

**BARRICK GOLD INC.
NICKEL PLATE MINE**



2014 TAILINGS FACILITY ANNUAL REPORT

PREPARED FOR:

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EXECUTIVE SUMMARY

The Nickel Plate tailings facility is a closed and reclaimed facility located approximately three kilometres northeast of Hedley, B.C. The tailings facility was inspected on September 11, 2014, as part of the annual dam safety inspection. In general it was apparent that the facility is in good condition and is being managed well. The tailings embankment appeared to be in good condition. There was no sign of mass movement or instability, or seepage through the embankment. Vegetation on the downstream face of the embankment is well established.

Classification of the tailings dam had been previously assessed as “HIGH” based on the potential consequences of failure and the classification scheme defined by the 2007 Canadian Dam Association (CDA) “Dam Safety Guidelines”. The “HIGH” classification was primarily based on the potential for significant environmental impact (loss or deterioration of important fish or wildlife habitat). The same dam classification of “HIGH” was also adopted for the Freshwater Dam, (also known as the Mascot Pond Dam) which comprises a small earthfill embankment that forms a water storage pond downstream of the south-western corner of the tailings facility. The potential consequences of failure and classification of the tailings dam was reviewed as part of a Dam Safety Review conducted by AMEC Environmental & Infrastructure in 2012. The findings of the Dam Safety Review recommend that the Dam Classification be increased from “HIGH” to “VERY HIGH”. This increase was based on consideration of potential environmental impact to the heavily vegetated slope areas downstream of the tailings facility and along Cahill Creek, and potential impact to water quality in the Similkameen Valley. A “VERY HIGH” dam classification was also recommended for the Freshwater Dam, on the basis that a potential failure may impact the integrity of the toe of the tailings dam.

A dam break analysis, including flood wave routing and inundation mapping, was carried out for the tailings facility and Freshwater Dam by EBA Engineering Consultants Ltd. in 2013. The findings of the dam break analysis confirmed that a Dam Classification of “VERY HIGH” is appropriate for the tailings facility and Freshwater Dam, based on the potential environmental impacts and losses to cultural values downstream.

The recently published CDA Technical Bulletin “Application of Dam Safety Guidelines to Mining Dams” (October, 2014) identifies specific issues to be considered for the design and safety evaluation of mining (tailings) dams. This includes recommendations and guidance for the Active and Passive phases of closure. The Nickel Plate tailings facility is considered to be in the Active Closure phase, due to the current requirement for water management and treatment operations at the facility. The tailings facility is monitored on a regular basis (including annual dam safety inspections) and the presence of site staff provides the ability to effectively respond to any warning signs or emergencies related to dam safety. Therefore, CDA dam safety requirements (including target levels for design earthquake and design flood) applicable for Operations and Transition (to closure) phases of the facility also apply for the Active Closure phase.

The 2013 revision to the CDA Guidelines and recently published CDA 2014 Technical Bulletin “Application of Dam Safety Guidelines to Mining Dams” requires that a dam with a “VERY HIGH” classification be designed for an Earthquake Design Ground Motion (EDGM) having a value equal to “1/2 between 1/2475 and 1/10,000 or MCE”, where MCE is the Maximum Credible Earthquake. An appropriate value for the EDGM is 0.19g, representative for very dense soil foundation conditions

below the tailings facility and Freshwater Dam. Previous design studies for the tailings facility adopted a deterministically derived MCE as the design event, with a peak ground acceleration on rock of 0.16g. Accounting for the amplification of earthquake ground motions through the foundation soils, the estimated peak ground acceleration at the base of the dam was approximately 0.18g. This indicates that there has been no significant change to the design earthquake loading due to revision of the Dam Classification from "HIGH" to "VERY HIGH", or from the recent revision to the CDA Guidelines in 2013.

The 2013 revision to the CDA Guidelines and recently published CDA 2014 Technical Bulletin "Application of Dam Safety Guidelines to Mining Dams" require that a dam with a "VERY HIGH" classification be designed for an Inflow Design Flood (IDF) having a value equal to "2/3 between 1/1000 and PMF", where PMF is the Probable Maximum Flood. Previous design studies for the tailings facility adopted the PMF as the IDF event for storm water management requirements. This flood event exceeds the requirements for a "VERY HIGH" Dam Classification for the Active Closure phase, and also satisfies requirements for the Passive Closure phase. The level of the remaining small tailings pond area has been checked against the embankment crest elevation and adequate freeboard exists to safely contain the flood volume from the PMF event and satisfy minimum freeboard requirements.

Several surficial erosions and wet zones were observed during the 2013 annual site inspection, above and on the downstream slope benches along the eastern side of the tailings facility. This was likely the result of higher than normal precipitation conditions in 2013. Regrading and ditching of the affected areas has since been carried out by site staff to provide positive drainage from the bench areas and facilitate discharge of any water accumulation. Monitoring of the downstream embankment slope and bench area needs to continue, particularly during and following periods of high precipitation, and similar action initiated if any surface erosion and/or wet areas are observed. No wet areas or significant evidence of surface erosion was observed during the 2014 site inspection.

The seepage recovery system, including collection ditches and sumps located along the downstream toe of the tailings embankment are apparently working satisfactorily. Routine clearing of debris from the collection ditches needs to continue to prevent water ponding, and the surrounding ground surface sloped towards the ditches (as required) to provide positive drainage.

There has been no visible change to the tailings surface which remains well covered and vegetated, apart from the small pond area confined against the upstream slope at the northern end of the facility. The upstream valley slopes are also generally well vegetated and show no signs of instability.

Four geomembrane lined ponds located at the northeast end of the facility continue to be used for storage of seepage return and inert sludge from the water treatment process. The ponds appear to be in good condition and operating as designed. The embankments forming the lined ponds appear to be in good condition.

The Sediment Pond (Rock Quarry Lake) at the northeast end of the tailings embankment is filled with water from runoff, direct precipitation and infiltration. The water level was approximately 0.5 metres below the spillway elevation at the time of the inspection.

Monitored instrumentation consists of several vibrating wire and standpipe piezometers, located in the embankment dam, foundations and tailings deposit. Piezometer data recorded up to early September 2014 generally indicates stable water levels, with seasonal fluctuations, within the embankment, tailings deposit and embankment foundation. Long-term piezometric monitoring data shows that water level trends are typically decreasing or steady-state, indicating the embankment is generally continuing to drain properly. However, seasonal fluctuations have been larger in recent years, attributed to higher than normal precipitation/snowfall conditions over the last three years. It is likely that this higher than normal precipitation has resulted in a general rise of the phreatic surface within the tailings facility (approximately 5 feet). Those piezometers showing the largest response to the seasonal increases in 2013 and 2014 need to be monitored closely during and following the 2015 freshet.

The stability of the tailings embankment has been shown previously to be satisfactory using piezometric conditions recorded at the end of 2006. Calculated static factors of safety of 1.6 exceeded the minimum required factor of safety of 1.5 for steady-state and long-term (closure) conditions. The apparent rise in the phreatic surface indicated by recent piezometric data does not have a significant impact on the stability of the embankment. Piezometric levels are far below threshold levels established previously for key piezometers and included in the OMS manual. However, a review of the embankment stability will need to be carried out in 2015 if recorded piezometric levels increase and remain above 2014 levels.

A stability assessment of the Freshwater Dam was carried out by EBA Engineering Consultants Ltd. in 2013, including a seismic stability analysis using a peak ground acceleration of 0.19g to represent the EDGM. The results indicate that the upstream and downstream slopes of the dam satisfy CDA minimum factor of safety requirements for static and seismic (pseudo-static) stability.

There is currently little water stored behind the Freshwater Dam. A study by EBA in 2013 demonstrated that it has sufficient capacity to accommodate the IDF and maintain sufficient freeboard. The potential flood volume resulting from the Probable Maximum Flood on the small catchment is also well below the available storage capacity of the freshwater pond.

Modifications to the spillway at the Freshwater Dam were carried out in May 2013 to increase the freeboard capacity of the spillway and provide a minimum one metre freeboard. The modification provides a total freeboard of about 4 feet (1.2 metres) between the spillway invert and the top of the spillway.

The most recent Operation, Maintenance and Surveillance (OMS) manual was prepared for Nickel Plate Mine by AMEC Environment & Infrastructure (December 19, 2013). The Nickel Plate Mine has Emergency Planning and Response Plan (EPRP) information contained in the document "Nickel Plate Mine Tailings Facility OMS Manual and EPP - Rev 4". Dam breach inundation maps prepared by EBA Engineering Consultants Ltd in 2013 for the tailings facility and Freshwater Dam have been incorporated into this document.

For a "VERY HIGH" dam classification a formal dam safety review is required every five years. The last dam safety review was carried out in 2012. Accordingly, the next dam safety review should be carried out no later than 2017. The next annual dam safety inspection should be scheduled for the summer or fall of 2015.

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1 – INTRODUCTION

The Nickel Plate Mine is a gold mine owned by Barrick Gold Inc. (formerly Homestake Canada Inc.). The mine is located 3 kilometres northeast of Hedley, B.C. at the southern end of the Thompson Plateau, in south-central British Columbia. Its location is shown on Figure 1.1.

The mine commenced operation in early 1987 and ceased operation in October 1996. The mine used open pit mining techniques combined with two-stage leaching and a Merrill-Crowe zinc precipitation milling process. During the initial years of operation the tailings stream was treated with hydrogen peroxide to destroy cyanide prior to disposal in the tailings facility. From September 1991 until closure the tailings stream was treated using an Inco-SO₂/air process to destroy cyanide prior to disposal.

The tailings facility comprises a homogeneous till embankment with a chimney drain and foundation blanket drain for internal drainage. The facility was originally designed by Robinson Dames and Moore and SRK-Robinson. The first stage of construction was completed in 1986 with two centreline raises and one upstream raise bringing the crest elevation to 4538 ft in 1992.

Knight Piésold Ltd. was engaged by Homestake Canada Inc. in January 1993 to design subsequent raises to the tailings facility and to provide consulting services to the mine on all aspects of the operation and monitoring of the facility. In 1994 the second embankment raise was constructed to elevation 4556 ft. The second raise and all subsequent raises were constructed following the modified centreline method. In 1995 the embankment was raised to 4570 ft at the northeast abutment and 4572 ft at the southwest abutment. The 1995 embankment expansion was sufficient to contain the tailings discharged until October 1996, at which time the mine ceased operations. Details of the final embankment raise are presented in the Knight Piésold report "Tailings Facility Expansion, Stage VII Embankment Raise, Construction Report – 1995" (Ref. No. 1819/2).

Knight Piésold was involved with reclamation works at the mine. Surface capping of the tailings facility commenced in May 1998. The majority of the closure and reclamation construction at the tailings facility was completed in 1998. Between the end of operations in 1996 and the commencement of tailings cover construction the free water (supernatant) pond was almost entirely removed from the tailings surface. Currently a small pond remains covering an area at the northern end of the facility. There has been no construction activities carried out on the tailings cover system since 1998. The unfinished area of the cover comprises an area in the north-eastern corner of the tailings facility where the reclaim pump is located. The small pond area is maintained as back up storage in case the discharge of water to Hedley Creek is disrupted due to low flow conditions or line freezing. It is anticipated that this small area of tailings surface will be covered and reclaimed once water treatment is no longer required. The current volume of water in the pond is minor. The general arrangement of the tailings facility is shown on Figure 1.2.

After mining and milling ceased, Nickel Plate Mine converted the mill to a biological treatment plant to treat supernatant water in the tailings facility and water from the tailings embankment drains and seepage collection wells. The treated water is discharged to Hedley Creek via a pipeline and diffuser. The by-product of the treatment process is nitrogen gas and an inert sludge. Water treatment will continue until the quality of water from the embankment drains and seepage collection wells achieves an acceptable level.

A revised closure plan for the tailings facility was prepared by AMEC Earth and Environmental (issued January 27, 2010). The document includes a description of site conditions, a review of studies and activities carried out for the tailings facility since the end of operations, and an updated closure plan. A primary objective of the revised closure plan is to reduce or eliminate downstream seepage and significantly reduce seepage volumes requiring treatment.

This annual report has been prepared to meet the “Guidelines for Annual Dam Safety Inspection Reports” of the Ministry of Energy and Mines (August, 2013). The report is based on information contained in previous reports on the project, instrumentation and monitoring data provided by Nickel Plate Mine, and on observations made by Graham Greenaway, P.Eng. of Knight Piésold Ltd. during a site visit on September 11, 2014.

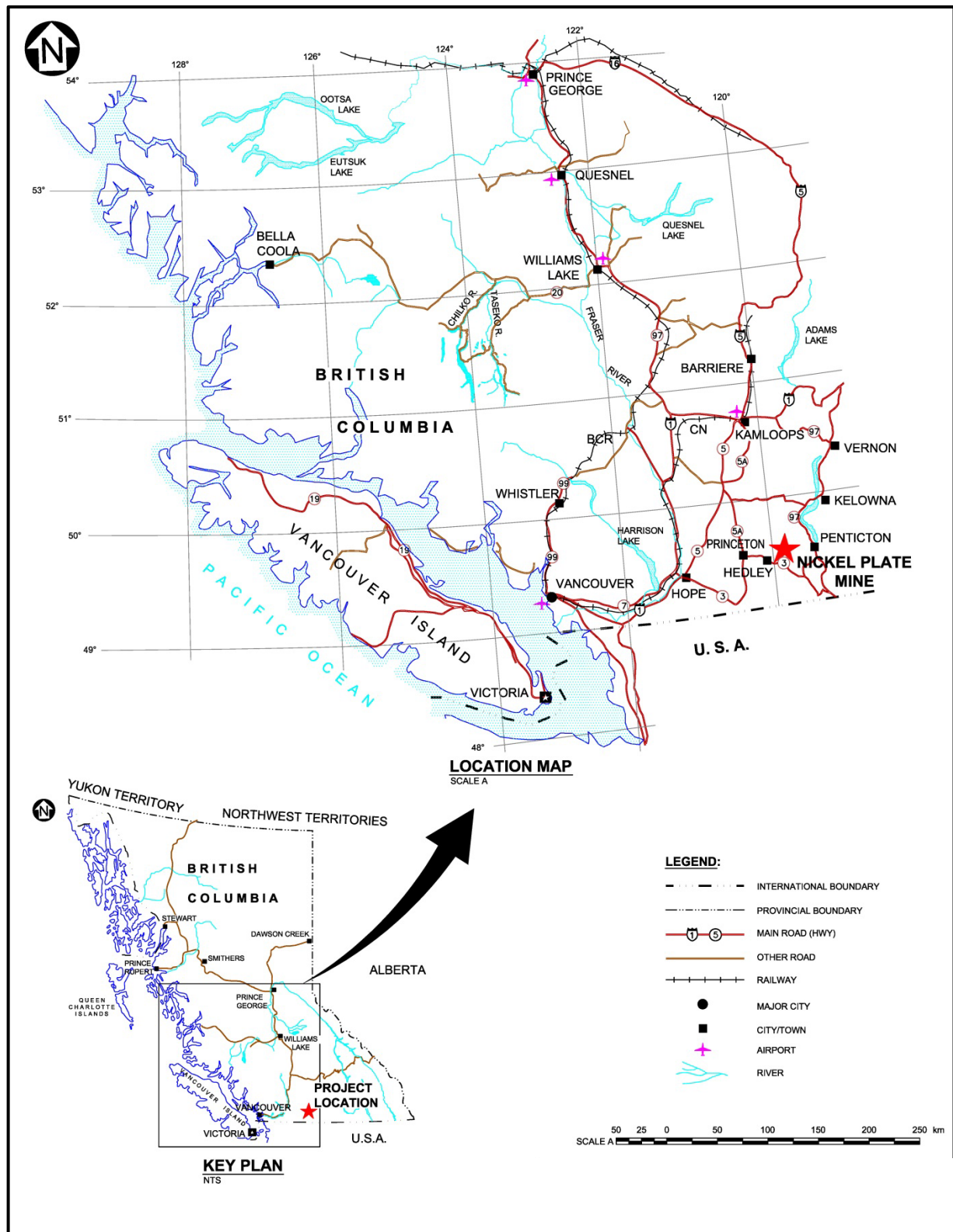


Figure 1.1 Location Plan



Figure 1.2 Tailings Storage Facility – General Arrangement

2 – DAM CLASSIFICATION

2.1 CONSEQUENCE CLASSIFICATION

Classification of the tailings dam had been previously assessed as “HIGH” based on the potential consequences of failure and the classification scheme defined by the 2007 Canadian Dam Association (CDA) “Dam Safety Guidelines”. The potential for loss of life following a failure of the tailings dam is minor. However, the environmental and socio-economic impacts would likely be significant. The HIGH classification is primarily based on the potential for significant environmental impact (loss or deterioration of important fish or wildlife habitat). The same dam classification of HIGH was also adopted for the Freshwater Dam, (also known as the Mascot Pond Dam) which comprises a small earthfill embankment that forms the freshwater pond downstream of the south-western corner of the tailings facility.

The potential consequences of failure and classification of the tailings dam was reviewed as part of a Dam Safety Review (DSR) conducted by AMEC Environmental & Infrastructure in 2012 (Report issued November 21, 2012). The findings of the DSR recommend that the Dam Classification be increased from “HIGH” to “VERY HIGH”. This increase was based on consideration of potential environmental impacts downstream of the tailings facility, including impact to the heavily vegetated slope areas downstream and along Cahill Creek, and impact to water quality in the Similkameen Valley. A “VERY HIGH” dam classification was also recommended for the Freshwater Dam, on the basis that a potential failure may impact the integrity of the toe of the tailings dam.

The 2012 DSR recommended that a dam break analysis be conducted for the tailings facility and Freshwater Dam (Mascot Pond Dam) to provide a more precise evaluation of the potential downstream inundation area. A dam break analysis, including flood wave routing and inundation mapping, was carried out for the tailings facility and Freshwater Dam by EBA Engineering Consultants Ltd. in 2013 (EBA, December 12th, 2013). The findings of the dam break analysis were used by EBA to review the Dam (Consequence) Classification for the tailings facility and Freshwater Dam. It was determined that a Dam Classification of “VERY HIGH” is appropriate for the tailings facility and Freshwater Dam, based on the potential environmental impacts and losses to cultural values downstream. Details of the dam break analysis and the consequence classification review are presented in the EBA report “Nickel Plate Tailings Storage Facility & Mascot Pond Dam Engineering Assessment” (December 12th, 2013).

The most recent Operation, Maintenance and Surveillance (OMS) manual was prepared for Nickel Plate Mine by AMEC Environment & Infrastructure (December 19, 2013). An Emergency Preparedness Plan (EPP) is required by the Ministry of Energy and Mines for a dam with a consequence category of “HIGH”, “VERY HIGH” or “EXTREME”. The Nickel Plate Mine has Emergency Planning and Response Plan (EPRP) information contained in the document “Nickel Plate Mine Tailings Facility OMS Manual and EPP - Rev 4”. Dam breach inundation maps prepared by EBA in 2013 for the tailings facility and Freshwater Dam have been incorporated into this document.

