MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
TAILINGS STORAGE FACILITY

REPORT ON
STAGE Ia/Ib CONSTRUCTION
(REF. NO. 10162/7-5)

AUGUST 14, 1997

Knight Piésold
CONSULTING ENGINEERS

Knight Piésold Ltd.
CONSULTING ENGINEERS

Suite 1400 - 750 West Pender Street
Vancouver, B.C. V6C 2T8
Telephone: (604) 685-0543
Fax: (604) 685-0147

TRANSMITTAL

COPY

TO: Mount Polley Mining Corporation

DATE: August 15, 1997 **REF. NO:** 7/1925

FILE NO: 10162/7.01

RE: Mt. Polley Project

ATTENTION: Mr. Don Parsons

WE ARE SENDING YOU the following items: ☒ Attached ☐ Under separate cover via _____

☐ Print(s) ☐ Reproducibles ☐ Letter(s) ☐ Specifications ☐ Disk(s)

☒ Report(s) ☐ Shop Drawings ☐ Other _____

NO.	DESCRIPTION
2 Copies	"REPORT ON STAGE Ia/Ib CONSTRUCTION, (REF. NO. 10162/7-5) AUGUST 14, 1997

REMARKS:

Copy To: Brian Kynoch, Imperial Metals (+1 copy)
George Headley, MEI (+1 copy)

Signed: K Brown

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
TAILINGS STORAGE FACILITY

REPORT ON
STAGE Ia/Ib CONSTRUCTION
(REF. NO. 10162/7-5)

AUGUST 14, 1997

Suite 1400
750 West Pender Street
Vancouver, British Columbia
Canada V6C 2T8
Telephone (604) 685-0543
Telefax (604) 685-0147
CIS: 72360,477

Knight Piésold Ltd.
CONSULTING ENGINEERS

Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
TAILINGS STORAGE FACILITY

REPORT ON
STAGE Ia/Ib CONSTRUCTION
(REF. NO. 10162/7-5)

This report was prepared by Knight Piésold Ltd. for the account of Mount Polley Mining Corporation. The material in it reflects Knight Piésold's best judgement in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Knight Piésold accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
TAILINGS STORAGE FACILITY

REPORT ON
STAGE Ia/Ib CONSTRUCTION
(REF. NO. 10162/7-5)

TABLE OF CONTENTS

TABLES

FIGURES

DRAWINGS

1625.225 Rev. 2	Tailings Storage Facility - Tailings Pipework Details Drop Box No. 2
1625.226 Rev. 2	Tailings Storage Facility - Reclaim Booster Pump Station Area - General Arrangement
1625.228 Rev. 2	Tailings Storage Facility - Tailings Impoundment - Tailings and Reclaim Pipework Profiles
1625.230 Rev. 5	Drainage Plan - Mine Site
1625.231 Rev. 6	Drainage Plan - Mill Site
1625.232 Rev. 5	Drainage Plan - Sections and Details
1628.001 Rev. 2	Pumping System - Plan, Profile and General Arrangement

APPENDICES

Appendix A	Construction Quality Assurance Record Test Summary Sheets
Appendix B	Construction Quality Assurance Control Test Summary Sheets and Gradation Plots
Appendix C	Piezometer Readings
	C1 Piezometer Records for Foundation Soils
	C2 Piezometer Records for Embankment Drains
	C3 Piezometer Records for Embankment Fill Zones

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
TAILINGS STORAGE FACILITY

REPORT ON
STAGE Ia/Ib CONSTRUCTION
(REF. NO. 10162/7-5)

SECTION 1.0 - INTRODUCTION

1.1 GENERAL DESCRIPTION

The first stage of the Mount Polley Mine Tailings Storage Facility (Stage Ia/Ib) was constructed from May, 1996 to March, 1997. The Stage Ia Main Embankment was completed to El. 927 metres to enable the impoundment of runoff water from the 1997 freshet within the facility. The Stage Ib Main and Perimeter Embankments were subsequently completed to El. 934 metres. Stage Ib will provide sufficient storage capacity to contain the above mentioned runoff, plus additional make-up water from Polley Lake and tailings from approximately one year of mining.

Knight Piésold Ltd. designed the Tailings Storage Facility and developed the technical specifications for the work. Knight Piésold Ltd. also provided full time supervision and technical assistance during the construction program and conducted and reviewed all laboratory quality assurance testwork. Knight Piésold Ltd. worked under the overall management and administration of Mount Polley Mining Corporation. The work was performed by North American Construction Group.

The general components of the Tailings Storage Facility are summarized below.

- A pipeline system conveys the tailings slurry via gravity from the Millsite to the facility. The pipeline system includes a movable discharge section with spigot offtakes to distribute the tailings from the embankment crest.

- A make-up water supply system comprising an intake on Polley Lake, a pump and a pipeline provides extra water to the Tailings Storage Facility.

- The Millsite Sump and Southeast Sediment Pond provide additional make-up water to the system. Millsite runoff is directed from the Millsite Sump into the tailings line near the mill. Flows from the Southeast Sediment Pond enter the system at the reclaim booster pump station or at the tailings dropbox.

- Earthfill embankments retain the tailings solids within the facility. The Main Embankment has a vertical chimney drain, with a collector (longitudinal) drain and three outlet drains.

- A low permeability basin liner (natural and constructed) provides containment of process fluids within the facility and minimizes the potential for seepage through the tailings basin soils.

- A foundation drain system is included below the Main Embankment to prevent the build-up of any pressures in foundation materials and to collect any seepage from the base of the Tailings Storage Facility.

- Seepage collection ponds excavated in low permeability soils store seepage and local runoff that is pumped back to the Facility.

- Instrumentation in the embankment foundations, fill and drains (including vibrating wire piezometers and survey monuments) is used to monitor the performance of the facility.

- A reclaim water system comprised of a barge mounted pumpstation in an excavated channel, a booster pumpstation and a pipeline provides process water to the mill.

- A system of monitoring wells is installed around the Tailings Storage Facility for groundwater quality monitoring.

This report presents:

- The scope of the work encompassing Stage Ia/Ib construction.
- Construction methods used to complete the work.
- The results of quality assurance tests carried out during construction.
- Monitoring data collected to date.

1.2 REFERENCE DOCUMENTS

The following Knight Piésold documents provide background information to support this report and are available for review:

1) Imperial Metals Corp. Mt. Polley Project, "Report on Geotechnical Investigations and Design of Open Pit, Waste Dumps and Tailings Storage Facility", February 19, 1990.

2) Imperial Metals Corp. Mt. Polley Project, Report on Project Water Management, Ref. No. 1624/1, February 6, 1995.

3) Imperial Metals Corp. Mt. Polley Project, "Report on 1995 Geotechnical Investigations for Mill Site and Tailings Storage Facility, Ref. No. 1623/1, March 14, 1995.

4) Imperial Metals Corp. Mt. Polley Project, Tailings Storage Facility and Ancillary Works, Part 10 - Technical Specifications, Ref. No. 1625/3, March 25, 1995.

5) Imperial Metals Corp. Mt. Polley Project, Tailings Access Road and Tailings/ Reclaim Pipelines, Part 6 - Technical Specifications, Ref. No. 1625/4, May 17, 1995.

6) Imperial Metals Corp. Mt. Polley Project, Manual on Sampling and Handling Guidelines for Determination of Groundwater Quality, Ref. No. 1625/5, May 19, 1995.

7) Imperial Metals Corp. Mt. Polley Project, Tailings Storage Facility, Design Report, Ref. No. 1625/1, May 26, 1995.

8) Imperial Metals Corp. Mt. Polley Project, Tailings Storage Facility, Site Inspection Manual, Ref. No. 1625/2, May 26, 1995.

9) Imperial Metals Corp. Mt. Polley Project, Response to Review Comments on Tailings Embankment Design, Ref. No. 1625/6, January 25, 1996.

10) Imperial Metals Corp. Mt. Polley Project, Groundwater Monitoring Program, Ref. No. 1624/2, June 3, 1996.

11) Imperial Metals Corp. Mt. Polley Project, Report on Geotechnical Investigations and Design of Open Pits and Waste Dumps, Ref. No. 1628/1, July 5, 1996.

12) Imperial Metals Corp. Mt. Polley Project, Response to Review Comments on Groundwater Monitoring Program, Ref. No. 1625/7, September 12, 1996.

13) Imperial Metals Corp. Mt. Polley Project, Requirements and Specifications for the 1996 Groundwater Monitoring Program, Ref. No. 1625/8, September 12, 1996.

14) Imperial Metals Corp. Mt. Polley Project, Specification for Drilling, Monitoring Well Installations and Related Services, Ref. No. 1628/3, September 18, 1996.

15) Mount Polley Mining Corporation, Mount Polley Project, 1996 Groundwater Monitoring Well Installation Program, Ref. No. 1628/4, February 17, 1997.

16) Mount Polley Mining Corporation, Mount Polley Project, Polley Lake Pumping System, Ref. No. 1628/5, February 19, 1997.

17) Mount Polley Mining Corporation, Mount Polley Project, Tailings Storage Facility, Operation, Maintenance and Surveillance Manual for Stage Ia Embankment (El. 927 m), Ref. No. 1627/1, March 11, 1997.

18) Mount Polley Mining Corporation, Mount Polley Project, Tailings Storage Facility and Ancillary Features, May 1, 1997 Site Inspection, Ref. No. 1627/4, June 3, 1997.

19) Mount Polley Mining Corporation, Mount Polley Project, Tailings Storage Facility, Updated Design Report, Ref. No. 1627/2, June 4, 1997.

20) Mount Polley Mining Corporation, Mount Polley Project, Tailings Storage Facility, Operation, Maintenance and Surveillance Manual for Stage Ib Embankment (El. 934 m), Ref. No. 10162/7-3, June 18, 1997.

SECTION 2.0 - GENERAL DESCRIPTION OF WORK

2.1 SCOPE OF WORK

Descriptions of each of the main components of the Stage Ia/Ib construction program are presented in the following sub-sections.

2.1.1 Access Roads

Several new access roads were constructed, as follows:

- The tailings access road to the northwest corner of the facility.
- The tailings pipeline access road around the perimeter of the facility.
- The reclaim pipeline access road to the reclaim barge.
- The Bootjack-Morehead Connector Relocation, at the south end of the facility, beyond the Main Embankment.

The tailings access road extends from the Millsite to the northwest corner of the Tailings Storage Facility. The tailings and reclaim pipelines were installed in the pipe containment channel adjacent to the road. The continuous downhill grade will ensure that tailings will flow by gravity to the facility. The pipe containment channel will provide containment of the tailings in the event of a pipeline leak or rupture. A separate runoff diversion ditch is located up-slope of the pipe containment channel to allow runoff to be diverted through the roadway to natural drainage courses via cross drain culverts.

The tailings pipeline road extends from the northwest corner of the facility to the right (west) abutment of the Main Embankment. The first section of this road is a continuation of the tailings access road which slopes down to the Stage Ib Perimeter Embankment. The tailings pipeline is located in a pipe containment channel on the inside edge of the road. The road is flat along the Perimeter Embankment. From the Perimeter Embankment to the Main Embankment, the road follows a rough trail used to install the tailings line.

Finally, the road follows the flat crest of the Stage Ib Main Embankment to the right (west) abutment.

The reclaim pipeline access road extends from the location where the pipelines split at the northwest corner of the facility to the reclaim barge. The road has a continuous downhill grade to allow the pipeline to drain by gravity. For the last 500 metres (approx.), the road runs parallel to the reclaim barge channel.

The Bootjack-Morehead Connector Relocation was constructed to replace the section of the Gavin Lake Forest Service Road that was inside the Tailings Storage Facility. The Bootjack-Morehead Connector Relocation runs near the toe of the future South Embankment and then parallels the Main Embankment south of the Seepage Collection Pond.

The scope of work for construction of the access roads included the following:

- Location of alignment and setting out.
- Construction of roads and ditches (with cut/fill sections as required).
- Installation of culverts, including the Bootjack Creek Crossing.
- Placement of wearing course road surfacing as required.

The details of the tailings and reclaim access roads are provided in plan on Drawing Nos. 1625.218 and 1625.222 and in section on Drawing Nos. 1625.206 and 1625.219. The Bootjack-Morehead Connector Relocation is shown on Drawing Nos. 1625.205, 1625.213 and 1625.214.

2.1.2 Tailings Basin

Containment within the tailings basin is provided by two earthfill embankments. It is enhanced by a low permeability glacial till liner present within the tailings basin. Work in the tailings basin included basin preparation for areas affected by construction (such as embankment footprints, seepage collection ponds, constructed basin liners, borrow areas, reclaim barge channel and road alignments) and the construction of a low permeability glacial till

basin liner where the natural surficial glacial till cover was thin (less than 2 metres) and was underlain by glaciofluvial/ glaciolacustrine sediments.

The scope of work for construction in the tailings basin included the following:

- Basin preparation, including clearing, grubbing and topsoil stripping and stockpiling. Topsoil was stockpiled downstream of the left (east) abutment of the Main Embankment.

- Grouting of previously installed monitoring wells.

- Soils investigations to determine the extent of the basin liners. Exploration trenches were backfilled in compacted lifts using low permeability soils. A mound of glacial till was placed over the backfilled trenches which fell within the liner limits.

- Laboratory testwork to evaluate the basin soils.

- In-situ field permeability testing (Field Air Entry Permeameter) for basin liner materials.

- Construction of the Lower and Upper Basin Liners. These liners were connected to the core zone (Zone S) of the Main Embankment. Additional material was placed as frost protection on any areas which were likely to be exposed to freezing temperatures over the winter.

- Construction of additional Basin Liners in the Original Borrow Area, where more permeable soils were encountered.

Details of the tailings basin preparation and basin liners are shown on Drawing Nos. 1625.201 and 1625.202.

2.1.3 Tailings Embankments

The Stage Ia/Ib Tailings Storage Facility includes two zoned earthfill embankments (Main and Perimeter) constructed to El. 934 metres. The embankments are approximately 1,000 and 800 metres long, with maximum heights of about 22 and 5 metres, respectively.

Stage Ia/Ib construction was completed using the following materials:

- The core (Zone S) and downstream (Zone B) zones were constructed from locally borrowed glacial till. The core zone (Zone S) is connected to the low permeability glacial till liner within the tailings basin. Three borrow areas were utilized, one within the tailings basin (Original Borrow Area) and two downstream of the Main Embankment left abutment (Alternate and Future Borrow Areas).

- A chimney drain system was constructed at the Main Embankment using processed rock, crushed and screened at the Millsite and at a rock borrow area. The materials were hauled to the embankment for placement in the drain.

- A foundation drain system was constructed under the downstream zone (Zone B) of the Main Embankment using processed rock, crushed and screened at the Millsite and hauled to the embankment for placement in the drains.

The scope of work for construction of the embankments included the following:

- Survey control of embankment construction.

- Preparation of the foundation and abutments to ensure a tie-in with dense, natural ground.

- Placement and compaction of the embankment fill materials in the respective zones in accordance with the Technical Specifications.

- Installation of the foundation drain and chimney drain systems at the Main Embankment.

- Installation and monitoring of vibrating wire piezometers.

- Evaluation of embankment materials through detailed testing on the fill and in the site soils laboratory.

Construction details for the embankments are shown on Drawing Nos. 1625.202, 1625.205, 1625.207, 1625.210, 1625.211, and 1625.212.

2.1.4 Seepage Collection Ponds

Seepage collection ponds were excavated outside the projected limits of the ultimate Main and Perimeter Embankments. The seepage collection ponds collect flows from the foundation and chimney drain systems (via the drain monitoring sumps), and local runoff and runoff diverted from disturbed areas downstream of the embankments. The collected water is pumped over the embankments, back into the Tailings Storage Facility, for use as process water.

The scope of work for construction of the seepage collection ponds included the following:

- Survey control.
- Excavation of the ponds in dense, in-situ soils.
- Installation of drain monitoring sumps and associated pipework.
- Installation of seepage recycle sumps and associated pipework.
- Installation of culverts and rough grading around the ponds.

The details of the seepage collection ponds are shown on Drawing Nos. 1625.202, 1625.205, 1625.210, 1625.211, 1625.213 and 1625.214.

2.1.5 Tailings Discharge System

The tailings discharge system was designed with the following objectives:

- To maximize the storage capacity of the facility.
- To maintain the supernatant pond in the area of the reclaim barge so as to maximize the amount of clean process water available for reclaim.
- To establish free draining tailings beaches adjacent to the embankments to facilitate future raises and to enhance embankment stability.

Tailings slurry is delivered to the Tailings Storage Facility by gravity flow through a single HDPE pipeline which is approximately 7,000 metres long. A concrete tailings dropbox (T2) is included for control of the maximum pipeline pressure and to allow additional surface runoff and overflow from the reclaim booster pump station to be added into the tailings pipeline.

The tailings pipeline is located in the pipe containment channel adjacent to the tailings access road and along the inside crest of the Perimeter and Main Embankments. The tailings pipeline has a variable downhill slope to ensure drainage. The pipeline will be flat (0 percent) from the start of the Perimeter Embankment to the end of the Main Embankment. The pipeline consists of sections of various diameters and pressure ratings, as shown on Drawing Nos. 1625.218, 1625.222 and 1625.228.

The scope of work for the construction of the tailings discharge system included the following:

- Construction of pipe containment channel, including the sleeved crossing of Bootjack Creek.
- Construction of the T2 tailings dropbox.

- Fusing of the HDPE pipeline, connection at flanged joints and installation in the pipe containment channel.

- Construction of the spigot offtakes (M1 dump valves and movable discharge section).

- Pipeline anchoring.

- Pipeline testing.

The tailings discharge system is discussed in detail in Section 4.2.

2.1.6 Reclaim System

Most of the process water for the mill is provided from water that accumulates in the Tailings Storage Facility as the tailings settle and consolidate. This water is pumped from a floating barge pumpstation back to the mill in a 24 inch (610 mm) pipeline in two steps:

- From the barge to the booster pumpstation - The pipeline consists of approximately 300 metres of steel pipe immediately above the barge, with various sections of 24 inch HDPE up to the booster pumpstation. The DR (dimensional ratio) of the HDPE pipe increases uphill as the pressure head reduces.

- From the booster pumpstation to the mill - The pipeline is comprised of various sections of 24 inch HDPE pipe from the booster pumpstation to the mill. As for the lower section, the DR (dimensional ratio) of the HDPE pipe increases uphill as the pressure head reduces.

The barge is located in a channel adjacent to the reclaim pipeline access road. The barge is connected to the 24 inch steel pipeline by a 12.2 metre (40 foot) steel pipe with a ball joint that allows 15 degrees of rotation. The 12. 2 metre

pipe, ball joint and accompanying ramp require relocation at three metre elevation increments as the level of the pond rises.

The scope of work for the construction of the reclaim system included the following:

- Construction of pipe containment channel, including the sleeved crossing of Bootjack Creek.
- Construction of the reclaim booster pumpstation.
- Installation of the floating barge pumpstation, steel ball joint and pipe.
- Fusing of the HDPE pipeline, connection at flanged joints and installation in the pipe containment channel.
- Pipeline anchoring.
- Pipeline testing.

The reclaim system is discussed in detail in Section 4.3.

2.1.6 Make-up Water System

In addition to the reclaim water obtained from tailings consolidation and local runoff, additional process water for the mill will be provided by a make-up water supply system which has three sources, as follows:

- Runoff from the Millsite - The Millsite area is graded so that all runoff is directed to the Millsite Sump. Water is collected in a manhole sump and is currently pumped directly back to the mill. In the future, the water will be conveyed by gravity flow (non-pressurized) to the tailings pipeline in an 8 inch (200 mm) HDPE pipe connected to the HDPE tailings line at a prefabricated Tee.

The Millsite Sump and associated pipework were constructed by a different Contractor (Ledcor) under a separate contract. The details are shown on Drawing Nos. 1625.230, 1625.231 and 1625.232.

- Runoff from Southeast Waste Dump - Runoff from the future Southeast Waste Dump is collected in a ditch that flows to the Southeast Sediment Pond. Water is decanted through a manhole into a 10 inch (250 mm) DR21 HDPE discharge pipeline that extends from the manhole to the reclaim booster pumpstation sump and to the T2 Dropbox.

  The Southeast Waste Dump ditch, Southeast Sediment Pond and associated pipework were constructed by a different Contractor (Ledcor) under a separate contract. The details are shown on Drawing Nos. 1625.230, 1625.231 and 1625.232.

- Fresh water from Polley Lake - The Polley Lake pumping system will enable the Mine to extract up to one million cubic meters of water from Polley Lake annually during the spring freshet period. The system includes a submerged intake connected to an on-shore diesel pump. Water is pumped to the Tailings Storage Facility in an HDPE pipeline, which has varying pressure (DR) ratings and is laid on grade on the access road. Water is discharged from the pipeline through an open end onto natural ground in the Tailings Storage Facility.

  The Polley Lake pumping system was installed using a different Contractor (Ledcor) under a separate contract. The details of the pumping system are not discussed in this report. For more information, see the report "Mount Polley Mining Corporation, Mount Polley Project, Polley Lake Pumping System, Ref. No. 1628/5, February 19, 1997".

The work items for the make-up water system were separate from most of the construction work completed for the Stage Ia/Ib Tailings Storage Facility and are therefore not discussed further in this report.

2.2 CONSTRUCTION SCHEDULE

Initial clearing of the lower areas of the tailings basin was completed in September and October, 1995. This was accompanied by the excavation of drainage ditches to enhance and control runoff in the Spring of 1996. This work was completed by Mount Polley Mining Corporation.

Construction of Stage Ia/Ib of the Tailings Storage Facility commenced in May, 1996 with clearing of the topsoil stockpile and potential borrow areas and clearing and rough grading of the tailings access road. Temporary construction roads were established with additional ditching to control runoff. This was followed by topsoil stripping at the Main Embankment and Seepage Collection Pond. The Main Embankment Seepage Collection Pond was excavated first so that it could be used as a sediment control structure during construction (completed mid August). The first embankment fill was placed August 9, 1996 after the foundation drains were installed in the lowest parts of the Main Embankment foundation soils.

Construction progress was slow due to a cool, rainy summer. Work continued through the Fall and construction activities were suspended on October 23, 1996 due to heavy snowfall and impending freezing conditions.

The Stage Ia Main Embankment needed to be completed in late 1997 and construction was continued under winter conditions. After extensive preparatory work, fill placement on the Main Embankment resumed November 29, 1996 and Stage Ia was completed to El. 927 metres on December 11, 1996.

Immediately following the completion of the Stage Ia Main Embankment, fill placement at the Perimeter Embankment commenced. Construction was suspended on December 17, 1996 due to cold temperatures (minus 20 degrees Celsius) and Christmas

shutdown. Approximately 75 percent of the Stage Ib Perimeter Embankment fill had been placed at that time.

The Stage Ib Main and Perimeter Embankments were completed in early 1997, before the Spring melt after additional investigation and testing work on glacial till from the borrow areas and extensive preparatory work on the embankments. Fill placement resumed at the Main Embankment on February 2, 1997. The Stage Ib Main and Perimeter Embankments were completed to El. 934 metres on March 17, 1997.

All other construction activities were completed during the periods listed above, including the installation of the tailings and reclaim pipelines. The pipeline work was completed in May, 1997.

2.3 CONSTRUCTION SUPERVISION AND QUALITY ASSURANCE

Knight Piésold Ltd. provided full time supervision and quality assurance services for construction of Stage Ia/Ib of the Tailings Storage Facility. During cold weather construction periods, additional Knight Piésold personnel were provided to ensure that the design objectives were achieved in spite of the freezing conditions. Key items addressed by Knight Piésold included foundation inspection and approval prior to fill placement, assessment of borrow material suitability, inspection of fill placement procedures, in-situ testing of the placed fill for moisture content and density, record and control testing at the required frequencies, and monitoring of all construction instrumentation.

The construction quality assurance (CQA) procedures are described in detail in the document "Imperial Metals Corp., Mt. Polley Project, Tailings Storage Facility, Site Inspection Manual, Ref. No. 1625/2, May 26, 1995". Technical Specifications were developed for the Work, as described in the document "Imperial Metals Corp., Mt. Polley Project, Tailings Storage Facility and Ancillary Works, Part 10 - Technical Specifications, Ref. No. 1625/3, March 25, 1995".

Laboratory testing required for the CQA program included the following:

- Moisture Content (ASTM D2216)
- Particle Size Distribution (ASTM D422)
- Laboratory Compaction (ASTM D1557)
- Specific Gravity (ASTM D854)
- Atterberg Limits (ASTM D4318)
- Field Density (ASTM D2167)
- Field Density by Nuclear Methods (ASTM D2922)
- Moisture Content by Nuclear Methods (ASTM D3017)
- Laboratory and Field Air Entry Permeameter (LAEP or FAEP)

The required testing frequencies and schedules are summarized on Table 2.1.

The construction quality assurance (CQA) program outlined in the Site Inspection Manual was closely followed. Construction was undertaken in accordance with the general technical requirements from the Technical Specifications and the field and laboratory test results indicate that the design objectives were achieved, as discussed in Section 3.0.

SECTION 3.0 - EARTHWORKS

3.1 GENERAL

The Stage Ia/Ib Tailings Storage Facility earthworks comprised the following zones and materials:

- Zone S - the core zone of the Main and Perimeter Embankments, constructed from locally borrowed fine grained glacial till.

- Zone B - the downstream zone of the Main Embankment, also constructed from locally borrowed glacial till.

- Basin liners - Upper and Lower basin liners were constructed upstream of the Main Embankment using locally borrowed fine grained glacial till. Some small sections in the Original Borrow area also had a liner placed on them.

- Foundation Drain System - the drain system constructed under the downstream zone of the Main Embankment using Drain Gravel from processed rock.

- Chimney Drain System - the drain system constructed within the Main Embankment using Filter Sand and Drain Gravel from processed rock.

The Construction Quality Assurance (CQA) procedures described in the Site Inspection Manual and Technical Specifications required that each material type be subjected to detailed field and laboratory testing to verify that the design objectives were met. Testing carried out on earthworks included Control and Record tests. Control tests were typically carried out on materials in borrow pits or from source locations to determine their suitability for use in the work. Record tests were typically carried out on materials after placement and compaction to document the level of workmanship achieved and to ensure that the design objectives shown on the Drawings were met. Both Control and Record tests were used as a basis for modifying the construction procedures as and when necessary. Record and Control testing requirements,

frequencies and estimated quantities are summarized on Table 2.1, as discussed in Section 2.0.

Stripping and preparatory work was completed at all foundations and abutments to ensure a good tie-in with dense, natural ground. Written foundation approval was required prior to placing any fill. Organic debris and topsoil were removed and stockpiled according to the Specifications. The embankment slope was dressed to final lines and grades using a CAT D8N bulldozer.

All fill materials were hauled to the embankment and placed according to the material and lift thickness specifications for each zone. Compaction was achieved from a sheepsfoot roller, a 10 ton vibratory pad foot roller and a 10 ton smooth drum roller. Additional compaction was obtained by routing the CAT 631E scraper units along the fill surfaces in Zone S, Zone B and the basin liners.

The moisture content and density of placed and compacted fill materials was continuously monitored using a nuclear densometer. The nuclear densometer provides instantaneous results and was used to evaluate the suitability of materials as soon as they were hauled to the embankments. If the results indicated that the materials were likely too wet to enable the compaction objective to be achieved, the construction fleet was moved to a new location in the borrow areas, where drier material was available. If the results indicated that the moisture content of the fill materials was acceptable but that the density was too low, the Contractor was directed to put additional compaction effort on the placed material. If the results indicated that the fill density and moisture content were acceptable, then the Contractor was given approval to place another lift on the embankment.

The nuclear densometer was also used in the borrow areas to evaluate potential fill material suitability before it was hauled to the embankments.

Approximately 5,000 recorded density and moisture contents results were recorded using the nuclear densometer during the Stage Ia/Ib construction program. Approximately 4,400 and 600 readings were from the Main and Perimeter Embankments, respectively.

Detailed results of the CQA testwork are presented on the Record and Control test summary sheets in Appendices A and B.

3.2 QUALITY ASSURANCE TESTWORK

A description of the test procedures and a discussion of the results of the construction quality assurance (CQA) testwork for the Stage Ia/Ib earthworks is presented in the following sub-sections.

3.2.1 Zone S

3.2.1.1 General

Zone S forms the low permeability core and abutment seal zones for the Main and Perimeter Embankments (the Stage Ia/Ib Perimeter Embankment was all Zone S). The material used in Zone S was fine grained glacial till borrowed locally from the borrow pits. The bulk of the Zone S material was taken from the Original Borrow area, located within the tailings basin. Additional material was excavated from the Alternate and Future Borrow areas, located downstream of the left (east) abutment of the Main Embankment.

The Specifications for Zone S material required placement and compaction in maximum 300 mm thick lifts, to 98 percent of the Standard Proctor maximum dry density. However, the material was typically placed and compacted in 150 mm lifts by the scraper construction fleet to ensure that the compaction objectives were met. The thinner lifts did not result in a slower fill placement rate.

Oversize cobbles and boulders were segregated from the advancing fill and were subsequently pushed into the Zone B fill (if acceptable) or to the face of the embankments.

Record tests on the compacted Zone S fill included the following:

- Moisture Content (ASTM D2216)
- Particle Size Distribution (ASTM D422)
- Laboratory Compaction (ASTM D1557)
- Specific Gravity (ASTM D854)
- Atterberg Limits (ASTM D4318)
- Field Density by Nuclear Methods (ASTM D2922)
- Moisture Content by Nuclear Methods (ASTM D3017)
- Laboratory Air Entry Permeameter (LAEP)

Field density and moisture content testing with the nuclear densometer was conducted on each lift.

3.2.1.2 Main Embankment

A total of 33 samples were taken for record testing of Zone S material placed in the Main Embankment. Particle size analyses show that Zone S glacial till is a well graded sandy silt with some clay and gravel. The gradation envelope with the median and 100 percent limits is shown on Figure 3.1.

Of the 33 record samples, only 2 were non-plastic as determined by the Atterberg Limits tests. For the remaining 31 samples, the plastic limit ranged from 11.5 to 19.6 percent, with a median of 14.9 percent. The liquid limit ranged from 17.0 to 28.1 percent, with a median of 24.4 percent. The plasticity index ranged from 3.6 to 12.7 percent, with a median of 9.9 percent. Based on this, the material is classified as CL in the Unified Soil Classification System (inorganic clay of low to medium plasticity).

Histograms of the measured field moisture content, the Standard Proctor optimum moisture content and the deviation from optimum are shown on Figure 3.2. The median field moisture content was 11.6 percent, while the median optimum moisture content was 9.9 percent. The median deviation from the optimum moisture content was 1.5 percent wet of optimum. These moisture contents were achieved with minimal moisture control and by halting

construction on wet days. Material which was too wet for direct placement in the fill was usually wasted. During summer construction, it was sometimes disced and allowed to air dry. Discing was typically done in the borrow areas, prior to hauling the material to the embankments. Occasionally, overly wet material which had been placed on the embankment but did not meet the compaction objective was disced and allowed to air dry before it was recompacted. In these cases, the material was removed to the waste stockpile if acceptable densities were not subsequently achieved.

Compaction is evaluated by comparing the measured field dry density with the Standard Proctor maximum dry density. The field dry density was determined using a nuclear densometer, which measures the total field density and the moisture content. The density was measured in the placed and compacted fill at the location and at the same time as the record sample was collected. Histograms of the measured field dry density, the Standard Proctor maximum dry density and the corresponding percent compaction are shown on Figure 3.3. The median dry density was 2065 kg/m^3, while the median maximum dry density was 2080 kg/m^3. The median percent compaction was 98.6 percent, indicating that the compaction objective was achieved.

Specific gravity was determined for 8 samples. The results varied from 2.72 to 2.75 and a median value of 2.74 was obtained.

The soil permeability was measured using the laboratory air entry permeameter (LAEP). A total of 13 tests were completed, with results from $1x10^{-10}$ to $5x10^{-8}$ cm/sec. The median value was $1x10^{-9}$ cm/sec.

3.2.1.3 Perimeter Embankment

A total of 6 samples were taken for record testing of Zone S material placed in the Perimeter Embankment. Particle size analyses show that the Zone S glacial till is a well graded sand and silt with some gravel and trace clay. The gradation envelope with the median and 100 percent limits is shown on Figure 3.4.

Of the 6 record samples, only 1 was non-plastic as determined by the Atterberg Limits tests. For the remaining 5 samples, the plastic limit ranged from 14.3 to 16.0 percent, with a median of 15.5 percent. The liquid limit ranged from 17.1 to 25.3 percent, with a median of 21.6 percent. The plastic index ranged from 2.4 to 11.0 percent, with a median of 6.1 percent. Based on this, the material is classified as CL - ML in the Unified Soil Classification System (inorganic clay/silt of low plasticity).

Histograms of the measured field moisture content, the Standard Proctor optimum moisture content and the deviation from optimum are shown on Figure 3.5. The median field moisture content was 9.5 percent, while the median optimum moisture content was 9.0 percent. The median deviation from the optimum moisture content was 1.0 percent wet of optimum. These moisture contents were achieved with minimal moisture control and by halting construction on wet days.

Compaction and density were evaluated as for the Main Embankment. Histograms of the measured field dry density, the Standard Proctor maximum dry density and the corresponding percent compaction are shown on Figure 3.6. The median dry density was 2072 kg/m^3, while the median maximum dry density was 2120 kg/m^3. The median percent compaction was 98.5 percent, indicating that the compaction objective was achieved.

Specific gravity was determined for 5 samples. The median value was 2.73.

The soil permeability was measured using the laboratory air entry permeameter. A total of 2 tests were completed, with results ranging from $1x10^{-9}$ to $9x10^{-9}$ cm/sec. The mean value was $5x10^{-9}$ cm/sec.

3.2.2 Zone B

Zone B forms the downstream zone of the Main Embankment. The material used for Zone B was glacial till borrowed locally from the borrow pits. The

specification for Zone B allowed the use of glacial till which was slightly coarser than Zone S. As for Zone S, material was taken from three borrow sources (Original, Alternate and Future Borrow areas), with the bulk of the material coming from the Original Borrow area.

The Specifications for Zone B material required placement and compaction in maximum 600 mm thick lifts, to 98 percent of Standard Proctor maximum dry density. However, as for Zone S, the material was typically placed and compacted in 150 mm lifts by the scraper construction fleet to ensure that the compaction objectives were met. The thinner lifts did not result in a slower fill placement rate. Field density and moisture content testing with the nuclear densometer was typically conducted on each lift.

Oversize cobbles and boulders were segregated from the advancing fill and were pushed to the face of the embankment.

Record tests on the compacted Zone B fill included the following:

- Moisture Content (ASTM D2216)
- Particle Size Distribution (ASTM D422)
- Laboratory Compaction (ASTM D1557)
- Specific Gravity (ASTM D854)
- Atterberg Limits (ASTM D4318)
- Field Density by Nuclear Methods (ASTM D2922)
- Moisture Content by Nuclear Methods (ASTM D3017)
- Laboratory Air Entry Permeameter (LAEP)

A total of 30 samples were taken for record testing of Zone B material placed in the Main Embankment. Particle size analyses show that Zone B glacial till is a well graded silt and sand with some gravel and trace clay. The gradation envelope with the median and 100 percent limits is shown on Figure 3.7.

Of the 30 record samples, 5 were non-plastic as determined by the Atterberg Limits tests. For the remaining 25 samples, the plastic limit ranged from 13.2

to 18.0 percent, with a median of 14.7 percent. The liquid limit ranged from 15.3 to 27.0 percent, with a median of 22.0 percent. The plasticity index ranged from 2.5 to 11.0 percent, with a median of 8.0 percent. Based on this, the material is classified as CL in the Unified Soil Classification System (inorganic clay of low to medium plasticity).

Histograms of the measured field moisture content, the Standard Proctor optimum moisture content and the deviation from optimum are shown on Figure 3.8. The median field moisture content was 10.7 percent, while the median optimum moisture content was 9.7 percent. The median deviation from the optimum moisture content was 1.1 percent wet of optimum. As for Zone S, these moisture contents were achieved with minimal moisture control and by halting construction on wet days. Material which was too wet for direct placement in the fill was usually wasted. During summer construction, it was occasionally disced and allowed to air dry. Discing was typically done in the borrow areas, prior to hauling the material to the embankments. Occasionally, overly wet material which had been placed on the embankment and had not met the compaction objective was disced and allowed to air dry before it was recompacted. In these cases, the material was removed to the waste stockpile if acceptable densities were not subsequently achieved.

Compaction and density were evaluated as for Zone S. Histograms of the measured field dry density, the Standard Proctor maximum dry density and the corresponding percent compaction are shown on Figure 3.9. The median dry density was 2048.5 kg/m^3, while the median maximum dry density was 2085 kg/m^3. The median percent compaction was 98.5 percent, indicating that the compaction objective was achieved.

Specific gravity was determined for 4 samples. The median value was 2.74.

The soil permeability was measured using the laboratory air entry permeameter. A total of 12 tests were completed, with results ranging from $3x10^{-10}$ to $3x10^{-9}$ cm/sec. The median value was $1x10^{-9}$ cm/sec.

3.2.3 Basin Liners

Initial work for the basin liners included Field Air Entry Permeameter (FAEP) testing of the foundation soils in the lower areas of the tailings basin, near the Main Embankment, to help delineate the location of any required liners. The results, summarized on Table 3.1, show that for six tests, the in-situ permeability of the near surface glacial till ranged from $2x10^{-6}$ to $2x10^{-9}$ cm/s. The median was $1x10^{-8}$ cm/s.

The basin liners were constructed using low permeability fine grained glacial till excavated from the borrow areas after the locations were delineated upstream of the Main Embankment (done in the field, based on Field Air Entry Permeameter tests and exploration trench observations). The Upper and Lower Basin liners are shown on Drawing No. 1625.205. In addition, some small sections of the Original Borrow area were covered by a basin liner, where higher permeability zones were encountered during construction.

The basin liners were placed and compacted in 150 mm thick lifts using fine grained glacial till which was wet of the Standard Proctor optimum moisture content. The Upper Basin Liner was capped with one 300 mm thick lift as frost protection for the areas which would be exposed to freezing conditions over the winter. The Lower Basin was capped with one 450 mm thick lift.

The gradation requirements for basin liner fill were identical to Zone S. The extra frost protection layer was permitted to contain particles up to 300 mm.

Record tests on the compacted basin liner fill included the following:

- Moisture Content (ASTM D2216)
- Particle Size Distribution (ASTM D422)
- Laboratory Compaction (ASTM D1557)
- Specific Gravity (ASTM D854)
- Atterberg Limits (ASTM D4318)
- Laboratory Air Entry Permeameter (LAEP)

- Field Air Entry Permeameter (LAEP)

A total of 11 samples were taken for record testing of glacial till placed in the basin liners. Particle size analyses show that the basin liner glacial till is a well graded sand and silt, with some clay and trace gravel. The gradation envelope with the median and 100 percent limits is shown on Figure 3.10.

Atterberg Limits were obtained for 9 of the 11 record samples. The plastic limit ranged from 12.0 to 16.1 percent, with a median of 14.7 percent. The liquid limit ranged from 22.5 to 27.4 percent, with a median of 23.2 percent. The plasticity index ranged from 6.4 to 12.9 percent, with a median of 8.9 percent. Based on this, the material is classified as CL in the Unified Soil Classification System (inorganic clay of low to medium plasticity).

Histograms of the measured field moisture content, the Standard Proctor optimum moisture content and the deviation from optimum are shown on Figure 3.11. The median field moisture content was 12.1 percent, while the median optimum moisture content was 10.0 percent. The median deviation from the optimum moisture content was 2.4 percent wet of optimum.

A compaction objective was not specified for the basin liners and compaction was therefore not monitored. However, it was verified that the material was placed and compacted in lifts according to the Specifications.

Specific gravity was determined for 8 samples. The median value was 2.73.

The soil permeability was measured using the laboratory air entry permeameter. A total of 8 tests were completed, with results ranging from $4x10^{-10}$ to $3x10^{-9}$ cm/sec. The median value was $7x10^{-10}$ cm/sec. One in-situ Field Air Entry Permeameter test was completed on placed liner fill. The resulting permeability value was $3x10^{-8}$ cm/sec.

3.2.4 Drain Systems

Two separate drain systems were installed at the Stage Ia/Ib Main Embankment to collect and convey seepage water to the seepage collection ponds. The drain systems are:

- Foundation Drain System
- Chimney Drain System

An upstream toe drain system will be installed during future staged expansions of the tailings impoundment.

Foundation Drain System

The Foundation Drain System is comprised of four foundation drains (FD-1 to FD-4) installed in the foundation soils below the downstream zone (Zone B) of the Main Embankment. The drains were installed a minimum of 800 mm below the prepared foundation surface, prior to the placement of any fill materials. Each foundation drain consists of a 4 inch (100 mm) perforated CPT pipe which is set in coarse Drain Gravel that is surrounded by filter fabric. Each drain is connected to the Drain Monitoring Sump by individual 6 inch (150 mm) solid HDPE pipes that enable the monitoring of flows and clarity and the collection of samples for water quality testing.

The material used for the foundation drains was Drain Gravel which was produced from a crushing and screening plant at the Millsite.

The Drain Gravel was placed in excavated trenches, as shown on Drawing No. 1625.202. There was no compaction specification and the only Record testing required was the determination of the Particle Size Distribution (ASTM D422).

A total of 8 samples were taken for record testing of the Drain Gravel. It consisted of approximately 76 percent coarse gravel, 22 percent fine gravel and 2 percent coarse sand, which was within the specified envelope. The Drain

Gravel can be described as a poorly graded gravel and is classified as GP in the Unified Soil Classification System. The gradation envelope with the median and 100 percent limits is shown on Figure 3.12.

Chimney Drain System

The Chimney Drain System comprises a vertical Chimney Drain with a Longitudinal (collector) Drain and three Outlet (conveyance) Drains. It extends from El. 915.7 metres to El. 929 metres. The Longitudinal and Outlet drains include 6 inch (150 mm) perforated CPT pipes set in coarse Drain surrounded by filter fabric. The gravel and filter fabric are encapsulated by Filter Sand. The Outlet Drains will be extended to the Drain Monitoring Sump during Stage II construction with solid 6 inch (150 mm) HDPE pipes to enable monitoring of flows and water clarity at each location.

The materials used for the Chimney Drain System included Drain Gravel and Type B Filter Sand which were produced from crushing and screening plants at the Millsite and rock borrow area.

The Drain Gravel was placed in the Longitudinal and Outlet Drains as shown on Drawing No. 1625.207. There was no compaction specification and the only record test required was the determination of the Particle Size Distribution (ASTM D422).

Record testing was completed on 7 samples of Drain Gravel in the Longitudinal and Outlet Drains. It consisted of approximately 76 percent coarse gravel, 22 percent fine gravel and 2 percent coarse sand, which was within the specified envelope. The Drain Gravel can be described as a poorly graded gravel and is classified as GP in the Unified Soil Classification System. The gradation envelope with the median and 100 percent limits is shown on Figure 3.13.

The Filter Sand was placed in the Chimney Drain System components as shown on Drawing No. 1625.207. There was no compaction specification and

the only record test required was the determination of the Particle Size Distribution (ASTM D422).

A total of 56 samples were taken for record testing of the Filter Sand. It consisted of approximately 47 percent fine gravel, 46 percent sand and 6 percent fines (passing the No. 200 sieve), which was within the specified envelope. The Type B Filter Sand can be described as a well graded sand and is classified as SW in the Unified Soil Classification System. The gradation envelope with the median and 100 percent limits is shown on Figure 3.14.

Upstream Toe Drain System

An Upstream Toe Drain System is included in the design of the embankments. The drains will be installed in future embankment expansions. For Stage Ia/Ib, the conveyance pipework was installed for the Upstream Toe Drain System at the Main Embankment. The pipework is located downstream of the projected final embankment toe. The pipework was backfilled with compacted local materials.

SECTION 4.0 - PIPEWORKS

4.1 GENERAL

The tailings and reclaim pipelines are the main components of the pipeworks for the Tailings Storage Facility. The tailings pipeline system conveys the tailings slurry via gravity from the Millsite to the Tailings Storage Facility. The reclaim pipeline system pumps process water from the Tailings Storage Facility to the mill for re-use in processing the ore.

4.2 TAILINGS PIPELINE SYSTEM

4.2.1 General

The tailings pipeline system includes a single HDPE pipeline that extends approximately 7,000 metres from the Millsite to the right (west) abutment of the Main Embankment. It was constructed with a concrete tailings dropbox (T2) that controls the maximum line pressure and allows additional surface runoff and overflow from the reclaim booster pump station to be added to the tailings pipeline.

Tailings discharge into the facility through a series of valved offtakes (spigots) which will distribute the total flow along the embankment crest. Initial deposition will take place from the movable discharge section at the Main Embankment to cover the basin liners and to fill the lowest area of the tailings basin. The movable discharge section will be relocated as required until a tailings beach is established over the length of the embankment.

The design of the tailings pipeline system is based on the following:

- Tailings to flow by gravity and pipeline to be self-draining.
- Millsite tailings discharge at El. 1,110 metres (approx.).
- Tailings embankment crest at start-up at El. 934 metres.
- Tailings embankment crest at end of mine life at El. 965 metres.

4.2.2 Tailings Delivery Pipework

The tailings delivery pipework consists of High Density Polyethylene (HDPE) pipe of varying diameter. The tailings delivery pipe consists of two sections with different pressure ratings and diameters. The first section extends from the Millsite to the T2 Dropbox and is comprised of 22 inch (556 mm) DR 17 HDPE pipe. The second section extends from the T2 Dropbox to the Tailings Storage Facility and comprises 24 inch (610 mm) DR 15.5 HDPE pipe. Two pieces of 30 inch (762 mm) DR 15.5 HDPE pipe are included at the start of the two pipeline sections (at the Millsite and at the T2 Dropbox) to ensure that flows are not restricted at the outlet of the dropbox.

The tailings delivery pipework is installed in the pipe containment channel adjacent to the tailings access road for spill containment. It is sleeved in a 900 mm corrugated steel pipe (CSP) culvert at the Bootjack Creek Crossing for extra spill containment.

4.2.3 Tailings Discharge Pipework

The tailings discharge pipe runs along the inside crest of the embankments. Tailings are discharged through the movable discharge section that is located at the end of the discharge pipeline. The movable discharge includes twelve lengths of pipe (199.2 m) with 150 mm offtakes near the end of every second pipe (6 offtakes total).

The tailings discharge pipe has several flanged connections where the movable discharge section can be located. For the first year of operations, discharge will be concentrated from the Main Embankment to cover the Upper Basin Liner and to fill the deepest part of the basin. Additional discharge will be provided from the two M1 dump valves, as required.

The offtakes or "spigots" on the movable discharge section comprise:

- A strap-on tee sleeve (Robar type) with a flanged 150 mm outlet.

- Heavy duty material handling hose attached to the flanged outlet.

- A sacrificial HDPE pipe anchored to the embankment to direct tailings flows down to the pond and to minimize erosion on the embankment

The tailings pipeline is secured on the embankment crest by straps and concrete blocks or guide posts to restrict hydraulically and/or thermally induced movements.

4.2.4 Construction Details

The tailings pipeline and components were provided by Mount Polley Mining Corporation. The pipeline installation and construction of related features was by North American Construction Group.

Construction activities for the tailings pipeline system included the following:

- Construction of the access roads and pipe containment channel, as described in Section 2.1.1.

- Receipt and storage of the pipeline sections and components.

- Assembly of the HDPE pipeline by butt fusion welding.

- Construction of the T2 dropbox and overflow pond, including all associated pipework.

- Construction of the discharge pipework components, including the M1 dump valves, movable discharge section and spigot offtakes.

The pipeline installation and construction was co-ordinated by Mount Polley Mining Corporation. Knight Piésold provided technical assistance as required.

Based on the as-built survey of the tailings pipeline (provided by Mount Polley Mining Corporation), it was determined that the section of the 30" tailings pipe that is connected to the down-slope side of the T2 Dropbox was initially installed flatter than the required slope of 3 percent. This section of pipe has been regraded and now meets the design specifications. This slope was specified to ensure adequate drainage of the tailings slurry and to prevent sanding in the line.

Hydrostatic pressure testing procedures and requirements were included in the Technical Specifications in the Contract Documents. The test procedures specified that the HDPE pipe was to be tested at 1.5 times the rated pressure of the pipe and that no section was to be pressurized higher than the test pressure or at less than 75 percent of the test pressure the before the pipeline installation was approved and accepted. MPMC elected to forego these test procedures, and instead have evaluated the performance of the pipeline by detailed observation since the start of milling operations. No flaws have been detected.

The tailings pipeline system is shown on Drawing Nos. 1625.218, 1625.219, 1625.222, 1625.224, 1625.225, 1625.226, and 1625.228.

4.3 RECLAIM PIPELINE SYSTEM

4.3.1 General

The reclaim pipeline system includes a single HDPE pipe that extends approximately 5,400 metres from the reclaim barge in the Tailings Storage Facility to the Millsite. The system includes a barge mounted pumpstation in an excavated channel and a booster pumpstation at approximately the midpoint of the profile to reduce the pressure rating requirements. Identical pumps are installed at the barge and booster pumpstation so as to reduce spare part requirements and to simplify maintenance.

4.3.2 Reclaim Pipeline

The reclaim pipeline was constructed in two sections, with varying pressure ratings to accommodate anticipated operating pressures and vacuum conditions. The first section extends from the pump barge to the booster pumpstation and includes a stretch (approximately 306 metres) of steel pipe at the reclaim barge. The remainder consists of HDPE pipe which decreases in thickness (pressure rating) as the booster pump station is approached and the pressure head is decreased. The second section extends from the booster pumpstation to the Millsite. It is similar to the first section, but does not have any steel pipe sections. Nominal 24 inch (610 mm) HDPE pipe with varying pressure ratings was installed to provide the required water transfer capacity.

The reclaim pipework is installed in the pipe containment channel adjacent to the tailings access road for spill containment. It is sleeved in a 900 mm corrugated steel pipe (CSP) culvert at the Bootjack Creek Crossing for extra spill containment.

4.3.3 Reclaim Barge

The reclaim barge is a prefabricated floating pump station complete with perimeter trash screens, internal wet well(s), pump(s), valving, piping, electrical power, instrumentation and control circuitry. A hinged walkway/pipe bridge provides access to the barge from the reclaim pipeline access road. The reclaim barge was designed by Others. The barge configuration is shown on Drawing No. 1625.206.

4.3.4 Reclaim Booster Pumpstation

The reclaim booster pumpstation was constructed using parts identical to those at the pump barge to the greatest degree possible. It will be provided with an inter-linked control system that will co-ordinate pump operations with process water demand at the Millsite. The control system and pipework design will

include the necessary provisions for spill prevention. The reclaim booster pumpstation was designed by Others.

4.3.5 Construction Details

The reclaim pipeline and components were provided by Mount Polley Mining Corporation. The pipeline was installed by North American Construction Group, who also constructed all related features. The reclaim barge and booster pumpstation were installed and constructed by Others.

Construction activities for the reclaim pipeline system included the following:

- Construction of the access roads and pipe containment channel, as described in Section 2.1.1.
- Receipt and storage of the pipeline sections and components.
- Assembly of the HDPE pipeline by butt fusion welding.
- Assembly of the 300 metre section of steel pipe at the reclaim barge.
- Construction of the booster pumpstation, including the sump, pumps and enclosure.
- Construction of the barge, including the pumps and enclosure.
- Connection of the pipeline to the ball joint and the steel pipe on the reclaim pipeline access road.

The pipeline installation and construction was co-ordinated by Mount Polley Mining Corporation. Knight Piésold provided technical assistance as required.

As for the tailings pipeline system, hydrostatic pressure testing procedures and requirements were included in the Technical Specifications in the Contract

Documents. The test procedures specified that the HDPE pipe was to be tested at 1.5 times the rated pressure of the pipe and that no section was to be pressurized higher than the test pressure or at less than 75 percent of the test pressure the before the pipeline installation was approved and accepted. The steel pipe was to be tested at minimum and maximum pressures of 150 psi and 300 psi, respectively. Although these test procedures were not followed, the performance of the pipeline has been under detailed observation since the start of milling operations. The reclaim system has performed well and no flaws have been detected.

The reclaim pipeline system is shown on Drawing Nos. 1625.218, 1625.219, 1625.222, 1625.223, 1625.226, and 1625.228.

SECTION 5.0 - INSTRUMENTATION AND MONITORING

5.1 GENERAL

Geotechnical and environmental instrumentation and monitoring systems are essential to evaluate the performance of the Tailings Storage Facility and to detect abnormal conditions relevant to embankment safety. Close monitoring is especially important in the first year of operations, before the tailings beaches are established.

Instrumentation and monitoring features provided for Stage Ia/Ib include the following:

- Vibrating wire piezometers.
- Survey monuments.
- Drain flow monitoring.
- Monitoring wells.

Details of these items are presented in the following sub-sections.

5.2 VIBRATING WIRE PIEZOMETERS

A total of 23 vibrating wire piezometers were installed for Stage Ia/Ib. Of these, 22 piezometers were located at the three instrumentation planes (A, B and C) at the Main Embankment and one was located the instrumentation planes (D) at the Perimeter Embankment, as follows:

- 6 piezometers were installed in boreholes (two at each plane) to monitor pore pressures in the foundation soils at the Main Embankment.

- 5 piezometers were installed in the foundation drains beneath Zone B to monitor the performance of the drains at the Main Embankment.

- 3 piezometers were installed at the base of the chimney drain at the Main Embankment (one at each plane).

- 8 piezometers were installed in glacial till fill.

- 1 piezometer was installed in glacial till fill on Plane D.

Details of the piezometer locations are shown on Drawing Nos. 1625.220 and 1625.221. Summaries of the piezometer data for each plane are included on Figures 5.1 to 5.4. Pressure plots based on weekly readings for each piezometers are included in Appendix C. The most recent readings (taken August 5, 1997) are summarized on Table 5.1. Since the piezometers were installed, two have stopped functioning. They will be replaced during Stage II construction, or as required.

The piezometer records are grouped and summarized as follows:

1. Foundation Soils - Five of six piezometers located in the foundation soils below the Main Embankment remain operational (C2-PE2-02 has stopped functioning). In general, these piezometers are indicating pore pressures that have stabilized after an initial increase of approximately 1 to 2 metres.

   Of the six foundation piezometers, three are indicating atersian pore pressures, whereby the water level is higher than the original ground surface (A2-PE2-01, C2-PE2-01 and C2-PE2-02). Based on the stability analyses, the factor of safety approaches 1.1 as the artesian pressures reach 6 metres. This defines the trigger level, as shown on Table 5.1. Of the three piezometers with artesian pressures, only C2-PE2-01 has risen to a significant level (4 metres). This piezometer is being closely monitored and contingency measures will be implemented if the pressure level increases further (such as the installation of additional pressure relief trenches or wells).

2. Drain Piezometers - All eight drain piezometers (five in the Foundation Drains and three in the Chimney Drain) are operational and continue to measure pore pressures less than zero. This indicates that fully drained conditions exist within the drains and that the drain systems are working as designed.

3. Embankment Fill Piezometers - Eight of nine piezometers installed in the embankment fill zones (eight at the Main Embankment and one at the Perimeter Embankment) remain operational (C2-PE2-04 has stopped functioning).

The fill piezometers responded quickly to the placement of additional material during construction and were monitored accordingly. Some high pressures equivalent to total stress conditions were observed. This is attributed to the piezometer installation method, where the saturated tips were immersed in a loose slurry in a small hole and were loaded as additional fill was placed. Therefore, these pore pressures are not considered to be indicative of general pore pressure conditions in the embankment fill, but only provide an indication of the confined slurry pressure at the piezometer tip. The high pressures are slowly dissipating and illustrate the low permeability nature of the surrounding fill. They will be closely monitored as the tailings pond rises. Piezometers placed in the fill during future construction programs will be installed in moist soil rather than within a saturated slurry in order to avoid false high pore pressure responses.

5.3 SURFACE MOVEMENT MONUMENTS

Surface movement monuments were installed on the crest of the Main Embankment, at each of the three instrumentation planes. They are used to monitor vertical and lateral movement of the earthfill dams. An end of construction survey was carried out for Stage Ia/Ib. Additional surveys are to be carried out on a quarterly basis.

A blank record of the surface movement monument data is included on Table 5.2. The data record will be updated as additional monitoring results are obtained.

5.4 DRAIN FLOW MONITORING

The flows from the Main Embankment Foundation Drains have been monitored on a weekly basis (to the greatest degree possible). A plot of the up to date Foundation Drain flows is shown on Figure 5.5. The data is included on Table 5.3. The plot shows

that the Foundation Drain flows have remained low, with a maximum total flow typically below 0.5 litres/second (30 litres/minute) even though the water level in the pond has increased to El. 926.4 metres. This indicates that the impounded water has not greatly influenced the underlying soils and that the glacial till liner (natural and constructed basin liner) is performing as intended.

In addition to monitoring the Foundation Drain flows, samples have been collected for water quality testing. The results for testing completed to date are available from Mount Polley Mining Corporation.

Flows from the three Outlet Drains for the Main Embankment Chimney Drain are also being monitored. To date the flows have been very low. The flow rates will be monitored when the Outlet Drains are extended in 1998. (Note that the Longitudinal Drains are set in to the foundation soils on the abutments and some seepage is expected.) The flows will be monitored for monthly reporting.

5.5 MONITORING WELLS

A total of 11 monitoring wells were installed at six locations around the perimeter of the Tailings Storage Facility in late 1996, as shown on Figure 5.6. Monitoring of the water levels has been initiated and will be continued on a monthly basis. In addition, well MP89-234 is being monitored.

A summary of the water levels recorded to date is presented on Table 5. The levels will be measured and reported on a quarterly basis.

Sampling and water quality testing have been initiated and will be continued on a regular basis. The results for testing completed to date are available from Mount Polley Mining Corporation.

SECTION 6.0 - OPERATION OF TAILINGS STORAGE FACILITY

6.1 FILLING SCHEDULE

The depth/area/capacity/filling rate relationships for the Tailings Storage Facility are presented on Figure 6.1. The anticipated filling schedule for the Tailings Storage Facility is shown on Figure 6.2. The level of the impounded water prior to start-up was El. 926.4 metres, corresponding to approximately 2.4 million cubic metres.

Tailings discharge was started on an irregular basis in early June, 1997. It is anticipated that tailings discharge at the planned throughput rate of 17,808 tonnes/day will commence by the end of July, 1997. Based on this, it is estimated that the embankments will need to be raised to the Stage II crest starting in June, 1998. The overall in-situ tailings density will be determined prior to construction of the Stage II embankments.

6.2 PROCESS WATER RECOVERY AND QUALITY

Process water will be recovered from the tailings as the solids settle out and the supernatant pond is developed. Water will be pumped back to the mill from the reclaim barge. The water recoveries will be monitored so that the data can be included in the project water management plans.

Seepage water and local runoff will be pumped back to the Tailings Storage Facility from the Seepage Collection Ponds. These flows also need to be monitored and included in the project water management plans.

6.3 TAILINGS DEPOSITION

Tailings discharge at start-up was primarily from the Mark 1a (M1a) and Mark 1b (M1b) dump valves. Once operating at full capacity, discharge will be from the movable discharge section located at the right (west) abutment of the Main Embankment so as to cover the basin liners. Once the liners are blanketed by tailings, discharge will be moved to the centre of the Main Embankment to fill the lowest area

of the tailings basin. After the tailings beach emerges from the stored make-up water, the movable discharge section will be relocated as required until a tailings beach is established over the length of the Main Embankment. Following this, deposition can commence from the Perimeter Embankment. Sequential rotation of tailings discharge will be started after beaches have developed over the full length of the Perimeter and Main Embankments. This will be accomplished by regularly (at least once per week) relocating the movable discharge section and allowing inactive areas of the tailings beach to partially dry and consolidate.

SECTION 7.0 - SUMMARY AND CONCLUSIONS

Stage Ia/Ib of the Mount Polley Mine Tailings Storage Facility was constructed from May, 1996 to March, 1997. The Stage Ia/Ib construction program included the completion of the Main and Perimeter Embankments to El. 934 metres to enable the impoundment of runoff water from the 1997 freshet, additional make-up water from Polley Lake and tailings from approximately one year of mining. The Stage Ia/Ib construction program also included the installation of the tailings and reclaim pipeline systems, the make-up water systems and seepage recycle systems.

The Stage Ia/Ib Tailings Storage Facility was designed by Knight Piésold Ltd., who provided full time supervision and technical assistance during the construction program.

Data obtained during the Construction Quality Assurance (CQA) program, results from instrumentation and observations during construction of Stage Ia/Ib of the Tailings Storage Facility confirm the following:

- The earthworks (embankments, basin liners and seepage collection ponds) were generally completed in compliance with the design, technical specifications and construction drawings.

- The tailings pipeline system was generally installed according to the design, technical specifications and construction drawings. Variations include a flatter slope on the 30 inch HDPE pipe which exits from the T2 Dropbox, detected on the as-built drawings (since regraded). Also, pressure testing of the pipeline was not completed as per the technical specifications, although it has performed well since start-up.

- The reclaim pipeline system was installed according to the design, technical specifications and construction drawings. Pressure testing of the pipeline was not completed as per the technical specifications, although it has performed well since start-up.

- The various components of the make-up water supply system were generally installed according to the design, technical specifications and construction drawings. One variation is the direct pumping of water from the Millsite Sump to the mill.

Based on the results of the construction program, observations from impounding water at the Tailings Storage Facility and observations during mill start-up, Knight Piésold has the following recommendations:

1) The 30" tailings pipe which exits from the T2 Dropbox should be regraded to 3 percent (minimum), as specified. This work has been completed.

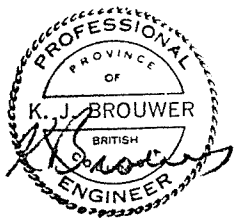
2) Geotechnical instrumentation and other monitoring results have shown that the facility is operating within design tolerances. However, two piezometers have stopped functioning and must be replaced. This can be deferred until Stage II construction, provided that no significant pore pressure increases occur in the other piezometers at the areas being monitored.

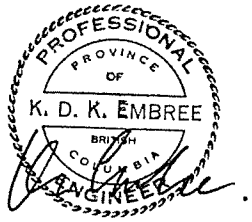
3) Tailings discharge must be concentrated from the movable discharge section on the Main Embankment. The Tailings Storage Facility must be conscientiously operated according to the design intent to ensure embankment stability and to enhance construction of the Stage II embankments. This requires that the tailings beach must be established against the Main Embankment as soon as possible.

4) The pond level in the Tailings Storage Facility must be closely monitored to ensure that there will be sufficient water available over the winter months and to ensure that the water level does not encroach on the required freeboard.

5) Based on experience from Stage Ia/Ib construction, a detailed investigation and laboratory testing program should be completed on potential borrow materials prior to Stage II construction. Close attention should be paid to the

moisture content of the soil, which may be too wet to use as fill for the top one to two metres.





Ken J. Brouwer, P.Eng.
Director

Ken D. Embree, P.Eng.
Senior Engineer

Knight Piésold Ltd.
CONSULTING ENGINEERS

TABLE 2.1

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
TAILINGS STORAGE FACILITY
STAGE Ia/Ib CONSTRUCTION

QUALITY ASSURANCE TESTING SCHEDULE

J:\JOB\REPORT\10162-7\5-TBL2-1.XLS

7/7/97

ZONE (Material)	QUANTITY (m^3)	CONTROL TESTS												RECORD TESTS													
		C1		C2		C3		C4		C6		C8a		R1		R2		R3		R4		R6		R7a/R7b		R8a	
		1 per	No.	1 per	No.	1 per	No.	1 per	No.	1 per	No.	1 per	No.	1 per	No.	1 per	No.	1 per	No.	1 per	No.	1 per	No.	1 per	No.	1 per	No.
Zone S - Main Embankment (Glacial Till)	314,000			25,000	13	25,000	13	25,000	13	50,000	6	25,000	13	10,000	31	10,000	31	10,000	31	10,000	31	0	0	10,000	31	20,000	16
			29		*100*		*41*		*21*		*32*		*10*		*33*		*33*		*33*		*32*		*8*		*33*		*13*
Zone S - Perimeter Embankment (Glacial Till)	38,000			5,000	8	5,000	8	5,000	8	10,000	4	10,000	4	5,000	8	5,000	8	5,000	8	5,000	8	0	0	5,000	8	20,000	2
															6		*6*		*6*		*6*		*6*		*6*		*2*
Zone B - Main Embankment (Glacial Till)	220,000			20,000	11	20,000	11	20,000	11	40,000	6	20,000	11	10,000	22	10,000	22	10,000	22	10,000	22	0	0	10,000	22	20,000	11
															30		*30*		*30*		*30*		*4*		*30*		*12*
Basin Liners - Main Emabnkment (Glacial Till)	70,000			20,000	4	20,000	4	20,000	4	40,000	2	20,000	4	10,000	7	10,000	7	10,000	7	10,000	7	0	0	10,000	7	10,000	7
															9		*10*		*11*		*7*		*8*		*0*		*8*
Foundation Drain (Drain Gravel)	1,500					1,000	2											1,000	2								
							12												*8*								
Chimney Drain System (Drain Gravel) - 450 m^3 for LD, 50 m^3 for OD	500																	1,000	1								
																			7								
Chimney Drain (Filter Sand) - 22,000 m3 for CD, 2,000 m3 for LD and 50 m^3 for OD	24,500					1,000	25											500	49								
							79												*56*								
Totals Specified	668,500		0		35		61		35		17		31		68		68		119		68		0		68		36
Completed			*29*		*100*		*132*		*21*		*32*		*10*		*78*		*79*		*151*		*75*		*26*		*69*		*35*
Specified													178														427
Completed													*324*														*513*

Notes :

1) Quantities are "neat line and do not account for any foundation materials which were sub-excavated and replaced.
2) CD - Chimney Drain; LD - Longitudinal Drain; OD - Outlet Drain
3) Italicized numbers in No. Columns are tests completed.
4) All control tests Glacial till (Zone S/B and Basin Liners) are summarized under Zone S - Main Embankment.

Control Tests:

C1	Atterberg Limits (ASTM D4318)
C2	Moisture Content (ASTM D2216)
C3	Particle Size Distribution (ASTM D422)
C4	Laboratory Compaction (ASTM D1557)
C6	Specific Gravity (ASTM D854)
C8a	Lab Air Entry Permeameter (LAEP)

Record Tests:

R1	Atterberg Limits (ASTM D4318)
R2	Moisture Content (ASTM D2216)
R3	Particle Size Distribution (ASTM D422)
R4	Laboratory Compaction (ASTM D1557)
R6	Specific Gravity (ASTM D854)
R7a	Field Density by Nuclear Methods (ASTM D2922)
R7b	Moisture Content by Nuclear Methods (ASTM D3017)
R8a	Lab Air Entry Permeameter (LAEP)

Knight Piésold Ltd.
CONSULTING ENGINEERS

TABLE 3.1

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
TAILINGS STORAGE FACILITY
STAGE Ia/Ib CONSTRUCTION

SUMMARY OF FIELD AIR ENTRY PERMEAMETER (FAEP) RESULTS

J:\JOB\DATA\10162-7\PREVSITE\AEP\FAEPSUM.XLS 14-Jul-97 11:03

Test No.	Run No.	Run Median Permeability k (cm/sec)	Overall Median Permeability k (cm/sec)	Location of Test	Material Tested
FAEP 96-1	1	1.88E-08	1.88E-08	Lower Tailings Basin, U/S of Lower Basin Liner	Native Glacial Till
FAEP 96-2	1	8.62E-10		Lower Tailings Basin, U/S of Lower Basin Liner	Native Glacial Till
	2	6.32E-09	1.50E-09		
FAEP 96-3	1	2.39E-07		Lower Tailings Basin, U/S of Lower Basin Liner	Native Glacial Till
	2	4.65E-07			
	3	9.73E-07			Native Glacial Till
	4	1.00E-06			
	5	2.53E-06			
	6	4.48E-06	1.63E-06		
FAEP 96-4	1	5.85E-09		Lower Tailings Basin, U/S of Lower Basin Liner	
	2	1.84E-08	7.21E-09		
FAEP 96-5	1	4.79E-09		Lower Tailings Basin, U/S of Lower Basin Liner	Native Glacial Till
	2	4.99E-09			
	3	3.17E-08			
	4	1.75E-08	5.75E-09		
FAEP 96-6	1	2.51E-06		Start of Reclaim Barge Channel, approx. El. 917	Native Glacial Till
	2	2.14E-06			
	3	2.12E-06			
	4	2.22E-06			
	5	3.41E-06	2.27E-06		
OVERALL MEDIAN			**1.30E-08**		
OVERALL AVERAGE			**6.55E-07**		
FAEP 96-7	1	3.18E-08	3.18E-08	Lower Basin Liner	Glacial Till Fill

TABLE 5.1

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
TAILINGS STORAGE FACILITY

SUMMARY OF PIEZOMETER DATA

J:\JOB\DATA\10162-7\REPORTS\16273MON.XLS 13-Aug-97 7:54

Piezometer Identification Number	Serial Number	Tip El. (m)	Zone Monitored	Reading Taken 5-Aug-97		Trigger Level	
				(m H2O)	(El. m)	Pressure (m H2O)	Elevation (m)
A1-PE1-01	64100	913.0	Foundation Drain	-0.60	912.40	2.0	915.0
A1-PE1-02	64096	912.1	Foundation Drain	-0.62	911.48	2.0	914.1
A1-PE1-03	64105	917.2	Chimney Drain	-0.56	916.64	2.0	919.2
A2-PE2-01	64104	903.7	Foundation, depth 9.0 m	11.29	914.99	15.0	918.7
A2-PE2-02	64103	909.8	Foundation, depth 2.9 m	1.92	911.72	8.9	918.7
A2-PE2-03	64101	919.4	Fill	9.71	929.11		
A2-PE2-04	*64099*	*926.1*	*Fill (Stopped functioning)*	--	------	------	------
A2-PE2-05	64102	921.9	Fill	-0.81	921.09		
B1-PE1-01	64107	917.3	Foundation Drain	-0.62	916.68	2.0	919.3
B1-PE1-02	64106	916.0	Foundation Drain	-0.72	915.28	2.0	918.0
B1-PE1-03	64118	918.7	Chimney Drain	-0.64	918.06	2.0	920.7
B2-PE2-01	64110	902.0	Foundation, depth 15.0 m	13.72	915.72	21.0	923.0
B2-PE2-02	64116	909.5	Foundation, depth 7.9 m	7.29	916.79	13.9	923.4
B2-PE2-03	64109	921.0	Fill	16.13	937.13		
B2-PE2-04	64108	921.0	Fill	6.78	927.78		
B2-PE2-05	64113	921.7	Fill	-0.12	921.58		
C1-PE1-01	64111	914.7	Foundation Drain	-0.52	914.18	2.0	916.7
C1-PE1-02	64115	916.6	Chimney Drain	-0.61	915.99	2.0	918.6
C2-PE2-01	64117	907.5	Foundation, depth 8.2 m	12.19	919.69	14.2	921.7
C2-PE2-02	*64119*	*910.5*	*Foundation, depth 5.2 m*	-----	------	*11.2*	*921.7*
C2-PE2-03	64112	921.0	Fill	-0.62	920.38		
C2-PE2-05	64114	924.8	Fill	0.48	925.28		
D1-PE1-01	64097	---	Not required for Stage Ib.	-----	------	------	------
D2-PE1-01	64096	931.0	Fill	0.41	931.41		

Notes:

1) Piezometers in *italics* have stopped functioning (to be replaced during future construction programs.
2) The trigger level for foundation piezometers is approx. 6 metres above ground and is based on the level where the factor of safety is approaching 1.1.
3) The trigger level for drain piezometers is approx. 2 metres of head.
4) Fill piezometers have no set trigger level, but must be closely monitored for pressure increases.

