BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

DELOITTE & TOUCHE INC.

2004 ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENT REVIEW

VARIOUS FACILITIES AT FARO MINE, YUKON

FINAL

PROJECT NO.: 0257-022-06
DATE: FEBUARY 22, 2005

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Project No. 0257-022-06
February 22, 2005

Mr. Doug Sedgwick
Deloitte & Touche Inc., as Interim Receiver for Anvil Range Mining Corporation
Suite 1900, TD Centre
79 Wellington Street West
Toronto, ON
M5K 1B9

Re: 2004 Annual Geotechnical Evaluation and Instrument Review
Various Mine Waste Facilities at Faro Mine, Yukon

Dear Mr. Sedgwick:

Please find attached our report on the Annual Geotechnical Evaluation and Instrument review of various mine waste facilities at Faro Mine. This report has been sent to the distribution list shown on the front cover.

If there are any questions regarding this report, please contact the undersigned at your convenience.

Yours truly,
BGC Engineering Inc.
per:

Gerry Ferris, M.Sc., P.Eng.
Geotechnical Engineer

encl.: Final report
JWC:GWF/sf

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LIMITATIONS OF REPORT

This report was prepared by BGC Engineering Inc. (BGC) for the account of Deloitte & Touche Inc., the Interim Receiver for Anvil Range Mining Corporation. The material in it reflects the judgement of BGC staff in light of the information available to BGC at the time of report preparation. Any use which a Third Party makes of this report or any reliance on decisions to be based on it are the responsibility of such Third Parties. BGC Engineering Inc. accepts no responsibility for damages, if any, suffered by any Third Party as a result of decisions made or actions based on this report.

As a mutual protection to our client, the public, and ourselves, all reports and drawings are submitted for the confidential information of our client for a specific project and authorization for use and/or publication of data, statements, conclusions or abstracts from or regarding our reports and drawings is reserved pending written approval by BGC.

1.0 INTRODUCTION

1.1 Scope of Services

BGC Engineering Inc. (BGC) provided a proposal (No. 04-056) for the annual geotechnical inspection and instrumentation review work at Faro Mine, dated May 26, 2004, to Mr. Doug Sedgwick of Deloitte & Touche Inc. (Deloitte), Interim Receiver for Anvil Range Mining Corporation. The scope of work detailed in that proposal comprised the following:

a) Field geotechnical inspection, review of relevant instrumentation data and preparation of maintenance recommendations concerning the following structures:
   - Down Valley Tailings Facility components comprising:
     - Cross Valley Dam and emergency spillway
     - Intermediate Dam and emergency spillway
     - Rose Creek Diversion Channel; dike crest, top of backslope and toe of slope
     - North Valley Wall Interceptor Ditch
   - North-Fork Rose Creek flow-through rock drain;
   - Selected portions of the Faro Waste Rock dumps; and
   - Faro Creek Diversion Channel above the Faro Pit.

b) Perform a review of the existing geotechnical instrumentation at the two main dams in the Down Valley and perform an elevation survey of these instruments.

c) Synthesis and interpretation of field instrumentation data (collected by site staff).

d) June and September site visits to inspect conditions.

e) Preparation and presentation of site staff geotechnical training seminar.

f) Preparation of a compilation report that provides interpretation and recommendations resulting from the instrumentation data and field inspections. The report provides a compendium of all relevant instrumentation data and plots.

This annual inspection report does not include the Fresh Water Supply (FWS) Dam as it has in the past. As detailed in Section 1.2, this dam was breached in 2003 and inspection of the breach and channel works constructed during the breach is reported under a separate water licence.

Three separate site inspections were performed in 2004; one each in May, July and September. The purpose of the May inspection was to examine site conditions at the Fresh Water Supply Dam breach, i.e., a post-freshet inspection. Additionally, during the May inspection, a review of the major structures in the Down Valley was conducted. The focus of the July inspection was the review of the existing geotechnical instrumentation at the two main dams in the Down Valley, a visual inspection of the dams following thaw and a performance review of the rock drain. The September inspection coincided with the timing of the annual inspection visits that have been performed for over 20 years, where the noted Faro structures were assessed.

In addition to the annual inspection and assessment work, BGC was responsible for the preparation of two training seminars for site staff. During the July inspection, a training seminar related to the newly prepared Operations, Maintenance and Surveillance (OM&S) Manual and the Emergency Preparedness Plan (EPP) was conducted. During the September inspection, a second seminar was given to provide site staff with continued training related to geotechnical and hydro-technical instrumentation. Site staff monitor these instruments on a on-going basis as part of this annual report on geotechnical issues.

Authorization to proceed with the work was provided by Mr. Doug Sedgwick of Deloitte via a letter dated May 28, 2004.

1.2 General Background Relating to Inspection and Instrumentation

Golder Geotechnical Consultants provided design recommendations for the Down Valley Tailings Disposal Project (Golder 1980). Following the subsequent construction of the facilities (Golder 1982), an extensive geotechnical monitoring program was initiated and is continuing to-date. Golder Associates was responsible for the annual inspection and instrumentation review of the Down Valley Tailings project between 1981 and 1999. Beginning in 2000, BGC has conducted the annual inspection and the instrumentation data assessment duties.

The report provided herein presents an assessment of the monitoring data collected in 2004. Monitoring data from piezometers, slope inclinometers, thermistors and seepage weirs, is collected by site staff. The data is forwarded to BGC for review and inclusion in this report. In addition to reviewing the instrumentation data, visual inspections of the various facilities were undertaken by BGC. This report compiles and reviews the instrumentation and inspection components in order to assess the physical performance of the noted structures.

As noted earlier, the FWS Dam was breached in November/December 2003, in accordance with the terms and conditions provide in the Yukon Water Board Licence Number QZ03-058. This licence is in effect until December 31, 2008 and provides details on reporting, effluent quality standards, monitoring and surveillance required for this specific project. The requirements provided in that licence are supplemental to those provided in Water Licence QZ95-003 which are applicable to the Faro Site.

The following components of Faro Mine are included within the present report:

- **The Down Valley Tailings Project** - The Down Valley Tailings Project comprises three major components; the Rose Creek Diversion Canal, the Intermediate Dam and the Cross Valley Dam, as shown in Drawings 1 and 2.
- **North-Fork Rose Creek Flow-Through Causeway ("the Rock Drain")** - The causeway was built of waste rock during 1987. The causeway was advanced by dumping waste from causeway grade to provide a zone of preferentially larger particles in the lower portion of the fill. This zone conveys creek flows through the structure; the

driving head being provided by a small pond of water on the upstream side of the causeway. During 2004, a review of the performance of this structure was performed by BGC and the results are provided in BGC (2005c).

- **Faro Creek Diversion Canal and East Wall of Faro Pit** – Faro Creek was diverted around the top of the Faro Pit through the construction of a diversion channel. The stability of the east wall of the Faro pit has been a concern throughout the lifetime of the pit operation. A number of structural discontinuities within the east pit wall, coupled with seepage from the Faro Creek diversion channel along the top of this pit wall, contribute to the slope instability that has occurred along this pit wall. A visual inspection along the diversion channel was initiated in 2000 to assess the concern that instability of the East Pit Wall could lead to the potential loss of the diversion channel.
- **Faro Waste Rock Dumps** – The Waste Rock dumps were built throughout the operating life of the Faro Pit. These dumps were generally constructed by end dumping and spreading from the final bench elevation of the dump. Portions of the Faro Waste Rock Dumps are adjacent to the North Fork of Rose Creek. Generally, the physical stability of waste dumps are of concern during construction and the first few years following construction. However, given their location adjacent to a creek, these portions of the waste dumps are reviewed on a two-year cycle.

1.3 Additional Relevant Studies

In addition to instrumentation monitoring and visual inspections, Deloitte is undertaking a number of assessment studies relevant to structures and facilities at Faro Mine that are discussed in this annual report. These additional studies are documented in the following reports:

1. Klohn (2002) provides dam safety reviews for the Intermediate, Cross Valley and FWS Dams at Faro Mine.
2. Klohn (2005) has prepared a detailed assessment of the seismic stability of the Intermediate and Secondary tailings dams under the condition of the Maximum Credible Earthquake.
3. Golder Associates (2002b) has provided an assessment of the long-term stability of the Faro Creek Diversion Channel.
4. BGC (2003) has written an Emergency Preparedness Plan for potential failure of the dams at the Faro Mine.
5. SRK (2004a) has undertaken a review of the Intermediate Dam; this review included commentary on the classification of the dam, the hydraulic capacity of the emergency spillway and a preliminary review of the seismic stability.
6. BGC (2005c) has undertaken a detailed review of the stability and hydraulic capacity of the rock drain.
7. BGC (2005a) has supervised construction to re-establish the hydraulic capacity of the Rose Creek Diversion Canal to the levels indicated in the water licence.

driving head being provided by a small pond of water on the upstream side of the causeway. During 2004, a review of the performance of this structure was performed by BGC and the results are provided in BGC (2005c).

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7. BGC (2005a) has supervised construction to re-establish the hydraulic capacity of the Rose Creek Diversion Canal to the levels indicated in the water licence.

All elevations documented in this report concerning the Cross Valley Dam and Intermediate Dam, including instrumentation, are reported with respect to m amsl. An elevation survey of all instruments at these dams was performed in 2004, allowing this conversion to amsl. Crest and instrument collar elevations for the Diversion Canal (Canal Dike, Back Slope, and Spoil Piles) are presented in dvpd. An elevation survey of the instruments on the Diversion Canal is planned for 2005. Since the majority of the elevations included within this report are with respect to m amsl, only elevations with respect to dvpd are specified as such.

2.3 2004 Water Management

Water pumped from the Faro pit passes through the mill water treatment plant and then flows to a pipe located in the spillway of the Intermediate Dam. After discharge, the water flows down to the polishing pond behind the Cross Valley Dam. Decant siphons are used to convey any retained water from the Intermediate pond over the Intermediate Dam. Water from the polishing pond is then discharged to the environment over the Cross Valley Dam, generally by siphon pipes.

The Intermediate and Cross Valley Pond water levels are measured with respect to m amsl using a staff gauge in each pond. Drawings 3 and 4 provide a summary of the Cross Valley Pond and Intermediate Pond water levels throughout the year. Table 1 also contains the 2004 water level data from the Intermediate and Cross Valley Ponds in tabular format. Included in Table 1 is a conversion of the pond levels to the dvpd datum for comparison to past results. The water level information is used to aid in the interpretation of the instrumentation response in the following sections.

The Cross Valley Pond fluctuated from a high of 1030.33 m on February 12 down to a low of 1028.90 m on September 17. The Intermediate pond level ranged from approximately 1047.33 m on April 16 to a low of 1045.74 m on June 21. During 2005, similar to the past few years, the pond levels in both the intermediate impoundment and polishing pond were kept low since the water quality was suitable for discharge.

2.4 Precipitation Information

Yearly climatic conditions significantly affect the performance of water retaining and water conveying earth structures. Table 2 provides a summary, on a month-by-month basis, of the total precipitation at the Faro Airport from 1978 to 2004. At the bottom of the table, the minimum, mean and maximum monthly precipitation values are also provided. The year 2004 was an above average year with respect to precipitation. The total annual precipitation was 329.5 mm, 24 mm above the mean annual value of 305.5 mm.

3.0 HISTORICAL RECORD AND 2004 MONITORING RESULTS

3.1 Diversion Canal – Canal Dike

3.1.1 Facility Overview

The Canal Dike separates the diversion canal from the Polishing Pond, the Intermediate Dam pond and tailings deposit. The Canal Dike is approximately 3,800 m long and has a crest width of approximately 5 m.

The dike is instrumented with piezometers, thermistors and slope indicators. The instrumentation was installed with the purpose of monitoring subsurface conditions within the dike. Failure of the dike, depending on location and magnitude, could result in the water from the diversion canal being directed into the tailings containment facilities.

The hydraulic capacity of the canal dike was assessed in 2003 (BGC 2004b). The results of this assessment indicated that the capacity of the canal was lower than its original design capacity due to settlement of the crest of the dike. In 2004, the crest of the Canal Dike was raised (BGC 2005a) in accordance with recommendations made in the 2003 study.

All of the elevations mentioned in Section 3.1 are referred to as m advd. Elevations for the crest of the canal dike were surveyed using geodetic datum in 2003/2004 (BGC 2004b & BGC 2005a), however, until all of the instrumentation is also surveyed, the Canal Dike information will be summarized in reference to Down Valley datum.

3.1.2 2004 Data Collection

Readings of the Canal Dike instruments for 2004 were obtained in July and September. Tabulated data and plotted records are presented in Appendix II and summarised in Tables 3, 4 and 5.

3.1.3 Instrumentation

Piezometers

Readings from the Canal Dike piezometers were obtained twice during the 2004 monitoring period. The Canal Dike is instrumented with the following piezometers: CD-10, CD-13, CD-15, CD-19, CD-21, CD-26, BH88-7 and BH88-11. Three of these instruments were destroyed in 2004; CD-19, BH88-7 and BH88-11. Locations of these piezometers can be found in Drawings 1 and 2.

Tabulated data is included in Appendix II and summarised in Table 3, which includes the following information:

- Date of installation;
- Type of piezometer;
- Number of readings in 2004;
- Ground elevation;
- Tip elevation;
- Historic and 2004 low reading information;
- Historic and 2004 high reading information; and
- Additional comments.

General Piezometric Observations

Over the period of record, the water level in the tailings pond retained by the Intermediate Dam was lowered during the months of May and June with a gradual increase during the rest of the year. The average pond level for 2004 is 1078.78 m advd. The Diversion Canal crest elevation opposite the south abutment of the Intermediate Dam is approximately 1085.2 m advd. The invert of the 0.6 m deep pilot channel (of the diversion canal) is at approximately 1081.2 m advd. Fall flows typically just inundate the bench adjacent to the pilot channel, suggesting a diversion canal water surface elevation of about 1081.9 to 1082.0 m advd, i.e., an elevation approximately two and a half metres above the level of the tailings pond at the Intermediate Dam. The gradient of the Diversion Canal is 0.19%. The tails beach limit, when the pond is at its full supply level, is about 1100 m upstream of the Intermediate Dam. In addition, higher spring and summer flows in the canal will produce a higher driving head for potential seepage.

Based on the above, the difference in elevation between the surface of the water in the Diversion Canal and the base level (water or tailings) upstream of the Intermediate Dam ranges from about 2 m at the Intermediate Dam to approximately 4 m at the beach limit. Upstream of the beach limit, the difference in elevation is about 4 m. Under these conditions and a uniform head loss between the Diversion Canal and the tailings pond, piezometric levels recorded by piezometers installed in the Canal Dike should range from about 1081.5 m advd just upstream of the Intermediate Dam, to about 1083.5 m advd at the limit of the tailings beach. The geometry and piezometric assumptions mentioned above are conceptually illustrated on Drawing 5.

The observed piezometric pressures generally reflect the anticipated conditions as explained above. Drawing 6 provides a longitudinal section of the piezometric conditions observed within the canal dike observed during 2004.

Additional general observations about the 2004 piezometric monitoring data include the following:

- Three of the eight pneumatic piezometers were discovered to be severed in 2004. The severed piezometers include BH88-7, BH88-11, and CD-19. The last readings acquired from piezometers BH88-7 and BH88-11 were on September 12, 2003. Piezometer CD-19 was monitored once in 2004 on July 6.
- Two of the deep piezometers (at locations CD-19, CD-21) continue to indicate piezometric pressures that are 1 to 4 m lower than the average intermediate pond elevation of the adjacent tailings pond, in spite of their locations being between 400 m and 600 m upstream of the Intermediate Dam.
- Data collected from CD-19, CD-21 and CD-26 have historically indicated minimal seasonal fluctuation of the piezometric surface. The data in all three piezometers indicates a downward hydraulic gradient, and low pore pressures at depth indicate that the subsurface is essentially free draining.
- Downstream of the Intermediate Dam, Piezometer CD-26 at Station 2+600 indicates essentially free drainage at depth. The lower piezometer, although some 70 m southwest of the pond shoreline, indicates a water level approximately 12.5 m above the full supply elevation of the polishing pond (1062.63 m advd). This is thought to be due to the influence of the upstream reservoir and the water level in the diversion canal.
- Data collected from CD-15 indicates that a weak upward hydraulic gradient exists at this location. The upward hydraulic gradient has been consistent since 2002.
- The downward trend in the pore pressures measured in the shallow piezometer of CD-15 since October 1985, may be an indication that the drainage capabilities at this depth may be improving. The pore pressures at depth measured by the deep piezometer continue to vary.

Thermistors

Readings from the Canal Dike thermistors were obtained twice during the 2004 monitoring period. The Canal Dike is instrumented with the following thermistors: CD-10, CD-15, CD-19, CD-21, CD-26, BH88-7, BH88-11 and BGC01-02. Locations of these thermistors can be found in Drawings 1 and 2.

Tabulated data is included in Appendix II and summarised in Table 4, which includes the following information:

- Date of installation;
- Length of thermistor string;
- Number of readings in 2004;
- Depth to permafrost in 2003;
- Depth to permafrost in 2004; and
- Additional comments.

General Geothermal Observations

A general warming trend in the foundations along the canal dike has occurred since thermistors were installed (although the ground temperatures appeared to have stabilized over the past few years). Trend interruptions that have been recorded likely reflect variations such as the timing of the readings or annual climatic effects. The warming has consumed virtually all of the permafrost that was initially present, prior to 1980/81 construction.

Based on the amount and location of settlement that has occurred in the crest of the canal dike (BGC 2004b), the areas that are still settling and the areas that continue to have permafrost, the following is inferred:

- More settlement has occurred in areas that took longer to show a fully thawed profile.
- The areas with the most settlement contained more ice content.
- The remaining zones with permafrost may continue to melt and induce further settlement.

Additional general observations about the 2004 geothermal monitoring data include:

- Three of the eight thermistors were discovered to be severed in 2004. The severed thermistors were BH88-7, BH88-11, and CD-19. The last readings acquired from thermistors BH88-7 and BH88-11 were on September 12, 2003. Thermistor CD-19 was monitored once in 2004 on July 6.
- The data continues to indicate a warming trend at depth at thermistor locations CD-10, CD-21, CD-26 and BGC01-02. No permafrost exists within 13 m of the surface in these locations.
- At thermistor location CD-15 (Station 1+530), the data continues to indicate a cooling trend at depth. Some permafrost still exists in the area around CD-15.
- A thermistor string was installed in borehole BGC01-02 to verify the geothermal conditions indicated by installation 88-11. The data collected in 2004 indicates that permafrost no longer exists within 13 m of the ground surface. Unfortunately, a number of the thermistor nodes at this instrument appear to be malfunctioning, limiting the ability to verify the geothermal conditions previously indicated by installations 88-7 and 88-11.

Slope Indicators

Readings from the Canal Dike slope inclinometers were obtained twice during the 2004 monitoring period. The Canal Dike is instrumented with the following slope inclinometers: CD-10, CD-15, CD-19, CD-21, 91CD-1, 94CD-1 and BGC01-01. Locations of these slope inclinometers can be found on Drawings 1 and 2.

Tabulated data is included in Appendix II and summarised in Table 5, which includes the following information:

- Date of installation;
- Length of casing;
- Number of readings in 2004; and
- Additional comments.

Only data since 1996 is illustrated on the plots in Appendix II because of quality and compatibility of the previously collected data.

General Ground Movement Observations

All of the inclinometers have shown negligible movement in 2004 and the following inclinometers have shown negligible movements since 1996:

- CD-10 at Station 0+990;
- CD-15 at Station 1+530;
- CD-19 at Station 1+900;
- 91CD-1 at Station 1+767; and,
- BH94CD-1 at Station 2+313.

Additional general observations about the 2004 slope indicator monitoring data include:

- The Canal Dike has settled in the vicinity of Station 2+100, based on the distinctive shape of the deflection versus depth curves for data recently obtained from CD- 21. This observation was confirmed by the 2003 survey of the dike crest (BGC 2004b).
- An inclinometer, designated 88-10/BGC01-01, was installed in 2001 to replace 88-10 and to monitor future displacements along the movement zone at approximately 6 m. In 2004, the probe was still not able to pass 11.8 m in the new casing, which was installed to a depth of 14 m. Readings were continued in 88-10/BGC01-01 above the blockage point. The data from this casing indicates that there is only some slow, minor downslope movement in the upper 10 m.

From study of the above data, it is concluded that, in general, the canal dike slope indicators continue to show minor movements, mostly related to thaw settlement of the dike or surficial movement due to shallow sloughing.

3.1.4 Canal Dike Summary

The majority of the permafrost that was originally in the Diversion Canal Dike has degraded beyond the depth of instrumentation, with the exception of the areas around installations CD-15 and BGC01-01. Ground movements were recorded at depth at installation 88-10 before it became inoperable in 2000/2001. Instrument BGC01-01, installed in 2001 as a replacement for 88-10, shows minor surficial movement. Surficial features indicating possible subsurface ground

movement have been observed around Station 2+100. Given the above summary of monitoring results, it is recommended that select instruments be monitored in 2005. The select instruments are located in the area of the 1 km of dike crest raise and the piezometers. Monitoring of all working instruments should be moved to a two year cycle. Replacements of the piezometers, SI casings and thermistors destroyed in 2004 at 88-07 and CD-19 should be undertaken.

3.2 Diversion Canal - Spoil Piles

3.2.1 Facility Overview

The Diversion Canal Spoil Piles (DCSP) were created during the construction of the Diversion Canal. The construction waste (spoil) was placed downslope of the Diversion Canal Dike. The DCSP were instrumented because of concerns that they could fail during thawing of the loosely placed, frozen materials. Failure of the DCSP would result in the spoil being deposited into the tailings disposal area. In subsequent years, increased support at the toe of the DCSP was provided by tailings deposited at the base of the Spoil Piles. The toe support has reduced the likelihood of significant slope failure. The support provided by the tailings is considered effective along the toe of the DCSP, except for the area extending a short distance upstream from the Intermediate Dam. The Spoil Pile overlooking the south abutment of the Cross Valley Dam was monitored (SP-5) in 2004 for subsurface movement and thermal fluctuation. One thermistor string (SP-3) and one slope indicator (SP-2) were monitored in 2004 at the toe of the spoil pile.

3.2.2 2004 Data Collection

Readings of the DCSP instruments for 2004 were obtained in July and September. Tabulated data and plotted records are presented in Appendix II and summarised in Tables 6 and 7.

3.2.3 Instrumentation

Thermistors

Readings from the DCSP thermistors were obtained twice during the 2004 monitoring period. The DCSP are instrumented with the following thermistors: SP-3 and SP-5. Locations of these thermistors can be found in Drawing 1.

Tabulated data is included in Appendix II and summarised in Table 6, which includes the following information:

- Date of installation;
- Length of thermistor string;
- Number of readings in 2004;
- Depth to permafrost in 2003;
- Depth to permafrost in 2004; and
- Additional comments.

General Geothermal Observations

Three thermistor strings have been installed in the DCSP. Initially all of these installations recorded permafrost. Since installation in 1981, much of the permafrost has degraded.

Thermistor SP-3 indicates permafrost conditions may exist below a depth of 8 m, however, data quality is poor as only four of the ten thermistor nodes are still functioning. Subzero temperatures were recorded at a depth of 9 m in September 2004.

Thermistor SP-5 indicates permafrost conditions exist below a depth of 9 m. Since 2000, the recorded temperatures have indicated a slight warming trend.

Slope Indicators

The DCSP is instrumented with slope inclinometers SP-2 and SP-5. Locations of these slope inclinometers can be found in Drawing 1. Readings from the DCSP slope inclinometers were obtained twice during the 2004 monitoring period.

Tabulated data is included in Appendix II and summarised in Table 7, which includes the following information:

- Date of installation;
- Length of casing;
- Number of readings in 2004; and
- Additional comments.

Not all of the data is illustrated on the plots in Appendix II because of quality and compatibility of the previously collected data. Only data since 2000 is illustrated in SP-2, and since 1996 for inclinometer SP-5.

General Ground Movement Observations

Both inclinometers monitored in 2004 showed negligible movement in 2004.

The DCSP has settled in the vicinity of Station 1+530, based on the distinctive shape of the deflection versus depth curves for data obtained from SP-2.

3.2.4 Spoil Pile Summary

The geothermal instrumentation indicates some remaining subzero ground temperatures at depth near the south abutment of the Cross Valley Dam. Data collected from Thermistor SP-3, upstream of the Intermediate Dam, is incomplete, but may indicate some permafrost remains at depth in the Spoil Pile at this location. Both instruments indicate a warming trend in the data.

Negligible ground movement has been observed at SP-5 but monitoring should be continued due to the permafrost that still remains at this location at depth. Since the nature of the permafrost at SP-5 is not certain, it is necessary to monitor the slope indicator and/or the thermistor at this location in the future, but on a two year cycle.

Negligible ground movement has been recorded at SP-2 but monitoring should be continued since settlement of the canal dike is occurring upslope from this location and settlement is on-going at this location.

3.3 Diversion Canal - Backslope

3.3.1 Facility Overview

The Diversion Canal Backslope (DCBS) was constructed when the Diversion Canal was excavated. The DCBS is excavated into native ground, composed mainly of silt, sand and gravel. Prior to construction, the DCBS contained significant amounts of permafrost. A layer of gravel was applied to the face of the DCBS during construction to act as a thermal protection berm. The DCBS was instrumented with slope indicators, piezometers, and thermistors to monitor ground conditions as the permafrost degraded due to the newly constructed geometry and the presence of water in the Diversion Canal.

All of the elevations mentioned in Section 3.3 are referred to as m advd, since no geodetic surveys of the instrumentation have been conducted.

3.3.2 2004 Data Collection

Readings of the DCBS instruments for 2004 were obtained in July and September. Tabulated data and plotted records are presented in Appendix II and summarised in Tables 8, 9 and 10.

3.3.3 Instrumentation

Piezometers

Readings from the DCBS piezometers were obtained twice during the 2004 monitoring period. The Canal Dike is instrumented with the following piezometers: BS-5 and BS-9. The location of these piezometers can be found in Drawings 1 and 2.

Tabulated data is included in Appendix II and summarised in Table 8, which includes the following information:

- Date of installation;
- Type of piezometer;
- Number of readings in 2004;

- Ground elevation;
- Tip elevation;
- Historic and 2004 low reading information;
- Historic and 2004 high reading information; and
- Additional comments.

General Piezometric Observations

This year marked the first year that piezometer BS-9 has been read since 1995. Piezometric elevations recorded in 2004 are consistent with previously recorded elevations for both active piezometers. Both piezometers indicate relatively well drained conditions.

Thermistors

Readings from the DCBS thermistors were obtained twice during the 2004 monitoring period. The DCBS is instrumented with the following thermistors: BS-5, BS-9, BS-10 and BS-12. Locations for these thermistors can be found in Drawings 1 and 2.

Tabulated data is included in Appendix II and summarised in Table 9, includes the following information:

- Date of installation;
- Length of thermistor string;
- Number of readings in 2004;
- Depth to permafrost in 2003;
- Depth to permafrost in 2004; and
- Additional comments.

General Geothermal Observations

Eleven thermistor strings have been installed in the DCBS. Six of those installations previously recorded permafrost and four recorded thawed profiles. The conclusion reached from a previous review of the thermistor data was that a substantial thickness of natural soils behind the gravel-mantled backslope (thermal liner) are now thawed (to at least 6 m based on the data from Thermistors BS-5 and BS-10) along the DCBS. As such, the possibility of excess pore pressures and possible instabilities related to insufficient drainage during thaw of ice-rich permafrost is diminished.

Only four of the eleven original thermistors were monitored in 2004. These four thermistors were located in areas of interest near settlement locations in the canal dike.

The data collected at thermistors BS-5 and BS-10 indicates the depth to permafrost is approximately 6 m at these locations, the same as the last time they were monitored in 2002. There has been a slight cooling trend at depth in these thermistors since installation in 1981.

The data collected at thermistors BS-9 and BS-12 indicates no permafrost present within 10 m below the surface. A slight warming trend is apparent since the last readings in 1995.

Slope Indicators

The DCBS is instrumented with the following slope inclinometers: BS-5, BS-9 and BS-10. Locations of these slope inclinometers can be found in Drawings 1 and 2. Readings from the DCBS slope inclinometers were obtained twice during the 2004 monitoring period.

Tabulated data is included in Appendix II and summarised in Table 10, which includes the following information:

- Date of installation;
- Length of casing;
- Number of readings in 2004; and
- Additional comments.

Only data since 1996 is illustrated on the plots in Appendix II because of quality and compatibility of the previously collected data.

General Ground Movement Observations

The DCBS has a limited history of ground movements. Previously, surface slides within the granular material of the thermal blanket occurred at upstream limit of the 1980 portion of the canal and also near the location where Cornish Creek joins the canal. During 2004, small sloughs occurred near Station 1+950 and immediately upstream of the upper weir. The sloughs can probably be contributed to surficial saturation effects due to precipitation and runoff.
Eight slope indicators (BS-2, BS-5, BS-9, BS-10, BS11, BS-16, BS-17 and BS-18) were installed in the DCBS to monitor ground movement. Only three of the slope indicators (BS-5, BS-9 and BS-10) were monitored in 2004 due to:

- The surficial nature of the previous slides; and
- degradation permafrost within the backslope has occurred most places.

The slope inclinometers that were monitored indicated only minor surficial movements within 1.5 to 2.5 m below ground which is indicative of slight creep movements. This creep type movement is typical on slopes experiencing freeze-thaw cycles and surface saturation effects.

3.3.4 Canal Dike Backslope Summary

Based on the readings collected in 2004, the DCBS is relatively well drained, lacks near surface permafrost and has a history of only failing surficially in response to extreme precipitation events. Consequently, it is no longer considered imperative to monitor the instruments in the DCBS with the same frequency as in previous years. A monitoring frequency of every two years for all functioning DCBS instrumentation is recommended for the future; as such monitoring should be undertaken in 2006. It is recommended though, that visual inspections of the DCBS by a qualified geotechnical engineer continue on an annual basis.

3.4 Cross Valley Dam

3.4.1 Facility Overview

The Cross Valley (CV) Dam was constructed with a crest elevation of 1065.8 m advd (1033.5 m), with a top of core elevation at 1064.8 m advd (1032.5 m) and a main spillway entrance elevation of 1063.5 m advd (1031.2 m). The CV Dam site was instrumented before construction. Additional instrumentation was installed after construction was complete and in 1988, a number of thermistors were installed in the crest of the dam.

In 2003, the crest was re-graded and the surface of the CV Dam and spillway was surveyed. This survey, performed directly in terms of msl, indicated that the crest of the dam was at elevation 1033.1 m and the spillway at 1031.7 m. This survey was undertaken as part of the development of the Operations, Maintenance and Surveillance (OM&S) Manual (BGC 2004a). The recent survey data for the crest of the dam likely indicates that settlement of the dam has occurred. This settlement, about 3% of the original dam height, would not affect the safety of the dam. However, a review of the spillway capacity is recommended.

Piezometers installed in the vicinity of the CV Dam embankment consist of pneumatic and standpipe piezometers. Two foundation sections are instrumented from as much as 20 m upstream of centreline to 7 m downstream of centreline. As well, five locations on centreline are instrumented; tips range in position from approximately 11 m below crest to approximately 13 m below the bottom of the cut-off trench. Finally, it is noted that the embankment core is attached to an upstream blanket of core-type glacial till material, which extends 30 m upstream of centreline. This blanket is connected with a secondary blanket of 'second-rate' glacial till material, which is 60 m wide. The function of these blankets is to reduce the hydraulic gradient in the mixed alluvial strata present beneath the dam.

Seepage emerging at the toe of the CV Dam is collected by a granular toe drain, which was constructed in 1991. The seepage rate is normally measured by observing flow rates in three tributary V-notch weirs and a combined flow weir. Each of the tributaries collects seepage from a discrete portion of the toe drain. The seepage rate is also influenced by some water derived from the spillway/decant area recharge downstream of the core section of the dam.

Ground temperatures in the CV Dam are monitored by the two thermistors installed at the crest of the dam. These temperatures are monitored in response to noted crest cracks.

In 2004, the elevation of the instruments of the CV Dam was surveyed. This survey was undertaken as part of the finalization of the OM&S manual (BGC 2004a).

3.4.2 2004 Data Collection

Plots of the data collected in 2004 are presented in Appendix II and summarised in Tables 11 through 14. The piezometers were monitored six times and the thermistors four times in 2004. Weirs at the toe of the CV Dam were monitored weekly during 2004.

3.4.3 Instrumentation

Piezometers

The CV Dam is instrumented with the following piezometers: CVDC-4, CVDC-7, CVDC-9, CVDP-1, CVDP-2, CVDP-3, CVDP-5, CVDP-6, CVDT-1, CVDT-2, 94CVDC-1 and P01-11. Locations of these piezometers can be found on Drawing 1. The positions of these instruments are shown in section on Drawing 7.

Tabulated data is included in Appendix II and summarised in Table 11, which includes the following information:

- Date of installation;
- Type of piezometer;
- Number of readings in 2004;
- Ground elevation;
- Tip elevation;
- Historic and 2004 low reading information;
- Historic and 2004 high reading information; and
- Additional comments.

General Piezometric Observations

The piezometric pressures recorded from the instrumentation in the CV Dam indicate that pore pressures within the CV Dam remain consistent with previous years' readings. Low pore pressures within the foundation and cut-off trench of the dam are indicated by readings taken at instruments CVDC-4, CVDC-7 and CVDP-6. Slightly higher pore pressures are observed at instrument CVDC-9. Higher pore pressures recorded at CVDC-9 are likely related to the fact that the instrument is located in the approximate area of the former Rose Creek channel. Instruments CVDP-1, CDP-3 and CVDP-5 along the toe indicate artesian pressures, as observed in previous monitoring.

In 2004, the elevation of the CV Dam instruments were surveyed. This survey was undertaken as part of the development of the OM&S manual (BGC 2004a). This survey also included conducting a general survey of the instrument condition and dimensions, provided in Appendix III. After the 2004 instrument survey, it was determined that the instrument stick-up for piezometer CVDT-1 was 0.27 m rather than 1.50 m. This resulted in a notable difference in the piezometric elevation results for this instrument, as can be seen in Appendix II. It is unclear when the stick-up changed, therefore only the 2004 data was plotted with respect to the revised stick-up.

Additional general observations with regards to the 2004 CV Dam piezometric monitoring data include the following:

- Instrument 94CVDC-1 indicates the piezometric surface within the core of the dam is approximately 10 m below the surface of the dam (approximately 1023.7 m).
- Data could not be acquired from CVDP-2 for two of the four readings. The other two readings were record low piezometric levels. These readings are suspect until it can be confirmed that the piezometer is functioning properly.
- Upward gradient conditions exist in the crest at the location of the nested standpipe piezometer CVDC-7.
- Artesian or near artesian conditions exist at piezometers CVDP-1, CVDP-3, CVDP-5, CVDT-1 and P01-11.

Seepage:

The 2004 data and the historic summary of weir flows are presented in Tables 12 and 13. Weir flows for 2004 are summarised on Drawing 8. Drawing 9 presents flow rate data for Weir X13 together with the year-by-year trend in mean annual seepage rate. The Weir X13 quantity is approximately equal to the combined flow volumes of X11, X12 and W3, but a difference exists between the calculated combined flow rates and the flow rate, as presented in Table 12. This difference is due to contributing surface run-off or from additional groundwater flow which comes to surface downstream of the seepage trench.

The north portion of the seepage collection trench, as measured by Weir X-11, produces the most seepage water. Additionally, this area has artesian pressures at depth. This performance is consistent with past performance. It is thought that this area experiences high pressures and seepage due to it being located at the boundary between a terrace and more recent alluvium (Klohn 2005).

Between August 19 and 26, 2003 new weir plates were installed at X11 and X13. Following this replacement of the weir plate, readings of the staff gauge continued as before. A large jump in the flow rate was calculated following this replacement. At the time of writing the 2003 geotechnical monitoring report, it was unclear whether this change in flow rate was real,

however it was reported as calculated. During the 2004 monitoring program, concurrent staff gauge readings and independent flow measurements were made. This revealed that the rating curve used to calculate flow rate from the staff gauge reading, after August 26, 2003, needed modification. The flow data from August 26, 2003 onward was revised in accordance with results of the 2004 spot flow measurements. Additional confirmation of this revised staff gauge / flow rate rating curve is recommended in 2005.

The average 2004 flow rate at Weir X13 is 35 L/s, which is slightly lower than the 38 L/s. recorded in 2003. The 2004 flow rates and the revised 2003 data follow the general trend of lower measured flow rates, as displayed on Drawing 9. Data collection should continue on this trend; this phenomenon may be reflective of changes within the granular toe drain (e.g. clogging) but no rise in piezometric levels observed at the toe of the CV Dam has been detected to date. The lower seepage amounts in the last three to four years are thought to be due in part to the lower pond level in the polishing pond.

Thermistors

The CV Dam is instrumented with thermistors CVDC-6 and 88-4. Locations for these thermistors can be found in Drawing 1 and in section on Drawing 7. Readings from the CV Dam thermistors were obtained four times during the 2004 monitoring period.

Tabulated data is included in Appendix II and summarised in Table 14, which includes the following information:

- Date of installation;
- Length of thermistor string;
- Number of readings in 2004;
- Depth to permafrost in 2003;
- Depth to permafrost in 2004; and
- Additional comments.

General Geothermal Observations

The 2004 readings indicate slight warming at depth in piezometer CVDC-6, which is consistent with previous readings. The thermistor beads at 21 and 29 m depth appear to be malfunctioning and therefore have been ignored.

Data collected in the spring from piezometer BH-88-4 indicates that winter frost penetration extends to a depth of approximately 3.5 m at this location.

3.4.4 Cross Valley Dam Summary

The piezometric pressures recorded from the instrumentation in the CV Dam indicate that pore pressures within the CV Dam remain consistent with previous years' readings. Instrument 94CVDC-1 indicates the piezometric surface within the core of the dam is approximately 10 m below the surface of the dam (approximately 1023.7 m). Low pore pressures within the foundation and cut-off trench of the dam are indicated by readings taken at instruments CVDC-4, CVDC-7, CVDP-3 and CVDP-6. Slightly higher pore pressures are observed at instrument CVDC-9. Higher pore pressures recorded at CVDC-9 are likely related to the fact that the instrument is located in the approximate area of the former Rose Creek channel.

Geothermal instrumentation within the CV Dam indicates that no permafrost is encountered within the foundation of the dam and winter frost penetration is observed to be approximately 3.5 m below the crest.

Overall, the dam is exhibiting acceptable piezometric and geothermal performance which is consistent with the historical monitoring at this dam. Continued monitoring of the seepage weirs and functioning instruments in the CV Dam is recommended for 2005.

3.5 Intermediate Dam

3.5.1 Facility Overview

The Intermediate Dam currently has a crest elevation of 1049.2 m amsl; initial construction in 1980 was to 1068.8 m advd (~1036.5 m amsl). The dam was raised as follows in response to tailings storage requirements:

- To elevation 1073.0 m advd in the summer of 1988 (spillway crest at 1071.5 m advd);
- To elevation 1078.0 m advd in the summer of 1989 (spillway crest at 1076.5 m advd); and
- To elevation 1081.7 m advd in the summer of 1991 (spillway crest at 1080.0 m advd).

Tailings were always discharged from the upstream end of the basin during mine operation, hence a water pond was present immediately upstream of the dam. The water level downstream of the dam is typically at Elevation 1031.2 m, as controlled by the spillway crest of the Cross Valley Dam, or lower, if siphoning/pumping over the Cross Valley Dam spillway is occurring. The elevation of the Intermediate Dam foundation is approximately 1017.7 m in the original bed of Rose Creek near the south side of the valley. Therefore, the maximum height of the Intermediate Dam is approximately 31.5 metres.

The original construction phase and first raising (1988) had the emergency spillway at the south abutment; it was moved to the opposite end of the dam during 1989 construction, and rebuilt in 1991 when the dam was raised to its present elevation. As a consequence of this general construction activity, all of the pre-construction and post-construction geotechnical performance instruments have been destroyed, see Appendix III for a complete listing of instruments. Some replacements have been made and new instruments have been installed where required.

The crest and downstream slope were graded in June 2003 and the crest and spillway of the Intermediate Dam was surveyed and a hydrotechnical analysis of the spillway capacity performed in 2003 (SRK 2004a). The result of this assessment was that the emergency spillway of the dam can not pass the design flow without exceeding the recommended maximum water level. As a result, the dam does not meet its original design for spillway capacity, Deloitte has indicated that the rehabilitation of this spillway will occur in 2005.

Original instrumentation included piezometers (standpipe and pneumatic types) and one string of thermistors. The piezometers monitored pore pressure conditions in the embankment and in the foundation. The thermistor string was installed in the permafrost of the south abutment.

As part of their mine closure study, Robertson GeoConsultants Inc. installed eight monitoring wells at two locations on the crest and two locations in the downstream berm of the Intermediate Dam. Static water level has been measured in these wells sporadically since their installation in 1996.

In 2001, Gartner Lee Ltd. installed three monitoring wells at the toe of the Intermediate Dam. Static water level was measured in installations P01-3A, P01-4A and P01-4B after installation in September 2001, in 2002, twice in June 2003, and four times in 2004.

In 2004, Klohn Crippen Consultants installed two piezometers on the crest of the Intermediate Dam, into the material on the downstream side of the drain layer. These two standpipe piezometers, BKS04-06 and BKS04-07, were measured by Klohn as part of their study and were found to be dry, as would be expected.

Currently monitored instrumentation consists of five pneumatic piezometers and seven standpipe piezometers, not including the recently installed Klohn standpipes.

3.5.2 2004 Data Collection

Plotted data for the piezometers and monitoring wells installed at the Intermediate Dam (ID) are presented in Appendix II and summarised in Table 15. Readings for 2004 were obtained in May, July and September. The measured Intermediate Pond elevation ranged from a high of 1047.33 m in April to a value of 1045.74 m in June.

3.5.3 Instrumentation

Piezometers

The Intermediate Dam is instrumented with the following piezometers: 91-ID3, 91-ID4, 91-ID5, 91-ID6, 91-ID7, 94-IDC-1, P96-1, P96-2, P96-3, P96-4, P01-03 and P01-04. Locations of these piezometers can be found in Drawing 1 with the location with the dam shown in Drawing 10.

Tabulated data is included in Appendix II and summarised in Table 15, which includes the following information:

- Date of installation;
- Type of piezometer;
- Number of readings in 2004;
- Ground elevation;
- Tip elevation;
- Historic and 2004 low reading information;
- Historic and 2004 high reading information; and
- Additional comments.

General Piezometric Observations

In 2004, the elevation of the ground surface at each of the instruments of the Intermediate Dam was surveyed. This survey was undertaken as part of the development of the OM&S manual (BGC 2004a). This survey also included a general survey of the instrument condition and dimensions, as discussed in Appendix III. After the 2004 instrument survey, the data from several piezometers indicated pressures that were not consistent with those from previous years. This is likely the result of updated instrument information, such as the standpipe stick-up and updated ground elevations. Future monitoring will be required to determine the consistency of the 2004 data. All of the 2004 data for the Intermediate Dam is reported with the updated survey information, where available.

The deep piezometer located in 91-ID3 continues to indicate an overall trend of declining pore pressures with time. It is inferred that the piezometer data reflects abutment conditions dominated by drainage from upslope, not the level of the tailings pond upstream of the dam. That inference is supported by the sudden increase in piezometric level of 2 m recorded by both tips in June 1992, which would be coincident with the spring freshet in the adjacent diversion channel. Therefore, the decline in piezometric pressure recorded by 91-ID3 may be related to better drainage associated with ongoing loss of permafrost in the abutment downstream of the dam.

Additional general observations about the 2004 Intermediate Dam piezometric monitoring data include the following:

- Similar conditions to historical readings were observed in 91-ID4, 91-ID6, 94-IDC-1, 96-1, 96-2, 96-3, 96-4 and P01-03.
- Pneumatic piezometer 91-ID6 indicates the presence of an upward hydraulic gradient.
- The data from the pneumatic piezometers at 91-ID3 and 91-ID4 indicates a downward hydraulic gradient at these locations.
- Hydrostatic conditions exist within the nested standpipe piezometers located at; P96-3, P96-4 and P01-04.
- Piezometers 94-IDC-1 and the shallow piezometer tip at 91-ID3 are both recording dry conditions.
- Pneumatic piezometer 91-ID5 has not worked since May 1999. This instrument was monitored in 2004, however, it is recommended that monitoring of this instrument be discontinued in 2005.
- The piezometric information from P01-04 indicates pore pressures within the foundation of the dam and not the pore pressures within the dam itself.

3.5.4 Intermediate Dam Summary

Overall, the Intermediate Dam appears to be performing in an acceptable manner. The piezometers and monitoring wells along the toe of the dam indicate a piezometric surface ranging between 0.5 and 2.5 m below ground surface (bgs). The piezometers and monitoring wells installed at the crest of the dam indicate a piezometric surface approximately 19.5 m bgs (1029.7 m). The piezometer in the south abutment of the dam indicates drained conditions in the upper 7 m. The deep tip (15.2 m bgs) in the south abutment indicates pore pressures at depth are continuing a declining trend. It is recommended that monitoring of all functional piezometers and monitoring wells in the Intermediate Dam continue in 2005.

4.0 FIELD INSPECTION AND SUMMARY NOTES

BGC staff were on-site three times in 2004 to undertake inspections of the various facilities, as noted below:

- Mr. G. Ferris, P.Eng. in May;
- Mr. J. Cassie, P.Eng., and Mr. M. McCrank, E.I.T. in July and
- Mr. J. Cassie again in September.

Summary memos from all three visits are attached in Appendix I. It should be noted that inspection observations with respect to the FWS Dam Breach Project are discussed in a separate report.

During the May inspection, the following facilities were inspected:

- The Intermediate and the Cross Valley Dams.
- The Rose Creek Diversion Channel (RCDC).
- The K8 Creek Rehabilitation work.
- The North Fork Rock Drain (NFRD).

The objective of the May site visit was to record the condition of the FWS Dam Breach Project during the first freshet following the breach construction completed in December 2003. Additionally, during this inspection, some of the instrumentation for the Rock Drain study was installed and the conditions of major Down Valley structures were also observed.

During the July inspection, the following facilities were inspected:

- The Intermediate and Cross Valley Dams.
- The RCDC.
- The NFRD, including downstream of the mine access road.
- The Faro Creek Diversion Channel (FCDC).
- The K8 Creek Rehabilitation work.

The objective of the July site visit was to inspect the condition of the dams and channels after the thaw of seasonal frost. In conjunction with this visit, the NFRD inspection (BGC 2005c), as well as part of the 2004 instrumentation survey (in Appendix III), were conducted.

Mr. Cassie visited the site from September 28 to 30, 2004 and inspected the following structures:

- The Intermediate and Cross Valley Dams.
- The K8 Creek Rehabilitation work.
- The RCDC and weir sections.
- The North Valley Wall Interceptor Ditch (NVWID).
- The FRDC.
- The NFRD.
- Selected waste dumps (overlooking the North Fork of Rose Creek).

The purpose of the September site inspection was to examine the facilities in detail for evidence of deficient performance and possible maintenance, to provide a basis for possible adjustment to the frequency of monitoring and to review points of immediate concern and maintenance with site representatives.

As in previous visits, the facilities were inspected during a walking tour and a camera and Dictaphone were used to record conditions and observations. The photographs, along with recorded observations, are compiled into a Field Record Summary that is kept in the files of BGC. The observations made during the May, July and September site visits are summarized within this section of the report; with the observations of the more recent September visit taking precedent over observations made in May or July.

At the time of the September visit, there was some snow on the ground, partially obscuring the surface conditions. At the Intermediate Dam, the reservoir level was approximately 0.8 m lower than the spillway inlet elevation. No water was being transferred at either the Intermediate or Cross Valley Dams. The retained pond level was estimated to be approximately 2.0 m lower than the spillway inlet elevation at the Cross Valley Dam.

4.1 Down Valley Tailings Project

The project consists of the following elements; the Rose Creek Diversion Canal, the North Valley Wall Interceptor Ditch, the Cross Valley Dam and the Intermediate Dam.

4.1.1 Diversion Canal

The RCDC was inspected by walking along the dike crest and observing the backslope from the dike crest. Mr. Ferris also walked the backslope in August 2004. It should be noted that the crest-raising project on the dike crest was undertaken just before the September inspection. The majority of the toe area from the Cross Valley Dam to west of the Intermediate Dam was also walked.

Some minor dike crest-edge cracking was observed in July on the uphill side of crest, just east of CD-15 (Station 1+550) and proximal to the four through sixth weirs from the beginning of the weir section. These minor cracks likely resulted from the slightly oversteepened nature of the rip rap on the inside face of the channel and potentially some erosion of the underlying base soils for the rip rap.

Small sloughs (with small headscarps and cracks) were noted at two locations on the backslope; approximately 30 m east of CD-19 and one directly south of the first weir. These sloughs likely resulted from surficial saturation of the backslope materials.

The weir sections appeared in satisfactory condition. As previously noted, many central boulders have been pushed slightly downstream. Surface water flow is escaping around the side of the final weir at the bottom.

At the dike toe between the Cross Valley Dam and the Intermediate Dam, approximately 17 minor seepage discharge points were noted within the snow cover. This is approximately the same number as other years, ranging from 10 to 15 distinct discharge points. Seepage was also noted at the toe of the dike at the old borrow area and below CD-8. No signs of new cracking were noted along the dike toe towards the east of the Intermediate Dam.

4.1.2 North Valley Wall Interceptor Ditch

Selected sections were inspected, including the Outfall Section at the access road, and no concerns were noted.

The two culverts that were located under the main access road, adjacent to the Intermediate Dam spillway, were replaced with a single 2.2 m diameter culvert during 2004. The replacement of the culvert was required to increase the hydraulic capacity to its revised design capacity. Information related to the culvert installation is detailed in an as-built report (BGC 2005b).

The stated design for the channel below the culverts is that it should be able to transmit a flow value of 5.4 m^3/s with an allowance for 0.5 m of freeboard. Based on visual estimates of the current channel grade and configuration, it is likely that the current channel could convey this design discharge quantity. A survey and detailed analyses should be undertaken to confirm this preliminary assessment.

4.1.3 Cross Valley Dam

At the time of the September inspection, the upstream pond was lower than the inlet elevation for the spillway. During the inspection, no water was being transferred from the polishing pond. The inlet to both the spillway and pilot channel were in satisfactory condition, based on the visual inspection. In the May and July inspections, a crack was evident in the base of the spillway, progressing towards the crest.

The crest of the dam was repaired in 2003. As reported by site personnel, between 150 and 400 mm of granular material was placed on the crest of the dam to re-grade the surface and fill the cracks that were present. In the May and July inspections, crest cracking was evident in the new fill placed in 2003, likely in response to frost effects and the low pond level. The crack was still visible in September but it had not opened up any further.

No signs of cracking or deformation were observed on the upstream side. Some small erosional gullies are formed on the downstream face.

4.1.4 Intermediate Dam

At the time of the September inspection, the pond level in the Intermediate Reservoir was lower than the spillway inlet. The condition of the emergency spillway remained unchanged from previous inspections. There are some areas of the spillway that have been disturbed as part of previous repair work at the spillway that were not returned to their original arrangements. Specifically, this includes crossing ramps and other disturbances to the base of the spillway. The spillway was surveyed and hydraulically assessed in 2003 (SRK 2004a). Recommendations for spillway repairs are contained in that report and should be reviewed in conjunction with this report. It is understood that the recommended spillway repairs will be performed in 2005.

The crest was repaired in 2003. The repairs consisted of the recommended crack filling and regrading (placement of about 250 mm of granular material on the crest). Some minor sinkholes and crest cracking has occurred in the new fill placed last year. The sinkholes were encountered in the crest near the center of the dam, the largest of which was 125 mm deep with a diameter of 400 mm. The cracking is occurring on the upstream side of the crest of the dam near the spillway. This area was subject to cracking prior to the placement of fill on the crest of the dam last spring. The cracking is likely in response to frost effects and the low pond level.

The upstream riprap was in good condition.

The downstream slope of the dam was rehabilitated in 2003. The surface of the downstream face of the dam was generally smooth with no signs of bulges or seepage in 2003. However, in spring 2004, the downstream face was subject to the formation of extensive erosional gullies and development of fans on the access road surface. The excess debris and slough material at the toe should be removed (so the drain can work properly) and the gullies should be monitored next spring following runoff and thaw.

During this year's inspections, no signs of seepage were noted at the south abutment toe. This may be due to the slough material on the drain.

4.2 North Fork Rose Creek Flow-Through Causeway

The flow-through rock drain, which is about 55 m high on the downstream side, was observed during the site inspections. The discharge area was observed to be flowing clear water from the downstream side. No significant evidence of instability on the slope above the discharge area, other than some old cracks along the top edge of the crest and a minor slough on the upstream face, was observed. On this basis, it appeared that the downstream portion of the causeway section was functioning as intended, and that its performance was not deteriorating.

In 2004, the performance of the NFRD was evaluated by BGC. A review of the typical year-to-year hydraulic performance of the NFRD was recommended in the 2003 Annual Geotechnical Inspection Report (BGC 2004c). Prior to the 2004 evaluation, the last detailed review of the structure was in 1992. Results of the 2004 evaluation can be found in BGC (2005c). The evaluation determined that the hydraulic performance of the rock drain continues to meet performance requirements and is showing no signs of deteriorating. The high pond level experienced in 2004 was about 0.5 m lower than the historical high pond elevation.

The assessment has been based on a limited dataset in 2004, due to datalogger problems. Additional data should be collected in 2005 to provide confirmation of the relationship developed for pond elevation and flow through capacity.

4.3 Waste Rock Dumps

The waste rock dumps overlooking the North Fork of Rose Creek were inspected during the September site visit. There were no signs of major instability noted from a traverse along the toe area of the waste rock dumps. Some minor sloughing of till materials on the NE Dump is continuing but debris is only reaching the dump toe.

4.4 Faro Creek Diversion Channel

The Faro Creek Diversion Channel is situated on top of the east wall of the Faro pit. The channel transmits creek water, which previously flowed directly through the pit area, over to the North Fork Rose Creek, where it flows though the Vangorda causeway rock drain.

Rehabilitation of the channel was undertaken in 2003. There were no notable concerns of the condition of the channel in 2004. The distance between the ravelling overburden pit slope and the diversion channel should be reassessed in the spring by site staff.

4.5 Training Seminars

Two training seminars were provided to the site staff on the evenings of July 12 to 13 and September 28. The training seminar in July discussed the new OMS Manual and the Emergency Preparedness Plan (EPP) and the September training seminar focussed on the Faro Mine instrumentation.

5.0 MAINTENANCE REQUIREMENTS

The following sections provide a point-form summary of the maintenance, assessment and repair recommendations presented in the inspection memos of Appendix I. In addition, some recommendations regarding minor monitoring requirements are also provided.

5.1 Down Valley Project

5.1.1 Diversion Canal

It is important that the crest of the Diversion Canal dike be graded each September or October after the annual inspection to cover areas where cracks and potholes have developed. The purpose of this treatment is to prevent ingress of surface run-off water that may be concentrated in the settled areas, potentially reducing stability. Blading should be used to accomplish this work. Care must be taken not to disturb the existing instrumentation that has been installed to monitor performance of the dike. Other items include the following:

- Monitor edge cracking noted at the toe and uphill side of the canal dike, proximal to the Intermediate Dam area.

- Repair the final weir in the weir section of the canal where flow is escaping around the south side of the weir.
- Install a thermistor string, SI casing and a nested piezometer to replace instrument 88-07, which was destroyed during the recent construction activities.
- Install a thermistor string, SI casing and a nested piezometer to replace instrument CD-19, which was destroyed during the recent construction activities.
- Check pneumatic piezometer CD-15 to see if damaged tip can be repaired.

5.1.2 North Valley Wall Interceptor Ditch

- No maintenance is required.
- Undertake survey of the outfall channel section beneath the new access road culvert to confirm discharge capacity. Based on preliminary calculations, it appears that the capacity is appropriate.

5.1.3 Cross Valley Dam

- No maintenance is required.
- Monitor the cracking in the crest of the dam following thaw.
- Given the Intermediate Dam spillway assessment results by SRK (2004a), perform an assessment of the capacity of the emergency spillway to confirm that the spillway can pass the required flow values. In addition, the design freeboard amount should be re-established.
- Check the weir flow equations for the weirs at the toe. This should be accomplished by measuring all the flows using the bucket/timer method on the same day in conjunction with the regular measurements.

5.1.4 Intermediate Dam

- Rehabilitation of the emergency spillway as recommended by SRK (2004a) to increase the capacity to the design value.
- As recommended in the OM&S manual (BGC 2004a), "trigger levels" for instruments at this dam should be established.
- Monitor the crest cracking of the dam following thaw.
- Monitor the erosional gullies that have formed on the downstream slope.
- All excess slough and debris accumulated at the toe of the downstream face should be excavated/graded off.
- Continue to monitor for seepage discharge at the south abutment.

5.2 North Fork Rose Creek Flow-Through Causeway (Rock Drain)

- No maintenance is required.

5.3 Waste Rock Dumps

- No maintenance is required.

5.4 Faro Creek Diversion Channel

- No maintenance is required.

6.0 INSTRUMENTATION, MONITORING AND ANNUAL REVIEW

6.1 Instrumentation Readings

The frequency of readings of the instrumentation has been greatly reduced from the initial practice of quarterly observations because confidence in the performance of the structures has been substantiated by accumulated data. Figure 27 provides a schedule of readings for 2005 for the major structures, broken down by month. As can be seen, piezometric readings on the Secondary Dam have been added to the program. As has been the case over the last several years, all instrumentation data collected by site staff should be immediately forwarded to BGC for review.

If any rapid lowering of either reservoir in the Down Valley is expected, then BGC should be consulted and changes to the monitoring program may be made.

It is recommended that the pond levels on the upstream side of the flow-through causeway be measured and correlated to measured flow in the North Fork of Rose Creek. The two dataloggers recently installed, in the pond and downstream of the flow-through causeway at R7, should be downloaded periodically to ensure they are functioning properly.

6.2 Routine Inspections by On-Site Personnel

6.2.1 Down Valley Project

It is important that current site staff continue with their inspection program as described below, and that a log of observations be maintained:

1. To inspect the Rose Creek Diversion Channel before run-off to ensure any snow and/or ice blockages are removed.
2. To inspect, on a monthly basis, the 400 m reach of the Diversion Canal dike crest immediately upstream of the Intermediate Dam for evidence of cracking.
3. To view on a monthly basis, the opposite side of the Diversion Canal from the driving dike looking for change to the top profile of the gravely backslope, possible narrowing of the flow channel, and other changes which might be attributed to sloughing of the backslope.

4. To inspect in June, just after spring runoff is completed, the top of the thermal liner on the backslope of the Diversion Canal at the location situated about 500 m upstream of the Intermediate Dam; such inspection to determine if new (sharp-edged) cracking has developed.
5. To inspect, weekly, the Cross Valley Dam's downstream toe berm culverts for consistency of flow rate.
6. To note and record the water levels weekly in the Intermediate Dam pond and the polishing pond. Consideration should be given to automating this task through the installation of pore pressure transducers and dataloggers so that continuous data may be collected.
7. To inspect weekly, the abutments of the Cross Valley Dam and the Intermediate Dam for evidence of changing conditions (sloughing of the embankment fill and/or the adjacent slopes), for evidence of active crest cracking and for evidence of changing seepage rates (especially the south abutment toe seepage at the Intermediate Dam) and locations.

Any change in condition that is noted as a consequence of this program of routine inspection must be brought immediately to the attention of the inspector's superiors. BGC must also be notified so that the condition can be evaluated in light of the database and prior performance history of the structures, and to provide any necessary geotechnical advice related to the concern at hand. Photos of the changed condition should be taken and forwarded to BGC.

6.2.2 North Fork Rose Creek Flow-Through Rock Drain

Additional data should be collected in 2005 as detailed in the BGC (BGC 2005c) report. This additional data should include pond levels, water levels at the downstream toe of the drain, and flow downstream of the drain. Headpond water level observations for both the causeway and the road culvert downstream should be downloaded periodically from the dataloggers to ensure they are functioning properly. If there is a problem with the dataloggers or the quality of the data, manual surveys of the water levels will be required. Data during periods of high flow is particularly important and, as a minimum, the headpond should be viewed weekly in the late afternoon for the period from about April 15th until June 30th.

The upstream and downstream faces of the rock drain should also be inspected monthly for any signs of instability or sloughing.

Any change in condition that is noted as a consequence of this program of routine inspection must be brought immediately to the attention of the inspector's superiors. BGC must also be notified so that the condition can be evaluated and to provide any necessary geotechnical advice related to the concerns at hand.

6.2.3 Faro Creek Diversion Channel

Continue with both visual and survey monitoring of the overburden ravelling proximal to the access road and diversion channel. Assess if the average ravelling rate noted by Golder (2004) is appropriate or if conditions have changed following rehabilitation of the channel.

Visual inspection of the access road and channel sections for cracks and for overburden ravelling overlooking the Faro Pit should be undertaken monthly from May until October. Any signs of deformation should be forwarded to BGC for comment.

6.2.4 Waste Rock Dumps

Continue visual monitoring of dump slope by site staff. The next geotechnical inspection of the waste rock dumps should be performed in 2006.

6.2.5 Instrumentation Survey

Only a portion of the total number of instruments within the various structures is actually monitored. BGC (2002) noted that less than half of the instrumentation installed within the tailings area was monitored in 2001. The monitored instruments are selected because they are currently working, they are accessible and they provide useful, non-redundant data. In 2004, an instrumentation survey was conducted to assess the condition of the Faro Mine instruments, and the survey results can be found in Appendix III. This assessment had three components: a summarization of all the instruments present in the tailings area (including abandoned instruments), a condition survey of each of the instruments still present and an elevation survey of the instruments. The focus of the 2004 survey work was on the instruments related to the Intermediate and Cross Valley Dams. It is recommended that the elevation survey be performed for all remaining instruments in the Down Valley project area during 2005.

The results of this instrumentation review resulted in a number of minor repairs being recommended for numerous instruments, such as the straightening out of protective casing and the backfilling of the protective casing. These recommendations are not repeated herein due to their minor nature. In addition to these minor repairs, a number of comments were made in relation to replacement of instruments and identifying redundant instruments (and recommending reading one of the two). The recommendations related to reduced monitoring for non-critical areas and reduced monitoring due to redundancy are reflected in the 2005 recommended monitoring program, shown in Table 27. For rational behind the change, the reader is referred to the memorandum in Appendix III.

6.2.6 Secondary Tailings Dam – West Leg

The Secondary Tailings Dam was evaluated as part of the recent seismic assessment performed by Klohn (Klohn 2005). The assessment indicated that a portion of the Secondary Dam near the inlet of the Rose Creek Diversion Canal would likely liquefy and fail during the maximum credible earthquake. The west leg of the Secondary Tailings Dam is directly adjacent to either the North Fork of Rose Creek or the original portion of the Rose Creek Diversion Canal. It is recommended that the existing instrumentation, consisting of piezometers in the dam be monitored and that a visual inspection of the dam be conducted on a yearly basis, similar to the visual inspection performed for the other tailings dams.

6.3 Annual Reviews

As has been noted in previous annual reports, the performance monitoring and annual inspections of facilities has served as a basis for:

a. judging current performance of the facilities;
b. providing some forewarning of any trends towards potentially troublesome performance;
c. adjusting the frequency of observation of instrumentation;
d. recommending the installation of additional instrumentation; and
e. undertaking maintenance work.

In keeping with the important nature of these facilities, and the inherent value of keeping a comprehensive performance record, it remains prudent to continue with the data acquisition. As such, Figure 27 provided a proposed schedule of instrumentation monitoring for 2005. The collection of current data is of both immediate and ongoing value, to review such data in relation to the existing database and to visually inspect the works on an annual basis for evidence of deteriorating or deficient performance.

Annual inspections in 2005 should be performed in late June and early September, in keeping with the schedules held for previous inspections, and for the advantage of consistency of conditions. It is recommended that the annual inspection of the Faro waste dumps be undertaken again in 2006 to see if any changes are occurring. If any extreme precipitation or seismic event occurs before then, an interim inspection of the dumps should be completed.

7.0 CLOSURE

This report summarizes the physical conditions as observed by BGC and the instrumentation results as collected by site staff on various mine waste facilities and structures at Faro Mine. Thank you for the opportunity to be of service to Deloitte & Touche and Faro Mine. Should you have any questions on this report, please contact BGC at your convenience.

Respectfully submitted,
BGC Engineering Inc.
per:

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TABLES

Table 1
Summary of Polishing Pond and Intermediate Pond Levels

DATE	Cross Valley Staff Gauge	Intermediate Dam Staff Gauge	Cross Valley Pond Elevation (m amsl)	Intermediate Dam Pond Elevation (m amsl)	Cross Valley Pond Elevation (m advpd)	Intermediate Dam Pond Elevation (m advpd)
6-Jan-04		All Readings off of the Gauge	1030.11	1047.13	1062.41	1079.429
12-Feb-04			1030.329		1062.629	
13-Feb-04				1047.20		1079.495
23-Feb-04			1030.23		1062.53	
28-Feb-04			1030.065		1062.365	
4-Mar-04			1030.038		1062.338	
8-Mar-04			1029.717		1062.017	
15-Mar-04			1029.63		1061.93	
23-Mar-04			1029.715		1062.015	
16-Apr-04				1047.327		1079.627
19-Apr-04			1030.165		1062.465	
22-Apr-04			1030.3		1062.6	
23-Apr-04			1030.27		1062.57	
26-Apr-04			1030.15		1062.45	
30-Apr-04			1029.882	1046.544	1062.182	1078.844
3-May-04			1029.795	1046.615	1062.095	1078.915
4-May-04				1046.65		1078.95
6-May-04			1029.702	1046.615	1062.002	1078.915
7-May-04				1046.59		1078.89
10-May-04			1029.61		1061.91	
11-May-04			1029.64	1046.505	1061.94	1078.805
12-May-04			1029.645		1061.945	
13-May-04			1029.658		1061.958	
16-May-04			1029.642	1046.54	1061.942	1078.84
21-May-04	0.24		1029.61	1046.458	1061.91	1078.758
28-May-04	0.365		1029.73	1046.348	1062.03	1078.648
2-Jun-04	0.45		1029.803	1046.19	1062.103	1078.49
7-Jun-04	0.52		1029.868	1046.152	1062.168	1078.452
17-Jun-04				1045.79		1078.09
21-Jun-04	0.35		1029.698	1045.74	1061.998	1078.04
6-Jul-04				1045.85		1078.15
8-Jul-04	0.51		1029.868		1062.168	
14-Jul-04				1045.972		1078.272
16-Jul-04	0.45		1029.805		1062.105	
28-Jul-04				1046.13		1078.43
30-Jul-04	0.38		1029.74		1062.04	
10-Aug-04				1046.24		1078.535
12-Aug-04	0.52		1029.868		1062.168	
17-Aug-04				1046.272		1078.572
19-Aug-04	0.58		1029.93		1062.23	
24-Aug-04				1046.35		1078.65
26-Aug-04	0.51		1029.83		1062.13	
8-Sep-04				1046.5		1078.8
10-Sep-04	Off Gauge		1029.198		1061.498	
15-Sep-04				1046.8		1079.1
17-Sep-04	Off Gauge		1028.902		1061.202	
22-Sep-04				1046.655		1078.955
24-Sep-04	Off Gauge		1029.03		1061.33	
3-Oct-04				1046.745		1079.045
5-Oct-04	Off Gauge		1029.202		1061.502	
6-Oct-04				1046.78		1079.08
8-Oct-04	Off Gauge		1029.252		1061.552	
12-Oct-04				1046.822		1079.122
14-Oct-04	Off Gauge		1029.345		1061.645	

TABLE 2
TOTAL MONTHLY PRECIPITATION (mm) AT FARO AIRPORT, YUKON

Year	Jan	Feb.	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total (mm)
1978	0.4	**miss.**	trace	4.1	11.6	27.0	38.1	41.6	7.8	32.4	20.2	19.0	
1979	8.9	18.3	20.2	6.7	10.5	68.2	55.4	13.8	13.4	11.6	12.4	34.4	273.8
1980	19.7	2.4	11.7	12.5	10.5	11.1	95.4	33.2	46.7	**miss.**	21.3	13.3	
1981	6.5	23.1	4.0	4.5	7.8	42.8	41.3	22.5	41.9	21.5	17.0	5.4	238.3
1982	10.2	18.0	9.5	4.1	18.2	14.3	58.3	47.3	47.2	42.3	11.8	13.6	294.8
1983	35.7	6.6	9.8	2.2	20.6	55.6	49.1	65.8	21.2	16.3	11.4	3.9	298.2
1984	27.6	24.1	5.9	2.4	38.8	49.0	16.6	64.9	5.5	10.8	10.7	22.5	278.8
1985	22.5	24.8	2.2	13.8	17.2	28.1	62.6	80.8	46.3	20.0	22.2	26.1	366.6
1986	8.4	4.7	34.6	12.9	35.1	12.8	81.8	77.4	44.4	22.7	15.9	5.6	356.3
1987	3.1	14.0	2.8	10	40.1	50.8	92.4	63.5	30.2	26.6	17.8	6.2	357.5
1988	7.0	10.4	17.2	8.2	38.0	37.3	97.2	25.5	43.8	29.0	17.9	16.5	348.0
1989	19.8	3.6	19.8	2.0	17.9	41.0	51.7	16.9	30.8	46.3	39.8	13.8	303.4
1990	14.4	25.8	5.0	7.0	23.4	45.4	30.0	64.4	66.2	22.7	25.4	24.8	354.5
1991	17.2	22.6	16.6	2.8	22.4	30.2	115.4	33.0	48.2	49.6	43.4	40.0	441.4
1992	22.8	24.6	7.6	15.8	14.4	11.4	66.1	34.4	47.8	13.8	18.8	13.0	290.5
1993	22.2	15.0	1.6	6.0	76.7	48.6	50.2	56.0	50.8	35.7	**miss.**	**miss.**	
1994	20.2	8.4	11.4	5.0	39.8	24.2	19.6	25.2	45.6	41.6	24.4	8.0	273.4
1995	8.4	7.8	18.4	5.2	10.9	33.9	73.4	63.4	28.8	12.2	22.3	15.4	300.1
1996	10.2	9.1	27.1	7.2	13.4	20.0	64.4	70.8	52.7	34.8	3.5	5.9	319.1
1997	6.6	8.7	1.4	14	16.5	39.3	86.4	33.2	trace	25.2	6.4	12.4	250.1
1998	7.0	2.8	4.8	4.2	14.4	29.6	19.2	24.2	23.4	24.0	4.6	8.2	166.4
1999	24.4	10.0	15.4	1.8	44.4	64.8	42.0	33.8	27.0	22.4	12.8	21.6	320.4
2000	12.2	2.0	trace	6.0	9.6	39.6	48.1	116.2	102.2	8.6	19.4	5.8	369.7
2001	7.4	3.0	4.0	14.6	30.8	35	58.4	14.2	44.6	28.6	12.2	15.4	268.2
2002	9.2	5.8	9.0	7.0	19.6	19.4	34.9	64.1	38.4	18.2	9.6	9.4	244.6
2003	22.4	8.0	16.0	0.4	7.6	45.2	63.2	30.4	30.8	12.8	32.8	19.9	289.5
2004	31.1	11.4	45.0	4.0	15.6	34.0	13.5	38.0	48.5	33.6	9.8	45.0	329.5
Max	35.7	25.8	45	15.8	76.7	68.2	115.4	116.2	102.2	49.6	43.4	45	
Year	1983	1990	2004	1992	1993	1979	1991	2000	2000	1991	1991	2004	
Mean	**15.0**	**12.1**	**11.9**	**6.8**	**23.2**	**35.5**	**56.5**	**46.5**	**38.3**	**25.5**	**17.8**	**16.4**	**305.5**
Min	0.4	2	trace	0.4	7.6	11.1	13.5	13.8	trace	8.6	3.5	3.9	
Year	1978	2000	1978	2003	2003	1980	2004	1979	1997	2000	1996	1983	
St.Dev	9.1	8.0	10.7	4.4	15.5	15.4	26.5	24.6	19.4	11.4	9.8	10.8	

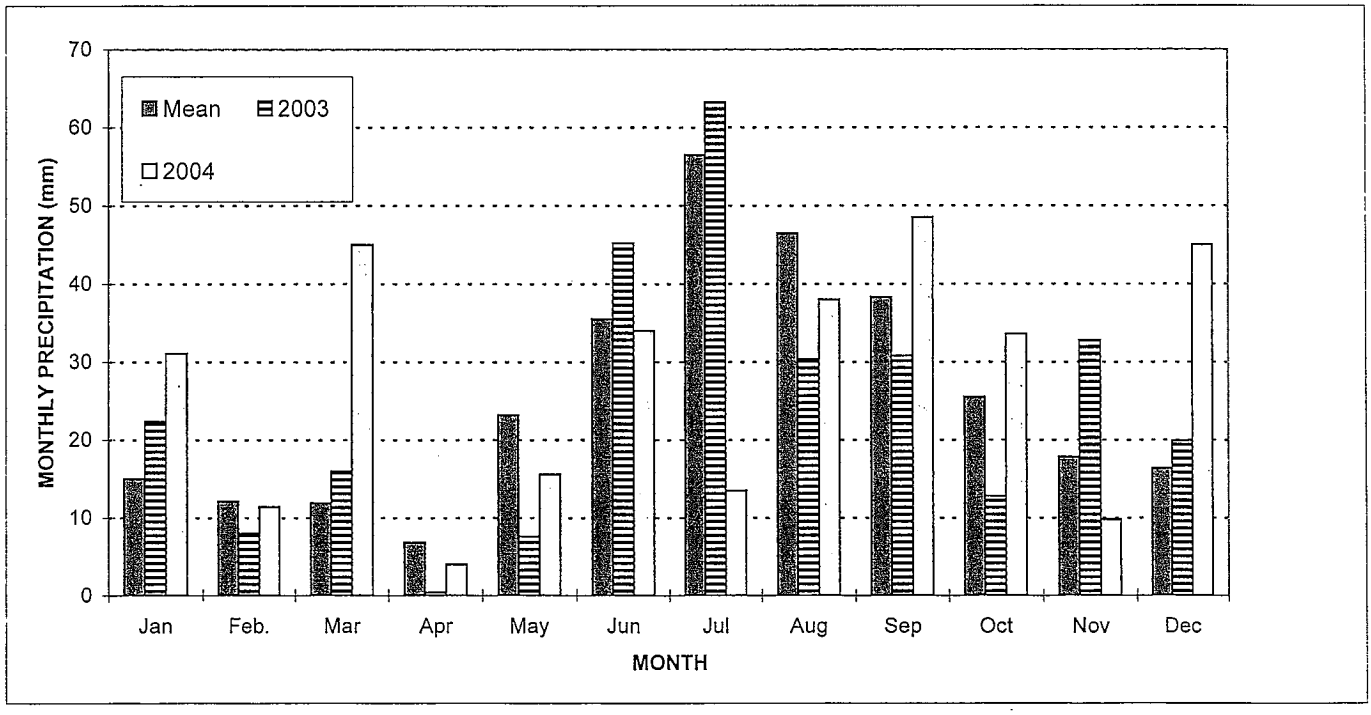


Table 3

Diversion Canal - Canal Dike - Piezometers

Installation	Date Installed	Standpipe (S) or Pneumatic (P)	# of Readings in 2004	Ground Elevation (m advpd)	Tip Elev. (m advpd)	Historic Low Reading/ Date	Historic High Reading/ Date	2004 Low Reading/ Date (Compared to 2003 Low)	2004 High Reading/ Date (Compared to 2003 High)	Comments
CD-10	1981	P	2	1088.3	1077.6	1078.27/ Mar 1982	1082.78/ Sep 1992	1081.31/ Sep 16 (N/A)	1081.59/ Jul 06 (N/A)	No comparison to 2003 data, since last reading in 1999. Readings consistent with previous data.
CD-13	1981	P	2	1087.6	1081.00/ **1077.00**	1081.07/ Jun 2003 **1079.87/ May 1982**	1083.94/ Jun 2000, Jun 2001 **1083.37/ Jun 2000**	**1082.39/ Sep 16 (-0.07)**	**1082.6/ Jul 06 (-0.42)**	Shallow piezometer no longer functioning properly. Historically the gradient was downward.
CD-15	1981	P	2	1087.0	1080.40/ **1075.60**	1080.40 (dry)/ Nov 1981, Dec 1981, Sep 2001, Jun 2003 **1075.61/ Dec, 1981**	1083.55/ Oct 1985 **1083.27/ Sep 2000**	1080.43/ Jul 06 (+0.03) **1081.06/ Sep 16 (-0.21)**	1080.75/ Sep 16 (0.0) **1081.62/ Jul 06 (-0.35)**	Normally an upward hydraulic gradient. Sub-zero temperatures at depth (thermistor CD-15) correlate with variable pressures at depth.
CD-19	1981	P	2	1086.3	1081.00/ **1077.30**	1081.35/ May 1982 **1077.30/ Sep 1991**	1091.43/ Jun 1992 **1083.39/ Jun 1992**	1082.96/ Jul 6 (+0.07)	1082.96/ Jul 6 (-0.28)	Piezometers destroyed in 2004 by canal dike upgrade construction activities. One reading obtained in July in shallow piezometer.
CD-21	1981	P	2	1085.9	1079.80/ **1074.30**	1080.22/ Apr 1991 **1074.58/ Nov 1988, May 1982 to Sep 1983**	1084.56/ Jun 1992 **1079.81/ Jun 1992**	1080.5/ Jul 6, Sep 16 (+0.07) **1074.93/ Jul 06 (0.0)**	1080.5/ Jul 6, Sep 16 (-0.07) **1075.0/ Sep 16 (+0.07)**	Downward gradient, likely free drainage at depth. Pressures dropping in shallow piezometer since 1999.
CD-26	1981	P	2	1085.5	1080.50/ **1074.30**	1080.50/ Sep 1995 **1074.30/ Sep 1995**	1082.11/ Jul 1988 **1075.91/ Jul 1988**	1080.85/ Jul 06 (0.0) **1074.93/ Jul 06 (+0.07)**	1080.92/ Sep 16 (0.0) **1075.0/ Sep 16 (+0.07)**	Downward gradient, likely free drainage at depth. Readings are very consistent since 2001.
BH88-7	1988	P	2	1086.3	1078.60/ **1071.40**	1079.09/ Oct 1988 **1071.54/ Mar 1989**	1094.63/ Aug 1998 **1081.48/ Jun 1992**	-	-	Piezometers destroyed in 2004 by canal dike construction activities.
BH88-11	1988	P	2	1086.2	1078.90/ **1072.30**	1079.53/ Oct 1988 **1073.00/ Jun 6 2001, Oct 1988**	1086.74/ Sep 1999 **1080.39/ Jun 1992**	-	-	Piezometers destroyed in 2004 by canal dike construction activities.

Note: **Bold values correspond to deep tip readings.**
Piezometric elevations quoted in m advpd.

Table 4
Diversion Canal - Canal Dike - Thermistors

Installation	Date Installed	Length of String (m)	# of Readings in 2004	Depth to Permafrost 2003 (depth below ground surface (m))	Depth to Permafrost 2004 (depth below ground surface (m))	Comments
CD-10	1981	10	2	Not observed within 9.9 m of ground surface.	Not observed within 9.9 m of ground surface.	Warming trend at depth.
CD-15	1981	10	2	9.5	9.5	The data indicating subzero ground temperatures recorded at 3 m depth may be spurious. Cooling trend indicated at depth.
CD-19	1981	10	1	7.0	N/A	Destroyed after July 2004 reading.
CD-21	1981	13	2	Not observed within 13.0 m of ground surface.	Not observed within 13.0 m of ground surface.	A completely thawed profile was present in Sept. 2004. Warming indicated at depth.
CD-26	1981	10	2	Not observed within upper 9.6 m of ground surface.	Not observed within upper 9.6 m of ground surface.	The data indicates slightly warmer ground temperatures than in 2003.
BH 88-7	1988	14.9	0	6.0	N/A	Destroyed after September 2003 reading.
BH88-11	1988	13.9	0	6.0	N/A	Destroyed after September 2003 reading.
BGC01-02	2001	13.9	2	10	Not observed within upper 13 m of ground surface.	Upper nodes malfunctioning. A completely thawed profile was present in Sept. 2004.

Table 5

Diversion Canal - Canal Dike - Slope Indicators

Installation	Date Installed	Length of Casing (m)	# of Readings in 2004	Comments
CD-10	1981	10	2	Negligible movement since 1996.
CD-15	1981	10	2	Negligible subsurface movement since 1996. Minor surficial movement in upper 2 m.
91CD-1	1991	11	2	Negligible movement since 1996.
CD-19	1981	10	2	Some movement was detected in readings prior to 1998. This movement has previously been attributed to settlement of the dike and settlement of the SI casing in the borehole. Negligible movement since 1998.
CD-21	1981	10	2	Some movement was detected in readings prior to 1998. This movement has been attributed to settlement of the dike and settlement of the SI casing in the borehole. Indications of settlement have been observed at surface during the annual inspection since 1991.
BGC01-01 (88-10 replacement)	2001	12	2	Original depth of casing was 14 m bgs, but freezing activities have resulted in a maximum bottom depth of 12 m. Minor movement noted in the upper 10 m.
94CD-1	1994	14	2	Negligible subsurface movement since 1996. Surficial movements in upper 2 m.

Table 6 Diversion Canal - Spoil Piles - Thermistors

Installation	Date Installed	Length of String (m)	# of Readings in 2004	Depth to Permafrost 2003 (m below surface)	Depth to Permafrost 2004 (m below surface)	Comments
SP-3	1981	10	2	-	Not observed with 10 m of ground surface	Below zero temperatures at 9 m depth in September 2004. Most thermistor tips malfunctioning.
SP-5	1981	10	2	-10.1	-9.1	Some thermistor tips malfunctioning.

Table 7 Diversion Canal - Spoil Piles - Slope Inclinometers

Installation	Date Installed	Length of Casing (m)	# of Readings in 2004	Comments
SP-2	1981	7.5	2	The DCSP has settled in the vicinity of SP-2, based on the distinctive shape of the deflection versus depth curves.
SP-5	1981	10	2	No movement at depth has been recorded since 1994. Minor surface displacements have been occurring in the upper 2 m since September 2000.

Table 8 Canal Backslope Piezometers

Installation	Date Installed	Standpipe (S) or Pneumatic (P)	# of Readings in 2004	Ground Elevation (m advd)	Tip Elev. (m advd)	Historic Low Reading/ Date	Historic High Reading/ Date	2004 Low Reading/ Date (Compared to 2003 Low)	2004 High Reading/ Date (Compared to 2003 High)	Comments
BS-5	1981	P	2	1092.5	1085.3	1085.69/ Mar 1982	1089.99/ May 1994	1086.42/ Sep 23 (N/A)	1086.77/ Jul 07 (N/A)	2004 data fits within normally observed range, with a general lowering of levels.
BS-9	1981	P	2	1088.3	1077.3	1080.03/ May 1982	1083.95/ Oct 1986, Oct 1990	1081.71/ Sep 23 (N/A)	1082.06/ Jul 07 (N/A)	2004 data similar to last recorded readings in 1995.

Note: Piezometric elevations quoted in **m advd.**

Table 9 Canal Backslope Thermistors

Installation	Date Installed	Length of String (m)	# of Readings in 2004	Depth to Permafrost 2003 (m below surface)	Depth to Permafrost 2004 (m below surface)	Comments
BS-5	1981	10	1	N/A	6	Appears to have cooled at depth since 1981. Subzero conditions below 6 m.
BS-9	1981	10	1	N/A	N/A	Only 3 of 10 nodes functioning sporadically. Below zero temperatures at -4.5 m.
BS-10	1981	10	2	N/A	6.5	Depth to permafrost steady at approximately 6.5 m since 2002.
BS-12	1981	10	2	N/A	N/A	Completely thawed profile to 10 m depth.

Table 10 Canal Backslope - Slope Inclinometers

Installation	Date Installed	Length of Casing (m)	# of Readings in 2004	Comments
BS-5	1981	10	2	Minimal movement in upper 1.5 m.
BS-9	1981	10	2	Minimal movement in upper 2 m
BS-10	1981	10	1	Minimal movement in upper 2.5 m, only one reading since new probe in 2002.

Table 11
Cross Valley Dam - Piezometers

Installation	Date Installed	Standpipe (S) or Pneumatic (P)	# of Readings in 2004	Ground Elevation (m amsl)	Tip Elev. (m amsl)	Historic Low Reading/ Date	Historic High Reading/ Date	2004 Low Reading/ Date (Compared to 2003 Low)	2004 High Reading/ Date (Compared to 2003 High)	Comments
CVDC-4	1981	S	6	1033.30	1007.9/ **999.7**	1016.68/ Apr 1984 **1016.72/ Apr 1984**	1018.44/ Oct 1986 **1019.05/ Jun 1992**	N/A **1018.71/ Sept 09 (+0.09)**	N/A **1018.83/ Aug 26 (0)**	Shallow piezometer blocked 7.6 m below top of pipe since 1987. Deep piezometer has been very consistent since 1992.
CVDC-7	1981	S	6	1033.24	1007.80/ **1002.90**	1015.21/ Apr 1984 **1017.17/ Apr 1984**	1016.30/ Sep 1992 **1019.21/ Jun 1992**	1015.55/ March 8 (-0.13) **1017.97/ Sept 9 (-0.11)**	1015.64/ Jul 15 (-0.21) **1018.14/ Jul 15 (-0.32)**	Very consistent readings in both piezometers. Upward gradient.
CVDC-9	1981	S	6	1033.28	1007.70/ **1000.70**	1019.91/ Aug 1983 **1021.18/ Jun 1984**	1024.74/ Aug 1982 **1025.61/ Jun 1992**	1021.10/ Apr 26 (-0.17) **1023.82/ Mar 8 (+0.22)**	1021.68/ Jul 19 (-0.20) **1024.19/ Jul 19, Aug 26 (+0.23)**	Moderately higher pore pressures than in other places of the dam. Slight upward gradient.
CVDP-1	1982	P	5	1016.86	1014.51	1017.38/ Aug 1983	1019.55/ Sep 1992	1018.64/ Mar 08 (+0.14)	1018.85/ Aug 26 (0)	Minor seasonal fluctuations, artesian conditions
CVDP-2	1982	P	4	1016.86	1014.51	1016.40/ Aug 2004	1019.44/ Oct 1986	-	-	Readings do not seem reliable, piezometer may still be broken
CVDP-3	1982	P	6	1016.86	1014.71	1014.99/ Sep 1992	1018.07/ May 1991	1016.81/ Mar 8, Apr 26 (+0.07)	1016.88/ Mar, Aug, Jul, Sep (-0.14)	Minor seasonal fluctuations, pore pressures at grade.
CVDP-5	1982	P	5	1019.18	1014.28	1018.13/ Aug 1983	1021.21/ Sep 1992	1020.51/ Sep 9 (+0.28)	1020.72/ Mar, Aug (+0.49)	Artesian conditions
CVDP-6	1982	P	6	1019.18	1014.37	1016.99/ May 1998	1018.99/ Sep 1992	1017.73/ Mar, Apr, Jul, Sep (+0.07)	1017.87/ Mar 4 (-0.21)	Stable seasonally, Low pore pressures in the shallow foundation.
CVDT-1	1994	S	6	1018.31	1007.9	1017.13/ May 1994	1018.32/ Aug 2004	1018.21/ Sep 09 (N/A)	1018.31/ Aug 26 (N/A)	Minor seasonal fluctuation. Increase in piezometric elevations in 2004 due to the difference in 2004 survey data compared to old data.
CVDT-2	1994	S	6	1019.5*	1006.2	1015.98/ Mar 2004	1016.49/ Oct 2000	1015.98/ Mar 04 (-0.12)	1016.22/ Aug 26 (-0.08)	Minor seasonal fluctuation, but 3.5 m below grade.
BH94CVDC-1	1994	S	6	1033.38	1020.4	1022.91/ May 1997	1024.58/ Sep 1995	1023.51/ Sep 09 (+0.37)	1023.78/ Apr 26 (+0.06)	Minor seasonal fluctuation.
P01-11	2001	S	3	1017.21	1006.61	1017.18/ Sep 2001, Sep 2004	1017.83/ Jul 2003	1017.18/ Sep 09 (0.02)	1017.37/ Jul 19 (-0.46)	Piezometric elevation located just below ground surface. Minor seasonal fluctuation.

Note: **Bold values correspond to deep tip readings**
Piezometric elevations quoted in **m amsl.**
*

Table 12
2004 Cross Valley Dam Weir Flows

DATE	X13 (comb.) FLOW* (Lps)	X11 (North) FLOW** (Lps)	X12 (South) FLOW*** (Lps)	W3 (Central) FLOW** (Lps)	X13-(X11+X12+W3) FLOW (Lps)
Jan 6, 2004	35.0	22.0	1.00	9.0	3
Jan 12, 2004	35.0	23.4	1.00	9.0	2
Jan 21, 2004	35.0	23.4	1.00	9.0	2
Jan 31, 2004	35.0	23.4	1.00	10.0	1
Feb 6, 2004	35.0	23.4	1.00	10.0	1
Feb 13, 2004	35.0	23.4	1.00	10.0	1
Feb 16, 2004	35.0	23.4	1.00	10.0	1
Feb 24, 2004	35.0	23.4	1.00	10.0	1
Feb 29, 2004	35.0	23.4	1.00	10.0	1
Mar 8, 2004	35.0	23.4	1.00	10.0	1
Mar 14, 2004	35.0				
Mar 15, 2004	35.0	23.4	1.00	10.0	1
Mar 22, 2004	35.0	23.4	1.00	10.0	1
Mar 29, 2004	35.0	23.4	1.00	10.0	1
Apr 5, 2004	31.6	20.6	1.00	8.5	2
Apr 14, 2004	31.6	20.6	1.00	8.5	2
Apr 22, 2004	35.0	20.6	1.00	8.5	5
Apr 29, 2004	35.0	23.4	1.00	8.5	2
May 6, 2004	35.0	22.0	1.00	8.5	4
May 13, 2004	35.0	23.4	1.00	8.5	2
May 14, 2004	35.0				
May 20, 2004	35.0	22.0	1.00	8.5	4
May 28, 2004	35.0	23.4	1.00	8.5	2
Jun 1, 2004	35.0				
Jun 3, 2004	38.5	31.5	1.00	8.5	-3
Jun 10, 2004		29.7	1.00	8.5	
Jun 13, 2004	38.5				
Jun 14, 2004	38.5				
Jun 17, 2004	49.5	26.5	1.00	8.5	14
Jun 22, 2004	42.0	26.5	1.00	9.0	6
Jul 8, 2004	42.0	26.5	1.00	10.0	5
Jul 12, 2004	42.0				
Jul 13, 2004	42.0				
Jul 15, 2004	42.0	26.5	1.00	10.0	5
Jul 20, 2004	35.0	23.4	1.00	10.0	1
Jul 25, 2004	35.0				
Jul 29, 2004	35.0	23.4	1.00	10.0	1
Aug 5, 2004	38.5	23.4	1.00	10.0	4
Aug 9, 2004	38.5				
Aug 12, 2004	35.0	23.4	1.00	10.0	1
Aug 17, 2004	38.5				
Aug 19, 2004	38.5	24.9	1.00	10.0	3
Aug 26, 2004	35.0	23.4	1.00	9.0	2
Aug 29, 2004	35.0				
Sep 2, 2004	38.5	23.4	0.85	9.0	5
Sep 7, 2004	31.6				
Sep 8, 2004	35.0	20.6	0.85	9.0	5
Sep 14, 2004	31.6				
Sep 16, 2004	35.0	19.2	0.75	8.5	7
Sep 24, 2004	31.6	17.9	0.75	8.5	4
Sep 30, 2004	31.6	17.9	0.75	8.5	4
Oct 7, 2004	31.6	17.9	0.75	8.5	4
Oct 12, 2004	31.6				
Oct 14, 2004	31.6	20.6	0.75	8.5	2
Oct 21, 2004	31.6	20.6	0.75	8.5	2
Oct 28, 2004	31.6	20.6	0.75	8.5	2
Nov 4, 2004	31.6	17.9	0.75	8.5	4
Nov 10, 2004	31.6	17.9	0.75	8.5	4
Nov 15, 2004	31.6				
Nov 16, 2004	31.6				
Nov 17, 2004	31.6	17.9	0.50	8.5	5
Nov 24, 2004	31.6	17.9	0.50	8.5	5
Dec 1, 2004	31.6	17.9	0.50	8.5	5

* flows calculated from stage-discharge curve and occasional spot measurements.
** flows calculated from standard V-Notch weir formula applied to staff gauge readings.
*** Flow estimated by bucket/ timer method.
The difference of flow at X13 less (X11+X12+W3) is unaccounted for or due to errors in measurement.

Table 13
CROSS VALLEY DAM SEEPAGE FLOWS - WEIR X13 (1982 - 2004)

YEAR	MEAN POND ELEVATION	MINIMUM FLOW RATE (month recorded)	MAXIMUM FLOW RATE (month recorded)	AVERAGE YEARLY FLOW RATE
	(m advd)	(L/s)	(L/s)	(L/s)
1982	1058.55	75.9 (Sept)	277.6 (June)	115.3
1984	1059.85	67.8 (Oct)	84.9 (Dec)	76.3
1985	1061.99	83.9 (Sept - Dec)	113.6 (Jul)	93.2
1986	1063.2	79.8 (May)	113.2 (Sept)	93.8
1987	~1063.2	77.0 (May)	106.1 (Aug - Sept)	94.4
1988	~1063.2	78.9 (Jun)	110.4 (Aug)	95.5
1989	~1063.2	72.3 (Mar)	97.9 (Aug)	85.7
1990	~1063.2	64.9 (Mar)	102.9 (Sept)	82.8
1991	~1063.2	66.6 (Oct)	91.0 (Jun)	81.6
1992	N/A	53.8 (Nov)	90.8	68.4
1995	1063.5	29.1 (Dec)	52.8 (Jun)	50.2
1996	1062.2(Sept)	15.8 (Apr)	58.3 (Sep)	34.8
1997	N/A	30.0 (Apr)	109.9 (Sep)	28.6
1998	1062.8	49.0 (Dec)	119.0 (Sep)	52.7
1999	1063.0	44.0 (Feb and Sep)	82.0 (July)	53.58
2000	1063.8	35.0 (Nov 18)	78.0 (June 26)	48.65
2001	N/A	**35**.0 (Jan and Feb)	**49** (Jun to Sep)	48
2002	N/A	**38** (Oct.3 - Nov. 12)	**49** (May 18 - Sept. 16)	46.4
2003	1062.0	**28** (Sept 24 - Oct 15)	**46** (Jan 7 - Mar 15)	38.1
2004	1062.1	**31.6** (Apr 5-14, Sep 7, Sep 14 to Dec 1)	**49.5** (June 17)	35.3

Notes:
1. For locations of weirs see Figure 1.
2. Flows for 1983, 1984 and 1985 based on records for period June to December and flow for 1991 based on records for period January to November.
3. High flow through Weir 3 in June, 1982 due to siphon discharge above weir.
4. Weir 3 was replaced by X13 as a consequence of the seepage filter construction conducted in the summer of 1991.
5. Drainage from west of south abutment road crossed to berm drainage collector during 1995 and perhaps in 1996; therefore some readings may higher than expected.
6. Insufficient data for average pond level in 2001 - 2003 as water level was below staff gauge.
7. Weir plates at X-11 and X-13 were replaced in August 2003.

Table 14

Cross Valley Dam - Thermistors

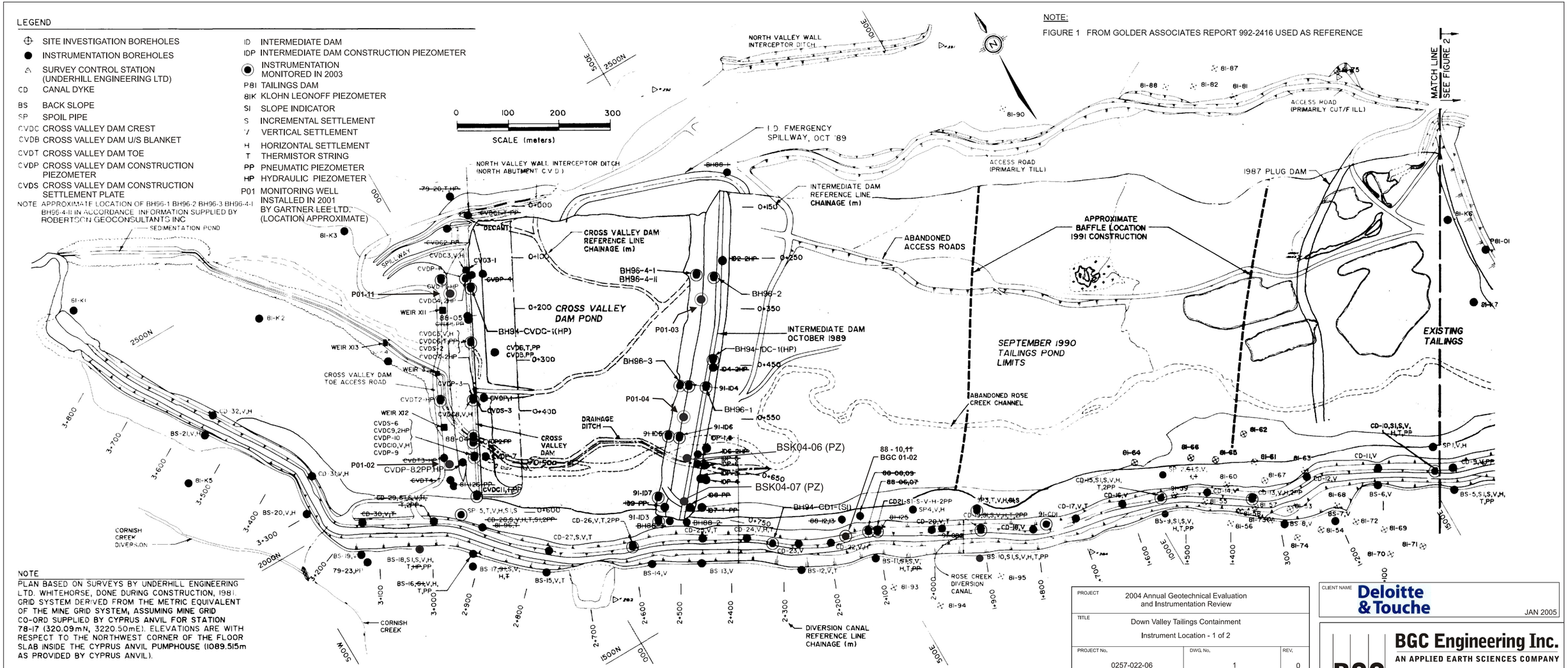
Installation	Date Installed	Length of String (m)	# of Readings in 2004	Depth to Permafrost 2003 (m below ground surface)	Depth to Permafrost 2004 (m below ground surface)	Comments
CVDC-6	1981	29	4	N/A	N/A	Readings at 21 m are unavailable. Minimal temperature fluctuation between April and September.
88-4-4T	1988	4.2	4	N/A	N/A	Depth of winter frost extends to approximately 3.5 m.

