



# Minto Mine Phase V/VI Expansion: Hydrogeological Characterization Report

Prepared for

Minto Explorations Ltd.



Prepared by



SRK Consulting (Canada) Inc.  
1CM002.008.301  
May 2013

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Project No: 1CM002.008.301

File Name: MintoMine\_HydrogeologicalCharacterization\_Report\_1CM002-008-301\_JA\_DBM\_20130531\_FNL

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# 1 Introduction

SRK Consulting (Canada) Inc. was contracted by Minto Explorations Ltd. to develop a hydrogeological conceptual model that characterizes the groundwater flow regime of the Minto Mine site in order to determine flow paths and where these will discharge to surface receiving bodies. The model is designed to address the central issues of how groundwater moves through the site and how it is potentially impacted by mining activities. The model also considers the possible follow-on effects to the receiving environment, where groundwater discharges to surface water bodies.

This report is intended to compile the existing hydrogeological knowledge of the site and to integrate this knowledge with the overall site hydrology in the context of the proposed plans for mine expansion. The hydrogeological conceptual model is used to determine the probable flow paths of groundwater through the site, the controlling factors for volume and rate of flow, and the areas where water may come into contact with sources of potential parameters of concern.

## 2 Hydrogeological Environment

### 2.1 Site Description

The Minto Mine is situated in the headwaters of Minto Creek (Figure 1), which drains northeast to the Yukon River. The Minto Creek catchment is characterized by moderate to steep slopes to the north, south, and west. The portion of the catchment occupied by the mine is known as Upper Minto Creek; this upper catchment covers approximately 1,040 ha of the larger 4,100 ha Minto Creek catchment, and is defined as the catchment area up gradient of the Water Storage Dam (SRK 2012b). The catchment below the water dam contains no mine components, and is known as Lower Minto Creek.

The groundwater flow regime is affected by several contributing factors including topography, climate, overburden, bedrock, major structures, and permafrost. At Minto, groundwater flow direction is dominated by topography, with groundwater flowing from the upland areas towards Minto Creek, as indicated by the arrows shown in Figure 2. The influences of these contributing factors are discussed throughout Section 2.

The conceptual model describes the groundwater flow regime at Minto Mine. It allows the site to be characterized based on the data available from multiple studies conducted on the property. Although the conceptual model does not provide quantitative results like outputs of a numerical model, it does provide a comprehensive description of groundwater flow at the site.

The flow regime at Minto Mine is a relatively simple groundwater system, but the system has some components that are difficult to characterize. With the exception of Minto North Pit, the entire mine footprint exists in a single catchment with Minto Creek as its main channel of surface discharge. However, permafrost distribution is not comprehensively known as it is discontinuous and is undoubtedly affected by mining, which results in changes in the location of permafrost boundaries over time. As permafrost creates an aquiclude (groundwater barrier), precise groundwater flow paths are challenging to determine or incorporate into a numerical model. Because the system has a main drainage location (Minto Creek), groundwater can be monitored

at multiple points along the gradient, thus providing the opportunity to track possible effects on groundwater.

Another factor that could significantly affect the groundwater flow regime is the fractured bedrock. Fractures in the bedrock have the potential to act as conduits for groundwater flow if they are well connected and are not blocked by low permeability materials such as clay. This factor is also difficult to characterize in a numerical groundwater model, even if extensive data is available. However, observations of drill core indicate that the bedrock generally has tight fractures or fractures filled with weathered material including clay and hematite.

The proposed Minto North Pit is part of the McGinty Creek watershed (Figure 2). The catchment containing the pit has an area of approximately 100 ha, and is located in the upper portion of the east tributary of McGinty Creek. Minto North Pit is the only component of the proposed mine expansion within this catchment. Preliminary water quality modelling has indicated that the development of Minto North Pit is unlikely to lead to significant water quality effects (SRK 2013c). Throughout pit operations, the pit sump water will be pumped into the Minto Creek watershed and managed with all other mine water; this pumping will result in a short term depression of the local water table. After pit operations are complete, it is expected that groundwater and local surface runoff will accumulate in the pit resulting in the groundwater table rebounding to near the pre-mining elevation.

## 2.2 Climate

The mine is located in a subarctic climate, typically characterized by long, cold winters and cool, mild summers (ACG 2012a). Minto Mine typically experiences precipitation throughout the year, with more snowfall than rain. Details regarding the baseline climate data are presented in the Minto Climate Baseline Report: YESAB Project Proposal Phase V/VI (ACG 2012a).

The mean annual temperature is  $-2^{\circ}\text{C}$ , with winter temperatures typically ranging from  $-10$  to  $-30^{\circ}\text{C}$  and summer ranging from  $10$  to  $20^{\circ}\text{C}$ . Wind direction is predominantly south to southeast and north to northwest with an average speed of approximately  $10$  km/h, dependent on height above ground surface. Relative humidity is highest during the winter months,  $75$  to  $95\%$ , and lowest in spring and early summer,  $40$  to  $60\%$ , with an annual average of  $71\%$ . Average daily mean temperatures recorded from October through March are below  $0^{\circ}\text{C}$ , representing the time of year where infiltration is reduced or not possible due to a frozen ground surface.

### 2.2.1 Hydrology

Total precipitation has been monitored on site in two locations and correlated with the Pelly Ranch meteorological station to determine the estimated mean annual precipitation to be  $329$  mm/year (SRK 2012b). The mean annual precipitation includes rainfall and snowfall, using snow water equivalent measurements.

The site-wide water balance estimated that the total runoff for the catchment area above the Water Storage Dam (WSD) was  $925,000$  m<sup>3</sup> for 2012 (SRK 2012b). The 2012 runoff is consistent with the runoff coefficient of  $0.3$  that has been estimated for the site (SRK 2013a).

There are three weirs set up for monitoring along Minto Creek where continuous water level monitoring is conducted for the open water season, which spans approximately early May through mid-October. The weirs are affected by controlled release of water from the site; however, rainfall events are still evident in the hydrographs (ACG 2012b).

## **2.3 Overburden**

Overburden thickness across the site is correlated with geomorphological features. Near topographic highs (or ridges) there is little to no overburden, while overburden thickness increases down valley slopes and is generally thickest in valley bottoms. Unconsolidated material deposited along the valley bottom varies in thickness. Typically, the ridge tops are dominated by sandy, residual soils grading to weathered bedrock. It is generally observed that fine weathering products have been washed down slope. Overburden in the valley bottoms consists of finer materials dominated by sandy silts and clays (SRK 2008a). A representative selection of drill hole logs from various geotechnical drilling programs is presented in Appendix A; collar locations are shown in Figure 3. The drill holes shown in Appendix A provide spatial coverage within the core site footprint and high quality data regarding depth to bedrock. In isolated cases, drill holes that did not reach bedrock are also included; these provide minimum bedrock depths.