The recently published CDA Technical Bulletin “Application of Dam Safety Guidelines to Mining Dams” (October, 2014) identifies specific issues to be considered for the design and safety evaluation of mining (tailings) dams. This includes recommendations and guidance for the Active

and Passive phases of closure. The Nickel Plate tailings facility is considered to be in the Active Closure phase, due to the current requirement for water management and treatment operations at the facility. The tailings facility is monitored on a regular basis (including annual dam safety inspections) and the presence of site staff provides the ability to effectively respond to any warning signs or emergencies related to dam safety. Therefore, the CDA dam safety requirements (including target levels for design earthquake and design flood) applicable for Operations and Transition (to closure) phases of the facility also apply for the Active Closure phase.

2.2 DESIGN EARTHQUAKE

The EBA study conducted in 2013 included a seismicity review and determination of the probabilistic ground motion parameters for the Nickel Plate Mine site. The peak ground accelerations determined for the 1/2475, 1/5,000 and 1/10,000 year events are 0.15g, 0.19g and 0.24g respectively. These values are representative for very dense soil and soft rock site conditions. Foundation conditions below the tailings facility and Freshwater Dam can be defined as typically very dense soils.

The 2013 revision to the CDA Guidelines and recently published CDA 2014 Technical Bulletin "Application of Dam Safety Guidelines to Mining Dams" requires that a tailings dam in the Active Closure phase with a "VERY HIGH" classification be designed for an Earthquake Design Ground Motion (EDGM) having a value equal to "1/2 between 1/2475 and 1/10,000 or MCE", where MCE is the Maximum Credible Earthquake. An appropriate value for the EDGM is 0.19g (using the 1/10,000 year event for calculation and not the MCE).

Previous design studies for the tailings facility adopted a deterministically derived MCE as the design event, with a peak ground acceleration on rock of 0.16g and earthquake magnitude of 7.5 (Knight Piésold report Ref. No. 10181/12-3, May 13, 1998). Accounting for the amplification of earthquake ground motions through the foundation soils, the corresponding peak ground acceleration for very dense soil conditions at the base of the dam is approximately 0.18g. This was determined from site-specific dynamic response analyses carried out for design studies in 1993 (Knight Piésold report Ref. No. 1812/1). This indicates that there has been no significant change to the design earthquake loading due to revision of the Dam Classification from "HIGH" to "VERY HIGH", or from the recent revision to the CDA Guidelines in 2013.

A stability assessment of the Freshwater Dam was carried out by EBA in 2013 as part of their engineering assessment (EBA, 2013). This included a seismic stability analysis using a peak ground acceleration of 0.19g. The findings of the stability assessment are discussed in Section 3.4.

2.3 DESIGN FLOOD

The 2013 revision to the CDA Guidelines and recently published CDA 2014 Technical Bulletin "Application of Dam Safety Guidelines to Mining Dams" require that a dam with a "VERY HIGH" classification be designed for an Inflow Design Flood (IDF) having a value equal to "2/3 between 1/1000 and PMF", where PMF is the Probable Maximum Flood.

Previous design studies for the tailings facility (Knight Piésold, 1993) adopted the PMF as the IDF event for storm water management requirements. This flood event exceeds the requirements for a "VERY HIGH" Dam Classification for the Active Closure phase, and also satisfies requirements for

the Passive Closure phase. A review of the flood storage capacity and available freeboard for the tailings facility following a PMF event is provided in Section 4.1.

A hydrology analysis for the Freshwater Dam was carried out by EBA Engineering Consultants Ltd. as part of their engineering assessment (EBA, 2013). This included estimation of the IDF for a “VERY HIGH” Dam Classification. The findings of the study are discussed in Section 4.2.

3 – TAILINGS FACILITY PERFORMANCE

3.1 SITE INSPECTION

The tailings facility was inspected by Graham Greenaway, P.Eng. of Knight Piésold Ltd. on September 11, 2014. It was a clear sunny day allowing a complete inspection of the facility. Support was provided during the inspection by Gary Douglas, Plant Manager at Nickel Plate Mine and Vanessa Bell, Senior Environmental Specialist at Nickel Plate Mine.

The specific components that were inspected included the following:

- Tailings embankment (including the crest, downstream face, benches and downstream toe area)
- Contingency pond area
- Seepage storage and sludge containment ponds (Ponds 1 to 4)
- Sediment pond (rock quarry lake)
- Uphill basin slopes, and
- Freshwater Dam (Mascot Pond Dam) and spillway.

A photographic record of the site inspection is included with this report in Appendix B.

It was apparent that the facility is in good condition and being managed well. There were no signs of mass movement or embankment instability. No surface seepage was observed during the site inspection. The embankment crest was generally in a good condition. The downstream face vegetation is well established. Photos 1 to 6 show the general site arrangement of the tailings facility, downstream embankment slopes and bench.

The small pond at the northern corner of the facility is confined against the upstream slope (see Photo 7). This pond area can be used as an emergency reserve for collected seepage water. The remainder of the tailing surface is capped and well vegetated (see Photos 1 and 3). The upstream valley slopes are also generally well vegetated (see Photo 8). A ditch along the Hedley Road intercepts water upgrade from the tailings facility.

Several surficial erosions and wet zones were observed during the 2013 annual site inspection, above and on the downstream slope benches along the eastern side of the tailings facility. This was likely the result of higher than normal precipitation conditions in 2013. Regrading and ditching of the affected areas has since been carried out by Nickel Plate site staff to provide positive drainage from the bench areas and facilitate discharge of any water accumulation. Monitoring of the downstream embankment slope and bench area needs to continue, particularly during and following periods of high precipitation, and similar action initiated if any surface erosion and/or wet areas are observed. No wet areas or significant evidence of surface erosion was observed during the 2014 site inspection.

The seepage recovery system, including collection ditches and sumps located along the downstream toe of the tailings embankment are apparently working satisfactorily. Routine clearing of debris from the collection ditches needs to continue to prevent water ponding, and the surrounding ground surface sloped towards the ditches (as required) to provide positive drainage.

The four geomembrane lined ponds located at the northeast end of the facility continue to be used for storage of collected seepage water and sludge containment (see Photos 2 and 3). Pond 1 (Photo 9) and Pond 2 (Photo 10) are used to receive the seepage water collected by the various

embankment toe collection systems prior to delivery to the water treatment plant. Pond 3 (Photo 11) and Pond 4 (Photo 12) are used to store sludge produced as a by-product of the water treatment process. There is significant vegetation on the surface of the stored sludge, particularly in Pond 4. The embankments forming the lined ponds appear to be in good condition.

The Sediment Pond (Rock Quarry Lake) located at the northeast end of the tailings embankment is filled with water from runoff, precipitation and infiltration. At the time of the site inspection the water level in the pond was approximately 0.5 m below the spillway grade (see Photo 13).

The Freshwater Dam (Mascot Pond Dam) is located downstream of the southwest corner of the tailings facility. At the time of the site inspection the dam contained a small pond from precipitation and runoff water (see Photos 14 and 15). This small dam is not currently used, but provides contingency storage for untreated water, if required. The dam is generally in good condition. Previous inspections have noted minor slope erosion and water accumulation at the toe. No seepage or water accumulation was noted at the toe of the Freshwater Dam during the dry conditions of this inspection. Overflow from the pond would discharge through a spillway located on the southwest side of the pond. The spillway channel was generally clear of vegetation and debris (see Photo 16).

3.2 PIEZOMETRIC DATA

3.2.1 General

Piezometers that are installed in the tailings embankment, foundation and tailings deposit comprise the following:

- Standpipe piezometers installed in the till embankment and foundation by SRK-Robinson prior to 1993.
- Vibrating wire piezometers placed in the embankment and in the tailings deposit as part of the modified centreline construction raises by Knight Piésold Ltd. in 1993, 1994 and 1995.
- Vibrating wire piezometers installed in the tailings deposit (below the surface capping layer) and underlying foundation soils by AMEC Earth and Environmental in 2009.

Standpipe piezometers were also installed in the Freshwater Dam (Piezometers P13, P14 and P15) in 1992. An additional standpipe piezometer (BH13-01) was installed at the Freshwater Dam in April 2013 during a site investigation program by EBA Engineering Consultants Ltd.

The standpipe piezometers are typically measured once per month (some weekly) and the vibrating wire piezometers are recorded weekly.

The locations of the tailings embankment piezometers are shown in plan on Drawing Nos. 1812.101 and 1816.100 and in section on Drawing Nos. 1816.101, 1819.201 and 1819.202. These Drawings are provided in Appendix A. The locations of the piezometers at the tailings facility and Freshwater Dam are presented on Figure 3.1. The monitoring data recorded to date for the standpipe and vibrating wire type piezometers is presented graphically on Figures 3.2 to 3.15, and discussed below.

3.2.2 Tailings Embankment

Long-term piezometric levels recorded by the vibrating wire piezometers installed in the tailings embankment have shown a typical seasonal fluctuation each year (increase during freshet followed by a decrease in the winter months). Vibrating wire piezometers A5 and A6 on Instrumentation Plane A (see Figure 3.12) and piezometers B1 and B2 on Instrumentation Plane B (see Figure 3.13) exhibited a larger than normal seasonal fluctuation in early 2014 of about 5 to 8 feet, associated with spring freshet. This is similar to higher than normal spring piezometric levels recorded in 2013 and 2011, attributed to higher than normal precipitation/snowfall conditions. Site staff have indicated that snow levels over the last three years have been higher than normal. It is likely that the higher than normal precipitation and higher snowfall conditions experienced at the site over the last three years has resulted in a general rise in the phreatic surface within the tailings facility.

2013 of about 4 to 8 feet, associated with spring freshet (typically about 2 to 5 feet). This is likely the result of higher than normal precipitation conditions in 2013 (annual precipitation approximately 30 percent higher than average) as discussed in Section 3.1 above. This is similar to higher than normal piezometric levels recorded in 2011, following a period of significant snow at the site in the Spring which delayed freshet.

Piezometer P93-3-2 has shown a gradual increase in water level over the last 12 years, increasing by about 10 feet since 2003. This trend should continue to be monitored.

Standpipe piezometer P92-2-62, located within the embankment at the south-eastern side of the facility, had been stable for several years, but recorded an increase of about 11 ft in July 2006 (see Figure 3.6). This elevated piezometric level remains and has shown either little change or a gradual increase since that time (total increase of about 5 feet since 2006). It is likely that the piezometer pipe has a blockage that is resulting in erroneous water level readings.

Piezometer P91-6-67 exhibited a seasonal increase of about 6 feet in early 2014, but has since declined to normal levels. The remaining embankment piezometer readings have been generally stable over the last several years (A10, A13, A14, P91-5-54, P91-7-81, P93-1-1, P93-10-1 and P93-10-2) with annual fluctuations in water level generally less than 0.5 feet if any. No data has been recorded for piezometers P91-5-55 and P92-2-61 since 2011.

Eight of the embankment piezometers are inoperative (A9, B6, P92-1-52, P93-1-2, P93-4-2, P93-6-2, P93-11-1 and P93-11-2).

3.2.3 Embankment Foundation

The recorded water level in P91-7-80 (located within sand and gravel outwash soils) indicated a significant increase of about 70 ft in June 2006, followed by a rapid drop of 37 ft (to about El 4479) where it has generally remained, although larger seasonal fluctuations have been recorded in 2014 (see Figure 3.4). As mentioned in previous inspection reports, it is likely that the high water level readings are due to a blockage in the piezometer pipe. The standpipe likely needs to be flushed and pumped to lower the water level and remove any blockage. The piezometer should continue to be monitored.

Similarly, piezometer P91-6-65 (located within the foundation till) has recorded relatively large increases and decreases in water level over the last decade. The piezometer level generally

remained at about El 4430 throughout 2012 and the first half of 2013, but increased to about El 4440 in late 2013, and into 2014 (see Figure 3.3). The recorded increases in piezometric level are not large enough to impact embankment stability, but this piezometer should continue to be closely monitored. The recorded variations in piezometric level are likely due to inaccurate measurements caused by standpipe blockage.

The water level in piezometer P93-4-1 (Plane W1000-S) has been gradually decreasing since 1995, but has remained at about El 4392 over the last 2 years. The remaining foundation piezometers (P92-1-51, P92-2-60, P92-3-82 and P93-3-1) have been generally stable for the last decade or more. Piezometric levels recorded for P92-1-51, P92-2-60 and P92-3-82 in 2014 may suggest a larger than normal seasonal fluctuation in 2014, but may also be due to one off erroneous readings. Three piezometers installed below the embankment foundation have been inoperative for several years (P91-5-53, P93-2 and P93-6-1).

Data for Monitoring Well W1000 has remained reasonably stable over the last few years, with water levels typically fluctuating by less than 5 ft. Larger seasonal fluctuations were recorded in 2011 and similarly in 2013 and again in early 2014, likely for the same reason noted above for several of the embankment piezometers at Plane A and Plane B (generally higher than normal precipitation in recent years). Despite previous attempts to rehabilitate Well W1100, subsequent inspection of the well by Nickel Plate staff has indicated that it remains blocked, and that recorded water level data does not reflect actual piezometric conditions. Monitoring data for W1000 and W1100 are plotted on Figure 3.11.

3.2.4 Tailings Deposit

There are ten functioning vibrating wire piezometers in the tailings deposit adjacent to the embankment, eight in Instrumentation Plane A (A1, A2, A3, A4, A7, A8, A11 and A12) and two in Instrumentation Plane B (B3 and B4). These piezometers have typically shown relatively stable water levels over the last several years, with seasonal fluctuations in the range of 2 to 5 ft. However, larger seasonal fluctuations (of up to about 5 to 10 feet) were recorded in 2011, 2013 and again in early 2014. This is likely for the same reason noted above for several of the embankment piezometers at Plane A and Plane B (generally higher than normal precipitation in recent years). It is noted that piezometers A7, A11, A12, B3 and B4 are typically located above the fluctuating level of the phreatic surface. However, piezometers A7, A12, B3 and B4 have shown a response (ranging from about 5 to 10 feet) in early 2014, indicating a higher than normal increase in the phreatic surface. All of these piezometers have since recorded a decline in piezometric levels during the summer months of 2014, consistent with previous seasonal fluctuations. Piezometer A11 did not record any response and appears to remain above the phreatic surface.

Historical monitoring data for tailings deposit piezometers in Plane A and Plane B are included on Figures 3.12 and 3.13 respectively.

Additional vibrating wire piezometers (VP09-01A/B, VP09-02, VP09-03, VP09-04) were installed into the tailings deposit in 2009 by AMEC Earth and Environmental, as part of a hydrological assessment of the tailings facility. These piezometers are located farther from the embankment, as shown on Figure 3.1. Piezometer VP09-01A/B was completed as a nested piezometer with two vibrating wire piezometer instruments set at different depths within the same borehole. VP09-01A was set close to the base of the tailings deposit, and VP09-01B was set within the underlying sand-gravel foundation

soil. Recorded pore pressure measurements since 2009 suggest relatively stable water levels, with seasonal fluctuations of about 5 to 8 feet (see Figure 3.14). The seasonal fluctuations in water level are consistent with those observed at other piezometers within the tailings deposit and embankment over the same time period. However, it is noted that the recorded piezometric levels in 2013 did not exhibit the typical seasonal decline over the last half of the year. A seasonal increase and ongoing decline in levels has since occurred to date in 2014. The piezometric data is likely indicating that the seasonal increase in water levels within the tailings facility is taking longer to dissipate, due to higher than normal precipitation in 2013 accumulating within the facility. These piezometers need to be monitored closely during and following freshet in 2015.

3.2.5 Freshwater Dam (Mascot Pond Dam)

The water levels in piezometers P13, P14 and P15 located in the embankment of the Freshwater Dam fluctuate in response to seasonal water level changes in the pond. These piezometers have shown very little change over the last several years. Historical monitoring data are plotted on Figure 3.15. There is currently little water in the pond (see Photo 14 in Appendix B).

It is recommended that routine (monthly) piezometric data is also collected for the additional standpipe piezometer (BH13-01) installed at the Freshwater Dam in April 2013.

3.2.6 Summary

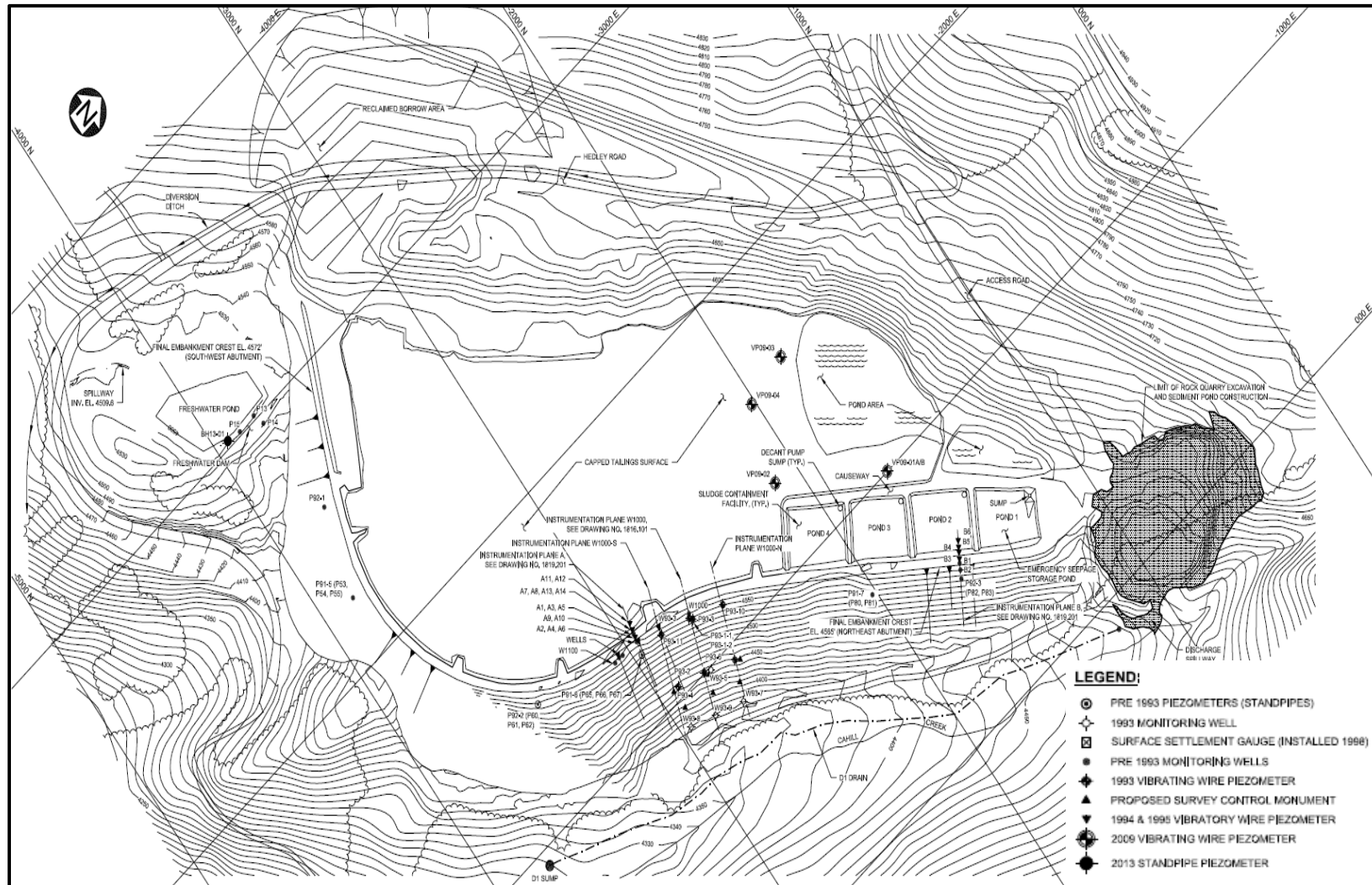
Piezometer data recorded to early September 2014 generally indicates stable water levels, with seasonal fluctuations, within the embankment, tailings deposit and embankment foundation. Long-term piezometric monitoring data shows that water level trends are typically decreasing or steady-state, indicating the embankment is generally continuing to drain properly. However, seasonal fluctuations have been larger in recent years (specifically 2011, 2013 and early 2014), attributed to higher than normal precipitation/snowfall conditions over the last three years.