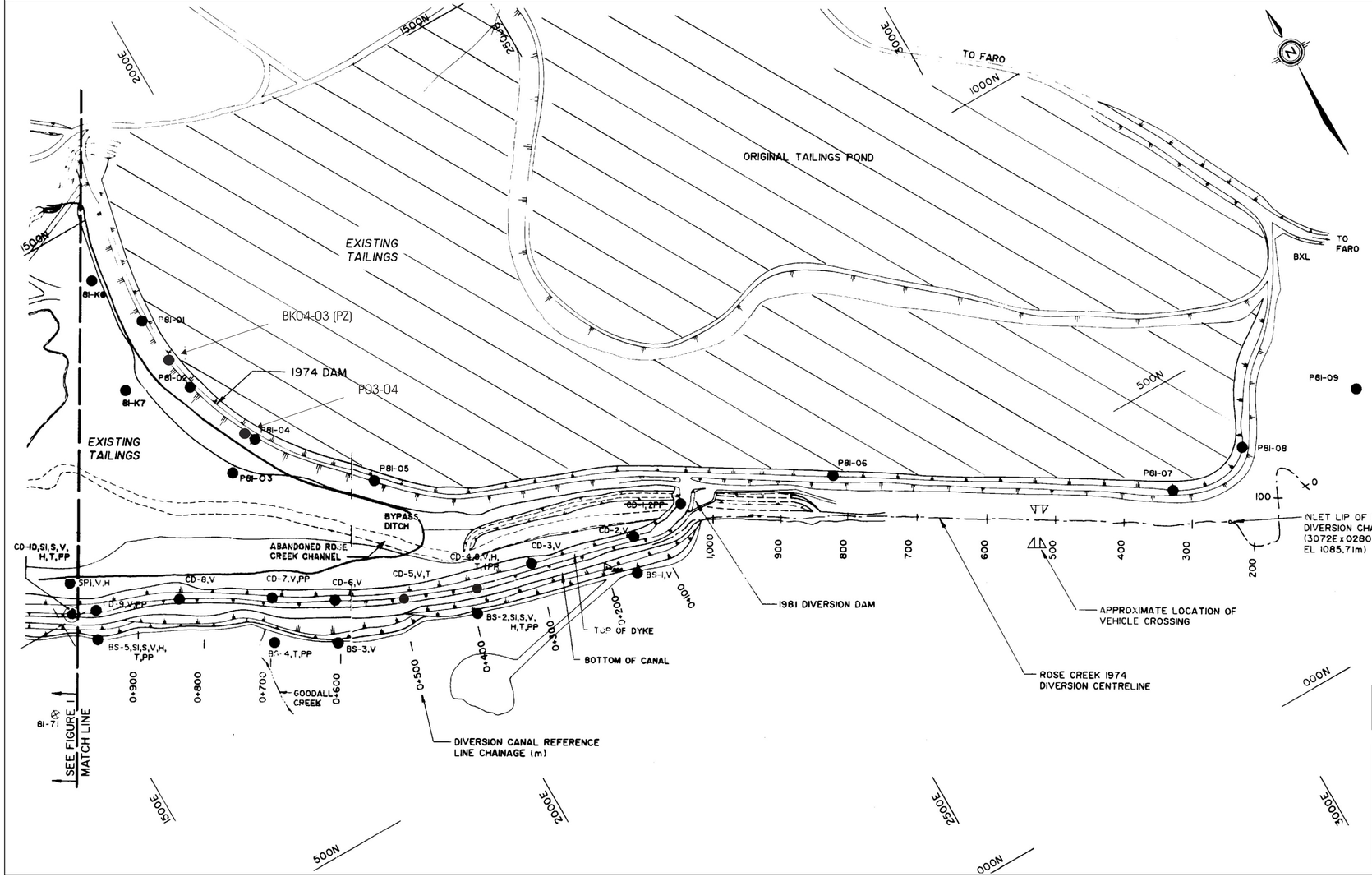
Table 15
Intermediate Dam - Piezometers

Installation	Date Installed	Standpipe (S) or Pneumatic (P)	# of Readings in 2004	Ground Elevation (m amsl)	Tip Elev. (m amsl)	Historic Low Reading/ Date	Historic High Reading/ Date	2004 Low Reading/ Date (Compared to 2003)	2004 High Reading/ Date (Compared to 2003)	Comments
91-ID3	1991	P	3	1043.62	1036.82/ 1028.62	1036.82/ Sep 1995, Dec 1998, Sep 2000, Sep 2002 and Sep 2003 1032.26/ May 2004	1039.23/ Jun 1992 1038.04/ Jun 1992	Dry (0.0) 1032.26/ May 10 (-0.77)	1036.89/ Sep 9 (-0.07) 1032.96/ Jul 19 (-1.75)	Shallow tip dry early in year. Deep tip indicates declining pore pressures with high seasonal flucuation. Downward gradient.
91-ID4	1991	P	3	1031.8*	1024.22/ 1017.08	1028.63/ May 1997 1028.42/ Sep 1999	1034.58/ Jun 1992 1031.85/ Sep 1992	1030.24/ Sep 9 (+0.70) 1029.12/ Sep 9 (+0.56)	1030.66/ Jul 19 (0.14) 1029.75/ May 10 (0.28)	Downward gradient, consistent with earlier readings.
91-ID5	1991	P	1	1031.64	1024.3/ 1017.08					Both tips are leaking, making the instrument inoperable. Tips should be replaced.
91-ID6	1991	P	3	1031.36	1024.8/ 1016.9	1026.83/ May 1997 1029.22/ Sep 1999 and Sep 2003	1031.74/ Jun 1992 1034.96/ Jun 1992	1028.93/ Sep 9 (0.56) 1029.92/ Sep 9 (0.70)	1029.35/ Jul 19 (0.07) 1030.27/ Jul 19 (0.07)	Upward gradient. Pore pressures slightly declining since 1999.
91-ID7	1991	P	3	1032.42	1025.95	1029.52/ May 1997	1032.20/ Feb 1992	1030.78/ Sep 9 (+0.49)	1031.13/ Jul 19 (-0.21)	Pore pressures appear to be declining since 1999.
94-IDC-1	1994	S	2	1049.21	1035.1 (approx)					Has recorded dry conditions since initial monitoring in 1994
P96-1	1996	S	4	1049.15	1027.35	1029.09/ Sep 2003	1031.65/ Jun 1999	1029.51/ Sep 9 (+0.42)	1030.14/ Jul 8 (+0.11)	Piezometric Elev. Approx. 19 - 20 m bgs.
P96-2	1996	S	3	1049.22	1029.18	1028.27/ May 10, 2004	1031.94/ Jun 1999	1028.87/ May 10 (-0.53)	1030.33/ Jul 19 (-0.01)	Piezometric Elev. Approx. 18 - 20 m bgs. Lowest reading recorded this year.
P96-3	1996	S	3	1031.48	1022.43/ 1012.23	1027.58/ May 1997 1027.71/ May 1997	1031.38/ Jun 1999 1031.45/ Jun 1999	1029.36/ Sep 9 (+0.71) 1029.43/ Sep 9 (+0.68)	1029.98/ Jul 8 (+0.37) 1030.06/ Jul 8 (+0.37)	Piezometric Elev. Approx. 1.5 - 2.0 m bgs.
P96-4	1996	S	3	1032.16	1025.68 1020.86 1015.69 1003.82	1027.89/May 1997 1029.23/ Sep 2003 1028.15/ May 1997 1029.01/ Sep 2003	1032.04/ Jun 2002 1032.08/ Jun 2002 1031.64/ Jun 1999 1031.75/ Jun 1999	1029.55/ Jul 19 (+0.64) 1029.62/ Sep 10 (+0.39) 1029.57/ Sep 10 (+0.72) 1029.67/ Sep 10 (+0.66)	1029.95/ Jul 08 (+0.09) 1029.94/ May 10, Jul 8,19 (+0.04) 1029.96/ Jul 8, 19 (+0.17) 1030.06/ Jun 8, 19 (+0.12)	Piezometric Elev. Approx. 2.5 m bgs. Less seasonal fluctuation observed in 2004.
P01-03	2001	S	4	1031.52	1022.35	1029.14/ Sep 2003	1030.63/ Sep 2001	1029.68/ Sep 9 (+0.54)	1030.43/ May 10 (-0.17)	Piezometric Elev. Approx. 1.5 - 2.0 m bgs. Less seasonal fluctuation observed in 2004.
P01-04	2001	S	4	1032.32	998.17/ 978.89	1029.55/ Sep 2003 1029.99/ Sep 2003	1031.59/ Jul 2004 1032.02/ Jul 2004	1030.95/ Sep 9 (+0.50) 1031.37/ Sep 9 (+0.51)	1031.59/ Jul 8 (+1.14) 1032.02/ Jul 8 (+1.16)	Piezometric Elev. Approx. 0.5 - 1.0 m bgs; roughly equivalent to discharge at polishing pond level.
BKS04-06	2004	S	1	1049.1	1036	dry				Installed this year and indicates dry conditions
BKS04-07	2004	S	1	1049.2	1037.3	dry				Installed this year and indicates dry conditions

Note: Bold values correspond to deep piezometer tips
Piezometric elevations quoted in m amsl, a * denotes that the elevation was converted from m advd and was not surveyed.
Tip elevations converted to m amsl from m advpd.

FIGURES


LEGEND
SITE INVESTIGATION BOREHOLES
INSTRUMENTATION BOREHOLES
SURVEY CONTROL STATION (UNDERHILL ENGINEERING LTD)
CD CANAL DYKE
BS BACK SLOPE
SP SPOIL PIPE
CVDC CROSS VALLEY DAM CREST
CVDB CROSS VALLEY DAM U/S BLANKET
CVDT CROSS VALLEY DAM TOE
CVDP CROSS VALLEY DAM CONSTRUCTION PIEZOMETER
CVDS CROSS VALLEY DAM CONSTRUCTION SETTLEMENT PLATE
NOTE APPROXIMATE LOCATION OF BH96-1 BH96-2 BH96-3 BH96-4-I BH96-4-II IN ACCORDANCE INFORMATION SUPPLIED BY ROBERTSON GEOCONSULTANTS INC
ID INTERMEDIATE DAM
IDP INTERMEDIATE DAM CONSTRUCTION PIEZOMETER
INSTRUMENTATION MONITORED IN 2003
PBI TAILINGS DAM
BIK KLOHN LEONOFF PIEZOMETER
SI SLOPE INDICATOR
S INCREMENTAL SETTLEMENT
V VERTICAL SETTLEMENT
H HORIZONTAL SETTLEMENT
T THERMISTOR STRING
PP PNEUMATIC PIEZOMETER
HP HYDRAULIC PIEZOMETER
P01 MONITORING WELL INSTALLED IN 2001 BY GARTNER LEE LTD. (LOCATION APPROXIMATE)
SEDIMENTATION POND
NORTH VALLEY WALL INTERCEPTOR DITCH
NORTH VALLEY WALL INTERCEPTOR DITCH (NORTH ABUTMENT C.V.D.)
DECANT
SPILLWAY
CROSS VALLEY DAM REFERENCE LINE CHAINAGE (m)
CROSS VALLEY DAM POND
CROSS VALLEY DAM TOE ACCESS ROAD
CROSS VALLEY DAM
DRAINAGE DITCH
CORNISH CREEK DIVERSION
CORNISH CREEK
I.D. EMERGENCY SPILLWAY, OCT '89
INTERMEDIATE DAM REFERENCE LINE CHAINAGE (m)
INTERMEDIATE DAM OCTOBER 1989
ACCESS ROAD (PRIMARILY TILL)
ABANDONED ACCESS ROADS
APPROXIMATE BAFFLE LOCATION 1991 CONSTRUCTION
1987 PLUG DAM
SEPTEMBER 1990 TAILINGS POND LIMITS
EXISTING TAILINGS
ABANDONED ROSE CREEK CHANNEL
ROSE CREEK DIVERSION CANAL
DIVERSION CANAL REFERENCE LINE CHAINAGE (m)
MATCH LINE SEE FIGURE 2
SCALE (meters) 0 100 200 300
BSK04-06 (PZ)
BSK04-07 (PZ)
BH94-CDT-(SI)
BH94-CVDC-1(HP)
BH94-IDC-1(HP)
BH96-1
BH96-2
BH96-3
BH96-4-I
BH96-4-II
BGC 01-02
CVDP-8.2PP.HP
NOTE:
FIGURE 1 FROM GOLDER ASSOCIATES REPORT 992-2416 USED AS REFERENCE
NOTE
PLAN BASED ON SURVEYS BY UNDERHILL ENGINEERING LTD. WHITEHORSE, DONE DURING CONSTRUCTION, 1981. GRID SYSTEM DERIVED FROM THE METRIC EQUIVALENT OF THE MINE GRID SYSTEM, ASSUMING MINE GRID CO-ORD SUPPLIED BY CYPRUS ANVIL FOR STATION 78-17 (320.09mN, 3220.50mE). ELEVATIONS ARE WITH RESPECT TO THE NORTHWEST CORNER OF THE FLOOR SLAB INSIDE THE CYPRUS ANVIL PUMPHOUSE (1089.515m AS PROVIDED BY CYPRUS ANVIL).
PROJECT 2004 Annual Geotechnical Evaluation and Instrumentation Review
TITLE Down Valley Tailings Containment Instrument Location - 1 of 2
PROJECT No. 0257-022-06
DWG. No. 1
REV. 0
CLIENT NAME Deloitte & Touche
JAN 2005
BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary, AB Phone: (403) 250 5185



LEGEND

- ⊕ SITE INVESTIGATION BOREHOLES
- ● INSTRUMENTATION BOREHOLES
- △ SURVEY CONTROL STATION (UNDERHILL ENGINEERING LTD)
- CD CANAL DYKE
- BS BACK SLOPE
- SP SPOIL PIPE
- CVDC CROSS VALLEY DAM CREST
- CVDB CROSS VALLEY DAM U/S BLANKET
- CVDT CROSS VALLEY DAM TOE
- CVDP CROSS VALLEY DAM CONSTRUCTION PIEZOMETER
- CVDS CROSS VALLEY DAM CONSTRUCTION SETTLEMENT PLATE
- ◉ INSTRUMENTATION MONITORED IN 2003
- ID INTERMEDIATE DAM
- IDP INTERMEDIATE DAM CONSTRUCTION PIEZOMETER
- P8I TAILINGS DAM
- 8IK KLOHN LEONOFF PIEZOMETER
- SI SLOPE INDICATOR
- S INCREMENTAL SETTLEMENT
- V VERTICAL SETTLEMENT
- H HORIZONTAL SETTLEMENT
- T THERMISTOR STRING
- PP PNEUMATIC PIEZOMETER
- HP HYDRAULIC PIEZOMETER
- P01 MONITORING WELL INSTALLED IN 2001 BY GARTNER LEE LTD. (LOCATION APPROXIMATE)

NOTE

PLAN BASED ON SURVEYS BY UNDERHILL ENGINEERING LTD. WHITEHORSE, DONE DURING CONSTRUCTION, 1981. GRID SYSTEM DERIVED FROM THE METRIC EQUIVALENT OF THE MINE GRID SYSTEM, ASSUMING MINE GRID CO-ORD SUPPLIED BY CYPRUS ANVIL FOR STATION 78-17 (320.09mN, 3220.50mE). ELEVATIONS ARE WITH RESPECT TO THE NORTHWEST CORNER OF THE FLOOR SLAB INSIDE THE CYPRUS ANVIL PUMPHOUSE (1089.515m AS PROVODED BY CYPRUS ANVIL).

FIGURE 2 FROM GOLDER ASSOCIATES REPORT 992-2416 USED AS REFERENCE

CLIENT: Deloitte & Touche

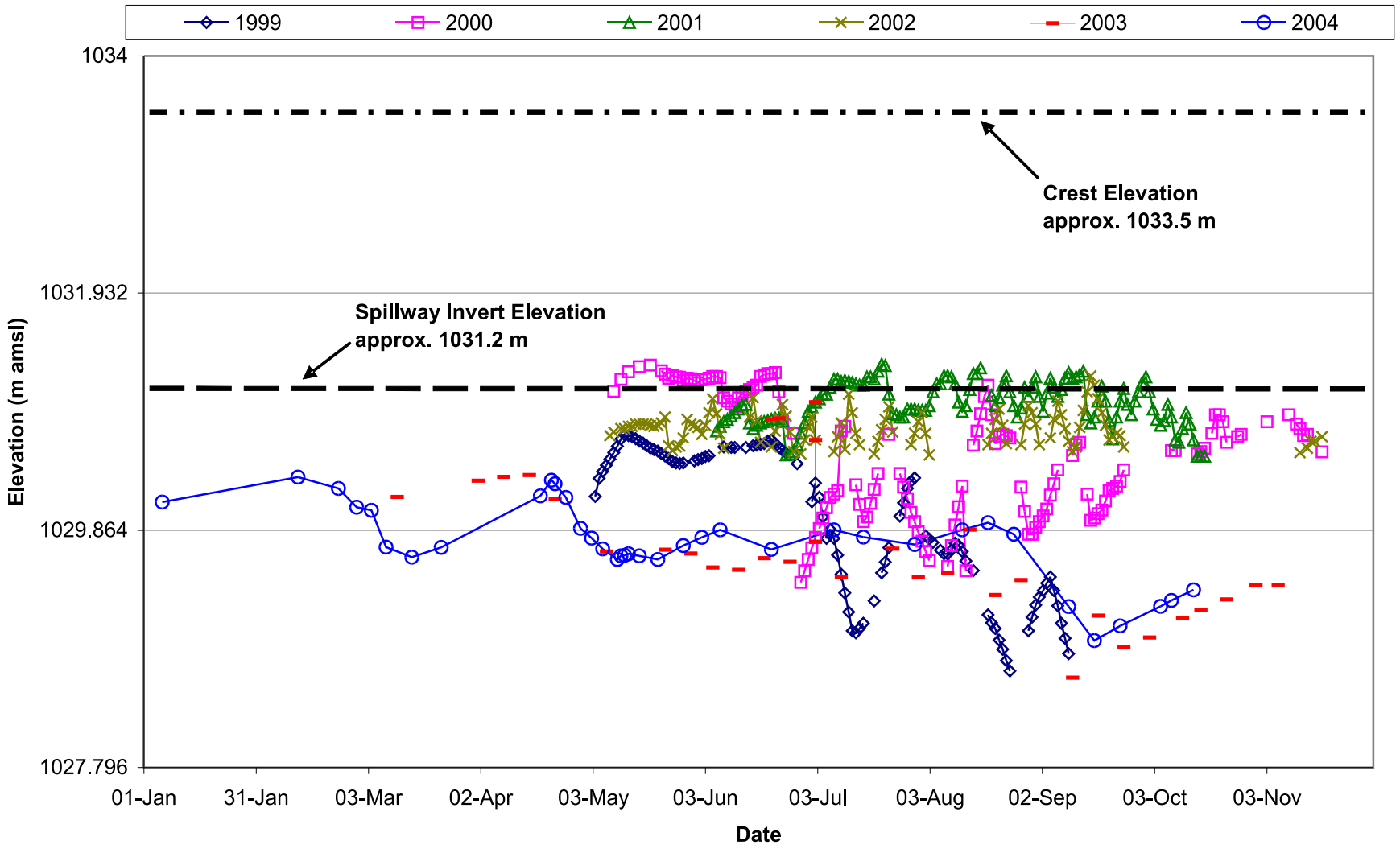
SCALE:	AS SHOWN
DATE:	JAN 2005
DRAWN:	CJT
DESIGNED:	JMS
CHECKED:	GWF
APPROVED:	JWC

PROJECT: 2004 Annual Geotechnical Evaluation and Instrumentation Review

TITLE: Down Valley Tailings Containment
Instrument Location - 2 of 2

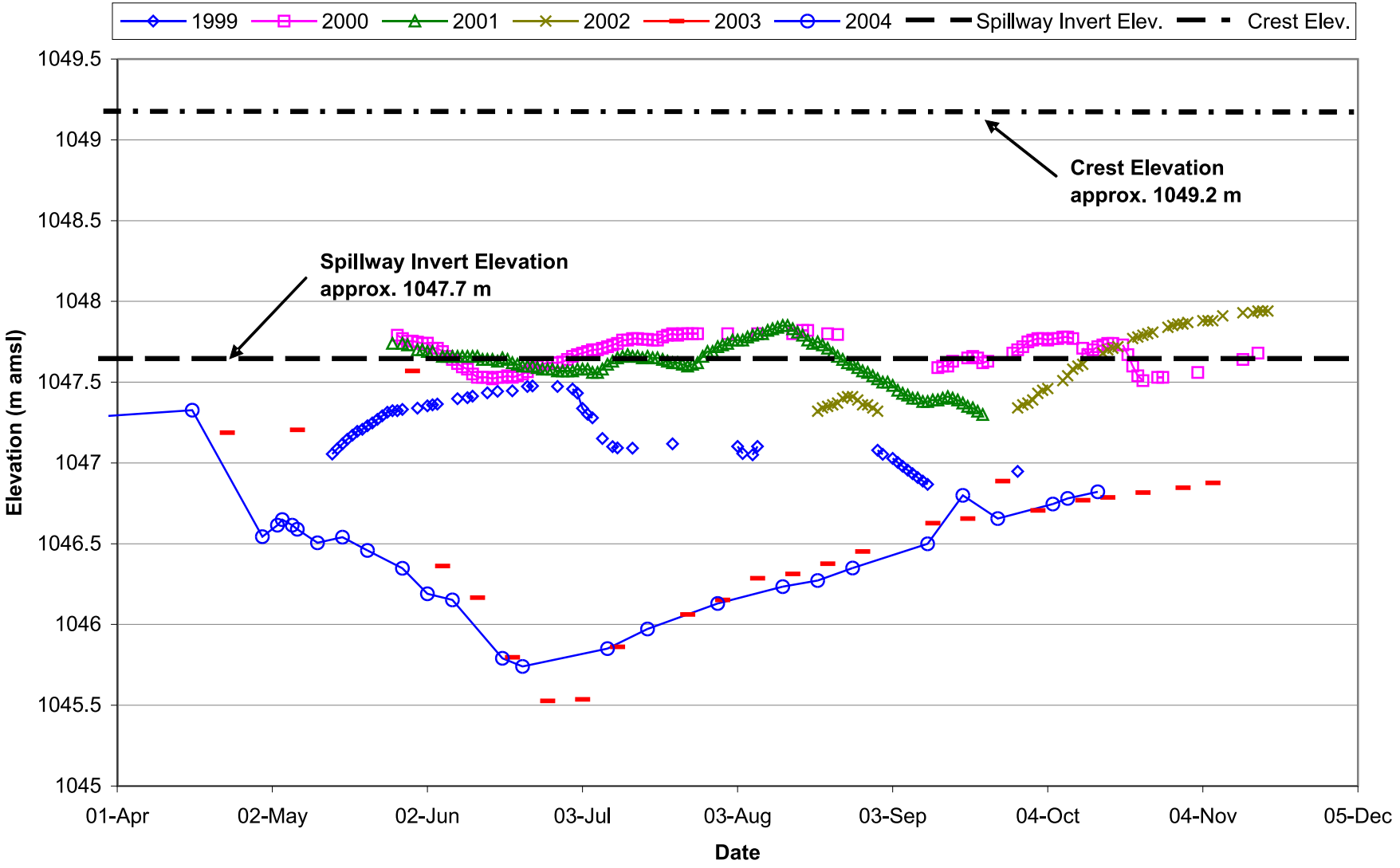
PROJECT No.	DWG. No.	REV.
0257-022-06	2	0

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Calgary, AB
Phone: (403) 250 5185

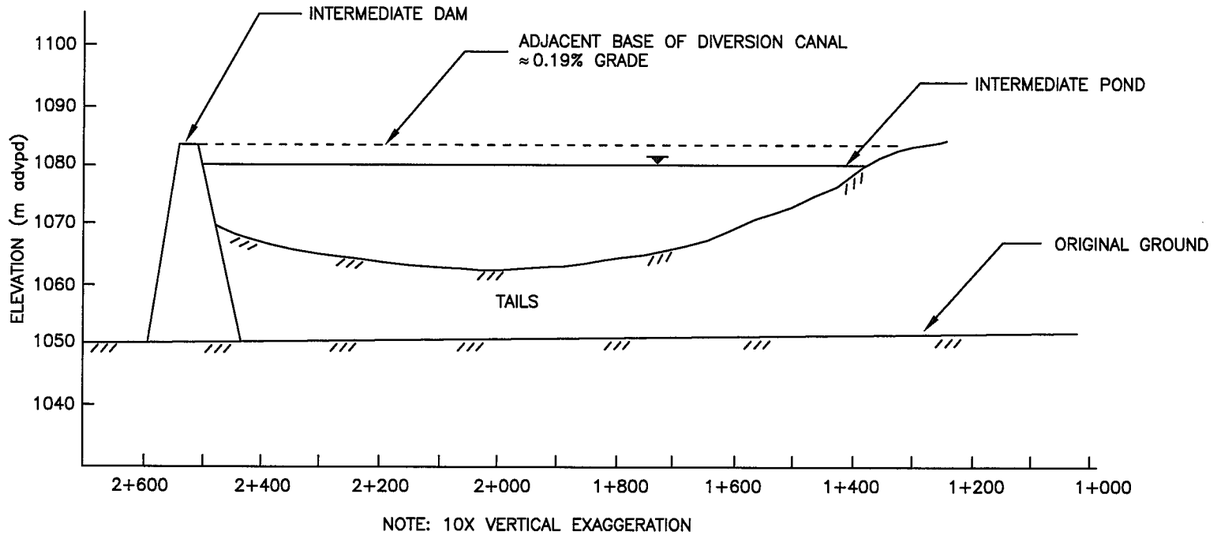


DATE: JAN 2005	DRAWN SLF	BGC ENGINEERING INC. AN APPLIED EARTH SCIENCES COMPANY Calgary, Alberta Phone: (403) 250-5185	PROJECT 2004 ANNUAL GEOTECHNICAL EVALUATION & INSTRUMENTATION REVIEW
REFERENCED DRAWING DESCRIPTION			TITLE CROSS VALLEY POND ELEVATIONS (1999-2004)
AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA, STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.	CLIENT Deloitte & Touche	PROJECT No. 0257-022-06	DWG. No. 3 / REV. 0

Intermediate Dam Pond Elevations

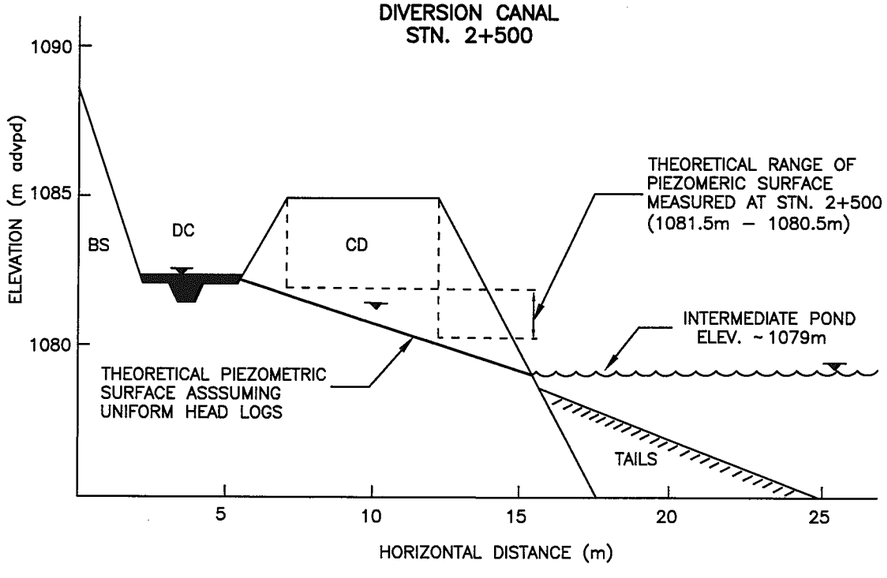


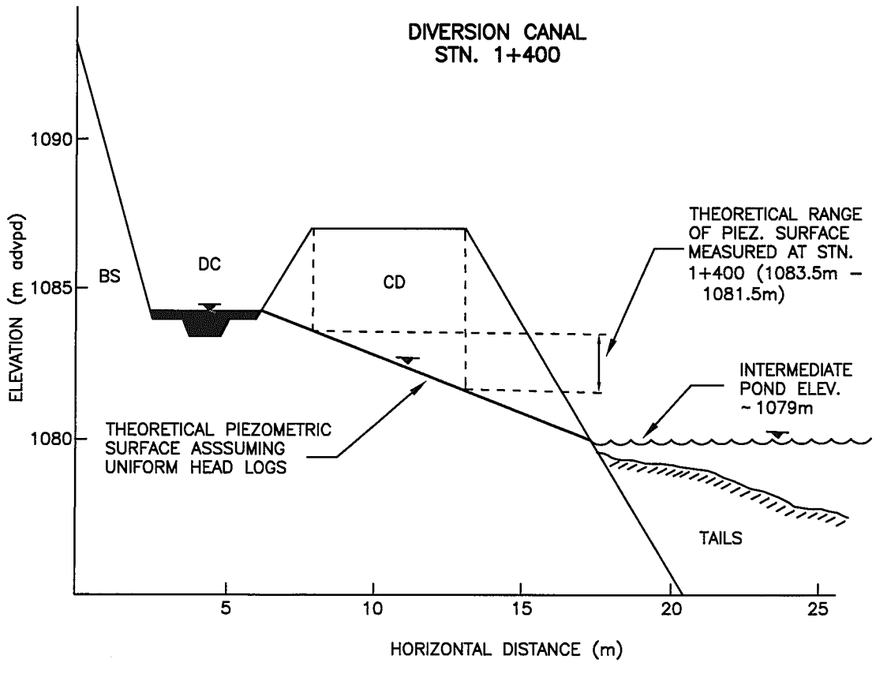
DATE: JAN 2005	DRAWN SLF	BGC ENGINEERING INC. AN APPLIED EARTH SCIENCES COMPANY Calgary, Alberta Phone: (403) 250-5185	PROJECT 2004 ANNUAL GEOTECHNICAL EVALUATION & INSTRUMENTATION REVIEW		
REFERENCED DRAWING DESCRIPTION			TITLE INTERMEDIATE POND ELEVATIONS (1999-2004)		
AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA, STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.		CLIENT Deloitte & Touche	PROJECT No. 0257-022-06	DWG. No. 4	REV. 0



NOTE: 10X VERTICAL EXAGGERATION

NOTES:
1) DRAWING IS A SCHEMATIC, CONSTRUCTED FOR ILLUSTRATIVE PURPOSES ONLY.
2) ALL ELEVATIONS ARE APPROXIMATE AND ARE BASED ON AVAILABLE INFORMATION.
3) LOCATION OF TAILINGS IN THE INTERMEDIATE POND IS APPROXIMATE. NO BATHYMETRIC INFORMATION IS AVAILABLE.





CLIENT:

N:\autocad\LOGO\deloitte & touche.bmp

LEGEND

BS BACK SLOPE
DC DIVERSION CANAL
CD CANAL DIKE

AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA, STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.

REV.	DATE	REVISION NOTES	DRAWN	CHECKED	APPROVED

SCALE:	AS SHOWN
DATE:	JAN 2005
DRAWN:	CJT
DESIGNED:	JMS
CHECKED:	GWF
APPROVED:	JWC

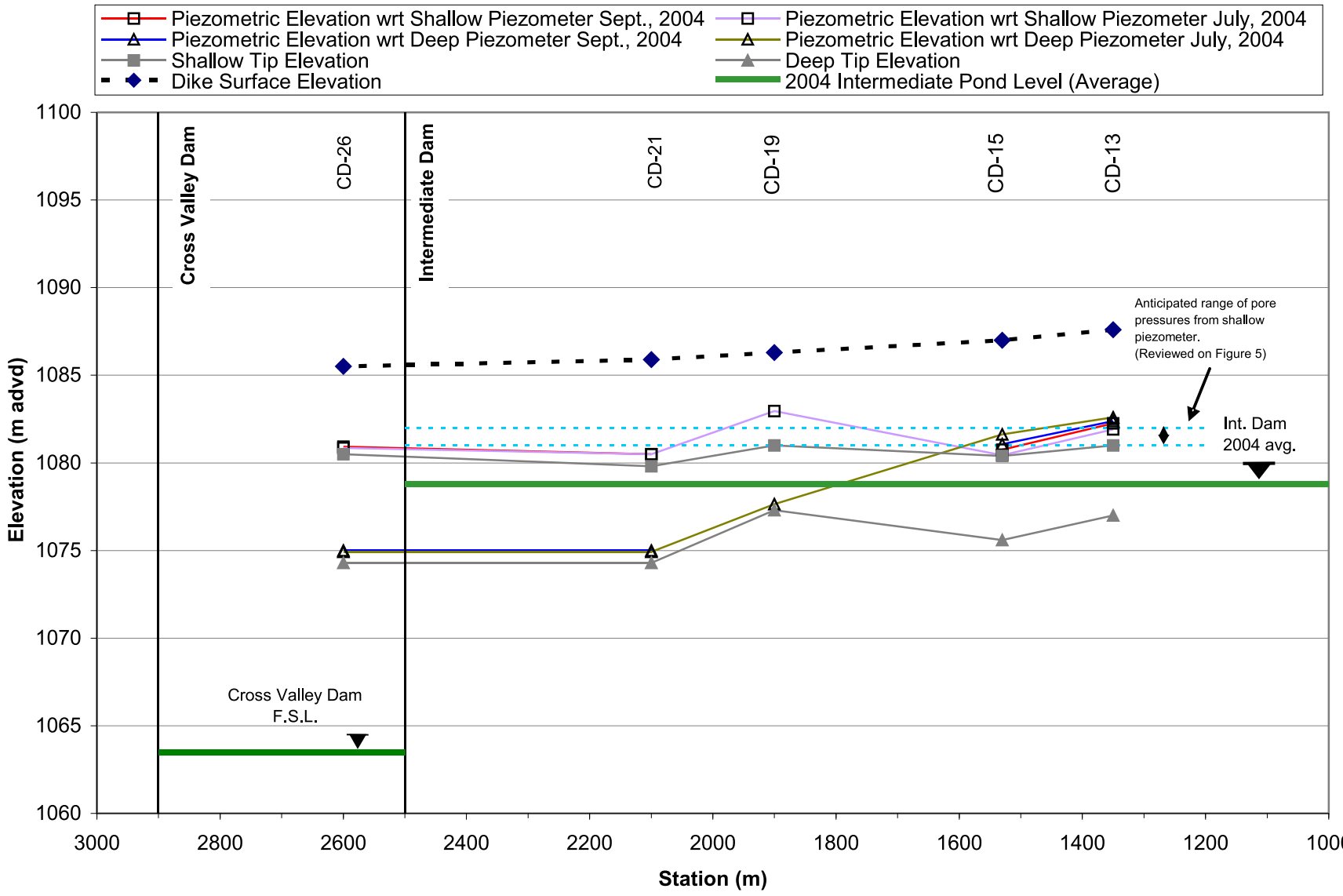
PROJECT: 2004 ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENTATION REVIEW

TITLE: CANAL DIKE / INTERMEDIATE POND HYDRAULIC CONNECTIVITY

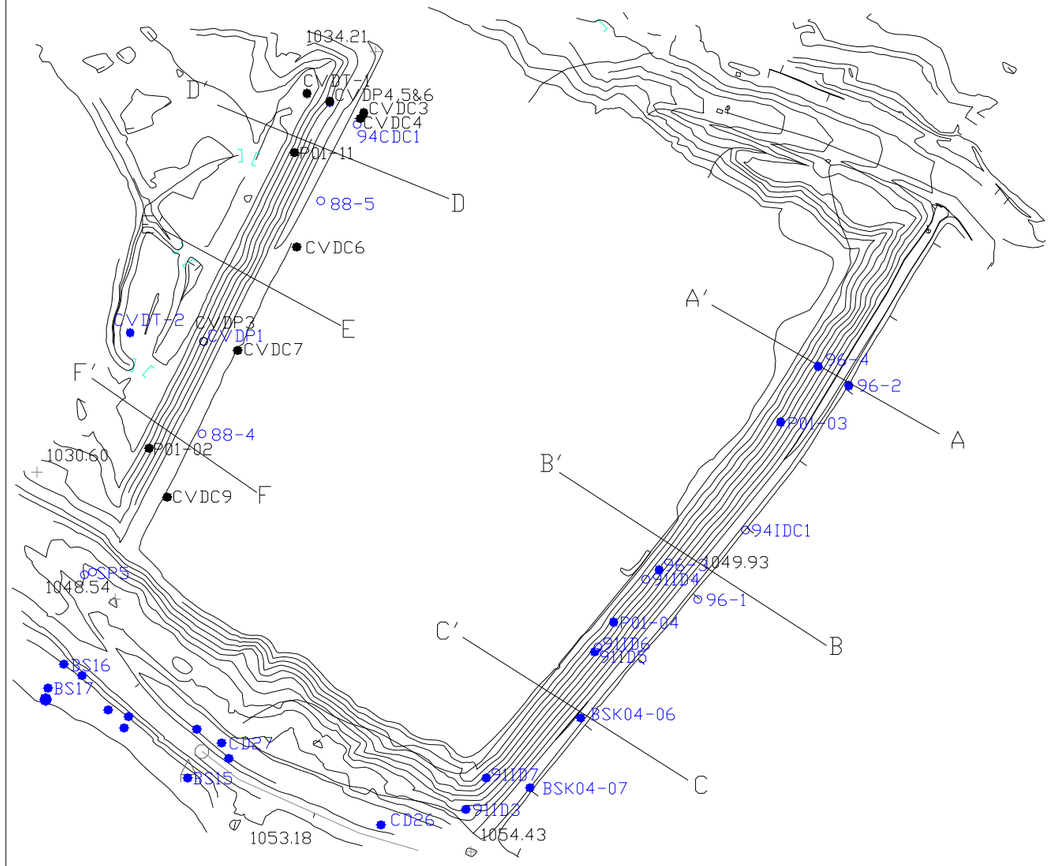
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0257–022–06	5	0

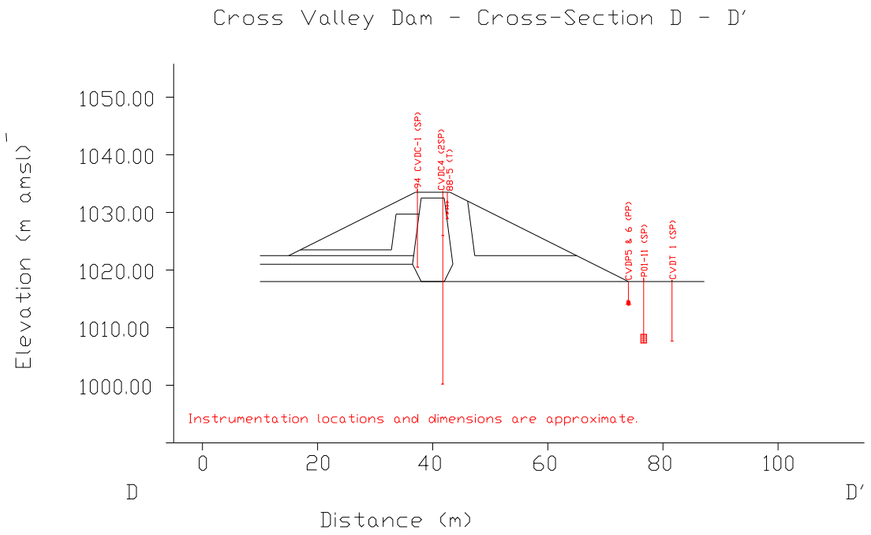
BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY
Calgary, AB Phone: (403) 250 5185

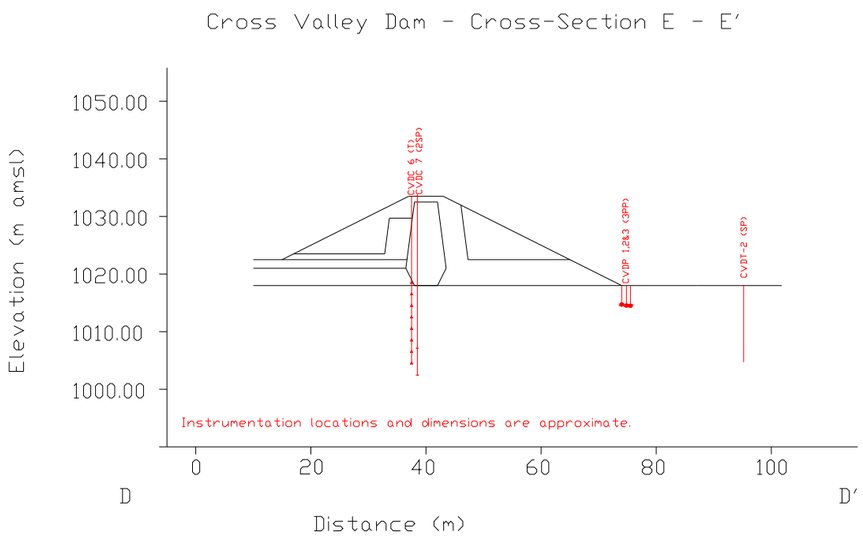
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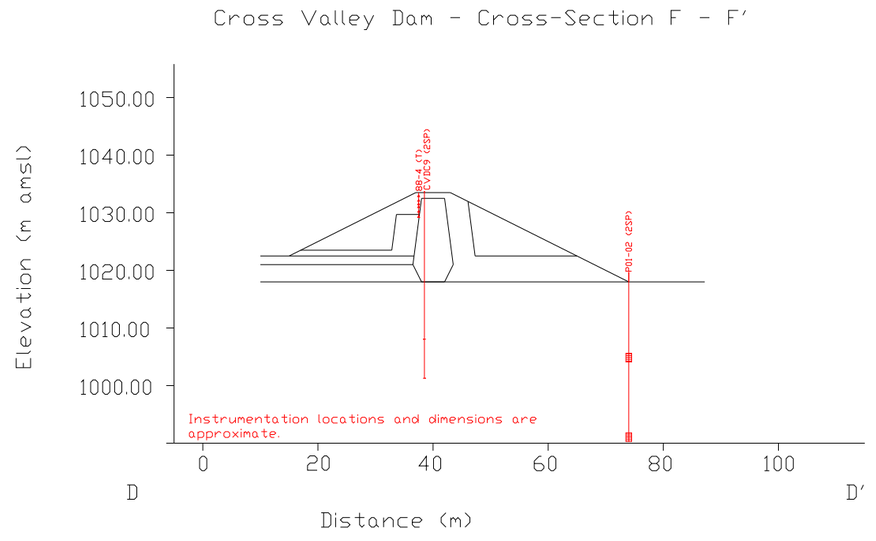


DATE: JAN 2005	DRAWN SLF	BGC ENGINEERING INC. AN APPLIED EARTH SCIENCES COMPANY Calgary, Alberta Phone: (403) 250-5185	PROJECT 2004 ANNUAL GEOTECHNICAL EVALUATION & INSTRUMENTATION REVIEW
REFERENCED DRAWING DESCRIPTION			TITLE CANAL DIKE, CURRENT PIEZOMETRIC CONDITIONS
AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA, STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.		CLIENT Deloitte & Touche	PROJECT No. 0257-022-06 / DWG. No. 6 / REV. 0









CLIENT:

Deloitte & Touche

- SP Standpipe Piezometers
- PP Pneumatic Piezometers
- T Thermistor Cables
- Screened Intervals of Standipe Piezometers
- Bottom of Standpipe Piezometers
- Pneumatic Piezometer Tips
- Thermistor Nodes

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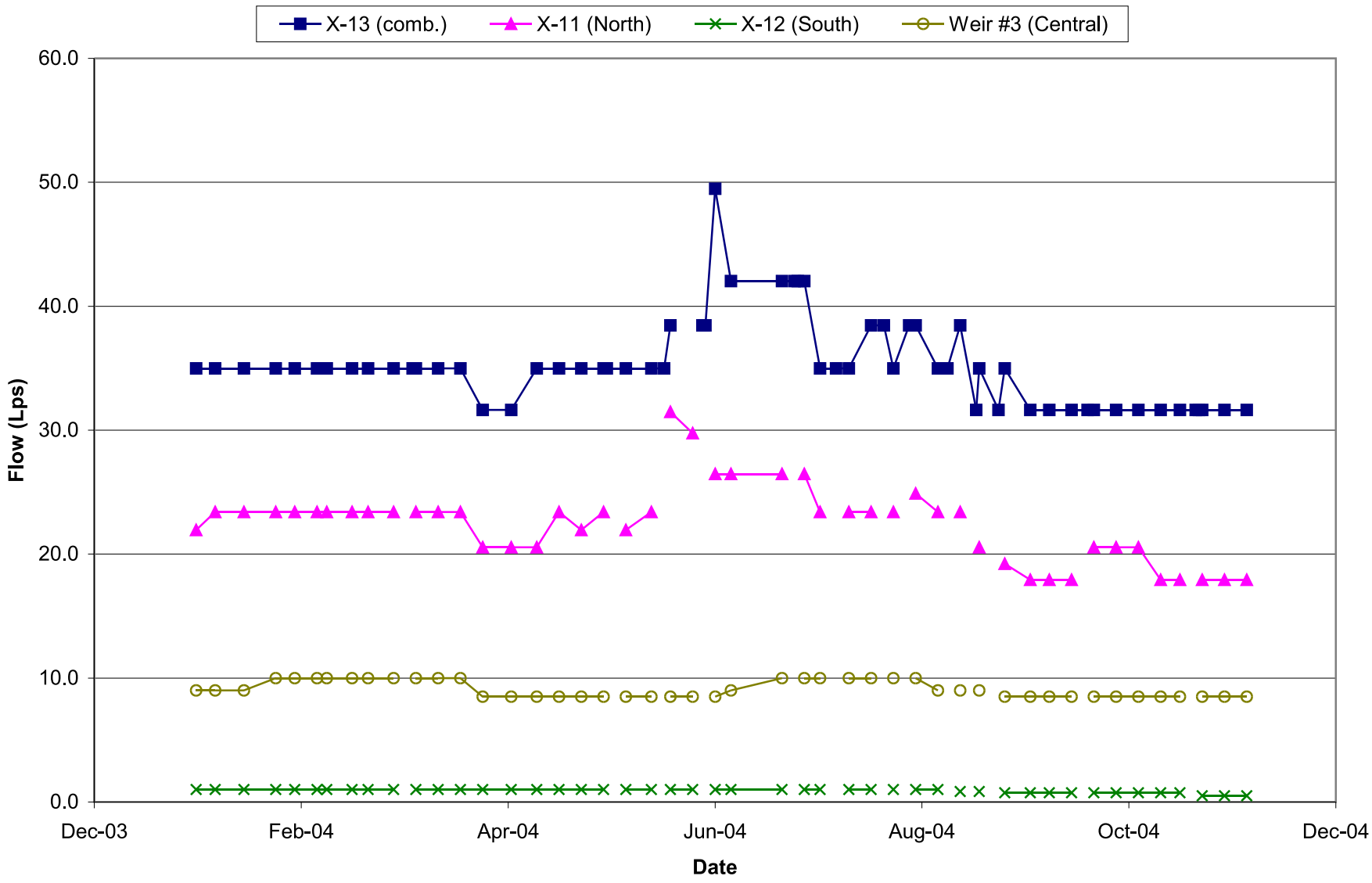
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DRAWN:	SLF
DESIGNED:	MJM
CHECKED:	GWF
APPROVED:	JWC

PROJECT
2004 ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENTATION REVIEW

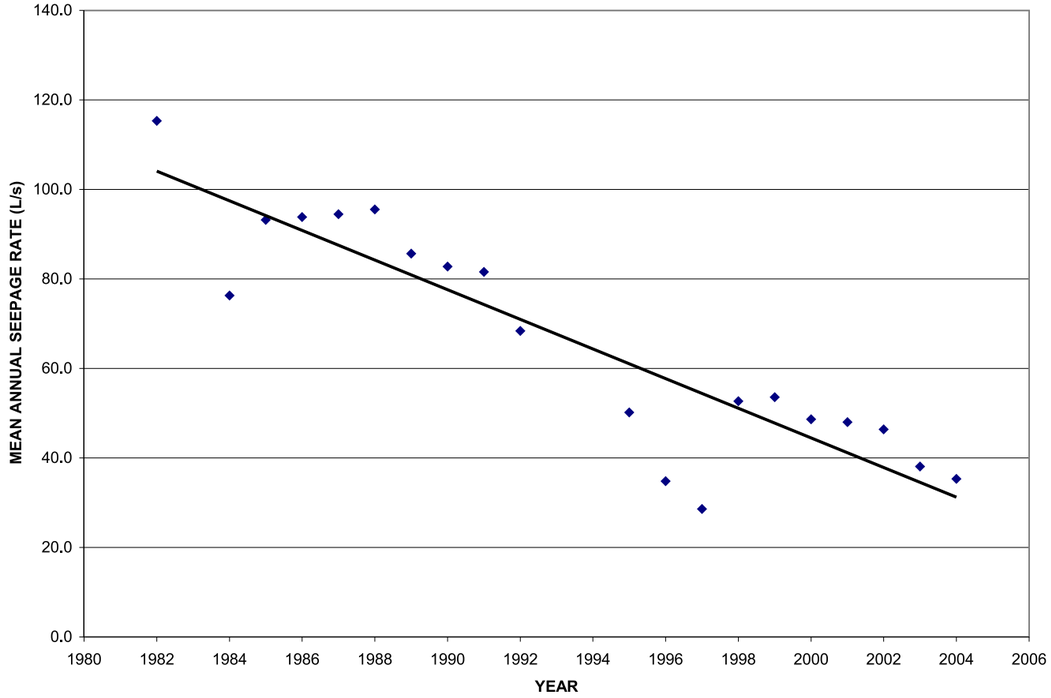
TITLE
SECTION VIEW OF CROSS VALLEY DAM

PROJECT No.	DWG. No.	REV.
0257-022-06	7	0

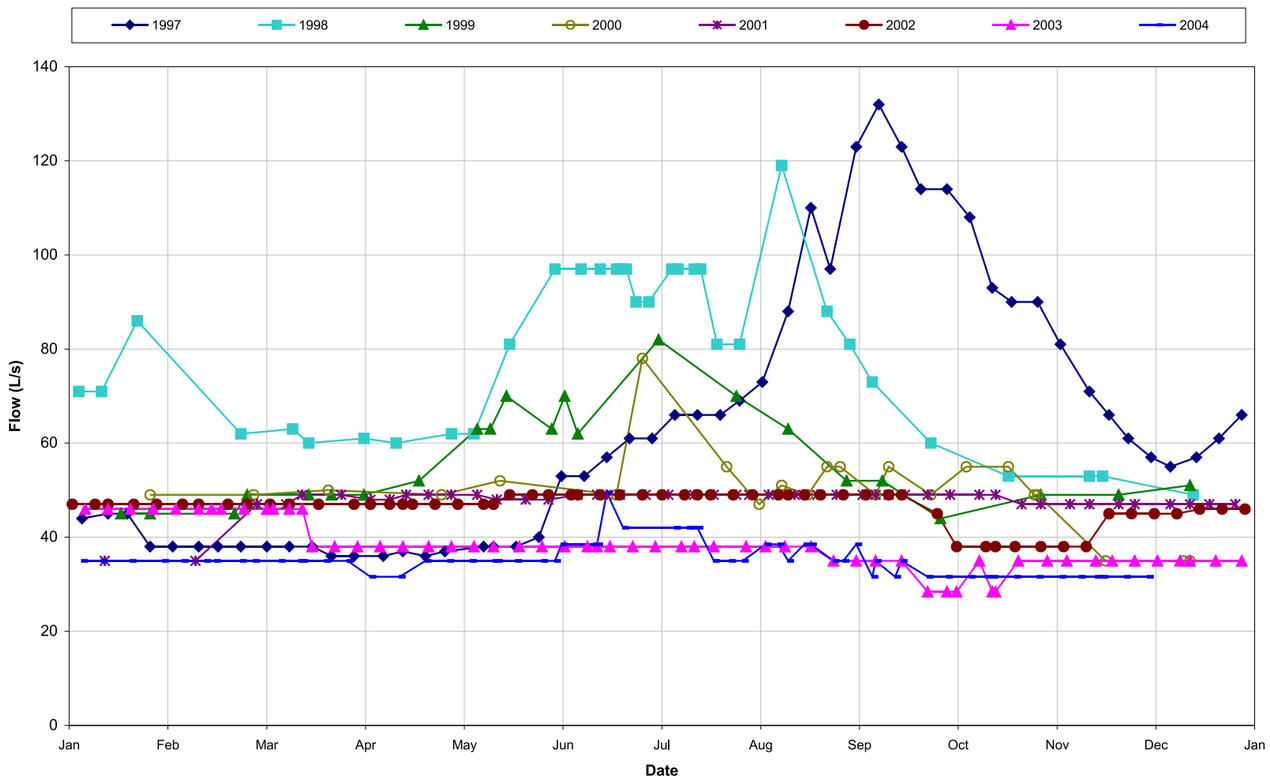
BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary Alberta
Phone: (403) 250-5185



DATE: FEB 2005	DRAWN SLF	BGC ENGINEERING INC. AN APPLIED EARTH SCIENCES COMPANY Calgary, Alberta Phone: (403) 250-5185	PROJECT 2004 ANNUAL GEOTECHNICAL EVALUATION & INSTRUMENTATION REVIEW		
REFERENCED DRAWING DESCRIPTION			TITLE CROSS VALLEY DAM 2004 WEIR FLOWS		
AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA, STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.		CLIENT Deloitte & Touche	PROJECT No. 0257-022-06	DWG. No. 8	REV. 0



MEASURED FLOW RATES AT X13 (L/s)



CLIENT:

Deloitte & Touche

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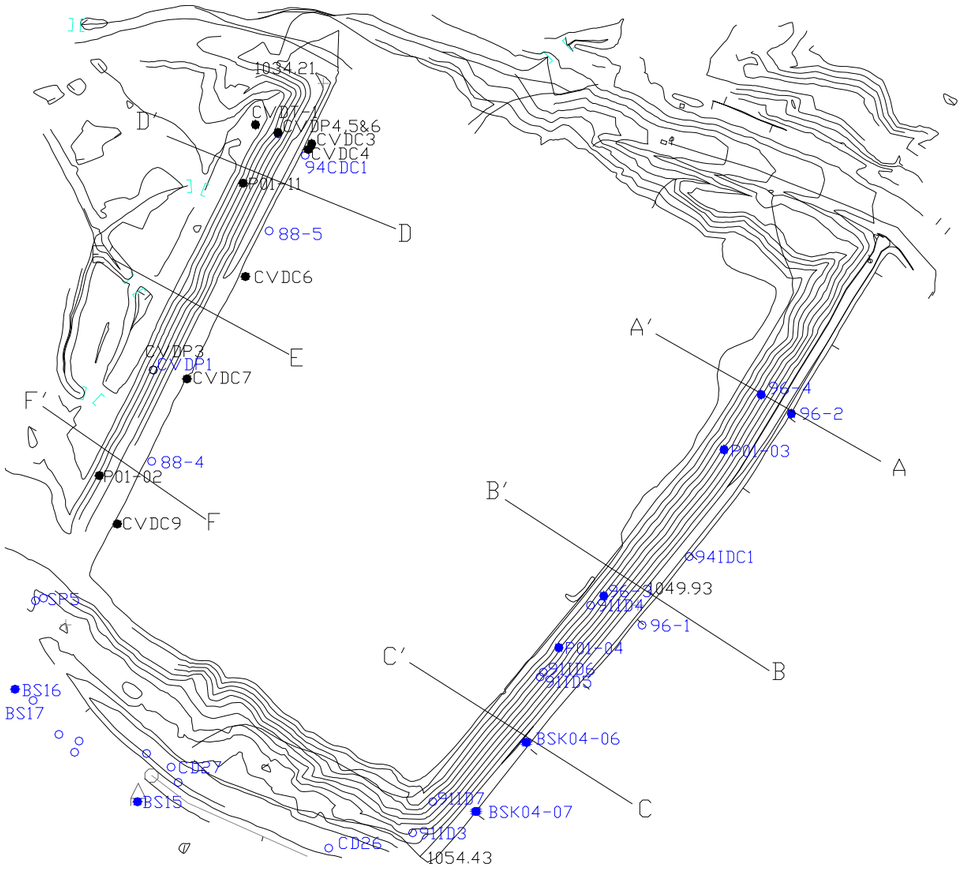
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DATE:	JANUARY 2005
DRAWN:	SLF
DESIGNED:	JMS
CHECKED:	GWF
APPROVED:	JWC

PROJECT
2004 ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENTATION REVIEW

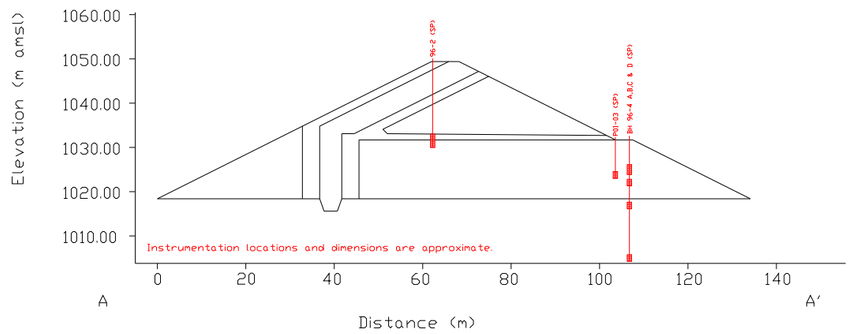
TITLE
CROSS VALLEY DAM MEASURED FLOW RATES AT X13 (1997 - 2004)

PROJECT No.	DWG. No.	REV.
0257-022-06	9	0

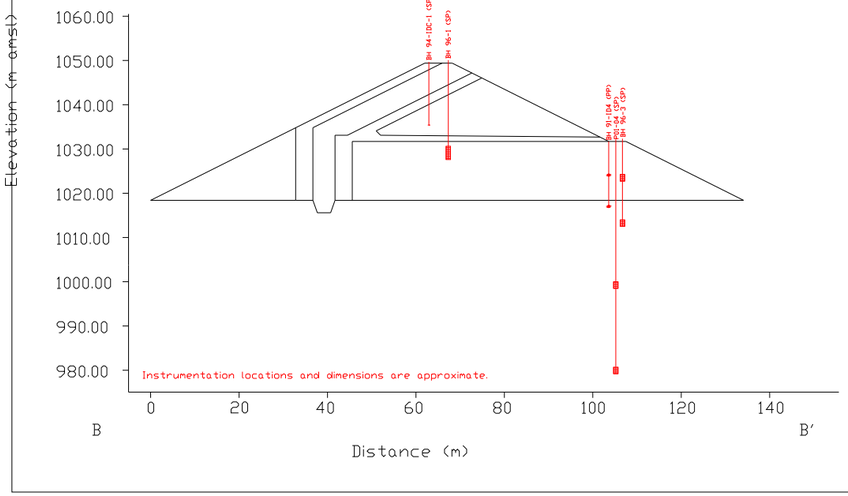
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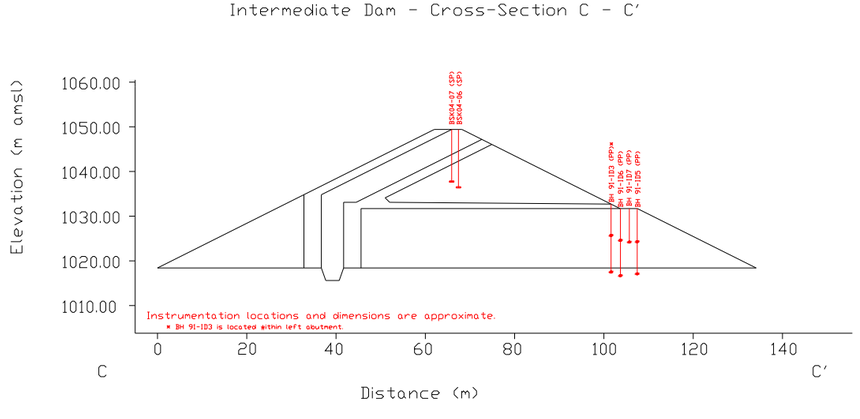
Intermediate Dam - Cross-Section A - A′



Intermediate Dam - Cross-Section B - B′



Intermediate Dam - Cross-Section C - C′



CLIENT:

Deloitte & Touche

- SP Standpipe Piezometers
- PP Pneumatic Piezometers
- T Thermistor Cables
- Screened Intervals of Standipe Piezometers
- Bottom of Standpipe Piezometers
- Pneumatic Piezometer Tips
- Thermistor Nodes

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SCALE:	N/A
DATE:	JANUARY 2005
DRAWN:	SLF
DESIGNED:	JMS
CHECKED:	GWF
APPROVED:	JWC

PROJECT
2004 ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENTATION REVIEW

TITLE
SECTION VIEW OF INTERMEDIATE DAM

PROJECT No.	DWG. No.	REV.
0257-022-06	10	0

BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary Alberta
Phone: (403) 250-5185



September: View of crest of Canal Dike looking downstream from CD-13. Surface of the dike looks smooth with no cracking.



September: View of the crest of the Canal Dike looking upstream from CD-22. The surface appears smooth, this is following completion of construction.



September; View of the newly placed, rounded riprap as part of the 2004 raise of the dike crest.



September: View of crest looking upstream from the western limit of the newly repaired section of the Canal Dike.

CLIENT:

Deloitte & Touche

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SCALE:	N/A
DATE:	FEBRUARY 2005
DRAWN:	SLF
DESIGNED:	GWF
CHECKED:	GWF
APPROVED:	JWC

PROJECT

2005 ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENT REVIEW

TITLE

DIVERSION CANAL DIKE INSPECTION PHOTOS

PROJECT No.	DWG. No.	REV.
0257-022-06	11	0

BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary Alberta
Phone: (403) 250-5185



September: View looking downstream, with instrument CD-13 in the foreground.



September: View of some erosion gullies in the backslope which have been lined with riprap.



September: View of some erosion gullies in the backslope that have been lined with riprap.



September: View looking downstream from the first weir of the upper weir section. Note that some central boulders have moved overtime.

CLIENT:

Deloitte & Touche

AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA STATEMENTS CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.

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SCALE:	N/A
DATE:	FEBRUARY 2005
DRAWN:	SLF
DESIGNED:	GWF
CHECKED:	GWF
APPROVED:	JWC

PROJECT

2005 ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENT REVIEW

TITLE

DIVERSION CANAL DIKE INSPECTION PHOTOS

PROJECT No.	DWG. No.	REV.
0257-022-06	12	0

BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary Alberta
Phone: (403) 250-5185



July: View of the first rock outcrop in the backslope of the canal dike. Note the riprap repairs above the rock outcrop; this repair appears to be in good shape.



July: A view of the tension cracks in the backslope. These three parallel cracks appear to be related to surficial saturation of the section of the backslope.



July: a view of one of the erosional gullies that has become stable over time. Vegetation is beginning to grow in the lower part of the gully.



July: A view of a tension crack in the backslope, immediately above the top weir of the upper weir section.

CLIENT:

Deloitte & Touche

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-	-	-	-	-	-

SCALE:	N/A
DATE:	FEBRUARY 2005
DRAWN:	SLF
DESIGNED:	GWF
CHECKED:	GWF
APPROVED:	JWC

PROJECT

2005 ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENT REVIEW

TITLE

DIVERSION CANAL DIKE INSPECTION PHOTOS

PROJECT No.	DWG. No.	REV.
0257-022-06	13	0

BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary Alberta
Phone: (403) 250-5185



September: View showing the middle of the upper weir section.



September: View looking downstream from instrument CD-19. Note the appearance of the newly placed riprap and the smooth surface of the raised dike.



September: Lower weir of the upper weir section. Note: the water flowing to the right of the lowest weir.



September; View of the seepage discharge points that are flowing into the polishing pond. Seventeen different seepage discharge points were noted.

CLIENT:

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SCALE:	N/A
DATE:	FEBRUARY 2005
DRAWN:	SLF
DESIGNED:	GWF
CHECKED:	GWF
APPROVED:	JWC

PROJECT

2005 ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENT REVIEW

TITLE

DIVERSION CANAL DIKE INSPECTION PHOTOS

PROJECT No.	DWG. No.	REV.
0257-022-06	14	0

BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary Alberta
Phone: (403) 250-5185



September: Shows the new (installed 2004) culvert installed to pass water under the main access road.



September: Shows the water entering the new (installed 2004) culvert installed on the main access road. Note the extensive riprap placement.



September: A view of the ditch looking in the downstream direction. This widened berm is located nominally above the guard house.



September: A view in the upstream direction of the channel, from a point above the guard house.

CLIENT:

Deloitte & Touche

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SCALE:	N/A
DATE:	FEBRUARY 2005
DRAWN:	SLF
DESIGNED:	GWF
CHECKED:	GWF
APPROVED:	JWC

PROJECT
2005 ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENT REVIEW

TITLE
NORTH VALLEY INTERCEPTOR DITCH INSPECTION PHOTOS

PROJECT No.	DWG. No.	REV.
0257-022-06	15	0

BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary Alberta
Phone: (403) 250-5185



July: A view of the Faro Creek Channel looking in the downstream direction. This was taken near the Faro Valley Waste Dump. The repaired section (completed in 2003) of the channel is seen to be flowing smoothly.



July: Looking downstream at the channel. The water is flowing within the riprap placed in 2003.

September: Looking upstream along channel from adjacent to the Faro Valley Dumps.



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SCALE:	N/A
DATE:	FEBRUARY 2005
DRAWN:	SLF
DESIGNED:	GWF
CHECKED:	GWF
APPROVED:	JWC

PROJECT: 2005 ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENT REVIEW

TITLE: FARO CREEK DIVERSION CHANNEL INSPECTION PHOTOS

PROJECT No.	DWG. No.	REV.
0257-022-06	16	0

BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary Alberta
Phone: (403) 250-5185



May: View of the spillway from near the pilot channel. Note a small tension crack in the base of the spillway. This appears to be in a similar position as the cracks in the crest.



September: A view of the upstream side of the spillway and inlet of the pilot channel. The water level was currently below the inlet elevation at the current time.



September: View of the crest of the dam near the north abutment looking south.



July: A view of the crest of the dam shoing a general smooth appearance. A faint tension crack is visible at the edge of the upstream face of the dam.

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SCALE:	N/A
DATE:	FEBRUARY 2005
DRAWN:	SLF
DESIGNED:	GWF
CHECKED:	GWF
APPROVED:	JWC

PROJECT
2005 ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENT REVIEW

TITLE
CROSS VALLEY DAM INSPECTION PHOTOS - CREST & UPSTREAM SIDE

PROJECT No.	DWG. No.	REV.
0257-022-06	17	0

BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary Alberta
Phone: (403) 250-5185



September: A view of the downstream face and downstream toe looking towards the north abutment. From this view point, no signs of settlement or seepage are observed.



May: View of the southern portion of the downstream side of the dam. No signs of sloughing, settlement or seepage noted.

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May: A view of the crest. Note the location of the instruments and the cracking on the surface of the dam. This crack runs the length of the crest and is thought to be due to frost action.



July: A view of the same crack shown in the adjacent photo. Note that the crack has mostly closed and the edge is less sharp.

SCALE:	N/A
DATE:	FEBRUARY 2005
DRAWN:	SLF
DESIGNED:	GWF
CHECKED:	GWF
APPROVED:	JWC

PROJECT
2005 ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENT REVIEW

TITLE
CROSS VALLEY DAM INSPECTION PHOTOS - CREST & DOWNSTREAM SIDE

PROJECT No.	DWG. No.	REV.
0257-022-06	18	0

BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary Alberta
Phone: (403) 250-5185



May: A view of the seepage being collected in the seepage trench at the middle weir.



July: A view of the downstream side and the toe area of the Cross Valley Dam. No signs of settlement, slough, seepage or concern is noted with this dam.



September: A view of the large angular fragments of riprap located on the far left side of the Emergency Spillway.



September: Crest of the dam. Note that there is almost no signs of the crest cracking noted in spring/early summer inspections.

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SCALE:	N/A
DATE:	FEBRUARY 2005
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DESIGNED:	GWF
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APPROVED:	JWC

PROJECT
2005 ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENT REVIEW

TITLE
CROSS VALLEY DAM INSPECTION PHOTOS

PROJECT No.	DWG. No.	REV.
0257-022-06	19	0

BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary Alberta
Phone: (403) 250-5185



May: view of the upstream position of the spillway as treated water is discharged.



July: Looking downstream along the spillway.



July: shows a view of riprap on the upstream side. The distance between the crest and the water is about 3.0 m.



May: A view of the crest looking to the south. Taken near the spillway. Note the two sets of cracks in the spring time.

CLIENT:

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SCALE:	N/A
DATE:	FEBRUARY 2005
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PROJECT
2004ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENT REVIEW

TITLE
INTERMEDIATE DAM INSPECTION PHOTOS

PROJECT No.	DWG. No.	REV.
0257-022-06	20	0

BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary Alberta
Phone: (403) 250-5185



September: A view of the crest looking towards the south abutment.



September: A view of the riprap on the upstream side. No signs of deformations or settlement noted.



May: A view of the downstream face looking towards the south abutment. The downstream face of the dam was regraded in the early summer of 2003. From this perspective, there are no signs of deformation from this location.



September: A view of the riprap on the upstream side. This is located at the spillway, a location where crest cracking was evident in the spring.

CLIENT:

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SCALE:	N/A
DATE:	FEBRUARY 2005
DRAWN:	SLF
DESIGNED:	GWF
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APPROVED:	JWC

PROJECT
2005 ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENT REVIEW

TITLE
INTERMEDIATE DAM INSPECTION PHOTOS

PROJECT No.	DWG. No.	REV.
0257-022-06	21	0

BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary Alberta
Phone: (403) 250-5185



July: An overview of the downstream side. In general, the slope appears to have a consistent slope with no bulging. The appearance of faint erosional gullies is apparent.



July: view looking upslope at the erosion gullies in the downstream face of the dam.



July: a view of the downstream face of the dam looking south.



May: overdview of the erosion gullies on the downstream face of the dam.

CLIENT:

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SCALE:	N/A
DATE:	FEBRUARY 2005
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DESIGNED:	GWF
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APPROVED:	JWC

PROJECT
2004ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENT REVIEW

TITLE
INTERMEDIATE DAM INSPECTION PHOTOS

PROJECT No.	DWG. No.	REV.
0257-022-06	22	0

BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary Alberta
Phone: (403) 250-5185



May: A view of a debris cone at the toe of the downstream face, caused by surface water erosion.



September: A view of the bottom of the spillway.



May: View of the crest of the dam near the north abutment.



May: A view of the materials at the toe of the downstream face as a result of the erosion of the face.

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PROJECT
2005 ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENT REVIEW

TITLE
INTERMEDIATE DAM INSPECTION PHOTOS

PROJECT No.	DWG. No.	REV.
0257-022-06	23	0

BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary Alberta
Phone: (403) 250-5185



September: View of the face of the Waste Dump. no signs of bulging or cracking were noted.



September: Overview of the Waste Rock Dumps adjacent to North Fork Rose Creek.



September: Crest of West Rock Dump.



September: View of a location where till soils are exposed and eroding at the edge of the waste dump.

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SCALE:	N/A
DATE:	FEBRUARY 2005
DRAWN:	SLF
DESIGNED:	GWF
CHECKED:	GWF
APPROVED:	JWC

PROJECT
2005 ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENT REVIEW

TITLE
WASTE ROCK DUMP INSPECTION

PROJECT No.	DWG. No.	REV.
0257-022-06	24	0

BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary Alberta
Phone: (403) 250-5185



May: View of upstream side of the Rock Drain. This photo was taken when the water near the high mark during 2004.



May: View of the water exiting the toe of the Rock Drain.



May: View of the pond near its maximum extent during 2004.



September: A view of the pond for more typical pond levels.

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SCALE:	N/A
DATE:	FEBRUARY 2005
DRAWN:	SLF
DESIGNED:	GWF
CHECKED:	GWF
APPROVED:	JWC

PROJECT
2005 ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENT REVIEW

TITLE
FLOW THROUGH ROCK DRAIN

PROJECT No.	DWG. No.	REV.
0257-022-06	25	0

BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary Alberta
Phone: (403) 250-5185



September: View of the upstream face of the Rock Drain.



September: View of the downstream face of the drain.



September: View of the datalogger at X2.

CLIENT:

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SCALE:	N/A
DATE:	FEBRUARY 2005
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DESIGNED:	GWF
CHECKED:	GWF
APPROVED:	JWC

PROJECT
2005 ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENT REVIEW

TITLE
FLOW THROUGH ROCK DRAIN

PROJECT No.	DWG. No.	REV.
0257-022-06	26	0

BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary Alberta
Phone: (403) 250-5185

2005 INSTRUMENTATION READINGS SCHEDULE	JAN 05	FEB 05	MAR 05	APR 05	MAY 05	JUN 05	JUL 05	AUG 05	SEP 05	OCT 05	NOV 05	DEC 05
1. Diversion Canal												
THERMISTORS												
- Canal Dyke: CD-10, CD-15, CD-19[5], CD-21, BGC01-02, 88-7[5]					***	***			***			
- Spoil Pile: SP-3						***						
SLOPE INDICATORS					If blocked in May, attempt to read in June.							
- Canal Dyke:												
BGC01-01, CD-15, CD-19					***				***			
CD-21, BH94CD-1, BH91-CD1					***				***			
- Spoil Pile: SP-2						***						
PIEZOMETERS												
- Canal Dyke CD-10, -13, -15[5], -19[5], -21, -26, 88-7[5]					***	***			***			
Staff Gauge: RCDC-4				daily	daily	daily	daily	daily	daily			
2. Cross Valley Dam												
THERMISTORS - BH88-4					***	***			***			
PIEZOMETERS: CVDC-4, -7, -9, CVDT-1, -2 CVDP-3, -6, 94 CVDC-1, CVDP-1, -2[5], -5, P01-02[2], P01-11[2]					***	***			***			
WEIR FLOWS: X-11, X-12, W3 (monthly)	***	***	***	***	***	***	***	***	***	***	***	***
WEIR FLOWS: X-13	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly
POLISHING POND WATER LEVEL[1] (or automate with datalogger)	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly
3. Intermediate Dam												
PIEZOMETERS: 91ID-4, -6, -7, 94-IDC-1, 96-1, 96-2, 96-4, P01-03[2], P01-04[2], BKS04-06, -07					***	***			***			
91-ID3 (with seepage observations near south abutment)					***	***		***	***			
RETAINED POND WATER LEVEL[1] (or automate with datalogger)	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly
4. Secondary Tailings Dam												
Piezometers: 81-6, -7, -8, -9; P03-01[4], -02[4], -03[4], -04[4]					***	***			***			
5. North Fork Rock Drain												
Dataloggers: Head Pond, X-2	Hourly	Hourly	Hourly	Hourly	Hourly	Hourly	Hourly	Hourly	Hourly	Hourly	Hourly	Hourly
NOTES:												
1 Confirm accuracy of staff gauge monitoring techniques.												
2 Before monitoring P01 series monitoring wells, confirm with GLL staff in Whitehorse that it is alright to do so.												
3 Monitor Instrumentation twice per month												
4 Monitored as part of Environmental Monitoring Program, provide elevation data to BGC												
5 Repair should be attempted.												

CLIENT:

Deloitte & Touche

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SCALE: N/A
DATE: FEBRUARY 2005
DRAWN: SLF
DESIGNED: GWF
CHECKED: GWF
APPROVED: JWC

PROJECT: 2004ANNUAL GEOTECHNICAL EVALUATION AND INSTRUMENT REVIEW

TITLE: 2005 MONITORING SCHEDULE

PROJECT No.	DWG. No.	REV.
0257-022-06	27	0

BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary Alberta Phone: (403) 250-5185

APPENDIX I
SITE VISIT INSPECTION MEMOS

(FROM MAY, JULY AND SEPTEMBER)

BGC ENGINEERING INC.

AN APPLIED EARTH SCIENCES COMPANY

1605, 840 - 7 Avenue S.W. , Calgary, Alberta, Canada. T2P 3G2
Phone (403) 250-5185 Fax (403) 250-5330

PROJECT MEMORANDUM

To:	**Anvil Range Mining Corp.**	**Fax No.:**	**(867) 994-3349**
Attention:	**Dana Haggar**	**CC:**	**Doug Sedgwick (416) 601-5902**
From:	**Gerry Ferris**	**Date:**	**June 7, 2004**
Subject:	**Summary of Inspection Visit by BGC, Various Facilities at Faro Mine,YT**		
No. of Pages (including this page): 3		**Project No:**	**0257-024-02**

Gerry Ferris, P.Eng., of BGC Engineering Inc. (BGC) visited the Faro Mine from Wednesday May 26 until Friday afternoon on May 28, 2004. Various structures were inspected, input/support was provided to various construction and monitoring projects, as detailed below. The following memo serves as a record of the work undertaken and provides recommendations for some minor work.

FWSD BREACH

- Water was flowing smoothly through the constructed breach section; the flow was mainly concentrated within the channel.
- Erosion of the soil placed above the rip rap in the five riffles has occurred; the majority of the soil placed on the riffles has been eroded. At the riffle locations water was flowing throughout the entire width of the floodplain. A small amount of water (estimated as less than 5%) was flowing through the rip rap erosion protection between the riffles.
- No movement of the rip rap was evident.
- Small slump failures were evident above the upper limit of the erosion protection; the slumping appeared to be related to the steep nature of the excavations made to install the erosion protection.
- Phase II seeding of the reservoir was occurring, including the planting of willow stakes within the riparian zone.
- The areas seeded last year appear to be growing well.
- The section of the Fresh Water channel downstream of the breach section had water flowing at high velocities; there were almost no signs of erosion.

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- Approximately 50 m downstream at the end of the breach the water spilled out from the channel banks becoming overland flow in the low ground area surrounding the channel. At FWSD-5 sampling location it was estimated that about 1/3 of the flow was outside of the main channel.
- Inspected the channel through the former reservoir base. The channel is within its old channel locations with some vegetation adjacent to the channel (vegetation from prior to the creation of the reservoir).
- Inspected condition of three main inflows into the reservoir. The recent repair at the Northeast Tributary (k8) appears to have stopped the down-cutting erosion as the creek enters the borrow pit within the former reservoir. Some re-channelization is occurring as the Northeast tributary exits the borrow pit. The other two channels appear to have found stable channels.
- The berm placed around the PAG stockpile is full of water. This pond should be removed to ensure the integrity of this berm. If the results of the testing indicates that the water meets the criteria indicated in the water licence, it should be pumped out and allowed to rejoin the water of the South Fork of Rose Creek, if not the water could be hauled for treatment.

INTERMEDIATE DAM

- Cracking is occurring on the upstream side of the crest of the dam near the spillway. This area was subject to cracking prior to the placement of fill on the crest of the dam last spring.
- Some minor sinkholes have developed in the crest of the dam through the center portion.
- One larger sinkhole, with a depth of 125 mm and a diameter of 400 mm, was encountered in the crest of the dam (near the center).
- Downstream face is subject to extensive erosional gullies. The top of the gullies are, in general, at two different levels, the majority at about the lower 1/3 point of the dam and a lesser amount at the upper 1/3 point of the dam. The gullies range in depth from about 100 mm to 600 mm deep, with the majority about 300 mm deep. The erosion resulted in fairly thick deposits of fine grained material on the lower road surface. The eroded material that has been deposited on this lower bench should be removed.
- Cracking is occurring on the downstream face of the dam, this is located at about the lower quarter of the dam. The cracking is prevalent throughout the majority of the dam's surface.
- The material at the toe of the dam is saturated.

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CROSS VALLEY DAM

- A crack extends completely across the crest of the dam, starting on the north side of the emergency spillway and extending to the south abutment. This crack is mostly located on the upstream side of the crest, however near the center of the dam it is located on the downstream side of the crest. This appears to be related to the cracking of the crest prior to the grading last year.
- The staff gauge located at the center of the drainage collection point has been removed from its stand. This staff gauge should be re-established.

ROSE CREEK DIVERSION CANAL

- The crest of the canal dike was raised at two different locations. The crest was raised temporarily (as recommended in the April 22, 2004, memo from BGC) in the areas identified by BGC in April. The surface of the newly placed fill is locally showing cracks in its surface and is locally soft. The cracking and softness is generally coincident with the thickest placement of the temporary fill.
- Approximately 50 m downstream of the start of the upper weir section cracking parallel with the edge of the canal is occurring. One crack was encountered perpendicular to the crest of the canal dike. It appears that some erosion of the soil underlying the rip rap has occurred. This section of the canal should be reviewed on a regular basis.

NORTH FORK ROCK DRAIN

- Recommendations were provided to the construction metal stands that will contain the data loggers.
- The location of the metal stand and the creek data logger was established, site staff will install the metal stand and datalogger once it is constructed.
- Installed new (temporary) data logger system within the pond on the upstream side of the rock drain. Given the current high pond levels installation of the permanent instrument location was not possible. Therefore the datalogger was installed from a barge.
- The status of the barge should be monitored, ensuring that the position of the sensors is not disturbed. Once the pond level reduces appropriately, the permanent metal stand should be installed and the datalogger moved. Prior to moving the instruments from its current location, the location should be marked so that the elevation can be established by a survey at a later date.
- The pond on the upstream side of the rock drain appeared to be within about 0.5 m of the previous maximum high water mark.

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MONITORING-RELATED

- Readings were taken throughout the site inspection at the Rose Creek staff gauge.
- The new data loggers for the pond on the upstream side of the flow through rock drain were installed.
- The data loggers for the pond and creek installations (flow through rock drain project) were initialized (set up to automatically record data).

CONSTRUCTION-RELATED AND MISCELLANEOUS

- A review of the gradation of the sand and gravel for the Canal Dike was reviewed. The rip rap gradation for the raise was also reviewed.
- As part of planning for the installation of a new trailer (with shower facility) investigations were performed for a septic field. This consisted of excavation of three test pits approximately 70 m to the south of the guard house. Within each of the test pits a percolation test was performed. The results of this testing will be provided separately from this memo.
- The locations of the test pits should be established by handheld GPS, using NAD 27 base and provided to BGC.

RECOMMENDATIONS

The recommendations resulting from this trip are summarized below:

- FWSD-5 sampling location should be moved from its current location to approximately 50 m downstream of the end of the breach (where the majority of water is contained within the main channel). The location used as FWSD-5 during the breach activities will not result in accurate measurements of either the flow or Total Suspended Solids (TSS) given that about 1/3 of the flow is outside of the main channel.
- The water which has collected behind the berm around the PAG stockpile area should be removed.
- The eroded material that has deposited on the lower road of the Intermediate Dam should be removed. This fine grained material is likely blocking the downstream drain. The outlet end of the downstream drain should be exposed.
- The section of the canal dike about 50 m downstream from the start of the upper weir section should be reviewed on a regular basis and changes reported to BGC.
- The status of the barge mounted data logger should be monitored. The ropes should be adjusted as necessary to maintain the barge position. Once the water level is reduced, a location for the permanent data logger should be established and installed. The temporary location of the probes should be marked prior to moving, so that the elevation can be established in a later survey. The probe elevation for the permanent installation should also be established, once installed.

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- The locations of each of the test pits should be established by handheld GPS, using NAD 27 base, and provided to BGC.

CLOSURE

In summary, the facilities inspected appear in satisfactory condition. All recommendations provided herein are of a minor nature. Please contact the undersigned should you have any questions.

Respectfully submitted
BGC Engineering Inc.
per:

Gerry Ferris, P.Eng.
Geotechnical Engineer

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BGC ENGINEERING INC.

AN APPLIED EARTH SCIENCES COMPANY

1605, 840 - 7 Avenue S.W. , Calgary, Alberta, Canada. T2P 3G2
Phone (403) 250-5185 Fax (403) 250-5330

PROJECT MEMORANDUM

To:	**Anvil Range Mining Corp.**	**Fax No.:**	**(867) 994-3349**
Attention:	**Dana Haggar**	**CC:**	**Doug Sedgwick**
			(416) 601-5902
From:	**Jim Cassie / Mike McCrank**	**Date:**	**July 20, 2004**
Subject:	**Summary of Inspection Visit by BGC**		
	Various Facilities at Faro Mine,YT		
No. of Pages (including this page): 3 Pages		**Project No:**	**0257-022-03**

Jim Cassie, P.Eng. and Mike McCrank, E.I.T., of BGC Engineering Inc. (BGC) visited the Faro Mine from Monday July 12 until Wednesday afternoon on July 14, 2004. They undertook a survey of selected Down Valley instrumentation, inspected various structures and provided input to various construction projects as detailed below. The following memo serves as a record of the work undertaken and provides recommendations for some minor work.

FWS Dam

- New dam notch and associated creek channel appears in good condition.
- A significant slough continues to develop in the south valley wall, just upstream from the south abutment of the breached dam. The slough appears to be driven by seepage at the valley wall. The slough will continue to grow in size as additional seepage occurs. Visual monitoring should be undertaken to ensure that seepage water does not carry any sediment into the nearby creek.
- The slough area should be backfilled with coarse drain rock to both support the eroding area and permit the drainage of the seepage water. If erosion conditions do not become worse, it is likely that the backfilling and grading of this slough area could proceed in the winter. If conditions deteriorate further, then the rehabilitation work may have to occur before then.

K8 Creek Rehab.

- The rip rap and the creek flow appear in good condition.

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Intermediate Dam

- Crest cracking has occurred in the new fill placed last year, likely in response to frost effects and the low pond level. Continue to monitor these cracks until the September site visit.
- Numerous erosional gullies have formed in the new fill on the downstream slope. Monitor their size and extent until the September site visit.
- All excess slough and debris accumulated at the toe of the downstream face should be excavated/graded off so that the drain in the dam can work properly.
- No seepage was noted at the south abutment toe.

Cross Valley Dam

- Crest cracking has occurred in the new fill placed last year, likely in response to frost effects and the low pond level. Continue to monitor these cracks until the September site visit.
- Repair one staff gauge in the middle weir pond at the toe.

Rose Creek Diversion Canal

- Small sloughs (with small headscarps) are forming at two locations on the backslope; two sloughs are located ~30 east of CD-19 and one directly south of the first weir.
- Some longitudinal cracks are occurring on the uphill side of the canal dike crest, at the fourth to sixth weirs in the Weir Section. These cracks are likely due to the slightly over-steepened nature of the rip rap on the inside face of the channel.
- Continue to monitor both situations until the September visit.

Faro Creek Diversion Channel

- Channel appears in good condition.

Monitoring-Related

- An elevation and condition survey of all instrumentation located on the Intermediate and the Cross Valley Dams was undertaken.
- A condition survey of all instrumentation on the RCDC dike crest was undertaken.
- Piezometers readings on the crest of the Second Tailings Embankment were taken.
- The two dataloggers from the head-pond and the creek below the North Fork Rock Drain were removed and the data downloaded. Unfortunately, the datalogger from the creek appears to have been shocked and no data was available for download. Both dataloggers were checked and then replaced in their respective locations.

Construction-Related and Miscellaneous

- Jim and Dana reviewed proposed lowering of the Intermediate Dam spillway. Final design (drawings, material specifications and quantities) still needs to be prepared before any construction work can proceed.

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- Jim and Dana reviewed installation details for the larger culverts at the Outflow Section of the North Valley Wall Interceptor Ditch (NVWID). The ditch will have to lowered slightly in the upstream direction in order to install the culverts. Some additional road fill will also be required over top of the culverts. Reviewed the potential to remove some fill from the terrace just north of the Outfall Channel and hence increase the contingency amount for discharge with this channel.
- Collected samples of "screened" sand and gravel that Dana proposes to use for the raising of the RCDC crest. BGC will submit samples for testing.
- Jim and Dana attempted to excavate test pit in the fill ("parking lot") just north of the Guard House for potential septic field. Encountered large angular mine rock fragments and hence, terminated the test-pit program and associated percolation testing.
- Training seminars with respect to the OMS Manual and the Emergency Preparedness Plan (EPP) were given to selected site staff on Monday and Tuesday evenings.

Closure

In summary, the facilities inspected appear in satisfactory condition. All recommendations provided herein are of a minor nature, but monitoring should be undertaken. If the noted conditions worsen in the near future, BGC should be consulted. Please contact the undersigned should you have any questions.

Respectfully submitted
BGC Engineering Inc.
per:

James W. Cassie, M.Sc., P.Eng.
Specialist Geotechnical Engineer

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BGC ENGINEERING INC.

AN APPLIED EARTH SCIENCES COMPANY

1605, 840 - 7 Avenue S.W. , Calgary, Alberta, Canada. T2P 3G2
Phone (403) 250-5185 Fax (403) 250-5330

PROJECT MEMORANDUM

To:	**Anvil Range Mining Corp.**	**Fax No.:**	**(867) 994-3349**
Attention:	**Dana Haggar**	**CC:**	**Doug Sedgwick**
			(416) 601-5902
From:	**Jim Cassie**	**Date:**	**Sept. 30, 2004**
Subject:	**Summary of September Inspection Visit**		
	Various Facilities at Faro Mine,YT		
No. of Pages (including this page): 3 Pages		**Project No:**	**0257-022-04**

Jim Cassie, P.Eng., of BGC Engineering Inc. (BGC), visited the Faro Mine from Sept. 28 to 30, 2004. The following memo serves as a record of the conditions observed and provides recommendations, if so required.

FWS Dam

- The slough continues on the south valley wall, just upstream from the south abutment of the breached dam. The extent of the slough should be monitored and rehabilitation work may be required next year.

K8 Creek Rehab.

- The rip rap and the creek flow appear in good condition.

Intermediate Dam

- Numerous erosional gullies previously formed on the downstream slope shouldbe monitored next spring following runoff and thaw.
- All excess slough and debris accumulated at the toe of the downstream face should be excavated/graded off so that the drain in the dam can work properly.
- No seepage was noted at the south abutment toe.

Cross Valley Dam

- No concerns noted.

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Rose Creek Diversion Canal and Weir Sections.

- No signs of significant sloughs noted on the face of the backslope.
- Some longitudinal cracks are occurring on the uphill side of the canal dike crest, just east of CD-10 and at the fourth to sixth weirs in the Weir Section. These cracks are likely due to the slightly over-steepened nature of the rip rap on the inside face of the channel. Continue to monitor these cracks next spring.
- No other concerns were noted.

North Valley Wall Interceptor Ditch (NVWID).

- Selected sections were inspected, including the Outfall Section at the access road, and no concerns were noted.

Faro Creek Diversion Channel

- Channel appears in good condition. Check for any additional ravelling next spring after runoff.

North Fork Rose Creek Rock Drain

- Drain appears in good condition.

Selected Waste Dumps (overlooking NFRC)

- No signs of major instability noted from a traverse along the toe area. Some minor sloughing of till materials on the NE Dump is continuing but debris only reaches the dump toe.

Monitoring-Related

- The two dataloggers from the head-pond and the creek below the North Fork Rock Drain were removed and the data downloaded.
- Discussion held with Ronnie with respect to installation of datalogger / new pressure cable / protection pipe in the headpond of the NFRD.

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Closure

It should be noted that some snow fell on the first day of the inspection, hence partially obscuring the surface conditions. All recommendations provided herein are of a minor nature, but monitoring should be undertaken. If the noted conditions worsen in the future, BGC should be consulted. Please contact the undersigned should you have any questions.

Respectfully submitted
BGC Engineering Inc.
per:

James W. Cassie, M.Sc., P.Eng.
Specialist Geotechnical Engineer

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APPENDIX II

INSTRUMENTATION DATA RECORDS AND GRAPHS

DIVERSION CANAL

CANAL DIKE

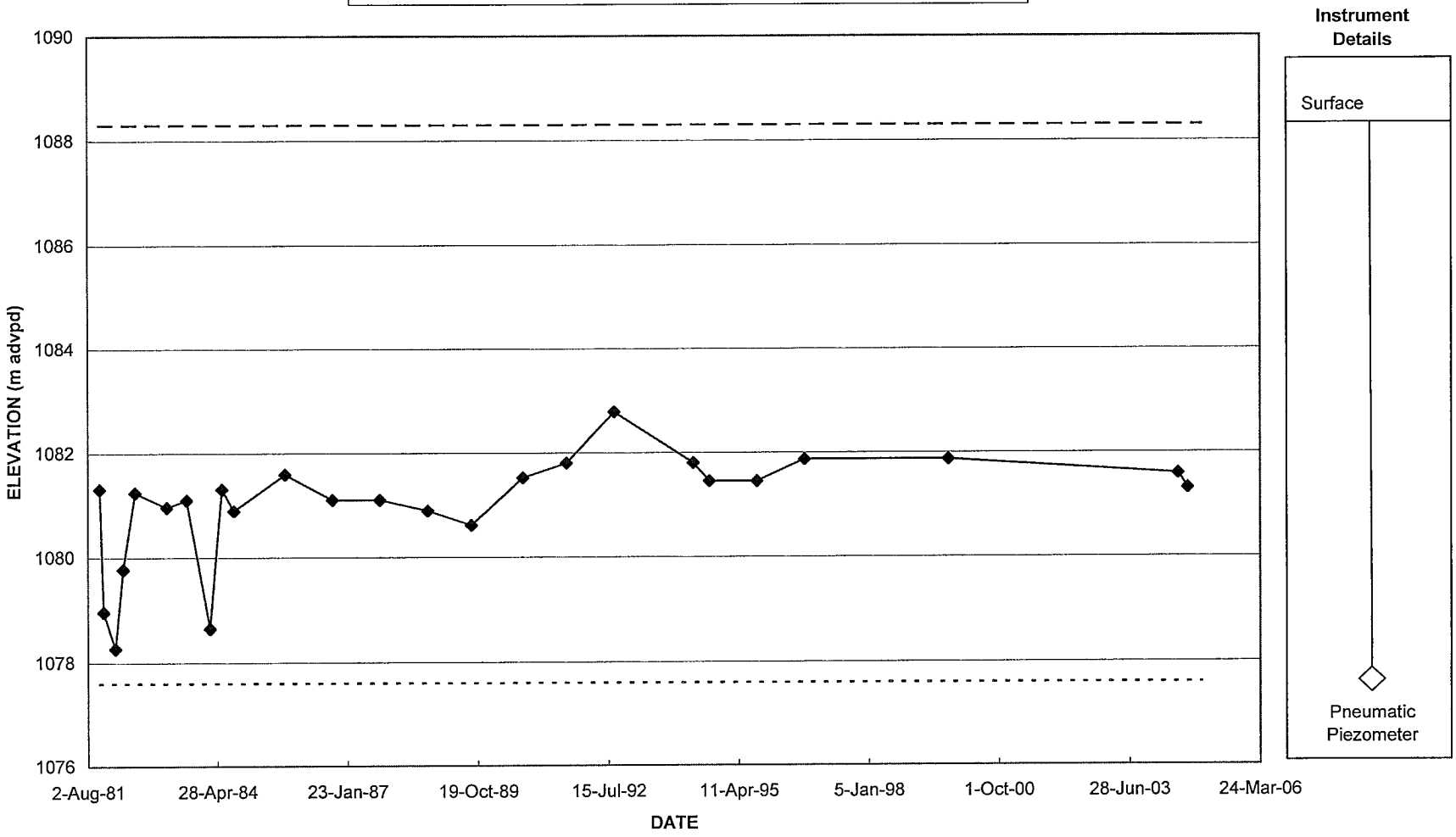
PIEZOMETERS

Faro Mine Instrumentation
Canal Dyke

CD-10			Location:	Canal Dyke St.0+990	Coordinates:	1008.7N, 1519.7E
			Ground Elevation (m advpd):	1088.30		8V581739 6913053
			Tip Elevation (m advpd):	1077.60	Surface Protector:	Yes
			Date Installed:	1981		

Date		Reading (psi)		Piezometric Elevation (m advpd)		Comments
1-Nov-81		5.3		1081.31		
1-Dec-81		1.95		1078.97		
1-Mar-82		0.95		1078.27		
1-May-82		3.1		1079.77		
1-Aug-82		5.2		1081.24		
1-Apr-83		4.8		1080.96		
1-Sep-83		5		1081.10		
1-Mar-84		1.5		1078.65		
1-Jun-84		5.3		1081.31		
1-Sep-84		4.7		1080.89		
1-Oct-85		5.7		1081.59		
1-Oct-86		5		1081.10		
1-Oct-87		5		1081.10		
1-Jul-88						
1-Oct-88		4.7		1080.89		
1-Mar-89						
1-Jun-89						
1-Aug-89						
1-Sep-89		4.3		1080.61		
1-Jan-90						
1-Feb-90						
1-Mar-90						
1-Apr-90						
1-May-90						
1-Jun-90						
1-Jul-90						
1-Aug-90						
1-Oct-90		5.6		1081.52		
1-Feb-91						
1-Mar-91						
1-Apr-91						
1-May-91						
1-Jun-91						
1-Jul-91						
1-Sep-91		6		1081.80		
1-Apr-92						
1-Jun-92						
1-Sep-92		7.4		1082.78		
1-May-94		6		1081.80		
1-Sep-94		5.5		1081.45		
1-Sep-95		5.5		1081.45		
1-Sep-96		6.1		1081.87		
11-Sep-99		6.1		1081.87		
6-Jul-04		5.7		1081.59		
16-Sep-04		5.3		1081.31		

DIVERSIONAL CANAL DIKE
Piezometric Monitoring
CD-10 Pneumatic Piezometer

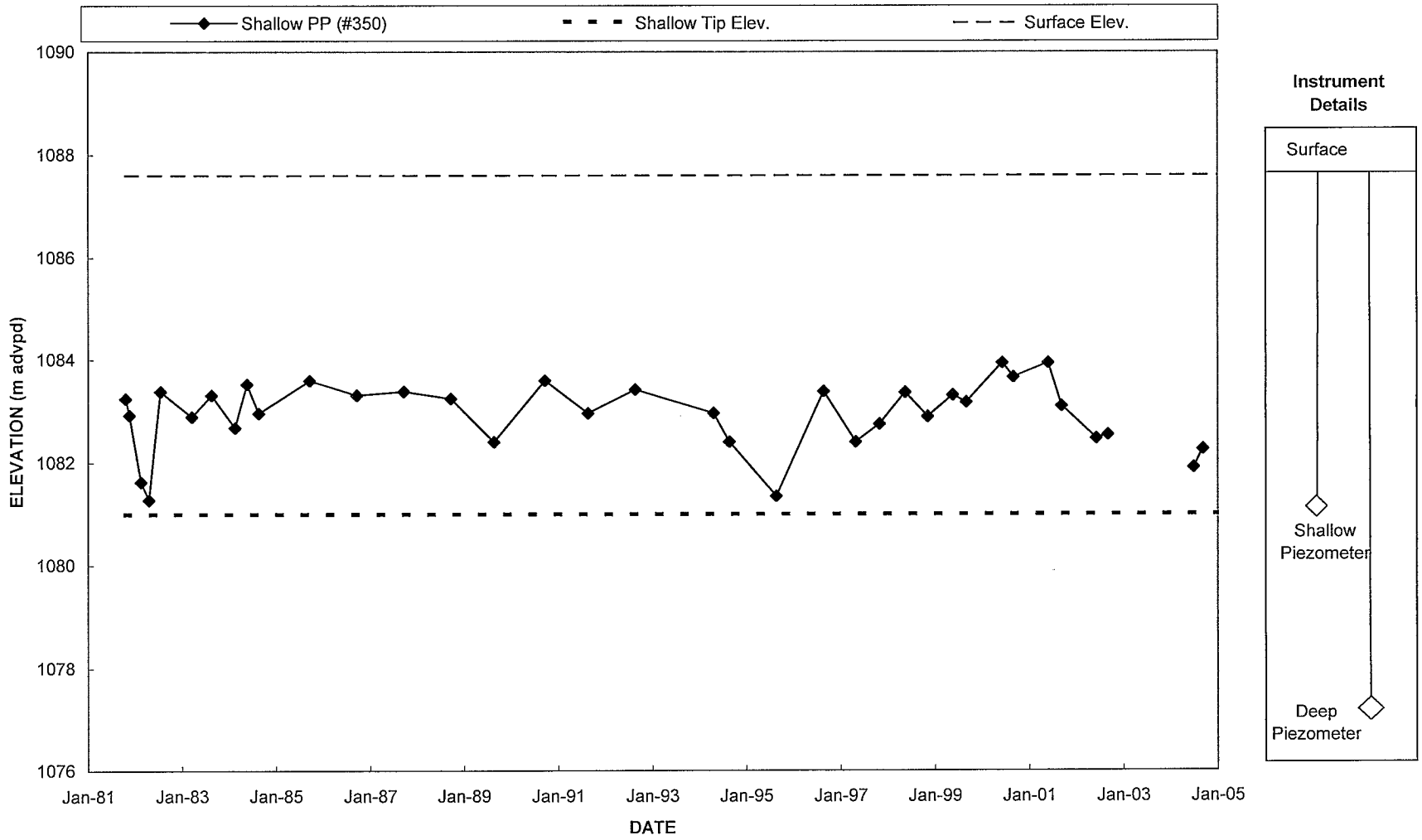


Faro Mine Instrumentation - Diversion Canal Dike

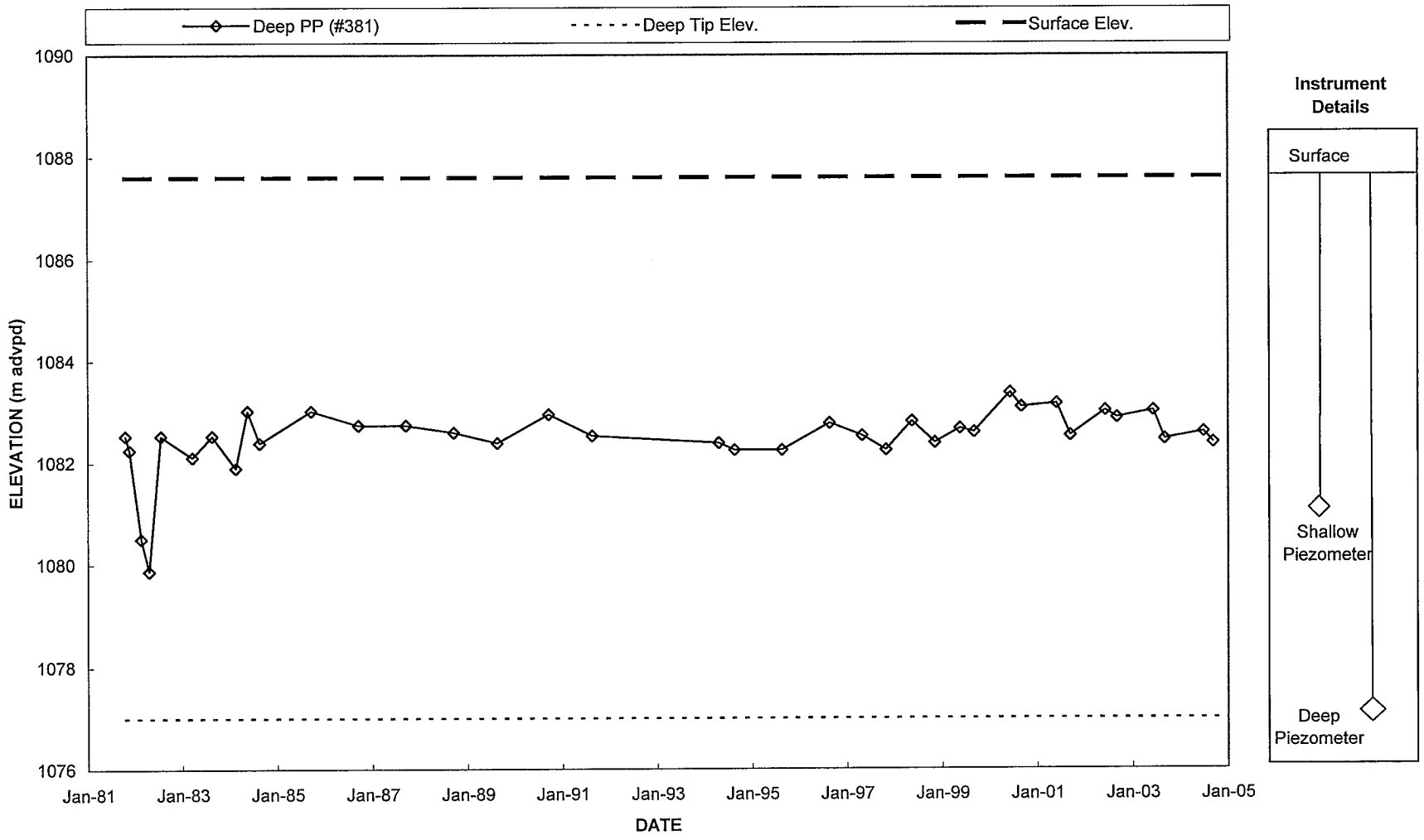
CD-13			Location:	Canal Dyke St.1+350		
			Ground Elevation (m advpd):	1087.60		
			Shallow Tip Elevation (m advpd):	1081.00	Coordinates:	8V581400 6913185
	Date Installed:	1981	Deep Tip Elevation (m advpd):	1077.00	Surface Protector:	yes

Date	Reading (psi) Shallow PP (#350)	Reading (psi) Deep PP (#381)		Piezometric Elevation (m advpd) Shallow (#350)	Piezometric Elevation (m advpd) Deep (#381)	Comments
01-Nov-81	3.2	7.9		1083.24	1082.53	
01-Dec-81	2.75	7.5		1082.93	1082.25	
01-Mar-82	0.9	5		1081.63	1080.50	
01-May-82	0.4	4.1		1081.28	1079.87	
01-Aug-82	3.4	7.9		1083.38	1082.53	
01-Apr-83	2.7	7.3		1082.89	1082.11	
01-Sep-83	3.3	7.9		1083.31	1082.53	
01-Mar-84	2.4	7		1082.68	1081.90	
01-Jun-84	3.6	8.6		1083.52	1083.02	
01-Sep-84	2.8	7.7		1082.96	1082.39	
01-Oct-85	3.7	8.6		1083.59	1083.02	
01-Oct-86	3.3	8.2		1083.31	1082.74	
01-Oct-87	3.4	8.2		1083.38	1082.74	
01-Oct-88	3.2	8		1083.24	1082.60	
01-Sep-89	2	7.7		1082.40	1082.39	
01-Oct-90	3.7	8.5		1083.59	1082.95	
01-Sep-91	2.8	7.9		1082.96	1082.53	
01-Sep-92	3.45			1083.42		
01-May-94	2.8	7.7		1082.96	1082.39	
01-Sep-94	2	7.5		1082.40	1082.25	
01-Sep-95	0.5	7.5		1081.35	1082.25	
01-Sep-96	3.4	8.25		1083.38	1082.78	
08-May-97	2.0	7.9		1082.40	1082.53	
07-Nov-97	2.5	7.5		1082.75	1082.25	
26-May-98	3.37	8.30		1083.36	1082.81	
15-Nov-98	2.70	7.70		1082.89	1082.39	
28-May-99	3.30	8.10		1083.31	1082.67	
11-Sep-99	3.10	8.00		1083.17	1082.60	
14-Jun-00	4.20	9.10		1083.94	1083.37	
09-Sep-00	3.80	8.70		1083.66	1083.09	
06-Jun-01	4.20	8.80		1083.94	1083.16	
19-Sep-01	3.00	7.90		1083.10	1082.53	
13-Jun-02	2.1	8.6		1082.47	1083.02	
12-Sep-02	2.2	8.4		1082.54	1082.88	
17-Jun-03	0.1	8.6		1081.07	1083.02	(#350 very wet)
12-Sep-03	0.1	7.8		1081.07	1082.46	(#350 very wet)
06-Jul-04	1.3	8		1081.91	1082.6	(#350 kept rising)
16-Sep-04	1.8	7.7		1082.26	1082.39	(#350 kept rising)