### **2.3.1 Thickness and Distribution**

Several geotechnical studies have been conducted across the site (e.g. Golder 1974; SRK 2007; EBA 2009–2011 and 2012). Figure 3 presents the overburden depth determined from these studies. It should be noted that overburden thicknesses for the Dry Stack Tailings Storage Facility generally represent data collected post-construction, and therefore reflect combined tailings and overburden thickness. The drill holes located at the toe of the Southwest Waste Dump were drilled prior to the full extent of the current waste rock and provide a good indication of the overburden depth.

Along the ridge near the proposed Ridgetop North and Ridgetop South pits, bedrock is close to the surface (less than 15 m). In most cases, the bedrock is within 5 m of the surface. The proposed Minto North Pit also has minimal overburden near the ridge top.

To the north/northeast of the Dry Stack Tailings Storage Facility, overburden is controlled by the steep valley slopes and Minto Creek cutting through the bottom of the valley. The overburden thickness near the creek bed is less than 15 m, but increases in some areas, especially along the southern valley slopes. In some areas, this overburden can exceed 50 m, but typically ranges between 30 and 50 m.

### **2.3.2 Material Composition**

The ridge tops to the north and south of the mine footprint have little overburden, and that which exists consists of sandy residual soils that grade into weathered bedrock. In the valley east of the Southwest Waste Dump, the subsurface soils consist of sand and silt layers that overlie the residual sandy soil and weathered bedrock. Some locations have a mix of sand, silt, and gravel layers with no clear stratigraphic continuity evident through the valley.

Fill has been placed in the mine's central area near the Main Pit, the mill, the administration and the camp buildings and extends up to 8 m below current ground surface. The fill overlies overburden consisting of sandy silt, with gravel and some cobbles throughout. The overburden transitions to weathered bedrock between 15 and 20 m below ground surface at the time of drilling (predominantly 2010 and 2011).

Below the Dry Stack Tailings Storage Facility, overburden is generally fine-grained silt or silt and sand overlying ice rich layers of silts and clays. This layered type of overburden continues along the valley to the east, which overlies residual sandy soils and weathered bedrock with depth.

## 2.4 Bedrock

The Minto Mine site is underlain predominantly by igneous rocks of granodiorite composition. The granodiorite is generally categorized based on textures which are associated with foliation and crystal size. Rock texture ranges from massive granodiorite to foliated granodiorite, with foliated granodiorite typically characterized by increased biotite content. The biotite-rich foliated granodiorite hosts mineralized zones of copper sulphide. Crystal textures range from equigranular to porphyritic.

Other minor lithologies consisting of small dykes of simple quartz-feldspar pegmatite, aplite, and an aphanitic textured intermediate composition rock are also observed. Bodies of all of these units are relatively thin and rarely exceed one metre core intersections. These dykes are relatively late, generally postdating the peak ductile deformation event; however, some pegmatite and aplite bodies observed in a rock cut located north of the mill complex are openly folded. There has been evidence of conglomerate and volcanic flows in drill core by past operators, and drilling has demonstrated that a conglomerate unit bearing local granodiorite pebbles occurs across much of the southern part of the project area. This is of particular note in the vicinity of the proposed Ridgetop North and Ridgetop South pits.

### 2.4.1 Structure

Structure can have a significant impact on groundwater flow if structures have a higher hydraulic conductivity than that of the surrounding rock. Although there is evidence both regionally and locally of multiple structures and structure types, this section discusses the structures that have been identified on site as structures of interest with respect to groundwater flow.

There are both ductile and brittle phases of deformation around the Minto deposits. Copper-sulphide mineralization is strongly associated with foliated granodiorite. This foliation is defined by the alignment of biotite in areas of weak to moderate strain, and by the segregation of quartz and feldspar into bands in areas of higher strain, giving the rock a gneissic texture in very strongly deformed areas. The deformation zones form sub-horizontal horizons within the more massive plutonic rocks of the region and can be traced laterally for more than 1,000 m in the drill core. They are often stacked in parallel to sub-parallel sequences (SRK 2013c).

The Minto Creek Fault (MC Fault) bisects the Minto Main deposit, dividing it into north and south areas and is modeled as dipping steeply north-northeast with an apparent left lateral reverse displacement. The northern block moved up and to the west relative to the southern block. Both the vertical and horizontal displacements are evident by offsets in the main zone mineralization

and appear to be minimal. A lack of marker horizons in the plutonic rocks, however, makes it difficult to determine the absolute magnitude of the movement (SRK 2008b).

The DEF Fault defines the northern end of the Minto Main deposit. It strikes more or less east-west and dips north-northwest and cuts off the Main Zone mineralization. The vertical orientation of most of the drilling is less than optimal to intersect steep to vertical faults; the DEF fault may have a similar sense of movement to the MC fault, however, a significant amount of displacement is inferred. (SRK 2013c).

The mineralization in the proposed Ridgetop North and Ridgetop South pits is also controlled by structure. The boundary between the Area 2 and Area 118 pits is defined by a northeast dipping fault. At least two parallel structures have also been identified in Area 118 (SRK 2008b).

## **2.5 Permafrost**

### **2.5.1 Spatial Distribution**

Instrumentation to monitor ground temperatures has been installed across the site as part of various studies conducted since 1974. The current general understanding of permafrost distribution is presented in Figure 4 (adapted from EBA 2011), as understood from a combination of drill results, test pit results, surficial mapping, and interpretation of aerial photographs. Although the available data does not allow for unequivocal mapping of areas of permafrost, the distribution of the permafrost across the site has been characterized to a degree that is adequate for developing a conceptual hydrogeological model and for planning the groundwater monitoring system layout.

Generally, the west to east trend of the upper Minto Creek valley bottom (extending from down gradient of the Southwest Waste Dump, past the mill and administration buildings, the Dry Stack Tailings Storage Facility, and along the north facing slopes of the Minto Creek drainage upstream of the Water Storage Dam) coincides with the permafrost region. The north facing slopes (at the southern edge of the property) have geomorphic and vegetation evidence suggesting the presence of permafrost or discontinuous permafrost, except along the crests of the ridges which are generally free of permafrost. The south facing slopes and ridges may or may not have permafrost, based on observations of both frozen and unfrozen ground conditions in these areas.