It is likely that the higher than normal precipitation and higher snowfall conditions experienced at the site over the last three years has resulted in a general rise of the phreatic surface within the tailings facility. The piezometric data indicates that this rise is about 5 feet or less on average.

Those piezometers showing the largest response to the seasonal increases in 2013 and 2014 need to be monitored closely during and following the 2015 freshet.

As noted in previous annual reports, it is likely that the readings for piezometers P92-2-62, P91-7-80 and P91-6-65 are being affected by inaccurate measurements, likely caused by standpipe blockage. These three piezometers should continue to be monitored closely and action initiated if piezometric levels show a significant or sustained increase.

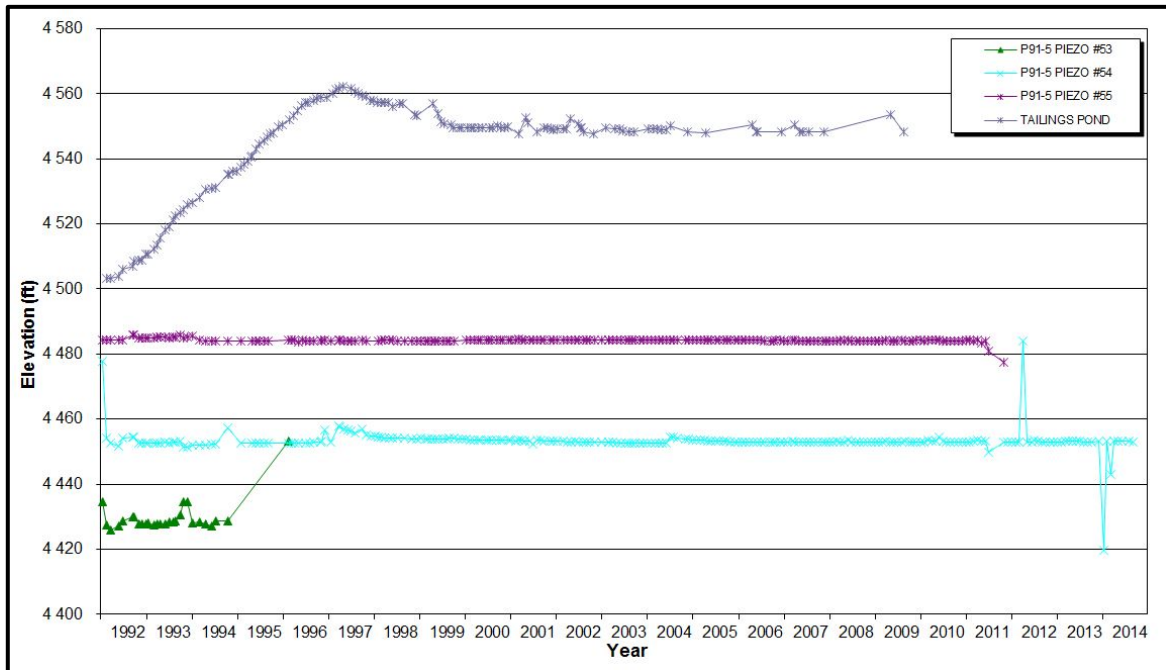
The recorded data indicates a spike in piezometric level (about 3.4 feet) for all of the vibrating wire piezometers at the facility on March 22, 2014. There is no physical cause that can be attributed to this spike (one reading) in the data, and therefore it is considered to be erroneous.



NOTES:

1. Topography provided from aerial survey flown in May 1992 by Orthoshop combined with As-Built survey data for 1992 and 1993 construction by Ledcor and Nickel Plate Mine.

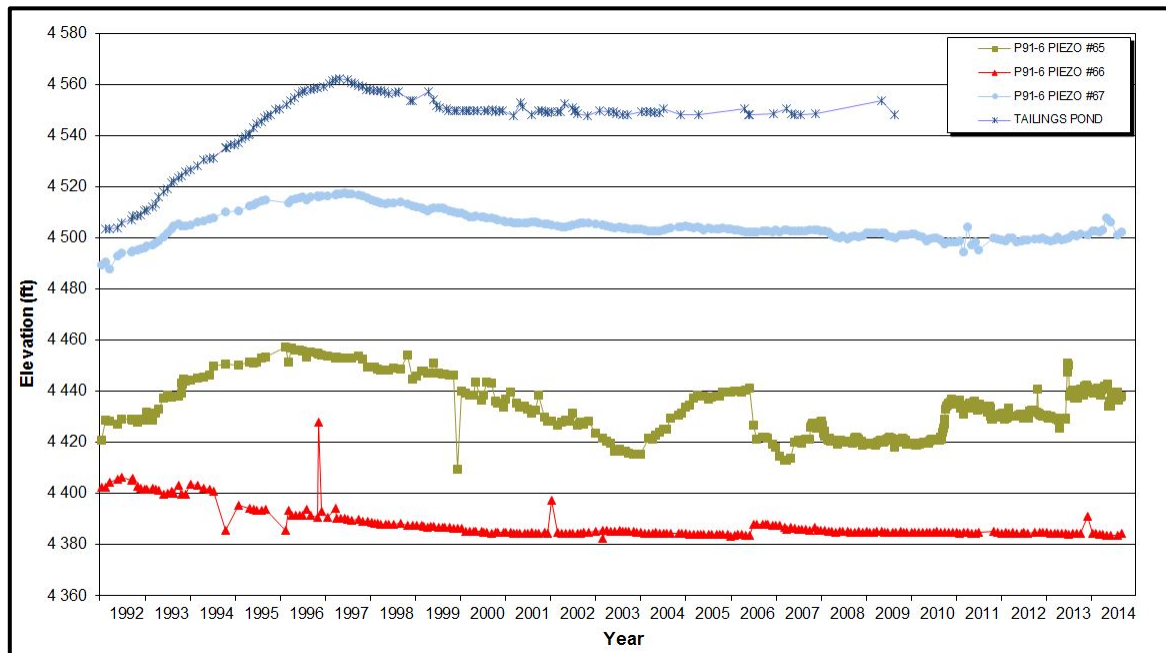
Figure 3.1 Piezometer Location Plan



NOTES:

1. Piezometer locations provided on Figure 3.1 and Drawings 1812.101 and 1819.202.

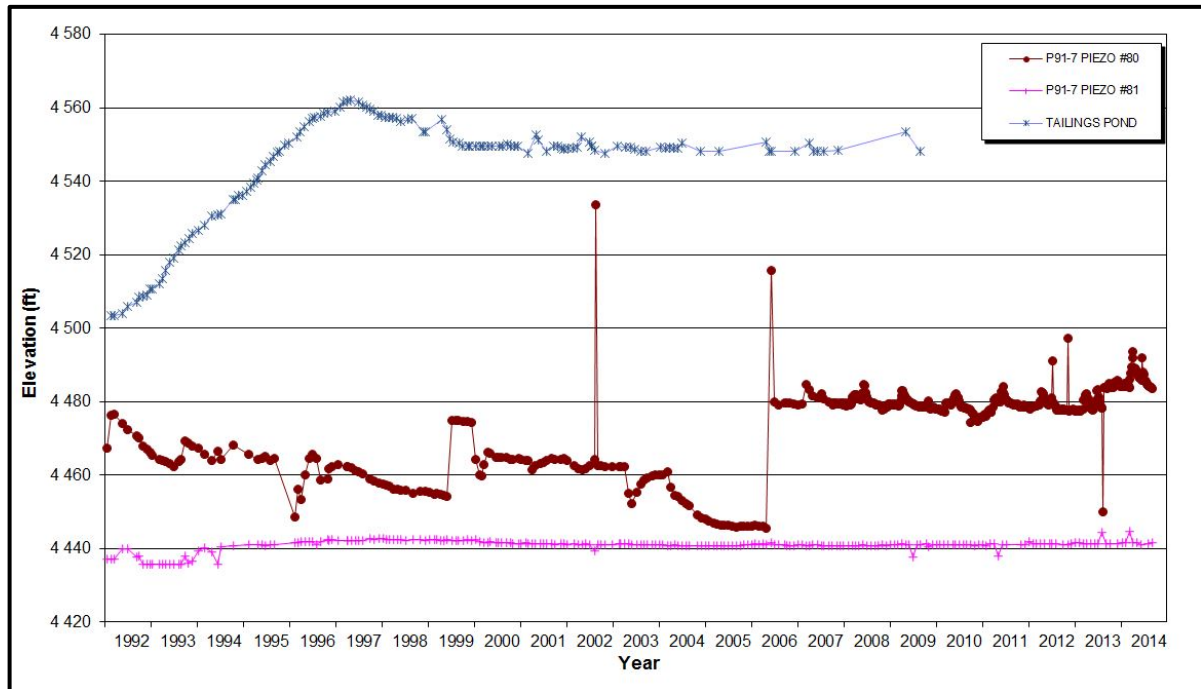
Figure 3.2 Embankment Piezometers P91-5



NOTES:

1. Piezometer locations provided on Figure 3.1 and Drawings 1812.101 and 1819.201.

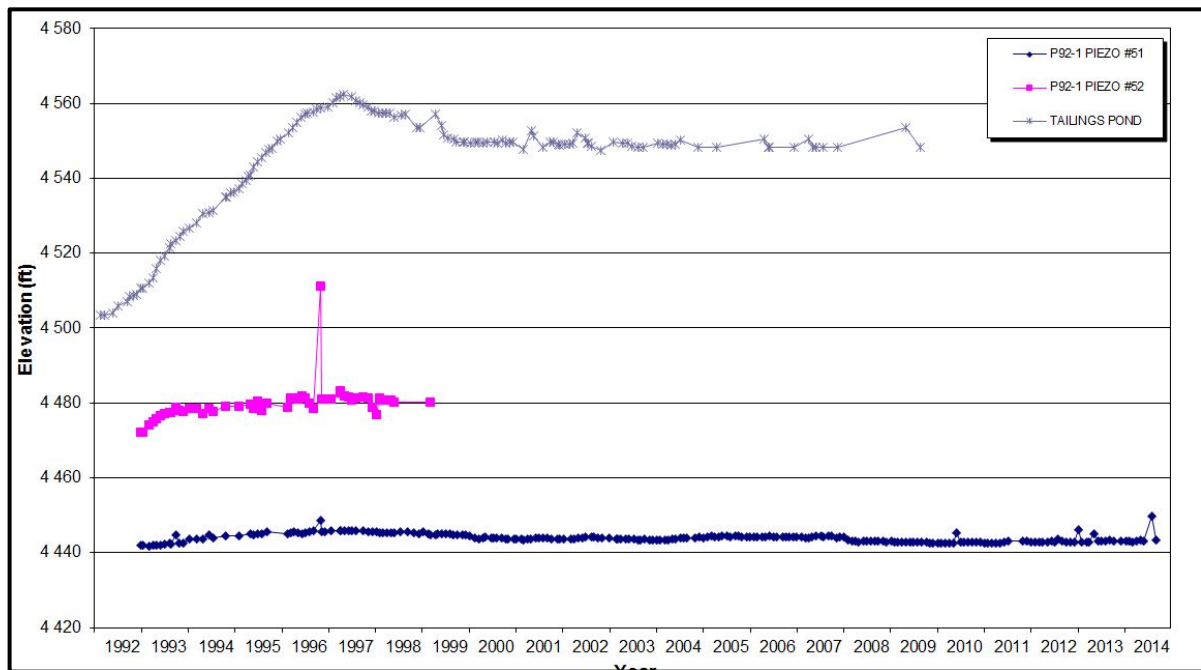
Figure 3.3 Embankment Piezometers P91-6



NOTES:

1. Piezometer locations provided on Figure 3.1 and Drawings 1812.101 and 1819.202.

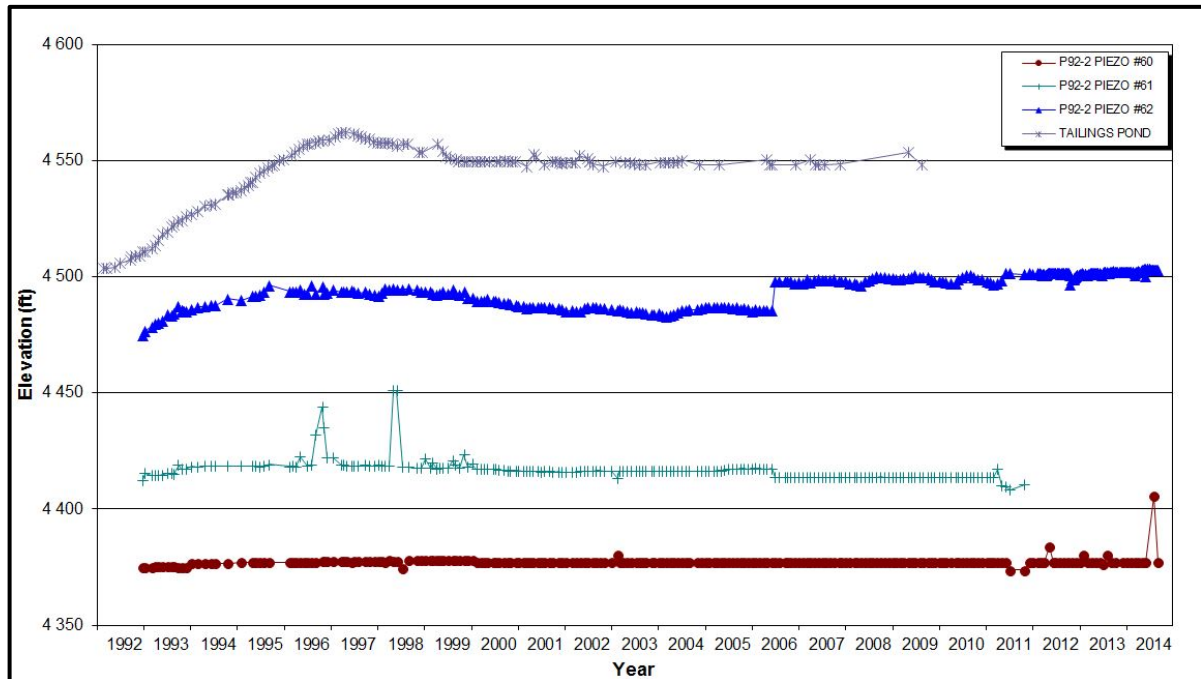
Figure 3.4 Embankment Piezometers P91-7



NOTES:

1. Piezometer locations provided on Figure 3.1 and Drawings 1812.101 and 1819.202.

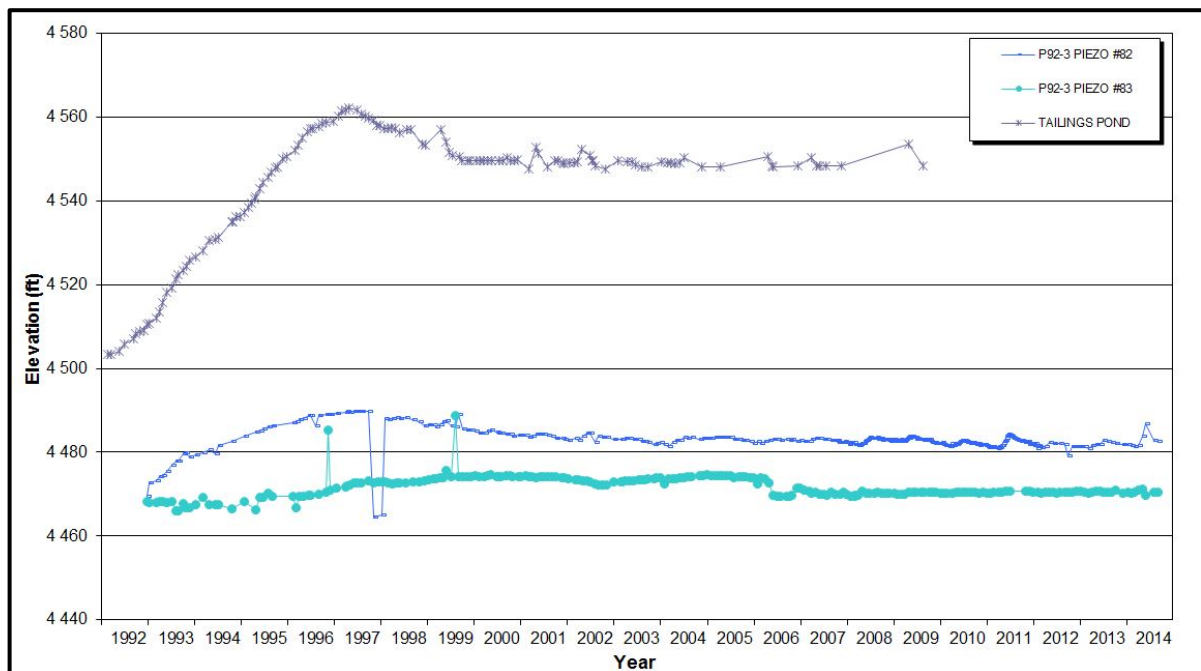
Figure 3.5 Embankment Piezometers P92-1



NOTES:

1. Piezometer locations provided on Figure 3.1 and Drawings 1812.101 and 1819.202.

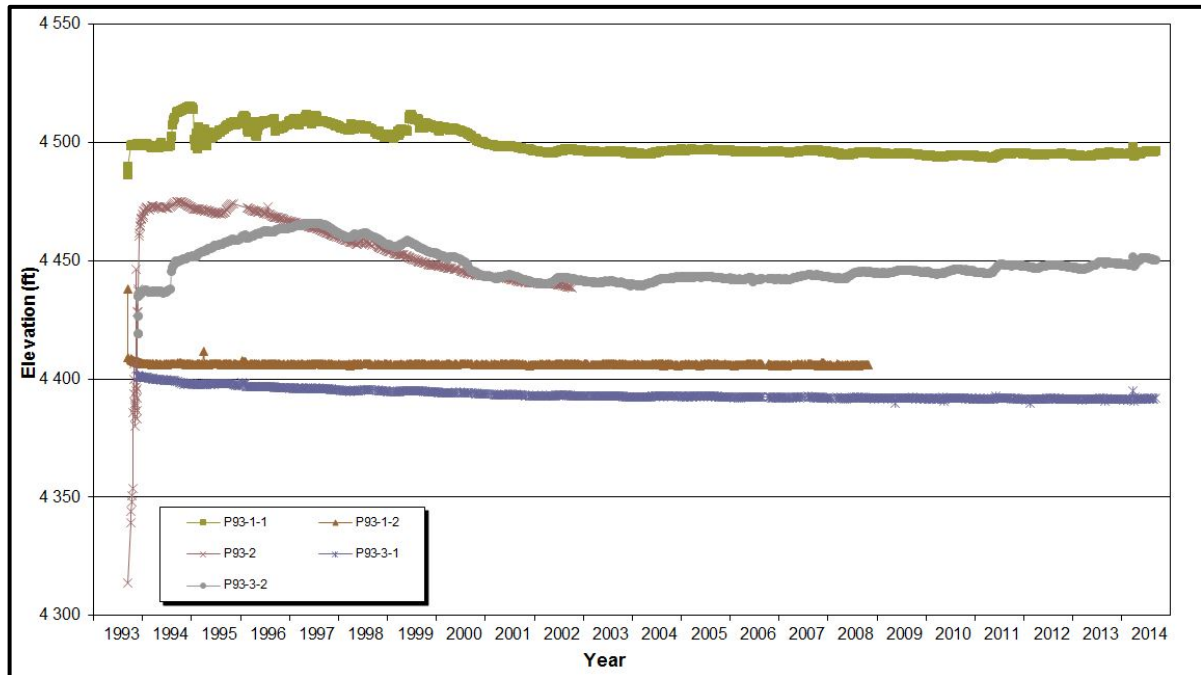
Figure 3.6 Embankment Piezometers P92-2



NOTES:

1. Piezometer locations provided on Figure 3.1 and Drawings 1812.101 and 1819.202

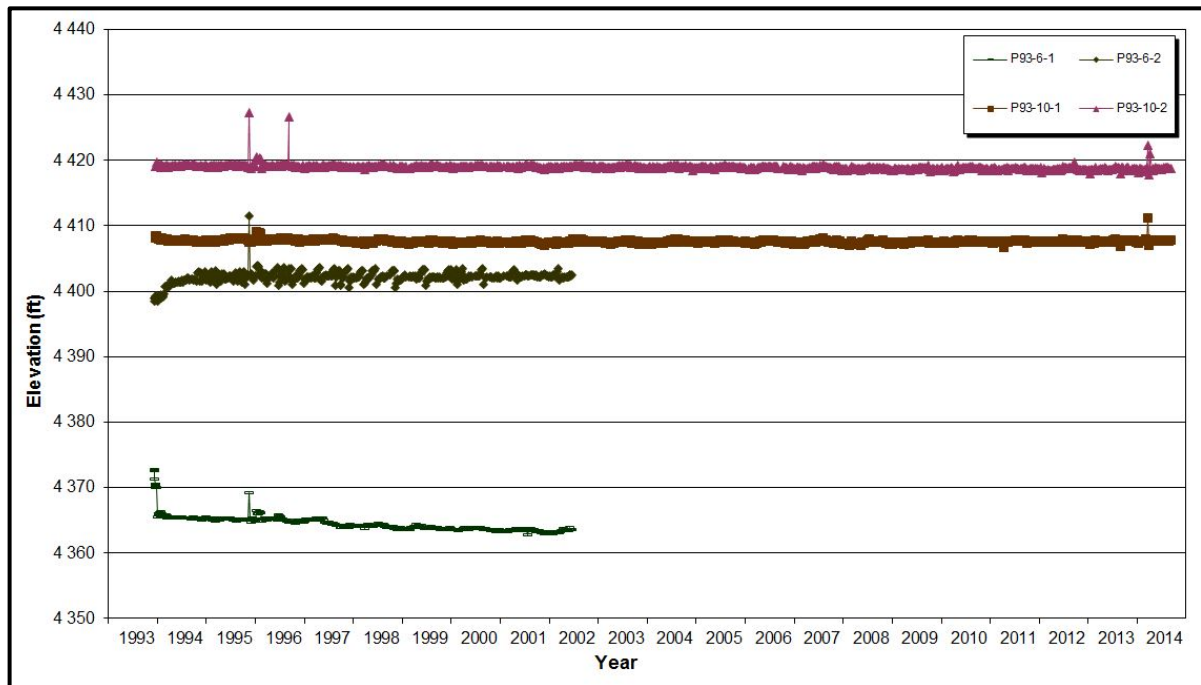
Figure 3.7 Embankment Piezometers P92-3



NOTES:

1. Piezometer locations provided on Figure 3.1 and Drawings 1812.101, 1816.100 and 1819.101.

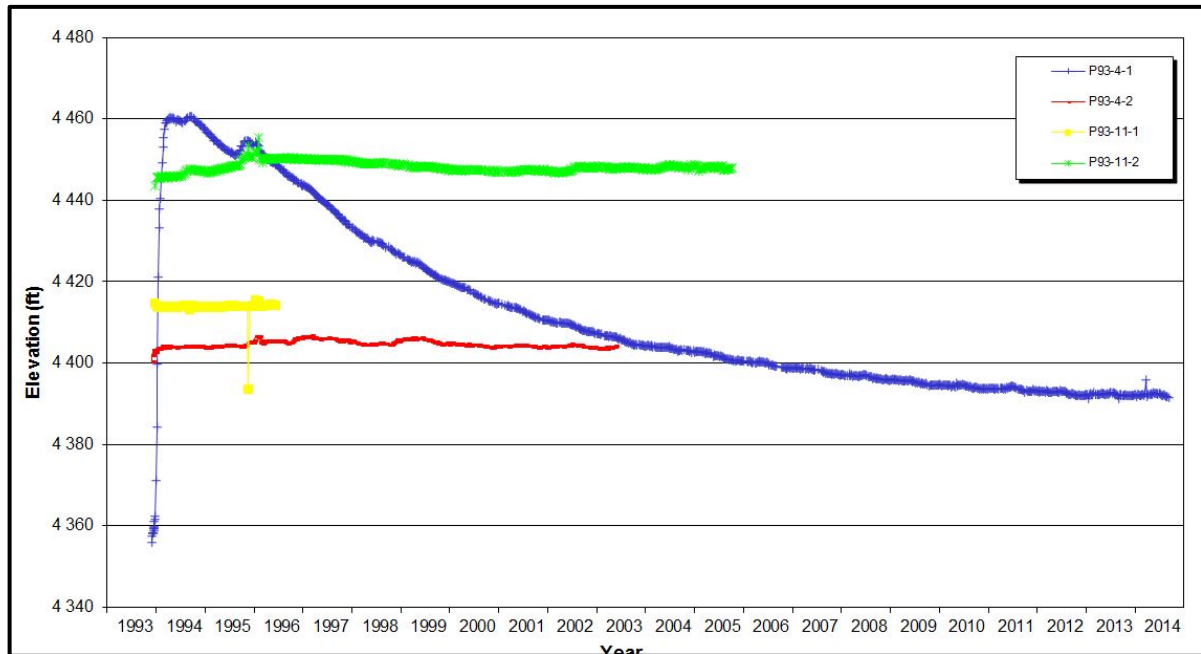
Figure 3.8 Piezometer Plane W1000



NOTES:

1. Piezometer locations provided on Figure 3.1 and Drawings 1812.101, 1816.100 and 1816.101.

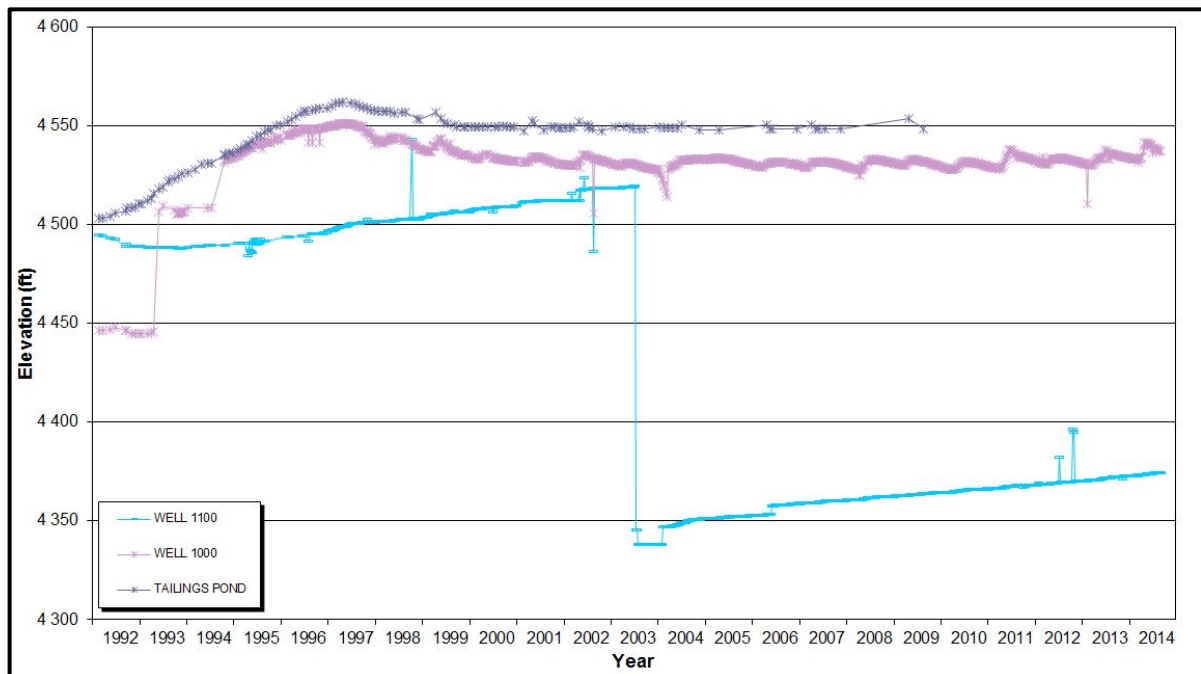
Figure 3.9 Piezometer Plane W1000-N



NOTES:

1. Piezometer locations provided on Figure 3.1 and Drawings 1812.101, 1816.100 and 1816.101.

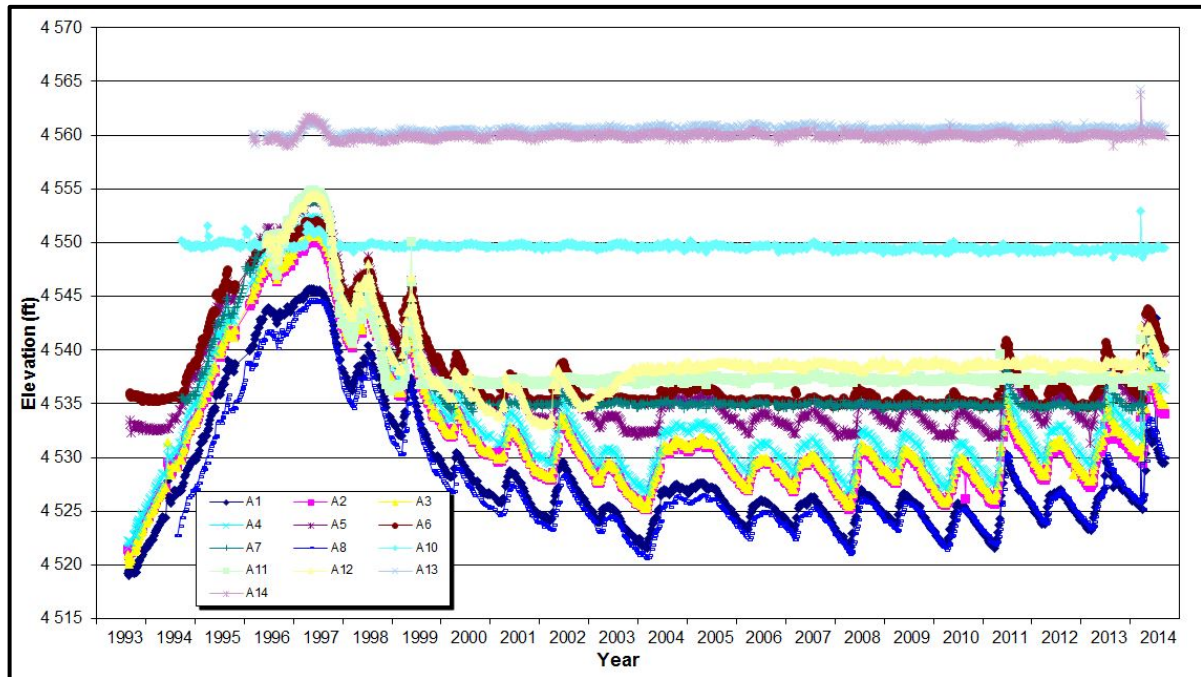
Figure 3.10 Piezometer Plane W1000-S



NOTES:

1. Piezometer locations provided on Figure 3.1 and Drawings 1812.101, 1816.100 and 1816.101.

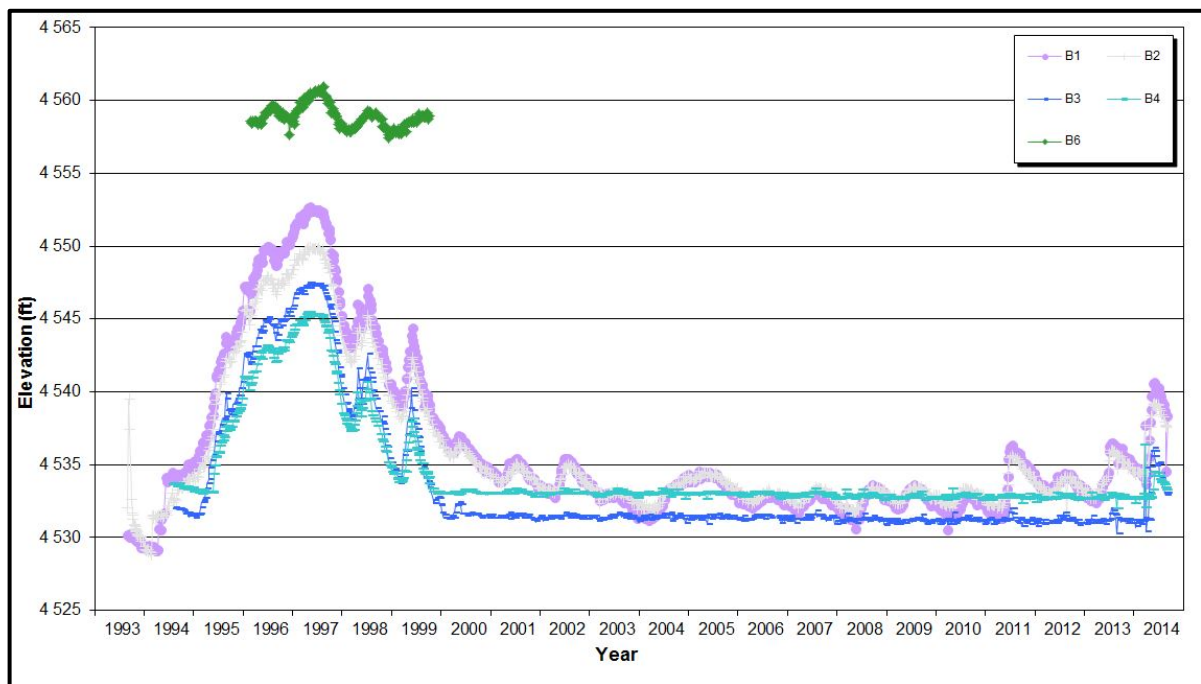
Figure 3.11 Embankment Piezometers W1000 and W1100



NOTES:

1. Piezometer A2 has not functioned since Feb. 2003.
2. Piezometer locations provided on Figure 3.1 and Drawings 1812.101 and 1819.201.

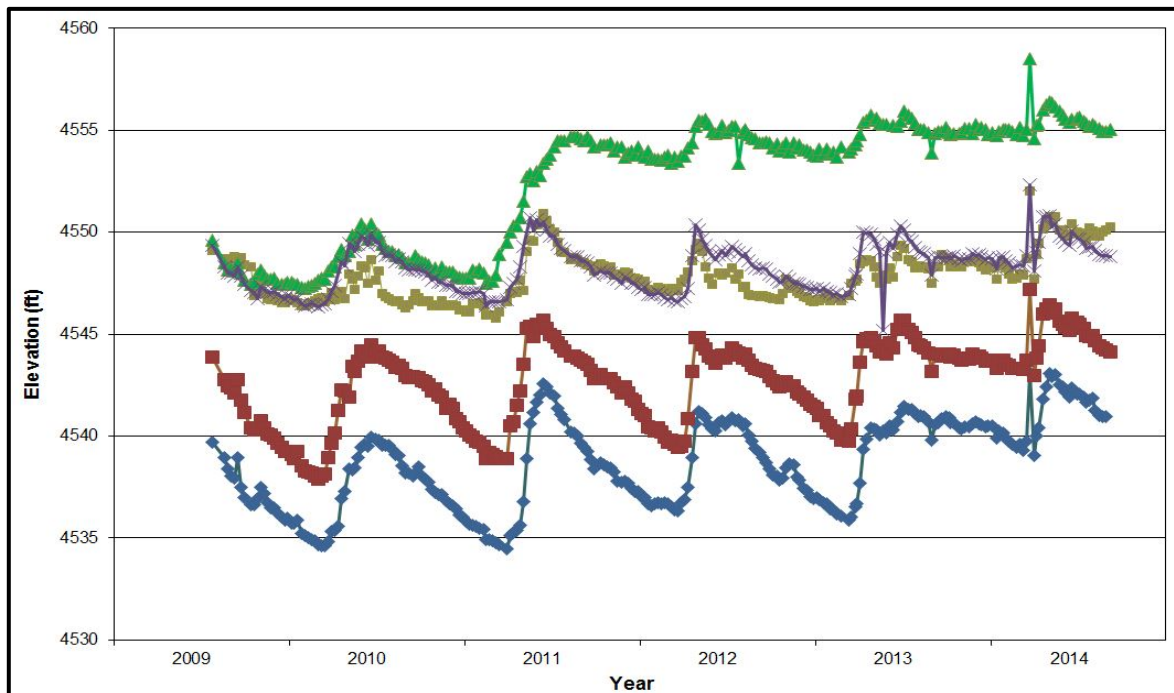
Figure 3.12 Piezometer Plane A



NOTES:

1. Piezometer locations provided on Figure 3.1 and Drawings 1812.101 and 1819.201.

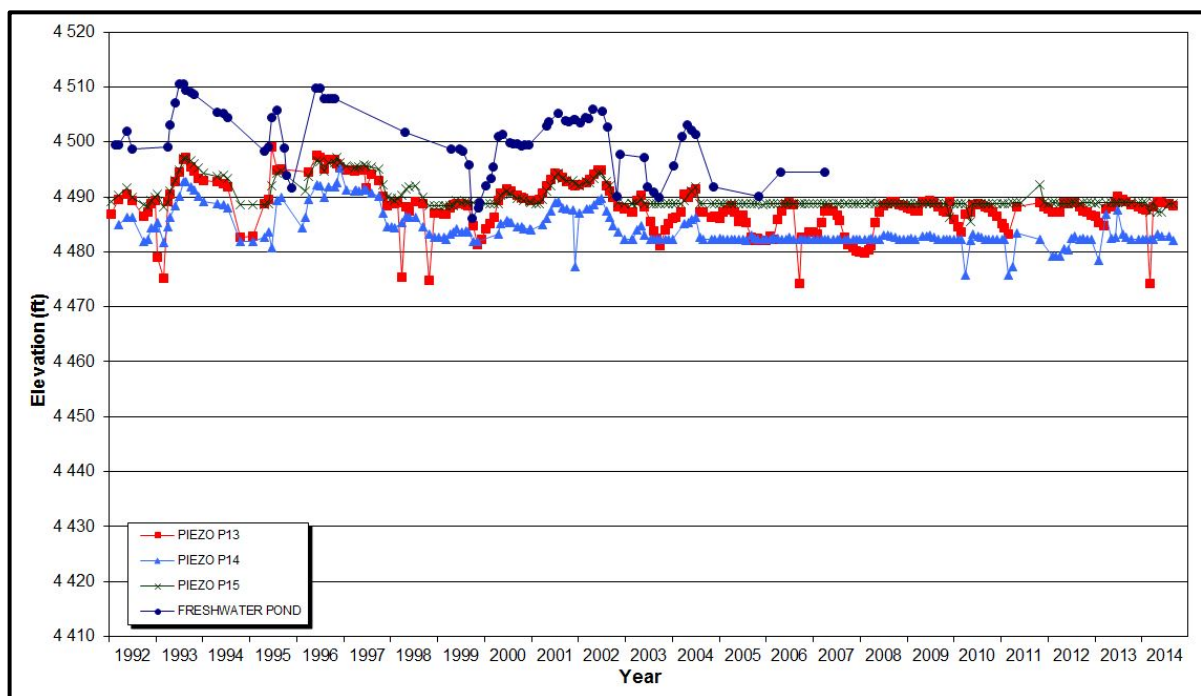
Figure 3.13 Piezometer Plane B



NOTES:

1. Piezometer locations provided on Figure 3.1.

Figure 3.14 Tailings and Foundation Piezometer VP09



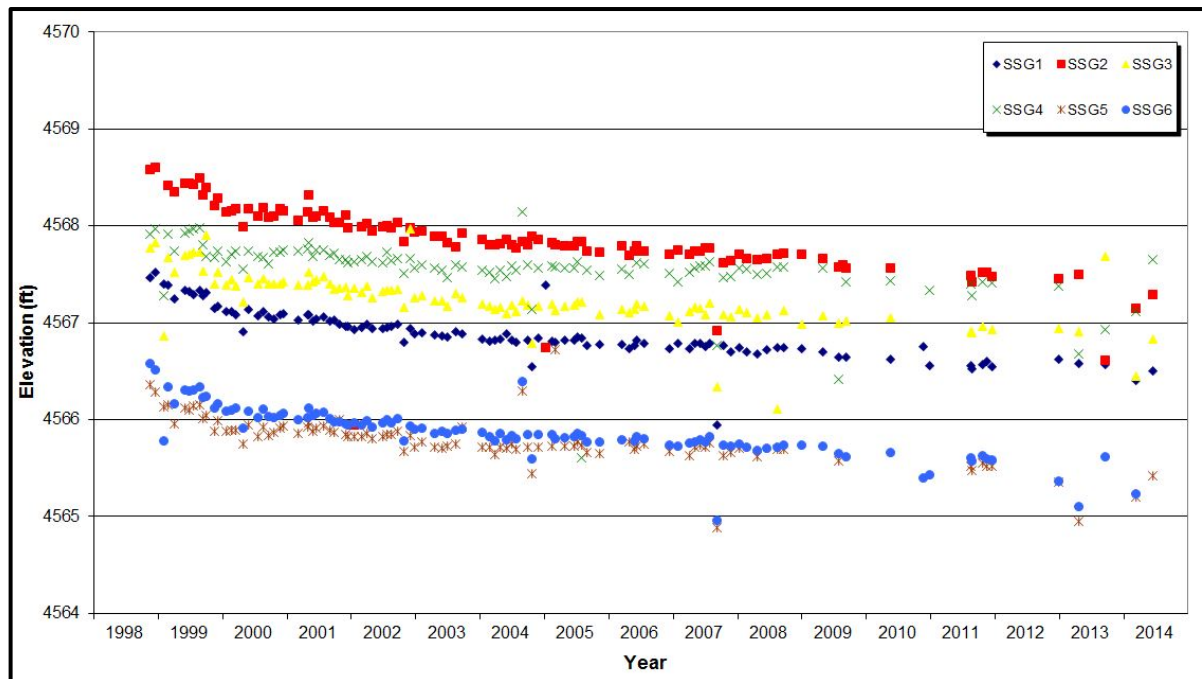
NOTES:

1. Piezometer locations provided on Figure 3.1.

Figure 3.15 Freshwater Dam Piezometers P13, P14, and P15

3.3 SURFACE SETTLEMENT GAUGES

There are six surface settlement gauges installed on the completed portion of the tailings cover system. The locations of these settlement gauges are shown on Drawing No. 1812.101 in Appendix A. The survey data collected for these gauges to date is presented on Figure 3.16. Measured settlement of the tailings reclamation cover has been approximately one foot or less since construction was completed and the gauges installed in 1998. There has been no significant change in tailings cover elevation over the last several years (typically less than 0.3 feet). Variations in the recorded elevations in recent years are likely within the measurement accuracy of the survey and influenced by site conditions at the time of the survey.



NOTES:

1. Locations of Surface Settlement Gauges provided on Drawing 1812.101.

Figure 3.16 Tailings Facility Surface Settlement Gauge Data

3.4 EMBANKMENT STABILITY

An embankment stability assessment for the tailings facility was completed for the 2006 annual dam safety inspection (Knight Piésold report Ref. No. 101-03/11-1, April 5, 2007) incorporating piezometric conditions recorded at the end of 2006. Stability analyses were carried out for the maximum embankment section (represented by instrumentation Plane A) and also for the east embankment at the northeast end of the facility (represented by instrumentation Plane B). The calculated static factor of safety was 1.6 for Plane A and 1.57 for Plane B. These values exceed the minimum factor of safety of 1.5 required for steady-state and long-term (closure) conditions.

The piezometric data recorded during 2007 to early September 2014 indicates that the water table has generally remained stable, with only seasonal fluctuations within the embankment since 2006, as shown by the piezometer data on Figure 3.12. The seasonal fluctuations have been larger in

recent years (specifically 2011, 2013 and early 2014), attributed to higher than normal precipitation/snowfall conditions over the last three years (as discussed in Section 3.2). The higher than normal precipitation/snowfall experienced at the site has likely resulted in a general rise in the phreatic surface within the tailings facility. However, the piezometric data indicates that this rise is only about 5 feet or less on average. Consequently, the stability of the embankment has not changed significantly and remains satisfactory, exceeding minimum factor of safety requirements recommended by the CDA (2013) for stability. Current piezometric levels are far below threshold levels established previously for key piezometers (P91-6 #65), P-93-4-1 and P92-3 #82) and included in the OMS manual. A review of the embankment stability will need to be carried out in 2015 if recorded piezometric levels increase and remain above 2014 levels.

A recommendation of a recent Dam Safety Review completed by AMEC in 2012 was for static and seismic stability analyses to be carried out for the Freshwater Dam (Mascot Pond Dam). This was due mainly to a concern that a failure of the Freshwater Dam may impact the integrity of the downstream embankment toe along the south side of the tailings facility. An engineering assessment of the tailings facility and freshwater dam (Mascot Pond Dam) was carried out by EBA Engineering Consultants Ltd. in 2013 (EBA, December 12th, 2013). This study included a stability assessment for the Freshwater Dam. A geotechnical site investigation, including one borehole (with Standard Penetration Testing), piezometer installation and laboratory testing, was carried out to provide geotechnical information and define foundation conditions for the stability assessment. The results of the stability assessment indicated that the upstream and downstream slopes of the dam satisfy the minimum factor of safety requirements recommended by the CDA (2007, 2013) for static and seismic (pseudo-static) stability.

3.5 TAILINGS SEEPAGE

Seepage from the tailings deposit has been steadily reducing since the removal of surface water from the tailings facility in 1997. Previous studies have been carried out to estimate the seepage from the tailings facility on the basis of the measured flows and chemistry of water pumped from the seepage recovery wells and the flows and chemistry of the water in Cahill Creek and Red Top Gulch (Knight Piésold reports Ref. No. 10181/12-3, 1998 and Ref. No. 11181/13-1, 1999).

The estimated seepage rate from the tailings deposit has generally ranged from approximately 1 to 2 l/sec (16 to 32 USgpm) over the last several years. Pore water pressures recorded during a Cone Penetration Test (CPT) program in 2003 indicated that the majority of the tailings deposit has achieved a high degree of consolidation (Knight Piésold report Ref. No. 101-3/7-1, 2004). Therefore, current seepage is predominantly due to steady-state seepage conditions and consolidation seepage from the tailings is negligible, if any. On-going seepage is due to groundwater infiltration into the back and base of the tailings basin and infiltration from precipitation onto the tailings facility.

4 – WATER MANAGEMENT

4.1 TAILINGS FACILITY

The small pond area located on the surface of the tailings facility has been effectively reduced, with only a minor volume of water remaining at the upstream northern corner of the facility. The embankment crest elevations have not been modified since the last raise in 1995 brought the southwest abutment to 4572 ft and the northeast abutment to 4565 ft. The last reported pond level was at elevation 4548.3 ft in August 2009. Under these conditions the minimum freeboard above the pond level is approximately 17 ft (5 metres). Pond elevations have not been recorded since 2009, but it is understood that the pond levels and volume have been similar to that observed in recent years (as observed during site inspections).

The Probable Maximum 24 hour Precipitation (PMP) event has been previously estimated at approximately 9 inches (~0.2 metres). The un-diverted catchment area for the tailings facility is 125 acres (Knight Piésold Report, Ref. No.1818/1, 1995). Conservatively assuming 100% runoff from the entire un-diverted catchment would result in an increase in pond level of about 3.3 ft (one metre). This is well within the available storage capacity of the tailings facility. As stated above, a minimum freeboard of approximately 17 ft (5 metres) is typically maintained. Therefore, the tailings facility has sufficient capacity to easily accommodate the Probable Maximum Flood (PMF) event and satisfy minimum freeboard requirements.

The collection and treatment systems of seepage and supernatant water have apparently operated satisfactorily in 2014 and have been on-going at the Mine since 1996. The Mine's use of a biological treatment process to improve the tailings pond water continues to be successful in meeting water quality objectives prior to its discharge into Hedley Creek.

4.2 FRESHWATER DAM

There is currently little water (runoff only) stored behind the Freshwater Dam (Mascot Pond Dam). The potential PMF flood volume resulting from a PMP event on the small catchment is well below the available storage capacity of the freshwater pond.

Modifications to the spillway at the Freshwater Dam were carried out in May 2013 to increase the freeboard capacity of the spillway. The highpoint of the spillway invert was lowered by local excavation and removal of material. This modification was completed to satisfy regulatory requirements for a minimum one metre freeboard. The highpoint of the spillway invert prior to excavation was at El 4511 feet. This was lowered to approximately El 4509.6 feet. This modification provides a total freeboard of about 4 feet (1.2 metres) between the spillway invert and the top of the spillway (El 4513.5 feet).

The level of the freshwater pond is at approximately El 4495 ft. (surveyed May 16th, 2013). The maximum volume of the freshwater pond has been estimated using available topographic information and survey data (May 2013). The maximum storage volume of the pond (to El 4509.6) is approximately 1.6 million cubic feet (45,000 cubic metres).

A hydrology analysis of the Freshwater Dam was carried out by EBA Engineering Consultants Ltd. in 2013 as part of their engineering assessment (EBA, December 12th, 2013). For a "VERY HIGH"

Dam Classification the Inflow Design Flood (IDF) is defined by the CDA Guidelines as a value equal to “2/3 between 1/1000 and PMF”. The findings of the study provided an estimated IDF volume of 21,745 m³ (approximately 0.77 million cubic feet) for the Freshwater Dam, and demonstrated that the dam would have sufficient capacity to accommodate the IDF event and maintain sufficient freeboard.

4.3 WATER QUALITY MONITORING

Water quality monitoring continues to be carried out on site by Nickel Plate Mine staff, as part of the closure and reclamation monitoring program. Monitoring has included all creeks, streams, wells and piezometers. Annual results of the monitoring for 2013 are provided in the report “Barrick Gold Inc. – Nickel Plate Mine – Annual Water Quality Report – 2013”. The latest results of the monitoring for 2014 are provided in the document “Barrick Gold Inc. – Nickel Plate Mine – Quarterly Water Quality Report, 2nd Quarter 2014 (April 1 – June 30, 2014)”.

5 – SUMMARY

The findings and conclusions of this annual report are summarised as follows:

5.1 DAM CLASSIFICATION

- Classification of the tailings dam had been previously assessed as “HIGH” based on the potential consequences of failure and the classification scheme defined by the Canadian Dam Association (CDA) “Dam Safety Guidelines”. The “HIGH” classification was primarily based on the potential for significant environmental impact (loss or deterioration of important fish or wildlife habitat). The same dam classification of “HIGH” was also adopted for the Freshwater Dam. The potential consequences of failure and classification of the tailings dam was reviewed as part of a Dam Safety Review conducted by AMEC Environmental & Infrastructure in 2012. The findings of the Dam Safety Review recommend that the Dam Classification be increased from “HIGH” to “VERY HIGH”. This increase was based on consideration of potential environmental impact to the heavily vegetated slope areas downstream of the tailings facility and along Cahill Creek, and potential impact to water quality in the Similkameen Valley. A “VERY HIGH” dam classification was also recommended for the Freshwater Dam, on the basis that a potential failure may impact the integrity of the toe of the tailings dam.
- A dam break analysis, including flood wave routing and inundation mapping, was carried out for the tailings facility and Freshwater Dam by EBA Engineering Consultants Ltd. in 2013. The findings of the dam break analysis were used to review the Dam Classification for the tailings facility and Freshwater Dam. It was determined that a Dam Classification of “VERY HIGH” is appropriate for the tailings facility and Freshwater Dam, based on the potential environmental impacts and losses to cultural values downstream.
- The current dam classification is “VERY HIGH”. There have been no known changes to the facility or downstream inundation area that would necessitate a change to the dam classification.

5.2 DESIGN EARTHQUAKE AND FLOOD EVENTS

- The 2013 revision to the CDA Guidelines and the recently published CDA Technical Bulletin “Application of Dam Safety Guidelines to Mining Dams” recent (October, 2014) require that a tailings dam in the Active Closure phase with a “VERY HIGH” classification be designed for an Earthquake Design Ground Motion (EDGM) having a value equal to “1/2 between 1/2475 and 1/10,000 or MCE”. An appropriate value for the EDGM is 0.19g, representative for very dense soil foundation conditions below the tailings facility and Freshwater Dam. Previous design studies for the tailings facility adopted a deterministically derived MCE as the design event, with a peak ground acceleration on rock of 0.16g. Accounting for the amplification of earthquake ground motions through the foundation soils, the estimated peak ground acceleration at the base of the dam was approximately 0.18g. This indicates that there has been no significant change to the design earthquake loading due to revision of the Dam Classification from “HIGH” to “VERY HIGH” or from the 2013 revision to the CDA Guidelines.
- The 2013 revision to the CDA Guidelines and recently published CDA 2014 Technical Bulletin “Application of Dam Safety Guidelines to Mining Dams” require that a tailings dam in the Active Closure phase with a “VERY HIGH” classification be designed for an Inflow Design Flood (IDF) having a value equal to “2/3 between 1/1000 and PMF”, where PMF is the Probable Maximum Flood. Previous design studies for the tailings facility adopted the PMF as the IDF event for

water management requirements. This flood event exceeds the requirements for a "VERY HIGH" Dam Classification for the Active Closure phase, and also satisfies requirements for the Passive Closure phase.

5.3 TAILINGS FACILITY PERFORMANCE

- The tailings embankment appears to be in good condition. There are no signs of movement or seepage through the embankment. Reclamation of the downstream slope, tailings cover, borrow areas and upstream slopes is generally well advanced.
- The geomembrane lined ponds located at the north-eastern end of the facility continue to be used for storage of seepage return and inert sludge from the water treatment process. The ponds appeared to be in good condition.
- Several surficial erosions and wet zones were observed during the 2013 annual site inspection, above and on the downstream slope benches along the eastern side of the tailings facility. This was likely the result of higher than normal precipitation conditions in 2013. Regrading and ditching of the affected areas has since been carried out by Nickel Plate site staff to provide positive drainage from the bench areas and facilitate discharge of any water accumulation. Monitoring of the downstream embankment slope and bench area needs to continue, particularly during and following periods of high precipitation, and similar action initiated if any surface erosion and/or wet areas are observed. No wet areas or significant evidence of surface erosion was observed during the 2014 site inspection.
- The seepage recovery system, including collection ditches and sumps located along the downstream toe of the tailings embankment are apparently working satisfactorily. Routine clearing of debris from the collection ditches needs to continue to prevent water ponding, and the surrounding ground surface sloped towards the ditches (as required) to provide positive drainage.
- Piezometer data recorded to early September 2014 generally indicates stable water levels, with seasonal fluctuations, within the embankment, tailings deposit and embankment foundation. Long-term piezometric monitoring data shows that water level trends are typically decreasing or steady-state, indicating the embankment is generally continuing to drain properly. However, seasonal fluctuations have been larger in recent years, attributed to higher than normal precipitation/snowfall conditions over the last three years. It is likely that this higher than normal precipitation has resulted in a general rise in the phreatic surface within the tailings facility.
- Those piezometers showing the largest response to the seasonal increases in 2013 and 2014 need to be monitored closely during and following the 2015 freshet.
- As noted in previous annual reports, it is likely that the readings for piezometers P92-2-62, P91-7-80 and P91-6-65 are being affected by inaccurate measurements, likely caused by standpipe blockage. These three piezometers need to continue to be monitored closely and action initiated if piezometric levels show a significant or sustained increase.
- The stability of the tailings embankment has been shown previously to be satisfactory using piezometric conditions recorded at the end of 2006. Calculated static factors of safety of 1.6 exceeded the minimum required factor of safety of 1.5 for steady-state and long-term (closure) conditions. Piezometric data recorded during 2007 to early September 2014 indicates that the water table has generally remained stable, with only seasonal fluctuations within the embankment since 2006. Seasonal fluctuations have been larger in recent years, attributed to higher than normal precipitation conditions, which has likely resulted in a general rise of the

phreatic surface within the tailings facility (approximately 5 feet). The stability of the embankment has not changed significantly and remains satisfactory, exceeding CDA minimum factor of safety requirements. The current piezometric levels are far below threshold levels established previously for key piezometers and included in the OMS manual.

- A review of the embankment stability will need to be carried out in 2015 if recorded piezometric levels increase and remain above 2014 levels. If required, this can be conducted as part of the annual dam safety inspection.
- Seepage from the tailings deposit has gradually reduced since the end of operations in 1996. Current seepage is predominantly due to steady-state seepage conditions. Consolidation seepage from the tailings deposit is negligible, if any.
- The level of the remaining small tailings pond area has been checked against the embankment crest elevation. Adequate freeboard exists to safely contain the flood volume from the Probable Maximum Flood (PMF) event and satisfy minimum freeboard requirements.