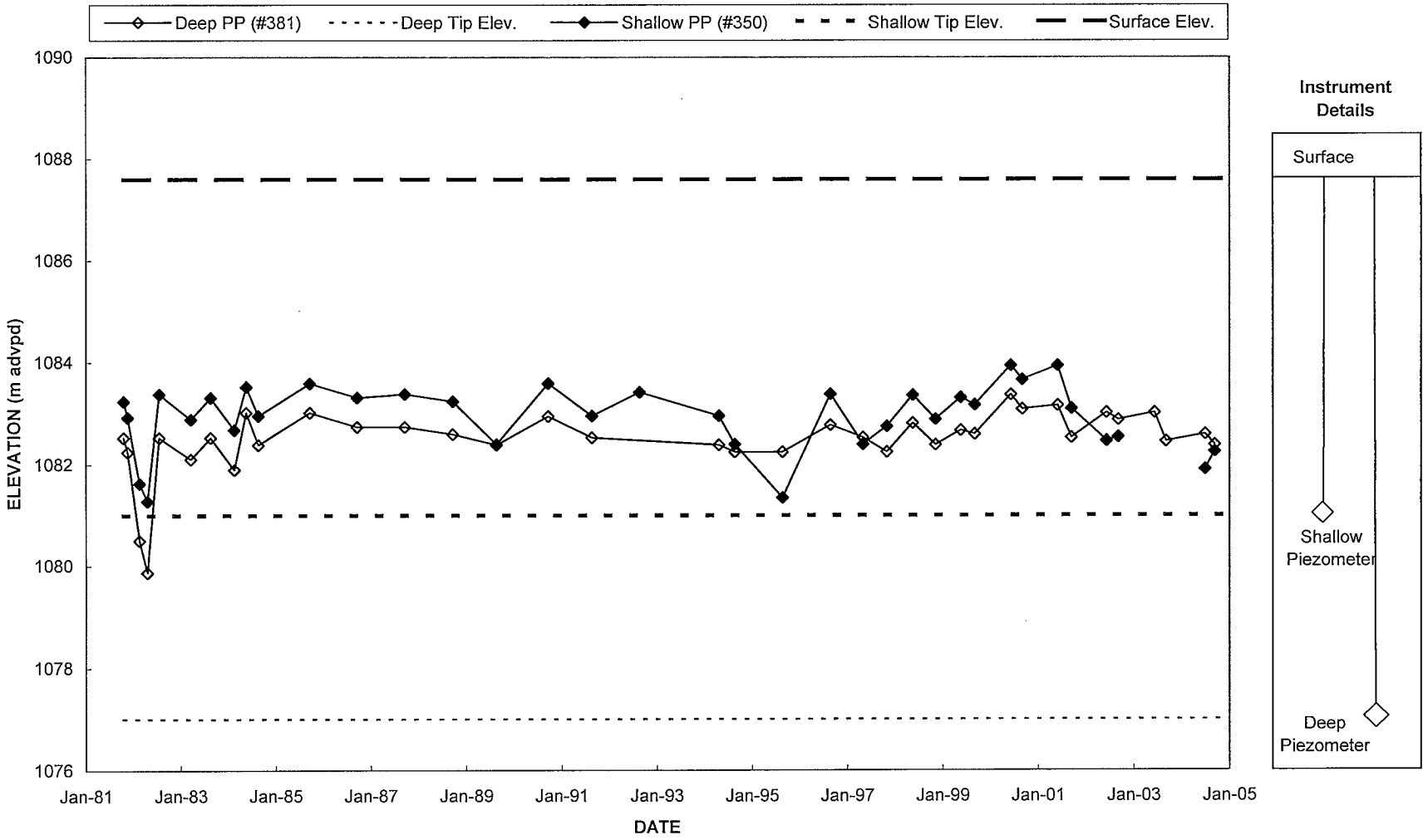
DIVERSION CANAL DIKE
Piezometric Monitoring
CD-13 Pneumatic Piezometer (Shallow Tip)



DIVERSION CANAL DIKE
Piezometric Monitoring
CD-13 Pneumatic Piezometer (Deep Tip)



DIVERSION CANAL DIKE
Piezometric Monitoring
CD-13 Pneumatic Piezometer (Both Tips)

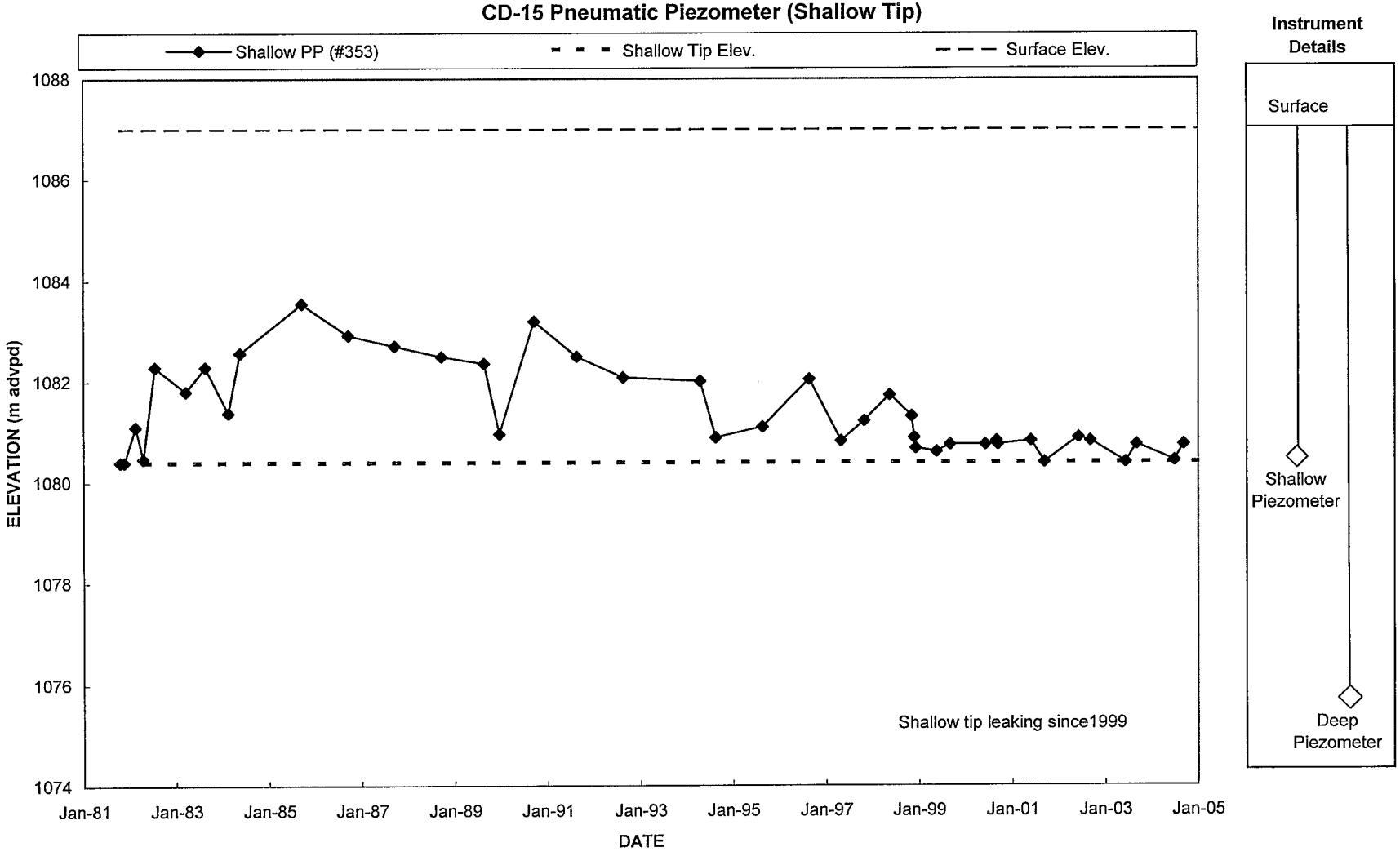


Faro Mine Instrumentation - Diversion Canal Dike

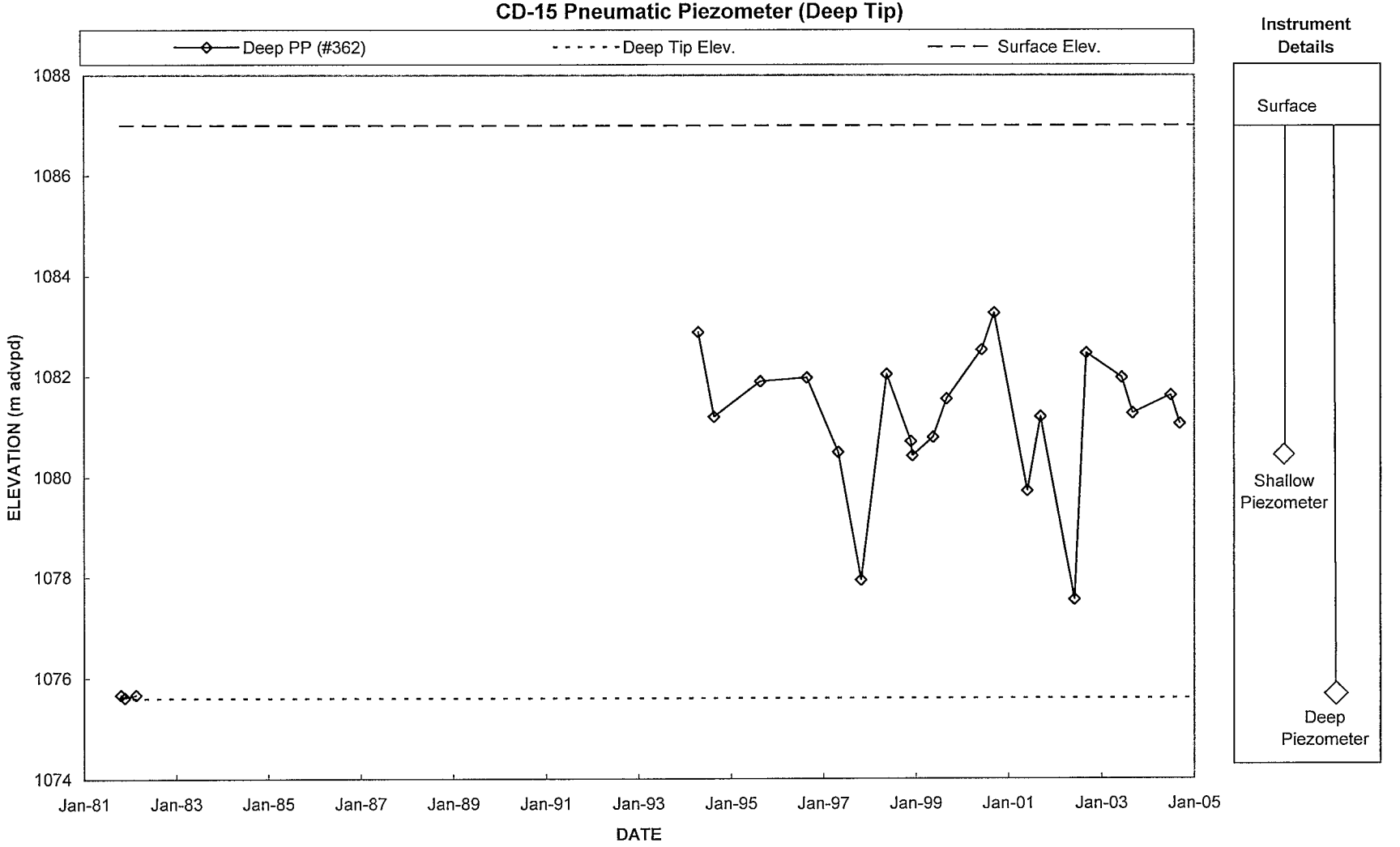
CD-15		Location:	Canal Dyke St.1+530			1233.7N, 1028.7E
			Ground Elevation (m advpd):	1087.00	Coordinates:	8V581245 6913275
			Shallow Tip Elevation (m advpd):	1080.40	Surface Protector:	yes
	Date Installed:	1981	Deep Tip Elevation (m advpd):	1075.60		

	Reading			Piezometric Elevation		
	Shallow PP	Deep PP		Shallow	Deep	
Date	(#353)	(#362)		(#353)	(#362)	Comments
01-Nov-81	0	0.1		1080.40	1075.67	
01-Dec-81	0	0.02		1080.40	1075.614	
01-Mar-82	1	0.1		1081.10	1075.67	
01-May-82	0.1			1080.47		
01-Aug-82	2.7			1082.29		
01-Apr-83	2			1081.80		
01-Sep-83	2.7			1082.29		
01-Mar-84	1.4			1081.38		
01-Jun-84	3.1			1082.57		
01-Oct-85	4.5			1083.55		
01-Oct-86	3.6			1082.92		
01-Oct-87	3.3			1082.71		
01-Oct-88	3			1082.50		
01-Sep-89	2.8			1082.36		
01-Jan-90	0.8			1080.96		
01-Oct-90	4			1083.20		
01-Sep-91	3			1082.50		
01-Sep-92	2.4			1082.08		
01-May-94	2.3	10.4		1082.01	1082.88	
01-Sep-94	0.7	8		1080.89	1081.2	
01-Sep-95	1	9		1081.10	1081.9	
01-Sep-96	2.35	9.1		1082.05	1081.97	
08-May-97	0.6	7.0		1080.82	1080.5	
06-Nov-97	1.17	3.35		1081.22	1077.945	
26-May-98	1.90	9.20		1081.73	1082.04	
15-Nov-98	1.3			1081.31		No return in deep piezo
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			1080.82		No return in deep piezo
19-Sep-00	0.50	10.95		1080.75	1083.265	
06-Jun-01	0.60	5.9		1080.82	1079.73	
19-Sep-01	0.00	8.0		1080.40	1081.2	Shallow tip is "dry"
13-Jun-02	0.7	2.8		1080.89	1077.56	
12-Sep-02	0.6	9.8		1080.82	1082.46	
17-Jun-03	0	9.1		1080.4	1081.97	*readings recorded with
12-Sep-03	0.5	8.1		1080.75	1081.27	new piezometer
06-Jul-04	0.04	8.6		1080.43	1081.62	
16-Sep-04	0.5	7.8		1080.75	1081.06	

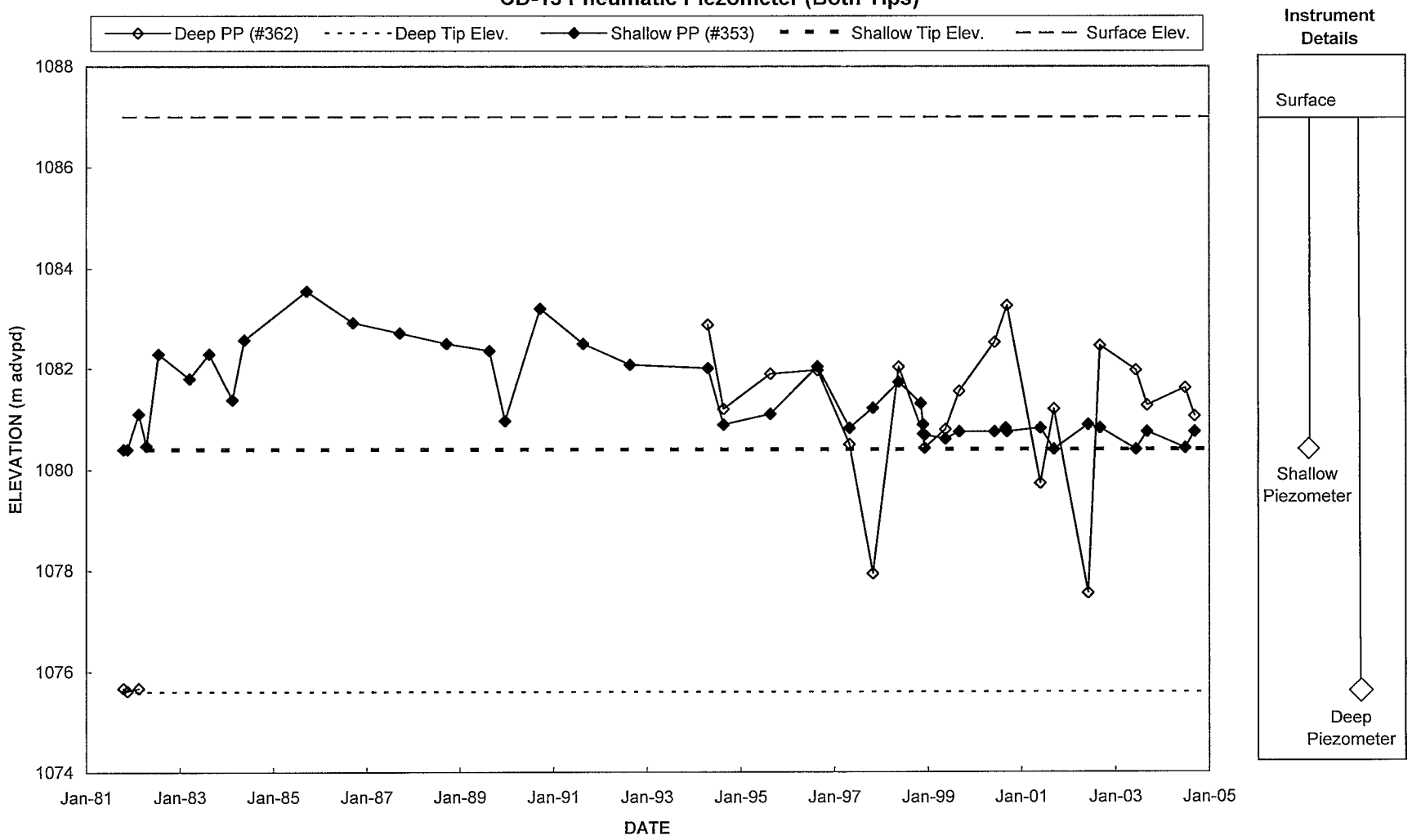
DIVERSION CANAL DIKE
Piezometric Monitoring
CD-15 Pneumatic Piezometer (Shallow Tip)



DIVERSION CANAL DIKE
Piezometric Monitoring
CD-15 Pneumatic Piezometer (Deep Tip)



DIVERSION CANAL DIKE
Piezometric Monitoring
CD-15 Pneumatic Piezometer (Both Tips)

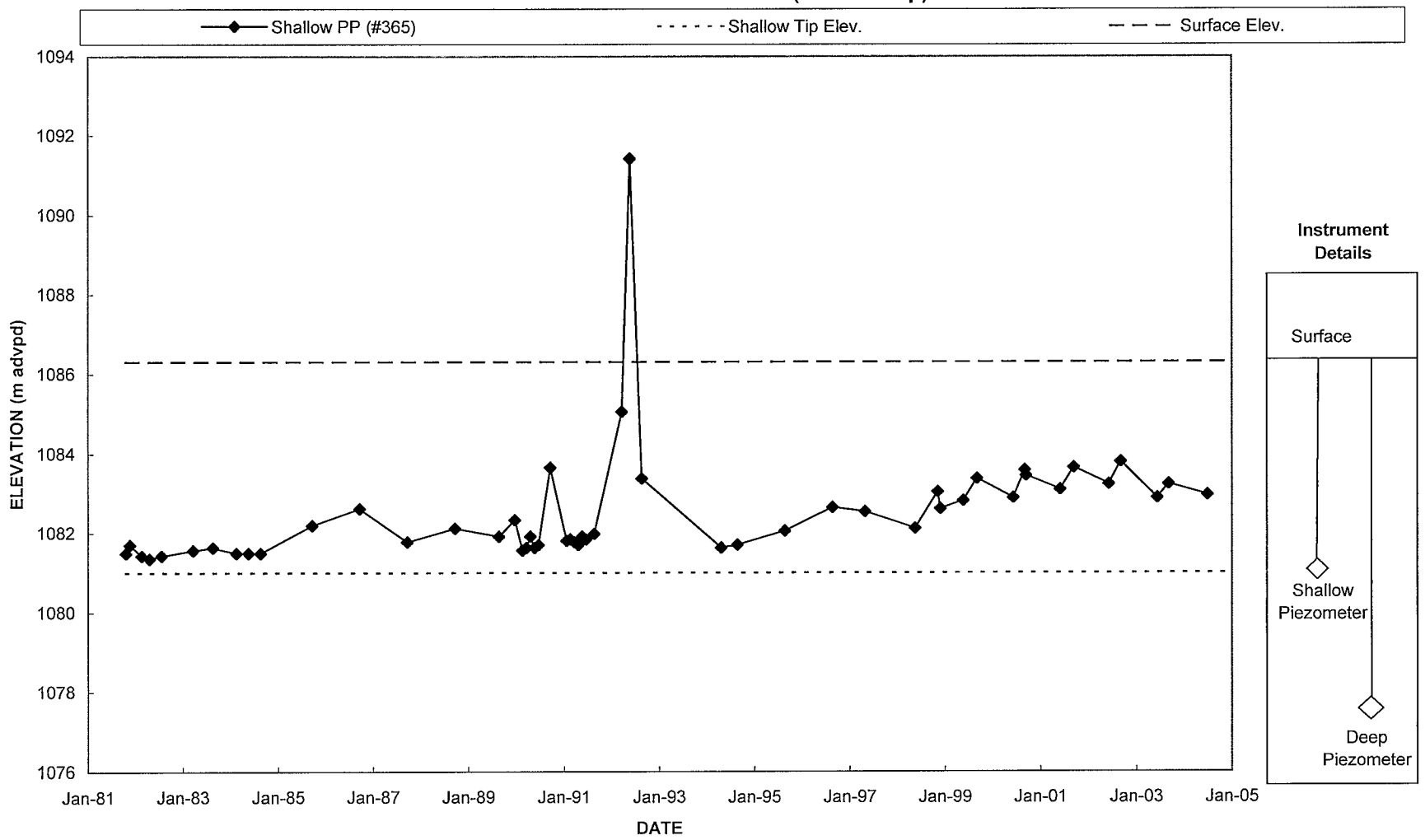


Faro Mine Instrumentation - Diversion Canal Dike

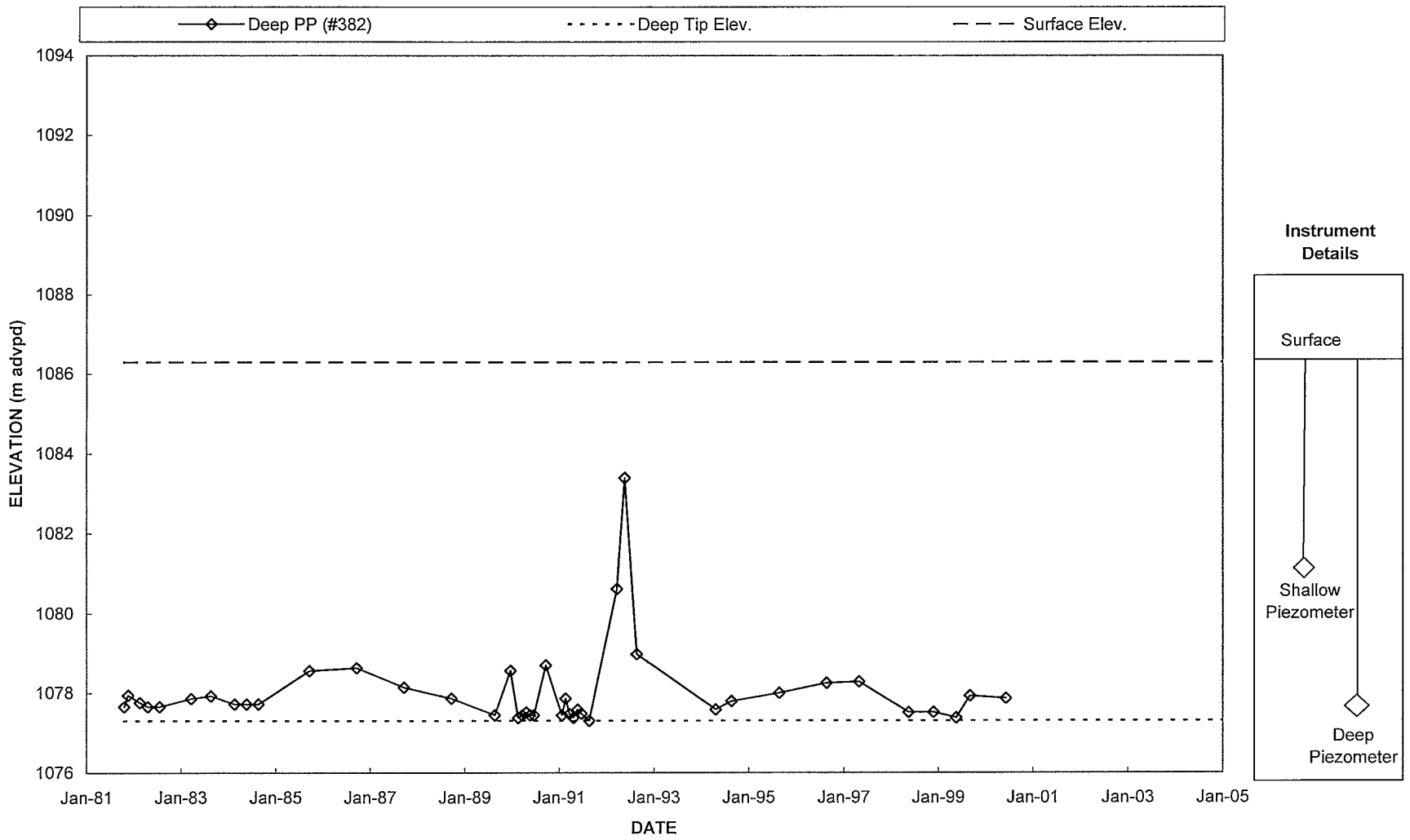
CD-19		Location:	Canal Dyke St.1+900			
			Ground Elevation (m advpd):	1086.30	Coordinates:	1357.8N, 687.9E
			Shallow Tip Elevation (m advpd):	1081.00	Surface Protector:	yes
	Date Installed:	1981	Deep Tip Elevation (m advpd):	1077.30		

	Reading (psi)			Piezometric Elevation (m advpd)		
Date	Shallow PP (#365)	Deep PP (#382)		Shallow (#365)	Deep (#382)	Comments
01-Nov-81	0.7	0.5		1081.49	1077.65	
01-Dec-81	1	0.92		1081.70	1077.944	
01-Mar-82	0.6	0.65		1081.42	1077.755	
01-May-82	0.5	0.5		1081.35	1077.65	
01-Aug-82	0.6	0.5		1081.42	1077.65	
01-Apr-83	0.8	0.8		1081.56	1077.86	
01-Sep-83	0.9	0.9		1081.63	1077.93	
01-Mar-84	0.7	0.6		1081.49	1077.72	
01-Jun-84	0.7	0.6		1081.49	1077.72	
01-Sep-84	0.7	0.6		1081.49	1077.72	
01-Oct-85	1.7	1.8		1082.19	1078.56	
01-Oct-86	2.3	1.9		1082.61	1078.63	
01-Oct-87	1.1	1.2		1081.77	1078.14	
01-Oct-88	1.6	0.8		1082.12	1077.86	
01-Sep-89	1.3	0.2		1081.91	1077.44	
01-Jan-90	1.9	1.8		1082.33	1078.56	
01-Mar-90	0.8	0.1		1081.56	1077.37	
01-Apr-90	0.9	0.2		1081.63	1077.44	
01-May-90	1.3	0.3		1081.91	1077.51	
01-Jun-90	0.9	0.2		1081.63	1077.44	
01-Jul-90	1	0.2		1081.70	1077.44	
01-Oct-90	3.8	2		1083.66	1078.7	
01-Feb-91	1.15	0.2		1081.81	1077.44	
01-Mar-91	1.2	0.8		1081.84	1077.86	
01-Apr-91	1.1	0.24		1081.77	1077.468	
01-May-91	1	0.1		1081.70	1077.37	
01-Jun-91	1.3	0.4		1081.91	1077.58	
01-Jul-91	1.2	0.25		1081.84	1077.475	
01-Sep-91	1.4	0		1081.98	1077.3	
01-Apr-92	5.8	4.75		1085.06	1080.625	
01-Jun-92	14.9	8.7		1091.43	1083.39	
01-Sep-92	3.4	2.4		1083.38	1078.98	
01-May-94	0.9	0.4		1081.63	1077.58	
01-Sep-94	1	0.7		1081.70	1077.79	
01-Sep-95	1.5	1		1082.05	1078	
01-Sep-96	2.35	1.35		1082.65	1078.245	
08-May-97	2.2	1.4		1082.54	1078.28	
07-Nov-97	could not locate					
26-May-98	1.60	0.30		1082.12	1077.51	
15-Nov-98	2.92	n.r.		1083.04		(no bubbles returned; hissing sound)
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		1083.59		(no bubbles #382)
19-Sep-00	3.50	0.70		1083.45		(no bubbles #382)
06-Jun-01	3.00	0.60		1083.10		(no bubbles #382)
19-Sep-01	3.80	0.09		1083.66		(no bubbles #382)
13-Jun-02	3.20	0.8		1083.24		(no bubbles #382)
12-Sep-02	4.00	0.7		1083.8		(no bubbles #382)
17-Jun-03	2.70	0.5		1082.89		*readings recorded with new piezometer
12-Sep-03	3.20	0.6		1083.24		(no bubbles #382)
06-Jul-04	2.8	0.5		1082.96		#382 rose to 2.2psi, then no bubbles
16-Sep-04						both piezos DESTROYED

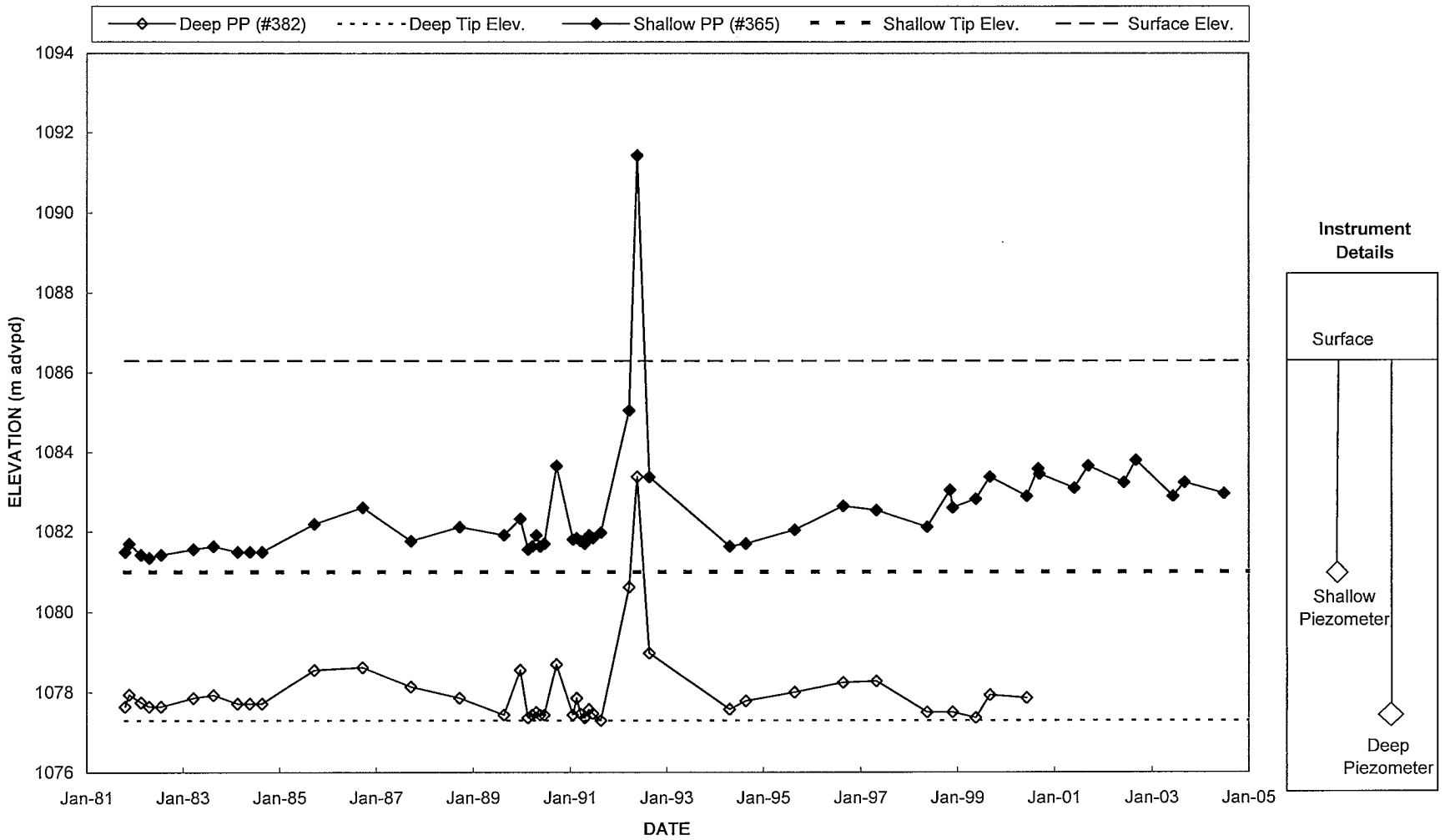
DIVERSION CANAL DIKE
Piezometric Monitoring
CD-19 Pneumatic Piezometer (Shallow Tip)



DIVERSION CANAL DIKE
Piezometric Monitoring
CD-19 Pneumatic Piezometer (Deep Tip)



DIVERSION CANAL DIKE
Piezometric Monitoring
CD-19 Pneumatic Piezometer (Both Tips)

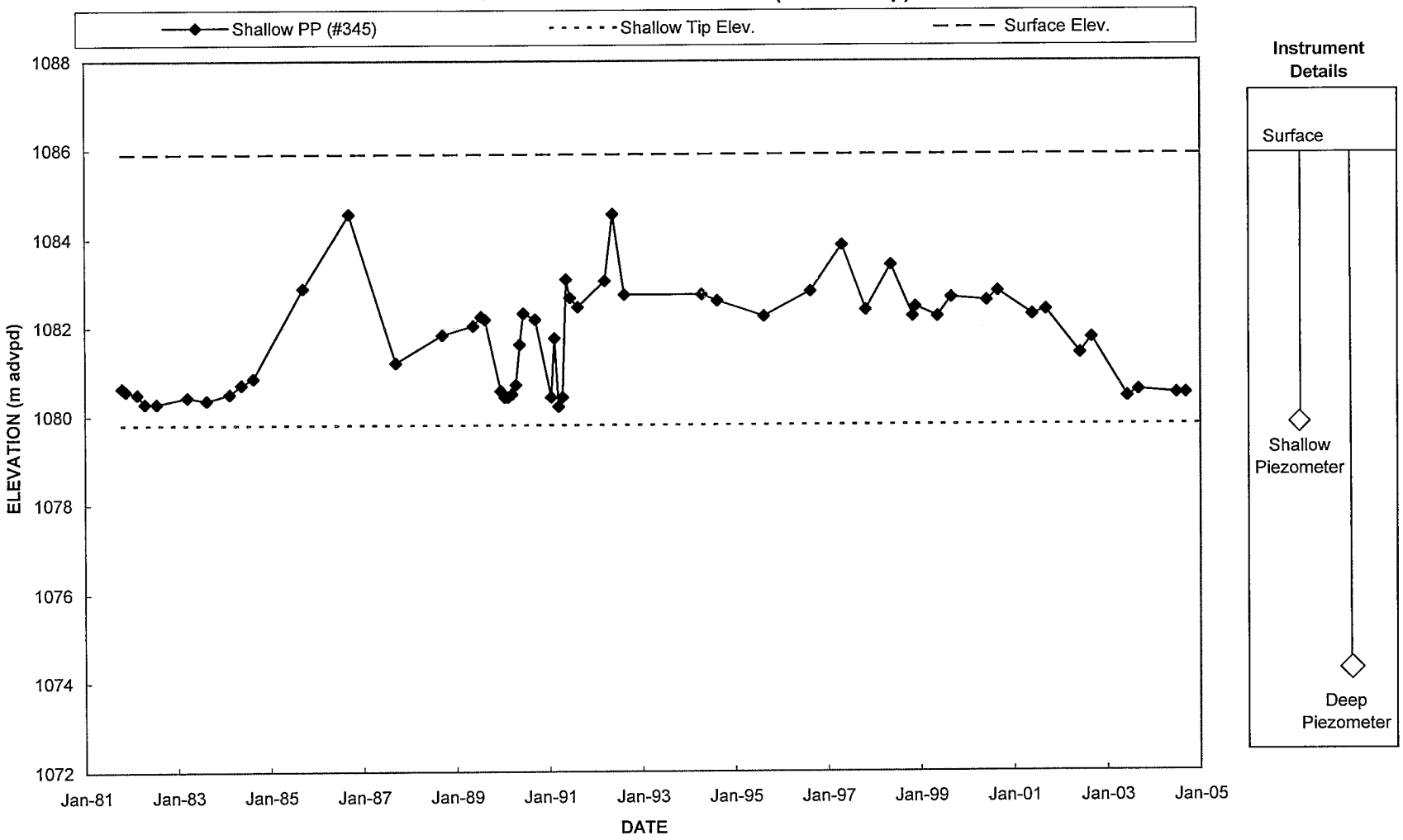


Faro Mine Instrumentation - Diversion Canal Dike

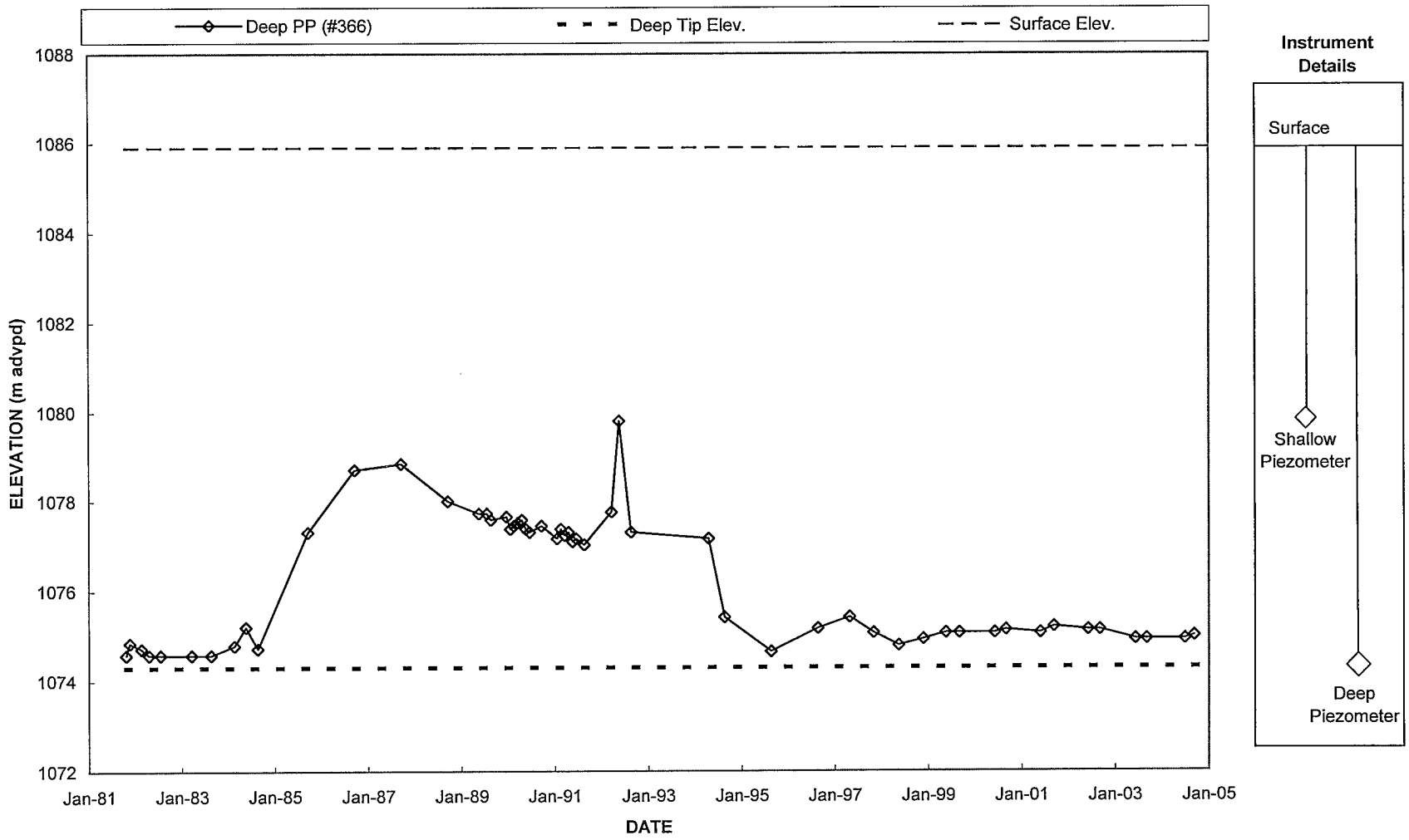
CD-21		Location:	Canal Dyke St.2+100		Coordinates:	1455.9N, 509.5E
			Ground Elevation (m advpd):	1085.90		8V580724 6913495
			Shallow Tip Elevation (m advpd):	1079.80	Surface Protector:	yes
	Date Installed:	1981	Deep Tip Elevation (m advpd):	1074.30		

Date	Reading (psi) Shallow PP (#345)	Reading (psi) Deep PP (#366)		Piezometric Elevation (m advpd) Shallow (#345)	Piezometric Elevation (m advpd) Deep (#366)	Comments
01-Nov-81	1.2	0.4		1080.64	1074.58	
01-Dec-81	1.1	0.78		1080.57	1074.85	
01-Mar-82	1	0.6		1080.50	1074.72	
01-May-82	0.7	0.4		1080.29	1074.58	
01-Aug-82	0.7	0.4		1080.29	1074.58	
01-Apr-83	0.9	0.4		1080.43	1074.58	
01-Sep-83	0.8	0.4		1080.36	1074.58	
01-Mar-84	1	0.7		1080.50	1074.79	
01-Jun-84	1.3	1.3		1080.71	1075.21	
01-Sep-84	1.5	0.6		1080.85	1074.72	
01-Oct-85	4.4	4.3		1082.88	1077.31	
01-Oct-86	6.8	6.3		1084.56	1078.71	
01-Oct-87	2	6.5		1081.20	1078.85	
01-Oct-88	2.9	5.3		1081.83	1078.01	
01-Jun-89	3.2	4.9		1082.04	1077.73	
01-Aug-89	3.5	4.9		1082.25	1077.73	
01-Sep-89	3.4	4.7		1082.18	1077.59	
01-Jan-90	1.1	4.8		1080.57	1077.66	
01-Feb-90	0.9	4.4		1080.43	1077.38	
01-Mar-90	0.9	4.5		1080.43	1077.45	
01-Apr-90	1	4.6		1080.50	1077.52	
01-May-90	1.3	4.7		1080.71	1077.59	
01-Jun-90	2.6	4.4		1081.62	1077.38	
01-Jul-90	3.6	4.3		1082.32	1077.31	
01-Oct-90	3.4	4.5		1082.18	1077.45	
01-Feb-91	0.9	4.1		1080.43	1077.17	
01-Mar-91	2.8	4.4		1081.76	1077.38	
01-Apr-91	0.6	4.2		1080.22	1077.24	
01-May-91	0.9	4.3		1080.43	1077.31	
01-Jun-91	4.7	4		1083.09	1077.1	
01-Jul-91	4.1	4.1		1082.67	1077.17	
01-Sep-91	3.8	3.9		1082.46	1077.03	
01-Apr-92	4.65	4.95		1083.06	1077.765	
01-Jun-92	6.8	7.87		1084.56	1079.809	
01-Sep-92	4.2	4.3		1082.74	1077.31	
01-May-94	4.2	4.1		1082.74	1077.17	
01-Sep-94	4	1.6		1082.60	1075.42	
01-Sep-95	3.5	0.5		1082.25	1074.65	
01-Sep-96	4.3	1.25		1082.81	1075.175	
08-May-97	5.8	1.6		1083.86	1075.42	
10-Nov-97	3.7	1.1		1082.39	1075.07	
26-May-98	5.16	0.70		1083.41	1074.79	
15-Nov-98	3.50	n.r.		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		1082.81	1075.14	
06-Jun-01	3.55	1.10		1082.29	1075.07	
19-Sep-01	3.70	1.30		1082.39	1075.21	
13-Jun-02	2.3	1.2		1081.41	1075.14	
12-Sep-02	2.8	1.2		1081.76	1075.14	
17-Jun-03	0.9	0.9		1080.43	1074.93	*readings recorded with new piezometer
12-Sep-03	1.1	0.9		1080.57	1074.93	
06-Jul-04	1	0.9		1080.5	1074.93	#366 Bubbles stpped at 1.7Psi
16-Sep-04	1	1		1080.5	1075	

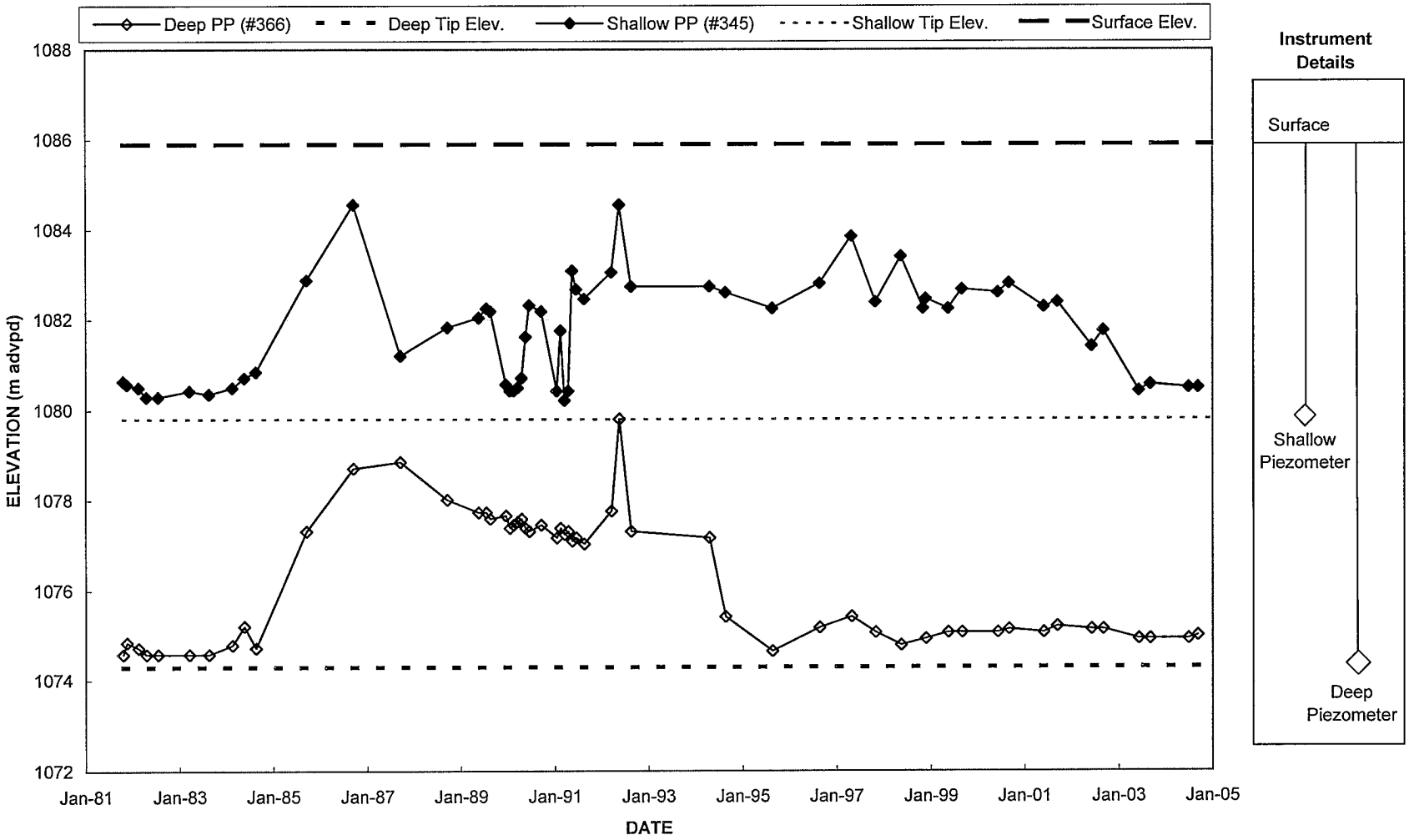
DIVERSION CANAL DIKE
Piezometric Monitoring
CD-21 Pneumatic Piezometer (Shallow Tip)



DIVERSION CANAL DIKE
Piezometric Monitoring
CD-21 Pneumatic Piezometer (Deep Tip)



DIVERSION CANAL DIKE
Piezometric Monitoring
CD-21 Pneumatic Piezometer (Both Tips)

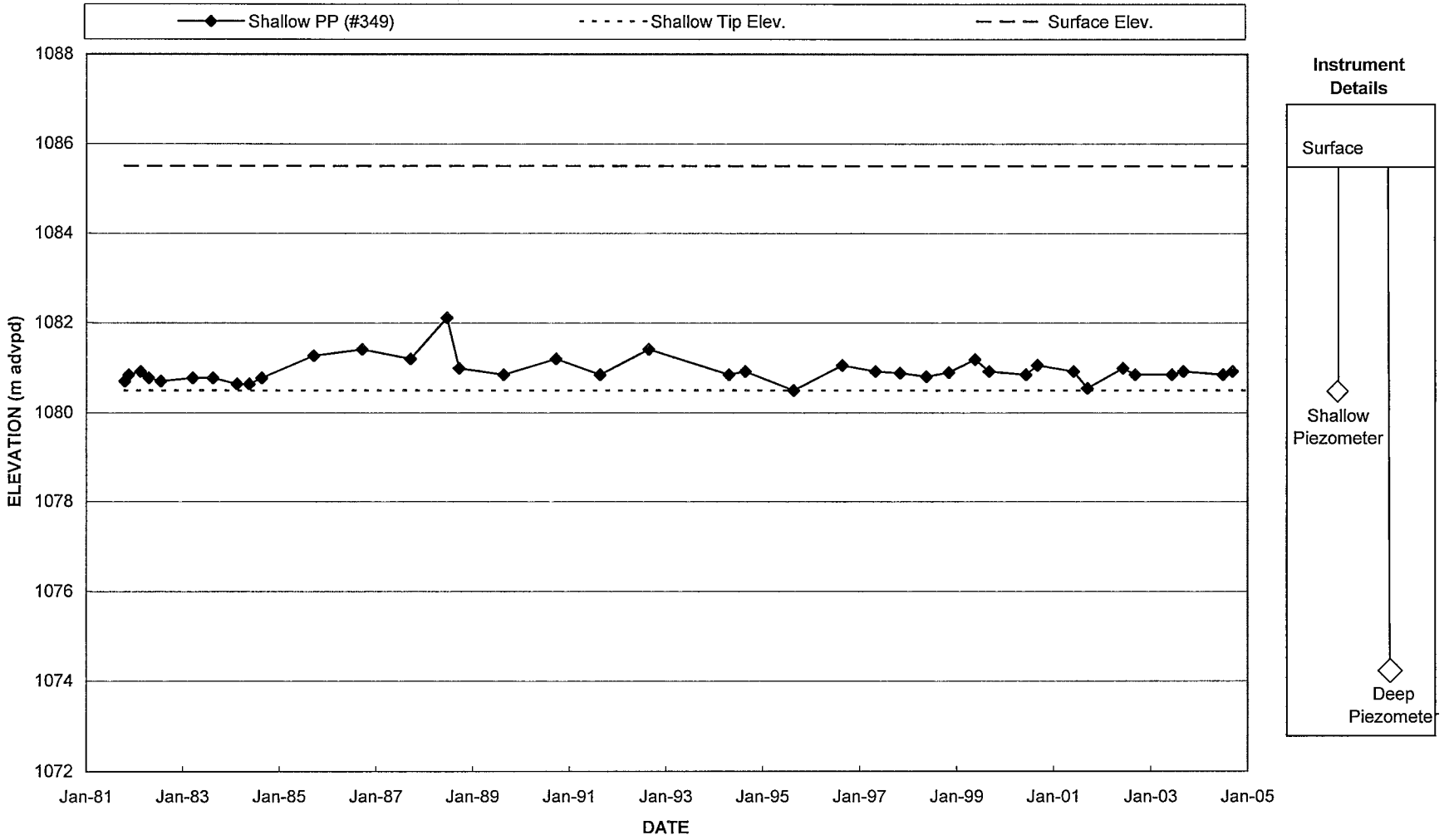


Faro Mine Instrumentation - Diversion Canal Dike

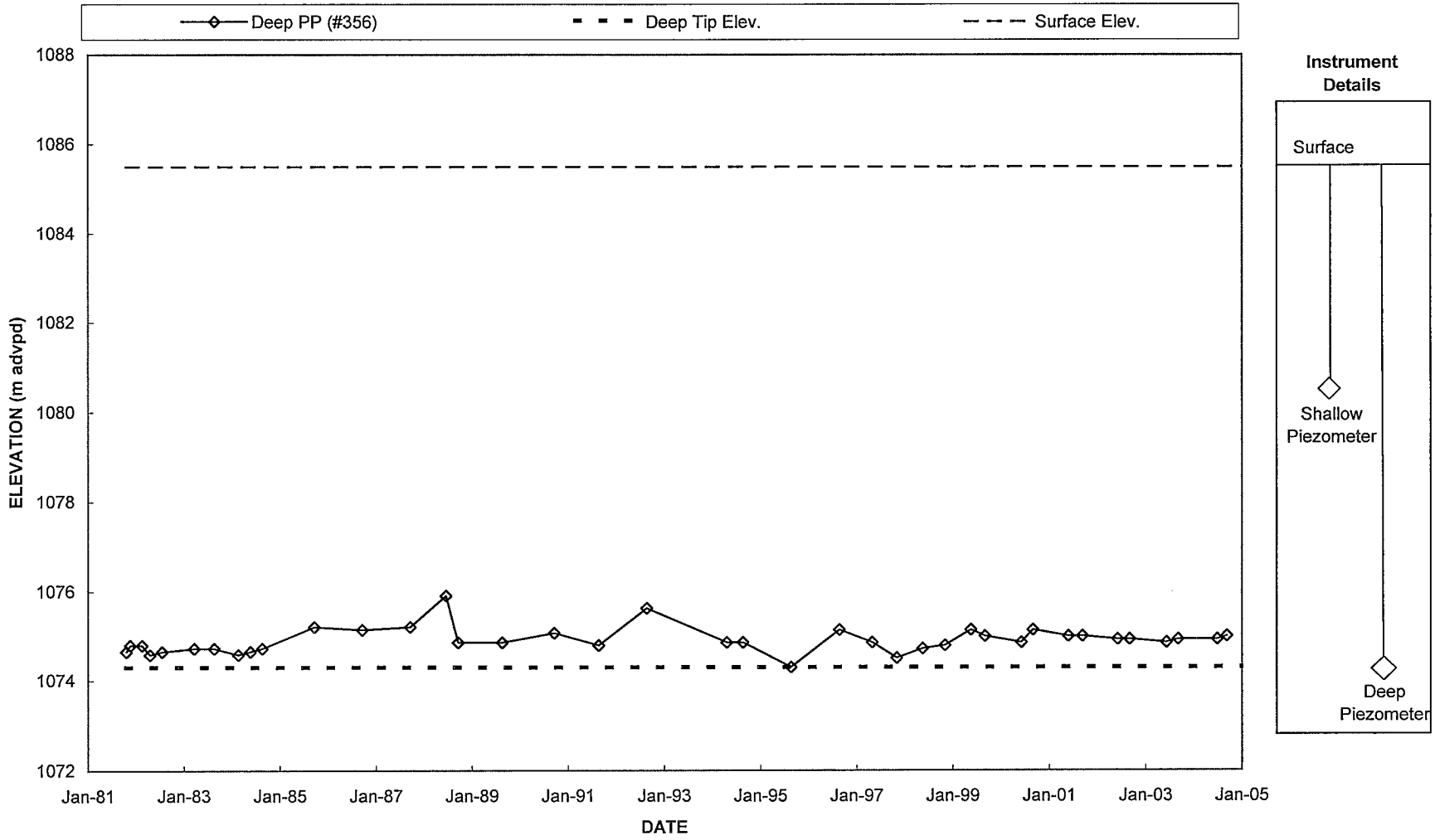
CD-26		Location:	Canal Dyke St.2+600		Coordinates:	1674.7N, 71.7E
			Ground Elevation (m advpd):	1085.50		8V580284 6913710
			Shallow Tip Elevation (m advpd):	1080.50	Surface Protector:	yes
	Date Installed:	1981	Deep Tip Elevation (m advpd):	1074.30		

	Reading (psi)			Piezometric Elevation (m advpd)		
	Shallow PP	Deep PP		Shallow	Deep	
Date	(#349)	(#356)		(#349)	(#356)	Comments
01-Nov-81	0.3	0.5		1080.71	1074.65	
01-Dec-81	0.5	0.7		1080.85	1074.79	
01-Mar-82	0.6	0.7		1080.92	1074.79	
01-May-82	0.4	0.4		1080.78	1074.58	
01-Aug-82	0.3	0.5		1080.71	1074.65	
01-Apr-83	0.4	0.6		1080.78	1074.72	
01-Sep-83	0.4	0.6		1080.78	1074.72	
01-Mar-84	0.2	0.4		1080.64	1074.58	
01-Jun-84	0.2	0.5		1080.64	1074.65	
01-Sep-84	0.4	0.6		1080.78	1074.72	
01-Oct-85	1.1	1.3		1081.27	1075.21	
01-Oct-86	1.3	1.2		1081.41	1075.14	
01-Oct-87	1	1.3		1081.20	1075.21	
01-Jul-88	2.3	2.3		1082.11	1075.91	
01-Oct-88	0.7	0.8		1080.99	1074.86	
01-Sep-89	0.5	0.8		1080.85	1074.86	
01-Oct-90	1	1.1		1081.20	1075.07	
01-Sep-91	0.5	0.7		1080.85	1074.79	
01-Sep-92	1.3	1.9		1081.41	1075.63	
01-May-94	0.5	0.8		1080.85	1074.86	
01-Sep-94	0.6	0.8		1080.92	1074.86	
01-Sep-95	0	0		1080.50	1074.30	
01-Sep-96	0.8	1.2		1081.06	1075.14	
08-May-97	0.6	0.8		1080.92	1074.86	
10-Nov-97	0.55	0.30		1080.89	1074.51	
26-May-98	0.44	0.60		1080.81	1074.72	
12-Nov-98	0.57	0.70		1080.90	1074.79	
28-May-99	0.98	1.20		1081.19	1075.14	
11-Sep-99	0.60	1.0		1080.92	1075.00	
14-Jun-00	0.50	0.8		1080.85	1074.86	
09-Sep-00	0.80	1.2		1081.06	1075.14	
06-Jun-01	0.60	1.0		1080.92	1075.00	
19-Sep-01	0.07	1.0		1080.55	1075.00	
13-Jun-02	0.7	0.9		1080.99	1074.93	
12-Sep-02	0.5	0.9		1080.85	1074.93	
17-Jun-03	0.5	0.8		1080.85	1074.86	*readings recorded with new piezometer
12-Sep-03	0.6	0.9		1080.92	1074.93	
06-Jul-04	0.5	0.9		1080.85	1074.93	
16-Sep-04	0.6	1		1080.92	1075.00	

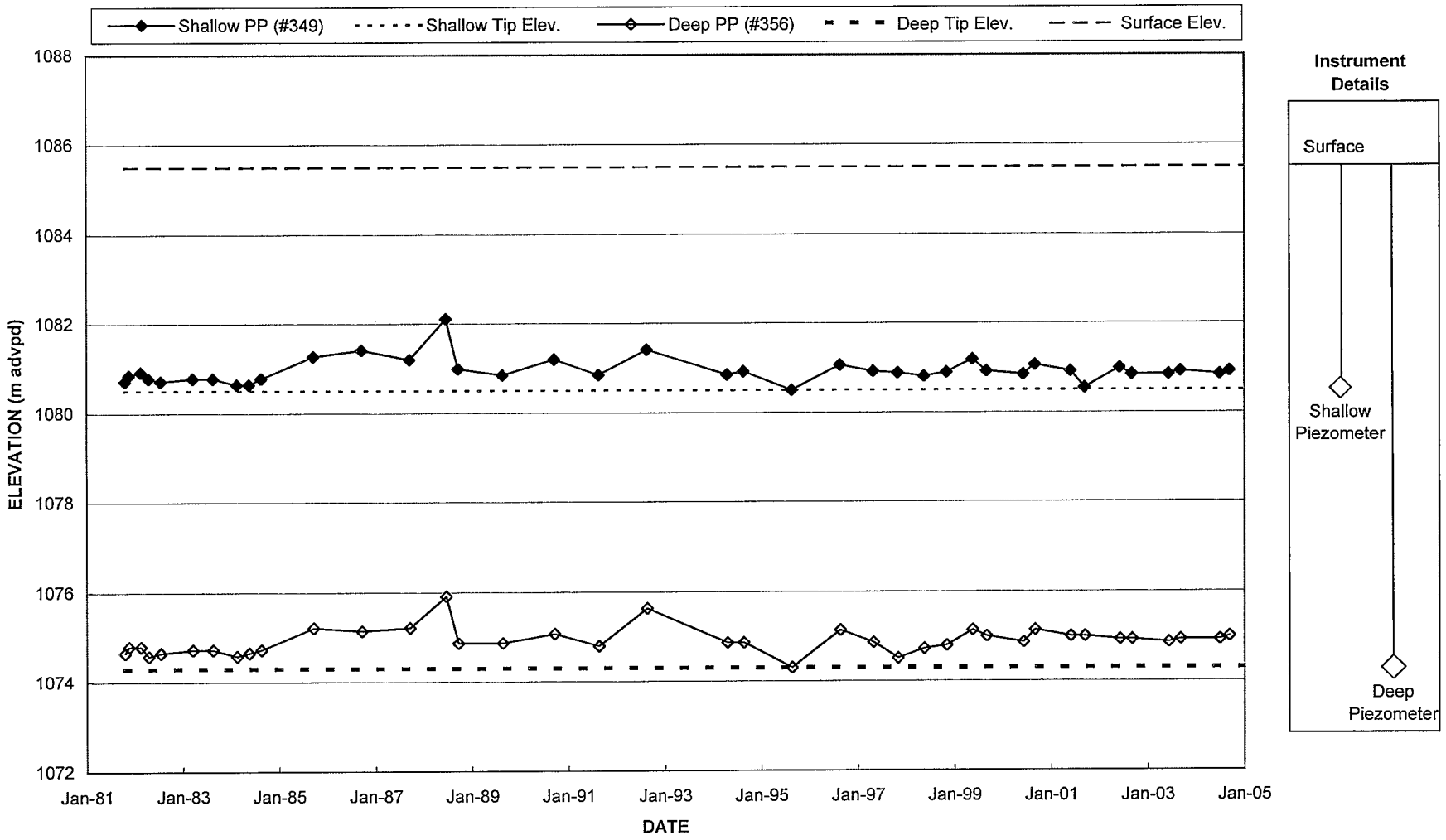
DIVERSION CANAL DIKE
Piezometric Monitoring
CD-26 Pneumatic Piezometer (Shallow Tip)



DIVERSION CANAL DIKE
Piezometric Monitoring
CD-26 Pneumatic Piezometer (Deep Tip)



DIVERSION CANAL DIKE
Piezometric Monitoring
CD-26 Pneumatic Piezometers (Both Tips)



THERMISTORS

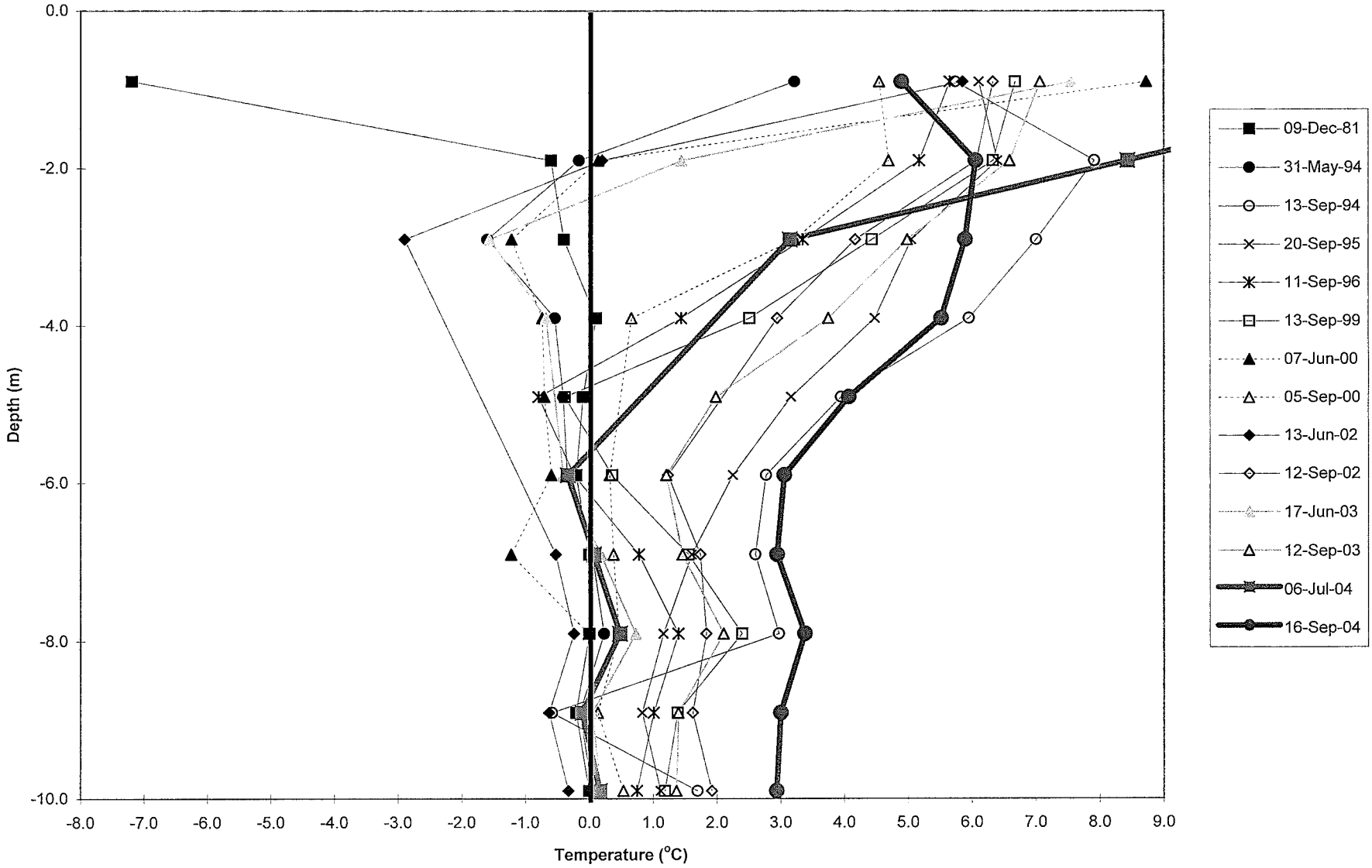
Faro Mine Instrumentation
Diversion Canal Dike

CD-10		Location:	Canal Dyke St. 0+990			Elevation:	1088.3 m advpd	Coordinates:	1008.7 mN, 1519.7 mE						
		Thermistor String #23	Date Installed:	1981	Thermistor Type:	Cantec Controls YSI 44007	Ice-Bath Calibration:	applied	Surface Protector:	yes					
Depth Correction	-0.1														
Depth on String	Actual Depth	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)
(m)	(m)	09-Dec-81	31-May-94	13-Sep-94	20-Sep-95	11-Sep-96	13-Sep-99	07-Jun-00	05-Sep-00	13-Jun-02	12-Sep-02	17-Jun-03	12-Sep-03	06-Jul-04	16-Sep-04
1.0	-0.9	23.70	13.83	12.20	11.98	12.25	11.65	10.54	12.94	12.13	11.85	11.16	11.43	8.32	12.72
2.0	-1.9	16.68	16.31	10.90	11.74	12.47	11.78	16.06	12.77	16.01	11.93	15.03	11.63	10.63	11.94
3.0	-2.9	16.50	17.55	11.39	12.54	13.65	12.93	17.21	13.74	18.77	13.10	17.52	12.58	13.79	12.03
4.0	-3.9	16.13	16.67	12.03	12.94	15.07	14.28	16.84	15.68		13.97	16.79	13.42		12.29
5.0	-4.9	16.24	16.50	13.24	13.77	16.83	16.48	16.75					14.61		13.16
6.0	-5.9	16.31	16.43	14.03	14.40	16.34	15.85	16.64	15.88		15.16	16.48	15.18	16.42	13.83
7.0	-6.9	16.19	16.15	14.19	14.92	15.56	14.96	17.24	15.88	16.63	14.82	16.04	15.03	16.13	13.95
8.0	-7.9	16.19	16.00	13.93	15.26	15.08	14.34	16.20	15.81	16.39	14.75	15.60	14.55	15.80	13.65
9.0	-8.9	16.36	16.31	16.68	15.52	15.38	15.09		16.08	16.72	14.91	16.15	15.08	16.28	13.91
10.0	-9.9	16.21	16.17	14.87	15.31	15.60	15.26		15.77	16.48	14.70	16.06	15.12	16.07	13.97

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

Depth on String	Actual Depth	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)
(m)	(m)	09-Dec-81	31-May-94	13-Sep-94	20-Sep-95	11-Sep-96	13-Sep-99	07-Jun-00	05-Sep-00	13-Jun-02	12-Sep-02	17-Jun-03	12-Sep-03	06-Jul-04	16-Sep-04
1.0	-0.9	-7.20	3.22	5.74	6.11	5.65	6.67	8.72	4.55	5.85	6.33	7.55	7.06	13.67	4.89
2.0	-1.9	-0.60	-0.16	7.91	6.40	5.17	6.33	0.14	4.69	0.20	6.07	1.44	6.59	8.43	6.05
3.0	-2.9	-0.40	-1.60	7.00	5.05	3.35	4.43	-1.22	3.22	-2.90	4.17	-1.57	4.99	3.14	5.89
4.0	-3.9	0.10	-0.54	5.95	4.48	1.44	2.51	-0.74	0.66		2.94	-0.68	3.75		5.52
5.0	-4.9	-0.10	-0.41	3.95	3.16	-0.80	-0.39	-0.70					1.98		4.07
6.0	-5.9	-0.20	-0.35	2.77	2.25	-0.24	0.36	-0.60	0.32		1.23	-0.41	1.21	-0.34	3.06
7.0	-6.9	0.00	0.05	2.60	1.61	0.78	1.56	-1.23	0.38	-0.52	1.74	0.18	1.46	0.07	2.94
8.0	-7.9	0.00	0.23	2.97	1.16	1.40	2.39	-0.01	0.47	-0.24	1.83	0.73	2.11	0.48	3.38
9.0	-8.9	-0.20	-0.14	-0.58	0.83	1.01	1.38		0.13	-0.63	1.62	0.05	1.40	-0.11	3.00
10.0	-9.9	0.00	0.04	1.69	1.12	0.75	1.18		0.54	-0.33	1.92	0.18	1.36	0.17	2.93

DIVERSION CANAL DIKE
Geothermal Monitoring
CD-10



CDtherm.xls
CD-10 chrt

BGC Engineering Inc.

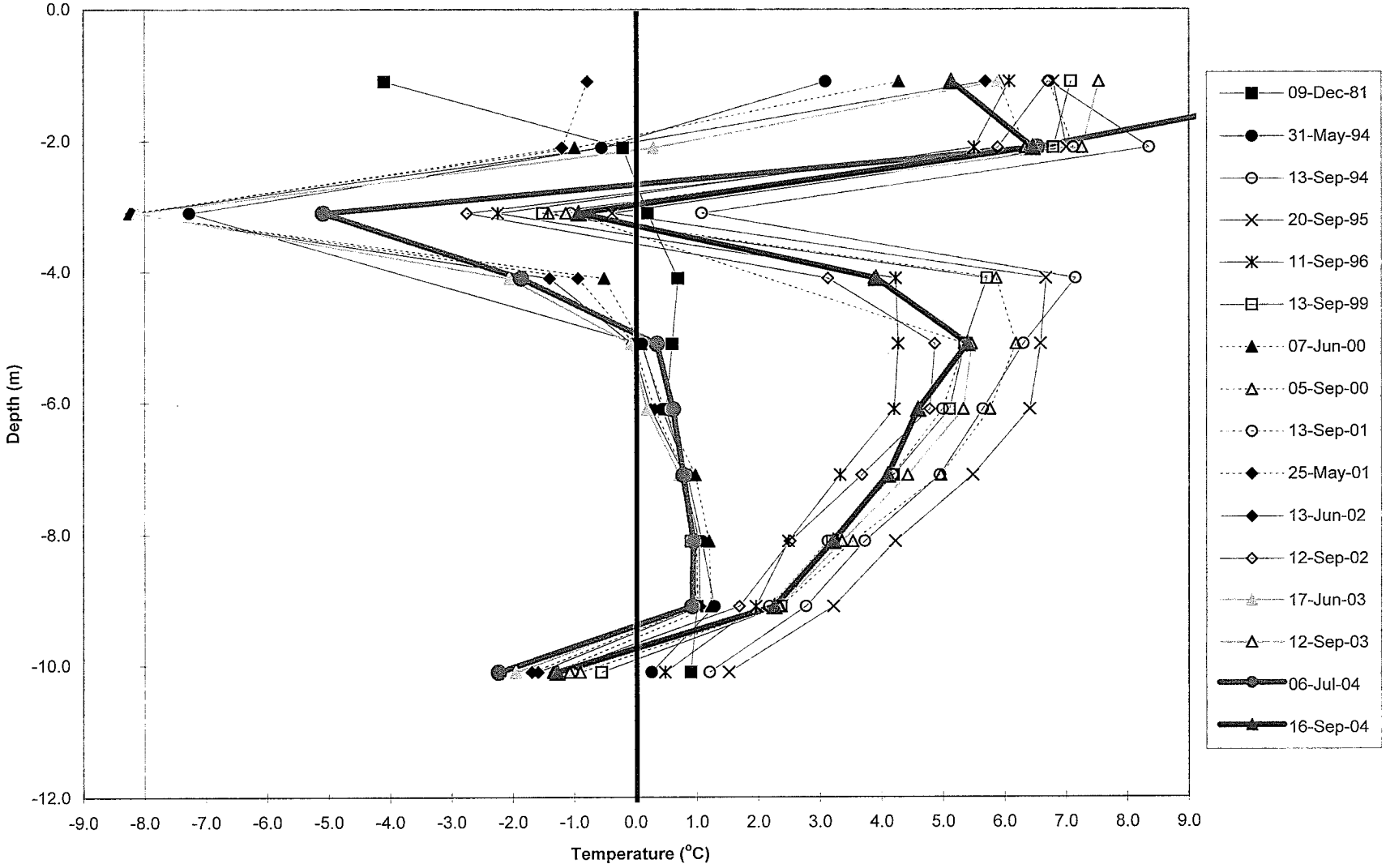
Faro Mine Instrumentation
Diversion Canal Dike

CD-15		Location:	Canal Dyke St. 1+530			Elevation:	1087.0 m advpd	Coordinates:	1233.7 mN, 1028.7 mE								
		Thermistor String #26	Date Installed:	1981	Thermistor Type:	Cantec Controls YSI 44007	Ice-Bath Calibration:	applied	Surface Protector:	yes							
Depth Correction	0.1																
Depth on String	Actual Depth	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)
(m)	(m)	09-Dec-81	31-May-94	13-Sep-94	20-Sep-95	11-Sep-96	13-Sep-99	07-Jun-00	05-Sep-00	25-May-01	13-Sep-01	13-Jun-02	12-Sep-02	17-Jun-03	12-Sep-03	06-Jul-04	16-Sep-04
1.0	-1.1	20.00	13.84	11.56	11.52	11.93	11.36	13.04	12.03	16.84	11.56	12.16	11.57	12.04	11.11	8.87	12.50
2.0	-2.1	16.29	16.58	10.64	11.36	12.23	11.48	16.96	11.74	17.14	11.30	16.59	12.00	15.88	11.22	11.63	11.67
3.0	-3.1	15.99	23.62	15.29	16.47	18.13	17.46	24.88	17.37	24.84	17.05	24.82	18.61	24.71	17.12	21.04	16.94
4.0	-4.1	15.65		11.34	11.61	13.10	12.17	16.64	12.08	17.01		17.42	13.84	18.02	13.33	17.84	13.31
5.0	-5.1	15.71	16.11	11.81	11.65	13.06	12.38	16.12	11.88	16.21	12.38	16.24	12.68	16.26	12.31	15.91	12.35
6.0	-6.1	15.75	15.80	12.17	11.72	13.07	12.50	15.77	12.10	15.90	12.57	15.95	12.70	16.00	12.36	15.66	12.82
7.0	-7.1	15.53	15.49	12.61	12.28	13.67	13.09	15.39	12.60	15.52	13.10	15.53	13.43	15.59	12.94	15.54	13.15
8.0	-8.1	15.47	15.33	13.42	13.09	14.28	13.78	15.24	13.55	15.40	13.83	15.37	14.26	15.43	13.67	15.44	13.77
9.0	-9.1	15.41	15.19	14.09	13.78	14.68	14.38	15.23	14.39	15.40	14.52	15.37	14.88	15.45	14.40	15.47	14.46
10.0	-10.1	15.45	15.96	15.21	14.97	15.78	16.64	17.33	16.94	17.64	17.05	17.55	17.30	17.88	17.09	18.14	17.27

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

Depth on String	Actual Depth	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)
(m)	(m)	09-Dec-81	31-May-94	13-Sep-94	20-Sep-95	11-Sep-96	13-Sep-99	07-Jun-00	05-Sep-00	25-May-01	13-Sep-01	13-Jun-02	12-Sep-02	17-Jun-03	12-Sep-03	06-Jul-04	16-Sep-04
1.0	-1.1	-4.10	3.09	6.72	6.79	6.08	7.08	4.28	5.91	-0.78	6.72	5.69	6.70	5.89	7.53	12.20	5.14
2.0	-2.1	-0.20	-0.55	8.35	7.01	5.51	6.79	-0.99	6.34	-1.19	7.12	-0.56	5.89	0.30	7.26	6.53	6.46
3.0	-3.1	0.20	-7.27	1.08	-0.38	-2.24	-1.51	-8.24	-1.41	-8.21	-1.05	-8.20	-2.75	-8.11	-1.13	-5.09	-0.92
4.0	-4.1	0.70		7.15	6.67	4.23	5.72	-0.51	5.87	-0.93		-1.40	3.13	-2.05	3.88	-1.86	3.91
5.0	-5.1	0.60	0.11	6.31	6.58	4.27	5.35	0.09	6.19	-0.01	5.35	-0.05	4.87	-0.07	5.47	0.35	5.40
6.0	-6.1	0.50	0.44	5.65	6.41	4.21	5.11	0.48	5.76	0.31	4.99	0.25	4.79	0.19	5.33	0.61	4.60
7.0	-7.1	0.80	0.85	4.95	5.48	3.33	4.20	0.98	4.96	0.81	4.18	0.80	3.68	0.72	4.43	0.78	4.10
8.0	-8.1	0.90	1.08	3.73	4.23	2.49	3.20	1.20	3.53	0.99	3.13	1.03	2.52	0.95	3.36	0.94	3.21
9.0	-9.1	1.00	1.28	2.77	3.22	1.96	2.37	1.23	2.35	1.01	2.18	1.05	1.69	0.95	2.34	0.92	2.26
10.0	-10.1	0.90	0.26	1.21	1.52	0.48	-0.56	-1.35	-0.90	-1.69	-1.03	-1.59	-1.31	-1.95	-1.08	-2.23	-1.28
	* The 3 metre depth tip is suspect																

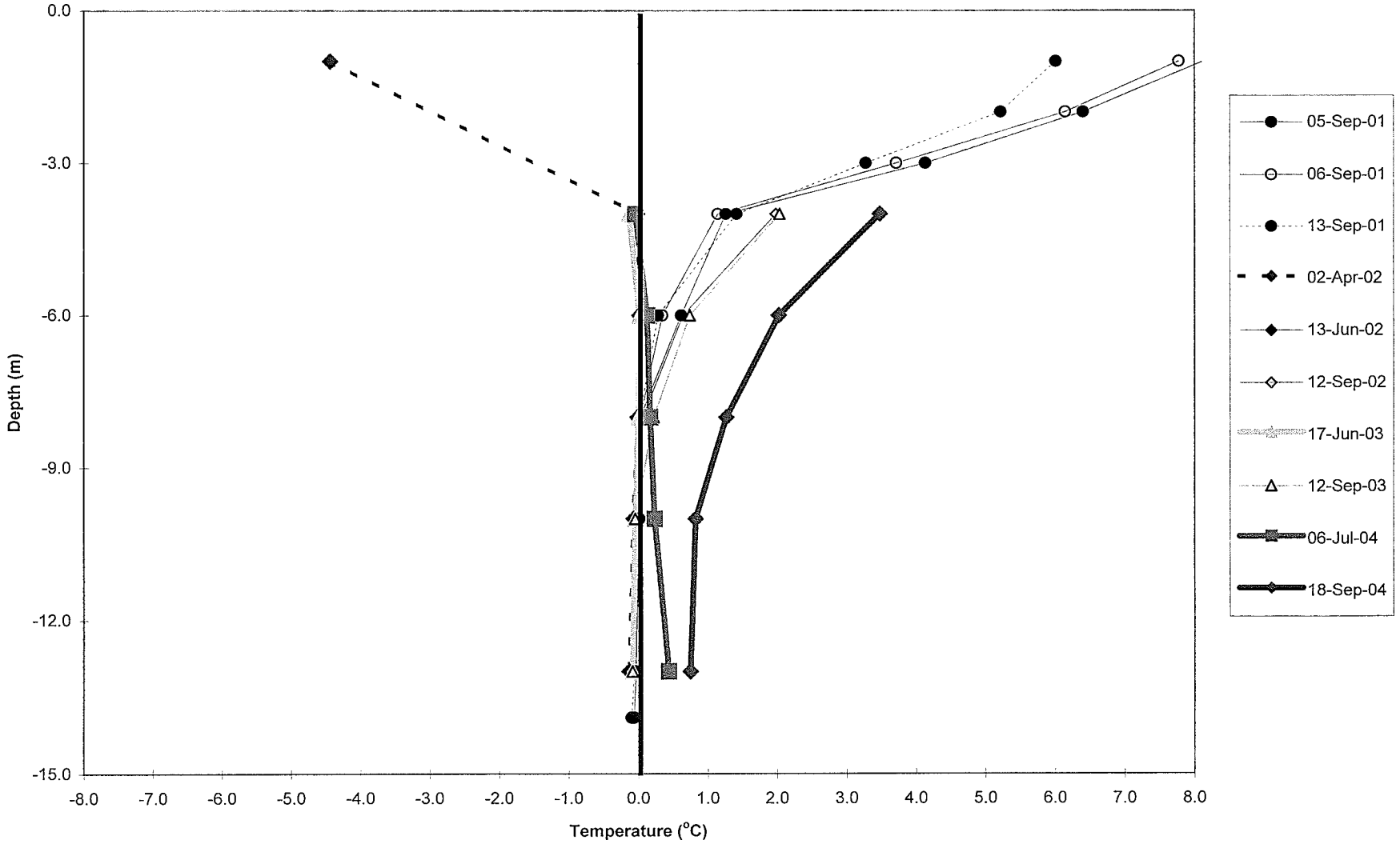
DIVERSION CANAL DIKE
Geothermal Monitoring
CD-15



Faro Mine Instrumentation
Diversion Canal Dike

BGC01-02		Location:	Canal Dyke St.2+160			Elevation:	1086.2 m advpd	Coordinates:	1478.8mN, 456.6mE					
		Thermistor String #	Date Installed:	2001	Thermistor Type:	YSI 44007	Ice-Bath Calibration:	yes	Surface Protector:	yes				
Depth Correction	0													
Depth on String	Actual Depth	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)
(m)	(m)	05-Sep-01	06-Sep-01	13-Sep-01	02-Apr-02	05-Apr-02	09-Apr-02	12-Apr-02	13-Jun-02	12-Sep-02	17-Jun-03	12-Sep-03	06-Jul-04	18-Sep-04
1.0	-1.0	10.86	11.05	12.05	20.50									
2.0	-2.0	11.82	11.97	12.53										
3.0	-3.0	13.25	13.53	13.83										
4.0	-4.0	15.31	15.40	15.19	16.34	16.33	16.33	16.34	16.36	14.76	16.44	14.72	16.36	13.69
6.0	-6.0	15.82	16.04	16.09	16.31	16.30	16.30	16.31	16.31	15.80	16.31	15.72	16.22	14.73
8.0	-8.0	16.32	16.32	16.33	16.35	16.34	16.35	16.35	16.35	16.29	16.34	16.16	16.20	15.32
10.0	-10.0	16.32	16.33	16.35	16.39	16.38	16.38	16.39	16.39	16.39	16.37	16.37	16.14	15.66
13.0	-13.0	16.32	16.32	16.34	16.40	16.39	16.39	16.39		16.39	16.36	16.36	15.93	15.68
13.9	-13.9	16.35	16.35	16.38										
		15.37	15.42	15.43			20.90							
Depth on String	Actual Depth	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)
(m)	(m)	05-Sep-01	06-Sep-01	13-Sep-01	02-Apr-02	05-Apr-02	09-Apr-02	12-Apr-02	13-Jun-02	12-Sep-02	17-Jun-03	12-Sep-03	06-Jul-04	18-Sep-04
1.0	-1.0	8.13	7.77	6.01	-4.44									
2.0	-2.0	6.40	6.14	5.22										
3.0	-3.0	4.13	3.71	3.28										
4.0	-4.0	1.26	1.14	1.41	-0.02	-0.01	-0.01	-0.02	-0.04	1.98	-0.14	2.04	-0.04	3.48
6.0	-6.0	0.61	0.34	0.28	0.02	0.03	0.03	0.02	0.02	0.64	0.02	0.74	0.12	2.02
8.0	-8.0	0.02	0.02	0.01	-0.01	0.00	-0.01	-0.01	-0.01	0.06	0.00	0.22	0.17	1.27
10.0	-10.0	0.01	0.00	-0.02	-0.07	-0.06	-0.06	-0.07	-0.07	-0.07	-0.05	-0.05	0.23	0.82
13.0	-13.0	-0.04	-0.04	-0.06	-0.13	-0.12	-0.12	-0.12		-0.12	-0.08	-0.08	0.44	0.75
13.9	-13.9	-0.06	-0.06	-0.10										

DIVERSION CANAL DIKE
Geothermal Monitoring
BGC01-02 (BH88-11 Replacement)



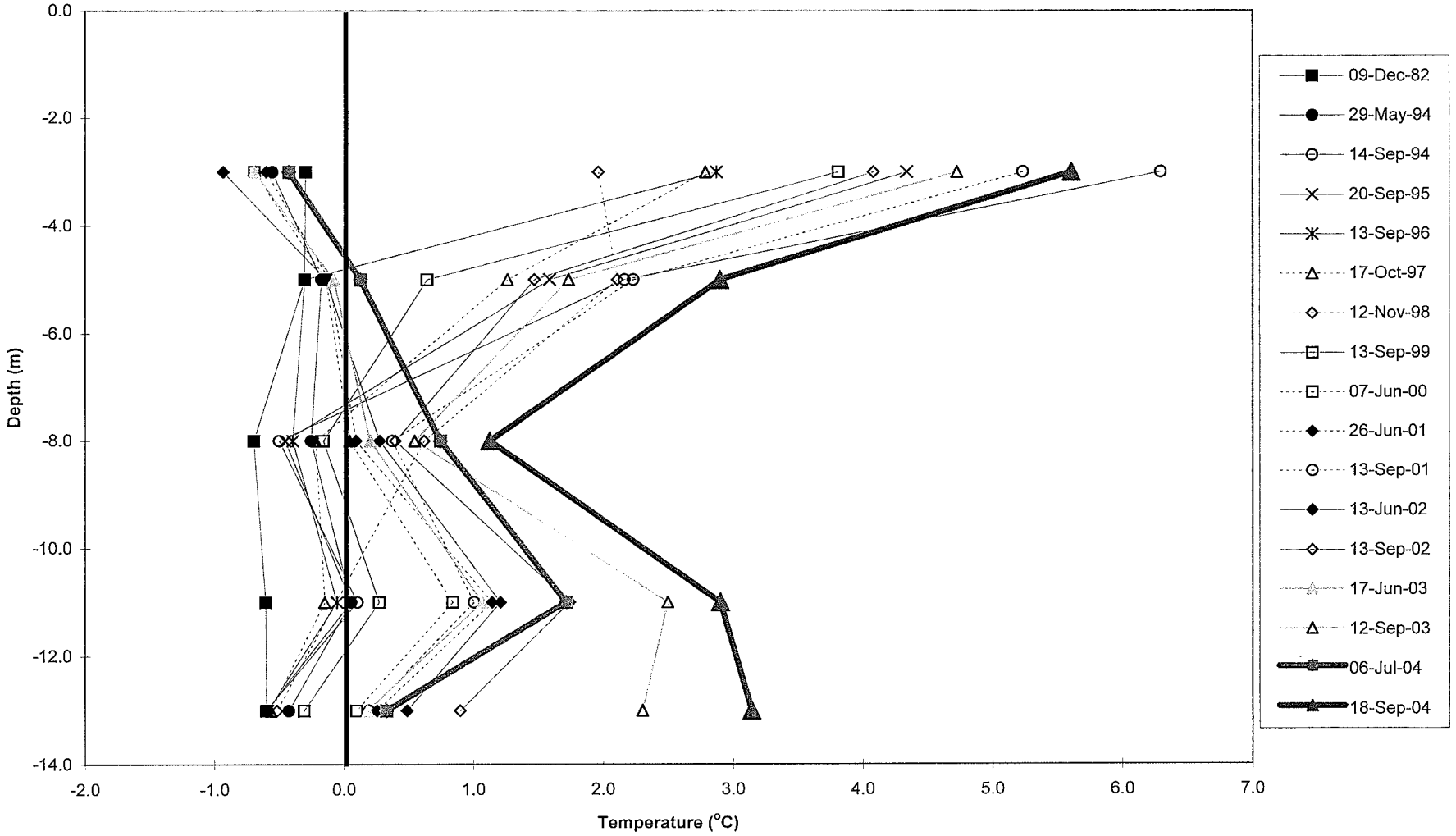
Faro Mine Instrumentation
Diversion Canal Dike

CD-21		Location:	Canal Dyke St.2+100			Elevation:	1085.9 m advpd	Coordinates:	1455.9 mN 509.5 mE	
		Thermistor String #12	Date Installed:	1981	Thermistor Type:	Cantec Controls YSI 44007	Ice-Bath Calibration:	NO	Surface Protector:	yes
Depth Correction	0									
Depth on String	Actual Depth	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)
(m)	(m)	09-Dec-82	29-May-94	14-Sep-94	20-Sep-95	13-Sep-96	17-Oct-97	12-Nov-98	13-Sep-99	07-Jun-00
3.0	-3.0	16.58	16.80	11.91	13.12	14.12	14.18	14.78	13.47	16.92
5.0	-5.0	16.56	16.45	14.61	15.04	16.56	15.29	14.65	15.78	16.42
8.0	-8.0	16.89	16.51	16.72	16.68	16.63	16.48	15.79	16.43	16.26
11.0	-11.0	16.87	16.31	16.27	16.31	16.40	16.48	nr	16.13	15.67
13.0	-13.0	16.84	16.69	16.84	16.84	16.83	16.81	16.77	16.59	16.25
Depth on String	Actual Depth	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)
(m)	(m)	09-Dec-82	29-May-94	14-Sep-94	20-Sep-95	13-Sep-96	17-Oct-97	12-Nov-98	13-Sep-99	07-Jun-00
3.0	-3.0	-0.30	-0.55	6.29	4.34	2.87	2.79	1.96	3.81	-0.69
5.0	-5.0	-0.30	-0.17	2.16	1.59	-0.30	1.26	2.11	0.64	-0.14
8.0	-8.0	-0.70	-0.25	-0.50	-0.45	-0.39	-0.22	0.62	-0.16	0.05
11.0	-11.0	-0.60	0.06	0.10	0.06	-0.05	-0.15		0.27	0.84
13.0	-13.0	-0.60	-0.42	-0.60	-0.60	-0.59	-0.56	-0.52	-0.31	0.10

*tip #4 suspect

Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)
05-Sep-00	25-May-01	26-Jun-01	13-Sep-01	13-Jun-02	13-Sep-02	17-Jun-03	12-Sep-03	06-Jul-04	18-Sep-04
13.27	16.96	16.84	12.55	17.13	13.29	16.92	12.87	16.69	12.32
15.15	16.34	16.40	14.56	16.42	15.13	16.37	14.93	16.20	14.08
16.23	16.11	16.22	15.99	16.07	15.97	16.13	15.85	15.69	15.39
15.79	15.53	15.43	15.54	15.38	14.97	15.49	14.41	14.99	14.12
16.37	16.00	16.12	16.17	15.93	15.60	16.18	14.53	16.06	13.93
Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)
05-Sep-00	25-May-01	26-Jun-01	13-Sep-01	13-Jun-02	13-Sep-02	17-Jun-03	12-Sep-03	06-Jul-04	18-Sep-04
4.11	-0.74	-0.60	5.23	-0.93	4.08	-0.69	4.73	-0.42	5.61
1.45	-0.04	-0.11	2.23	-0.14	1.47	-0.08	1.73	0.13	2.90
0.08	0.23	0.09	0.37	0.28	0.40	0.20	0.55	0.75	1.13
0.69	1.02	1.14	1.00	1.21	1.74	1.07	2.50	1.72	2.90
-0.05	0.40	0.25	0.19	0.49	0.90	0.18	2.30	0.33	3.14

DIVERSION CANAL DIKE
Geothermal Monitoring
CD-21



Faro Mine Instrumentation
Diversion Canal Dike

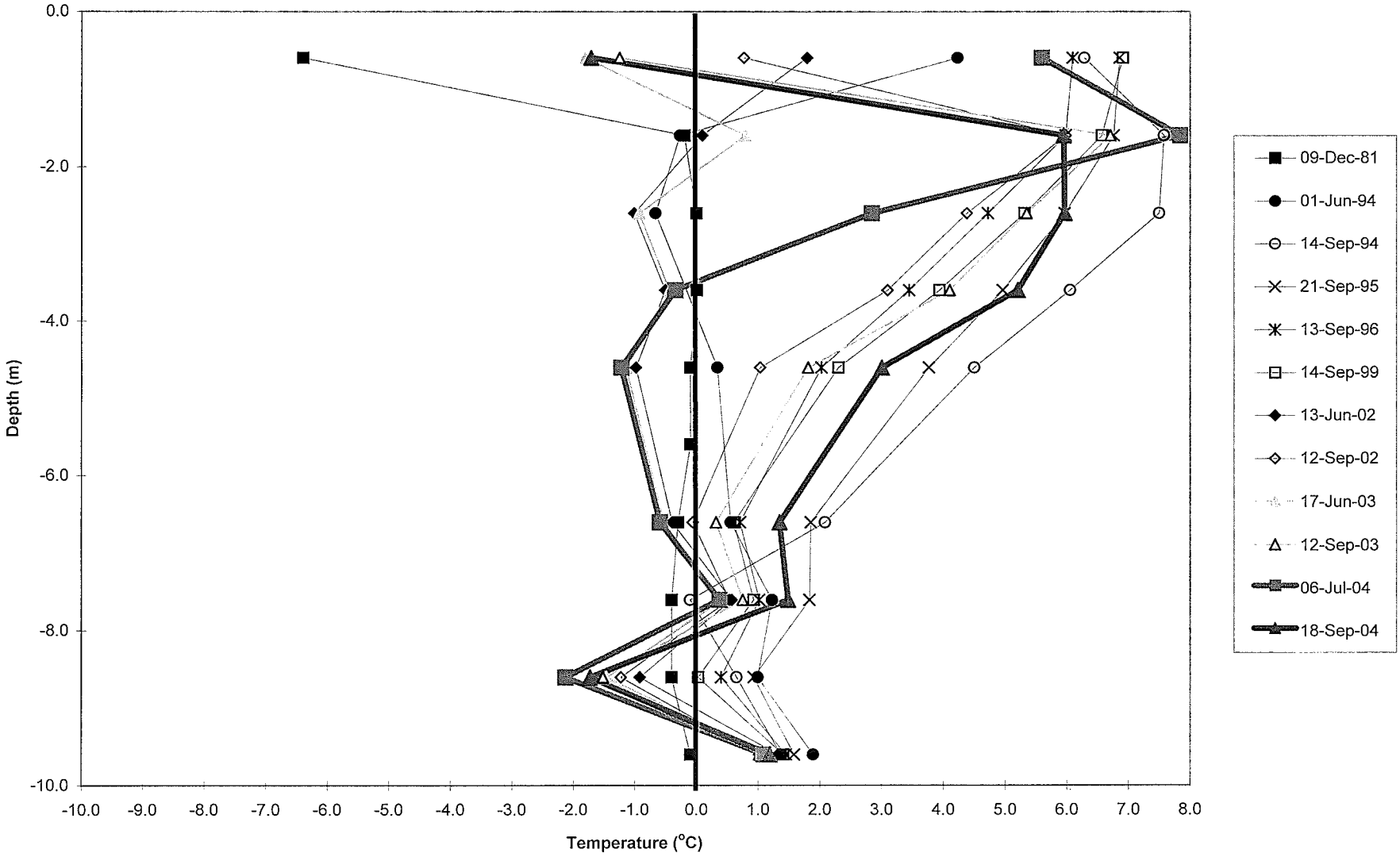
CD-26		Location:	Canal Dyke St.2+600			Elevation (m advpd):	1085.5	Coordinates:	1674.7 mN, 71.7 mE				
		Thermistor String #17	Date Installed:	1981	Thermistor Type:	Cantec Controls YSI 44007	Ice-Bath Calibration:	applied	Surface Protector:	yes			
Depth Correction	-0.4												

Depth on String	Actual Depth	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)
(m)	(m)	09-Dec-81	01-Jun-94	14-Sep-94	21-Sep-95	13-Sep-96	14-Sep-99	13-Jun-02	12-Sep-02	17-Jun-03	12-Sep-03	06-Jul-04	18-Sep-04
1.0	-0.6	22.70	13.14	11.87	11.54	11.98	11.51	14.85	15.64	17.85	17.34	12.28	17.76
2.0	-1.6	16.32	16.38	11.07	11.52	11.97	11.63	16.08	11.97	15.52	11.55	10.93	11.99
3.0	-2.6	16.20	16.76	11.14	12.01	12.77	12.40	17.06	12.99	16.99	12.38	14.03	12.01
4.0	-3.6	16.17		11.94	12.60	13.59	13.26	16.60	13.83	16.54	13.15	16.46	12.45
5.0	-4.6	16.24	15.88	12.88	13.36	14.58	14.38	16.99	15.33	17.13	14.74	17.20	13.88
6.0	-5.6	16.28	17.71	15.80	18.08	22.69	27.08	35.50	34.25	37.50	35.00	40.20	34.00
7.0	-6.6	16.43	15.73	14.56	14.73	15.61	15.69	16.51	16.23	16.63	15.92	16.68	15.11
8.0	-7.6	16.50	15.19	16.25	14.73	15.35	15.42	15.70	15.73	15.83	15.56	15.86	14.99
9.0	-8.6	16.46	15.33	15.60	15.38	15.80	16.10	16.90	17.17	17.38	17.43	17.99	17.62
10.0	-9.6	16.24	14.68	15.07	14.91	15.01	15.04	15.11	15.34	15.26	15.34	15.29	15.21

Depth on String	Actual Depth	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)
(m)	(m)	09-Dec-81	01-Jun-94	14-Sep-94	21-Sep-95	13-Sep-96	14-Sep-99	13-Jun-02	12-Sep-02	17-Jun-03	12-Sep-03	06-Jul-04	18-Sep-04
1.0	-0.6	-6.40	4.23	6.28	6.86	6.10	6.91	1.79	0.77	-1.81	-1.25	5.59	-1.71
2.0	-1.6	-0.20	-0.27	7.58	6.76	5.98	6.57	0.09	5.98	0.79	6.71	7.84	5.95
3.0	-2.6	0.00	-0.67	7.50	5.97	4.72	5.32	-1.01	4.38	-0.93	5.35	2.84	5.97
4.0	-3.6	0.00		6.05	4.96	3.45	3.94	-0.51	3.10	-0.44	4.10	-0.34	5.21
5.0	-4.6	-0.10	0.34	4.50	3.77	2.02	2.30	-0.98	1.03	-1.14	1.81	-1.22	3.00
6.0	-5.6	-0.10											
7.0	-6.6	-0.30	0.56	2.08	1.85	0.71	0.61	-0.39	-0.06	-0.53	0.32	-0.59	1.35
8.0	-7.6	-0.40	1.22	-0.10	1.83	1.02	0.93	0.57	0.54	0.41	0.75	0.37	1.49
9.0	-8.6	-0.40	0.99	0.65	0.93	0.40	0.03	-0.92	-1.23	-1.46	-1.52	-2.13	-1.73
10.0	-9.6	-0.10	1.89	1.37	1.58	1.45	1.41	1.32	1.02	1.12	1.02	1.08	1.19