### **2.5.2 Effects on Groundwater Flow System**

Permafrost plays a significant role in the groundwater flow system on the site as it forms a confining layer (or aquiclude) for flow below the frozen ground and inhibits infiltration from the overlying active layer. The lack of permafrost in the bed and adjacent areas of Minto Creek (SRK 2013c) indicates that groundwater and surface water can interact along the axis of the creek and that by-pass of surface and/or shallow groundwater monitoring points below a permafrost layer is unlikely.

As permafrost limits infiltration into the groundwater system, it can also prevent contaminants from entering the deeper groundwater system. One of the areas where this is most notable is along the valley between the Southwest Waste Dump and the proposed Ridgetop Waste Dump. The valley has many small surface channels during spring and summer, but also has evidence of



permafrost. Groundwater will either tend to report to the ephemeral supraperafrost channels (in the case of shallow groundwater) or stay below the permafrost layer (in the case of deeper groundwater) until it reports to the Main Pit.

## 2.6 Hydraulic Conductivity

Hydraulic conductivity data have been collected during two studies at Minto Mine. The first tests were a series of packer injection tests conducted by Golder Associates as part of the initial mine feasibility studies (Golder 1974). These tests were carried out in the vicinity of the Main Pit at various depths within bedrock, and were categorized by multiple rock characteristics:

- completely weathered (CW),
- highly weathered (HW),
- moderately weathered (MW),
- slightly weathered (SW), and
- fresh jointed (FJ).

The results from these tests are presented in Table 1. It should be noted that tests were not conducted in massive rock and therefore the results in Table 1 are biased towards more permeable zones to a certain extent.

In the second study, rising head tests were completed as part of the multi-port (MP) monitoring well installation program in the fall of 2012 (SRK 2013b). These tests were conducted primarily in bedrock with the exception of one test in overburden. Analyses of these tests can be found in Appendix B. Table 1 also summarizes the 2012 results using the same rock categories as those presented by Golder (1974). Where multiple tests were conducted, a mean result for the interval is presented.

The bulk hydraulic conductivity for different bedrock and overburden characteristics is presented in Table 2. These represent the best estimate of hydraulic conductivity for each of the rock categories on site. These values were obtained by averaging all available tests for a given rock condition and they seem reasonable, based on observations of pit wall rock, drill core, typical literature values, and experience elsewhere.

Of note is the observation that the “fresh jointed” rock does not exhibit increased hydraulic conductivity when compared to all other rock categories. This implies that the jointing is not well connected through the rock mass (i.e., the fractures do not interlink to provide a flow path). Therefore, it appears that rock on site is consistently low K with a low probability of extensive higher K zones that could transmit significant water flux. The overburden hydraulic conductivity value presented in Table 1 is situated in frozen ground.

**Table 1: Compiled Hydraulic Conductivity Data.**

Hole ID	Test Type	Test Depth (m)	Rock Condition	Hydraulic Conductivity (m/s)
75	Packer Injection Test	40 - 43	MW	$6 \times 10^{-07}$
77	Packer Injection Test	46 - 49	HW	$9 \times 10^{-08}$
		55 - 59	MW	$6 \times 10^{-08}$
		61 - 65	MW	$5 \times 10^{-08}$
		67 - 71	MW	$5 \times 10^{-08}$
		73 - 77	HW	$6 \times 10^{-08}$
		80 - 83	HW	$5 \times 10^{-08}$
		86 - 89	MW	$6 \times 10^{-08}$
		92 - 95	MW	$5 \times 10^{-08}$
		98 - 101	MW	$5 \times 10^{-08}$
		104 - 107	SW	$3 \times 10^{-08}$
79	Packer Injection Test	43 - 46	FJ	$6 \times 10^{-08}$
		52 - 55	SW	$7 \times 10^{-08}$
		58 - 61	FJ	$5 \times 10^{-07}$
		64 - 67	FJ	$8 \times 10^{-08}$
		70 - 73	FJ	$2 \times 10^{-08}$
		76 - 80	FJ	$8 \times 10^{-08}$
		82 - 86	SW	$6 \times 10^{-08}$
		88 - 92	FJ	$7 \times 10^{-08}$
		94 - 98	FJ	$6 \times 10^{-08}$
		101 - 104	SW	$9 \times 10^{-08}$
84	Packer Injection Test	22 - 25	HW	$2 \times 10^{-06}$
87	Packer Injection Test	21 - 25	MW	$9 \times 10^{-08}$
		40 - 43	SW	$4 \times 10^{-08}$
		58 - 61	SW	$3 \times 10^{-08}$
		64 - 70	SW	$3 \times 10^{-08}$
		76 - 80	FJ	$5 \times 10^{-08}$
		85 - 89	FJ	$4 \times 10^{-08}$
		101 - 104	FJ	$2 \times 10^{-08}$
89	Packer Injection Test	25 - 28	CW	$1 \times 10^{-07}$
		28 - 31	HW	$1 \times 10^{-07}$
		34 - 37	HW	$3 \times 10^{-07}$
		40 - 43	MW	$8 \times 10^{-08}$
		46 - 49	CW	$7 \times 10^{-08}$
		55 - 59	HW	$6 \times 10^{-08}$
MW12-05	Rising head	136	FJ	$4 \times 10^{-09}$
		98	FJ	$1 \times 10^{-07}$
		52	SW	$7 \times 10^{-07}$
		18	HW	$1 \times 10^{-08}$
MW12-06	Rising head	126	FJ	$4 \times 10^{-07}$
		70	SW	$2 \times 10^{-07}$
		22	overburden	$5 \times 10^{-09}$
MW12-07	Rising head	136	SW	$1 \times 10^{-07}$
		103	HW	$2 \times 10^{-08}$

Source: \\VAN-SVR0\Projects\01\_SITES\Minto\1CM002.008\_Hydrogeology\_2012\1080\_Deliverables\Hydrogeological Conceptual Model\020\_Tables

**Table 2: Assumed Bulk Hydraulic Conductivity Values.**

Rock Condition	Hydraulic Conductivity (m/s)
Overburden & Highly Weathered Bedrock	$2 \times 10^{-07}$
Moderately Weathered Bedrock	$6 \times 10^{-08}$
Non-Weathered Bedrock	$8 \times 10^{-08}$
Fault Zone	$5 \times 10^{-09}$

Source: \\VAN-SVR0\Projects\01\_SITES\Minto\1CM002.008\_Hydrogeology\_2012\1080\_Deliverables\Hydrogeological Conceptual Model\020\_Tables

## 2.7 Water Level Data

SRK installed three standpipes down gradient of the proposed Ridgetop North and Ridgetop South pits (SRK 2012a and Figure 1). Figures 5 to 8 give the temperature profiles over time along the ridge. With the exception of the active layer, permafrost is present in two of the ridge top monitoring wells (MW11-02 and MW11-03). MW11-04A thermistor data reports above freezing temperatures, but no recent samples have been collected as this well is still being developed. Temperatures in monitoring well MW11-01A are above freezing at depth, and portions of the overburden around the Main Pit are expected to be absent of permafrost.