Knight Piésold Ltd.
CONSULTING ENGINEERS

TABLE 5.2

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
TAILINGS STORAGE FACILITY

SUMMARY OF SURVEY MONUMENT DATA

J:\JOB\REPORT\10162-7\5-TBL5-2.XLS

7/7/97

STAGE Ib - ONGOING SURVEY						RECORD OF DISPLACEMENTS[2]						
	Observations	Date	N_n	E_n	El_n	ΔN	ΔE	ΔEl	D_{xy}	D_{xyz}	$D_{xy\text{-}total}$	$D_{xyz\text{-}total}$
A2-SM-02												
B2-SM-01												
C2-SM-03												
A2-SM-02												
B2-SM-01												
C2-SM-03												
A2-SM-02												
B2-SM-01												
C2-SM-03												
A2-SM-02												
B2-SM-01												
C2-SM-03												
A2-SM-02												
B2-SM-01												
C2-SM-03												

Notes:

1. Calculate displacements as shown below:

Total Displacement from initial survey *(06 - Feb - 97)*

$\Delta N = N_n - N_o$

$\Delta E = E_n - E_o$

$\Delta El = El_n - El_o$

$D_{xy\text{ - total}} = (\Delta N^2 + \Delta E^2)^{1/2}$

$D_{xyz\text{ - total}} = (\Delta N^2 + \Delta E^2 + \Delta El^2)^{1/2}$

Displacement between readings

$\Delta N = N_{(n+1)} - N_n$

$\Delta E = E_{(n+1)} - E_n$

$\Delta El = El_{(n+1)} - El_n$

$D_{xy} = (\Delta N^2 + \Delta E^2)^{1/2}$

$D_{xyz} = (\Delta N^2 + \Delta E^2 + \Delta El^2)^{1/2}$

Comments on calculations

1. Coordinate system is (Easting, Northing, Elevation) = f(x,y,z)
2. Coordinate system is as shown on Drawings

Knight Piésold Ltd.
CONSULTING ENGINEERS

TABLE

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
TAILINGS STORAGE FACILITY

SUMMARY OF DRAIN FLOW DATA

FILENAME: J:\JOB\DATA\10162-7\REPORTS\FD-MON.XLS

August 13, 1997

DATE	FD-1			FD-2			FD-3			FD-4			Total Flow			Pond El (m)
	Flow Rate (l/min)	(l/sec)	Comments	Flow Rate (l/min)	(l/sec)	Comments	Flow Rate (l/min)	(l/sec)	Comments		(l/sec)		Flow Rate (l/min)	(l/sec)	Comments	
28-Aug-96	4.62	0.08	Clear	0.49	0.01	Clear	5.37	0.09	Clear	1.77	0.03	Slightly cloudy	12.25	0.20	FD-3, FD-4 incomplete	
1-Sep-96	3.55	0.06	Clear	0.82	0.01	Clear	6.56	0.11	Cloudy	1.25	0.02	Very Cloudy	12.18	0.20	FD-3, FD-4 incomplete	
5-Sep-96	2.60	0.04	Clear	0.62	0.01	Clear	2.71	0.05	Clear	0.93	0.02	Cloudy	6.86	0.11	FD-3, FD-4 incomplete	
10-Sep-96	2.04	0.03	Clear	0.66	0.01	Clear	2.17	0.04	Clear	0.81	0.01	Clear	5.68	0.09	FD-3, FD-4 incomplete	
27-Sep-96	3.10	0.05	Clear	0.70	0.01	Clear	3.10	0.05	Clear	1.00	0.02	Clear	7.90	0.13	FD-3, FD-4 incomplete	
5-Oct-96	4.94	0.08	Clear	0.77	0.01	Clear	4.33	0.07	Slightly cloudy	6.16	0.10	Slightly cloudy	16.20	0.27	FD-3, FD-4 incomplete	
12-Oct-96	3.90	0.07	Clear	1.00	0.02	Clear	3.50	0.06	Clear	1.80	0.03	Clear	10.20	0.17	FD-3, FD-4 incomplete	915.20
13-Oct-96	4.20	0.07	Clear	0.90	0.02	Clear	13.50	0.23	Clear	1.70	0.03	Clear	20.30	0.34	FD-3 complete, FD-4 incomplete	915.50
14-Oct-96	3.80	0.06	Clear	1.00	0.02	Clear	15.00	0.25	Clear	5.40	0.09	Clear	25.20	0.42	FD-3 complete, FD-4 complete	915.23
17-Oct-96	5.90	0.10	Clear	0.80	0.01	Clear	16.60	0.28	Clear	5.40	0.09	Clear	28.70	0.48		915.44
18-Oct-96	9.80	0.16	Clear	1.00	0.02	Clear	26.10	0.44	Clear	9.00	0.15	Clear	45.90	0.77		915.50
22-Oct-96	6.20	0.10	Clear	0.80	0.01	Clear	20.40	0.34	Clear	5.90	0.10	Clear	33.30	0.56		915.63
27-Oct-96	***6.00***	0.10	Clear	1.50	0.03	Clear	24.20	0.40	Clear	6.40	0.11	Clear	38.10	0.64		916.00
28-Oct-96																916.50
30-Oct-96																917.37
1-Nov-96																917.53
2-Nov-96																917.62
3-Nov-96																917.68
4-Nov-96																917.75
15-Mar-97	3.89	0.06	Clear	1.35	0.02	Clear	8.91	0.15	Clear	3.19	0.05	Clear	17.34	0.29	pig installed, sump pumped out	918.00
16-Mar-97	3.48	0.06	Clear	1.15	0.02	Clear	8.37	0.14	Clear	2.87	0.05	Clear	15.88	0.26	pig installed, sump pumped out	918.20
2-Apr-97	2.10	0.04	Clear	1.12	0.02	Clear	8.40	0.14	Clear	3.46	0.06	Clear	15.08	0.25	pig installed, sump pumped out	920.27
23-Apr-97	4.14	0.07	Clear	0.94	0.02	Clear	11.56	0.19	Clear	2.35	0.04	Clear	18.99	0.32	pig installed, sump pumped out	923.7
24-Apr-97	3.16	0.05	Clear	0.84	0.01	Clear	12.73	0.21	Clear	2.05	0.03	Clear	18.78	0.31	pig installed, sump pumped out	923.75
29-Apr-97	2.90	0.05	Clear	0.59	0.01	Clear	10.32	0.17	Clear	1.71	0.03	Clear	15.52	0.26	pig installed, sump pumped out	924.81
8-May-97	3.60	0.06	Clear	0.76	0.01	Clear	14.15	0.24	Clear	1.92	0.03	Clear	20.43	0.34	pig out, pumped down	925.86
13-May-97	4.04	0.07	Clear	0.79	0.01	Clear	14.85	0.25	Clear	1.95	0.03	Clear	21.63	0.36	pig out, pumped down	926.43
20-May-97	4.11	0.07	Clear	0.77	0.01	Clear	17.09	0.28	Clear	1.85	0.03	Clear	23.82	0.40	pig out, pumped down	926.2
28-May-97	3.99	0.07	Clear	0.8	0.01	Clear	15.71	0.26	Clear	1.87	0.03	Clear	22.37	0.37	pig out, pumped down	926.25
10-Jun-97	4.15	0.07	Clear	0.82	0.01	Clear	18.35	0.31	Clear	1.89	0.03	Clear	25.21	0.42	pig out, pumped down	926.34
17-Jun-97	4.10	0.07	Clear	0.78	0.01	Clear	19.93	0.33	Clear	1.85	0.03	Clear	26.66	0.44	pig out, pumped down	926.4
24-Jun-97	3.97	0.07	Clear	0.84	0.01	Clear	17.24	0.29	Clear	1.83	0.03	Clear	23.88	0.40	pig out, pumped down	926.39
1-Jul-97	3.93	0.07	Clear	0.69	0.01	Clear	14.72	0.25	Clear	1.73	0.03	Clear	21.07	0.35	pig out, pumped down	926.38
8-Jul-97	4.05	0.07	Clear	0.72	0.01	Clear	18.07	0.30	Clear	1.88	0.03	Clear	24.72	0.41	pig out, pumped down	926.39
15-Jul-97	4.11	0.07	Clear	0.88	0.01	Clear	15.38	0.26	Clear	2.24	0.04	Clear	22.61	0.38	pig out, pumped down	926.57
22-Jul-97	4.06	0.07	Clear	0.91	0.02	Clear	15.83	0.26	Clear	2.05	0.03	Clear	22.61	0.38	pig out, pumped down	926.66
29-Jul-97	4.40	0.07	Clear	0.85	0.01	Clear	20.48	0.34	Clear	2.11	0.04	Clear	27.84	0.46	pig out, pumped down	926.73
5-Aug-97	4.13	0.07	Clear	0.79	0.01	Clear	18.35	0.31	Clear	1.97	0.03	Clear	25.24	0.42	pig out, pumped down	926.75

Knight Piésold Ltd.
CONSULTING ENGINEERS

TABLE 5.4

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
TAILINGS STORAGE FACILITY

GROUNDWATER MONITORING WELLS - SUMMARY OF WATER LEVELS

FILENAME: J:\JOB\DATA\10162-7\REPORTS\GWW-MON.XLS

8/13/97

DATE	WATER LEVEL (Elevation, metres) WELL IDENTIFICATION															Pond El. (m)	Comments
	GW96-1A	GW96-1B	GW96-2A	GW96-2B	GW96-3A	GW96-3B	GW96-4A	GW96-4B	GW96-5A	GW96-5B	GW96-6	GW96-7	GW96-8A	GW96-8B	GW96-9		
Ground Level	927.89	927.81	931.42	931.42	912.06	912.06	940.56	940.56	973.55	973.44	1058.53	1021.32	1050.10	1050.09	916.18		
10-Dec-96	908.99	914.91	901.82	913.92	891.46		938.96	938.76	972.95	DRY	1058.53	1019.32			916.18	918	approx.
11-Jun-97						912.06							1050.10	1050.09	916.98	926.4	

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
GRADATION LIMITS - MAIN EMBANKMENT ZONE S RECORD SAMPLES
STAGE Ia/Ib CONSTRUCTION

Project : 1627
Date : March 21, 1997

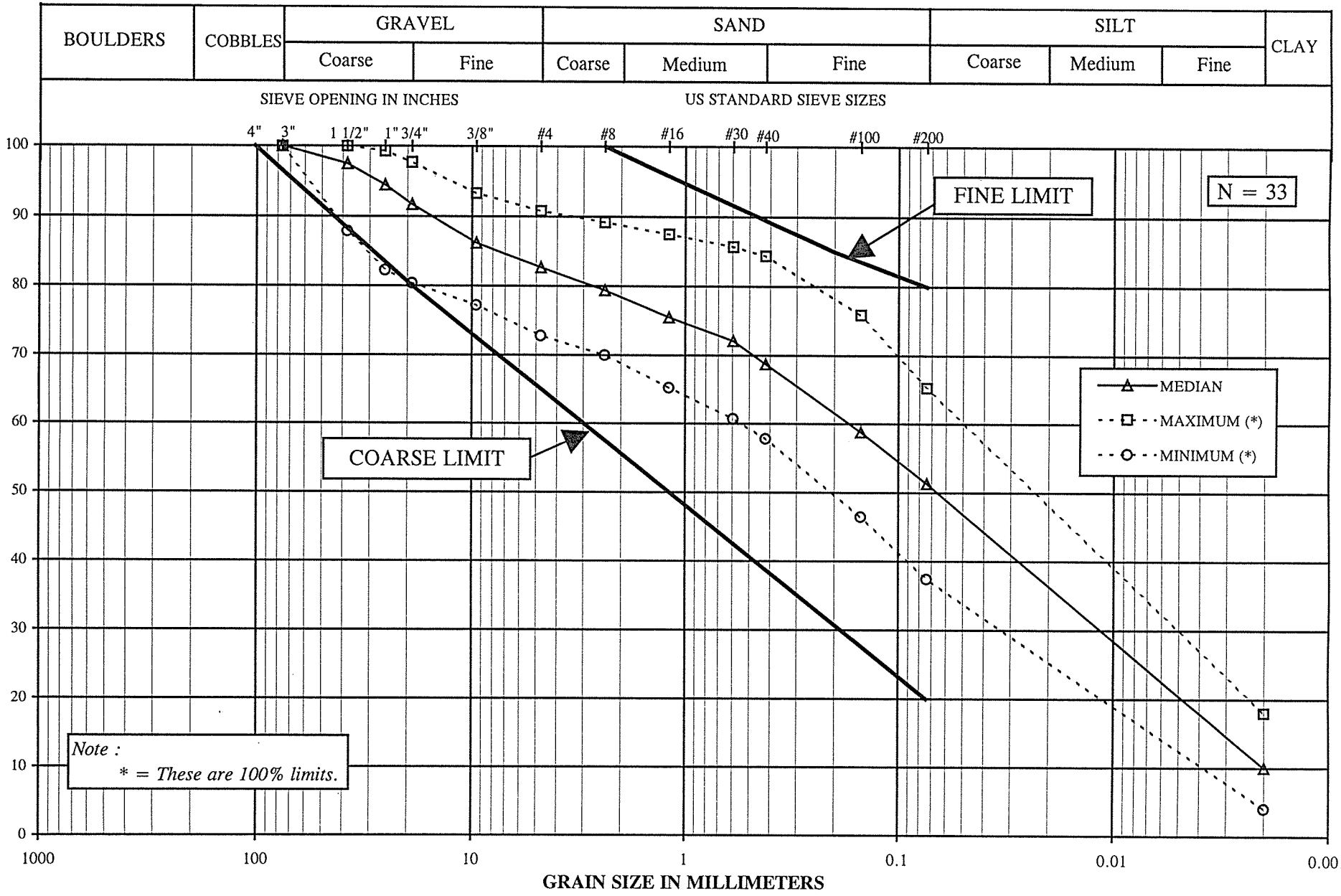
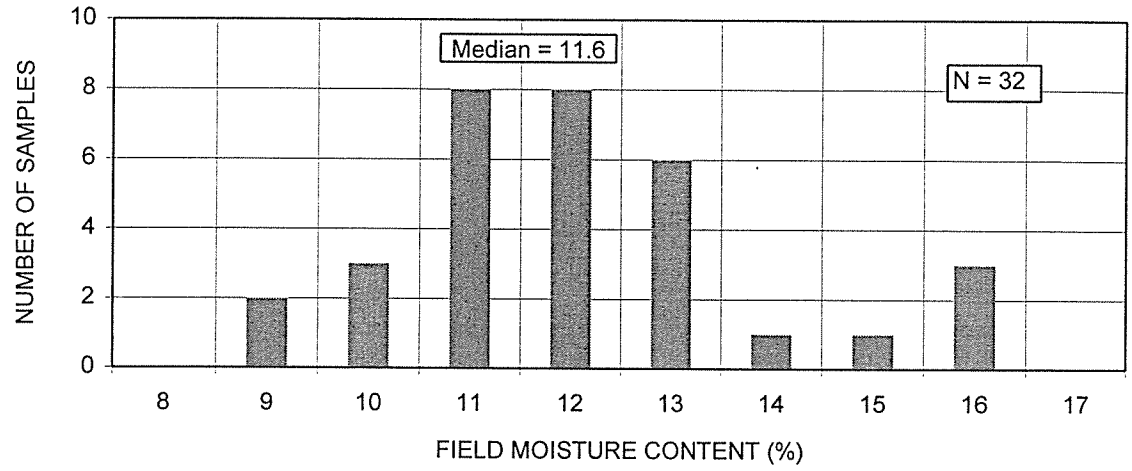
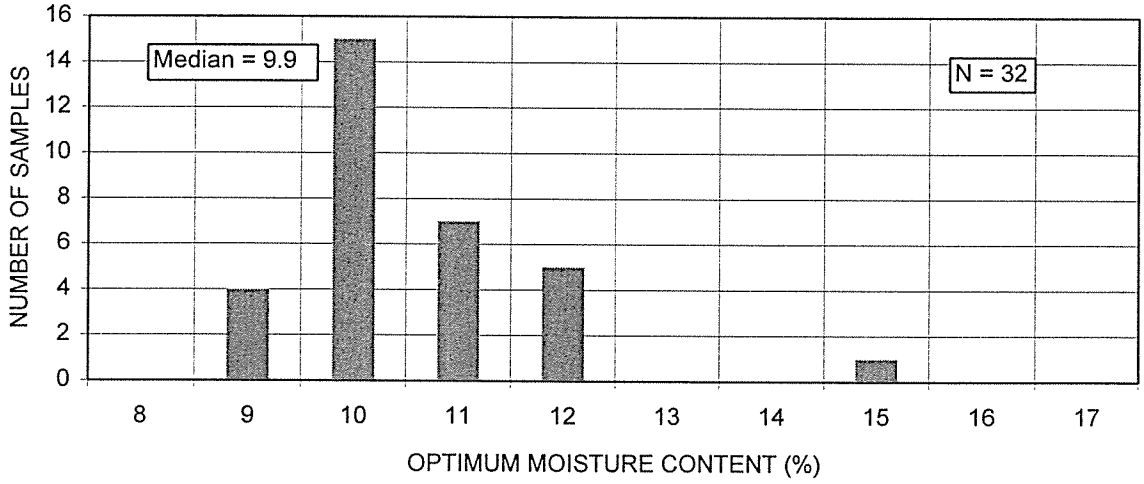


FIGURE 3.1

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
MOISTURE CONTENT HISTOGRAMS
MAIN EMBANKMENT ZONE S RECORD SAMPLES
STAGE Ia/Ib CONSTRUCTION





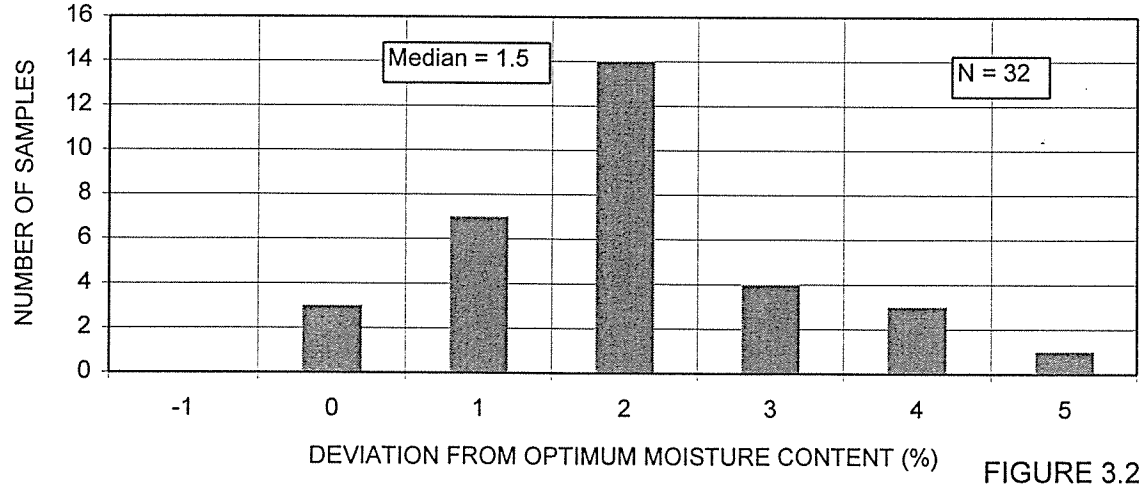
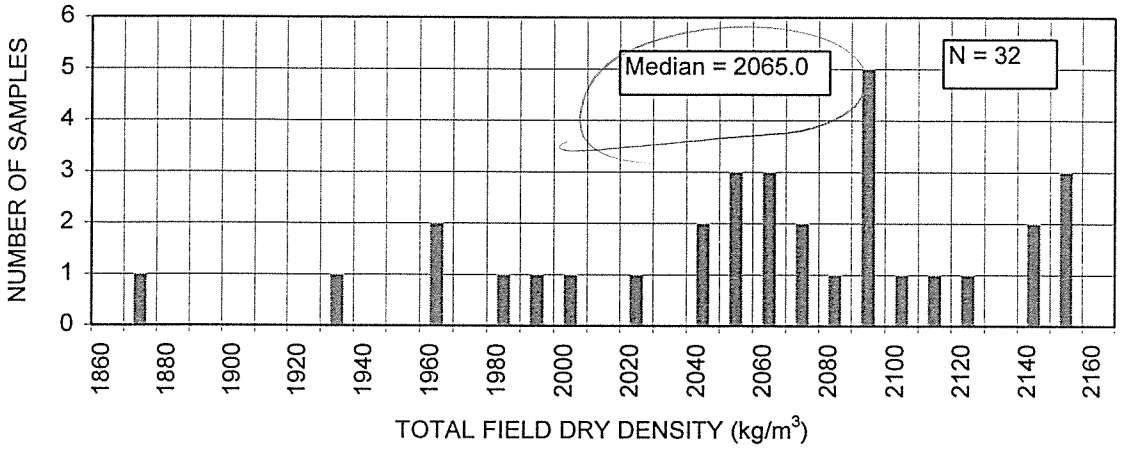
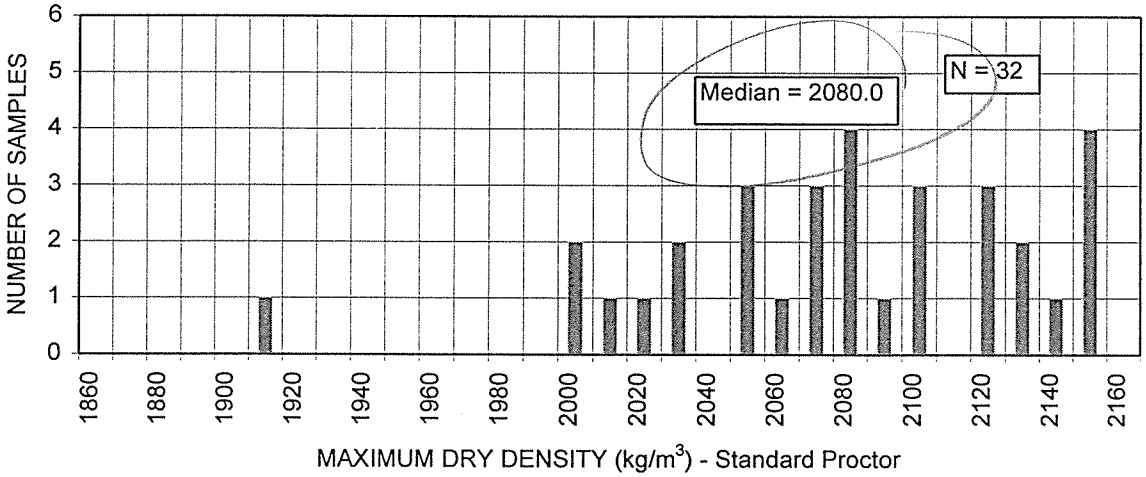


FIGURE 3.2

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
DENSITY AND COMPACTION HISTOGRAMS
MAIN EMBANKMENT ZONE S RECORD SAMPLES
STAGE Ia/Ib CONSTRUCTION





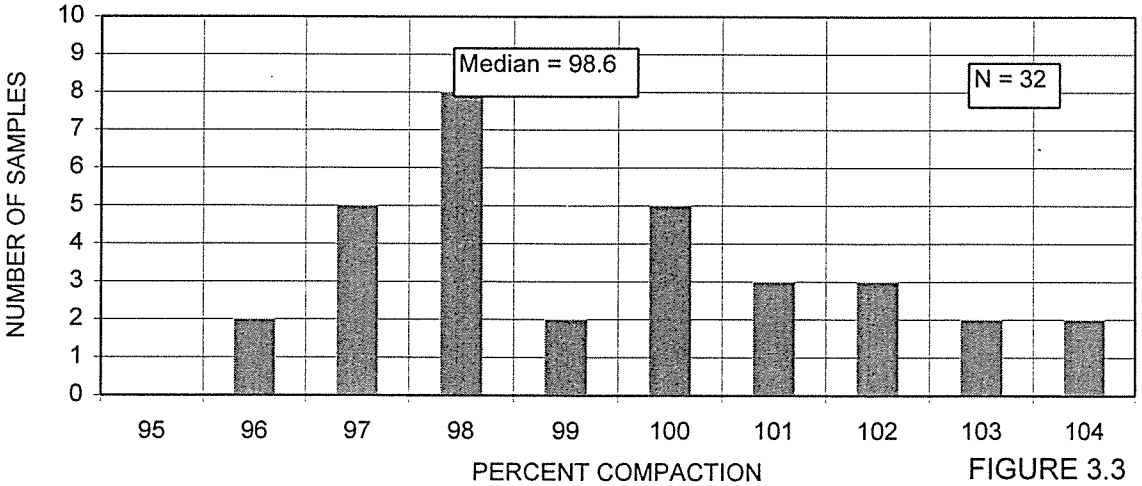


FIGURE 3.3

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

J:\JOB\...\J162-7\REPORTS\R-ME-ZS.XLS

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
GRADATION LIMITS - PERIMETER EMBANKMENT ZONE S RECORD SAMPLES
STAGE Ia/Ib CONSTRUCTION

Project : 1627
Date : March 21, 1997

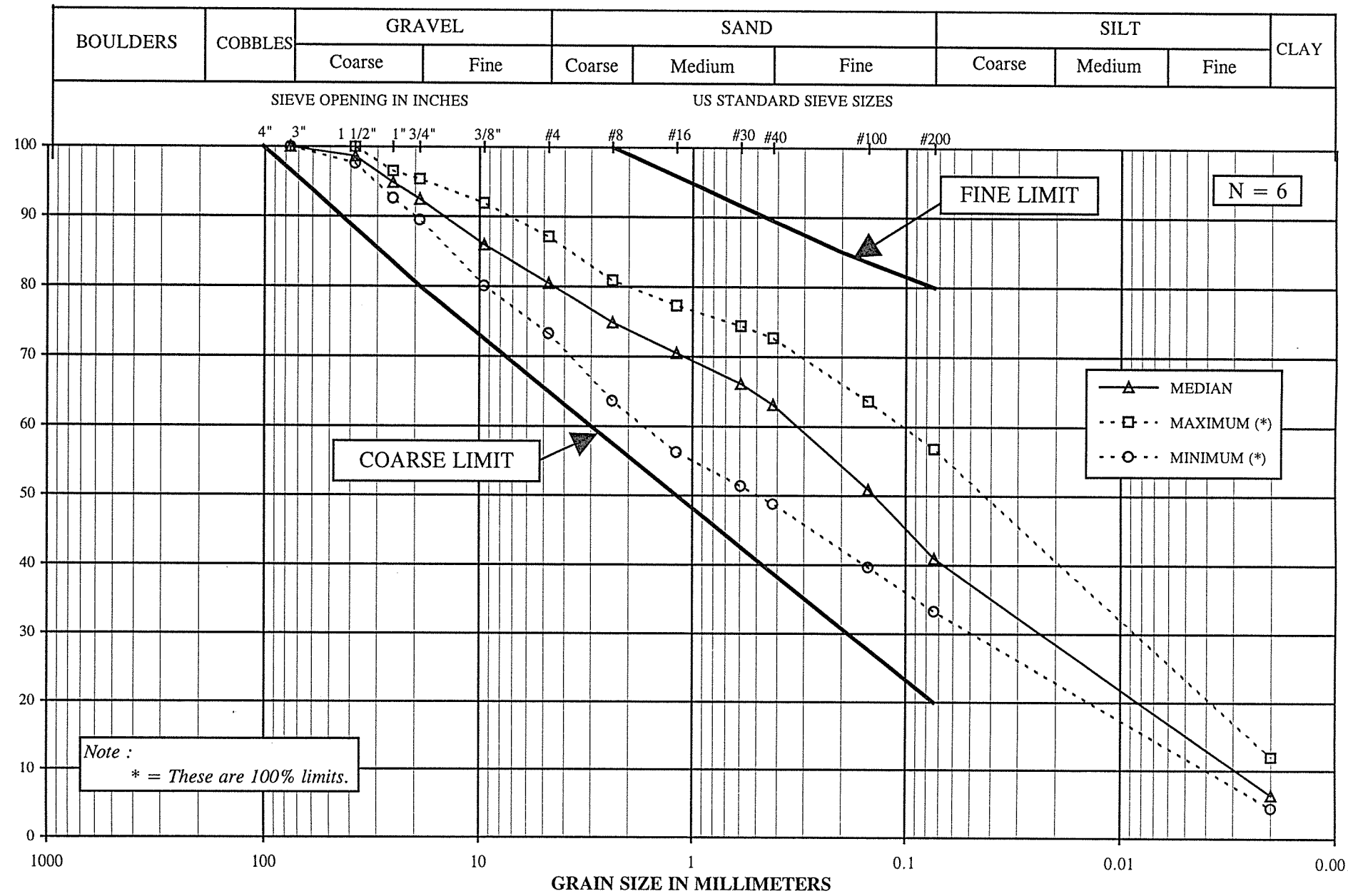
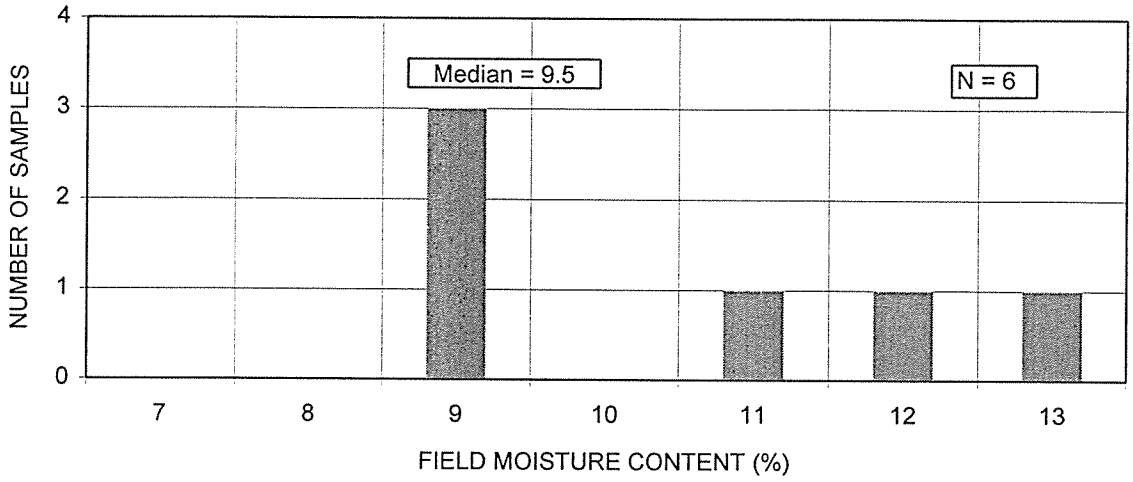
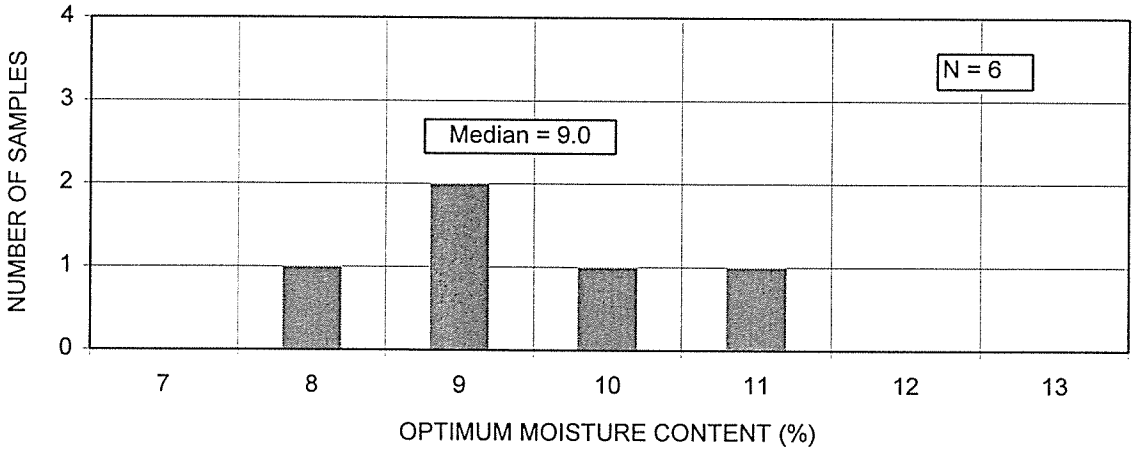


FIGURE 3.4

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
MOISTURE CONTENT HISTOGRAMS
PERIMETER EMBANKMENT ZONE S RECORD SAMPLES
STAGE Ia/Ib CONSTRUCTION





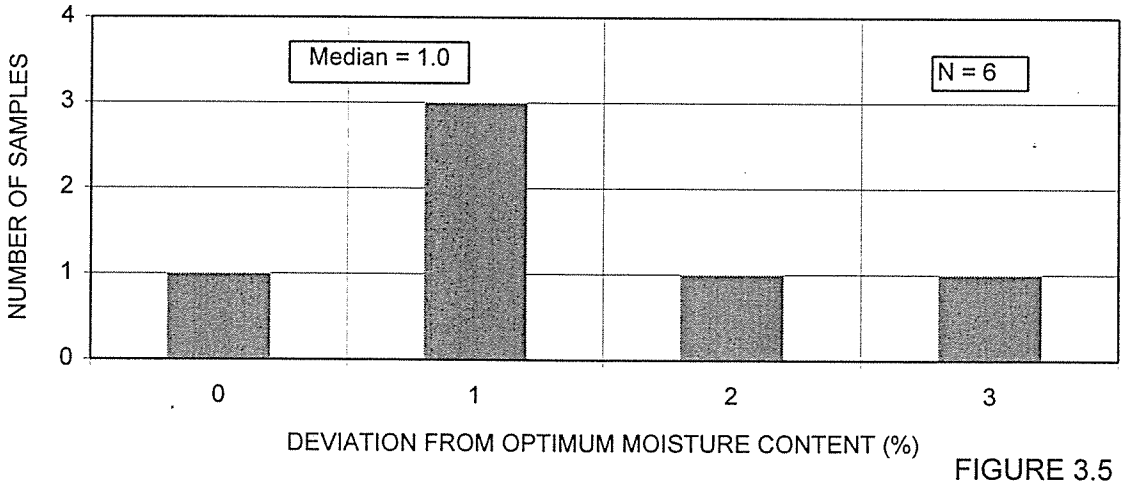
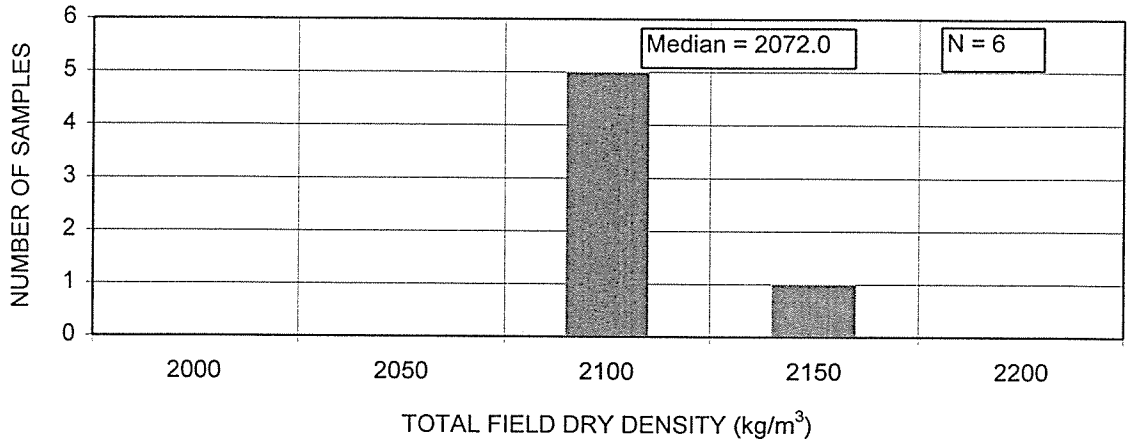


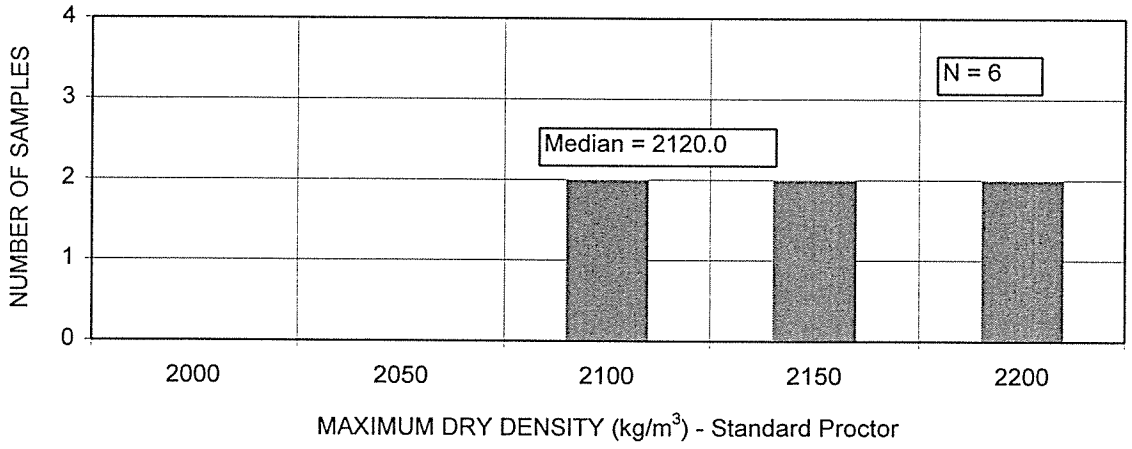
FIGURE 3.5

J:\JOBS\...62-7\REPORTS\R-PE-ZS.XLS

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
DENSITY AND COMPACTION HISTOGRAMS
PERIMETER EMBANKMENT ZONE S RECORD SAMPLES
STAGE Ia/Ib CONSTRUCTION





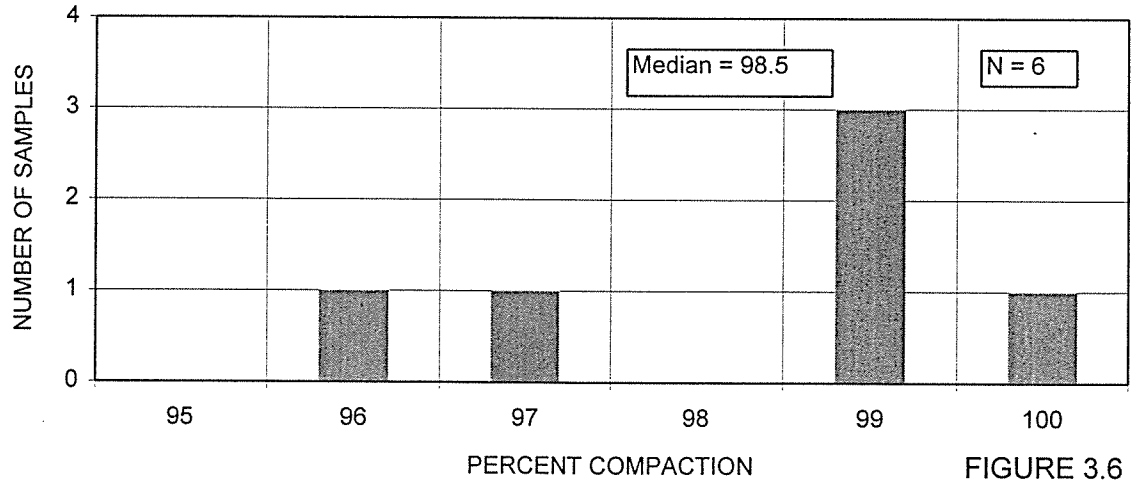


FIGURE 3.6

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
GRADATION LIMITS - MAIN EMBANKMENT ZONE B RECORD SAMPLES
STAGE Ia/Ib CONSTRUCTION

Project : 1627
Date : March 21, 1997

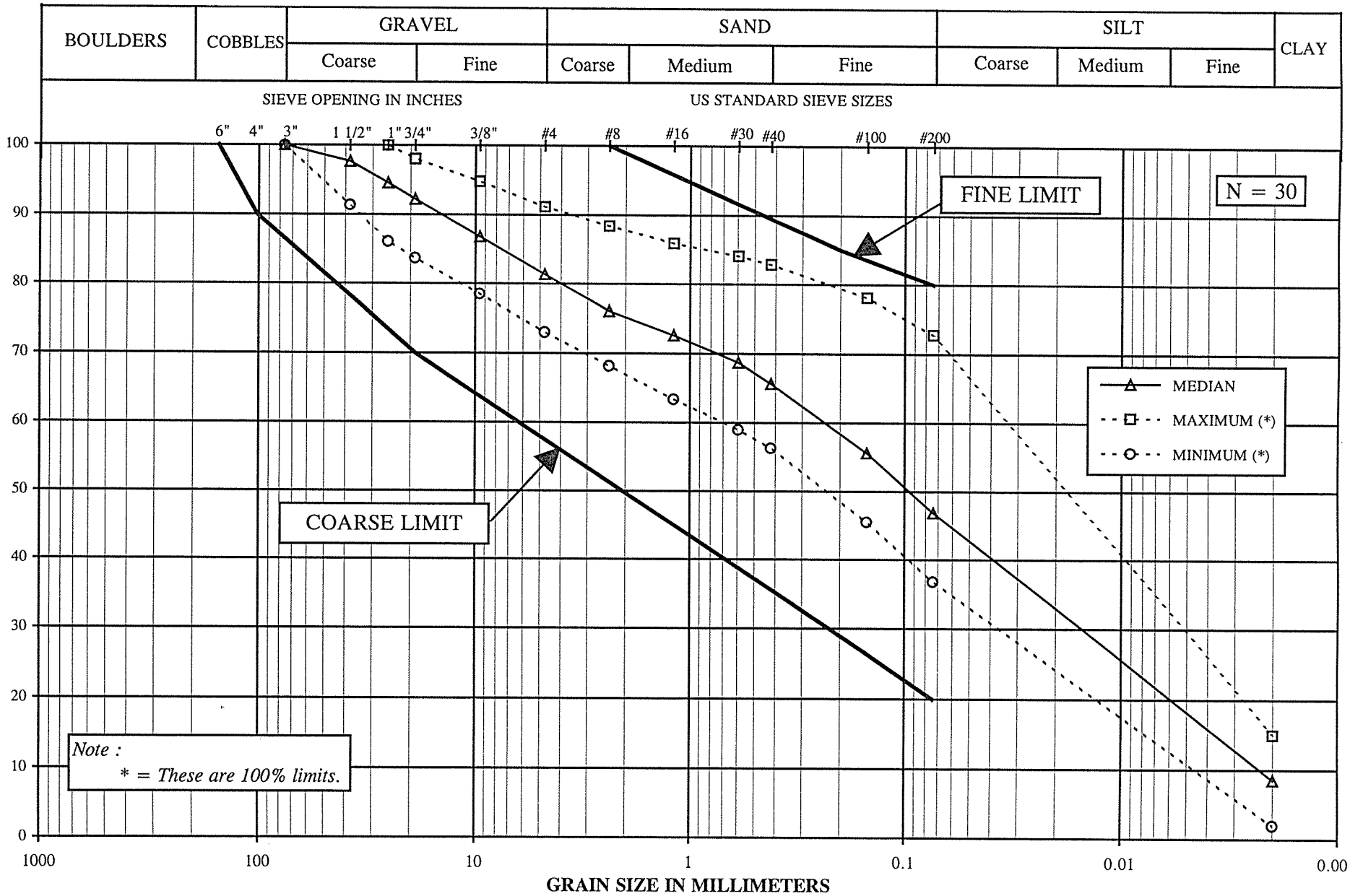
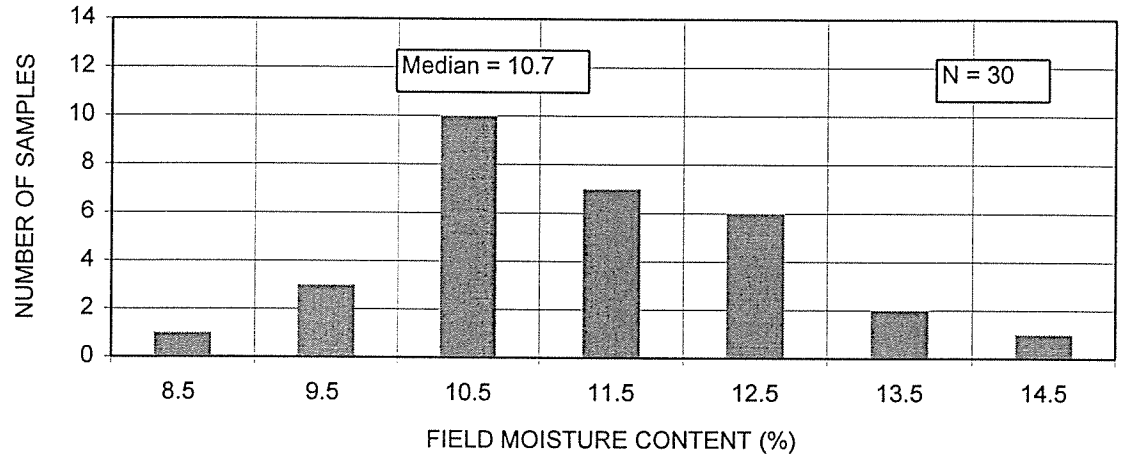
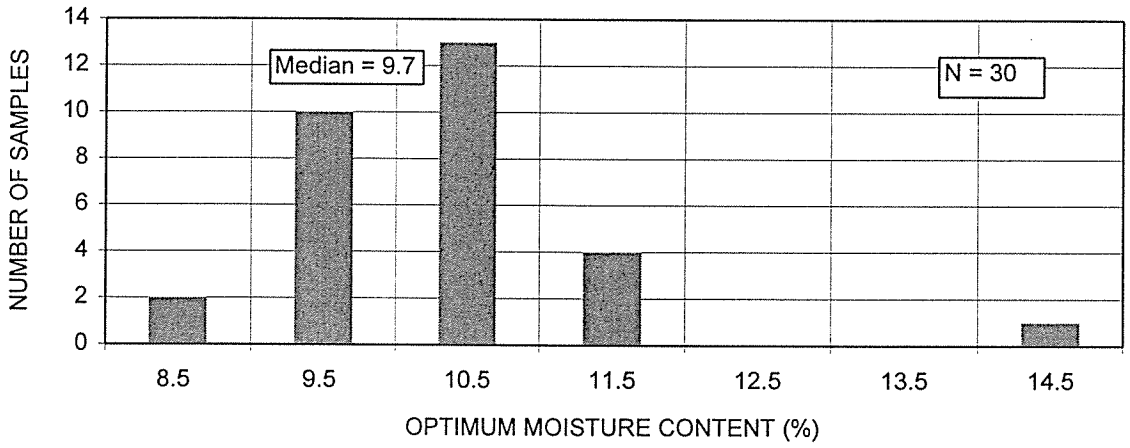


FIGURE 3.7

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
MOISTURE CONTENT HISTOGRAMS
MAIN EMBANKMENT ZONE B RECORD SAMPLES
STAGE Ia/Ib CONSTRUCTION





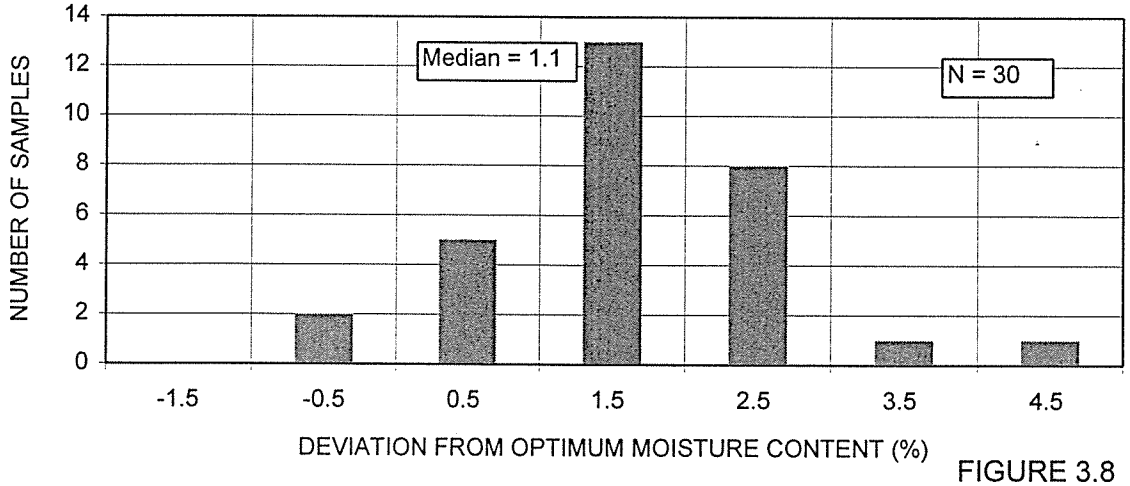
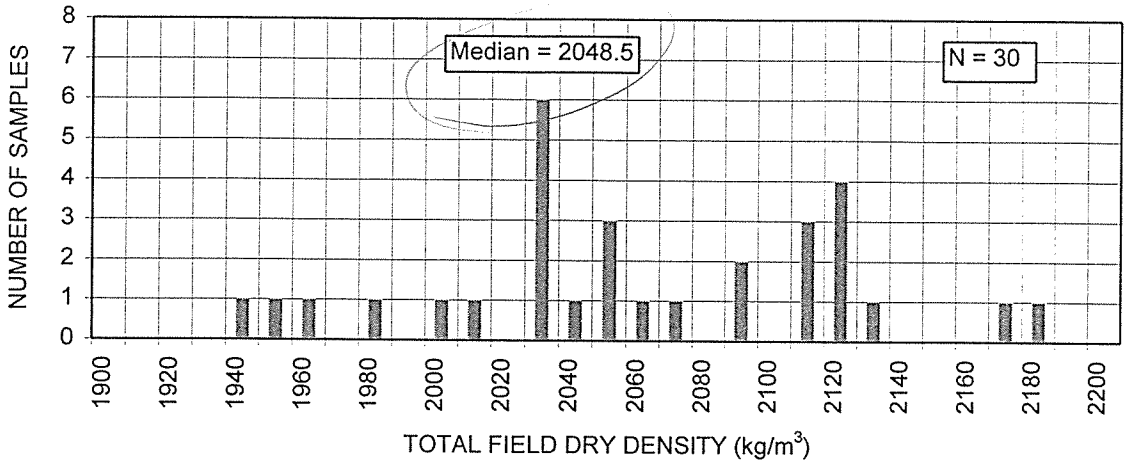
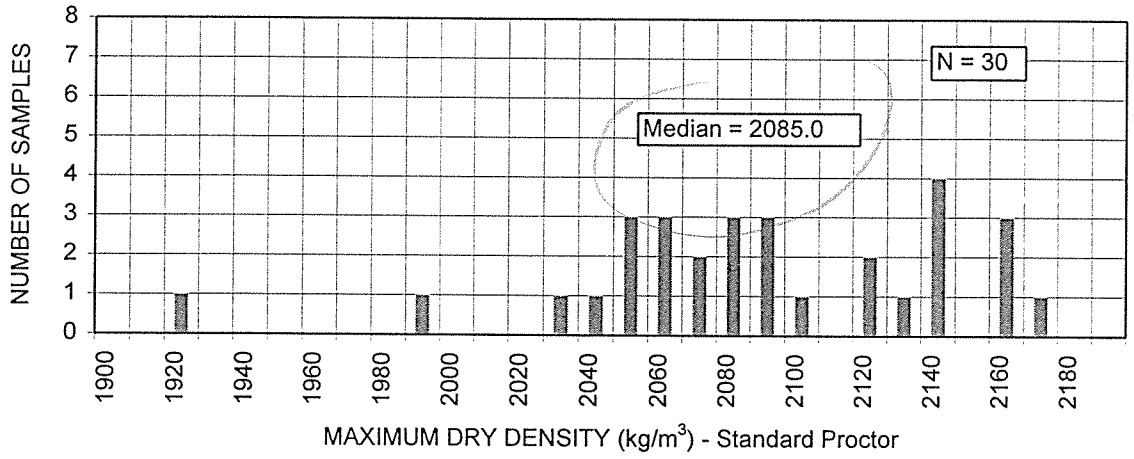


FIGURE 3.8

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
DENSITY AND COMPACTION HISTOGRAMS
MAIN EMBANKMENT ZONE B RECORD SAMPLES
STAGE Ia/Ib CONSTRUCTION





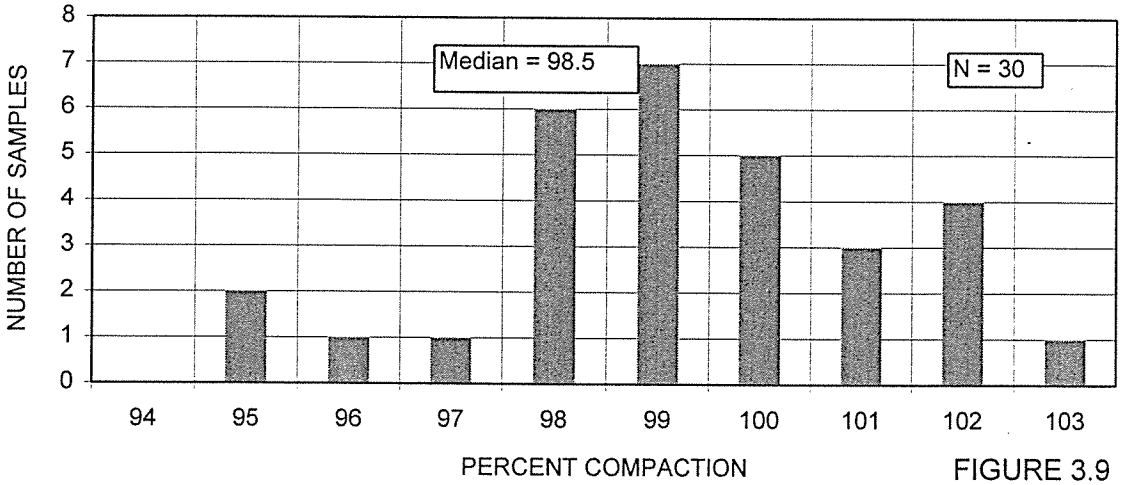


FIGURE 3.9

J:\JOB\D...\627\REPORTS\R-ME-ZB.XLS

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
GRADATION LIMITS - BASIN LINER RECORD SAMPLES

Project : 1627
Date : March 18, 1997

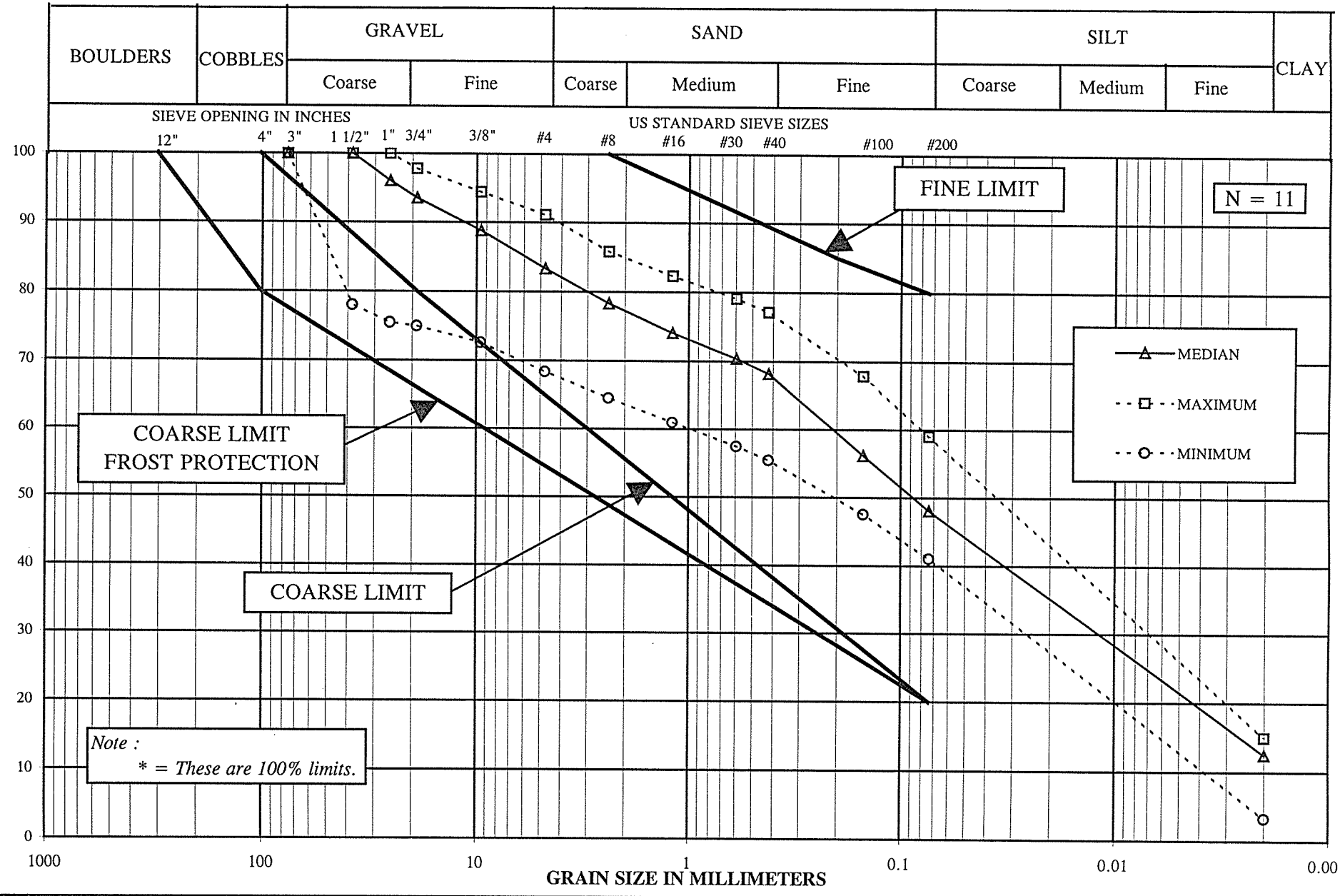
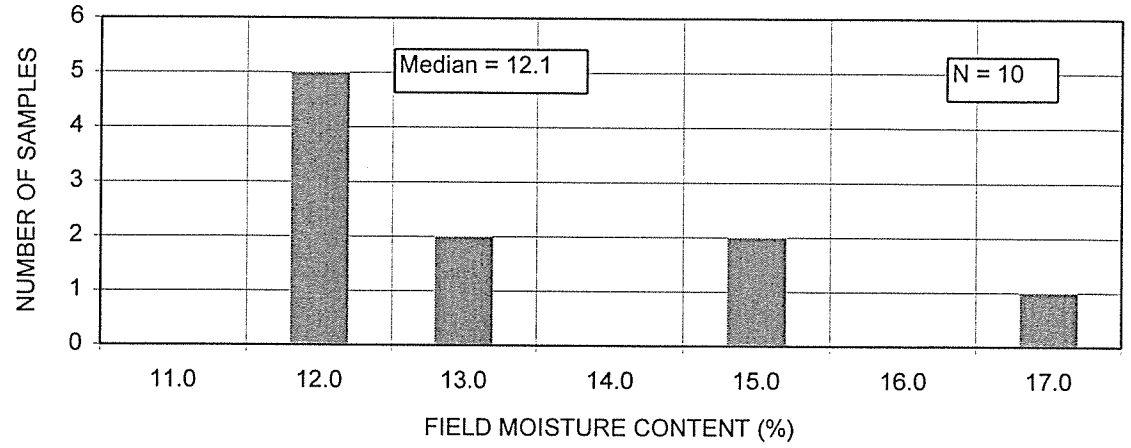
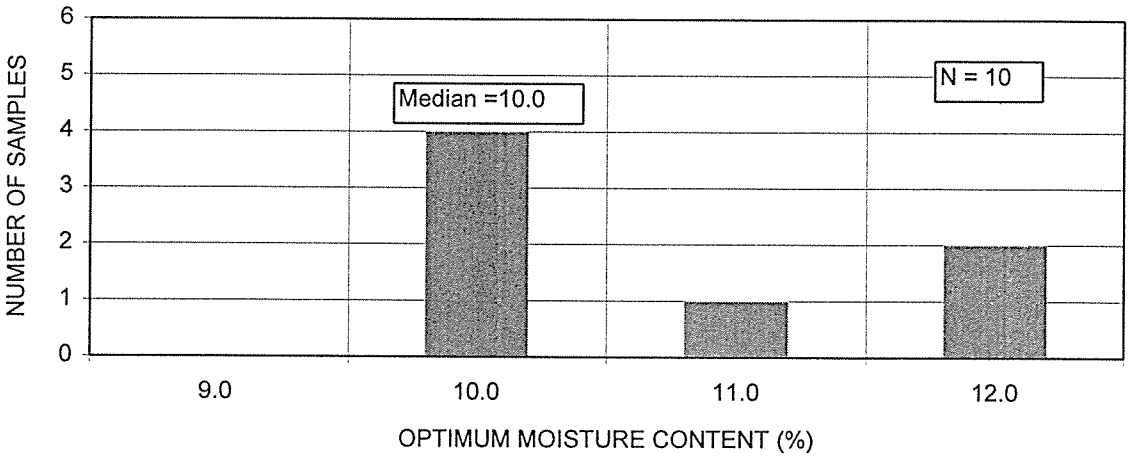


FIGURE 3.10

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
MOISTURE CONTENT HISTOGRAMS
BASIN LINERS
STAGE Ia/Ib CONSTRUCTION





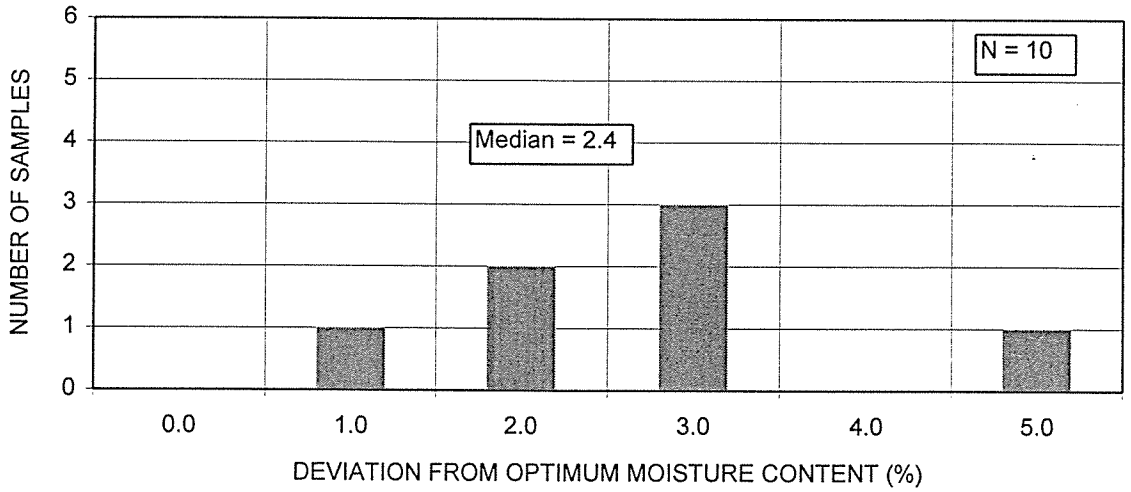


FIGURE 3.11

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
GRADATION LIMITS - DRAIN GRAVEL RECORD SAMPLES
FOR FOUNDATION DRAIN SYSTEM
STAGE Ia/Ib CONSTRUCTION

Project : 1627
Date : March 21, 1997

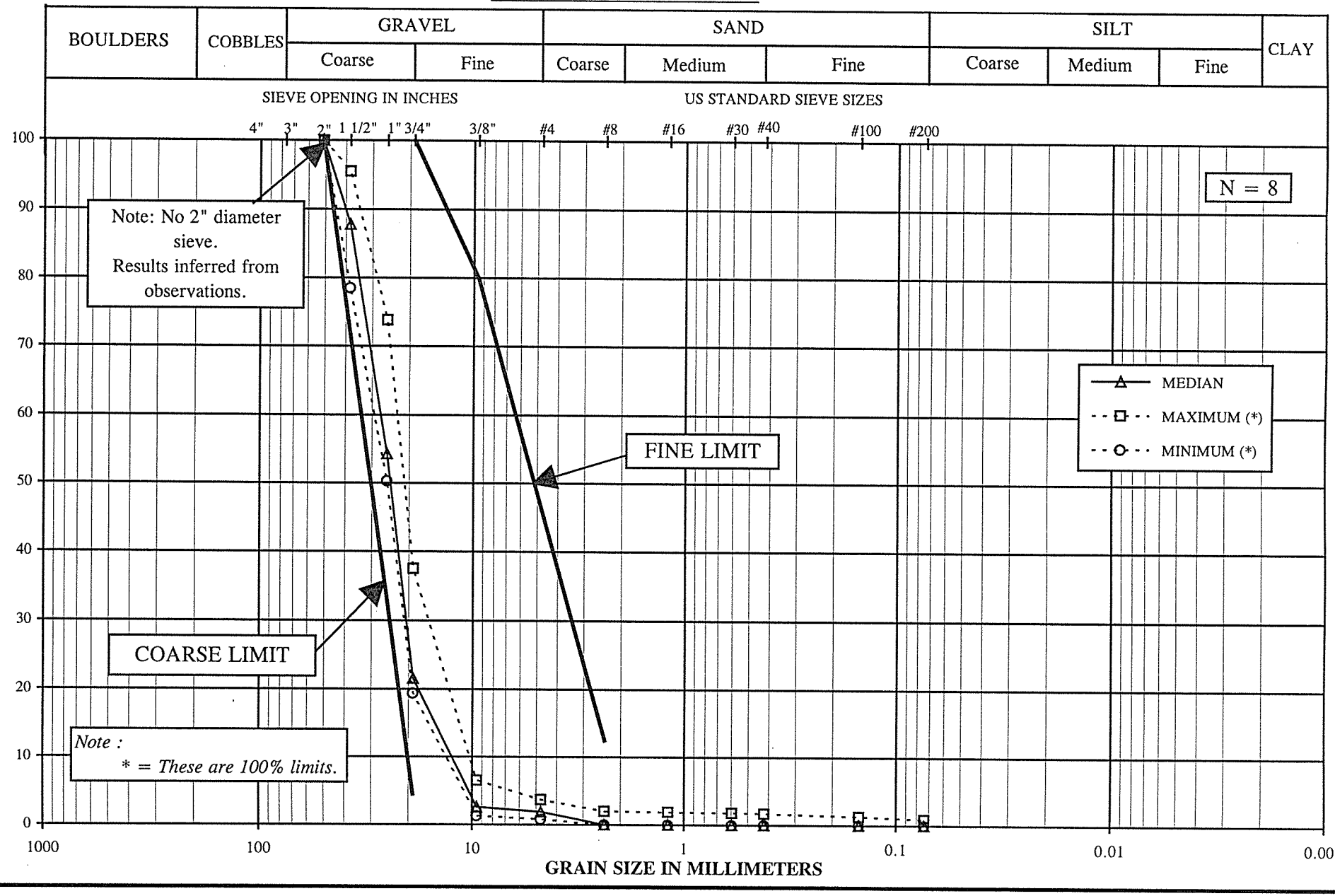


FIGURE 3.12

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
GRADATION LIMITS - DRAIN GRAVEL RECORD SAMPLES
FOR CHIMNEY DRAIN SYSTEM
STAGE Ia/Ib CONSTRUCTION

Project : 1627
Date : March 21, 1997

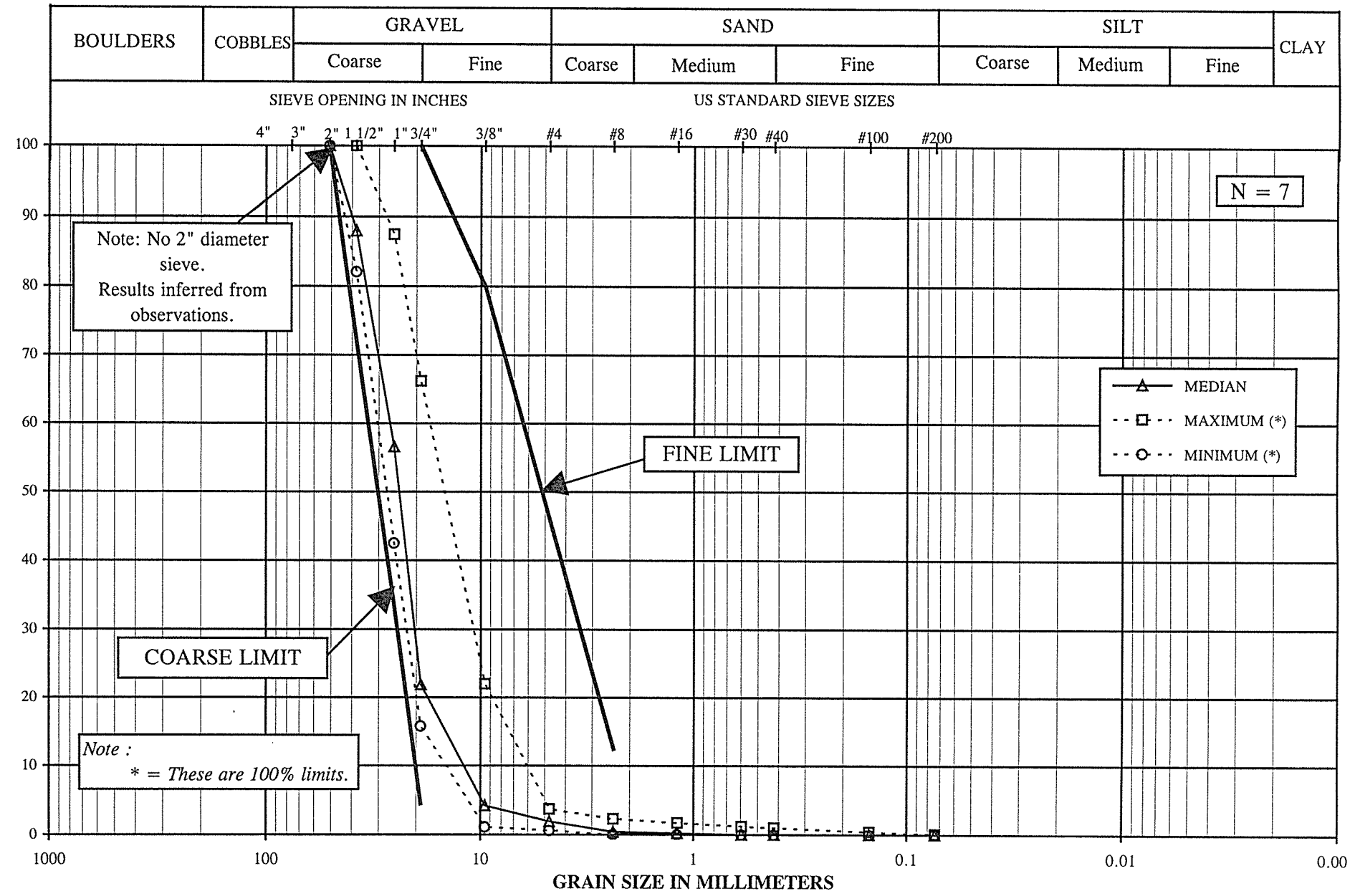


FIGURE 3.13

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
GRADATION LIMITS - FILTER SAND TYPE - B RECORD SAMPLES
STAGE Ia/Ib CONSTRUCTION

Project : 1627
Date : March 21, 1997

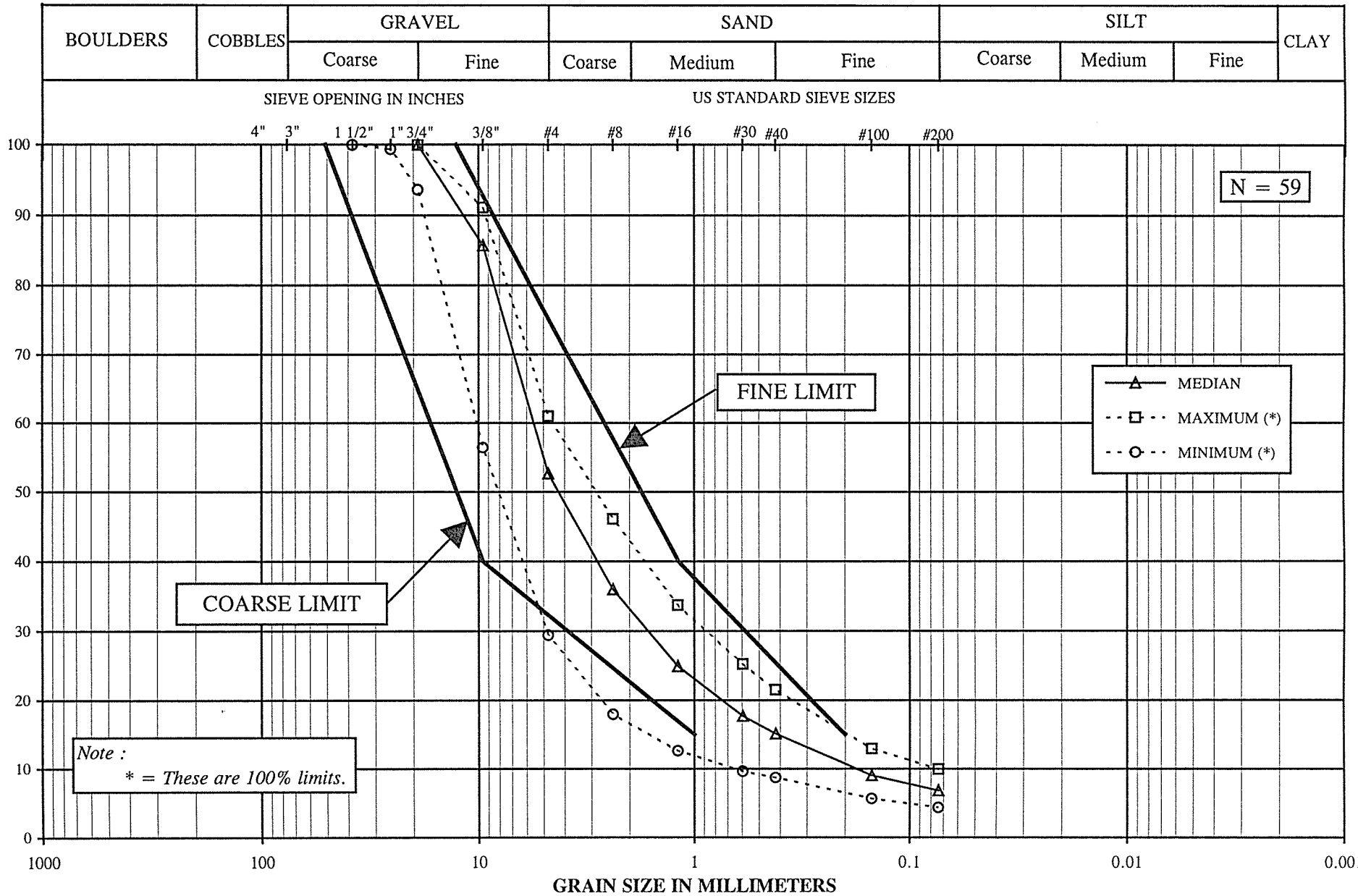


FIGURE 3.14

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORP0RATION
MOUNT POLLEY PROJECT
SUMMARY PLOT PIEZOMETER PLANE A

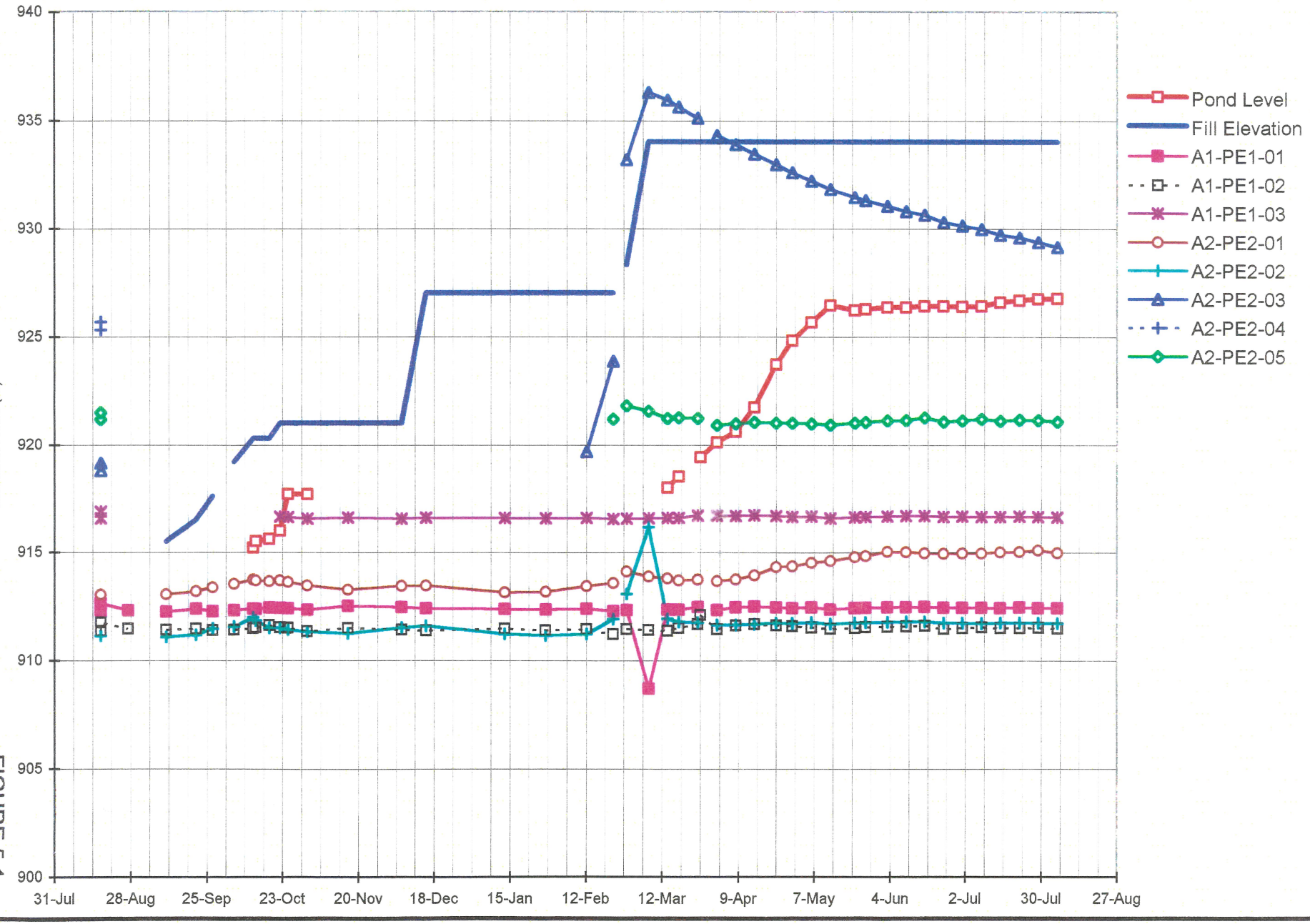


FIGURE 5.1

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORP0RATION
TAILINGS STORAGE FACILITY
SUMMARY PLOT PIEZOMETER PLANE B