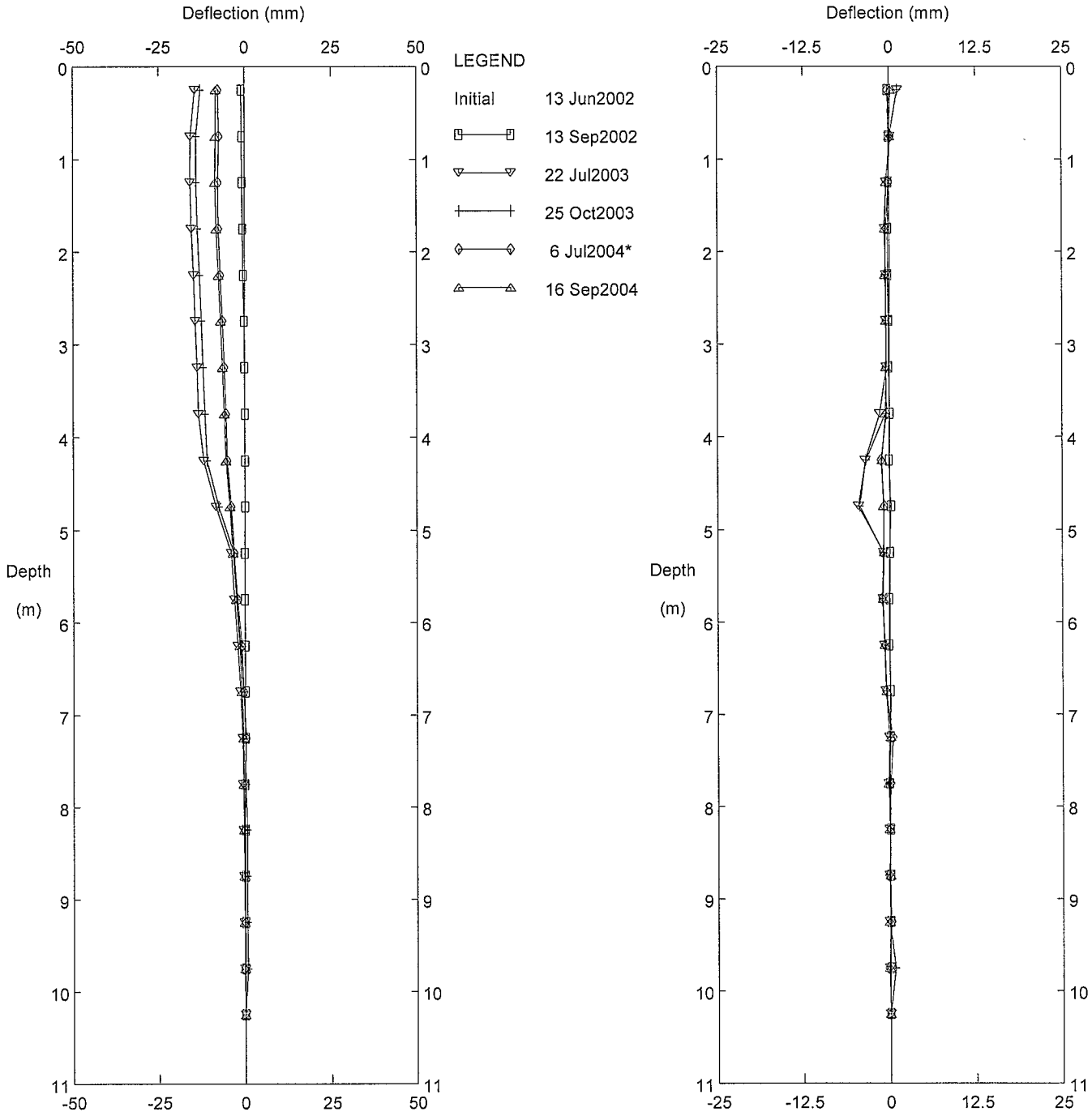
*Tip at 5.6 m depth is suspect

DIVERSION CANAL DIKE
Geothermal Monitoring
CD-26



SLOPE INDICATORS

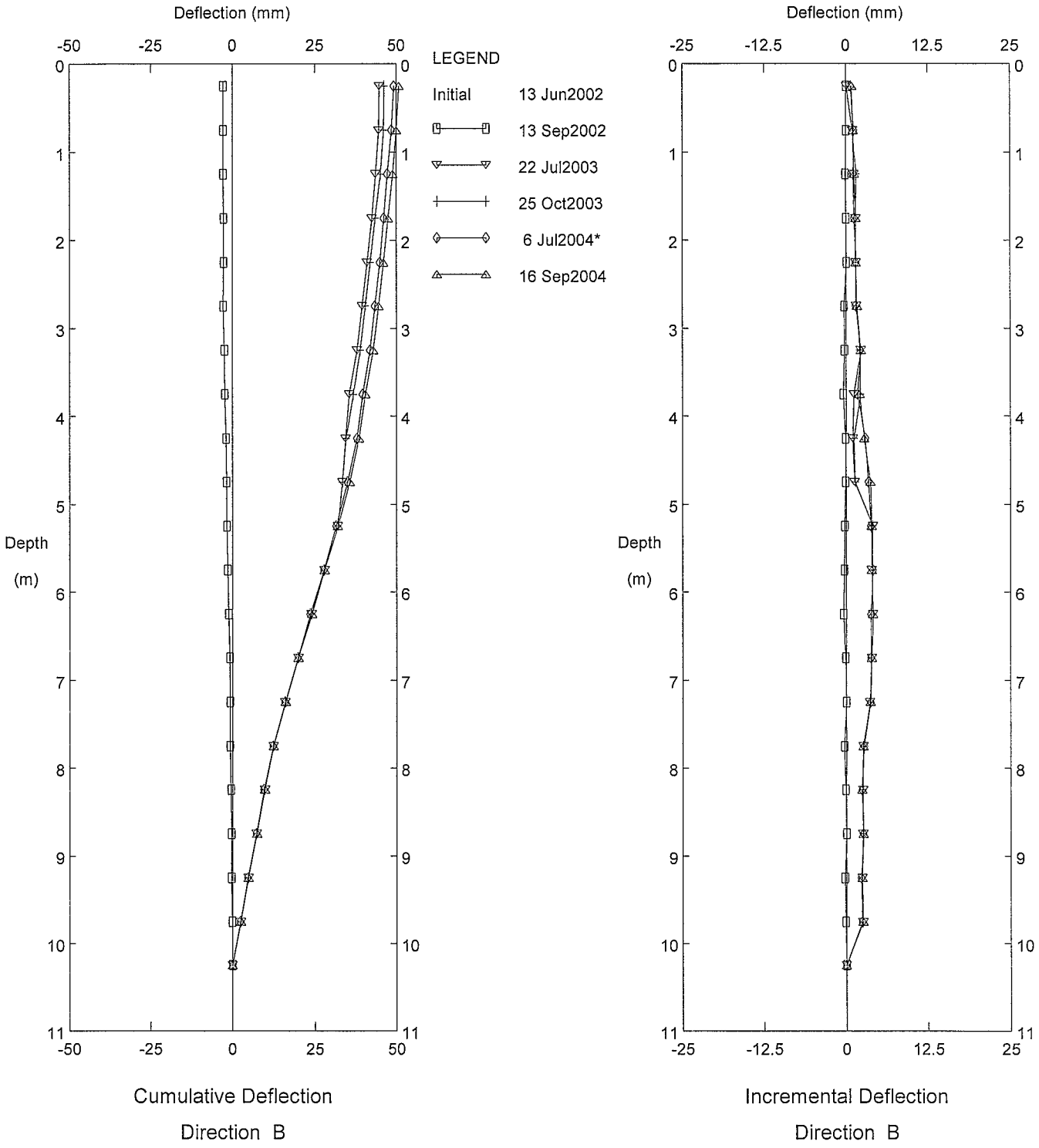
BGC Engineering Inc. - Calgary, AB



CD-10, Inclinometer 0+990

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

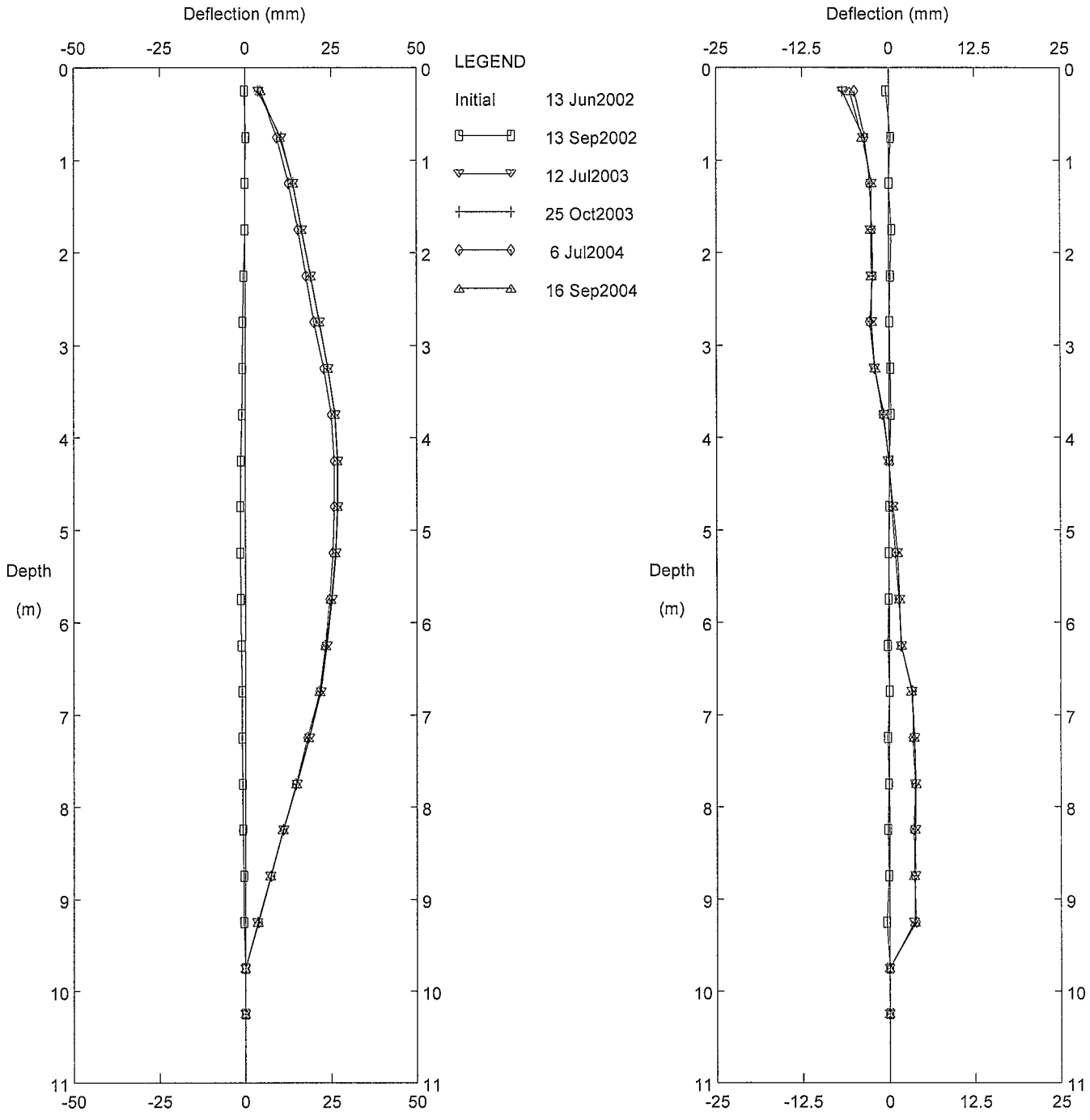
BGC Engineering Inc. - Calgary, AB



CD-10, Inclinometer 0+990

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

BGC Engineering Inc. - Calgary, AB



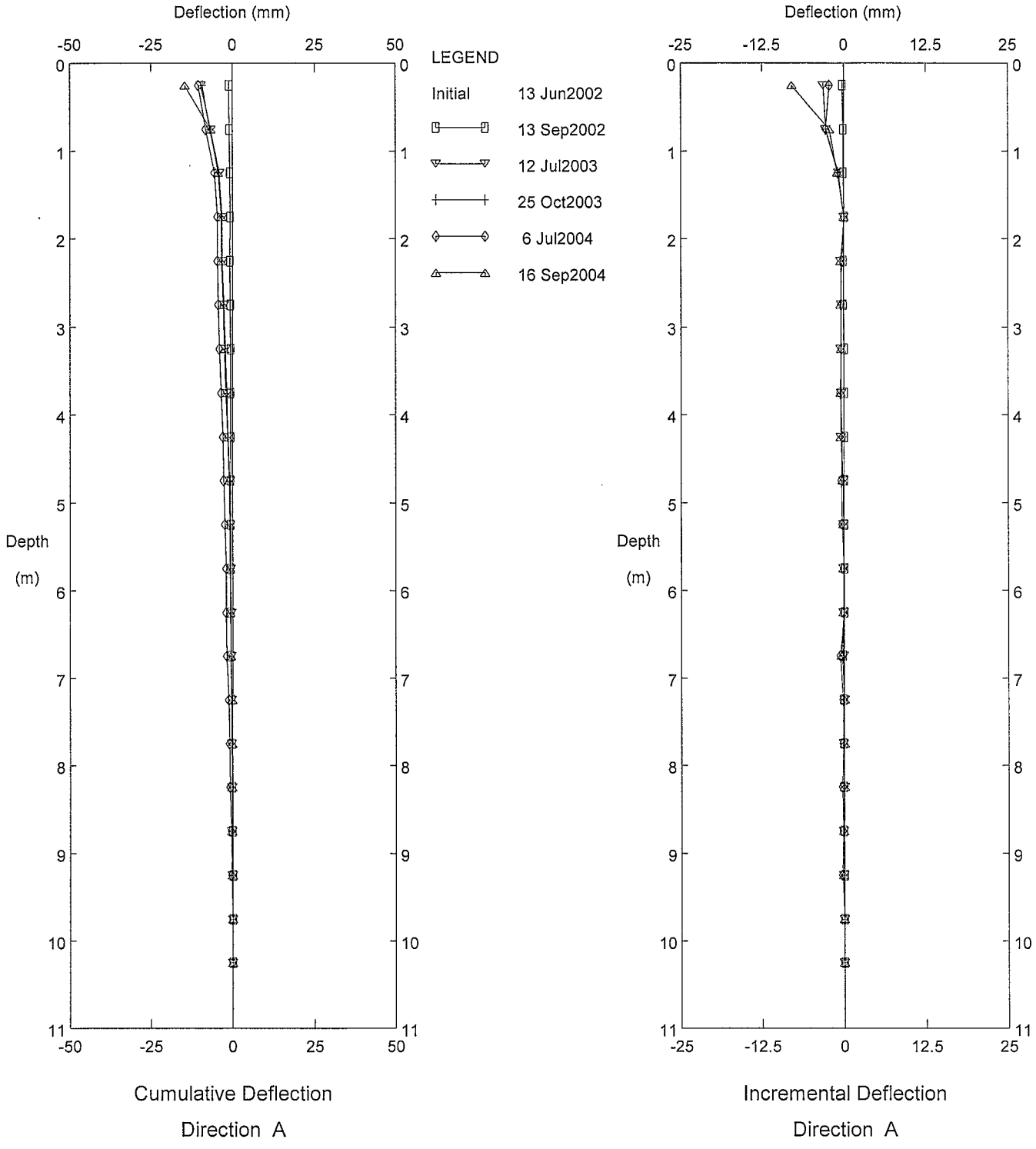
Cumulative Deflection
Direction B

Incremental Deflection
Direction B

CD-15, Inclinometer 1+530

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

BGC Engineering Inc. - Calgary, AB



Cumulative Deflection

Direction A

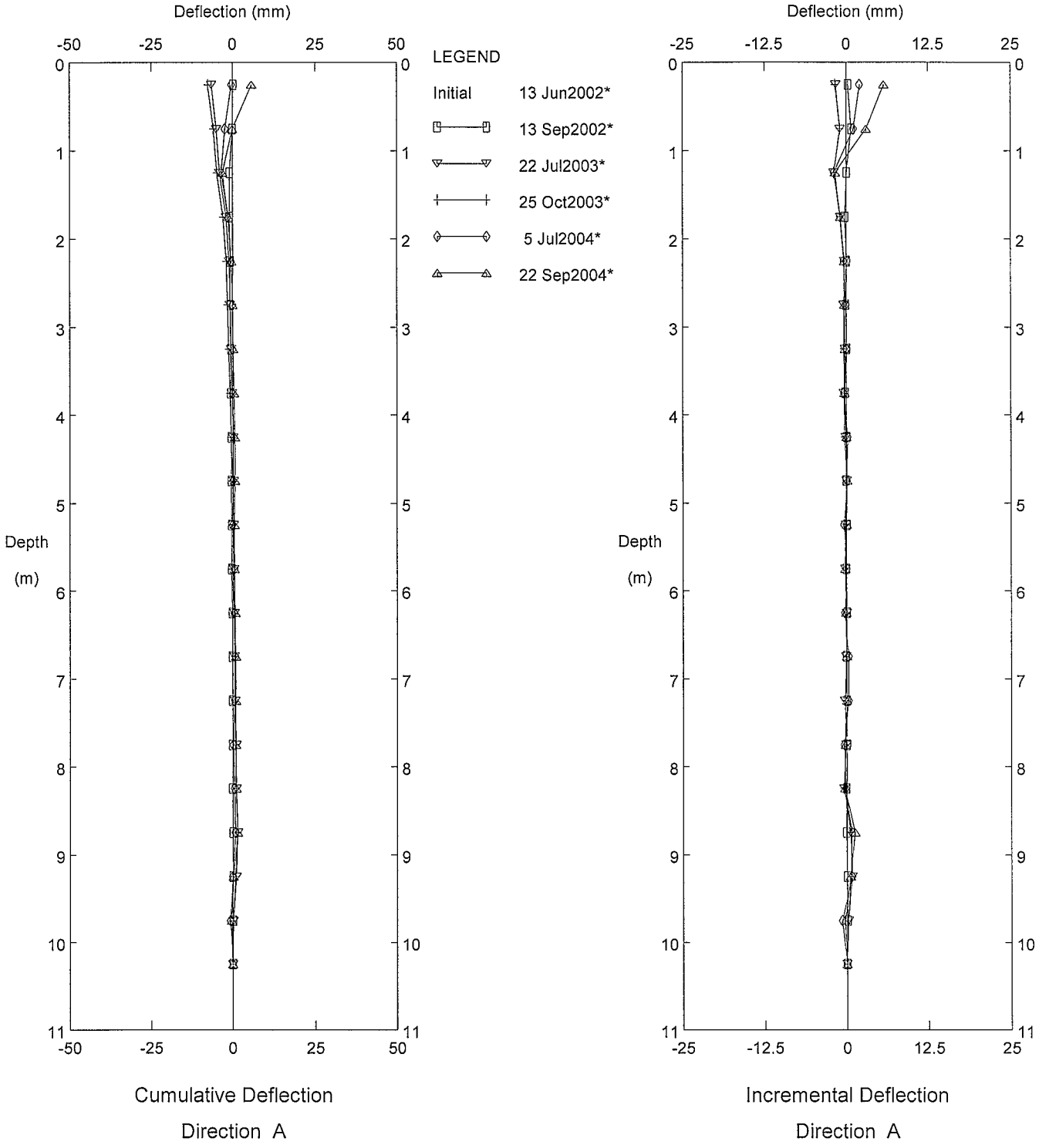
Incremental Deflection

Direction A

CD-15, Inclinometer 1+530

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

BGC Engineering Inc. - Calgary, AB



Cumulative Deflection

Direction A

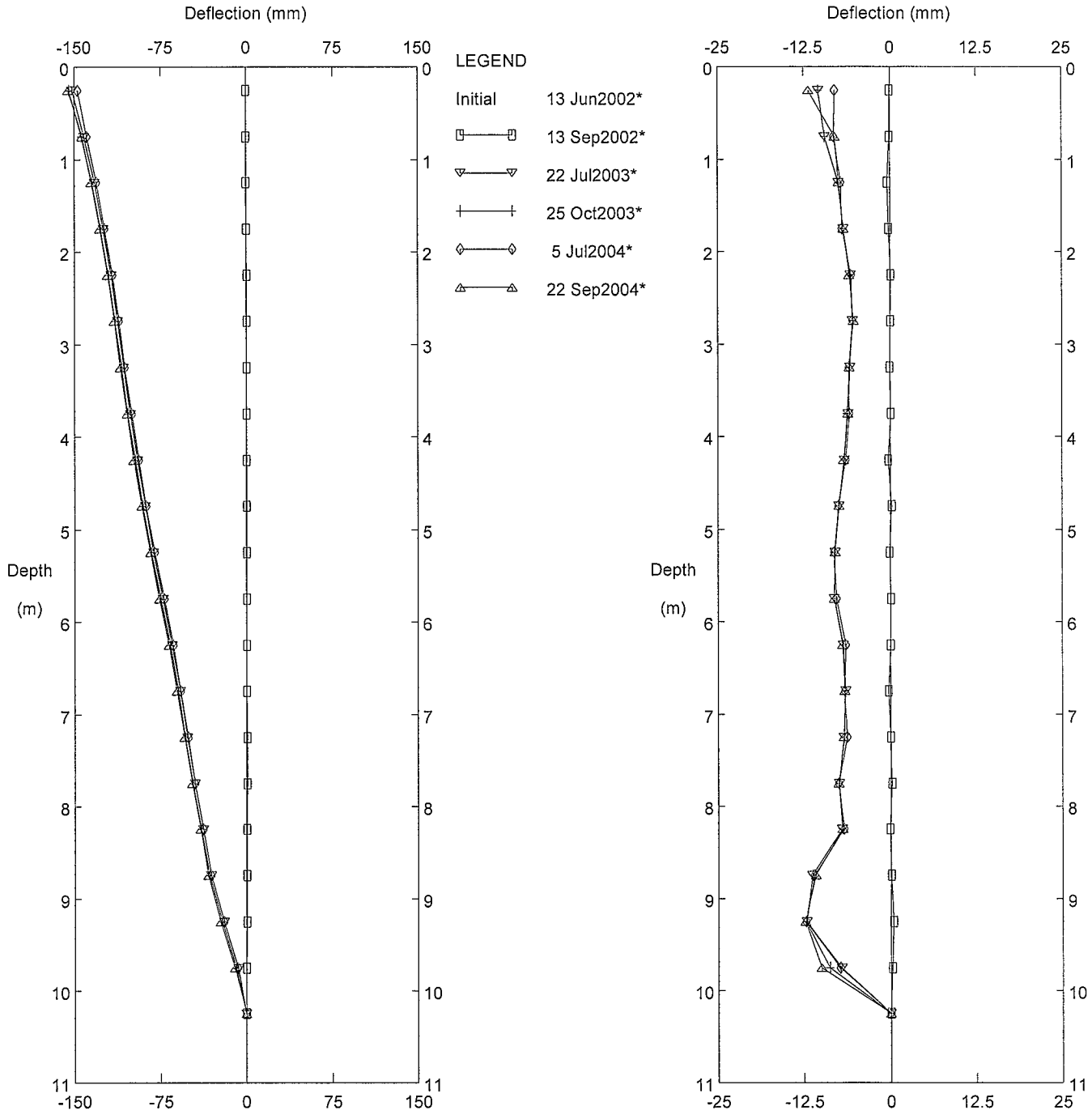
Incremental Deflection

Direction A

CD-19, Inclinometer 1+900

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

BGC Engineering Inc. - Calgary, AB



Cumulative Deflection

Direction B

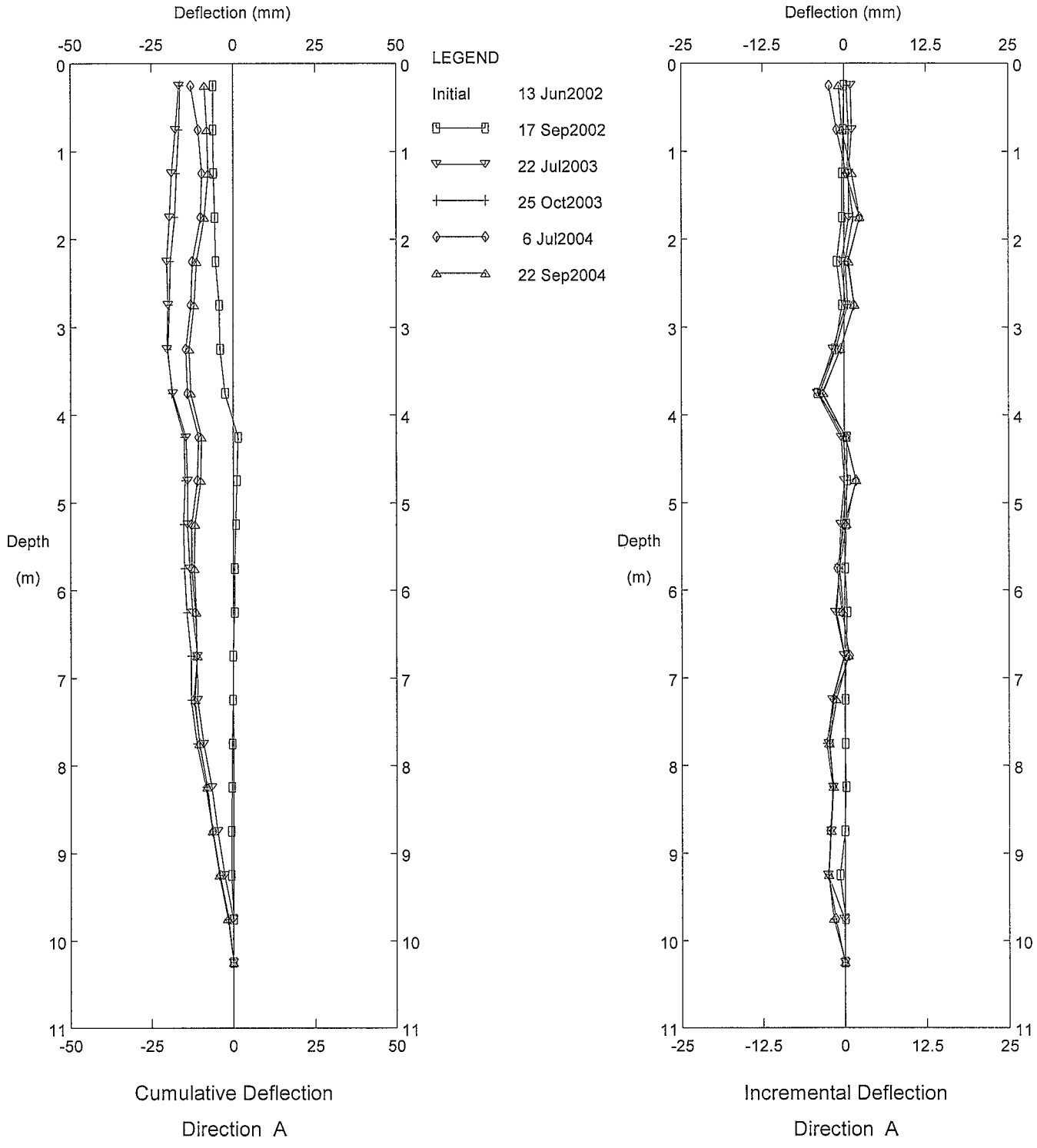
Incremental Deflection

Direction B

CD-19, Inclinometer 1+900

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

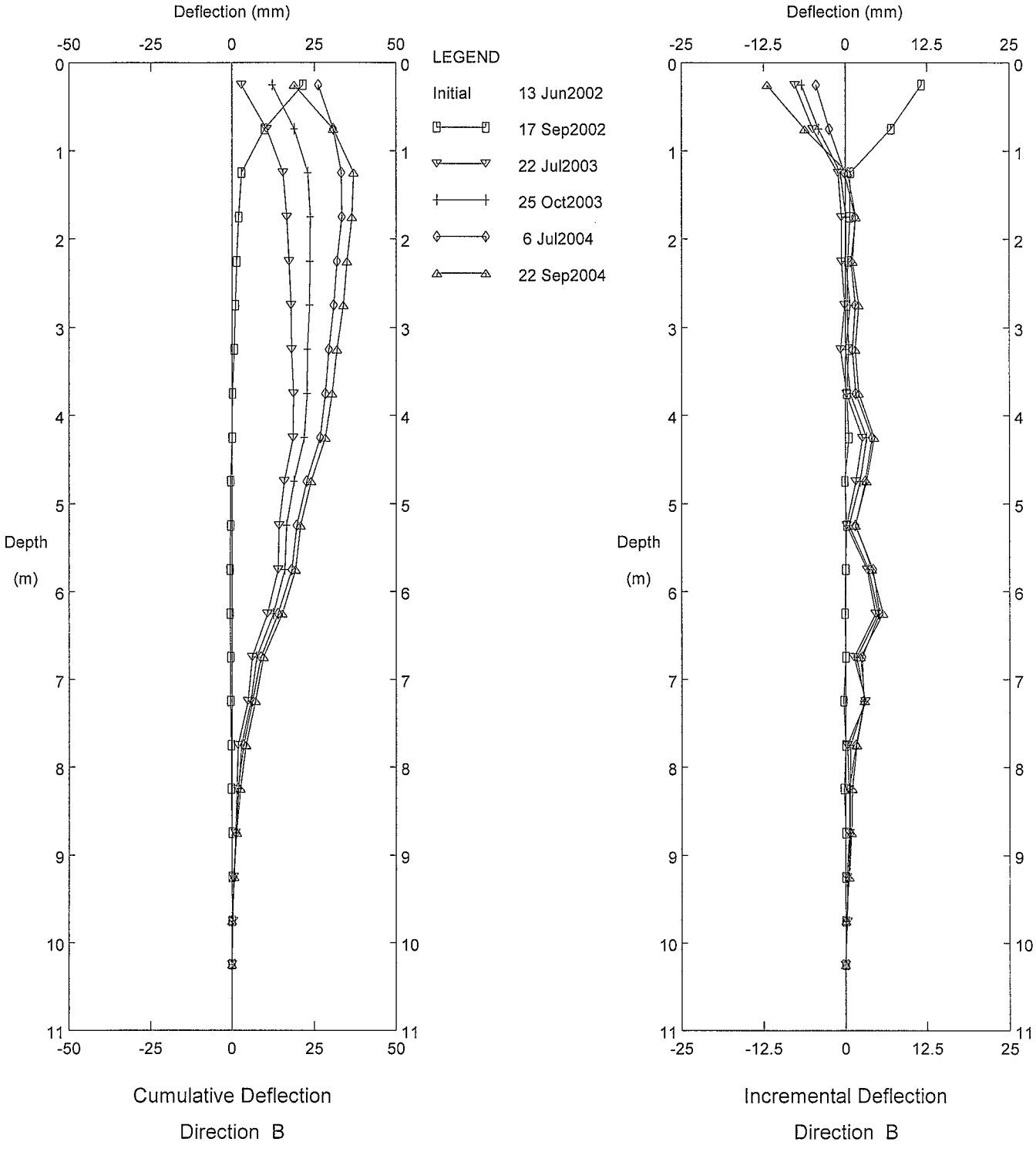
BGC Engineering Inc. - Calgary, AB



CD-21, Inclinometer 2+100

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

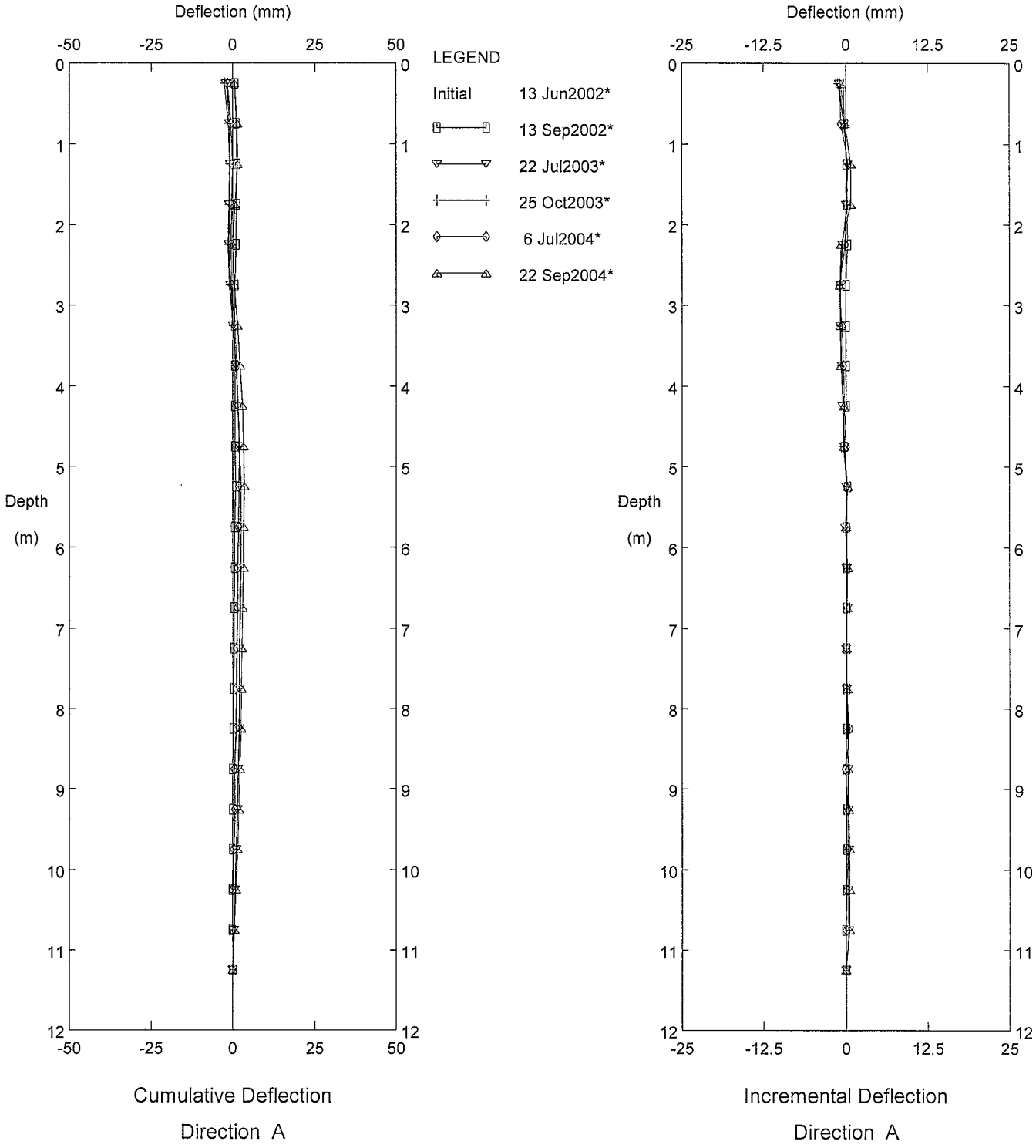
BGC Engineering Inc. - Calgary, AB



CD-21, Inclinometer 2+100

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

BGC Engineering Inc. - Calgary, AB



Cumulative Deflection

Direction A

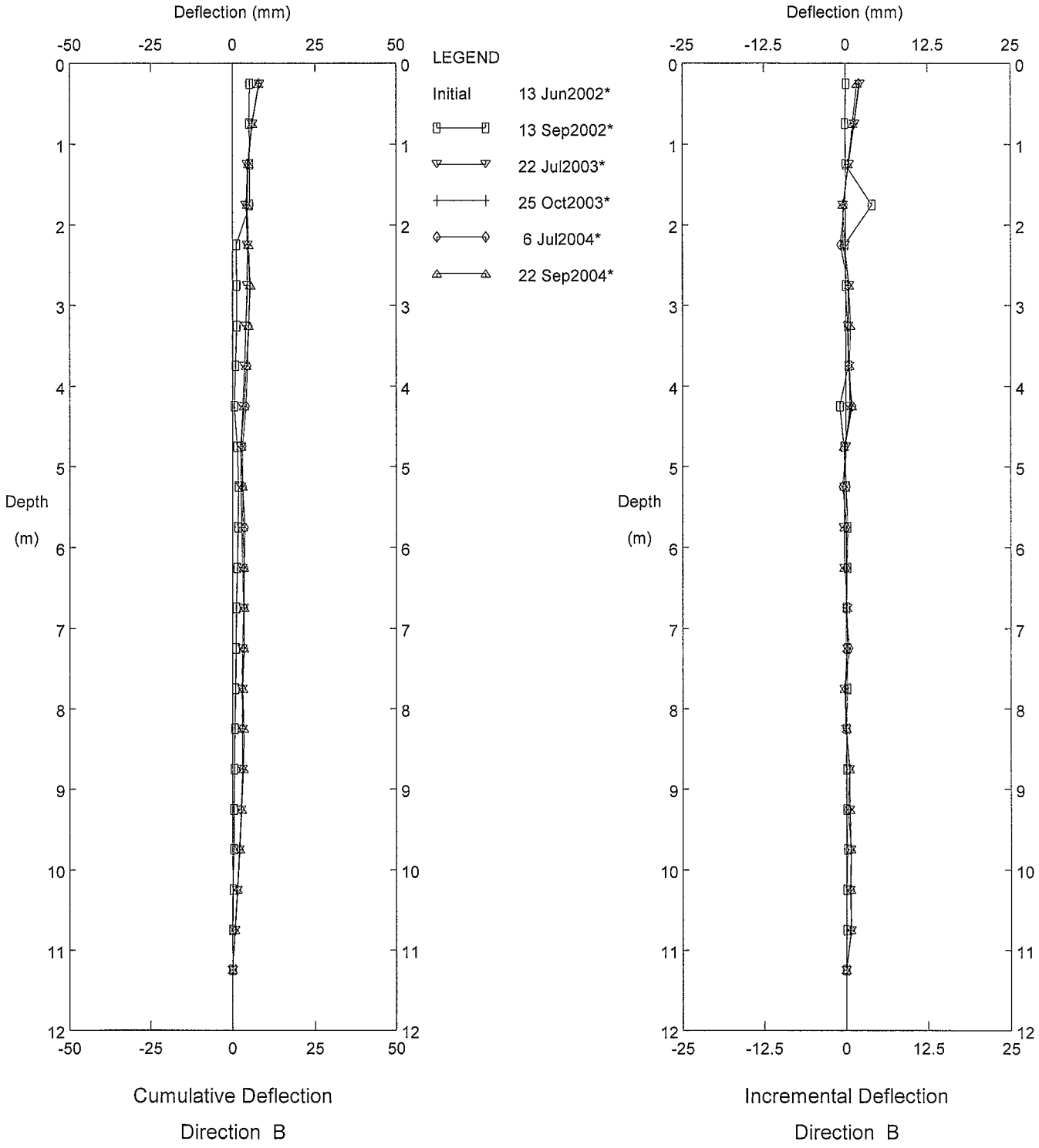
Incremental Deflection

Direction A

91CD-1, Inclinometer 1+767

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

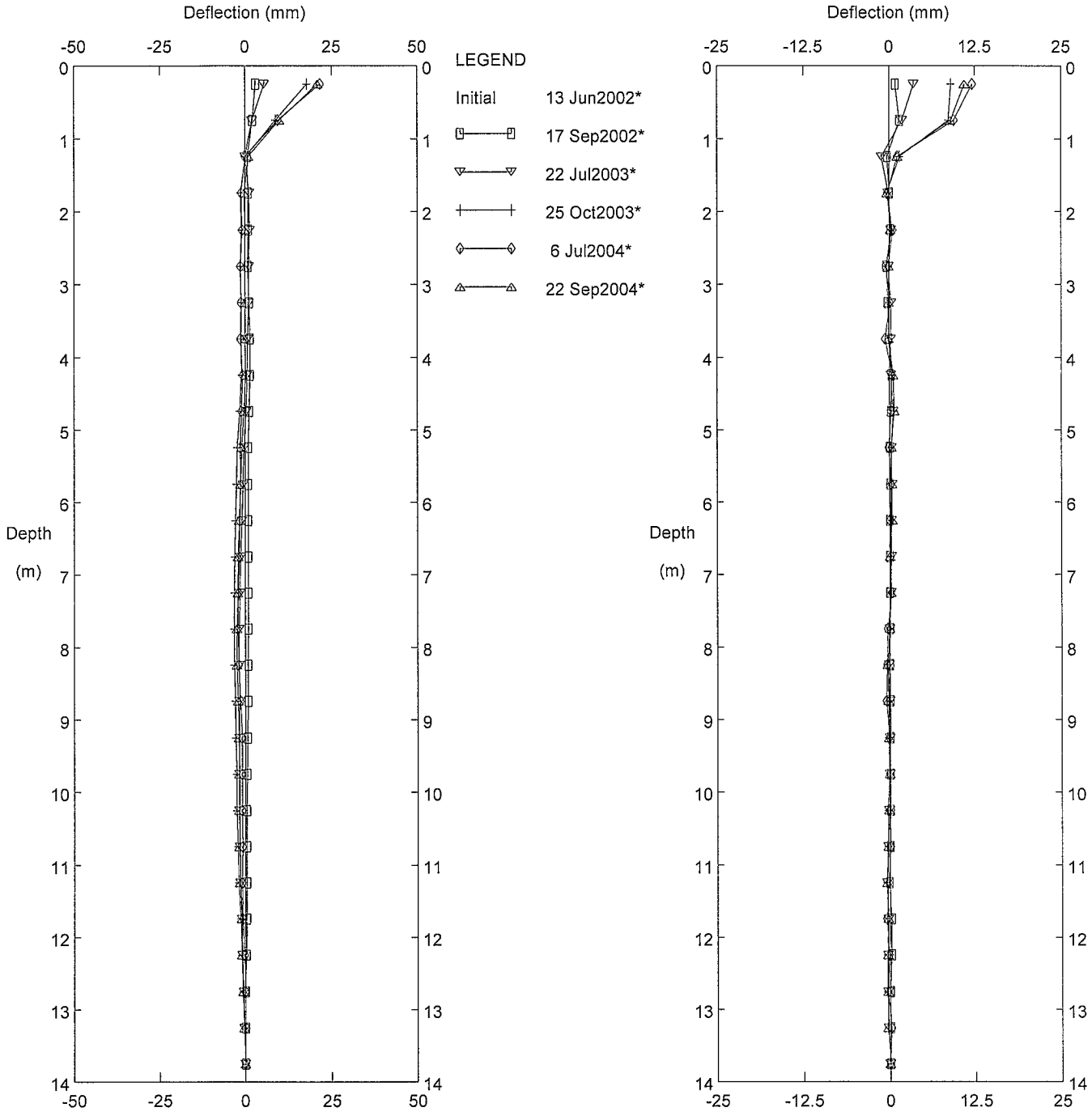
BGC Engineering Inc. - Calgary, AB



91CD-1, Inclinometer 1+767

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

BGC Engineering Inc. - Calgary, AB



Cumulative Deflection

Direction A

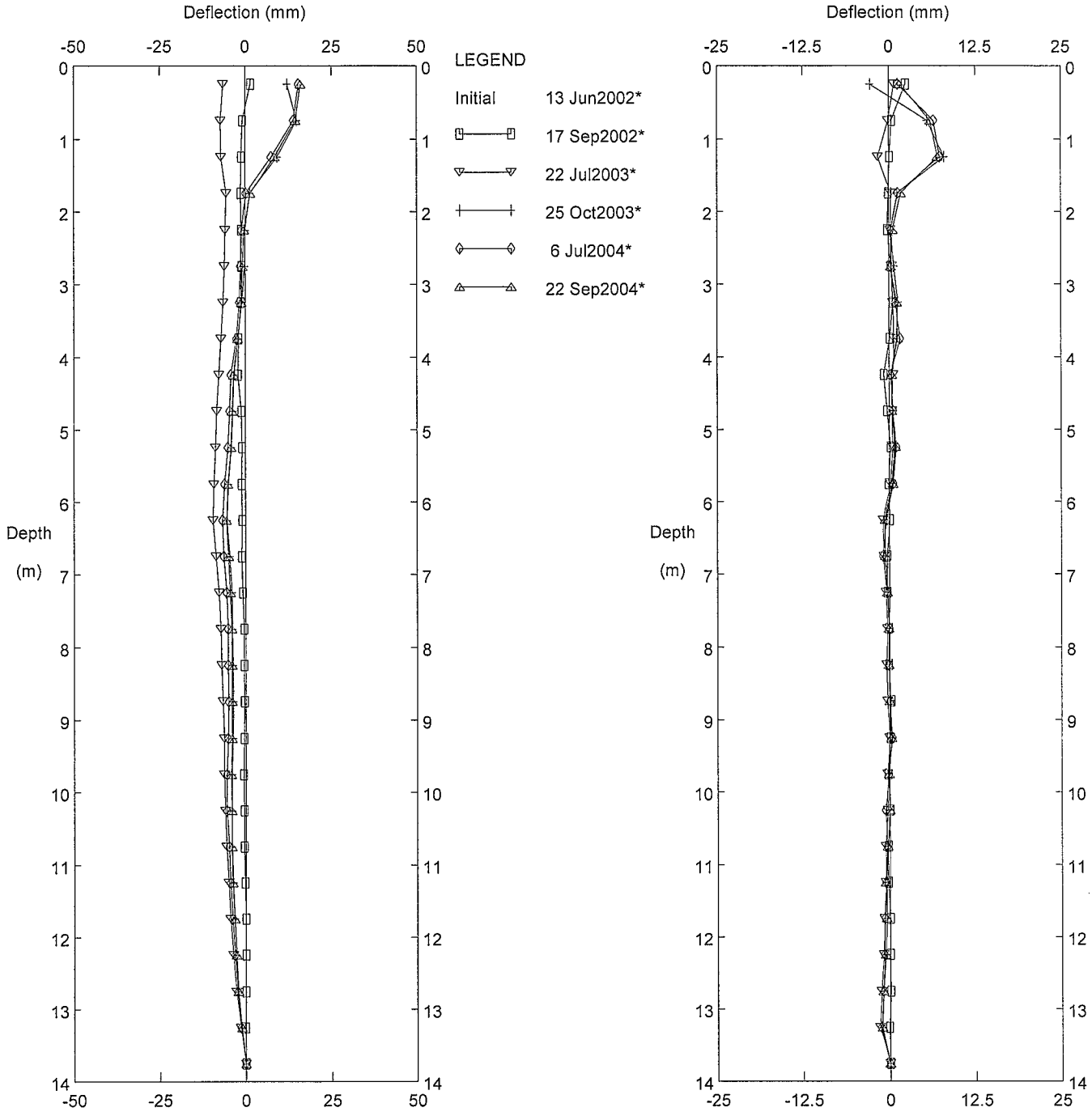
Incremental Deflection

Direction A

94CD-1, Inclinometer BH-94CD-1

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

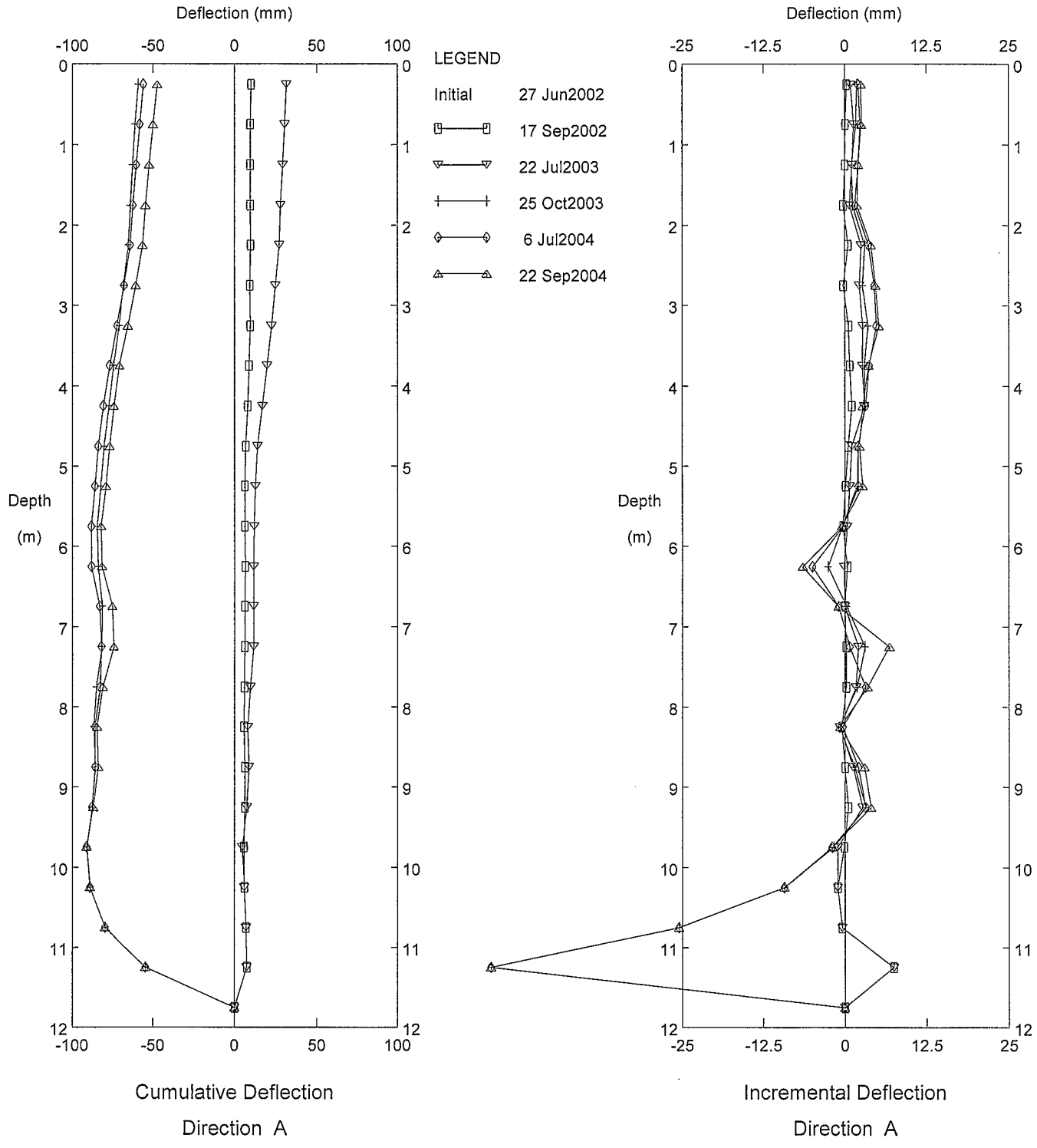
BGC Engineering Inc. - Calgary, AB



94CD-1, Inclinometer BH-94CD-1

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

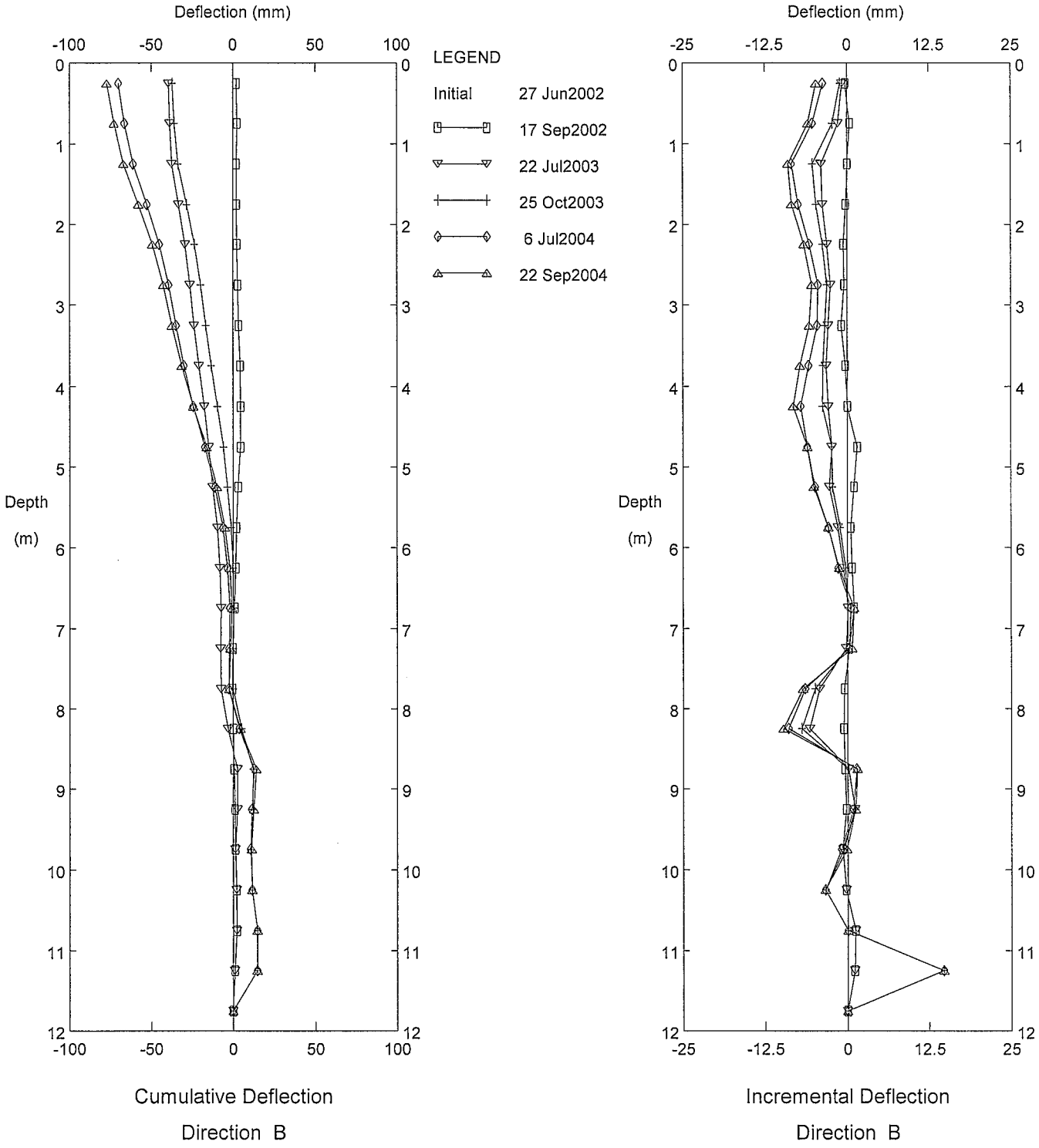
BGC Engineering Inc. - Calgary, AB



Faro Mine - Closure Monitoring sdfs, Inclinometer 8810BGC01-01

Deloitte and Touche

BGC Engineering Inc. - Calgary, AB



Faro Mine - Closure Monitoring sdfs, Inclinometer 8810BGC01-01

Deloitte and Touche

DIVERSION CANAL

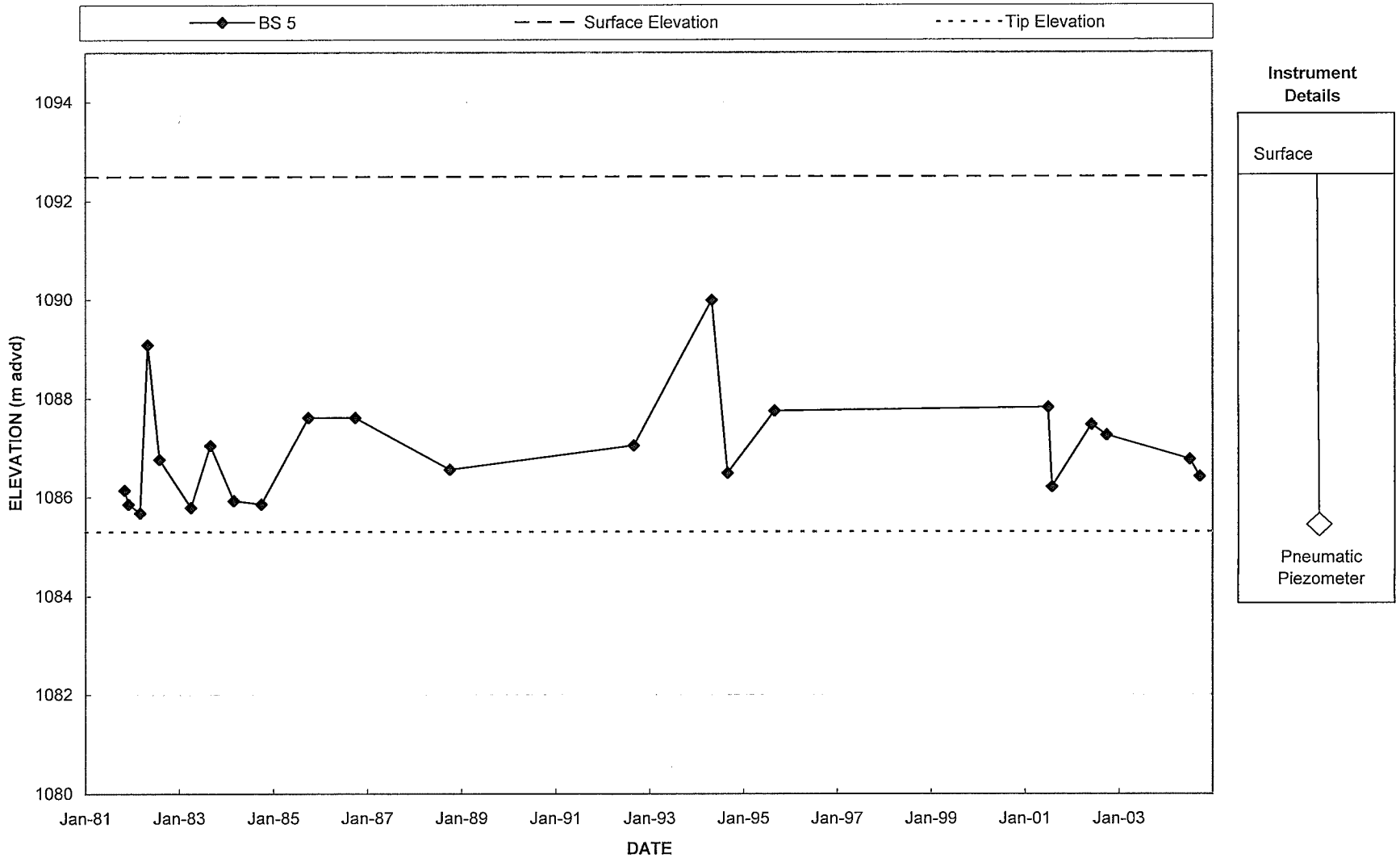
BACK SLOPE

PIEZOMETERS

Faro Mine Instrumentation
Diversion Canal Backslope

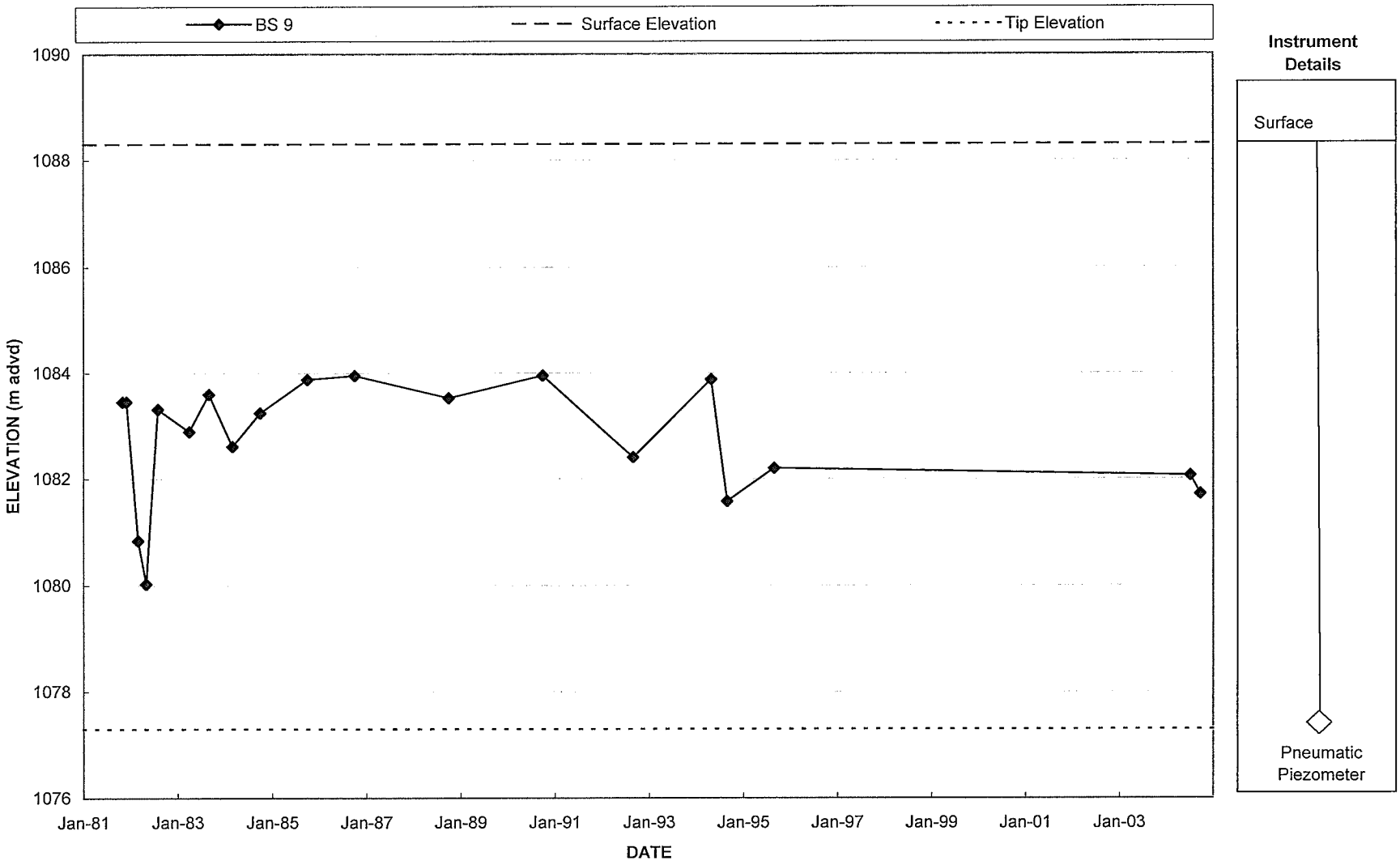
BS-5		Location:	Canal Dyke Backslope		Ground Elevation (m advd):	1092.50	Coordinates:	953.2N, 1534.6E
		Date Installed:	1981		Tip Elevation (m advd):	1085.30	Surface Protector:	yes
Date		Reading (psi)				Piezometric Elevation (m advd)		Comments
Nov-81		1.20				1086.14		
Dec-81		0.80				1085.86		
Mar-82		0.55				1085.69		
May-82		5.40				1089.08		
Aug-82		2.10				1086.77		
Apr-83		0.70				1085.79		
Sep-83		2.50				1087.05		
Mar-84		0.90				1085.93		
Oct-84		0.80				1085.86		
Oct-85		3.30				1087.61		
Oct-86		3.30				1087.61		
Oct-88		1.80				1086.56		
Oct-90								
Sep-92		2.50				1087.05		
May-94		6.70				1089.99		
Sep-94		1.70				1086.49		
Sep-95		3.50				1087.75		
Jul-01		3.60				1087.82		
Aug-01		1.30				1086.21		
Jun-02		3.10				1087.47		
Sep-02		2.80				1087.26		
Jul-04		2.10				1086.77		
Sep-04		1.60				1086.42		

DIVERSION CANAL BACKSLOPE
Piezometric Monitoring
BS5



BS-9		Location:	Canal Dyke Backslope				
			St.1+530	Ground Elevation (m advd):	1088.30	Coordinates:	1200N, 1018.4E
		Date Installed:	1981	Tip Elevation (m advd):	1077.30	Surface Protector:	yes
Date		Reading (psi)			Piezometric Elevation (m advd)		Comments
Nov-81		8.80			1083.46		
Dec-81		8.80			1083.46		
Mar-82		5.05			1080.84		
May-82		3.90			1080.03		
Aug-82		8.60			1083.32		
Apr-83		8.00			1082.90		
Sep-83		9.00			1083.60		
Mar-84		7.60			1082.62		
Oct-84		8.50			1083.25		
Oct-85		9.40			1083.88		
Oct-86		9.50			1083.95		
Oct-88		8.90			1083.53		
Oct-90		9.50			1083.95		
Sep-92		7.30			1082.41		
May-94		9.40			1083.88		
Sep-94		6.10			1081.57		
Sep-95		7.00			1082.20		
7-Jul-04		6.80			1082.06		
23-Sep-04		6.30			1081.71		

DIVERSION CANAL BACKSLOPE
Piezometric Monitoring
BS9



THERMISTORS

Faro Mine Instrumentation
Diversion Canal Backslope

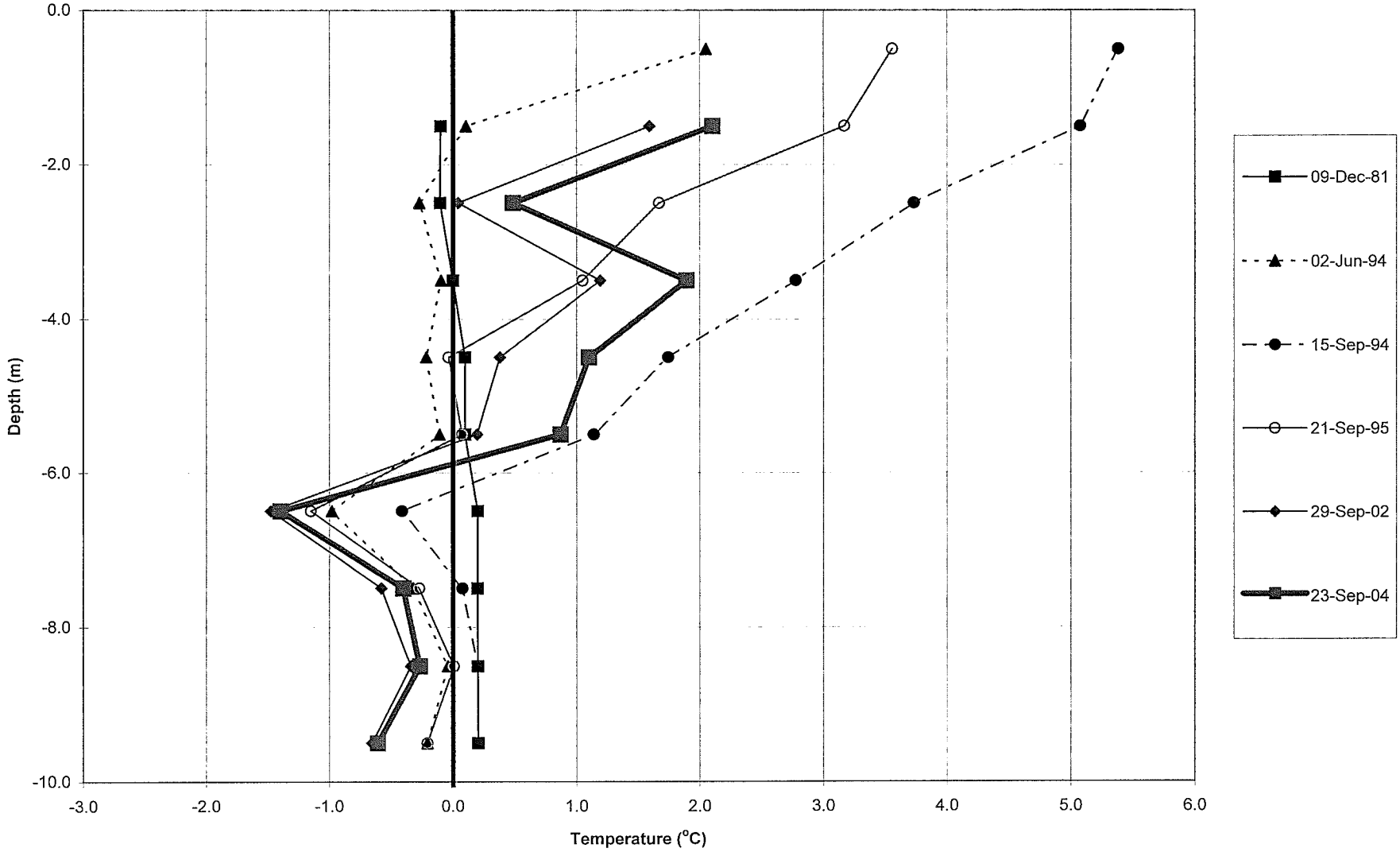
BS-5		Location:	Diversion Canal - Back Slope St.0+960		Surface Elevation (m advd):	1092.5 m	Coordinates:	
		Date Installed:	1981		Thermistor Type:	Cantec Controls YSI 44007	Ice-Bath Calibration:	applied
Thermistor String #3		Depth Correction	-0.5					
Depth on String	Actual Depth	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)
(m)	(m)	09-Dec-81	02-Jun-94	15-Sep-94	21-Sep-95	29-Sep-02	07-Jul-04	23-Sep-04
1.0	-0.5		14.56	12.33	13.50		data too noisy	
2.0	-1.5	16.28	16.11	12.55	13.80	14.94		14.56
3.0	-2.5	16.25	16.39	13.39	14.85	16.13		15.77
4.0	-3.5	16.18	16.26	14.06	15.34	15.23		14.70
5.0	-4.5	16.10	16.36	14.81	16.21	15.87		15.30
6.0	-5.5	16.10	16.27	15.27	16.12	16.02		15.48
7.0	-6.5	16.05	17.05	16.56	17.20	17.49		17.42
8.0	-7.5	16.01	16.44	16.11	16.40	16.66		16.51
9.0	-8.5	16.04	16.24	16.04	16.20	16.49		16.43
10.0	-9.5	16.03	16.37	16.23	16.37	16.75		16.71

Depth on String	Actual Depth	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)
(m)	(m)	09-Dec-81	02-Jun-94	15-Sep-94	21-Sep-95	29-Sep-02	07-Jul-04	23-Sep-04
1.0	-0.5		2.05	5.38	3.56			
2.0	-1.5	-0.10	0.11	5.07	3.17	1.59		2.10
3.0	-2.5	-0.10	-0.27	3.73	1.67	0.04		0.49
4.0	-3.5	0.00	-0.09	2.78	1.05	1.19		1.89
5.0	-4.5	0.10	-0.21	1.74	-0.03	0.38		1.10
6.0	-5.5	0.10	-0.11	1.14	0.07	0.20		0.87
7.0	-6.5	0.20	-0.98	-0.41	-1.15	-1.48		-1.40
8.0	-7.5	0.20	-0.32	0.08	-0.27	-0.58		-0.40
9.0	-8.5	0.20	-0.04	0.20	0.01	-0.34		-0.27
10.0	-9.5	0.20	-0.21	-0.04	-0.21	-0.65		-0.61

* The 6.5 metre depth tip is suspect

*Data is too noisy

DIVERSION CANAL BACKSLOPE
Geothermal Monitoring
BS-5



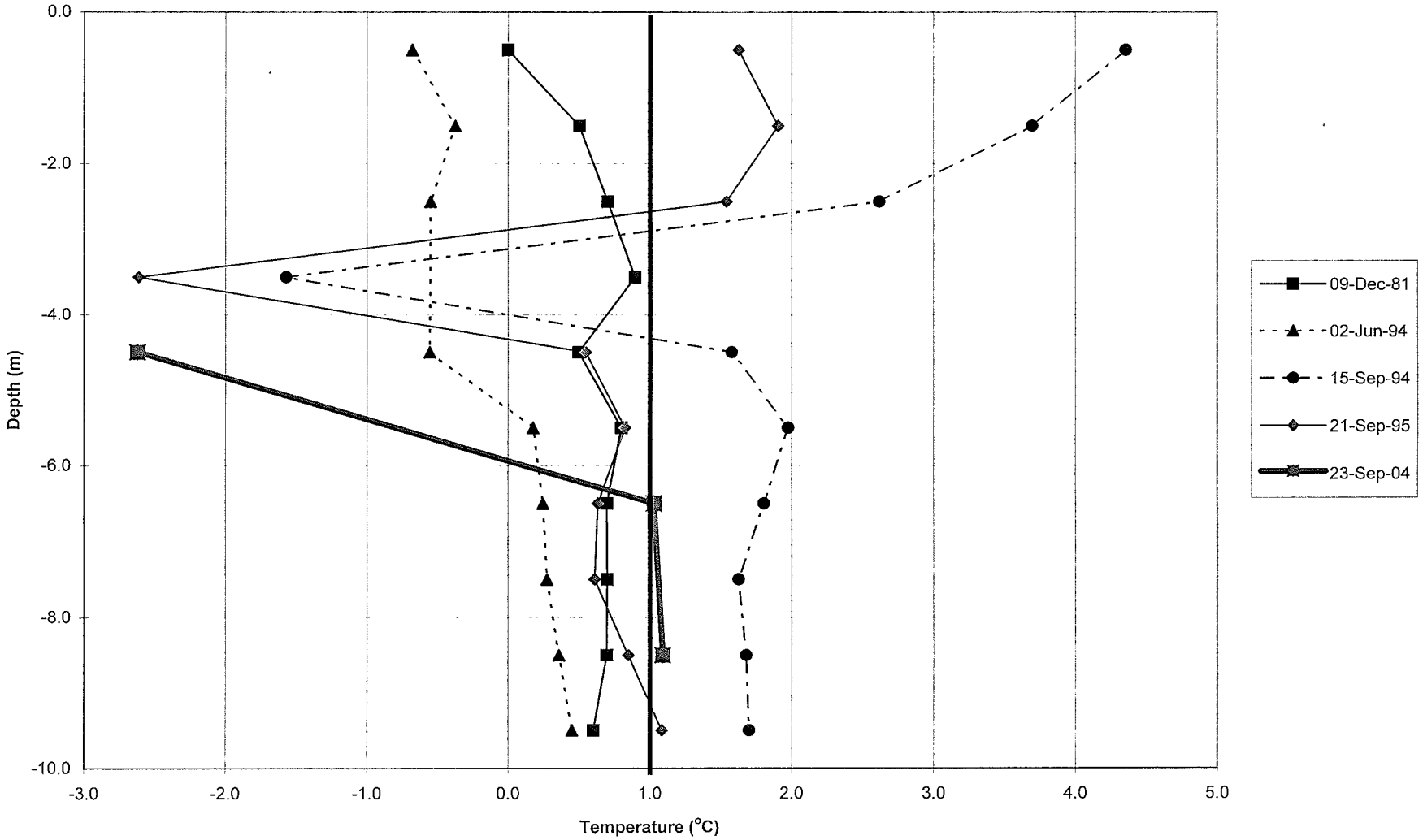
Faro Mine Instrumentation
Canal Dyke Backslope

BS-9		Location:	Canal - Back Slope St.1+530		Elevation (m advd):	1088.3 m	Coordinates:	1200.0 m N 1018.4 m E		
		Date Installed:	1981		Thermistor Type:	Cantec Controls YSI 44007	Ice-Bath Calibration:	applied	Surface Protector:	yes
Thermistor String #4		Depth Correction:	-0.5							
Depth on String	Actual Depth	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)
(m)	(m)	09-Dec-81	02-Jun-94	15-Sep-94	21-Sep-95	07-Jul-04	23-Sep-04			
1.0	-0.5	16.14	16.71	12.96	14.86	No readings, nothing registered				
2.0	-1.5	15.74	16.46	13.40	14.66					
3.0	-2.5	15.62	16.65	14.18	14.97					
4.0	-3.5	15.46		17.54	18.51					
5.0	-4.5	15.76	16.63	14.92	15.72		18.50			
6.0	-5.5	15.56	16.06	14.66	15.54					
7.0	-6.5	15.57	15.93	14.72	15.62		15.31			
8.0	-7.5	15.64	15.98	14.92	15.71					
9.0	-8.5	15.61	15.88	14.85	15.49		15.30			
10.0	-9.5	15.67	15.79	14.82	15.29					

Depth on String	Actual Depth	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)
(m)	(m)	09-Dec-81	02-Jun-94	15-Sep-94	21-Sep-95	07-Jul-04	23-Sep-04			
1.0	-0.5	0.00	-0.68	4.36	1.63					
2.0	-1.5	0.50	-0.37	3.70	1.91					
3.0	-2.5	0.70	-0.55	2.62	1.54					
4.0	-3.5	0.90		-1.57	-2.61					
5.0	-4.5	0.50	-0.55	1.58	0.55		-2.62			
6.0	-5.5	0.80	0.18	1.98	0.82					
7.0	-6.5	0.70	0.25	1.81	0.63		1.03			
8.0	-7.5	0.70	0.28	1.63	0.61					
9.0	-8.5	0.70	0.36	1.68	0.85		1.09			
10.0	-9.5	0.60	0.45	1.70	1.08					
		The 4 metre depth tip is suspect								

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

THERMISTOR BS-9
(installed 1981)



Faro Mine Instrumentation
Diversion Canal Backslope

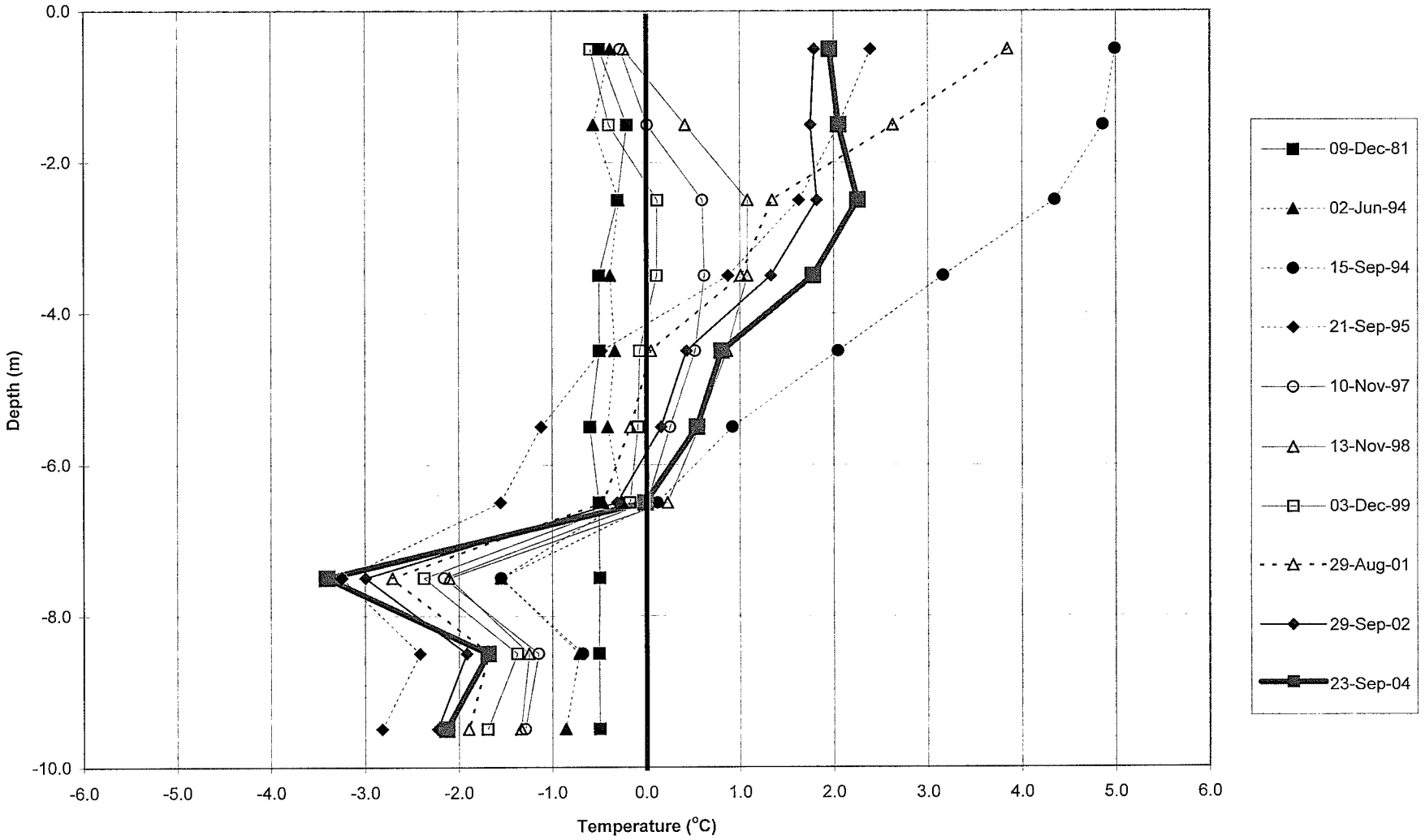
BS-10		Location:	Diversion Canal - Back Slope St.1+900		Surface Elevation (m advd):	1098.2	Coordinates:	1310.5 m N 657.3 m E		
		Date Installed:	1981		Thermistor Type:	Cantec Controls YSI 44007	Ice-Bath Calibration:	applied	Surface Protector:	yes
Thermistor String #5		Depth Correction	-0.5							

Depth on String	Actual Depth	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)
(m)	(m)	09-Dec-81	02-Jun-94	15-Sep-94	21-Sep-95	10-Nov-97	13-Nov-98	03-Dec-99	29-Aug-01	29-Sep-02	07-Jul-04	23-Sep-04
1.0	-0.5	16.64	16.54	12.62	14.37	16.45	16.42	16.72	13.36	14.81	16.11	14.69
2.0	-1.5	16.35	16.65	12.67	14.58	16.17	15.84	16.51	14.20	14.84	16.90	14.62
3.0	-2.5	16.45	16.44	13.01	14.91	15.71	15.33	16.10	15.15	14.79	17.05	14.47
4.0	-3.5	16.55	16.45	13.75	15.43	15.63	15.27	16.04	15.41	15.16	16.57	14.82
5.0	-4.5	16.59	16.45	14.58	16.57	15.75	15.48	16.23	16.18	15.87	16.89	15.57
6.0	-5.5	16.65	16.49	15.41	17.10	15.94	15.69	16.22	16.36	16.09	16.67	15.78
7.0	-6.5	16.62	16.41	16.10	17.54	16.19	16.01	16.34	16.61	16.48	16.79	16.23
8.0	-7.5	16.58	17.50	17.50	19.11	18.06	18.01	18.26	18.65	18.93	19.60	19.34
9.0	-8.5	16.62	16.80	16.77	18.34	17.18	17.27	17.38	17.68	17.90	17.82	17.69
10.0	-9.5	16.58	16.89	16.95	18.69	17.27	17.31	17.63	17.88	18.19	18.06	18.10

Depth on String	Actual Depth	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)
(m)	(m)	09-Dec-81	02-Jun-94	15-Sep-94	21-Sep-95	10-Nov-97	13-Nov-98	03-Dec-99	29-Aug-01	29-Sep-02	07-Jul-04	23-Sep-04
1.0	-0.5	-0.50	-0.38	4.99	2.39	-0.27	-0.24	-0.59	3.85	1.79	0.14	1.96
2.0	-1.5	-0.20	-0.56	4.86	2.05	0.01	0.42	-0.39	2.63	1.75	-0.80	2.05
3.0	-2.5	-0.30	-0.29	4.35	1.63	0.60	1.08	0.12	1.35	1.82	-0.97	2.25
4.0	-3.5	-0.50	-0.38	3.16	0.87	0.62	1.08	0.11	1.01	1.33	-0.41	1.78
5.0	-4.5	-0.50	-0.33	2.04	-0.47	0.52	0.86	-0.07	0.05	0.43	-0.79	0.81
6.0	-5.5	-0.60	-0.41	0.92	-1.12	0.26	0.57	-0.09	-0.16	0.16	-0.53	0.54
7.0	-6.5	-0.50	-0.25	0.12	-1.55	0.01	0.23	-0.17	-0.46	-0.31	-0.67	-0.01
8.0	-7.5	-0.50	-1.55	-1.55	-3.25	-2.16	-2.10	-2.37	-2.71	-2.99	-3.66	-3.41
9.0	-8.5	-0.50	-0.71	-0.68	-2.41	-1.15	-1.25	-1.37	-1.68	-1.91	-1.83	-1.69
10.0	-9.5	-0.50	-0.86	-0.93	-2.82	-1.29	-1.34	-1.69	-1.89	-2.23	-2.09	-2.13

The 8 metre depth tip is suspect

DIVERSION CANAL BACKSLOPE
Geothermal Monitoring
BS-10

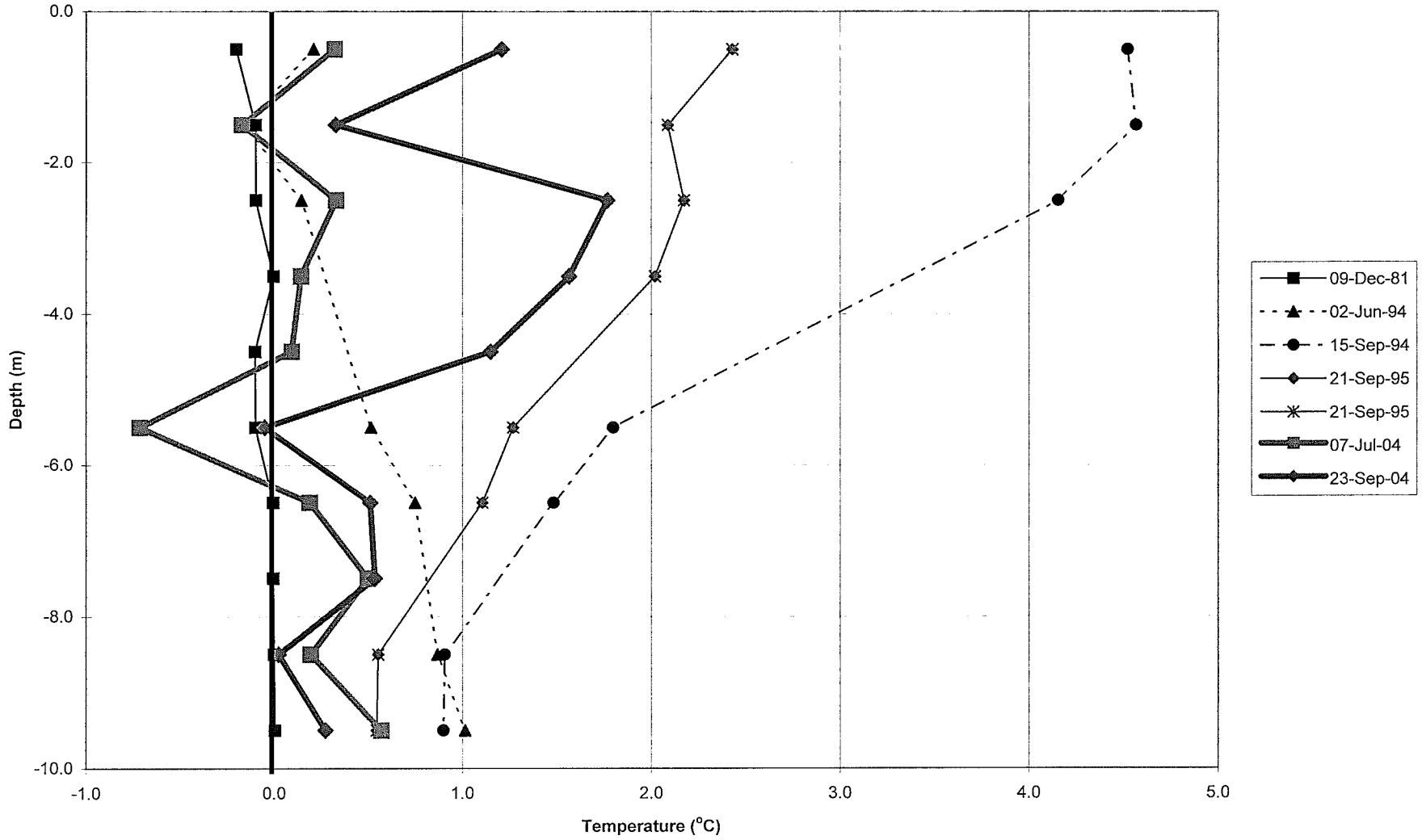


BS-12		Location:	Canal - Back Slope St.2+260		Elevation (m advd):	1094.6 m	Coordinates:	1463.6 m N 343.1 m E		
		Date Installed:	1981		Thermistor Type:	Cantec Controls YSI 44007	Ice-Bath Calibration:	applied	Surface Protector:	yes
Thermistor String #10		Depth Correction:	-0.5							
Depth on String	Actual Depth	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)
(m)	(m)	09-Dec-81	02-Jun-94	15-Sep-94	21-Sep-95	07-Jul-04	23-Sep-04			
1.0	-0.5	16.34	16.00	12.88	14.30	15.91	15.21			
2.0	-1.5	16.28	16.33	12.87	14.57	16.34	15.93			
3.0	-2.5	16.27	16.07	13.13	14.50	15.92	14.80			
4.0	-3.5	16.20			14.62	16.08	14.96			
5.0	-4.5	16.24				16.08	15.24			
6.0	-5.5	16.23	15.73	14.74	15.14	16.75	16.19			
7.0	-6.5	16.21	15.60	15.03	15.32	16.05	15.79			
8.0	-7.5	16.21				15.80	15.77			
9.0	-8.5	16.19	15.49	15.46	15.74	16.03	16.17			
10.0	-9.5	16.17	15.36	15.45	15.73	15.71	15.95			

Depth on String	Actual Depth	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)
(m)	(m)	09-Dec-81	02-Jun-94	15-Sep-94	21-Sep-95	07-Jul-04	23-Sep-04			
1.0	-0.5	-0.20	0.21	4.52	2.43	0.32	1.21			
2.0	-1.5	-0.10	-0.16	4.57	2.09	-0.17	0.33			
3.0	-2.5	-0.10	0.15	4.16	2.17	0.33	1.77			
4.0	-3.5	0.00			2.02	0.14	1.57			
5.0	-4.5	-0.10				0.09	1.15			
6.0	-5.5	-0.10	0.52	1.80	1.27	-0.71	-0.05			
7.0	-6.5	0.00	0.75	1.48	1.11	0.19	0.51			
8.0	-7.5	0.00				0.50	0.54			
9.0	-8.5	0.00	0.87	0.91	0.55	0.19	0.02			
10.0	-9.5	0.00	1.01	0.90	0.55	0.57	0.27			

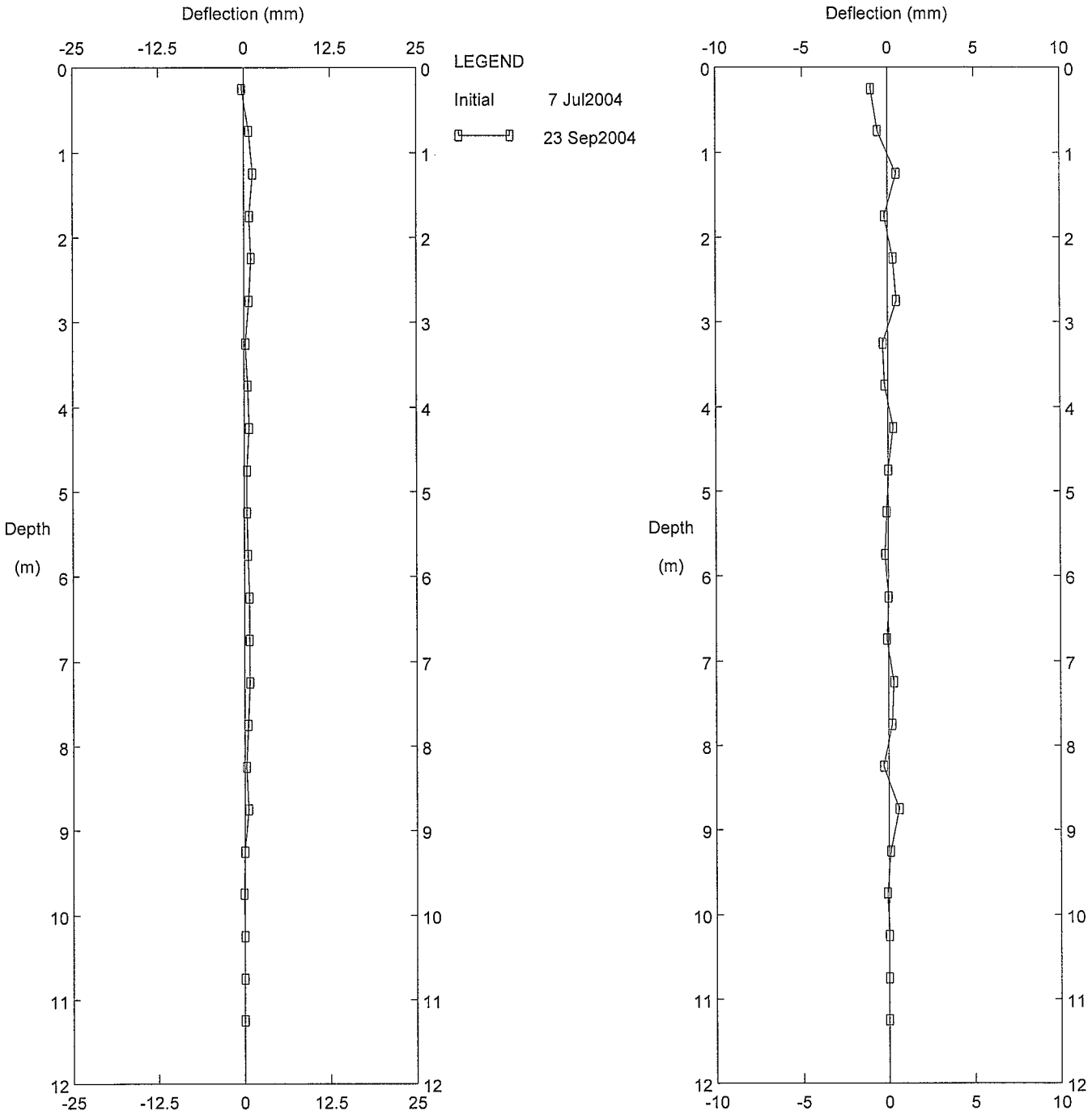
* The initial reading (Nov 15/81) is excluded from the data set because post-installation temperature equilibruim may not have been complete.