The multi-piezometer (MP) monitoring wells installed in 2009 and 2012 provide water level data that can be used in conjunction with permafrost data to determine the flow of groundwater (SRK 2009, SRK 2012a, SRK 2012b). Appendix C provides the piezometric levels in each of the active MP wells. The design of each MP well is presented in Appendix D.

The pressure profiles show that most of the locations exist in hydrostatic conditions and therefore limited vertical groundwater flow will occur. In other words, the groundwater flux is expected to be dominated by horizontal flow.

## 3 Groundwater Flow Regime

### 3.1 Upper Minto Creek

A series of cross sections have been used to aid the following discussion of the groundwater flow regime within the upper Minto Creek watershed. Figure 9 presents the map of the section lines for the sections provided in Figures 10 to 18. These sections display the current topography, bedrock surface (modeled), and existing and expected pit development. Representative flow lines are shown and illustrate how the topography dominates flow direction.

Where permafrost occurs, it is expected that most groundwater will be confined and travel beneath the permafrost layer, with minor seasonal flow occurring through the near-surface active layer. As the permafrost depth across the site is not well delineated, it is represented schematically in the cross sections for purposes of illustration.

Section A (Figure 10) is perpendicular to the Minto Creek valley and was selected to illustrate the typical flow patterns expected down gradient of the Water Storage Dam, across the narrow part of the valley where steep slopes are present. Each end of the section is on a ridge, which are both the topographical and groundwater divides. It is expected that permafrost exists on the south

slope as that is consistent with other south-facing slopes on site, but there is no thermal ground data at this location in the valley. Groundwater will flow from the ridges on both sides and surface along the Minto Creek valley. On the south slope, groundwater will have minor seasonal suprapermafrost flow, and deeper water will be confined until it reaches the valley where it will then report to the creek.

Section B (Figure 11) was selected to show the flow regime expected in the vicinity of the Dry Stack Tailings Storage Facility (DSTSF). The section terminates on a ridge to the north of the DSTSF and at a ridge near the airstrip. Bedrock is close to or at surface near the northern ridge, so shallow groundwater is expected to travel within the weathered bedrock. From the ridge near the airstrip, groundwater travels sub-permafrost beneath the DSTSF and to the Minto Creek valley. This slope contains permafrost, with seasonal flow through the active layer towards the valley.

Section C (Figure 12) demonstrates groundwater flows from ridge tops to the small valley between the Southwest Waste Dump (SWD) and the proposed Ridgetop Waste Dump. The valley is underlain by permafrost with ephemeral surface water channels. From the west, shallow groundwater will flow through and beneath the SWD, with the permafrost confining deeper water. Shallow groundwater will only flow through the active layer of the overburden before reporting to surface channels. Groundwater will flow down gradient from the east ridge to the valley, also directed to either shallow soils in the active layer or confined below the permafrost.

Section D (Figure 13) was selected to illustrate how groundwater will be directed from the ridge near the airstrip and the proposed Ridgetop pits towards the valley between these points. Since permafrost is present in this valley, the shallow groundwater will largely report to surface water in the valley bottom. Deeper groundwater will be confined by permafrost in the valley, which will then be topographically directed to the northwest beneath the DSTSF. The Ridgetop North Pit will contain saturated and unsaturated tailings post-closure, with the expectation that groundwater will continue to flow down gradient through the pit.

Section E (Figure 14) was selected to represent the groundwater flow regime across the Minto Creek valley down gradient of the Main Pit. The Area 2 Pit will contain saturated tailings while the Area 118 Pit will be backfilled with overburden. Permafrost will be affected by mining, and likely recede from the pit walls within the plane of this section, and groundwater will travel from the ridge top towards the mill area where it will be directed down the Minto Creek valley. Some shallow water will flow above permafrost, with deeper groundwater confined beneath the mill area as well. Groundwater from the north will also flow from ridge tops to the mill area and will merge with other groundwater moving eastward (out of this section) along the Minto Creek valley.

Section F (Figure 15) was selected to illustrate groundwater flow through the Minto North Pit to the McGinty Creek catchment, while groundwater to the south of the topographic divide will be directed toward the Main Pit. The Minto North Pit will fill with surface and groundwater inflows to a static water level that is expected to approximate pre-mining groundwater levels. Groundwater will flow from the ridge top down gradient into the McGinty Creek watershed. South of the Minto North Pit, groundwater will report to the Main Pit which will be full of saturated tailings. The ridge near the western edge of the Area 2 pit will also yield groundwater that will move towards the

Main Pit. It should be noted that this ridge will direct groundwater radially in multiple directions – north, east and west, as it is at the edge of multiple topographic divides.

Sections G through I (Figures 16 to 18) were selected to represent the groundwater paths along the length of the Upper Minto Creek valley. Section G starts at the edge of the west wall of the Main Pit and travels through the mill area where it intersects Section B. The Minto Creek valley continues with Section H, which traces along the Water Storage Pond and through the Water Storage Dam where it intersects Section A. Section I continues along the Minto Creek valley and terminates down gradient of all the mine components, into the Lower Minto Creek catchment. This section was terminated where ridges with bedrock close to or at surface are present, defining an ideal narrow point in the valley where overburden is expected to be limited.

These sections (G through I) show the approximate flow paths that groundwater on the site are expected to follow. At the western end of the section, groundwater is directed to the Main Pit and Minto Creek. Once directed here, it will continue along the valley towards the Yukon River. In Section G, groundwater is predominantly confined deep by permafrost until it is down gradient of the mill area. It will continue along the valley trace to the Water Storage Pond. The Water Storage Dam will be breached post-closure, removing the pond, but a saturated area similar to a wetland is expected to remain. Groundwater will then follow the trace of the valley to the Yukon River. It should be noted the valley floor doesn't have a steep topographical gradient, so groundwater movement does not have a large hydraulic head driving force. Furthermore, this trace along the Minto Creek valley is free of permafrost allowing groundwater to surface in the creek channel. There is an expectation that deeper regional groundwater also flows beneath the valley, but it is not expected to be affected by the mine components.