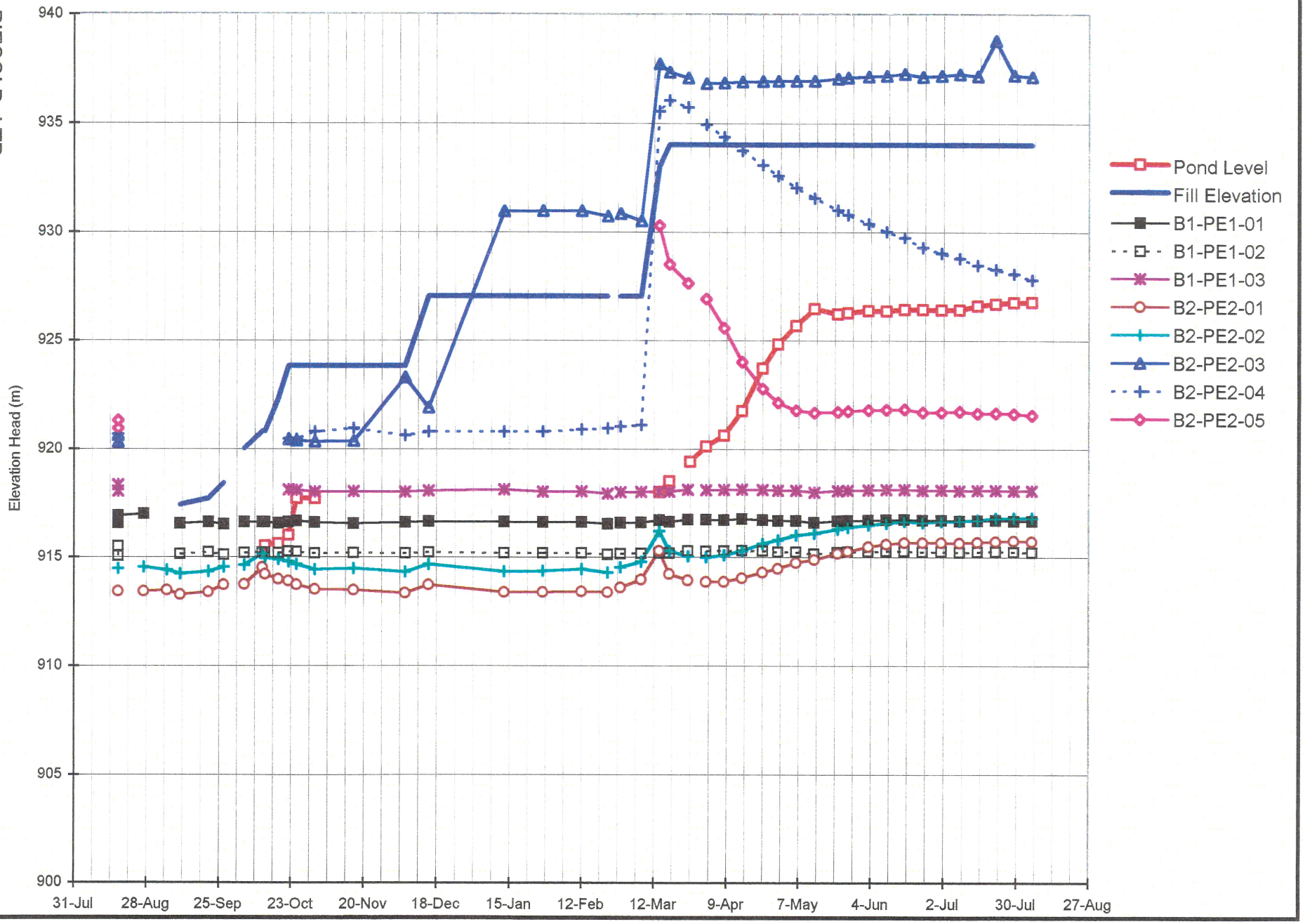


FIGURE5.2

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORP0RATION
TAILINGS STORAGE FACILITY
SUMMARY PLOT PIEZOMETER PLANE C

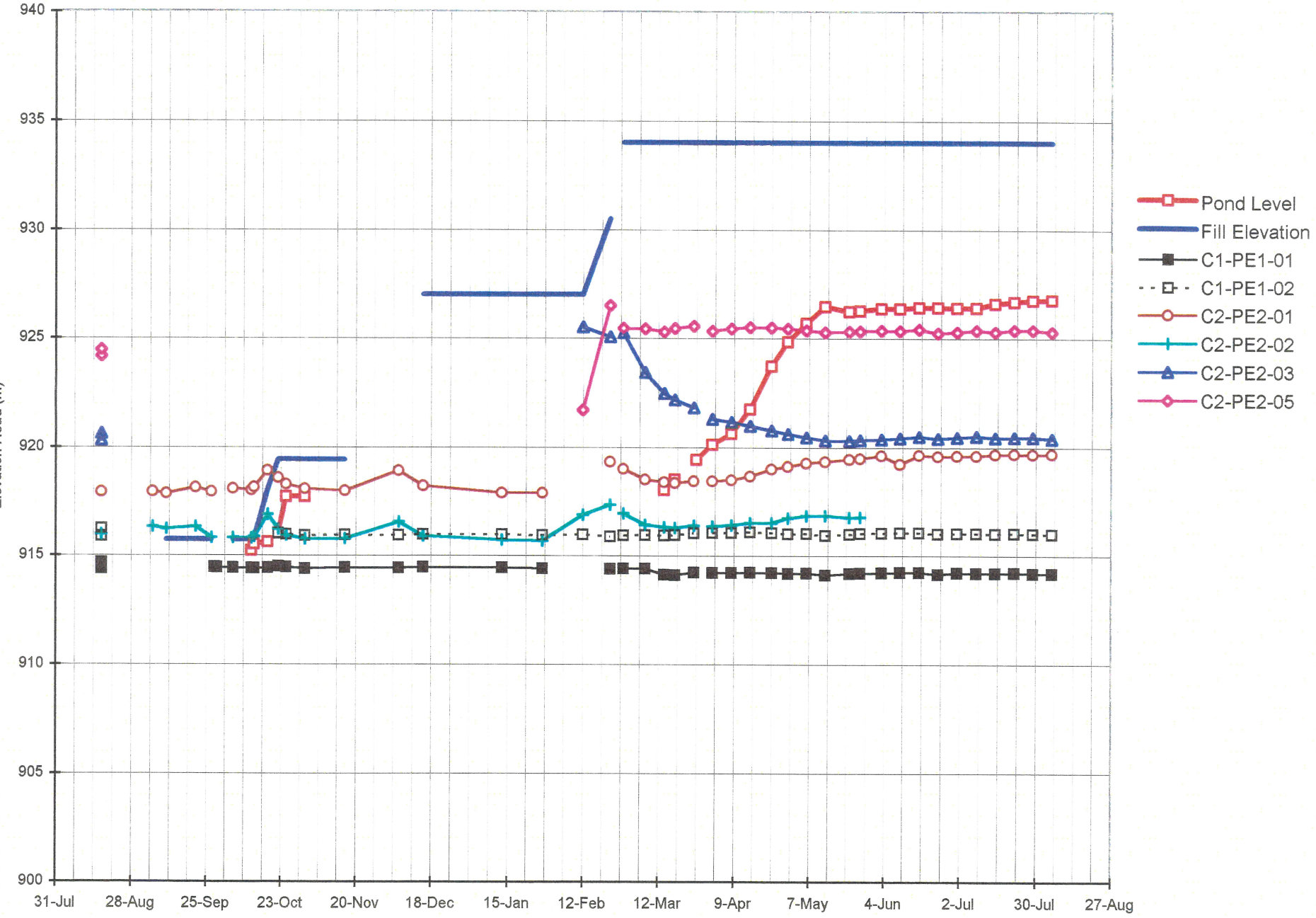


FIGURE 5.3

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORP0RATION
TAILINGS STORAGE FACILITY
SUMMARY PLOT PIEZOMETER PLANE D

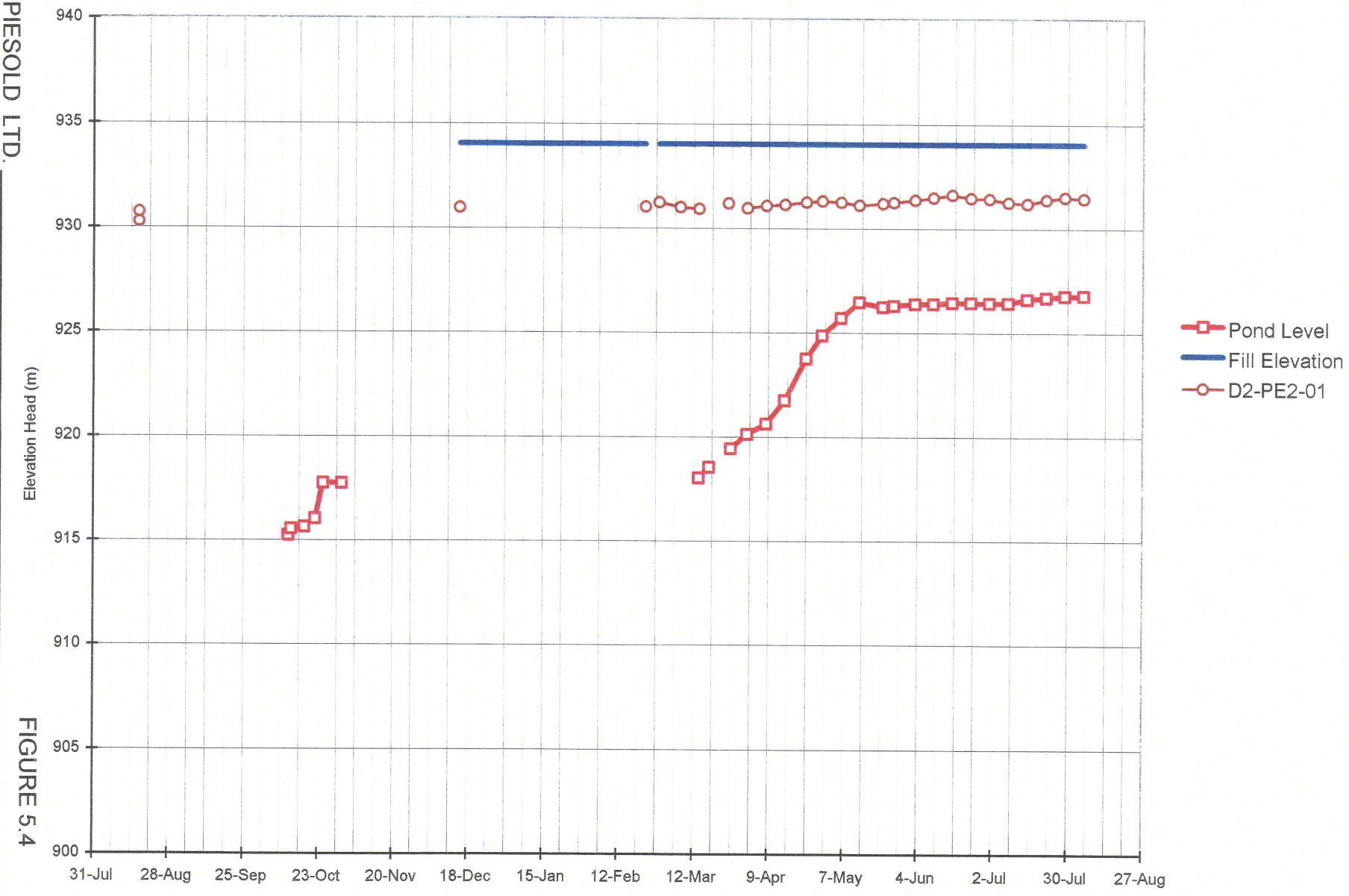


FIGURE 5.4

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
MAIN EMBANKMENT FOUNDATION DRAIN FLOWS

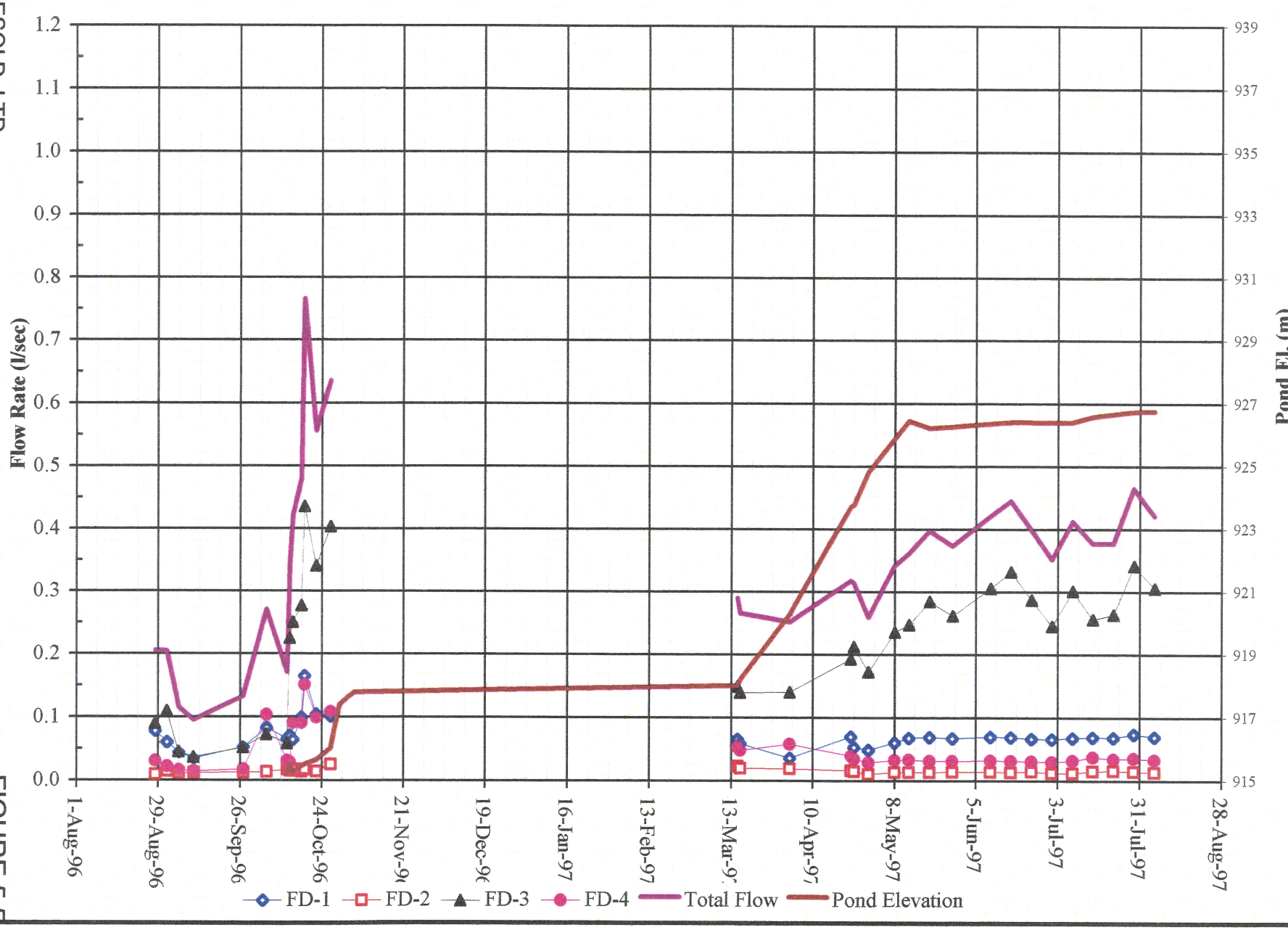
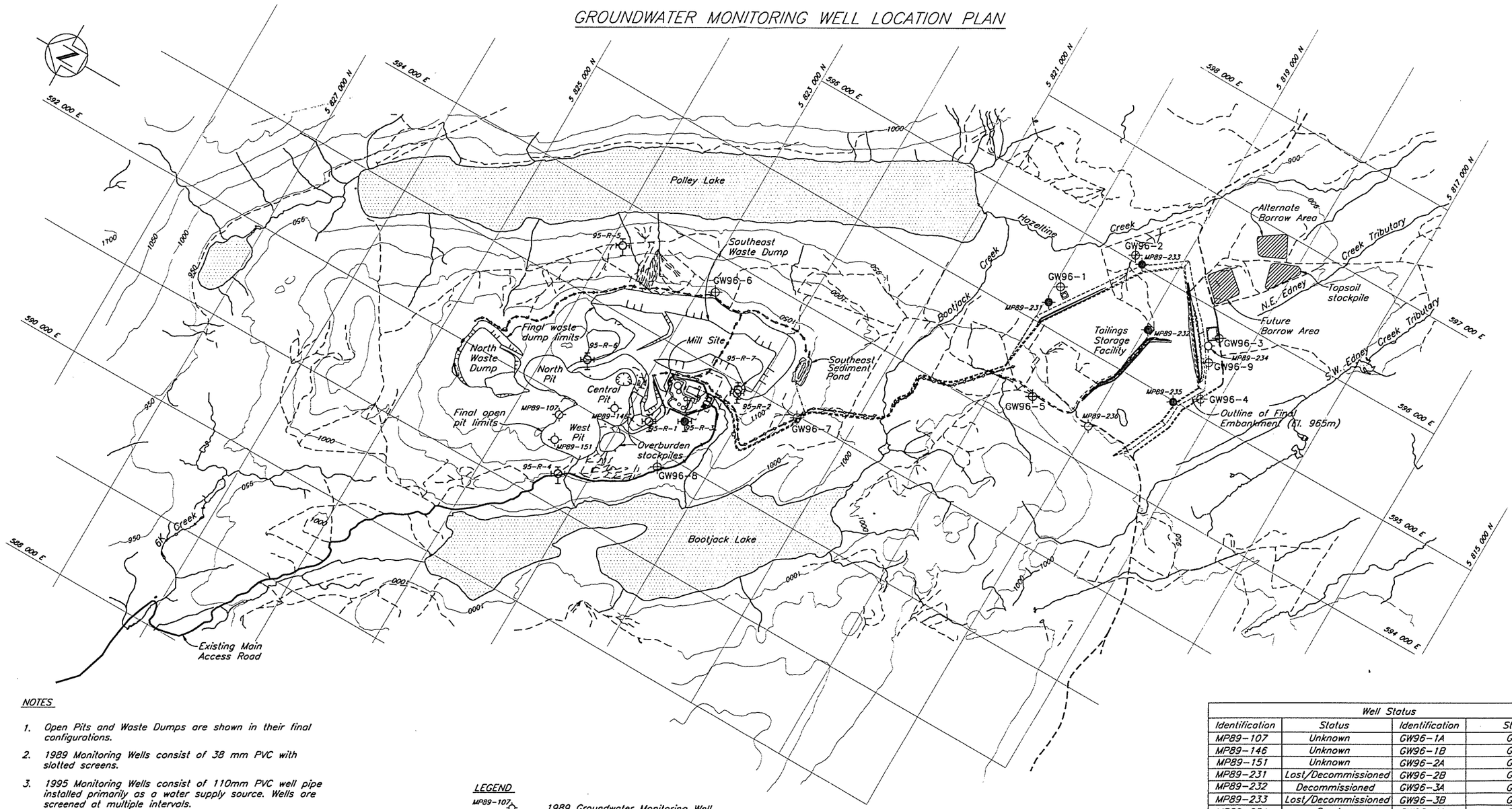


FIGURE 5.5

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
GROUNDWATER MONITORING WELL LOCATION PLAN



NOTES

1. Open Pits and Waste Dumps are shown in their final configurations.
2. 1989 Monitoring Wells consist of 38 mm PVC with slotted screens.
3. 1995 Monitoring Wells consist of 110mm PVC well pipe installed primarily as a water supply source. Wells are screened at multiple intervals.
4. Monitoring installation 95-R-3 has been blocked at a depth of approximatly 70 metres below the collar. This installation is no longer operable as a screen interval is not accessible.
5. 1996 Monitoring Wells consist of 50 mm PVC with one slotted screen section.
6. All previously installed monitoring wells with the tailing basin have been decommissioned.

LEGEND

- MP89-107 — 1989 Groundwater Monitoring Well
- GW96-1 — 1996 Groundwater Monitoring Well
- Decommissioned / Lost Groundwater Well
- 95-R-4 — 1995 Groundwater Supply Well

Scale 1000 500 0 1000 2000 m

Well Status			
Identification	Status	Identification	Status
MP89-107	Unknown	GW96-1A	Good
MP89-146	Unknown	GW96-1B	Good
MP89-151	Unknown	GW96-2A	Good
MP89-231	Lost/Decommissioned	GW96-2B	Good
MP89-232	Decommissioned	GW96-3A	Good
MP89-233	Lost/Decommissioned	GW96-3B	Good
MP89-234	Good	GW96-4A	Good
MP89-235	Lost/Decommissioned	GW96-4B	Good
MP89-236	Broken, Repairable	GW96-5A	Good
95-R-1	Good	GW96-5B	Good
95-R-2	Good	GW96-6	Good
95-R-3	Blocked	GW96-7	Good
95-R-4	Good	GW96-8A	Good
95-R-5	Good	GW96-8B	Good
95-R-6	Good	GW96-9	Good
95-R-7	Good		

May 16, 1997

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

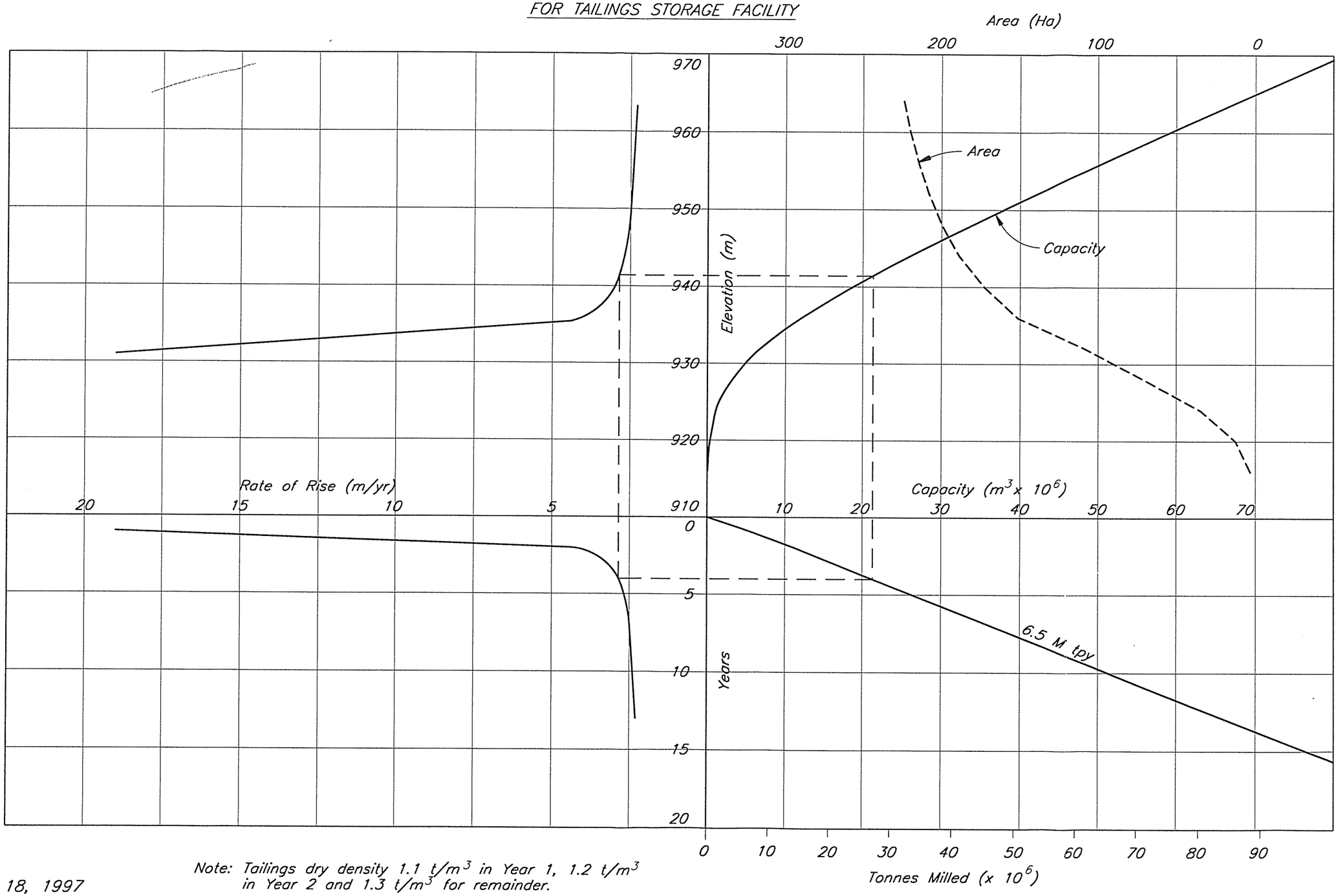
FIGURE 5.6

CAD FILE: \1627\FIG\312 1:40000 Plot 1=40

MOUNT POLLEY MINING CORPORATION

MOUNT POLLEY PROJECT

DEPTH/AREA/CAPACITY/FILLING RATE FOR TAILINGS STORAGE FACILITY



Note: Tailings dry density 1.1 t/m^3 in Year 1, 1.2 t/m^3 in Year 2 and 1.3 t/m^3 for remainder.

Apr. 18, 1997

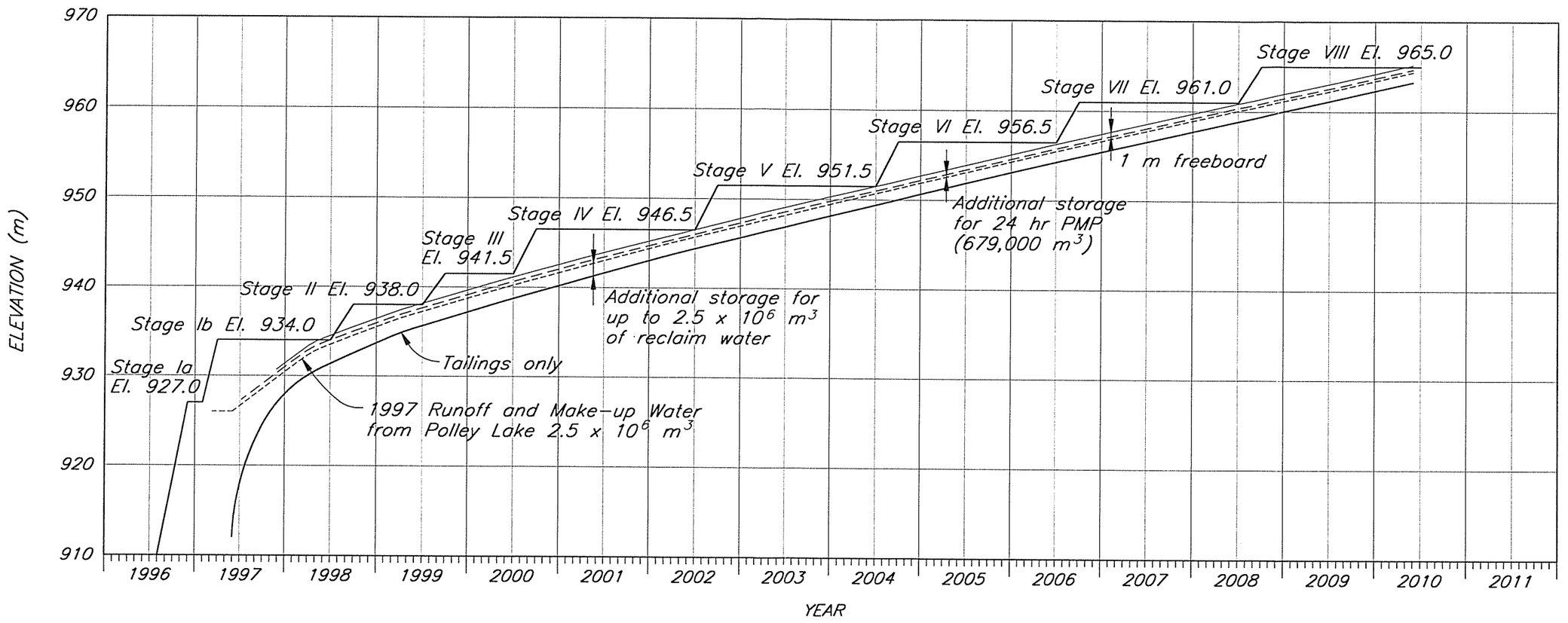
KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

FIGURE 6.1

MOUNT POLLEY MINING CORPORATION

MOUNT POLLEY PROJECT

TAILINGS AREA FILLING SCHEDULE AND STAGED CONSTRUCTION FOR 6,500,000 tpy THROUGHPUT



NOTES

1. All construction periods shown are for July through September, except Stage Ib, which is February through March.
2. Filling schedule based on tailings dry density of 1.1 t/m^3 in Year 1, 1.2 t/m^3 in Year 2 and 1.3 t/m^3 for remainder.
3. Embankment crest elevations for each of the staged expansions will be determined annually based on tailings production, in-situ density and water management requirements.

June 3, 1997

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

FIGURE 6.2

NOTES

1. Millsite layout as per CSFM Engineering.
2. As-built information from Mount Polley Mining Corporation.
3. Topography has not been updated from 1997 Flyover.

Scale 1000 500 0 1000 2000 m

CAD FILE\1625\DWG\019 1=20000 Plot 1=20 AUG 14, 1997

DRG. NO.	DESCRIPTION
REFERENCE DRAWINGS	

REV.	DATE	DESCRIPTION	APPROVED
REVISIONS			

REV.	DATE	DESCRIPTION	APPROVED
5	AUG 14/97	AS-BUILT PIPELINES	KJG
4	MAY 30/97	AS-BUILT STAGE Ib EMBANKS, PONDS BARGE CHAN & SE SEDIMENT POND	
3	MAY 24/96	ISSUED FOR CONSTRUCTION	
2	APRIL 1/95	MILLSITE AND CONTROL POND REVISED	
1	MAR 25/96	UPDATE OPEN PITS, WASTE DUMP, SITE DRAINAGE & ROADS	
0	JUNE 2/95	ISSUED FOR TENDER	
REVISIONS			

* "SIGNATURES AND PROFESSIONAL SEAL ON PREVIOUS REVISION"

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

*

DESIGNED	KDE/KGB
DRAWN	NSD/VY
CHECKED	*
APPROVED	*

MOUNT POLLEY MINING CORPORATION

MOUNT POLLEY PROJECT

OVERALL SITE PLAN

DATE JUNE 2, 1995 | SCALE AS SHOWN | DRG. NO. 510-12-01-1625.200 | REV. 5

595 000 E
5 821 000 N
Polley Lake
Creek
Polley Lake Pipeline
Bootjack
5 820 000 N
596 000 E
5 819 000 N
S.O.L., see Drg. No. 1625.205
Alternate Borrow Area
Topsoil Stockpile
Future Borrow Area
Perimeter Embankment Stage Ib crest El. 934
6
Perimeter Embankment seepage collection pond
Original Borrow Area
Stripping limits (typ.)
Main Embankment Stage Ib crest El. 934
6
5 818 000 N
Embankment Foundation Drains
Main Embankment Seepage Collection Pond
6
Basin liner limits, see Note 1
Reclaim barge channel
6
594 000 E
Tailings pipeline route
Tailings and Reclaim Pipeline
Reclaim pipeline route
Bootjack–Morehead Connector
Bootjack–Morehead Connector Relocation
S.O.L., see Drg. No. 1625.205
1090
1080
1070
1060
1050
1040
1030
1020
1010
1000
990
980
970
960
950
940
930
920
910
900
890
880
870
860
850
840
830
820
810
800
790
780
770
760
750
740
730
720
710
700
690
680
670
660
650
640
630
620
610
600
590
580
570
560
550
540
530
520
510
500
490
480
470
460
450
440
430
420
410
400
390
380
370
360
350
340
330
320
310
300
290
280
270
260
250
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

Scale 100 0 100 200 300 400 500 m

LEGEND

Stripped Areas

NOTES 6

1. Basin liner limits finalized from exploration trenches.
2. Stripped material to be stockpiled in designated areas for future reclamation use.
3. All drillholes in tailing basin grouted as per technical specifications.
4. Clearing around Perimeter Embankment Seepage Collection Pond finalized in the field.
5. Soft foundation soils to be removed as required by the Engineer.
6. As-built information provided by Mount Polley Mining Corporation.
7. Topography has not been updated from 1997 Flyover.
8. Geological Investigations are shown in plan on Drg. No. 1627.001 and on section on Drg. Nos. 1627.002 to 1627.012.

DRG. NO.	DESCRIPTION
1625.205	TSF – STAGE Ib IMPOUNDMENT – GENERAL ARRANGEMENT

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	APPROVED
6	MAY 30/97	AS-BUILT LINERS, EMBANKMENTS, PONDS, AND BARGE CHANNEL	KJB
5	MAY 24/96	ISSUED FOR CONSTRUCTION	
4	APR 11/96	RE-ISSUED FOR TENDER	

REVISIONS

REV.	DATE	DESCRIPTION	APPROVED
3	APRIL 1/96	NOTE 4 AND STRIPPING LIMITS	
2	MAR 25/96	UPDATE ROADS & DRAINAGE	
1	JULY 27/95	NOTE 4 AND STRIPPING LIMITS	
0	JUNE 2/95	ISSUED FOR TENDER	

REVISIONS

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA K. D. K. EMBREE

DESIGNED	KDE
DRAWN	RDT
CHECKED	KJB
APPROVED	KJB

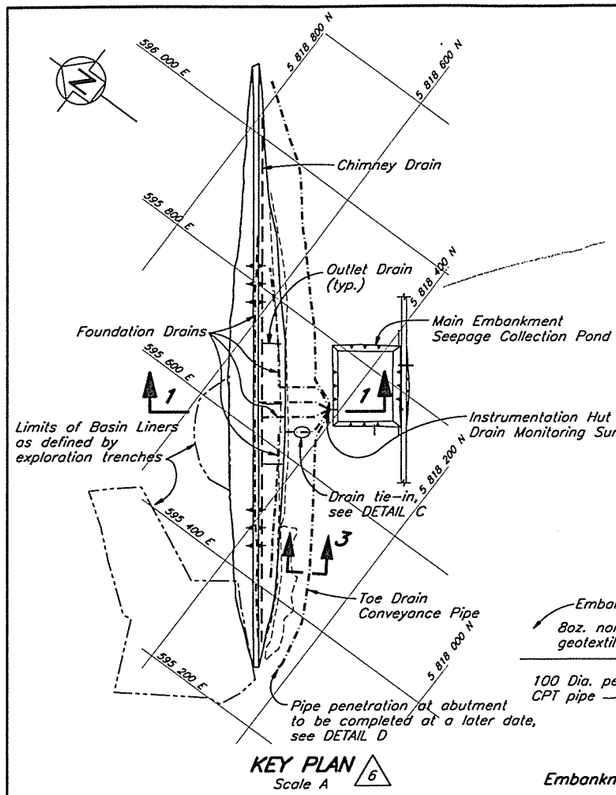
MOUNT POLLEY MINING CORPORATION

MOUNT POLLEY PROJECT

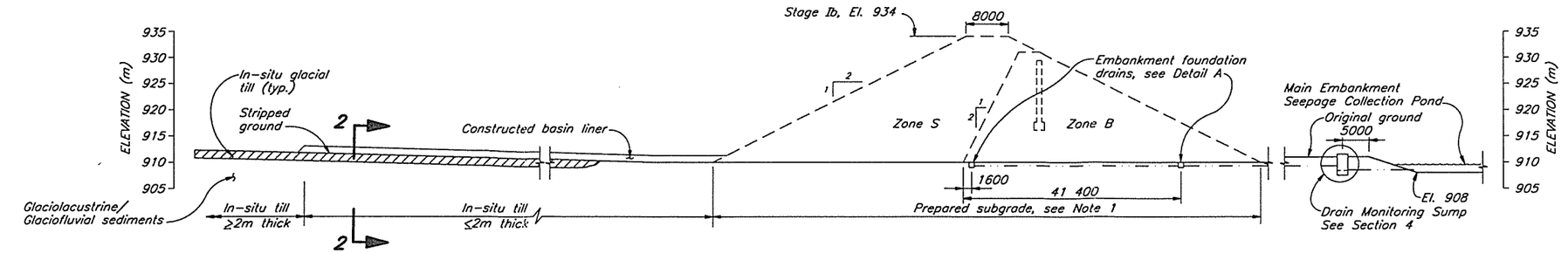
TAILINGS STORAGE FACILITY BASIN PREPARATION AND BASIN LINER

DATE JUNE 2, 1995 | SCALE AS SHOWN | DRG. NO. 510-11-01-1625.201 | REV. 6

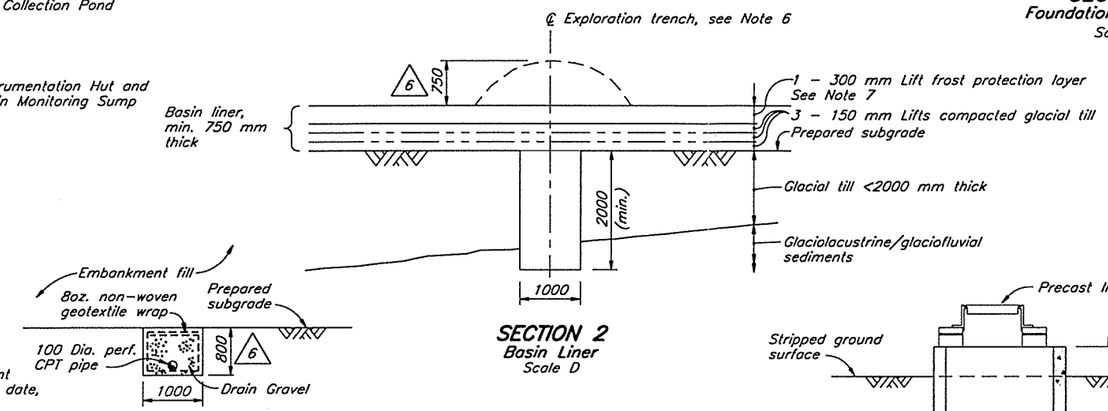
CAD FILE: \1625\01\B\018 1:5000 Plot 1=5 MAY 30, 1997



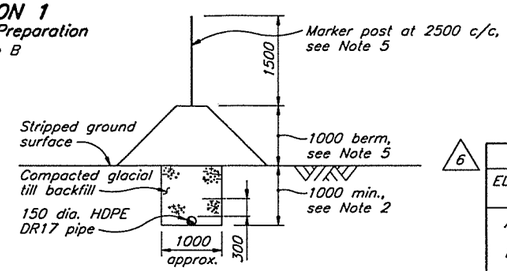
KEY PLAN 6
Scale A



SECTION 1
Foundation Preparation
Scale B



SECTION 2
Basin Liner
Scale D

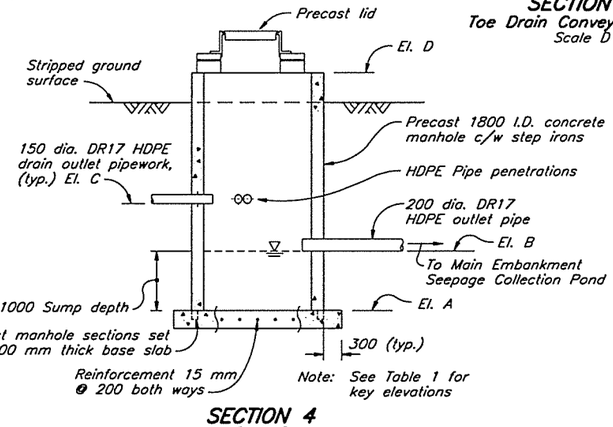


SECTION 3
Toe Drain Conveyance Pipe
Scale D

6

Table 1		
ELEV.	MAIN EMBANKMENT	PERIMETER EMBANKMENT
A	907.5	925.5
B	908.5	926.5
C	909.3	927.0
D	911.5	930.5

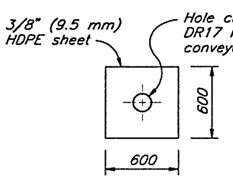
DETAIL A
Embankment Foundation Drain
Scale D



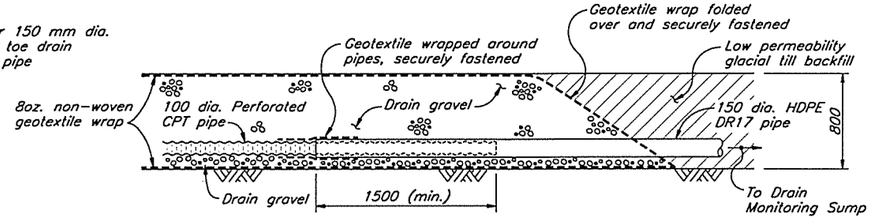
SECTION 4
Scale D

6 NOTES

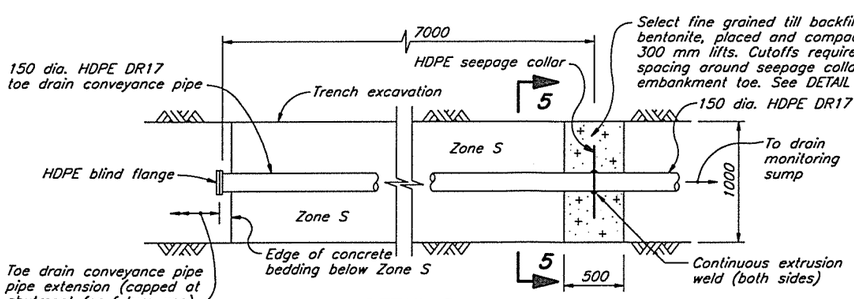
1. Subgrade preparation to comprise stripping of topsoil and organics and removing saturated materials to establish a competent, bearing surface for fill placement as directed by the Engineer.
2. All pipework to have a minimum of 1 m of cover for frost protection.
3. All HDPE pipe penetrations to be water tight.
4. Drain monitoring sump invert elevations shown on Table 1 may be adjusted in the field by the Engineer.
5. Buried pipework to be covered by a berm and clearly marked by a line of stakes.
6. Exploration trenches backfilled in compacted lifts, with additional material mounded at surface.
7. 300 mm Frost protection layer only required for Upper Basin Liner. Lower Basin Liner to have extra 450 mm placed in one lift for frost protection.
8. As-built information provided by Mount Polley Mining Corporation.



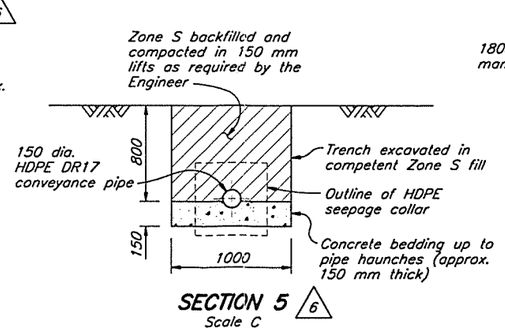
DETAIL B
HDPE Seepage Collar 6
Scale C



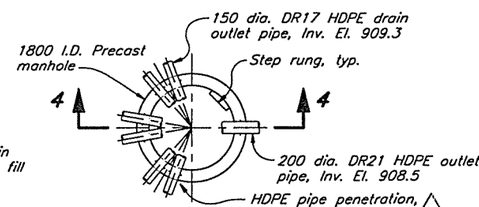
DETAIL C
Embankment Foundation Drain Tie-in (in Section) 6
Scale C



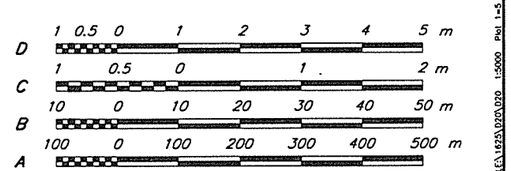
DETAIL D
Conveyance Pipe (in Plan) 6
Scale C



SECTION 5 6
Scale C



DETAIL E
Drain Monitoring Sump
Scale D



CAD FILE\1625\020\020 1:5000 Plot 1=5 MAY 30, 1997

DRG. NO.	DESCRIPTION
1625.210	TAILINGS STORAGE FACILITY – MAIN & PERIMETER EMBANKMENTS – PLAN
1625.207	TAILINGS STORAGE FACILITY – TAILINGS DAM CHIMNEY DRAIN
1625.111	TAILINGS STORAGE FACILITY – TAILINGS EMBANKMENT – SECTIONS & DETAILS

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	APPROVED
6	MAY 30/97	AS-BUILT EMBANK., REVISED DRAIN DETAILS	KJB
5	MAY 24/96	ISSUED FOR CONSTRUCTION	

REVISIONS

REV.	DATE	DESCRIPTION	APPROVED
4	APR 18/96	UPDATE FOR EXPLORATION TRENCH	
3	MAR 25/96	UPDATE DRAINAGE & SEEPAGE COLLAR	
2	JAN 18/96	REVISIONS FOR REVIEW COMMENTS	
1	JULY 15/95	FROST LAYER REVISED AND NOTE 9 ADDED	
0	JUNE 2/95	ISSUED FOR TENDER	

REVISIONS

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA K. D. KALMBACH

DESIGNED	KDE
DRAWN	RDT/WAL/NSD
CHECKED	KJB
APPROVED	KJB

DATE JUNE 2, 1995 | SCALE AS SHOWN | DRG. NO. 510–15–01–1625.202 | REV. 6

MOUNT POLLEY MINING CORPORATION

MOUNT POLLEY PROJECT

TAILINGS STORAGE FACILITY FOUNDATION PREPARATION AND BASIN LINER SECTION AND DETAILS

ORIGINAL SETTING OUT POINTS

Description	Point	Northing	Easting
Setting Out Line (S.O.L.)	S1	5 818 622.590	594 258.688
	S2	5 818 392.402	594 765.778
	S3	5 818 365.375	594 995.246
	S4	5 818 238.539	595 240.350
	S5	5 818 966.983	596 208.866
	S6	5 819 304.035	595 955.881
	S7	5 819 932.926	595 020.397
	S8	5 820 025.632	594 375.061
Stripping Limits	S13	5 818 233.372	595 392.851
	S14	5 818 696.416	595 997.943
	S15	5 818 828.350	596 066.684
Main Embkmnt. Seepage Collection Pond	S19	5 818 461.203	595 790.290
	S20	5 818 391.047	595 697.013
	S21	5 818 317.351	595 752.085
	S22	5 818 387.678	595 845.590
Reclaim Barge Channel	S23	5 818 743.870	595 479.103
	C5	5 818 856.841	595 365.834
	BC	5 818 879.675	595 408.055
	EC	5 818 903.862	595 375.481
	PI5	5 818 899.065	595 397.857
	S24	5 819 007.126	594 840.706
Bootjack – Morehead Connector Relocation	C1	5 818 550.264	595 840.492
	BC	5 818 447.016	595 949.303
	EC	5 818 430.386	595 930.655
	PI1	5 818 437.922	595 940.674
	C2	5 818 243.100	595 432.097
	BC	5 818 123.222	595 522.260
	EC	5 818 112.295	595 505.514
	PI2	5 818 117.199	595 514.252
	C3	5 818 096.998	595 273.949
	BC	5 818 009.797	595 322.894
	EC	5 818 002.473	595 241.322
	PI3	5 817 987.827	595 283.752
	C4	5 818 228.844	594 248.367
	BC	5 818 333.078	594 283.514
	EC	5 818 307.478	594 171.448
	PI4	5 818 354.995	594 220.025

LEGEND

- C1 – Curve No. 1 (typ.)
- BC – Begin Curve
- EC – End Curve
- PI1 – Point of Intersection for Curve No. 1

NOTES

1. Stripping and clearing required 5m beyond seepage collection ponds and pipeworks.
2. As-built information provided by Mount Polley Mining Corporation.
3. Topography has not been updated for 1997 Flyover.
4. Pipeline alignments to be updated based on as-built survey.

Polley Lake
Polley Lake Pipeline
Creek
Bootjack
595 000 E
594 000 E
596 000 E
5 821 000 N
5 820 000 N
5 819 000 N
5 818 000 N
S.O.L.
Alternate Borrow Area
Topsoil Stockpile
Future Borrow Area
Original Borrow Area
Stripping Limits
Perimeter Embankment seepage collection pond
Perimeter Embankment Stage Ib crest El. 934
Main Embankment Stage Ib crest El. 934
Main Embankment seepage collection pond
Channel invert El. 918
Channel invert El. 937
Bootjack–Morehead Connector Relocation
Lower basin liner
Upper basin liner
Wet or unsuitable material
Stage Ib stripping limits
Reclaim barge channel
Reclaim pipeline access road, see Section 3/1625.213
Tailings Pipeline
Tailings and Reclaim Pipelines, see Note 4
Reclaim Pipeline
2/1625.211
1/1625.211
S1 S2 S3 S4 S5 S6 S7 S8 S13 S14 S15 S19 S20 S21 S22 S23 S24

Scale 100 50 0 100 200 300 400 500 m

CAD FILE\1625.017\017 1:5000 Plot 1=5 MAY 26, 1997

DRG. NO.	DESCRIPTION
1625.213	TSF – TAILINGS CONTROL AND SEEPAGE COLLECTION
1625.211	TSF – TAILINGS EMBANKMENT – SECTIONS AND DETAILS

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	APPROVED
6	MAY 30/97	AS-BUILT LINERS, EMBANKMENTS, PONDS AND BARGE CHANNEL	KJB
5	MAY 24/96	ISSUED FOR CONSTRUCTION	
4	APR 1/96	DIVERSION DITCH NOTE AND CULVERT	

REVISIONS

REV.	DATE	DESCRIPTION	APPROVED
3	MAR 22/96	UPDATE ROAD & BORROW AREA ADDED	
2	JAN. 18/96	REVISED SEEPAGE COLLECTION POND	
1	JULY 27/95	POINT S16 AND S17 DELETED	
0	JUNE 2/95	ISSUED FOR TENDER	

REVISIONS

PROFESSIONAL ENGINEER – PROVINCE OF BRITISH COLUMBIA – K. D. KLEMMER

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

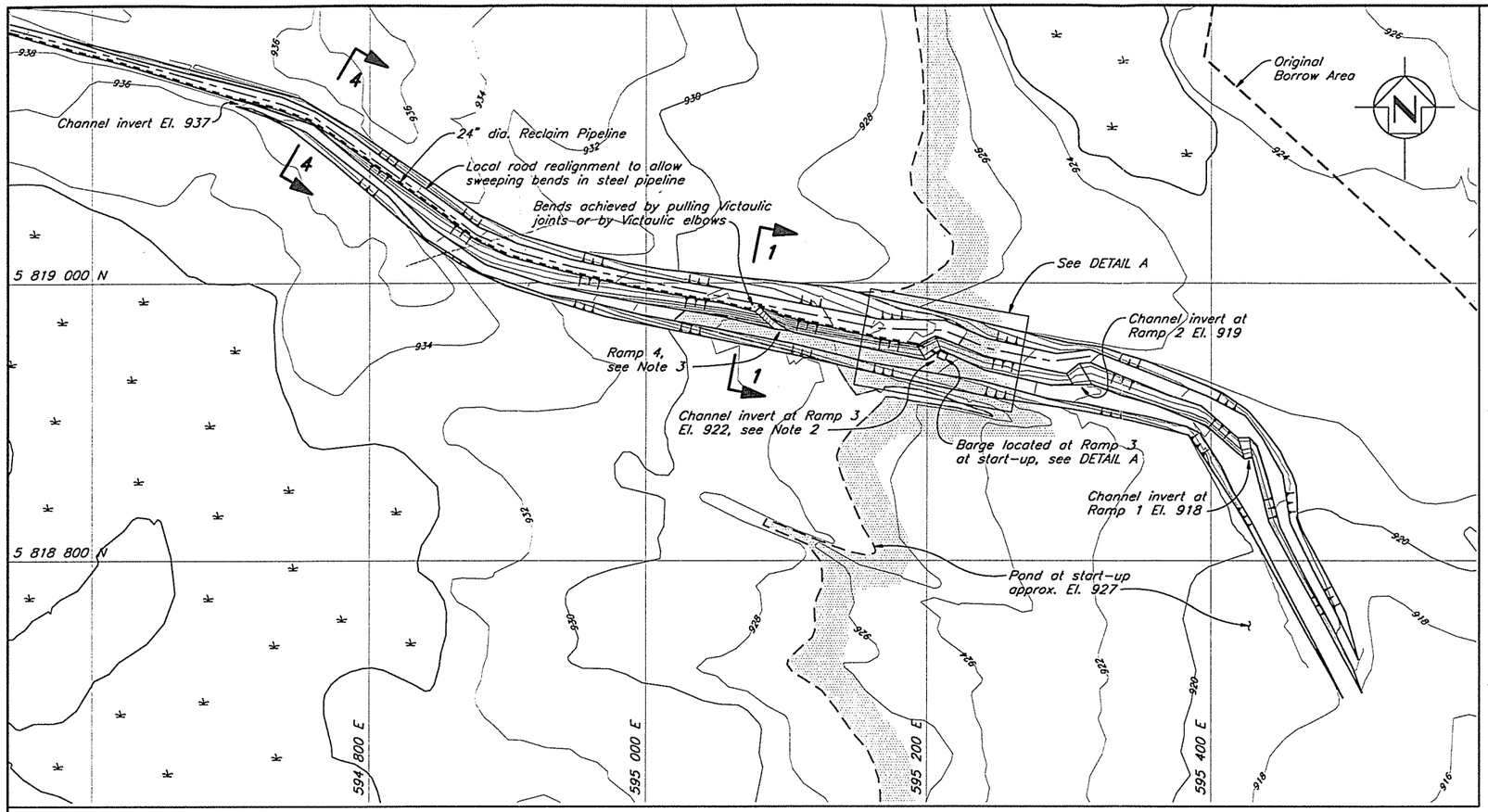
DESIGNED KDE/KGB
DRAWN WAL/VY/NSD
CHECKED KJB
APPROVED KJB

MOUNT POLLEY MINING CORPORATION

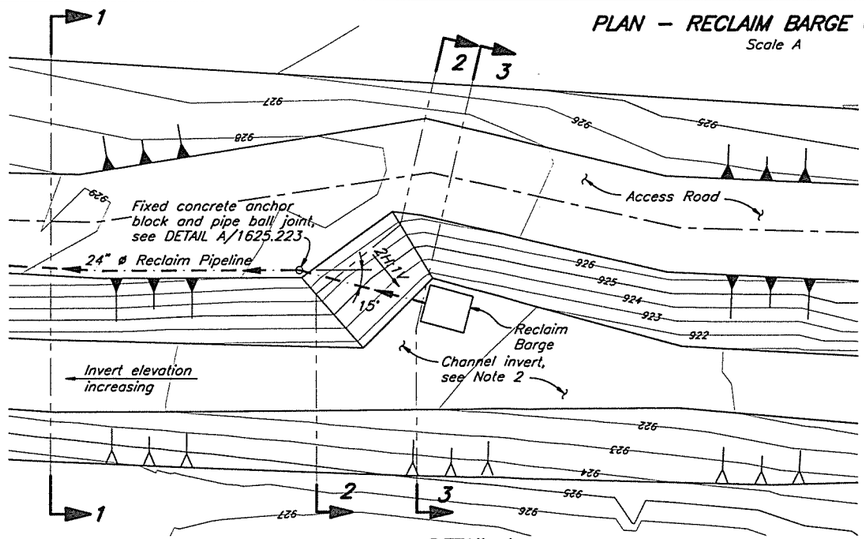
MOUNT POLLEY PROJECT

TAILINGS STORAGE FACILITY STAGE Ib TAILINGS IMPOUNDMENT GENERAL ARRANGEMENT

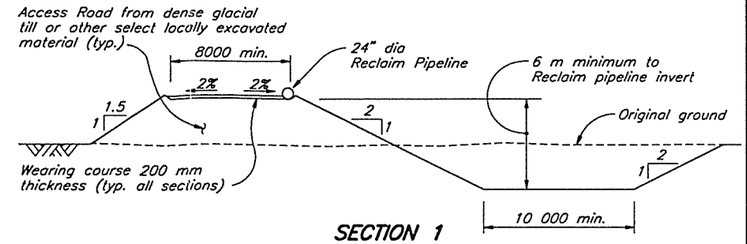
DATE JUNE 2, 1995 | SCALE AS SHOWN | DRG. NO. 510–12–02–1625.205 | REV. 6



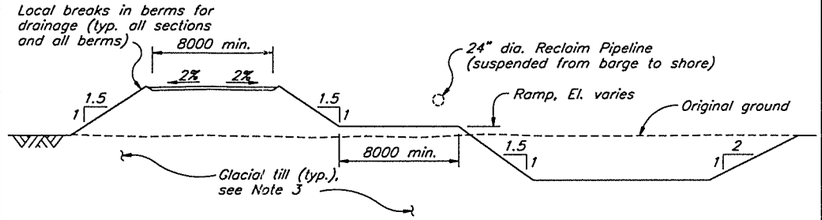
PLAN – RECLAIM BARGE CHANNEL (1)
Scale A



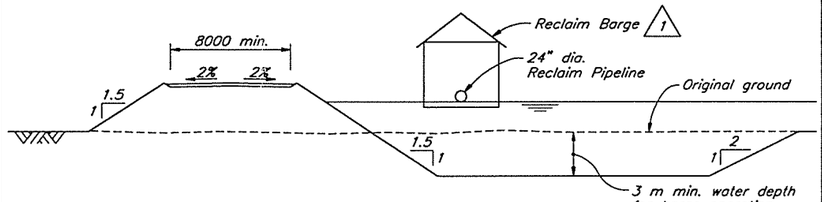
DETAIL A
BARGE ACCESS RAMP (1)
Scale C



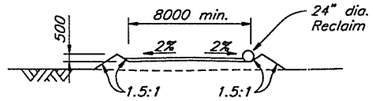
SECTION 1
Scale B



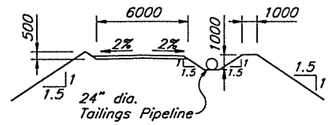
SECTION 2
Scale B



SECTION 3
Scale B



SECTION 4, 4/1625.218 , 1/1625.222
Scale B



SECTION 5/1625.218 , 2/1625.222
Scale B

Scale C 10 0 20 40 m

Scale B 10 5 0 10 20 Metres

Scale A 100 50 0 100 200 Metres

NOTES

1. Barge requires a minimum water depth of 3 m for operation and can operate over a 3 m range (see Drg. No. 1625.223).
2. Pond level at start-up approx. El. 927, with initial access road and ball joint at El. 928 and channel invert at El. 922 or lower.
3. Additional access ramps to be added as required at 3 m elevation increments. If the initial ramp is moved down channel from the assumed start-up location, additional reclaim pipe will be required.
4. Compacted glacial till placed along the barge channel excavation when higher permeability soils encountered (to meet basin liner requirements), as directed by the Engineer.
5. As-built information provided by Mount Polley Mining Corporation.
6. Topography has not been updated for 1997 Flyover.
7. Pipeline alignments to be updated based on as-built survey.

DRG. NO.	DESCRIPTION
1625.223	TSF – RECLAIM PIPELINE DETAILS
1625.222	TSF – TAILINGS IMPOUNDMENT – TAILINGS & RECLAIM PIPEWORK – PLAN
1625.218	TSF – TAILINGS DISTRIBUTION & RECLAIM SYSTEM – PLAN

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	APPROVED

REVISIONS

REV.	DATE	DESCRIPTION	APPROVED
1	MAY 30/97	AS-BUILT RECLAIM BARGE CHANNEL	KJB
0	JULY 15/96	ISSUED FOR CONSTRUCTION	

REVISIONS

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA H. G. DEW

DESIGNED	HPD
DRAWN	NSD
CHECKED	KDE
APPROVED	KJB

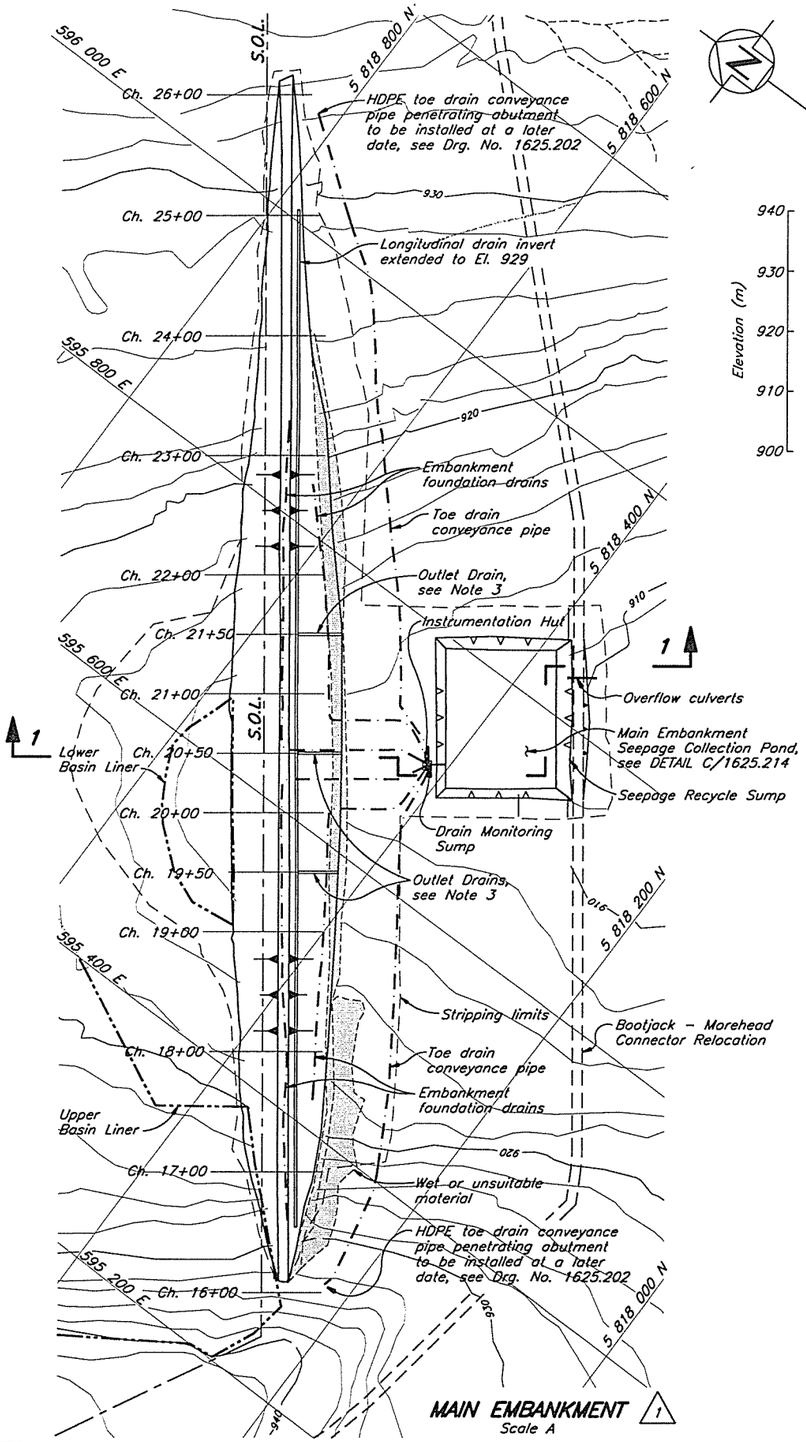
DATE JULY 15, 1996 | SCALE AS SHOWN | DRG. NO. 1625.206 | REV. 1

MOUNT POLLEY MINING CORPORATION

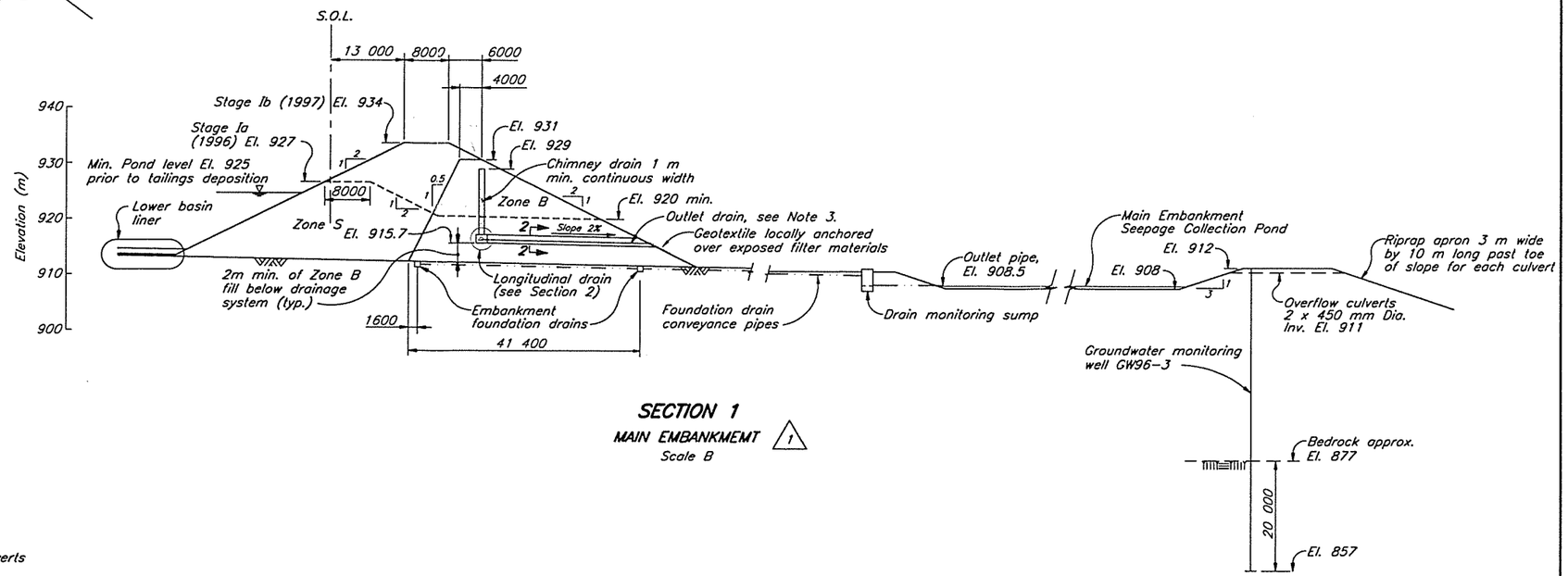
MOUNT POLLEY PROJECT

TAILINGS STORAGE FACILITY RECLAIM BARGE CHANNEL EXCAVATION DETAILS

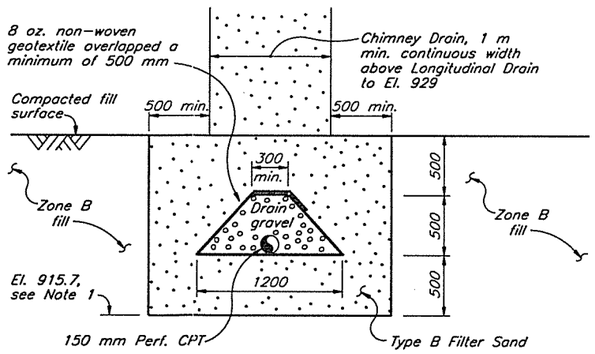
CAD FILE\1625/051/051 1:2000 Plot 1=2 MAY 28, 1997



MAIN EMBANKMENT
Scale A



SECTION 1
MAIN EMBANKMEMT (1)
Scale B



SECTION 2
LONGITUDINAL DRAIN/OUTLET DRAIN DETAIL (1)
Scale C

(1) NOTES

1. Longitudinal drain installed with invert El. 915.7 m approx. Ch. 18+50 to 23+00. On the right abutment, (Ch. 16+00 to 18+50) it was installed to invert El. 929 m in placed and compacted Zone B fill. On the left abutment (Ch. 23+00 to 25+25) it was installed in original ground, following the prepared ground surface.
2. HDPE toe drain conveyance pipe to be installed at later date. To be bedded with concrete as shown on Drg. No. 1625.202.
3. Outlet drains to be extended to Drain Monitoring Sumps during Stage II construction.
4. As-built information provided by Mount Polley Mining Corporation.
5. Topography has not been updated for 1997 Flyover.

C 500 0 500 1000 1500 2000 2500 mm
B 10 0 10 20 30 40 50 m
A 100 50 0 100 200 m

c:\50_FLES\1625\0553\053_1:2500_Plot 1=2.5_MAY 29, 1997

DRG. NO.	DESCRIPTION
1625.214	TSF - SEDIMENT CONTROL & SEEPAGE COLLECTION - SECTIONS & DETAILS
1625.202	TSF - FOUNDATION PREPARATION & BASIN LINER

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	APPROVED

REVISIONS

REV.	DATE	DESCRIPTION	APPROVED
1	MAY 30/97	AS-BUILT EMBANKMENT AND POND	KJB
0	SEPT 4/96	ISSUED FOR CONSTRUCTION	

REVISIONS

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS - VANCOUVER, B.C.