THERMISTOR BS-12
(installed 1981)



SLOPE INDICATORS

BGC Engineering Inc. - Calgary, AB



Cumulative Deflection

Direction A

Incremental Deflection

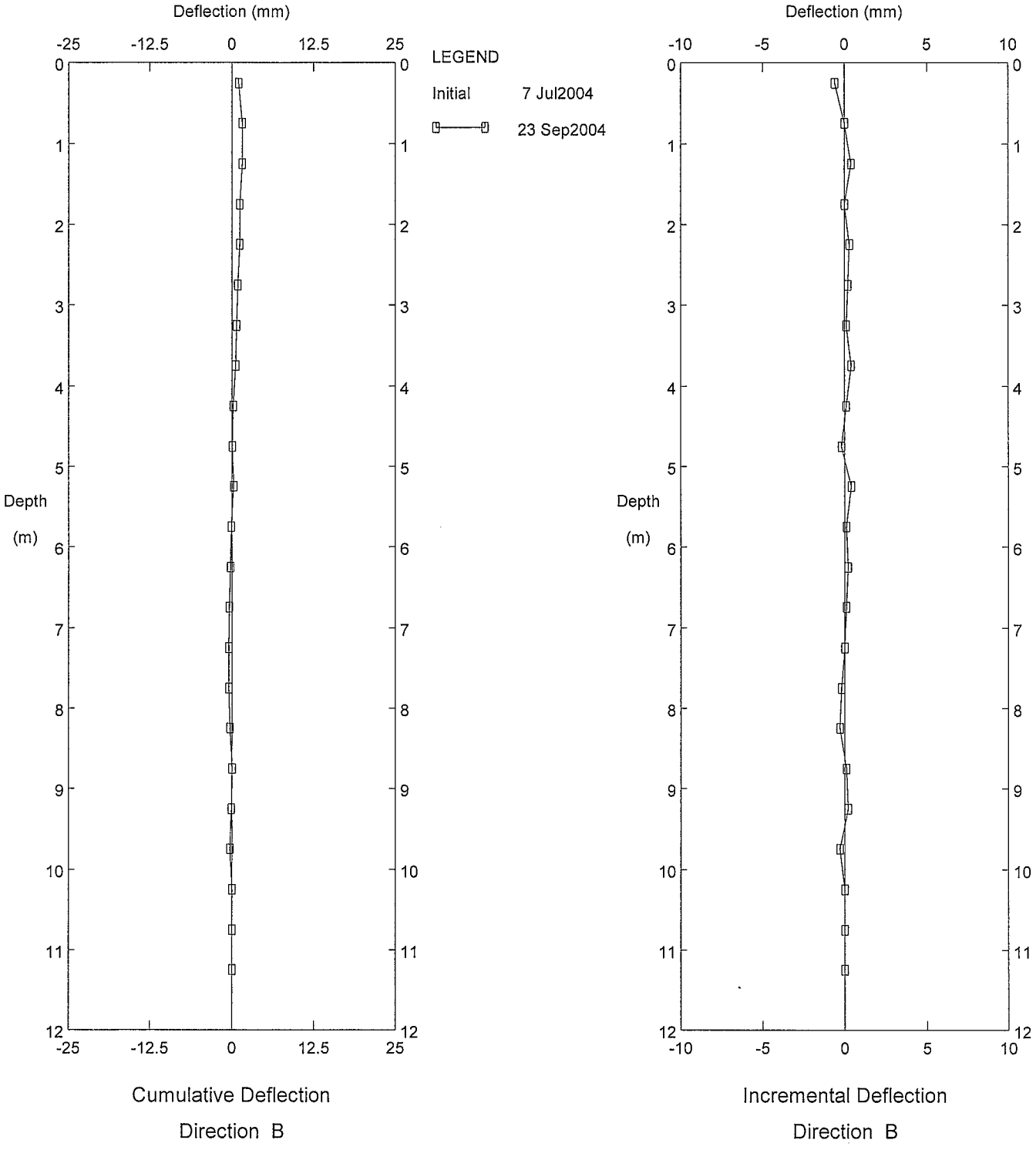
Direction A

Faro, Inclinometer BS-5

Deloitte and Touche

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

BGC Engineering Inc. - Calgary, AB



Cumulative Deflection
Direction B

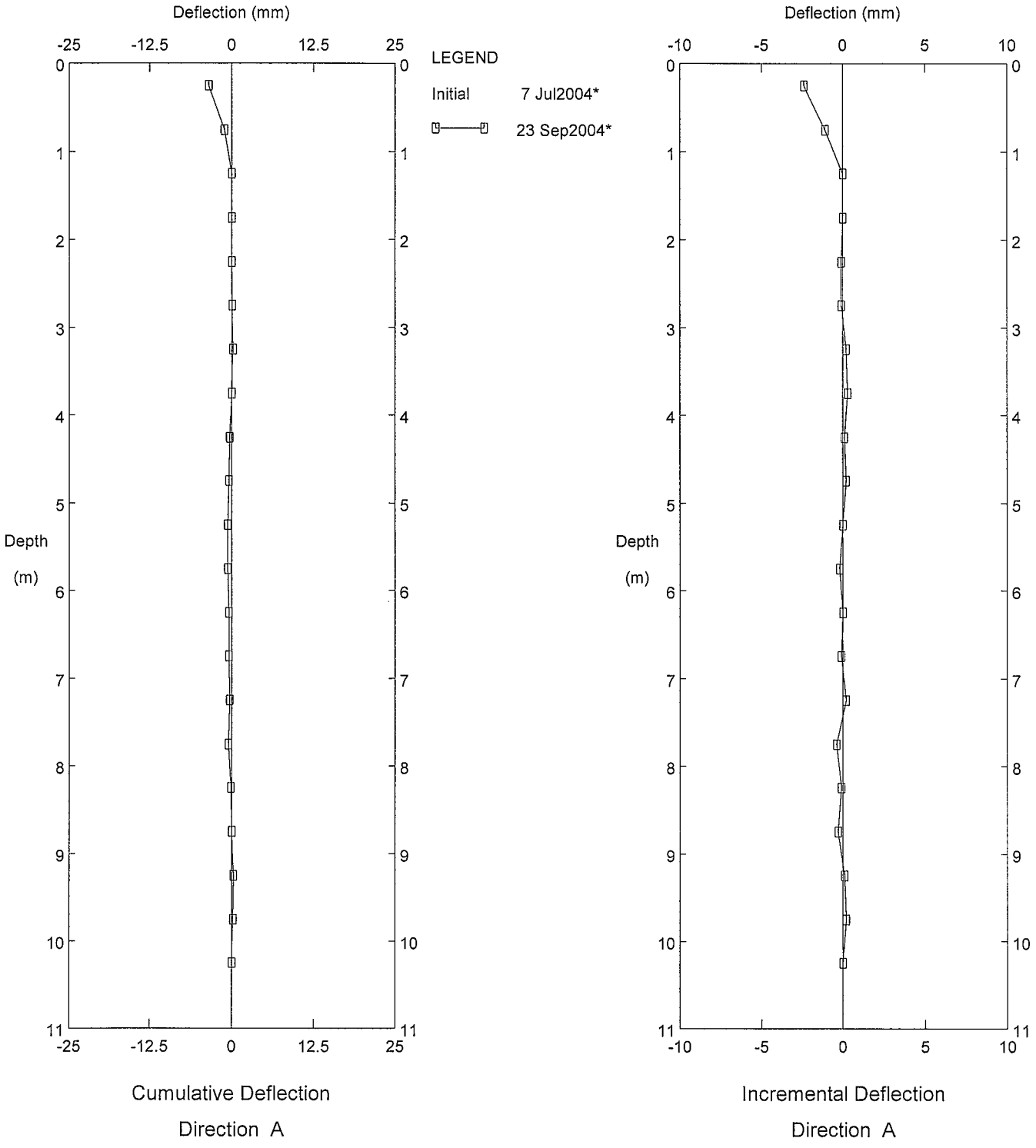
Incremental Deflection
Direction B

Faro, Inclinometer BS-5

Deloitte and Touche

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

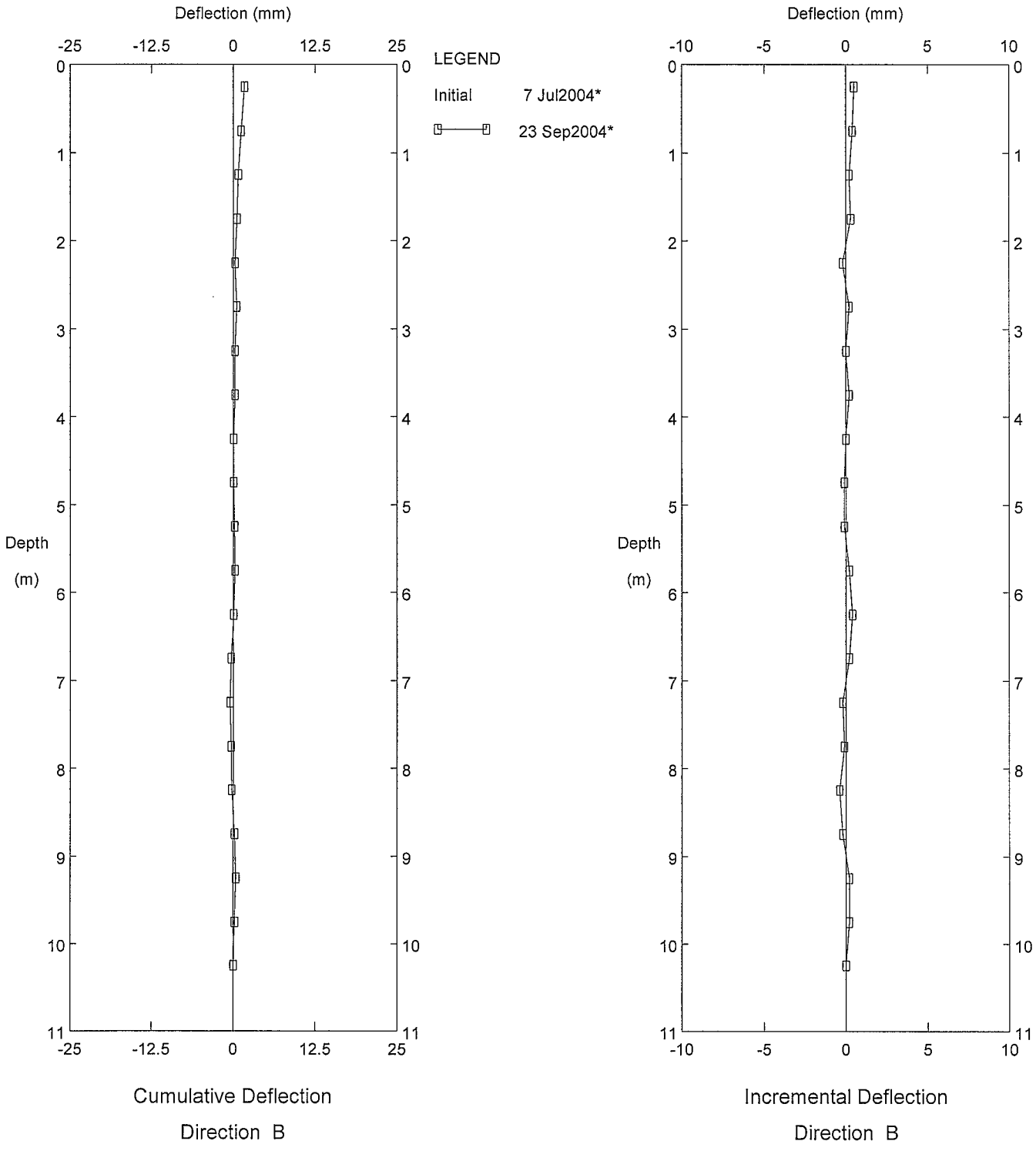
BGC Engineering Inc. - Calgary, AB



BS-9, Inclinometer 1+530

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

BGC Engineering Inc. - Calgary, AB



BS-9, Inclinometer 1+530

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

DIVERSION CANAL

SPOIL PILES

THERMISTORS

Faro Mine Instrumentation
Diversion Canal Spoil Pile

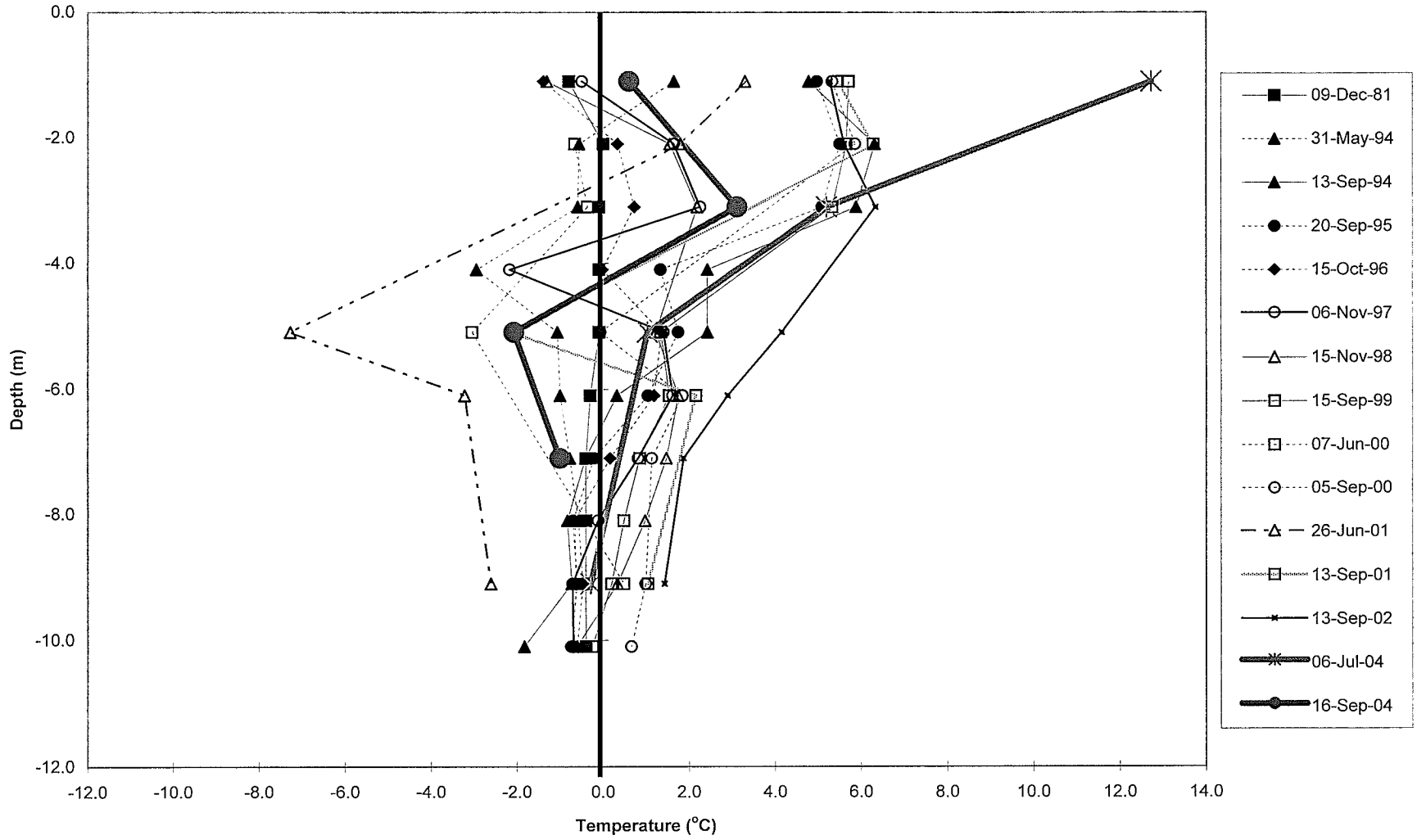
SP-3		Location:	N. of canal dyke St.1+900		Surface Elevation (m advpd):	1083.5	Coordinates:	1394.4 m N & 704.5 m E			
		Date Installed:	1981		Thermistor Type:	Cantec Controls YSI 44007	Ice-Bath Calibration:	applied		Surface Protector:	yes
Thermistor String#25		Depth Correction	0.1								

Depth on String	Actual Depth	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)
(m)	(m)	09-Dec-81	31-May-94	13-Sep-94	20-Sep-95	15-Oct-96	06-Nov-97	15-Nov-98	15-Sep-99	07-Jun-00	05-Sep-00	26-Jun-01	13-Sep-01	13-Jun-02	13-Sep-02	06-Jul-04	16-Sep-04
1.0	-1.1	16.85	14.88	12.72	12.60	17.37	16.59	17.30	12.15		12.38	13.69	12.31	10.81	12.41	8.65	15.69
2.0	-2.1	16.20	16.67	11.81	12.29	15.90	14.88	14.95	12.18	16.73	12.06	14.76	11.81		12.21		
3.0	-3.1	16.25	16.66	12.04	12.52	15.59	14.43	14.48	12.38	16.48				17.41	11.78	12.46	13.82
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	23.65	18.05		13.12	15.35	18.00
6.0	-6.1	16.39	16.99	15.88	15.31	15.23	14.90	14.80	14.96		14.73	19.10	14.50		13.97	25.52	25.10
7.0	-7.1	16.49	16.81	16.50	16.33	16.04	15.52	15.01	15.49		15.27		14.87		14.71		17.03
8.0	-8.1	16.54	16.69	16.91	16.80	16.73	16.27	15.39	15.78			18.79	18.79				
9.0	-9.1	16.54	16.60	16.82	16.71	16.70	16.77	15.90	16.01	15.78	15.38	18.50	15.34		15.04	16.41	
10.0	-10.1	16.48	16.65	17.74	16.77	16.77	16.75	16.68	16.38		15.64					85.10	

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

Depth on String	Actual Depth	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)
(m)	(m)	09-Dec-81	31-May-94	13-Sep-94	20-Sep-95	15-Oct-96	06-Nov-97	15-Nov-98	15-Sep-99	07-Jun-00	05-Sep-00	26-Jun-01	13-Sep-01	13-Jun-02	13-Sep-02	06-Jul-04	16-Sep-04
1.0	-1.1	-0.80	1.64	4.77	4.96	-1.39	-0.50	-1.31	5.70		5.32	3.30	5.44	8.08	5.27	12.72	0.60
2.0	-2.1	0.00	-0.56	6.31	5.50	0.33	1.64	1.55	5.65	-0.66	5.85	1.80	6.28		5.60		
3.0	-3.1	-0.10	-0.59	5.87	5.08	0.72	2.25	2.18	5.32	-0.37				-1.44	6.33	5.19	3.11
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	-7.28	-2.14		4.15	1.03	-2.08
6.0	-6.1	-0.30	-1.00	0.32	1.04	1.18	1.61	1.75	1.54		1.84	-3.23	2.15		2.89	-8.69	-8.38
7.0	-7.1	-0.40	-0.77	-0.41	-0.21	0.16	0.81	1.47	0.85		1.13				1.87		-1.01
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	-2.61	1.04		1.43	-0.28	
10.0	-10.1	-0.40	-0.60	-1.83	-0.74	-0.71	-0.68	-0.60	-0.25		0.66						

DIVERSION CANAL SPOIL PILE
Geothermal Monitoring
SP-3



Faro Mine Instrumentation
Diversion Canal Spoil Pile

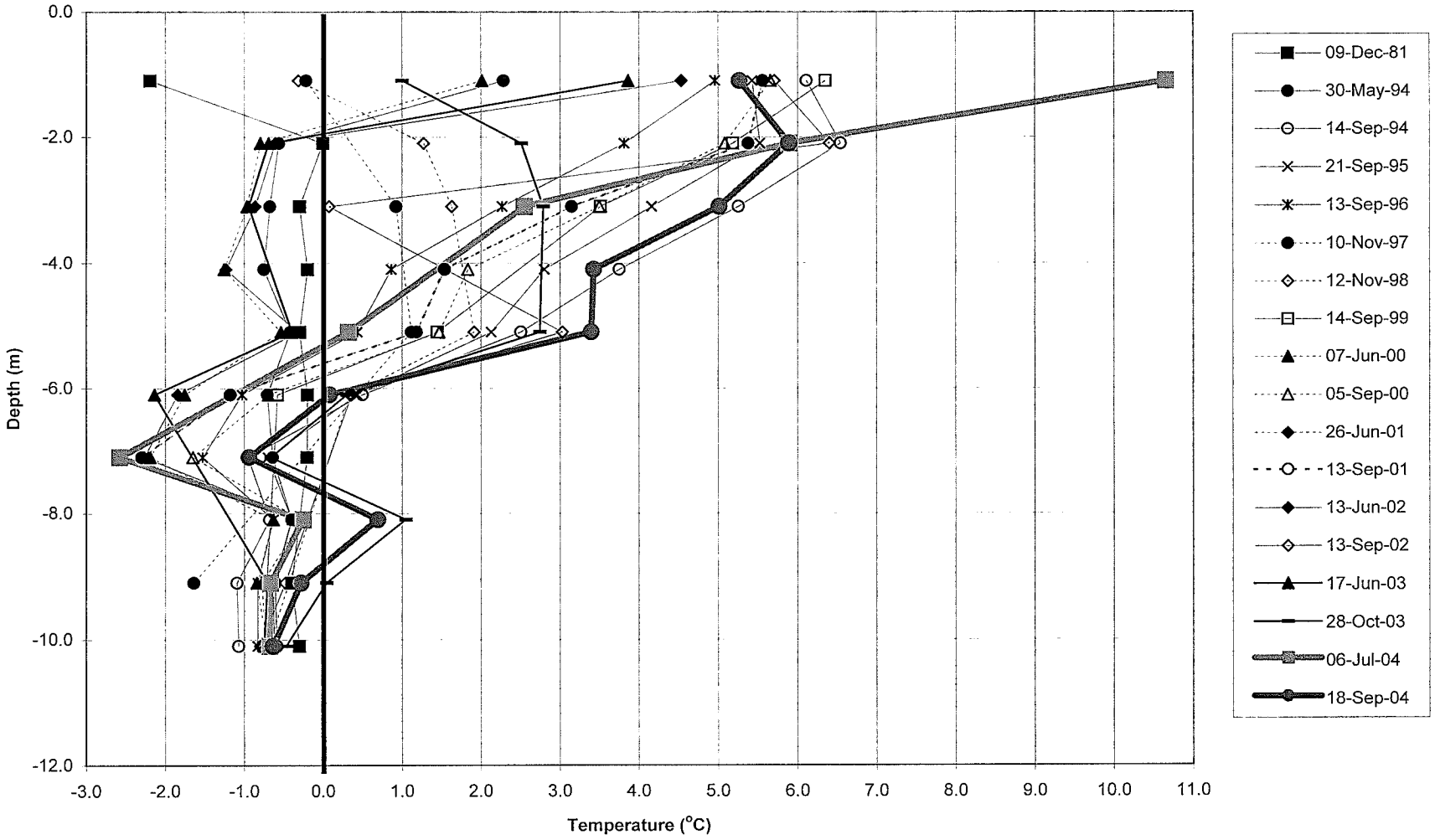
SP-5		Location:	N. of canal dyke St.2+950		Surface Elevation (m advpd):	1079.2	Coordinates:	1898.2 m N & 183.1 m W	8V580023 6913930			
		Date Installed:	1981		Thermistor Type:	Cantec Controls YSI 44007	Ice-Bath Calibration:	applied			Surface Protector:	yes
Thermistor String #24		Depth Correction	0.1									

Depth on String	Actual Depth	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)
(m)	(m)	09-Dec-81	30-May-94	14-Sep-94	21-Sep-95	13-Sep-96	10-Nov-97	12-Nov-98	14-Sep-99	07-Jun-00	05-Sep-00	26-Jun-01	13-Sep-01	13-Jun-02	13-Sep-02	17-Jun-03	28-Oct-03	06-Jul-04	18-Sep-04
1.0	-1.1	18.19	14.47	11.96	12.37	12.66	16.43	16.51	11.82	14.67	12.23	12.84	12.29	12.93	12.20	13.37	15.44	9.59	12.47
2.0	-2.1	16.21	16.68	11.68	12.28	13.37		15.19	12.49	16.88	12.55	17.03	12.37	16.72	11.76	16.79	14.27	12.06	12.06
3.0	-3.1	16.38	16.70	12.39	13.08	14.38	15.39	14.85	13.51	16.95	13.52	16.87	13.76	16.86	16.07	16.93	14.01	14.18	12.54
4.0	-4.1	16.32	16.79	13.37	14.02	15.46				17.23	14.72	17.23	14.94	17.21		17.35			13.59
5.0	-5.1	16.38	16.48	14.21	14.48	15.78	15.24	14.64	14.99	16.58	14.97	16.51	15.19	16.4	13.84	16.46	14.04	15.87	13.59
6.0	-6.1	16.33	16.76	15.76	15.81	17.04		15.89	16.65	17.69	16.75	17.76	17.17	17.77	15.87	18.04	15.92		16.1
7.0	-7.1	16.36	16.73	17.00	16.78	17.51				18.12	17.62	18.16	18.22	18.19		18.47	16.75	18.49	16.99
8.0	-8.1	16.40	16.48	16.72	16.48	16.68				16.68	16.38	16.50		16.40		16.40	15.31	16.36	15.59
9.0	-9.1	16.54	16.72	17.14	16.74	16.91	17.63		16.81	16.92	16.86	16.85		16.80	16.61	16.80	16.17	16.77	16.44
10.0	-10.1	16.40	16.64	17.06	16.67	16.85		16.73	16.72	16.75	16.77	16.77		16.75	16.82	16.78	16.54	16.72	16.68

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

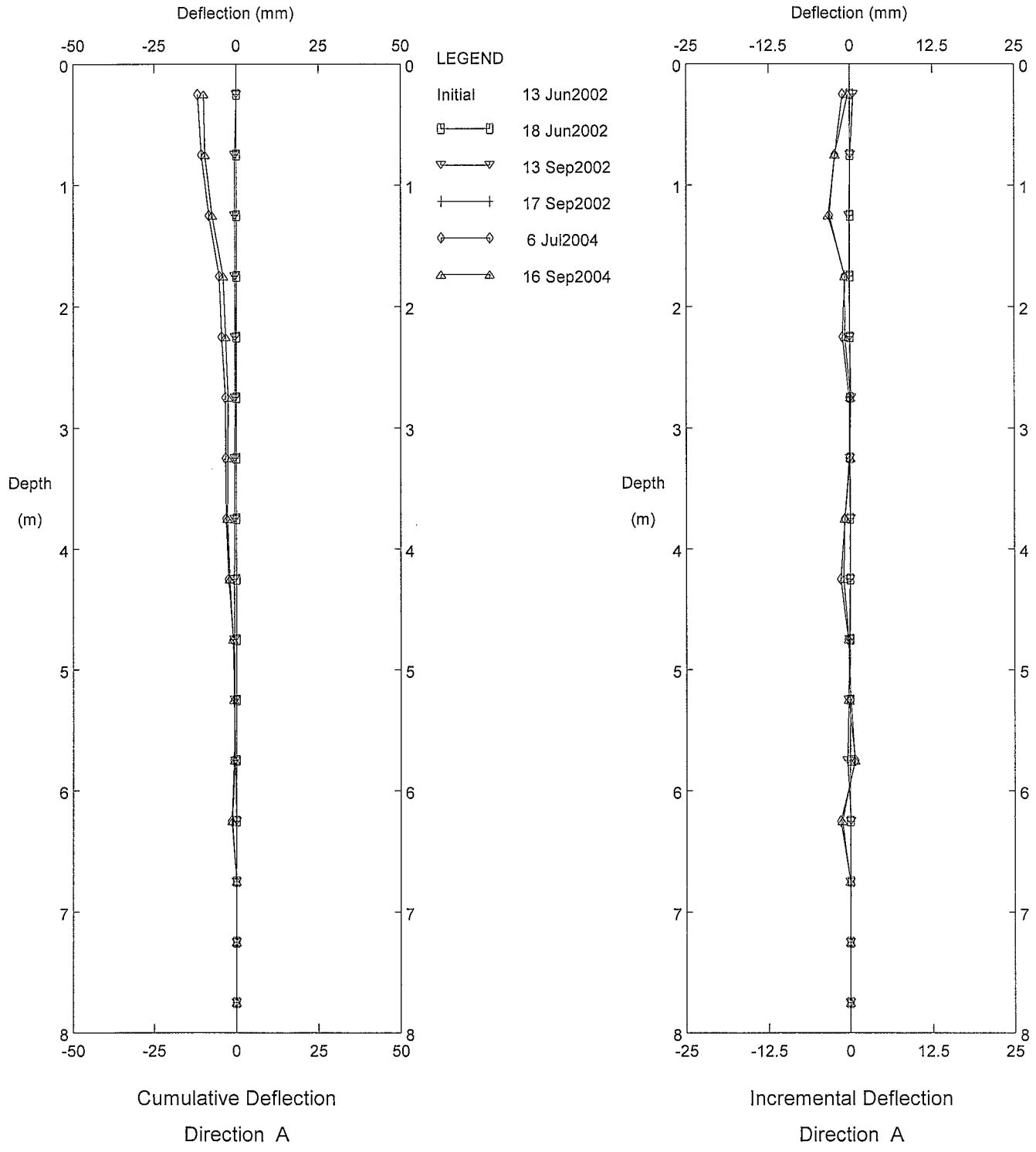
Depth on String	Actual Depth	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)
(m)	(m)	09-Dec-81	30-May-94	14-Sep-94	21-Sep-95	13-Sep-96	10-Nov-97	12-Nov-98	14-Sep-99	07-Jun-00	05-Sep-00	26-Jun-01	13-Sep-01	13-Jun-02	13-Sep-02	17-Jun-03	28-Oct-03	06-Jul-04	18-Sep-04
1.0	-1.1	-2.20	2.28	6.11	5.43	4.96	-0.22	-0.31	6.35	2.01	5.66	4.67	5.56	4.53	5.71	3.86	1.00	10.65	5.26
2.0	-2.1	0.00	-0.56	6.54	5.52	3.81		1.27	5.18	-0.80	5.08	-0.97	5.38	-0.61	6.40	-0.69	2.51	5.89	5.89
3.0	-3.1	-0.30	-0.68	5.25	4.16	2.27	0.93	1.63	3.51	-0.97	3.50	-0.87	3.15	-0.86	0.08	-0.94	2.79	2.55	5.01
4.0	-4.1	-0.20	-0.75	3.75	2.80	0.87				-1.25	1.84	-1.25	1.54	-1.23					3.43
5.0	-5.1	-0.30	-0.42	2.51	2.13	0.43	1.12	1.91	1.45	-0.54	1.47	-0.45	1.18	-0.32	3.03	-0.39	2.74	0.32	3.40
6.0	-6.1	-0.20	-0.71	0.50	0.44	-1.03		0.34	-0.58	-1.76	-0.69	-1.83	-1.18	-1.84	0.36	-2.14	0.30		0.08
7.0	-7.1	-0.20	-0.64	-0.95	-0.70	-1.53				-2.19	-1.65	-2.23	-2.30	-2.27			-0.66	-2.58	-0.94
8.0	-8.1	-0.30	-0.40	-0.68	-0.40	-0.63				-0.63	-0.28	-0.42		-0.30			1.05	-0.25	0.69
9.0	-9.1	-0.40	-0.61	-1.09	-0.63	-0.83	-1.64		-0.71	-0.84	-0.77	-0.76		-0.70	-0.48	-0.70	0.04	-0.67	-0.28
10.0	-10.1	-0.30	-0.59	-1.07	-0.62	-0.83		-0.69	-0.68	-0.71	-0.74	-0.74		-0.71	-0.80	-0.75	-0.47	-0.68	-0.63

DIVERSION CANAL SPOIL PILE
Geothermal Monitoring
SP-5



SLOPE INDICATORS

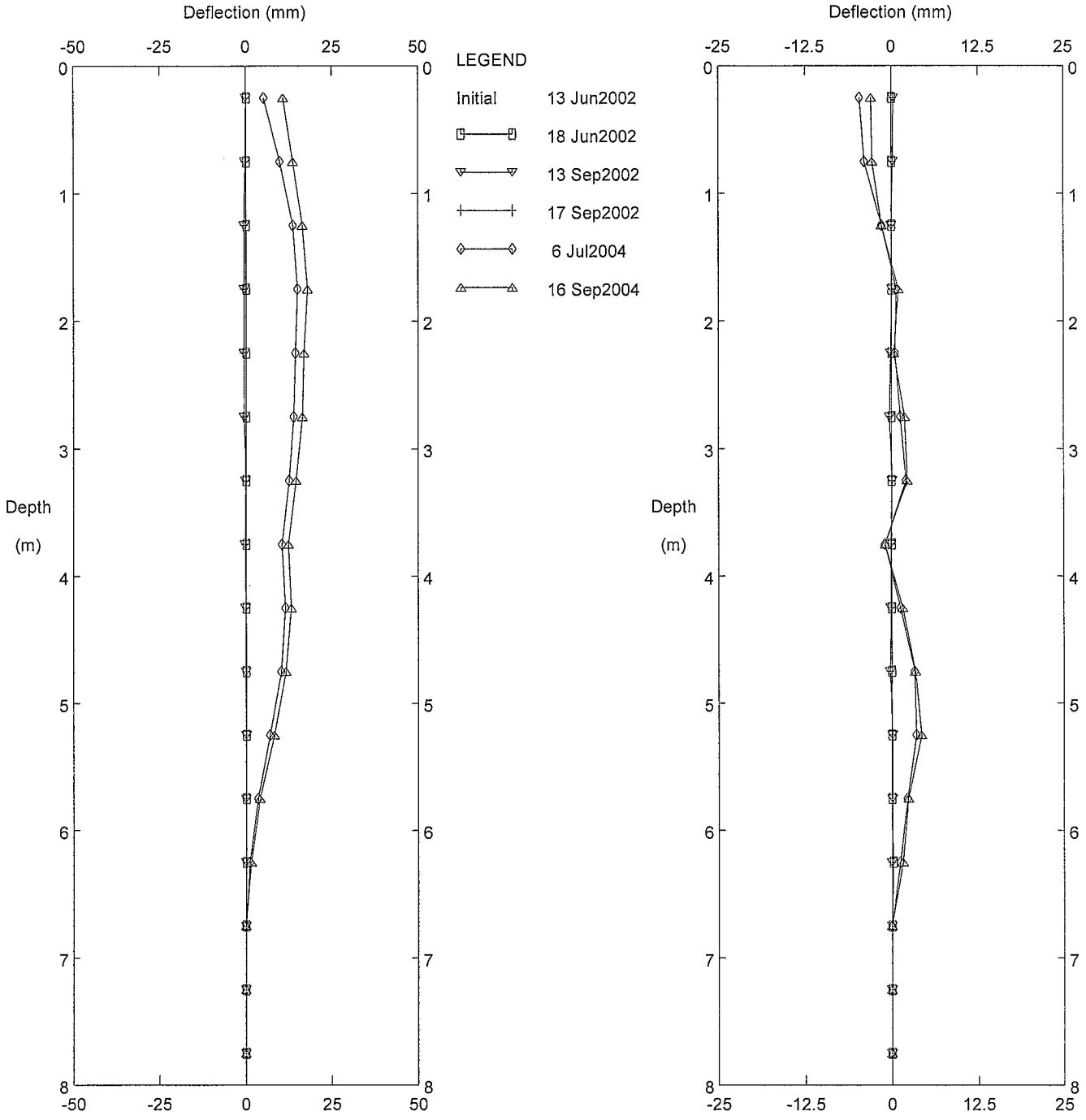
BGC Engineering Inc. - Calgary, AB



SP-2, Inclinometer 1+530

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

BGC Engineering Inc. - Calgary, AB



Cumulative Deflection

Direction B

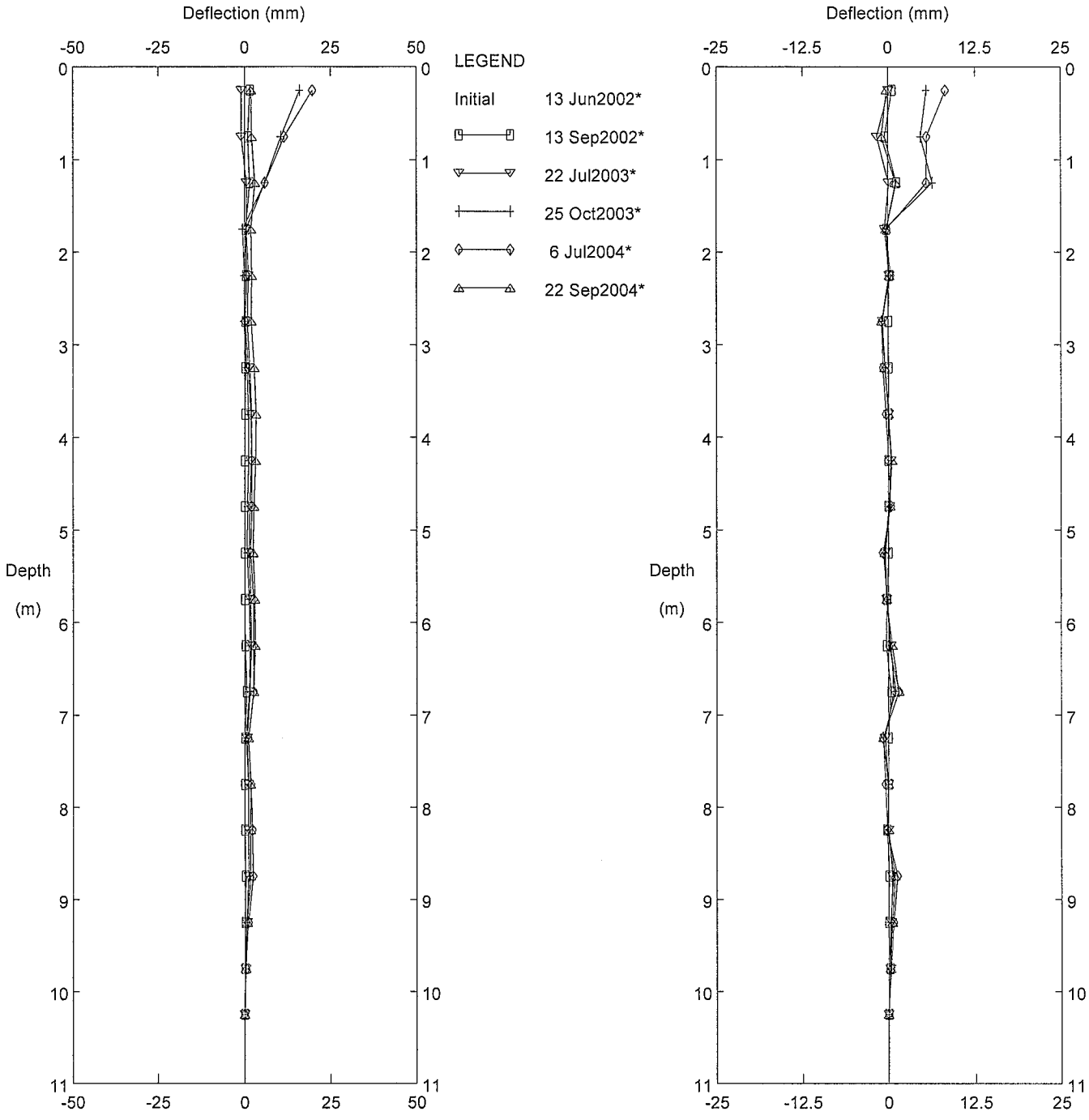
Incremental Deflection

Direction B

SP-2, Inclinometer 1+530

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

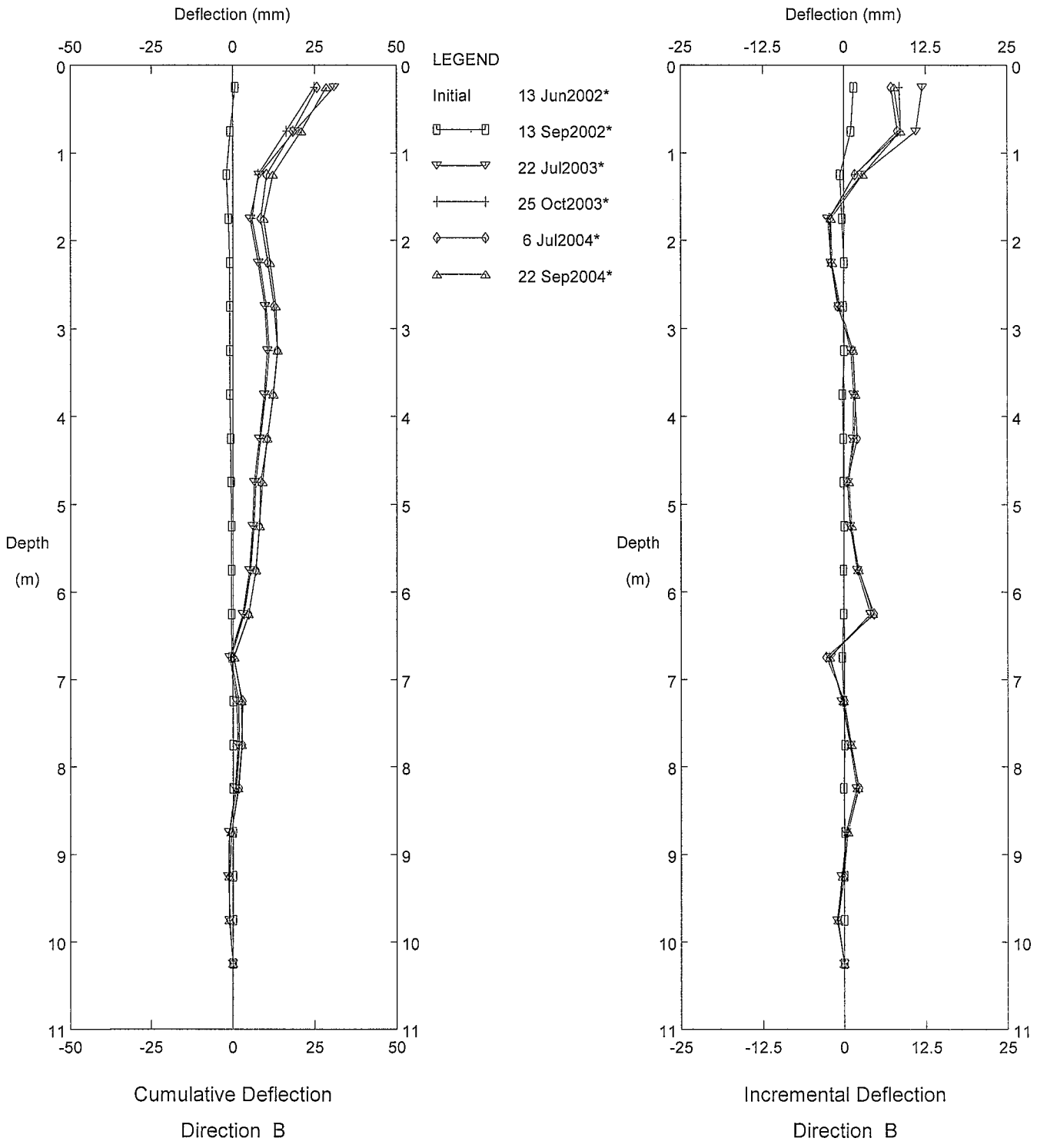
BGC Engineering Inc. - Calgary, AB



SP-5, Inclinometer 2+950

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

BGC Engineering Inc. - Calgary, AB



Cumulative Deflection
Direction B

Incremental Deflection
Direction B

SP-5, Inclinometer 2+950

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

CROSS VALLEY DAM

PIEZOMETERS

Faro Mine Instrumentation Cross Valley Dam

CVDT-1			Ground Elevation (m advd):	1050.0	2004 Ground Elevation (m amsl):	1018.30	Coordinates:	8V580219 6914353
	Location:	Cross Valley Dam Toe	Tip Elevation (m advd):	1040.2	2004 Tip Elevation (m amsl):	1007.90	Surface Protector:	N/A
		black PVC adj. to X11 channel						
	Date Installed:	1994	Stick-up:	1.5m/ 0.13m	2004 Stick-up (m):	0.27		

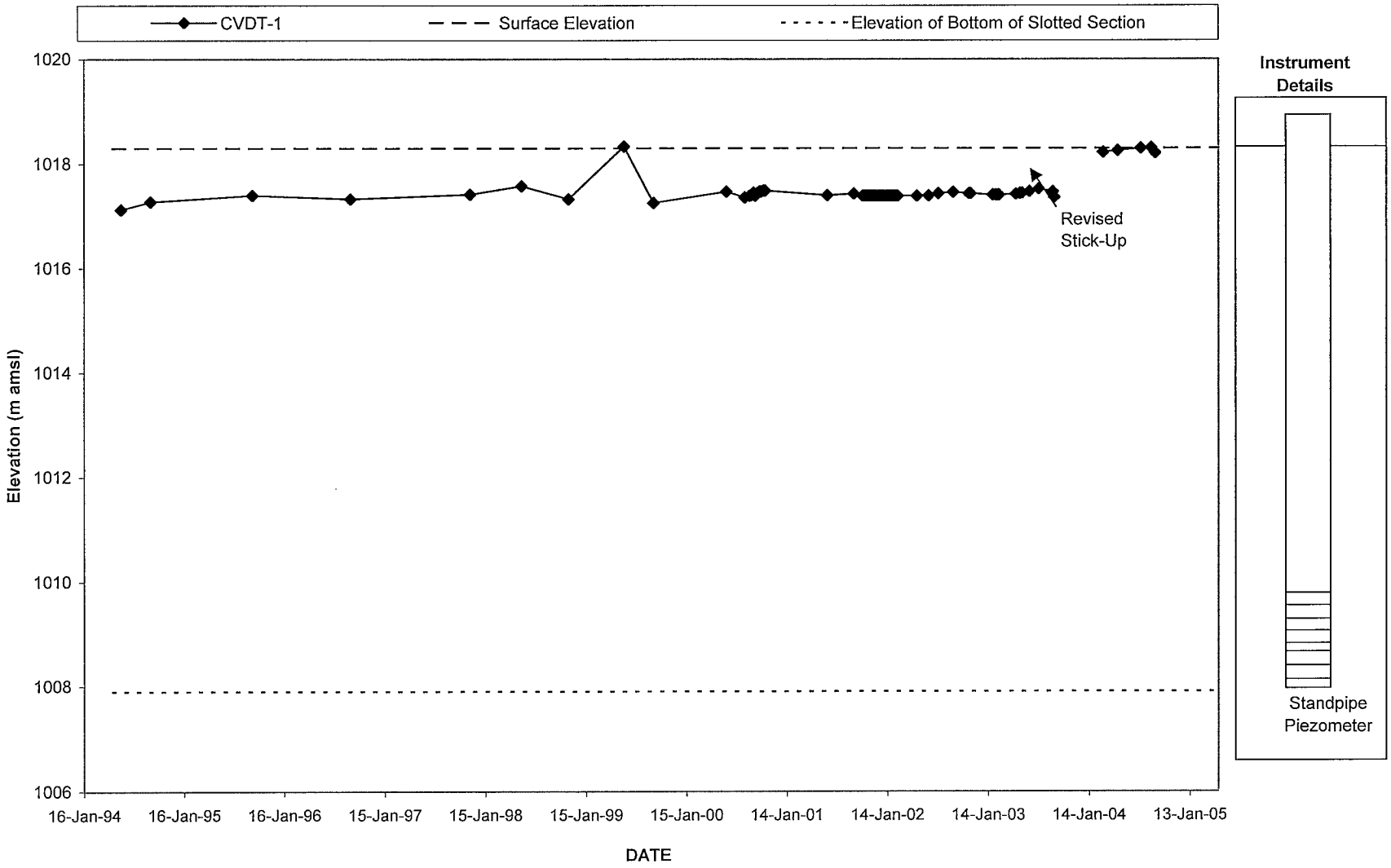
Date		Water Level from top of pipe (m)		Piezometric Elevation (m advd)	Piezometric Elevation (m amsl)		Pond Elevation (m advd)	Comments
31-May-94		-2.07		1049.43	1017.13			
15-Sep-94		-1.92		1049.58	1017.28			
22-Sep-95		-1.80		1049.70	1017.40			
13-Sep-96		-1.87		1049.63	1017.33		1062.215	
20-Nov-97		-1.78		1049.72	1017.42			
26-May-98		-1.62		1049.88	1017.58		1063.50	
13-Nov-98		-1.87		1049.63	1017.33		1062.10	
3-Jun-99		-0.868		1050.63	1018.33		1063.70	
18-Sep-99		-1.940		1049.56	1017.26		~1061.50	
8-Jun-00		-1.73		1049.77	1017.47		~1062.50	
14-Aug-00		-1.84		1049.66	1017.36			
31-Aug-00		-1.81		1049.69	1017.39			
7-Sep-00		-1.80		1049.70	1017.40			
14-Sep-00		-1.75		1049.75	1017.45			
21-Sep-00		-1.81		1049.69	1017.39			
28-Sep-00		-1.76		1049.74	1017.44			
6-Oct-00		-1.73		1049.77	1017.47			
12-Oct-00		-1.73		1049.77	1017.47			
20-Oct-00		-1.71		1049.79	1017.49			
27-Oct-00		-1.71		1049.79	1017.49			
10-Jun-01		-1.80		1049.70	1017.40			
14-Sep-01		-1.77		1049.73	1017.43			
16-Oct-01		-1.81		1049.69	1017.39			
18-Oct-01		-1.81		1049.69	1017.39			
19-Oct-01		-1.81		1049.69	1017.39			
20-Oct-01		-1.81		1049.69	1017.39			
21-Oct-01		-1.81		1049.69	1017.39			
22-Oct-01		-1.81		1049.69	1017.39			
25-Oct-01		-1.81		1049.69	1017.39			
29-Oct-01		-1.81		1049.69	1017.39			
1-Nov-01		-1.81		1049.69	1017.39			
5-Nov-01		-1.81		1049.69	1017.39			
6-Nov-01		-0.44		1049.69	1017.39			Stick up changed
8-Nov-01		-0.44		1049.69	1017.39			
12-Nov-01		-0.44		1049.69	1017.39			
15-Nov-01		-0.44		1049.69	1017.39			
19-Nov-01		-0.44		1049.69	1017.39			
21-Nov-01		-0.44		1049.69	1017.39			
23-Nov-01		-0.44		1049.69	1017.39			pond elev approx - 8 ft.
26-Nov-01		-0.44		1049.69	1017.39			daytime temp -34 C
28-Nov-01		-0.44		1049.69	1017.39			
30-Nov-01		-0.44		1049.69	1017.39			
3-Dec-01		-0.44		1049.69	1017.39			
5-Dec-01		-0.44		1049.69	1017.39			
12-Dec-01		-0.44		1049.69	1017.39			
14-Dec-01		-0.44		1049.69	1017.39			
15-Dec-01		-0.44		1049.69	1017.39			
16-Dec-01		-0.44		1049.69	1017.39			
17-Dec-01		-0.44		1049.69	1017.39			
18-Dec-01		-0.44		1049.69	1017.39			
19-Dec-01		-0.44		1049.69	1017.39			
26-Dec-01		-0.44		1049.69	1017.39			
2-Jan-02		-0.44		1049.69	1017.39			
9-Jan-02		-0.44		1049.69	1017.39			
16-Jan-02		-0.44		1049.69	1017.39			
23-Jan-02		-0.44		1049.69	1017.39			
30-Jan-02		-0.44		1049.69	1017.39			
6-Feb-02		-0.44		1049.69	1017.39			
13-Feb-02		-0.44		1049.69	1017.39			
20-Feb-02		-0.44		1049.69	1017.39			
1-May-02		-0.44		1049.69	1017.39			
12-Jun-02		-0.435		1049.695	1017.40			
17-Jul-02		-0.395		1049.735	1017.44			
7-Aug-02								not read
9-Sep-02		-0.37		1049.76	1017.46			
4-Nov-02		-0.395		1049.735	1017.44			
10-Nov-02		-0.395		1049.735	1017.44			
30-Jan-03		-0.42		1049.71	1017.41			
9-Feb-03		-0.42		1049.71	1017.41		1090.90	start siphon
11-Feb-03		-0.42		1049.71	1017.41		1090.80	
13-Feb-03		-0.42		1049.71	1017.41		1090.80	
18-Feb-03		-0.42		1049.71	1017.41			
21-Feb-03		-0.42		1049.71	1017.41		1090.78	

Faro Mine Instrumentation Cross Valley Dam

CVDT-1			Ground Elevation (m advd):	1050.0	2004 Ground Elevation (m amsl):	1018.30	Coordinates:	8V580219 6914353
	Location:	Cross Valley Dam Toe	Tip Elevation (m advd):	1040.2	2004 Tip Elevation (m amsl):	1007.90	Surface Protector:	N/A
		black PVC adj. to X11 channel						
	Date Installed:	1994	Stick-up:	1.5m/ 0.13m	2004 Stick-up (m):	0.27		

Date		Water Level from top of pipe (m)		Piezometric Elevation (m advd)	Piezometric Elevation (m amsl)		Pond Elevation (m advd)	Comments
23-Apr-03		-0.405		1049.725	1017.43		1062.44	
7-May-03		-0.39		1049.74	1017.44			
16-May-03		-0.385		1049.745	1017.45			
11-Jun-03		-0.355		1049.775	1017.48			
15-Jul-03		-0.305		1049.825	1017.53			
4-Sep-03		-0.36		1049.77	1017.47			
10-Sep-03		-0.465		1049.67	1017.37		1028.58	
4-Mar-04		-0.345			1018.23			2004 survey data use from here on
8-Mar-04								Pulled ice and snow
26-Apr-04		-0.315			1018.26		1030.15	
19-Jul-04		-0.27			1018.30			
26-Aug-04		-0.26			1018.31	0.78		
9-Sep-04		-0.36			1018.21	0.84		

CROSS VALLEY DAM
Piezometric Monitoring
CVDT-1 Standpipe Piezometer
(Toe of Dam)

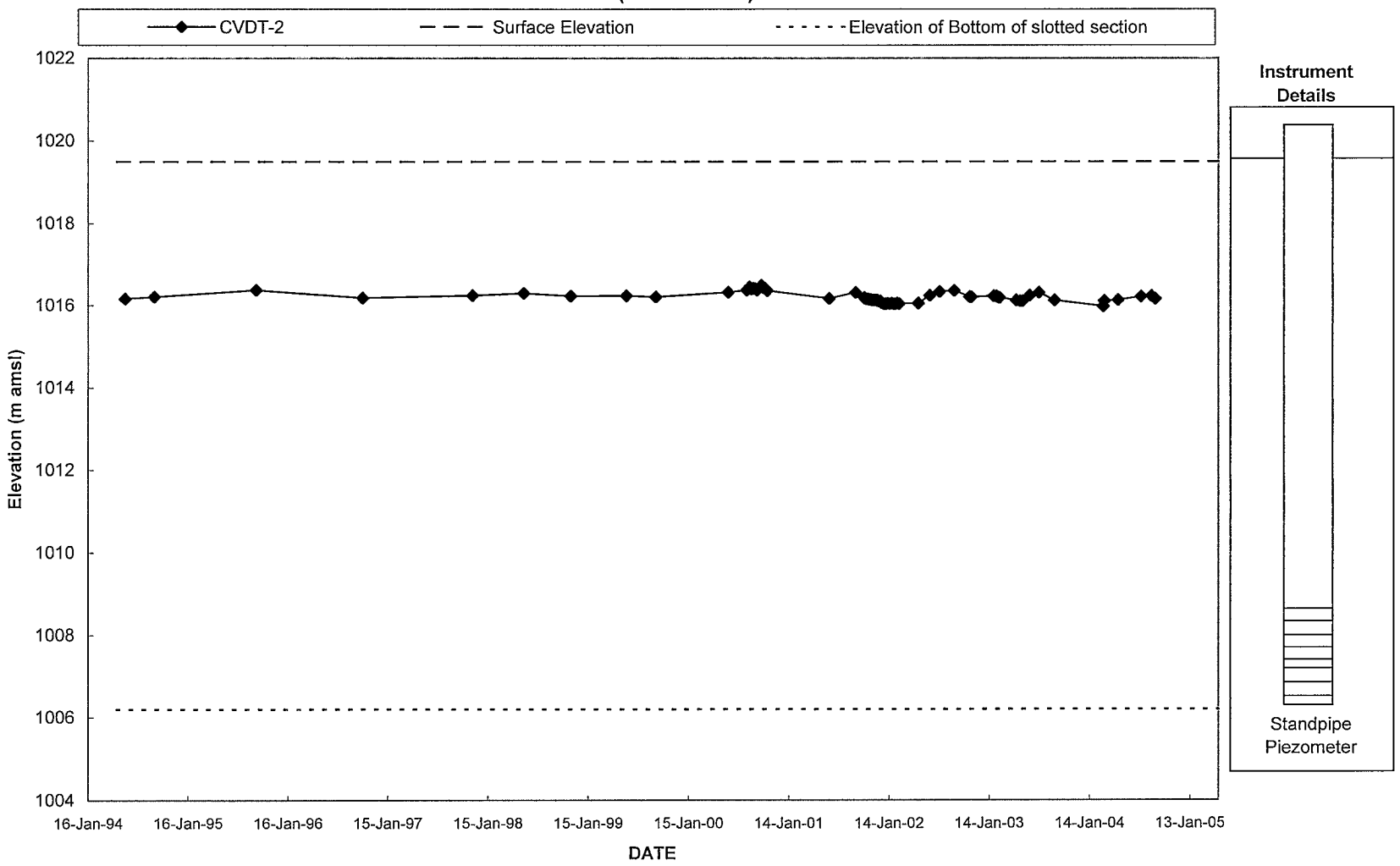


CVDT-2								
			Ground Elevation (m advd):	1051.8	Ground Elevation (m amsl):	1019.50	Coordinates:	N/A
	Location:	Cross Valley Dam Toe	Tip Elevation (m advd):	1038.5	Tip Elevation (m amsl):	1006.20	Surface Protector:	N/A
		black PVC adj. to W3 channel						
	Date Installed:	1994	Stick up:	1.52m/ 0.38m				

Date		Water level from top of pipe (m)		Piezometric Elevation (m advd)	Piezometric Elevation (m amsl)		Pond Elevation (m advd)	Comments
31-May-94		-4.86		1048.46	1016.16			
15-Sep-94		-4.81		1048.51	1016.21			
21-Sep-95		-4.65		1048.67	1016.37			
15-Oct-96		-4.84		1048.48	1016.18		1062.215	
20-Nov-97		-4.78		1048.54	1016.24			
26-May-98		-4.73		1048.59	1016.29		1063.50	
13-Nov-98		-4.79		1048.53	1016.23		1062.10	
3-Jun-99		-4.784		1048.54	1016.24		1063.70	
18-Sep-99		-4.81		1048.51	1016.21		~1061.50	
8-Jun-00		-4.70		1048.62	1016.32		~1062.50	
14-Aug-00		-4.65		1048.67	1016.37			
24-Aug-00		-4.57		1048.75	1016.45			
31-Aug-00		-4.62		1048.70	1016.40			
7-Sep-00		-4.60		1048.72	1016.42			
14-Sep-00		-4.61		1048.71	1016.41			
21-Sep-00		-4.65		1048.67	1016.37			
28-Sep-00		-4.60		1048.72	1016.42			
6-Oct-00		-4.53		1048.79	1016.49			
12-Oct-00		-4.59		1048.73	1016.43			
20-Oct-00		-4.61		1048.71	1016.41			
27-Oct-00		-4.66		1048.66	1016.36			
10-Jun-01		-4.85		1048.47	1016.17			
14-Sep-01		-4.71		1048.61	1016.31			
16-Oct-01		-4.83		1048.49	1016.19			
18-Oct-01		-4.85		1048.47	1016.17			
19-Oct-01		-4.86		1048.46	1016.16			
20-Oct-01		-4.86		1048.46	1016.16			
21-Oct-01		-4.86		1048.46	1016.16			
22-Oct-01		-4.86		1048.46	1016.16			
25-Oct-01		-4.87		1048.45	1016.15			
29-Oct-01		-4.87		1048.45	1016.15			
1-Nov-01		-4.875		1048.45	1016.15			
5-Nov-01		-4.88		1048.44	1016.14			
6-Nov-01		-3.74		1048.44	1016.14			New stick-up of 0.38 m
8-Nov-01		-3.74		1048.44	1016.14			
12-Nov-01		-3.76		1048.42	1016.12			
15-Nov-01		-3.76		1048.42	1016.12			
19-Nov-01		-3.755		1048.425	1016.13			
21-Nov-01		-3.75		1048.43	1016.13			
23-Nov-01		-3.75		1048.43	1016.13			pond elev approx - 8 ft.
26-Nov-01		-3.75		1048.43	1016.13			daytime temp -34 C
28-Nov-01		-3.76		1048.42	1016.12			
30-Nov-01		-3.76		1048.42	1016.12			
3-Dec-01		-3.76		1048.42	1016.12			
5-Dec-01		-3.775		1048.405	1016.11			
12-Dec-01		-3.775		1048.405	1016.11			
14-Dec-01		-3.775		1048.405	1016.11			
15-Dec-01		-3.8		1048.38	1016.08			
16-Dec-01		-3.79		1048.39	1016.09			
17-Dec-01		-3.81		1048.37	1016.07			
18-Dec-01		-3.815		1048.365	1016.07			
19-Dec-01		-3.82		1048.36	1016.06			
26-Dec-01		-3.84		1048.34	1016.04			
2-Jan-02		-3.84		1048.34	1016.04			
9-Jan-02		-3.835		1048.345	1016.05			
16-Jan-02		-3.84		1048.34	1016.04			
23-Jan-02		-3.83		1048.35	1016.05			
30-Jan-02		-3.84		1048.34	1016.04			
6-Feb-02		-3.84		1048.34	1016.04			
13-Feb-02		-3.83		1048.35	1016.05			
20-Feb-02		-3.84		1048.34	1016.04			
1-May-02		-3.83		1048.35	1016.05			
12-Jun-02		-3.64		1048.54	1016.24			
17-Jul-02		-3.545		1048.635	1016.34			
7-Aug-02								not read
9-Sep-02		-3.52		1048.66	1016.36			
4-Nov-02		-3.67		1048.51	1016.21			
10-Nov-02		-3.68		1048.5	1016.20			

CVDT-2			Ground Elevation (m advd):	1051.8	Ground Elevation (m amsl):	1019.50	Coordinates:	N/A
	Location:	Cross Valley Dam Toe	Tip Elevation (m advd):	1038.5	Tip Elevation (m amsl):	1006.20	Surface Protector:	N/A
		black PVC adj. to W3 channel						
	Date Installed:	1994	Stick up:	1.52m/ 0.38m				
Date		Water level from top of pipe (m)		Piezometric Elevation (m advd)	Piezometric Elevation (m amsl)		Pond Elevation (m advd)	Comments
30-Jan-03		-3.655		1048.525	1016.23			
9-Feb-03		-3.66		1048.52	1016.22		1090.90	start siphon
11-Feb-03		-3.665		1048.515	1016.22		1090.80	
13-Feb-03		-3.675		1048.505	1016.21		1090.80	
18-Feb-03		-3.69		1048.49	1016.19			
21-Feb-03		-3.695		1048.485	1016.19		1090.78	
23-Apr-03		-3.76		1048.42	1016.12		1062.44	
7-May-03		-3.775		1048.405	1016.11			
16-May-03		-3.775		1048.405	1016.11			
11-Jun-03		-3.64		1048.54	1016.24			
15-Jul-03		-3.57		1048.61	1016.31			
10-Sep-03		-3.76		1048.42	1016.12			
4-Mar-04		-3.9		1048.28	1015.98			No 2004 survey data available
8-Mar-04		-3.77		1048.41	1016.11			
26-Apr-04		-3.75		1048.43	1016.13			
19-Jul-04		-3.665		1048.515	1016.215			
26-Aug-04		-3.655		1048.525	1016.225			
9-Sep-04		-3.72		1048.46	1016.16			

CROSS VALLEY DAM
Piezometric Monitoring
CVDT-2 Standpipe Piezometer
(Toe of Dam)



Faro Mine Instrumentation Cross Valley Dam

94CVDC-1		Location:	Cross Valley Dam Crest, Stn. 0+215					
			Ground Elevation (m advd):	1065.5	2004 Ground Elevation (m amsl):	1033.38	Coordinates:	8V580263 6914326
	Date Installed:	1994	Tip Elevation (m advd):	1052.7	2004 Tip Elevation (m amsl):	1020.4	Surface Protector:	yes
			Stick-up (m):	0.7	2004 Stick-up (m):	0.64		

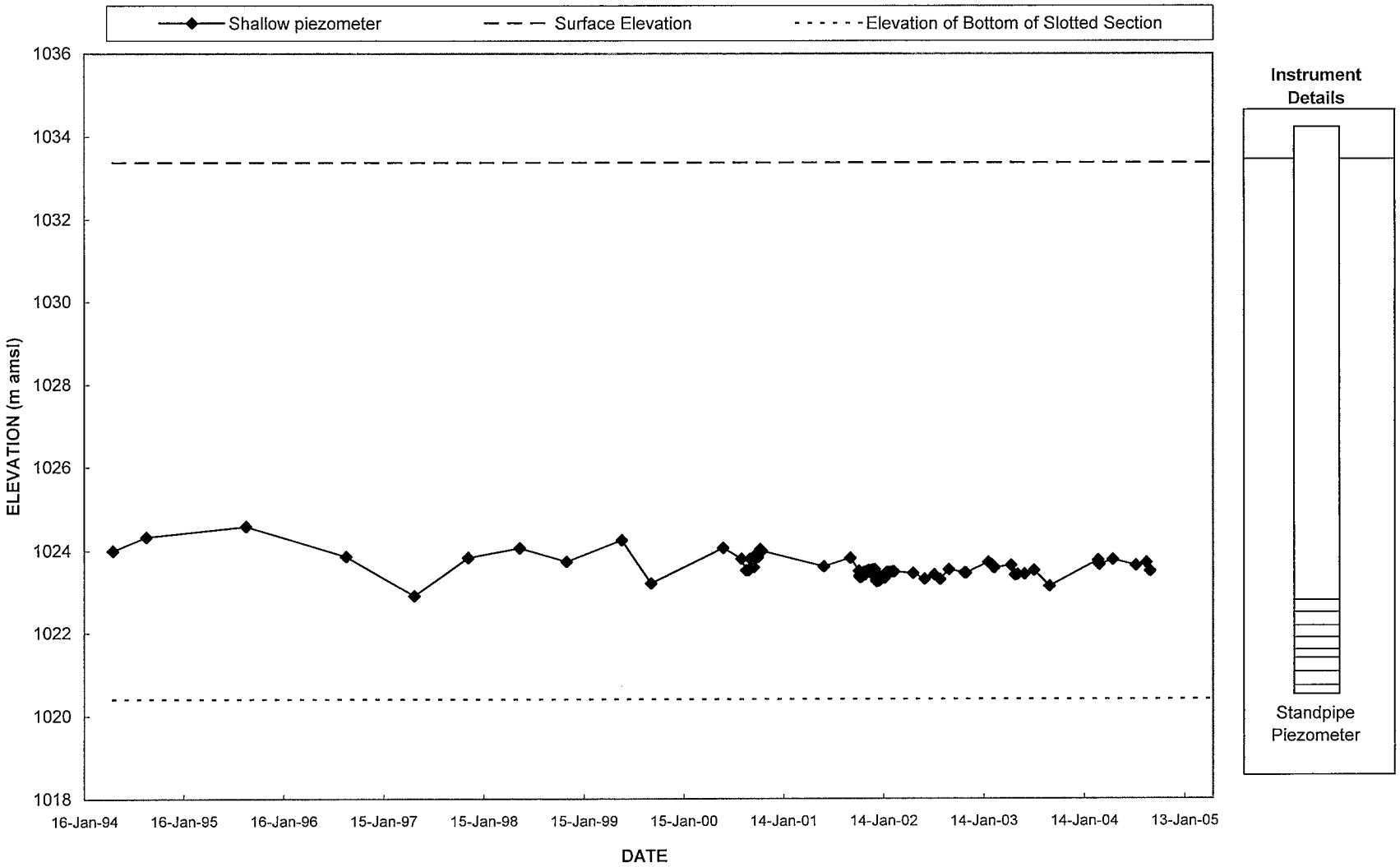
Date		Water Level from top of pipe (m)		Piezometric Elevation (m advd)	Piezometric Elevation (m amsl)		Pond Elevation (m advd)	Comments
01-May-94		9.90		1056.30	1024.00			
01-Sep-94		9.57		1056.63	1024.33			
01-Sep-95		9.32		1056.88	1024.58			
01-Sep-96		10.04		1056.16	1023.86		1062.215	
07-May-97		11.00		1055.21	1022.91			
20-Nov-97		10.07		1056.13	1023.83			
26-May-98		9.84		1056.36	1024.06		1063.5	
13-Nov-98		10.16		1056.04	1023.74		1062.1	
03-Jun-99		9.650		1056.55	1024.25		1063.7	
18-Sep-99		10.69		1055.51	1023.21		~1061.5	
08-Jun-00		9.84		1056.36	1024.06		~1062.5	
14-Aug-00		10.10		1056.10	1023.80			
31-Aug-00		10.38		1055.82	1023.52			
07-Sep-00		10.38		1055.82	1023.52			
14-Sep-00		10.10		1056.10	1023.80			
21-Sep-00		13.61						frozen?
28-Sep-00		10.30		1055.90	1023.60			
06-Oct-00		9.99		1056.21	1023.91			
12-Oct-00		10.06		1056.14	1023.84			
20-Oct-00		9.87		1056.33	1024.03			
27-Oct-00		9.91		1056.29	1023.99			
10-Jun-01		10.28		1055.92	1023.62			
14-Sep-01		10.08		1056.12	1023.82			
16-Oct-01		10.39		1055.81	1023.51			
18-Oct-01		10.51		1055.69	1023.39			
19-Oct-01		10.53		1055.67	1023.37			
20-Oct-01		10.54		1055.66	1023.36			
21-Oct-01		10.55		1055.65	1023.35			
22-Oct-01		10.53		1055.67	1023.37			
25-Oct-01		10.53		1055.67	1023.37			
29-Oct-01		10.44		1055.76	1023.46			
01-Nov-01		10.425		1055.775	1023.48			
05-Nov-01		10.485		1055.715	1023.42			
06-Nov-01		10.485		1055.715	1023.42			
08-Nov-01		10.41		1055.79	1023.49			
12-Nov-01		10.41		1055.79	1023.49			
15-Nov-01		10.39		1055.81	1023.51			
19-Nov-01		10.38		1055.82	1023.52			
21-Nov-01		10.375		1055.825	1023.53			
23-Nov-01		10.42		1055.78	1023.48			pond elev approx - 8 ft.
26-Nov-01		10.42		1055.78	1023.48			daytime temp -34 C
28-Nov-01		10.39		1055.81	1023.51			
30-Nov-01		10.37		1055.83	1023.53			
03-Dec-01		10.37		1055.83	1023.53			
05-Dec-01		10.365		1055.835	1023.54			
12-Dec-01		10.36		1055.84	1023.54			
14-Dec-01		10.42		1055.78	1023.48			
15-Dec-01		10.48		1055.72	1023.42			
16-Dec-01		10.53		1055.67	1023.37			
17-Dec-01		10.59		1055.61	1023.31			
18-Dec-01		10.62		1055.58	1023.28			
19-Dec-01		10.65		1055.55	1023.25			
26-Dec-01		10.64		1055.56	1023.26			
02-Jan-02		10.56		1055.64	1023.34			
09-Jan-02		10.57		1055.63	1023.33			
16-Jan-02		10.56		1055.64	1023.34			
23-Jan-02		10.43		1055.77	1023.47			
30-Jan-02		10.42		1055.78	1023.48			
06-Feb-02		10.42		1055.78	1023.48			
13-Feb-02		10.41		1055.79	1023.49			
20-Feb-02		10.41		1055.79	1023.49			
01-May-02		10.45		1055.75	1023.45			
12-Jun-02		10.59		1055.61	1023.31			
17-Jul-02		10.485		1055.715	1023.42			
07-Aug-02		10.595		1055.605	1023.31			
09-Sep-02		10.36		1055.84	1023.54			
04-Nov-02		10.435		1055.765	1023.47			
10-Nov-02		10.44		1055.76	1023.46			
30-Jan-03		10.18		1056.02	1023.72			
09-Feb-03		10.235		1055.965	1023.67		1090.9	start siphon
11-Feb-03		10.235		1055.965	1023.67		1090.8	
13-Feb-03		10.275		1055.925	1023.63		1090.8	
18-Feb-03		10.31		1055.89	1023.59			
21-Feb-03		10.31		1055.89	1023.59		1090.78	
23-Apr-03		10.26		1055.94	1023.64		1062.44	
07-May-03		10.485		1055.715	1023.42			

Faro Mine Instrumentation Cross Valley Dam

94CVDC-1		Location:	Cross Valley Dam Crest, Stn. 0+215					
			Ground Elevation (m advd):	1065.5	2004 Ground Elevation (m amsl):	1033.38	Coordinates:	8V580263 6914326
	Date Installed:	1994	Tip Elevation (m advd):	1052.7	2004 Tip Elevation (m amsl):	1020.4	Surface Protector:	yes
			Stick-up (m):	0.7	2004 Stick-up (m):	0.64		

Date		Water Level from top of pipe (m)		Piezometric Elevation (m advd)	Piezometric Elevation (m amsl)		Pond Elevation (m advd)	Comments
16-May-03		10.47		1055.73	1023.43			
11-Jun-03		10.465		1055.735	1023.44			
15-Jul-03		10.38		1055.82	1023.52			
10-Sep-03		10.755		1055.445	1023.15			
04-Mar-04		10.25			1023.77			2004 Survey data used from here on.
08-Mar-04		10.355			1023.67			
26-Apr-04		10.24			1023.78			
19-Jul-04		10.38			1023.64			
26-Aug-04		10.305			1023.72			
09-Sep-04		10.51			1023.51			

CROSS VALLEY DAM
Piezometric Monitoring
BH94 CVDC-1 Standpipe Piezometer
(Dam Crest)



Faro Mine Instrumentation Cross Valley Dam

CVDC-9		Location:	Cross Valley Dam Crest St.0+565	Ground Elevation (m advd):	1065.6	2004 Ground Elevation (m amsl):	1033.28		
				Shallow Tip Elevation (m advd):	1040	2004 Shallow Tip Elevation (m amsl)	1007.70	Coordinates:	8V580096 6913998
	Date Installed:	1981		Deep Tip Elevation (m advd):	1033	2004 Deep Tip Elevation (m amsl):	1000.70	Surface Protector:	yes
				Shallow stick-up (m):	0.24/ 0.30/ 0.32	2004 Shallow stick-up (m):	0.27		
				Deep stick-up (m):	0.16/ 0.23/ 0.25	2004 Deep stick-up (m):	0.19		

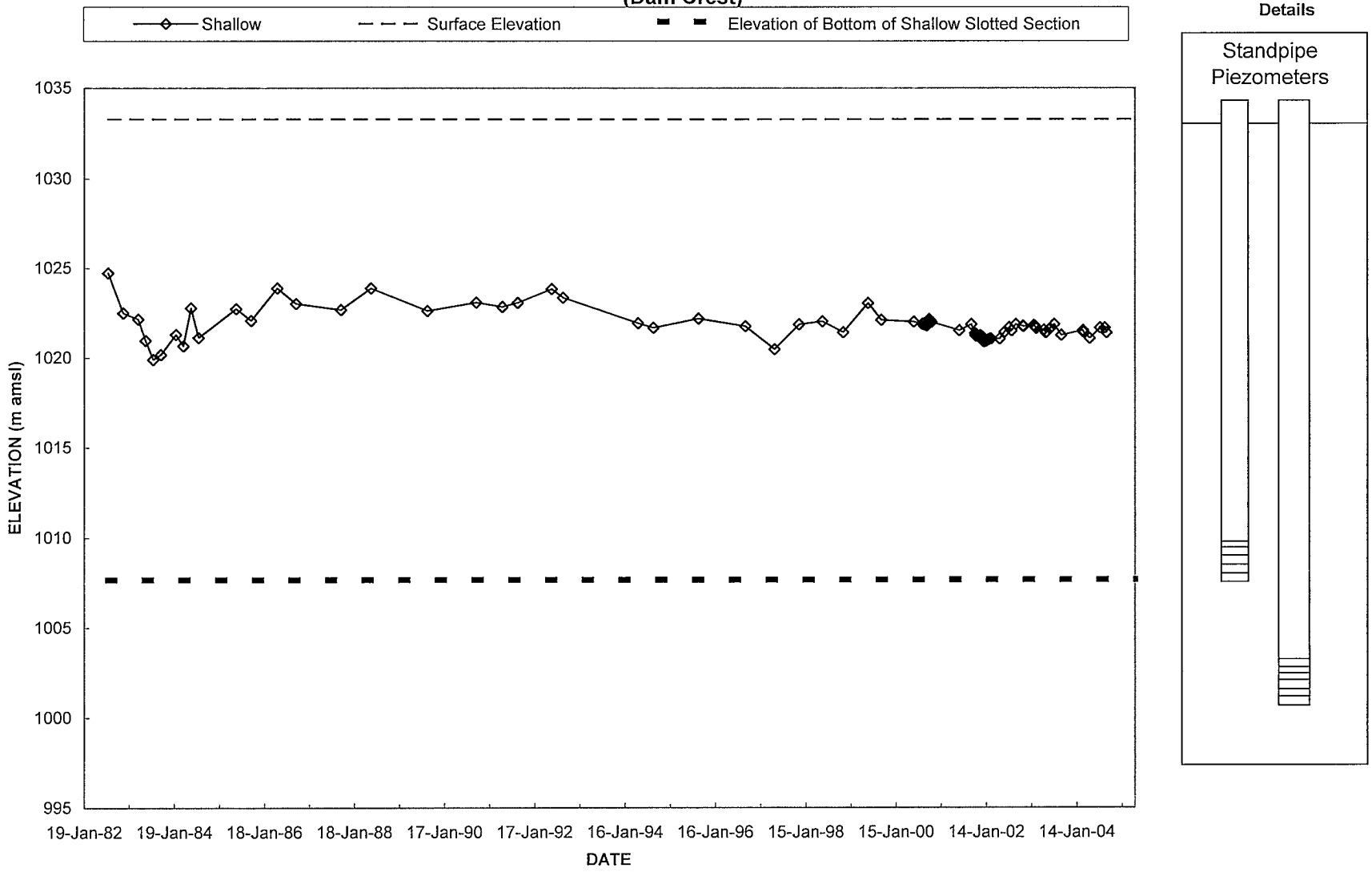
Date		Water Level below top of pipe (m) Shallow	Water Level below top of pipe (m) Deep	Piezometric Elevation (m advd) Shallow	Piezometric Elevation (m advd) Deep	Piezometric Elevation (m amsl) Shallow	Piezometric Elevation (m amsl) Deep	Pond Elevation (m advd)	Comments
1-Aug-82		8.80	8.85	1057.04	1056.91	1024.74	1024.61		
1-Dec-82		11.04	9.00	1054.80	1056.76	1022.50	1024.46		
1-Apr-83		11.38	9.81	1054.46	1055.95	1022.16	1023.65	1061.63	
1-Jun-83		12.58	10.74	1053.26	1055.02	1020.96	1022.72	1058.18	
1-Aug-83		13.63	11.90	1052.21	1053.86	1019.91	1021.56		
1-Oct-83		13.36	11.13	1052.48	1054.63	1020.18	1022.33		
1-Feb-84		12.24	10.67	1053.60	1055.09	1021.30	1022.79		
1-Mar-84								1062.90	
1-Apr-84		12.87	11.65	1052.97	1054.11	1020.67	1021.81		
1-Jun-84		10.75	12.28	1055.09	1053.48	1022.79	1021.18	1059.10	
1-Aug-84		12.41	11.05	1053.43	1054.71	1021.13	1022.41		
1-Jun-85		10.80	8.98	1055.04	1056.78	1022.74	1024.48	1063.50	
1-Oct-85		11.45	8.25	1054.39	1057.51	1022.09	1025.21		
1-May-86		9.65	11.18	1056.19	1054.58	1023.89	1022.28	1063.00	
1-Oct-86		10.51	8.79	1055.33	1056.97	1023.03	1024.67	1063.20	
1-Oct-87		10.85	9.10	1054.99	1056.66	1022.69	1024.36		
1-Jun-88		9.74	9.42	1056.20	1056.41	1023.90	1024.11		
1-Sep-89		11.01	9.07	1054.93	1056.76	1022.63	1024.46		
1-Oct-90		10.54	8.83	1055.40	1057.00	1023.10	1024.70		
1-May-91		10.79	9.14	1055.15	1056.69	1022.85	1024.39		
1-Sep-91		10.56		1055.38		1023.08			
1-Jun-92		9.79	7.92	1056.15	1057.91	1023.85	1025.61		
1-Sep-92		10.27	8.29	1055.67	1057.54	1023.37	1025.24		
1-May-94		11.68	9.49	1054.24	1056.36	1021.94	1024.06		
1-Sep-94		11.93	9.82	1053.99	1056.03	1021.69	1023.73		
1-Sep-95		11.42	8.86	1054.50	1056.99	1022.20	1024.69		
13-Sep-96		11.84	9.52	1054.08	1056.33	1021.78	1024.03	1062.215	
7-May-97		13.15	11.57	1052.78	1054.29	1020.48	1021.99		
20-Nov-97		11.74	9.58	1054.18	1056.27	1021.88	1023.97		
26-May-98		11.57	9.11	1054.35	1056.74	1022.05	1024.44	1063.5	
13-Nov-98		12.19	9.90	1053.73	1055.95	1021.43	1023.65	1062.1	
3-Jun-99		10.560	8.868	1055.36	1056.98	1023.06	1024.68	1063.7	
18-Sep-99		11.50	10.25	1054.42	1055.60	1022.12	1023.30	~1061.5	
8-Jun-00		11.60	8.90	1054.32	1056.95	1022.02	1024.65	~1062.5	
14-Aug-00		11.73	9.19	1054.19	1056.66	1021.89	1024.36		
31-Aug-00		11.77	9.30	1054.15	1056.55	1021.85	1024.25		
7-Sep-00		11.66	9.12	1054.26	1056.73	1021.96	1024.43		
14-Sep-00		11.65	9.30	1054.27	1056.55	1021.97	1024.25		
19-Sep-00		11.83	9.34	1054.09	1056.51	1021.79	1024.21		
21-Sep-00		11.78	9.28	1054.14	1056.57	1021.84	1024.27		
28-Sep-00		11.61	9.40	1054.31	1056.45	1022.01	1024.15		
6-Oct-00		11.46	8.89	1054.46	1056.96	1022.16	1024.66		
12-Oct-00		11.57	9.00	1054.35	1056.85	1022.05	1024.55		
20-Oct-00		11.53	8.91	1054.39	1056.94	1022.09	1024.64		
27-Oct-00		11.62	9.03	1054.30	1056.82	1022.00	1024.52		
10-Jun-01		12.09	9.63	1053.83	1056.22	1021.53	1023.92		
14-Sep-01		11.75	9.67	1054.17	1056.18	1021.87	1023.88		
16-Oct-01		12.24	10.2	1053.68	1055.65	1021.38	1023.35		
18-Oct-01		12.35	10.33	1053.57	1055.52	1021.27	1023.22		
19-Oct-01		12.37	10.36	1053.55	1055.49	1021.25	1023.19		
20-Oct-01		12.38	10.37	1053.54	1055.48	1021.24	1023.18		
21-Oct-01		12.39	10.38	1053.53	1055.47	1021.23	1023.17		
22-Oct-01		12.40	10.39	1053.52	1055.46	1021.22	1023.16		
25-Oct-01		12.42	10.39	1053.5	1055.46	1021.20	1023.16		
29-Oct-01		12.405	10.34	1053.515	1055.51	1021.22	1023.21		
1-Nov-01		12.395	10.315	1053.525	1055.535	1021.23	1023.24		
5-Nov-01		12.41	10.31	1053.51	1055.54	1021.21	1023.24		
6-Nov-01		12.41	10.31	1053.51	1055.54	1021.21	1023.24		
8-Nov-01		12.41	10.3	1053.51	1055.55	1021.21	1023.25		
12-Nov-01		12.42	10.295	1053.5	1055.555	1021.20	1023.26		
15-Nov-01		12.42	10.285	1053.5	1055.565	1021.20	1023.27		
19-Nov-01		12.39	10.22	1053.53	1055.63	1021.23	1023.33		
21-Nov-01		12.37	10.19	1053.55	1055.66	1021.25	1023.36		
23-Nov-01		12.37	10.17	1053.55	1055.68	1021.25	1023.38		pond elev approx - 8 ft.

Faro Mine Instrumentation Cross Valley Dam

CVDC-9		Location:	Cross Valley Dam Crest						
			St.0+565	Ground Elevation (m advd):	1065.6	2004 Ground Elevation (m amsl):	1033.28		
				Shallow Tip Elevation (m advd):	1040	2004 Shallow Tip Elevation (m amsl)	1007.70	Coordinates:	8V580096 6913998
	Date Installed:	1981		Deep Tip Elevation (m advd):	1033	2004 Deep Tip Elevation (m amsl):	1000.70	Surface Protector:	yes
				Shallow stick-up (m):	0.24/ 0.30/ 0.32	2004 Shallow stick-up (m):	0.27		
				Deep stick-up (m):	0.16/ 0.23/ 0.25	2004 Deep stick-up (m):	0.19		

Date		Water Level below top of pipe (m) Shallow	Water Level below top of pipe (m) Deep	Piezometric Elevation (m advd) Shallow	Piezometric Elevation (m advd) Deep	Piezometric Elevation (m amsl) Shallow	Piezometric Elevation (m amsl) Deep	Pond Elevation (m advd)	Comments
26-Nov-01		12.37	10.17	1053.55	1055.68	1021.25	1023.38		daytime temp -34 C
28-Nov-01		12.38	10.16	1053.54	1055.69	1021.24	1023.39		
30-Nov-01		12.385	10.17	1053.535	1055.68	1021.24	1023.38		
3-Dec-01		12.4	10.19	1053.52	1055.66	1021.22	1023.36		
5-Dec-01		12.42	10.2	1053.5	1055.65	1021.20	1023.35		
12-Dec-01		12.435	10.2	1053.485	1055.65	1021.19	1023.35		
14-Dec-01		12.47	10.25	1053.45	1055.6	1021.15	1023.30		
15-Dec-01		12.52	10.31	1053.4	1055.54	1021.10	1023.24		
16-Dec-01		12.57	10.38	1053.35	1055.47	1021.05	1023.17		
17-Dec-01		12.62	10.43	1053.3	1055.42	1021.00	1023.12		
18-Dec-01		12.66	10.48	1053.26	1055.37	1020.96	1023.07		
19-Dec-01		12.68	10.51	1053.24	1055.34	1020.94	1023.04		
26-Dec-01		12.72	10.53	1053.2	1055.32	1020.90	1023.02		
2-Jan-02		12.7	10.49	1053.22	1055.36	1020.92	1023.06		
9-Jan-02		12.68	10.45	1053.24	1055.4	1020.94	1023.10		
16-Jan-02		12.65	10.41	1053.27	1055.44	1020.97	1023.14		
23-Jan-02		12.62	10.36	1053.3	1055.49	1021.00	1023.19		
30-Jan-02		12.6	10.33	1053.32	1055.52	1021.02	1023.22		
6-Feb-02		12.585	10.31	1053.335	1055.54	1021.04	1023.24		
13-Feb-02		12.55	10.26	1053.37	1055.59	1021.07	1023.29		
20-Feb-02		12.55	10.25	1053.37	1055.6	1021.07	1023.30		
1-May-02		12.55	10.27	1053.37	1055.58	1021.07	1023.28		
12-Jun-02		12.155	9.77	1053.765	1056.08	1021.47	1023.78		
17-Jul-02		11.91	9.465	1054.01	1056.385	1021.71	1024.09		
7-Aug-02		12.1	9.705	1053.82	1056.145	1021.52	1023.85		
9-Sep-02		11.75	9.24	1054.17	1056.61	1021.87	1024.31		
4-Nov-02		11.85	9.64	1054.07	1056.21	1021.77	1023.91		
10-Nov-02		11.86	9.665	1054.06	1056.185	1021.76	1023.89		
30-Jan-03		11.805	9.395	1054.115	1056.455	1021.82	1024.16		
9-Feb-03		11.84	9.42	1054.08	1056.43	1021.78	1024.13	1090.9	start siphon
11-Feb-03		11.87	9.455	1054.05	1056.395	1021.75	1024.10	1090.8	
13-Feb-03		11.91	9.5	1054.01	1056.35	1021.71	1024.05	1090.8	
18-Feb-03		11.96	9.55	1053.96	1056.3	1021.66	1024.00		
21-Feb-03		11.97	9.56	1053.95	1056.29	1021.65	1023.99	1090.78	
23-Apr-03		12.055	9.565	1053.865	1056.285	1021.57	1023.99	1062.44	
7-May-03		12.21	9.78	1053.71	1056.07	1021.41	1023.77		
16-May-03		12.175	9.7	1053.745	1056.15	1021.45	1023.85		
11-Jun-03		11.99	9.46	1053.93	1056.39	1021.63	1024.09		
15-Jul-03		11.74	9.13	1054.18	1056.72	1021.88	1024.42		
10-Sep-03		12.355	9.95	1053.565	1055.9	1021.27	1023.60		
4-Mar-04		12.01	9.52			1021.54	1023.95		2004 Survey data used from here on
8-Mar-04		12.11	9.65			1021.44	1023.82		
26-Apr-04		12.45	9.5			1021.10	1023.97		
19-Jul-04		11.87	9.28			1021.68	1024.19		
26-Aug-04		11.88	9.28			1021.67	1024.19		
9-Sep-04		12.15	9.64			1021.40	1023.83		

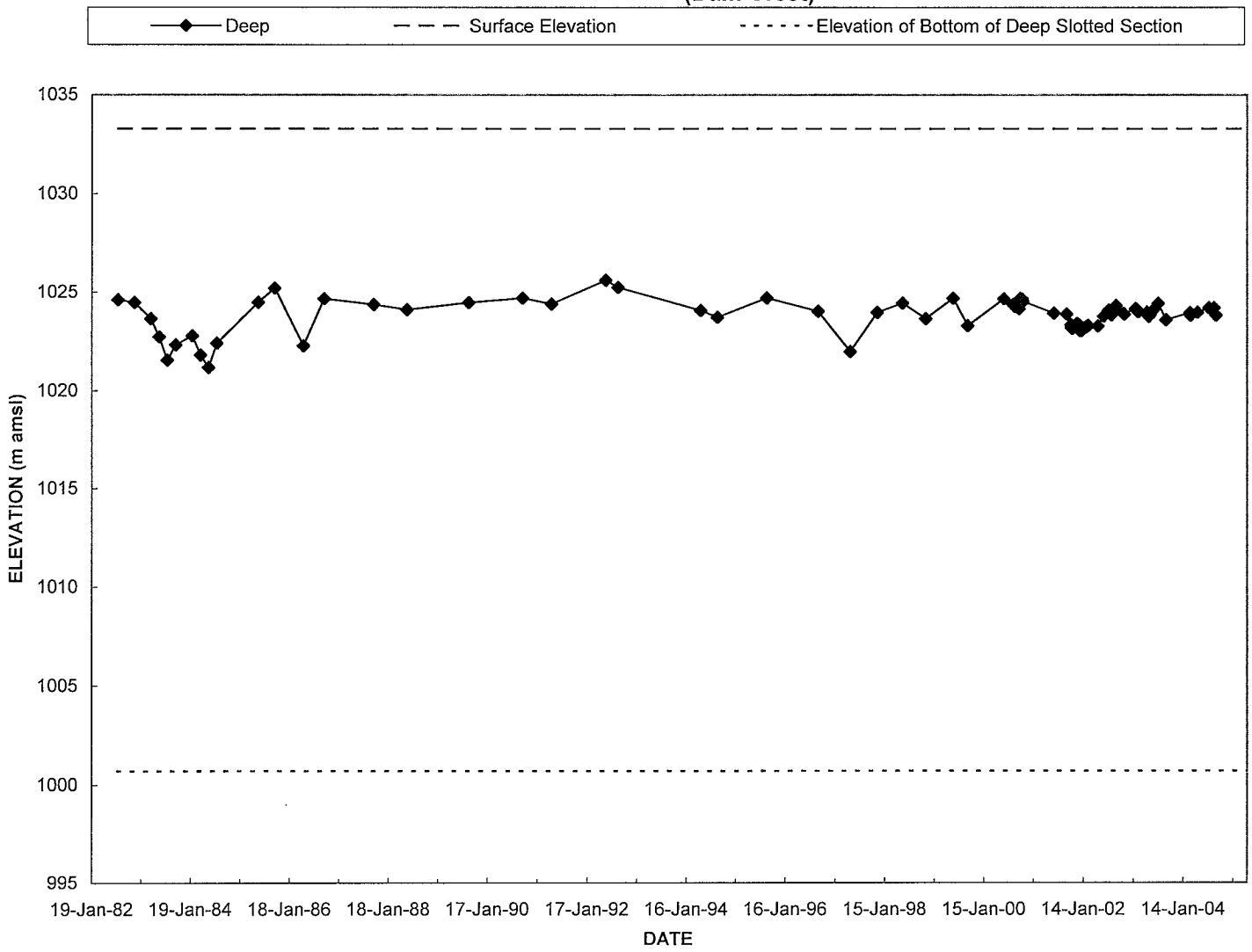
CROSS VALLEY DAM
Piezometric Monitoring
CVDC-9 Shallow Standpipe Piezometer
(Dam Crest)

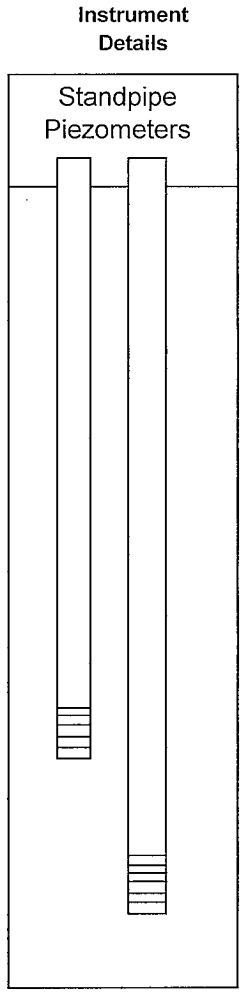


Cvdpiez.xls
CVDC9 chart (sh)

BGC Engineering Inc.

CROSS VALLEY DAM
Piezometric Monitoring
CVDC-9 Deep Standpipe Piezometer
(Dam Crest)

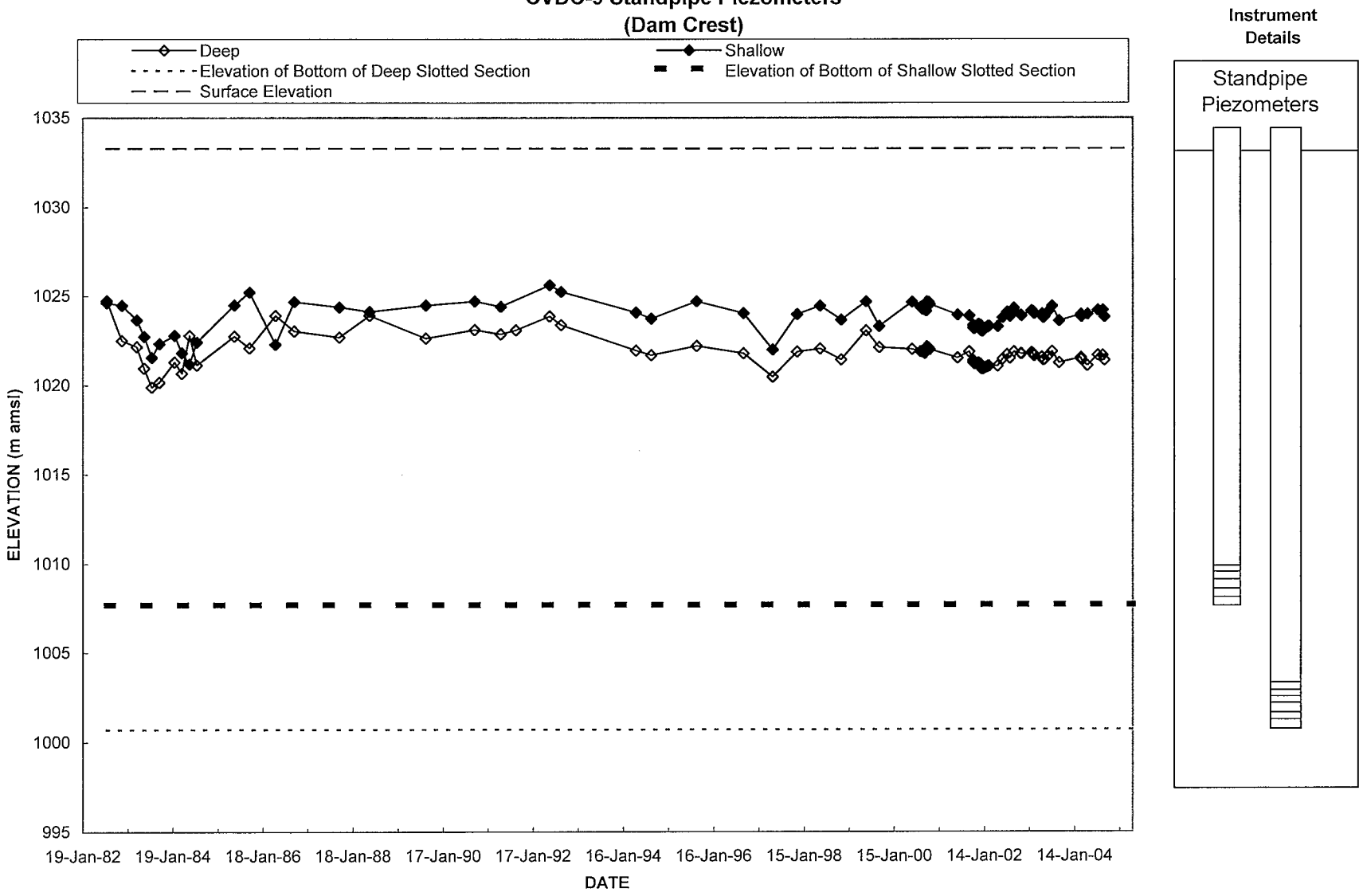




Cvdpiez.xls
CVDC9 chart (dp)

BGC Engineering Inc.

CROSS VALLEY DAM
Piezometric Monitoring
CVDC-9 Standpipe Piezometers
(Dam Crest)



Instrument Details

Faro Mine Instrumentation Cross Valley Dam

CVDC-7		Location:	Cross Valley Dam Crest St.0+450	Ground Elevation (m advd):	1065.7	2004 Ground Elevation (m amsl):	1033.24		
				Shallow Tip Elevation (m advd):	1040.1	2004 Shallow Tip Elevation (m amsl):	1007.80	Coordinates:	8V580158 6914127
	Date Installed:	1981		Deep Tip Elevation (m advd):	1035.2	Deep Tip Elevation (m amsl):	1002.90	Surface Protector:	yes
				Shallow stick-up (m):	0.22/ 0.23/ 0.26	2004 Shallow stick-up (m):	0.31		
				Deep stick-up (m):	0.13/ 0.29	2004 Deep stick-up (m):	0.23		

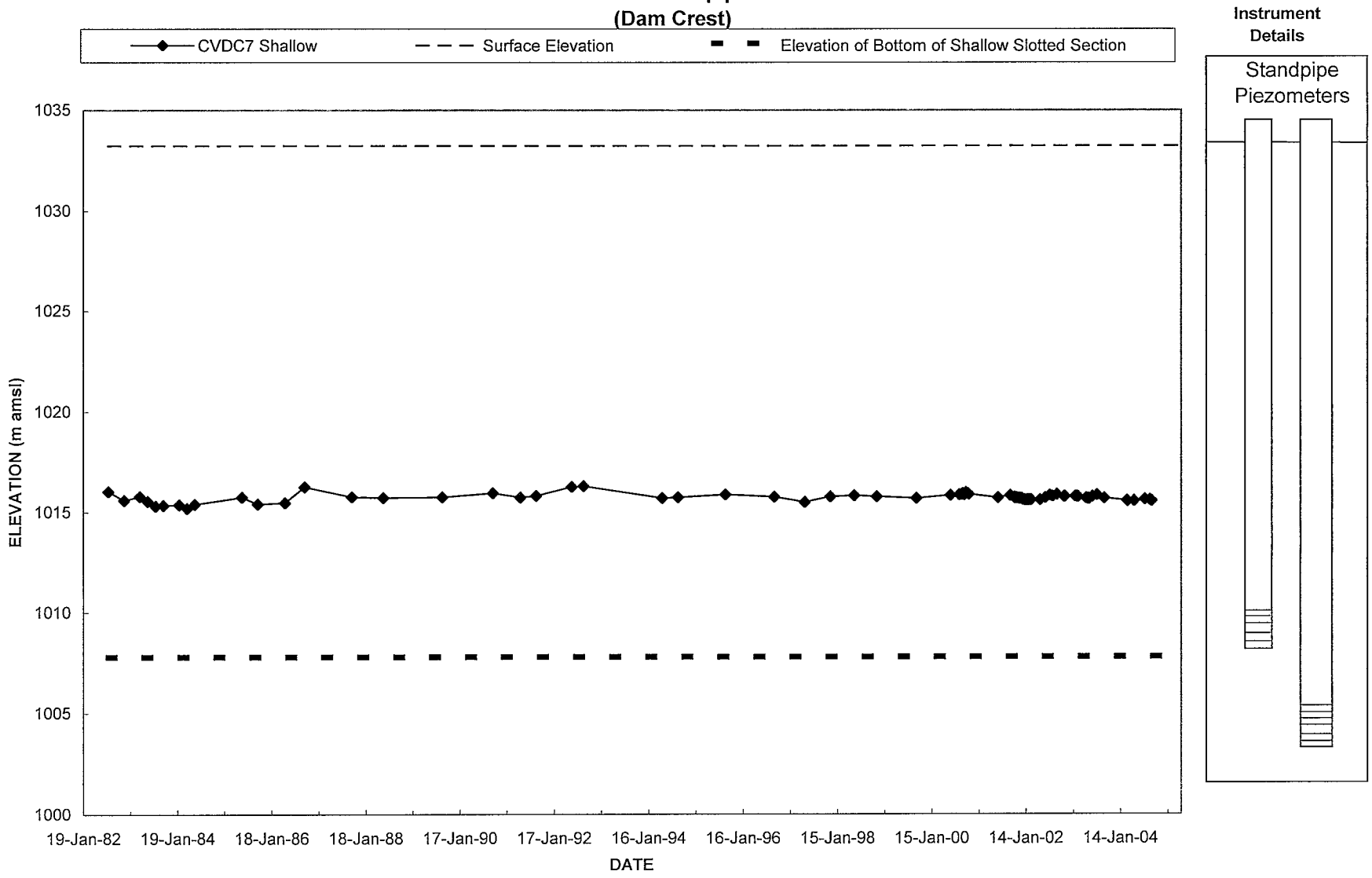
Date		Water Level from top of pipe (m)		Piezometric Elevation (m advd)		Piezometric Elevation (m amsl)		Pond Elevation (m advd)	Comments
		Shallow	Deep	Shallow	Deep	Shallow	Deep		
1-Aug-82		17.58	14.44	1048.34	1051.39	1016.04	1019.09		
1-Dec-82		18.02	15.10	1047.90	1050.73	1015.60	1018.43		
1-Apr-83		17.83	15.24	1048.09	1050.59	1015.79	1018.29	1061.63	
1-Jun-83		18.06	14.88	1047.86	1050.95	1015.56	1018.65	1058.18	
1-Aug-83		18.30	16.24	1047.62	1049.59	1015.32	1017.29		
1-Oct-83		18.26	16.01	1047.66	1049.82	1015.36	1017.52		
1-Feb-84		18.24	15.92	1047.68	1049.91	1015.38	1017.61		
1-Mar-84								1062.90	
1-Apr-84		18.41	16.36	1047.51	1049.47	1015.21	1017.17		
1-Jun-84		18.22	16.06	1047.70	1049.77	1015.40	1017.47	1059.10	
1-Jun-85		17.87	16.06	1048.05	1049.77	1015.75	1017.47	1063.50	
1-Oct-85		18.20	15.55	1047.72	1050.28	1015.42	1017.98		
1-May-86		18.14	15.14	1047.78	1050.69	1015.48	1018.39	1063.00	
1-Oct-86		17.35	14.40	1048.57	1051.43	1016.27	1019.13	1063.20	
1-Oct-87		17.85	14.85	1048.07	1050.98	1015.77	1018.68		
1-Jun-88		17.90	15.10	1048.03	1050.89	1015.73	1018.59		
1-Sep-89		17.88	15.03	1048.05	1050.96	1015.75	1018.66		
1-Oct-90		17.68	15.03	1048.25	1050.96	1015.95	1018.66		
1-May-91		17.89	15.36	1048.04	1050.63	1015.74	1018.33		
1-Sep-91		17.81		1048.12		1015.82			
1-Jun-92		17.37	14.48	1048.56	1051.51	1016.26	1019.21		
1-Sep-92		17.33	14.66	1048.60	1051.33	1016.30	1019.03		
1-May-94		17.99	15.50	1048.00	1050.46	1015.70	1018.16		
1-Sep-94		17.95	15.47	1048.04	1050.49	1015.74	1018.19		
1-Sep-95		17.81	15.08	1048.18	1050.88	1015.88	1018.58		
13-Sep-96		17.93	15.34	1048.06	1050.62	1015.76	1018.32	1062.215	
7-May-97		18.19	16.07	1047.80	1049.89	1015.50	1017.59		
20-Nov-97		17.91	15.29	1048.08	1050.67	1015.78	1018.37		
26-May-98		17.87	15.12	1048.12	1050.84	1015.82	1018.54	1063.5	
15-Nov-98		17.91	15.38	1048.08	1050.58	1015.78	1018.28	1062.1	
3-Jun-99		n.r.	15.10		1050.86		1018.56	1063.7	
18-Sep-99		18.00	15.59	1047.99	1050.37	1015.69	1018.07	~1061.5	
8-Jun-00		17.85	15.08	1048.14	1050.88	1015.84	1018.58	~1062.5	
14-Aug-00		17.82	15.10	1048.17	1050.86	1015.87	1018.56		
31-Aug-00		17.80	15.16	1048.19	1050.80	1015.89	1018.50		
7-Sep-00		17.78	15.09	1048.21	1050.87	1015.91	1018.57		
14-Sep-00		17.78	15.80	1048.21	1050.16	1015.91	1017.86		
19-Sep-00		17.82	15.19	1048.17	1050.77	1015.87	1018.47		
21-Sep-00		17.82	15.16	1048.17	1050.80	1015.87	1018.50		
28-Sep-00		17.77	15.60	1048.22	1050.36	1015.92	1018.06		
6-Oct-00		17.71	14.96	1048.28	1051.00	1015.98	1018.70		
12-Oct-00		17.75	15.03	1048.24	1050.93	1015.94	1018.63		
20-Oct-00		17.76	15.00	1048.23	1050.96	1015.93	1018.66		
27-Oct-00		17.80	15.08	1048.19	1050.88	1015.89	1018.58		
10-Jun-01		17.97	15.39	1048.02	1050.57	1015.72	1018.27		
14-Sep-01		17.86	15.16	1048.13	1050.80	1015.83	1018.50		
16-Oct-01		17.95	15.43	1048.04	1050.53	1015.74	1018.23		
18-Oct-01		17.97	15.48	1048.02	1050.48	1015.72	1018.18		
19-Oct-01		17.98	15.49	1048.01	1050.47	1015.71	1018.17		
20-Oct-01		17.98	15.49	1048.01	1050.47	1015.71	1018.17		
21-Oct-01		17.98	15.49	1048.01	1050.47	1015.71	1018.17		
22-Oct-01		17.98	15.5	1048.01	1050.46	1015.71	1018.16		
25-Oct-01		17.99	15.51	1048.00	1050.45	1015.70	1018.15		
29-Oct-01		17.99	15.51	1048	1050.45	1015.70	1018.15		
1-Nov-01		17.985	15.495	1048.005	1050.465	1015.71	1018.17		
5-Nov-01		17.99	15.505	1048	1050.455	1015.70	1018.16		
6-Nov-01		17.99	15.505	1048	1050.455	1015.70	1018.16		
8-Nov-01		17.99	15.51	1048	1050.45	1015.70	1018.15		
12-Nov-01		18	15.51	1047.99	1050.45	1015.69	1018.15		
15-Nov-01		18	15.51	1047.99	1050.45	1015.69	1018.15		
19-Nov-01		18	15.51	1047.99	1050.45	1015.69	1018.15		
21-Nov-01		17.99	15.495	1048	1050.465	1015.70	1018.17		
23-Nov-01		17.99	15.495	1048	1050.465	1015.70	1018.17		pond elev approx - 8 ft.
26-Nov-01		18	15.495	1047.99	1050.465	1015.69	1018.17		daytime temp -34 C

Faro Mine Instrumentation Cross Valley Dam

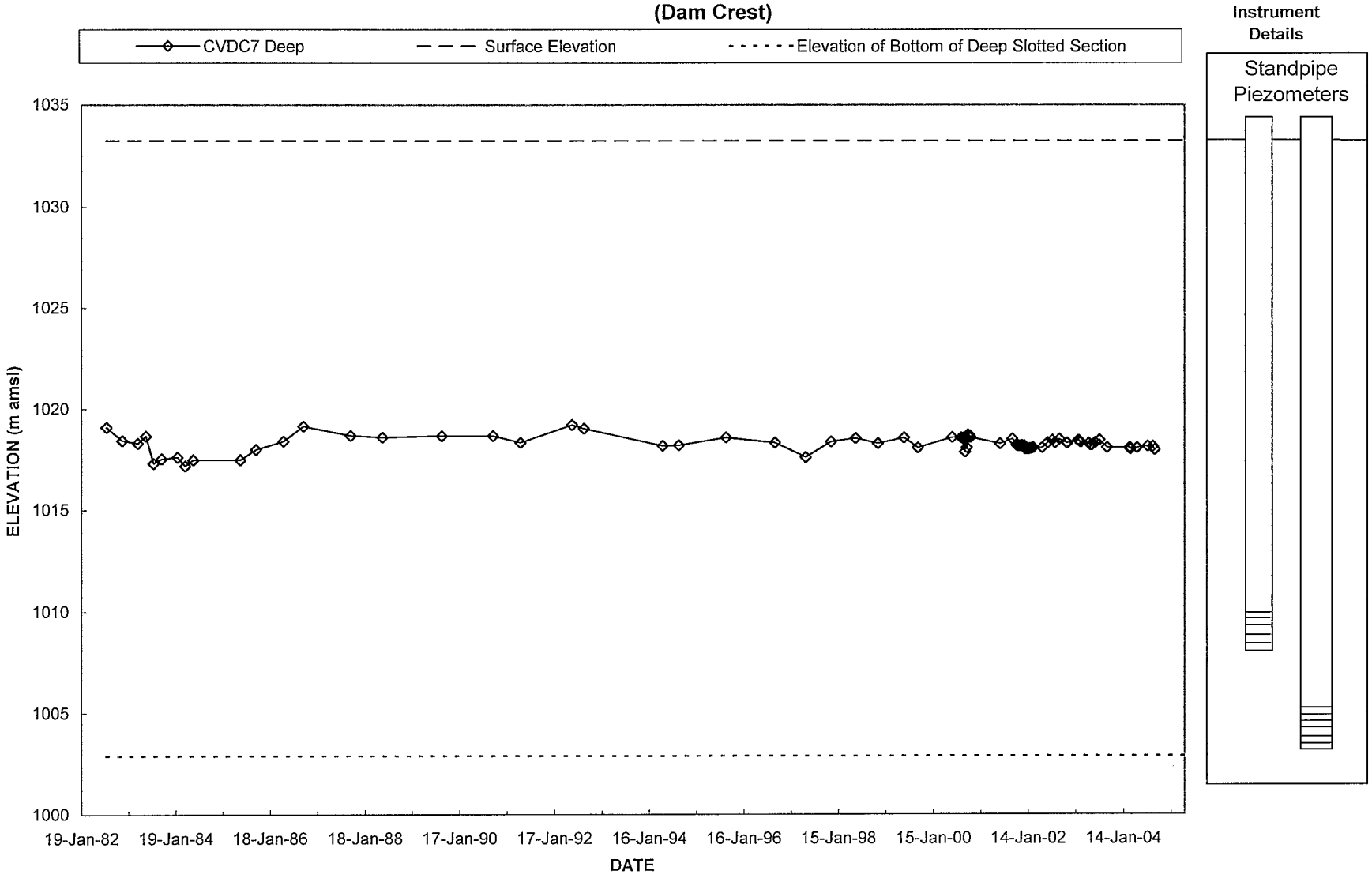
CVDC-7		Location:	Cross Valley Dam Crest St.0+450	Ground Elevation (m advd):	1065.7	2004 Ground Elevation (m amsl):	1033.24		
				Shallow Tip Elevation (m advd):	1040.1	2004 Shallow Tip Elevation (m amsl):	1007.80	Coordinates:	8V580158 6914127
	Date Installed:	1981		Deep Tip Elevation (m advd):	1035.2	Deep Tip Elevation (m amsl):	1002.90	Surface Protector:	yes
				Shallow stick-up (m):	0.22/ 0.23/ 0.26	2004 Shallow stick-up (m):	0.31		
				Deep stick-up (m):	0.13/ 0.29	2004 Deep stick-up (m):	0.23		

Date		Water Level from top of pipe (m)		Piezometric Elevation (m advd)		Piezometric Elevation (m amsl)		Pond Elevation (m advd)	Comments
		Shallow	Deep	Shallow	Deep	Shallow	Deep		
28-Nov-01		18	15.5	1047.99	1050.46	1015.69	1018.16		
30-Nov-01		18.01	15.5	1047.98	1050.46	1015.68	1018.16		
3-Dec-01		18.01	15.51	1047.98	1050.45	1015.68	1018.15		
5-Dec-01		18.01	15.52	1047.98	1050.44	1015.68	1018.14		
12-Dec-01		18.01	15.52	1047.98	1050.44	1015.68	1018.14		
14-Dec-01		18.01	15.5	1047.98	1050.46	1015.68	1018.16		
15-Dec-01		18.02	15.54	1047.97	1050.42	1015.67	1018.12		
16-Dec-01		18.03	15.58	1047.96	1050.38	1015.66	1018.08		
17-Dec-01		18.04	15.61	1047.95	1050.35	1015.65	1018.05		
18-Dec-01		18.05	15.63	1047.94	1050.33	1015.64	1018.03		
19-Dec-01		18.06	15.65	1047.93	1050.31	1015.63	1018.01		
26-Dec-01		18.07	15.66	1047.92	1050.3	1015.62	1018.00		
2-Jan-02		18.07	15.65	1047.92	1050.31	1015.62	1018.01		
9-Jan-02		18.08	15.66	1047.91	1050.3	1015.61	1018.00		
16-Jan-02		18.08	15.65	1047.91	1050.31	1015.61	1018.01		
23-Jan-02		18.07	15.63	1047.92	1050.33	1015.62	1018.03		
30-Jan-02		18.08	15.63	1047.91	1050.33	1015.61	1018.03		
6-Feb-02		18.075	15.62	1047.915	1050.34	1015.62	1018.04		
13-Feb-02		18.07	15.6	1047.92	1050.36	1015.62	1018.06		
20-Feb-02		18.075	15.6	1047.915	1050.36	1015.62	1018.06		
1-May-02		18.07	15.6	1047.92	1050.36	1015.62	1018.06		Water being discharged from the polishing pond
12-Jun-02		17.975	15.35	1048.015	1050.61	1015.72	1018.31		
17-Jul-02		17.85	15.225	1048.14	1050.735	1015.84	1018.44		
7-Aug-02		17.9	15.35	1048.09	1050.61	1015.79	1018.31		
9-Sep-02		17.815	15.17	1048.175	1050.79	1015.88	1018.49		
4-Nov-02		17.91	15.36	1048.08	1050.6	1015.78	1018.30		
10-Nov-02		17.91	15.355	1048.08	1050.605	1015.78	1018.31		
30-Jan-03		17.895	15.235	1048.095	1050.725	1015.80	1018.43		
9-Feb-03		17.9	15.245	1048.09	1050.715	1015.79	1018.42	1090.9	start siphon
11-Feb-03		17.905	15.256	1048.085	1050.704	1015.79	1018.40	1090.8	
13-Feb-03		17.91	15.28	1048.08	1050.68	1015.78	1018.38	1090.8	
18-Feb-03		17.925	15.31	1048.065	1050.65	1015.77	1018.35		
21-Feb-03		17.93	15.32	1048.06	1050.64	1015.76	1018.34	1090.78	
23-Apr-03		17.98	15.37	1048.01	1050.59	1015.71	1018.29	1062.44	
7-May-03		18.01	15.47	1047.98	1050.49	1015.68	1018.19		
16-May-03		18.01	15.455	1047.98	1050.505	1015.68	1018.21		
11-Jun-03		17.91	15.33	1048.08	1050.63	1015.78	1018.33		
15-Jul-03		17.84	15.205	1048.15	1050.755	1015.85	1018.46		
10-Sep-03		18	15.585	1047.99	1050.375	1015.69	1018.08		
4-Mar-04		17.97	15.39			1015.58	1018.08		2004 Survey data used from here on
8-Mar-04		18	15.46			1015.55	1018.01		
26-Apr-04		17.98	15.4			1015.57	1018.07		
19-Jul-04		17.91	15.33			1015.64	1018.14		
26-Aug-04		17.93	15.34			1015.619	1018.129		
9-Sep-04		17.985	15.5			1015.564	1017.97		

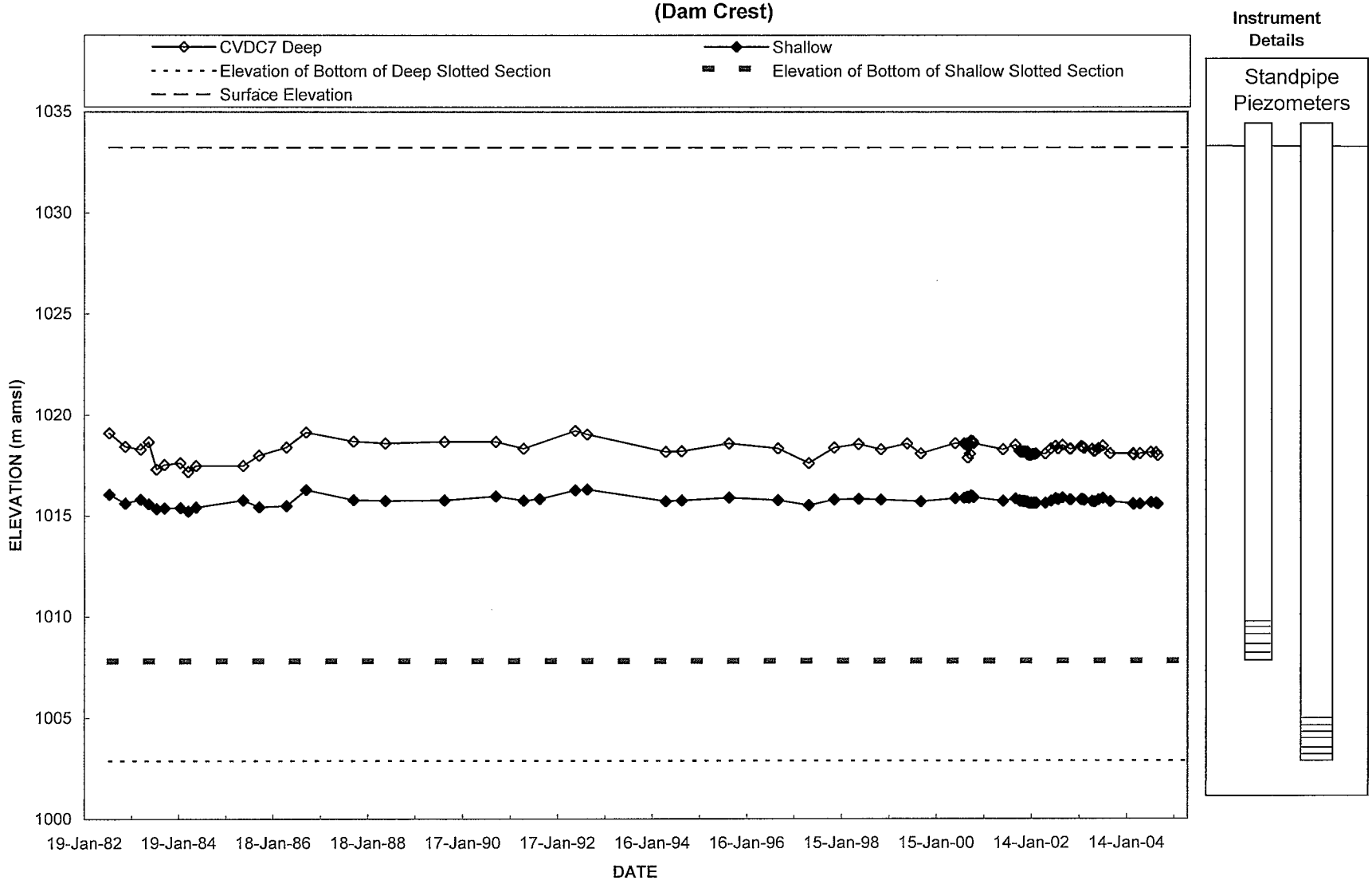
CROSS VALLEY DAM
Piezometric Monitoring
CVDC-7 Shallow Standpipe Piezometer
(Dam Crest)



CROSS VALLEY DAM
Piezometric Monitoring
CVDC-7 Deep Standpipe Piezometer
(Dam Crest)



CROSS VALLEY DAM
Piezometric Monitoring
CVDC-7 Deep Standpipe Piezometer
(Dam Crest)



Cvdpiez.xls
CVDC7 chart (both)

BGC Engineering Inc.