The faults identified in Section 2.4.1 are not expected to change the overall groundwater flow direction as they are not characterized by significantly different hydraulic conductivity than the surrounding fractured bedrock. Hydraulic testing conducted at MW12-06 across a fault zone that was characterized with over 1 m of completely altered clay material, yielded a hydraulic conductivity of  $5 \times 10^{-9}$  m/s. Artesian conditions below the fault also suggest this could be a confining unit, further supporting fault characteristics to restrict groundwater flow. The DEF fault has been similarly characterized as a groundwater barrier in previous studies (SRK 2009). Assuming these represent typical faults on the property, it is improbable that faults will act as conduits for significant water flow.

There is the possibility that groundwater may preferentially flow through fractured bedrock. However, being able to identify which fractures may be significant and connected across the site, or even within a defined zone, is a difficult feature to characterize. Geotechnical core logging conducted for three drill holes (SRK 2013c) found that fractures in the weathered bedrock were often filled with hematite or gouge, suggesting groundwater flow rates would be minimized. Fresh bedrock joints were often extremely tight, also restricting groundwater flow. As discussed in Section 2.6, the hydraulic conductivity of highly fractured rock was found to be similar to unfractured rock, indicating poor connectivity over the larger scale of rock mass.

Despite the difficulty of accurately characterizing the permafrost extent or the network of bedrock fractures, it is possible to adequately monitor groundwater at the Minto property. Since the system exists almost entirely in a single catchment, the strategically planned groundwater

network allows for the ability to monitor groundwater at multiple locations as it travels down gradient. Drivepoint piezometers have also been installed to monitor overburden groundwater flow down gradient of the Southwest Waste Dump and below the Mill Valley Fill (Stage 1).

All surface water is monitored and managed at Minto Mine. Any water released from the property from the Water Storage Pond must meet water use licence conditions (YWB 2012).

### **3.2 Minto North**

The proposed Minto North Pit is located in the headwaters of McGinty Creek, the catchment immediately north of Minto Creek. The pit will remain dewatered throughout the mining phase of the pit (approximately 1 to 2 years). All water - surface and groundwater - that flows into the pit will be pumped to the Minto Creek catchment and managed accordingly.

Since Minto North Pit is in the very upper part of the McGinty Creek headwaters, groundwater quality will not be affected by upstream mining activity (i.e., there are no additional mining activities upgradient of the pit). Similar to the Minto Creek catchment, topography within the McGinty Creek catchment is expected to control groundwater flow. As water will be pumped out of the pit during operations, groundwater will not be released into the environment, thereby ensuring Minto North Pit will not affect down gradient groundwater during operations. After mining is complete, the Minto North Pit will be allowed to fill with surface and groundwater inflows, and it is expected that the final lake water level will be similar to the pre-mining groundwater table elevation of 907 to 896 m above sea level.

A post-mining water and load balance was developed for the McGinty Creek catchment that indicated there will be no significant effect to water quality (SRK 2013a).

## **4 Water Chemistry Data**

The groundwater monitoring network was most recently updated in November 2012 (SRK 2013b). Initial sampling was conducted shortly after each well installation program. All of the groundwater chemistry data is presented in Appendix E. Table 4 presents selected chemistry data for all samples collected as of April 2013. The Groundwater Monitoring Plan (Minto 2013) was updated in 2013 to include all monitoring wells and specifies semi-annual sampling. Data from future monitoring will allow trends in groundwater chemistry to be identified.

**Table 3: Selected Chemistry Data.**

Well ID	Zone	Date	Selected Parameters (mg/L)					
			SO4-D	N-NO3	Cd-D	Cu-D	Se-D	Zn-D
MW09-01	2	30-Nov-2009	77	n/a*	0.000050	0.012	0.0028	0.0090
MW09-01	3	30-Nov-2009	83	n/a*	0.000080	0.020	0.0028	0.0060
MW09-01	3	30-Mar-2010	170	n/a*	0.00015	0.021	0.0018	0.016
MW09-01	4	30-Nov-2009	83	n/a*	0.000070	0.018	0.0030	0.0040
MW09-02	1	2-Dec-2009	170	n/a*	0.000090	0.0040	0.0067	0.010
MW09-02	3	2-Dec-2009	170	n/a*	0.000060	0.0030	0.0068	0.0070
MW09-03	1	1-Dec-2009	120	n/a*	0.00020	0.019	0.0080	0.022
MW09-03	1	29-Mar-2010	23	n/a*	0.00012	0.0040	<0.0006	0.014
MW09-03	1	10-May-2012	21	0.11	0.000085	0.0028	<0.00010	0.017
MW09-03	1	17-Nov-2012	22	0.069	0.00068	0.0018	0.000052	0.011
MW09-03	2	1-Dec-2009	110	n/a*	0.000080	0.022	0.0067	0.010
MW09-03	2	29-Mar-2010	49	n/a*	0.00072	0.0060	0.0028	0.0050
MW09-03	2	10-May-2012	<0.50	0.10	0.000028	0.0011	0.00020	0.0053
MW09-03	2	17-Nov-2012	<0.50	0.035	<0.000025	0.00073	<0.00020	0.0080
MW09-03	3	1-Dec-2009	10	n/a*	0.000070	0.0050	<0.0006	0.012
MW09-03	3	29-Mar-2010	10	n/a*	0.000020	0.0050	<0.0006	0.0050
MW09-03	3	10-May-2012	11	0.30	0.000069	0.0032	0.00031	0.0078
MW09-03	3	17-Nov-2012	9.8	0.25	0.000023	0.0017	0.00041	0.0014
MW09-03	5	10-May-2012	<0.50	<0.020	<0.000010	0.00022	<0.0001	<0.0050
MW09-03	5	17-Nov-2012	<0.50	<0.020	<0.0000050	0.00011	<0.00004	0.00046
MW12-05	1	11-Nov-2012	350	0.37	0.00014	0.0074	0.00047	0.040
MW12-05	3	12-Nov-2012	460	0.030	0.00021	0.0022	0.00036	0.031
MW12-05	5	12-Nov-2012	46	0.82	0.000016	0.0015	0.00016	0.0066
MW12-05	7	12-Nov-2012	41	<0.020	<0.0000050	0.00048	0.00011	0.0054
MW12-06	2	16-Nov-2012	210	0.081	0.000016	0.00023	0.00014	0.011
MW12-06	4	16-Nov-2012	180	0.080	0.000012	0.00011	0.000083	0.0081
MW12-06	6	16-Nov-2012	170	0.45	0.000012	0.00026	0.00051	0.0031
MW12-07	1	3-Nov-2012	180	54	0.00063	0.077	0.035	0.064
MW12-07	2	3-Nov-2012	280	21	0.00027	0.022	0.015	0.039