PROFESSIONAL ENGINEER OF K. J. BROUWER BRITISH COLUMBIA

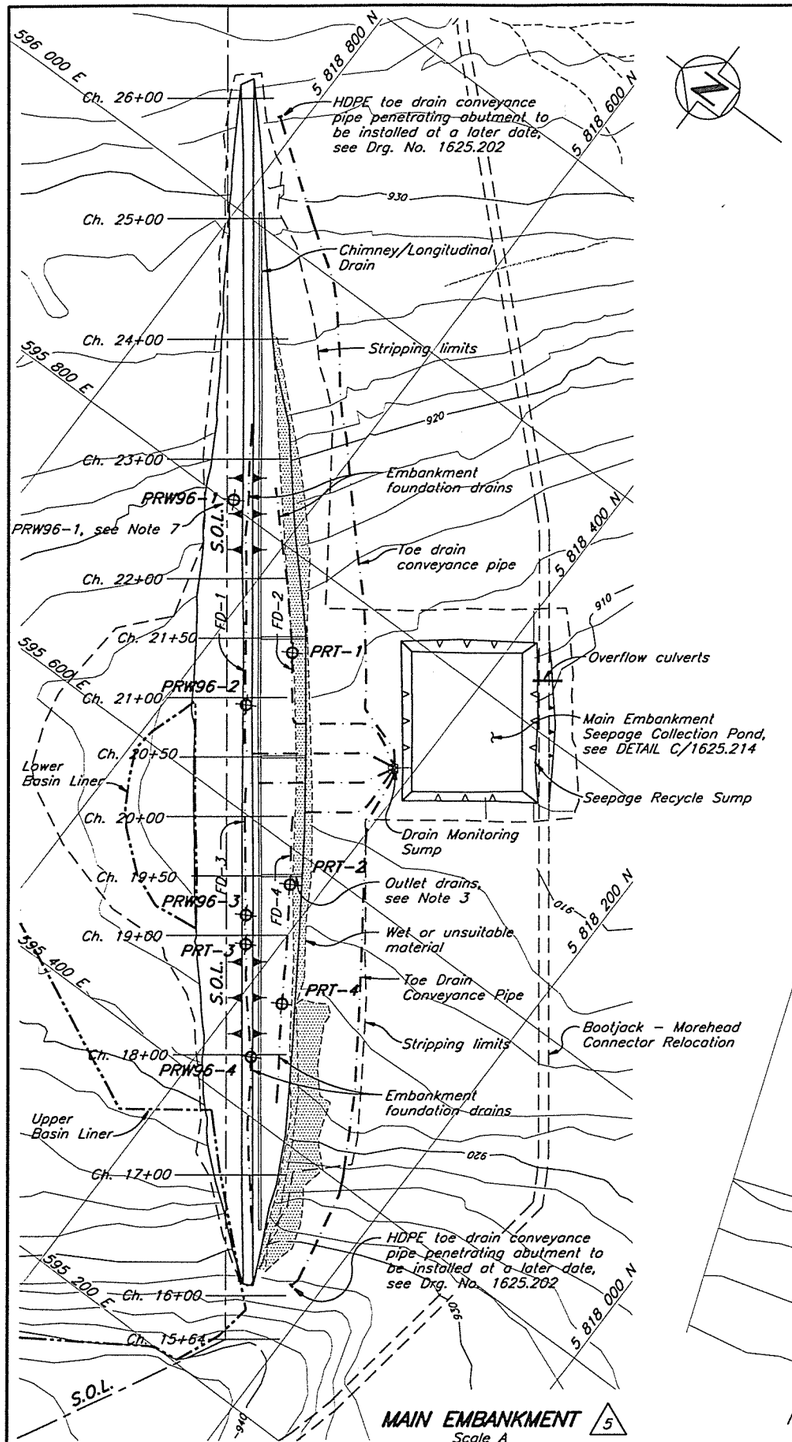
DESIGNED	KJB
DRAWN	WAL/DHS
CHECKED	KJB
APPROVED	KJB

MOUNT POLLEY MINING CORPORATION

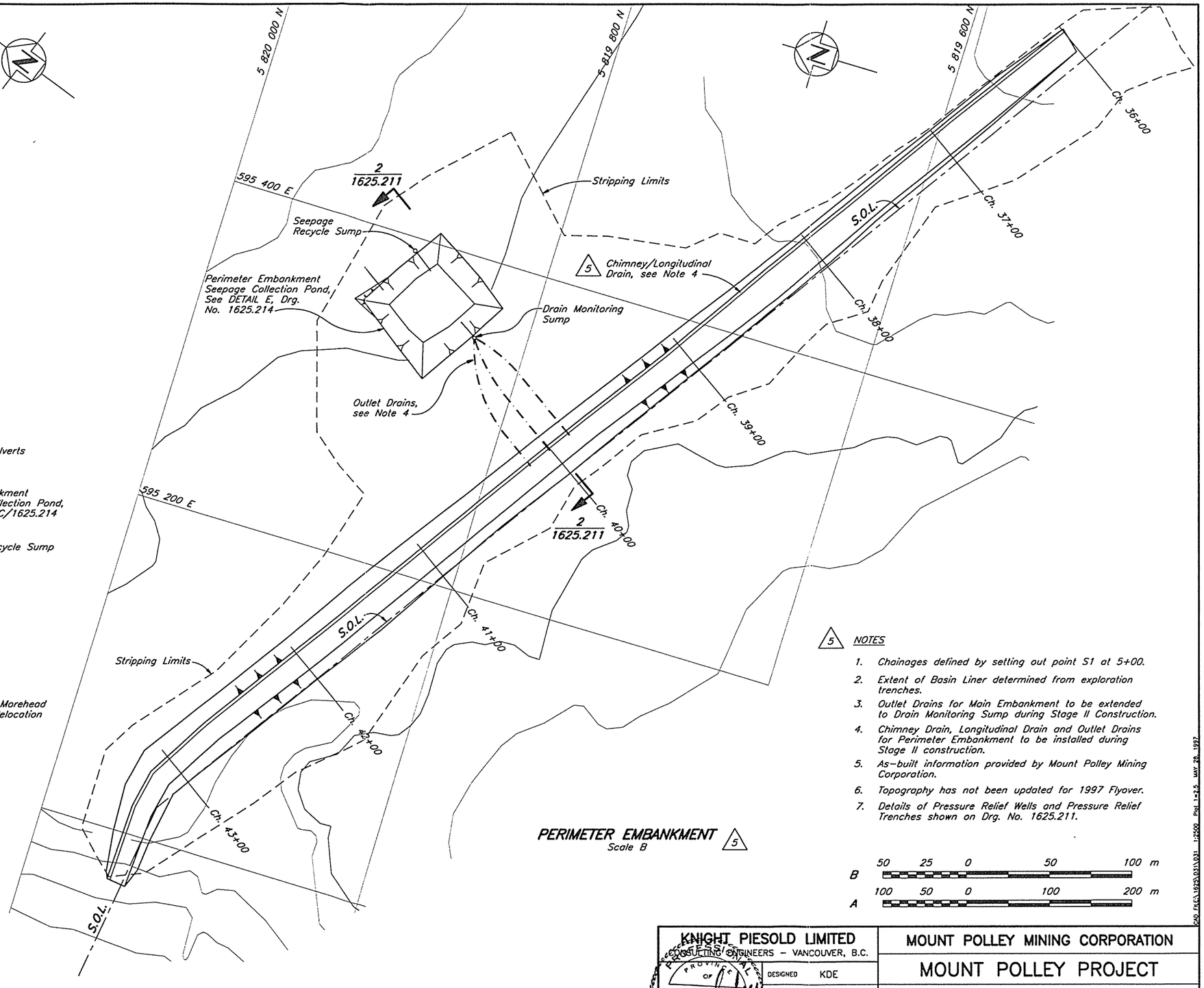
MOUNT POLLEY PROJECT

TAILINGS STORAGE FACILITY
TAILINGS DAM CHIMNEY DRAIN

DATE SEPT. 4, 1996 | SCALE AS SHOWN | DRG. NO. 1625.207 | REV. 1



MAIN EMBANKMENT 5
Scale A



PERIMETER EMBANKMENT 5
Scale B

5 NOTES

1. Chainages defined by setting out point S1 at 5+00.
2. Extent of Basin Liner determined from exploration trenches.
3. Outlet Drains for Main Embankment to be extended to Drain Monitoring Sump during Stage II Construction.
4. Chimney Drain, Longitudinal Drain and Outlet Drains for Perimeter Embankment to be installed during Stage II construction.
5. As-built information provided by Mount Polley Mining Corporation.
6. Topography has not been updated for 1997 Flyover.
7. Details of Pressure Relief Wells and Pressure Relief Trenches shown on Drg. No. 1625.211.

B 50 25 0 50 100 m

A 100 50 0 100 200 m

CAD FILE: 1625.031\031 1:2500 Plot 1=2.5 MAY 28, 1997

DRG. NO.	DESCRIPTION
1625.214	TSF - SEDIMENT CONTROL & SEEPAGE COLLECTION - SECTIONS & DETAILS
1625.202	TSF - FOUNDATION PREPARATION & BASIN LINER - SECTIONS & DEATILS

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	APPROVED
5	MAY 30/97	AS-BUILT EMBANKMENTS, PONDS AND LINERS	KJB
4	MAY 24/95	ISSUED FOR CONSTRUCTION	

REVISIONS

REV.	DATE	DESCRIPTION	APPROVED
3	APR 1/96	OVERFLOW CULVERTS ADDED	
2	MAR 25/96	UPDATE ROADS AND DRAINS	
1	JULY 27/95	BASIN LINER AND DRAINAGE REVISED	
0	JUNE 2/95	ISSUED FOR TENDER	

REVISIONS

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS - VANCOUVER, B.C.

PROFESSIONAL ENGINEERS PROVINCE OF BRITISH COLUMBIA K. D. K. EMBREE ENGINEER

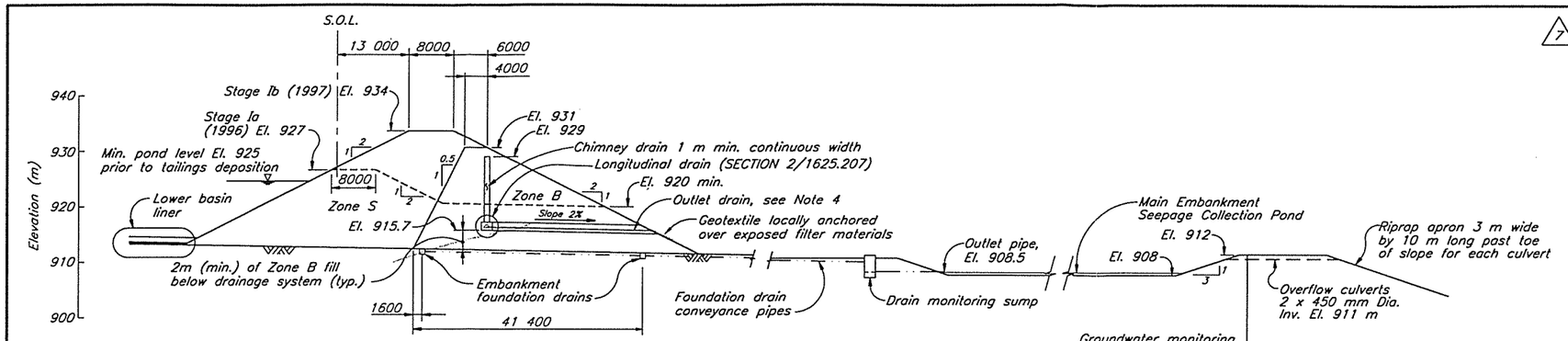
MOUNT POLLEY MINING CORPORATION

MOUNT POLLEY PROJECT

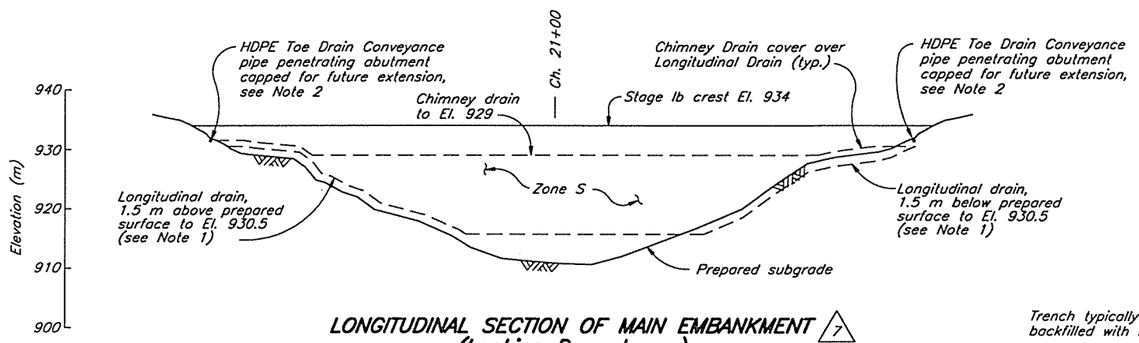
TAILINGS STORAGE FACILITY
MAIN AND PERIMETER EMBANKMENTS
PLAN

DESIGNED	KDE
DRAWN	RDT
CHECKED	KJB
APPROVED	KJB

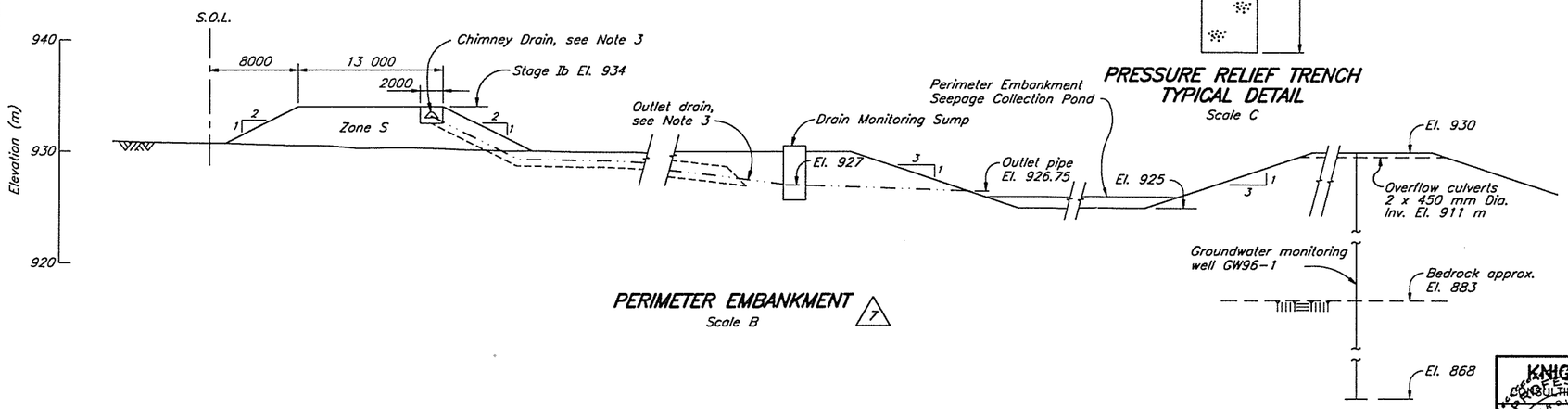
DATE JUNE 2, 1995 | SCALE AS SHOWN | DRG. NO. 510-14-01-1625.210 | REV. 5



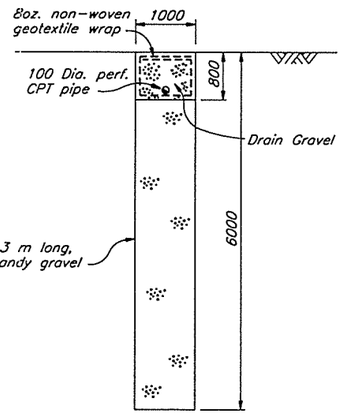
MAIN EMBANKMENT △7
Scale A



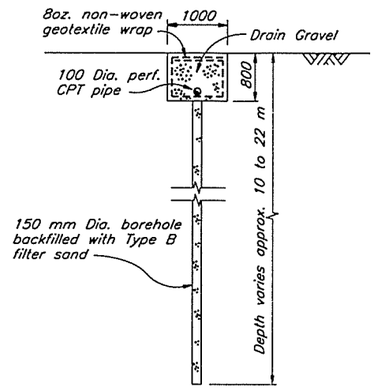
LONGITUDINAL SECTION OF MAIN EMBANKMENT (Looking Downstream) △7
N.T.S.



PERIMETER EMBANKMENT △7
Scale B



PRESSURE RELIEF TRENCH TYPICAL DETAIL
Scale C



PRESSURE RELIEF WELL TYPICAL DETAIL
Scale C

ZONE	MATERIAL TYPE	PLACEMENT AND COMPACTION REQUIREMENTS
Blanket/Toe Drain	Filter sand	Placed and spread in maximum 1.0 m thick layers. Vibratory compaction as directed by the Engineer.
Foundation Drain	Drain Gravel	Placed and compacted as shown on the Drawings.
S	Glacial till	Placed, moisture conditioned and spread in maximum 300 mm thick layers (after compaction). Vibratory compaction to 98% of Standard Proctor maximum dry density or as approved by the Engineer.
B	Glacial till	Placed, moisture conditioned and spread in maximum 600 mm thick layers (after compaction). Vibratory compaction to 98% of Standard Proctor maximum dry density or as approved by the Engineer.
Chimney Drain	Type B Filter Sand	Placed and spread in maximum 600 mm thick layers. Compaction as directed by the Engineer.

△7 NOTES

1. Longitudinal drain installed with invert El. 915.7 m approx. Ch. 18+50 to 23+00. On the right abutment, (Ch. 16+00 to 18+50) it was installed to invert El. 929 m in placed and compacted Zone B fill. On the left abutment (Ch. 23+00 to 25+25) it was installed in original ground, following the prepared ground surface.
2. HDPE toe drain conveyance pipes for Main Embankment to be installed at a later date. Details shown on Drg. No. 1625.202.
3. Chimney drain, longitudinal drain and Outlet drains for Perimeter Embankment to be installed during Staged II Construction.
4. Outlet drains to be extended to Drain Monitoring Sumps during Stage II construction.
5. Fill placement rates to be modified by the Engineer if excess pore pressures monitored in fill or foundation piezometers.
6. Groundwater monitoring wells to be installed by others.
7. As Built Information provided by Mount Polley Mining Corporation.

C 1 0 1 2 3 4 5 m
B 10 5 0 10 20 m
A 10 0 10 20 30 40 50 m

CAD FILE\ 1625\02\021 1:500 Plot 1=0.5 MAY 28, 1997

DRG. NO.	DESCRIPTION
1625.207	TSF – TAILINGS DAM CHIMNEY DRAIN
1625.202	TSF – FOUNDATION PREPARATION & BASIN LINER – SECTIONS & DETAILS

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	APPROVED
7	MAY 30/97	AS-BUILT EMBANKMENTS AND PONDS	KJB
6	SEP 4/96	STAGE Ia ADDED, MODIFIED DRAINAGE DETAIL	
5	MAY 28/96	ISSUED FOR CONSTRUCTION	

REVISIONS

REV.	DATE	DESCRIPTION	APPROVED
4	APR 19/96	EMBANKMENT EROSION PROTECTION	
3	APR 11/96	RE-ISSUED FOR TENDER	
2	APR 1/96	OVERFLOW CULVERTS ADDED	
1	MAR 22/96	UPDATE DRAINAGE	
0	JUNE 2/95	ISSUED FOR TENDER	

REVISIONS

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

PROFESSIONAL ENGINEER
K. D. KLEMMER
PROVINCE OF BRITISH COLUMBIA

DESIGNED	KDE
DRAWN	WAL/VY
CHECKED	KJB
APPROVED	KJB

DATE JUNE 2, 1995 | SCALE AS SHOWN

MOUNT POLLEY MINING CORPORATION

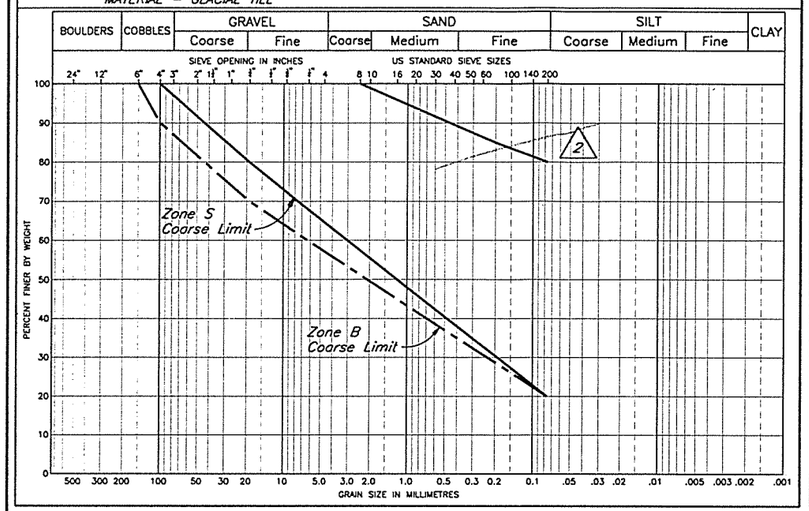
MOUNT POLLEY PROJECT

TAILINGS STORAGE FACILITY
TAILINGS EMBANKMENT
SECTIONS AND DETAILS

DRG. NO. 510-14-02-1625.211 | REV. 7

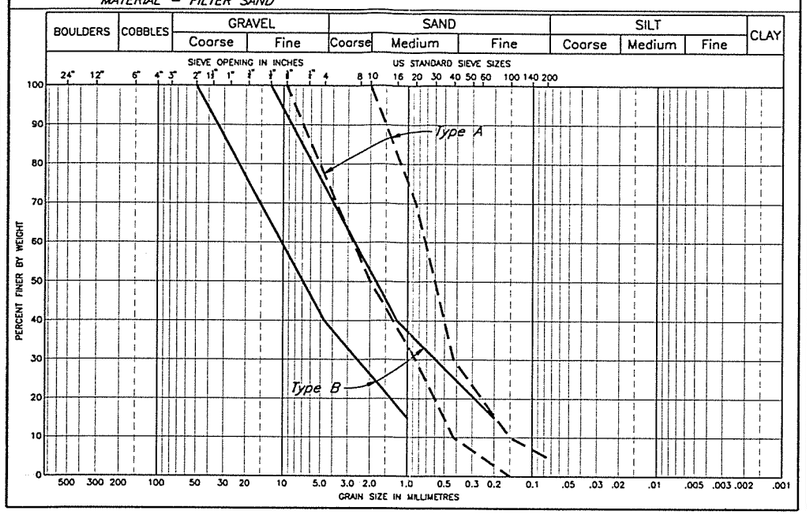
UNIFIED SOIL CLASSIFICATION SYSTEM

PROJECT: *ZONE – S AND B*
MATERIAL – GLACIAL TILL



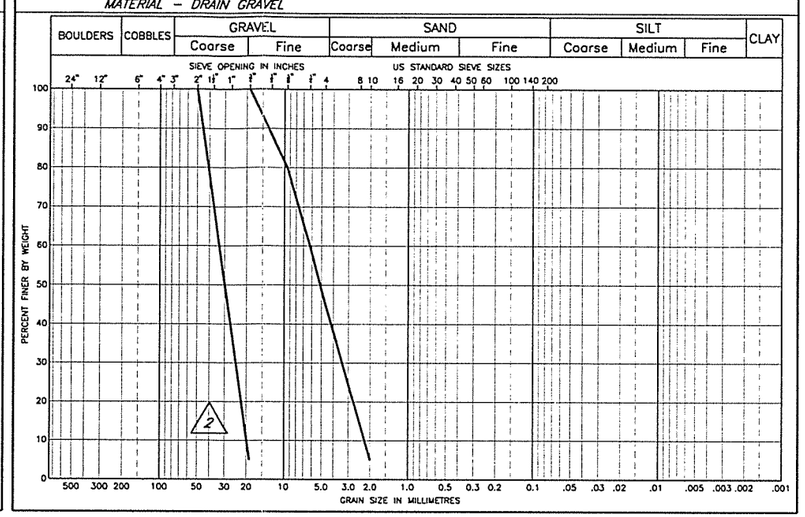
UNIFIED SOIL CLASSIFICATION SYSTEM

PROJECT: *ZONE – DRAINS*
MATERIAL – FILTER SAND



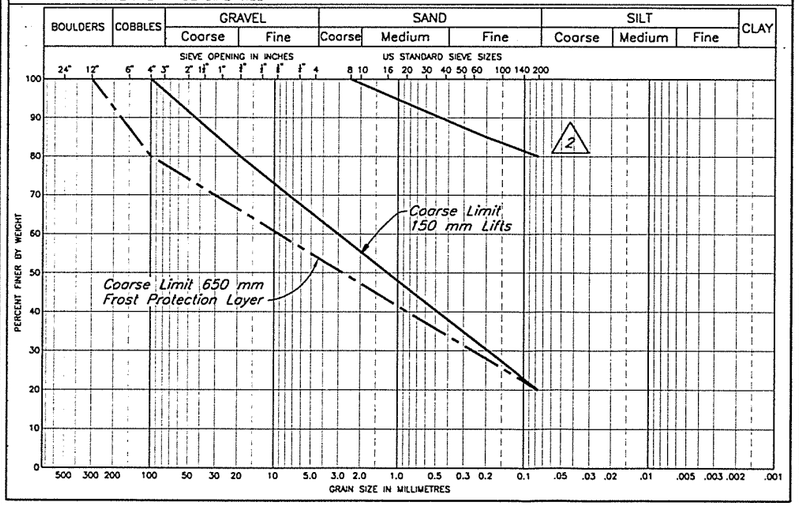
UNIFIED SOIL CLASSIFICATION SYSTEM

PROJECT: *ZONE – PIPE SURROUND*
MATERIAL – DRAIN GRAVEL



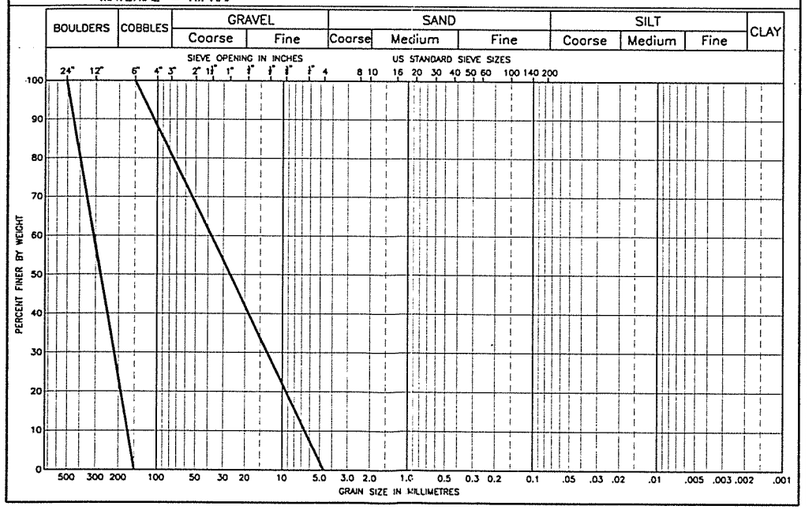
UNIFIED SOIL CLASSIFICATION SYSTEM

PROJECT: *ZONE – BASIN LINER*
MATERIAL – GLACIAL TILL



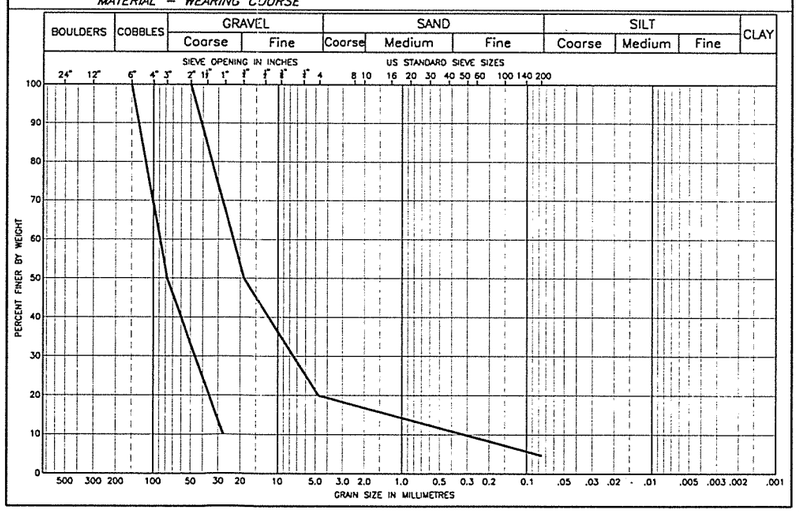
UNIFIED SOIL CLASSIFICATION SYSTEM

PROJECT: *ZONE – DITCH EROSION PROTECTION*
MATERIAL – RIPRAP



UNIFIED SOIL CLASSIFICATION SYSTEM

PROJECT: *ZONE – ROAD SURFACING*
MATERIAL – WEARING COURSE



NOTES

1. *No more than 10% of Zone S material shall be coarser than the Zone S Coarse Limit and such material shall be finer than the Zone B coarse limit. Zone S material which has a gradation between the Zone S and B coarse limits shall be well spaced out and shall not form continuous layers or sizeable lenses.*

2. *For Filter sand, the portion passing the No. 40 sieve must have a plasticity index (PI) of zero.*

DRG. NO.	DESCRIPTION

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	APPROVED

REVISIONS

REV.	DATE	DESCRIPTION	APPROVED
2	MAY 30/97	REVISED LIMITS	KJB
1	MAY 24/96	ISSUED FOR CONSTRUCTION	
0	JUNE 2/95	ISSUED FOR TENDER	

REVISIONS

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA K. D. K. EMBREE

DESIGNED	KDE
DRAWN	RDT
CHECKED	KJB
APPROVED	KJB

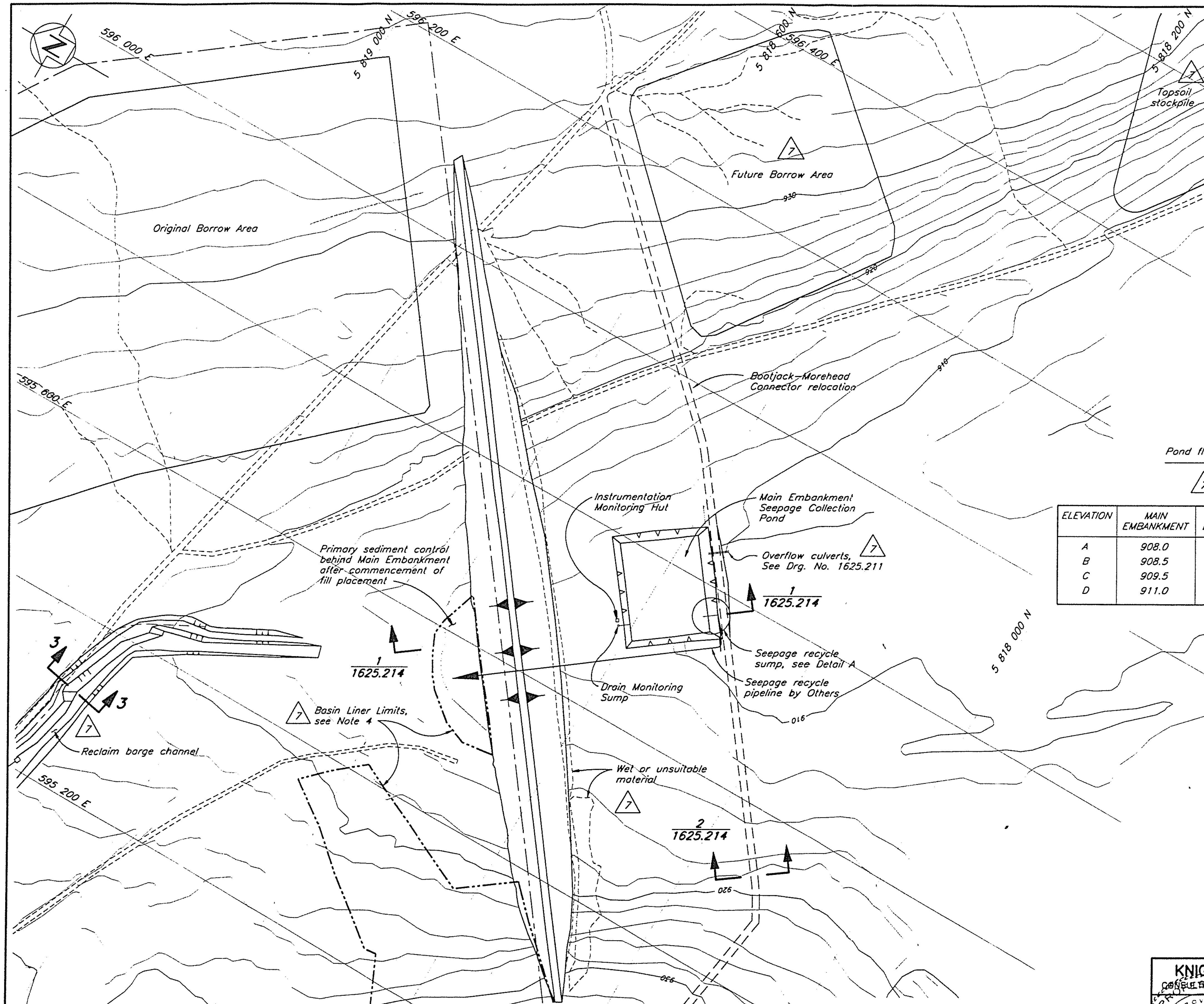
DATE **JUNE 2, 1995** | SCALE AS SHOWN | DRG. NO. **510–14–03–1625.212** | REV. **2**

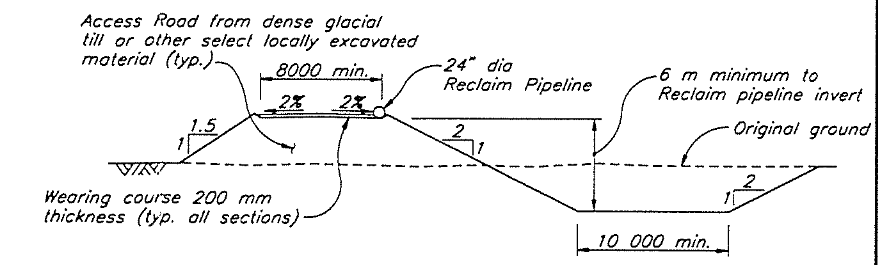
MOUNT POLLEY MINING CORPORATION

MOUNT POLLEY PROJECT

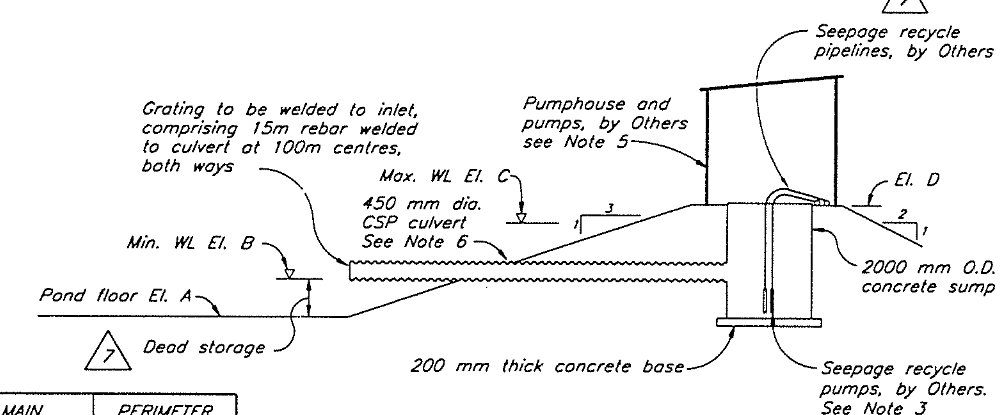
TAILINGS STORAGE FACILITY
MATERIAL SPECIFICATIONS

CAD FILE\ 1625\ 030\ 030 1:1000 Plot 1=1 MAY 26, 1997





SECTION 3, SECTION 3/1625.218
RECLAIM BARGE CHANNEL
Scale B



ELEVATION	MAIN EMBANKMENT	PERIMETER EMBANKMENT
A	908.0	925.0
B	908.5	926.0
C	909.5	928.0
D	911.0	930.0

DETAIL A
SEEPAGE RECYCLE SYSTEM
NTS

NOTE

1. Test pits indicate 4m thickness of till in proposed location of barge channel. Additional test pits will be required to confirm adequate thickness of till to finalize barge channel alignment.
2. Compacted glacial till shall be placed along the barge channel excavation if higher permeability sediments encountered (to meet basin liner requirements) as directed by the Engineer.
3. Seepage recycle pumps to be electric submersible pumps, discharging to pipelines extended up D/S face of tailings embankment. Pump sump to be fully enclosed with an insulated building c/w venting and I beam suitable for raising the pumps.
4. Extent of basin liner determined from exploration trenches.
5. Pumphouse by C.S.F.M. Engineering. Ltd. see Drg. No. 903
6. Penetration of concrete sump by CSP culvert to be water tight.
7. As built information provided by Mount Polley Mining Corporation.
8. Topography has not been updated for 1997 Flyover.

B 10 5 0 10 20 m
A 100 50 0 100 200 m

REFERENCE DRAWINGS

DRG. NO.	DESCRIPTION
1625.214	TSF - SEDIMENT CONTROL & SEEPAGE COLLECTION - SECTIONS & DETAILS
1625.211	TSF - TAILINGS EMBANKMENT - SECTIONS & DETAILS

REVISIONS

REV.	DATE	DESCRIPTION	APPROVED
7	MAY 30/97	AS-BUILT EMBANKMENT, POND AND BARGE CHANNEL	KJB
6	MAY 24/96	ISSUED FOR CONSTRUCTION	

REVISIONS

REV.	DATE	DESCRIPTION	APPROVED
5	APR 26/96	CHANGE NOTE	
4	APR 19/96	RECLAIM CHANNEL ACCESS ROAD	
3	APR 1/96	CULVERTS & SEEPAGE DETAILS ADDED	
2	MAR 25/96	UPDATE ROAD & DRAINAGE	
1	JUL 27/95	BASIN LINER REVISED	
0	JUN 2/95	ISSUED FOR TENDER	

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS - VANCOUVER, B.C.

PROVINCE OF BRITISH COLUMBIA — K. D. K. EMBREE — ENGINEER

DESIGNED	KDE
DRAWN	RDT/VY
CHECKED	KJB
APPROVED	KJB

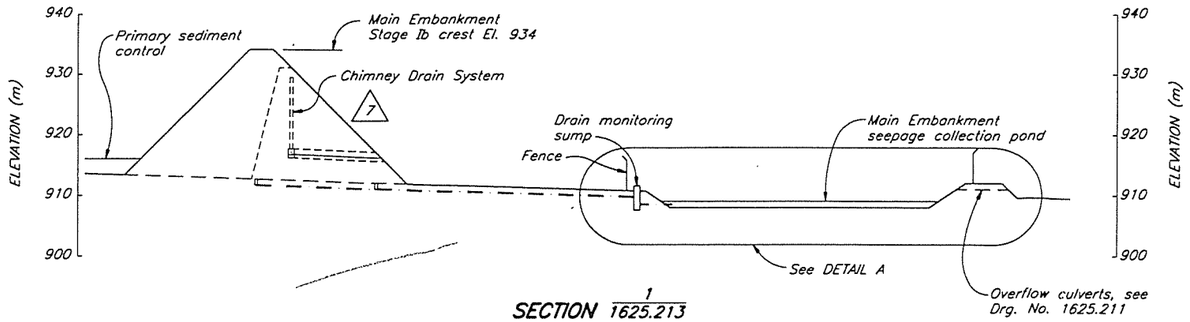
MOUNT POLLEY MINING CORPORATION

MOUNT POLLEY PROJECT

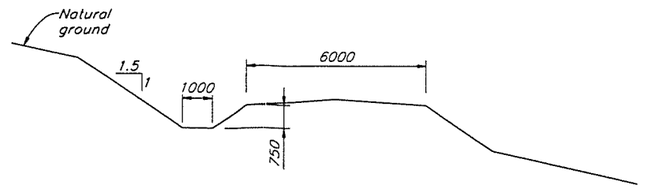
TAILINGS STORAGE FACILITY
SEDIMENT CONTROL AND
SEEPAGE COLLECTION

DATE JUNE 2, 1995 | SCALE AS SHOWN | DRG. NO. 510-19-01-1625.213 | REV. 7

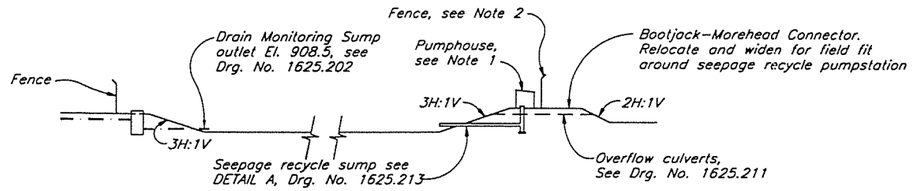
CAD FILE: \1625\022\022 1:2500 PWL 1=2.5 MAY 29, 1997



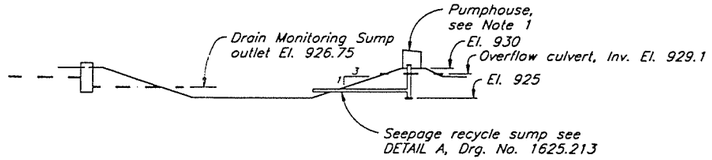
SECTION 1/1625.213
SEEPAGE PROFILE
Horiz. Scale C, Vert. Scale A



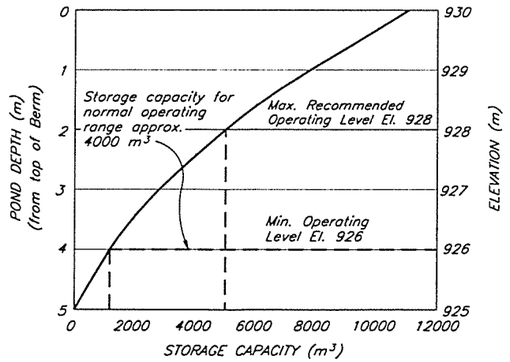
SECTION 2/1625.213
TYPICAL SECTION FOR BOOTJACK–MOREHEAD CONNECTOR RELOCATION
Scale B



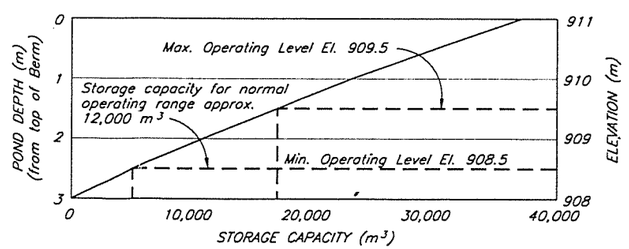
DETAIL A
MAIN EMBANKMENT SEEPAGE COLLECTION POND
Scale A



DETAIL E/1625.210
PERIMETER EMBANKMENT SEEPAGE COLLECTION POND
Scale A



PERIMETER EMBANKMENT SEEPAGE COLLECTION POND
DEPTH/CAPACITY RELATIONSHIP



MAIN EMBANKMENT SEEPAGE COLLECTION POND
DEPTH/CAPACITY RELATIONSHIP

NOTES

1. Pumphouse by C.S.F.M. Engineering Ltd. see Drg. No. 903
2. Fence to be six feet high, chain link with 2 inch galvanized posts and two six foot wide access gates. Not yet installed (May 27, 1997)
3. As–built information provided by Mount Polley Mining Coporation.

C 20 10 0 20 40 60 80 100 m
B 2 1 0 2 4 6 8 10 m
A 10 5 0 10 20 30 40 50 m

CAD FILE: \1625\023\1625023 1:500 Plot 1=0.5 MAY 29, 1997

DRG. NO.	DESCRIPTION
1625.213	TSF – SEDIMENT CONTROL AND SEEPAGE COLLECTION
1625.211	TSF – TAILINGS EMBANKMENT – SECTIONS AND DETAILS
1625.210	TSF – MAIN AND PERIMETER EMBANKMENTS – PLAN
1625.202	TSF – FOUNDATION PREPARATION & BASIN LINER – SECTIONS & DETAILS

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	APPROVED
7	MAY 30/97	AS–BUILT PONDS	KJB
6	JUN 6/96	FENCE NOTE ADDED	
5	MAY 24/96	RE–ISSUED FOR CONSTRUCTION	

REVISIONS

REV.	DATE	DESCRIPTION	APPROVED
4	APR 1/96	OVERFLOW CULVERTS ADDED	
3	MAR 22/96	UPDATE DRAINAGE AND ROAD	
2	SEPT. 5/95	ISSUED FOR CONSTRUCTION	
1	JULY 27/95	RIPRAP APRON ADDED	
0	JUNE 2/95	ISSUED FOR TENDER	

REVISIONS

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA K.D. KLEIN

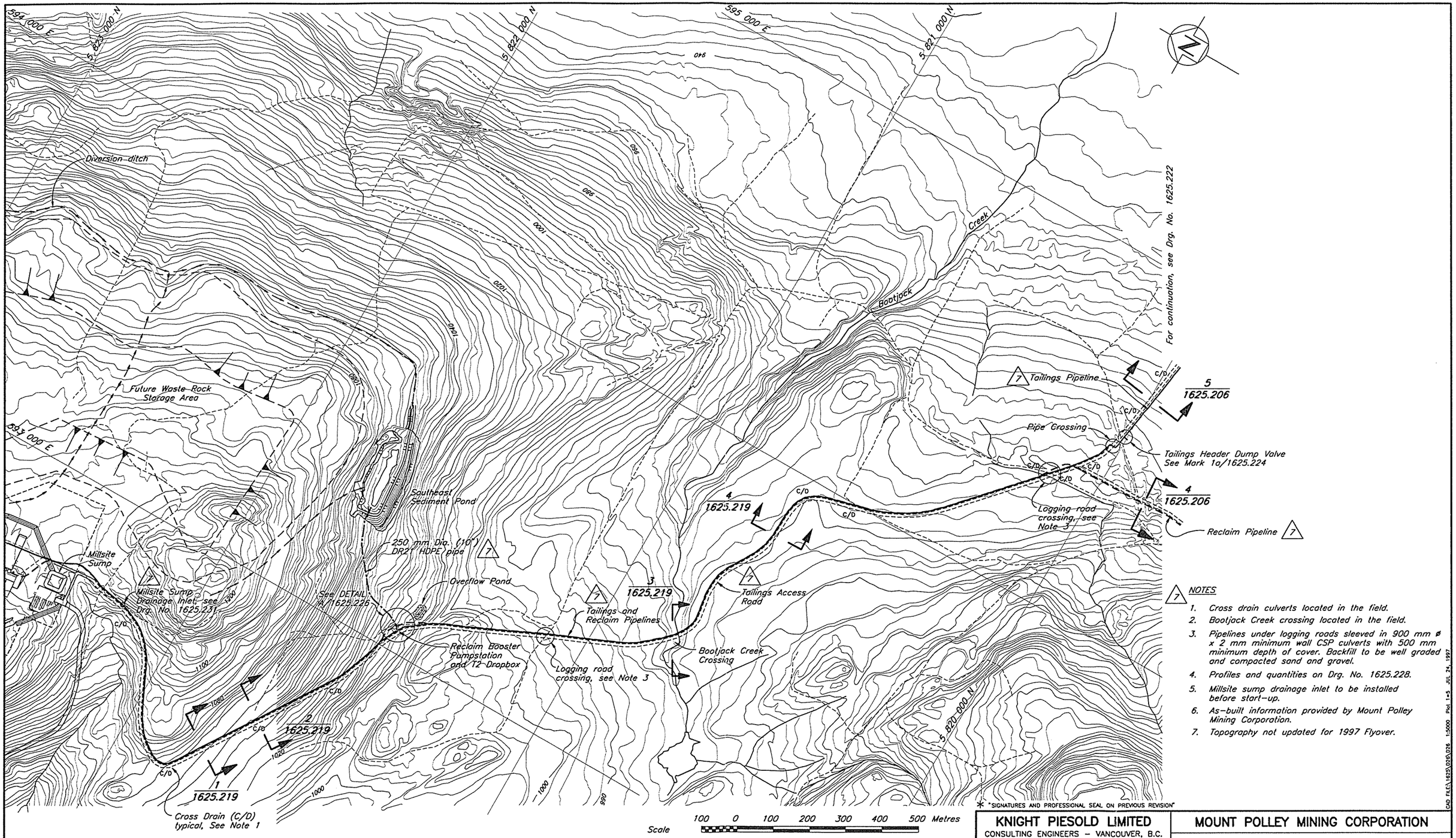
DESIGNED KDE
DRAWN VY/NSD
CHECKED KJB
APPROVED KJB

DATE JUNE 2, 1995 | SCALE AS SHOWN | DRG. NO. 510–19–02–1625.214 | REV. 7

MOUNT POLLEY MINING CORPORATION

MOUNT POLLEY PROJECT

TAILINGS STORAGE FACILITY SEDIMENT CONTROL AND SEEPAGE COLLECTION – SECTIONS AND DETAILS



7 NOTES

1. Cross drain culverts located in the field.
2. Booljack Creek crossing located in the field.
3. Pipelines under logging roads sleeved in 900 mm ø x 2 mm minimum wall CSP culverts with 500 mm minimum depth of cover. Backfill to be well graded and compacted sand and gravel.
4. Profiles and quantities on Drg. No. 1625.228.
5. Millsite sump drainage inlet to be installed before start-up.
6. As-built information provided by Mount Polley Mining Corporation.
7. Topography not updated for 1997 Flyover.

* "SIGNATURES AND PROFESSIONAL SEAL ON PREVIOUS REVISION"

CAD FILE\ 1625\026\026 1:5000 Plot 1:5 JUL 24, 1997

DRG. NO.	DESCRIPTION
1625.231	DRAINAGE PLAN – MILL SITE
1625.228	TSF – TAILINGS DISTRIBUTION AND RECLAIM SYSTEM – PROFILES
1625.226	TSF – RECLAIM BOOSTER PUMP STATION AREA – GENERAL ARRANGEMENT
1625.222	TSF – TAILINGS IMPOUNDMENT – TAILINGS AND RECLAIM PIPEWORK PLAN
1625.219	TSF – TAILINGS DISTRIBUTION & RECLAIM SYSTEM – SECTIONS & DETAILS
1625.206	TSF – RECLAIM BARGE CHANNEL – EXCAVATION DETAILS

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	APPROVED
7	JUL 25/97	AS-BUILT PIPELINES	KJB
6	MAY 30/97	AS-BUILT SOUTHEAST SEDIMENT POND	

REVISIONS

REV.	DATE	DESCRIPTION	APPROVED
5	JULY 15/96	PIPELINES RELOCATED, SEE NOTE 5	
4	MAY 24/96	ISSUED FOR CONSTRUCTION	
3	APR 19/95	NOTE ADDED	
2	APR 1/96	MILLSITE AND CONTROL POND REVISED	
1	MAR 25/96	RE-ISSUED FOR TENDER	
0	JUNE 2/95	ISSUED FOR TENDER	

REVISIONS

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

*

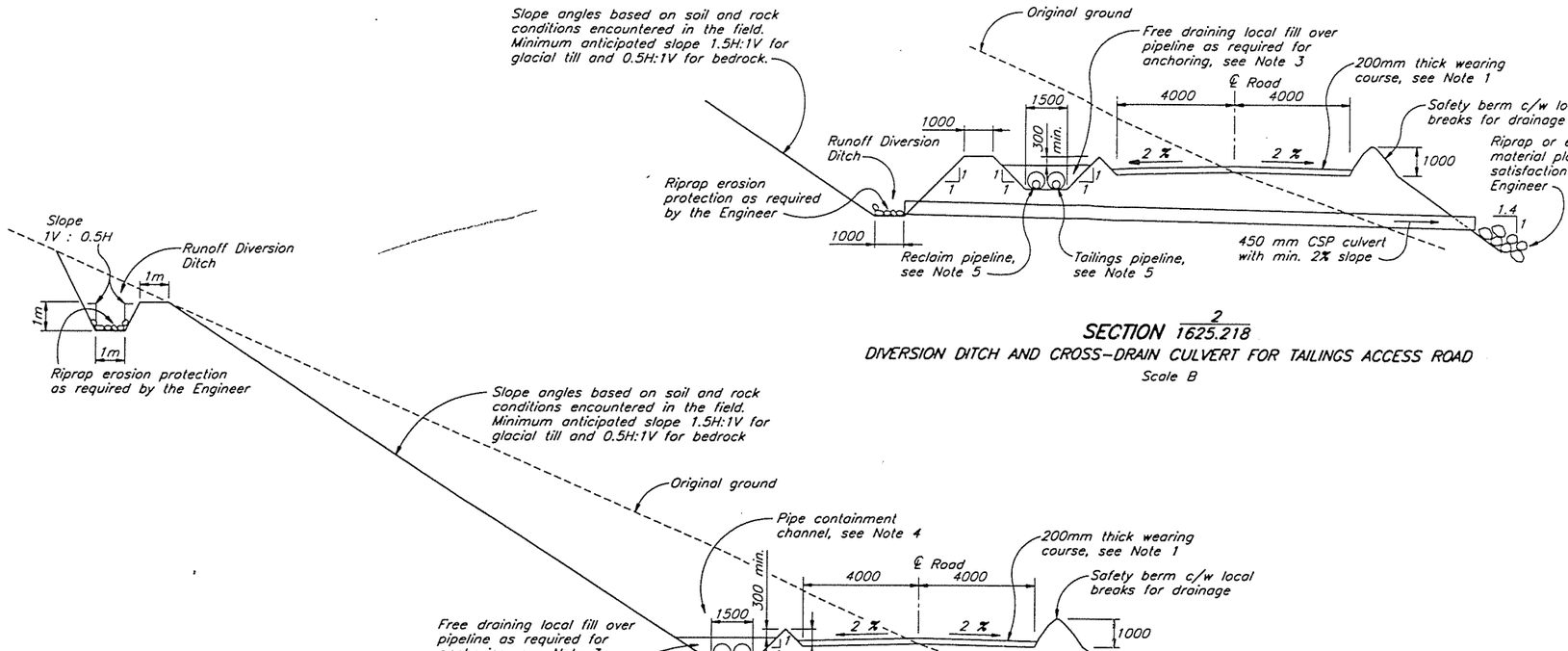
DESIGNED MBS
DRAWN VY/RDT/NSD
CHECKED *
APPROVED *

MOUNT POLLEY MINING CORPORATION

MOUNT POLLEY PROJECT

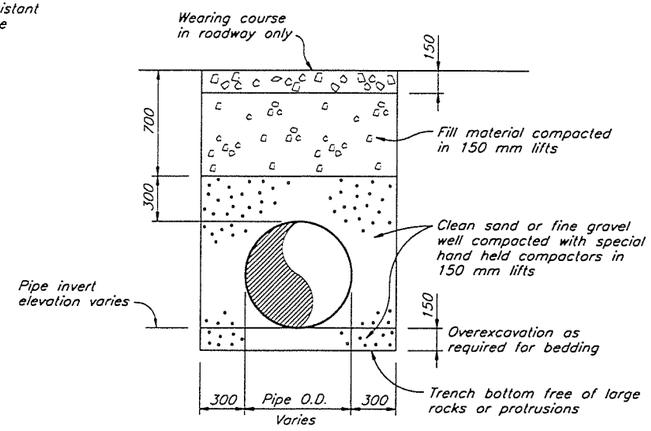
TAILINGS STORAGE FACILITY TAILINGS DISTRIBUTION AND RECLAIM SYSTEM – PLAN

DATE JUNE 2, 1995 | SCALE AS SHOWN | DRG. NO. 1625.218 | REV. 7

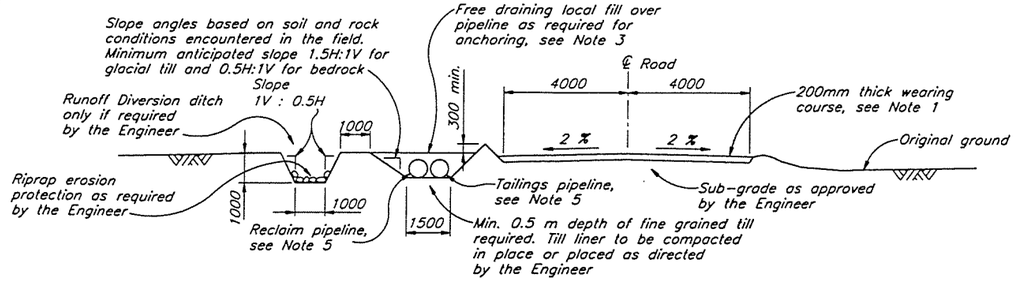


SECTION 2/1625.218
DIVERSION DITCH AND CROSS-DRAIN CULVERT FOR TAILINGS ACCESS ROAD

Scale B

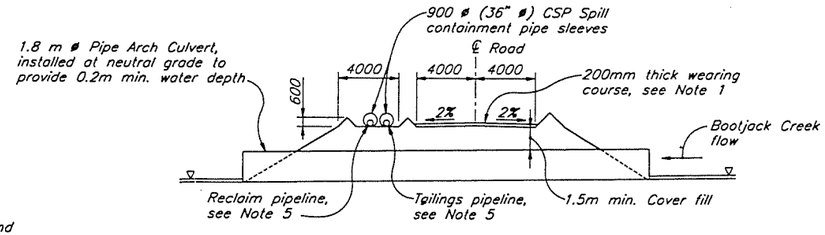


TYPICAL DETAIL FOR BURIED HDPE PIPE
NTS



SECTION 1/1625.218 , 1/1625.226
TAILINGS ACCESS ROAD WITH DIVERSION DITCH

Scale B



SECTION 3/1625.218
TAILINGS ACCESS ROAD
BOOTJACK CREEK CROSSING

Scale A

SECTION 4/1625.218 , 2/1625.226
TAILINGS ACCESS ROAD WITH DIVERSION DITCH ON FLAT GROUND

Scale B

NOTES

1. Wearing course required for Tailings Access Road, Reclaim Barge Access Road and Bootjack-Morehead connector relocation only.
2. For crossing under road, tailings and reclaim pipelines to be installed in individual 900 mm (min.) dia. culverts laid under road with 500 mm min. cover. Culverts laid immediately downslope of cross-drain.
3. Spacing of fill for anchoring to be determined in the field by the Engineer. Anchor posts or concrete anchor blocks can be substituted for local fill.
4. Trench width may vary locally to accomodate additionol pipelines or structures in the trench.
5. Tailings and reclaim pipelines crossed over immediately up-gradient of T2 Dropbox and where the pipelines split at the Tailings Storage Facility.
6. Runoff Diversion Ditches may require periodic cleaning.
7. Tailings access road design was modified by Mount Polley Mining Corporation. Road cross-section may vary from that shown.

B: 2 1 0 2 4 6 8 10 m

A: 10 5 0 10 20 m

CAD FILE:\1625\027\027 1:200 Plot 1=0.7 MAY 29, 1997

DRG. NO.	DESCRIPTION
1625.226	TSF – RECLAIM BOOSTER PUMP STATION AREA – GENERAL ARRANGEMENT
1625.218	TSF – TAILINGS DISTRIBUTION & RECLAIM SYSTEM – PLAN

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	APPROVED
7	MAY 30/97	NOTES UPDATED	KJB
6	APR. 29/97	TAILINGS ACCESS ROAD WAS NOT BUILT TO THIS DESIGN	

REVISIONS

REV.	DATE	DESCRIPTION	APPROVED
5	JULY 15/96	PIPELINES RELOCATED	
4	MAY 28/96	ISSUED FOR CONSTRUCTION	
3	APR 26/96	REVISE DRAINAGE DITCHES	
2	APR 19/96	SECTIONS REVISED	
1	MAR 22/96	RE-ISSUED FOR TENDER	
0	JUNE 2/95	ISSUED FOR TENDER	

REVISIONS

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
K. D. K. LIMBRE

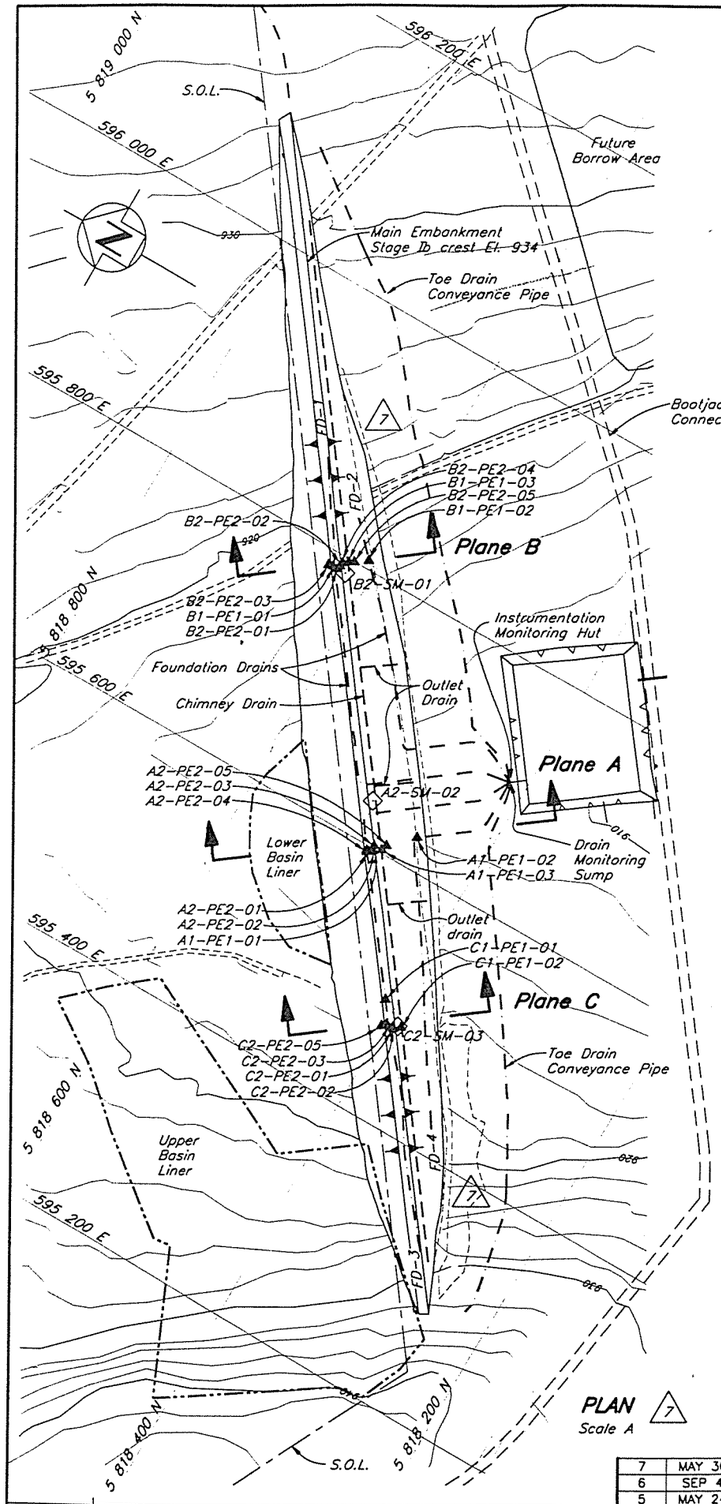
DESIGNED	MBS/HPD
DRAWN	VY
CHECKED	KJB
APPROVED	KJB

DATE JUNE 2, 1995 | SCALE AS SHOWN | DRG. NO. 510-61-02-1625.219 | REV. 7

MOUNT POLLEY MINING CORPORATION

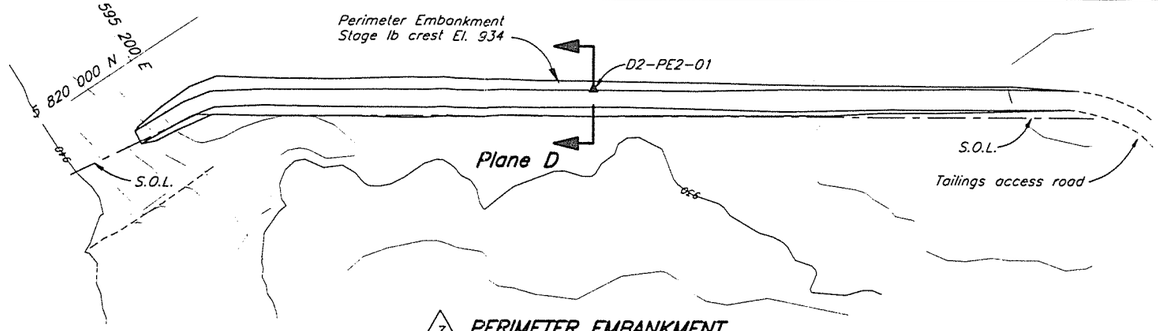
MOUNT POLLEY PROJECT

TAILINGS STORAGE FACILITY
TAILINGS DISTRIBUTION AND
RECLAIM SYSTEM – SECTIONS AND DETAILS



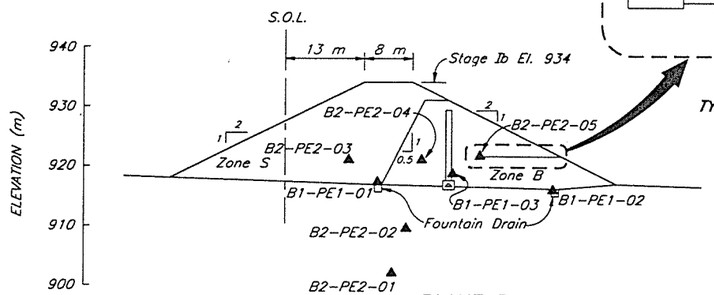
PLAN

Scale A



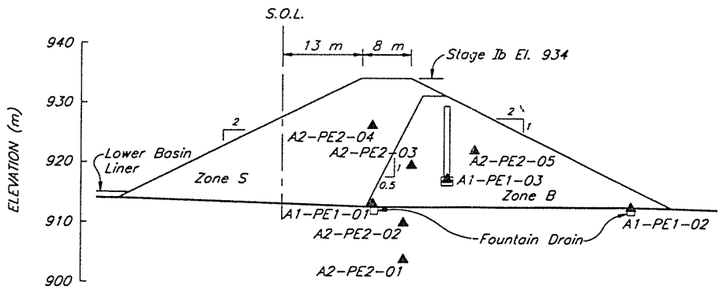
PERIMETER EMBANKMENT

Scale A



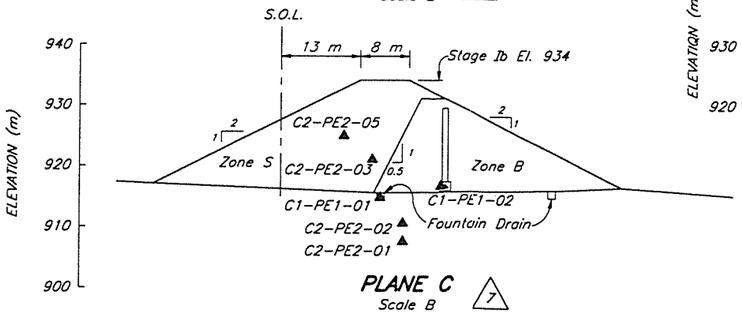
PLANE B

Scale B



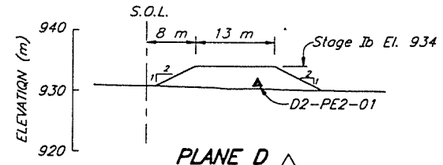
PLANE A

Scale B



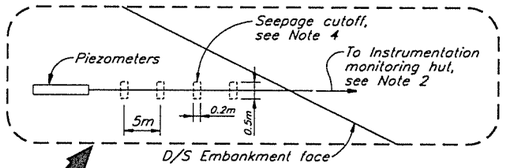
PLANE C

Scale B



PLANE D

Scale B



TYPICAL DETAIL OF SEEPAGE CUTOFF FOR PIEZOMETER LEADS

NTS

SUMMARY OF PIEZOMETERS LEAD LENGTHS

PIEZOMETER No.	LEAD LENGTH (m)	NORTHING	EASTING	ELEV.
A1-PE1-03	200	5 818 476.8220	595 602.380	917.17
A1-PE1-01	175	5 818 486.650	595 595.060	912.99
A1-PE1-02	150	5 818 456.420	595 626.250	912.14
A2-PE2-01	200	5 818 482.710	595 598.140	903.7
A2-PE2-02	200	5 818 482.710	595 598.140	909.8
A2-PE2-03	175	5 818 484.196	595 598.140	919.43
A2-PE2-04	200	5 818 487.510	595 595.995	926.07
A2-PE2-05	175	5 818 475.061	595 607.560	921.87
B1-PE1-03	305	5 818 622.780	595 797.260	918.69
B1-PE1-01	300	5 818 632.550	595 787.910	917.27
B1-PE1-02	275	5 818 609.040	595 806.770	915.95
B2-PE2-01	325	5 818 628.270	595 787.880	902.00
B2-PE2-02	325	5 818 627.470	595 790.660	909.50
B2-PE2-03	325	5 818 636.530	595 786.970	921.00
B2-PE2-04	330	5 818 626.940	595 794.190	921.00
B2-PE2-05	325	5 818 619.014	595 799.804	921.70
C1-PE1-01	325	5 818 410.500	595 496.070	914.70
C1-PE1-02	330	5 818 410.500	595 496.070	916.60
C2-PE2-01	350	5 818 392.410	595 478.240	907.50
C2-PE2-02	350	5 818 392.410	595 478.240	910.50
C2-PE2-03	325	5 818 399.106	595 478.824	920.97
C2-PE2-05	325	5 818 402.343	595 475.326	924.84
D1-PE1-01 *	90	–	–	–
D2-PE2-01	85	5 818 768.104	595 506.055	931.00

* D1-PE1-01 to be installed during Stage II construction.

NOTES

1. Piezometers are vibrating type, RST model VW-2100 with a pressure rating of 100 psi or equivalent, connected to a readout panel via standard non-vented model VW-232 direct burial cable.
2. Piezometer leads are to be extended to Instrumentation Monitoring Hut after foundation preparation for final embankment during Stage II construction.
3. Future survey monuments not shown. A minimum of 2 monuments will be installed for each embankment raise.
4. Seepage cutoffs placed at 5m intervals with 10% bentonite added to fine grained till backfill, see Drg. No. 1625.221.
5. As-built information provided by Mount Polley Mining Corporation.
6. Topography has not been updated for 1997 flyover.
7. Installation details for borehole piezometers as shown on Drg. No. 1625.221.

LEGEND

A0-PE1-01 — Plane I.D. (A, B etc.); Area (0-Tailings, 1-Drain, 2-Embankment); Number I.D.; Pressure Rating (1-Low, 2-High); Type of Instrumentation (PE-Piezometer electric, SM-Survey Monument)

A1-PE1-01 ▲ Embankment drain piezometer (Foundation drain and Chimney drain)

A2-PE2-01 ▲ Embankment foundation and fill piezometer

A2-SM-01 ◇ Embankment survey monument

B 10 0 10 20 30 40 50 m

A 100 50 0 100 200 m

CAD FILE\ 1625\025\028 1:2500 Plot 1=2.5 June 2, 1997

REFERENCE DRAWINGS		
DRG. NO.	DESCRIPTION	
1625.221	TSF – INSTRUMENTATION – SECTIONS AND DETAILS	

REVISIONS			
REV.	DATE	DESCRIPTION	APPROVED
7	MAY 30/97	AS-BUILT PIEZOMETER LOCATIONS	KJB
6	SEP 4/96	REVISED PIEZO. LOCATIONS	
5	MAY 24/96	ISSUED FOR CONSTRUCTION	
4	APR 1/96	PIEZOMETER INFORMATION ADDED	

REVISIONS			
REV.	DATE	DESCRIPTION	APPROVED
3	MAR 25/96	ROAD UPDATED	
2	JAN 18/96	REVISED SEEPAGE COLLECTION POND	
1	JUL 27/95	BASIN GROUNDWATER DRAINS REVISED	
0	JUN 2/95	ISSUED FOR TENDER	

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA K. D. K. EMBREE

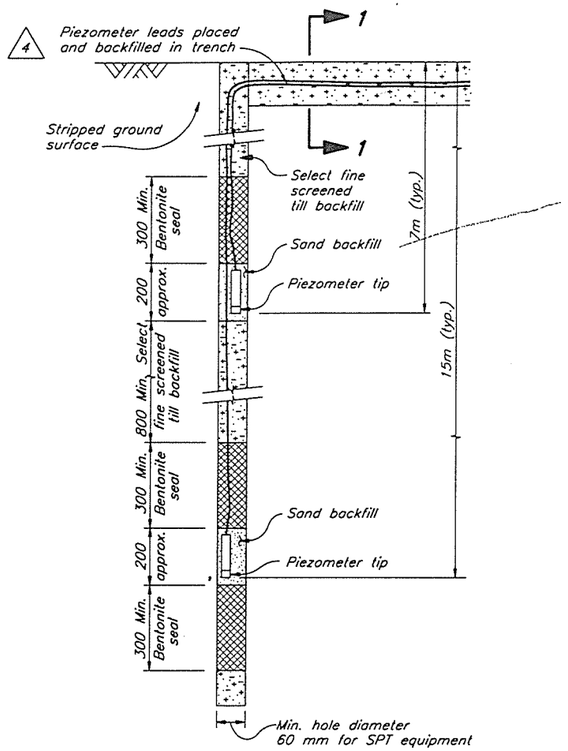
DESIGNED	GRG
DRAWN	RDT/VY/DHS
CHECKED	KJB
APPROVED	KJB
DATE	JUNE 2, 1995
SCALE	AS SHOWN

MOUNT POLLEY MINING CORPORATION

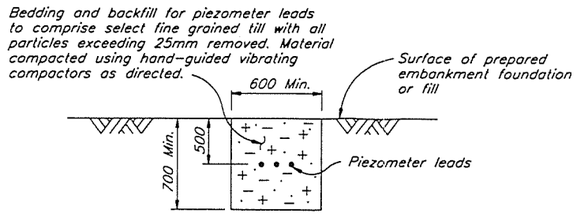
MOUNT POLLEY PROJECT

TAILINGS STORAGE FACILITY INSTRUMENTATION

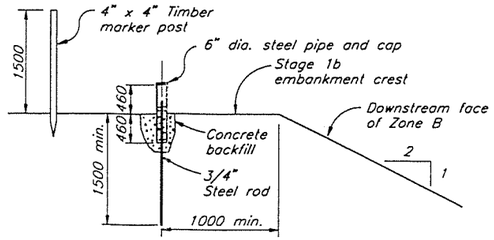
DRG. NO. 510-77-01-1625.220 REV. 7



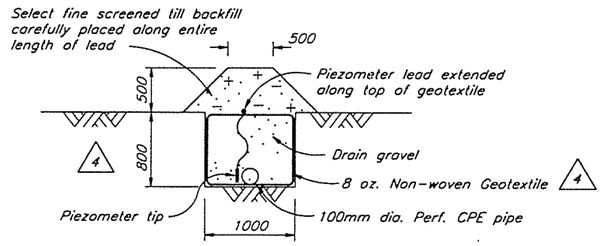
DETAIL A
INSTALLATION OF PIEZOMETERS IN BOREHOLES
N.T.S.



SECTION 1
TYPICAL SECTION THROUGH PIEZOMETER LEAD TRENCH IN PREPARED EMBANKMENT FOUNDATION OR IN ZONE S AND B FILL
N.T.S.



DETAIL OF
SURFACE MOVEMENT MONUMENT
N.T.S.



DETAIL C
TYPICAL PIEZOMETER INSTALLATION IN EMBANKMENT FOUNDATION DRAIN OR TOE DRAIN
N.T.S.

NOTES 4

1. Dimensions are in millimeters unless otherwise noted.
2. Tailings piezometers to be installed during future investigation programs.