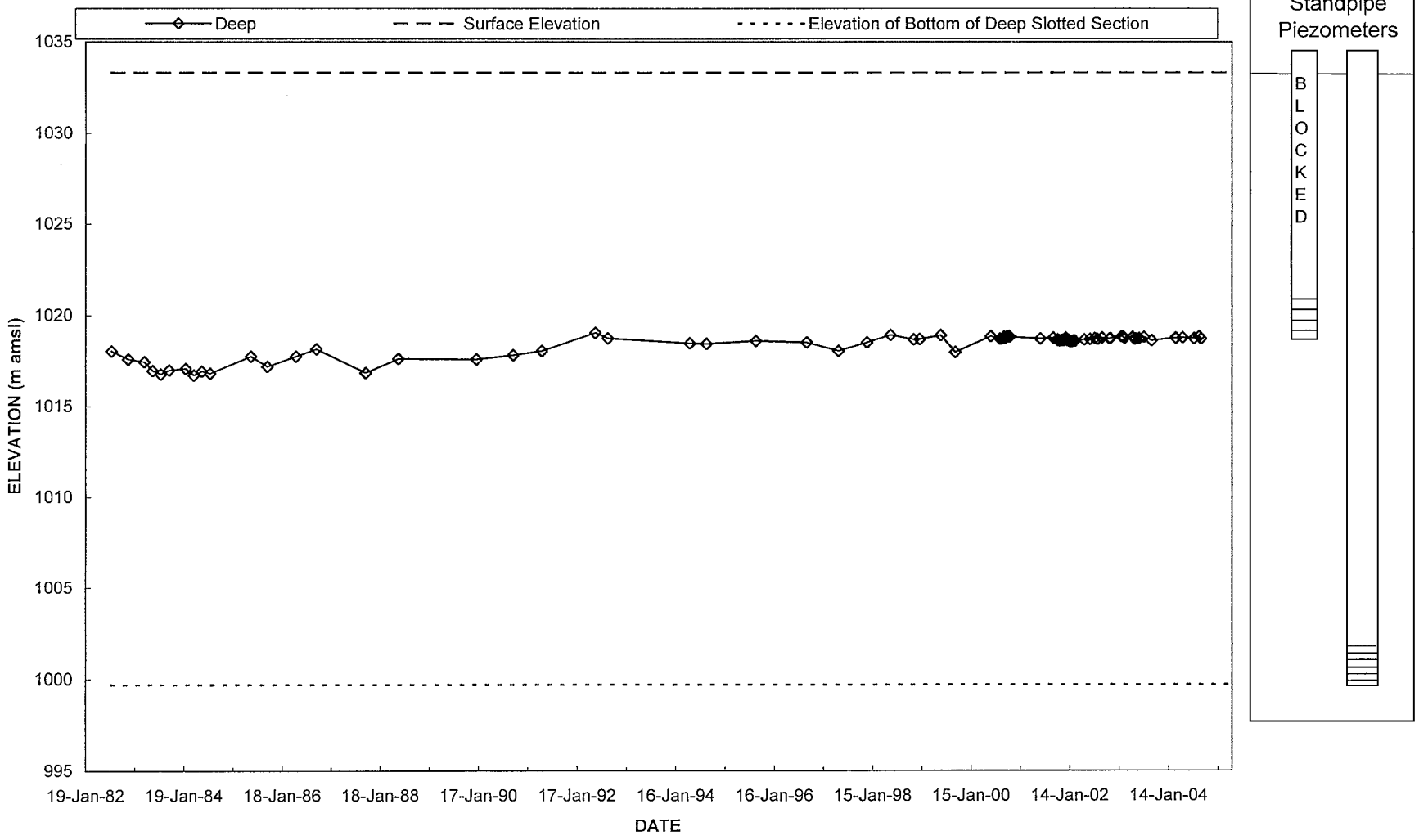
CVDC-4		Location:	Cross Valley Dam Crest St.0+215	Ground Elevation (m advd):	1065.5	2004 Ground Elevation (m amsl):	1033.3		
				Shallow Tip Elevation (m advd):	1040.2	Shallow Tip Elevation (m amsl):	1007.9	Coordinates:	8V580266 6914331
		Date Installed:	1981	Deep Tip Elevation (m advd):	1032	Deep Tip Elevation (m amsl):	999.7	Surface Protector:	yes
				Shallow stick-up (m):	0.13	2004 Shallow stick-up 2004 (m):	0.11		
				Deep stick-up (m):	0.28	2004 Deep stick-up (m):	0.3		

Date		Water Level from top of pipe (m)		Piezometric Elevation (m advd)		Piezometric Elevation (m amsl)		Pond Elevation (m advd)	Comments
		Shallow	Deep	Shallow	Deep	Shallow	Deep		
1-Aug-82		15.10	15.26	1050.53	1050.24	1018.33	1018.04		
1-Dec-82		15.82	15.71	1049.81	1049.79	1017.61	1017.59		
1-Apr-83		15.71	15.84	1049.92	1049.66	1017.72	1017.46	1061.63	
1-Jun-83		16.54	16.33	1049.09	1049.17	1016.89	1016.97	1058.18	
1-Aug-83		16.57	16.52	1049.06	1048.98	1016.86	1016.78		
1-Oct-83		16.34	16.30	1049.29	1049.20	1017.09	1017.00		
1-Feb-84		16.21	16.22	1049.42	1049.28	1017.22	1017.08		
1-Mar-84								1062.90	
1-Apr-84		16.75	16.58	1048.88	1048.92	1016.68	1016.72		
1-Jun-84		16.40	16.37	1049.23	1049.13	1017.03	1016.93	1059.10	
1-Aug-84		16.50	16.48	1049.13	1049.02	1016.93	1016.82		
1-Jun-85		15.50	15.55	1050.13	1049.95	1017.93	1017.75	1063.50	
1-Oct-85		16.00	16.10	1049.63	1049.40	1017.43	1017.20		
1-May-86		15.58	15.54	1050.05	1049.96	1017.85	1017.76	1063.00	
1-Oct-86		14.99	15.14	1050.64	1050.36	1018.44	1018.16	1063.20	
1-Oct-87		15.42	16.45	1050.21	1049.05	1018.01	1016.85		
1-Jun-88			15.67		1049.83		1017.63		
1-Jan-90			15.78		1049.79		1017.59		
1-Oct-90			15.54		1050.03		1017.83		
1-May-91			15.31		1050.26		1018.06		
1-Jun-92			14.32		1051.25		1019.05		
1-Sep-92			14.63		1050.94		1018.74		
1-May-94			14.93		1050.67		1018.47		
1-Sep-94			14.95		1050.65		1018.45		
1-Sep-95			14.80		1050.80		1018.60		
13-Sep-96			14.89		1050.71		1018.51	1062.215	
7-May-97			15.34		1050.26		1018.06		
2-Dec-97			14.89		1050.71		1018.51		shallow standpipe - dry
26-May-98			14.66		1051.12		1018.92	1063.5	
13-Nov-98			14.91		1050.87		1018.67	1062.1	
29-Dec-98			14.89		1050.89		1018.69	1062.1	
3-Jun-99			14.671		1051.11		1018.91	1063.7	
18-Sep-99			15.60		1050.18		1017.98	~1061.5	
8-Jun-00			14.73		1051.05		1018.85	~1062.5	
14-Aug-00			14.88		1050.90		1018.70		
31-Aug-00			14.86		1050.92		1018.72		
7-Sep-00			14.83		1050.95		1018.75		
14-Sep-00			14.76		1051.02		1018.82		
21-Sep-00			14.84		1050.94		1018.74		shallow standpipe - plugged
28-Sep-00			14.79		1050.99		1018.79		shallow standpipe - plugged
6-Oct-00			14.75		1051.03		1018.83		shallow standpipe - n.r.
12-Oct-00			14.76		1051.02		1018.82		shallow standpipe - n.r.
20-Oct-00			14.74		1051.04		1018.84		blocked @ 1.25m
27-Oct-00			14.76		1051.02		1018.82		shallow standpipe - blocked @ 7.60m
10-Jun-01		7.67	14.87		1050.91		1018.71		shallow standpipe - blocked @ 7.61m
14-Sep-01		7.61	14.82		1050.96		1018.76		shallow standpipe - blocked @ 7.61m
16-Oct-01		7.61	14.90		1050.88		1018.68		shallow standpipe - blocked @ 7.62m
18-Oct-01		7.61	14.93		1050.85		1018.65		shallow standpipe - blocked @ 7.61m
19-Oct-01		7.61	14.95		1050.83		1018.63		shallow standpipe - blocked @ 7.61m
20-Oct-01		7.61	14.96		1050.82		1018.62		shallow standpipe - blocked @ 7.61m
21-Oct-01		7.61	14.97		1050.81		1018.61		shallow standpipe - blocked @ 7.61m
22-Oct-01		7.61	14.98		1050.8		1018.60		shallow standpipe - blocked @ 7.61m
25-Oct-01		7.61	14.98		1050.8		1018.60		shallow standpipe - blocked @ 7.61m
29-Oct-01		7.61	14.98		1050.8		1018.60		shallow standpipe - blocked @ 7.61m
1-Nov-01		7.61	14.975		1050.805		1018.61		shallow standpipe - blocked @ 7.61m
5-Nov-01		7.61	14.97		1050.81		1018.61		
6-Nov-01		7.61	14.97		1050.81		1018.61		
8-Nov-01		7.61	14.965		1050.815		1018.62		
12-Nov-01		7.61	14.96		1050.82		1018.62		
15-Nov-01		7.61	14.95		1050.83		1018.63		
19-Nov-01		7.61	14.95		1050.83		1018.63		
21-Nov-01		7.61	14.95		1050.83		1018.63		
23-Nov-01		7.61	14.94		1050.84		1018.64		pond elev approx - 8 ft.
26-Nov-01		7.61	14.95		1050.83		1018.63		daytime temp -34 C

CVDC-4		Location:	Cross Valley Dam Crest St.0+215	Ground Elevation (m advd):	1065.5	2004 Ground Elevation (m amsl):	1033.3		
				Shallow Tip Elevation (m advd):	1040.2	Shallow Tip Elevation (m amsl):	1007.9	Coordinates:	8V580266 6914331
		Date Installed:	1981	Deep Tip Elevation (m advd):	1032	Deep Tip Elevation (m amsl):	999.7	Surface Protector:	yes
				Shallow stick-up (m):	0.13	2004 Shallow stick-up 2004 (m):	0.11		
				Deep stick-up (m):	0.28	2004 Deep stick-up (m):	0.3		

Date		Water Level from top of pipe (m)		Piezometric Elevation (m advd)		Piezometric Elevation (m amsl)		Pond Elevation (m advd)	Comments
		Shallow	Deep	Shallow	Deep	Shallow	Deep		
28-Nov-01		7.61	14.94		1050.84		1018.64		
30-Nov-01		7.61	14.94		1050.84		1018.64		
3-Dec-01		7.61	14.96		1050.82		1018.62		
5-Dec-01		7.61	14.97		1050.81		1018.61		
12-Dec-01		7.61	14.94		1050.84		1018.64		
14-Dec-01		7.61	14.82		1050.96		1018.76		
15-Dec-01		7.61	14.84		1050.94		1018.74		
16-Dec-01		7.61	14.87		1050.91		1018.71		
17-Dec-01		7.61	14.9		1050.88		1018.68		
18-Dec-01		7.61	14.92		1050.86		1018.66		
19-Dec-01		7.61	14.94		1050.84		1018.64		
26-Dec-01		7.61	14.96		1050.82		1018.62		
2-Jan-02		7.61	14.94		1050.84		1018.64		
9-Jan-02		7.61	14.99		1050.79		1018.59		
16-Jan-02		7.61	15.04		1050.74		1018.54		
23-Jan-02		7.61	15.02		1050.76		1018.56		
30-Jan-02		7.61	15.02		1050.76		1018.56		
6-Feb-02		7.61	15.00		1050.78		1018.58		
13-Feb-02		7.61	15		1050.78		1018.58		
20-Feb-02		7.61	14.99		1050.79		1018.59		
1-May-02		7.61	14.915		1050.865		1018.67		
12-Jun-02		7.61	14.895		1050.885		1018.69		
17-Jul-02		7.61	14.845		1050.935		1018.74		
7-Aug-02		7.61	14.895		1050.885		1018.69		
9-Sep-02		7.61	14.82		1050.96		1018.76		
4-Nov-02		7.61	14.86		1050.92		1018.72		
10-Nov-02		7.61	14.85		1050.93		1018.73		
30-Jan-03		7.61	14.75		1051.03		1018.83		
9-Feb-03		7.61	14.755		1051.025		1018.83	1090.9	start siphon
11-Feb-03		7.61	14.765		1051.015		1018.82	1090.8	
13-Feb-03		7.61	14.78		1051		1018.80	1090.8	
18-Feb-03		7.61	14.8		1050.98		1018.78		
21-Feb-03		7.61	14.83		1050.95		1018.75	1090.78	
23-Apr-03		7.61	14.78		1051		1018.80	1062.44	
7-May-03		7.61	14.875		1050.905		1018.71		
16-May-03		7.61	14.87		1050.91		1018.71		
11-Jun-03		7.61	14.85		1050.93		1018.73		
15-Jul-03		7.61	14.78		1051		1018.80		
10-Sep-03		7.61	14.965		1050.815		1018.62		
4-Mar-04		7.61	14.84				1018.76		2004 Survey data used from here on
8-Mar-04		7.61	14.86				1018.74		
26-Apr-04		7.61	14.83				1018.77		
19-Jul-04		7.61	14.875				1018.725		
26-Aug-04		7.61	14.775				1018.825		
9-Sep-04		7.61	14.89				1018.71		

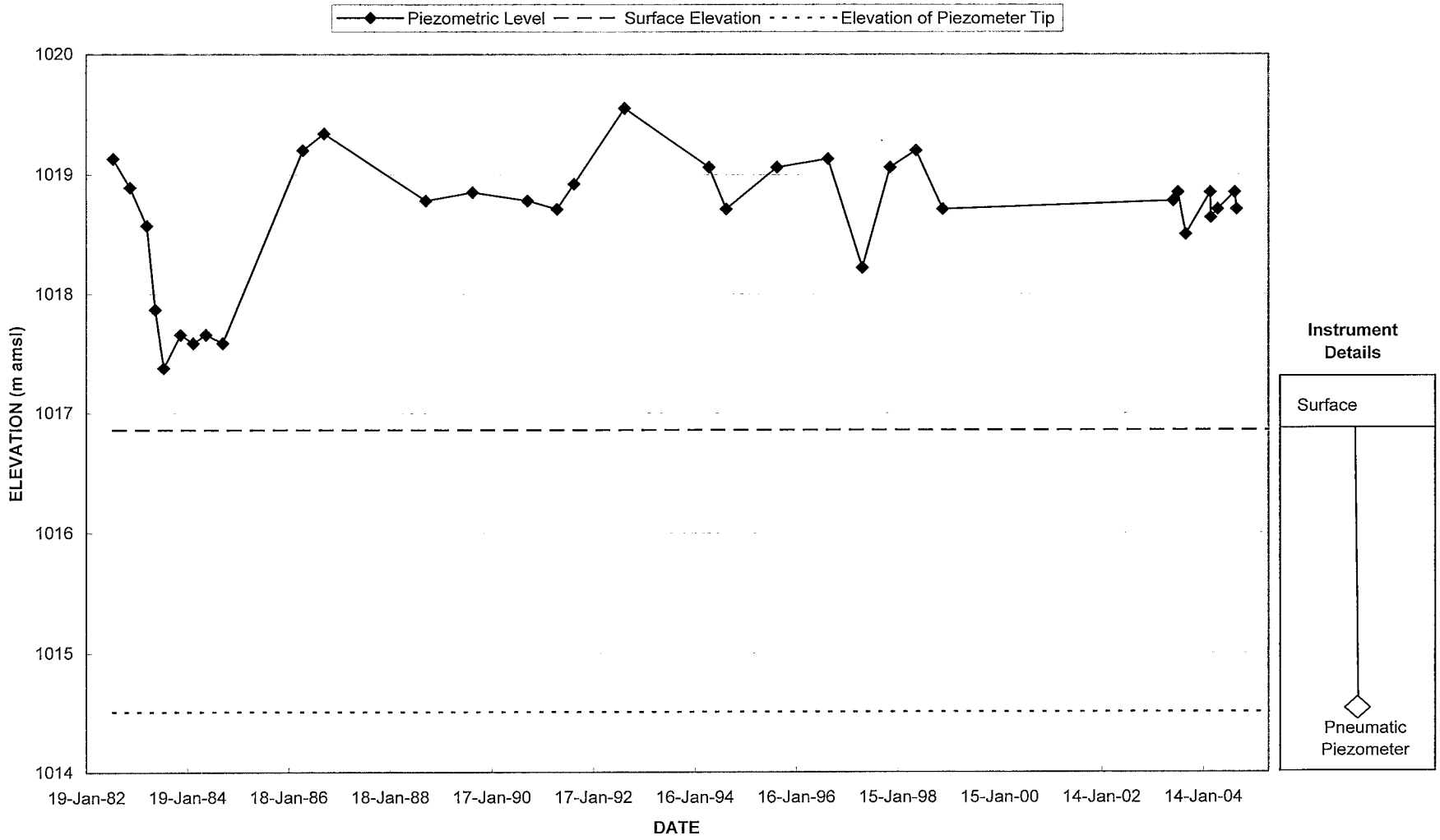
CROSS VALLEY DAM
Pieometric Monitoring
CVDC-4 Deep Standpipe
(Dam Crest)



CVDP-1		Location:	Cross Valley Dam St.0+450 20m u/s of CL.	Ground Elevation (m advd):	1049.16	2004 Ground Elevation (m amsl):	1016.86
		Date Installed:	1982	Tip Elevation (m advd):	1046.81	Coordinates:	8V580128 6914135
				Tip Elevation (m amsl):	1014.51	Surface Protector:	yes

Date		Reading (psi)		Piezometric Elevation (m dvd)	Piezometric Elevation (m amsl)	Pond Elevation (m advd)	Comments
1-Aug-82		6.60		1051.43	1019.13		
1-Dec-82		6.26		1051.19	1018.89		
1-Apr-83		5.80		1050.87	1018.57	1061.63	
1-Jun-83		4.80		1050.17	1017.87	1058.18	
1-Aug-83		4.10		1049.68	1017.38		
1-Dec-83		4.50		1049.96	1017.66		
1-Mar-84		4.40		1049.89	1017.59	1062.01	
1-Jun-84		4.50		1049.96	1017.66	1059.10	
1-Oct-84		4.40		1049.89	1017.59		
1-May-86		6.70		1051.50	1019.20	1063.00	
1-Oct-86		6.90		1051.64	1019.34	1063.20	
1-Oct-88		6.10		1051.08	1018.78		
1-Sep-89		6.20		1051.15	1018.85		
1-Oct-90		6.10		1051.08	1018.78		
1-May-91		6.00		1051.01	1018.71		
1-Sep-91		6.30		1051.22	1018.92		
1-Sep-92		7.20		1051.85	1019.55		
1-May-94		6.50		1051.36	1019.06		
1-Sep-94		6.00		1051.01	1018.71		
1-Sep-95		6.50		1051.36	1019.06		
1-Sep-96		6.60		1051.43	1019.13	1062.215	
6-May-97		5.30		1050.52	1018.22		
21-Nov-97		6.50		1051.36	1019.06		
27-May-98		6.70		1051.5	1019.20	1063.5	
12-Nov-98							no air bubbles returned
4-Dec-98		6.0		1051.01	1018.71	1062.1	
16-Dec-98						1062.1	black tube broken at connector
11-Jun-03		6.1		1051.08	1018.78		new piezometer
15-Jul-03		6.2		1051.15	1018.85		
10-Sep-03		5.7		1050.8	1018.50		
4-Mar-04		6.2			1018.85		2004 Survey data used from here on
8-Mar-04		5.9			1018.64		
26-Apr-04		6			1018.71		
26-Aug-04		6.2			1018.85		
9-Sep-04		6			1018.71		

CROSS VALLEY DAM
Pieometric Monitoring
CVDP-1 Pneumatic Piezometer
(Toe of Dam)

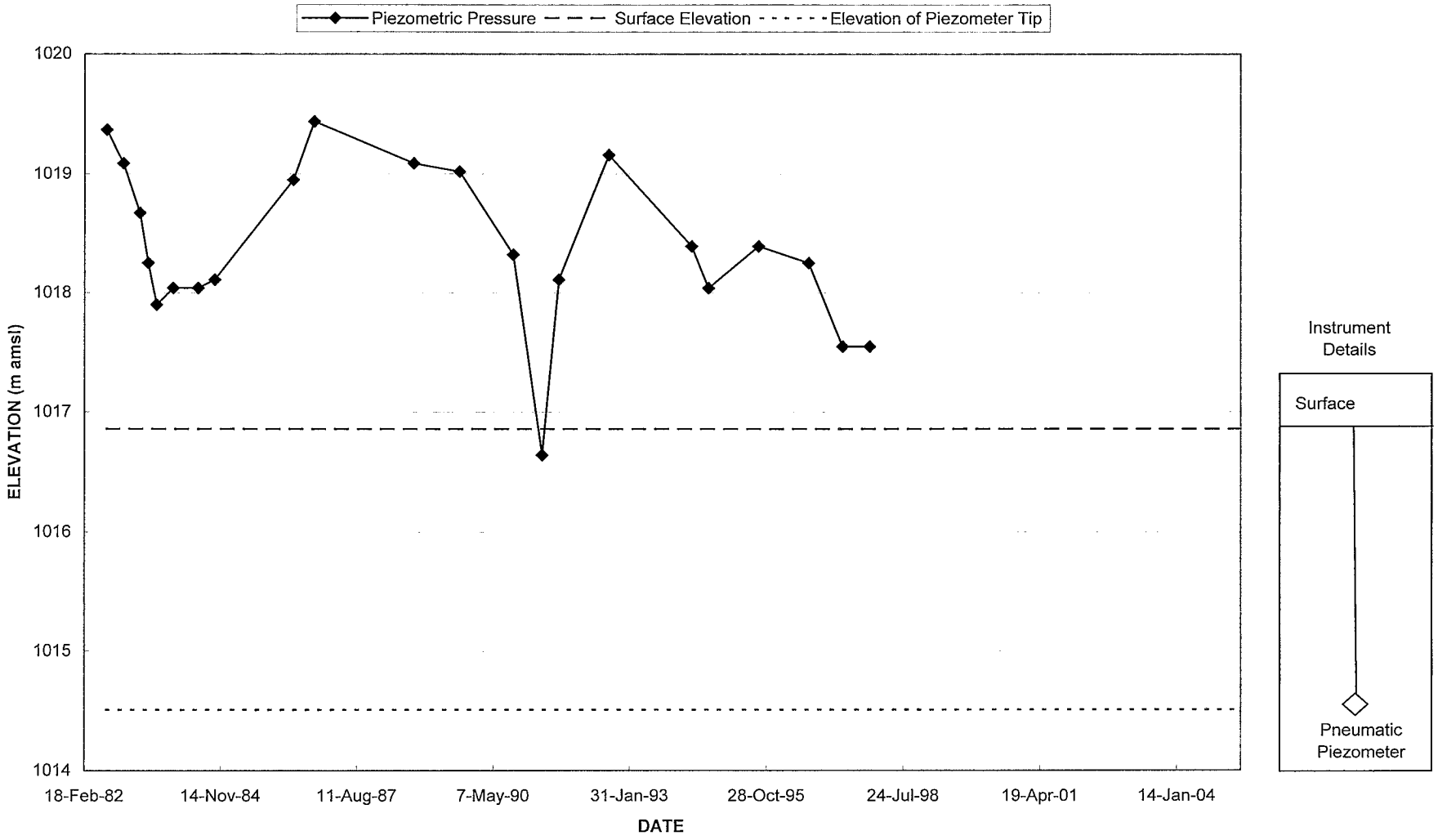


Faro Mine Instrumentation
CROSS VALLEY DAM

CVDP-2		Location:	Cross Valley Dam St.0+450 5m u/s of CL.	Ground Elevation (m advd):	1049.16		
				Ground Elevation (m amsl):	1016.86		
		Date Installed:	1982	Tip Elevation (m advd):	1046.81	Coordinates:	8V580128 6914135
				Tip Elevation (m amsl):	1014.51	Surface Protector:	yes

Date		Reading (psi)		Piezometric Elevation (m advd)	Piezometric Elevation (m amsl)	Pond Elevation (m advd)	Comments
1-Aug-82		6.90		1051.67	1019.37		
1-Dec-82		6.50		1051.39	1019.09		
1-Apr-83		5.90		1050.97	1018.67	1061.63	
1-Jun-83		5.30		1050.55	1018.25	1058.18	
1-Aug-83		4.80		1050.20	1017.90		
1-Dec-83		5.00		1050.34	1018.04		
1-Mar-84						1062.01	
1-Jun-84		5.00		1050.34	1018.04	1059.10	
1-Oct-84		5.10		1050.41	1018.11		
1-May-86		6.30		1051.25	1018.95	1063.00	
1-Oct-86		7.00		1051.74	1019.44	1063.20	
1-Oct-88		6.50		1051.39	1019.09		
1-Sep-89		6.40		1051.32	1019.02		
1-Oct-90		5.40		1050.62	1018.32		
1-May-91		3.00		1048.94	1016.64		
1-Sep-91		5.10		1050.41	1018.11		
1-Sep-92		6.60		1051.46	1019.16		
1-May-94		5.50		1050.69	1018.39		
1-Sep-94		5.00		1050.34	1018.04		
1-Sep-95		5.50		1050.69	1018.39		
1-Sep-96		5.30		1050.55	1018.25	1062.215	
6-May-97		4.30		1049.85	1017.55		
21-Nov-97				1049.85	1017.55		Broken
10-Sep-03		16.90		1058.67			Broken
4-Mar-04							Frozen
8-Mar-04		19.20		1060.28			Broken
26-Aug-04		2.70		1048.73			Broken
9-Sep-04		2.80		1048.8			Broken

CROSS VALLEY DAM
Pieometric Monitoring
CVDP-2 Pneumatic Piezometer
(Toe of Dam)



Faro Mine Instrumentation Cross Valley Dam

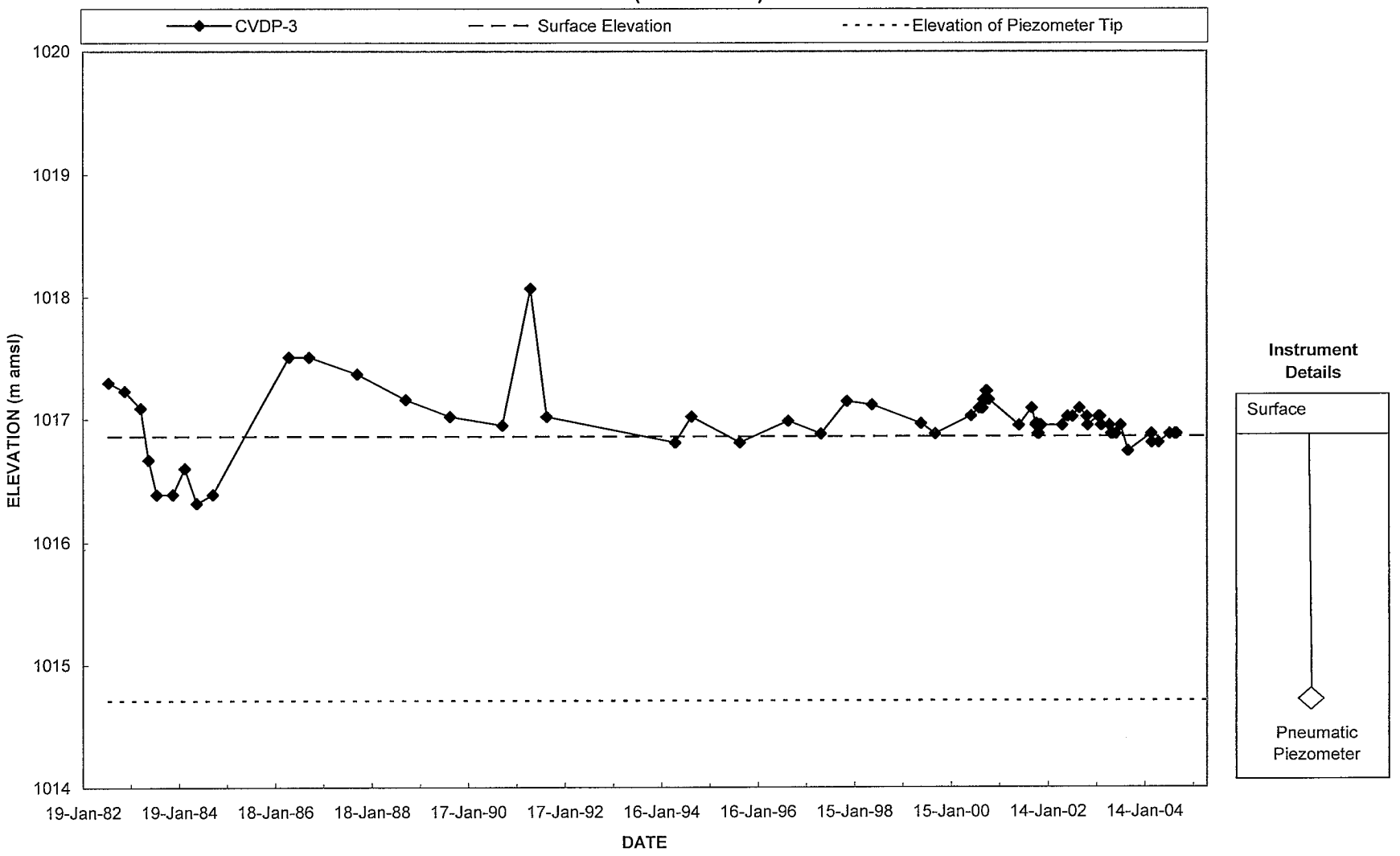
CVDP-3		Location:	Cross Valley Dam St.0+450	Ground Elevation (m advd):	1049.16	2004 Ground Elevation (m amsl):	1016.86
			7m d/s of CL.	Tip Elevation (m advd):	1047.01	Coordinates:	8V580128 6914135
		Date Installed:	1982	Tip Elevation (m amsl):	1014.71	Surface Protector:	yes

Date		Reading (psi)		Piezometric Elevation (m advd)	Piezometric Elevation 2004 (m amsl)	Pond Elevation (m advd)	Comments
1-Aug-82		3.70		1049.60	1017.30		
1-Dec-82		3.60		1049.53	1017.23		
1-Apr-83		3.40		1049.39	1017.09	1061.63	
1-Jun-83		2.80		1048.97	1016.67	1058.18	
1-Aug-83		2.40		1048.69	1016.39		
1-Dec-83		2.40		1048.69	1016.39		
1-Mar-84		2.70		1048.90	1016.60	1062.01	
1-Jun-84		2.30		1048.62	1016.32	1059.10	
1-Oct-84		2.40		1048.69	1016.39		
1-May-86		4.00		1049.81	1017.51	1063.00	
1-Oct-86		4.00		1049.81	1017.51	1063.20	
1-Oct-87		3.80		1049.67	1017.37		
1-Oct-88		3.50		1049.46	1017.16		
1-Sep-89		3.30		1049.32	1017.02		
1-Oct-90		3.20		1049.25	1016.95		
1-May-91		4.80		1050.37	1018.07		
1-Sep-91		3.30		1049.32	1017.02		
1-Sep-92		0.40		1047.29	1014.99		
1-May-94		3.00		1049.11	1016.81		
1-Sep-94		3.30		1049.32	1017.02		
1-Sep-95		3.00		1049.11	1016.81		
1-Sep-96		3.25		1049.29	1016.99	1062.215	
6-May-97		3.10		1049.18	1016.88		
21-Nov-97		3.48		1049.45	1017.15		
27-May-98		3.44		1049.42	1017.12	1063.5	
12-Nov-98		n.r.					no air bubbles returned
4-Dec-98		n.r.					no air bubbles returned
3-Jun-99		3.22		1049.26	1016.96	1063.7	
18-Sep-99		3.10		1049.18	1016.88	~1061.5	very slow
14-Jun-00		3.31		1049.33	1017.03	~1062.5	
14-Aug-00		3.40		1049.39	1017.09		
31-Aug-00		3.40		1049.39	1017.09		
7-Sep-00		3.40		1049.39	1017.09		
14-Sep-00		3.50		1049.46	1017.16		
21-Sep-00		3.50		1049.46	1017.16		
28-Sep-00		3.50		1049.46	1017.16		
6-Oct-00		3.60		1049.53	1017.23		
12-Oct-00		3.60		1049.53	1017.23		
20-Oct-00		3.50		1049.46	1017.16		
27-Oct-00		3.50		1049.46	1017.16		
10-Jun-01		3.20		1049.25	1016.95		
14-Sep-01		3.40		1049.39	1017.09		
16-Oct-01		3.2		1049.25	1016.95		
18-Oct-01		3.2		1049.25	1016.95		
19-Oct-01		3.2		1049.25	1016.95		
20-Oct-01		3.22		1049.264	1016.96		
21-Oct-01		3.21		1049.257	1016.96		
22-Oct-01		3.2		1049.25	1016.95		
25-Oct-01		3.2		1049.25	1016.95		
29-Oct-01		3.1		1049.18	1016.88		
1-Nov-01		3.2		1049.25	1016.95		
5-Nov-01		3.1		1049.18	1016.88		
6-Nov-01		3.1		1049.18	1016.88		
8-Nov-01		3.2		1049.25	1016.95		
12-Nov-01		3.2		1049.25	1016.95		
15-Nov-01		3.2		1049.25	1016.95		
19-Nov-01		3.2		1049.25	1016.95		
21-Nov-01		3.2		1049.25	1016.95		
23-Nov-01		3.2		1049.25	1016.95		pond elev approx - 8 ft.
26-Nov-01		3.2		1049.25	1016.95		daytime temp -34 C
28-Nov-01							not read, low pressure in box
30-Nov-01							instrument broken from Nov 01 to Feb 02
1-May-02		3.2		1049.25	1016.95		instrument fixed
12-Jun-02		3.3		1049.32	1017.02		
17-Jul-02		3.3		1049.32	1017.02		
7-Aug-02							not read

Faro Mine Instrumentation Cross Valley Dam

CVDP-3		Location:	Cross Valley Dam St.0+450	Ground Elevation (m advd):	1049.16	2004 Ground Elevation (m amsl):	1016.86
			7m d/s of CL.	Tip Elevation (m advd):	1047.01	Coordinates:	8V580128 6914135
		Date Installed:	1982	Tip Elevation (m amsl):	1014.71	Surface Protector:	yes
Date		Reading (psi)		Piezometric Elevation (m advd)	Piezometric Elevation 2004 (m amsl)	Pond Elevation (m advd)	Comments
9-Sep-02		3.4		1049.39	1017.09		
4-Nov-02		3.3		1049.32	1017.02		
10-Nov-02		3.2		1049.25	1016.95		
30-Jan-03		3.3		1049.32	1017.02		
9-Feb-03		3.3		1049.32	1017.02	1090.9	start siphon
11-Feb-03		3.3		1049.32	1017.02	1090.8	
13-Feb-03		3.3		1049.32	1017.02	1090.8	
18-Feb-03		3.2		1049.25	1016.95		
21-Feb-03		3.2		1049.25	1016.95	1090.78	
23-Apr-03		3.2		1049.25	1016.95	1062.44	
7-May-03		3.1		1049.18	1016.88		
16-May-03		3.1		1049.18	1016.88		
11-Jun-03		3.1		1049.18	1016.88		*new piezometer readout
15-Jul-03		3.2		1049.25	1016.95		
10-Sep-03		2.9		1049.04	1016.74		
4-Mar-04		3.1			1016.88		2004 Survey data used from here on
8-Mar-04		3			1016.81		
26-Apr-04		3			1016.81		
19-Jul-04		3.1			1016.88		
26-Aug-04		3.1			1016.88		
9-Sep-04		3.1			1016.88		

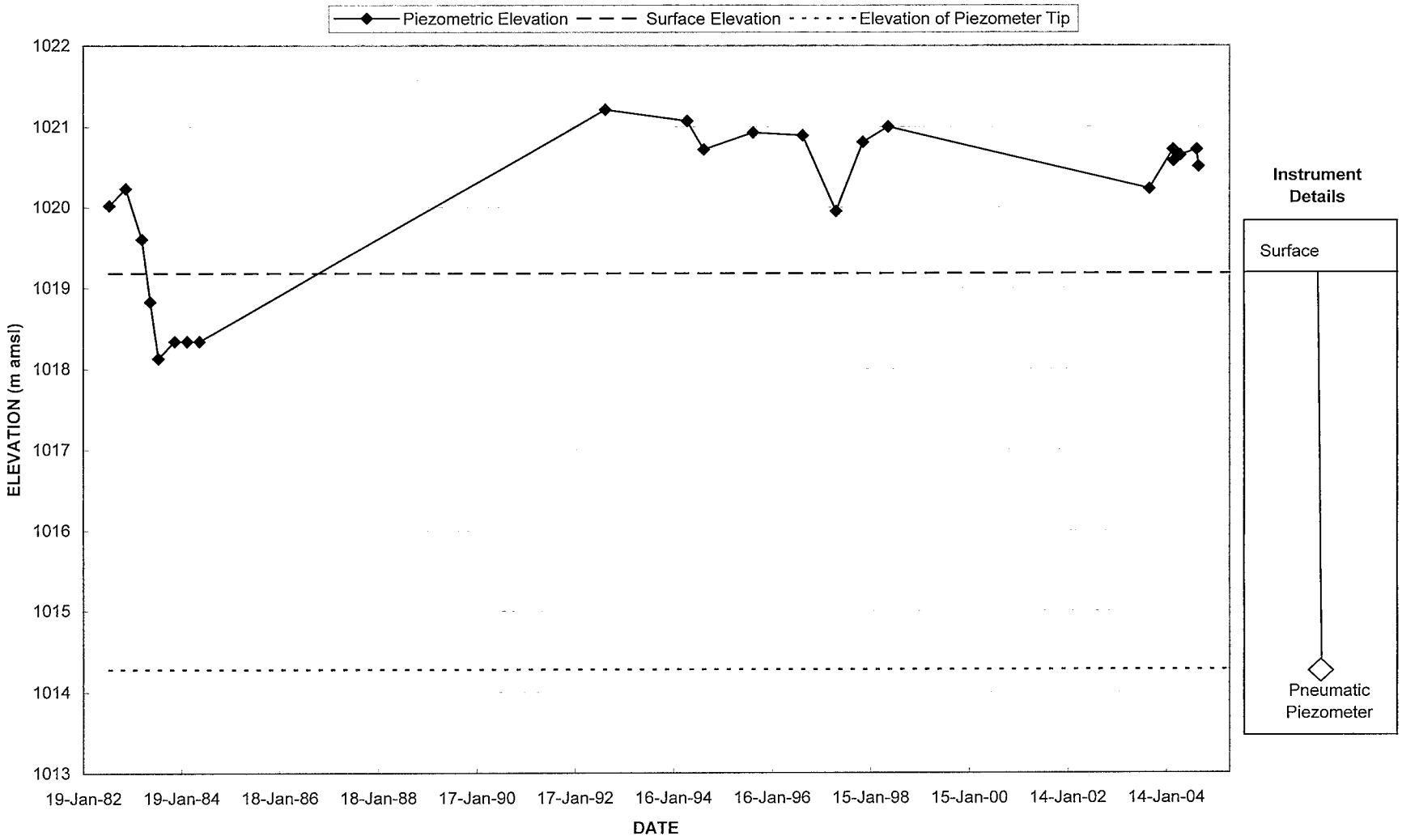
CROSS VALLEY DAM
Piezometric Monitoring
CVDP-3 Pneumatic Piezometer
(Toe of Dam)



CVDP-5		Location:	Cross Valley Dam St.0+210 9m u/s of CL.	Ground Elevation (m advd):	1051.48		
				2004 Ground Elevation (m amsl):	1019.18	Coordinates:	8V580239 6914346
		Date Installed:	1982	Tip Elevation (m advd):	1046.58	Surface Protector:	yes
				Tip Elevation (m amsl):	1014.28		

Date		Reading (psi)		Piezometric Elevation (m advd)	Piezometric Elevation (m amsl)	Pond Elevation (m advd)	Comments
1-Aug-82		8.20		1052.32	1020.02		
1-Dec-82		8.50		1052.53	1020.23		
1-Apr-83		7.60		1051.90	1019.60	1061.63	
1-Jun-83		6.50		1051.13	1018.83	1058.18	
1-Aug-83		5.50		1050.43	1018.13		
1-Dec-83		5.80		1050.64	1018.34		
1-Mar-84		5.80		1050.64	1018.34	1062.01	
1-Jun-84		5.80		1050.64	1018.34	1059.10	
1-May-86						1063.00	
1-Oct-86						1063.20	
1-Sep-92		9.90		1053.51	1021.21		
1-May-94		9.70		1053.37	1021.07		
1-Sep-94		9.20		1053.02	1020.72		
1-Sep-95		9.50		1053.23	1020.93		
1-Sep-96		9.45		1053.20	1020.90	1062.215	
6-May-97		8.10		1052.25	1019.95		
21-Nov-97		9.33		1053.11	1020.81		
27-May-98		9.60		1053.30	1021.00		
12-Nov-98							black air tube broken at connector
10-Sep-03		8.50		1052.53	1020.23		
4-Mar-04		9.20			1020.72		2004 Survey data used from here on
8-Mar-04		9.00			1020.58		
26-Apr-04		9.10			1020.65		
26-Aug-04		9.20			1020.72		
9-Sep-04		8.90			1020.51		

CROSS VALLEY DAM
Pieometric Monitoring
CVDP-5 Pneumatic Piezometer
(Toe of Dam)



Faro Mine Instrumentation Cross Valley Dam

CVDP-6		Location:	Cross Valley Dam St.0+210 5m d/s of CL.	Ground Elevation	1051.48	2004 Ground Elevation (m amsl):	1019.18
		Date Installed:	1982	Tip Elevation (m advd):	1046.67	Coordinates:	8V580239 6914346
				Tip Elevation (m amsl):	1014.37	Surface Protector:	yes

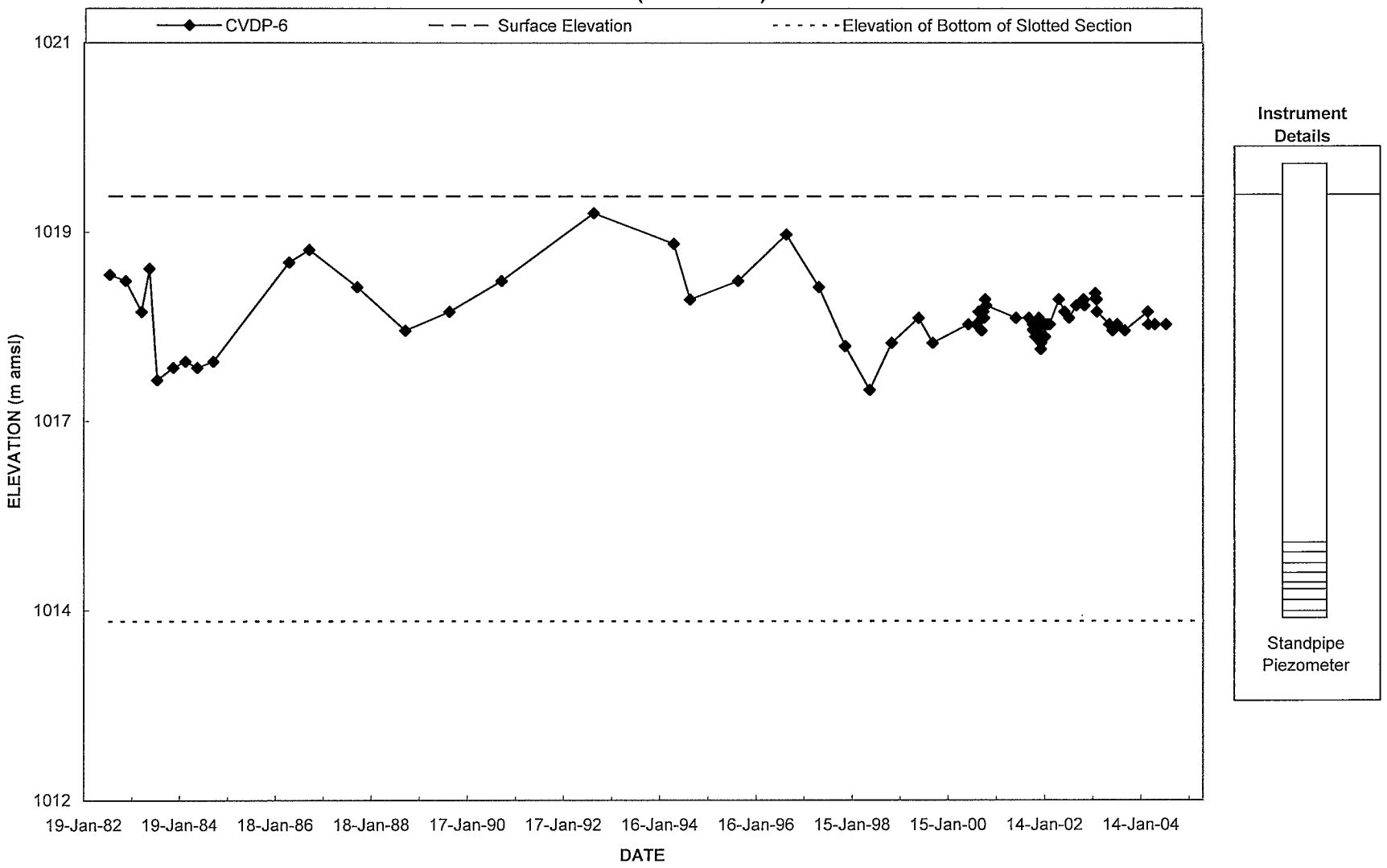
Date		Reading (psi)		Piezometric Elevation (m advd)	Piezometric Elevation 2004 (m amsl)	Pond Elevation (m advd)	Comments
1-Aug-82		5.60		1050.59	1018.29		
1-Dec-82		5.50		1050.52	1018.22		
1-Apr-83		5.00		1050.17	1017.87	1061.63	
1-Jun-83		5.70		1050.66	1018.36	1058.18	
1-Aug-83		3.90		1049.40	1017.1		
1-Dec-83		4.10		1049.54	1017.24		
1-Mar-84		4.20		1049.61	1017.31	1062.01	
1-Jun-84		4.10		1049.54	1017.24	1059.10	
1-Oct-84		4.20		1049.61	1017.31		
1-May-86		5.80		1050.73	1018.43	1063.00	
1-Oct-86		6.00		1050.87	1018.57	1063.20	
1-Oct-87		5.40		1050.45	1018.15		
1-Oct-88		4.70		1049.96	1017.66		
1-Sep-89		5.00		1050.17	1017.87		
1-Oct-90		5.50		1050.52	1018.22		
1-Sep-92		6.60		1051.29	1018.99		
1-May-94		6.10		1050.94	1018.64		
1-Sep-94		5.20		1050.31	1018.01		
1-Sep-95		5.50		1050.52	1018.22		
1-Sep-96		6.25		1051.05	1018.745	1062.215	
6-May-97		5.40		1050.45	1018.15		
21-Nov-97		4.45		1049.79	1017.485		
27-May-98		3.74		1049.29	1016.988	1063.5	
12-Nov-98		4.50		1049.82	1017.52	1062.1	
3-Jun-99		4.90		1050.10	1017.8	1063.7	
18-Sep-99		4.50		1049.82	1017.52		
14-Jun-00		4.80		1050.03	1017.73	~1062.5	
14-Aug-00		4.80		1050.03	1017.73		
31-Aug-00		5.00		1050.17	1017.87		return bubbles "sputtering"
7-Sep-00		5.00		1050.17	1017.87		
14-Sep-00		5.00		1050.17	1017.87		
21-Sep-00		4.70		1049.96	1017.66		
28-Sep-00		4.90		1050.10	1017.8		
6-Oct-00		5.00		1050.17	1017.87		
12-Oct-00		4.90		1050.10	1017.8		
20-Oct-00		5.20		1050.31	1018.01		
27-Oct-00		5.10		1050.24	1017.94		
10-Jun-01		4.90		1050.1	1017.8		
14-Sep-01		4.9		1050.1	1017.8		
16-Oct-01		4.8		1050.03	1017.73		
18-Oct-01		4.72		1049.974	1017.674		
19-Oct-01		4.7		1049.96	1017.66		
20-Oct-01		4.7		1049.96	1017.66		
21-Oct-01		4.7		1049.96	1017.66		
22-Oct-01		4.7		1049.96	1017.66		
25-Oct-01		4.70		1049.96	1017.66		
29-Oct-01		4.7		1049.96	1017.66		
1-Nov-01		4.7		1049.96	1017.66		
5-Nov-01		4.6		1049.89	1017.59		
6-Nov-01		4.6		1049.89	1017.59		
8-Nov-01		4.7		1049.96	1017.66		
12-Nov-01		4.7		1049.96	1017.66		
15-Nov-01		4.7		1049.96	1017.66		
19-Nov-01		4.8		1050.03	1017.73		
21-Nov-01		4.7		1049.96	1017.66		
23-Nov-01		4.7		1049.96	1017.66		pond elev approx - 8 ft.
26-Nov-01		-					not read

Faro Mine Instrumentation Cross Valley Dam

CVDP-6		Location:	Cross Valley Dam St.0+210 5m d/s of CL.	Ground Elevation	1051.48	2004 Ground Elevation (m amsl):	1019.18
		Date Installed:	1982	Tip Elevation (m advd):	1046.67	Coordinates:	8V580239 6914346
				Tip Elevation (m amsl):	1014.37	Surface Protector:	yes

Date		Reading (psi)		Piezometric Elevation (m advd)	Piezometric Elevation 2004 (m amsl)	Pond Elevation (m advd)	Comments
28-Nov-01		-					not read, low pressure in box
30-Nov-01		4.9		1050.1	1017.8		
3-Dec-01		4.7		1049.96	1017.66		
5-Dec-01		4.7		1049.96	1017.66		
12-Dec-01		4.7		1049.96	1017.66		
14-Dec-01		4.8		1050.03	1017.73		
15-Dec-01		4.4		1049.75	1017.45		
16-Dec-01		4.8		1050.03	1017.73		
17-Dec-01		4.8		1050.03	1017.73		
18-Dec-01		4.5		1049.82	1017.52		
19-Dec-01		4.8		1050.03	1017.73		
26-Dec-01		4.6		1049.89	1017.59		
2-Jan-02		4.8		1050.03	1017.73		
9-Jan-02		4.6		1049.89	1017.59		
16-Jan-02		4.6		1049.89	1017.59		
23-Jan-02		4.8		1050.03	1017.73		
30-Jan-02		4.8		1050.03	1017.73		
6-Feb-02		4.8		1050.03	1017.73		
13-Feb-02		4.8		1050.03	1017.73		
20-Feb-02		4.8		1050.03	1017.73		
1-May-02		5.2		1050.31	1018.01		
12-Jun-02		5.0		1050.17	1017.87		
17-Jul-02		4.9		1050.1	1017.8		
7-Aug-02							not read
9-Sep-02		5.1		1050.24	1017.94		
4-Nov-02		5.2		1050.31	1018.01		
10-Nov-02		5.1		1050.24	1017.94		
30-Jan-03		5.3		1050.38	1018.08		
9-Feb-03		5.2		1050.31	1018.01	1090.9	start siphon
11-Feb-03		5.2		1050.31	1018.01	1090.8	
13-Feb-03		5		1050.17	1017.87	1090.8	
18-Feb-03							*Piezometer tip broken (-35 oC)
21-Feb-03						1090.78	
23-Apr-03						1062.44	
7-May-03							
16-May-03		4.8		1050.03	1017.73		*piezometer tip repaired
11-Jun-03		4.7		1049.96	1017.66		*new piezometer readout
15-Jul-03		4.8		1050.03	1017.73		
10-Sep-03		4.7		1049.96	1017.66		
4-Mar-04		5			1017.87		2004 Survey data used from here on
8-Mar-04		4.8			1017.73		
26-Apr-04		4.8			1017.73		
19-Jul-04		4.8			1017.73		
26-Aug-04		4.9			1017.80		
9-Sep-04		4.8			1017.73		

CROSS VALLEY DAM
Piezometric Monitoring
CVDP-6 Pneumatic Piezometer
(Toe of Dam)



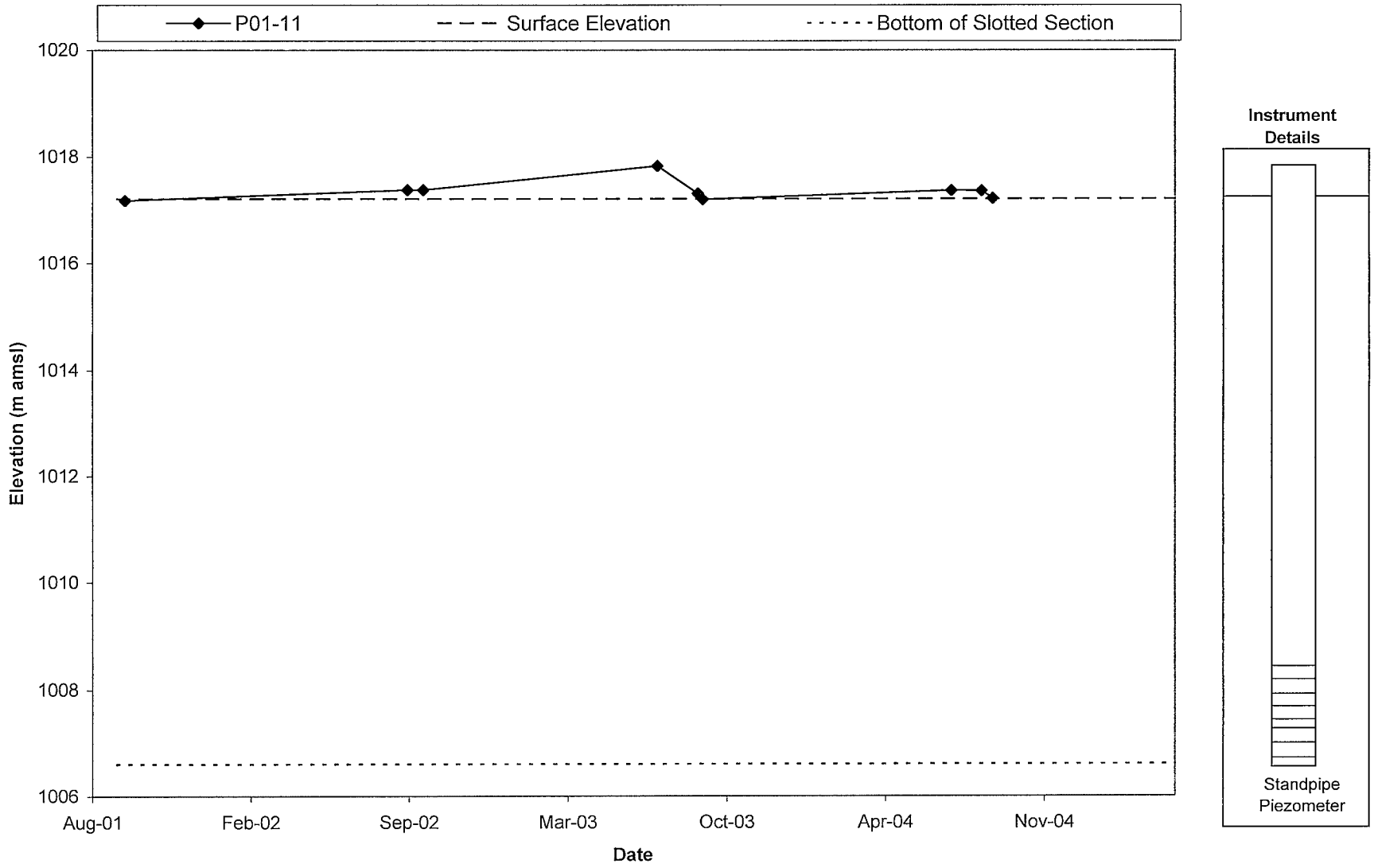
Cvdpiez.xls
CVDP6 chart

BGC Engineering Inc.

P01-11			Location:	Cross Valley Dam Toe		
			Surface Elevation (m amsl):	1017.278	2004 Surface Elevation (m amsl):	1017.21
			Surface Elevation (m advd):	1049.58	Coordinates:	8V580208 6914301
	Date Installed:	2001	Screened Interval (m bgs):	9.15 - 10.67	Surface Protector:	yes
			Tip Elevation (m advd):	1038.91		
			Tip Elevation (m amsl):	1006.61		
			Stick Up (m):	0.55	2004 Stick-Up (m):	0.66

Date		Water level from top of pipe (m)	Piezometric Elevation (m advd)	Piezometric Elevation (m amsl)		Comments
11-Sep-01		0.65	1049.48	1017.18		
03-Sep-02		0.45	1049.68	1017.38		
23-Sep-02		0.45	1049.68	1017.38		
15-Jul-03		0.00	1050.13	1017.83		*whole casing filled with water
04-Sep-03		0.52	1049.61	1017.31		* Rhonda noted: 'water in casing'
10-Sep-03		0.63	1049.50	1017.20		
19-Jul-04		0.505		1017.37		2004 survey data used from here on
26-Aug-04		0.51		1017.36		
09-Sep-04		0.65		1017.22		Ice in tubing, sulphur smell

CROSS VALLEY DAM
Piezometric Monitoring
P01-11 (2001 - GLL Monitoring Well)



THERMISTORS

Faro Mine Instrumentation
Cross Valley Dam

CVDC-6		Location:	Stn 0+340, Cross Valley Dam Crest	Elevation (m amsl):	1033.3	Coordinates:	2182.1 m N, 4.7 m E 8V580210 6914218		
		Date Installed:	1981	Thermistor Type:	Cantec Controls YSI 44007	Ice-Bath Calibration:	applied	Surface Protector:	yes
Thermistor String #32		Depth Correction:	0						

Depth on String	Actual Depth	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)
(m)	(m)	09-Dec-81	30-May-94	15-Sep-94	22-Sep-95	13-Sep-96	20-Sep-99	07-Jun-00	05-Sep-00	26-Jun-01	14-Sep-01	16-Oct-01
15.0	-15.0	11.05	13.87	14.23	15.64	All readings	14.22	14.27	14.55	14.61	14.63	16.26
17.0	-17.0	11.70	13.95	15.22	15.74	fluctuating		14.54	14.79	14.82	14.91	16.48
19.0	-19.0	12.59	13.81	14.63	15.59		14.01	14.29	14.50	14.49	14.60	16.12
21.0	-21.0	13.48	18.73	19.53	20.59		21.25	22.11	22.55	22.63	22.75	24.31
23.0	-23.0	14.16	13.80	14.26	14.97		14.00	14.31	14.54	14.16	14.18	15.02
25.0	-25.0	15.37	13.96	14.42	14.97		14.21	14.45	14.62	14.19	14.27	15.09
27.0	-27.0	15.42	14.26	14.91	15.29		14.55	14.80	14.96	14.96	14.97	15.81
29.0	-29.0	15.35	14.46	14.14	15.44		14.86	15.12	15.22	16.01	16.15	17.05

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

Depth on String	Actual Depth	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)
(m)	(m)	09-Dec-81	30-May-94	15-Sep-94	22-Sep-95	13-Sep-96	20-Sep-99	07-Jun-00	05-Sep-00	26-Jun-01	14-Sep-01	16-Oct-01
15.0	-15.0	7.60	3.01	2.50	0.63		2.51	2.44	2.06	1.97	1.95	-0.13
17.0	-17.0	6.40	2.85	1.12	0.46			2.03	1.69	1.65	1.53	-0.44
19.0	-19.0	4.90	3.04	1.90	0.64		2.76	2.36	2.07	2.09	1.94	-0.02
21.0	-21.0											
23.0	-23.0	2.60	3.11	2.46	1.49		2.82	2.39	2.07	2.60	2.57	1.43
25.0	-25.0	1.00	2.91	2.26	1.52		2.56	2.22	1.99	2.58	2.47	1.36
27.0	-27.0	0.90	2.45	1.56	1.06		2.05	1.71	1.50	1.50	1.48	0.41
29.0	-29.0											

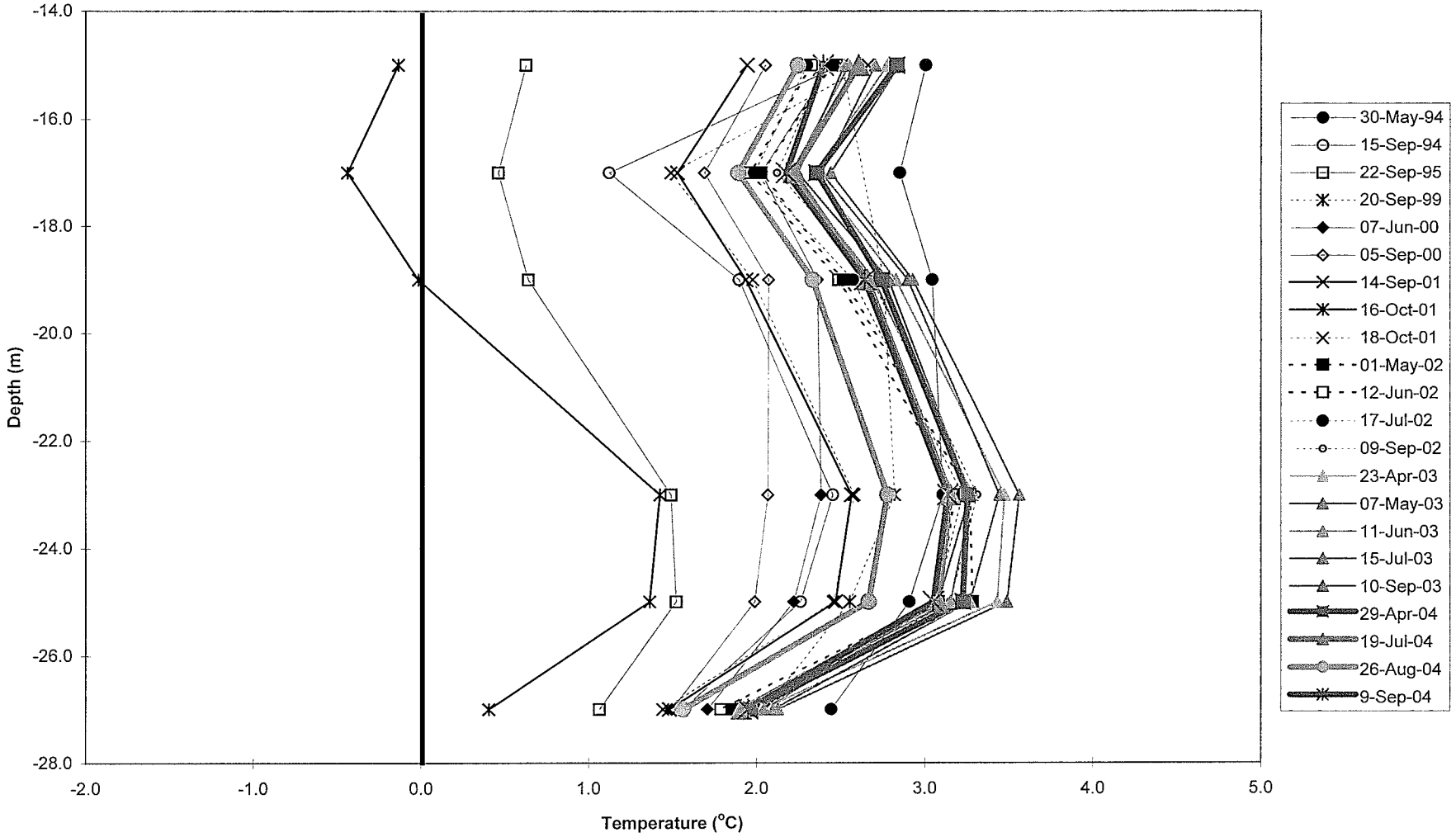
The -21 and -29 metre depth tips are suspect

Faro Mine Instrumentation
Cross Valley Dam

Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)
18-Oct-01	01-May-02	12-Jun-02	17-Jul-02	09-Sep-02	23-Apr-03	07-May-03	11-Jun-03	15-Jul-03	10-Sep-03	29-Apr-04	19-Jul-04	26-Aug-04	09-Sep-04
14.11	14.26	14.35	14.37	14.30	14.03	13.98	14.19	14.08	14.21	13.99	14.15	14.41	14.30
14.94	14.54	14.59	14.57	14.47	14.31	14.24	14.41	14.28	14.38	14.30	14.40	14.64	14.43
14.57	14.18	14.20	14.14	14.06	13.96	13.89	14.05	13.91	13.99	14.02	14.08	14.31	14.09
22.82	22.39	22.43	22.43	22.44	22.74	22.70	22.29	22.98	23.29	24.02	24.55	24.98	24.81
14.17	13.69	13.75	13.72	13.66	13.55	13.49	13.68	13.57	13.69	13.70	13.77	14.03	13.78
14.28	13.70	13.84	13.85	13.79	13.60	13.56	13.79	13.71	13.84	13.74	13.84	14.13	13.86
15.00	14.69	14.74	14.67	14.57	14.56	14.49	14.65	14.51	14.55	14.61	14.65	14.91	14.62
16.25	16.33	16.37	16.28	16.16	17.97	18.01	18.44	18.53	19.06	20.24	20.55	20.93	20.69

Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)
18-Oct-01	01-May-02	12-Jun-02	17-Jul-02	09-Sep-02	23-Apr-03	07-May-03	11-Jun-03	15-Jul-03	10-Sep-03	29-Apr-04	19-Jul-04	26-Aug-04	09-Sep-04
2.67	2.46	2.33	2.30	2.40	2.78	2.85	2.55	2.71	2.53	2.84	2.61	2.25	2.40
1.49	2.03	1.96	1.99	2.12	2.35	2.44	2.21	2.39	2.25	2.36	2.22	1.89	2.18
1.98	2.52	2.49	2.57	2.69	2.83	2.93	2.70	2.90	2.79	2.74	2.66	2.34	2.64
2.58	3.27	3.18	3.22	3.31	3.47	3.56	3.28	3.44	3.27	3.25	3.15	2.78	3.14
2.46	3.28	3.08	3.07	3.15	3.43	3.49	3.15	3.27	3.08	3.23	3.08	2.67	3.05
1.44	1.86	1.79	1.88	2.02	2.03	2.13	1.91	2.10	2.05	1.96	1.91	1.56	1.95

CROSS VALLEY DAM
Geothermal Monitoring
CVDC-6
(installed 1981)



Faro Mine Instrumentation Cross Valley Dam

BH 88-4		Location:	0+450, Cross Valley Dam Crest		Elevation (m amsl):	1033.4	Coordinates:	2018.3 m N, 76.6 m W 8V580127 6914054		
		Date Installed:	1988		Thermistor Type:	Cantec Controls YSI 44007	Ice-Bath Calibration:	no	Surface Protector:	Yes
		Depth Correction:	0							

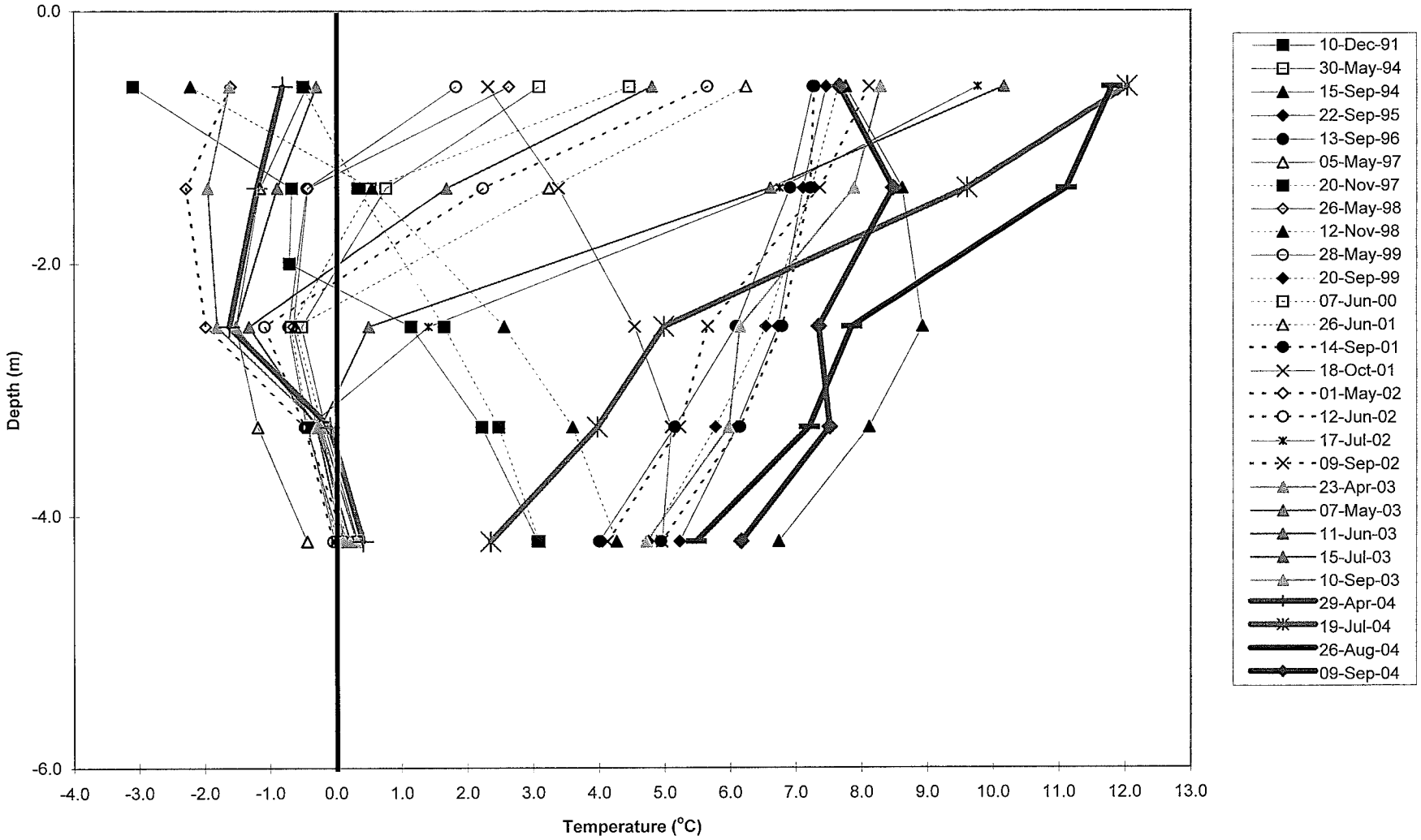
Depth on String	Actual Depth	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)
(m)	(m)	10-Dec-91	24-Jan-92	30-May-94	15-Sep-94	22-Sep-95	13-Sep-96	05-May-97	20-Nov-97	26-May-98	12-Nov-98	28-May-99	20-Sep-99	07-Jun-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
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
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
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
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
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

Depth on String	Actual Depth	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)
(m)	(m)	10-Dec-91	24-Jan-92	30-May-94	15-Sep-94	22-Sep-95	13-Sep-96	05-May-97	20-Nov-97	26-May-98	12-Nov-98	28-May-99	20-Sep-99	07-Jun-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
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
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
2.5	-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
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
4.2	-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

Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)	Resistivity (kOhms)
05-Sep-00	26-Jun-01	14-Sep-01	18-Oct-01	01-May-02	12-Jun-02	17-Jul-02	09-Sep-02	23-Apr-03	07-May-03	11-Jun-03	15-Jul-03	10-Sep-03	29-Apr-04	19-Jul-04	26-Aug-04	09-Sep-04
11.74	11.86	11.27	14.42	17.61	12.21	9.99	10.82	17.63	16.47	12.73	9.80	10.73	16.91	8.96	9.06	11.06
11.74	13.71	11.26	13.61	18.17	14.42	11.52	11.18	17.86	16.91	14.83	11.60	10.90	17.18	10.03	9.33	10.59
14.13	19.22	13.49	15.59	21.52	19.89	15.78	13.85	21.06	20.35	19.94	16.22	13.38	20.44	13.37	11.88	12.67
12.05	16.67	11.50	12.85	17.89	17.08	15.04	12.16	17.73	17.47	17.29	15.75	11.87	17.56	12.57	10.92	11.19
12.59	16.33	11.87	12.50	16.54	16.55	16.51	12.42	16.34	16.38	16.40	16.35	11.97	16.23	13.22	11.27	11.10
13.30	16.03	12.60	12.59	16.04	16.19	16.17	13.12	15.90	15.98	16.08	16.05	12.74	15.82	14.34	12.27	11.86

Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperature (C)	Temperatu re (C)	Temperatu re (C)	Temperatu re (C)
05-Sep-00	26-Jun-01	14-Sep-01	18-Oct-01	01-May-02	12-Jun-02	17-Jul-02	09-Sep-02	23-Apr-03	07-May-03	11-Jun-03	15-Jul-03	10-Sep-03	29-Apr-04	19-Jul-04	26-Aug-04	09-Sep-04
6.46	6.25	7.29	2.32	-1.60	5.66	9.77	8.13	-1.62	-0.30	4.82	10.17	8.30	-0.81	12.04	11.81	7.68
6.38	3.25	7.23	3.40	-2.28	2.24	6.76	7.37	-1.95	-0.89	1.69	6.62	7.89	-1.20	9.61	11.12	8.49
2.65	-3.37	3.57	0.70	-5.52	-4.02	0.46	3.05	-5.11	-4.46	-4.07	-0.08	3.74	-4.54	3.75	6.14	4.83
5.85	-0.61	6.80	4.55	-1.98	-1.08	1.41	5.66	-1.81	-1.52	-1.32	0.50	6.15	-1.62	4.99	7.86	7.36
4.96	-0.21	6.15	5.11	-0.46	-0.47	-0.42	5.24	-0.22	-0.27	-0.29	-0.23	5.98	-0.09	3.98	7.21	7.52
3.86	0.15	4.94	4.96	0.14	-0.04	-0.02	4.13	0.31	0.22	0.09	0.13	4.72	0.41	2.35	5.48	6.17

CROSS VALLEY DAM
Geothermal Monitoring
88-4



INTERMEDIATE DAM

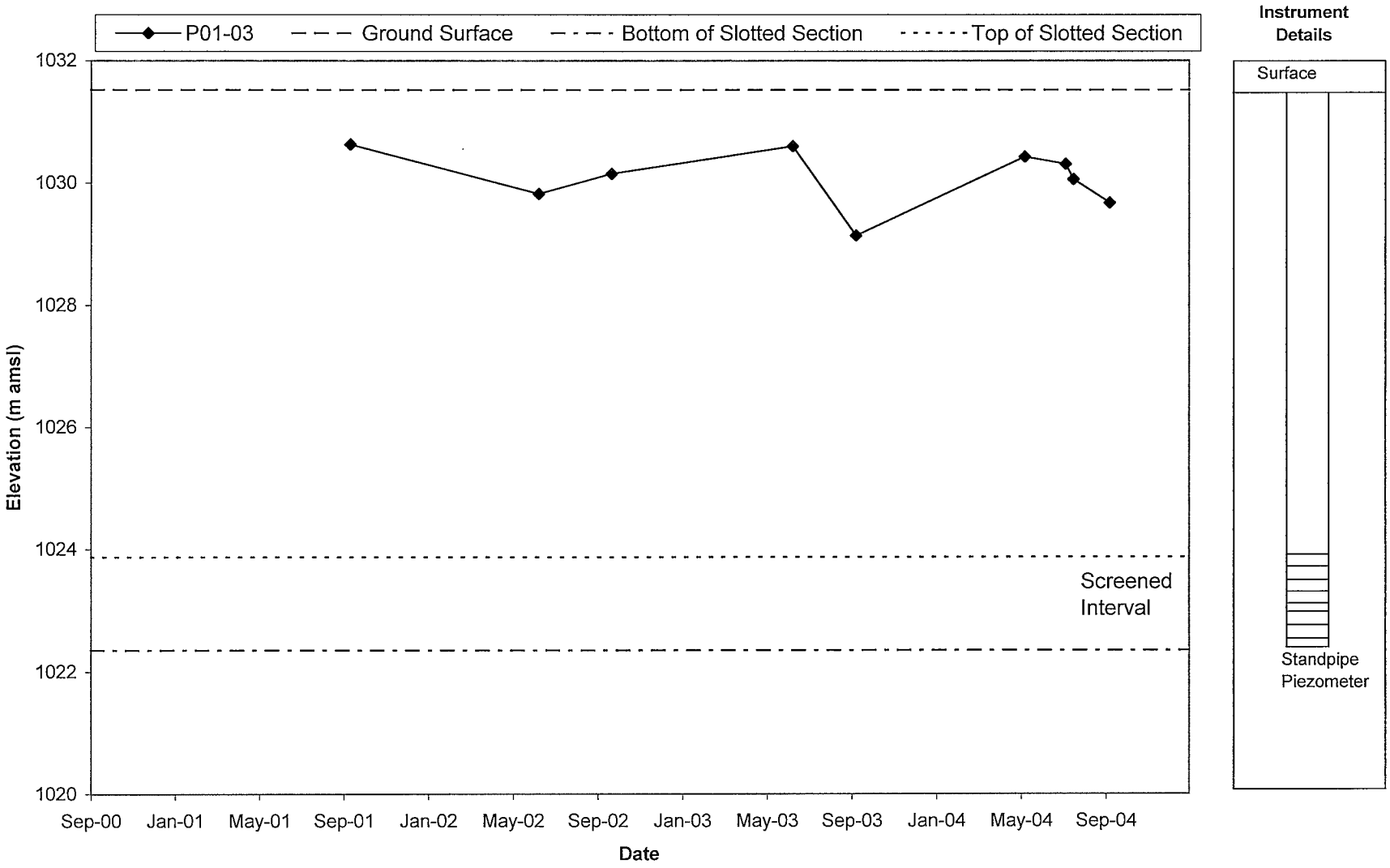
PIEZOMETERS

Faro Mine Instrumentation Intermediate Dam

P01-03		Location:	Intermediate Dam Toe				
				Surface Elevation (m amsl):	1031.652	Coordinates:	8V580636 6914064
		Date Installed:	1996	Surface Elevation (m advpd):	1063.95	2004 Surface Elevation (m amsl):	1031.52
				Screened Interval (m bgs):	7.78 - 9.30	Surface Protector:	yes
				Tip Elevation (m advpd):	1054.65	Tip Elevation (m amsl):	1022.35
				Stick Up (m):	0.56	2004 Stick-Up (m):	0.61

Date			Water level from top of pipe (m)	Piezometric Elevation (m amsl)	Piezometric Elevation (m advpd)	Pond El. (m amsl)	Comments
11-Sep-01			1.58	1030.63	1062.93		
10-Jun-02			2.39	1029.82	1062.12		
23-Sep-02			2.06	1030.15	1062.45	1047.2	
11-Jun-03			1.61	1030.60	1062.90		
10-Sep-03			3.075	1029.14	1061.44		
10-May-04			1.7	1030.43			2004 survey info used from here on
08-Jul-04			1.82	1030.31			
19-Jul-04			2.07	1030.06			
09-Sep-04			2.455	1029.68			Dirty, strong sulphur smell

INTERMEDIATE DAM
Piezometric Monitoring
P01-03 (2001 GLL Monitoring Well)

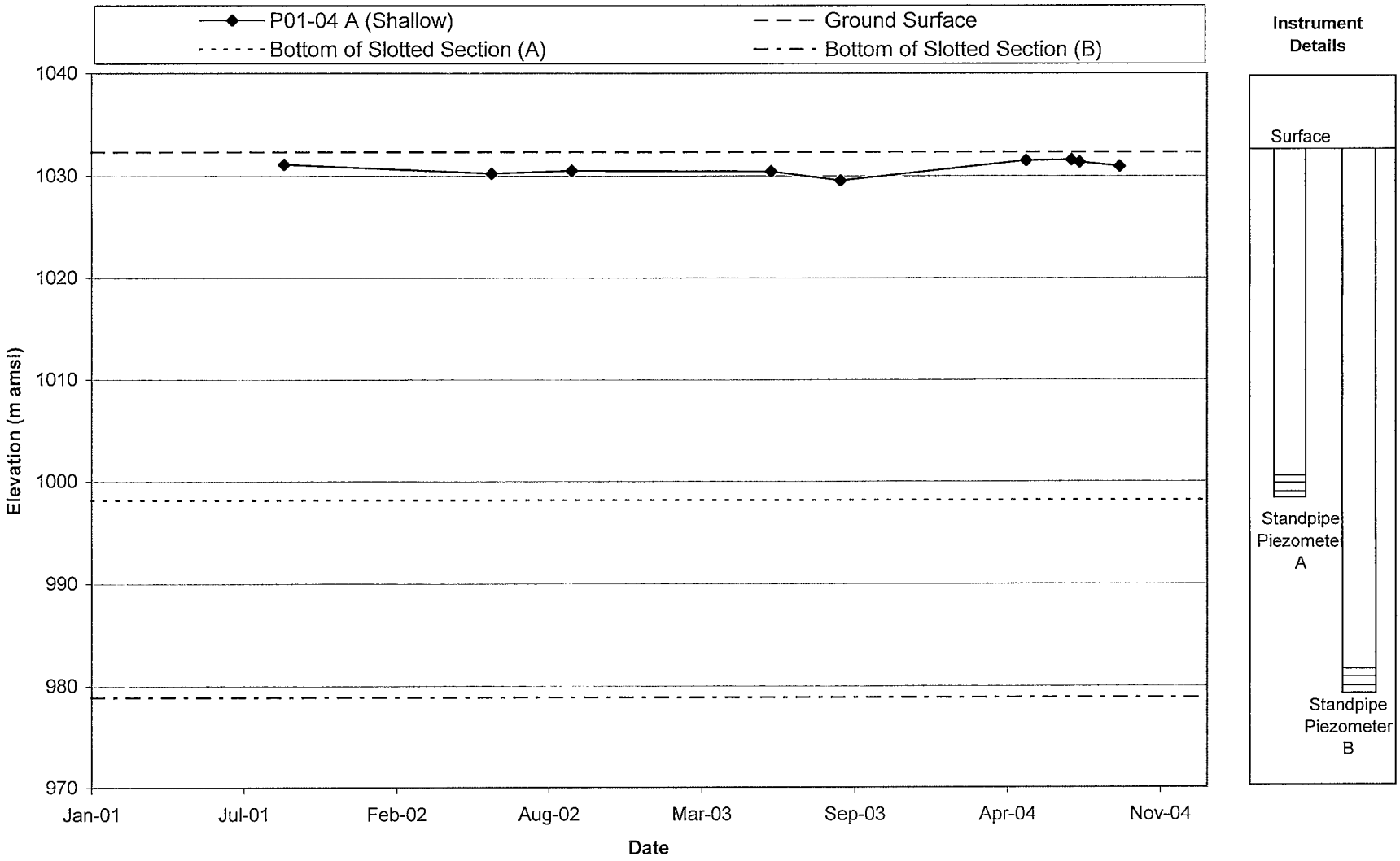


Faro Mine Instrumentation Intermediate Dam

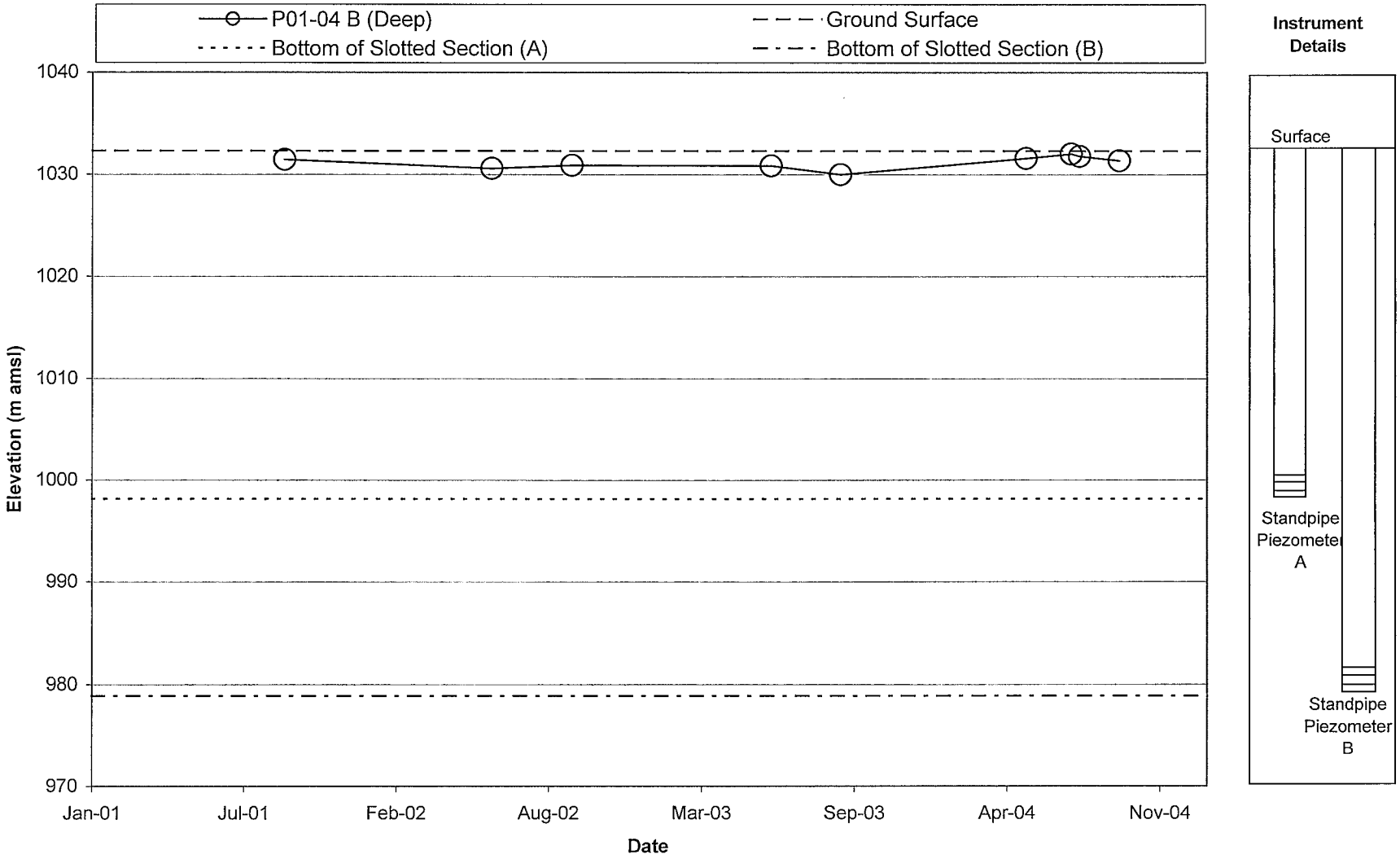
P01-04		Location:	Intermediate Dam Toe				
			Surface Elevation (m amsl):	1031.39	Coordinates:	8V580489 6913888	
	Date Installed:	1996	Surface Elevation (m advpd):	1063.69	2004 Surface Elevation (m amsl):	1032.32	
			Tip Elevation - A (m amsl):	998.17	Surface Protector:	yes	
			Tip Elevation - B (m amsl):	978.89			
	Screened Interval -A (m bgs):	31.7 - 33.22	Stick Up - A (m):	0.51	2004 Stick Up - A (m):	0.45	
	Screened Interval - B (m bgs):	51.0 - 52.5	Stick Up - B (m):	0.50	2004 Stick Up -B (m):	0.45	

Date	Water level from top of pipe (m)		Piezometric Elevation (m amsl)		Piezometric Elevation (m advpd)		Comments
	A	B	A	B	A	B	
11-Sep-01	0.78	0.43	1031.12	1031.46	1063.42	1063.8	
10-Jun-02	1.67	1.29	1030.23	1030.60	1062.53	1062.9	
23-Sep-02	1.39	1.00	1030.51	1030.89	1062.81	1063.2	
11-Jun-03	1.45	1.03	1030.45	1030.86	1062.75	1063.2	
10-Sep-03	2.35	1.90	1029.55	1029.99	1061.85	1062.29	
10-May-04	1.25	1.17	1031.52	1031.60			2004 survey info used from this point on
08-Jul-04	1.18	0.755	1031.59	1032.02			
19-Jul-04	1.42	0.99	1031.35	1031.78			
09-Sep-04	1.825	1.4	1030.95	1031.37			

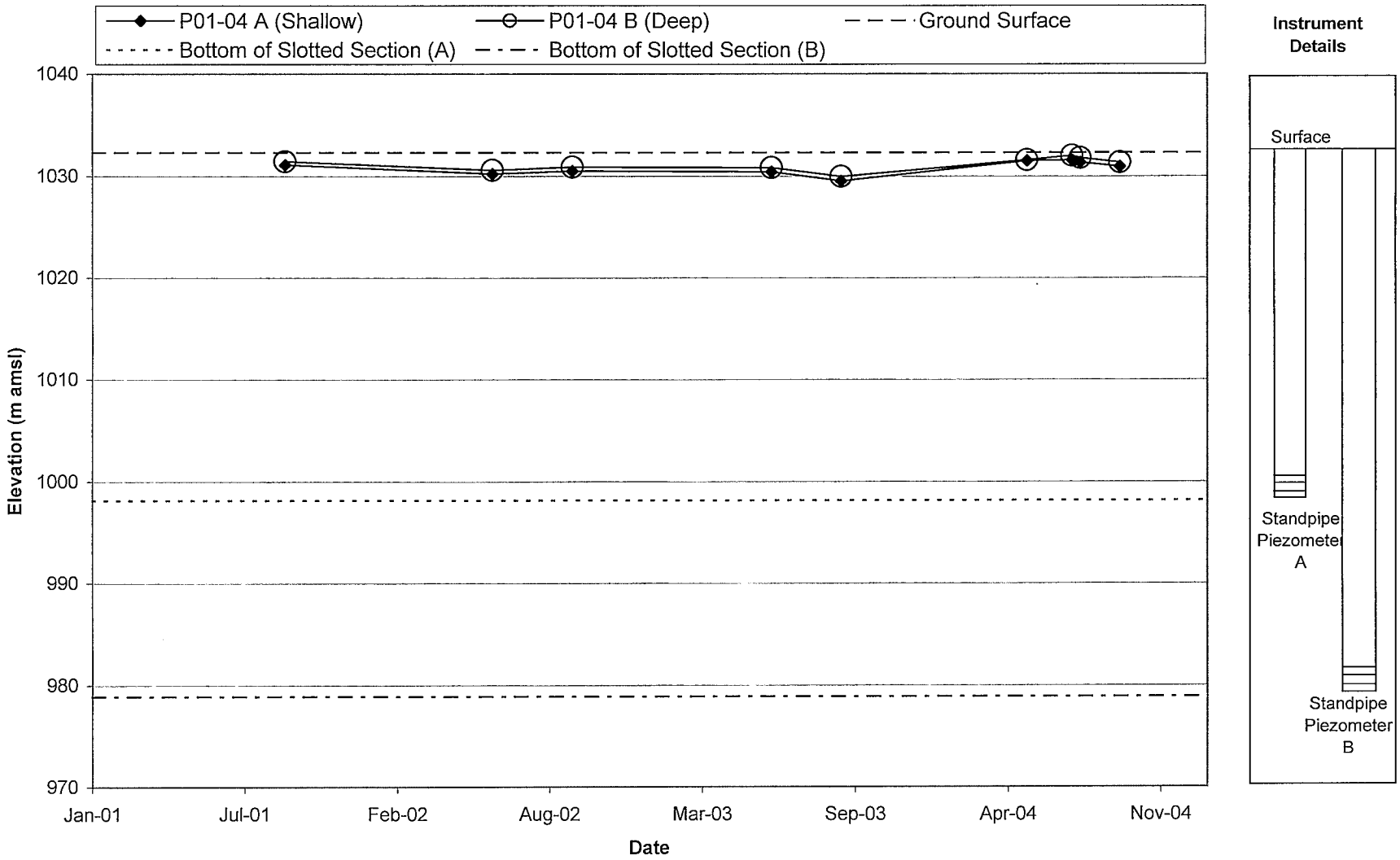
INTERMEDIATE DAM
Piezometric Monitoring
P01-04A (2001 - GLL Monitoring Well)



INTERMEDIATE DAM
Piezometric Monitoring
P01-04B (2001 - GLL Monitoring Well)



INTERMEDIATE DAM
Piezometric Monitoring
P01-04 (2001 - GLL Monitoring Well)

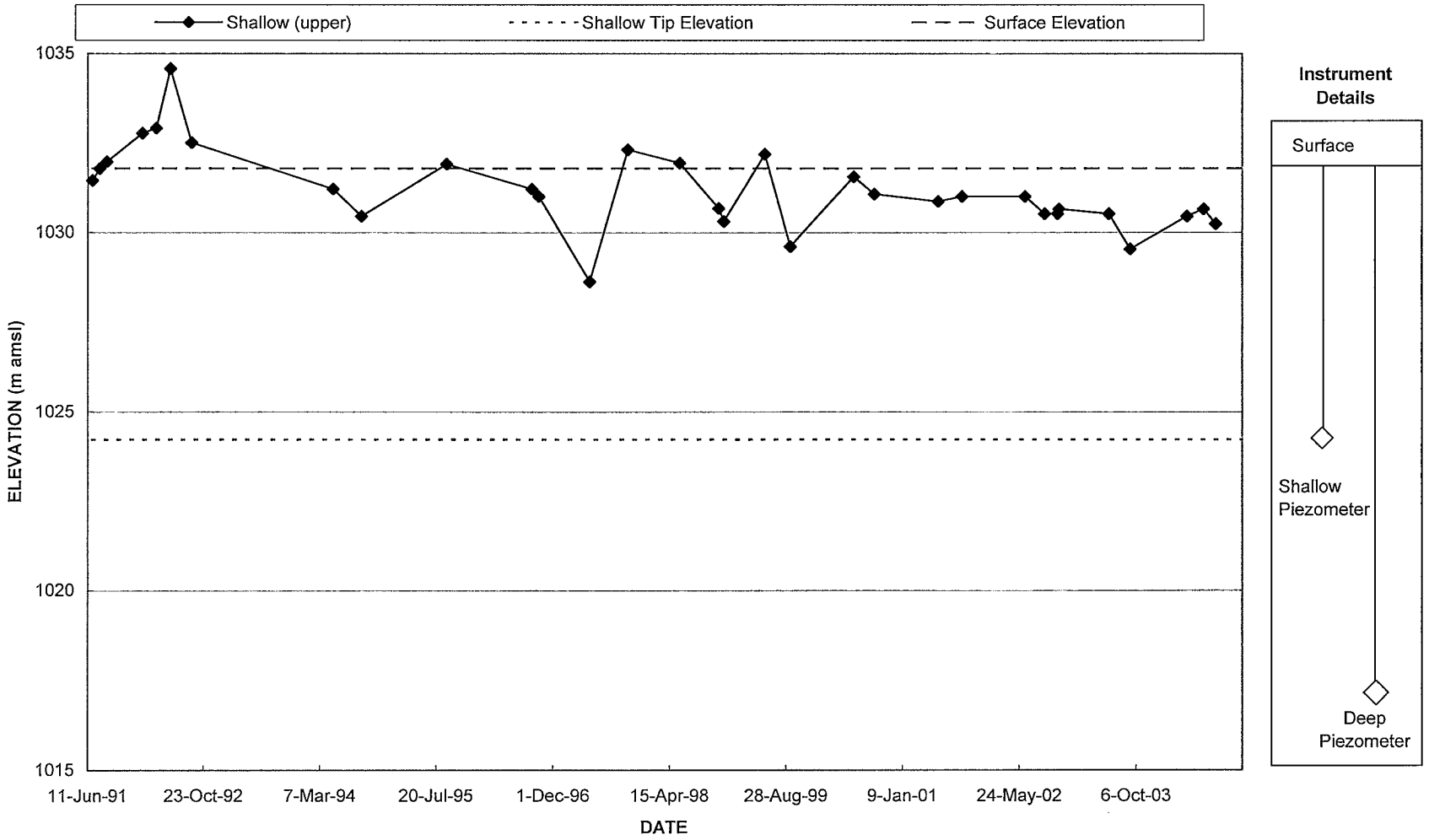


BH91-ID4		Location:	Intermediate Dam Toe @St.0+567					
				Surface Elevation (m advpd):	1064.10	*Surface Elevation (m amsl):	1031.80	Coordinates:	8V580517 6913926
		Date Installed:	1991	Shallow Tip Elevation (m advpd):	1056.52	Shallow Tip Elevation (m amsl):	1024.22	Surface Protector:	yes
				Deep Tip Elevation (m advpd):	1049.38	Deep Tip Elevation (m amsl):	1017.08		

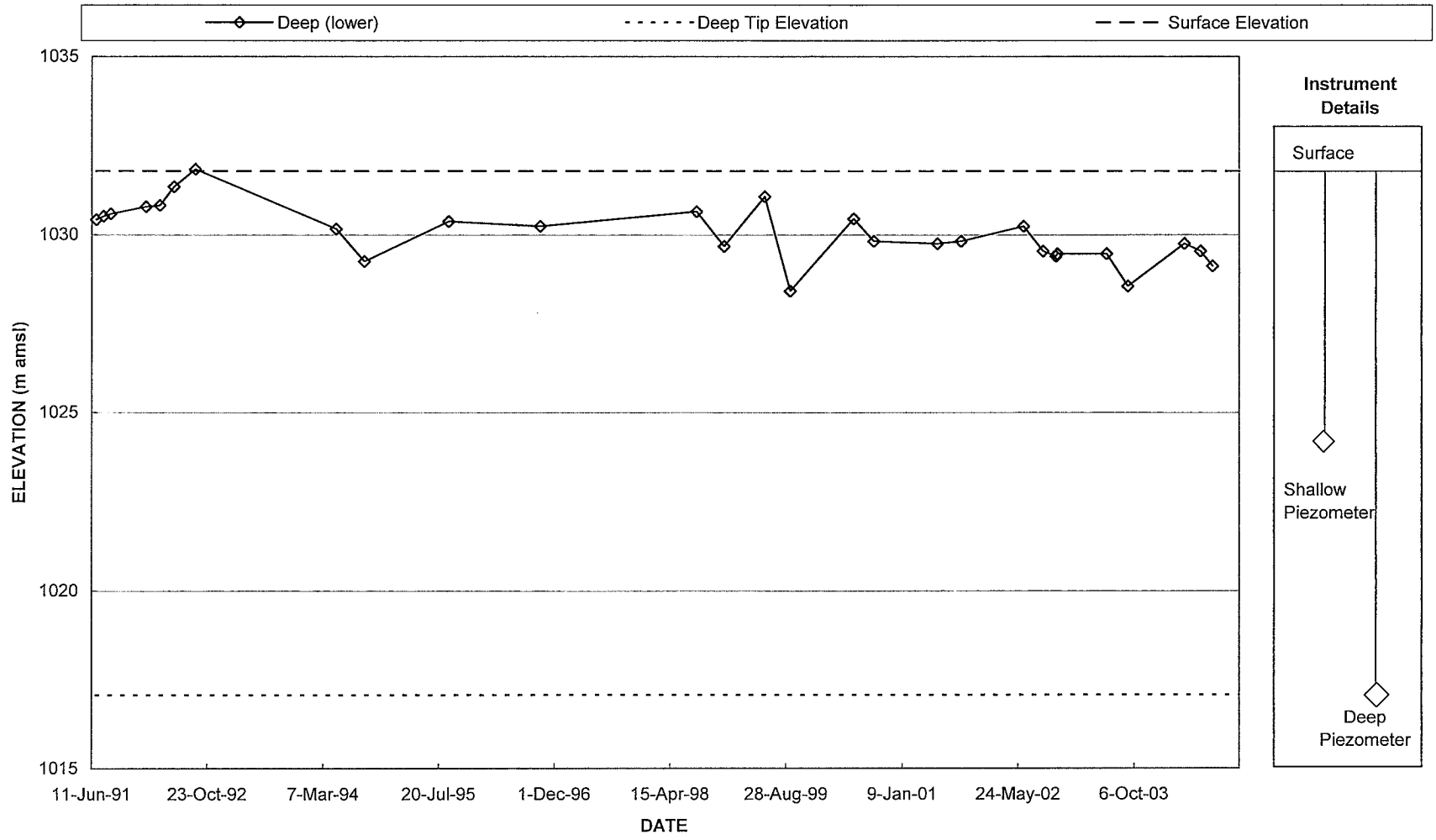
Date		Reading (psi)		Piezometric Elevation (m advpd)		Piezometric Elevation (m amsl)		Pond El. (m advpd)	Comments
		Shallow (upper)	Deep (lower)	Shallow (upper)	Deep (lower)	Shallow (upper)	Deep (lower)		
1-Jul-91		10.34	19.06	1063.76	1062.72	1031.46	1030.42	~1074.5	
1-Aug-91		10.81	19.20	1064.09	1062.82	1031.79	1030.52	~1074.5	
1-Sep-91		11.10	19.30	1064.29	1062.89	1031.99	1030.59	~1074.5	
1-Feb-92		12.24	19.59	1065.09	1063.09	1032.79	1030.79	1080.0	
1-Apr-92		12.44	19.64	1065.23	1063.13	1032.93	1030.83	1080.0	
1-Jun-92		14.80	20.40	1066.88	1063.66	1034.58	1031.36	1080.0	
1-Sep-92		11.86	21.10	1064.82	1064.15	1032.52	1031.85	1080.0	
1-May-94		10.00	18.70	1063.52	1062.47	1031.22	1030.17	1080.0	
1-Sep-94		8.90	17.40	1062.75	1061.56	1030.45	1029.26	1080.0	
1-Sep-95		11.00	19.00	1064.22	1062.68	1031.92	1030.38	1080.0	
1-Sep-96		10.00		1063.52		1031.22		1080.4	
1-Oct-96		9.7	18.8	1063.31	1062.54	1031.01	1030.24		
7-May-97		6.3		1060.93		1028.63			
17-Oct-97		11.58		1064.63		1032.33			
27-May-98		11.04		1064.25		1031.95		1080.4	
7-Aug-98			19.4		1062.96		1030.66	1080.4	
12-Nov-98		9.22		1062.97		1030.67		1080.1	
4-Dec-98		8.7	18.0	1062.61	1061.98	1030.31	1029.68	1080.1	
29-May-99		11.40	20.00	1064.5	1063.38	1032.20	1031.08	1080.3	
16-Sep-99		7.7	16.2	1061.91	1060.72	1029.61	1028.42	1080.0	
14-Jun-00		10.5	19.1	1063.87	1062.75	1031.57	1030.45	1079.9	
9-Sep-00		9.8	18.2	1063.38	1062.12	1031.08	1029.82		
10-Jun-01		9.50	18.1	1063.17	1062.05	1030.87	1029.75		
20-Sep-01		9.70	18.2	1063.31	1062.12	1031.01	1029.82		
18-Jun-02		9.70	18.80	1063.31	1062.54	1031.01	1030.24		
10-Sep-02		9.00	17.80	1062.82	1061.84	1030.52	1029.54		
4-Nov-02		9.00	17.60	1062.82	1061.7	1030.52	1029.40		
10-Nov-02		9.20	17.7	1062.96	1061.77	1030.66	1029.47		
11-Jun-03		9.00	17.7	1062.82	1061.77	1030.52	1029.47		*New piezometer readout used
10-Sep-03		7.60	16.4	1061.84	1060.86	1029.54	1028.56		
10-May-04		8.9	18.1	1062.75	1062.05	1030.45	1029.75		No 2004 elevation data
19-Jul-04		9.2	17.8	1062.96	1061.84	1030.66	1029.54		
9-Sep-04		8.6	17.2	1062.54	1061.42	1030.24	1029.12		

*Surface elevation not surveyed in 2004, amsl levels based on conversion from advpd.