\\VAN-SVR0\Projects\01\_SITES\Minto\1CM002.008\_Hydrogeology\_2012\080\_Deliverables\Hydrogeological Conceptual Model\020\_Tables

\*n/a - not available



## 5 Conclusions/Recommendations

The conceptual understanding of the Minto Mine site's hydrogeological system is reasonably well advanced. The topographical constraints on the groundwater flow system being imposed by the relief of the catchment provide a high degree of control of groundwater flow. This constraint allows for a high probability of predicting the major flow paths in the system. The topographic constraint also allows for a high degree of confidence in the placement of monitoring wells and surface water stations to assess potential impacts on the receiving waters.

### 5.1 Spatial Coverage

A key aspect of any monitoring plan is to ensure the system is designed to collect samples from all reasonable flow paths that could be carrying parameters of concern to a receiving body - in this case Lower Minto Creek.

Based on the review of the site layout and conceptual flows paths, which are presented both in map view (Figure 1) and section view (Figures 9 to 18), the current groundwater monitoring and surface water monitoring systems are considered to be appropriate for monitoring groundwater that may be impacted by mining and milling operations.

### 5.2 Temporal Coverage

For the most part, because the groundwater monitoring system has only been installed over the last several years, the temporal record of monitoring results is short. However, monitoring locations have been situated to collect data in a reasonable time period (i.e., situated close enough to a potential source to detect significant changes in parameters of concern within a reasonable time period, even if flow systems are moving slowly, as is expected at Minto Mine). As such, while the period of monitoring is still short, it is anticipated that any significant changes in groundwater chemistry related to mining operations will be detected in a timely fashion.

### 5.3 Adequacy of Groundwater Monitoring

Because the groundwater is not expected to have significant changes over short periods of time, the sampling can be conducted twice a year. One sampling event should be conducted around or just after freshet, as this time is expected to represent the recent effects of any loads mobilized during the melt. The second sampling event should be conducted in approximately late September or October, when groundwater chemistry is expected to be most concentrated due to reduced infiltration because of low precipitation at the end of summer/early autumn.

### 5.4 Numerical Modelling

At this time, SRK does not recommend carrying out detailed site-wide 3D numerical groundwater modelling. The current data for the site does not allow for a reasonable calibration to site hydrogeological conditions. The number of non-unique solutions would be too large to be of any real benefit for predicting groundwater movement over what can be inferred from routine hydrogeological theory and an understanding of the topography and subsurface conditions at the site.

The conceptual model has presented the available data and the current understanding of permafrost distribution. The monitoring wells present the opportunity to characterize groundwater at multiple points within the catchment with two wells, MW12-06 and MW12-05, near where the groundwater “exits” from the property. With these monitoring opportunities and with topography that lends itself to focussing the discharge point, numerical modelling does not present a better opportunity to increase comprehension of the flow regime.

This report, “Minto Mine Phase V/VI Expansion: Hydrogeological Characterization Report”, was prepared by SRK Consulting (Canada) Inc.

*“Original signed by Jennifer Adams”*

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Jennifer Adams, GIT (BC)  
Consultant (Hydrogeology)

and reviewed by

*“Original signed by Michael Royle”*

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Michael Royle, M.App.Sci., PGeo (BC, NT)  
Principal Consultant (Hydrogeology)

*“Original signed by Dylan MacGregor”*

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Dylan MacGregor, PGeo (BC)  
Principal Consultant (Geochemistry)

All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

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The opinions expressed in this report have been based on the information available to SRK at the time of preparation. SRK has exercised all due care in reviewing information supplied by others for use on this project. Whilst SRK has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. SRK does not accept responsibility for any errors or omissions in the supplied information, except to the extent that SRK was hired to verify the data.

## 6 References

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Figures

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385000

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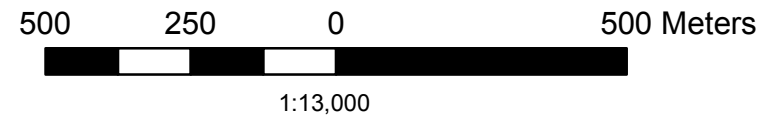
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**Legend**

- + MP Well, Functional
- + MP Well, Non-functional
- + Piezometer with thermistor, Functional
- + Drivepoint, Functional
- Surface Water Monitoring
- Catchment Boundary



Notes:  
 1. Data presented in NAD 1983 UTM Zone 8N.  
 2. Base orthophoto provided by Minto Mine, August 2012.  
 3. Final pit designs provided by Minto Mine, October 2012.