Scale 1000 500 0 1000 2000 mm

CAD FILE:\1625\DRW\079 1:20 Plot 1=0.02 MAY 29, 1997

REFERENCE DRAWINGS	
DRG. NO.	DESCRIPTION
1625.220	TAILINGS STORAGE FACILITY – INSTRUMENTATION

REVISIONS			
REV.	DATE	DESCRIPTION	APPROVED

REVISIONS			
REV.	DATE	DESCRIPTION	APPROVED
4	MAY 30/97	PARSHALL FLUME DELETED	KJB
3	MAR 24/96	ISSUED FOR CONSTRUCTION	
2	APR 1/96	NOTE ADDED	
1	JAN. 18/96	GROUNDWATER DRAINS REMOVED	
0	JUNE 2/95	ISSUED FOR TENDER	

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA K. D. K. ENGINEER

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

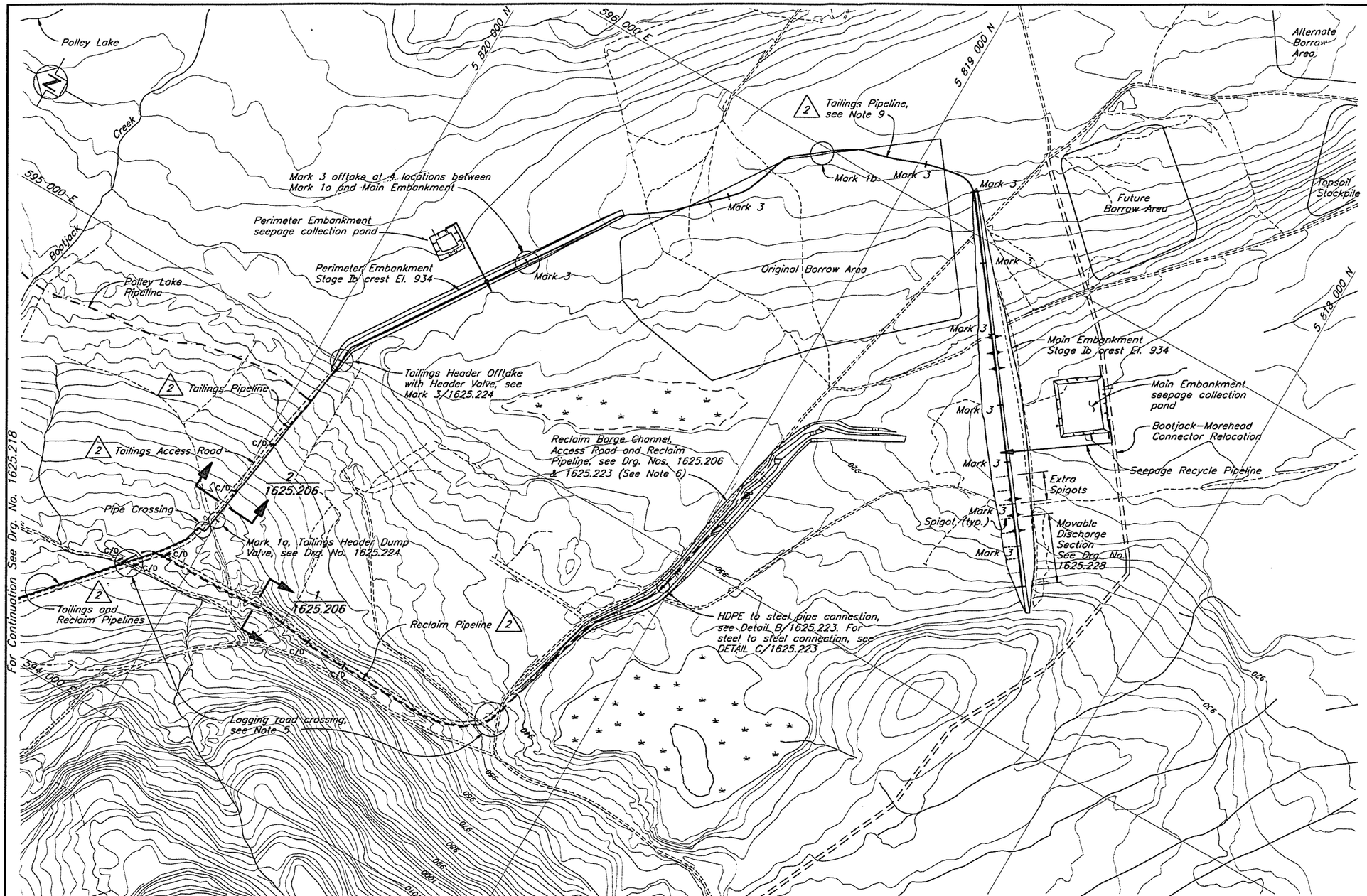
MOUNT POLLEY MINING CORPORATION

MOUNT POLLEY PROJECT

TAILINGS STORAGE FACILITY
INSTRUMENTATION
SECTIONS AND DETAILS

DESIGNED	KDE/MBS
DRAWN	VY
CHECKED	KJB
APPROVED	KJB

DATE JUNE 2, 1995 | SCALE AS SHOWN | DRG. NO. 510-77-02-1625.221 | REV. 4



NOTES

1. Tailings and reclaim pipeline profiles shown on Drg. No. 1625.228.
2. Mark 3 offtakes temporarily omitted, (flange locations shown). Pipe sections have flanged joints to permit Mark 3 offtakes to be installed as required.
3. Mark 2 and 4 offtakes have been revised and are included on the movable discharge section, as shown on Drg. No. 1625.224.
4. All bends in tailings and reclaim HDPE pipelines are made using natural flexibility of pipe unless otherwise noted. Minimum bend radius to be 25 pipe diameter.
5. Pipelines at logging road crossings to be sleeved in 900 mm ø x 2mm minimum wall CSP culvert with 500 mm minimum depth of cover. Backfill to be well graded and compacted sand and gravel.
6. Reclaim pipeline installed to original ground at El. 925 m. Additional ramps for barge to be added as required.
7. As-built information provided by Mount Polley Mining Corporation.
8. Topography has not been updated for 1997 Flyover.
9. Tailings pipeline installed on grade between Perimeter and Main Embankments. Access is provided by a rough trail near the pipeline.

Scale 100 50 0 100 200 300 400 500 m

* "SIGNATURES AND PROFESSIONAL SEAL ON PREVIOUS REVISION"

DRG. NO.	DESCRIPTION
1625.228	TSF – TAILINGS AND RECLAIM PIPEWORK PROFILE
1625.224	TSF – TAILINGS DISTRIBUTION SYSTEM – DETAILS
1625.223	RECLAIM PIPELINE DETAILS
1625.218	TAILINGS DISTRIBUTION AND RECLAIM SYSTEM – PLAN
1625.206	TSF – RECLAIM BARGE CHANNEL – EXCAVATION DETAILS

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	APPROVED

REVISIONS

REV.	DATE	DESCRIPTION	APPROVED
2	AUG 14/97	AS-BUILT PIPELINES	KJB
1	MAY 30/97	AS-BUILT BARGE CHANNEL, EMBANKMENTS, AND PONDS	
0	JULY 15/96	ISSUED FOR CONSTRUCTION	

REVISIONS

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

*

DESIGNED HPD
DRAWN AW/RDT
CHECKED *
APPROVED *

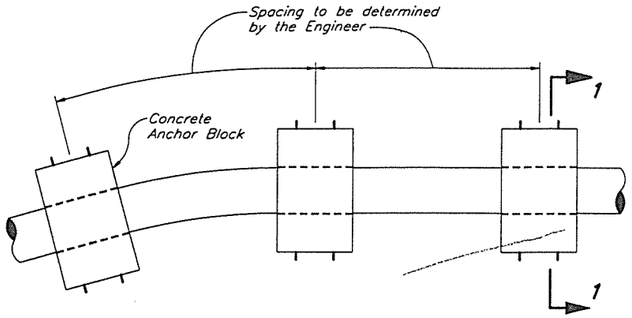
MOUNT POLLEY MINING CORPORATION

MOUNT POLLEY PROJECT

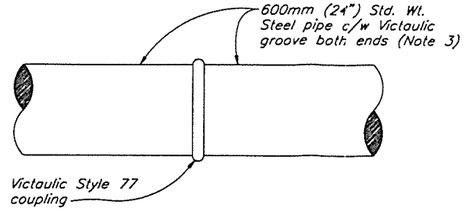
TAILINGS STORAGE FACILITY
TAILINGS IMPOUNDMENT
TAILINGS AND RECLAIM PIPEWORK PLAN

DATE JULY 15, 1996 | SCALE AS SHOWN | DRG. NO. 1625.222 | REV. 2

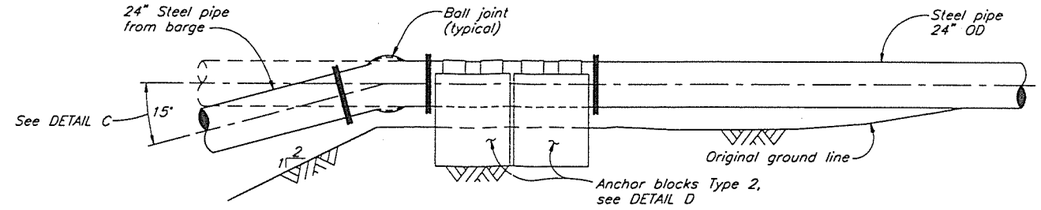
C:\0 FILES\1625\DWG\042 1:5000 Plot 1=5 AUG 14, 1997



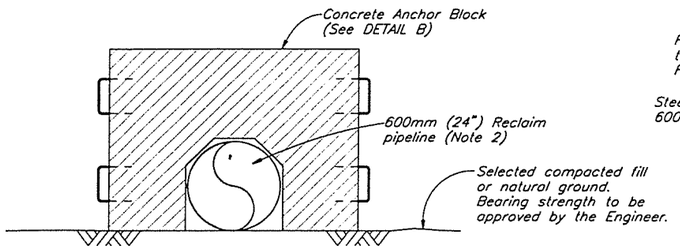
PIPELINE BEND ANCHORING
Scale B



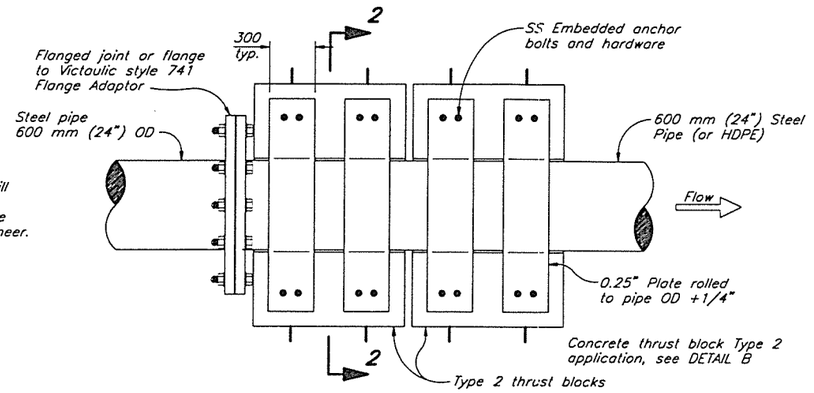
DETAIL C / 1625.222
STEEL RECLAIM PIPE CONNECTION
Scale A



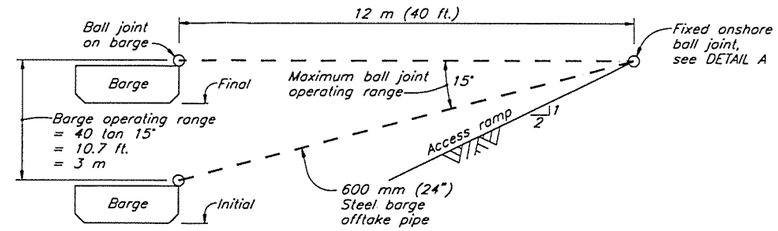
DETAIL A , A / 1625.206
ONSHORE BALL JOINT
Scale B



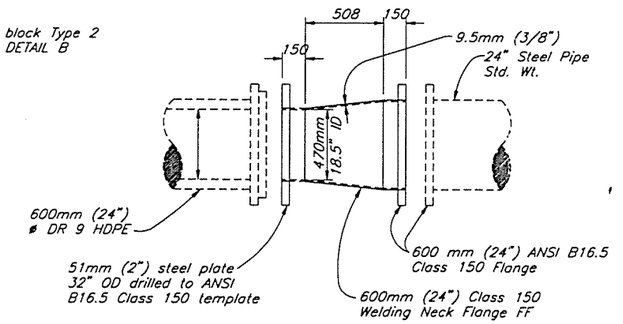
SECTION 1
CONCRETE ANCHOR BLOCK – TYPE 1 APPLICATION
Scale A



DETAIL D, B / 1625.222
CONCRETE THRUST BLOCK – TYPE 2 APPLICATION
CONNECTION BETWEEN STEEL AND HDPE PIPE
CONNECTION AT RECLAIM BOOSTER PUMPSTATION DISCHARGE
AND CONNECTION AT BARGE OFFTAKE BALL JOINT
Scale A



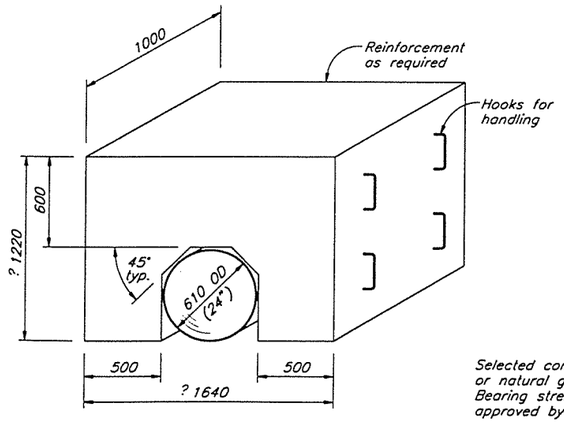
DETAIL C
BARGE OPERATING RANGE – SCHEMATIC



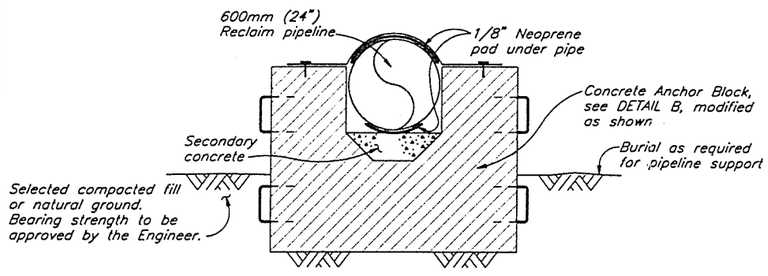
DETAIL
REDUCER, SPECIAL, 24" HDPE TO STEEL
INSIDE DIAMETER ADAPTER
Scale A

NOTES

1. Concrete anchoring blocks to be used at barge ball joint and at locations where pipeline changes from steel to HDPE.
2. Anchor blocks may be used for reclaim or tailings pipeline as required by the Engineer. Modifications will be required for pipe diameter other than 24".
3. Victaulic grooves to be rolled if pipe wall thickness is less than 0.375".



DETAIL B
TYPICAL PORTABLE CONCRETE BLOCK FOR 24" OD PIPE
(4.5 TONNE)
Scale A



SECTION 2
CONCRETE THRUST BLOCK – TYPE 2 APPLICATION
Scale A

B 2000 1000 0 2000 4000 mm
A 1000 500 0 1000 2000 mm

CAD FILES\1625\PLOT\C40 1:20 Plot 1=0.02 MAY 29, 1997

DRG. NO.	DESCRIPTION
1625.224	TAILINGS DISTRIBUTION SYSTEM – DETAILS
1625.222	TAILINGS IMPOUNDMENT – TAILINGS AND RECLAIM PIPEWORK PLAN
1625.206	TSF – RECLAIM BARGE CHANNEL – EXCAVATION DETAILS

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	APPROVED

REVISIONS

REV.	DATE	DESCRIPTION	APPROVED
1	MAY 30/97	REFERENCE TO DRAWINGS REVISED	KJB
0	JULY 15/96	ISSUED FOR CONSTRUCTION	

REVISIONS

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

PROVINCE OF BRITISH COLUMBIA R. P. DEAN ENGINEER

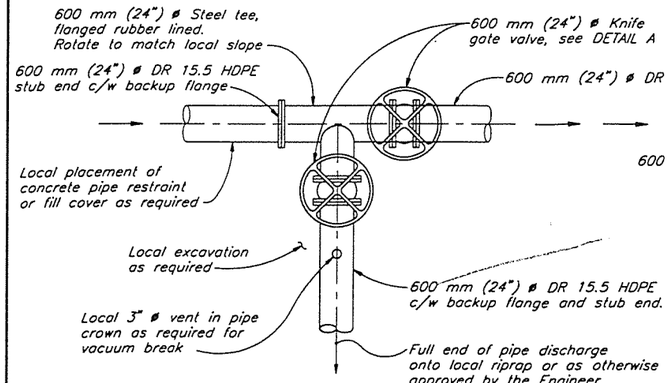
DESIGNED	HPD/NM
DRAWN	AW/RDT/NSD
CHECKED	KDE
APPROVED	KJB
DATE	JULY 15, 1996

MOUNT POLLEY MINING CORPORATION

MOUNT POLLEY PROJECT

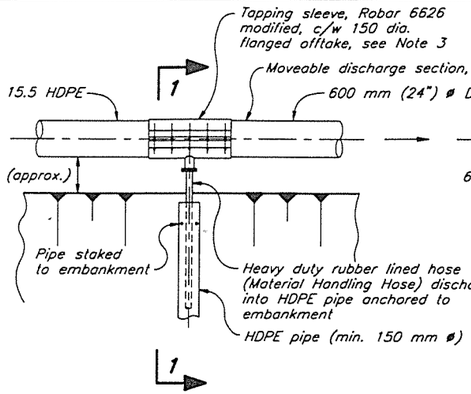
TAILINGS STORAGE FACILITY
RECLAIM PIPELINE DETAILS

SCALE AS SHOWN | DRG. NO. 1625.223 | REV. 1



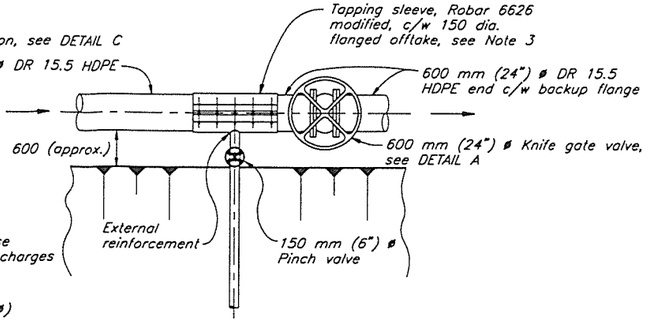
TAILINGS HEADER DUMP VALVE (MARK 1/1625.222)

Scale A



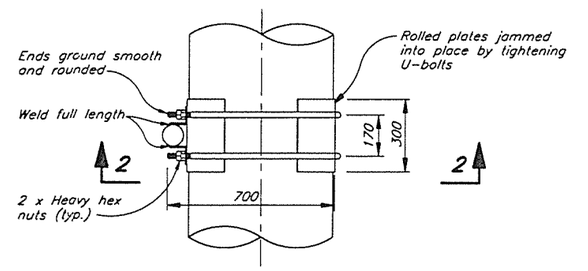
TYP. TAILINGS HEADER OFFTAKE (MARK 2/1625.222)

Scale A



TYP. TAILINGS HEADER OFFTAKE WITH HEADER VALVE (MARK 3/1625.222)

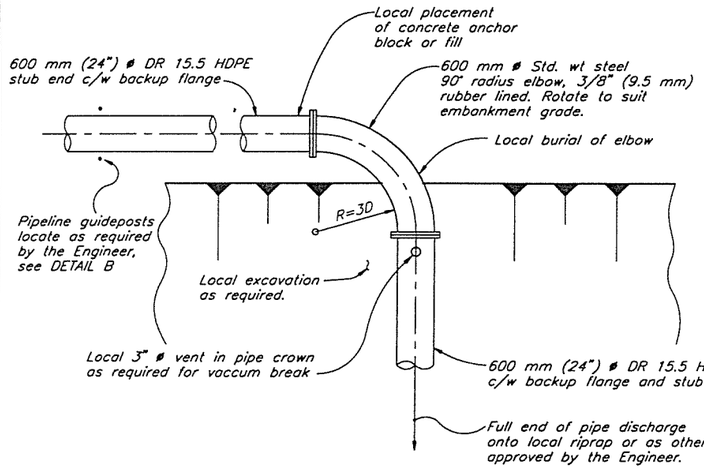
Scale A



PIPE RESTRAINT FOR 24" HDPE

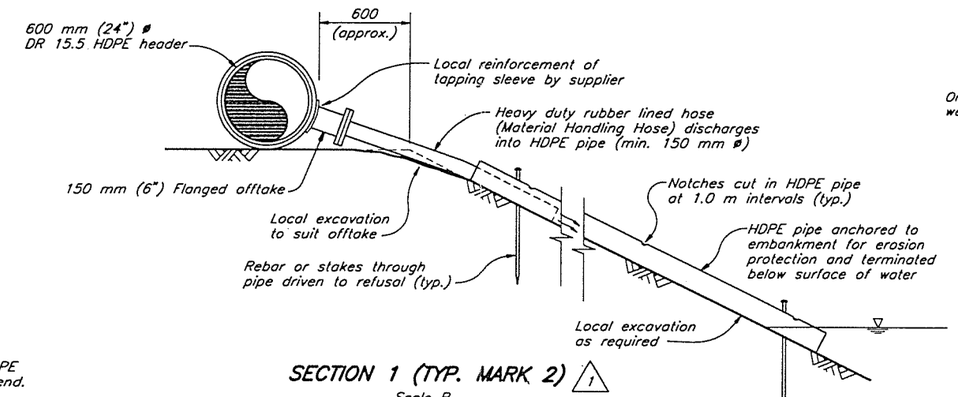
(Locate as required by the Engineer)

NTS



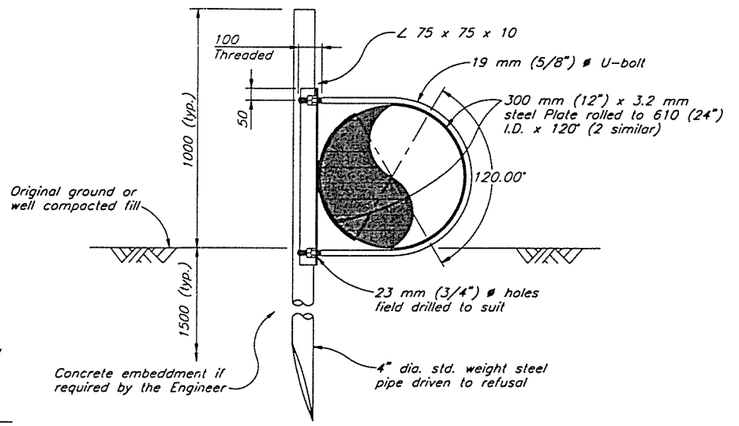
ALTERNATE TAILINGS HEADER PIPELINE TERMINATION (MARK 4/1625.222)

Scale A



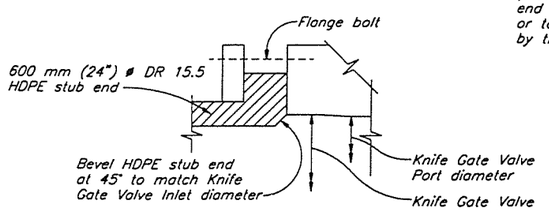
SECTION 1 (TYP. MARK 2) 1

Scale B



SECTION 2

NTS

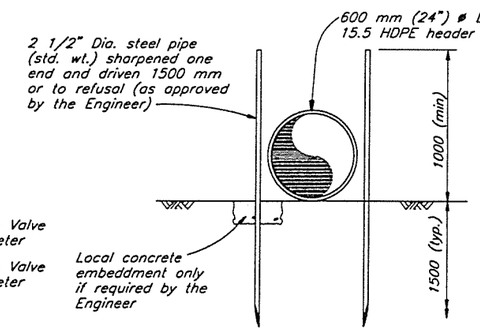


DETAIL A

KNIFE GATE INLET

(Note 4)

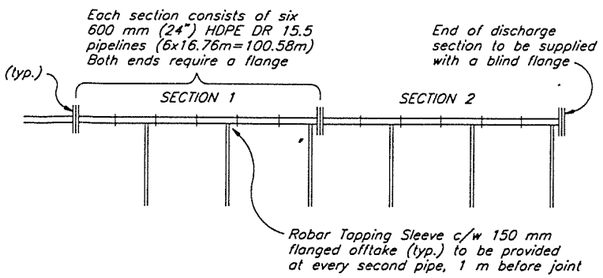
NTS



DETAIL B

GUIDEPOST

Scale B



DETAIL C

1 SCHEMATIC PLAN OF MOVABLE DISCHARGE SECTION

NTS

NOTES:

1. Rubber lining to be Linatex PGR or approved equivalent.
2. Pipe restraint by local burial of pipeline or as otherwise required by the Engineer to control movement due to thermal and hydraulic forces.
3. Robar 6626 c/w 1/4" rubber lining of offtake and external reinforcement of offtake to sleeve joint.
4. HDPE Pipe ID exceeds that of knife gate valve and is to be field bevelled to match.
5. HDPE pipelines to be connected under cool conditions with snaking allowance made for additional thermal contraction of empty pipeline.
6. Mark 2 and 3 offtakes to be added as required.

B 1 0.5 0 1 2 m

A 1 0 1 2 3 4 5 m

CAD FILE\1625\D39\D39 1:50 Plot 1=0.05 MAY 29, 1997

DRG. NO.	DESCRIPTION
1625.222	TSF – TAILINGS AND RECLAIM PIPEWORK PLAN
1625.228	TSF – TAILINGS AND RECLAIM PIPEWORK PROFILES

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	APPROVED

REVISIONS

REV.	DATE	DESCRIPTION	APPROVED
1	MAY 30/97	REVISED DISCHARGE SECTION	KJB
0	JULY 15/96	ISSUED FOR CONSTRUCTION	

REVISIONS

KNIGHT PIÉSOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

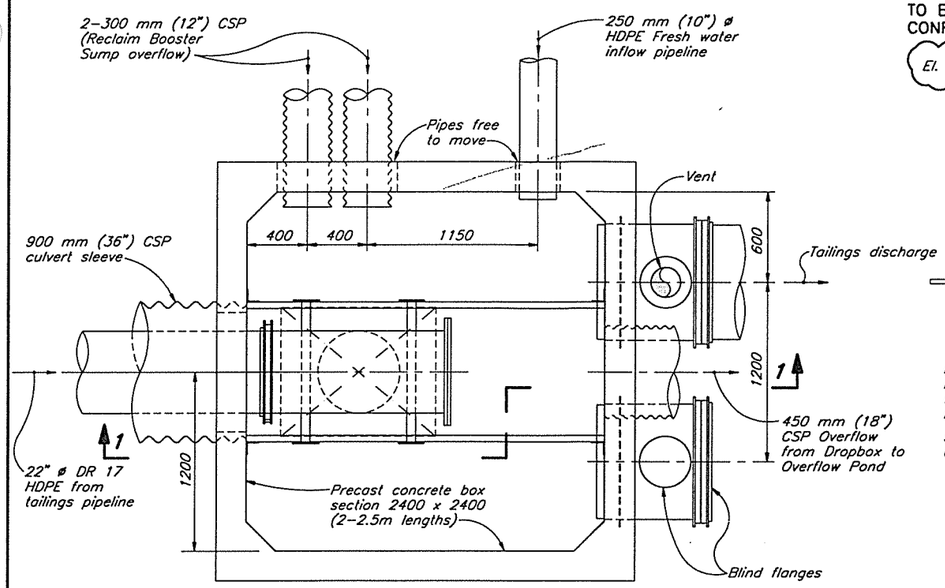
DESIGNED	HPD
DRAWN	AW/RDT
CHECKED	KDE
APPROVED	KJB

MOUNT POLLEY MINING CORPORATION

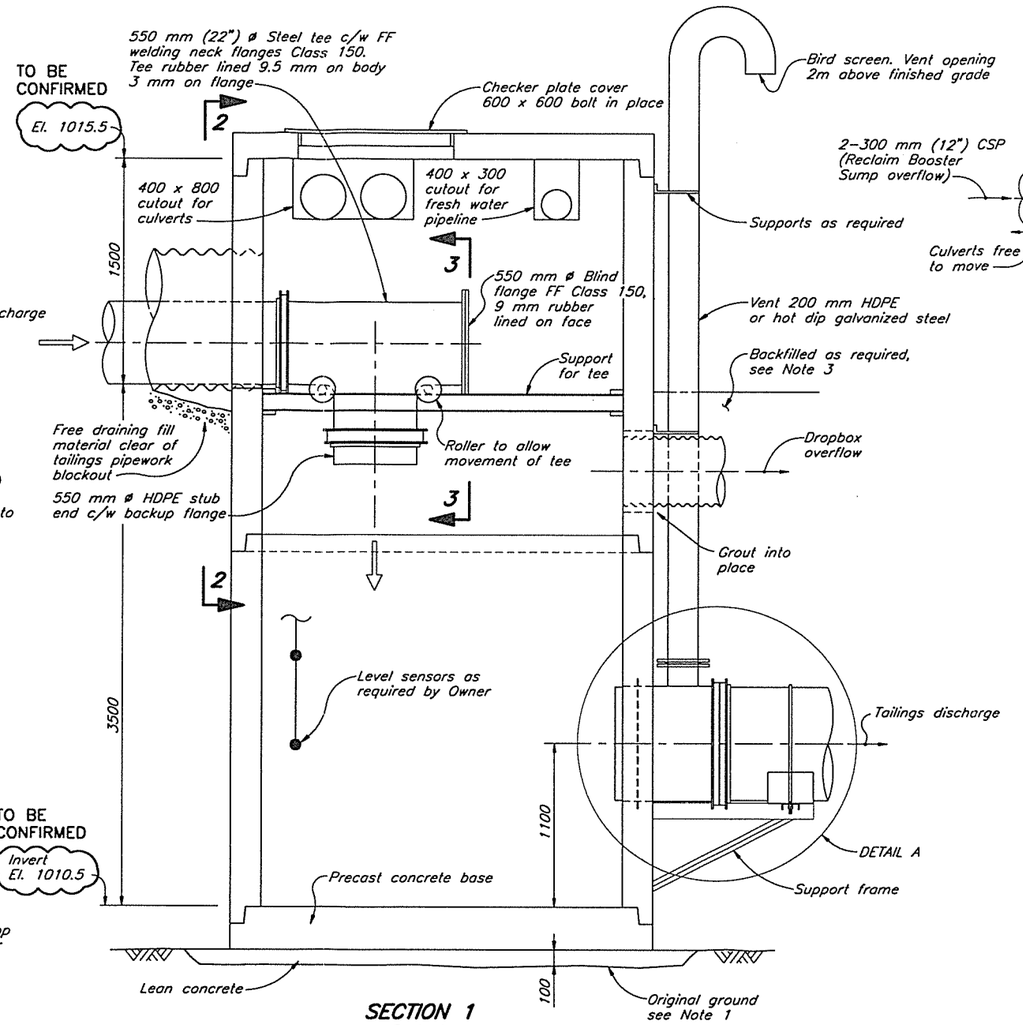
MOUNT POLLEY PROJECT

TAILINGS STORAGE FACILITY
TAILINGS DISTRIBUTION SYSTEM
DETAILS

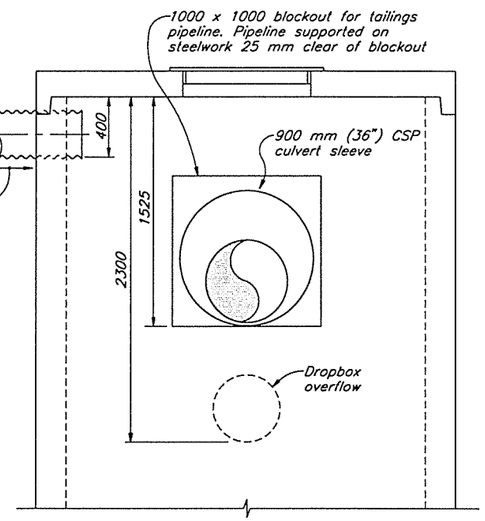
DATE JULY 15, 1996 | SCALE AS SHOWN | DRG. NO. 1625.224 | REV. 1



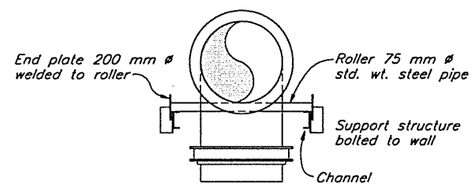
T2 TAILINGS DROPBOX
Scale A



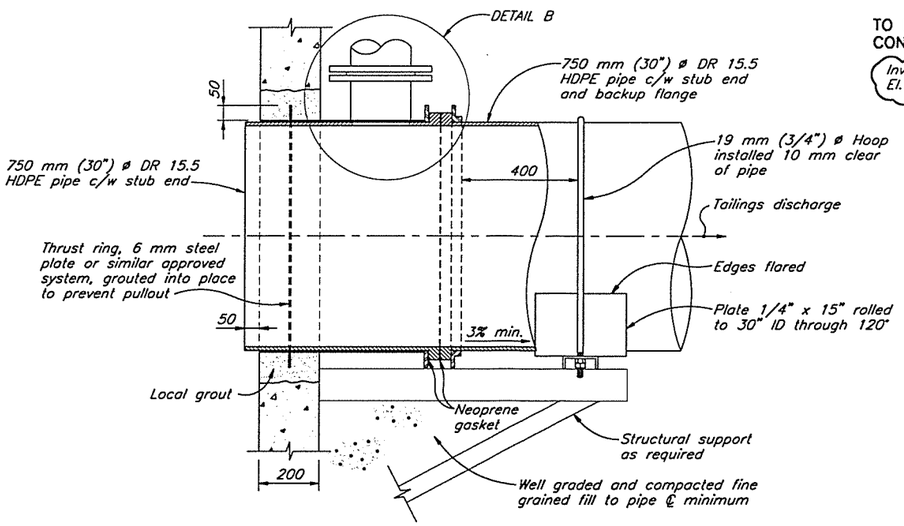
SECTION 1
Scale A



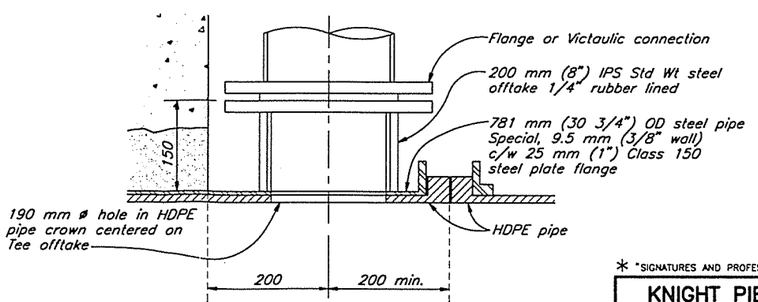
SECTION 2
Scale A



SECTION 3
Scale A



DETAIL A
DISCHARGE PIPELINE
Scale B



DETAIL B
VENT CONNECTION
Scale C

NOTES

1. Foundation bearing capacity to be 100 kPa min..
2. Structural steel bolting to be stainless steel.
3. Backfill around dropbox to be placed and compacted in max. 500 mm lifts.
4. Elevations to be updated based on as–built survey.

C	250	125	0	250	500 mm
B	500	250	0	500	1000 mm
A	1000	500	0	1000	2000 mm

CAD FILE:\1625\DRAWING\041 1:20 Plot 1=0.02 AUG 14, 1997

* "SIGNATURES AND PROFESSIONAL SEAL ON PREVIOUS REVISION"

DRG. NO.	DESCRIPTION
1625.228	TSF – TAILINGS AND RECLAIM PIPEWORK PROFILES
1625.226	TSF – RECLAIM BOOSTER PUMP STATION, AREA – GENERAL ARRANGEMENT

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	APPROVED

REVISIONS

REV.	DATE	DESCRIPTION	APPROVED
2	AUG 14/97	AS–BUILT DETAILS	KJB
1	MAY 30/97	REVISED DROPBOX	
0	JULY 15/96	ISSUED FOR CONSTRUCTION	

REVISIONS

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

*

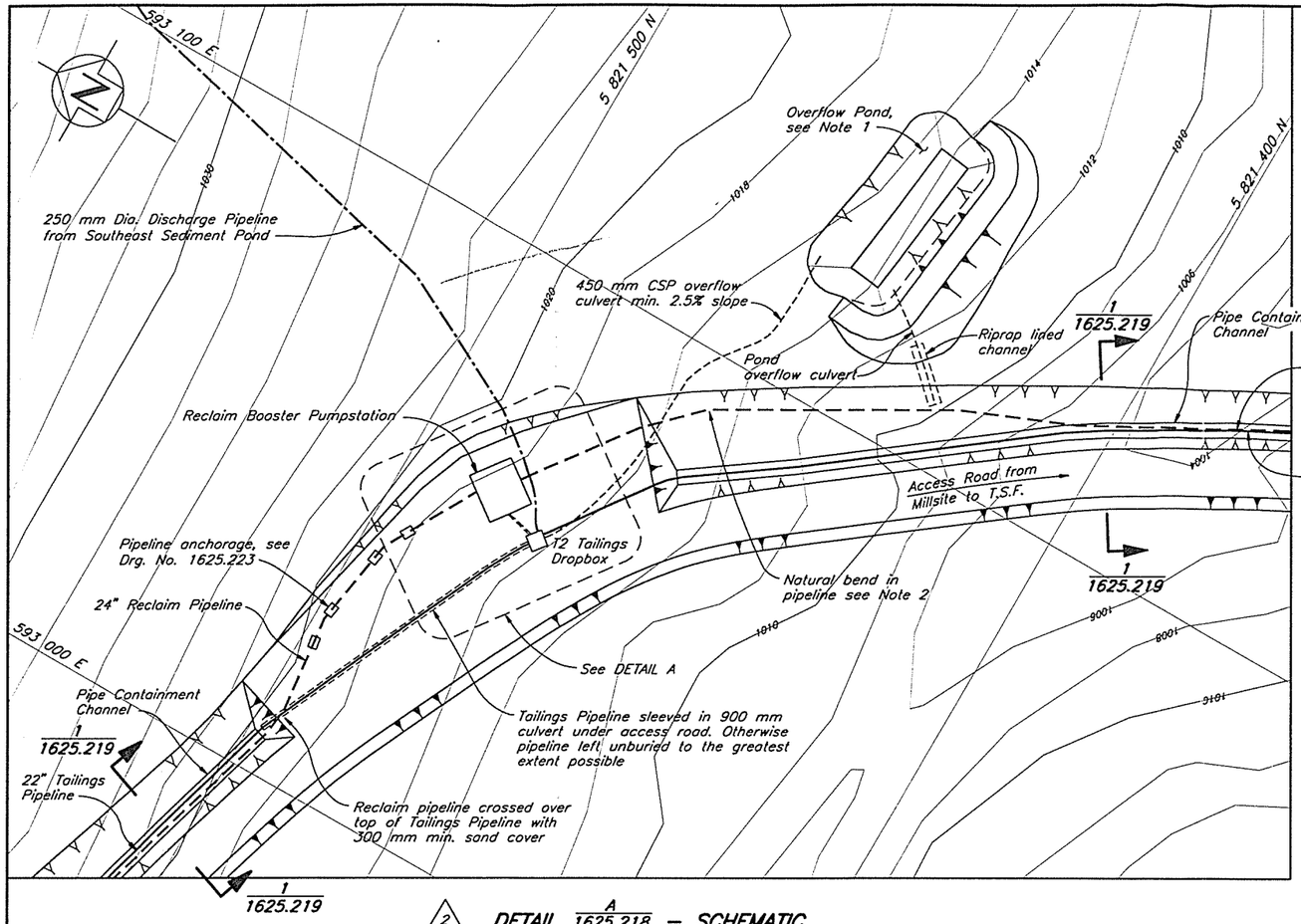
DESIGNED HPD
DRAWN TAM/NSD
CHECKED *
APPROVED *

MOUNT POLLEY MINING CORPORATION

MOUNT POLLEY PROJECT

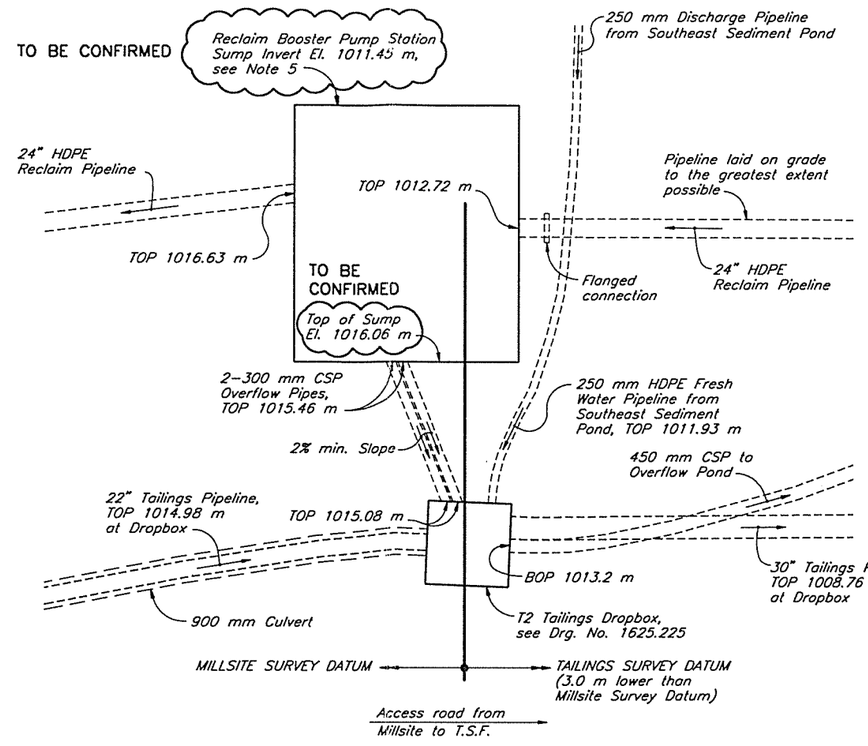
TAILINGS STORAGE FACILITY
TAILINGS PIPEWORK DETAILS
DROP BOX No. 2

DATE JULY 15, 1996 | SCALE AS SHOWN | DRG. NO. 1625.225 | REV. 2



2 DETAIL A / 1625.218 — SCHEMATIC

RECLAIM BOOSTER PUMPSTATION, T2 TALINGS DROPBOX AND OVERFLOW POND



2 DETAIL A — SCHEMATIC

NTS

2 NOTES

1. The 500 m^3 capacity of the Overflow Pond, is sufficient to contain the contents of the upstream tailings pipeline. Pond located by Mount Polley Mining Corporation.
2. Radius of natural bends in HDPE pipelines not to be less than 25 pipe diameters.
3. Tailings and Reclaim pipelines uniformly graded between pipe containment channel and structures without high or low points.
4. Details of pipelines into Reclaim Booster Pumpstation sump determined in conjunction with CSFM.
5. Invert of pipe containment channel is assumed to be 1 m below local road elevation.
6. Local riprap required where 450 mm CSP overflow culvert exits overflow pond.
7. Top of discharge culvert for overflow pond to be 1000 mm below top of overflow pond.
8. As-built information provided by Mount Polley Mining Corporation.
9. Topography not updated by 1997 Flyover.
10. Pipeline elevations from Tailings Storage Facility to T2 Dropbox and Booster Pumpstation are based on Tailings Survey Datum (3.0 m lower than Millsite Datum). Survey control break is shown at the T2 Dropbox and Booster Pumpstaion.

LEGEND

TOP Top of Pipe

BOP Bottom of Pipe

Scale 10 5 0 10 20 30 40 50 Metres

CAD FILE:\1625\D052\052 1:500 Plot 1=0.50 AUG. 14, 1997

* "SIGNATURES AND PROFESSIONAL SEAL ON PREVIOUS REVISION"

DRG. NO.	DESCRIPTION
1625.225	TSF — TAILINGS PIPEWORK DETAILS — DROP BOX No. 2
1625.223	TSF — RECLAIM PIPELINE DETAILS
1625.219	TSF — TAILINGS DISTRIBUTION & RECLAIM SYSTEM — SECTIONS & DETAILS
1625.218	TSF — TAILINGS DISTRIBUTION & RECLAIM SYSTEM — PLAN

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	APPROVED

REVISIONS

REV.	DATE	DESCRIPTION	APPROVED
2	AUG 14/97	AS-BUILT PIPELINES	LJB
1	MAY 30/97	REVISED LOCATION	
0	JULY 15/96	ISSUED FOR CONSTRUCTION	

REVISIONS

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS — VANCOUVER, B.C.

*

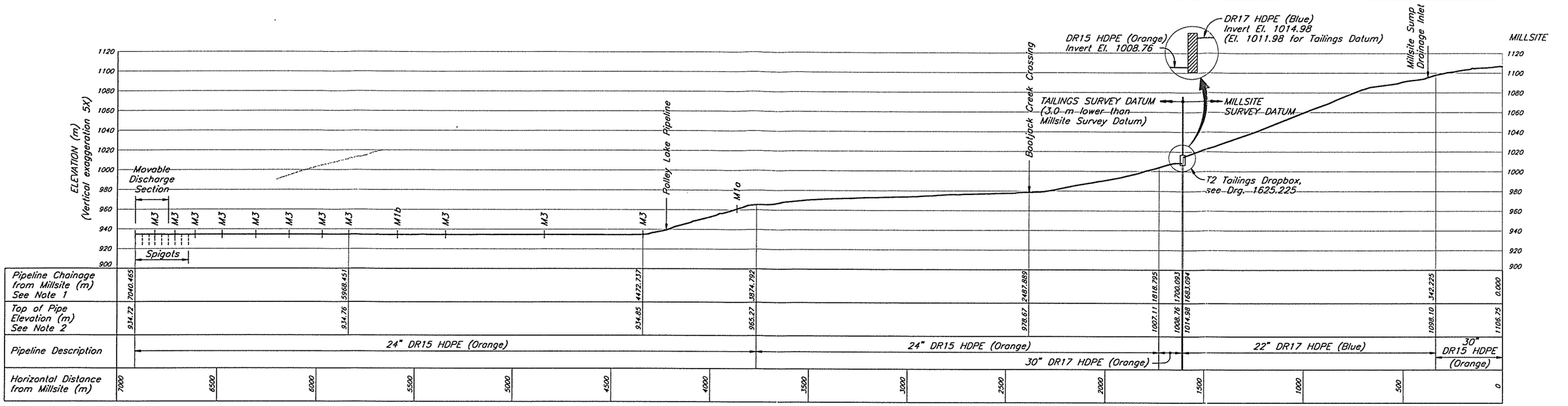
DESIGNED HPD/NM
DRAWN VY
CHECKED *
APPROVED *

MOUNT POLLEY MINING CORPORATION

MOUNT POLLEY PROJECT

TAILINGS STORAGE FACILITY RECLAIM BOOSTER PUMP STATION AREA GENERAL ARRANGEMENT

DATE JULY 15, 1996 | SCALE AS SHOWN | DRG. NO. 1625.226 | REV. 2



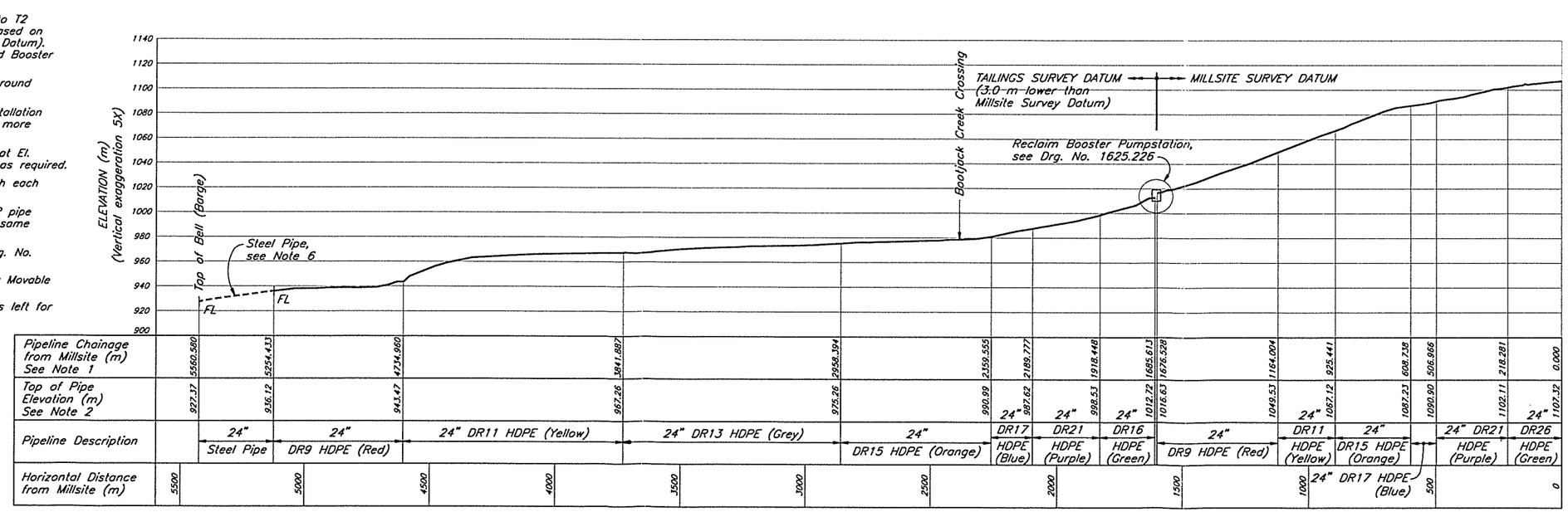
TAILINGS PIPELINE PROFILE 2

2 NOTES

1. Pipeline chainage is based on top of pipe (TOP) As-Built Survey.
2. Pipeline elevations from Tailings Storage Facility to T2 Dropbox and Reclaim Booster Pumpstation are based on Tailings Survey Datum (3.0 m lower than Millsite Datum). Survey control break is shown at T2 Dropbox and Booster Pumpstation.
3. Flanges in pipelines must be supported off the ground if pipelines are dragged into position.
4. Any section of HDPE pipeline damaged during installation by a local reduction in wall thickness of 10% or more cut out and replaced.
5. Reclaim pipeline installed only to original ground at El. 925 m. Additional ramps for barge to be added as required.
6. All steel and HDPE DR9 pipeline to be moved with each barge relocation.
7. Butt fusion joining of lower DR pipe to higher DR pipe requires end of lower DR pipe to be bevelled to same inside diameter as higher DR pipe.
8. Tailings offtakes (Mark 1 to 4) are shown on Drg. No. 1625.224.
9. Mark 2 and 4 offtakes not installed. Replaced by Movable Discharge Section.
10. Mark 3 offtakes not installed. Flanged connections left for future use.

LEGEND

FL	Flange Joints
M1	Mark 1 Offtake (2)
M2	Mark 2 Offtake
M3	Mark 3 Offtake (10)
M4	Mark 4 Offtake
DR9	HDPE Pipe Dimensional Ratio (typical)



RECLAIM PIPELINE PROFILE 2

Scale 200 100 0 200 400 600 800 1000 Metres

REFERENCE DRAWINGS			
DRG. NO.	DESCRIPTION		
1625.226	TSF – RECLAIM BOOSTER PUMP STATION AREA – GENERAL ARRANGEMENT		
1625.225	TSF – TAILINGS PIPEWORK DETAILS – DROP BOX NO. 2		
1625.224	TSF – TAILINGS DISTRIBUTION SYSTEM – DETAILS		
1625.206	TSF – RECLAIM BARGE CHANNEL – EXCAVATION DETAILS		

REVISIONS			
REV.	DATE	DESCRIPTION	APPROVED

REVISIONS			
REV.	DATE	DESCRIPTION	APPROVED
2	AUG 14/97	AS-BUILT PIPELINES	KIB
1	MAY 30/97	REVISED DROPBOX/PUMPSTATION LOCATIONS	
0	JULY 15/96	ISSUED FOR CONSTRUCTION	

* "SIGNATURES AND PROFESSIONAL SEAL ON PREVIOUS REVISION"

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

*

DESIGNED HPD
DRAWN NAR
CHECKED *
APPROVED *

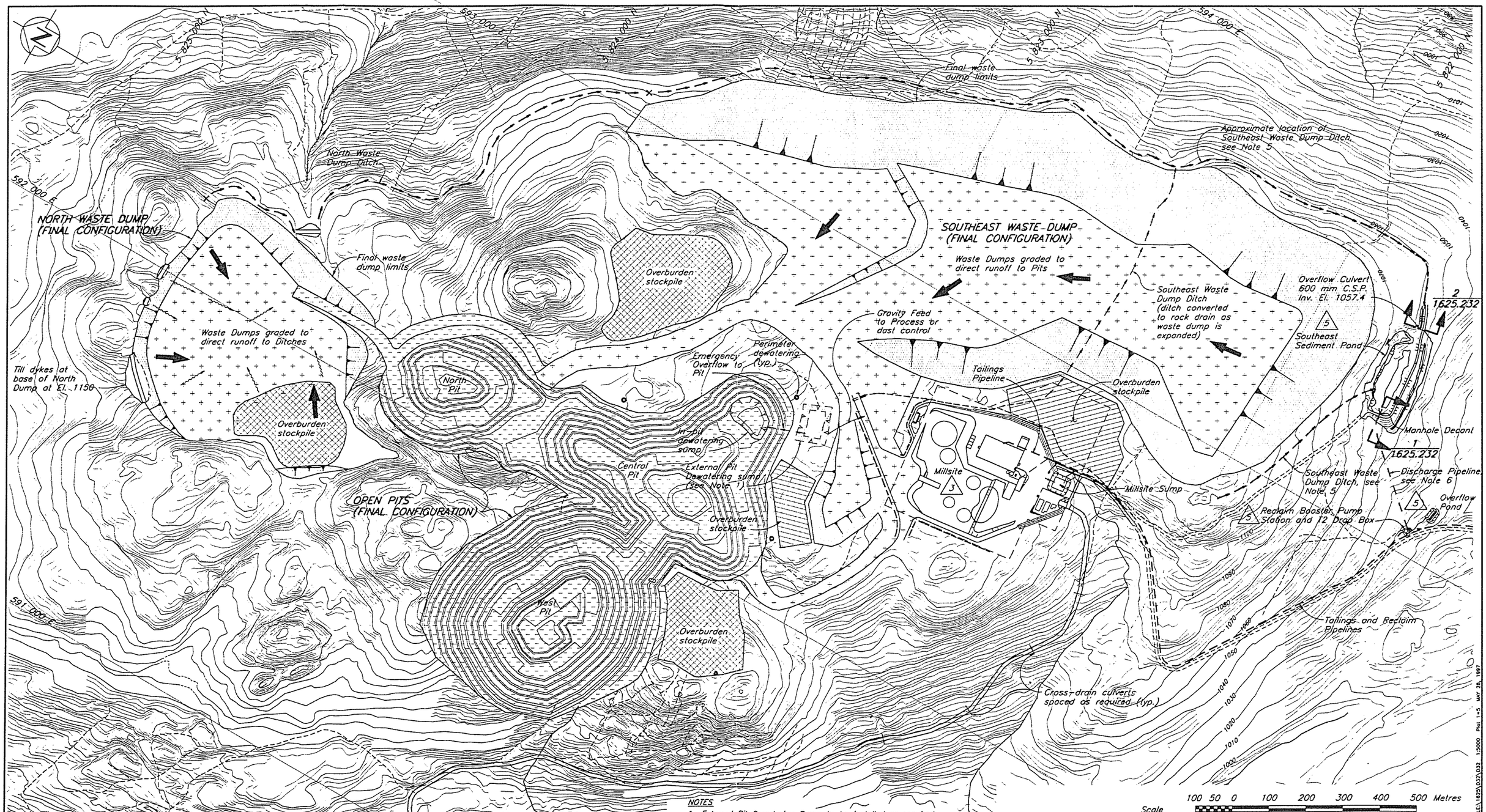
MOUNT POLLEY MINING CORPORATION

MOUNT POLLEY PROJECT

TAILINGS STORAGE FACILITY
TAILINGS AND RECLAIM
PIPEWORK PROFILES

DATE JULY 15, 1996 | SCALE AS SHOWN | DRG. NO. 1625.228 | REV. 2

CAD FILE\1625\045\045.048 1=10000 Plot 1=10 AUG 14, 1997



NOTES

1. External Pit Dewatering Sump to be installed as required.
2. Open Pit and Waste Dump layouts digitized from information supplied by Mount Polley Mining Corporation.
3. Location of Southeast Sediment Pond by Others.
4. As-built information provided by Mount Polley Mining Corporation.
5. As-built survey of Southeast Waste Ditch will be provided by Mount Polley Mining Corporation.
6. As-built survey of Discharge Pipeline will be provided by Mount Polley Mining Corporation.

REFERENCE DRAWINGS	
DRG. NO.	DESCRIPTION
1625.232	DRAINAGE PLAN – SECTIONS AND DETAILS

REVISIONS			
REV.	DATE	DESCRIPTION	APPROVED
5	MAY 8/97	UPDATED SOUTHEAST SEDIMENT POND	KDE
4	JULY 15/96	RELOCATE BOOSTER PUMP STATION	
3	APRIL 1/96	MILLSITE AND CONTROL POND REVISED	

REVISIONS			
REV.	DATE	DESCRIPTION	APPROVED
2	MAR 20/96	UPDATE DRAINAGE, MILLSITE & SOUTH SEDIMENT CONTROL POND	
1	MAR 14/96	UPDATED OPEN PITS,WASTEDUMPS,SITE DRAINAGE	
0	AUG 24/95	ISSUED FOR CONSTRUCTION	

* "SIGNATURES AND PROFESSIONAL SEAL ON REV.0 ORIGINAL"

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

MOUNT POLLEY MINING CORPORATION

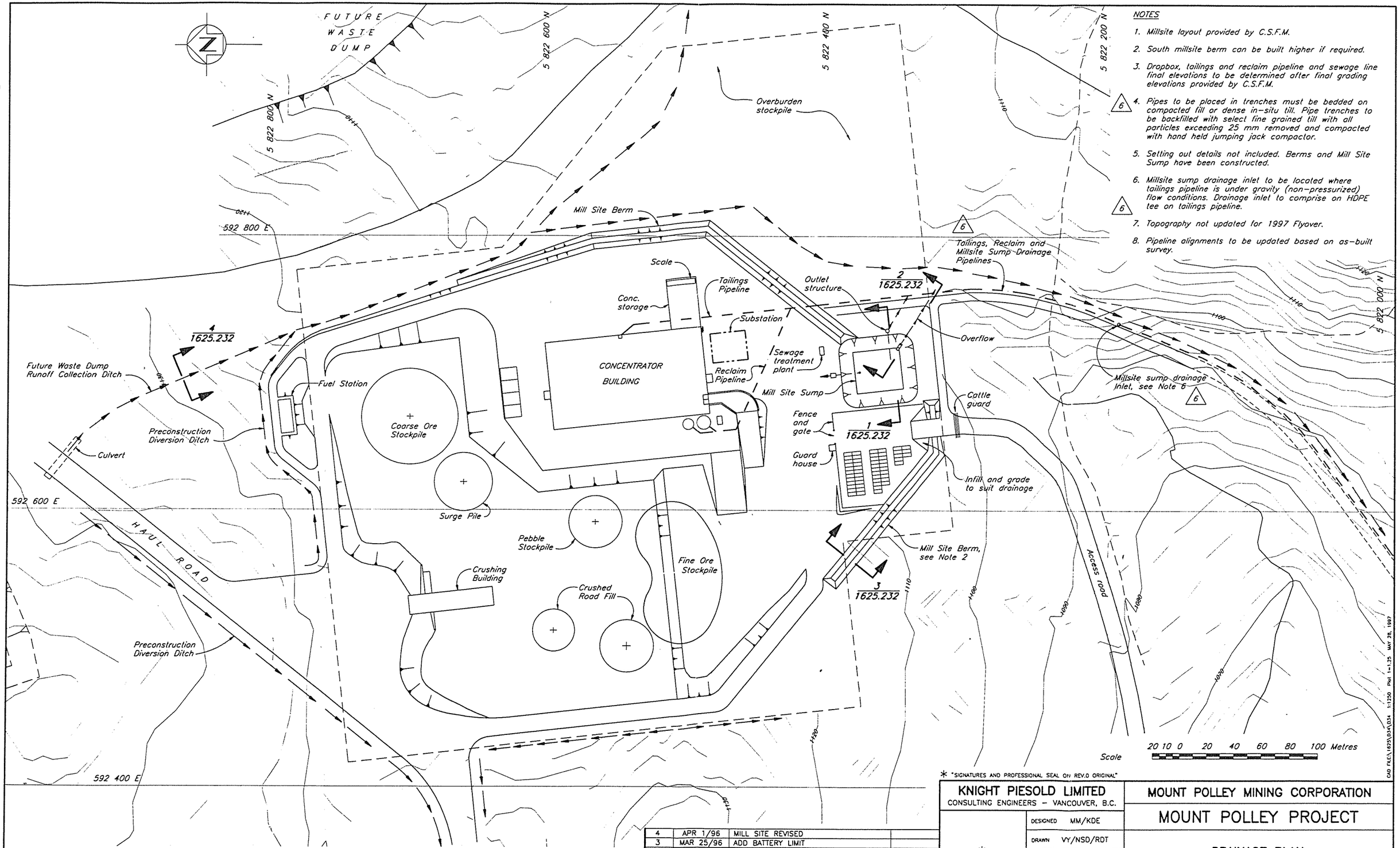
MOUNT POLLEY PROJECT

DRAINAGE PLAN MINE SITE

DESIGNED	KDE/MM
DRAWN	RDT/VY/NSD
CHECKED	*
APPROVED	*

DATE AUGUST 24, 1995 | SCALE AS SHOWN | DRG. NO. 1625.230 | REV. 5

CAD FILE: \1625\032\032 1:5000 Plot 1=5 MAY 28, 1997



NOTES

1. Millsite layout provided by C.S.F.M.
2. South millsite berm can be built higher if required.
3. Dropbox, tailings and reclaim pipeline and sewage line final elevations to be determined after final grading elevations provided by C.S.F.M.
4. Pipes to be placed in trenches must be bedded on compacted fill or dense in-situ till. Pipe trenches to be backfilled with select fine grained till with all particles exceeding 25 mm removed and compacted with hand held jumping jack compactor.
5. Setting out details not included. Berms and Mill Site Sump have been constructed.
6. Millsite sump drainage inlet to be located where tailings pipeline is under gravity (non-pressurized) flow conditions. Drainage inlet to comprise on HDPE tee on tailings pipeline.
7. Topography not updated for 1997 Flyover.
8. Pipeline alignments to be updated based on as-built survey.

* "SIGNATURES AND PROFESSIONAL SEAL ON REV.0 ORIGINAL"

REFERENCE DRAWINGS	
1625.232	DRAINAGE PLAN – SECTIONS AND DETAILS
DRG. NO.	DESCRIPTION

REVISIONS			
6	MAY 30/97	REVISED MILLSITE SUMP DRAINAGE INLET	KJB
5	JULY 15/96	OVERFLOW POND NO. 1 ADDED	
REV.	DATE	DESCRIPTION	APPROVED

REVISIONS			
4	APR 1/96	MILL SITE REVISED	
3	MAR 25/96	ADD BATTERY LIMIT	
2	MAR 20/96	UPDATE DRAINAGE AND MILLSITE	
1	MAR 14/96	RELOCATED OPEN PIT SUMP	
0	AUG 24/95	ISSUED FOR CONSTRUCTION	
REV.	DATE	DESCRIPTION	APPROVED

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

*

MOUNT POLLEY MINING CORPORATION

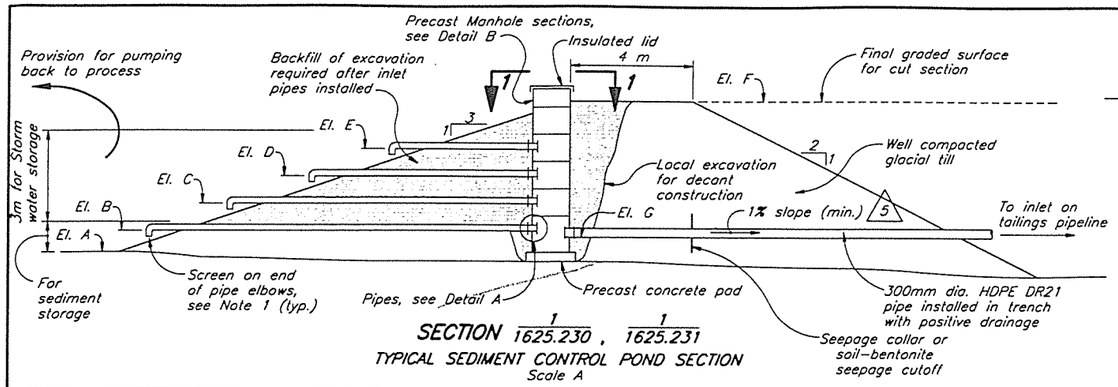
MOUNT POLLEY PROJECT

DESIGNED MM/KDE
DRAWN VY/NSD/RDT
CHECKED *
APPROVED *

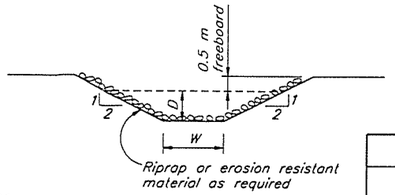
DRAINAGE PLAN
MILLSITE

DATE AUG. 24, 1995 | SCALE AS SHOWN | DRG. NO. 1625.231 | REV. 6

CAD FILE\1625\034\034 1:1250 Plot 1=1.25 MAY 28, 1997



SECTION 1/1625.230 , 1/1625.231
TYPICAL SEDIMENT CONTROL POND SECTION
Scale A



SECTION 4/1625.231
TYPICAL DITCH SECTION
Scale A

DITCH DIMENSIONS		
Ditch	W(m)	D(m)
All Mill Site Diversion Ditches	1.0	0.35
All Waste Dump Ditches	1.0	0.6

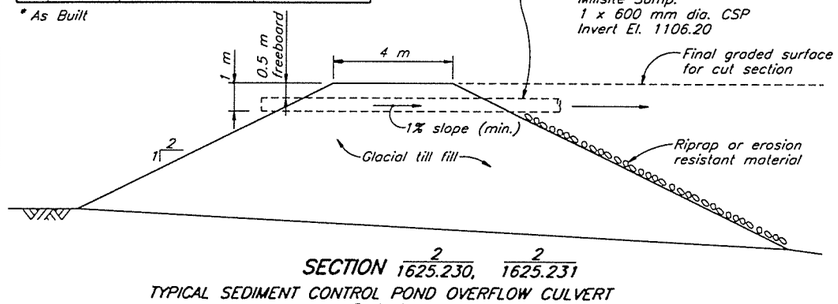
5 NOTES

1. Pipe elbows provided for oil skimming.
2. Sediment control pond fill sections to be constructed using suitable glacial till materials from local excavations.
3. Fill sections to be constructed in max. 0.5 m lifts and compacted prior to the placement of the next lift.
4. Silt fence and hay bales provided for sediment control.
5. Rockfill to comprise clean coarse gravel and cobbles.
6. All pond excavations and fill sections to be completed in low permeabilty glacial till materials.

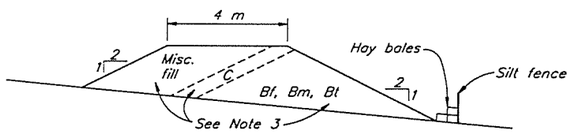
El.	Millsite Sump *	Southeast Sediment Pond *	Pit Dewatering Sump
A	1100.00	1052.20	To Be Determined
B	1100.91	1053.56	
C	1101.81	1054.42	
D	1102.70	1055.29	
E	1103.61	1056.18	
F	1107.40	1058.00	
G	1100.56	1053.37	

5

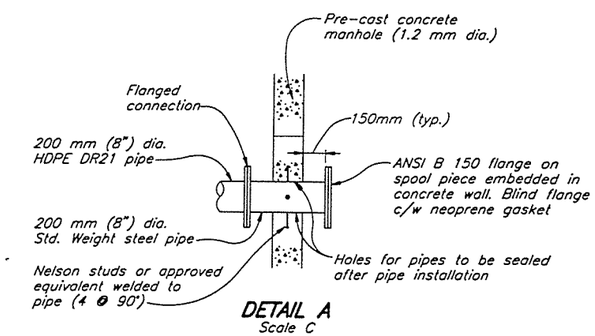
* As Built



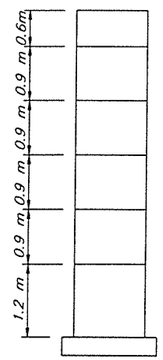
SECTION 2/1625.230, 2/1625.231
TYPICAL SEDIMENT CONTROL POND OVERFLOW CULVERT
Scale A



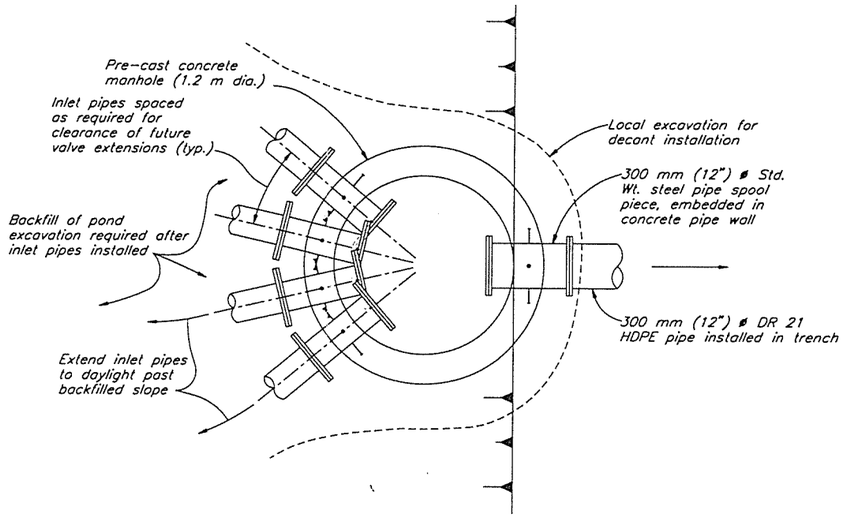
SECTION 3/1625.231
MILLSITE BERM SECTION
Scale A



DETAIL A
Scale C



DETAIL B
TYPICAL MANHOLE SECTIONS FOR 5 m DEEP POND
NTS



SECTION 1
Scale C

POND	STORAGE VOLUMES (m^3)		CRITERIA
	Live Storage	Dead Storage	
Southeast Sediment Pond	40,000 *	3,000 *	10yr 24 hour precipitation event at start-up of operations
Pit Dewatering Sump – Initial	Not required	Not required	1.5 x 10yr 24 hour precipitation event at start-up of operations
Pit Dewatering Sump – Final	24,400 1	6,700	
Millsite Sump	9,000 *	3,000 *	1.5 x 10yr 24 hour precipitation event

NOTES:

1. Pit Dewatering Sump size to be increased in conjunction with waste dump expansion.
2. Final Pit Dewatering Sump includes 10% of Open Pit inflows.
3. Typical Sediment Control Pond and Typical Sediment Control Pond Overflow Culverts cross-sections will change in fill construction and will be appropriately adjusted in the field as determined by the Engineer.