5.4 FRESHWATER DAM (MASCOT POND DAM)

- A stability assessment of the Freshwater Dam was carried out by EBA Engineering Consultants Ltd. in 2013, including a seismic stability analysis using a peak ground acceleration of 0.19g. The results indicate that the upstream and downstream slopes of the dam satisfy CDA minimum factor of safety requirements for static and seismic (pseudo-static) stability.
- There is currently little water (run-off only) stored behind the Freshwater Dam. A study by EBA in 2013 provided an estimated IDF volume for the Freshwater Dam, and demonstrated that it has sufficient capacity to accommodate the IDF and maintain sufficient freeboard. The potential flood volume resulting from the Probable Maximum Flood on the small catchment is also well below the available storage capacity.
- Modifications to the spillway at the Freshwater Dam were carried out in May 2013 to increase the freeboard capacity of the spillway and provide a minimum one metre freeboard. The modification provides a total freeboard of about 4 feet (1.2 metres) between the spillway invert and the top of the spillway.
- The dam is generally in good condition. Previous inspections have noted minor slope erosion and water accumulation at the toe. No seepage or water accumulation was noted at the toe during the dry conditions of this inspection.
- The spillway channel was generally clear of vegetation and debris. Periodic clearing of vegetation is required to maintain the current discharge capacity of the spillway.

5.5 OMS AND EPRP DOCUMENTATION

The most recent Operation, Maintenance and Surveillance (OMS) manual was prepared for Nickel Plate Mine by AMEC Environment & Infrastructure (December 19, 2013). The Nickel Plate Mine has Emergency Planning and Response Plan (EPRP) information contained in the document "Nickel Plate Mine Tailings Facility OMS Manual and EPP - Rev 4". Dam breach inundation maps prepared by EBA Engineering Consultants Ltd in 2013 for the tailings facility and Freshwater Dam have been incorporated into this document.

For a "VERY HIGH" dam classification a formal dam safety review is required every five years. The last dam safety review was carried out in 2012. Accordingly, the next dam safety review should be carried out no later than 2017. The next annual dam safety inspection should be scheduled for the summer or fall of 2015.

6 – REFERENCES

- AMEC Environment & Infrastructure, “2012 Dam Safety Review” AMEC File: VM00407A.1200, November 21, 2012.
- AMEC Earth & Environmental, “2009 Drilling Program, Hydrogeological Assessment – Tailings Impoundment Facility, Nickel Plate Mine, Hedley, B.C.” January 11, 2010.
- AMEC Earth & Environmental, “Nickel Plate Mine Tailings Area Closure Plan Update” January 27, 2010.
- AMEC Environment & Infrastructure, “Nickel Plate Mine Tailings Facility - OMS Manual and EPP – Rev 4,” AMEC File: VM00407A-1300, December 19, 2013.
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7 – CERTIFICATION

This report was prepared, reviewed and approved by the undersigned.



Prepared:

Graham R. Greenaway, P.Eng.
Specialist Geotechnical Engineer

Approved:


per Jeremy P. Haile, P.Eng.
Principal Consultant

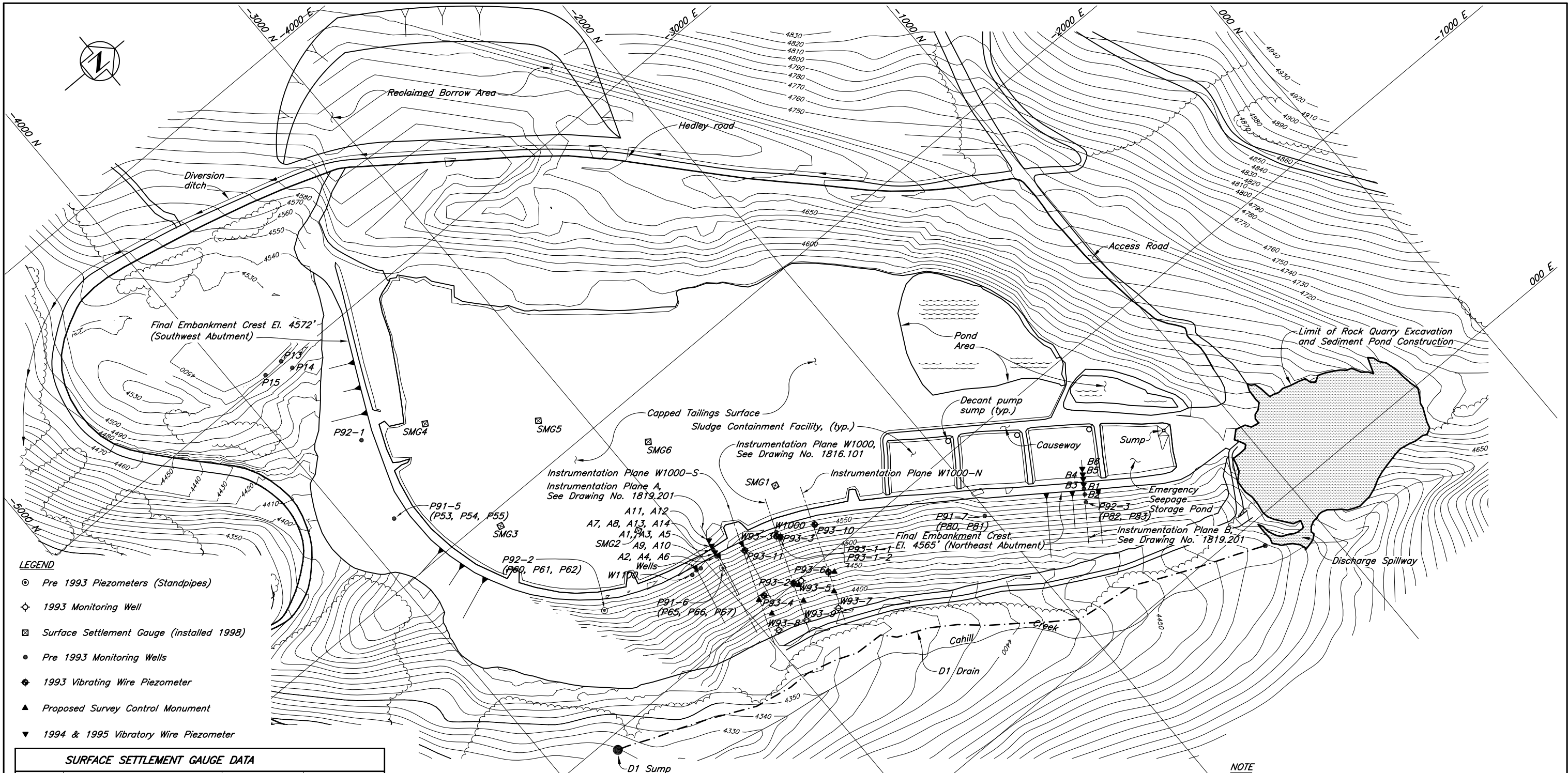
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APPENDIX A

DRAWINGS

(Pages A-1 to A-5)

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- LEGEND**
- Pre 1993 Piezometers (Standpipes)
 - ◇ 1993 Monitoring Well
 - ⊠ Surface Settlement Gauge (installed 1998)
 - Pre 1993 Monitoring Wells
 - ◆ 1993 Vibrating Wire Piezometer
 - ▲ Proposed Survey Control Monument
 - ▼ 1994 & 1995 Vibratory Wire Piezometer

SURFACE SETTLEMENT GAUGE DATA				
POINT	CO-ORDINATES		*INITIAL ELEVATION	**CURRENT ELEVATION
	EAST	NORTH		
SMG1	-1351.510	-2587.740	4567.520	4566.74
SMG2	-1567.430	-3127.380	4568.605	4567.71
SMG3	-1938.190	-3540.320	4567.830	4566.98
SMG4	-2449.560	-3508.310	4567.970	4567.58
SMG5	-2165.450	-3151.000	4566.280	4565.70
SMG6	-1815.640	-2866.230	4566.515	4565.74

NOTE: *Surveyed by Nickel Plate Mine December 15, 1998
**Surveyed by Nickel Plate Mine December 29, 2008

1819.201	INSTRUMENTATION PLANES A AND B
1816.101	INSTRUMENTATION AND GEOLOGICAL SECTIONS

DRG. NO.	DESCRIPTION
1819.201	INSTRUMENTATION PLANES A AND B
1816.101	INSTRUMENTATION AND GEOLOGICAL SECTIONS

14	MAR. 14/11	POND 1 SUMP LOCATION UPDATED	
13	FEB 02/09	SETTLEMENT DATA UPDATED	
12	MAR 03/05	ISSUED FOR ANNUAL REPORT	
11	MAR 02/04	ISSUED FOR ANNUAL REPORT, TITLE BLOCK CHANGE	
10	APR 1/99	NEW SURFACE SETTLEMENT GAUGES ADDED	
9	MAY 13/98	PIEZOMETER NAME CORRECTED	

REV.	DATE	DESCRIPTION	APPROVED
8	FEB 10/98	NAMES OF PIEZOMETER PLANES UPDATED	
7	AUG 28/96	PIEZOMETER NAMES CLARIFIED	
6	JAN, 8/96	AS CONSTRUCTED	
5	MAY 30/95	STAGE VII FINAL DESIGN	
4	AUG. 31/94	AS CONSTRUCTED	
3	MAY 12/94	STAGE VI FINAL DESIGN	
2	FEB. 5/94	AS CONSTRUCTED	
1	JAN. 5/94	INSTRUMENTATION ADDED	
0	NOV. 5/93	AS CONSTRUCTED	

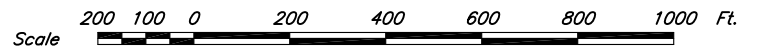
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6	JAN, 8/96	AS CONSTRUCTED	
5	MAY 30/95	STAGE VII FINAL DESIGN	
4	AUG. 31/94	AS CONSTRUCTED	
3	MAY 12/94	STAGE VI FINAL DESIGN	
2	FEB. 5/94	AS CONSTRUCTED	
1	JAN. 5/94	INSTRUMENTATION ADDED	
0	NOV. 5/93	AS CONSTRUCTED	

REV.	DATE	DESCRIPTION	APPROVED
8	FEB 10/98	NAMES OF PIEZOMETER PLANES UPDATED	
7	AUG 28/96	PIEZOMETER NAMES CLARIFIED	
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1	JAN. 5/94	INSTRUMENTATION ADDED	
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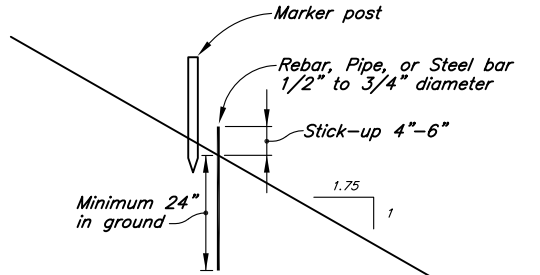
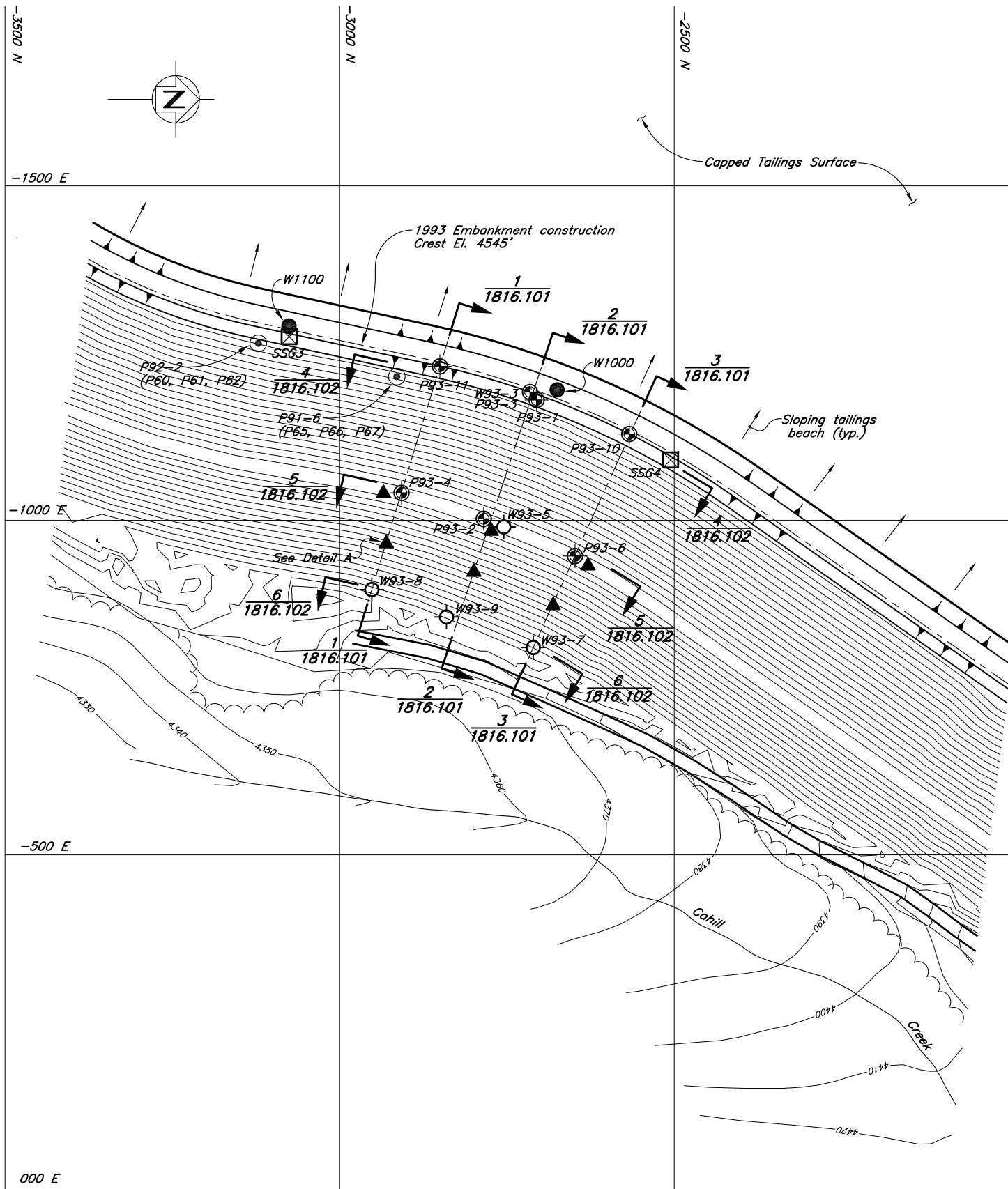
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CONSULTING ENGINEERS – VANCOUVER, B.C.	
	DESIGNED TFK
	DRAWN BMC/WAL/NSD
	CHECKED
	APPROVED

DATE	NOV. 8, 1993	SCALE	AS SHOWN	DRG. NO.	1812.101	REV.	14
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NOTE
1. Topography provided from Aerial survey flown in may 1992 by Orthoshop combined with as-built survey data for 1992 and 1993 construction by Ledcor and Nickel Plate Mine.



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INSTRUMENTATION PLANE W1000-S			
Piezometer Designation	Tip Elevation	Co-ordinate	
		North	East
P93-4-1	4354.2	-2906.46	-1045.36
P93-4-2	4398.8	-2906.46	-1045.36
W93-8	4287.9	-2951.88	-896.46
P93-11-1	4416.0	-2976.10	-1250.04
P93-11-2	4441.7	-2976.10	-1250.04

INSTRUMENTATION PLANE W1000			
P93-1-1	4475.5	-2704.60	-1180.70
P93-1-2	4407.5	-2704.60	-1180.70
P93-2	4315.5	-2784.40	-1002.90
P93-3-1	4390.7	-2715.53	-1188.71
P93-3-2	4421.4	-2715.53	-1188.71
W93-3	4496.5	-2715.53	-1188.71
W93-5-1	4325.3	-2752.80	-994.50
W93-5-2	4354.0	-2752.50	-994.36
W93-9	4331.3	-2840.33	-855.48

INSTRUMENTATION PLANE W1000-N			
P93-6-1	4355.1	-2641.65	-950.16
P93-6-2	4398.0	-2641.65	-950.16
W93-7	4298.7	-2710.64	-809.79
P93-10-1	4409.8	-2567.30	-1126.63
P93-10-2	4420.7	-2567.30	-1126.63