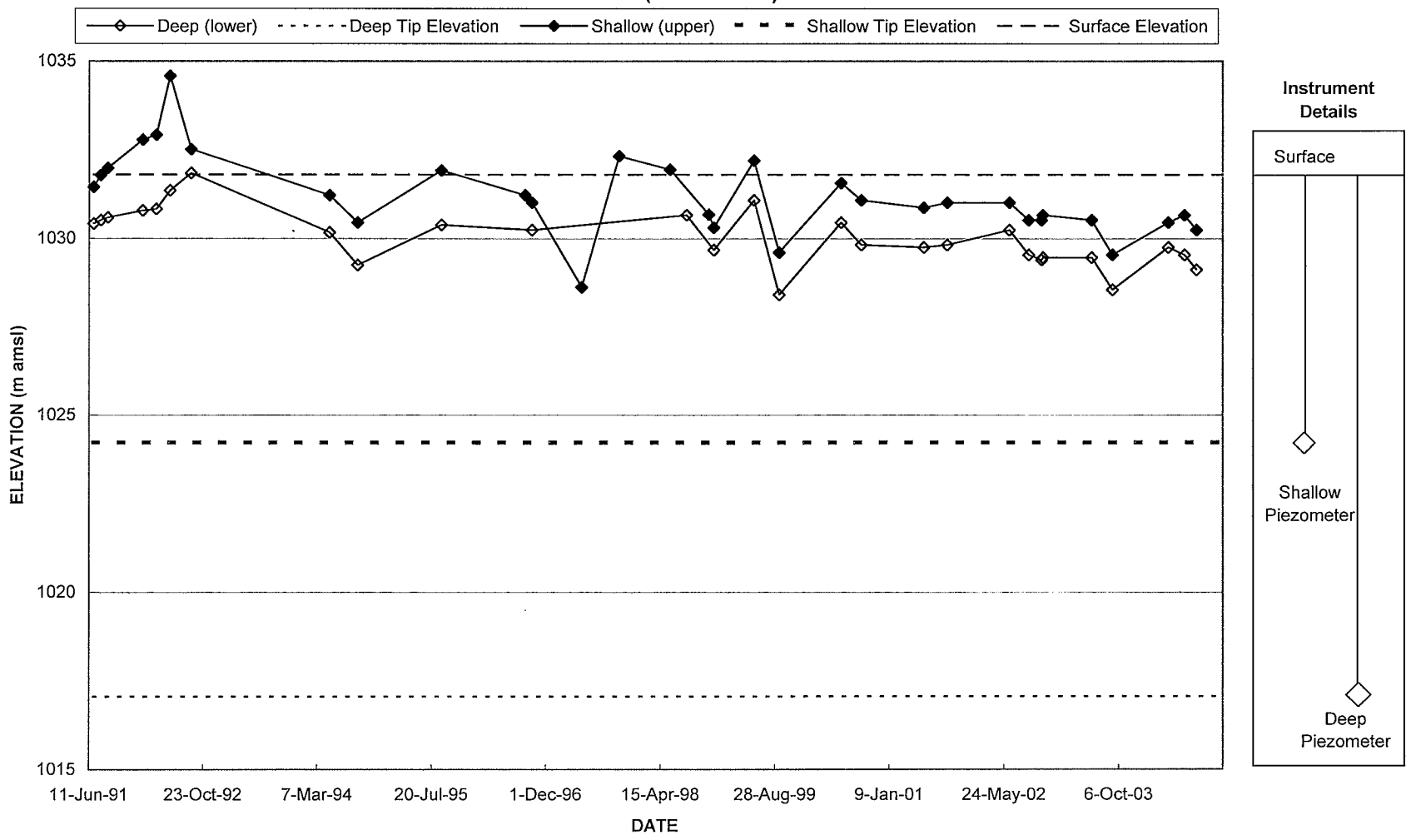
INTERMEDIATE DAM
Piezometric Monitoring
BH91-ID4 Pneumatic Piezometer (Shallow Tip)
(Toe of Dam)



INTERMEDIATE DAM
Piezometric Monitoring
BH91-ID4 Pneumatic Piezometer (Deep Tip)
(Toe of Dam)



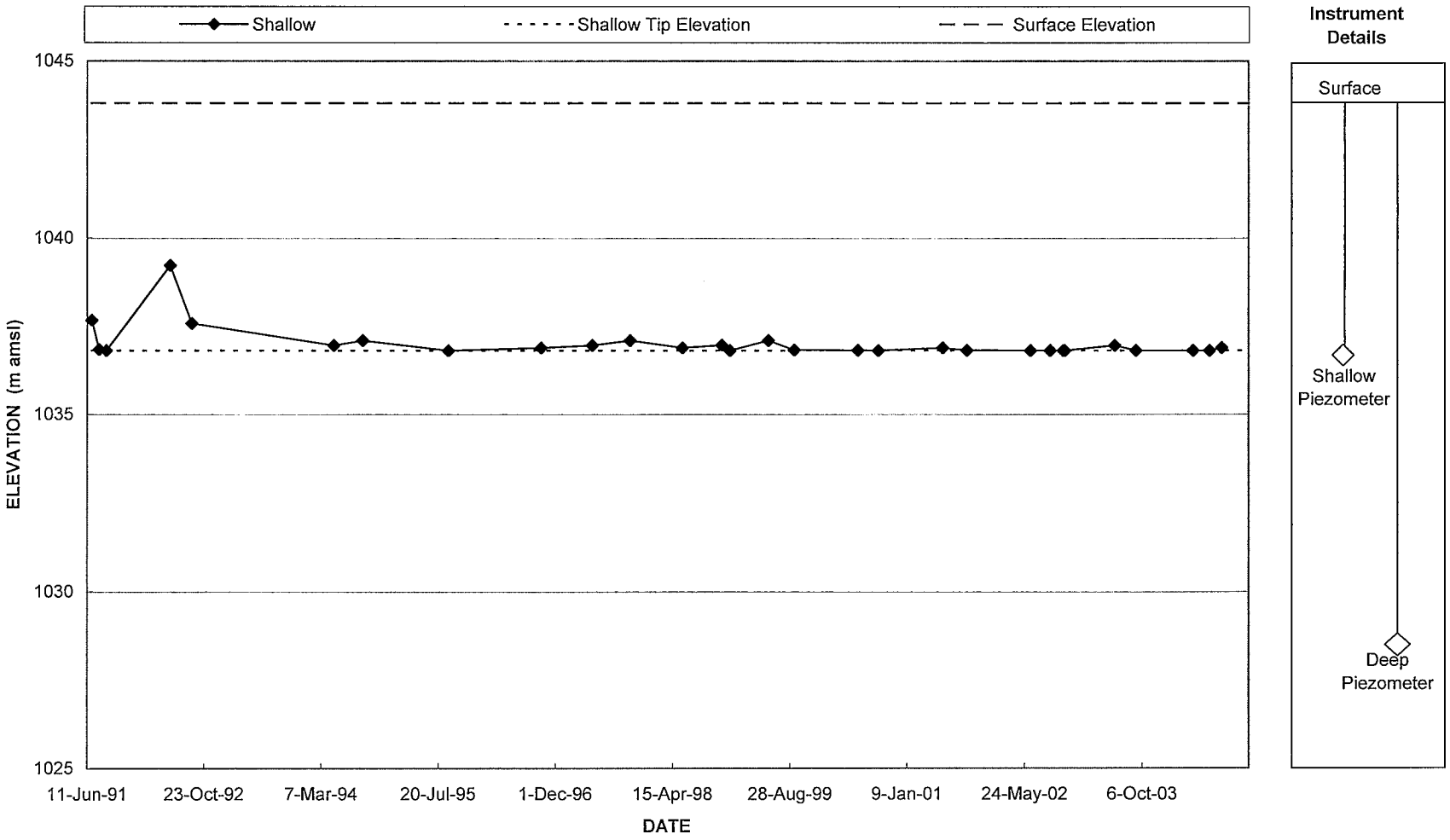
INTERMEDIATE DAM
Piezometric Monitoring
BH91-ID4 Pneumatic Piezometer (Both Tips)
(Toe of Dam)



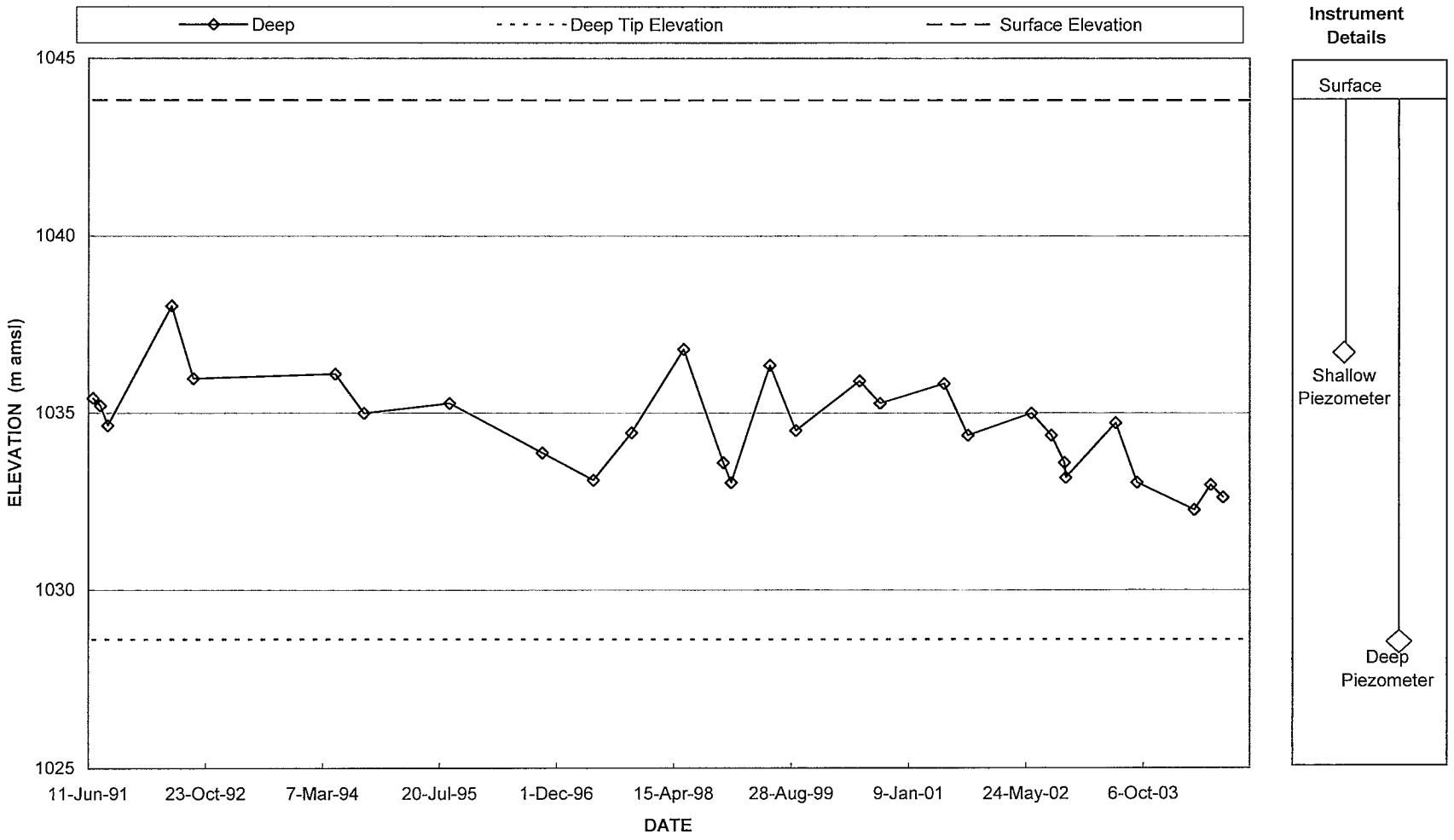
BH91-ID3		Location:	Intermediate Dam South Abutment @ Stn. 0+810					
				Surface Elevation (m advpd):	1085.45	2004 Surface Elevation (m amsl):	1043.82	Coordinates:	8V580359 6913723
		Date Installed:	1991	Shallow Tip Elevation (m advpd):	1078.45	Shallow Tip Elevation (m amsl):	1036.82	Surface Protector:	yes
				Deep Tip Elevation (m advpd):	1070.25	Deep Tip Elevation (m amsl):	1028.62		

Date		Reading (psi)		Piezometric Elevation (m advpd)		Piezometric Elevation (m amsl)		Pond El. (m advpd)	Comments
		Shallow	Deep	Shallow	Deep	Shallow	Deep		
1-Jul-91		1.23	9.71	1079.31	1077.05	1037.68	1035.42	~1074.5	
1-Aug-91		0.04	9.40	1078.48	1076.83	1036.85	1035.2	~1074.5	
1-Sep-91			8.60		1076.27	1036.82	1034.64	~1074.5	
1-Feb-92									
1-Apr-92									
1-Jun-92		3.44	13.46	1080.86	1079.67	1039.23	1038.04	1080.0	
1-Sep-92		1.10	10.51	1079.22	1077.61	1037.59	1035.98	1080.0	
1-May-94		0.20	10.70	1078.59	1077.74	1036.96	1036.11	1080.0	
1-Sep-94		0.40	9.10	1078.73	1076.62	1037.1	1034.99	1080.0	
1-Sep-95		0.00	9.50	1078.45	1076.9	1036.82	1035.27	1080.0	
1-Oct-96		0.1	7.5	1078.52	1075.5	1036.89	1033.87	1080.4	
7-May-97		0.2	6.4	1078.59	1074.73	1036.96	1033.1		
17-Oct-97		0.40	8.31	1078.73	1076.07	1037.1	1034.437		
27-May-98		0.10	11.70	1078.52	1078.44	1036.89	1036.81	1080.4	
12-Nov-98		0.22	7.10	1078.60	1075.22	1036.974	1033.59	1080.1	
16-Dec-98		0.0	6.3	1078.45	1074.66	1036.82	1033.03	1080.1	
29-May-99		0.40	11.05	1078.73	1077.99	1037.1	1036.355	1080.3	
16-Sep-99		0.02	8.4	1078.46	1076.13	1036.834	1034.5	1080.0	
14-Jun-00		0.01	10.4	1078.46	1077.54	1036.827	1035.907	1079.9	
9-Sep-00		0.00	9.5	1078.45	1076.90	1036.82	1035.27		
10-Jun-01		0.10	10.3	1078.52	1077.46	1036.89	1035.83		
20-Sep-01		0.01	8.2	1078.457	1075.99	1036.827	1034.36		
18-Jun-02		0.00	9.1	1078.45	1076.62	1036.82	1034.99		
10-Sep-02		0.00	8.20	1078.45	1075.99	1036.82	1034.36		
4-Nov-02		0.00	7.10	1078.45	1075.22	1036.82	1033.59		
10-Nov-02		0.00	6.50	1078.45	1074.8	1036.82	1033.17		
11-Jun-03		0.20	8.70	1078.59	1076.34	1036.96	1034.71		*have to continue using old piezometer, tips are too big
10-Sep-03		0.00	6.30	1078.45	1074.66	1036.82	1033.03		* Installed new tips, now using new box
10-May-04		0	5.2			1036.82	1032.26		2004 survey data used from this point on
19-Jul-04		0	6.2			1036.82	1032.96		
9-Sep-04		0.1	5.7			1036.89	1032.61		

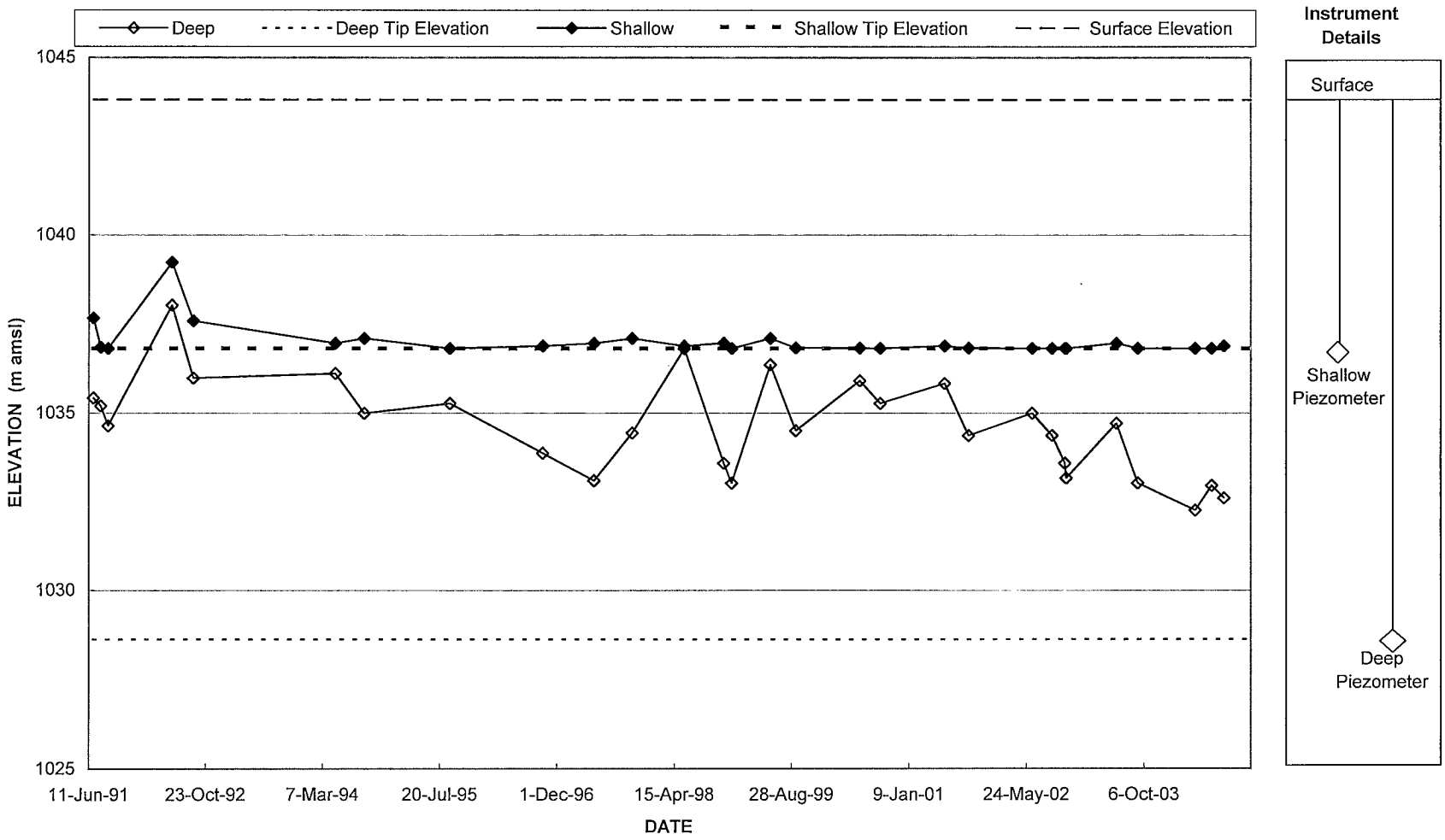
INTERMEDIATE DAM
Piezometric Monitoring
BH91-ID3 Pneumatic Piezometer (Shallow Tip)
(South Abutment of Dam)



INTERMEDIATE DAM
Piezometric Monitoring
BH91-ID3 Pneumatic Piezometer (Deep Tip)
(South Abutment of Dam)



INTERMEDIATE DAM
Piezometric Monitoring
BH91-ID3 Pneumatic Piezometer (Both Tips)
(South Abutment of Dam)

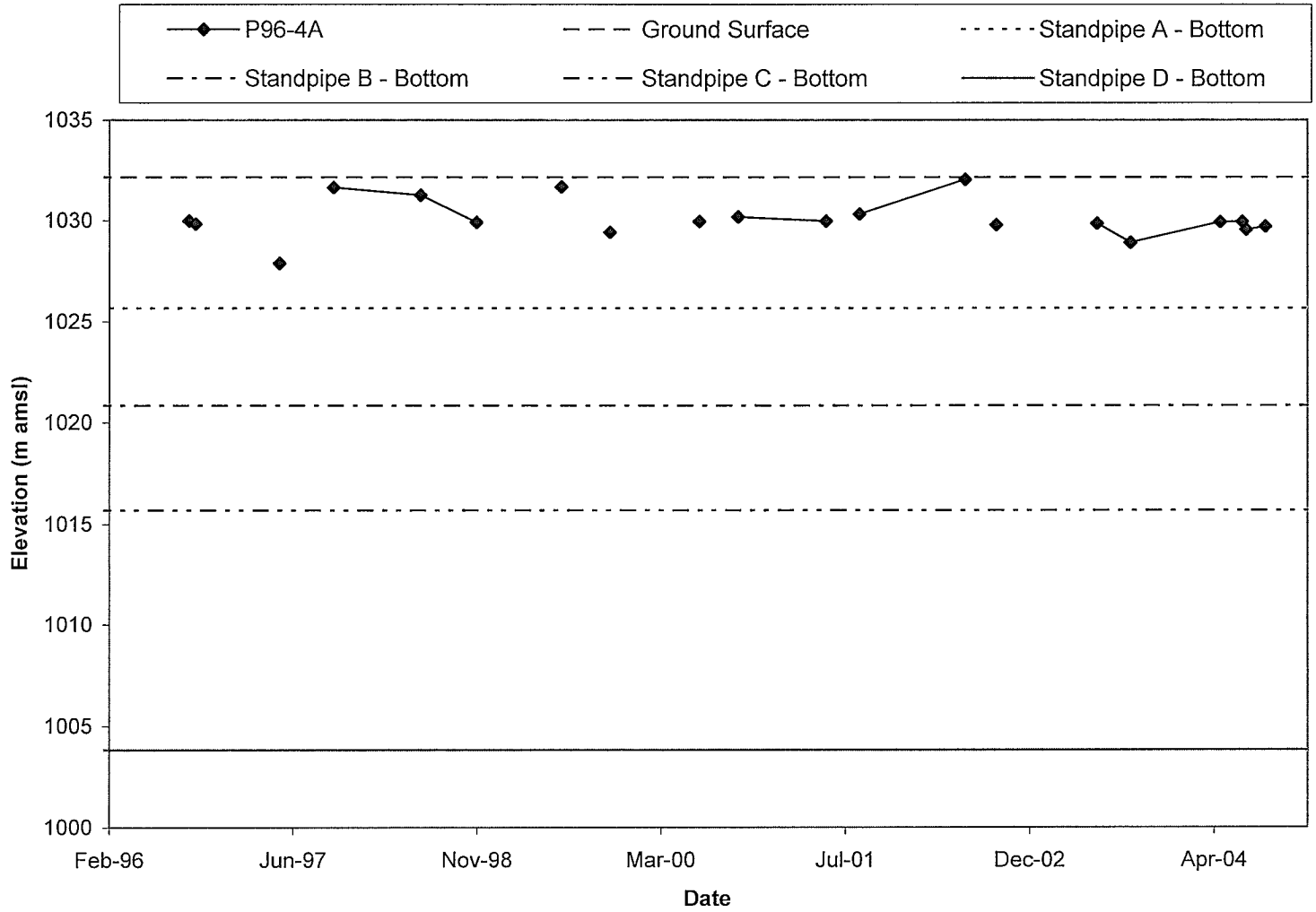


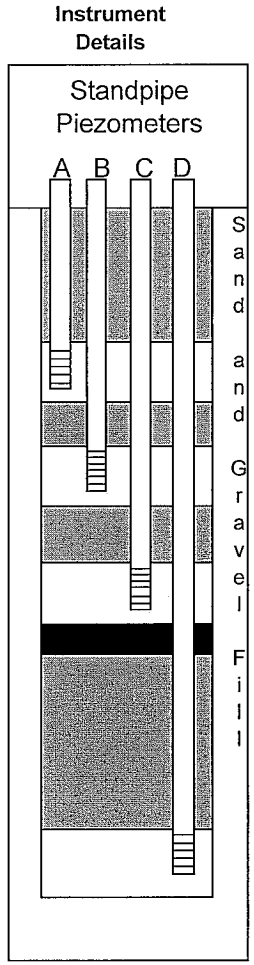
BH94-IDC-1		Location:	Intermediate Dam Crest				
				2004 Surface Elevation (m amsl):	1049.21	Coordinates:	8V580605 6913969
		Date Installed:	1994	Tip Elevation:	N/A	Surface Protector:	Yes
				Stick Up (m):	0.37	2004 Stick Up (m):	0.27
Date			Water level from top of pipe (m)	Piezometric Elevation (m amsl)		Pond El. (m advpd)	Comments
2-Jun-94						1080.0	dry
16-Sep-94						1080.0	dry
22-Sep-95						1080.0	dry
25-Sep-96						1080.4	dry
28-May-98						1080.4	dry
13-Nov-98			14.10			1080.1	dry
8-Jun-99			14.10			1080.1	dry
16-Sep-99			14.18			1080.0	dry
14-Jun-00			14.11			1079.9	dry
9-Sep-00			14.11			1079.9	H2O
10-Jun-01			14.11			1079.9	
1-Aug-01			14.11			1079.9	dry
18-Jun-02			14.11				dry
5-Aug-02			14.19				dry
2-Sep-02			14.11				dry
2-Nov-02			14.11				dry
10-Nov-02			14.11				dry
11-Jun-03			14.12				dry
10-Sep-03			14.11				dry
10-May-03			14.11				dry
19-Jul-04			14.11				dry
9-Sep-04			14.11				dry

BH96-4	Location: Intermediate Dam Toe near South Abutment				Surface Elevation (m amsl):	1032.3	Coordinates:	8V580669 6914113		
	Date Installed:	1996			Surface Elevation (m advpd):	1064.6	2004 Surface Elevation (m amsl):	1032.16		
					Screened Interval - A (m bgs):	5.7-6.48	Screened Interval - C (m bgs):	14.97-16.47		
					Screened Interval - B (m bgs):	9.8-11.3	Screened Interval - D (m bgs):	26.84-28.34		
					Stick Up - A (m):	0.80	Stick Up - C (m):	0.70		
					Stick Up - B (m):	0.75	Stick Up - D (m):	0.70		
					2004 Stick Up - A (m):	0.95	2004 Stick Up - C (m):	0.91		
					2004 Stick Up - B (m):	0.87	2004 Stick Up - D (m):	0.88		

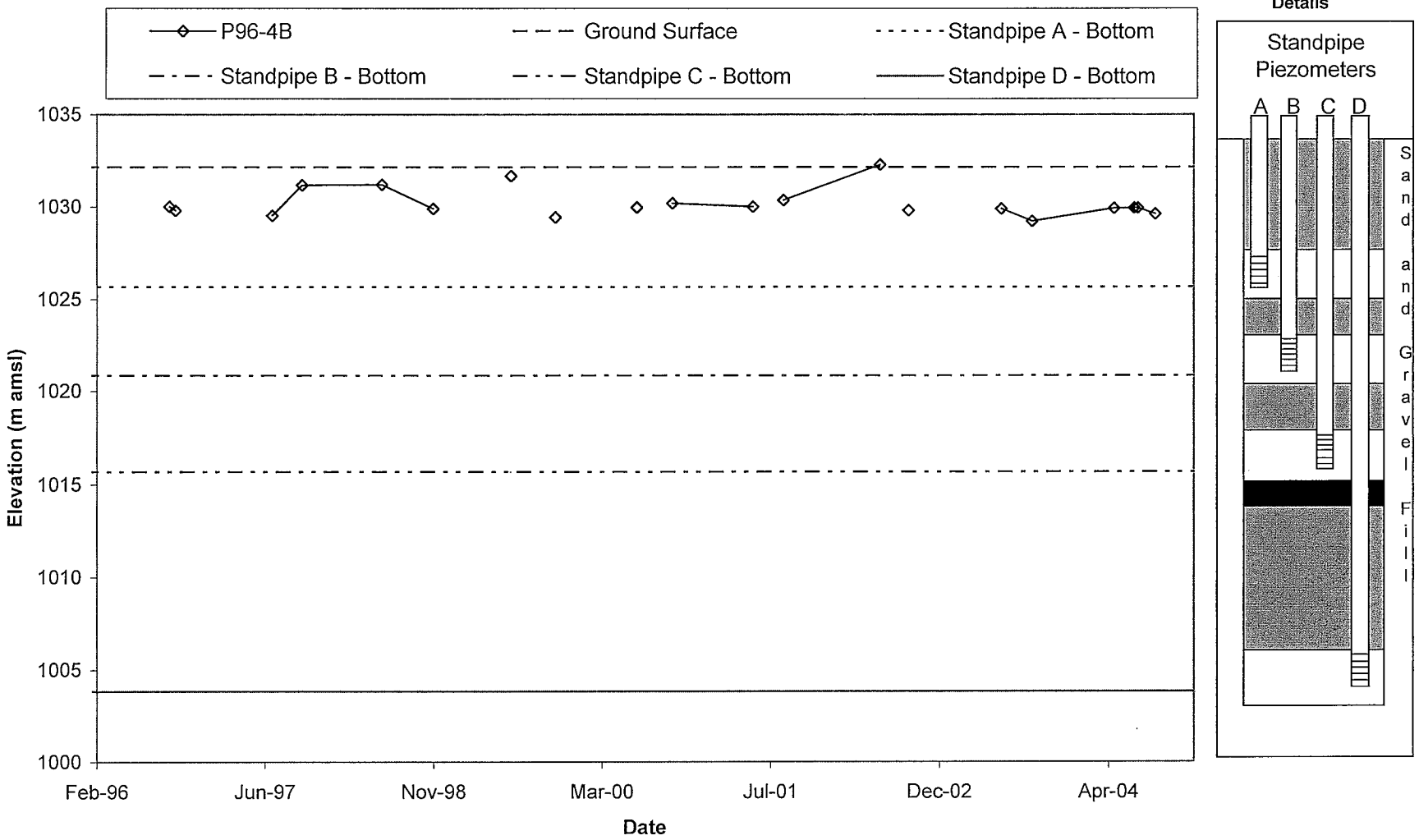
	Water level from top of pipe (m)				Piezometric Elevation (m amsl)				Piezometric Elevation (m advpd)				
Date	A	B	C	D	A	B	C	D	96-4A	96-4B	96-4C	96-4D	Comments
08-Sep-96	3.11	3.04	2.98	2.88	1029.99	1030.01	1030.02	1030.12	1062.29	1062.31	1062.32	1062.42	
26-Sep-96	3.27	3.25	3.12	3.05	1029.83	1029.80	1029.88	1029.95	1062.13	1062.10	1062.18	1062.25	
27-Sep-96													
13-May-97	5.21		4.85		1027.89		1028.15		1060.19		1060.45		
06-Jun-97													
11-Jul-97		3.51				1029.54				1061.84			
07-Oct-97	1.45	1.87	1.82		1031.65	1031.18	1031.18		1063.95	1063.48	1063.48		
01-Jun-98	1.84	1.84	1.83	1.62	1031.26	1031.21	1031.17	1031.38	1063.56	1063.51	1063.47	1063.68	
31-Oct-98	3.18	3.15	3.09	3.01	1029.92	1029.90	1029.91	1029.99	1062.22	1062.20	1062.21	1062.29	
13-Nov-98													
08-Jun-99													
19-Jun-99	1.43	1.38	1.36	1.25	1031.67	1031.67	1031.64	1031.75	1063.97	1063.97	1063.94	1064.05	
03-Jul-99													
29-Oct-99	3.68	3.62	3.60	3.48	1029.42	1029.43	1029.40	1029.52	1061.72	1061.73	1061.70	1061.82	
31-Oct-99													
31-May-00													
27-Jun-00	3.14	3.08	3.07	2.93	1029.96	1029.97	1029.93	1030.07	1062.26	1062.27	1062.23	1062.37	
25-Jul-00			2.84				1030.16				1062.46		
21-Sep-00													
10-Oct-00	2.92	2.85	2.83	2.71	1030.18	1030.20	1030.17	1030.29	1062.48	1062.50	1062.47	1062.59	
06-Jun-01	3.13	3.04	3.06	2.94	1029.97	1030.01	1029.94	1030.06	1062.27	1062.31	1062.24	1062.36	
15-Jul-01													
05-Sep-01	2.77	2.68	2.71	2.57	1030.33	1030.37	1030.29	1030.43	1062.63	1062.67	1062.59	1062.73	
18-Jun-02	1.06	0.77			1032.04	1032.28			1064.34	1064.58			
05-Aug-02													
10-Sep-02	3.31	3.24	3.25	3.11	1029.80	1029.82	1029.75	1029.90	1062.10	1062.12	1062.05	1062.20	
04-Nov-02													
10-Nov-02													
11-Jun-03	3.24	3.15	3.21	3.06	1029.86	1029.90	1029.79	1029.94	1062.16	1062.20	1062.09	1062.24	
10-Sep-03	4.19	3.82	4.15	3.99	1028.91	1029.23	1028.85	1029.01	1061.21	1061.53	1061.15	1061.31	
10-May-04	3.18	3.10	3.14	3.01	1029.93	1029.94	1029.93	1030.03					2004 survey info used from here on
08-Jul-04	3.16	3.09	3.12	2.99	1029.95	1029.94	1029.96	1030.06					
19-Jul-04	3.56	3.09	3.12	2.99	1029.55	1029.94	1029.96	1030.06					
09-Sep-04	3.41	3.41	3.50	3.38	1029.70	1029.62	1029.57	1029.67					a, b and c - dirty; d - clear; a and d - sulphur smell

INTERMEDIATE DAM
Piezometric Monitoring
P96-4A Monitoring Well (Robertson, 1996)
(Toe of Dam - South Abutment)

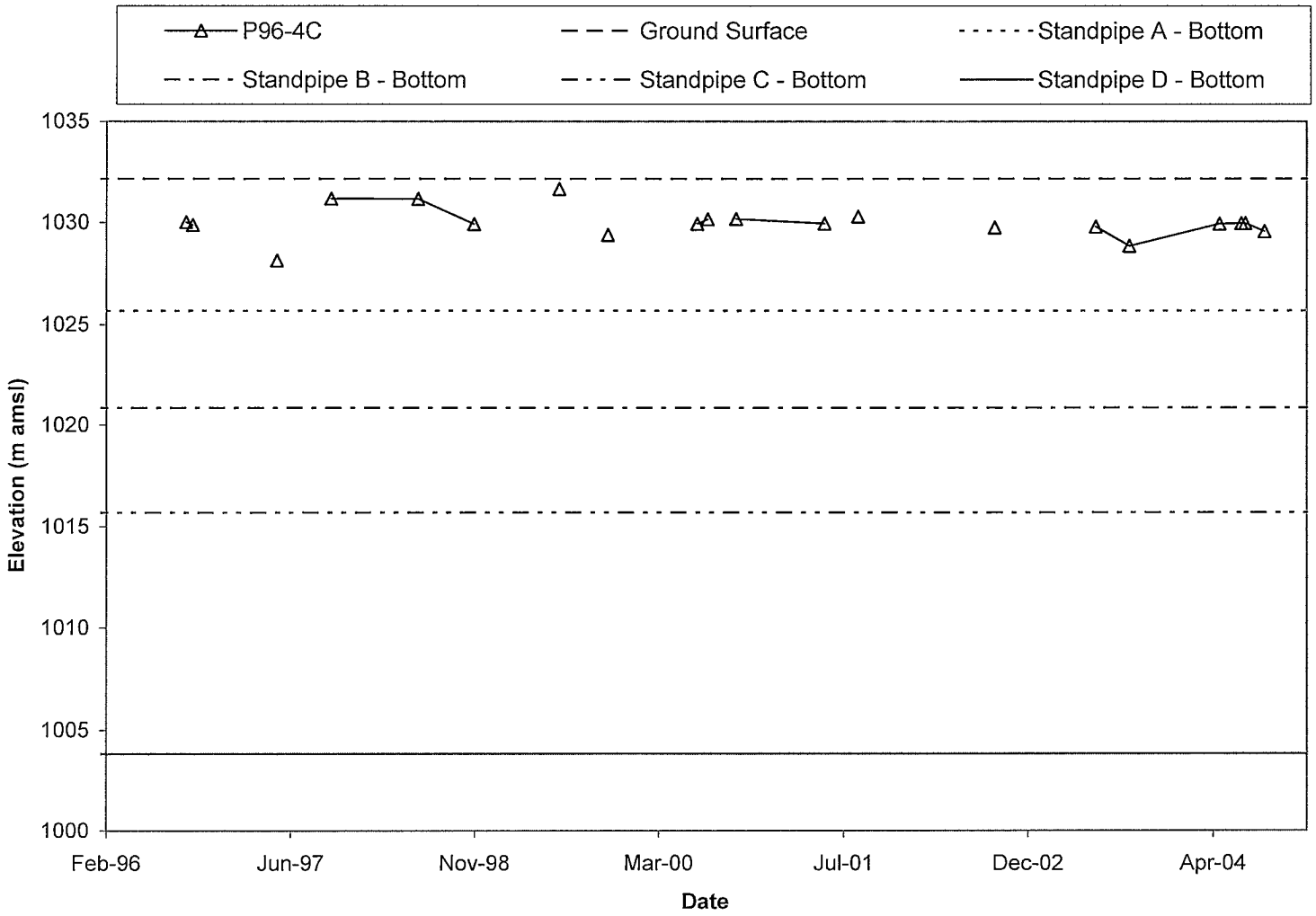


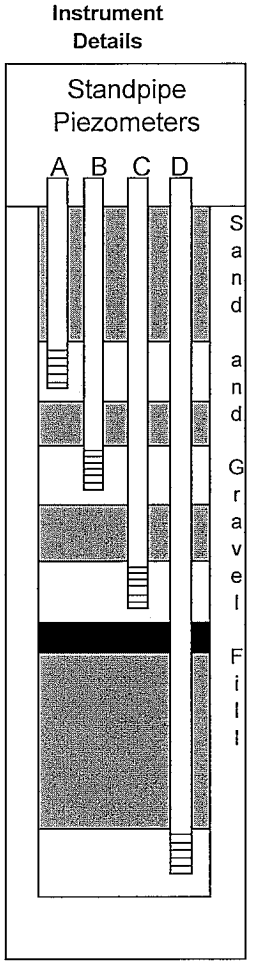


INTERMEDIATE DAM
Piezometric Monitoring
P96-4B Monitoring Well (Robertson, 1996)
(Toe of Dam - South Abutment)

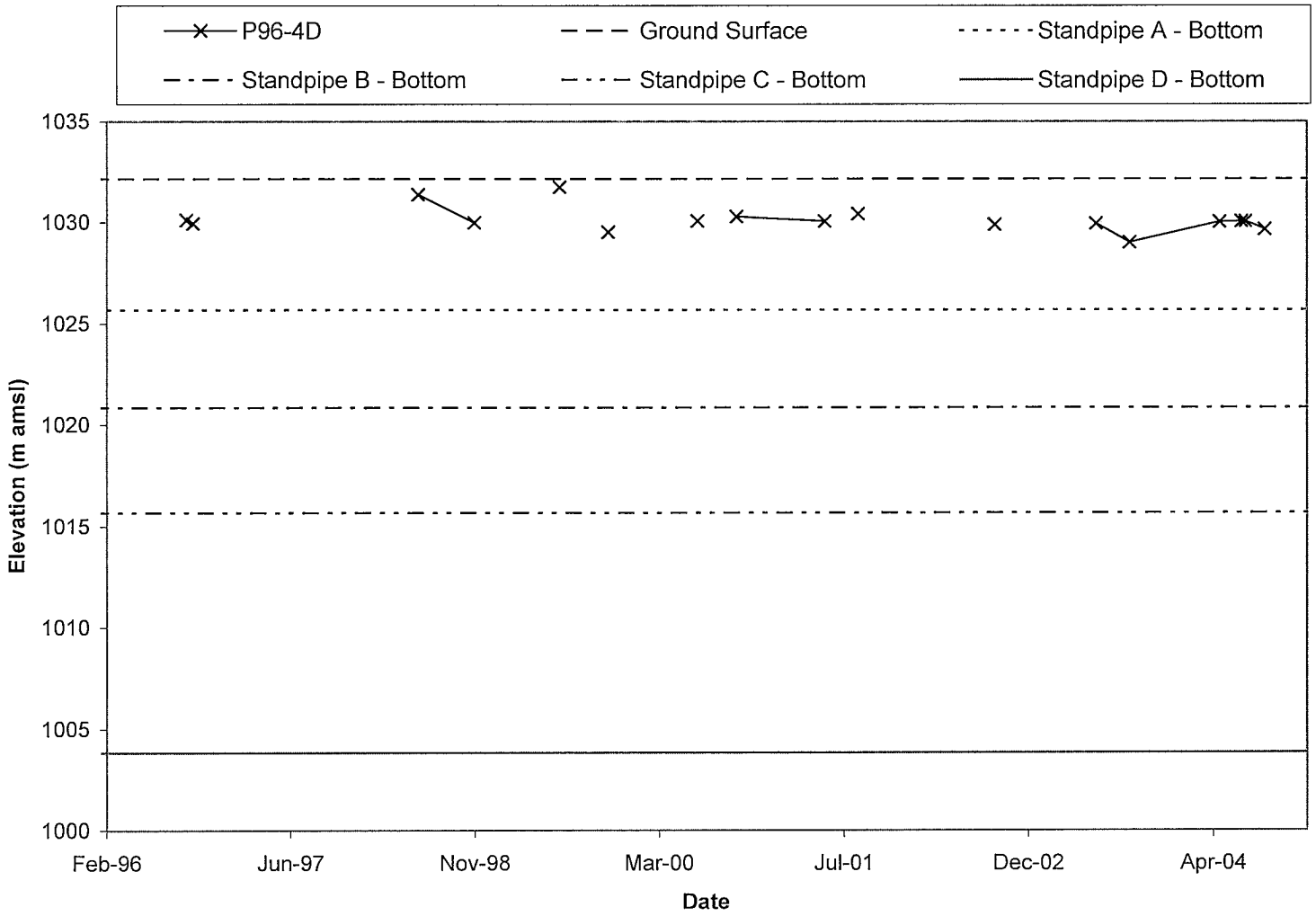


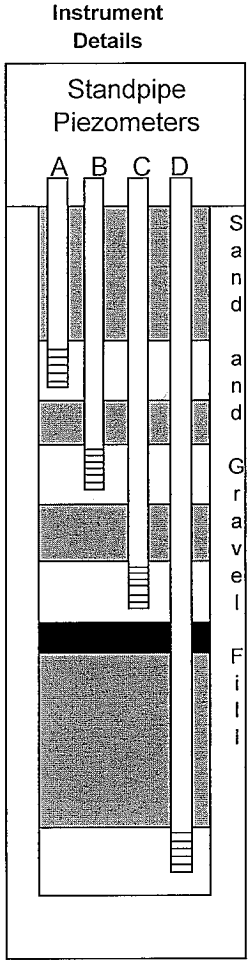
INTERMEDIATE DAM
Piezometric Monitoring
P96-4C Monitoring Well (Robertson, 1996)
(Toe of Dam - South Abutment)



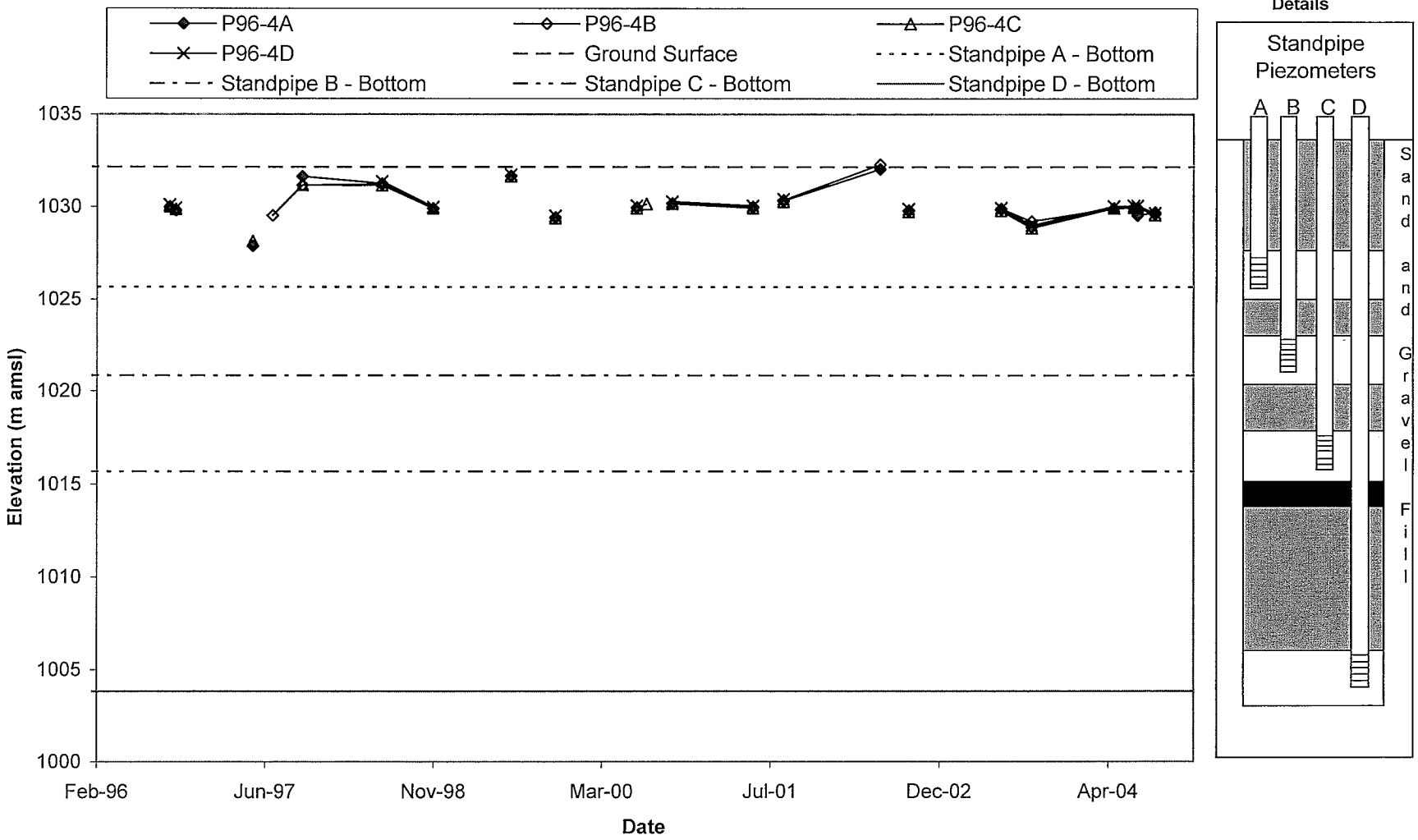


INTERMEDIATE DAM
Piezometric Monitoring
P96-4D Monitoring Well (Robertson, 1996)
(Toe of Dam - South Abutment)





INTERMEDIATE DAM
Piezometric Monitoring
P96-4 Monitoring Well (Robertson, 1996)
(Toe of Dam - South Abutment)

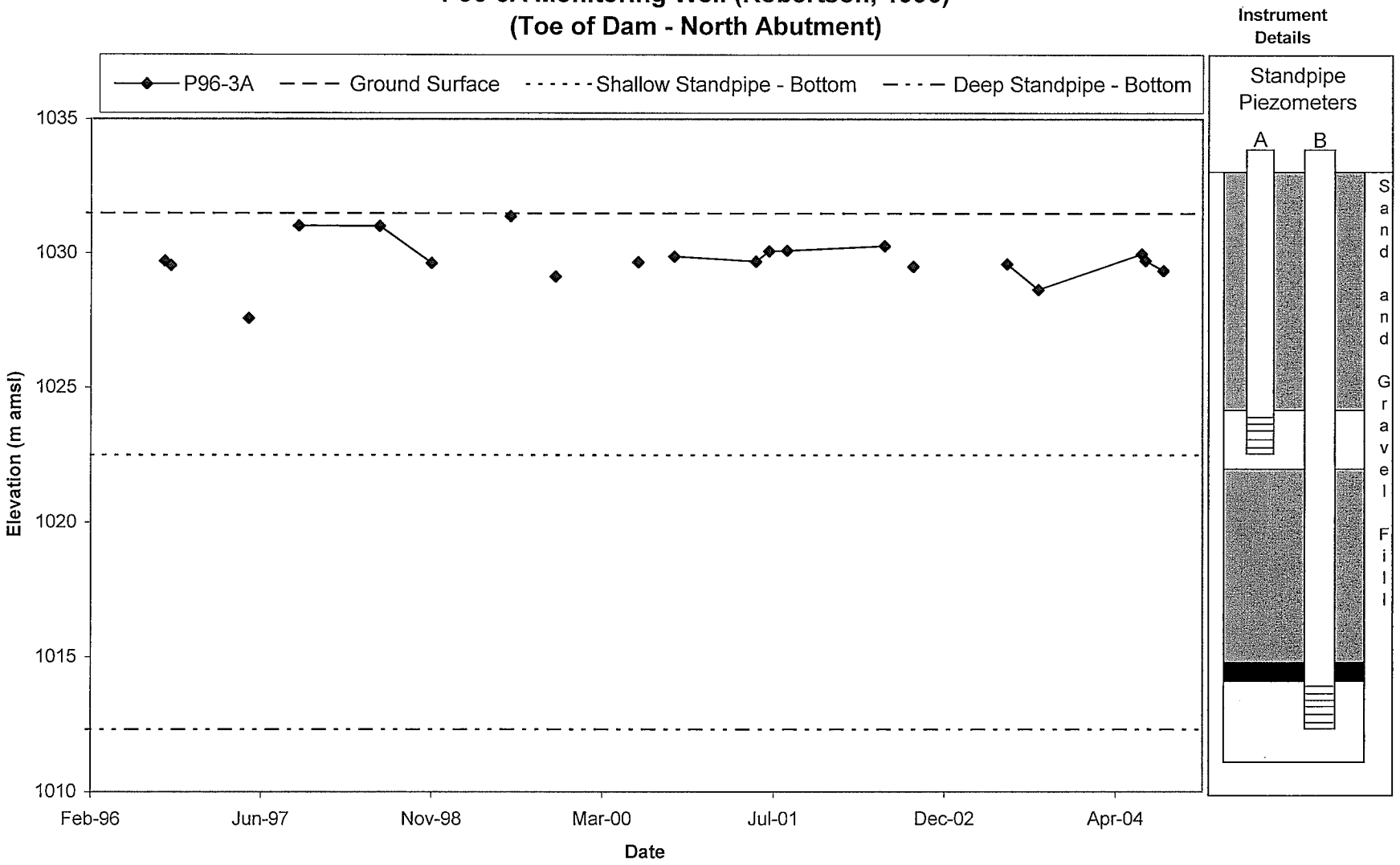


Faro Mine Instrumentation Intermediate Dam

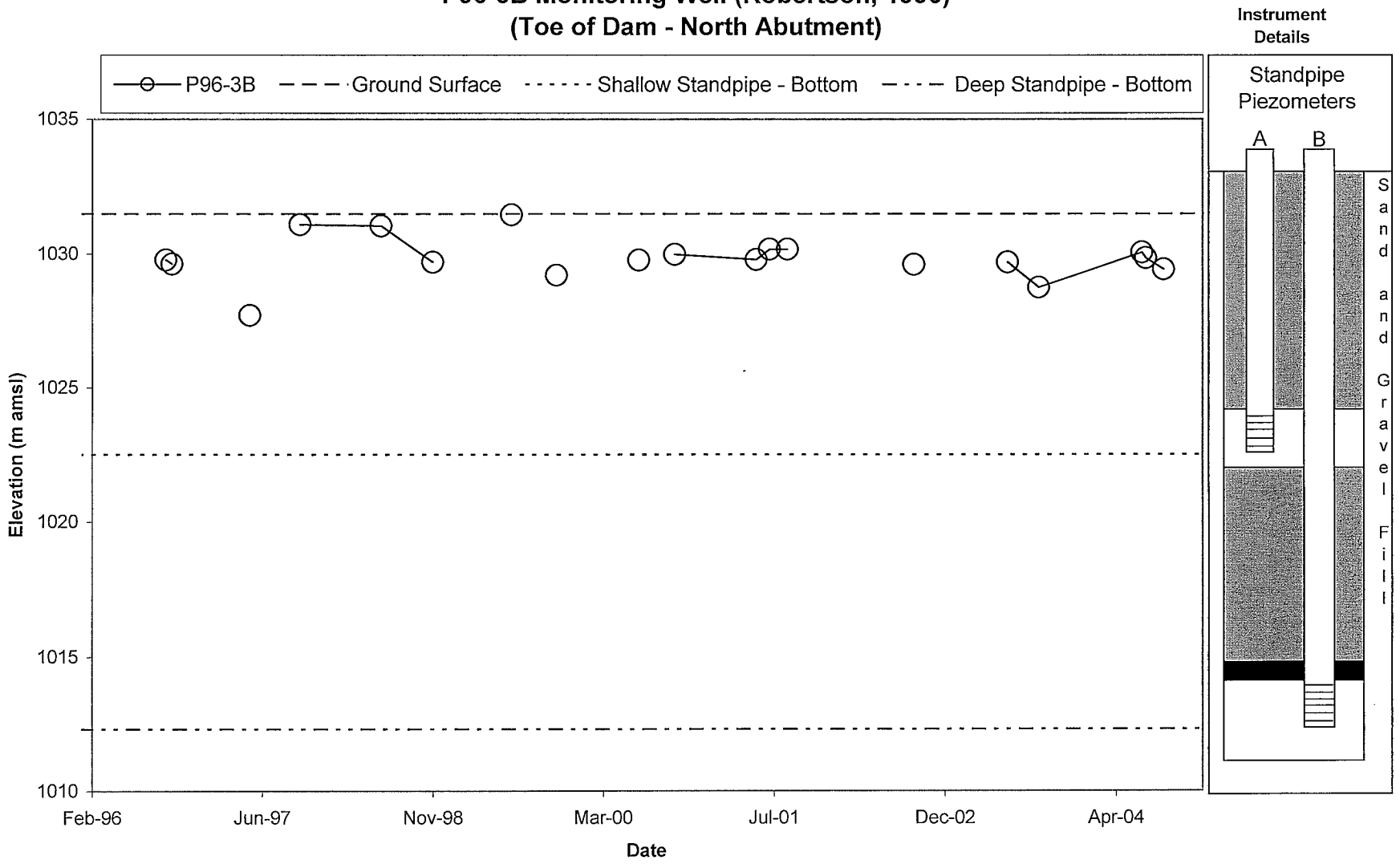
BH96-3		Location:	Intermediate Dam Toe near the North Abutment					
				Surface Elevation (m amsl):	1031.4	Coordinates:	8V580529 6913934	
	Date Installed:		1996	Surface Elevation (m advpd):	1063.70	2004 Surface Elevation (m amsl):	1031.48	
	Tip Elevation - A (m amsl):		1022.43	Screened Interval - A (m bgs):	7.44 - 8.97	Surface Protector:	yes	
	Tip Elevation - B (m amsl):		1012.23	Screened Interval - B (m bgs):	17.7 - 19.17			
				Stick Up - A (m):	0.68	2004 Stick Up - A (m):	0.65	
				Stick Up - B (m):	0.63	2004 Stick Up - B (m):	0.59	

Date		Water level from top of pipe (m)		Piezometric Elevation (m amsl)		Piezometric Elevation (m advpd)		Comments
		A	B	96-3A (Shallow)	96-3B (Deep)	96-3A (Shallow)	96-3B (Deep)	
08-Sep-96		2.37	2.25	1029.71	1029.78	1062.01	1062.08	
26-Sep-96		2.53	2.4	1029.55	1029.63	1061.85	1061.93	
27-Sep-96								
13-May-97		4.5	4.32	1027.58	1027.71	1059.88	1060.01	
06-Jun-97								
11-Jul-97								
07-Oct-97		1.06	0.95	1031.02	1031.08	1063.32	1063.38	
01-Jun-98		1.07	0.99	1031.01	1031.04	1063.31	1063.34	
31-Oct-98		2.44	2.34	1029.64	1029.69	1061.94	1061.99	
13-Nov-98								
08-Jun-99								
19-Jun-99		0.7	0.58	1031.38	1031.45	1063.68	1063.75	
03-Jul-99								
29-Oct-99		2.94	2.82	1029.14	1029.21	1061.44	1061.51	
31-Oct-99								
31-May-00								
27-Jun-00		2.41	2.26	1029.67	1029.77	1061.97	1062.07	
25-Jul-00								
21-Sep-00								
10-Oct-00		2.2	2.05	1029.88	1029.98	1062.18	1062.28	
06-Jun-01		2.38	2.24	1029.70	1029.79	1062.00	1062.09	
15-Jul-01		2.00	1.86	1030.08	1030.17	1062.38	1062.47	
05-Sep-01		1.98	1.86	1030.10	1030.17	1062.40	1062.47	
18-Jun-02		1.81		1030.27		1062.57		
05-Aug-02								
10-Sep-02		2.565	2.42	1029.52	1029.61	1061.82	1061.91	
04-Nov-02								
10-Nov-02								
11-Jun-03		2.47	2.34	1029.61	1029.69	1061.91	1061.99	
10-Sep-03		3.43	3.28	1028.65	1028.75	1060.95	1061.05	
08-Jul-04		2.15	2.01	1029.98	1030.06			2004 survey data used from here on
19-Jul-04		2.4	2.225	1029.73	1029.85			
09-Sep-04		2.77	2.645	1029.36	1029.43			clear, sulphur smell

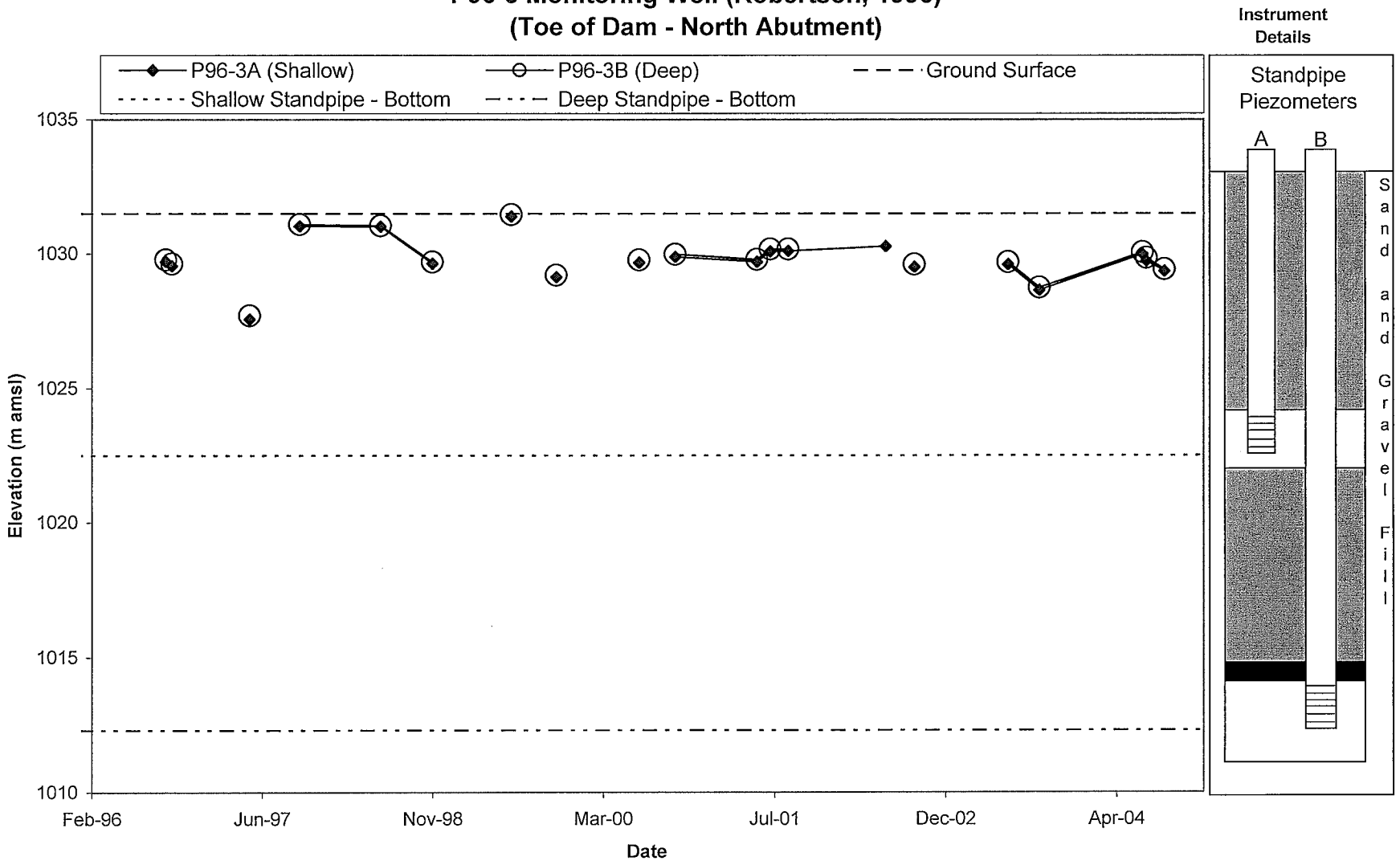
INTERMEDIATE DAM
Piezometric Monitoring
P96-3A Monitoring Well (Robertson, 1996)
(Toe of Dam - North Abutment)



INTERMEDIATE DAM
Piezometric Monitoring
P96-3B Monitoring Well (Robertson, 1996)
(Toe of Dam - North Abutment)



INTERMEDIATE DAM
Piezometric Monitoring
P96-3 Monitoring Well (Robertson, 1996)
(Toe of Dam - North Abutment)

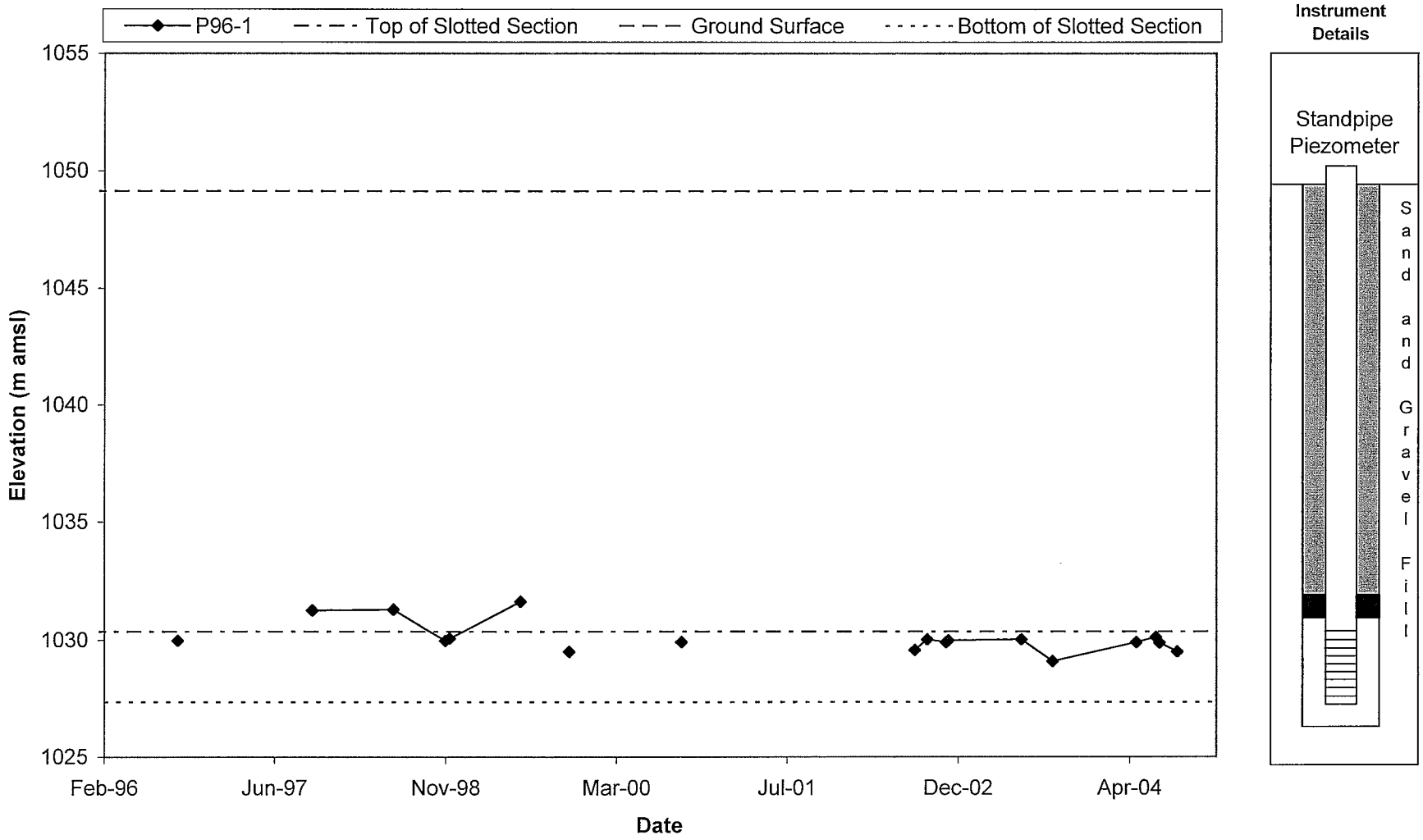


Faro Mine Instrumentation Intermediate Dam

BH96-1		Location:	Intermediate Dam Crest				
			Surface Elevation (m amsl):	1049.3	Coordinates:	8V580563 6913908	
	Date Installed:	1996	Surface Elevation (m advpd):	1081.60	2004 Surface Elevation (m amsl):	1049.15	
			Screened Interval (m bgs):	18.77 - 21.80	Surface Protector:	yes	
			Tip Elevation (m amsl):	1027.35			
			Stick Up (m):	0.75	2004 Stick Up:	0.68	

Date			Water level from top of pipe (m)		Piezometric Elevation (m amsl)	Piezometric Elevation (m advpd)	Comments
08-Sep-96			20.06		1029.99	1062.29	
26-Sep-96							
27-Sep-96							
13-May-97							
06-Jun-97							
11-Jul-97							
07-Oct-97			18.77		1031.28	1063.58	
01-Jun-98			18.73		1031.32	1063.62	
31-Oct-98			20.08		1029.97	1062.27	
13-Nov-98			19.97		1030.08	1062.38	
08-Jun-99			18.4		1031.65	1063.95	
19-Jun-99							
03-Jul-99							
29-Oct-99			20.55		1029.50	1061.80	
31-Oct-99							
31-May-00							
27-Jun-00							
25-Jul-00							
21-Sep-00			20.13		1029.92	1062.22	
10-Oct-00							
06-Jun-01							
15-Jul-01							
05-Sep-01							
18-Jun-02							
05-Aug-02			20.48		1029.57	1061.87	
10-Sep-02			20.02		1030.03	1062.33	
04-Nov-02			20.14		1029.91	1062.21	
10-Nov-02			20.06		1029.99	1062.29	
11-Jun-03			20.025		1030.03	1062.33	
10-Sep-03			20.96		1029.09	1061.39	
12-May-04			19.925		1029.91		2004 survey data used from here on
08-Jul-04			19.695		1030.14		
19-Jul-04			19.945		1029.89		
09-Sep-04			20.325		1029.51		clear

INTERMEDIATE DAM
Piezometric Monitoring
P96-1 Monitoring Well (Robertson, 1996)
(Dam Crest)

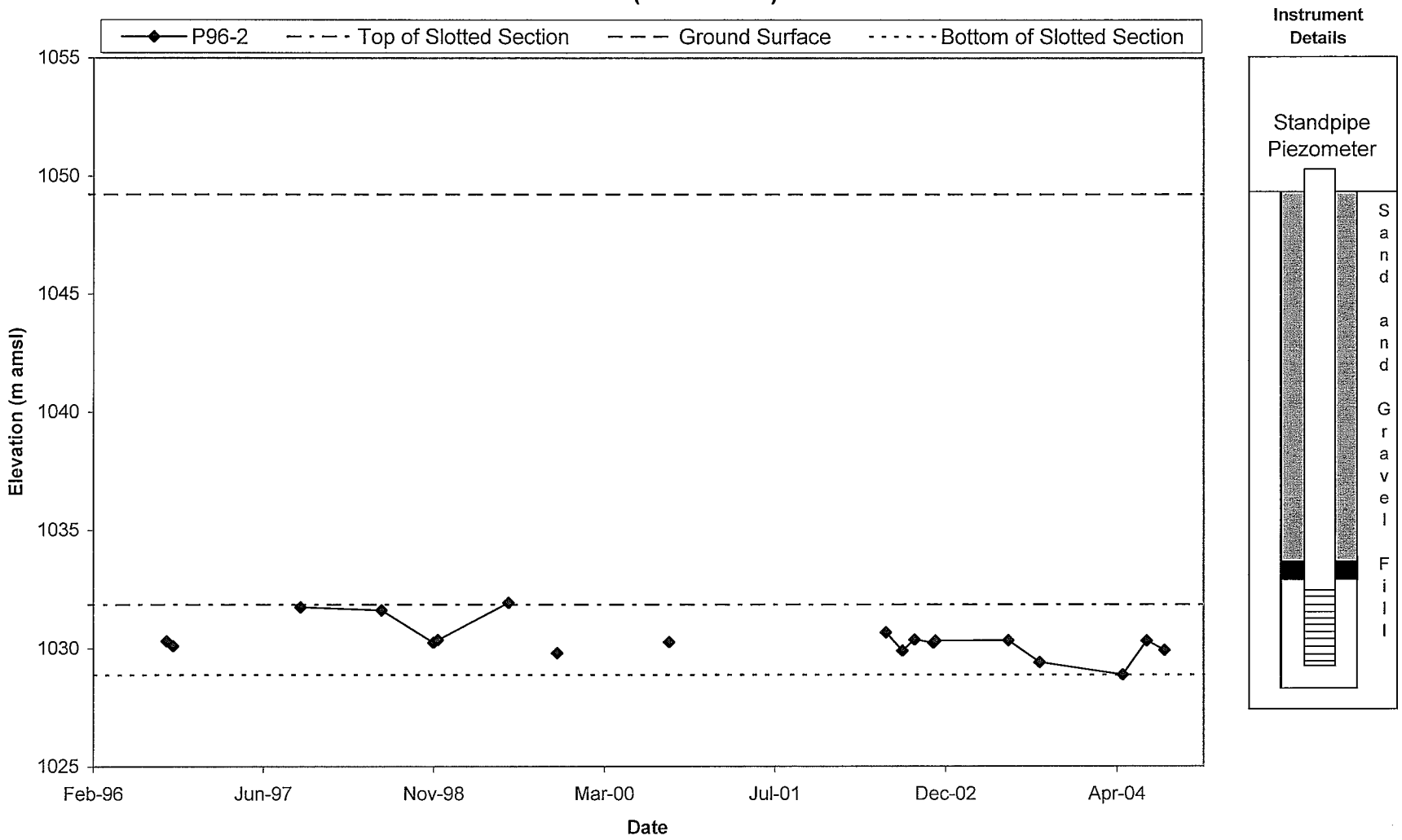


Faro Mine Instrumentation Intermediate Dam

BH96-2		Location:	Intermediate Dam Crest				
				Surface Elevation (m amsl):	1049.3	Coordinates:	8V580696 6914096
		Date Installed:	1996	Surface Elevation (m advpd):	1081.60	2004 Surface Elevation: (m amsl)	1049.22
				Screened Interval (m bgs):	17.13 - 20.12	Surface Protector:	yes
				Tip Elevation (m amsl):	1029.07	Tip Elevation (m amsl):	1028.87
				Stick Up (m):	0.75	2004 Stick Up (m):	0.72

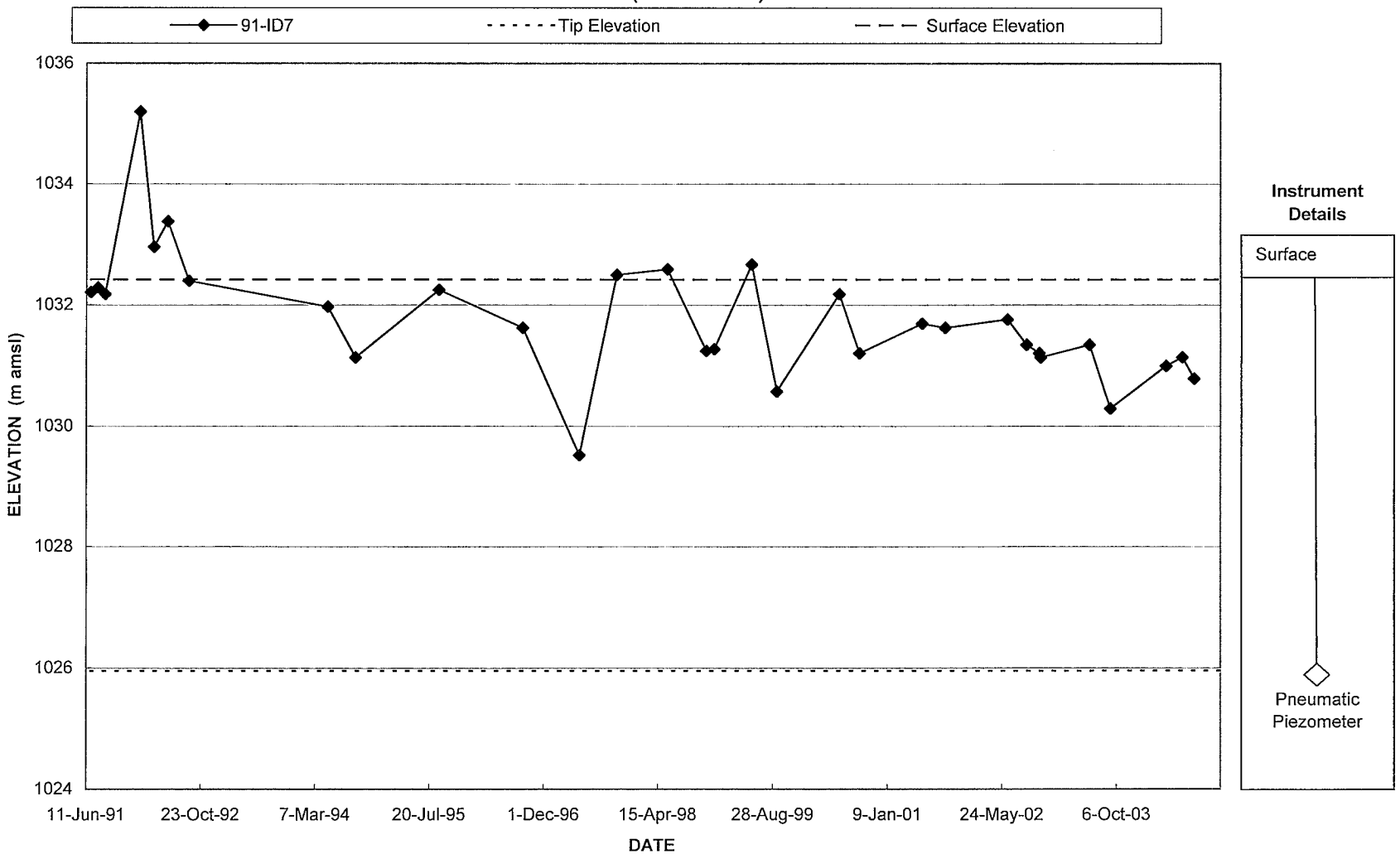
Date		Water level from top of pipe (m)		Piezometric Elevation (m amsl)	Piezometric Elevation (m advpd)	Comments
08-Sep-96		19.74		1030.31	1062.61	
26-Sep-96						
27-Sep-96		19.94		1030.11	1062.41	
13-May-97						
06-Jun-97						
11-Jul-97						
07-Oct-97		18.3		1031.75	1064.05	
01-Jun-98		18.44		1031.61	1063.91	
31-Oct-98		19.8		1030.25	1062.55	
13-Nov-98		19.69		1030.36	1062.66	
08-Jun-99		18.11		1031.94	1064.24	
19-Jun-99						
03-Jul-99						
29-Oct-99		20.25		1029.80	1062.10	
31-Oct-99						
31-May-00						
27-Jun-00						
25-Jul-00						
21-Sep-00		19.78		1030.27	1062.57	
10-Oct-00						
06-Jun-01						
15-Jul-01						
05-Sep-01						
18-Jun-02		19.375		1030.68	1062.98	
05-Aug-02		20.15		1029.90	1062.20	
10-Sep-02		19.68		1030.37	1062.67	
04-Nov-02		19.815		1030.24	1062.54	
10-Nov-02		19.73		1030.32	1062.62	
11-Jun-03		19.71		1030.34	1062.64	
10-Sep-03		20.65		1029.40	1061.70	
10-May-04		21.07		1028.87		Dry reading, 2004 survey data used from here on
19-Jul-04		19.615		1030.33		
09-Sep-04		20.02		1029.92		

Intermediate Dam
Piezometric Monitoring
P96-2 Monitoring Well (Robertson, 1996)
(Dam Crest)



BH91-ID7		Location:	Intermediate Dam Toe @St.0+759				
				Ground Elevation (m advpd):	1065.75	Coordinates:	8V580377 6913751
		Date Installed:	1991	Tip Elevation (m advpd):	1058.25	2004 Ground Elevation (amsl):	1032.42
				Tip Elevation (m amsl):	1025.95	Surface Protector:	yes
Date		Reading (psi)		Piezometric Elevation (m advpd)	Piezometric Elevation (m amsl)	Pond El. (m advpd)	Comments
1-Jul-91		8.94		1064.51	1032.21	~1074.5	
1-Aug-91		9.06		1064.59	1032.29	~1074.5	
1-Sep-91		8.90		1064.48	1032.18	~1074.5	
1-Feb-92		13.21		1067.50	1035.2	1080.0	
1-Apr-92		10.01		1065.26	1032.96	1080.0	
1-Jun-92		10.61		1065.68	1033.38	1080.0	
1-Sep-92		9.21		1064.70	1032.4	1080.0	
1-May-94		8.60		1064.27	1031.97	1080.0	
1-Sep-94		7.40		1063.43	1031.13	1080.0	
1-Sep-95		9.00		1064.55	1032.25	1080.0	
1-Sep-96		8.1		1063.92	1031.62	1080.4	
7-May-97		5.1		1061.82	1029.52		
17-Oct-97		9.36		1064.80	1032.502		
27-May-98		9.49		1064.89	1032.593	1080.4	
12-Nov-98		7.56		1063.54	1031.242	1080.1	
16-Dec-98		7.6		1063.57	1031.27	1080.1	
29-May-99		9.60		1064.97	1032.67	1080.3	
16-Sep-99		6.6		1062.87	1030.57	1080.0	
14-Jun-00		8.9		1064.48	1032.18	1079.9	
9-Sep-00		7.5		1063.50	1031.2		
10-Jun-01		8.20		1063.99	1031.69		
20-Sep-01		8.10		1063.92	1031.62		
18-Jun-02		8.30		1064.06	1031.76		
10-Sep-02		7.70		1063.64	1031.34		
4-Nov-02		7.50		1063.5	1031.2		
10-Nov-02		7.40		1063.43	1031.13		
11-Jun-03		7.70		1063.64	1031.34		*New piezometer started use here
10-Sep-03		6.20		1062.59	1030.29		
10-May-04		7.20			1030.99		2004 survey data used from here on
19-Jul-04		7.40			1031.13		
9-Sep-04		6.90			1030.78		

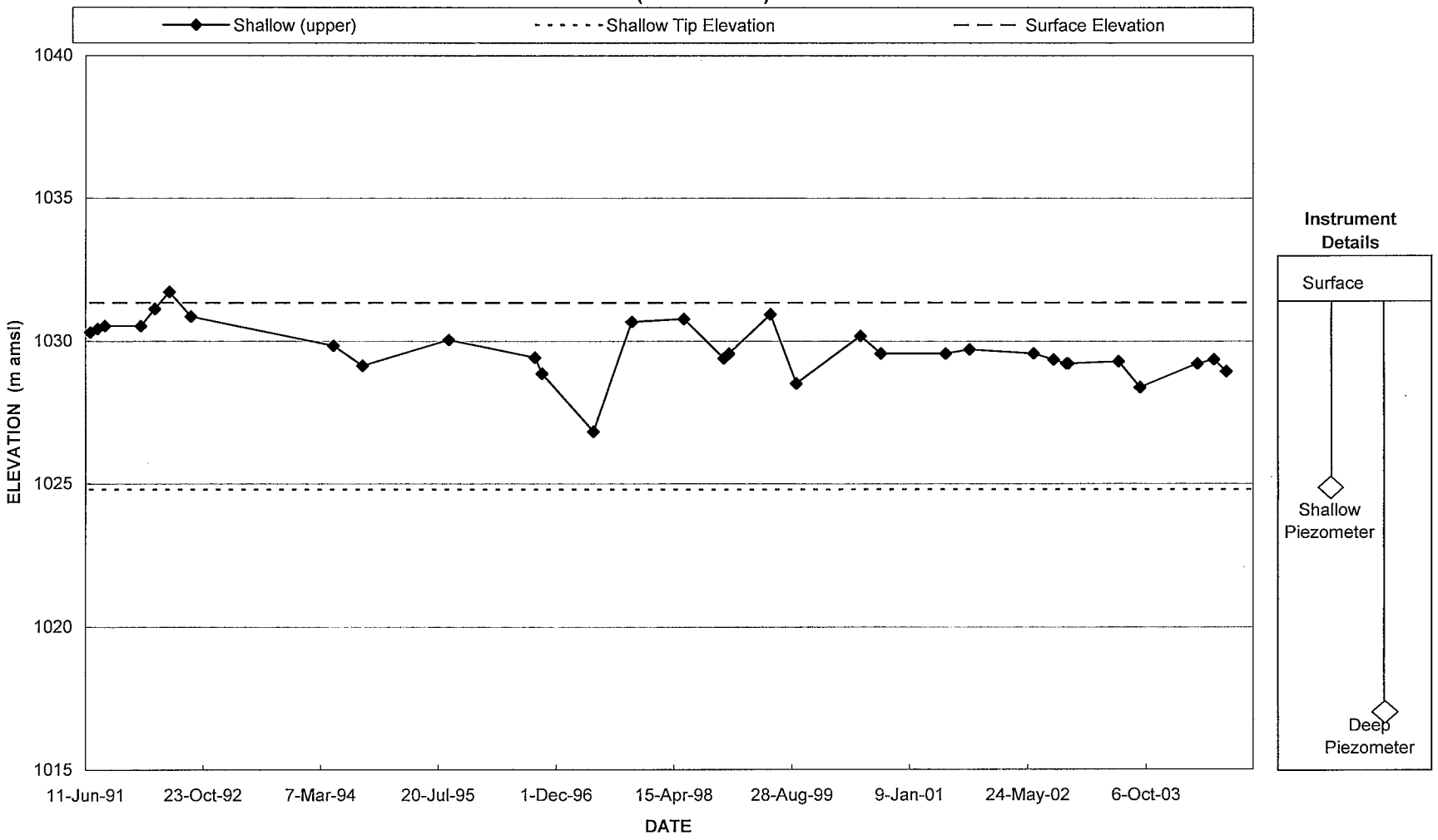
INTERMEDIATE DAM
Piezometric Monitoring
BH91-ID7 Pneumatic Piezometer
(Toe of Dam)



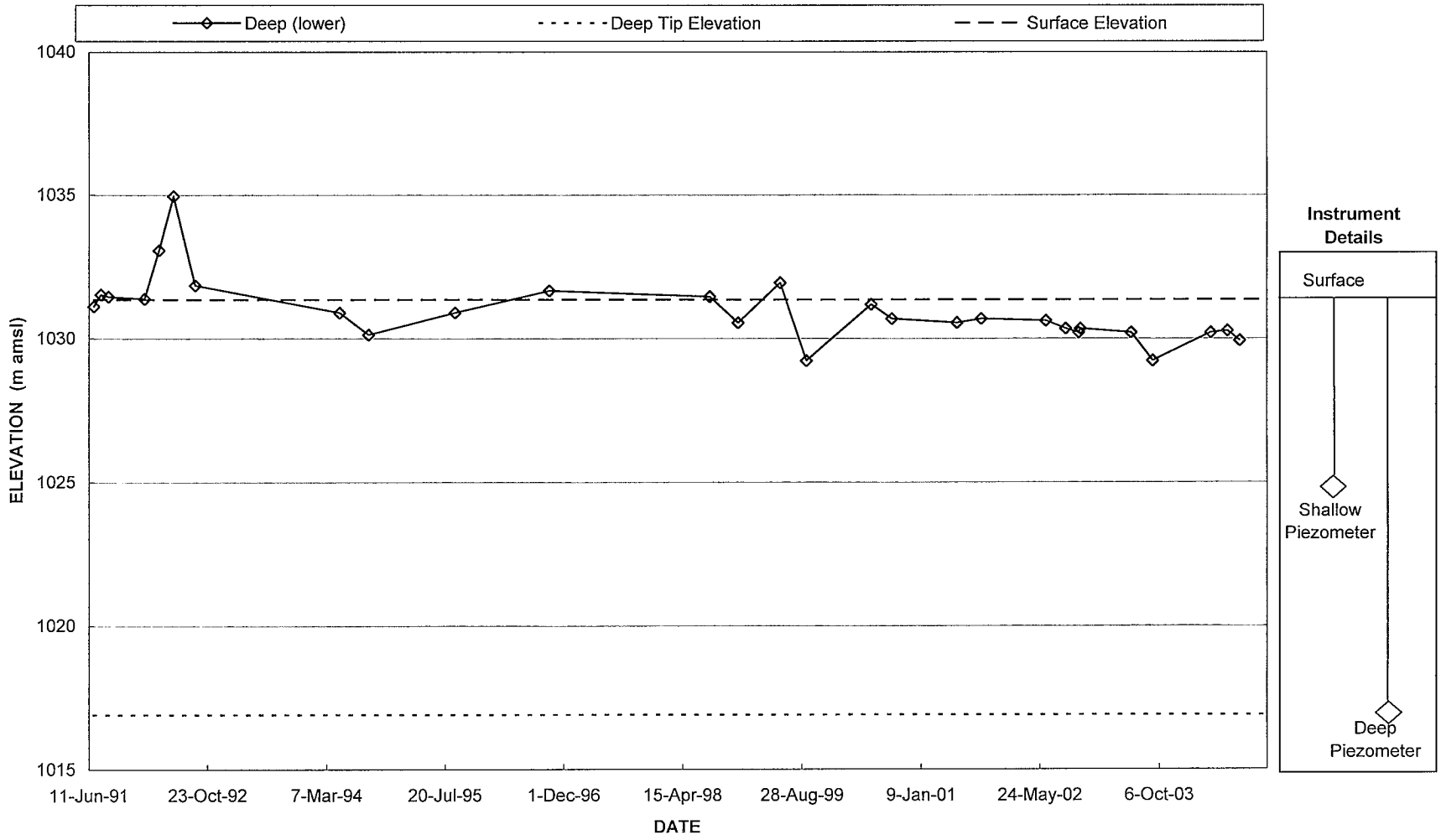
BH91-ID6		Location:	Intermediate Dam Toe @St.0+630						
				Surface Elevation (m advpd):	1064.20	2004 Surface Elevation (m amsl):	1031.36	Coordinates:	8V580475 6913866
		Date Installed:	1991	Shallow Tip Elevation (m advpd):	1057.10	Shallow Tip Elevation (m amsl):	1024.80	Surface Protector:	yes
				Deep Tip Elevation (m advpd):	1049.20	Deep Tip Elevation (m amsl):	1016.90		

		Reading (psi)		Piezometric Elevation (m advpd)		Piezometric Elevation (m amsl)			
Date		Shallow (upper)	Deep (lower)	Shallow (upper)	Deep (lower)	Shallow (upper)	Deep (lower)	Pond El. (m advpd)	Comments
1-Jul-91		7.89	20.33	1062.62	1063.43	1030.32	1031.13	~1074.5	
1-Aug-91		8.06	20.91	1062.74	1063.84	1030.44	1031.54	~1074.5	
1-Sep-91		8.20	20.80	1062.84	1063.76	1030.54	1031.46	~1074.5	
1-Feb-92		8.20	20.70	1062.84	1063.69	1030.54	1031.39	1080.0	
1-Apr-92		9.06	23.10	1063.44	1065.37	1031.14	1033.07	1080.0	
1-Jun-92		9.91	25.80	1064.04	1067.26	1031.74	1034.96	1080.0	
1-Sep-92		8.67	21.36	1063.17	1064.15	1030.87	1031.85	1080.0	
1-May-94		7.20	20.00	1062.14	1063.2	1029.84	1030.9	1080.0	
1-Sep-94		6.20	18.90	1061.44	1062.43	1029.14	1030.13	1080.0	
1-Sep-95		7.50	20.00	1062.35	1063.2	1030.05	1030.9	1080.0	
1-Sep-96		6.6		1061.72		1029.42		1080.4	
1-Oct-96		5.8	21.1	1061.16	1063.97	1028.86	1031.67		
7-May-97		2.9		1059.13		1026.83			
17-Oct-97		8.41		1062.99		1030.687			
27-May-98		8.56		1063.09		1030.792		1080.4	
7-Aug-98			20.8		1063.76		1031.46	1080.4	
12-Nov-98		6.57		1061.70		1029.399		1080.1	
4-Dec-98		6.8	19.5	1061.86	1062.85	1029.56	1030.55	1080.1	
29-May-99		8.78	21.50	1063.25	1064.25	1030.946	1031.95	1080.3	
16-Sep-99		5.3	17.60	1060.81	1061.52	1028.51	1029.22	1080.0	
14-Jun-00		7.7	20.41	1062.49	1063.487	1030.19	1031.187	1079.9	
9-Sep-00		6.8	19.70	1061.86	1062.99	1029.56	1030.69		
10-Jun-01		6.80	19.50	1061.86	1062.85	1029.56	1030.55		
20-Sep-01		7.00	19.70	1062.00	1062.99	1029.7	1030.69		
18-Jun-02		6.80	19.60	1061.86	1062.92	1029.56	1030.62		
10-Sep-02		6.50	19.20	1061.65	1062.64	1029.35	1030.34		
4-Nov-02		6.30	19.00	1061.51	1062.5	1029.21	1030.2		
10-Nov-02		6.30	19.2	1061.51	1062.64	1029.21	1030.34		
11-Jun-03		6.40	19	1061.58	1062.5	1029.28	1030.2		*New piezometer started use here
10-Sep-03		5.10	17.6	1060.67	1061.52	1028.37	1029.22		
10-May-04		6.3	19			1029.21	1030.2		2004 survey data used from this point on
19-Jul-04		6.5	19.1			1029.35	1030.27		
9-Sep-04		5.9	18.6			1028.93	1029.92		

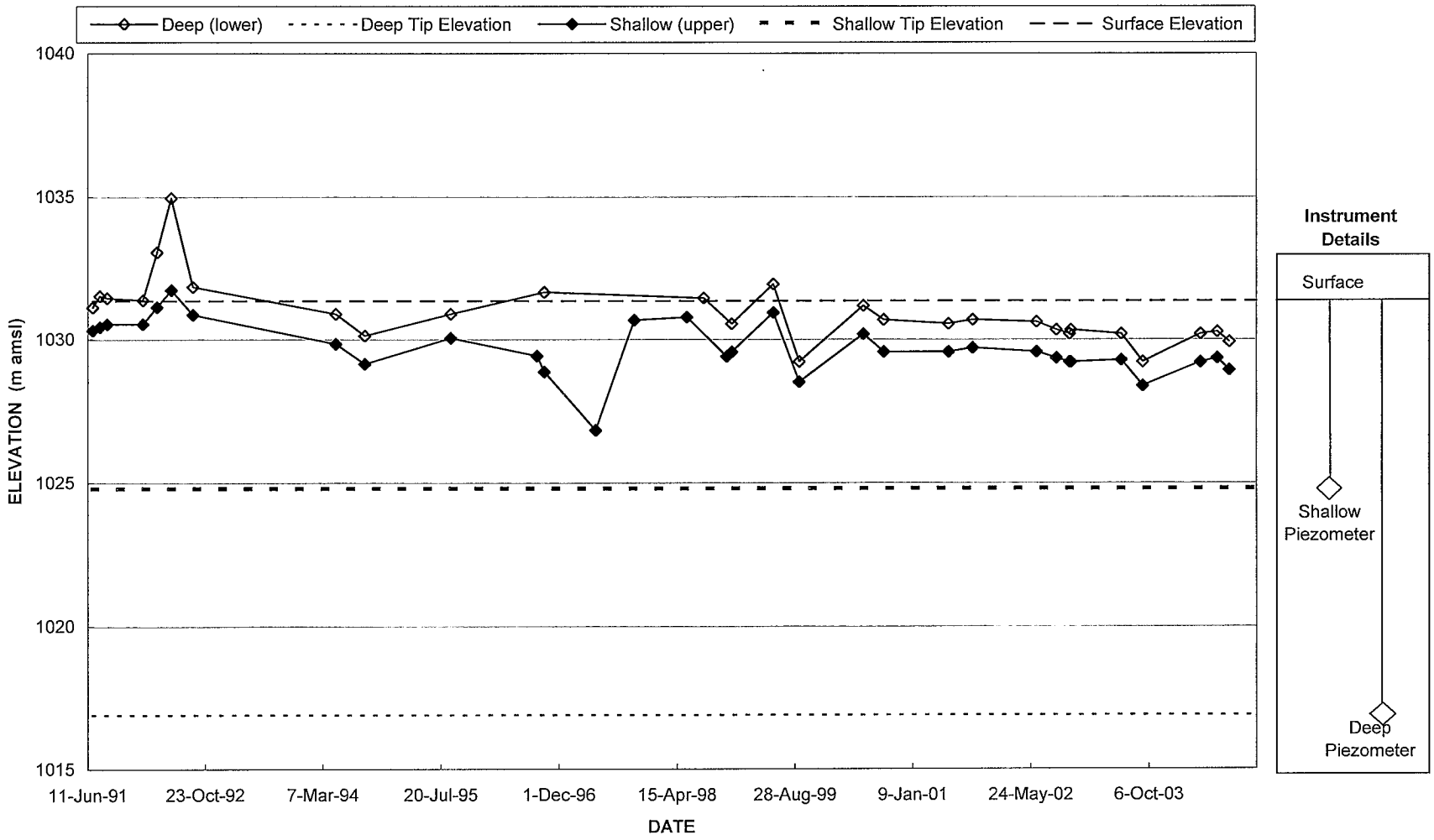
INTERMEDIATE DAM
Piezometric Monitoring
BH91-ID6 Pneumatic Piezometer (Shallow Tip)
(Toe of Dam)



INTERMEDIATE DAM
Piezometric Monitoring
BH91-ID6 Pneumatic Piezometer (Deep Tip)
(Toe of Dam)



INTERMEDIATE DAM
Piezometric Monitoring
BH91-ID6 Pneumatic Piezometer (Both Tips)
(Toe of Dam)



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PROJECT MEMORANDUM

To:	**Deloitte & Touche Inc.**	**Fax No.:**	**(416) 601-6151**
Attention:	**Mr. Doug Sedgwick**	**CC:**	
From:	**Gerry Ferris, Mike McCrank**	**Date:**	**February 22, 2005**
Subject:	**Instrumentation Inspection at Faro Mine on July 12 to 14, 2004 Summary of Observations and Recommendations**		
No. of Pages:	**9 plus appendices**	**Project No:**	**0257-022-02**

BGC Engineering Inc. (BGC) was retained by Deloitte & Touche Inc. (D&T), the Interim Receiver for Anvil Range Mine, to perform a review of instrumentation installed within the Cross Valley Dam, Intermediate Dam and Rose Creek Diversion Canal (Canal Dike crest). The purpose of this review w dition survey, an instrument elevation survey and a the dams. The instrument condition survey and th eview of available relevant documentation to provi strument condition survey, elevation survey and crit

Appendix D

BACKGROUND REVIE

As part of the literatur e instruments, the following sources from the BGC

- Borehole logs.
- Installation repor
- Monitoring docu
- As-built construc

The list of reports used to develop the summary of instruments on site is contained in the reference section of this memorandum. The summary of the instruments that have been installed at the Cross Valley Dam, Intermediate Dam and Rose Creek Diversion Canal is contained in Appendix I.

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SITE INSPECTION

Mr. Jim Cassie, P.Eng. and Mr. Mike McCrank of BGC conducted the site inspection between July 12 and 14, 2004. The site inspection consisted of confirming the existence of the instruments, checking their condition and identifying any condition that would require minor repairs. In addition to this inspection, an elevation survey of the ground surface at the instrument was conducted for the instruments on the Cross Valley and Intermediate Dams. Mr. Gerry Ferris, P.Eng., also conducted a site inspection of the backslope between September 10 and 14, 2004 where the locations of instruments were confirmed. The information acquired during these inspections was used to summarize the current status of the instrumentation for the Down Valley Project area.