* As-built

C 400 0 400 800 1200 1600 2000 mm
B 1 0.5 0 1 2 3 4 5 m
A 2 1 0 2 4 6 8 10 m

* "SIGNATURES AND PROFESSIONAL SEAL ON REV.0 ORIGINAL"

CAD FILE: \1625\DWG\033 1:100 Plot Ref=0.1 STD.1 MAY 28, 1997

REFERENCE DRAWINGS	
DRG. NO.	DESCRIPTION
1625.230	DRAINAGE PLAN – MINE SITE
1625.231	DRAINAGE PLAN – MILL SITE

REVISIONS			
REV.	DATE	DESCRIPTION	APPROVED

REVISIONS			
REV.	DATE	DESCRIPTION	APPROVED
5	MAY 8/97	ELEVATIONS MODIFIED	KDB
4	JULY 15/96	DETAIL AND ELEVATIONS MODIFIED	
3	APR 1/96	UPDATE SEDIMENT CONTROL POND	
2	MAR. 20/96	UPDATE SEDIMENT CONTROL POND	
1	MAR 14/96	UPDATE DITCHES AND NOTE 3 ADDED	
0	AUG 24/95	ISSUED FOR CONSTRUCTION	

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

*

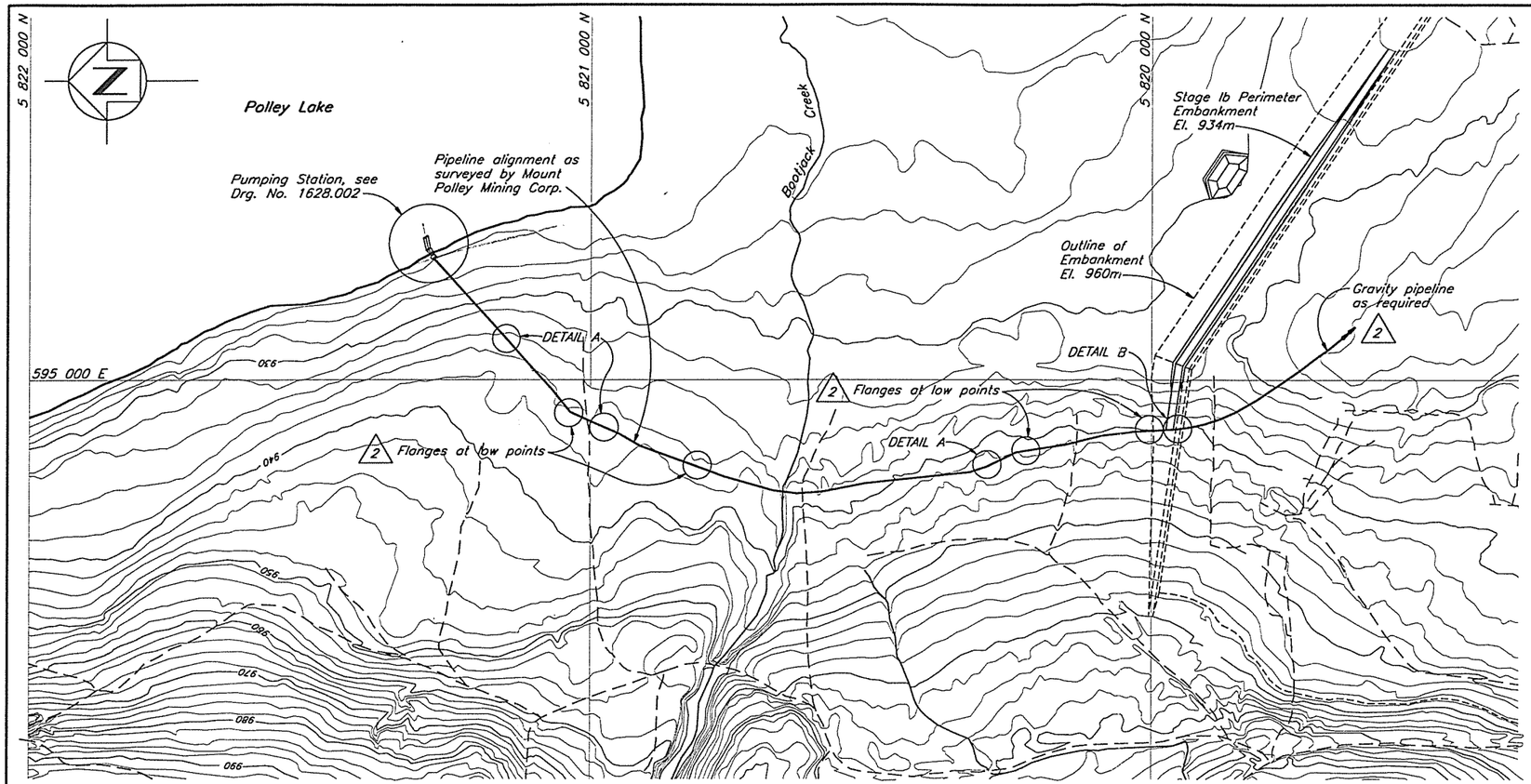
MOUNT POLLEY MINING CORPORATION

MOUNT POLLEY PROJECT

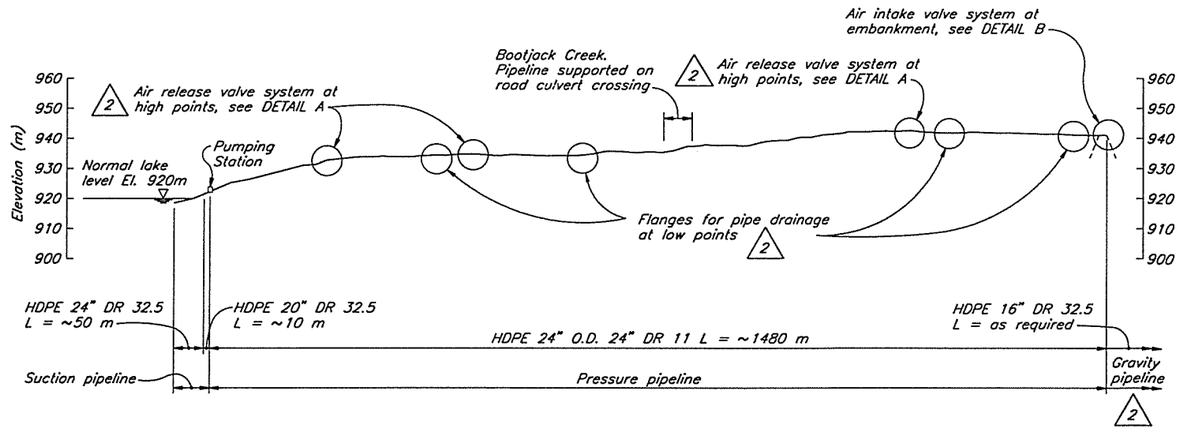
DRAINAGE PLAN
SECTIONS AND DETAILS

DESIGNED	KDE/MM
DRAWN	RDT/NSD
CHECKED	*
APPROVED	*

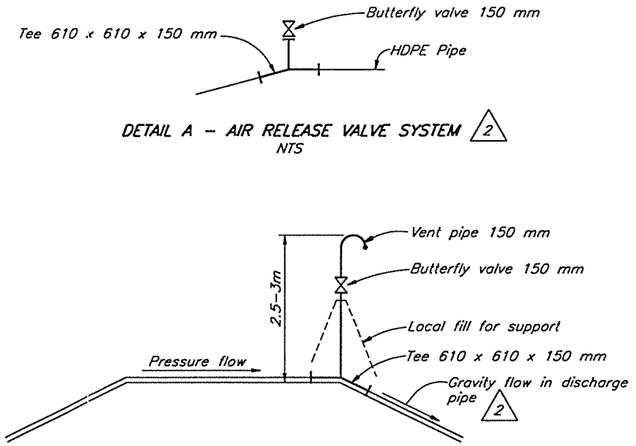
DATE AUGUST 24, 1995 | SCALE AS SHOWN | DRG. NO. 1625.232 | REV. 5



PLAN
Scale A

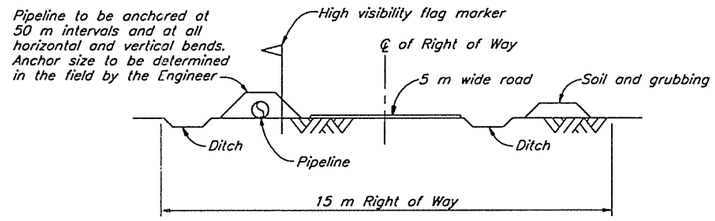


PIPELINE PROFILE
Horiz. Scale A, Vert. Scale B



DETAIL A – AIR RELEASE VALVE SYSTEM 2
NTS

DETAIL B – AIR INTAKE VALVE AT EMBANKMENT
NTS



TYPICAL SECTION OF RIGHT OF WAY
NTS

NOTES

1. Pumping system has been designed for a maximum extraction rate of 8 000 USgpm. The extraction rate will be controlled by the pipeline I.D. and lengths selected for installation by Mount Polley Mining Corporation.
2. Pipeline profile is based on centreline of access road.
2 3. Pipeline may be constructed with some high sections. Air release valves required as shown.
2 4. Flanges to be provided at low points for pipe drainage, cleaning, and protection against freezing during prolonged shut down periods.
2 5. Air intake valve system required at embankment to facilitate drainage. Additional air intakes may be required at high points.
6. All air release/intake systems to be protected against freezing during pumping.
7. Elevations on pipeline profile are from survey data and do not correspond accurately to topographic contours.
8. Valves to be AWWA quality.

B 20 10 0 20 40 60 80 100 m
A 100 0 100 200 300 400 500 m

CAD FILE\ 1628\08\06 1:5000 Plot 1=5 FEB 19, 1997

* "SIGNATURES AND PROFESSIONAL SEAL ON REV.0 ORIGINAL"

REFERENCE DRAWINGS	
DRG. NO.	DESCRIPTION
1628.002	PUMPING STATION – GENERAL ARRANGEMENT

REVISIONS			
REV.	DATE	DESCRIPTION	APPROVED

REVISIONS			
REV.	DATE	DESCRIPTION	APPROVED
2	FEB 19/97	REVISED PIPELINE DETAILS	
1	JAN 31/97	ISSUED FOR CONSTRUCTION	
0	AUG 13/96	ISSUED FOR TENDER	

KNIGHT PIESOLD LIMITED
CONSULTING ENGINEERS – VANCOUVER, B.C.

*

DESIGNED	NM
DRAWN	TAM
CHECKED	*
APPROVED	*

MOUNT POLLEY MINING CORPORATION

MOUNT POLLEY PROJECT

PUMPING SYSTEM
PLAN, PROFILE AND SECTION
GENERAL ARRANGEMENT

DATE AUG. 13, 1996 | SCALE AS SHOWN | DRG. NO. 1628.001 | REV. 2

APPENDIX A

CONSTRUCTION QUALITY ASSURANCE
RECORD TEST SUMMARY SHEETS

Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
STAGE Ia/Ib CONSTRUCTION

J:\JOB\DATA\10162-7\REPORTS\R-ME-ZS.XLS

7-Jul-97

Knight Piésold Ltd.
CONSULTING ENGINEERS

RECORD TEST - SUMMARY SHEET
MAIN EMBANKMENT ZONE S

SHEET : 1 of 1

PERIOD : 22-Aug-96 to 17-Mar-97

PROJECT NO. : 1627

AREA : Main Embankment - Zone S

PROJECT : MOUNT POLLEY - TAILINGS STORAGE FACILITY - STAGE Ia/Ib CONSTRUCTION

MATERIAL : Glacial Till Zone S

DATE SAMPLED	SAMPLE No.	LOCATION			R1			R2		R7			R3													R4		R6	R8a
		Chainage (m)	Offset (m)	Elevation (m)	Atterberg Limits			Field																		Standard Proctor		S.G.	LAEP
					PL	LL	PI	m/c	LI	R7a Dry Density	R7b Nat. m.c.	% Max	76.2	38.1	25.4	19.05	9.525	4.7498	2.38	1.19126	0.5944	0.4191	0.1499	0.0737	0.002	Max Dry Density	Opt. m/c		
					%	%	%	%	%	kg/m³	%	Density	3	1.5	1	0.75	0.375	0.187	0.0937	0.0469	0.0234	0.0165	0.0059	0.0029	0.000079	kg/m³	%		cm/s
													3	1 1/2	1	3/4	3/8	#4	#8	#16	#30	#40	#100	#200	Clay				
													Percent Passing																
22-Aug-96	R/ME/ZS-1	21+84	15m N of C/L	916.0	15.4	28.1	12.7	14.4	-0.08	1959	14.0	95.8	100.0	100.0	98.0	93.1	89.3	85.3	81.4	78.2	75.0	72.8	63.7	55.3	17.0	2045	10.5	2.74	2.4E-09
22-Aug-96	R/ME/ZS-2	19+30	10m N of C/L	915.0	15.8	27.8	12.0	16.0	0.02	1928	13.1	96.4	100.0	100.0	98.4	95.7	92.5	89.9	86.6	83.6	80.6	78.6	70.0	62.2	18.0	2000	11.2	2.74	
24-Aug-96	R/ME/ZS-3	20+50	20m S U/S Shoulder	913.9	15.0	27.0	12.0	12.4	-0.22	1954	12.5	97.7	100.0	100.0	96.2	94.9	92.2	89.4	86.9	84.0	80.8	78.7	69.2	60.8	16.0	2000	11.0	2.74	7.9E-10
25-Aug-96	R/ME/ZS-4	20+50	20m S U/S Shoulder	914.5	13.9	26.1	12.2	15.1	0.10	2034	12.6	100.4	100.0	100.0	97.4	93.5	88.4	84.2	79.0	75.5	72.1	70.1	61.3	53.0	16.0	2025	11.2	2.75	9.8E-10
27-Aug-96	R/ME/ZS-5	21+90	20m S U/S Shoulder	915.3	15.1	27.3	12.2	13.5	-0.13	2047	11.7	101.8	100.0	100.0	96.6	96.4	93.3	89.6	84.5	80.7	77.2	74.9	65.1	56.2	16.0	2010	11.6	2.72	1.4E-10
27-Aug-96	R/ME/ZS-6	20+00	20m S U/S Shoulder	915.0	14.2	24.7	10.5	12.4	-0.18	1987	12.2	96.9	100.0	100.0	96.8	93.6	89.8	85.5	81.7	78.0	74.5	72.1	62.7	54.1	12.0	2050	11.1	2.73	4.7E-08
13-Sep-96	R/ME/ZS-7	21+00	10m N of C/L	916.5	13.9	24.6	10.7	11.7	-0.21	2090	11.1	99.9	100.0	96.4	93.0	90.2	84.1	78.8	75.6	72.5	69.0	66.7	57.3	49.4	11.3	2093	9.9	2.72	4.8E-10
26-Sep-96	R/ME/ZS-8	21+00	5m S U/S Shoulder	917.0	14.7	26.8	12.1	11.8	-0.24	1973	12.3	97.4	100.0	93.3	92.2	90.1	85.5	82.3	79.4	76.7	73.6	71.3	62.1	54.1	12.0	2025	11.1	2.75	
30-Sep-96	R/ME/ZS-9	20+50	S of U/S Shoulder	917.8	15.2	23.4	8.2	10.8	-0.54	2041	12.2	97.7	100.0	94.1	90.5	89.3	85.9	80.8	77.5	73.9	70.1	67.3	56.4	48.4	9.7	2090	10.1		5.3E-09
3-Oct-96	R/ME/ZS-10	20+90	10m N L/D	919.0	14.3	22.6	8.3	11.2	-0.37	2000	13.3	96.9	100.0	89.5	88.3	85.7	80.8	76.7	72.1	68.6	65.6	63.4	54.4	46.4	15.0	2065	9.8		
12-Oct-96	R/ME/ZS-11	20+80	13m S U/S Shoulder	919.6	15.1	25.2	10.1	12.0	-0.31	2079	12.0	101.4	100.0	97.5	96.6	95.1	90.2	84.5	81.4	78.4	75.3	72.9	63.4	55.0	10.5	2050	10.0		6.3E-10
13-Oct-96	R/ME/ZS-12	19+00	Ditch Crossing	917.6	14.6	24.1	9.5	12.3	-0.24	2115	11.8	102.4	100.0	94.9	93.6	91.6	86.9	82.4	78.1	74.5	70.8	68.4	58.0	47.3	11.7	2065	10.1		
16-Oct-96	R/ME/ZS-13	21+50	6m S U/S Shoulder	920.9	14.5	24.8	10.3	11.4	-0.30	2101	11.0	101.6	100.0	98.7	93.3	90.7	86.1	80.9	77.9	74.4	70.3	68.5	59.0	51.5	12.1	2068	10.0		2.9E-09
18-Oct-96	R/ME/ZS-14	18+75	18m S U/S Shoulder	917.6	14.9	24.9	10.0	12.4	-0.25	2053	12.3	99.7	100.0	95.6	93.6	92.3	88.2	83.4	79.5	76.2	72.8	70.5	61.2	53.2	13.2	2060	9.6		1.2E-09
19-Oct-96	R/ME/ZS-15	18+50	5m N of C/L	918.5	14.7	24.9	10.2	12.2	-0.25	2015	12.5	97.0	100.0	98.7	96.8	93.9	83.9	84.5	80.1	76.6	73.1	70.6	60.6	52.4	12.1	2077	9.7		
3-Dec-96	R/ME/ZS-16	19+00	5m S U/S Shoulder	921.0	15.3	24.3	9.0	10.3	-0.56	2060	10.4	98.5	100.0	95.4	94.5	92.9	89.4	84.3	80.7	77.6	74.3	72.0	62.6	55.3	9.0	2092	10.1		
4-Dec-96	R/ME/ZS-17	18+25	6m S U/S Shoulder	922.0	15.7	23.5	7.8	10.1	-0.72	2090	10.4	98.8	100.0	97.1	92.1	90.0	86.2	82.7	79.4	76.3	73.0	70.7	60.8	52.9	7.5	2115	9.2		
5-Dec-96	R/ME/ZS-18	17+10	6m S U/S Shoulder	923.5	15.9	21.0	5.1	8.2	-1.51	2144	10.0	99.7	100.0	93.3	92.0	89.5	83.8	78.7	74.9	71.5	68.0	65.6	55.7	50.2	5.5	2150	8.7		9.3E-10
3-Dec-96	R/ME/ZS-19	21+20	20m S U/S Shoulder	923.0	15.4	24.4	9.0	11.9	-0.39	2082	11.3	97.1	100.0	87.9	82.3	80.4	77.2	72.8	70.4	67.4	64.4	62.4	54.1	48.0	9.0	2145	9.1		
10-Dec-96	R/ME/ZS-20	23+50	10m S U/S Shoulder	925.5	14.3	21.0	6.7	10.0	-0.64	2070	10.0	97.6	100.0	100.0	94.5	91.7	86.0	80.9	75.3	71.9	68.8	66.7	57.8	51.3	8.5	2120	9.6		
11-Dec-96	R/ME/ZS-21	23+00	5m N D/S Shoulder	927.0	14.9	22.0	7.1	10.1	-0.68	2141	8.1	102.9	100.0	100.0	99.3	97.7	93.3	87.8	81.8	78.1	74.4	71.7	64.5	54.5	9.0	2080	10.1		
21-Feb-97	R/ME/ZS-22	18+25	C/L	926.0	13.5	23.0	9.5	10.7	-0.29	2150	7.8	103.4	100.0	100.0	98.0	96.4	90.9	86.0	81.8	77.4	72.2	68.7	56.1	45.9	8.0	2080	9.9		
21-Feb-97	R/ME/ZS-23	19+75	8m N of C/D	925.0	14.6	22.5	7.9	11.8	-0.35	2090	8.4	100.5	100.0	97.9	93.0	89.3	82.5	77.2	71.5	67.1	63.0	60.4	49.4	39.9	12.0	2080	10.1		
22-Feb-97	R/ME/ZS-24	19+00	5m N of C/D	927.5	11.5	22.8	11.3	8.8	-0.24	2070	12.3	97.4	100.0	96.6	92.3	89.9	83.6	77.3	71.9	67.7	63.8	61.3	51.2	42.4	7.9	2125	9.7		
25-Feb-97	R/ME/ZS-25	19+50	7m N of C/D	929.0	14.2	24.5	10.3	10.4	-0.37	2140	10.2	99.5	100.0	100.0	93.7	90.1	83.8	76.1	70.0	65.2	60.7	57.8	46.5	37.6	8.8	2150	8.8		2.8E-10
26-Feb-97	R/ME/ZS-26	20+05	4m S U/S Shoulder	927.5		17.0				2080	10.7		100.0	100.0	98.6	97.1	92.6	86.7	79.7	74.3	69.4	66.2	54.6	45.4	4.0				
5-Mar-97	R/ME/ZS-27	25+85	3m N D/S Shoulder	933.0	19.6	27.0	7.4	15.6	-0.54	1870	14.3	97.9	100.0	100.0	96.6	96.0	93.0	90.8	89.2	87.5	84.8	82.5	73.2	65.2	7.0	1910	14.3		3.4E-08
9-Mar-97	R/ME/ZS-28	22+00	6m N of C/D	926.5	16.3	26.2	9.9	12.8	-0.35	2050	10.8	96.7	100.0	97.5	94.7	90.0	82.4	76.1	73.2	69.9	66.2	63.8	52.8	47.5	10.0	2120	9.1		
9-Mar-97	R/ME/ZS-29	21+18	D/S Shoulder	932.0	15.2	21.7	6.5	10.6	-0.71	2060	11.1	96.0	100.0	92.6	88.6	84.5	80.3	75.5	71.8	67.9	63.9	60.9	48.1	40.7	6.7	2145	9.0		
13-Mar-97	R/ME/ZS-30	22+50	5m S U/S Shoulder	931.0	13.7	24.6	10.9	11.3	-0.22	2040	12.1	95.3	100.0	94.9	94.9	89.7	82.4	76.6	72.1	67.9	63.8	60.9	48.1	37.4	8.2	2140	9.4		
14-Mar-97	R/ME/ZS-31	24+00	8m S U/S Shoulder	928.0		18.3		11.0		2090	9.8	103.5	100.0	96.3	95.3	94.2	91.6	90.0	88.5	87.3	85.7	84.4	75.9	58.3	7.0	2020	9.4		
14-Mar-97	R/ME/ZS-32	24+50	4m U/S of CL	932.0	16.9	20.5	3.6	9.8	-1.97	2140	9.3	100.5	100.0	94.0	91.4	89.8	82.6	77.6	75.2	72.5	69.5	67.2	55.5	45.0	8.0	2130	9.4		
17-Mar-97	R/ME/ZS-33	25+75	U/S Shoulder	934.0	15.5	21.7	6.2	9.9	-0.90	2100	9.7	100.0	100.0	97.0	95.7	94.7	87.9	82.7	79.5	76.2	72.8	70.2	58.8	48.6	10.0	2100	8.8		
MEAN					15.0	23.9	9.3	11.7	-0.44	2056	11.3	99.0	100.0	96.9	94.2	91.8	86.9	82.4	78.4	75.0	71.5	69.1	59.1	50.5	10.6	2076	10.1	2.74	7.5E-09
MEDIAN					14.9	24.4	9.9	11.6	-0.31	2070	11.3	98.6	100.0	97.5	94.5	91.7	86.2	82.7	79.4	75.5	72.1	68.7	58.8	51.3	10.0	2080	9.9	2.74	9.8E-10
MAXIMUM (*)					19.6	28.1	12.7	16.0	0.10	2150	14.3	103.5	100.0	100.0	99.3	97.7	93.3	90.8	89.2	87.5	85.7	84.4	75.9	65.2	18.0	2150	14.3	2.75	4.7E-08
MINIMUM (*)					11.5	17.0	3.6	8.2	-1.97	1870	7.8	95.3	100.0	87.9	82.3	80.4	77.2	72.8	70.0	65.2	60.7	57.8	46.5	37.4	4.0	1910	8.7	2.72	1.4E-10

(*) Note : These are 100% limits.

R1 Atterberg Limits (ASTM D4318)
R2 Moisture Content (ASTM D2216)
R3 Particle Size Distribution (ASTM D422)
R4 Laboratory Compaction (ASTM D1557)
R6 Specific Gravity (ASTM D854)
R7a Field Density by Nuclear Methods (ASTM D2922)
R7b Moisture Content by Nuclear Methods (ASTM D3017)
R8a Lab Air Entry Permeameter (LAEP)
R8b Field Air Entry Permeameter (FAEP)

Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
STAGE Ia/Ib CONSTRUCTION

J:\JOB\DATA\10162-7\REPORTS\R-PE-ZS.XLS 7-Jul-97

Knight Piésold Ltd.
CONSULTING ENGINEERS

RECORD TEST - SUMMARY SHEET
PERIMETER EMBANKMENT ZONE S

SHEET : 1 of 1
PERIOD : 12-Dec-96 to 16-Feb-97
PROJECT NO. : 1627
AREA : Perimeter Embankment - Zone S

PROJECT : MOUNT POLLEY - TAILINGS STORAGE FACILITY - STAGE Ia/Ib CONSTRUCTION
MATERIAL : GLACIAL TILL

DATE SAMPLED	SAMPLE No.	LOCATION			R1			R2		R7			R3													R6	R8a
		Chainage (m)	Offset (m)	Elevation (m)	Atterberg Limits			Field m/c	LI	R7a Dry Density	R7b Nat. m.c.	% Max Density	76.2	38.1	25.4	19.05	9.525	4.7498	2.37998	1.19126	0.5944	0.4191	0.1499	0.0737	0.002	Standard Proctor		S.G.	LAEP
					PL	LL	PI						3	1.5	1	0.75	0.375	0.187	0.0937	0.0469	0.0234	0.0165	0.0059	0.0029	quantity	Max Dry Density	Opt. m/c		
					%	%	%	%	%	kg/m³	%	%	3	1 1/2	1	3/4	3/8	#4	#8	#16	#30	#40	#100	#200	Cw	kg/m³	%		cm/s
													Percent Passing																
12-Dec-96	R/PE/ZS-1	38+50	D/S side of fill	932.5	15.5	21.6	6.1	12.1	-0.56	2,056	9.3	98.4	100.0	98.0	96.4	95.3	91.9	87.1	80.9	77.3	74.4	72.7	63.7	56.8	8.0	2090	10.2	2.73	-
14-Dec-96	R/PE/ZS-2	40+00	D/S side of fill	931.6	14.6	17.1	2.5	8.2	-2.56	2,070	10.3	96.1	100.0	97.6	93.5	89.8	82.2	75.6	67.4	60.6	54.9	51.8	41.2	35.4	4.7	2155	8.1	2.73	8.7E-09
14-Dec-96	R/PE/ZS-3	41+25	D/S side of fill	931.5	15.8	18.2	2.4	8.2	-3.17	2,108	8.7	98.7	100.0	97.9	96.5	92.5	86.0	80.2	74.7	70.2	65.4	62.3	50.2	41.2	4.5	2135	9.0	2.73	-
15-Dec-96	R/PE/ZS-4	41+50	D/S side of fill	931.5	NP	NP	NP	8.4	NP	2,074	9.2	95.1	100.0	99.2	92.6	89.5	80.1	73.3	63.7	56.3	51.4	48.8	39.7	33.3	4.5	2180	7.4	2.73	-
16-Dec-96	R/PE/ZS-5	42+50	U/S side of fill	930.5	16.0	22.3	6.3	10.5	-0.87	2,058	10.6	98.7	100.0	100.0	95.9	92.5	87.3	82.8	79.8	76.8	73.4	71.0	61.5	52.8	9.0	2085	9.5	2.73	-
16-Feb-97	R/PE/ZS-6	43+25	5m from D/S toe	930.5	14.3	25.3	11.0	11.2	-0.28	2,090	10.7	99.3	100.0	100.0	93.7	92.4	85.9	80.7	75.0	70.8	66.9	64.0	51.6	40.7	12.0	2105	9.0	-	1.2E-09
MEAN					15.2	20.9	5.7	9.8	-1.5	2,076	9.8	97.7	100.0	98.8	94.8	92.0	85.6	80.0	73.6	68.7	64.4	61.8	51.3	43.4	7.1	2125	8.9	2.7	5.0E-09
MEDIAN					15.5	21.6	6.1	9.5	-0.9	2,072	9.8	98.5	100.0	98.6	94.8	92.5	86.0	80.5	74.9	70.5	66.2	63.2	50.9	41.0	6.4	2120	9.0	2.7	0.0
MAXIMUM (*)					16.0	25.3	11.0	12.1	-0.3	2,108	10.7	99.3	100.0	100.0	96.5	95.3	91.9	87.1	80.9	77.3	74.4	72.7	63.7	56.8	12.0	2180	10.2	2.7	0.0
MINIMUM (*)					14.3	17.1	2.4	8.2	-3.2	2,056	8.7	95.1	100.0	97.6	92.6	89.5	80.1	73.3	63.7	56.3	51.4	48.8	39.7	33.3	4.5	2085	7.4	2.7	0.0

(*) Note: These are 100% limits.

R1 Atterberg Limits (ASTM D4318)
R2 Moisture Content (ASTM D2216)
R3 Particle Size Distribution (ASTM D422)
R4 Laboratory Compaction (ASTM D1557)
R6 Specific Gravity (ASTM D854)
R7a Field Density by Nuclear Methods (ASTM D2922)
R7b Moisture Content by Nuclear Methods (ASTM D3017)
R8a Lab Air Entry Permeameter (LAEP)
R8b Field Air Entry Permeameter (FAEP)

Knight Piésold Ltd.
CONSULTING ENGINEERS

J:\JOB\DATA\10162-7\REPORTS\R-ME-ZB.XLS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
STAGE Ia/Ib CONSTRUCTION

7-Jul-97

Knight Piésold Ltd.
CONSULTING ENGINEERS

RECORD TEST - SUMMARY SHEET
MAIN EMBANKMENT ZONE B

SHEET : 1 of 1
PERIOD : 28-Aug-96 to 13-Feb-97
PROJECT NO. : 1627
AREA : Main Embankment - Zone B

PROJECT : MOUNT POLLEY - TAILINGS STORAGE FACILITY - STAGE Ia/Ib CONSTRUCTION

MATERIAL : Glacial Till Zone B

DATE SAMPLED	SAMPLE No.	LOCATION			R1			R2		R7			R3												R4		R6	R8a
		Chainage (m)	Offset (m)	Elev. (m)	Atterberg Limits			Field m.c	LI	R7a Dry Density	R7b Nat. m.c.	% Max Density	76.2	38.1	25.4	19.05	9.525	4.7498	2.37998	1.19126	0.5944	0.4191	0.1499	0.0737	0.002	Standard Proctor		S.G.	LAEP
					PL	LL	PI						3	1.5	1	0.75	0.375	0.187	0.0937	0.0469	0.0234	0.0165	0.0059	0.0029		Max Dry Density	Opt. m/c		
					%	%	%	%	%	kg/m³	%		3	1 1/2	1	3/4	3/8	#4	#8	#16	#30	#40	#100	#200	Clay	kg/m³	%		cm/s
													Percent Passing																
28-Aug-96	R/ME/ZB-1	20+25	25m N of D/S Shoulde	913.6	15.0	26.7	11.7	13.7	-0.12	1934.0	13.8	94.1	100.0	91.4	90.2	88.1	81.8	77.4	75.6	72.8	69.5	67.3	57.1	48.3	15.0	2055	10.1	2.74	8.9E-10
22-Aug-96	R/ME/ZB-2	22+25	20m S of C/L	917.0	14.3	24.7	10.4	12.4	-0.18	1995.0	12.1	97.3	100.0	96.9	94.0	92.9	87.5	84.1	82.4	79.6	76.1	74.0	64.7	55.8	12.0	2050	11.2	2.74	9.9E-10
1-Sep-96	R/ME/ZB-3	19+50	20m N of D/S Toe	915.5	15.0	22.1	7.1	12.5	-0.35	1976.0	13.4	96.4	100.0	97.6	93.8	92.8	87.7	84.3	81.8	78.8	75.1	72.7	62.0	51.8	8.0	2050	11.1	2.74	4.5E-10
13-Sep-96	R/ME/ZB-4	21+00	20m S of C/L	916.4	14.3	24.5	10.2	12.3	-0.20	2025.0	11.7	97.6	100.0	97.5	93.9	92.5	88.5	84.6	78.7	74.7	71.2	68.9	59.5	51.1	11.7	2075	10.1	2.74	
28-Sep-96	R/ME/ZB-5	19+70	5m N of D/S Shoulder	917.0	14.2	22.9	8.7	10.7	-0.40	2032.0	10.6	97.2	100.0	100.0	100.0	97.1	91.0	84.9	82.2	79.0	75.3	72.6	61.7	52.6	10.5	2090	9.6		3.1E-09
10-Oct-96	R/ME/ZB-6	21+00	13m N of D/S Shoulde	917.5	14.2	25.0	10.8	12.4	-0.17	2044.0	12.2	98.3	100.0	98.0	97.1	95.2	90.9	86.5	83.0	79.0	74.8	71.9	60.7	52.0	11.0	2080	10.0		1.3E-09
11-Oct-96	R/ME/ZB-7	21+75	27m N of D/S Shoulde	919.6	14.2	25.6	11.4	11.7	-0.22	2027.0	11.8	98.5	100.0	100.0	97.6	96.7	92.5	88.1	83.6	79.5	75.6	73.1	63.2	55.0	14.4	2058	10.9		
12-Oct-96	R/ME/ZB-8	20+50	25m N of D/S Shoulde	920.3	14.7	25.6	10.9	11.5	-0.29	2070.0	11.8	101.8	100.0	94.9	93.7	93.2	88.5	83.2	81.0	77.9	74.5	72.1	62.1	53.1	11.8	2033	9.9		2.6E-09
17-Oct-96	R/ME/ZB-9	18+65	8m N of D/S Shoulder	916.6	15.2	24.5	9.3	11.7	-0.38	2026.0	12.1	97.9	100.0	97.0	93.7	92.0	87.1	81.1	74.9	70.4	66.9	64.6	55.9	48.8	9.6	2070	9.6		
19-Oct-96	R/ME/ZB-10	18+50	15N of D/S Shoulder	918.5	14.7	25.1	10.4	11.5	-0.31	2047.0	11.9	99.2	100.0	100.0	95.8	94.2	89.5	84.9	80.5	76.9	73.4	71.2	61.4	53.1	12.5	2063	10.4		6.2E--10
4-Feb-97	R/ME/ZB-11	16+60	5m N of D/S Shloulder	929.0				13.2	NP	2027.0	10.3	99.9	100.0	100.0	96.9	95.0	86.5	83.0	80.8	78.7	76.3	73.0	64.5	52.6	7.4	2030	10.0		4.3E-10
5-Feb-97	R/ME/ZB-12	18+00	4m N of L/D	922.0				11.1	NP	2028.0	9.5	98.4	100.0	97.7	94.9	91.2	86.2	79.8	73.7	70.1	66.6	64.3	54.6	45.5	4.8	2060	10.0		
6-Feb-97	R/ME/ZB-13	18+50	13m N of D/S Shoulde	921.0	16.2	27.0	10.8	13.1	-0.29	1945.0	12.0	101.6	100.0	100.0	98.7	97.5	93.9	91.2	88.4	85.9	84.1	82.9	78.1	72.8	13.0	1915	14.2		1.3E-09
9-Feb-97	R/ME/ZB-14	18+50	10m N of D/S Shoulde	924.0	13.2	21.5	8.3	9.8	-0.41	2110.0	9.9	101.4	100.0	100.0	99.2	95.7	87.7	81.2	76.3	72.4	68.5	65.8	55.3	47.4	10.7	2080	9.3		
8-Feb-97	R/ME/ZB-15	17+75	5m N of D/S Shoulder	927.0	18.0	26.7	8.7	9.8	-0.94	1957.0	9.6	98.6	100.0	100.0	99.1	98.0	94.8	90.3	86.3	81.9	76.8	73.2	58.2	45.1	2.4	1985	11.1		1.8E-09
9-Feb-97	R/ME/ZB-16	18+50	3m N of D/S Shoulder	924.5	14.0	22.0	8.0	9.7	-0.54	2170.0	9.3	100.7	100.0	96.1	93.7	90.5	82.6	76.5	72.1	68.1	64.2	61.5	51.2	43.0	9.0	2155	8.9		
13-Feb-97	R/ME/ZB-17	19+90	8m N of D/S Shoulder	923.0	14.8	22.0	7.2	11.2	-0.50	2126.0	10.4	100.5	100.0	100.0	97.9	95.5	89.4	81.6	75.8	71.7	67.6	64.8	53.5	43.3	9.0	2115	9.2		2.8E-10
13-Feb-97	R/ME/ZB-18	18+75	N of C/ D	926.0	16.9	19.4	2.5	10.2	-2.68	2180.0	8.6	101.2	100.0	97.9	86.1	83.7	78.5	73.2	69.0	65.2	61.4	58.7	48.7	41.1	7.0	2155	8.6		
13-Feb-97	R/ME/ZB-19	19+90	N of C/D	923.0	15.7	19.8	4.1	10.4	-1.29	2006.0	8.0	94.8	100.0	100.0	94.5	91.5	85.1	79.5	75.2	71.3	65.8	61.6	47.9	37.7	4.0	2115	8.9		
13-Feb-97	R/ME/ZB-20	19+25	S of C/D	925.4	15.8	19.2	3.4	9.3	-1.91	2050.0	9.2	98.1	100.0	98.7	95.8	92.8	86.6	81.2	75.8	71.4	67.2	64.5	54.5	46.9	5.0	2090	9.7		
13-Feb-97	R/ME/ZB/21	20+06	5m D/S of C/D	925.7	14.0	21.7	7.7	10.5	-0.45	2120.0	10.4	98.4	100.0	97.4	94.6	91.8	84.8	78.0	69.9	63.4	59.0	56.3	45.5	36.8	8.0	2155	8.4		1.1E-09
13-Feb-97	R/ME/ZB-22	20+20	4m D/S of C/D	927.5		17.7		10.1		2090.0	9.5	102.2	100.0	98.2	98.2	97.1	92.6	89.4	85.7	82.1	78.1	75.1	60.9	46.8	7.0	2045	9.0		
13-Feb-97	R/ME/ZB-23	22+20	6m D/S of C/D	921.5	14.2	22.2	8.0	10.6	-0.45	2120.0	9.8	99.3	100.0	96.1	94.5	91.9	85.1	79.3	74.5	69.5	64.9	61.8	50.9	42.9	9.0	2135	9.0		
13-Feb-97	R/ME/ZB-24	22+75	8m N of D/S Shoulder	924.0	14.9	21.2	6.3	9.5	-0.86	2120.0	8.5	99.1	100.0	95.2	94.2	91.4	86.6	80.5	74.7	69.6	64.7	61.3	49.3	39.7	7.0	2140	8.7		
13-Feb-97	R/ME/ZB-25	21+50	3m N of C/D	929.0		15.3		8.2		2060.0	11.1	95.2	100.0	95.6	91.1	88.3	80.2	74.1	69.8	65.5	61.1	58.2	46.6	36.8	2.0	2165	8.4		
13-Feb-97	R/ME/ZB-26	21+10	5m N of D/S Shoulder	931.0	14.9	20.8	5.9	10.2	-0.80	2090.0	9.4	97.7	100.0	95.2	94.1	91.8	87.0	81.5	77.2	73.2	68.9	65.6	51.4	42.9	7.0	2140	9.5		
13-Feb-97	R/ME/ZB-27	22+25	4m D/S of C/D	928.0	14.5	20.8	6.3	9.7	-0.76	2110.0	9.8	98.6	100.0	100.0	95.9	91.5	84.1	78.9	73.9	69.8	65.6	62.7	50.8	41.7	7.0	2140	9.7		
13-Feb-97	R/ME/ZB-28	23+00	5m N of C/D	927.5		18.8		9.5		2030.0	8.5	97.1	100.0	94.9	90.1	86.1	78.7	73.0	68.2	64.6	61.6	58.7	48.5	39.0	3.0	2090	9.8		
14-Mar-97	R/ME/ZB-29	23+25	4m S of C/D	929.2	14.7	21.5	6.8	10.0	-0.69	2110.0	10.0	99.1	100.0	93.5	89.6	86.4	80.5	76.1	71.7	68.1	64.1	61.5	50.6	41.1	9.0	2130	9.3		
13-Feb-97	R/ME/ZB-30	24+50	3m D/S of CL	930.0	15.0	21.0	6.0	11.1	-0.65	2120.0	9.8	101.0	100.0	96.3	95.3	91.5	86.6	82.7	77.5	74.0	70.3	67.7	56.9	46.9	8.0	2100	9.6		
MEAN					14.9	22.3	8.0	10.9	-0.63	2058	10.5	98.7	100.0	97.5	94.8	92.5	86.8	81.7	77.3	73.5	69.6	66.9	56.2	47.1	8.5	2085	9.8	2.74	1.3E-09
MEDIAN					14.7	22.0	8.0	10.7	-0.45	2049	10.2	98.5	100.0	97.7	94.6	92.3	86.8	81.4	76.0	72.6	68.7	65.7	55.6	46.9	8.5	2085	9.7	2.74	1.1E-09
MAXIMUM (*)					18.0	27.0	11.7	13.7	-0.12	2180	13.8	102.2	100.0	100.0	100.0	98.0	94.8	91.2	88.4	85.9	84.1	82.9	78.1	72.8	15.0	2165	14.2	2.74	3.1E-09
MINIMUM (*)					13.2	15.3	2.5	8.2	-2.68	1934	8.0	94.1	100.0	91.4	86.1	83.7	78.5	73.0	68.2	63.4	59.0	56.3	45.5	36.8	2.0	1915	8.4	2.74	2.8E-10

(*) Note: These are 100% limits.

R1 Atterberg Limits (ASTM D4318)
R2 Moisture Content (ASTM D2216)
R3 Particle Size Distribution (ASTM D422)
R4 Laboratory Compaction (ASTM D1557)
R6 Specific Gravity (ASTM D854)
R7a Field Density by Nuclear Methods (ASTM D2922)
R7b Moisture Content by Nuclear Methods (ASTM D3017)
R8a Lab Air Entry Permeameter (LAEP)
R8b Field Air Entry Permeameter (FAEP)

Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
STAGE Ia/Ib CONSTRUCTION

J:\JOB\DATA\10162-7\REPORTS\R-BLSUM.XLS 7-Jul-97

Knight Piésold Ltd.
CONSULTING ENGINEERS

RECORD TEST - SUMMARY SHEET
UPPER / LOWER BASIN LINERS AND LINERS IN ORIGINAL BORROW

SHEET : 1 of 1
PERIOD : 4-Jul-96 to 12-Feb-97
PROJECT NO. : 1627
AREA : Basin Liners

PROJECT : MOUNT POLLEY - TAILINGS STORAGE FACILITY - STAGE Ia/Ib CONSTRUCTION
MATERIAL : GLACIAL TILL

DATE SAMPLED	SAMPLE No.	Location	Depth (m)	R1 Atterberg Limits PL %	R1 LL %	R1 PI %	R2 Field m/c %	R1 LI %	R3 Percent Passing 76.2	38.1	25.4	19.05	9.525	4.750	2.380	1.191	0.594	0.419	0.150	0.074	0.002
									3	1.5	1	0.75	0.375	0.187	0.0937	0.0469	0.0234	0.0165	0.0059	0.0029	0.000079
									3	1 1/2	1	3/4	3/8	#4	#8	#16	#30	#40	#100	#200	Clay
1-Oct-96	R/UBL-1	Lower Section	750 mm	14.9	23.2	8.3	12.0	-0.35	100.0	100.0	96.0	93.0	88.2	83.3	80.2	76.8	73.1	70.6	60.3	51.1	12.5
2-Dec-96	R/UBL (FP)-1	Upper Section	-	-	-	-	11.4	-	100.0	100.0	100.0	97.2	93.1	88.0	83.6	79.2	74.6	71.2	55.6	44.1	9.9
3-Dec-96	R/UBL-2	Upper Section	-	14.9	23.8	8.9	12.1	-0.31	100.0	85.3	83.5	82.6	78.0	71.3	69.4	66.1	62.8	60.4	51.8	45.2	12.5
3-Dec-96	R/UBL-3	Upper Section	-	16.1	22.5	6.4	16.5	0.06	100.0	100.0	97.4	94.3	88.3	80.8	76.0	71.4	67.3	64.7	54.9	48.1	9.0
13-Feb-97	R/UBL-4	Upper Section	-	14.7	23.1	8.4	12.2	-0.30	100.0	100.0	98.8	94.7	89.9	83.6	78.3	73.8	69.8	67.2	56.2	46.5	13.0
4-Jul-96	R/LBL-1	Lower Basin Liner	-	-	-	-	-	-	100.0	78.0	75.5	75.0	72.6	68.4	64.6	61.0	57.5	55.5	47.6	41.1	5.0
28-Aug-96	R/LBL-2	Lower Basin Liner	+150 mm	14.5	27.4	12.9	12.0	-0.19	100.0	100.0	99.0	97.8	94.4	91.1	85.8	82.3	79.1	77.1	67.9	59.0	15.0
2-Oct-96	R/LBL-3	Lower Basin Liner	+900 mm	15.1	27.2	12.1	14.5	-0.05	100.0	95.7	93.6	92.3	88.8	82.5	77.3	73.6	70.4	68.3	59.7	52.1	14.5
2-Oct-96	R/LBL-4	Lower Basin Liner	+900 mm	14.5	25.1	10.6	11.9	-0.25	100.0	95.8	95.2	92.5	87.2	83.0	77.9	74.1	70.6	68.2	58.8	50.5	13.6
10-Feb-97	R/OB/BL-1	Original Borrow (5F-5I)	-	12.0	22.7	10.7	14.2	0.21	100.0	97.1	95.3	93.5	89.7	85.6	81.8	78.1	74.5	72.1	61.5	51.1	3.3
12-Feb-97	R/OB/BL-2	Original Borrow (5I)	-	13.9	22.5	8.6	11.6	-0.27	100.0	100.0	96.8	94.9	90.3	83.9	78.8	74.1	69.7	66.7	54.8	42.7	12.0
MEAN				14.5	24.2	9.7	12.8	-0.2	100.0	95.6	93.7	91.6	87.3	82.0	77.6	73.7	69.9	67.5	57.2	48.3	10.9
MEDIAN				14.7	23.2	8.9	12.1	-0.2	100.0	100.0	96.0	93.5	88.8	83.3	78.3	74.1	70.4	68.2	56.2	48.1	12.5
MAXIMUM (*)				16.1	27.4	12.9	16.5	0.2	100.0	100.0	100.0	97.8	94.4	91.1	85.8	82.3	79.1	77.1	67.9	59.0	15.0
MINIMUM (*)				12.0	22.5	6.4	11.4	-0.4	100.0	78.0	75.5	75.0	72.6	68.4	64.6	61.0	57.5	55.5	47.6	41.1	3.3

R4 Standard Proctor (1) Max Dry Density kg/m³	R4 Opt. m/c %	R6 S.G.	R8a LAEP cm/s
2070	9.6	2.73	6.5E-10
-	-	2.73	-
-	-	2.73	1.2E-09
-	-	2.73	
2080	9.8	-	1.5E-09
-	-	2.72	3.1E-09
1960	11.6	2.75	-
2065	9.9	2.75	7.3E-10
2045	10.7	2.75	6.7E-10
2068	11.6	-	4.2E-10
2090	10.0	-	4.7E-10
2054	10.5	2.74	1.1E-09
2068	10.0	2.73	7.0E-10
2090	11.6	2.75	3.1E-09
1960	9.6	2.72	4.2E-10

(*) Note: These are 100% limits.

R1 Atterberg Limits (ASTM D4318)
R2 Moisture Content (ASTM D2216)
R3 Particle Size Distribution (ASTM D422)
R4 Laboratory Compaction (ASTM D1557)
R6 Specific Gravity (ASTM D854)
R7a Field Density by Nuclear Methods (ASTM D2922)
R7b Moisture Content by Nuclear Methods (ASTM D3017)
R8a Lab Air Entry Permeameter (LAEP)
R8b Field Air Entry Permeameter (FAEP)

Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
STAGE Ia/Ib CONSTRUCTION

J:\JOB\DATA\10162-7\REPORTS\R-DG-FD.XLS

Knight Piésold Ltd. CONSULTING ENGINEERS	RECORD TEST - SUMMARY SHEET MAIN EMBANKMENT FOUNDATION DRAIN SYSTEM	SHEET : 1 of 1 PERIOD : 09-Aug-96 to 13-Mar-97
PROJECT :	MOUNT POLLEY - TAILINGS STORAGE FACILITY - STAGE Ia/Ib CONSTRUCTION	PROJECT NO. : 1627
MATERIAL :	DRAIN GRAVEL FOR FOUNDATION DRAIN SYSTEM	AREA : Main Embankment

DATE SAMPLED	SAMPLE No.	CHAINAGE (m)	Location	R3													
				76.2	50.8	38.1	25.4	19.05	9.525	4.750	2.380	1.191	0.594	0.419	0.150	0.074	0.002
				3	2	1.5	1	0.75	0.375	0.187	0.0937	0.0469	0.0234	0.0165	0.0059	0.0029	0.000079
				3	2	1 1/2	1	3/4	3/8	#4	#8	#16	#30	#40	#100	#200	Clay
				Percent Passing													
9-Aug-96	R/DG/1		Foundation Drain 1	100.0	*100.0*	92.6	54.6	19.6	3.0	2.2	2.0	1.9	1.8	1.7	1.3	0.9	
9-Aug-96	R/DG/2		Foundation Drain 1	100.0	*100.0*	83.8	54.0	21.8	2.2	1.6	1.5	1.5	1.4	1.4	1.1	0.8	
10-Aug-96	R/DG/3		Foundation Drain 1	100.0	*100.0*	78.5	50.3	19.4	2.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	
10-Aug-96	R/DG/4		Foundation Drain 1	100.0	*100.0*	95.5	73.8	37.5	6.5	3.2	0.0	0.0	0.0	0.0	0.0	0.0	
13-Aug-96	R/DG/5		Foundation Drain 3	100.0	*100.0*	89..1	63.1	33.7	6.4	3.7	0.0	0.0	0.0	0.0	0.0	0.0	
13-Aug-96	R/DG/6		Foundation Drain 3	100.0	*100.0*	87.8	53.1	21.4	1.3	0.8	0.0	0.0	0.0	0.0	0.0	0.0	
14-Aug-96	R/DG/7		Foundation Drain 4	100.0	*100.0*	87.3	53.7	20.1	1.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0	
14-Aug-96	R/DG/8		Foundation Drain 4	100.0	*100.0*	89.4	59.9	27.4	4.9	2.7	0.0	0.0	0.0	0.0	0.0	0.0	
MEAN				100.0	100.0	87.8	57.8	25.1	3.5	2.0	0.4	0.4	0.4	0.4	0.3	0.2	
MEDIAN				100.0	100.0	87.8	54.3	21.6	2.6	1.9	0.0	0.0	0.0	0.0	0.0	0.0	
MAXIMUM (*)				100.0	100.0	95.5	73.8	37.5	6.5	3.7	2.0	1.9	1.8	1.7	1.3	0.9	
MINIMUM (*)				100.0	100.0	78.5	50.3	19.4	1.3	0.8	0.0	0.0	0.0	0.0	0.0	0.0	

(*) Notes: These are 100% limits.

Material passing 2" sieved assumed to be 100%.

R3 Particle Size Distribution (ASTM D422)

Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
STAGE Ia/Ib CONSTRUCTION

J:\JOB\DATA\10162-7\REPORTS\R-DG-LOD.XLS

Knight Piésold Ltd. CONSULTING ENGINEERS	RECORD TEST - SUMMARY SHEET MAIN EMBANKMENT CHIMNEY DRAIN SYSTEM	SHEET : 1 of 1 PERIOD : 09-Aug-96 to 13-Mar-97
PROJECT :	MOUNT POLLEY - TAILINGS STORAGE FACILITY - STAGE Ia/Ib CONSTRUCTION	PROJECT NO. : 1627
MATERIAL :	DRAIN GRAVEL FOR CHIMNEY DRAIN SYSTEM	AREA : Main Embankment

DATE SAMPLED	SAMPLE No.	CHAINAGE (m)	Location	R3													
				76.2	50.8	38.1	25.4	19.05	9.525	4.750	2.380	1.191	0.594	0.419	0.150	0.074	0.002
				3	2	1.5	1	0.75	0.375	0.187	0.0937	0.0469	0.0234	0.0165	0.0059	0.0029	0.000079
				3	2	1 1/2	1	3/4	3/8	#4	#8	#16	#30	#40	#100	#200	Clay
				Percent Passing													
30-Sep-96	R/DG/9	20+50	Longitudinal Drain Outlet	100.0	***100.0***	83.3	42.5	15.8	1.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	
4-Feb-97	R/DG/10	17+90	Longitudinal Drain	100.0	***100.0***	82.1	46.5	21.9	4.9	3.7	0.0	0.0	0.0	0.0	0.0	0.0	
4-Feb-97	R/DG/11	16+50	Longitudinal Drain	100.0	***100.0***	99.0	87.5	66.2	22.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	
10-Mar-97	R/DG/12	23+00	Longitudinal Drain	100.0	***100.0***	85.4	53.1	19.7	1.1	0.6	0.4	0.2	0.0	0.0	0.0	0.0	
12-Mar-97	R/DG/13	24+00	Longitudinal Drain	100.0	***100.0***	100.0	76.0	51.7	4.2	1.9	1.2	1.0	0.8	0.7	0.2	0.1	
13-Mar-97	R/DG/14	24+60	Longitudinal Drain	100.0	***100.0***	96.3	56.6	23.8	5.0	3.3	2.3	1.7	1.2	1.0	0.4	0.1	
13-Mar-97	R/DG/15	25+25	Longitudinal Drain	100.0	***100.0***	88.0	58.5	19.5	3.5	1.9	1.4	1.1	0.8	0.7	0.3	0.1	
MEAN				100.0	100.0	90.6	60.1	31.2	6.1	2.1	0.8	0.6	0.4	0.3	0.1	0.0	
MEDIAN				100.0	100.0	88.0	56.6	21.9	4.2	1.9	0.4	0.2	0.0	0.0	0.0	0.0	
MAXIMUM (*)				100.0	100.0	100.0	87.5	66.2	22.0	3.7	2.3	1.7	1.2	1.0	0.4	0.1	
MINIMUM (*)				100.0	100.0	82.1	42.5	15.8	1.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0	

(*) Notes: These are 100% limits.

Material passing 2" sieved assumed to be 100%.

R3 Particle Size Distribution (ASTM D422)

Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
STAGE Ia/Ib CONSTRUCTION

J:\JOB\DATA\10162-7\REPORTS\R-ME-FS.XLS 7-Jul-97

Knight Piésold Ltd. CONSULTING ENGINEERS	RECORD TEST SUMMARY SHEET MAIN EMBANKMENT CHIMNEY / LONGITUDINAL DRAIN	SHEET : PERIOD : 29-Sep-96 to 14-Mar-97
PROJECT : MOUNT POLLEY - TAILINGS STORAGE FACILITY - STAGE Ia/Ib CONSTRUCTION		PROJECT NO. : 1627
MATERIAL : FILTER SAND TYPE B		AREA Chimney Drain / Longitudinal Drain

DATE OF SAMPLE	SAMPLE No.	CHAINAGE (m)	LOCATION	R3												
				76.2	38.1	25.4	19.05	9.525	4.750	2.380	1.191	0.594	0.419	0.150	0.074	0.002
				3	1.5	1	0.75	0.375	0.187	0.0937	0.0469	0.0234	0.0165	0.0059	0.0029	0.000079
				3	1 1/2	1	3/4	3/8	#4	#8	#16	#30	#40	#100	#200	Clay
				Percent Passing												
29-Sep-96	R-ME-FS-1	21+50	Outlet Drain, bottom lift; 13 m from d/s edge	100.0	100.0	100.0	100.0	90.6	60.9	45.1	32.8	23.9	20.0	12.9	9.8	-
29-Sep-96	R-ME-FS-2	21+50	Outlet Drain, top lift; 17 m from d/s edge	100.0	100.0	100.0	100.0	89.6	58.3	43.1	31.1	22.9	19.5	12.7	9.9	-
29-Sep-96	R-ME-FS-3	20+50	Outlet Drain, bottom of trench; 17 m from d/s edge	100.0	100.0	100.0	100.0	88.5	58.8	39.3	25.8	18.5	15.7	10.5	8.1	-
30-Sep-96	R-ME-FS-4	20+50	Outlet Drain, top backfill; 5 m d/s from cL. of Long. Drain	100.0	100.0	100.0	100.0	88.7	56.0	39.2	27.7	19.9	16.6	10.5	8.0	-
30-Sep-96	R-ME-FS-5	19+50	Outlet Drain, bottom of trench; 8 m d/s from cL. of Long. Drain	100.0	100.0	100.0	100.0	86.1	54.1	30.2	20.1	14.1	11.9	8.4	6.8	-
30-Sep-96	R-ME-FS-6	19+50	Outlet Drain, top of drain; 14 m from d/s edge	100.0	100.0	100.0	100.0	86.7	54.6	34.9	22.2	15.2	12.6	8.4	6.5	-
7-Oct-96	R-ME-FS-7	19+89	Long Drain, bottom lift	100.0	100.0	100.0	100.0	89.1	57.8	46.1	33.7	24.5	20.5	12.5	9.4	-
8-Oct-96	R-ME-FS-8	19+58	Long. Drain, top lift	100.0	100.0	100.0	100.0	86.0	52.9	40.6	30.1	22.7	19.3	12.2	9.0	-
8-Oct-96	R-ME-FS-9	20+25	Long. Drain, bottom lift	100.0	100.0	100.0	100.0	86.5	51.7	36.0	25.9	19.2	16.1	10.1	7.4	-
8-Oct-96	R-ME-FS-10	20+00	Long. Drain, top lift	100.0	100.0	100.0	100.0	83.1	42.3	27.6	18.8	14.0	12.0	7.7	5.6	-
8-Oct-96	R-ME-FS-11	20+40	Long. Drain, top lift	100.0	100.0	100.0	100.0	86.7	49.7	34.2	23.6	16.8	13.9	8.3	6.0	-
8-Oct-96	R-ME-FS-12	21+22	Long. Drain, bottom lift	100.0	100.0	100.0	100.0	89.7	57.5	43.9	32.9	25.2	21.5	12.7	8.7	-
6-Oct-96	R-ME-FS-13	21+90	Long. Drain, top lift	100.0	100.0	100.0	100.0	90.9	60.2	44.3	30.5	21.1	17.3	10.5	7.9	-
?-Oct-96	R-ME-FS-14	21+25	Long. Drain, top lift	100.0	100.0	100.0	100.0	89.2	56.7	44.8	32.9	24.1	20.0	11.4	8.0	-
8-Oct-96	R-ME-FS-15	22+50	Long. Drain, bottom lift	100.0	100.0	100.0	100.0	91.0	58.8	42.9	31.0	22.5	18.9	11.5	8.3	-
?-Oct-96	R-ME-FS-16	21+90	Long. Drain, top lift	100.0	100.0	100.0	100.0	90.5	58.2	45.7	33.0	23.9	19.7	11.5	8.3	-
9-Oct-96	R-ME-FS-17	22+80	Long. Drain, bottom lift	100.0	100.0	100.0	100.0	86.4	52.4	35.9	24.9	17.9	14.9	9.2	6.8	-
9-Oct-96	R-ME-FS-18	22+80	Long. Drain, top lift	100.0	100.0	100.0	100.0	88.9	54.5	36.5	26.0	19.3	16.3	10.5	7.8	-
10-Oct-96	R-ME-FS-19	22+00	Chimney Drain, el. 917.8	100.0	100.0	100.0	100.0	86.2	49.7	32.4	20.7	14.6	12.2	7.9	5.9	-
10-Oct-96	R-ME-FS-20	20+00	Chimney Drain, el. 918.0	100.0	100.0	100.0	100.0	87.2	52.1	36.6	23.2	15.8	12.9	8.1	6.1	-
19-Oct-96	R-ME-FS-21	19+50	Chimney Drain, el. 918.0	100.0	100.0	100.0	100.0	89.3	55.5	33.7	19.8	13.2	11.1	7.7	5.8	-
19-Oct-96	R-ME-FS-22	20+00	Chimney Drain, el. 918.0	100.0	100.0	100.0	100.0	87.2	50.3	36.2	25.2	17.7	14.5	8.7	6.4	-
19-Oct-96	R-ME-FS-23	20+50	Chimney Drain, el. 918.0	100.0	100.0	100.0	100.0	88.9	57.0	41.3	27.6	18.8	15.4	9.4	7.0	-

J:\JOB\DATA\10162-7\REPORTS\R-ME-FS.XLS

7-Jul-97

Knight Piésold Ltd. CONSULTING ENGINEERS	RECORD TEST SUMMARY SHEET MAIN EMBANKMENT CHIMNEY / LONGITUDINAL DRAIN	SHEET : PERIOD : 29-Sep-96 to 14-Mar-97
PROJECT : MOUNT POLLEY - TAILINGS STORAGE FACILITY - STAGE Ia/Ib CONSTRUCTION		PROJECT NO. : 1627
MATERIAL : FILTER SAND TYPE B		AREA Chimney Drain / Longitudinal Drain

DATE OF SAMPLE	SAMPLE No.	CHAINAGE (m)	LOCATION	R3												
				76.2	38.1	25.4	19.05	9.525	4.750	2.380	1.191	0.594	0.419	0.150	0.074	0.002
				3	1.5	1	0.75	0.375	0.187	0.0937	0.0469	0.0234	0.0165	0.0059	0.0029	0.000079
				3	1 1/2	1	3/4	3/8	#4	#8	#16	#30	#40	#100	#200	Clay
				Percent Passing												
19-Oct-96	R-ME-FS-24	21+06	Chimney Drain, el. 918.0	100.0	100.0	100.0	100.0	88.7	52.0	38.9	26.7	18.7	15.3	9.3	6.9	-
19-Oct-96	R-ME-FS-25	21+50	Chimney Drain, el. 918.0	100.0	100.0	100.0	100.0	88.3	53.2	40.3	27.3	18.6	15.0	9.3	7.1	-
19-Oct-96	R-ME-FS-26	22+00	Chimney Drain, el. 918.0	100.0	100.0	100.0	100.0	87.9	52.6	36.0	23.0	15.9	13.2	8.7	6.6	-
19-Oct-96	R-ME-FS-27	22+50	Chimney Drain, el. 918.0	100.0	100.0	100.0	100.0	85.7	49.0	37.7	27.9	20.0	16.4	9.5	6.8	-
19-Oct-96	R-ME-FS-28	18+80	Chimney Drain, el. 918.0	100.0	100.0	100.0	100.0	86.5	51.7	35.2	24.4	17.2	14.1	8.2	5.7	-
19-Oct-96	R-ME-FS-29a	23+00	Chimney Drain, el. 918.0	100.0	100.0	100.0	100.0	86.8	52.7	34.7	23.2	16.7	14.1	9.0	6.3	-
3-Feb-97	R-ME-FS-29b	17+25	Long. Drain, bottom	100.0	100.0	100.0	95.6	68.2	43.6	29.5	21.0	15.5		8.1	5.8	
4-Feb-97	R-ME-FS-30	18+00	Long. Drain, top	100.0	100.0	100.0	100.0	78.0	53.1	35.7	24.3	17.3		8.6	6.0	
3-Feb-97	R-ME-FS-31	17+50	Long. Drain, top	100.0	100.0	100.0	96.3	67.1	40.8	25.8	17.5	12.8		6.9	5.0	
4-Feb-97	R-ME-FS-32	16+60	Long. Drain, top	100.0	100.0	100.0	100.0	73.7	43.7	28.2	19.8	14.8		8.1	6.0	
4-Feb-97	R-ME-FS-33	16+95	Long. Drain, top	100.0	100.0	100.0	93.6	56.4	29.4	18.0	12.6	9.6		5.7	4.3	
5-Feb-97	R-ME-FS-34	16+80	Long. Drain, bottom	100.0	100.0	100.0	98.2	74.4	47.4	30.0	18.6	12.7	10.6	6.8	5.2	
5-Feb-97	R-ME-FS-35	18+25	Long. Drain 0.75 m above top	100.0	100.0	100.0	99.5	69.1	41.0	26.5	17.5	12.6	10.6	6.7	5.1	
5-Feb-97	R-ME-FS-35b	18+25	Long. Drain 0.75 m above top	100.0	100.0	99.4	98.3	75.0	48.0	27.8	16.8	11.7	9.9	6.3	4.8	
5-Feb-97	R-ME-FS-36	18+10	Log. Drain 1.25 m above top	100.0	100.0	100.0	99.5	69.1	41.0	26.5	17.5	12.6	10.6	6.7	5.1	
6-Feb-97	R-ME-FS-37	17+30	Chimney Drain, El. 934	100.0	100.0	100.0	99.5	83.0	57.8	36.0	21.7	14.6	12.2	7.9	6.3	
7-Feb-97	R-ME-FS-38	18+75	Chimney Drain, El 921 m	100.0	100.0	100.0	100.0	80.4	51.7	35.6	25.2	18.6	15.8	9.8	7.2	
7-Feb-97	R-ME-FS-39	19+00	Chimney Drain, El 921	100.0	100.0	100.0	100.0	82.9	57.7	42.0	29.9	21.9	18.4	7.7	4.5	
7-Feb-97	R-ME-FS-40	19+00	Chimney Drain, El 922.1	100.0	100.0	100.0	99.7	80.8	51.4	28.4	15.8	10.5	8.7	5.6	4.3	
7-Feb-97	R-ME-FS-40b	19+00	Chimney Drain, El 922.1	100.0	100.0	100.0	100.0	84.0	55.6	38.6	27.0	19.7	16.4	9.7	6.9	
9-Feb-97	R-ME-FS-41	18+10	Chimney Drain, El 925	100.0	100.0	100.0	100.0	77.0	50.9	33.6	22.0	12.7	8.9			
10-Feb-97	R-ME-FS-42	20+55	Chimney Drain, 300 mm depth	100.0	100.0	100.0	100.0	91.1	61.0	40.3	28.1	20.6	17.4	11.3	8.2	
10-Feb-97	R-ME-FS-43	20+55	Chimney Drain, 900 mm depth	100.0	100.0	100.0	100.0	84.7	50.5	33.1	23.5	17.6	15.0	9.9	7.4	

J:\JOB\DATA\10162-7\REPORTS\R-ME-FS.XLS

7-Jul-97

Knight Piésold Ltd.
CONSULTING ENGINEERS

RECORD TEST SUMMARY SHEET
MAIN EMBANKMENT CHIMNEY / LONGITUDINAL DRAIN

SHEET :

PERIOD : 29-Sep-96 to 14-Mar-97

PROJECT NO. : 1627

AREA Chimney Drain / Longitudinal Drain

PROJECT : MOUNT POLLEY - TAILINGS STORAGE FACILITY - STAGE Ia/Ib CONSTRUCTION

MATERIAL : FILTER SAND TYPE B

DATE OF SAMPLE	SAMPLE No.	CHAINAGE (m)	LOCATION	R3												
				76.2	38.1	25.4	19.05	9.525	4.750	2.380	1.191	0.594	0.419	0.150	0.074	0.002
				3	1.5	1	0.75	0.375	0.187	0.0937	0.0469	0.0234	0.0165	0.0059	0.0029	0.000079
				3	1 1/2	1	3/4	3/8	#4	#8	#16	#30	#40	#100	#200	Clay
				Percent Passing												
12-Feb-97	R-ME-FS-44	19+50	Chimney Drain, El 922	100.0	100.0	100.0	100.0	80.8	52.6	36.5	25.3	18.3	15.4	9.2	6.7	
21-Feb-97	R-ME-FS-45	18+50	Chimney Drain, El 925.8	100.0	100.0	100.0	100.0	79.6	50.5	29.5	17.6	11.8	9.9	6.6	5.0	
23-Feb-97	R-ME-FS-46	20+50	Chimney Drain	100.0	100.0	100.0	98.6	79.4	52.1	37.7	26.6	19.3	16.2	9.7	7.1	
25-Feb-97	R-ME-FS-47	20+35	Chimney Drain, El 926	100.0	100.0	100.0	100.0	82.5	55.8	37.6	26.7	19.6	16.5	10.2	7.6	
26-Feb-97	R-ME-FS-48	20+20	Chimney Drain, El 928	100.0	100.0	100.0	100.0	81.1	53.7	35.9	25.3	18.9	16.0	9.8	7.0	
6-Mar-97	R-ME-FS-49	21+00	Chimney Drain, El 926.8	100.0	100.0	100.0	100.0	81.9	50.1	40.0	28.2	19.9	16.5	10.0	7.7	
8-Mar-97	R-ME-FS-50	21+00	Chimney Drain, El 928.5	100.0	100.0	100.0	99.9	81.8	52.6	35.0	24.4	17.6	14.6	8.8	6.0	
11-Mar-97	R-ME-FS-51	23+75	Long. Drain, el. 922	100.0	100.0	100.0	100.0	87.4	53.0	40.7	28.2	19.0	15.2	9.0	7.0	
11-Mar-97	R/ME/FS-52	22+55	Chimney Drain, el. 928.2	100.0	100.0	100.0	100.0	80.6	51.2	34.1	23.4	16.9	14.3	8.7	6.3	
12-Mar-97	R/ME-FS-53	24+25	Long. Drain, el. 924.5	100.0	100.0	100.0	100.0	70.5	38.1	23.0	15.6	11.7	10.2	6.6	4.8	
13-Mar-97	R/ME-FS-54	24+40	Long. Drain, el. 924.75	100.0	100.0	100.0	99.7	83.7	54.1	36.5	24.4	17.1	14.2	8.9	6.8	
14-Mar-97	R/ME/FS-55	23+60	Long. Drain, el. 928	100.0	100.0	100.0	99.8	85.6	56.6	45.0	32.4	23.4	19.3	11.5	8.7	
14-Mar-97	R/ME/FS-56	23+75	Chimney Drain, el. 929	100.0	100.0	100.0	100.0	77.7	48.8	34.6	23.4	16.6	13.8	8.2	6.1	
MEAN				100.0	100.0	100.0	99.6	83.0	51.9	35.8	24.6	17.6	15.0	9.1	6.8	
MEDIAN				100.0	100.0	100.0	100.0	85.7	52.6	36.0	24.9	17.7	15.1	9.0	6.8	
MAXIMUM (*)				100.0	100.0	100.0	100.0	91.1	61.0	46.1	33.7	25.2	21.5	12.9	9.9	
MINIMUM (*)				100.0	100.0	99.4	93.6	56.4	29.4	18.0	12.6	9.6	8.7	5.6	4.3	

(*) Note: These are 100% limits.