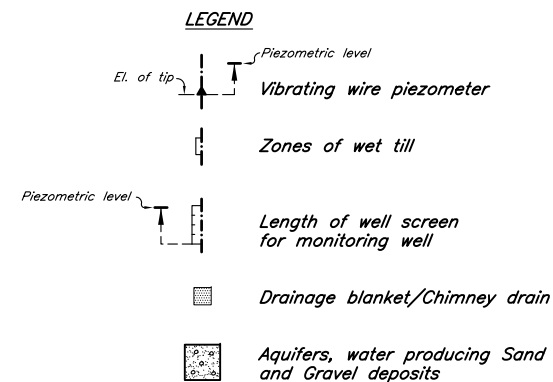
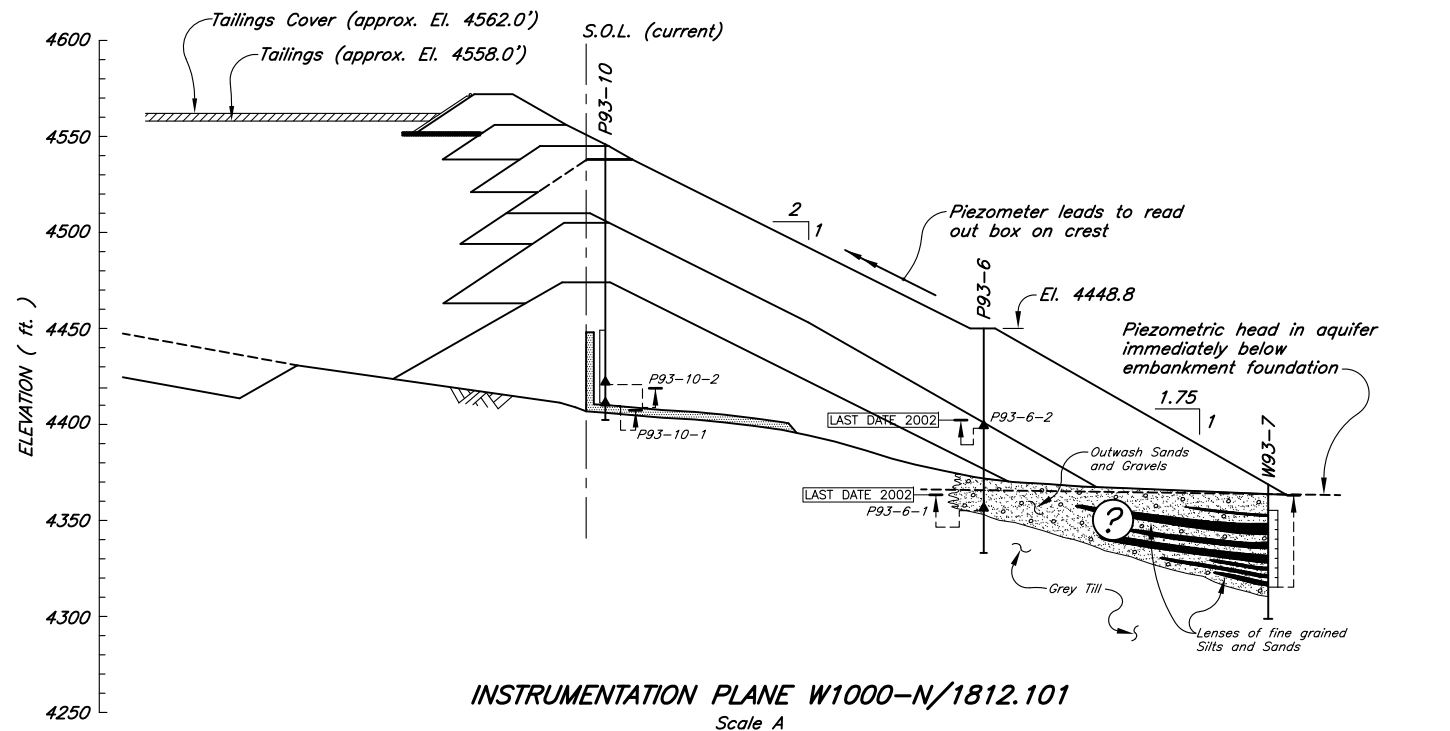
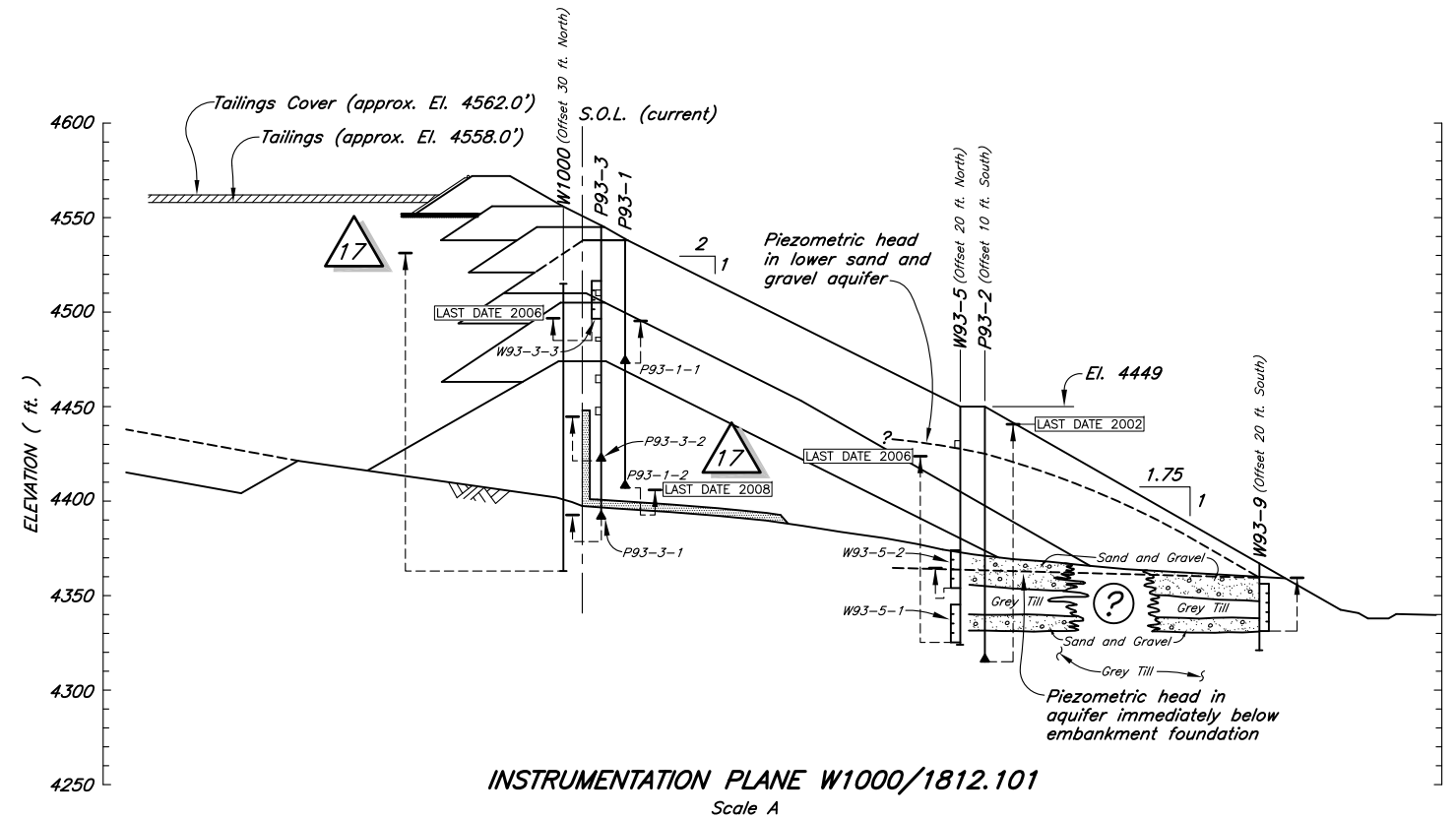
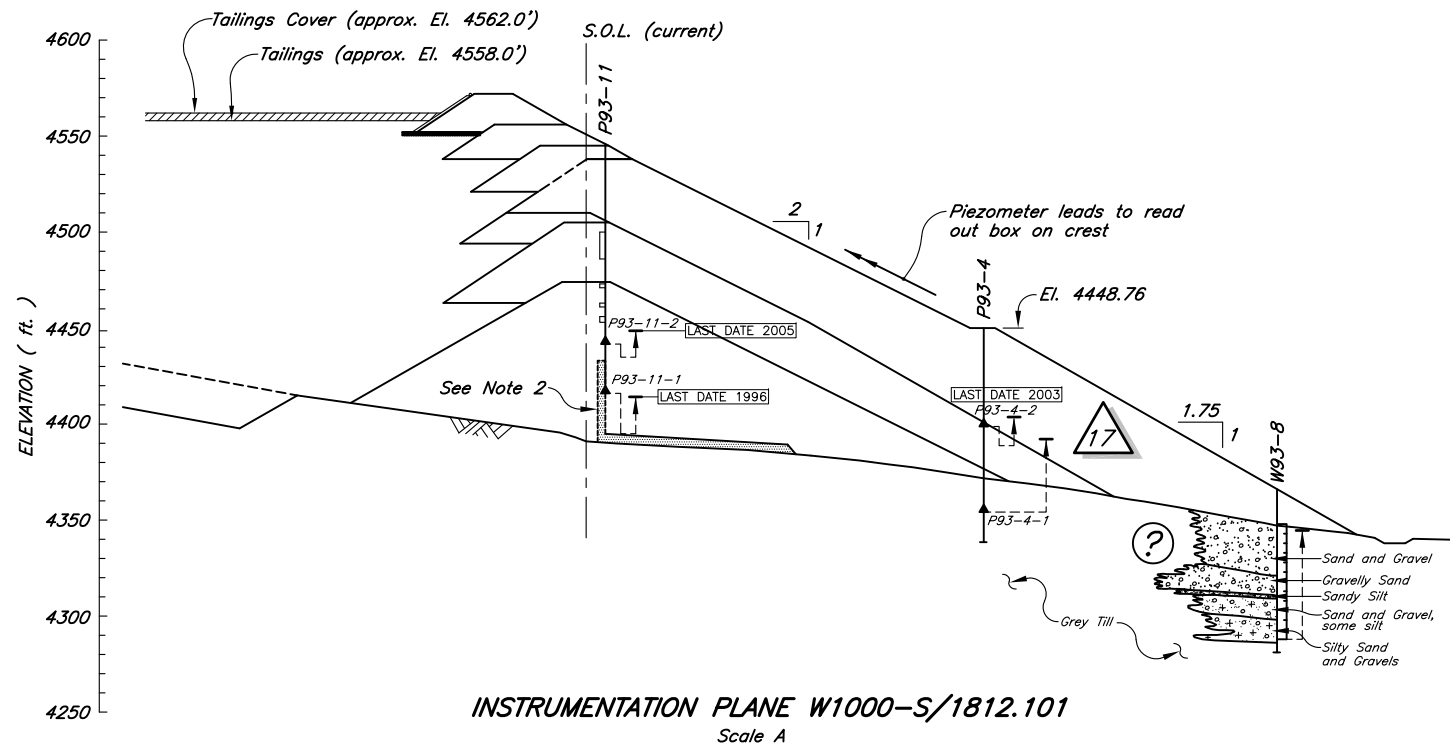
- LEGEND
- Pre 1993 Piezometers (Standpipes)
 - ⊕ 1993 Monitoring Well
 - ⊠ Surface Settlement Gauge
 - Pre 1993 Monitoring Wells
 - ⊕ 1993 Vibrating Wire Piezometer
 - ▲ Proposed Survey Control Monument

- NOTES:
- Drill holes designated with a "P" signify drill holes where vibrating wire piezometers were installed.
 - Drill holes designated with a "W" signify drill holes where monitoring wells were installed.
 - Section 1 corresponds to Instrumentation Plane W1000-S
Section 2 corresponds to Instrumentation Plane W1000
Section 3 corresponds to Instrumentation Plane W1000-N

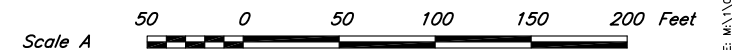


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														5	MAR 03/06	TAILINGS SURFACE NOTE REVISED				DRAWN	WAL								
														4	MAR 02/04	TITLE BLOCK CHANGED				CHECKED		INSTRUMENTATION PLAN PLANES W1000, W1000–S AND W1000–N							
														3	MAY 05/98	POND ELEVATION UPDATED				APPROVED									
														2	MAY 16/97	POND ELEVATION UPDATED													
														1	AUG 28/96	PIEZOMETER NAMES CLARIFIED													
														0	JAN. 20/94	ISSUED FOR REPORT													
DRG. NO.		DESCRIPTION				7	FEB 06/09	ISSUED FOR REPORT			REV.	DATE	DESCRIPTION		APPROVED	REV.	DATE	DESCRIPTION		APPROVED	DATE		JAN. 20, 1994	SCALE AS SHOWN	DRG. NO.	1816.100	REV. 7		
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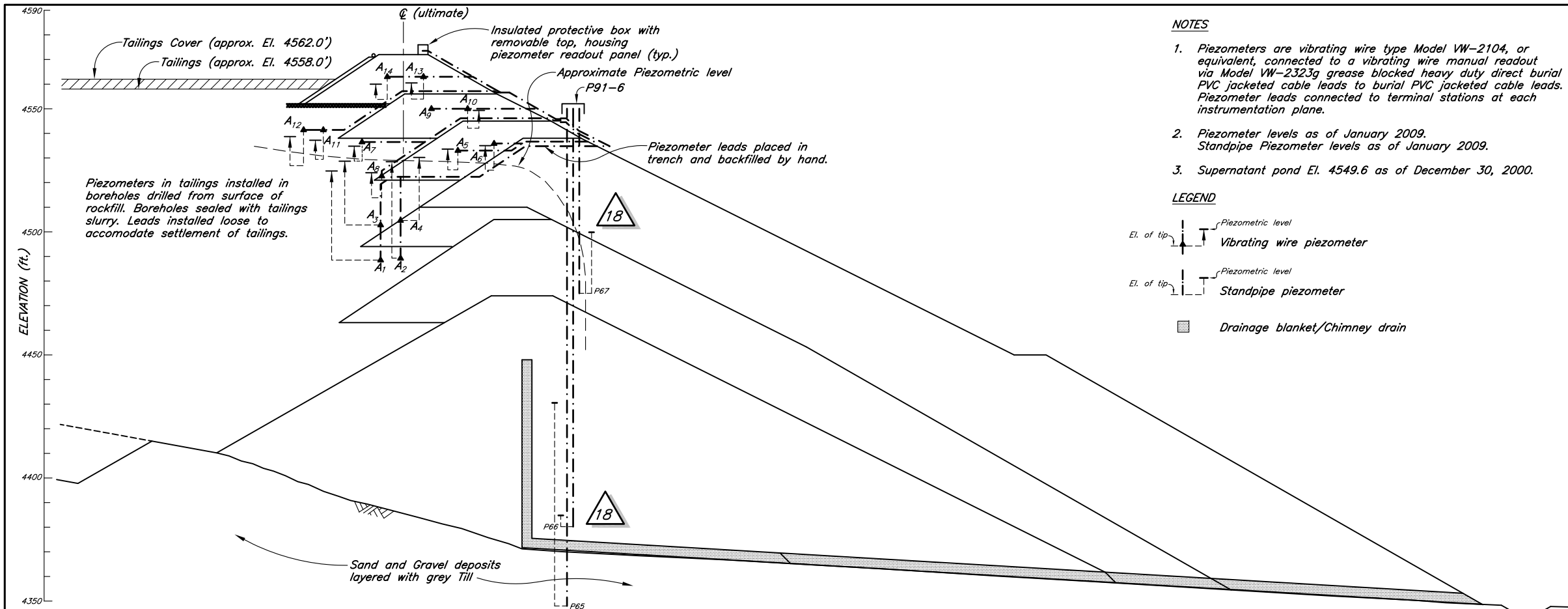


- NOTES**
- Geologic interpretation is based on limited information available from drill hole logs.
 - Chimney drain intersected down stream of location indicated in as built drawings.
 - Piezometer levels as of January 2007.
 - Supernatant pond El. 4549.6' as of December 30, 2000.

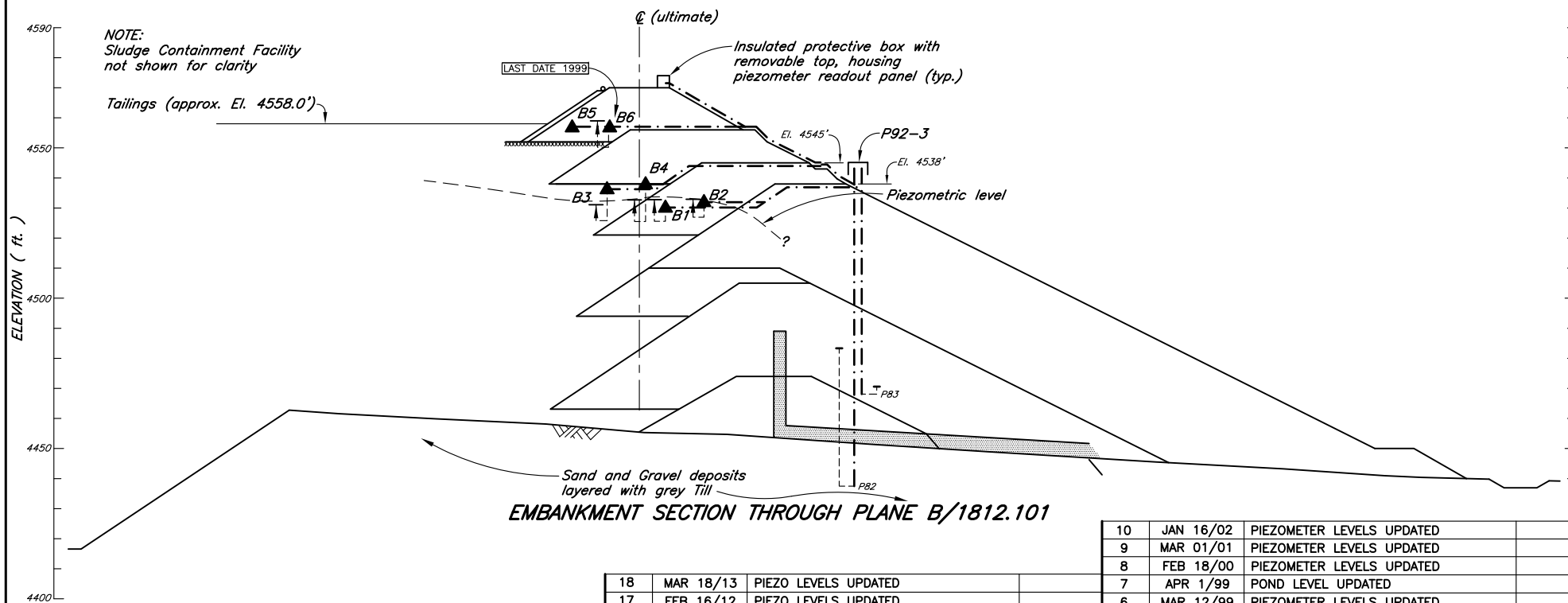


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						FEB 18/00		PIEZOMETER LEVELS UPDATED		8	
						APR 1 /99		POND LEVEL UPDATED		7	
						MAR 12/99		PIEZOMETER LEVELS UPDATED		6	
						MAY 5/98		PIEZOMETER LEVELS UPDATED		5	
						FEB 10/98		PIEZOMETER LEVELS UPDATED		4	
						MAY 16/97		PIEZOMETER LEVELS UPDATED		3	
						AUG 28/96		PIEZOMETER LEVELS UPDATED		2	
						OCT. 2/95		EMBANKMENT CREST AND PIEZOMETER LEVELS UPDATED		1	
						JAN. 20/94		ISSUED FOR REPORT		0	
1812.101		INSTRUMENTATION PLAN		REV. 17		MAR 01/01		PIEZOMETER LEVELS UPDATED, DATE ADDED		17	
						FEB 06/09		PIEZOMETER LEVELS UPDATED, DATE ADDED		16	
						MAR 11/08		PIEZOMETER LEVELS UPDATED, DATE ADDED		15	
						MAR 01/07		PIEZOMETER LEVELS UPDATED, DATE ADDED		14	
						MAR 03/06		PIEZO DATES ADDED, HATCHING REMOVED		13	
						FEB 11/05		PIEZOMETER LEVELS UPDATED		12	
						MAR 02/04		PIEZOMETER LEVELS UPDATED, TITLE BLOCK CHANGED		11	
						JAN 16/02		PIEZOMETER LEVELS UPDATED		10	
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EMBANKMENT SECTION THROUGH PLANE A/1812.101



EMBANKMENT SECTION THROUGH PLANE B/1812.101

NOTES

1. Piezometers are vibrating wire type Model VW-2104, or equivalent, connected to a vibrating wire manual readout via Model VW-2323g grease blocked heavy duty direct burial PVC jacketed cable leads to burial PVC jacketed cable leads. Piezometer leads connected to terminal stations at each instrumentation plane.
2. Piezometer levels as of January 2009.
Standpipe Piezometer levels as of January 2009.
3. Supernatant pond El. 4549.6 as of December 30, 2000.