Job No: 1CM002.008  
 Filename: Figure1\_SiteMap\_Minto\_1CM002.008\_rev02.mxd



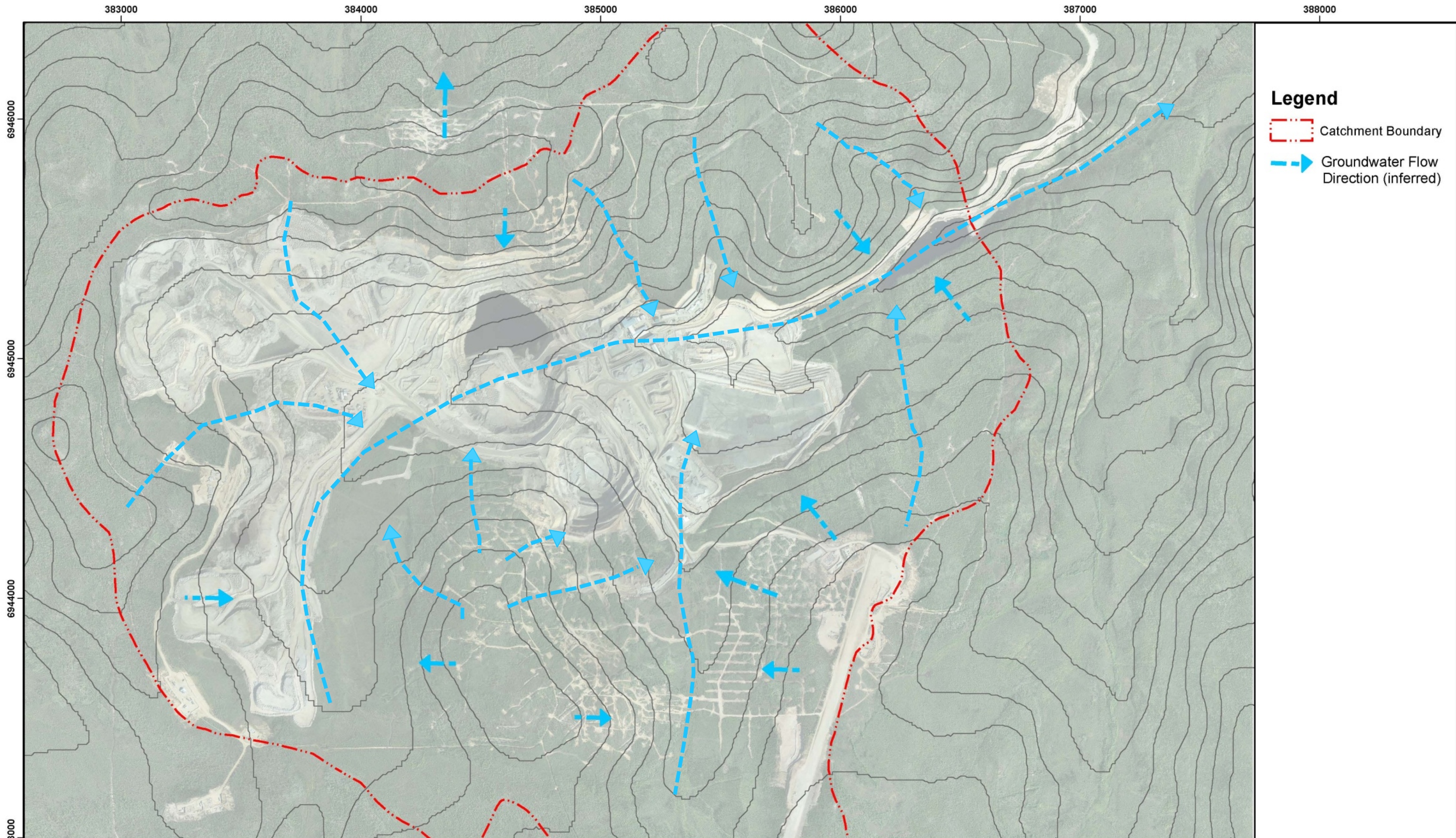
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Phase V/VI Hydrogeological Characterization Report

**Site Map with Proposed Phase V/VI Pits**

Date: May 2013	Approved: JA	Figure: <b>1</b>
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**Legend**

- - - Catchment Boundary
- - - Groundwater Flow Direction (inferred)

N

500 250 0 500 Meters

1:15,000

Notes:  
 1. Data presented in NAD 1983 UTM Zone 8N.  
 2. Base orthophoto provided by Minto Mine, August 2012.  
 3. Contours are in 20 m intervals and represent pre-mining topography.

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Job No: 1CM002.008  
 Filename: Fig2\_gwFlow\_Minto\_1CM002.008\_rev02.mxd

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Phase V/VI Hydrogeological Characterization Report

**Inferred Groundwater Flow Direction**

Date: May 2013	Approved: JA	Figure: 2
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383000

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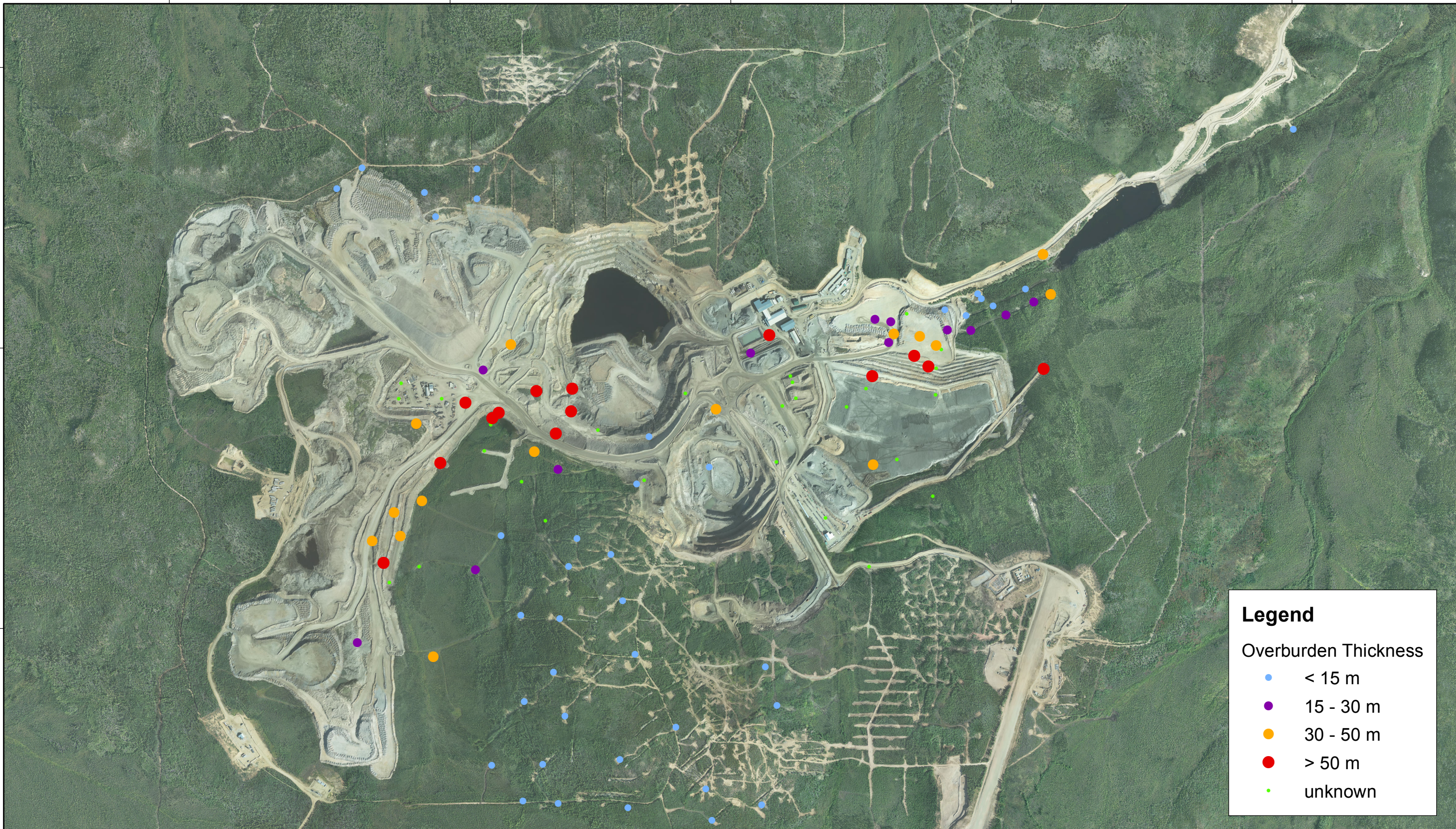
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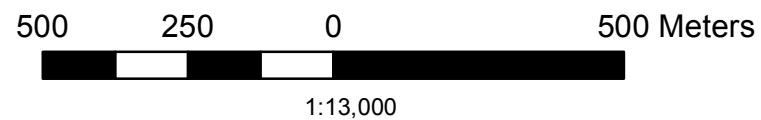
6944000