R3 Particle Size Distribution (ASTM D422)

APPENDIX B

CONSTRUCTION QUALITY ASSURANCE CONTROL TEST SUMMARY SHEETS AND GRADATION PLOTS

J:\JOB\DATA\10162-7\REPORTS\C-ME-OB.XLS

7/7/97

Knight Piésold Ltd.
CONSULTING ENGINEERS

CONTROL TEST - SUMMARY SHEET
ORIGINAL BORROW AREA

SHEET : 1 of 2
PERIOD : 23-Jun-96 to 5-Oct-96
PROJECT NO. : 1627
AREA : Original Borrow Area

PROJECT : MOUNT POLLEY - TAILINGS STORAGE FACILITY - STAGE Ib CONSTRUCTION
MATERIAL : GLACIAL TILL - FROM ORIGINAL BORROW AREA (OB)

DATE SAMPLED	SAMPLE No.	Location	Depth (m)	C1 Atterberg Limits PL %	LL %	PI %	C2 Field m/c %	LI %	C3 76.2 3	38.1 1.5	25.4 1	19.05 0.75	9.525 0.375	4.7498 0.187	2.37998 0.0937	1.19126 0.0469	0.59436 0.0234	0.4191 0.0165	0.14986 0.0059	0.07366 0.0029	0.002 ***** Clay	C4 Modified Proctor Max Dry Density kg/m³	Opt. m/c %	Standard Proctor[1] Max Dry Density kg/m³	Opt. m/c %	C6 S.G.	C8 LAEP cm/s
									3	1 1/2	1	3/4	3/8	#4	#8	#16	#30	#40	#100	#200								
23-Jun-96	C/ME/ZS-1	OB : Test Pit	-	14.4	28.3	13.9	16.6	0.16	100.0	100.0	100.0	100.0	97.9	94.4	91.4	87.7	69.0	54.4	28.3	13.8	3.7	2035.0	11.8	-	-	-	3.9E-09
23-Jun-96	C/ME/ZS-2	OB : Test Pit	-	16.4	23.0	6.6	15.6	-0.12	100.0	100.0	100.0	98.8	95.7	91.0	88.4	85.3	82.0	79.6	68.7	58.9	9.0	-	-	-	-	2.75	6.7E-09
23-Jun-96	C/ME/ZS-3	OB : Test Pit	-	16.7	22.9	6.2	13.9	-0.45	-	-	-	-	-	-	-	-	-	-	-	-	-	2183.0	7.8	-	-	-	-
23-Jun-96	C/ME/ZS-4	OB : Test Pit	-	16.5	23.6	7.1	13.1	-0.48	100.0	100.0	100.0	100.0	93.9	89.3	86.3	82.7	78.4	75.5	62.4	51.7	8.0	2207.0	7.5	-	-	2.73	-
23-Jun-96	C/ME/ZS-5	OB : Test Pit	-	18.2	21.6	3.4	16.4	-0.53	100.0	100.0	98.1	95.3	91.7	88.0	84.9	82.0	78.4	75.9	65.5	56.5	15.0	-	-	-	-	2.74	1.5E-09
23-Jun-96	C/ME/ZS-6	OB : Test Pit	-	17.5	15.4	-2.1	14.9	1.24	100.0	100.0	100.0	98.9	94.5	91.0	86.7	84.0	81.3	79.5	69.7	59.8	6.0	-	-	-	-	2.75	-
23-Jun-96	C/ME/ZS-7	OB : Test Pit	-	16.9	30.1	13.2	17.8	0.07	100.0	100.0	100.0	100.0	97.8	94.1	90.4	87.0	83.6	81.4	71.4	62.2	17.0	2085.0	9.5	-	-	I/P	2.5E-09
17-Jul-96	C/ME/ZS-8	OB : Test Pit	-	17.1	28.0	10.9	17.6	0.05	100.0	100.0	98.1	96.9	91.9	88.6	85.7	81.8	76.7	73.4	61.9	53.1	13.0	2050.0	9.8	1920.0	13.9	2.74	5.0E-10
17-Jul-96	C/ME/ZS-9	OB : Test Pit	-	16.6	25.7	9.1	19.4	0.31	100.0	100.0	98.0	96.7	93.8	90.6	85.0	81.1	77.1	74.3	63.6	55.2	12.0	2040.0	10.3	1935.0	13.1	2.72	5.7E-10
17-Jul-96	C/ME/ZS-10	OB : Test Pit	-	15.8	26.4	10.6	17.0	0.11	100.0	100.0	96.9	95.6	92.5	89.6	87.8	85.0	81.2	78.3	66.2	57.1	17.0	2045.0	10.5	1940.0	13.4	2.72	1.8E-09
2-Aug-96	C/ME/ZS-11	OB : Test Pit	-	15.8	26.4	10.6	15.7	-0.01	100.0	100.0	100.0	98.8	97.6	94.8	92.8	88.9	83.6	80.3	68.3	58.1	10.0	2040.0	10.2	-	-	2.70	1.6E-09
9-Aug-96	C/ME/ZS-12	OB : Test Pit	-	-	-	-	18.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9-Aug-96	C/ME/ZS-13	OB : Test Pit	-	-	-	-	13.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9-Aug-96	C/ME/ZS-14	OB : Test Pit	-	17.5	29.4	11.9	15.8	-0.14	100.0	100.0	98.6	97.4	95.8	92.7	89.6	86.9	83.6	81.4	72.2	64.2	18.0	2050.0	9.9	-	-	2.72	-
9-Aug-96	C/ME/ZS-15	OB : Test Pit	-	17.8	27.3	9.5	19.4	0.17	100.0	100.0	100.0	98.6	97.6	95.6	93.3	90.7	88.0	86.0	77.2	69.2	18.0	2065.0	9.5	-	-	2.73	-
9-Aug-96	C/ME/ZS-16	OB : Test Pit	-	-	-	-	12.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9-Aug-96	C/ME/ZS-17	OB : Test Pit	-	-	-	-	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Aug-96	C/ME/ZS-18	OB : Test Pit	-	17.1	18.5	1.4	13.2	-2.79	100.0	97.6	96.1	94.0	89.7	85.2	79.9	75.5	71.2	68.7	58.6	50.3	7.0	2110.0	8.9	-	-	2.71	4.1E-09
12-Aug-96	C/ME/ZS-19	OB : Test Pit	-	14.4	29.2	14.8	14.0	-0.03	100.0	100.0	98.9	91.7	88.5	86.3	83.1	80.1	77.1	75.1	66.1	58.2	13.0	2140.0	9.5	1980.0	12.5	2.73	1.4E-08
10-Aug-96	C/ME/ZS-20	OB : ET-96/08/10-1	-	-	-	-	14.0	-	100.0	100.0	100.0	97.9	94.8	91.8	88.7	85.7	82.8	80.8	71.6	63.2	15.0	-	-	-	-	-	-
10-Aug-96	C/ME/ZS-21	OB : ET-96/08/10-2		-	-	-	13.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Aug-96	C/ME/ZS-22A	OB : ET-96/08/15-1	0.5-1.5	-	-	-	13.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-22B	"	2.5-3.0	-	-	-	16.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-23A	OB : ET-96/08/15-2	0.5-1.5	14.9	28.1	13.2	13.6	-0.10	100.0	100.0	100.0	97.8	93.3	88.6	84.7	81.5	78.6	76.7	67.4	59.5	15.0	-	-	1990.0	12.3	2.75	-
"	C/ME/ZS-23B	"	2.5-3.5	-	-	-	12.9	-	100.0	100.0	100.0	95.6	91.6	87.2	84.3	81.5	78.1	75.5	63.2	53.7	-	-	-	-	-	-	-
"	C/ME/ZS-24	OB : ET-96/08/15-4	0.5-1.5	-	-	-	13.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-25	OB : ET-96/08/15-5	4.0-6.0	-	-	-	10.8	-	100.0	100.0	98.5	87.8	86.0	82.4	89.1	54.6	77.9	73.2	59.7	53.5	-	-	-	-	-	-	-
"	C/ME/ZS-26B	"	5.7-7.3	-	-	-	6.1	-	100.0	97.4	88.8	84.0	73.1	66.1	60.2	55.7	51.2	47.9	36.7	28.3	-	-	-	-	-	-	-
"	C/ME/ZS-27A	OB : ET-96/08/15-8	0.5-2.0	-	-	-	11.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-27B	"	2.0-3.0	np	-	-	12.1	-	100.0	100.0	97.5	94.8	92.9	90.2	87.8	83.8	78.3	74.8	62.1	52.4	3.0	-	-	2000.0	11.2	2.73	-
"	C/ME/ZS-27C	"	3.0-4.0	-	-	-	8.7	-	100.0	100.0	100.0	97.1	92.7	88.0	82.8	75.9	67.2	61.7	47.5	39.3	-	-	-	-	-	-	-
"	C/ME/ZS-27D	"	4.0-6.0	-	-	-	8.5	-	100.0	100.0	97.9	96.1	91.0	86.1	79.5	71.2	62.6	58.2	46.0	38.6	-	-	-	-	-	-	-
"	C/ME/ZS-27E	"	6.0-7.0	-	-	-	10.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-28A	OB : ET-96/08/15-9	1.0-3.0	17.0	24.4	7.4	11.8	-0.70	100.0	100.0	98.9	97.6	94.8	90.9	87.0	83.6	80.6	78.5	68.6	51.5	12.0	-	-	2030.0	11.0	2.70	-
"	C/ME/ZS-28B	"	3.0-5.0				9.7	-	100.0	100.0	100.0	97.0	93.3	89.4	85.4	81.8	78.1	75.3	63.7	55.2	8.0	-	-	-	-	-	-
"	C/ME/ZS-29	OB : ET-96/08/15-10	0.5-1.2	-	-	-	14.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-30A	OB : ET-96/08/15-11	1.0-3.0	16.2	22.2	6.0	10.2	-1.00	100.0	97.5	96.3	93.4	87.9	82.7	78.6	70.4	65.9	62.7	49.6	40.0	8.0	-	-	2090.0	9.5	2.73	-
"	C/ME/ZS-30B	"	4.0-6.0	-	-	-	10.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-31A	OB : ET-96/08/15-12	0.5-2.0	13.6	20.1	6.5	12.7	-0.14	100.0	100.0	99.1	97.5	95.4	91.6	86.4	81.1	74.6	69.6	51.5	40.6	8.0	-	-	2015.0	11.0	2.75	-
"	C/ME/ZS-31B	"	4.0-6.0	-	-	-	10.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16-Aug-96	C/ME/ZS-32A	OB : ET-96/08/16-1	0.1-0.6	-	-	-	14.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-32B	"	1.5-2.5	13.3	24.4	11.1	13.1	-0.02	100.0	100.0	100.0	100.0	91.4	86.9	81.8	77.6	73.6	71.0	60.9	52.9	11.0	-	-	2005.0	10.9	2.71	-
"	C/ME/ZS-32C	"	4.0-5.8	-	-	-	9.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-33A	OB : ET-96/08/16-2	0.6-1.5	-	-	-	14.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-33B	"	1.5-2.0	-	-	-	9.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-33D	"	4.5-6.0	-	-	-	13.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Sep-96	C/ME/ZS-34A	ET96/09/23-1	(0-0.25)	-	-	-	12.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-34B	"	(0.25-0.55)	-	-	-	15.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-34C	"	(0.55-2.0)	-	-	-	10.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-34E	"	(4.8-5.1)	-	-	-	12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-34F	"	(5.5-5.7)	-	-	-	13.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-35A	ET96/09/23-2	(0-0.6)	-	-	-	11.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
STAGE Ia/Ib CONSTRUCTION

J:\JOB\DATA\10162-7\REPORTS\C-ME-OB.XLS

7/7/97

Knight Piésold Ltd. CONSULTING ENGINEERS

CONTROL TEST - SUMMARY SHEET

ORIGINAL BORROW AREA

SHEET : 1 of 2

PERIOD : 23-Jun-96 to 5-Oct-96

PROJECT : MOUNT POLLEY - TAILINGS STORAGE FACILITY - STAGE Ib CONSTRUCTION

PROJECT NO. : 1627

MATERIAL : GLACIAL TILL - FROM ORIGINAL BORROW AREA (OB)

AREA : Original Borrow Area

DATE SAMPLED	SAMPLE No.	Location	Depth (m)	C1 Atterberg Limits PL %	LL %	PI %	C2 Field m/c %	LI %	C3 76.2 3 3	38.1 1.5 1 1/2	25.4 1 1	19.05 0.75 3/4	9.525 0.375 3/8	4.7498 0.187 #4	2.37998 0.0937 #8	1.19126 0.0469 #16	0.59436 0.0234 #30	0.4191 0.0165 #40	0.14986 0.0059 #100	0.07366 0.0029 #200	0.002 microns Clay	C4 Modified Proctor Max Dry Density kg/m³	Opt. m/c %	Standard Proctor (1) Max Dry Density kg/m³	Opt. m/c %	C6 S.G.	C8 LAEP cm/s
"	C/ME/ZS-35B	"	(0.6-2.0)	-	-	-	9.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-35C	"	(3.0)	-	-	-	8.6		100.0	93.3	92.3	91.3	85.9	79.8	74.7	70.7	67.0	64.4	54.8	46.4	7.5	46.4	7.5			2.72	
"	C/ME/ZS-35D	"	(4.5)	-	-	-	10.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24-Sep-96	C/ME/ZS-36A	ET96/09/24-1	(0-0.25)	-	-	-	10.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-36B	"	(0.25-0.6)	-	-	-	14.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-36C	"	(0.6-2.0)	-	-	-	10.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-36D	"	(3.1)	-	-	-	13.0		100.0	100.0	95.6	90.3	92.0	76.0	71.1	67.6	64.6	62.6	54.0	46.5	9.0	46.5	9.0			2.75	
"	C/ME/ZS-36E	"	(4.5)	-	-	-	10.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-36F	"	(6.0)	-	-	-	10.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-36G	"	(6.3)	-	-	-	9.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-37A	ET96/09/24-2	(0-0.4)	-	-	-	12.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-37B	"	(0.4-1.0)	-	-	-	11.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-37C	"	(1.0-2.5)	-	-	-	11.7		100.0	95.4	93.9	91.8	84.7	78.4	73.9	69.6	65.7	63.0	52.4	43.7	11.0	43.7	11.0			2.72	
"	C/ME/ZS-38A	ET96/09/24-3	(0.3-1.1)	-	-	-	14.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-38B	"	(1.1-2.0)	-	-	-	10.2		100.0	97.6	94.4	91.1	85.2	78.5	72.0	67.6	63.6	61.0	50.8	40.0	7.0	40.0	7.0	-	-	2.75	-
"	C/ME/ZS-38C	"	(3.7)	-	-	-	8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-38D	"	(5.0-5.8)	-	-	-	11.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-38E	"	(6.5)	-	-	-	10.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-39A	ET96/09/24-4	(0.2.5-1.1)	-	-	-	12.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-39B	"	(1.1-2.5)	-	-	-	10.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-40A	ET96/09/24-5	(0..5-1.2)	-	-	-	13.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-40B	"	(1.2-2.5)	-	-	-	10.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-41A	ET96/09/24-6	(0-0.6)	-	-	-	12.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-41B	"	(0.6-2.0)	-	-	-	11.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-41C	"	(2.5)	-	-	-	9.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-42A	ET96/09/24-7	(0.5-1.2)	-	-	-	12.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-42B	"	(1.2-2.5)	-	-	-	11.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"	C/ME/ZS-42C	"	(2.5)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-Oct-96	C/ME/ZS-43	OB		13.9	22.5	8.6	14.4	0.06	100.0	98.4	95.2	92.6	88.1	83.6	80.8	77.6	73.6	70.8	58.8	48.5	8.1	-	-	2062.0	10.7	-	
5-Oct-96	C/ME/ZS-44	OB		13.9	20.2	6.3	12.4	-0.24	100.0	97.0	94.0	91.6	86.7	81.4	77.9	73.5	69.2	66.4	55.1	42.7	5.9	-	-	2095.0	9.7	-	1.0E-09
15-Aug-96	*C/ME/ZS-26A*	*OB ; ET-96/08/15-7*	*2.0-3.5*	-	-	-	*15.5*	-	*100.0*	*100.0*	*100.0*	*98.8*	*97.3*	*96.2*	*94.9*	*93.7*	*92.4*	*91.3*	*85.7*	*81.0*	-	-	-	-	-	-	-	-
16-Aug-96	*C/ME/ZS-33C*	"	*3.4-4.5*	-	-	-	*14.5*	-	*100.0*	*100.0*	*100.0*	*100.0*	*98.1*	*97.5*	*96.7*	*95.5*	*93.7*	*92.3*	*87.6*	*83.4*	*13.0*	-	-	-	-	-	-	-
MEAN							12.7	-0.2	100.0	99.2	97.8	95.4	91.5	87.0	83.4	78.5	74.7	71.5	59.8	50.4	10.5	1576.7	9.4	2005.2	11.6	2.7	3.5E-09
MEDIAN							12.5	-0.1	100.0	100.0	98.6	96.7	92.5	88.6	85.0	81.5	77.1	74.3	62.1	52.9	9.5	2047.5	9.5	2002.5	11.1	2.7	1.8E-09
MAXIMUM (*)							19.4	1.2	100.0	100.0	100.0	100.0	97.9	95.6	93.3	90.7	88.0	86.0	77.2	69.2	18.0	2207.0	11.8	2095.0	13.9	2.8	1.4E-08
MINIMUM (*)							6.1	-2.8	100.0	93.3	88.8	84.0	73.1	66.1	60.2	54.6	51.2	47.9	28.3	13.8	3.0	40.0	7.0	1920.0	9.5	2.7	5.0E-10

Bold and Italicized no suitable for fill material. Not Used for Mean, Median, Maximum, Minimum calculations.

Note : These are 100% limits.

C1 Atterberg Limits (ASTM D4318)
C2 Moisture Content (ASTM D2216)
C3 Particle Size Distribution (ASTM D422)
C4 Laboratory Compaction (ASTM D1557)
C6 Specific Gravity (ASTM D854)
C7a Field Density by Nuclear Methods (ASTM D2922)
C7b Moisture Content by Nuclear Methods (ASTM D3017)
C8a Lab Air Entry Permeameter (LAEP)

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
GRADATION LIMITS - ZONE S CONTROL SAMPLES FROM ORIGIONAL BORROW AREA

Project : 1627
Date : March 21, 1997

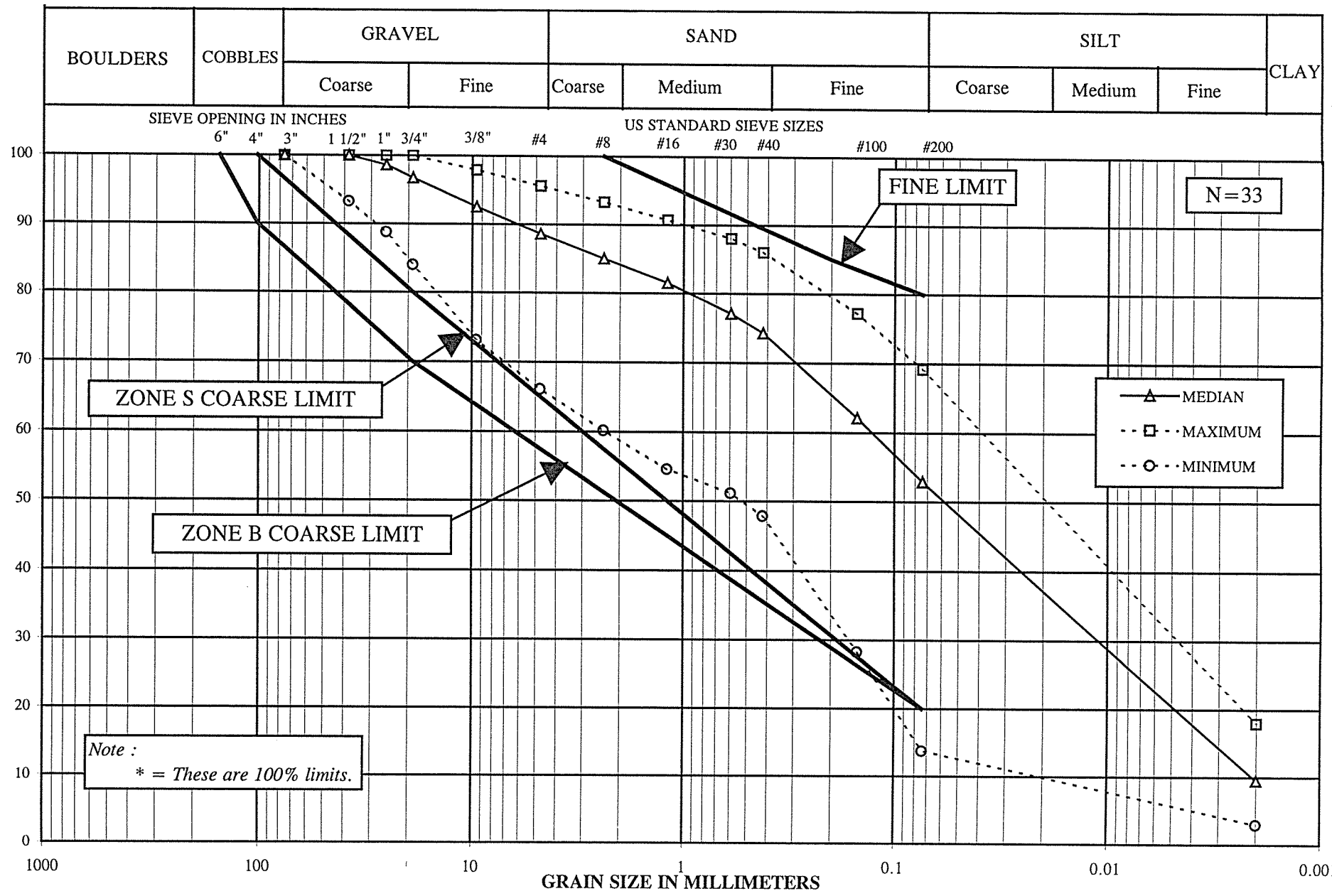


FIGURE B1

Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
TAILINGS STORAGE FACILITY

J:\JOB\DATA\10162-7\REPORTS\C-ME-AB.XLS

7/7/97

Knight Piésold Ltd.
CONSULTING ENGINEERS

CONTROL TEST - SUMMARY SHEET

ALTERNATE BORROW AREA

SHEET : 1 of 1
PERIOD : 13-Sep-96 to 18-Oct-96
PROJECT NO. : 1627
AREA : Alternate Borrow Area

PROJECT : MOUNT POLLEY - TAILINGS STORAGE FACILITY - STAGE 1b CONSTRUCTION

MATERIAL : GLACIAL TILL FROM ALTERNATE BORROW AREA (NEAR TOPSOIL STOCKPILE)

DATE SAMPLED	CONTROL SAMPLE No.	ET SAMPLE No.	Depth (m)	C1 Atterberg Limits PL %	LL %	PI %	C2 Field m/c %	LI %	C3 101.6 4	76.2 3	38.1 1.5	25.4 1	19.05 0.75	9.525 0.375	4.750 0.187	2.380 0.0937	1.191 0.0469	0.594 0.0234	0.419 0.0165	0.150 0.0059	0.074 0.0029	0.002 Clay	C4 Standard Proctor (1) Max Dry Density kg/m³	Opt. m/c %	C6 S.G.	C8a LAEP cm/s
									4	3	1 1/2	1	3/4	3/8	#4	#8	#16	#30	#40	#100	#200					
13-Sep-96	C/ME(AB)/(ZS,ZB)-1A	ET96/09/13-3	(2.4-2.7)	14.7	20.9	6.2	8.9	-0.94	100.0	91.2	82.8	72.5	67.5	59.1	53.9	50.5	47.6	44.5	42.5	34.1	27.3	2.5			2.74	
	C/ME(AB)/(ZS,ZB)-1B	"	(3.6-3.9)				12.1		100.0	100.0	86.3	81.6	78.7	71.9	67.3	64.8	62.1	59.2	57.2	48.9	41.9	8.0			2.73	
13-Sep-96	C/ME(AB)/(ZS,ZB)-2A	ET96/09/13-4	(0.3-0.6)				12.8		100.0	100.0	94.5	93.6	92.4	88.1	84.3	79.1	75.1	70.8	67.9	56.7	48.1	9.0	2025.0	10.2	2.72	
	C/ME(AB)/(ZS,ZB)-2B	"	(2.0-3.0)	14.8	25.4	10.6	11.2	-0.34	100.0	100.0	94.3	90.7	89.2	84.1	78.5	73.1	69.3	66.1	64.1	56.4	49.5	13.0	2083.0	10.5	2.73	
	C/ME(AB)/(ZS,ZB)-2C	"	(2.5-3.1)				13.0																			
	C/ME(AB)/(ZS,ZB)-2D	"	(3.6-4.1)				12.1																			
	C/ME(AB)/(ZS,ZB)-2E	"	(5.0-5.3)				10.9																			
13-Sep-96	C/ME(AB)/(ZS,ZB)-3A	ET96/09/13-5	(1.0-2.0)				11.9		100.0	100.0	96.8	94.5	91.3	84.0	78.3	72.9	68.8	64.7	62.0	51.6	43.3	7.5			2.74	
16-Sep-96	C/ME(AB)/(ZS,ZB)-4A	ET96/09/16-1	(0.0-0.7)				17.0																			
	C/ME(AB)/(ZS,ZB)-4B	"	(1.0-2.0)				10.3																			
	C/ME(AB)/(ZS,ZB)-4C	"	(2.0-3.0				10.5		100.0	100.0	98.7	95.5	93.9	89.6	85.2	80.9	77.0	73.1	70.5	59.8	50.1	6.0	2070.0	10.5	2.73	
	C/ME(AB)/(ZS,ZB)-4D	"	(4.0-5.0)				10.1																			
16-Sep-96	C/ME(AB)/(ZS,ZB)-5A	ET96/09/16-2	(2.0-3.0)	14.8	24.3	9.5	11.0	-0.40	100.0	100.0	97.2	92.2	89.6	83.8	77.3	72.0	67.8	64.1	61.7	53.3	46.4	7.5	2083.0	9.5	2.73	
	C/ME(AB)/(ZS,ZB)-5B		(3.3-3.6)				10.4																			
16-Sep-96	C/ME(AB)/(ZS,ZB)-6A	ET96/09/16-3	(0.5-1.5)				11.8		100.0	100.0	99.0	98.0	96.1	92.1	88.5	83.9	80.0	76.4	74.1	64.6	56.4	8.0	2000.0	11.4	2.74	
	C/ME(AB)/(ZS,ZB)-6B	"	(2.2-2.7)				11.4																			
	C/ME(AB)/(ZS,ZB)-6C	"	(4.4-4.7)				10.2																			
16-Sep-96	C/ME(AB)/(ZS,ZB)-7A	ET96/09/16-4	(3.5-4.5)				9.3		100.0	100.0	95.4	94.1	91.6	85.9	81.1	77.3	73.1	68.5	65.5	52.7	42.3	7.5	2168.0	8.3	2.72	
	C/ME(AB)/(ZS,ZB)-7B	"	(4.5-5.0)				12.6																			
19-Sep-96	C/ME(AB)/(ZS,ZB)-8A	ET96/09/19-1	(0.3-1.0)				11.9																			
	C/ME(AB)/(ZS,ZB)-8B	"	(1.0-2.0)				9.9																			
	C/ME(AB)/(ZS,ZB)-8C	"	(2.5-3.0)				10.7																			
19-Sep-96	C/ME(AB)/(ZS,ZB)-9A	ET96/09/19-2	(1.0-2.0)				11.6																			
	C/ME(AB)/(ZS,ZB)-9B	"	(3.0-4.0)				12.5																			
	C/ME(AB)/(ZS,ZB)-9C	"	(4.5-4.9)				12.1																			
	C/ME(AB)/(ZS,ZB)-9D	"	(6.0-6.3)				10.5																			
19-Sep-96	C/ME(AB)/(ZS,ZB)-10A	ET96/09/19-3	(0.2-0.5)				14.8																			
	C/ME(AB)/(ZS,ZB)-10B	"	(0.5-1.1)				13.4																			
	C/ME(AB)/(ZS,ZB)-10C		(2.0-2.4)	15.4	23.6	8.2	13.2	-0.27	100.0	100.0	95.9	94.6	93.2	88.8	84.1	78.7	74.1	69.7	66.9	57.5	49.7	6.3	2025.0	11.3	2.75	
	C/ME(AB)/(ZS,ZB)-10D	"	(3.4-3.6)				9.9																			
19-Sep-96	C/ME(AB)/(ZS,ZB)-11A	ET96/09/19-4	(0.1-0.4)				12.2																			
	C/ME(AB)/(ZS,ZB)-11B	"	(0.4-0.85)				14.5																			
	C/ME(AB)/(ZS,ZB)-11C	"	(0.85-2.0)				10.8																			

Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
TAILINGS STORAGE FACILITY

J:\JOB\DATA\10162-7\REPORTS\C-ME-AB.XLS

7/7/97

Knight Piésold Ltd. CONSULTING ENGINEERS	CONTROL TEST - SUMMARY SHEET ALTERNATE BORROW AREA	SHEET : 1 of 1 PERIOD : 13-Sep-96 to18-Oct-96
PROJECT :	MOUNT POLLEY - TAILINGS STORAGE FACILITY - STAGE Ib CONSTRUCTION	PROJECT NO. : 1627
MATERIAL :	GLACIAL TILL FROM ALTERNATE BORROW AREA (NEAR TOPSOIL STOCKPILE)	AREA : Alternate Borrow Area

DATE SAMPLED	CONTROL SAMPLE No.	ET SAMPLE No.	Depth (m)	C1 Atterberg Limits PL %	LL %	PI %	C2 Field m/c %	LI %	C3 101.6 4	76.2 3	38.1 1 1/2	25.4 1	19.05 3/4	9.525 3/8	4.750 #4	2.380 #8	1.191 #16	0.594 #30	0.419 #40	0.150 #100	0.074 #200	0.002 Clay	C4 Standard Proctor (1) Max Dry Density kg/m³	Opt. m/c %	C6 S.G.	C8a LAEP cm/s
	C/ME(AB)/(ZS,ZB)-11D	"	(2.0-3.0)				10.0																			
	C/ME(AB)/(ZS,ZB)-11E	"	(3.5-3.7)				9.3																			
	C/ME(AB)/(ZS,ZB)-11F	"	(4.0-4.2)				11.2																			
	C/ME(AB)/(ZS,ZB)-11G	"	(5.0-5.4)				9.5																			
13-Oct-96	C/ME(AB)/(ZS,ZB)-12	Hand Dug	(0.0-0.4)	17.2	25.8	8.6	16.9	-0.03	100.0	100.0	97.9	89.4	86.6	79.5	75.1	70.6	66.2	61.9	59.2	50.4	43.8	10.0	1970.0	12.4		
13-Oct-96	C/ME(AB)/(ZS,ZB)-13	Hand Dug	(0.0-0.3)	16.4	21.6	5.2	13.9	-0.48	100.0	100.0	96.5	93.6	90.9	84.7	79.4	75.8	71.4	67.1	64.6	56.0	48.0	7.0	1975.0	12.0		
			MEAN	15.6	23.6	8.1	11.7	-0.41	100.0	99.3	94.6	90.9	88.4	82.6	77.8	73.3	69.4	65.5	63.0	53.5	45.6	7.7	2044.3	10.7	2.73	
			MEDIAN	15.1	24.0	8.4	11.4	-0.37	100.0	100.0	96.2	93.6	91.1	84.4	79.0	74.5	70.4	66.6	64.4	54.7	47.2	7.5	2025.0	10.5	2.73	
			MAXIMUM (*)	17.2	25.8	10.6	17.0	-0.03	100.0	100.0	99.0	98.0	96.1	92.1	88.5	83.9	80.0	76.4	74.1	64.6	56.4	13.0	2168.0	12.4	2.75	
			MINIMUM (*)	14.7	20.9	5.2	8.9	-0.94	100.0	91.2	82.8	72.5	67.5	59.1	53.9	50.5	47.6	44.5	42.5	34.1	27.3	2.5	1970.0	8.3	2.72	

Note : These are 100% limits.

C1	Atterberg Limits (ASTM D4318)
C2	Moisture Content (ASTM D2216)
C3	Particle Size Distribution (ASTM D422)
C4	Laboratory Compaction (ASTM D1557)
C6	Specific Gravity (ASTM D854)
C7a	Field Density by Nuclear Methods (ASTM D2922)
C7b	Moisture Content by Nuclear Methods (ASTM D3017)
C8a	Lab Air Entry Permeameter (LAEP)

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
GRADATION LIMITS - ALTERNATE BORROW AREA INVESTIGATION SAMPLES

Project : 1627
Date : March 18, 1997

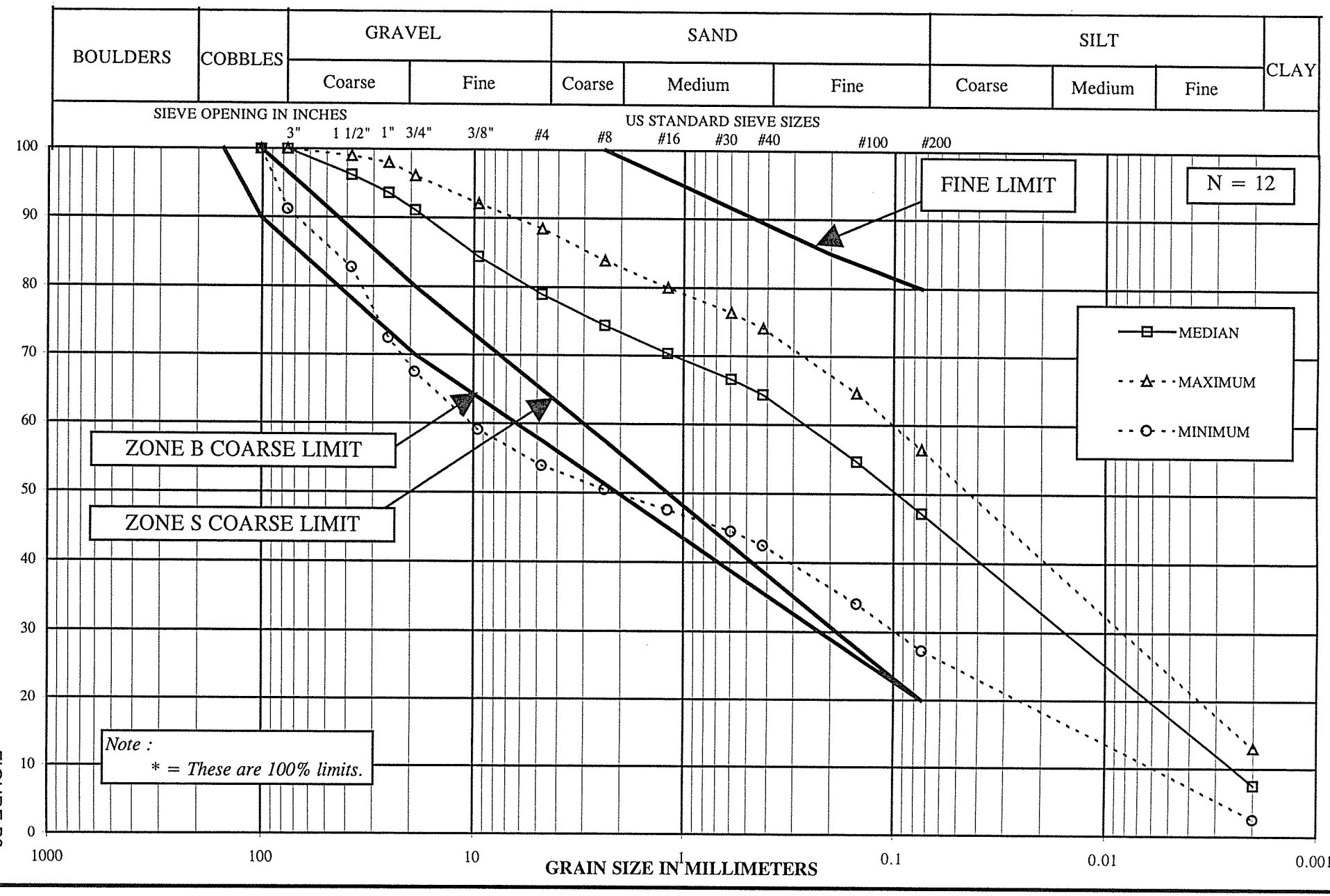


FIGURE B2

Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
TAILINGS STORAGE FACILITY

7/7/97

Knight Piésold Ltd.
CONSULTING ENGINEERS

CONTROL TEST - SUMMARY SHEET

FUTURE BORROW AREA

SHEET : 1 of 1
PERIOD : 13-Sep-96 to 24-Oct-96
PROJECT NO. : 1627
AREA : Future Borrow Area (east of PE)

PROJECT : MOUNT POLLEY - TAILINGS STORAGE FACILITY - STAGE Ib CONSTRUCTION

MATERIAL : GLACIAL TILL FROM FUTURE BORROW AREA

DATE SAMPLED	CONTROL SAMPLE No.	ET SAMPLE No.	Depth (m)	C1 Atterberg Limits PL %	LL %	PI %	C2 Field m/c %	LI %	C3 63.5 mm	38.1 mm	25.4 mm	19.05 mm	9.525 mm	4.750 mm	2.380 mm	1.191 mm	0.594 mm	0.419 mm	0.150 mm	0.074 mm	0.002 mm	C4 Standard Proctor (1) Max Dry Density kg/m³	Opt. m/c %	C6 S.G.	C8a LAEP cm/s
									2.5	1.5	1	0.75	0.375	0.187	0.0937	0.0469	0.0234	0.0165	0.0059	0.0029	0.xxxx(2)				
									3	1 1/2	1	3/4	3/8	#4	#8	#16	#30	#40	#100	#200	Clay				
24-Oct-96	C/ME(FB)/(ZS,ZB)-1A	ET-96/10/24-1	(0.3-0.5)				14.7																		
"	C/ME(FB)/(ZS,ZB)-1B	"	(0.8-1.0)				15.4																		
"	C/ME(FB)/(ZS,ZB)-1C	"	(2.0-4.0)				10.2		100.0	87.3	84.6	81.9	75.7	70.1	67.1	63.8	59.7	56.7	45.8	37.5						
"	C/ME(FB)/(ZS,ZB)-1D	"	(5.0-5.4)				10.0		100.0	94.8	91.3	88.0	81.3	76.7	71.9	67.7	63.7	61.2	50.5	42.2	5.0					
"	C/ME(FB)/(ZS,ZB)-2A	ET-96/10/24-2	(0.7-1.0)				12.6																		
"	C/ME(FB)/(ZS,ZB)-2B	"	(3.0-3.5)				10.6		100.0	100.0	100.0	98.6	96.2	93.4	90.4	87.2	83.3	80.3	67.5	55.0						
"	C/ME(FB)/(ZS,ZB)-3A	ET-96/10/24-3	(1.0-1.5)				13.0																		
"	C/ME(FB)/(ZS,ZB)-3B	"	(2.5-3.0)				9.7		100.0	88.7	86.7	83.6	79.5	75.0	68.8	64.2	59.8	56.9	46.3	38.1	3.0					
"	C/ME(FB)/(ZS,ZB)-4A	ET-96/10/24-4	(0.7-1.2)				14.9																		
"	C/ME(FB)/(ZS,ZB)-4B	"	(2.5-3.0)				9.2																		
			MEAN				12.0		100.0	92.7	90.7	88.0	83.2	78.8	74.6	70.7	66.6	63.8	52.5	43.2	4.0				
			MEDIAN				11.6		100.0	91.8	89.0	85.8	80.4	75.9	70.4	66.0	61.8	59.1	48.4	40.2	4.0				
			MAXIMUM (*)				15.4		100.0	100.0	100.0	98.6	96.2	93.4	90.4	87.2	83.3	80.3	67.5	55.0	5.0				
			MINIMUM (*)				9.2		100.0	87.3	84.6	81.9	75.7	70.1	67.1	63.8	59.7	56.7	45.8	37.5	3.0				

Note : These are 100% limits.

C1 Atterberg Limits (ASTM D4318)
C2 Moisture Content (ASTM D2216)
C3 Particle Size Distribution (ASTM D422)
C4 Laboratory Compaction (ASTM D1557)
C6 Specific Gravity (ASTM D854)
C7a Field Density by Nuclear Methods (ASTM D2922)
C7b Moisture Content by Nuclear Methods (ASTM D3017)
C8a Lab Air Entry Permeameter (LAEP)

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
GRADATION LIMITS - FUTURE BORROW AREA INVESTIGATION SAMPLES

Project : 1627
Date : October 24, 1996

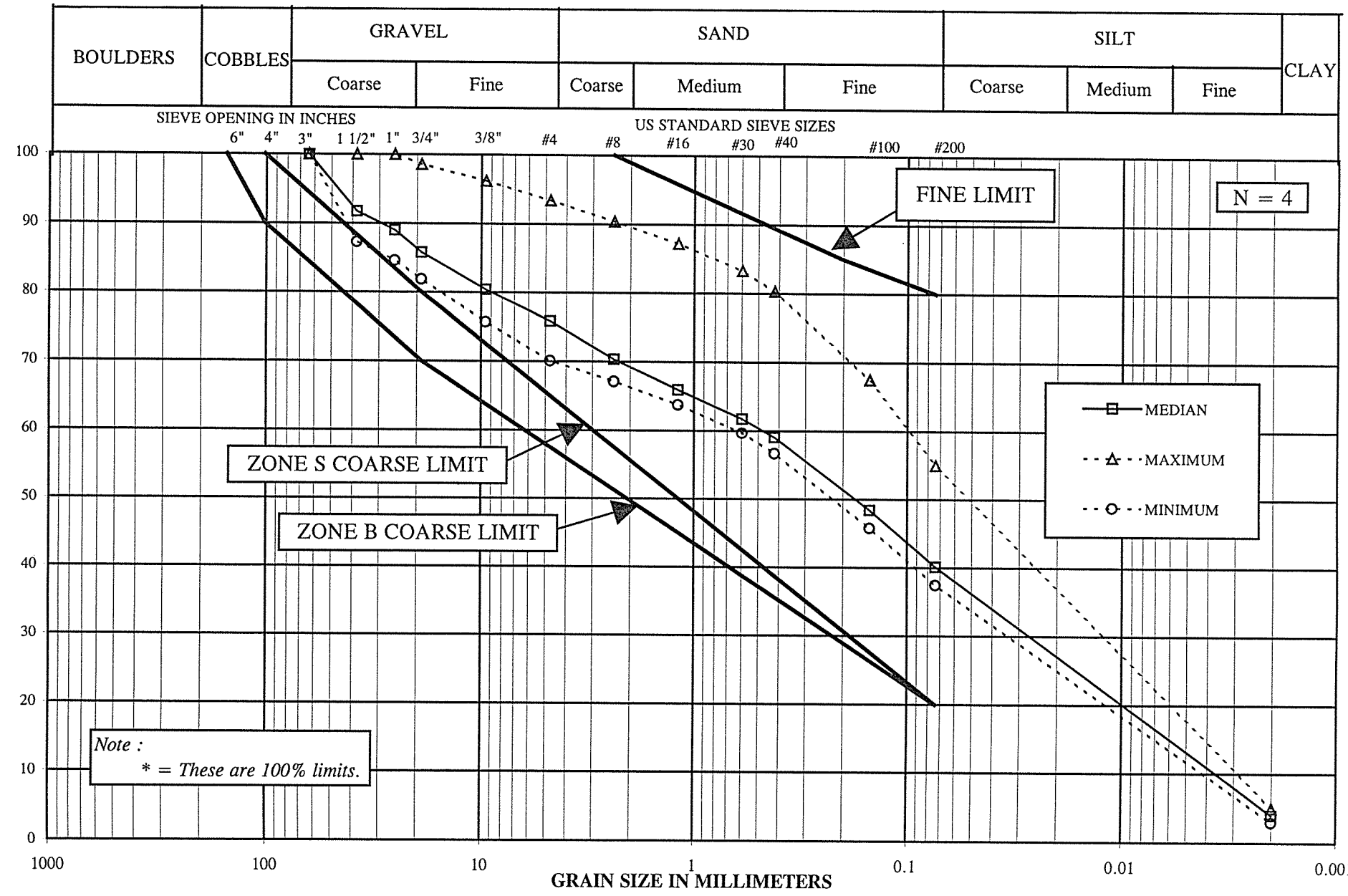


FIGURE B3

Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
TAILINGS STORAGE FACILITY
STAGE Ia/Ib CONSTRUCTION

J:\JOB\DATA\10162-7\REPORTS\C-DG-SUM.XLS 7-Jul-97

Knight Piésold Ltd. CONSULTING ENGINEERS	CONTROL TEST - SUMMARY SHEET DRAIN GRAVEL FROM STOCKPILES	SHEET : 1 of 1 PERIOD : 27-Jun-96 to 15-Jan-97
PROJECT :	MOUNT POLLEY - TAILINGS STORAGE FACILITY - STAGE Ia/Ib CONSTRUCTION	PROJECT NO. : 1627
MATERIAL :	DRAIN GRAVEL	AREA : Stockpiles at Mill

DATE SAMPLED	SAMPLE No.	Location	C3												
			76.2	*50.8*	38.1	25.4	19.05	9.525	4.750	2.380	1.191	0.594	0.419	0.150	0.074	0.002
			3	*2*	1.5	1	0.75	0.375	0.187	0.0937	0.0469	0.0234	0.0165	0.0059	0.0029	0.000079
			3	*2*	1 1/2	1	3/4	3/8	#4	#8	#16	#30	#40	#100	#200	Clay
			Percent Passing													
27-Jun-96	C/DG-1A	Stockpile at Mill	100.0	*100.0*	84.9	53.2	16.7	1.4	0.8	0.6	0.5	0.4	0.3	0.1	0.1	
27-Jun-96	C/DG-1B	Stockpile at Mill	100.0	*100.0*	89.3	58.6	23.5	3.2	1.4	1.0	0.9	0.8	0.7	0.3	0.2	
28-Jun-96	C/DG-2	Stockpile at Mill	100.0	*100.0*	91.9	63.1	19.1	1.0	0.6	0.5	0.4	0.4	0.3	0.1	0.1	
12-Jan-97	C/DG-3	Pipeline Road Location	100.0	*100.0*	85.4	61.9	45.3	22.8	15.6	14.4	13.6	12.7	12.1	10.0	8.3	
11-Jan-97	C/DG-4	Pipeline Road Location	100.0	*100.0*	100.0	93.1	84.2	53.3	25.7	23.2	21.9	20.4	19.5	16.3	13.5	
11-Jan-97	C/DG-5	Pipeline Road Location	100.0	*100.0*	79.5	48.3	36.2	17.8	10.8	10.0	9.4	8.8	8.4	6.9	5.7	
13-Jan-97	C/DG-6	Pipeline Road Location	100.0	*100.0*	80.9	42.0	22.7	9.3	8.4	7.9	7.4	6.9	6.6	5.5	4.6	
13-Jan-97	C/DG-7	Pipeline Road Location	100.0	*100.0*	87.9	69.9	58.6	38.5	18.1	16.8	15.9	14.9	14.3	11.9	9.8	
14-Jan-97	C/DG-8	Pipeline Road Location	100.0	*100.0*	75.6	33.5	17.8	8.6	7.0	6.4	5.9	5.5	5.2	4.2	3.4	
14-Jan-97	C/DG-9	Pipeline Road Location	100.0	*100.0*	78.7	47.2	28.2	12.5	9.2	8.3	7.7	7.1	6.8	5.5	4.6	
15-Jan-97	C/DG-10	Pipeline Road Location	100.0	*100.0*	100.0	79.8	56.1	17.0	1.2							
15-Jan-97	C/DG-11	Pipeline Road Location	100.0	*100.0*	97.3	68.6	40.6	10.4	1.0							
15-Jan-97	C/DG-12	Pipeline Road Location	100.0	*100.0*	100.0	79.8	50.3	10.4	1.0							
MEAN			100.0	100.0	88.6	61.5	38.4	15.9	7.8	8.9	8.4	7.8	7.4	6.1	5.0	
MEDIAN			100.0	100.0	87.9	61.9	36.2	10.4	7.0	8.1	7.6	7.0	6.7	5.5	4.6	
MAXIMUM (*)			100.0	100.0	100.0	93.1	84.2	53.3	25.7	23.2	21.9	20.4	19.5	16.3	13.5	
MINIMUM (*)			100.0	100.0	75.6	33.5	16.7	1.0	0.6	0.5	0.4	0.4	0.3	0.1	0.1	

(*) Notes: These are 100% limits.
Material passing 2" sieve assumed to be 100%.
C3 Particle Size Distribution (ASTM D422)

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
GRADATION LIMITS - DRAIN GRAVEL CONTROL SAMPLES
STAGE Ia/Ib CONSTRUCTION

Project : 1627
Date : March 21, 1997

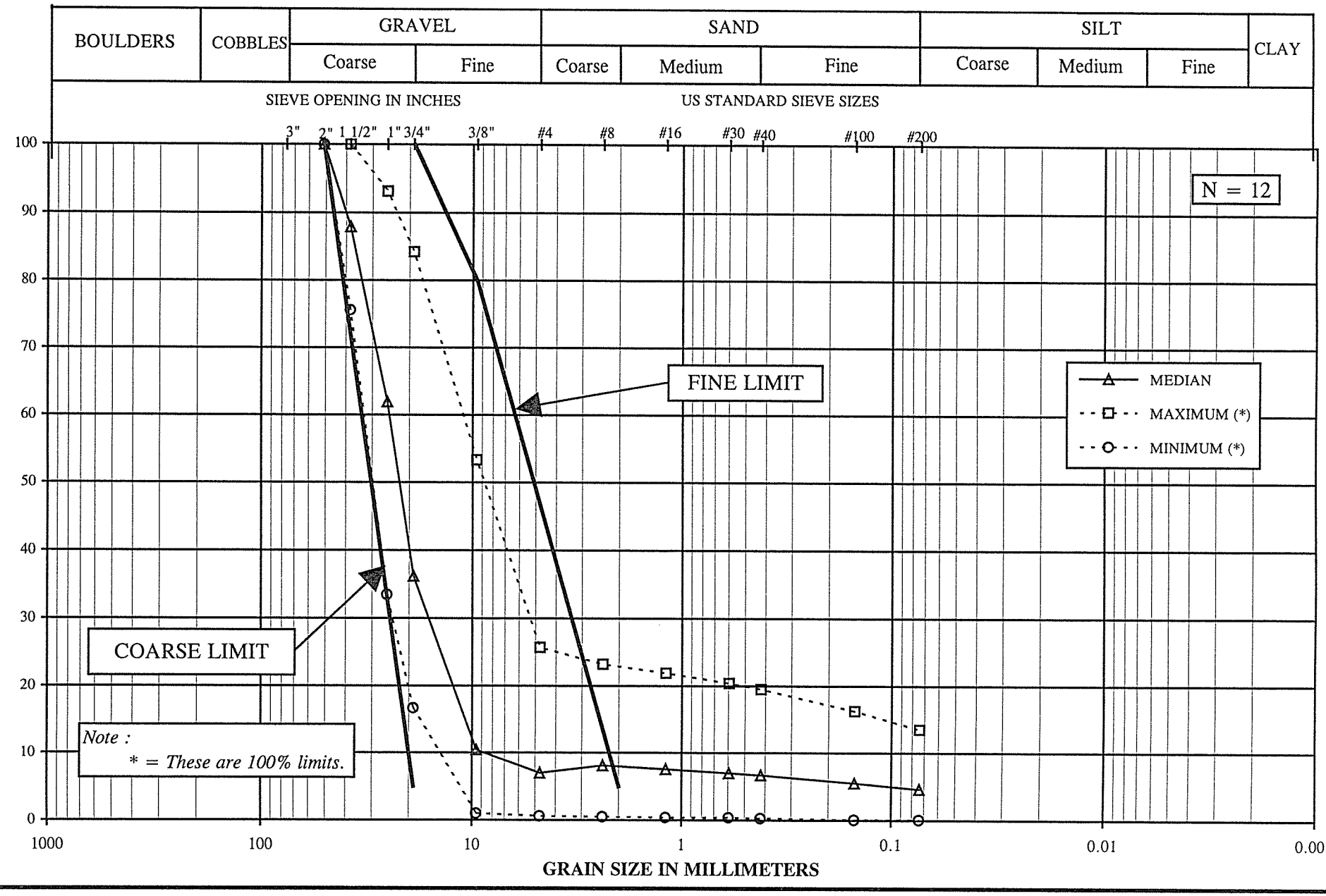


FIGURE B4

Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
TAILINGS STORAGE FACILITY
STAGE Ia/Ib CONSTRUCTION

J:\JOB\DATA\10162-7\REPORTS\C-FS-SUM.XLS

7-Jul-97

Knight Piésold Ltd. CONSULTING ENGINEERS	CONTROL TEST - SUMMARY SHEET FILTER SAND FROM STOCKPILES	SHEET :
PROJECT :	MOUNT POLLEY - TAILINGS STORAGE FACILITY - STAGE Ia/Ib CONSTRUCTION	PERIOD : 4-Jul-96 to 14-Feb-97
MATERIAL :	FILTER SAND TYPE B	PROJECT NO. : 1627
		AREA : Stockpiles

DATE SAMPLED	SAMPLE No.	Location	C3												
			76.2	38.1	25.4	19.05	9.525	4.750	2.380	1.191	0.594	0.419	0.150	0.074	0.002
			3	1.5	1	0.75	0.375	0.187	0.0937	0.0469	0.0234	0.0165	0.0059	0.0029	0.000079
			3	1 1/2	1	3/4	3/8	#4	#8	#16	#30	#40	#100	#200	Clay
			Percent Passing												
4-Jul-96	C/FS/1	Stockpile at Mill													
5-Jul-96	C/FS/2-A	Stockpile at Mill													
7-Jul-96	C/FS/2-B	Stockpile at Mill													
7-Jul-96	C/FS/2-C	Stockpile at Mill	100.0	100.0	100.0	100.0	87.6	51.1	30.3	18.0	11.4	8.9	4.2	2.2	
7-Jul-96	C/FS/2-D	Stockpile at Mill	100.0	100.0	100.0	100.0	87.0	51.7	34.3	23.3	16.6	13.8	8.2	5.7	
7-Jul-96	C/FS/3	Stockpile at Mill	100.0	100.0	100.0	100.0	92.4	68.2	49.6	35.2	25.4	21.1	12.6	8.7	
8-Jul-96	C/FS/4	Stockpile at Mill	100.0	100.0	100.0	100.0	92.1	61.1	40.9	27.8	19.9	16.8	10.6	7.4	
8-Jul-96	C/FS/5	Stockpile at Mill	100.0	100.0	100.0	100.0	94.4	70.7	49.9	33.7	23.5	19.1	11.1	7.6	
8-Jul-96	C/FS/6	Stockpile at Mill	100.0	100.0	100.0	100.0	85.2	53.7	38.5	27.3	20.1	16.9	10.4	7.5	
8-Jul-96	C/FS/7	Stockpile at Mill	100.0	100.0	100.0	100.0	93.4	61.3	44.5	31.8	23.1	19.2	11.9	8.7	
13-Jul-96	C/FS/8	Not used													
13-Jul-96	C/FS/9	Not used													
1-Aug-96	C/FS/10	Stockpile at Mill	100.0	100.0	100.0	100.0	86.5	53.9	36.8	25.3	17.8	14.6	8.5	6.0	
1-Aug-96	C/FS/11	Stockpile at Mill	100.0	100.0	100.0	100.0	92.3	59.3	36.7	24.3	17.5	14.9	10.1	7.5	
1-Aug-96	C/FS/12	Stockpile at Mill	100.0	100.0	100.0	100.0	82.7	41.6	23.6	15.3	11.1	9.5	6.2	4.5	
1-Aug-96	C/FS/13	Not used													
1-Aug-96	C/FS/14	Not used													
4-Aug-96	C/FS/15	Stockpile at Mill	100.0	100.0	100.0	100.0	87.5	51.7	33.1	22.1	15.8	13.4	8.5	6.3	
FIRST TRIALS - Not approved - used as road base															
17-Jan-97	C/FS-16	Conveyor	100.0	94.3	63.7	46.3	24.8	15.4							
17-Jan-97	C/FS-17	Conveyor	100.0	100.0	87.6	73.5	45.6	31.2	23.4	17.2	13.2	11.3	7.3	5.5	
STOCKPILE 1 - Reprocessed															
17-Jan-97	C/FS-18	Conveyor	100.0	100.0	100.0	81.5	34.6	15.8							
17-Jan-97	C/FS-19	Conveyor	100.0	100.0	100.0	80.7	39.2	19.5							
17-Jan-97	C/FS-20	Conveyor	100.0	100.0	100.0	84.5	38.2	21.0							
18-Jan-97	C/FS-21	Stockpile	100.0	100.0	100.0	91.2	65.3	43.9	32.5	23.2	15.8	12.3	4.5	1.0	
21-Jan-97	C/FS-22	Stockpile	100.0	100.0	100.0	95.9	70.6	51.4	35.5	21.3	12.4	9.1	3.4	0.9	
21-Jan-97	C/FS-23	Stockpile	100.0	100.0	100.0	90.2	61.2	43.7	31.2	23.4	18.7	15.8	9.9	7.2	

Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
TAILINGS STORAGE FACILITY
STAGE Ia/Ib CONSTRUCTION

J:\JOB\DATA\10162-7\REPORTS\C-FS-SUM.XLS 7-Jul-97

Knight Piésold Ltd. CONSULTING ENGINEERS	CONTROL TEST - SUMMARY SHEET FILTER SAND FROM STOCKPILES	SHEET :
PROJECT :	MOUNT POLLEY - TAILINGS STORAGE FACILITY - STAGE Ia/Ib CONSTRUCTION	PERIOD : 4-Jul-96 to 14-Feb-97
MATERIAL :	FILTER SAND TYPE B	PROJECT NO. : 1627
		AREA : Stockpiles

DATE SAMPLED	SAMPLE No.	Location	C3												
			76.2	38.1	25.4	19.05	9.525	4.750	2.380	1.191	0.594	0.419	0.150	0.074	0.002
			3	1.5	1	0.75	0.375	0.187	0.0937	0.0469	0.0234	0.0165	0.0059	0.0029	0.000079
			3	1 1/2	1	3/4	3/8	#4	#8	#16	#30	#40	#100	#200	Clay
			Percent Passing												
21-Jan-97	C/FS-24	Stockpile	100.0	100.0	97.8	76.2	27.1	11.5							
21-Jan-97	C/FS-38	Stockpile	100.0	100.0	100.0	99.2	64.8	34.6							
21-Jan-97	C/FS-26	Stockpile	100.0	100.0	100.0	89.8	52.6	32.0							
21-Jan-97	C/FS-27	Stockpile	100.0	100.0	100.0	92.5	40.5	14.8							
21-Jan-97	C/FS-28	Stockpile	100.0	100.0	98.7	86.9	45.6	24.9							
STOCKPILE 2 - Reprocessed															
22-Jan-97	C/FS-29	Conveyor	100.0	100.0	100.0	83.4	46.3	25.2							
22-Jan-97	C/FS-30	Conveyor	100.0	100.0	98.7	86.6	42.1	24.7							
22-Jan-97	C/FS-31	Stockpile	100.0	100.0	100.0	93.7	67.7	46.8	30.8	22.4	18.1	15.7	10.2	7.4	
22-Jan-97	C/FS-32	Stockpile	100.0	100.0	99.0	93.2	65.8	45.9	27.2	15.8	10.6	9.1	6.0	4.5	
22-Jan-97	C/FS-33	Stockpile	100.0	100.0	100.0	94.3	61.4	39.9	27.7	20.0	15.3	13.2	8.5	6.3	
22-Jan-97	C/FS-34	Stockpile	100.0	100.0	100.0	94.9	65.1	45.1	33.5	24.9	18.9	16.4	10.7	7.8	
25-Jan-97	C/FS-50	Stockpile	100.0	100.0	94.0	81.3	45.3	28.9	17.1	10.7	7.5	6.2	3.8	2.7	
28-Jan-97	C/FS-51	Stockpile	100.0	100.0	98.3	83.6	40.6	23.1	15.4	10.6	8.1	7.2	4.9	3.7	
STOCKPILE 3 - Not approved for use as filter sand - used as road base.															
23-Jan-97	C/FS-35	Conveyor	100.0	100.0	100.0	94.4	57.4	36.8	21.4	13.5	9.6	8.1	4.8	3.5	
23-Jan-97	C/FS-36	Stockpile	100.0	100.0	100.0	94.7	61.0	40.7	25.5	16.0	10.9	9.0	5.2	3.7	
23-Jan-97	C/FS-37	Stockpile	100.0	100.0	100.0	92.3	65.9	44.4	32.7	22.8	15.9	13.1	7.4	5.2	
24-Jan-97	C/FS-44	Stockpile	100.0	100.0	100.0	73.2	31.7	18.0							
STOCKPILE 4 - Approved															
24-Jan-97	C/FS-38	Stockpile	100.0	100.0	100.0	99.2	64.8	34.6							
24-Jan-97	C/FS-39	Stockpile	100.0	100.0	100.0	100.0	83.9	51.9	28.2	15.6	9.4	6.9	2.5	0.7	
24-Jan-97	C/FS-40	Stockpile	100.0	100.0	100.0	99.2	82.2	55.3	37.6	24.8	17.0	14.0	8.4	6.1	
24-Jan-97	C/FS-41	Stockpile	100.0	100.0	99.7	97.3	73.3	45.8	31.6	22.7	16.6	14.0	8.5	6.2	
24-Jan-97	C/FS-42	Stockpile	100.0	100.0	100.0	100.0	87.9	68.3	53.2	39.1	27.1	21.6	11.1	7.7	
24-Jan-97	C/FS-43	Stockpile	100.0	100.0	100.0	100.0	72.4	46.4	31.4	22.2	15.7	13.0	7.7	5.4	
25-Jan-97	C/FS-45	Stockpile	100.0	100.0	100.0	100.0	84.1	54.7	35.8	24.2	17.2	14.2	7.9	5.5	
25-Jan-97	C/FS-46	Stockpile	100.0	100.0	100.0	100.0	78.9	48.3	33.4	22.4	15.0	12.2	7.0	4.9	

Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
TAILINGS STORAGE FACILITY
STAGE Ia/Ib CONSTRUCTION

J:\JOB\DATA\10162-7\REPORTS\C-FS-SUM.XLS 7-Jul-97

Knight Piésold Ltd. CONSULTING ENGINEERS	CONTROL TEST - SUMMARY SHEET FILTER SAND FROM STOCKPILES	SHEET :
PROJECT :	MOUNT POLLEY - TAILINGS STORAGE FACILITY - STAGE Ia/Ib CONSTRUCTION	PERIOD : 4-Jul-96 to 14-Feb-97
MATERIAL :	FILTER SAND TYPE B	PROJECT NO. : 1627
		AREA : Stockpiles

DATE SAMPLED	SAMPLE No.	Location	C3												
			76.2	38.1	25.4	19.05	9.525	4.750	2.380	1.191	0.594	0.419	0.150	0.074	0.002
			3	1.5	1	0.75	0.375	0.187	0.0937	0.0469	0.0234	0.0165	0.0059	0.0029	0.000079
			3	1 1/2	1	3/4	3/8	#4	#8	#16	#30	#40	#100	#200	Clay
			Percent Passing												
26-Jan-97	C/FS-47	Stockpile	100.0	100.0	100.0	99.6	81.2	58.0	39.6	28.4	21.3	18.0	10.5	7.3	
26-Jan-97	C/FS-48	Conveyor	100.0	100.0	100.0	100.0	80.4	52.2	32.4	21.5	15.1	12.4	7.3	5.3	
27-Jan-97	C/FS-49	Stockpile	100.0	100.0	100.0	100.0	81.0	53.0	37.4	23.9	16.0	13.0	7.3	5.1	
Miscellaneous sample from reworked small stockpile at main embankment.															
5-Feb-97	C/FS-54		100.0	100.0	100.0	99.7	70.1	37.9	23.3	15.5	11.4	-	6.0	4.3	
3-Feb-97	C/FS-52	Conveyor	100.0	100.0	100.0	100.0	82.1	57.1	39.8	27.8	21.0	17.4	11.2	8.4	
4-Feb-97	C/FS-53	Stockpile	100.0	100.0	100.0	100.0	83.8	59.9	42.5	30.5	22.4	19.0	11.6	8.2	
5-Feb-97	C/FS-55	Conveyor	100.0	100.0	100.0	99.6	71.7	40.9	33.3	28.4	25.5	23.0	22.4	21.4	
6-Feb-97	C/FS-57	Stockpile	100.0	100.0	100.0	100.0	83.3	56.9	41.1	28.5	20.4	17.0	10.5	7.9	
7-Feb-97	*C/FS-60	Stockpile	100.0	100.0	100.0	99.8	88.1	64.9	44.6	31.3	23.2	19.7	12.2	8.8	
7-Feb-97	C/FS-62	Stockpile	100.0	100.0	100.0	100.0	80.6	49.4	33.6	23.1	16.9	14.3	8.8	6.4	
STOCKPILE 6 - Reprocessed															
6-Feb-97	C/FS-56	Conveyor	100.0	100.0	100.0	100.0	62.6	31.5							
8-Feb-97	*C/FS-63	Stockpile	100.0	100.0	100.0	100.0	81.9	53.3	29.1	16.2	10.8	9.0	5.8	4.4	
9-Feb-97	*C/FS-66	Stockpile	100.0	100.0	100.0	100.0	71.9	40.9	26.4	17.5	12.7	10.7	6.7	5.0	
9-Feb-97	*C/FS-66 (redo)	Stockpile	100.0	100.0	100.0	100.0	73.3	43.6	27.8	19.5	14.7	12.6	7.9	5.4	
STOCKPILE 7 - Approved															
7-Feb-97	C/FS-61	Conveyor	100.0	100.0	100.0	100.0	84.2	64.6	37.6	23.1	15.9	13.1	7.9	5.8	
8-Feb-97	C/FS-64	Conveyor	100.0	100.0	100.0	100.0	80.8	58.3	41.0	28.4	20.6	17.2	10.3	7.3	
8-Feb-97	C/FS-65	Conveyor	100.0	100.0	100.0	100.0	75.2	51.6	35.0	25.0	18.9	16.1	10.2	7.2	
9-Feb-97	*C/FS-67	Stockpile	100.0	100.0	100.0	100.0	82.5	58.8	30.5	14.5	7.9	5.9	2.9	1.9	
9-Feb-97	*C/FS-67 (redo)	Stockpile	100.0	100.0	100.0	100.0	86.3	64.0	42.6	29.4	20.5	16.7	9.8	7.0	
9-Feb-97	*C/FS-68	Conveyor	100.0	100.0	100.0	100.0	60.3	35.2	22.5	14.5	10.3	8.6	5.1	3.6	
9-Feb-97	*C/FS-68 (redo)	Conveyor	100.0	100.0	100.0	100.0	62.7	37.4	22.9	14.7	10.4	8.7	5.0	3.3	
9-Feb-97	C/FS-69	Stockpile	100.0	100.0	100.0	100.0	81.6	54.7	37.1	24.1	17.1	14.2	8.8	7.7	
10-Feb-97	C/FS-70	Stockpile	100.0	100.0	100.0	100.0	82.1	59.4	41.5	28.4	18.9	14.5			
10-Feb-97	C/FS-71	Stockpile	100.0	100.0	100.0	100.0	89.8	67.0	45.3	29.6	19.4	15.0			
10-Feb-97	C/FS-72	Stockpile	100.0	100.0	100.0	100.0	80.2	55.6	36.6	22.4	13.0	8.8			

Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY PROJECT
TAILINGS STORAGE FACILITY
STAGE Ia/Ib CONSTRUCTION

J:\JOB\DATA\10162-7\REPORTS\C-FS-SUM.XLS 7-Jul-97

Knight Piésold Ltd. CONSULTING ENGINEERS	CONTROL TEST - SUMMARY SHEET FILTER SAND FROM STOCKPILES	SHEET :
PROJECT :	MOUNT POLLEY - TAILINGS STORAGE FACILITY - STAGE Ia/Ib CONSTRUCTION	PERIOD : 4-Jul-96 to 14-Feb-97
MATERIAL :	FILTER SAND TYPE B	PROJECT NO. : 1627
		AREA : Stockpiles

DATE SAMPLED	SAMPLE No.	Location	C3												
			76.2	38.1	25.4	19.05	9.525	4.750	2.380	1.191	0.594	0.419	0.150	0.074	0.002
			3	1.5	1	0.75	0.375	0.187	0.0937	0.0469	0.0234	0.0165	0.0059	0.0029	0.000079
			3	1 1/2	1	3/4	3/8	#4	#8	#16	#30	#40	#100	#200	Clay
			Percent Passing												
STOCKPILE 8 - Approved															
10-Feb-97	C/FS-73	Conveyor	100.0	100.0	100.0	100.0	91.8	60.8	41.1	27.8	19.0	14.8			
10-Feb-97	C/FS-74	Stockpile	100.0	100.0	100.0	100.0	96.7	71.1	43.6	27.3	17.5	13.2	4.7	1.1	
STOCKPILE 9 - Approved to date															
11-Feb-97	C/FS-75 (Note)	Conveyor	100.0	100.0	100.0	100.0	80.6	68.7	58.7	50.7	40.3	32.7	11.6	2.6	
12-Feb-97	C/FS-76	Conveyor	100.0	100.0	100.0	100.0	85.1	51.9	35.3	21.2	13.6	10.9	6.3	4.6	
12-Feb-97	C/FS-77	Stockpile	100.0	100.0	100.0	100.0	88.1	61.7	41.9	29.2	21.0	17.5	10.7	7.7	
12-Feb-97	C/FS-78	Conveyor	100.0	100.0	100.0	100.0	85.5	57.1	38.5	27.1	19.9	16.6	10.5	7.9	
12-Feb-97	C/FS-79	Stockpile	100.0	100.0	100.0	100.0	84.0	57.8	38.6	27.8	20.5	17.2	10.5	7.8	
13-Feb-97	C/FS-80	Conveyor	100.0	100.0	100.0	100.0	94.8	65.4	32.4	17.4	12.0	10.4	7.3	5.8	
14-Feb-97	C/FS-81	Conveyor	100.0	100.0	100.0	100.0	93.8	63.7	39.9	26.7	19.5	16.6			
14-Feb-97	C/FS-82	Stockpile	100.0	100.0	100.0	100.0	86.5	57.6	37.1	24.6	17.5	14.8	9.4	7.0	
14-Feb-97	C/FS-83	Stockpile	100.0	100.0	100.0	100.0	87.4	57.2	37.1	25.0	17.9	15.0	9.4	6.8	
MEAN			100.0	99.9	99.2	95.6	72.5	47.3	35.0	23.8	16.9	14.1	8.4	5.9	
MEDIAN			100.0	100.0	100.0	100.0	80.6	51.7	35.4	23.6	17.0	14.2	8.5	6.0	
MAXIMUM (*)			100.0	100.0	100.0	100.0	96.7	71.1	58.7	50.7	40.3	32.7	22.4	21.4	
MINIMUM (*)			100.0	94.3	63.7	46.3	24.8	11.5	15.4	10.6	7.5	5.9	2.5	0.7	

(*) Notes: These are 100% limits.

Samples 1, 2A and 2B not washed over No. 200 Sieve. Results not included.

Samples 8,9, 13 and 14 from top of reclaim barge channel. Results not included.

C1 Atterberg Limits (ASTM D4318)
C2 Moisture Content (ASTM D2216)
C3 Particle Size Distribution (ASTM D422)
C4 Laboratory Compaction (ASTM D1557)
C6 Specific Gravity (ASTM D854)
C7a Field Density by Nuclear Methods (ASTM D2922)
C7b Moisture Content by Nuclear Methods (ASTM D3017)
C8a Lab Air Entry Permeameter (LAEP)

KNIGHT PIESOLD LTD.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
GRADATION LIMITS - FILTER SAND TPYE B CONTROL SAMPLES
STAGE Ia/Ib CONSTRUCTION

Project : 1627
Date : March 21, 1997

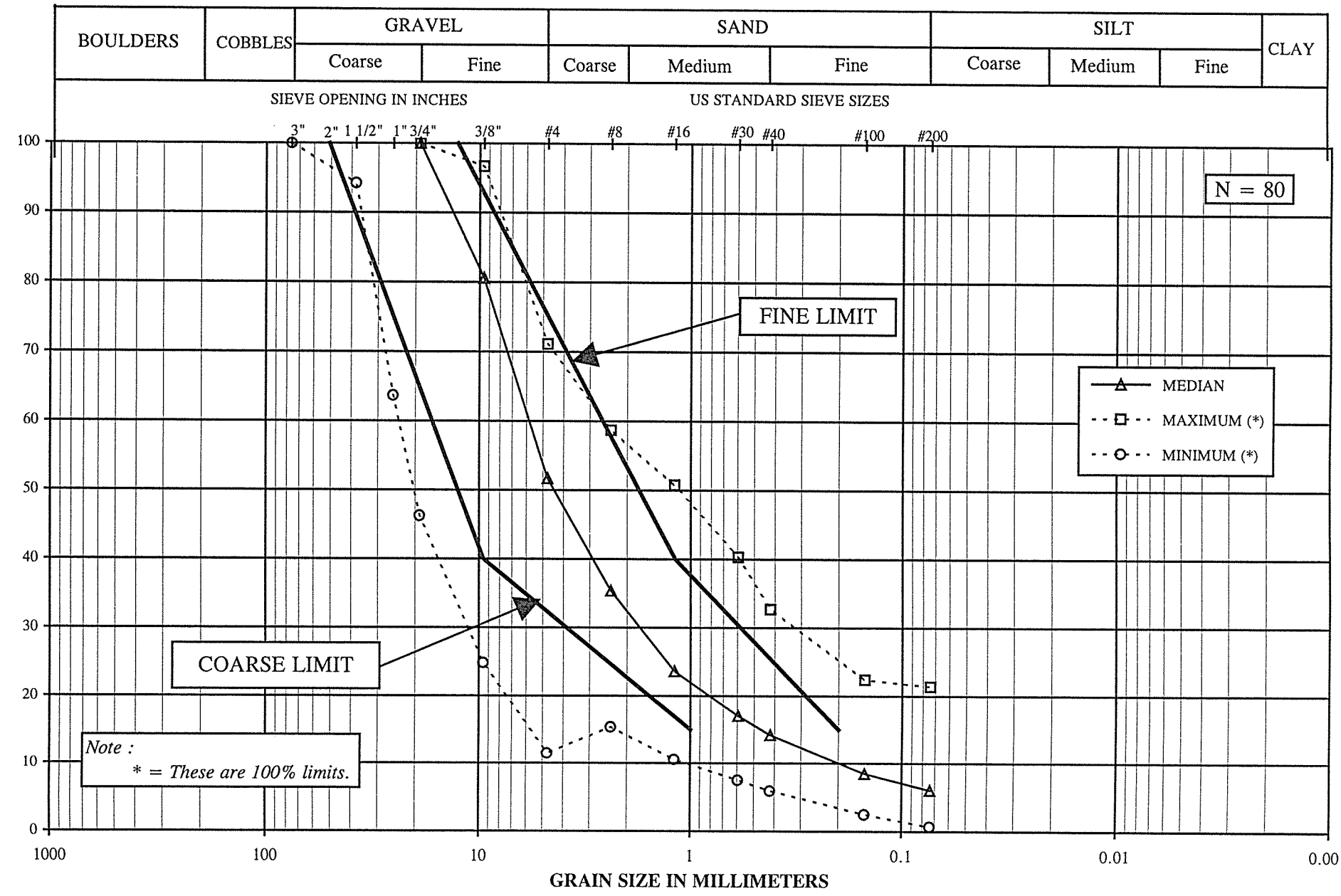


FIGURE B5

APPENDIX C

PIEZOMETER READINGS

C1 PIEZOMETER RECORDS FOR FOUNDATION SOILS

C2 PIEZOMETER RECORDS FOR EMBANKMENT DRAINS

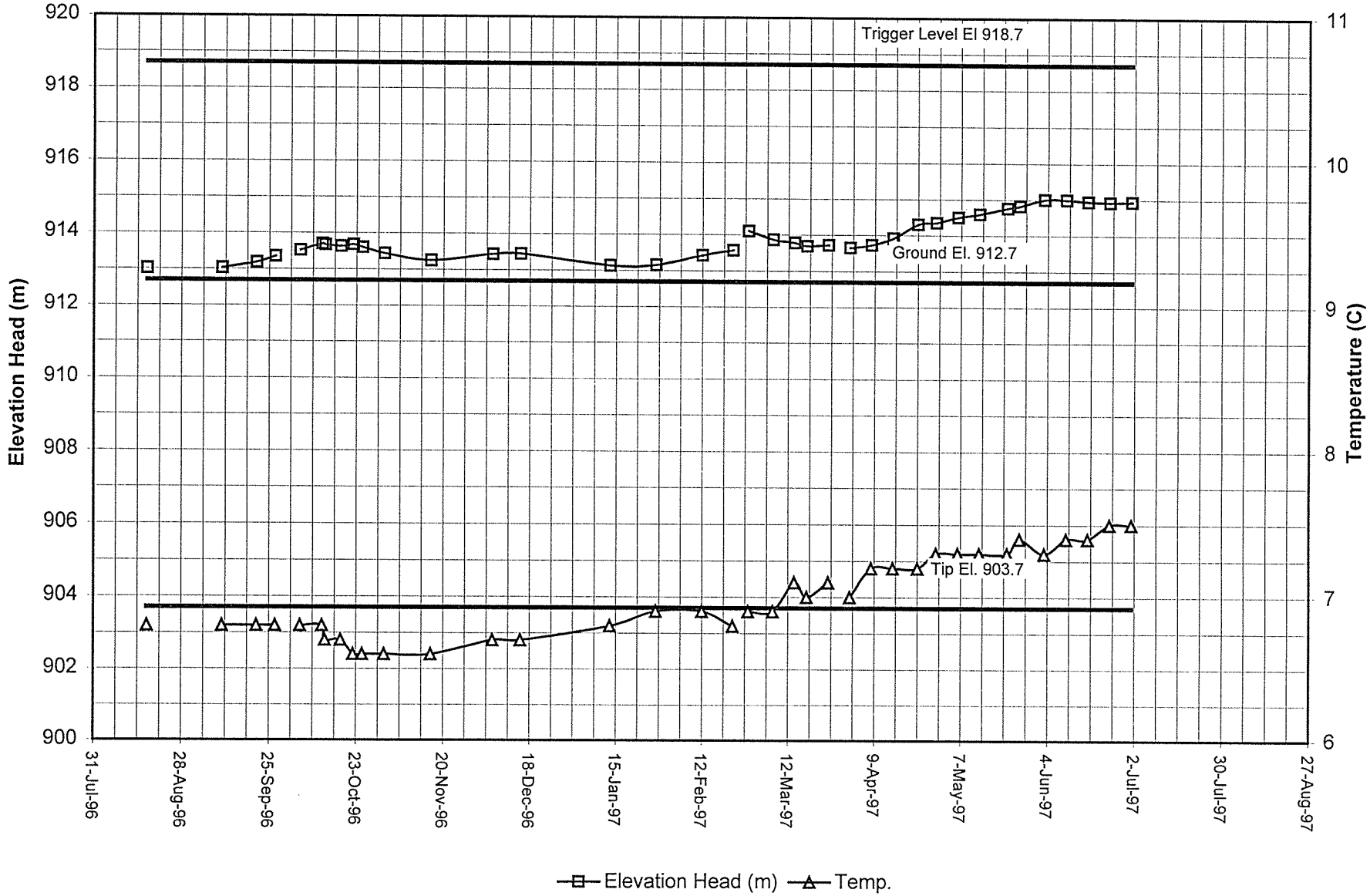
C3 PIEZOMETER RECORDS FOR EMBANKMENT FILL ZONES

C1

PIEZOMETER RECORDS FOR FOUNDATION SOILS

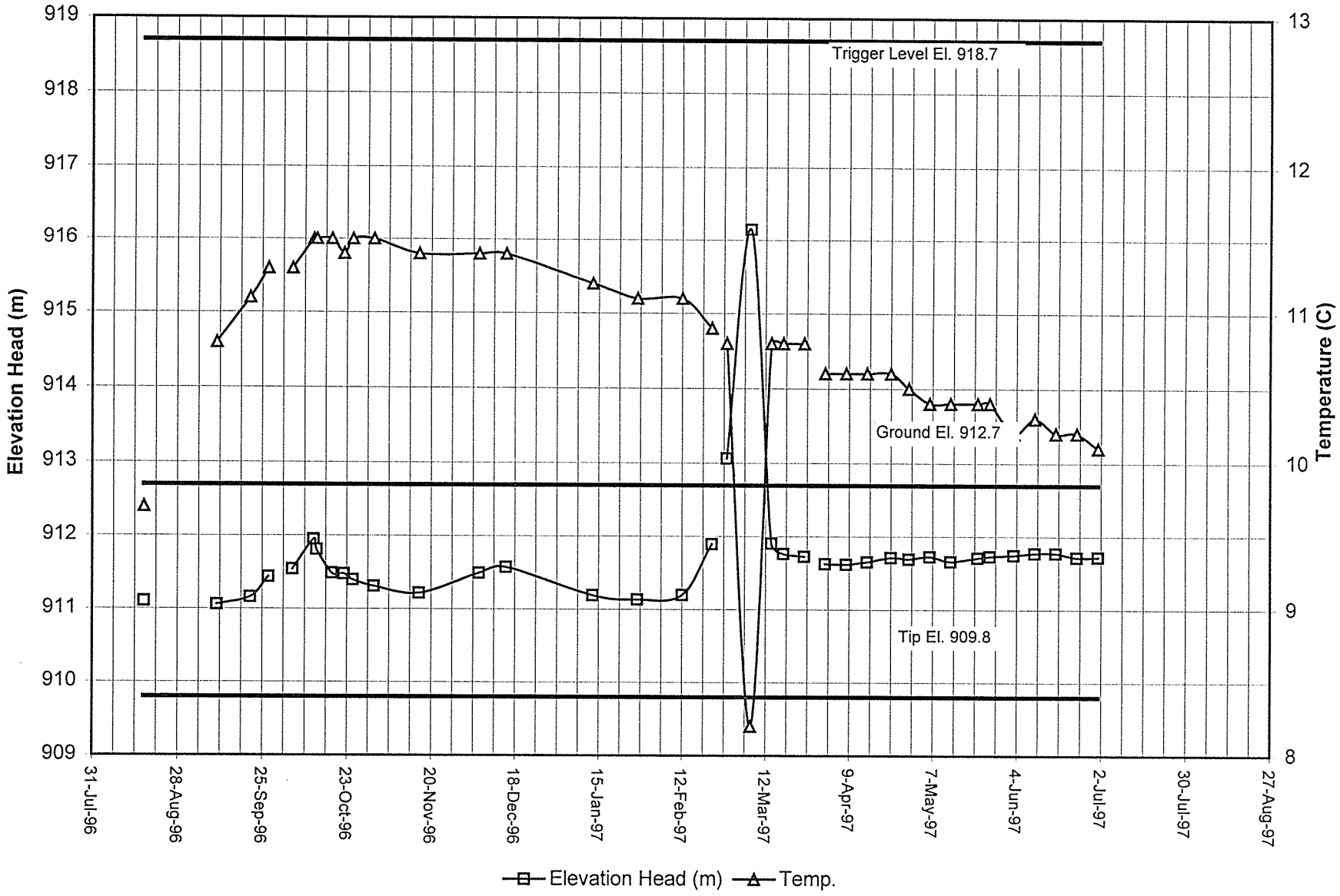
Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER A2-PE2-01
(Foundation Piezometer)