LEGEND

- El. of tip — Piezometric level
Vibrating wire piezometer
- El. of tip — Piezometric level
Standpipe piezometer
- Drainage blanket/Chimney drain

INSTRUMENTATION PLANE A

Piezometer No.	Tip Elevation	Co-ordinate	
		North	East
A1	4488.50	-2945.98	-1313.36
A2	4498.30	-2947.00	-1305.00
A3	4502.80	-2945.98	-1313.36
A4	4504.60	-2947.00	-1305.00
A5	4533.00	-2956.28	-1288.96
A6	4535.89	-2947.34	-1280.89
A7	4536.50	-2951.73	-1299.97
A8	4522.65	-2949.25	-1341.66
A9	4550.39	-2965.95	-1297.98
A10	4550.10	-2963.20	-1286.24
A11	4549.94	-2964.80	-1328.50
A12	4549.98	-2962.32	-1335.74
A13	4560.10	-2961.10	-1300.80
A14	4559.70	-2958.20	-1310.10

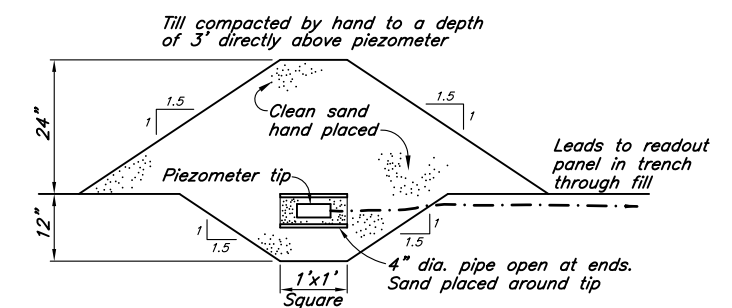
INSTRUMENTATION PLANE B

B1	4530.17	-1643.33	-524.12
B2	4531.95	-1655.56	-522.28
B3	4536.24	-1643.33	-568.41
B4	4537.88	-1644.47	-553.47
B5	4558.27	-1662.01	-589.01
B6	4558.42	-1662.20	-580.01
P82	4437.50	-1672.20	-495.16
P83	4468.10	-1672.20	-495.16

INSTRUMENTATION PLANE W1000*

P93-1-1	4475.50	-2704.63	-1180.71
P93-1-2	4407.50	-2704.63	-1180.71
P93-2	4315.50	-2784.37	-1002.85

* Co-ordinates from Ledcor survey October 1993



DETAIL B
TYPICAL VIBRATING WIRE INSTALLATION IN FILL
NTS

Scale 20 10 0 20 40 60 80 100 ft.

18	MAR 18/13	PIEZO LEVELS UPDATED			10	JAN 16/02	PIEZOMETER LEVELS UPDATED		
17	FEB 16/12	PIEZO LEVELS UPDATED			9	MAR 01/01	PIEZOMETER LEVELS UPDATED		
16	FEB 09/09	PIEZO LEVELS UPDATED			8	FEB 18/00	PIEZOMETER LEVELS UPDATED		
15	MAR 11/08	PIEZO LEVELS UPDATED			7	APR 1/99	POND LEVEL UPDATED		
14	MAR 01/07	PIEZO LEVELS UPDATED			6	MAR 12/99	PIEZOMETER LEVELS UPDATED		
13	MAR 03/06	PIEZO ELEV. REVISED, HATCHING REMOVED			5	MAY 5/98	PIEZOMETER LEVELS UPDATED		
12	FEB 28/05	PIEZOMETER LEVELS UPDATED			4	FEB 10/98	PIEZOMETER LEVELS UPDATED		
11	FEB 24/04	PIEZOMETER LEVELS UPDATED, TITLE BLOCK CHANGED			3	MAY 16/97	PIEZOMETER LEVELS UPDATED		
					2	AUG 28/96	PIEZOMETER LEVELS UPDATED		
					1	JAN. 8/96	AS CONSTRUCTED		
					0	OCT. 2/95	ISSUED FOR REPORT		

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

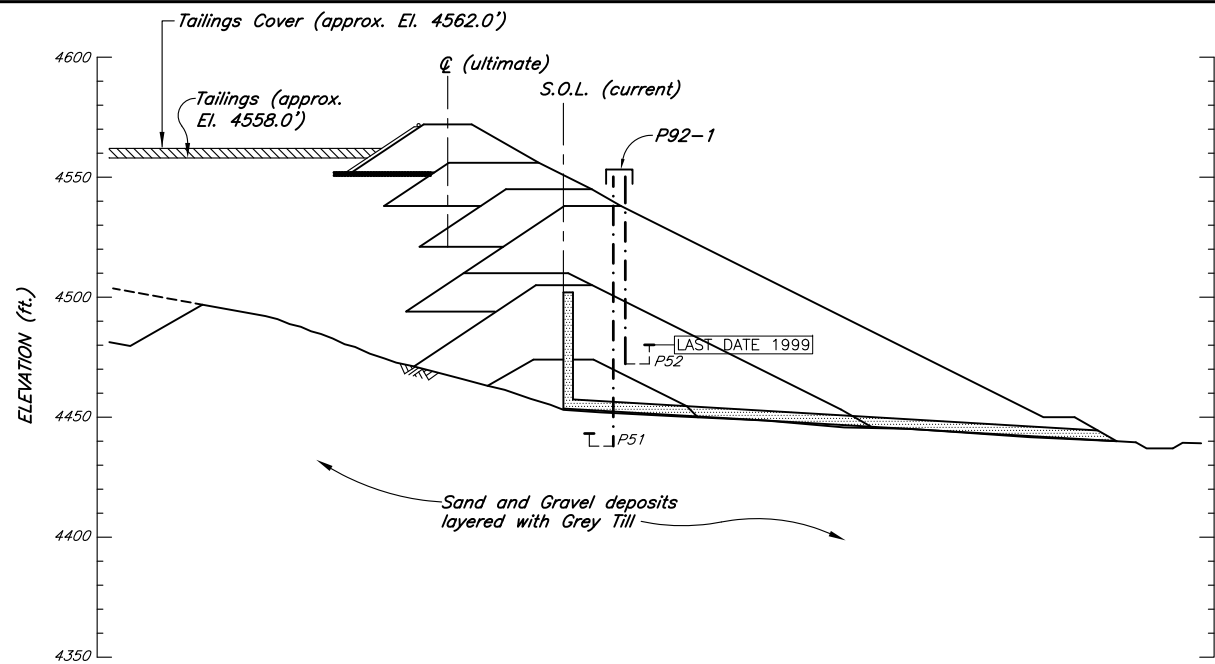
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(FORMERLY HOMESTAKE CANADA INC.)

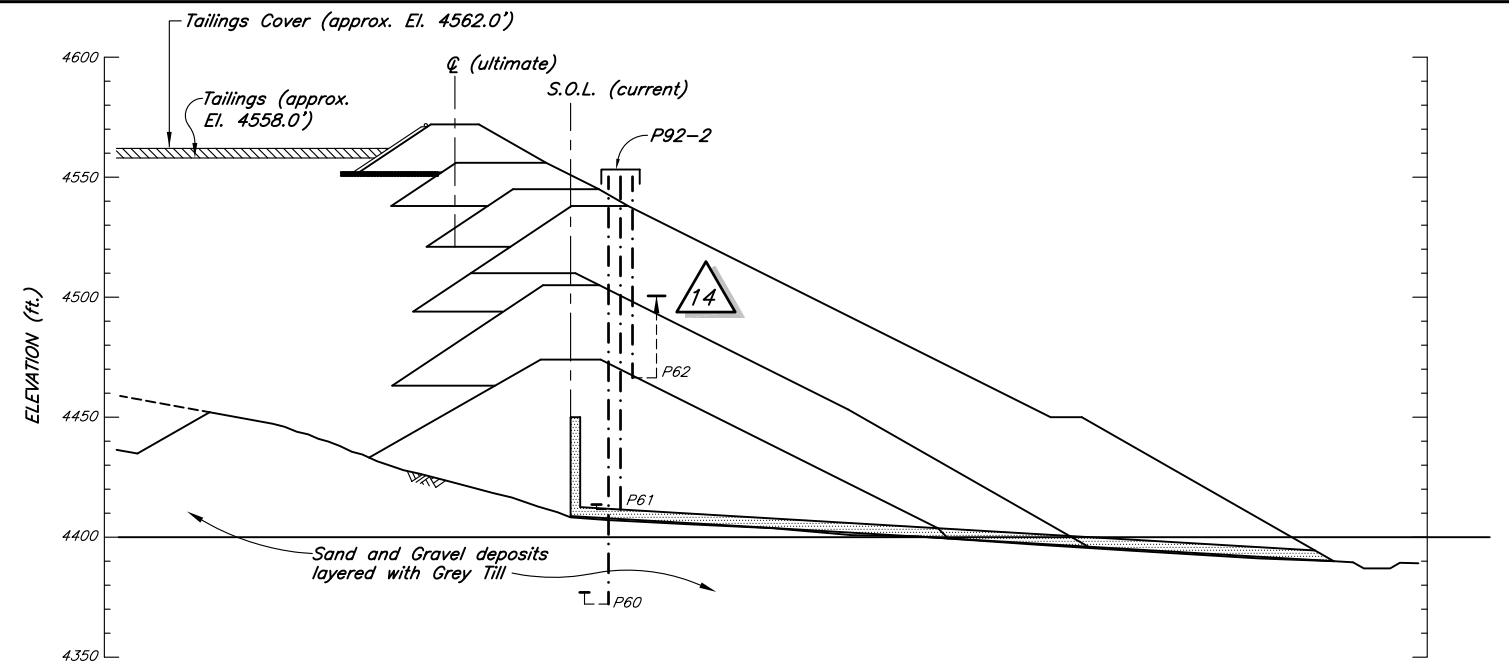
NICKEL PLATE MINE

INSTRUMENTATION PLANES A & B

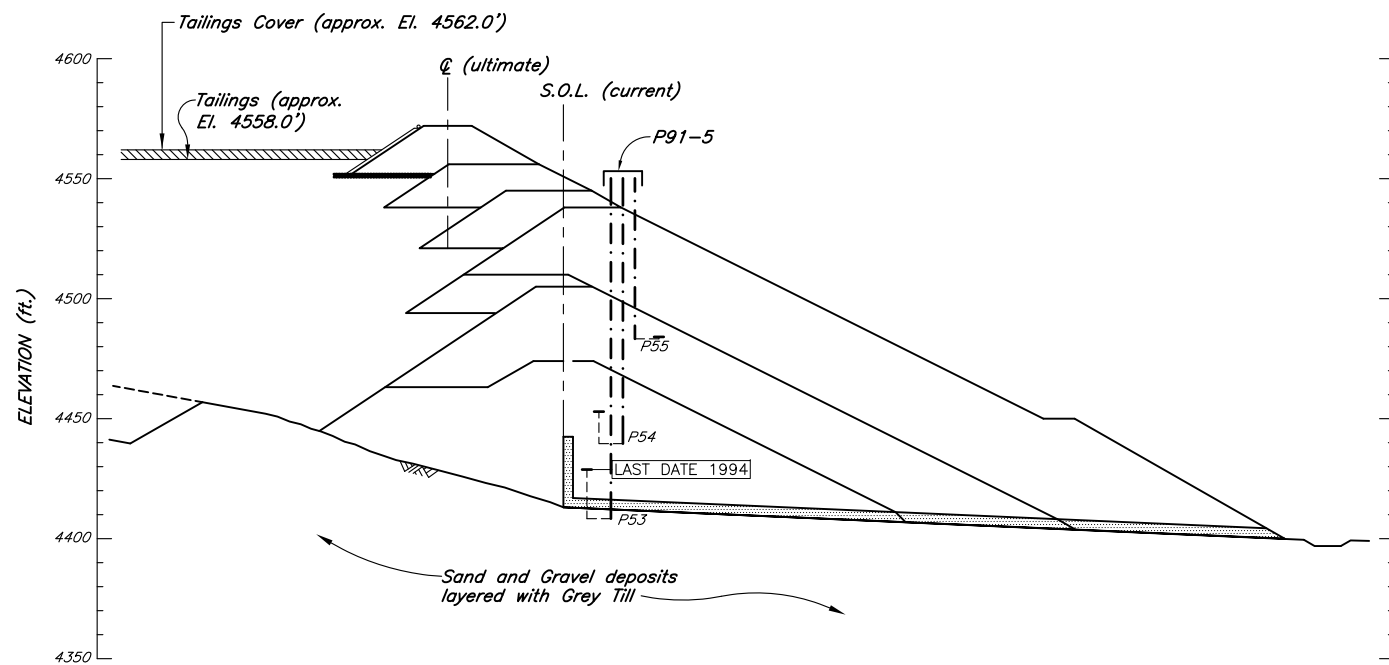
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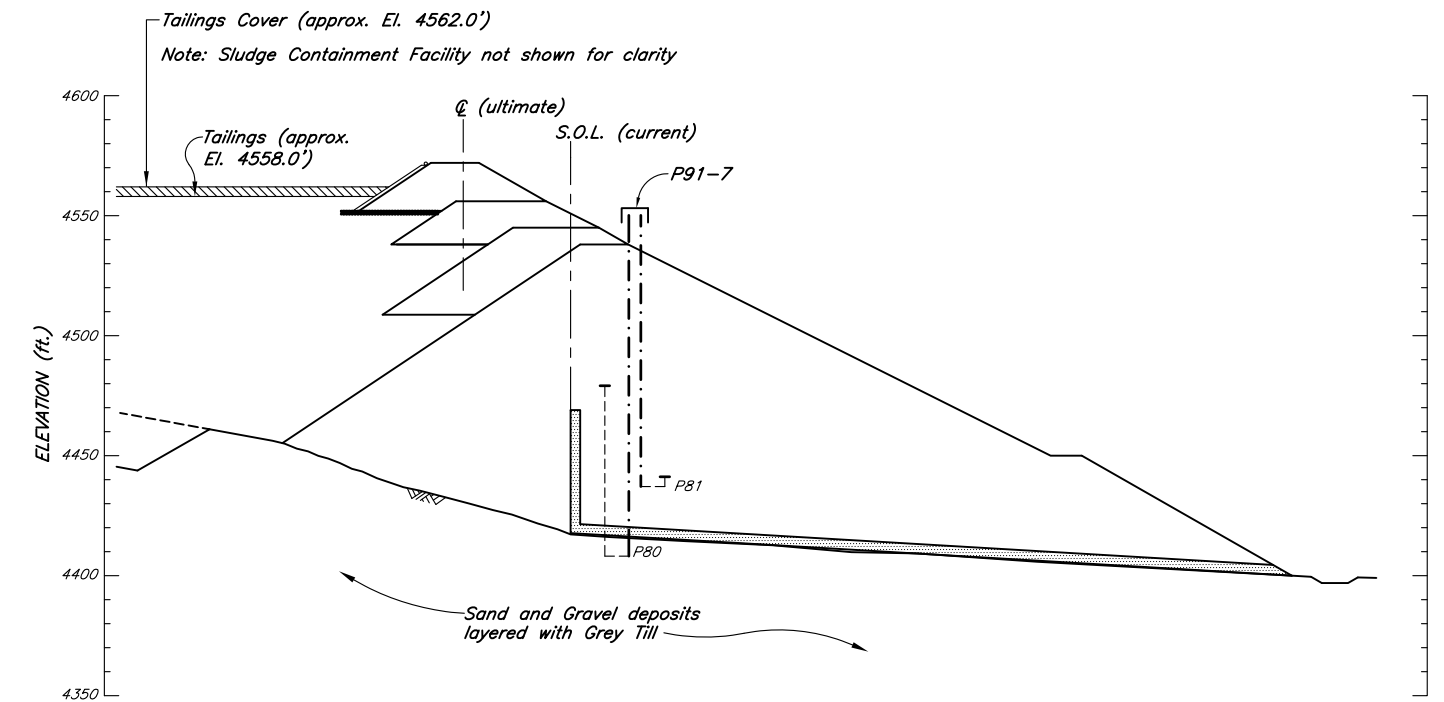
EMBANKMENT SECTION THROUGH STANDPIPE PIEZOMETERS P51, P52 AT LOCATION P92-1



EMBANKMENT SECTION THROUGH STANDPIPE PIEZOMETERS P60, P61, P62 AT LOCATION P92-2



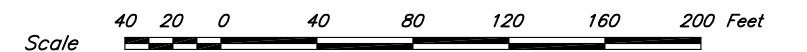
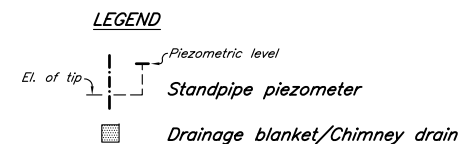
EMBANKMENT SECTION THROUGH STANDPIPE PIEZOMETERS P53, P54, P55 AT LOCATION P91-5



EMBANKMENT SECTION THROUGH STANDPIPE PIEZOMETERS P80, P81 AT LOCATION P91-7

NOTE

1. Piezometer levels as of January 2009



14	MAR 18/13	PIEZOMETER LEVEL UPDATED		7	JAN 16/02	PIEZOMETER LEVELS UPDATED	
13	FEB 09/09	PIEZOMETER LEVELS UPDATED		6	MAR 01/01	PIEZOMETER LEVELS UPDATED	
12	MAR 11/08	PIEZOMETER LEVELS UPDATED		5	FEB 18/00	PIEZOMETER LEVELS UPDATED	
11	MAR 01/07	PIEZOMETER LEVELS UPDATED		4	MAR 12/99	PIEZOMETER LEVELS UPDATED	
10	MAR 03/06	PIEZO DATES ADDED, HATCHING REMOVED		3	MAY 5/98	PIEZOMETER LEVELS UPDATED	
9	FEB 11/05	PIEZOMETER LEVELS UPDATED		2	MAY 16/97	PIEZOMETER LEVELS UPDATED	
8	MAR 02/04	PIEZOMETER LEVELS UPDATED, TITLE BLOCK CHANGED		1	AUG 28/96	PIEZOMETER LEVELS UPDATED	
				0	OCT. 2/95	ISSUED FOR REPORT	

KNIGHT PIESOLD LIMITED CONSULTING ENGINEERS – VANCOUVER, B.C.			BARRICK GOLD INC. (FORMERLY HOMESTAKE CANADA INC.)		
	DESIGNED	SMS	NICKEL PLATE MINE		
	DRAWN	TAM			
	CHECKED		PIEZOMETER PLANES		
	APPROVED				
DATE	OCT. 2, 1995	SCALE AS SHOWN	DRG. NO.	1819.202	REV. 14

APPENDIX B

PHOTOGRAPHS FROM 2014 SITE INSPECTION

(Pages B-1 to B-8)



PHOTO 1 – Revegetated tailings cover, looking south.



PHOTO 2 – Lined ponds on tailings surface (northeast end of facility).

**BARRICK GOLD INC.
NICKEL PLATE MINE**



PHOTO 3 – Lined ponds (2 to 4) on tailings surface and small pond area.



PHOTO 4 – Downstream embankment slope – East side of facility.

**BARRICK GOLD INC.
NICKEL PLATE MINE**



PHOTO 5 – Downstream embankment slope – South side of facility (looking east).



PHOTO 6 – Embankment bench area on downstream slope (eastern side).

**BARRICK GOLD INC.
NICKEL PLATE MINE**



PHOTO 7 – Small pond area (uncapped) at northern corner of tailings facility.



PHOTO 8 – Reclaimed slopes above tailings facility (looking west).

**BARRICK GOLD INC.
NICKEL PLATE MINE**



PHOTO 9 – Lined Pond 1 – Collected seepage water (looking west).



PHOTO 10 – Lined Pond 2 – Collected seepage water (looking west).

**BARRICK GOLD INC.
NICKEL PLATE MINE**



PHOTO 11 – Lined Pond 3 – Inert sludge containment (looking west).



PHOTO 12 – Lined Pond 4 – Inert sludge containment (looking west).

**BARRICK GOLD INC.
NICKEL PLATE MINE**



PHOTO 13 – Sediment Pond (Rock Quarry Lake).



PHOTO 14 – Freshwater Dam (looking from tailings embankment).

**BARRICK GOLD INC.
NICKEL PLATE MINE**



PHOTO 15 – Freshwater Dam (Mascot Pond Dam).



PHOTO 16 – Freshman Dam – Spillway channel.

**BARRICK GOLD INC.
NICKEL PLATE MINE**