ELEVATION AND CONDITION SURVEY RESULTS

As noted previously, a summary of all the instruments on site is contained in Appendix I. A similar table of all the existing and active instruments is contained in Appendix II. The tables contained in Appendix II include the information from the 2004 site inspection. The summary tables in Appendices I and II include the following information, where available:

- Instrument type;
- Date installed;
- Instrument location;
- GPS location (NAD27, unless otherwise noted);
- Ground elevation (above mean sea level, unless otherwise noted);
- Depth of instrument;
- Protective casing stick-up;
- Instrument stick-up;
- Current condition assessment; and
- Additional comments.

RECOMMENDATIONS FROM SITE INSPECTION

Based on observations from the 2004 instrumentation condition survey, the following is a list of recommended repairs for select instruments at the Cross Valley Dam, Intermediate Dam and Canal Dike:

Cross Valley Dam

- CVDP-4 and CVDC6: The exposed tubing should be cut and the tips replaced in these pneumatic piezometers in an attempt to repair.
- CVDC-3, CVDC-5, CVDC-7, CVDC-8, CVDC-10, P01-02, 88-4, and 88-5: The protective casings should be backfilled (with bentonite and sand mixture).
- CVDC-4: The local depression at this instrument should be backfilled with a bentonite/sand & gravel blend.

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- P01-11: The protective casing is frost heaving out of the ground, the casing should be pushed back into the ground and backfilled.
- CVDC-6: The thermistor wires are frayed and should be covered to prevent further damage and possible malfunction.
- CVDP-1, CVDP-2 and CVDP-3: these pneumatic piezometers are exposed and should be protected from the elements.

Intermediate Dam

- P01-03, 91-ID6 and 91-ID5: The protective casings should be backfilled.
- 91-ID7, 91-ID6 and 91-ID5: The protective casing has been damaged and should be repaired, if possible.
- 96-4: The protective casing is frost heaving out of the ground, the casing should be pushed back into the ground, if possible.
- 91-ID6 and 96-4: The protective casings need new caps.
- 91-ID4: The protective barrel containing this instrument was partially buried with sloughing material from the downstream face of the dam, rendering the instrument inaccessible. This material should be removed so the instrument can be accessible for monitoring.

RCDC Dike

- CD-13 (Piezometer), CD-15 (SI), CD-19 (SI), CD-21(SI), CD-27(Pin), BGC01-01(SI): The protective casing has been pushed over and is leaning into the slope inclinometer, the casing should be straightened, if possible.
- CD-10(SI), CD-20(Thermistor), CD-21(SI), CD-27(Pin), BGC01-02(Thermistor): The protective casing should be backfilled.
- 91CD-1(SI), CD-15(Piezometer and Thermistor): Install a protective casing.
- CD-16(Pin), CD-21(Thermistor), CD-27(Thermistor): Soil from the 2004 crest raise covered the protective barrel, needs to be rehabilitated.

Note: The following instruments were destroyed during the 2004 dike crest raise: CD-19 (SI, Thermistor), CD-21 (Piezometer), BH88-7 (SI, Piezometer, Thermistor) and BH88-11 (SI, Piezometer, Thermistor).

RCDC Spoil Piles

- SP5 (SI): The protective casing should be backfilled.
- SP5 (Pin): The hinge on the protective casing is rusted shut and should be replaced.

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RECOMMENDATIONS FROM A REVIEW

Based on the instruments, the following recommendations are made with respect to instruments at the Cross Valley Dam, Intermediate Dam and Canal Dike:

Cross Valley Dam

- The instrumentation within this dam is used to monitor the on-going performance of the dam and the results are used to assess the safety of the dam.
- *Weirs*: Two weirs were replaced in 2003, X-11 and X-13 and the rating curve was modified. A new correlation between staff gauge reading and flow was developed in 2004, based on spot measurements. The relationships for all weirs should be confirmed.
- *Thermistors*: CVDC 6 was installed to measure the thaw of permafrost following construction. The thaw of permafrost is complete and this instrument should be monitored on a two year cycle.
- *Piezometers*: CVDP-2 repairs should be attempted for this piezometer. This repair is not critical since this piezometer is a back up for CVDP-1. The following two piezometers provide redundant data; P01-11 and CVDT 1, but since P01-11 is a groundwater sampling point both piezometers should continue to be read.

Intermediate Dam

- The instrumentation within this dam is used to monitor the on-going performance of the dam and the results are used to assess the safety of the dam.
- *Piezometers*: Piezometers 94-IDC-1, BKS04-06 and BKS04-07 are dry. These instruments are installed into the downstream drainage blanket and should be dry. Piezometers P96-3 and 91ID-4 provide redundant data, only 91ID-4 needs to be read. Instruments 91ID-5 and 91ID-6 provide redundant data, only 91ID-6 needs to be read.
- The redundant instruments should not be abandoned but read on a two year cycle to ensure that they continue to be available as a back-up if the main instrument were to fail.

RCDC

- As indicated in the series of annual reports from 1982 through 2005, the performance of the RCDC has generally been good. The approximately 1 km portion of the canal dike crest raised in 2005 is the only area of ongoing concern. Monitoring of other areas of the RCDC should only be related to confirmation good performance and monitoring for confirmation of safe performance.
- *Backslope*: Instruments were installed to ensure safety during permafrost thaw, which is complete. Erosion and the appearance of tension cracks on the backslope have been monitored visually and are most likely due to localized surface saturation and/or seepage. Instruments are not useful for these types of failure modes. Reading instruments on the backslope should be moved to a two year cycle to confirm the existing conditions.
- *Spoil Pile*: Instruments were installed to monitor the settlement and movement of the spoil placed as part of the construction. Only minor movement of the upper 3 m of the spoil has

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been observed and the majority of the spoil pile has tailings acting as a toe buttress. Readings at SP-3 should be performed every year given the closeness of the pond and the on-going settlement upslope on the Canal Dike. Other instruments should be read on a two year cycle to confirm the existing conditions.

- *Canal Dike*: Instruments were installed to monitor the settlement, melting of permafrost and water tables. The instruments along the 1 km portion of dike crest should be monitored to confirm the performance of this portion of the crest. Monitoring of the piezometers should continue throughout the length of the dike crest to confirm the water levels related to seepage from the canal. Other instruments should be read on a two year cycle to confirm existing conditions.

FUTURE ASSESSMENTS

The 2004 inspection focused on the more critical areas of the Cross Valley Dam, Intermediate Dam and portions of the Canal Dike crest. The following is a list of recommendations for future investigations following on from this assessment:

- Detailed ground elevation surveys of the instruments located on the RCDC Dike, Spoil Piles and Back Slopes are required.
- Detailed instrument reviews are required to identify the working condition of all of the instruments along the RCDC Dike, Spoil Piles and Back Slopes. This requires using mine site monitoring equipment to test each individual instrument.
- In the 2004 Annual Report it was recommended that monitoring of instruments and visual monitoring of the west leg of the Secondary Tailings Dam. The instrument survey and review should be extended to the instruments on this structure.
- Any instruments that can still be located but are listed as 'non-functioning' should be assessed to determine if repairs are possible. Any repairs that may result in returning the instrument to a functioning state should be attempted. If the instrument is beyond repair, then recommendations should be made to properly abandon the instrument.

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CLOSURE

This report summarizes the conditions of the instrumentation as they exist at the Faro Mine. We trust that this report meets your needs at this current time. Should you have any questions or comments concerning the information provided within this report, please contact the undersigned.

The summary tables in this report will be included as an appendix within the 2004 Annual Geotechnical Inspection report.

RESPECTFULLY SUBMITTED,
BGC Engineering Inc.
Per:

Gerry Ferris, M.Sc., P.Eng. (AB)
Geotechnical Engineer

Mike McCrank, E.I.T. (AB)
Geological Engineer-in-Training

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REFERENCES

BGC Engineering Inc. 2002. 2001 Annual Geotechnical Evaluation and Instrument Review, Various Facilities at Faro Mine, Yukon. Two volume report submitted to Deloitte and Touche Inc., Project No 0257-005-04, February 2002.

Golder Associates Ltd. 1990. Down Valley Tailings Project, 1990 Instrumentation Observation Schedule and Repair Note, Faro, Yukon. Report submitted to Curragh Resources Inc., May 1990.

Golder Associates Ltd. 1990. 1990 Performance Monitoring of the Down Valley Tailings Project, Faro Mine. Two volume report submitted to Curragh Resources Inc., April 1991.

Robertson Geoconsultants Inc. 1996. Anvil Range Mining Complex, Integrated Comprehensive Abandonment Plan. Three volume report submitted to Anvil Range Mining Corporation, November 1996.

Klohn Leonoff Consulting Engineers. 1981. Faro Mine Tailings, Abandonment Plan. Report submitted to Cyprus Anvil Mining Corporation, September 1981.

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APPENDIX I
HISTORICAL INSTRUMENTATION INFORMATION

This communication is intended for the use of the above named recipient. Any unauthorized use, copying, review or disclosure of the contents by other than the recipient is prohibited.

Intermediate Dam

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation	Depth(s) of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments:
ID2	Two Standpipe Piezometer	1981	0+250		*1064.1	*3-4.5 (s), 8.5-10 (d)		*0.11 (s) 0.13 (d)	No	Not located in 2004.
ID4	Two Standpipe Piezometer	1981	0+460		*1065.3	*3-4.5 (s), 18.3-19.8 (d)		*0.24 (s) 0.15 (d)	No	Blocked in January 1990. Not located in 2004.
ID6	Two Standpipe Piezometer	1981	0+627						No	Not located in 2004.
ID7	Pneumatic and Thermistor	1981	0+740		*1068.9	(PP) *14.9 (T) *1,2,3,4,5,6,7,8,9,10			No	Thermistor abandoned; PP working in 1990. Not located in 2004.
ID8	Pneumatic Piezometer	1981	0+745		*1069.1	*14.9			No	Malfunctioning in January 1990. Not located in 2004.
ID9	Pneumatic Piezometer	1981	0+750						No	Destroyed in 1989.
IDP1	Pneumatic Piezometer	1981	0+594			*1047.0 m dvd			No	Not located in 2004.
IDP2	Pneumatic Piezometer	1981	0+621						No	Destroyed in May 1981.
IDP3	Pneumatic Piezometer	1981	0+680		*1053.03				No	Not located in 2004.
IDP4	Pneumatic Piezometer	1981	0+680		*1052.46				No	Not located in 2004.
IDP5	Pneumatic Piezometer	1988	0+650		*1064.85				No	Not located in 2004.
IDP6	Pneumatic Piezometer	1981	0+649		*1064.9	*3.9-5.4 (s), 28.7-30.2 (d)		*0.16 (s) 0.07 (d)	No	Not located in 2004.
88-1	Nested Pneumatic Piezometer	1988	North Abutment		*1080.7	*6.0 (s), *15.3 (d)			No	Not located in 2004.
88-2	Nested Pneumatic Piezometer and Thermistor	1988	South Abutment		*1076.8	(PP) *8 (s), *11.5 (d) (T) 1,2,4,6,10,10.9,11.8			No	Not located in 2004. Thermistor not monitored since 1991.
88-3	Nested Pneumatic Piezometer and Thermistor	1988	South Abutment			(PP) *5 (s), *11.5 (d) (T) *.7,1.7,3.7,5.7, 9.7,10.8,11.9			No	Not located in 2004. Piezometer last monitored in 1995. Thermistor not monitored since 1991.
BH91-ID3	Nested Pneumatic Piezometer	1991	South Abutment, 0+810	8V580359 6913723	1043.815	*7 (s), *15.2 (d)	0.49		Yes	Piezometer tips replaced in 2003.
BH91-ID4	Nested Pneumatic Piezometer	1991	Toe	8V580517 6913926		*7.6 (s), *14.7 (d)			Yes	
BH91-ID5	Nested Pneumatic Piezometer	1991	Toe	8V580472 6913862	1031.636	*7.4 (s), *14.6 (d)	0.4		No	Has not worked since May 1999.
BH91-ID6	Nested Pneumatic Piezometer	1991	Toe	8V580475 6913866	1031.364	*7.1 (s), *15 (d)	0.4		Yes	Protective casing damaged/bent.
BH91-ID7	Pneumatic Piezometer	1991	Toe	8V580377 6913751	1032.419	*7.5	0.5		Yes	Protective casing damaged/bent.
BH94-IDC-1	Standpipe Piezometer	1994	Crest	8V580605 6913969	1049.21	14	0.42	0.27	Yes	Dry since installation in 1994.
96-1	Standpipe Piezometer	1996	Crest	8V580563 6913908	1049.147	*Slotted 18.77 - 21.80	0.71	0.68	Yes	
96-2	Standpipe Piezometer	1996	Crest	8V580696 6914096	1049.224	*Slotted 17.13 - 20.12	0.74	0.72	Yes	
96-3 (A)	Standpipe Piezometer	1996	Toe	8V580529 6913934	1031.482	*Slotted 7.44 - 8.97	0.52	0.65	Yes	Labelled as X25A in the field.
96-3 (B)	Standpipe Piezometer	1996	Toe	8V580529 6913934	1031.482	*Slotted 17.7 - 19.17	0.52	0.59	Yes	Labelled as X25B in the field.
96-4 (A)	Standpipe Piezometer	1996	Toe, near N abutment.	8V580529 6913934	1032.156	*Slotted 8.70 - 6.48	0.86	0.95	Yes	Labelled as X24A.
96-4 (B)	Standpipe Piezometer	1996	Toe, near N abutment.	8V580529 6913934	1032.156	*Slotted 9.80 - 11.3	0.86	0.87	Yes	Labelled as X24B.

Intermediate Dam

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation	Depth(s) of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments:
96-4 (C*)	Standpipe Piezometer	1996	Toe, near N abutment.	8V580529 6913934	1032.156	*Slotted 14.97 - 16.47	0.86	0.91	Yes	Labelled as X24C.
96-4 (D)	Standpipe Piezometer	1996	Toe, near N abutment.	8V580669 6914113	1032.122	*Slotted 26.84 - 28.34	0.78	0.88	Yes	Labelled as X24D.
P01-03	Standpipe Piezometer	2001	Toe, near N abutment.	8V580636 6914064	1031.516	*Slotted 7.78 - 9.30	0.71	0.61	Yes	
P01-04 (A)	Standpipe Piezometer	2001	Toe, near S abutment.	8V580489 6913888	1031.319	*Slotted 31.7 - 33.22	0.48	0.45	Yes	
P01-04 (B)	Standpipe Piezometer	2001	Toe, near S abutment.	8V580489 6913888	1031.319	*Slotted 51.0 - 52.5	0.48	0.45	Yes	
Unnamed Survey Pin	Survey Pin		Crest, near S abutment	8V580454 6913790					No	
Unnamed Survey Pin	Survey Pin		Crest, near 94-IDC-1	8V580605 6913953					No	

*DVD *Depth at time of installation, in Down Valley Datum (DVD)

Cross Valley Dam

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation (m)	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
79-20	Thermistor	1979	North Abutment		*1076.8	1,2,3.3,7,12,17,22,29,37			No	Could not be located in 2004.
81-126	Pneumatic Piezometer	1981	South Abutment		*1058.86	*8.8			No	Destroyed in 1998.
81-K1	Nested Pneumatic Piezometer	1981			*1046.6	*6.5 (s), 30.5 (d)		*1.33, 0.64	No	Could not be located in 2004.
81-K2	Nested Pneumatic Piezometer	1981			*1051.27	*6 (s), 24 (d)		*0.48, 1.14	No	Could not be located in 2004.
81-K3	Nested Pneumatic Piezometer	1981			*1052.74	*11 (s), 22 (d)		*0.45, 0.48	No	Could not be located in 2004.
81-K4	Nested Pneumatic Piezometer	1981			*1060.68	*12 (s), 27 (d)		*0.98,1.12	No	Blocked in January 1990. Could not be located in 2004.
81-K5	Pneumatic Piezometer	1981				*22			No	Blocked in January 1990. Could not be located in 2004.
CVDC 1	Pneumatic Piezometer and Thermistor		0+050		*1064.8	(PP) *15.2 (Therm) *1,3,5,7,9,11,13,15			No	Last monitored in 1990. Could not be located in 2004.
CVDC 2	Pneumatic Piezometer		0+150		*1062.3	*14.3			No	Destroyed in 1988
CVDC 3	Vertical Settlement and Horizontal Settlement		0+204	8V580269 6914336	1033.256		0.35		No	Labelled as UU502
CVDC 4	Two Standpipe Piezometers	1982	0+2152	8V580266 6914331	1033.302	7.63(s), 33.6(d) (top of pipe)	none	0.11, 0.30	Yes	Shallow piezometer no longer functioning due to blockage
CVDC 5	Vertical Settlement and Horizontal Settlement		0+338	8V580211 6914215	1033.358		0.29		No	Labelled as UU415
CVDC 6	Pneumatic Piezometer and Thermistor	1981	0+340	8V580210 6914218	1033.303	*Thermistor nodes: 15,17,19,21, 23,25,27,29	0.2		Yes	Piezometer Detroyed in 1982; Thermistor still functioning
CVDC 7	Two Standpipe Piezometers	1982	0+450	8V580158 6914127	1033.239	26.6(s), 31.05(d) (top of pipe)	0.06	0.31, 0.23	Yes	
CVDC 8	Vertical Settlement and Horizontal Settlement		0+460	8V580155 6914108	1033.217		0.3		No	Labelled as UU416
CVDC 9	Two Standpipe Piezometers	1982	0+565	8V580096 6913998	1033.283	25.45(s), 32.23(d) (top of pipe)	0.29	0.27, 0.19	Yes	
CVDC 10	Vertical Settlement and Horizontal Settlement		0+568	8V580107 6914013	1033.286		0.32		No	Labelled as UU417
CVDC 11	Pneumatic Piezometer and Thermistor		0+645	8V580071 6913940	*1065.7	*14.9			No	Destroyed in June 2003
CVDB	Pneumatic Piezometer and Thermistor		0+370						No	Destroyed
CVDB	Pneumatic Piezometer		0+370						No	Destroyed
CVDT 1	Standpipe Piezometer		0+210	8V580219 6914353	1018.305	10.6 (top of pipe)		0.27	Yes	
CVDT 2	Standpipe Piezometer		0+450		*1051.8	*11.7-13.3	0.21		Yes	
CVDT 3	Standpipe Piezometer		0+570		*1053.1	*11.6-13.1	0.24		No	Destroyed in 1987
CVDT 4	Thermistor		0+630		*1058.9	*1.4,3.4,5.4,7.4,9.4, 11.4,13.4,15.4			No	Destroyed in 1996
CVDP 1	Pneumatic Piezometer	1982	0+450	8V580128 6914135	1016.858	*1046.81 m dvd	none	0	Yes	
CVDP 2	Pneumatic Piezometer	1982	0+450	8V580128 6914135	1016.858	*1046.84 m dvd	none	0	Yes	
CVDP 3	Pneumatic Piezometer	1982	0+450	8V580128 6914135	1016.858	*1047 m dvd	none	0	Yes	
CVDP 4	Pneumatic Piezometer		0+210	8V580239 6914346	1019.18	*1046.76 m dvd	box	0	No	Malfunctioning in January 1990

Cross Valley Dam

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation (m)	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
CVDP 5	Pneumatic Piezometer		0+210	8V580239 6914346	1019.18	*1046.58 m dvd	box	0	Yes	
CVDP 6	Pneumatic Piezometer	1982	0+210	8V580239 6914346	1019.18	*1046.7 m dvd	box	0	Yes	
CVDP 7	Pneumatic Piezometer		0+570			*1047.53 m dvd			No	Not located in 2004.
CVDP 8	Pneumatic Piezometer		0+570			*1047.93 m dvd			No	Not located in 2004.
CVDP 9	Pneumatic Piezometer		0+570			*1048.18 m dvd			No	Not located in 2004.
CVDP 10	Pneumatic Piezometer		0+570			*1049.1 m dvd			No	Not located in 2004.
88-4	Thermistor	1988	crest	8V580127 6914054	1033.391	*Therm nodes: 0.6, 1.4, 2, 2.5, 3.3, 4.2	0.31		Yes	
88-5	Thermistor	1988	crest	8V580231 6914259	1033.414	*Therm nodes: 1, 1.7, 2.3, 2.8, 3.6, 4.5	0.24		No	Last monitored in 1999.
94CVDC-1	Standpipe Piezometer	1994	crest	8V580263 6914326	1033.383	13.64 (top of pipe)	0.62	0.64	Yes	
P01-11	Standpipe Piezometer	2001		8V580636 6914064	1017.213	Slotted *9.15 - *10.67 (bgl)	0.72	0.66	Yes	
CVD3-1			crest	8V580273 6914338	1033.205				No	Not labelled. No historical information on this instument
CVDS-6?	Incremental Settlement Plate		crest	8V580113 6914014	1033.213	7.8, 3.52		-0.03, 0.77	No	Not labelled, appeared to be nested standpipe. No historical information on this instrument
CVDS-3	Incremental Settlement Plate		crest	8V580160 6914111	1033.223		0.3		No	No historical information on this instument
P01-02	Standpipe		Toe	8V580080 6914041	1018.904	*Slotted 12.4 - 13.9; 26.2 - 27.7	0.75	1.69, 0.70	Yes	artesian conditions in 2004
Weir X12				8V580099 6914099	1015.595				Yes	top of weir
weir X3				8V580130 6914199	1013.936				Yes	bottom of v-notch
Weir X11				8V580184 6914287	1015.496				Yes	bottom of v-notch

*DVD *Depth at time of installation, in Down Valley Datum (DVD)

Diversion Canal Dike

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments:
CD 1	Nested Pneumatic Piezometer	1981	0+020						No	Destroyed
CD 2	Vertical Settlement	1981	0+150						No	Destroyed
CD 3	Vertical Settlement	1981	0+300						No	Destroyed
CD 4	Increment Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	0+400	8V582274 6912801	*1089.7	*Thermistor nodes: 0.8, 1.8, 2.8, 3.8, 4.8, 5.8, 6.8, 7.8, 8.8, 9.8	0.28 (thermistor and piezo) 0.44 (settlement tubing) 0.4 (survey pin)		No	Piezometer tip labelled '365'. Survey pin labelled UU550.
CD 5	Vertical Settlement, Thermistor	1981	0+510	8V582171 6912839	*1089.8	*Thermistor nodes: 1.1, 2.1, 3.1, 4.1, 5.1, 6.1, 7.1, 8.1, 9.1	0.32 (thermistor) 0.26 (survey pin)		No	Last monitored in 2000.
CD 6	Vertical Settlement	1981	0+610	8V582093 6912877			0.31		No	
CD 7	Vertical Settlement, Pneumatic Piezometer	1981	0+710	8V582003 6912921		*7.6	0.37 (survey pin)		No	Piezometer Destroyed
CD 8	Vertical Settlement	1981	0+840	8V581886 6912993			0.32		No	
CD 9	Vertical Settlement, Pneumatic Piezometer	1981	0+960	8V581769 6913038		*5.0	0.35 (piezo)		No	Piezometer tip labelled '346'. Last monitored in 1999.
CD 10	Slope Inclinometer, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	0+990	8V581739 6913053	*1088.3	*Thermistor Nodes: 0.9, 1.9, 2.9, 3.9, 4.9, 5.9, 6.9, 7.9, 8.9, 9.9 *SI: 10	0.41 (thermistor and piezo) 0.38 (SI) 0.40 (survey pin)	0.38 (SI)	Yes	Piezometer tip labelled '367'. Survey pin labelled UU153.
CD 11	Vertical Settlement	1981	1+110	8V581642 6913110			0.39		No	
CD 12	Vertical Settlement	1981	1+230	8V581521 6913164			0.33		No	
CD 13	Vertical Settlement, Horizontal Settlement, Nested Pneumatic Piezometer	1981	1+350	8V581400 6913185		*PP - 6.6 (s), 10.6(d)	0.54 (piezo) 0.32 (survey pin)		Yes	Piezometer tips labelled '350' and '381'.
CD 14	Vertical Settlement	1981	1+440	8V581325 6913237			0.37		No	
CD 15	Slope Inclinometer, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	1+530	8V581245 6913275	*1087	*SI 9.5 *Thermistor Nodes; 1.1, 2.1, 3.1, 4.1, 5.1, 6.1, 7.1, 8.1, 9.1, 10.1 *PP - 6.6 (s), 11.4(d)	0.35 (SI) 0.34 (survey pin) none (thermistor) none (piezo)	0.15 (SI)	Yes	Survey pin labelled UU156. Leads on piezmeters labelled '349' and '356'.
CD 16	Vertical Settlement	1981	1+610	8V581169 6913301					No	
CD 17	Vertical Settlement, Thermistor	1981	1+705	8V581075 6913323	*1086.9	*Thermistor Nodes: 0.9, 1.9, 2.9, 3.9, 4.9, 5.9, 6.9, 7.9, 8.9, 9.9	0.18 (thermistor) 0.25 (survey pin)		No	Last monitored in 1999
CD 18	Vertical Settlement	1981	1+800	8V580995 6913342			0.09		No	

Diversion Canal Dike

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments:
CD 19	Slope Inclinometer, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	1+900	8V580907 6913396	*1086.3	*SI - 10 *Thermistor Nodes: 0.0, 0.8, 1.8, 2.8, 3.8, 4.8, 5.8, 6.8, 7.8, 8.8 *PP - 5.3 (s), 9 (d)	0.17 (SI)	0.12 (SI)	Yes (SI only)	Slope Inclinometer is the only instrument located in 2004.
CD 20	Vertical Settlement, Thermistor	1981	2+000	8V580811 6913445	*1086.5	*Thermistor Nodes: 0.5, 1.5, 2.5, 3.5, 4.5, 5.5, 6.5, 7.5, 8.5, 9.5	0.14 (thermistor) 0.18 (survey pin)		No	Last monitored in 1999.
CD 21	Slope Inclinometer, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	2+100	8V580724 6913495	*1085.9	*SI - 10; *Thermistor Nodes: 3.0, 5.0, 8.0, 11.0, 13.0; *PP - 6.1(s), 11.6(d)	0.11 (SI) 0.12 (piezo)	0.30 (SI)	Yes	Setlement instrumentation not located in 2004
81-125	Thermistor	1981	2+100			*0,1,2,3,4,5,6, 6.9,7.8,8.8			No	Destroyed in 1996.
CD 22	Vertical Settlement, Horizontal Settlement	1981	2+200						No	Could not be found in 2004.
CD 23	Vertical Settlement	1981	2+260						No	Could not be found in 2004.
CD 24	Vertical Settlement, Horizontal Settlement, Thermistor	1981	2+365	8V580495 6913607	*1085.8	*Thermistor Nodes: 0.7, 1.7, 2.7, 3.7, 4.7,	0.23 (thermistor)		No	Survey pin labelled UU411. Last monitored in 1999.
CD 25	Vertical Settlement, Thermistor	1981	2+460	8V580413 6913647	*1085.5	*Thermistor Nodes: 0.5, 1.5, 2.5, 3.5, 4.5, 5.5, 6.5, 7.5, 8.5, 9.5	0.30 (thermistor)		No	Last monitored in 1999.
CD 26	Vertical Settlement, Thermistor, Nested Pneumatic Piezometer	1981	2+600	8V580284 6913710	*1085.5	*Thermistor Nodes: 0.6, 1.6, 2.6, 3.6, 4.6, 5.6, 6.6, 7.6, 8.6, 9.6 *PP - 5 (s), 11.2 (d)	0.27 (piezo+therm)		Yes	Piezometer leads are labelled as '349' and '356'.
CD 27	Increment Settlement, Vertical Settlement, Thermistor	1981	2+765	8V580144 6913782	*1085.1	0.3, 1.3, 2.3, 3.3, 4.3, 5.3, 6.3, 7.3, 8.3, 9.3	0.17 (thermistor)		No	Last monitored in 1999.
CD 28	Slope Inclinometer, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	2+900		*1080.3	*6.1			No	Destroyed October 1988
81-89	Thermistor	1981	2+900						No	Could not be located in 2004.
CD 29	Slope Inclinometer, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	3+000		*1075	*5.2			No	Could not be found in 2004
CD 30	Vertical Settlement, Thermistor	1981	3+130		*1068.6	*1,2,3,4,5,6,7,8,9,10			No	Could not be found in 2004

Diversion Canal Dike

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments:
CD 31	Vertical Settlement, Horizontal Settlement	1981	3+360	8V579802 6914151			0.26		No	Labelled as UU497
CD 32	Vertical Settlement, Horizontal Settlement	1981	3+550	8V579700 6914341			0.47		No	Labelled as UU500
81-K1		1981							No	Could not be located in 2004.

*DVD *Depth at time of Installation, in Down Valley Datum (DVD)

Faro Mine
Historical Instrumentation Information

Diversion Canal Stabilization Area

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation	Depth of Inst. Bgl	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
88-6	Slope Indicator	1988	2+115	8V580713 6913506	*1086.3	*14	0.16	0.7	No	Destroyed
88-7	Thermistor, Nested Pneumatic Piezometer	1988	2+115		*1086.3	*Thermistor Nodes: 1.0, 2.0, 3.0, 4.0, 6.0, 8.0, 10.0, 13.0, 14.9 *PP - 1078.6 (s), 1071.4 (d)			Yes	Thermistor and PP were monitored in 2003
88-8	Slope Indicator	1988	2+120		*1077	*7				Working in January 1990
88-9	Thermistor, Pneumatic Piezometer	1988	2+120		*1077	*6.8				Working in January 1990
88-10	Slope Indicator	1988	2+160		*1086.2	*14				Replace by BGC01-02
88-11	Thermistor, Nested Pneumatic Piezometer	1988	2+160		*1086.2	Thermistor Nodes 1.0, 2.0, 3.0, 4.0, 6.0, 8.0, 10.0, 13.0, 13.9 *PP - 1078.6 (s) 1072.3 (d)			Yes	Thermistor and PP were monitored in 2003
88-12	Slope Indicator	1988	2+160		*1077.8	*8				Damaged in September 1989
88-13	Thermistor, Pneumatic Piezometer	1988	2+160		*1077.8	*7.62				Working in January 1990
91-CD-1	Slope Indicator	1991	1+767	8V581023 6913342		*11	0.56	0.56	Yes	
94-CD-1	Slope Indicator	1994	2+325	8V580540 6913572		*13.5	0.56	0.58	Yes	
BGC01-01	Slope Indicator	2001	2+160	8V580670 6913516		*14	0.5	0.52	Yes	Replaced 88-10
BGC01-02	Thermistor	2001	2+160	8V580665 6913524		*Thermistor Nodes: 1, 2, 3, 4, 6, 8, 10, 13, 13.9	0.7		Yes	Replaced 88-10,11

* DVD *Depth at time of installation, in Down Valley Datum (DVD)

Diversion Canal Backslope

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation	Depth of Inst. Bgl	Protective Casing Stick-Up	Borehole Log Yes/No	Instrument Stick-Up	Active Yes/No	Comments
BS 1	Vertical Settlement	1981	0+150								Working in January 1990
BS 2	Slope Indicator, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	0+400	582249 6912765	*1094.3	(PP) *8.5 (SI) *7 (T) *.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5					Working in January 1990
BS 3	Vertical Settlement	1981	0+610								Working in January 1990
BS 4	Thermistor, Pneumatic Piezometer	1981	0+710		*1096.7	(PP) *11 (T) *.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5					Working in January 1990
BS 5	Slope Indicator, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	0+960		*1092.5	(PP) *7.2 (SI) *10.5 (T) *.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5				Yes (SI, therm, piezo))	Working in January 1990
BS 6	Vertical Settlement	1981	1+110								Working in January 1990
BS 7	Vertical Settlement	1981	1+200								Working in January 1990
BS 8	Vertical Settlement	1981	1+300								Working in January 1990
BS 9	Slope Indicator, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	1+530	581235 6913246	*1088.3	(PP) *11 (SI) * 10 (T) *.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5				Yes (SI, therm, piezo))	Working in January 1990
BS 10	Slope Indicator, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	1+900	580873 6913352	*1098.2	(PP) *11 (SI) * 10 (T) *.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5				Yes (SI, therm)	SI Blocked, Piezo damage, others working
BS 11	Slope Indicator, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	2+100	580695 6913452	*1095	(PP) *11 (SI) * 9.5 (T) *.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5					SI Blocked, others working
BS 12	Vertical Settlement, Thermisto	1981	2+260	580552 6913505	*1094.6	*.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5				Yes (therm)	Working in January 1990
BS 13	Vertical Settlement	1981	2+460								Working in January 1990
BS 14	Vertical Settlement	1981	2+560								Working in January 1990
BS 15	Vertical Settlement, Thermisto	1981	2+760	580114 6913751	*1090.5	*.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5					Working in January 1990
BS 16	Slope Indicator, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	2+900	580005 6913851	*1087.1	(PP) *14.2 (T) *.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5					Slope Indicator broken, others working

Diversion Canal Backslope

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation	Depth of Inst. Bgl	Protective Casing Stick-Up	Borehole Log Yes/No	Instrument Stick-Up	Active Yes/No	Comments
BS 17	Slope Indicator, Incremental Settlement, Vertial Settlement, Horizontal Settlement, Thermistor	1981	2+900	579991 6913830	*1092.4	*.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5					SI Blocked, others working
BS 18	Slope Indicator, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer, Standpipe Piezometer	1981	3+000		(PP) *1083.2 (SP) *1083	(PP) *11 (SP) *6.6-8.1 (SI) *10 (T) *.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5				Yes (SI)	Working in January 1990
BS 19	Vertical Settlement	1981	3+130								Working in January 1990
BS 20	Vertical Settlement, Horizontal Settlement	1981	3+300								Working in January 1990
BS 21	Vertical Settlement, Horizontal Settlement	1981	3+550								Working in January 1990
81-K5	Standpipe Piezometer	1981	3+535		*1060.68	*22					
79-23	Pneumatic Piezometer	1979	3+120		*1083.2	*12					Working in January 1990

* DVD *Depth at time of Installation, in Down Valley Datum (DVD)

Diversion Canal Spoil Piles										
Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
SP 1	Vertical Settlement, Horizontal Settlement		0+990							Working in January 1990
SP 2	Slope Indicator, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor	1981	1+530		*1093.1	(SI) * 10 (T) *.3,1.3,2.3,3.3, 4.3,5.3,6.3,7.3,8.3, 9.3			Yes	Only SI monitored in 2003
SP 3	Slope Indicator, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor		1+900		*1083.5	(SI) * 10 (T) 1.1,2.1,3.1,4.1, 5.1,6.1,7.1,8.1,9.1, 10.1				SI blocked, others working
SP 4	Vertical Settlement, Horizontal Settlement		2+040							Working in January 1990
SP5	Slope Indicator, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor	1981	2+950	8V580030 6913932 (SI) to 8V580023 6913930 (therm)	*1079.2	*SI: 10 *Thermistor Nodes: 1.1, 2.1, 3.1, 4.1, 5.1, 6.1, 7.1, 8.1, 9.1, 10.1	0.43 (SI) 0.44 (survey pin) 0.36 (thermistor)	1.21 (SI)	Yes	

*DVD *Depth at time of Installation, in Down Valley Datum (DVD)

Faro Mine
Historical Instrumentation Information

1974 Dam

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
P81-01	Standpipe Piezometer	1981	crest	8V582046 6913462		10.05, 6.08	0.53	0.63	No	
P81-02	Standpipe Piezometer	1981	crest	8V582051 6913270		5.73, 5.38	0.7	0.83, 0.84		Buried
P81-03	Piezometer ?	1981								Buried
P81-04	Standpipe Piezometer	1981	crest	8V582085 6913176	*1093	4.98	0.77	0.90, 0.92	Yes	One of the standpipes is used for environmental monitoring
P81-05	Standpipe Piezometer	1981	crest	8V582215 6913008	*1093	13.08	0.94	0.18	No	
P81-06	Piezometer ?	1981			*1093	*5.9		0.92		Buried
P81-07	Piezometer ?	1981			*1094.8	*6.1		0.88		Buried
P81-08	Piezometer ?	1981			*1095.7	*7.6		0.72		Buried
P81-09	Piezometer ?	1981			*1094.8	*11.8		0.87		Buried
81-K6		1981								Buried
81-K7		1981								Buried
P03-04	Standpipe Piezometer		crest	8V582082 6913176			0.52	0.74	Yes	Multiple nested piezometer (10x0.5"), used for environmental monitoring

*DVD *Depth at time of Installation, in Down Valley Datum (DVD)

APPENDIX II
ACTIVE INSTRUMENTATION INFORMATION

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Intermediate Dam

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	2004 Ground Elevation (m amsl)	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
BH91-ID3	Nested Pneumatic Piezometer	1991	South Abutment 0+810	8V580359 6913723	1043.815	*7 (s), *15.2 (d)	0.49		Yes	Piezometer tips replaced in 2003.
BH91-ID4	Nested Pneumatic Piezometer	1991	Toe	8V580517 6913926		*7.6 (s), *14.7 (d)			Yes	
BH91-ID5	Nested Pneumatic Piezometer	1991	Toe	8V580472 6913862	1031.636	*7.4 (s), *14.6 (d)	0.4		No	Has not worked since May 1999.
BH91-ID6	Nested Pneumatic Piezometer	1991	Toe	8V580475 6913866	1031.364	*7.1 (s), *15 (d)	0.4		Yes	Protective casing damaged/bent.
BH91-ID7	Pneumatic Piezometer	1991	Toe	8V580377 6913751	1032.419	*7.5	0.5		Yes	Protective casing damaged/bent.
BH94-IDC-1	Standpipe Piezometer	1994	Crest	8V580605 6913969	1049.21	14	0.42	0.27	Yes	Dry since installation in 1994.
96-1	Standpipe Piezometer	1996	Crest	8V580563 6913908	1049.147	*Slotted 18.77 - 21.80	0.71	0.68	Yes	
96-2	Standpipe Piezometer	1996	Crest	8V580696 6914096	1049.224	*Slotted 17.13 - 20.12	0.74	0.72	Yes	
96-3 (A)	Standpipe Piezometer	1996	Toe	8V580529 6913934	1031.482	*Slotted 7.44 - 8.97	0.52	0.65	Yes	Labelled as X25A in the field.
96-3 (B)	Standpipe Piezometer	1996	Toe	8V580529 6913934	1031.482	*Slotted 17.7 - 19.17	0.52	0.59	Yes	Labelled as X25B in the field.
96-4 (A)	Standpipe Piezometer	1996	Toe, near N abutment.	8V580669 6914113	1032.156	*Slotted 8.70 - 6.48	0.86	0.95	Yes	Labelled as X24A.
96-4 (B)	Standpipe Piezometer	1996	Toe, near N abutment.	8V580669 6914113	1032.156	*Slotted 9.80 - 11.3	0.86	0.87	Yes	Labelled as X24B.
96-4 (C*)	Standpipe Piezometer	1996	Toe, near N abutment.	8V580669 6914113	1032.156	*Slotted 14.97 - 16.47	0.86	0.91	Yes	Labelled as X24C.
96-4 (D)	Standpipe Piezometer	1996	Toe, near N abutment.	8V580669 6914113	1032.122	*Slotted 26.84 - 28.34	0.78	0.88	Yes	Labelled as X24D.
P01-03	Standpipe Piezometer	2001	Toe, near N abutment.	8V580636 6914064	1031.516	*Slotted 7.78 - 9.30	0.71	0.61	Yes	
P01-04 (A)	Standpipe Piezometer	2001	Toe, near S abutment.	8V580489 6913888	1031.319	*Slotted 31.7 - 33.22	0.48	0.45	Yes	
P01-04 (B)	Standpipe Piezometer	2001	Toe, near S abutment.	8V580489 6913888	1031.319	*Slotted 51.0 - 52.5	0.48	0.45	Yes	
Unnamed Survey Pin	Survey Pin		Crest, near S abutment	8V580454 6913790					No	
Unnamed Survey Pin	Survey Pin		Crest, near 94-IDC-1	8V580605 6913953					No	

*Depth at time of Installation, in Down Valley Datum (DVD)

Cross-Valley Dam

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	2004 Ground Elevation (m amsl)	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
CVDC 3	Vertical Settlement and Horizontal Settlement		0+204	8V580269 6914336	1033.256		0.35		No	Labelled as UU502
CVDC 4	Two Standpipe Piezometers	1981	0+215	8V580266 6914331	1033.302	7.63(s), 33.6(d) (top of pipe)	none	0.11, 0.30	Yes	Shallow piezometer no longer functioning due to blockage
CVDC 5	Vertical Settlement and Horizontal Settlement		0+338	8V580211 6914215	1033.358		0.29		No	Labelled as UU415
CVDC 6	Pneumatic Piezometer and Thermistor	1981	0+340	8V580210 6914218	1033.303	*Thermistor nodes: 15,17,19,21, 23,25,27,29	0.2		Yes	Piezometer Detroyed in 1982; Thermistor still functioning
CVDC 7	Two Standpipe Piezometers	1981	0+450	8V580158 6914127	1033.239	26.6(s), 31.05(d) (top of pipe)	0.06	0.31, 0.23	Yes	
CVDC 8	Vertical Settlement and Horizontal Settlement		0+460	8V580155 6914108	1033.217		0.3		No	Labelled as UU416
CVDC 9	Two Standpipe Piezometers	1981	0+565	8V580096 6913998	1033.283	25.45(s), 32.23(d) (top of pipe)	0.29	0.27, 0.19	Yes	
CVDC 10	Vertical Settlement and Horizontal Settlement		0+568	8V580107 6914013	1033.286		0.32		No	Labelled as UU417
CVDT 1	Standpipe Piezometer		0+210	8V580219 6914353	1018.305	10.6 (top of pipe)		0.27	Yes	
CVDP 1	Pneumatic Piezometer	1982	0+450	8V580128 6914135	1016.858	*1046.81 dvd m	none	0	Yes	
CVDP 2	Pneumatic Piezometer	1982	0+450	8V580128 6914135	1016.858	*1046.84 dvd m	none	0	Yes	
CVDP 3	Pneumatic Piezometer	1982	0+450	8V580128 6914135	1016.858	*1047 dvd m	none	0	Yes	
CVDP 4	Pneumatic Piezometer		0+210	8V580239 6914346	1019.18		box	0	No	Malfunctioning in January 1990
CVDP 5	Pneumatic Piezometer		0+210	8V580239 6914346	1019.18	*1046.58 dvd m	box	0	Yes	
CVDP 6	Pneumatic Piezometer	1982	0+210	8V580239 6914346	1019.18	*1046.7 dvd m	box	0	Yes	
88-4	Thermistor	1988	crest	8V580127 6914054	1033.391	*Therm nodes: 0.6, 1.4, 2, 2.5, 3.3, 4.2	0.31		Yes	
88-5	Thermistor	1988	crest	8V580231 6914259	1033.414	*Therm nodes: 1, 1.7, 2.3, 2.8, 3.6, 4.5	0.24		No	Last monitored in 1999.
94CVDC-1	Standpipe Piezometer	1994	crest	8V580263 6914326	1033.383	13.64 (top of pipe)	0.62	0.64	Yes	
P01-11	Standpipe Piezometer	2001		8V580208 6914301	1017.213	Slotted *9.15 - *10.67 (bgl)	0.72	0.66	Yes	
CVD3-1			crest	8V580273 6914338	1033.205				No	Not labelled. No historical information on this instument
CVDS-6?	Incremental Settlement Plate		crest	8V580113 6914014	1033.213	7.8, 3.52		-0.03, 0.77	No	Not labelled, appeared to be nested standpipe. No historical information on this instrument
CVDS-3	Incremental Settlement Plate		crest	8V580160 6914111	1033.223		0.3		No	No historical information on this instument

P01-02	Standpipe		Toe	8V580080 6914041	1018.904	*Slotted 12.4 - 13.9; 26.2 - 27.7	0.75	1.69, 0.70	Yes	artesian conditions in 2004
Weir X12				8V580099 6914099	1015.595				Yes	top of weir
Weir X3				8V580130 6914199	1013.936				Yes	bottom of v-notch
Weir X11				8V580184 6914287	1015.496				Yes	bottom of v-notch

*Depth at time of Installation, in Down Valley Datum (DVD)

Canal Dyke

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	2004 Ground Elevation (m amsl)	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
CD 4	Increment Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	0+400	8V582274 6912801		*Thermistor nodes: 0.8, 1.8, 2.8, 3.8, 4.8, 5.8, 6.8, 7.8, 8.8, 9.8	0.28 (thermistor and piezo) 0.44 (settlement tubing) 0.4 (survey pin)		No	Piezometer tip labelled '365'. Survey pin labelled UU550.
CD 5	Vertical Settlement, Thermistor	1981	0+510	8V582171 6912839		*Thermistor nodes: 1.1, 2.1, 3.1, 4.1, 5.1, 6.1, 7.1, 8.1, 9.1	0.32 (thermistor) 0.26 (survey pin)		No	Last monitored in 2000.
CD 6	Vertical Settlement	1981	0+610	8V582093 6912877			0.31		No	
CD 7	Vertical Settlement, Pneumatic Piezometer	1981	0+710	8V582003 6912921		*7.6	0.37 (survey pin)		No	Piezometer Destroyed
CD 8	Vertical Settlement	1981	0+840	8V581886 6912993			0.32		No	
CD 9	Vertical Settlement, Pneumatic Piezometer	1981	0+960	8V581769 6913038		*5.0	0.35 (piezo)		No	Piezometer tip labelled '346'. Last monitored in 1999.
CD 10	Slope Inclinometer, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	0+990	8V581739 6913053		*Thermistor Nodes: 0.9, 1.9, 2.9, 3.9, 4.9, 5.9, 6.9, 7.9, 8.9, 9.9 *SI: 10	0.41 (thermistor and piezo) 0.38 (SI) 0.40 (survey pin)	0.38 (SI)	Yes	Piezometer tip labelled '367'. Survey pin labelled UU153.
CD 11	Vertical Settlement	1981	1+110	8V581642 6913110			0.39		No	
CD 12	Vertical Settlement	1981	1+230	8V581521 6913164			0.33		No	
CD 13	Vertical Settlement, Horizontal Settlement, Nested Pneumatic Piezometer	1981	1+350	8V581400 6913185		*PP - 6.6 (s), 10.6(d)	0.54 (piezo) 0.32 (survey pin)		Yes	Piezometer tips labelled '350' and '381'.
CD 14	Vertical Settlement	1981	1+440	8V581325 6913237			0.37		No	
CD 15	Slope Inclinometer, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	1+530	8V581245 6913275		*Thermistor Nodes; 1.1, 2.1, 3.1, 4.1, 5.1, 6.1, 7.1, 8.1, 9.1, 10.1 *PP - 6.6 (s), 11.4(d)	0.35 (SI) 0.34 (survey pin) none (thermistor) none (piezo)	0.15 (SI)	Yes	Survey pin labelled UU156. Leads on piezometers labelled '349' and '356'.
CD 16	Vertical Settlement	1981	1+610	8V581169 6913301					No	
CD 17	Vertical Settlement, Thermistor	1981	1+705	8V581075 6913323		*Thermistor Nodes: 0.9, 1.9, 2.9, 3.9, 4.9, 5.9, 6.9, 7.9, 8.9, 9.9	0.18 (thermistor) 0.25 (survey pin)		No	Last monitored in 1999
CD 18	Vertical Settlement	1981	1+800	8V580995 6913342			0.09		No	

CD 19	Slope Inclinometer, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	1+900	8V580907 6913396		*SI - 10 *Thermistor Nodes: 0.0, 0.8, 1.8, 2.8, 3.8, 4.8, 5.8, 6.8, 7.8, 8.8 *PP - 5.3 (s), 9 (d)	0.17 (SI)	0.12 (SI)	Yes (SI only)	Slope Inclinometer is the only instrument located in 2004.
CD 20	Vertical Settlement, Thermistor	1981	2+000	8V580811 6913445		*Thermistor Nodes: 0.5, 1.5, 2.5, 3.5, 4.5, 5.5, 6.5, 7.5, 8.5, 9.5	0.14 (thermistor) 0.18 (survey pin)		No	Last monitored in 1999.
CD 21	Slope Inclinometer, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	2+100	8V580724 6913495		*SI - 10; *Thermistor Nodes: 3.0, 5.0, 8.0, 11.0, 13.0; *PP - 6.1(s), 11.6(d)	0.11 (SI) 0.12 (piezo)	0.30 (SI)	Yes	Setlement instrumentation not located in 2004
CD 24	Vertical Settlement, Horizontal Settlement, Thermistor	1981	2+365	8V580495 6913607		*Thermistor Nodes: 0.7, 1.7, 2.7, 3.7, 4.7, 5.7, 6.7, 7.7, 8.7, 9.7	0.23 (thermistor)		No	Survey pin labelled UU411. Last monitored in 1999.
CD 25	Vertical Settlement, Thermistor	1981	2+460	8V580413 6913647		*Thermistor Nodes: 0.5, 1.5, 2.5, 3.5, 4.5, 5.5, 6.5, 7.5, 8.5, 9.5	0.30 (thermistor)		No	Last monitored in 1999.
CD 26	Vertical Settlement, Thermistor, Nested Pneumatic Piezometer	1981	2+600	8V580284 6913710		*Thermistor Nodes: 0.6, 1.6, 2.6, 3.6, 4.6, 5.6, 6.6, 7.6, 8.6, 9.6 *PP - 5 (s), 11.2 (d)	0.27 (piezo+therm)		Yes	Piezometer leads are labelled as '349' and '356'.
CD 27	Increment Settlement, Vertical Settlement, Thermistor	1981	2+765	8V580144 6913782		*Thermistor Nodes: 0.3, 1.3, 2.3, 3.3, 4.3, 5.3, 6.3, 7.3, 8.3, 9.3	0.17 (thermistor)		No	Last monitored in 1999.
CD 31	Vertical Settlement, Horizontal Settlement	1981	3+360	8V579802 6914151			0.26		No	Labelled as UU497
CD 32	Vertical Settlement, Horizontal Settlement	1981	3+550	8V579700 6914341			0.47		No	Labelled as UU500

*Depth at time of Installation, in Down Valley Datum (DVD)

Diversion Canal Stabilisation

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	2004 Ground Elevation (m amsl)	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
88-6	Slope Indicator	1988	2+115	8V580713 6913506			0.16	0.7	No	Destroyed
91-CD-1	Slope Indicator	1991	1+767	8V581023 6913342		*11	0.56	0.56	Yes	
94-CD-1	Slope Indicator	1994	2+325	8V580540 6913572		*13.5	0.56	0.58	Yes	
BGC01-01	Slope Indicator	2001	2+160	8V580670 6913516		*14	0.5	0.52	Yes	Replaced 88-10
BGC01-02	Thermistor	2001	2+160	8V580665 6913524		*Thermistor Nodes: 1, 2, 3, 4, 6, 8, 10, 13, 13.9	0.7		Yes	Replaced 88-10,11

*Depth at time of Installation, in Down Valley Datum (DVD)

Canal Spoil Piles

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	2004 Ground Elevation (m amsl)	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
SP5	Slope Indicator, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor	1981	2+950	8V580030 6913932 (SI) to 8V580023 6913930 (therm)		*SI: 10 *Thermistor Nodes: 1.1, 2.1, 3.1, 4.1, 5.1, 6.1, 7.1, 8.1, 9.1, 10.1	0.43 (SI) 0.44 (survey pin) 0.36 (thermistor)	1.21 (SI)	Yes	

*Depth at time of installation, in Down Valley Datum (DVD)

1974 Dam

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	2004 Ground Elevation (m amsl)	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
P81-01	Standpipe Piezometer	1981	crest	8V582046 6913462		10.05, 6.08	0.53	0.63	No	
P81-02	Standpipe Piezometer	1981	crest	8V582051 6913270		5.73, 5.38	0.7	0.83, 0.84		Buried
P81-04	Standpipe Piezometer	1981	crest	8V582085 6913176		4.98	0.77	0.90, 0.92	Yes	One of the standpipes is used for environmental monitoring
P81-05	Standpipe Piezometer	1981	crest	8V582215 6913008		13.08	0.94	0.18	No	
P03-04	Standpipe Piezometer		crest	8V582082 6913176			0.52	0.74	Yes	Multiple nested piezometer (10x0.5"), used for environmental monitoring

Diversion Canal Backslope

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	2004 Ground Elevation (m amsl)	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
BS 5	Slope Indicator, Thermistor, Pneumatic Piezometer	1981	0+960	581737 6913004		*SI: 10 *Therm: 10 *Piezo: 7.2	0.52	0.74	Yes	
BS 9	Slope Indicator, Thermistor, Pneumatic Piezometer	1981	1+530	581235 6913246		*SI: 10 *Therm: 10 *Piezo: 11			Yes	
BS 10	Slope Indicator, Thermistor	1981	1+900	580873 6913352		*SI: 10 *Therm: 10			Yes	
BS 12	Thermistor	1981	2+260	580552 6913505		*Therm: 10			Yes	
BS 18	Slope Indicator	1981	3+000			*SI: 10			Yes	

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PROJECT MEMORANDUM

To:	**Deloitte & Touche Inc.**	**Fax No.:**	**(416) 601-6151**
Attention:	**Mr. Doug Sedgwick**	**CC:**	
From:	**Gerry Ferris, Mike McCrank**	**Date:**	**February 22, 2005**
Subject:	**Instrumentation Inspection at Faro Mine on July 12 to 14, 2004 Summary of Observations and Recommendations**		
No. of Pages: 9 plus appendices		**Project No:**	**0257-022-02**

BGC Engineering Inc. (BGC) was retained by Deloitte & Touche Inc. (D&T), the Interim Receiver for Anvil Range Mine, to perform a review of instrumentation installed within the Cross Valley Dam, Intermediate Dam and Rose Creek Diversion Canal (Canal Dike crest). The purpose of this review was threefold; an instrument condition survey, instrument elevation survey and a critical review of the monitoring needs at the dams. The instrument condition survey and the critical review of monitoring required a review of available relevant documentation to provide a summary of all instruments. The instrument condition survey, elevation survey and critical review required a site inspection.

Background Review

As part of the literature review of available documentation for the instruments the following sources from the BGC library were used:

- Borehole logs.
- Installation reports.
- Monitoring documentation (Previous Annual reports).
- As-built construction documents.

The list of reports used to develop the summary of instruments on site is contained in the reference section of this memorandum. The summary of the instruments that have been installed at the Cross Valley Dam, Intermediate Dam and Rose Creek Diversion Canal is contained in Appendix I.

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Site Inspection

Mr. Jim Cassie, P.Eng. and Mr. Mike McCrank of BGC conducted the site inspection between July 12 and 14, 2004. The site inspection consisted of confirming the existence of the instruments, checking its condition and identifying any condition that would require minor repairs. In addition to this inspection, an elevation survey of the ground surface at the instrument was conducted for the instruments on the Cross Valley and Intermediate Dams. Mr. Gerry Ferris also conducted a site inspection of the backslope between September 10 and 14, 2004 where the locations of instruments were confirmed. The information acquired during these inspections was used to summarize the current status of the instrumentation for the Down Valley Project Area.

Elevation Survey and Condition survey Results

As noted previously a summary of all the instruments on site is contained in Appendix I. A similar table of all the existing and active instruments is contained in Appendix II. The tables contained in Appendix II include the information from the 2004 site inspection. The summary tables in Appendices I and II include the following information, where available:

- Instrument type,
- Date installed,
- Instrument location,
- GPS location (NAD27, unless otherwise noted),
- Ground elevation (above mean sea level, unless otherwise noted),
- Depth of instrument,
- Protective casing stick-up,
- Instrument stick-up,
- Current condition assessment, and
- Additional comments.

Recommendations from Site Inspection

Based on observations from the 2004 instrumentation condition survey, the following is a list of recommended repairs for select instruments at the Cross Valley Dam, Intermediate Dam and Canal Dike:

Cross Valley Dam

- CVDP-4 and CVDC6: The exposed tubing should be cut and the tips replaced in these pneumatic piezometers to try and repair.
- CVDC-3, CVDC-5, CVDC-7, CVDC-8, CVDC-10, P01-02, 88-4, and 88-5: The protective casings should be backfilled (with bentonite or sand).

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- CVDC-4: The local depression at this instrument should be backfilled with a bentonite/sand & gravel blend.
- P01-11: The protective casing is frost heaving out of the ground, the casing should be pushed back into the ground and backfilled.
- CVDC-6: The thermistor wires are frayed and should be covered to prevent further damage and possible malfunction.
- CVDP-1, CVDP-2 and CVDP-3: these pneumatic piezometers are exposed and should be protected from the elements.

Intermediate Dam

- P01-03, 91-ID6 and 91-ID5: The protective casings should be backfilled.
- 91-ID7, 91-ID6 and 91-ID5: The protective casing has been damaged and should be repaired, if possible.
- 96-4: The protective casing is frost heaving out of the ground, the casing should be pushed back into the ground, if possible.
- 91-ID6 and 96-4: The protective casings need new caps.
- 91-ID4: The protective barrel containing this instrument was partially buried with sloughing material from the downstream face of the dam, rendering the instrument inaccessible. This material should be removed so the instrument can be accessible for monitoring.

RCDC Dike

- CD-13 (Piezometer), CD-15 (SI), CD-19 (SI), CD-21(SI), CD-27(Pin), BGC01-01(SI): The protective casing has been pushed over and is leaning into the slope inclinometer, the casing should be straightened, if possible.
- CD-10(SI), CD-20(Thermistor), CD-21(SI), CD-27(Pin), BGC01-02(Thermistor): The protective casing should be backfilled.
- 91CD-1(SI), CD-15(Piezometer and Thermistor): Install a protective casing.
- CD-16(Pin), CD-21(Thermistor), CD-27(Thermistor): Soil from the 2004 crest raise covered the protective barrel, needs to be rehabilited.

Note: The following instruments were destroyed during the 2004 dike crest raise: CD-19 (SI, Therm), CD-21 (Piezo), BH88-7 (SI, Piezo, therm) and BH88-11 (SI, Piezo, therm).

RCDC Spoil Piles

- SP5(SI): The protective casing should be backfilled.
- SP5(Pin): The hinge on the protective casing is rusted shut and should be replaced.

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Recommendations from Critical Review

Based on the critical review of instruments the following recommendations are made with respect to instruments at the Cross Valley Dam, Intermediate Dam and Canal Dike:

Cross Valley Dam

-

Intermediate Dam

-

RCDC Dike

-

Future Assessments

The 2004 inspection focused on the more critical areas of the Cross Valley Dam, Intermediate Dam and portions of the Canal Dike crest. The following is a list of recommendations for future investigations following on from this asessment:

- Detailed ground elevation surveys of the instruments located on the RCDC Dike, Spoil Piles and Back Slopes are required.
- Detailed instrument reviews are required to identify the working condition of all of the instruments along the RCDC Dike, Spoil Piles and Back Slopes. This requires using mine site monitoring equipment to test each individual instrument.
- Any instruments that can still be located but are listed as 'non-functioning' should be assessed to determine if repairs are possible. Any repairs that may result in returning the instrument to a functioning state should be attempted. If the instrument is beyond repair, then recommendations should be made to properly abandon the instrument.

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Closure

This report summarizes the conditions of the instrumentation as they exist at the Faro Mine. We trust that this report meets your needs at this current time. Should you have any questions or comments concerning the information provided within this report, please contact the undersigned.

The summary tables in this report will be included as an appendix within the 2004 Annual Geotechnical Inspection report.

RESPECTFULLY SUBMITTED,
BGC Engineering Inc.
Per:

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Geological Engineer-in-Training

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APPENDIX I
HISTORICAL INSTRUMENTATION INFORMATION

This communication is intended for the use of the above named recipient. Any unauthorized use, copying, review or disclosure of the contents by other than the recipient is prohibited.

Intermediate Dam

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation	Depth(s) of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments:
ID2	Two Standpipe Piezometer	1981	0+250		*1064.1	*3-4.5 (s), 8.5-10 (d)		*0.11 (s) 0.13 (d)	No	Not located in 2004.
ID4	Two Standpipe Piezometer	1981	0+460		*1065.3	*3-4.5 (s), 18.3-19.8 (d)		*0.24 (s) 0.15 (d)	No	Blocked in January 1990. Not located in 2004.
ID6	Two Standpipe Piezometer	1981	0+627						No	Not located in 2004.
ID7	Pneumatic and Thermistor	1981	0+740		*1068.9	(PP) *14.9 (T) *1,2,3,4,5,6,7,8,9,10			No	Thermistor abandoned; PP working in 1990. Not located in 2004.
ID8	Pneumatic Piezometer	1981	0+745		*1069.1	*14.9			No	Malfunctioning in January 1990. Not located in 2004.
ID9	Pneumatic Piezometer	1981	0+750						No	Destroyed in 1989.
IDP1	Pneumatic Piezometer	1981	0+594			*1047.0 m dvd			No	Not located in 2004.
IDP2	Pneumatic Piezometer	1981	0+621						No	Destroyed in May 1981.
IDP3	Pneumatic Piezometer	1981	0+680		*1053.03				No	Not located in 2004.
IDP4	Pneumatic Piezometer	1981	0+680		*1052.46				No	Not located in 2004.
IDP5	Pneumatic Piezometer	1988	0+650		*1064.85				No	Not located in 2004.
IDP6	Pneumatic Piezometer	1981	0+649		*1064.9	*3.9-5.4 (s), 28.7-30.2 (d)		*0.16 (s) 0.07 (d)	No	Not located in 2004.
88-1	Nested Pneumatic Piezometer	1988	North Abutment		*1080.7	*6.0 (s), *15.3 (d)			No	Not located in 2004.
88-2	Nested Pneumatic Piezometer and Thermistor	1988	South Abutment		*1076.8	(PP) *8 (s), *11.5 (d) (T) 1,2,4,6,10,10.9,11.8			No	Not located in 2004. Thermistor not monitored since 1991.
88-3	Nested Pneumatic Piezometer and Thermistor	1988	South Abutment			(PP) *5 (s), *11.5 (d) (T) *.7,1.7,3.7,5.7, 9.7,10.8,11.9			No	Not located in 2004. Piezometer last monitored in 1995. Thermistor not monitored since 1991.
BH91-ID3	Nested Pneumatic Piezometer	1991	South Abutment, 0+810	8V580359 6913723	1043.815	*7 (s), *15.2 (d)	0.49		Yes	Piezometer tips replaced in 2003.
BH91-ID4	Nested Pneumatic Piezometer	1991	Toe	8V580517 6913926		*7.6 (s), *14.7 (d)			Yes	
BH91-ID5	Nested Pneumatic Piezometer	1991	Toe	8V580472 6913862	1031.636	*7.4 (s), *14.6 (d)	0.4		No	Has not worked since May 1999.
BH91-ID6	Nested Pneumatic Piezometer	1991	Toe	8V580475 6913866	1031.364	*7.1 (s), *15 (d)	0.4		Yes	Protective casing damaged/bent.
BH91-ID7	Pneumatic Piezometer	1991	Toe	8V580377 6913751	1032.419	*7.5	0.5		Yes	Protective casing damaged/bent.
BH94-IDC-1	Standpipe Piezometer	1994	Crest	8V580605 6913969	1049.21	14	0.42	0.27	Yes	Dry since installation in 1994.
96-1	Standpipe Piezometer	1996	Crest	8V580563 6913908	1049.147	*Slotted 18.77 - 21.80	0.71	0.68	Yes	
96-2	Standpipe Piezometer	1996	Crest	8V580696 6914096	1049.224	*Slotted 17.13 - 20.12	0.74	0.72	Yes	
96-3 (A)	Standpipe Piezometer	1996	Toe	8V580529 6913934	1031.482	*Slotted 7.44 - 8.97	0.52	0.65	Yes	Labelled as X25A in the field.
96-3 (B)	Standpipe Piezometer	1996	Toe	8V580529 6913934	1031.482	*Slotted 17.7 - 19.17	0.52	0.59	Yes	Labelled as X25B in the field.
96-4 (A)	Standpipe Piezometer	1996	Toe, near N abutment.	8V580529 6913934	1032.156	*Slotted 8.70 - 6.48	0.86	0.95	Yes	Labelled as X24A.
96-4 (B)	Standpipe Piezometer	1996	Toe, near N abutment.	8V580529 6913934	1032.156	*Slotted 9.80 - 11.3	0.86	0.87	Yes	Labelled as X24B.

Intermediate Dam

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation	Depth(s) of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments:
96-4 (C*)	Standpipe Piezometer	1996	Toe, near N abutment.	8V580529 6913934	1032.156	*Slotted 14.97 - 16.47	0.86	0.91	Yes	Labelled as X24C.
96-4 (D)	Standpipe Piezometer	1996	Toe, near N abutment.	8V580669 6914113	1032.122	*Slotted 26.84 - 28.34	0.78	0.88	Yes	Labelled as X24D.
P01-03	Standpipe Piezometer	2001	Toe, near N abutment.	8V580636 6914064	1031.516	*Slotted 7.78 - 9.30	0.71	0.61	Yes	
P01-04 (A)	Standpipe Piezometer	2001	Toe, near S abutment.	8V580489 6913888	1031.319	*Slotted 31.7 - 33.22	0.48	0.45	Yes	
P01-04 (B)	Standpipe Piezometer	2001	Toe, near S abutment.	8V580489 6913888	1031.319	*Slotted 51.0 - 52.5	0.48	0.45	Yes	
Unnamed Survey Pin	Survey Pin		Crest, near S abutment	8V580454 6913790					No	
Unnamed Survey Pin	Survey Pin		Crest, near 94-IDC-1	8V580605 6913953					No	

*DVD *Depth at time of Installation, in Down Valley Datum (DVD)

Cross Valley Dam

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation (m)	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
79-20	Thermistor	1979	North Abutment		*1076.8	1,2,3.3,7,12,17,22,29,37			No	Could not be located in 2004.
81-126	Pneumatic Piezometer	1981	South Abutment		*1058.86	*8.8			No	Destroyed in 1998.
81-K1	Nested Pneumatic Piezometer	1981			*1046.6	*6.5 (s), 30.5 (d)		*1.33, 0.64	No	Could not be located in 2004.
81-K2	Nested Pneumatic Piezometer	1981			*1051.27	*6 (s), 24 (d)		*0.48, 1.14	No	Could not be located in 2004.
81-K3	Nested Pneumatic Piezometer	1981			*1052.74	*11 (s), 22 (d)		*0.45, 0.48	No	Could not be located in 2004.
81-K4	Nested Pneumatic Piezometer	1981			*1060.68	*12 (s), 27 (d)		*0.98,1.12	No	Blocked in January 1990. Could not be located in 2004.
81-K5	Pneumatic Piezometer	1981				*22			No	Blocked in January 1990. Could not be located in 2004.
CVDC 1	Pneumatic Piezometer and Thermistor		0+050		*1064.8	(PP) *15.2 (Therm) *1,3,5,7,9,11,13,15			No	Last monitored in 1990. Could not be located in 2004.
CVDC 2	Pneumatic Piezometer		0+150		*1062.3	*14.3			No	Destroyed in 1988
CVDC 3	Vertical Settlement and Horizontal Settlement		0+204	8V580269 6914336	1033.256		0.35		No	Labelled as UU502
CVDC 4	Two Standpipe Piezometers	1982	0+2152	8V580266 6914331	1033.302	7.63(s), 33.6(d) (top of pipe)	none	0.11, 0.30	Yes	Shallow piezometer no longer functioning due to blockage
CVDC 5	Vertical Settlement and Horizontal Settlement		0+338	8V580211 6914215	1033.358		0.29		No	Labelled as UU415
CVDC 6	Pneumatic Piezometer and Thermistor	1981	0+340	8V580210 6914218	1033.303	*Thermistor nodes: 15,17,19,21, 23,25,27,29	0.2		Yes	Piezometer Detroyed in 1982; Thermistor still functioning
CVDC 7	Two Standpipe Piezometers	1982	0+450	8V580158 6914127	1033.239	26.6(s), 31.05(d) (top of pipe)	0.06	0.31, 0.23	Yes	
CVDC 8	Vertical Settlement and Horizontal Settlement		0+460	8V580155 6914108	1033.217		0.3		No	Labelled as UU416
CVDC 9	Two Standpipe Piezometers	1982	0+565	8V580096 6913998	1033.283	25.45(s), 32.23(d) (top of pipe)	0.29	0.27, 0.19	Yes	
CVDC 10	Vertical Settlement and Horizontal Settlement		0+568	8V580107 6914013	1033.286		0.32		No	Labelled as UU417
CVDC 11	Pneumatic Piezometer and Thermistor		0+645	8V580071 6913940	*1065.7	*14.9			No	Destroyed in June 2003
CVDB	Pneumatic Piezometer and Thermistor		0+370						No	Destroyed
CVDB	Pneumatic Piezometer		0+370						No	Destroyed
CVDT 1	Standpipe Piezometer		0+210	8V580219 6914353	1018.305	10.6 (top of pipe)		0.27	Yes	
CVDT 2	Standpipe Piezometer		0+450		*1051.8	*11.7-13.3	0.21		Yes	
CVDT 3	Standpipe Piezometer		0+570		*1053.1	*11.6-13.1	0.24		No	Destroyed in 1987
CVDT 4	Thermistor		0+630		*1058.9	*1.4,3.4,5.4,7.4,9.4, 11.4,13.4,15.4			No	Destroyed in 1996
CVDP 1	Pneumatic Piezometer	1982	0+450	8V580128 6914135	1016.858	*1046.81 m dvd	none	0	Yes	
CVDP 2	Pneumatic Piezometer	1982	0+450	8V580128 6914135	1016.858	*1046.84 m dvd	none	0	Yes	
CVDP 3	Pneumatic Piezometer	1982	0+450	8V580128 6914135	1016.858	*1047 m dvd	none	0	Yes	
CVDP 4	Pneumatic Piezometer		0+210	8V580239 6914346	1019.18	*1046.76 m dvd	box	0	No	Malfunctioning in January 1990

Cross Valley Dam

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation (m)	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
CVDP 5	Pneumatic Piezometer		0+210	8V580239 6914346	1019.18	*1046.58 m dvd	box	0	Yes	
CVDP 6	Pneumatic Piezometer	1982	0+210	8V580239 6914346	1019.18	*1046.7 m dvd	box	0	Yes	
CVDP 7	Pneumatic Piezometer		0+570			*1047.53 m dvd			No	Not located in 2004.
CVDP 8	Pneumatic Piezometer		0+570			*1047.93 m dvd			No	Not located in 2004.
CVDP 9	Pneumatic Piezometer		0+570			*1048.18 m dvd			No	Not located in 2004.
CVDP 10	Pneumatic Piezometer		0+570			*1049.1 m dvd			No	Not located in 2004.
88-4	Thermistor	1988	crest	8V580127 6914054	1033.391	*Therm nodes: 0.6, 1.4, 2, 2.5, 3.3, 4.2	0.31		Yes	
88-5	Thermistor	1988	crest	8V580231 6914259	1033.414	*Therm nodes: 1, 1.7, 2.3, 2.8, 3.6, 4.5	0.24		No	Last monitored in 1999.
94CVDC-1	Standpipe Piezometer	1994	crest	8V580263 6914326	1033.383	13.64 (top of pipe)	0.62	0.64	Yes	
P01-11	Standpipe Piezometer	2001		8V580636 6914064	1017.213	Slotted *9.15 - *10.67 (bgl)	0.72	0.66	Yes	
CVD3-1			crest	8V580273 6914338	1033.205				No	Not labelled. No historical information on this instument
CVDS-6?	Incremental Settlement Plate		crest	8V580113 6914014	1033.213	7.8, 3.52		-0.03, 0.77	No	Not labelled, appeared to be nested standpipe. No historical information on this instrument
CVDS-3	Incremental Settlement Plate		crest	8V580160 6914111	1033.223		0.3		No	No historical information on this instument
P01-02	Standpipe		Toe	8V580080 6914041	1018.904	*Slotted 12.4 - 13.9; 26.2 - 27.7	0.75	1.69, 0.70	Yes	artesian conditions in 2004
Weir X12				8V580099 6914099	1015.595				Yes	top of weir
weir X3				8V580130 6914199	1013.936				Yes	bottom of v-notch
Weir X11				8V580184 6914287	1015.496				Yes	bottom of v-notch

*DVD *Depth at time of Installation, in Down Valley Datum (DVD)

Diversion Canal Dike

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments:
CD 1	Nested Pneumatic Piezometer	1981	0+020						No	Destroyed
CD 2	Vertical Settlement	1981	0+150						No	Destroyed
CD 3	Vertical Settlement	1981	0+300						No	Destroyed
CD 4	Increment Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	0+400	8V582274 6912801	*1089.7	*Thermistor nodes: 0.8, 1.8, 2.8, 3.8, 4.8, 5.8, 6.8, 7.8, 8.8, 9.8	0.28 (thermistor and piezo) 0.44 (settlement tubing) 0.4 (survey pin)		No	Piezometer tip labelled '365'. Survey pin labelled UU550.
CD 5	Vertical Settlement, Thermistor	1981	0+510	8V582171 6912839	*1089.8	*Thermistor nodes: 1.1, 2.1, 3.1, 4.1, 5.1, 6.1, 7.1, 8.1, 9.1	0.32 (thermistor) 0.26 (survey pin)		No	Last monitored in 2000.
CD 6	Vertical Settlement	1981	0+610	8V582093 6912877			0.31		No	
CD 7	Vertical Settlement, Pneumatic Piezometer	1981	0+710	8V582003 6912921		*7.6	0.37 (survey pin)		No	Piezometer Destroyed
CD 8	Vertical Settlement	1981	0+840	8V581886 6912993			0.32		No	
CD 9	Vertical Settlement, Pneumatic Piezometer	1981	0+960	8V581769 6913038		*5.0	0.35 (piezo)		No	Piezometer tip labelled '346'. Last monitored in 1999.
CD 10	Slope Inclinometer, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	0+990	8V581739 6913053	*1088.3	*Thermistor Nodes: 0.9, 1.9, 2.9, 3.9, 4.9, 5.9, 6.9, 7.9, 8.9, 9.9 *SI: 10	0.41 (thermistor and piezo) 0.38 (SI) 0.40 (survey pin)	0.38 (SI)	Yes	Piezometer tip labelled '367'. Survey pin labelled UU153.
CD 11	Vertical Settlement	1981	1+110	8V581642 6913110			0.39		No	
CD 12	Vertical Settlement	1981	1+230	8V581521 6913164			0.33		No	
CD 13	Vertical Settlement, Horizontal Settlement, Nested Pneumatic Piezometer	1981	1+350	8V581400 6913185		*PP - 6.6 (s), 10.6(d)	0.54 (piezo) 0.32 (survey pin)		Yes	Piezometer tips labelled '350' and '381'.
CD 14	Vertical Settlement	1981	1+440	8V581325 6913237			0.37		No	
CD 15	Slope Inclinometer, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	1+530	8V581245 6913275	*1087	*SI 9.5 *Thermistor Nodes; 1.1, 2.1, 3.1, 4.1, 5.1, 6.1, 7.1, 8.1, 9.1, 10.1 *PP - 6.6 (s), 11.4(d)	0.35 (SI) 0.34 (survey pin) none (thermistor) none (piezo)	0.15 (SI)	Yes	Survey pin labelled UU156. Leads on piezmeters labelled '349' and '356'.
CD 16	Vertical Settlement	1981	1+610	8V581169 6913301					No	
CD 17	Vertical Settlement, Thermistor	1981	1+705	8V581075 6913323	*1086.9	*Thermistor Nodes: 0.9, 1.9, 2.9, 3.9, 4.9, 5.9, 6.9, 7.9, 8.9, 9.9	0.18 (thermistor) 0.25 (survey pin)		No	Last monitored in 1999
CD 18	Vertical Settlement	1981	1+800	8V580995 6913342			0.09		No	

Diversion Canal Dike

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments:
CD 19	Slope Inclinometer, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	1+900	8V580907 6913396	*1086.3	*SI - 10 *Thermistor Nodes: 0.0, 0.8, 1.8, 2.8, 3.8, 4.8, 5.8, 6.8, 7.8, 8.8 *PP - 5.3 (s), 9 (d)	0.17 (SI)	0.12 (SI)	Yes (SI only)	Slope Inclinometer is the only instrument located in 2004.
CD 20	Vertical Settlement, Thermistor	1981	2+000	8V580811 6913445	*1086.5	*Thermistor Nodes: 0.5, 1.5, 2.5, 3.5, 4.5, 5.5, 6.5, 7.5, 8.5, 9.5	0.14 (thermistor) 0.18 (survey pin)		No	Last monitored in 1999.
CD 21	Slope Inclinometer, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	2+100	8V580724 6913495	*1085.9	*SI - 10; *Thermistor Nodes: 3.0, 5.0, 8.0, 11.0, 13.0; *PP - 6.1(s), 11.6(d)	0.11 (SI) 0.12 (piezo)	0.30 (SI)	Yes	Setlement instrumentation not located in 2004
81-125	Thermistor	1981	2+100			*0,1,2,3,4,5,6, 6.9,7.8,8.8			No	Destroyed in 1996.
CD 22	Vertical Settlement, Horizontal Settlement	1981	2+200						No	Could not be found in 2004.
CD 23	Vertical Settlement	1981	2+260						No	Could not be found in 2004.
CD 24	Vertical Settlement, Horizontal Settlement, Thermistor	1981	2+365	8V580495 6913607	*1085.8	*Thermistor Nodes: 0.7, 1.7, 2.7, 3.7, 4.7,	0.23 (thermistor)		No	Survey pin labelled UU411. Last monitored in 1999.
CD 25	Vertical Settlement, Thermistor	1981	2+460	8V580413 6913647	*1085.5	*Thermistor Nodes: 0.5, 1.5, 2.5, 3.5, 4.5, 5.5, 6.5, 7.5, 8.5, 9.5	0.30 (thermistor)		No	Last monitored in 1999.
CD 26	Vertical Settlement, Thermistor, Nested Pneumatic Piezometer	1981	2+600	8V580284 6913710	*1085.5	*Thermistor Nodes: 0.6, 1.6, 2.6, 3.6, 4.6, 5.6, 6.6, 7.6, 8.6, 9.6 *PP - 5 (s), 11.2 (d)	0.27 (piezo+therm)		Yes	Piezometer leads are labelled as '349' and '356'.
CD 27	Increment Settlement, Vertical Settlement, Thermistor	1981	2+765	8V580144 6913782	*1085.1	0.3, 1.3, 2.3, 3.3, 4.3, 5.3, 6.3, 7.3, 8.3, 9.3	0.17 (thermistor)		No	Last monitored in 1999.
CD 28	Slope Inclinometer, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	2+900		*1080.3	*6.1			No	Destroyed October 1988
81-89	Thermistor	1981	2+900						No	Could not be located in 2004.
CD 29	Slope Inclinometer, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	3+000		*1075	*5.2			No	Could not be found in 2004
CD 30	Vertical Settlement, Thermistor	1981	3+130		*1068.6	*1,2,3,4,5,6,7,8,9,10			No	Could not be found in 2004

Diversion Canal Dike

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments:
CD 31	Vertical Settlement, Horizontal Settlement	1981	3+360	8V579802 6914151			0.26		No	Labelled as UU497
CD 32	Vertical Settlement, Horizontal Settlement	1981	3+550	8V579700 6914341			0.47		No	Labelled as UU500
81-K1		1981							No	Could not be located in 2004.

*DVD *Depth at time of Installation, in Down Valley Datum (DVD)

Faro Mine
Historical Instrumentation Information

Diversion Canal Stabilization Area

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation	Depth of Inst. Bgl	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
88-6	Slope Indicator	1988	2+115	8V580713 6913506	*1086.3	*14	0.16	0.7	No	Destroyed
88-7	Thermistor, Nested Pneumatic Piezometer	1988	2+115		*1086.3	*Thermistor Nodes: 1.0, 2.0, 3.0, 4.0, 6.0, 8.0, 10.0, 13.0, 14.9 *PP - 1078.6 (s), 1071.4 (d)			Yes	Thermistor and PP were monitored in 2003
88-8	Slope Indicator	1988	2+120		*1077	*7				Working in January 1990
88-9	Thermistor, Pneumatic Piezometer	1988	2+120		*1077	*6.8				Working in January 1990
88-10	Slope Indicator	1988	2+160		*1086.2	*14				Replace by BGC01-02
88-11	Thermistor, Nested Pneumatic Piezometer	1988	2+160		*1086.2	Thermistor Nodes 1.0, 2.0, 3.0, 4.0, 6.0, 8.0, 10.0, 13.0, 13.9 *PP - 1078.6 (s) 1072.3 (d)			Yes	Thermistor and PP were monitored in 2003
88-12	Slope Indicator	1988	2+160		*1077.8	*8				Damaged in September 1989
88-13	Thermistor, Pneumatic Piezometer	1988	2+160		*1077.8	*7.62				Working in January 1990
91-CD-1	Slope Indicator	1991	1+767	8V581023 6913342		*11	0.56	0.56	Yes	
94-CD-1	Slope Indicator	1994	2+325	8V580540 6913572		*13.5	0.56	0.58	Yes	
BGC01-01	Slope Indicator	2001	2+160	8V580670 6913516		*14	0.5	0.52	Yes	Replaced 88-10
BGC01-02	Thermistor	2001	2+160	8V580665 6913524		*Thermistor Nodes: 1, 2, 3, 4, 6, 8, 10, 13, 13.9	0.7		Yes	Replaced 88-10,11

* DVD *Depth at time of Installation, in Down Valley Datum (DVD)

Diversion Canal Backslope

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation	Depth of Inst. Bgl	Protective Casing Stick-Up	Borehole Log Yes/No	Instrument Stick-Up	Active Yes/No	Comments
BS 1	Vertical Settlement	1981	0+150								Working in January 1990
BS 2	Slope Indicator, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	0+400	582249 6912765	*1094.3	(PP) *8.5 (SI) *7 (T) *.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5					Working in January 1990
BS 3	Vertical Settlement	1981	0+610								Working in January 1990
BS 4	Thermistor, Pneumatic Piezometer	1981	0+710		*1096.7	(PP) *11 (T) *.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5					Working in January 1990
BS 5	Slope Indicator, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	0+960		*1092.5	(PP) *7.2 (SI) *10.5 (T) *.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5				Yes (SI, therm, piezo))	Working in January 1990
BS 6	Vertical Settlement	1981	1+110								Working in January 1990
BS 7	Vertical Settlement	1981	1+200								Working in January 1990
BS 8	Vertical Settlement	1981	1+300								Working in January 1990
BS 9	Slope Indicator, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	1+530	581235 6913246	*1088.3	(PP) *11 (SI) * 10 (T) *.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5				Yes (SI, therm, piezo))	Working in January 1990
BS 10	Slope Indicator, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	1+900	580873 6913352	*1098.2	(PP) *11 (SI) * 10 (T) *.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5				Yes (SI, therm)	SI Blocked, Piezo damage, others working
BS 11	Slope Indicator, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	2+100	580695 6913452	*1095	(PP) *11 (SI) * 9.5 (T) *.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5					SI Blocked, others working
BS 12	Vertical Settlement, Thermisto	1981	2+260	580552 6913505	*1094.6	*.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5				Yes (therm)	Working in January 1990
BS 13	Vertical Settlement	1981	2+460								Working in January 1990
BS 14	Vertical Settlement	1981	2+560								Working in January 1990
BS 15	Vertical Settlement, Thermisto	1981	2+760	580114 6913751	*1090.5	*.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5					Working in January 1990
BS 16	Slope Indicator, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	2+900	580005 6913851	*1087.1	(PP) *14.2 (T) *.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5					Slope Indicator broken, others working

Diversion Canal Backslope

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation	Depth of Inst. Bgl	Protective Casing Stick-Up	Borehole Log Yes/No	Instrument Stick-Up	Active Yes/No	Comments
BS 17	Slope Indicator, Incremental Settlement, Vertial Settlement, Horizontal Settlement, Thermistor	1981	2+900	579991 6913830	*1092.4	*.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5					SI Blocked, others working
BS 18	Slope Indicator, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer, Standpipe Piezometer	1981	3+000		(PP) *1083.2 (SP) *1083	(PP) *11 (SP) *6.6-8.1 (SI) *10 (T) *.5,1.5,2.5,3.5, 4.5,5.5,6.5,7.5,8.5, 9.5				Yes (SI)	Working in January 1990
BS 19	Vertical Settlement	1981	3+130								Working in January 1990
BS 20	Vertical Settlement, Horizontal Settlement	1981	3+300								Working in January 1990
BS 21	Vertical Settlement, Horizontal Settlement	1981	3+550								Working in January 1990
81-K5	Standpipe Piezometer	1981	3+535		*1060.68	*22					
79-23	Pneumatic Piezometer	1979	3+120		*1083.2	*12					Working in January 1990

* DVD *Depth at time of Installation, in Down Valley Datum (DVD)

Diversion Canal Spoil Piles

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
SP 1	Vertical Settlement, Horizontal Settlement		0+990							Working in January 1990
SP 2	Slope Indicator, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor	1981	1+530		*1093.1	(SI) * 10 (T) *.3,1.3,2.3,3.3, 4.3,5.3,6.3,7.3,8.3, 9.3			Yes	Only SI monitored in 2003
SP 3	Slope Indicator, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor		1+900		*1083.5	(SI) * 10 (T) 1.1,2.1,3.1,4.1, 5.1,6.1,7.1,8.1,9.1, 10.1				SI blocked, others working
SP 4	Vertical Settlement, Horizontal Settlement		2+040							Working in January 1990
SP5	Slope Indicator, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor	1981	2+950	8V580030 6913932 (SI) to 8V580023 6913930 (therm)	*1079.2	*SI: 10 *Thermistor Nodes: 1.1, 2.1, 3.1, 4.1, 5.1, 6.1, 7.1, 8.1, 9.1, 10.1	0.43 (SI) 0.44 (survey pin) 0.36 (thermistor)	1.21 (SI)	Yes	

*DVD *Depth at time of Installation, in Down Valley Datum (DVD)

Faro Mine
Historical Instrumentation Information

1974 Dam

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	Ground Elevation	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
P81-01	Standpipe Piezometer	1981	crest	8V582046 6913462		10.05, 6.08	0.53	0.63	No	
P81-02	Standpipe Piezometer	1981	crest	8V582051 6913270		5.73, 5.38	0.7	0.83, 0.84		Buried
P81-03	Piezometer ?	1981								Buried
P81-04	Standpipe Piezometer	1981	crest	8V582085 6913176	*1093	4.98	0.77	0.90, 0.92	Yes	One of the standpipes is used for environmental monitoring
P81-05	Standpipe Piezometer	1981	crest	8V582215 6913008	*1093	13.08	0.94	0.18	No	
P81-06	Piezometer ?	1981			*1093	*5.9		0.92		Buried
P81-07	Piezometer ?	1981			*1094.8	*6.1		0.88		Buried
P81-08	Piezometer ?	1981			*1095.7	*7.6		0.72		Buried
P81-09	Piezometer ?	1981			*1094.8	*11.8		0.87		Buried
81-K6		1981								Buried
81-K7		1981								Buried
P03-04	Standpipe Piezometer		crest	8V582082 6913176			0.52	0.74	Yes	Multiple nested piezometer (10x0.5"), used for environmental monitoring

*DVD *Depth at time of Installation, in Down Valley Datum (DVD)

APPENDIX II
ACTIVE INSTRUMENTATION INFORMATION

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Intermediate Dam

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	2004 Ground Elevation (m amsl)	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
BH91-ID3	Nested Pneumatic Piezometer	1991	South Abutment 0+810	8V580359 6913723	1043.815	*7 (s), *15.2 (d)	0.49		Yes	Piezometer tips replaced in 2003.
BH91-ID4	Nested Pneumatic Piezometer	1991	Toe	8V580517 6913926		*7.6 (s), *14.7 (d)			Yes	
BH91-ID5	Nested Pneumatic Piezometer	1991	Toe	8V580472 6913862	1031.636	*7.4 (s), *14.6 (d)	0.4		No	Has not worked since May 1999.
BH91-ID6	Nested Pneumatic Piezometer	1991	Toe	8V580475 6913866	1031.364	*7.1 (s), *15 (d)	0.4		Yes	Protective casing damaged/bent.
BH91-ID7	Pneumatic Piezometer	1991	Toe	8V580377 6913751	1032.419	*7.5	0.5		Yes	Protective casing damaged/bent.
BH94-IDC-1	Standpipe Piezometer	1994	Crest	8V580605 6913969	1049.21	14	0.42	0.27	Yes	Dry since installation in 1994.
96-1	Standpipe Piezometer	1996	Crest	8V580563 6913908	1049.147	*Slotted 18.77 - 21.80	0.71	0.68	Yes	
96-2	Standpipe Piezometer	1996	Crest	8V580696 6914096	1049.224	*Slotted 17.13 - 20.12	0.74	0.72	Yes	
96-3 (A)	Standpipe Piezometer	1996	Toe	8V580529 6913934	1031.482	*Slotted 7.44 - 8.97	0.52	0.65	Yes	Labelled as X25A in the field.
96-3 (B)	Standpipe Piezometer	1996	Toe	8V580529 6913934	1031.482	*Slotted 17.7 - 19.17	0.52	0.59	Yes	Labelled as X25B in the field.
96-4 (A)	Standpipe Piezometer	1996	Toe, near N abutment.	8V580669 6914113	1032.156	*Slotted 8.70 - 6.48	0.86	0.95	Yes	Labelled as X24A.
96-4 (B)	Standpipe Piezometer	1996	Toe, near N abutment.	8V580669 6914113	1032.156	*Slotted 9.80 - 11.3	0.86	0.87	Yes	Labelled as X24B.
96-4 (C*)	Standpipe Piezometer	1996	Toe, near N abutment.	8V580669 6914113	1032.156	*Slotted 14.97 - 16.47	0.86	0.91	Yes	Labelled as X24C.
96-4 (D)	Standpipe Piezometer	1996	Toe, near N abutment.	8V580669 6914113	1032.122	*Slotted 26.84 - 28.34	0.78	0.88	Yes	Labelled as X24D.
P01-03	Standpipe Piezometer	2001	Toe, near N abutment.	8V580636 6914064	1031.516	*Slotted 7.78 - 9.30	0.71	0.61	Yes	
P01-04 (A)	Standpipe Piezometer	2001	Toe, near S abutment.	8V580489 6913888	1031.319	*Slotted 31.7 - 33.22	0.48	0.45	Yes	
P01-04 (B)	Standpipe Piezometer	2001	Toe, near S abutment.	8V580489 6913888	1031.319	*Slotted 51.0 - 52.5	0.48	0.45	Yes	
Unnamed Survey Pin	Survey Pin		Crest, near S abutment	8V580454 6913790					No	
Unnamed Survey Pin	Survey Pin		Crest, near 94-IDC-1	8V580605 6913953					No	

*Depth at time of Installation, in Down Valley Datum (DVD)

Cross-Valley Dam

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	2004 Ground Elevation (m amsl)	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
CVDC 3	Vertical Settlement and Horizontal Settlement		0+204	8V580269 6914336	1033.256		0.35		No	Labelled as UU502
CVDC 4	Two Standpipe Piezometers	1981	0+215	8V580266 6914331	1033.302	7.63(s), 33.6(d) (top of pipe)	none	0.11, 0.30	Yes	Shallow piezometer no longer functioning due to blockage
CVDC 5	Vertical Settlement and Horizontal Settlement		0+338	8V580211 6914215	1033.358		0.29		No	Labelled as UU415
CVDC 6	Pneumatic Piezometer and Thermistor	1981	0+340	8V580210 6914218	1033.303	*Thermistor nodes: 15,17,19,21, 23,25,27,29	0.2		Yes	Piezometer Detroyed in 1982; Thermistor still functioning
CVDC 7	Two Standpipe Piezometers	1981	0+450	8V580158 6914127	1033.239	26.6(s), 31.05(d) (top of pipe)	0.06	0.31, 0.23	Yes	
CVDC 8	Vertical Settlement and Horizontal Settlement		0+460	8V580155 6914108	1033.217		0.3		No	Labelled as UU416
CVDC 9	Two Standpipe Piezometers	1981	0+565	8V580096 6913998	1033.283	25.45(s), 32.23(d) (top of pipe)	0.29	0.27, 0.19	Yes	
CVDC 10	Vertical Settlement and Horizontal Settlement		0+568	8V580107 6914013	1033.286		0.32		No	Labelled as UU417
CVDT 1	Standpipe Piezometer		0+210	8V580219 6914353	1018.305	10.6 (top of pipe)		0.27	Yes	
CVDP 1	Pneumatic Piezometer	1982	0+450	8V580128 6914135	1016.858	*1046.81 dvd m	none	0	Yes	
CVDP 2	Pneumatic Piezometer	1982	0+450	8V580128 6914135	1016.858	*1046.84 dvd m	none	0	Yes	
CVDP 3	Pneumatic Piezometer	1982	0+450	8V580128 6914135	1016.858	*1047 dvd m	none	0	Yes	
CVDP 4	Pneumatic Piezometer		0+210	8V580239 6914346	1019.18		box	0	No	Malfunctioning in January 1990
CVDP 5	Pneumatic Piezometer		0+210	8V580239 6914346	1019.18	*1046.58 dvd m	box	0	Yes	
CVDP 6	Pneumatic Piezometer	1982	0+210	8V580239 6914346	1019.18	*1046.7 dvd m	box	0	Yes	
88-4	Thermistor	1988	crest	8V580127 6914054	1033.391	*Therm nodes: 0.6, 1.4, 2, 2.5, 3.3, 4.2	0.31		Yes	
88-5	Thermistor	1988	crest	8V580231 6914259	1033.414	*Therm nodes: 1, 1.7, 2.3, 2.8, 3.6, 4.5	0.24		No	Last monitored in 1999.
94CVDC-1	Standpipe Piezometer	1994	crest	8V580263 6914326	1033.383	13.64 (top of pipe)	0.62	0.64	Yes	
P01-11	Standpipe Piezometer	2001		8V580208 6914301	1017.213	Slotted *9.15 - *10.67 (bgl)	0.72	0.66	Yes	
CVD3-1			crest	8V580273 6914338	1033.205				No	Not labelled. No historical information on this instument
CVDS-6?	Incremental Settlement Plate		crest	8V580113 6914014	1033.213	7.8, 3.52		-0.03, 0.77	No	Not labelled, appeared to be nested standpipe. No historical information on this instrument
CVDS-3	Incremental Settlement Plate		crest	8V580160 6914111	1033.223		0.3		No	No historical information on this instument

P01-02	Standpipe		Toe	8V580080 6914041	1018.904	*Slotted 12.4 - 13.9; 26.2 - 27.7	0.75	1.69, 0.70	Yes	artesian conditions in 2004
Weir X12				8V580099 6914099	1015.595				Yes	top of weir
Weir X3				8V580130 6914199	1013.936				Yes	bottom of v-notch
Weir X11				8V580184 6914287	1015.496				Yes	bottom of v-notch

*Depth at time of Installation, in Down Valley Datum (DVD)

Canal Dyke

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	2004 Ground Elevation (m amsl)	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
CD 4	Increment Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	0+400	8V582274 6912801		*Thermistor nodes: 0.8, 1.8, 2.8, 3.8, 4.8, 5.8, 6.8, 7.8, 8.8, 9.8	0.28 (thermistor and piezo) 0.44 (settlement tubing) 0.4 (survey pin)		No	Piezometer tip labelled '365'. Survey pin labelled UU550.
CD 5	Vertical Settlement, Thermistor	1981	0+510	8V582171 6912839		*Thermistor nodes: 1.1, 2.1, 3.1, 4.1, 5.1, 6.1, 7.1, 8.1, 9.1	0.32 (thermistor) 0.26 (survey pin)		No	Last monitored in 2000.
CD 6	Vertical Settlement	1981	0+610	8V582093 6912877			0.31		No	
CD 7	Vertical Settlement, Pneumatic Piezometer	1981	0+710	8V582003 6912921		*7.6	0.37 (survey pin)		No	Piezometer Destroyed
CD 8	Vertical Settlement	1981	0+840	8V581886 6912993			0.32		No	
CD 9	Vertical Settlement, Pneumatic Piezometer	1981	0+960	8V581769 6913038		*5.0	0.35 (piezo)		No	Piezometer tip labelled '346'. Last monitored in 1999.
CD 10	Slope Inclinometer, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	0+990	8V581739 6913053		*Thermistor Nodes: 0.9, 1.9, 2.9, 3.9, 4.9, 5.9, 6.9, 7.9, 8.9, 9.9 *SI: 10	0.41 (thermistor and piezo) 0.38 (SI) 0.40 (survey pin)	0.38 (SI)	Yes	Piezometer tip labelled '367'. Survey pin labelled UU153.
CD 11	Vertical Settlement	1981	1+110	8V581642 6913110			0.39		No	
CD 12	Vertical Settlement	1981	1+230	8V581521 6913164			0.33		No	
CD 13	Vertical Settlement, Horizontal Settlement, Nested Pneumatic Piezometer	1981	1+350	8V581400 6913185		*PP - 6.6 (s), 10.6(d)	0.54 (piezo) 0.32 (survey pin)		Yes	Piezometer tips labelled '350' and '381'.
CD 14	Vertical Settlement	1981	1+440	8V581325 6913237			0.37		No	
CD 15	Slope Inclinometer, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	1+530	8V581245 6913275		*Thermistor Nodes; 1.1, 2.1, 3.1, 4.1, 5.1, 6.1, 7.1, 8.1, 9.1, 10.1 *PP - 6.6 (s), 11.4(d)	0.35 (SI) 0.34 (survey pin) none (thermistor) none (piezo)	0.15 (SI)	Yes	Survey pin labelled UU156. Leads on piezometers labelled '349' and '356'.
CD 16	Vertical Settlement	1981	1+610	8V581169 6913301					No	
CD 17	Vertical Settlement, Thermistor	1981	1+705	8V581075 6913323		*Thermistor Nodes: 0.9, 1.9, 2.9, 3.9, 4.9, 5.9, 6.9, 7.9, 8.9, 9.9	0.18 (thermistor) 0.25 (survey pin)		No	Last monitored in 1999
CD 18	Vertical Settlement	1981	1+800	8V580995 6913342			0.09		No	

CD 19	Slope Inclinometer, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	1+900	8V580907 6913396		*SI - 10 *Thermistor Nodes: 0.0, 0.8, 1.8, 2.8, 3.8, 4.8, 5.8, 6.8, 7.8, 8.8 *PP - 5.3 (s), 9 (d)	0.17 (SI)	0.12 (SI)	Yes (SI only)	Slope Inclinometer is the only instrument located in 2004.
CD 20	Vertical Settlement, Thermistor	1981	2+000	8V580811 6913445		*Thermistor Nodes: 0.5, 1.5, 2.5, 3.5, 4.5, 5.5, 6.5, 7.5, 8.5, 9.5	0.14 (thermistor) 0.18 (survey pin)		No	Last monitored in 1999.
CD 21	Slope Inclinometer, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor, Pneumatic Piezometer	1981	2+100	8V580724 6913495		*SI - 10; *Thermistor Nodes: 3.0, 5.0, 8.0, 11.0, 13.0; *PP - 6.1(s), 11.6(d)	0.11 (SI) 0.12 (piezo)	0.30 (SI)	Yes	Setlement instrumentation not located in 2004
CD 24	Vertical Settlement, Horizontal Settlement, Thermistor	1981	2+365	8V580495 6913607		*Thermistor Nodes: 0.7, 1.7, 2.7, 3.7, 4.7, 5.7, 6.7, 7.7, 8.7, 9.7	0.23 (thermistor)		No	Survey pin labelled UU411. Last monitored in 1999.
CD 25	Vertical Settlement, Thermistor	1981	2+460	8V580413 6913647		*Thermistor Nodes: 0.5, 1.5, 2.5, 3.5, 4.5, 5.5, 6.5, 7.5, 8.5, 9.5	0.30 (thermistor)		No	Last monitored in 1999.
CD 26	Vertical Settlement, Thermistor, Nested Pneumatic Piezometer	1981	2+600	8V580284 6913710		*Thermistor Nodes: 0.6, 1.6, 2.6, 3.6, 4.6, 5.6, 6.6, 7.6, 8.6, 9.6 *PP - 5 (s), 11.2 (d)	0.27 (piezo+therm)		Yes	Piezometer leads are labelled as '349' and '356'.
CD 27	Increment Settlement, Vertical Settlement, Thermistor	1981	2+765	8V580144 6913782		*Thermistor Nodes: 0.3, 1.3, 2.3, 3.3, 4.3, 5.3, 6.3, 7.3, 8.3, 9.3	0.17 (thermistor)		No	Last monitored in 1999.
CD 31	Vertical Settlement, Horizontal Settlement	1981	3+360	8V579802 6914151			0.26		No	Labelled as UU497
CD 32	Vertical Settlement, Horizontal Settlement	1981	3+550	8V579700 6914341			0.47		No	Labelled as UU500

*Depth at time of Installation, in Down Valley Datum (DVD)

Diversion Canal Stabilisation

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	2004 Ground Elevation (m amsl)	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
88-6	Slope Indicator	1988	2+115	8V580713 6913506			0.16	0.7	No	Destroyed
91-CD-1	Slope Indicator	1991	1+767	8V581023 6913342		*11	0.56	0.56	Yes	
94-CD-1	Slope Indicator	1994	2+325	8V580540 6913572		*13.5	0.56	0.58	Yes	
BGC01-01	Slope Indicator	2001	2+160	8V580670 6913516		*14	0.5	0.52	Yes	Replaced 88-10
BGC01-02	Thermistor	2001	2+160	8V580665 6913524		*Thermistor Nodes: 1, 2, 3, 4, 6, 8, 10, 13, 13.9	0.7		Yes	Replaced 88-10,11

*Depth at time of Installation, in Down Valley Datum (DVD)

Canal Spoil Piles

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	2004 Ground Elevation (m amsl)	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
SP5	Slope Indicator, Incremental Settlement, Vertical Settlement, Horizontal Settlement, Thermistor	1981	2+950	8V580030 6913932 (SI) to 8V580023 6913930 (therm)		*SI: 10 *Thermistor Nodes: 1.1, 2.1, 3.1, 4.1, 5.1, 6.1, 7.1, 8.1, 9.1, 10.1	0.43 (SI) 0.44 (survey pin) 0.36 (thermistor)	1.21 (SI)	Yes	

*Depth at time of Installation, in Down Valley Datum (DVD)

1974 Dam

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	2004 Ground Elevation (m amsl)	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
P81-01	Standpipe Piezometer	1981	crest	8V582046 6913462		10.05, 6.08	0.53	0.63	No	
P81-02	Standpipe Piezometer	1981	crest	8V582051 6913270		5.73, 5.38	0.7	0.83, 0.84		Buried
P81-04	Standpipe Piezometer	1981	crest	8V582085 6913176		4.98	0.77	0.90, 0.92	Yes	One of the standpipes is used for environmental monitoring
P81-05	Standpipe Piezometer	1981	crest	8V582215 6913008		13.08	0.94	0.18	No	
P03-04	Standpipe Piezometer		crest	8V582082 6913176			0.52	0.74	Yes	Multiple nested piezometer (10x0.5"), used for environmental monitoring

Diversion Canal Backslope

Instrumentation Name	Type of Instrumentation	Year Installed	Approx. Location	GPS Location	2004 Ground Elevation (m amsl)	Depth of Instrument (m)	Protective Casing Stick-Up (m)	Instrument Stick-Up (m)	Active Yes/No	Comments
BS 5	Slope Indicator, Thermistor, Pneumatic Piezometer	1981	0+960	581737 6913004		*SI: 10 *Therm: 10 *Piezo: 7.2	0.52	0.74	Yes	
BS 9	Slope Indicator, Thermistor, Pneumatic Piezometer	1981	1+530	581235 6913246		*SI: 10 *Therm: 10 *Piezo: 11			Yes	
BS 10	Slope Indicator, Thermistor	1981	1+900	580873 6913352		*SI: 10 *Therm: 10			Yes	
BS 12	Thermistor	1981	2+260	580552 6913505		*Therm: 10			Yes	
BS 18	Slope Indicator	1981	3+000			*SI: 10			Yes	