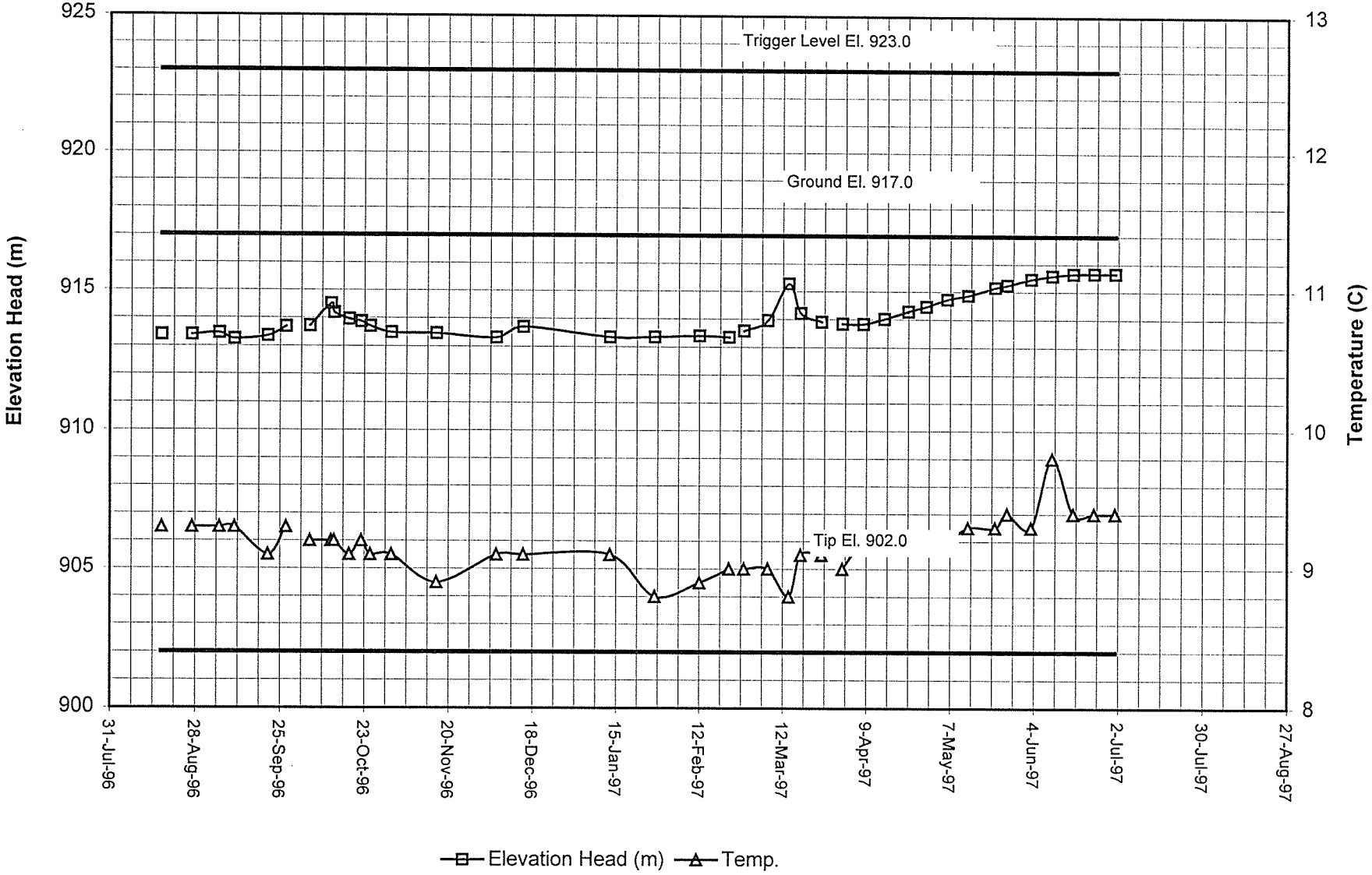
Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER A2-PE2-02
(Foundation Piezometer)



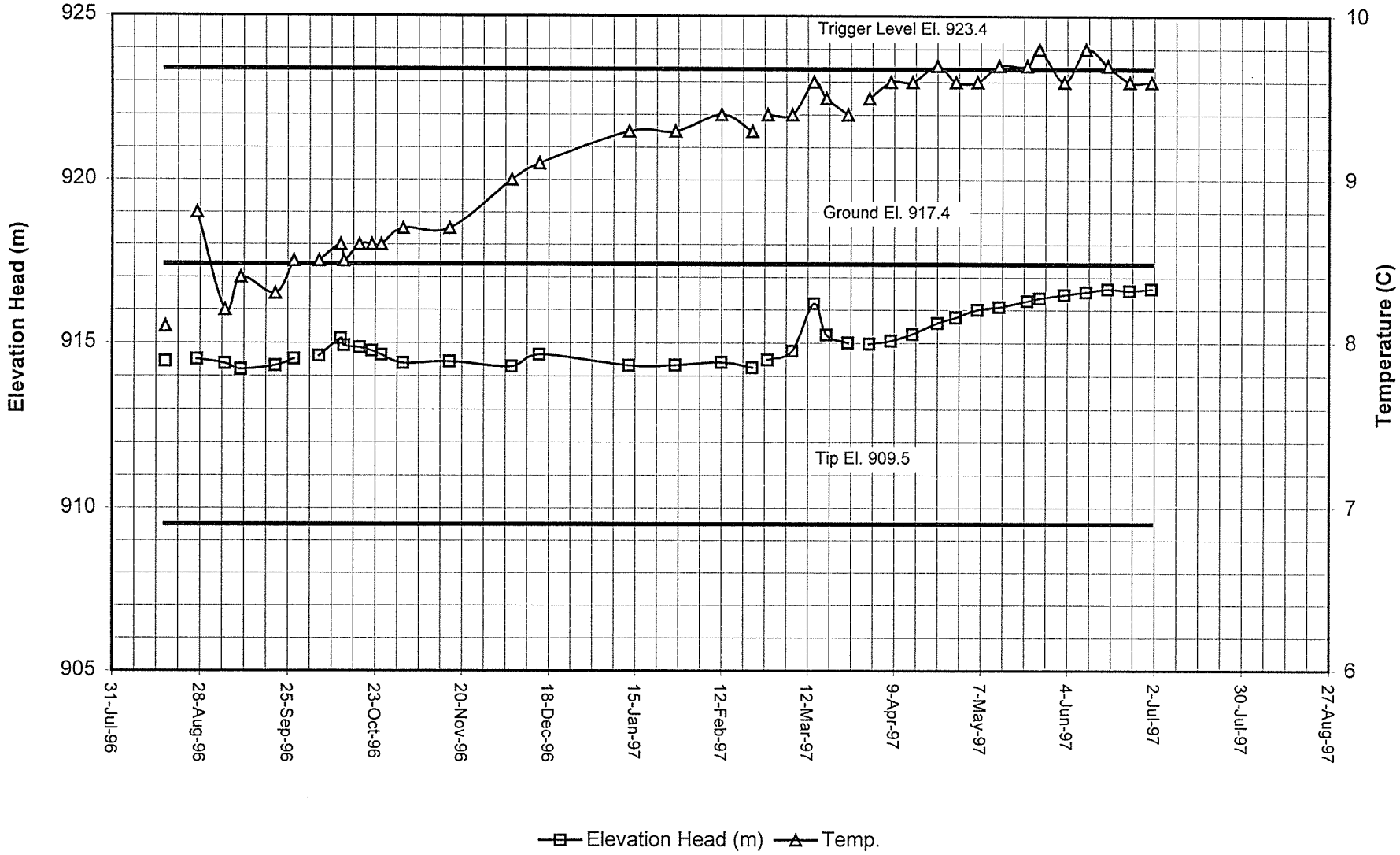
Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER B2-PE2-01
(Foundation Piezometer)



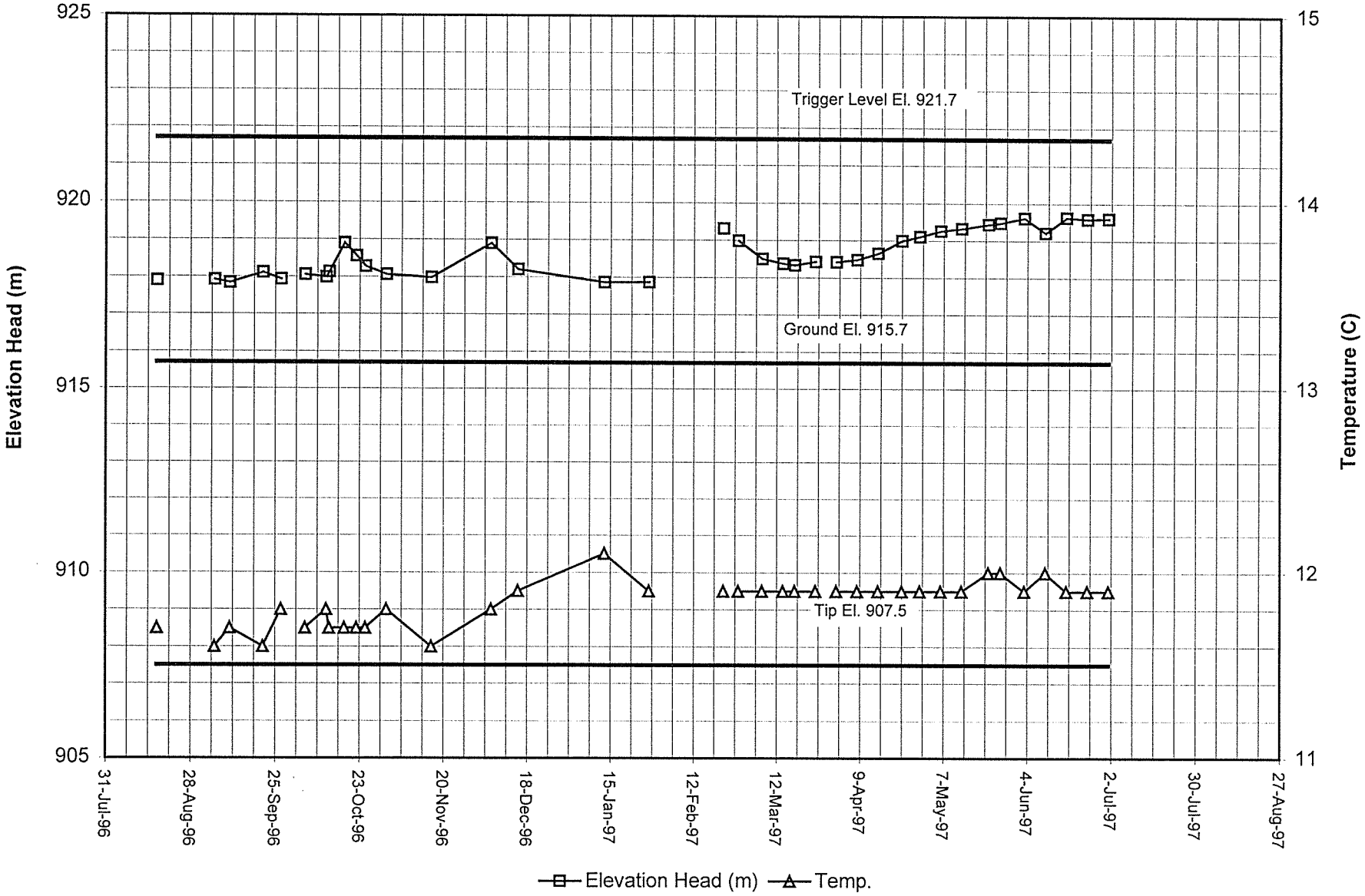
Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER B2-PE2-02
(Foundation Piezometer)



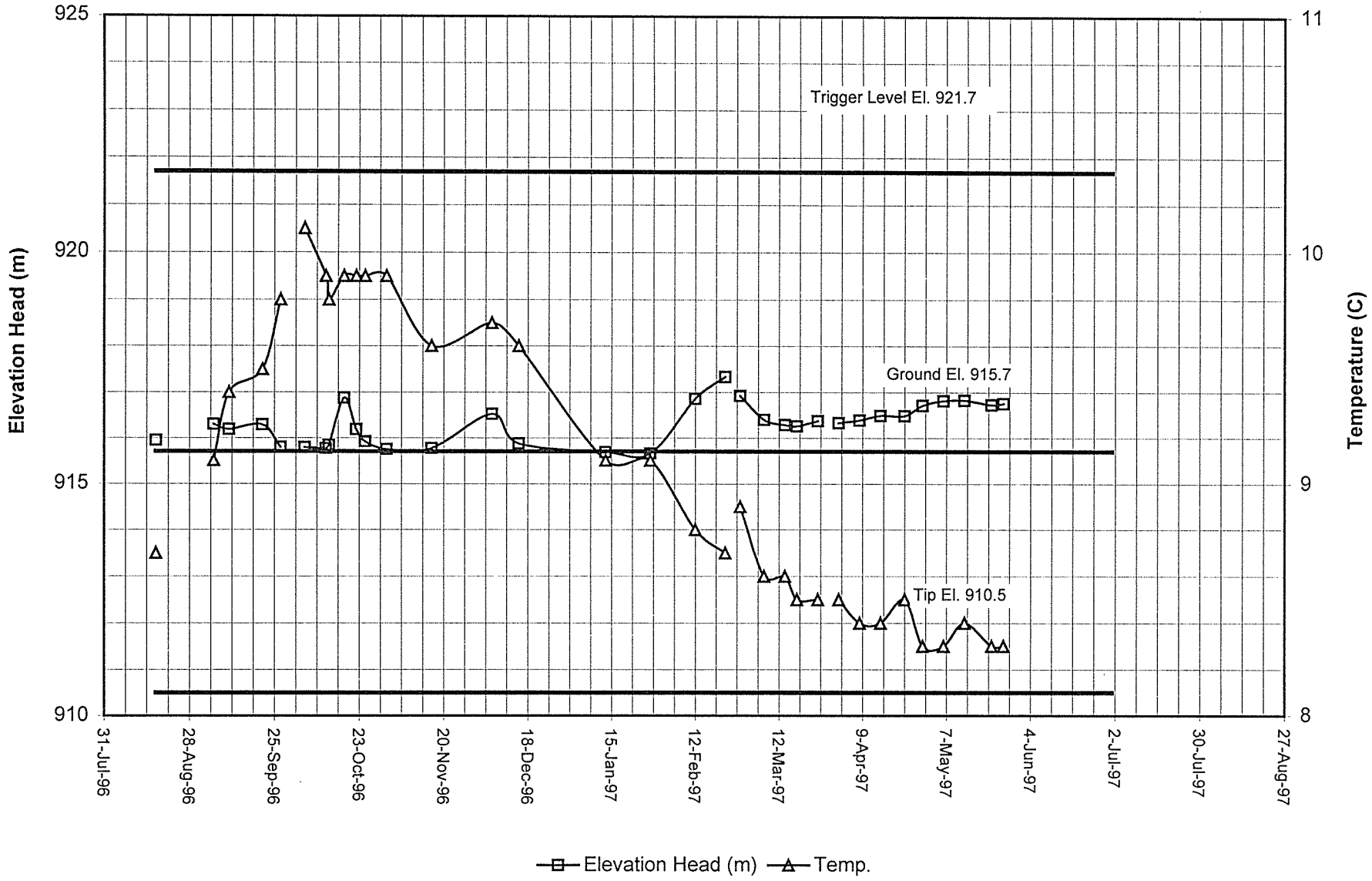
Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER C2-PE2-01
(Foundation Piezometer)



Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER C2-PE2-02
(Foundation Piezometer)

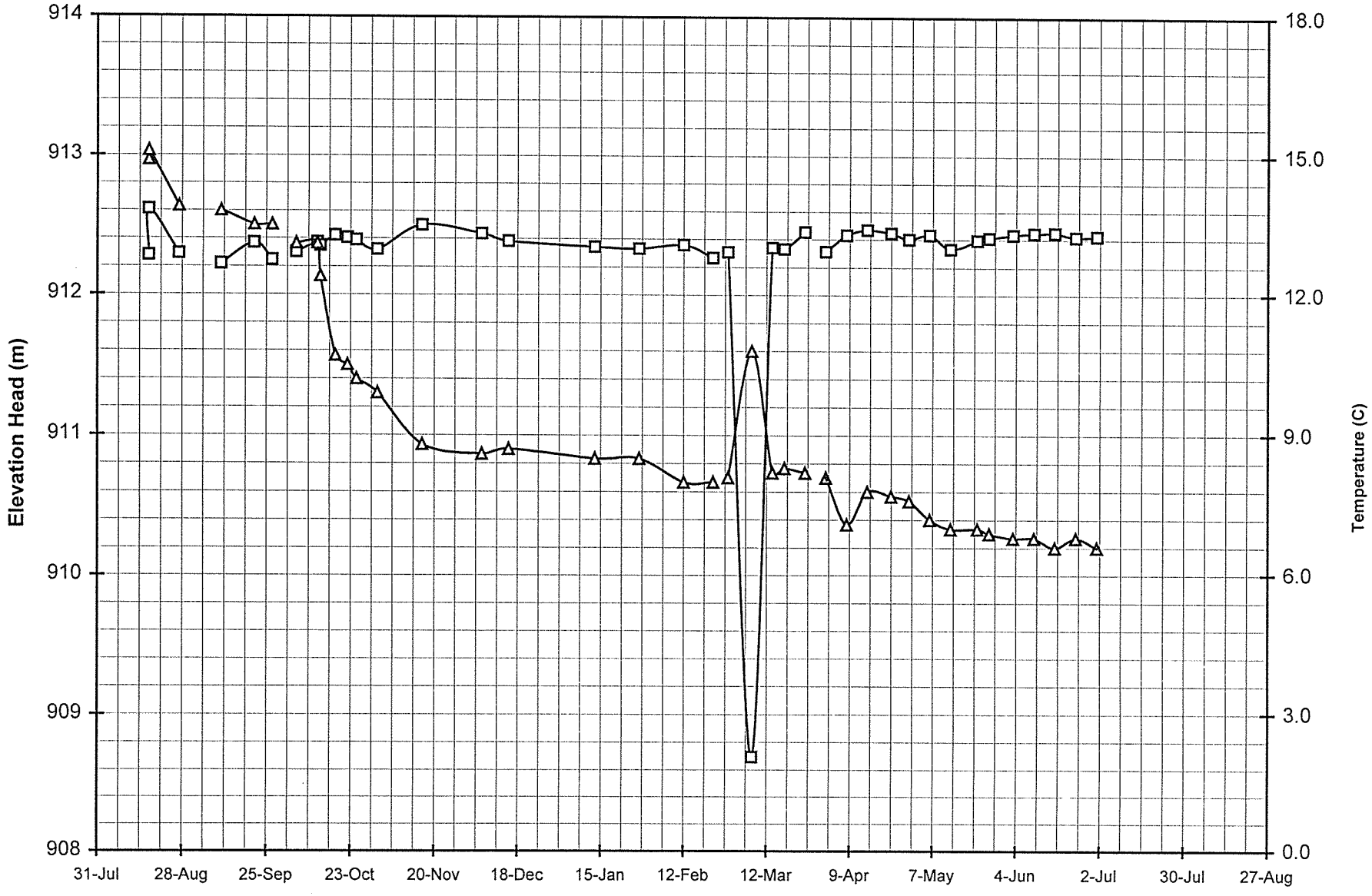


C2

PIEZOMETER RECORDS FOR EMBANKMENT DRAINS

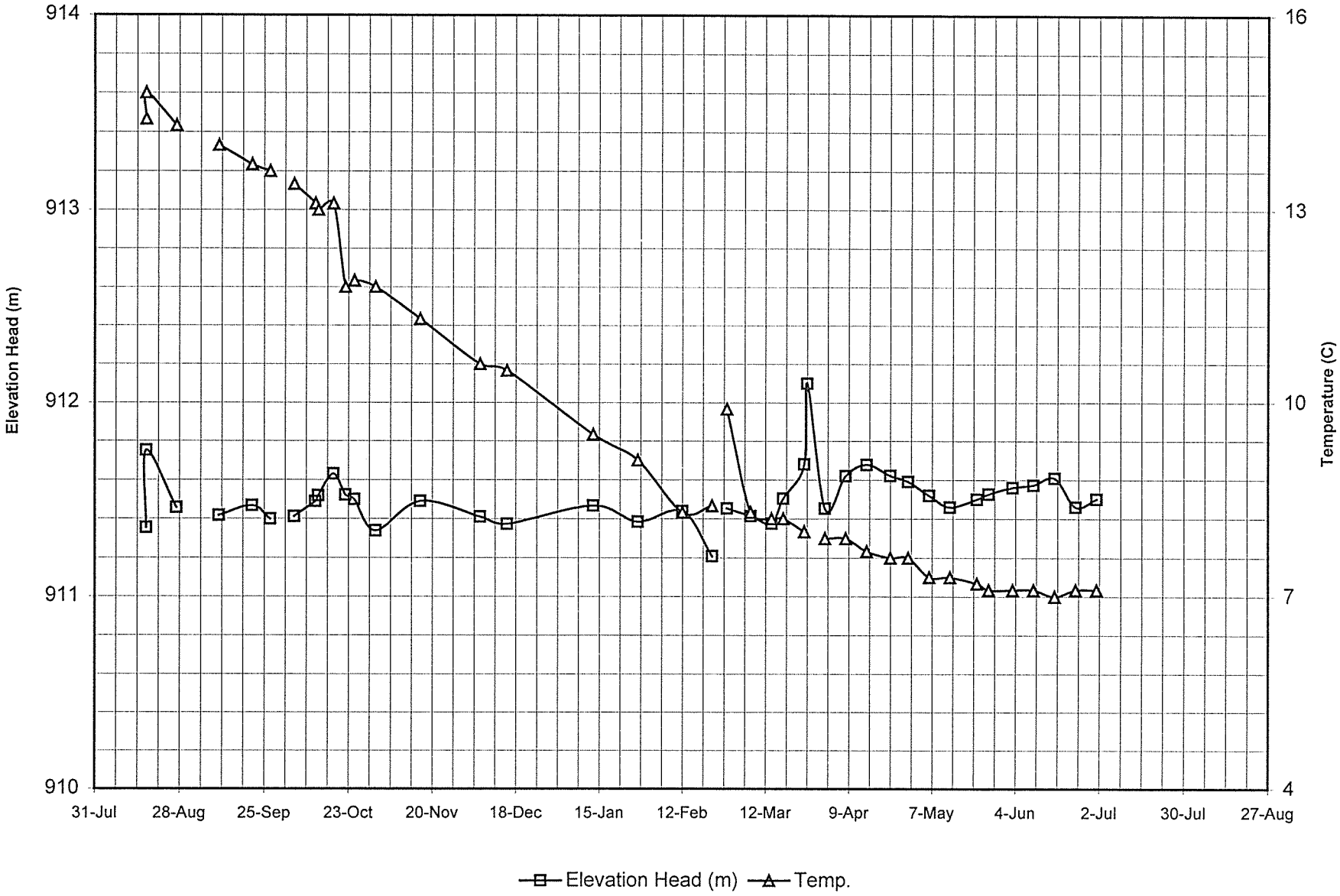
Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION
TAILINGS STORAGE FACILITY
PIEZOMETER A1-PE1-01
(Foundation Drain FD-3 El. 913.0)



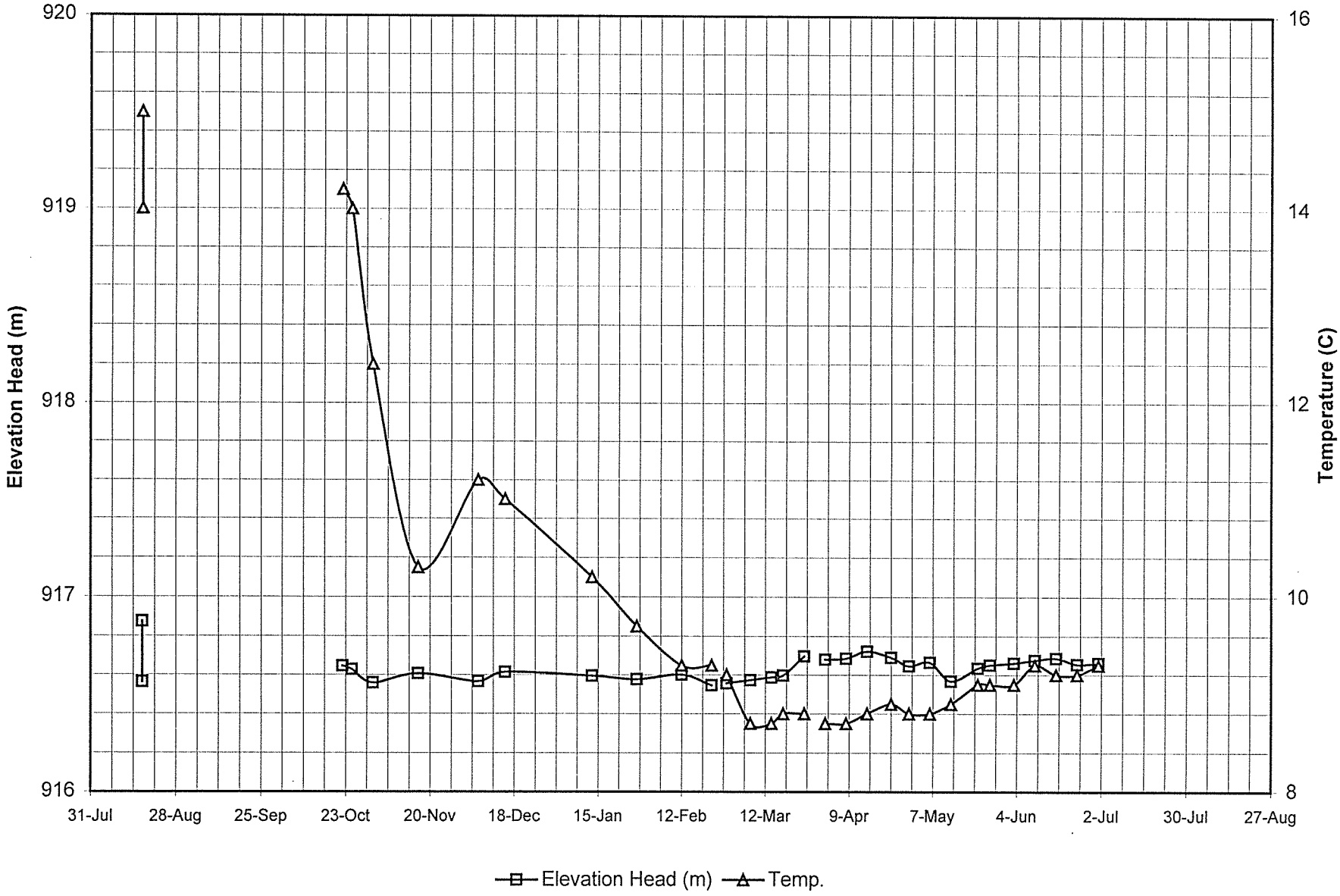
Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER A1-PE1-02
Foundation Drain FD-4 (El. 912.1)



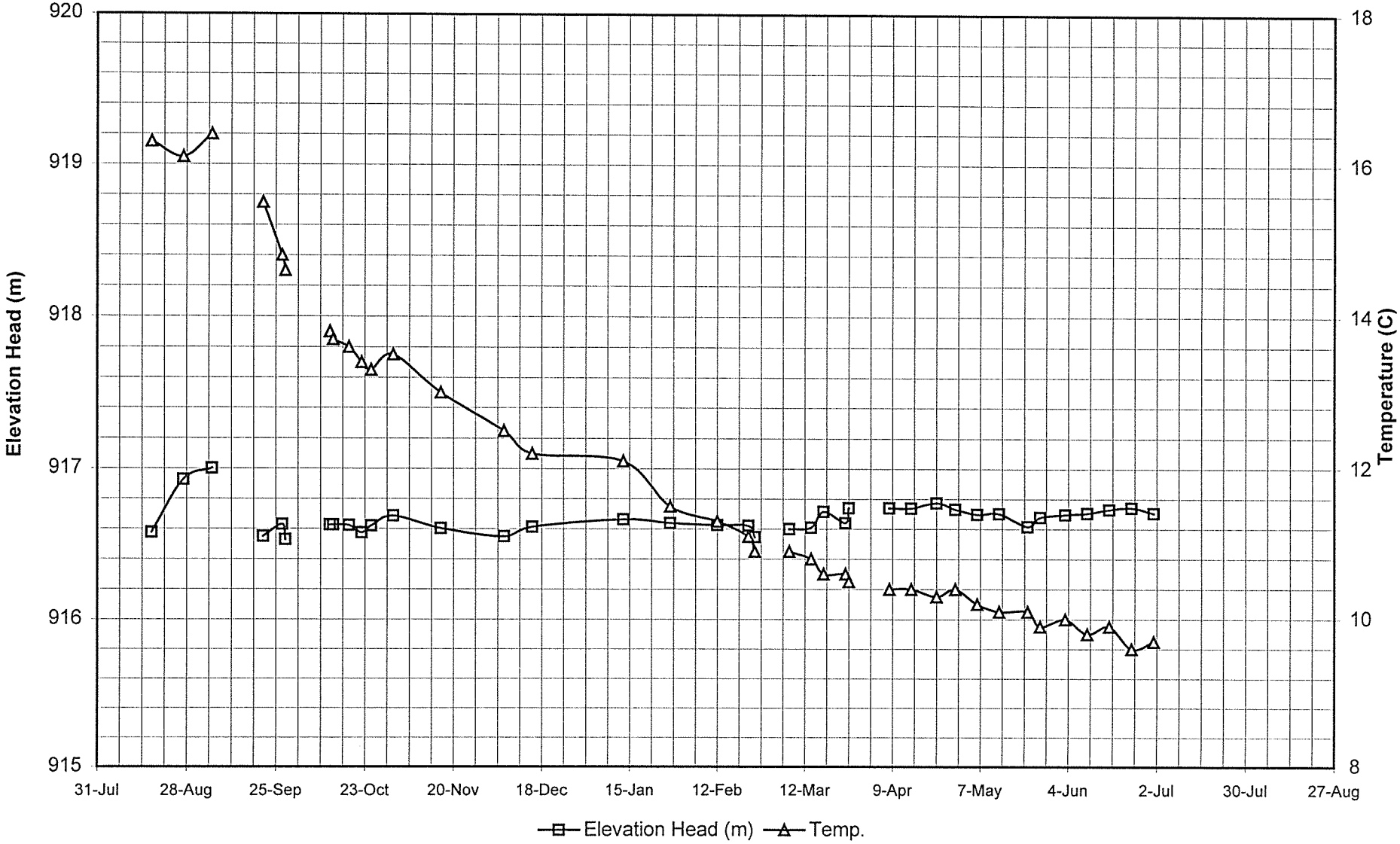
Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER A1-PE1-03
(Chimney Drain Ch. El. 917.2)



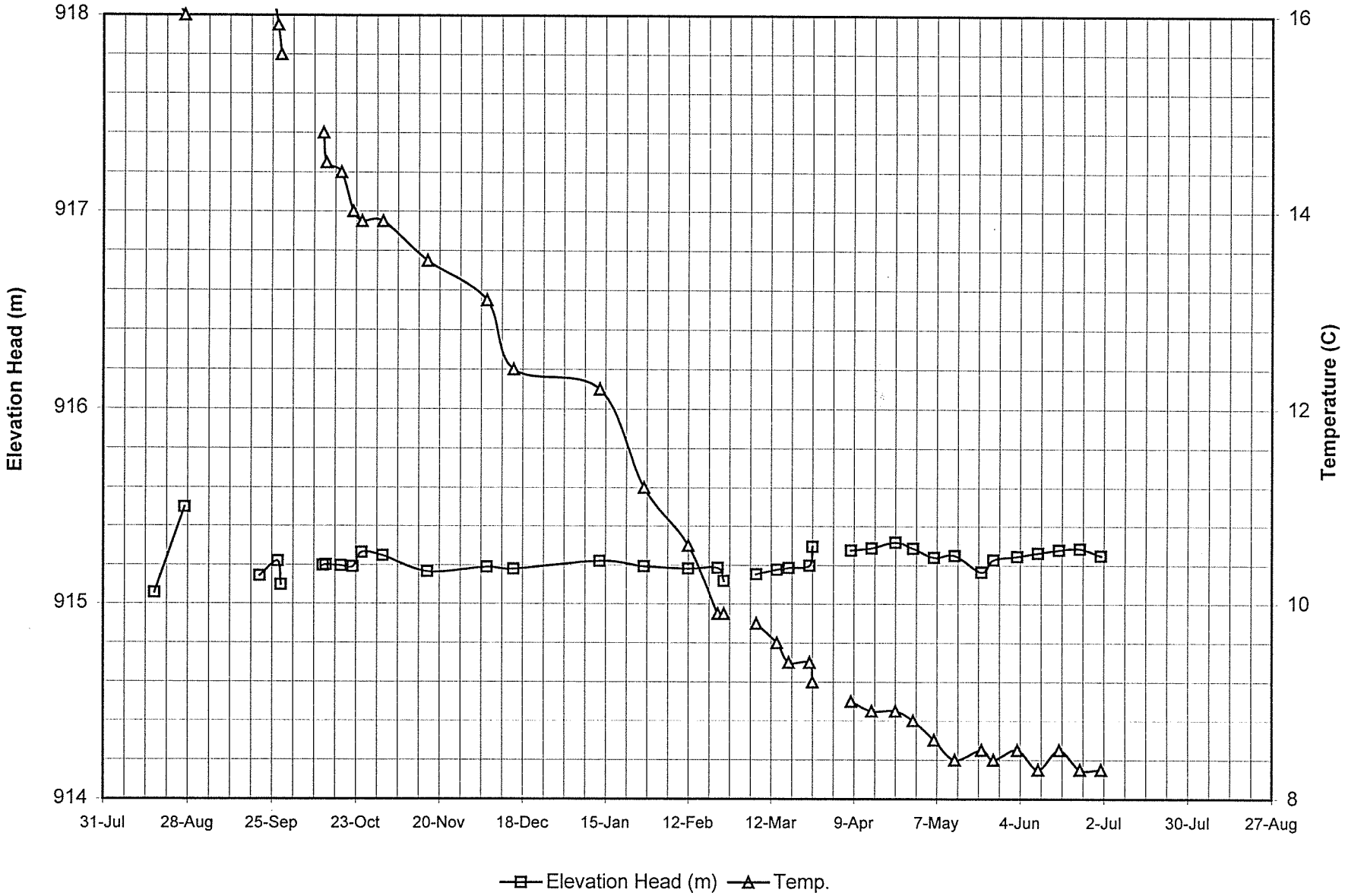
Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER B1-PE1-01
(Foundation Drain FD-1 El. 917.3)



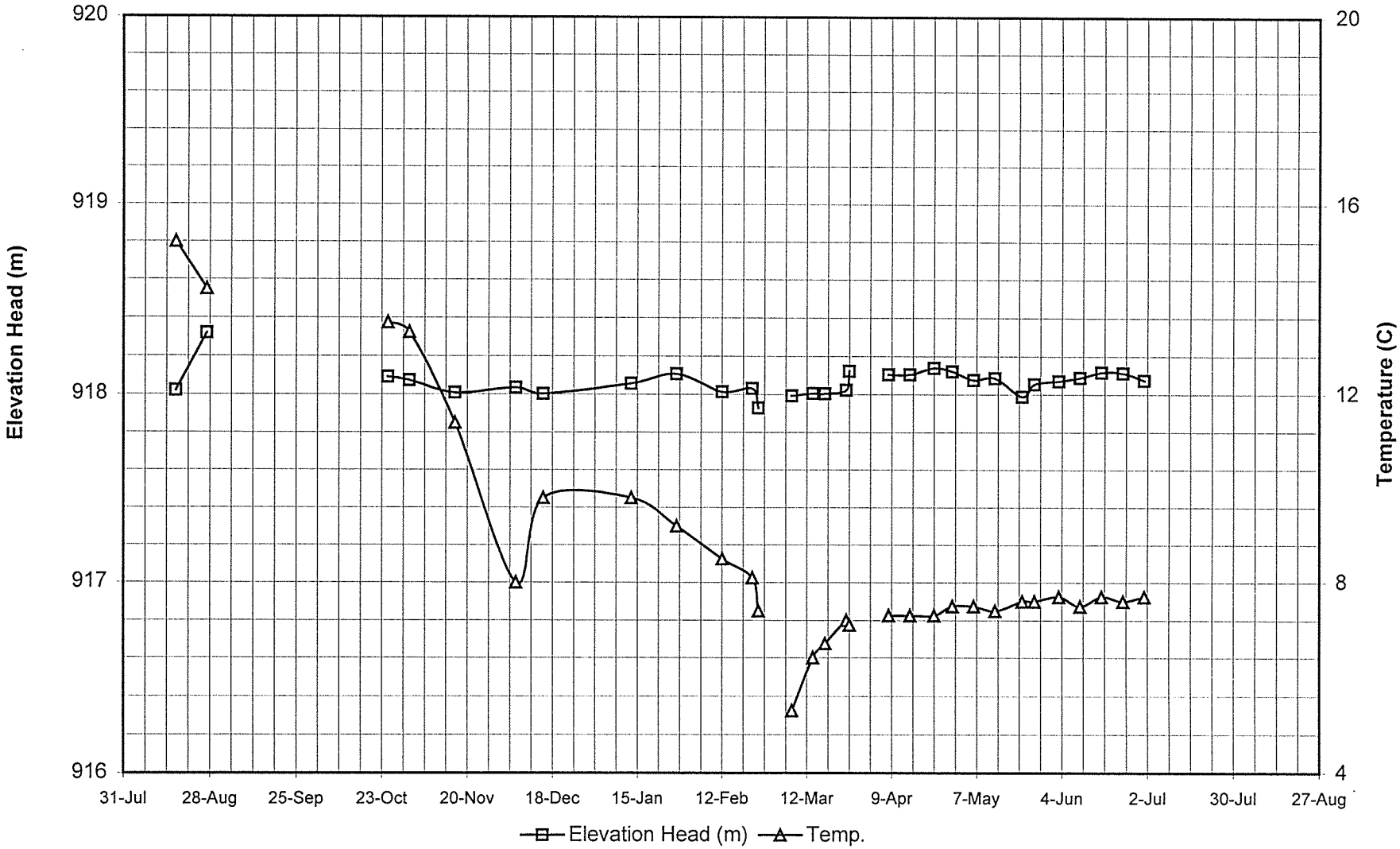
Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER B1-PE1-02
(Foundation Drain FD-2 El. 916.0)



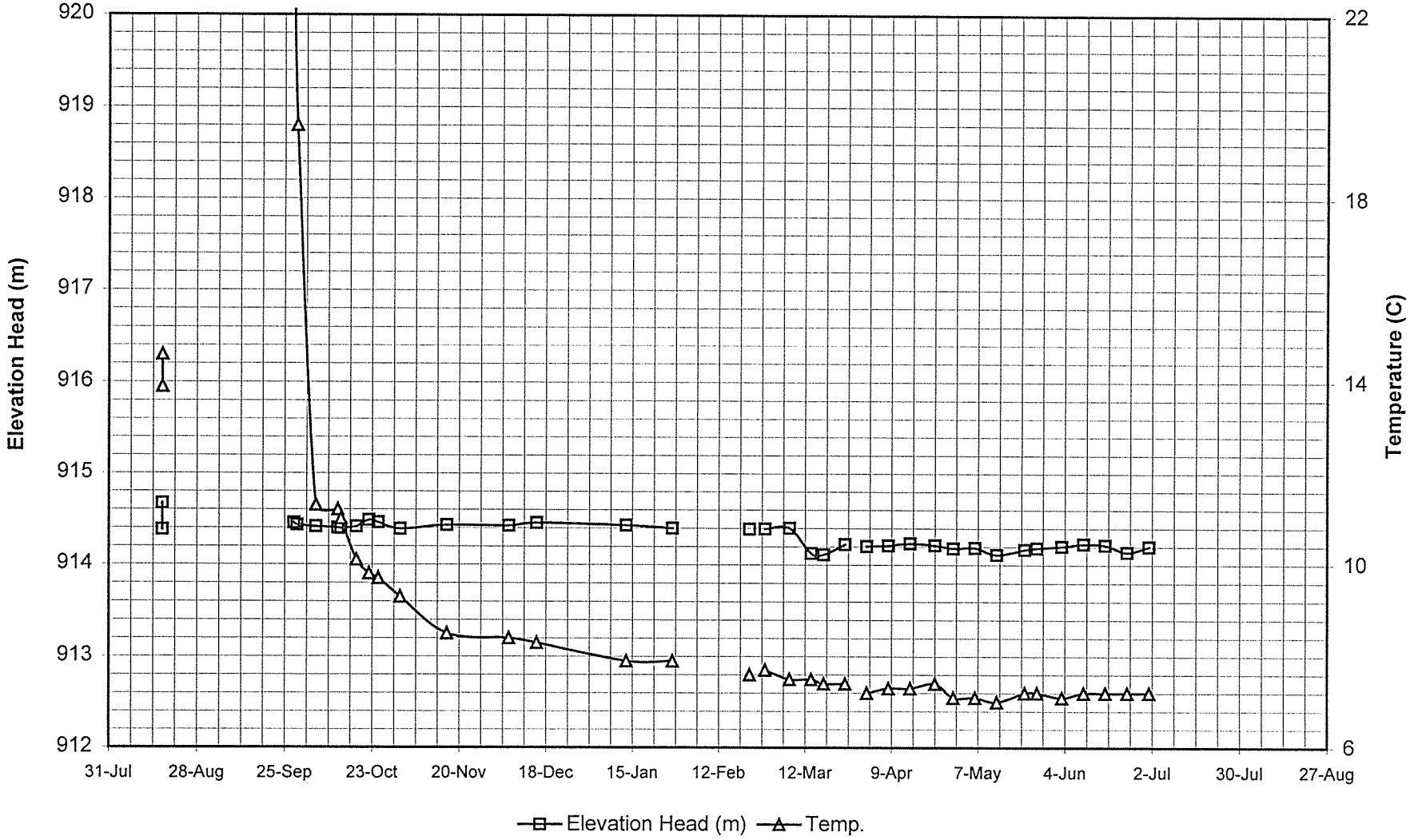
Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER B1-PE1-03
(Chimney Drain El. 918.7)



Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER C1-PE1-01
(Foundation Drain FD-1 El. 914.7)



Knight Piésold Ltd.
CONSULTING ENGINEERS

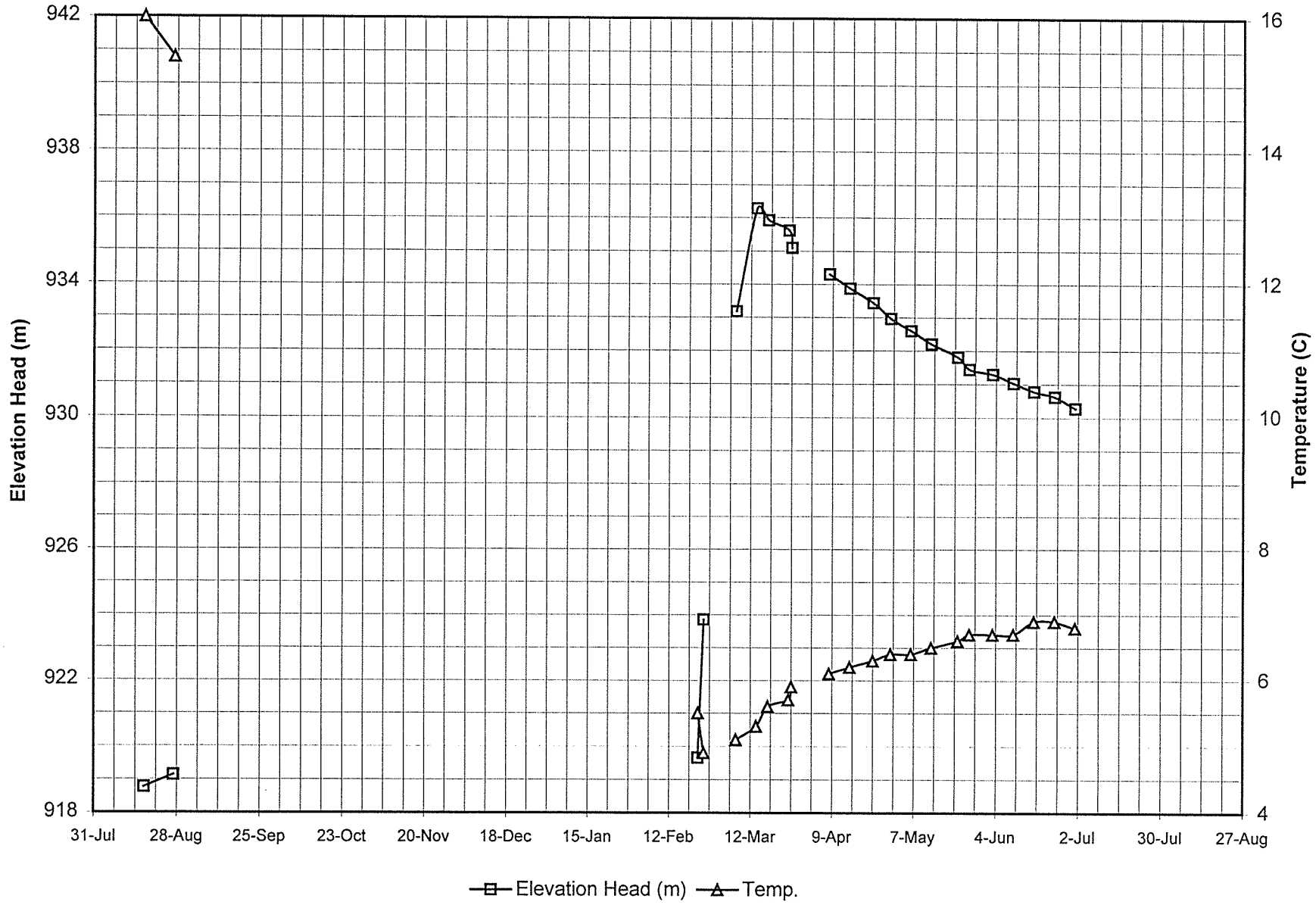
MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER C1-PE1-02
(Chimney Drain El. 916.6)

C3

PIEZOMETER RECORDS FOR EMBANKMENT FILL ZONES

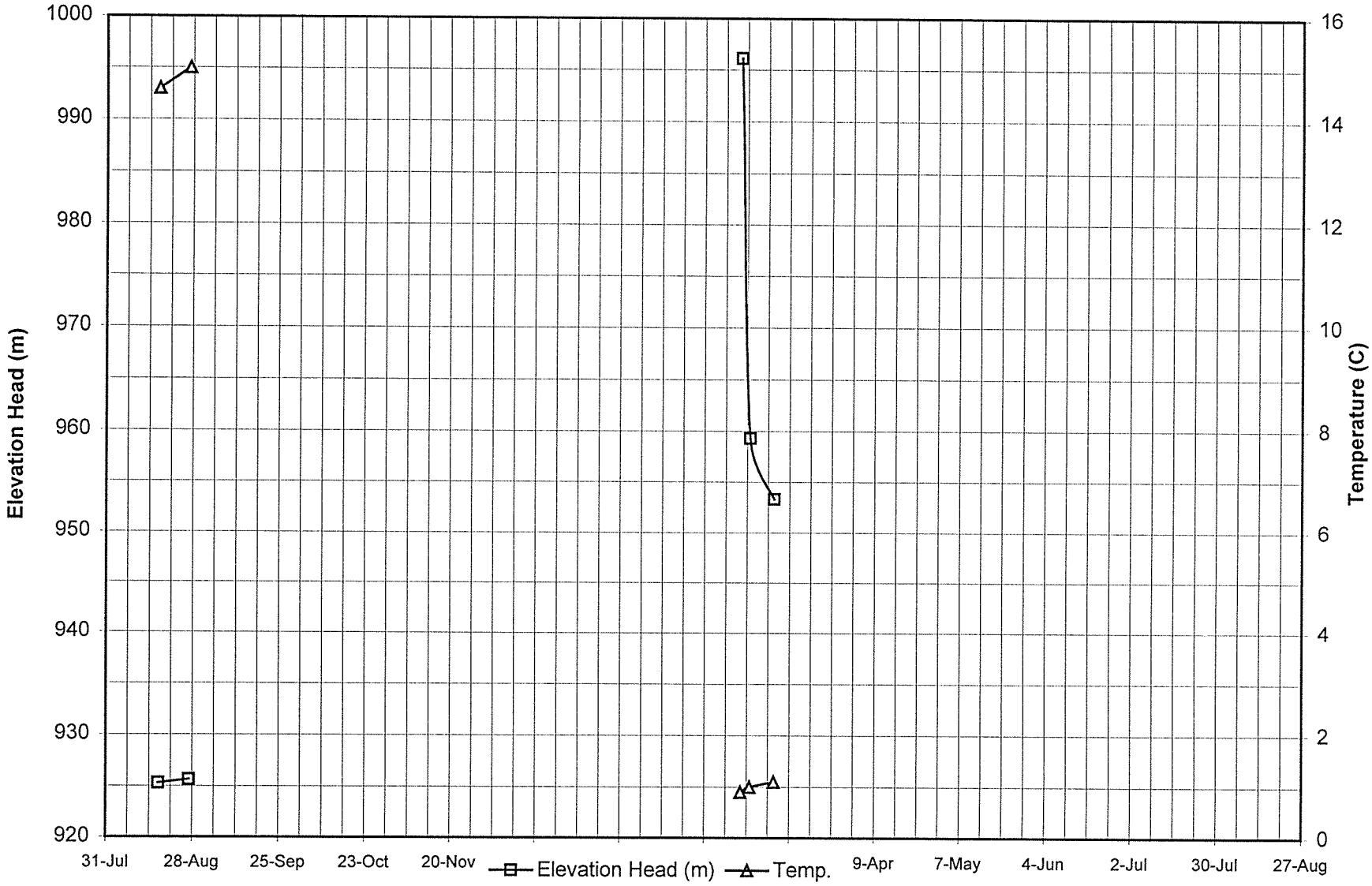
Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER A2-PE2-03
(Fill El. 919.4)



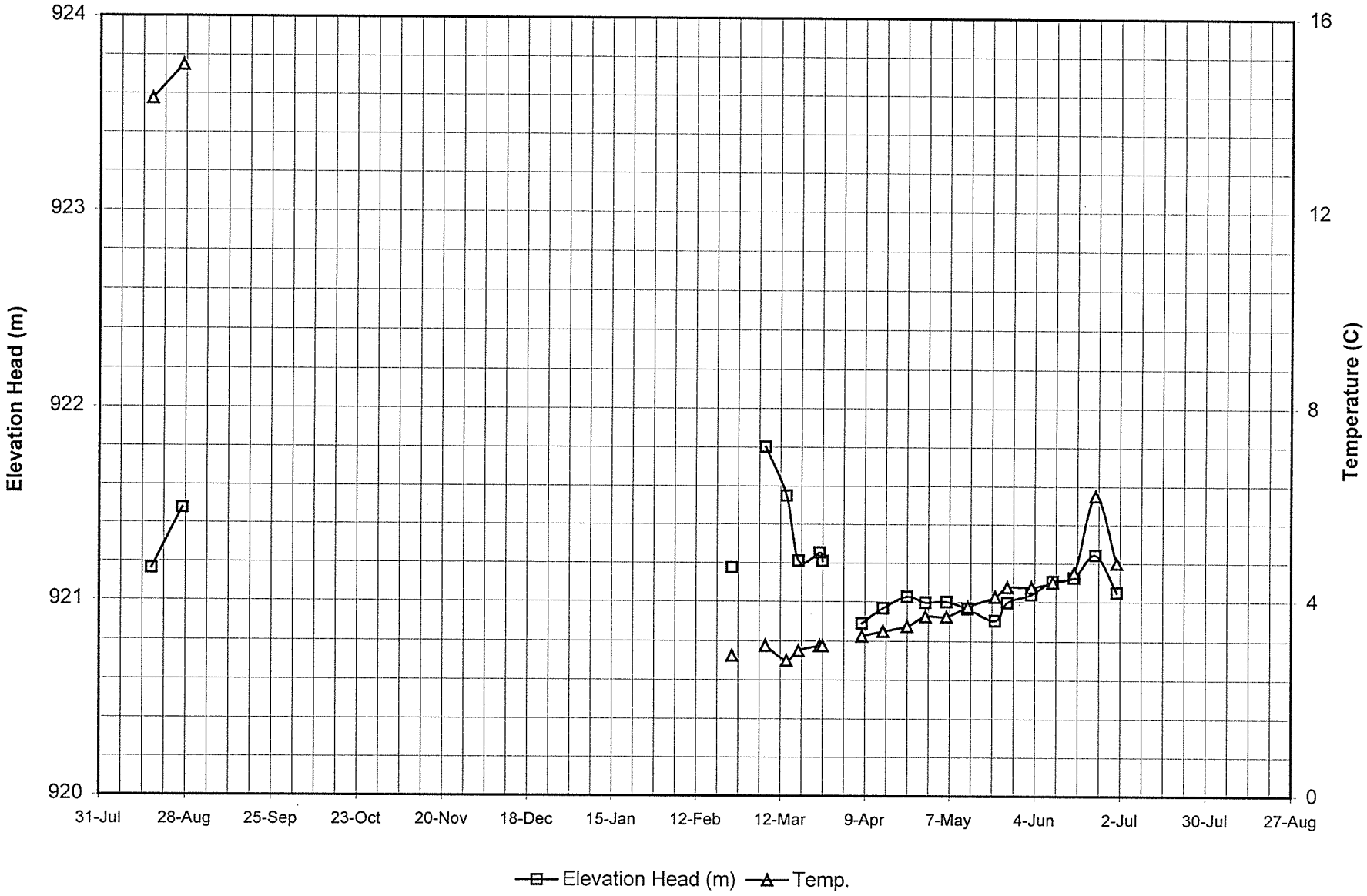
Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER A2-PE2-04
(Fill El. 926.1)



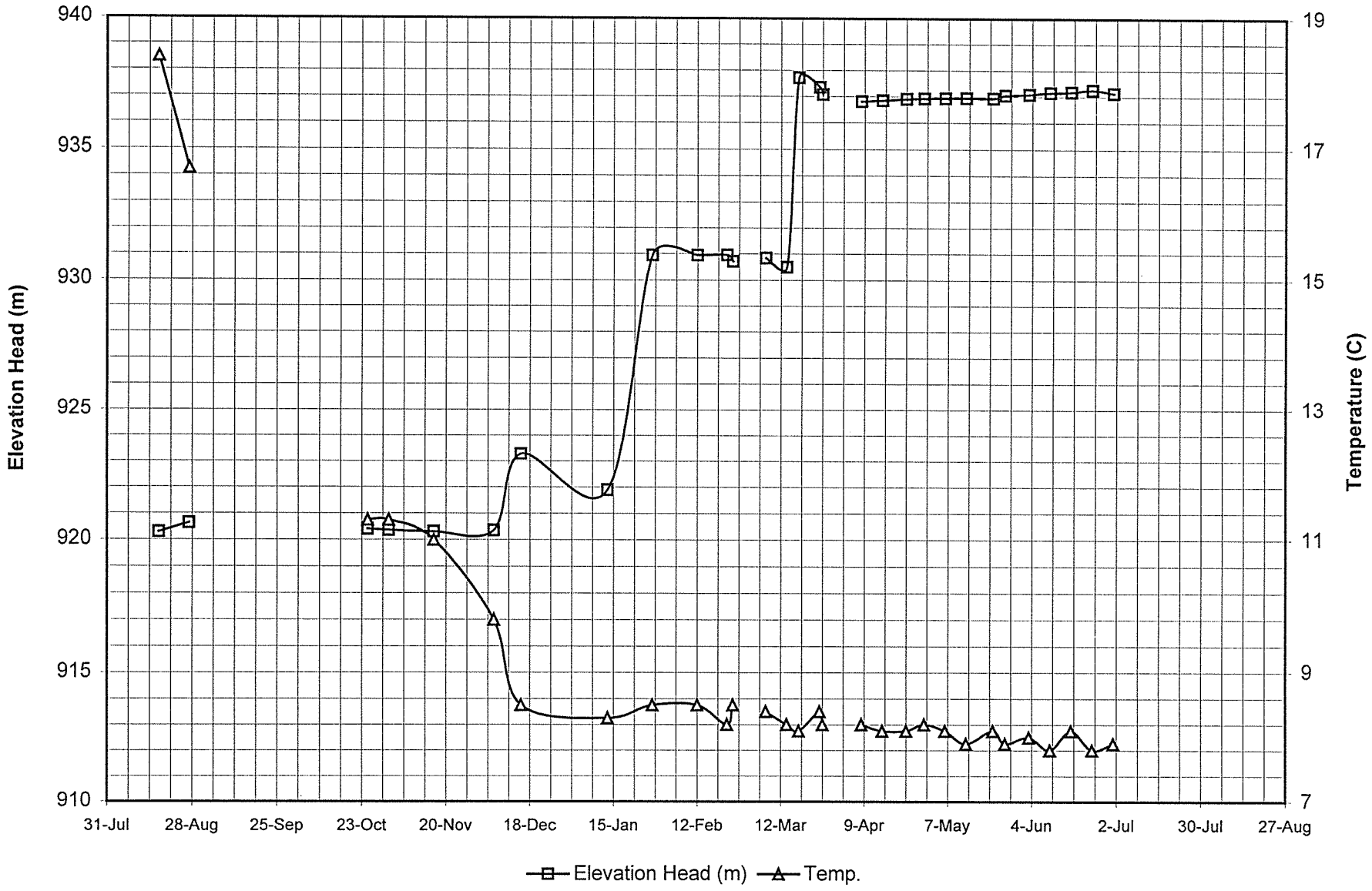
Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER A2-PE2-05
(Fill El. 921.9)



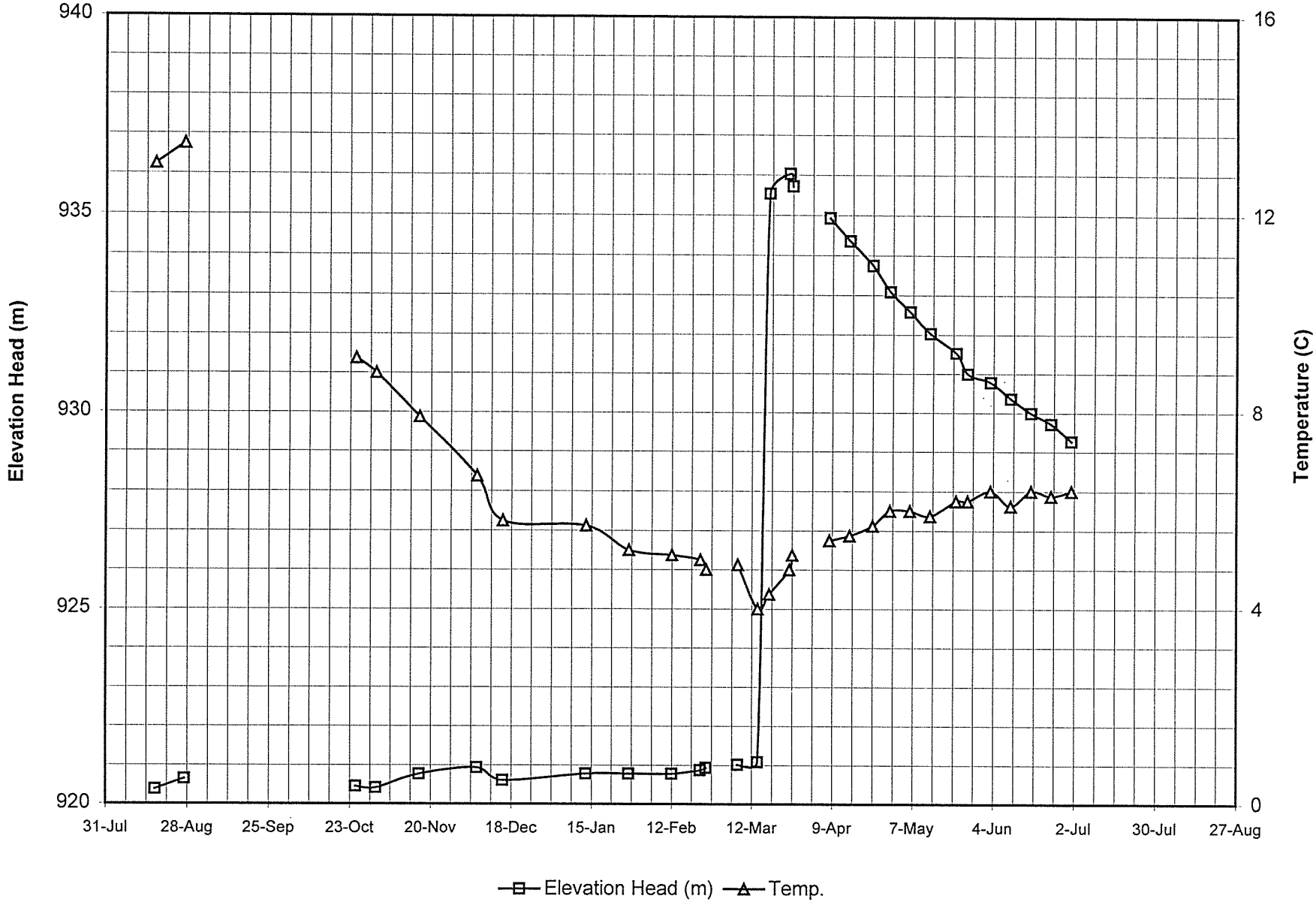
Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER B2-PE2-03
(Fill El. 921.0)



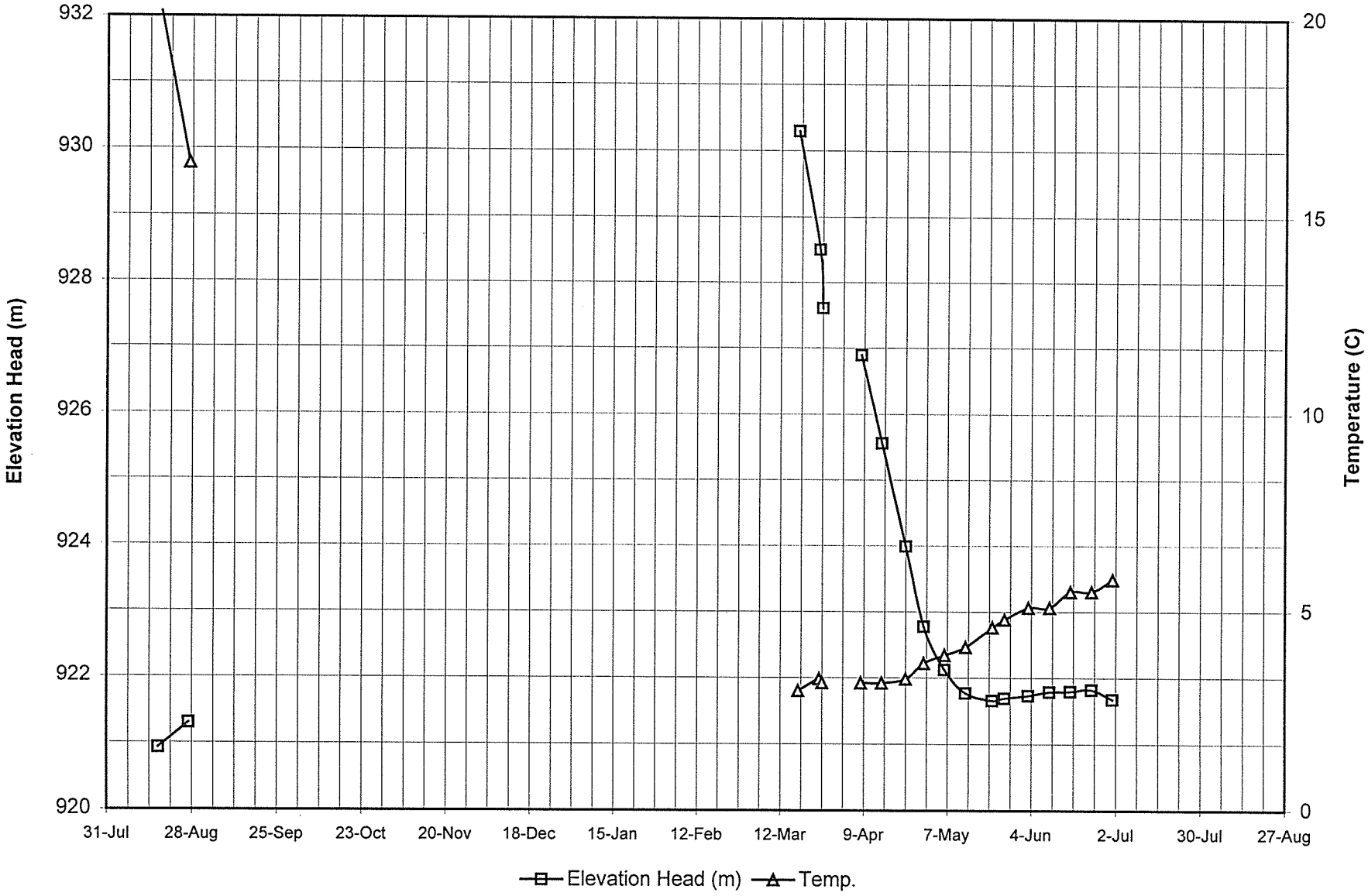
Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER B2-PE2-04
(Fill El. 921.0)



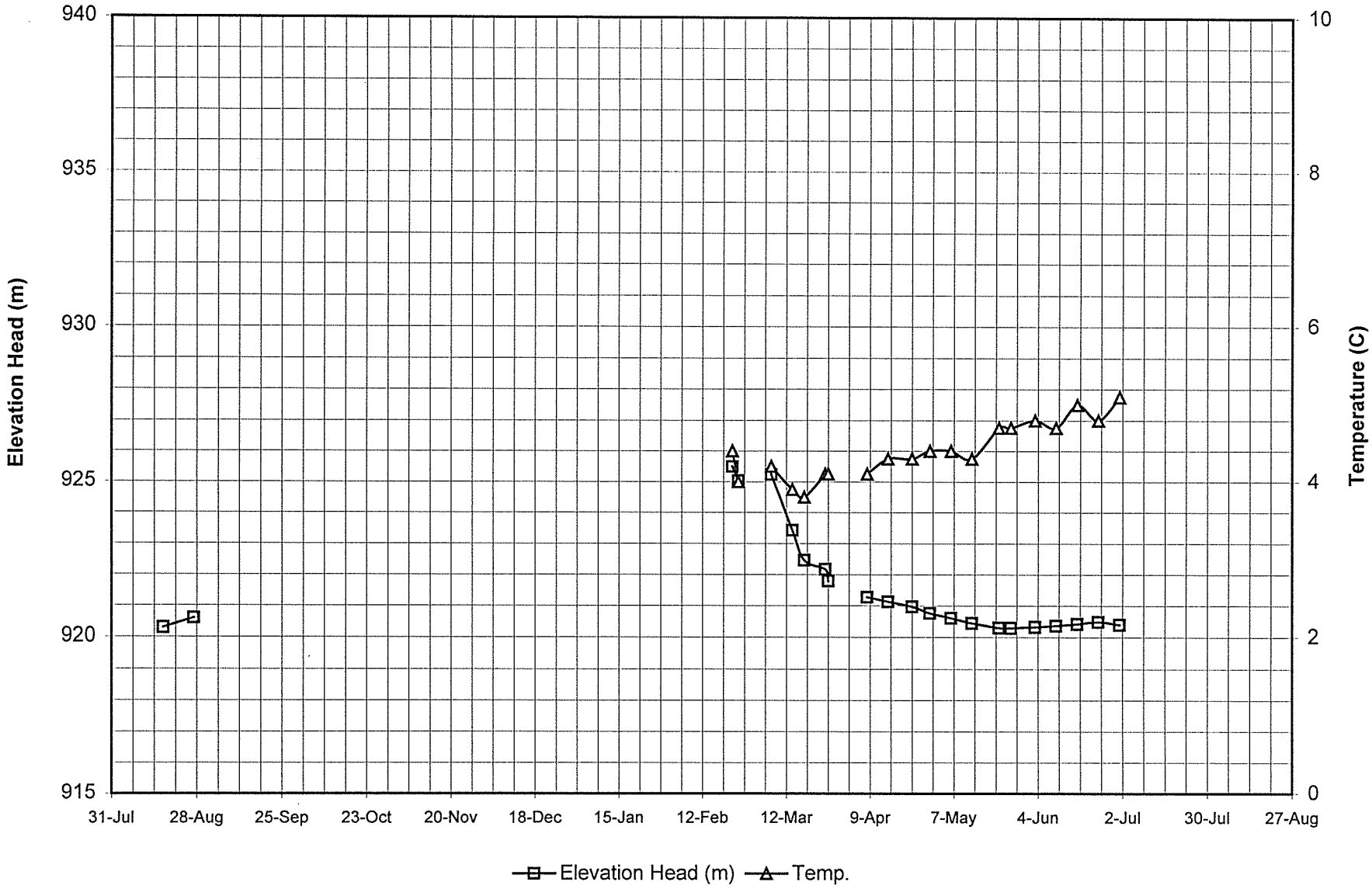
Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER B2-PE2-05
(Fill D/S of Chimney Drain El. 921.7)



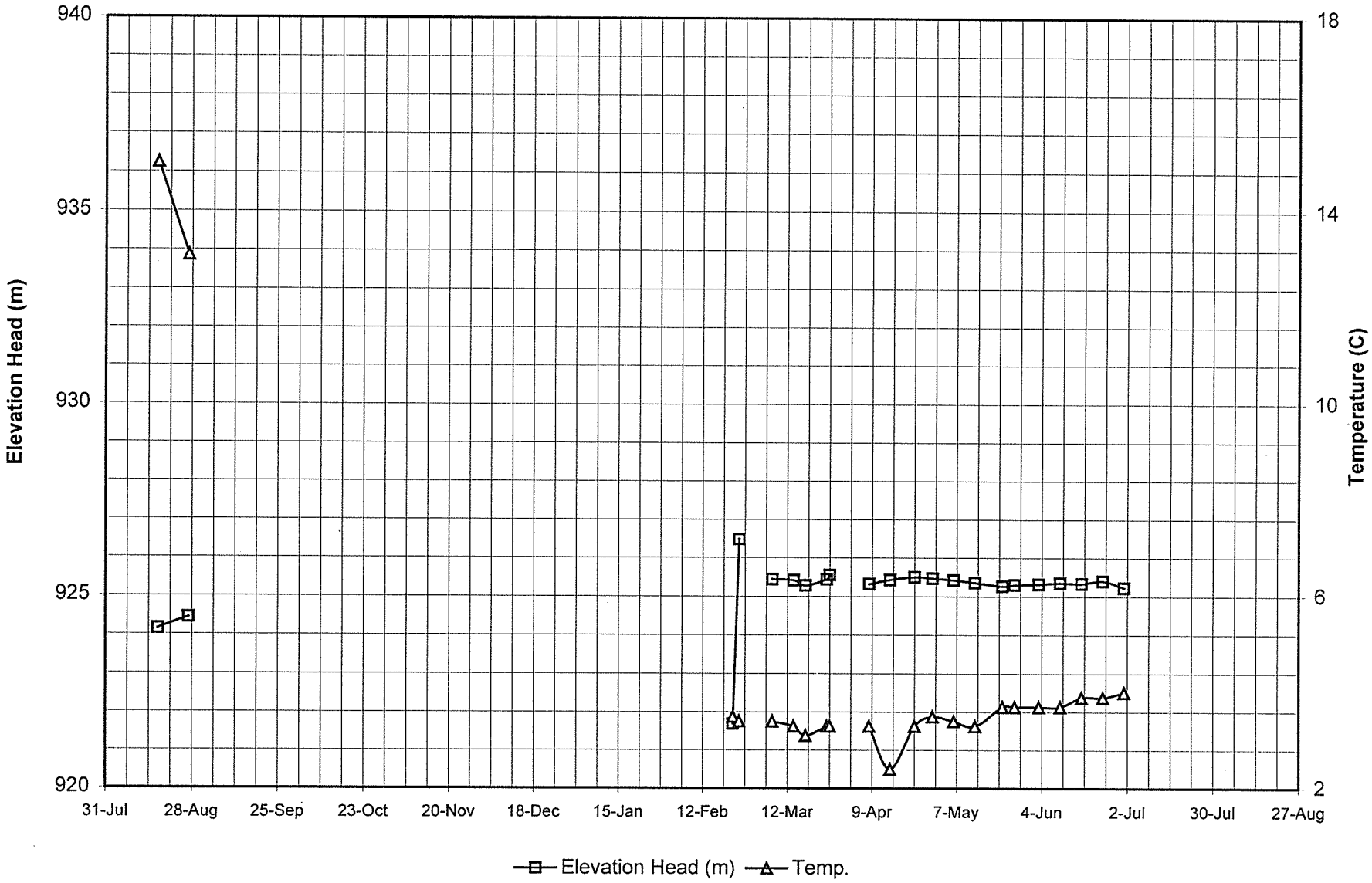
Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER C2-PE2-03
(Fill El. 921.0)



Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER C2-PE2-05
(Fill El. 924.8)



Knight Piésold Ltd.
CONSULTING ENGINEERS

MOUNT POLLEY MINING CORPORATION.
TAILINGS STORAGE FACILITY
PIEZOMETER D2-PE2-01
(Fill El. 931.0)