**Legend**

Overburden Thickness

- < 15 m
- 15 - 30 m
- 30 - 50 m
- > 50 m
- unknown



Notes:  
 1. Data presented in NAD 1983 UTM Zone 8N.  
 2. Base orthophoto provided by Minto Mine, August 2012.



Job No: 1CM002.008  
 Filename: Fig3\_OBdistribution\_Minto\_1CM002.008.mxd



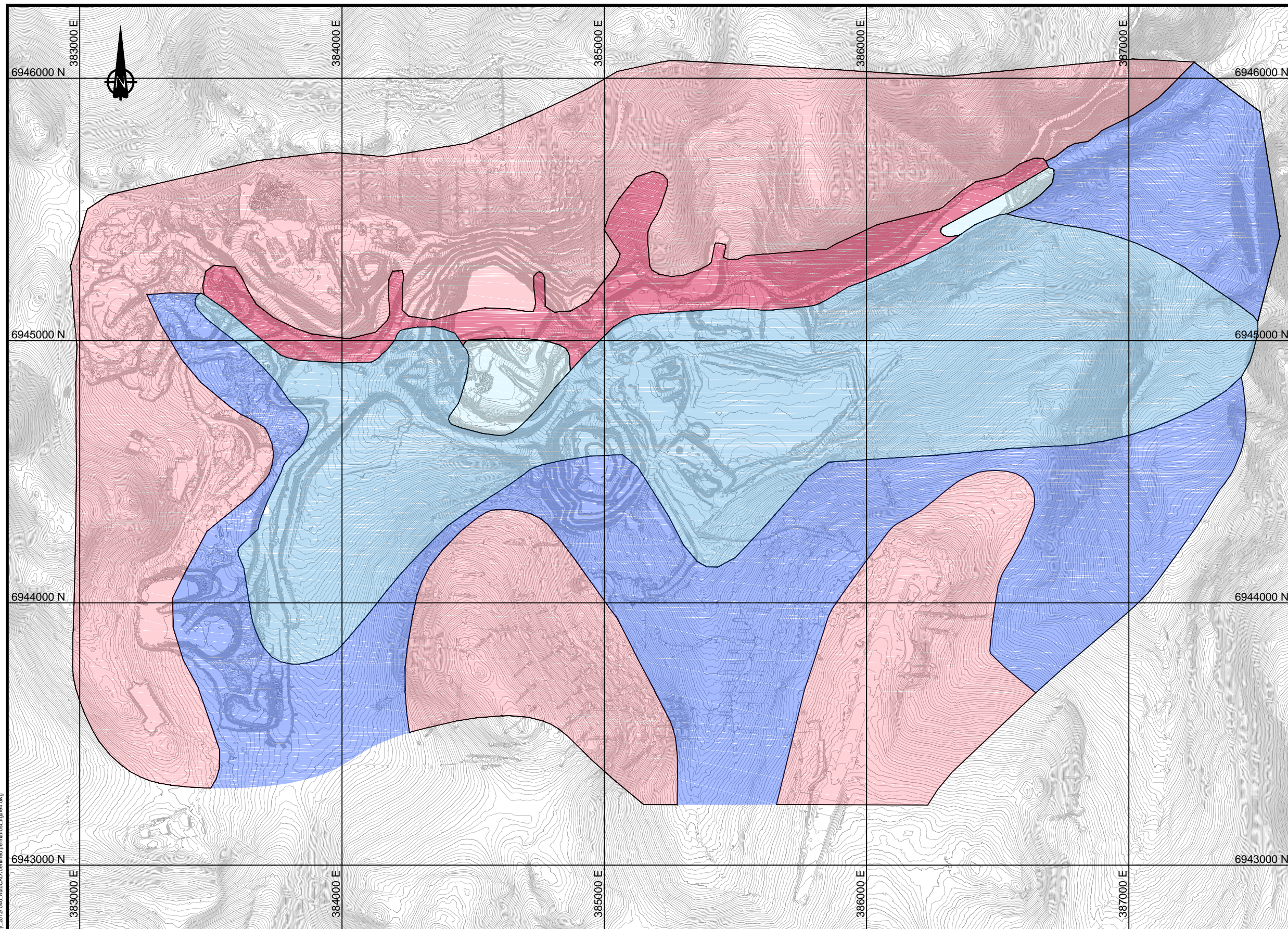
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Phase V/VI Hydrogeological  
 Characterization Report

**OverburdenDrillhole  
 Distribution and Thickness**

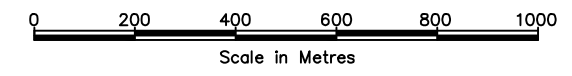
Date: May 2013	Approved: JA	Figure: <b>3</b>
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**LEGEND**

- Indicates zones containing permafrost and/or ice
- Indicates zones possibly containing permafrost and/or ice
- Indicates zones containing thawed permafrost and/or ice
- Indicates zones containing no permafrost and/or ice
- Indicates zones possibly containing no permafrost and/or ice



- NOTES**
1. Data presented in NAD 1983 UTM Zone 8N
  2. Topographic information provided by Minto Mine, August 2012
  3. Permafrost information provided by EBA, October 2011

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SRK JOB NO.: 1CM002.008.B1  
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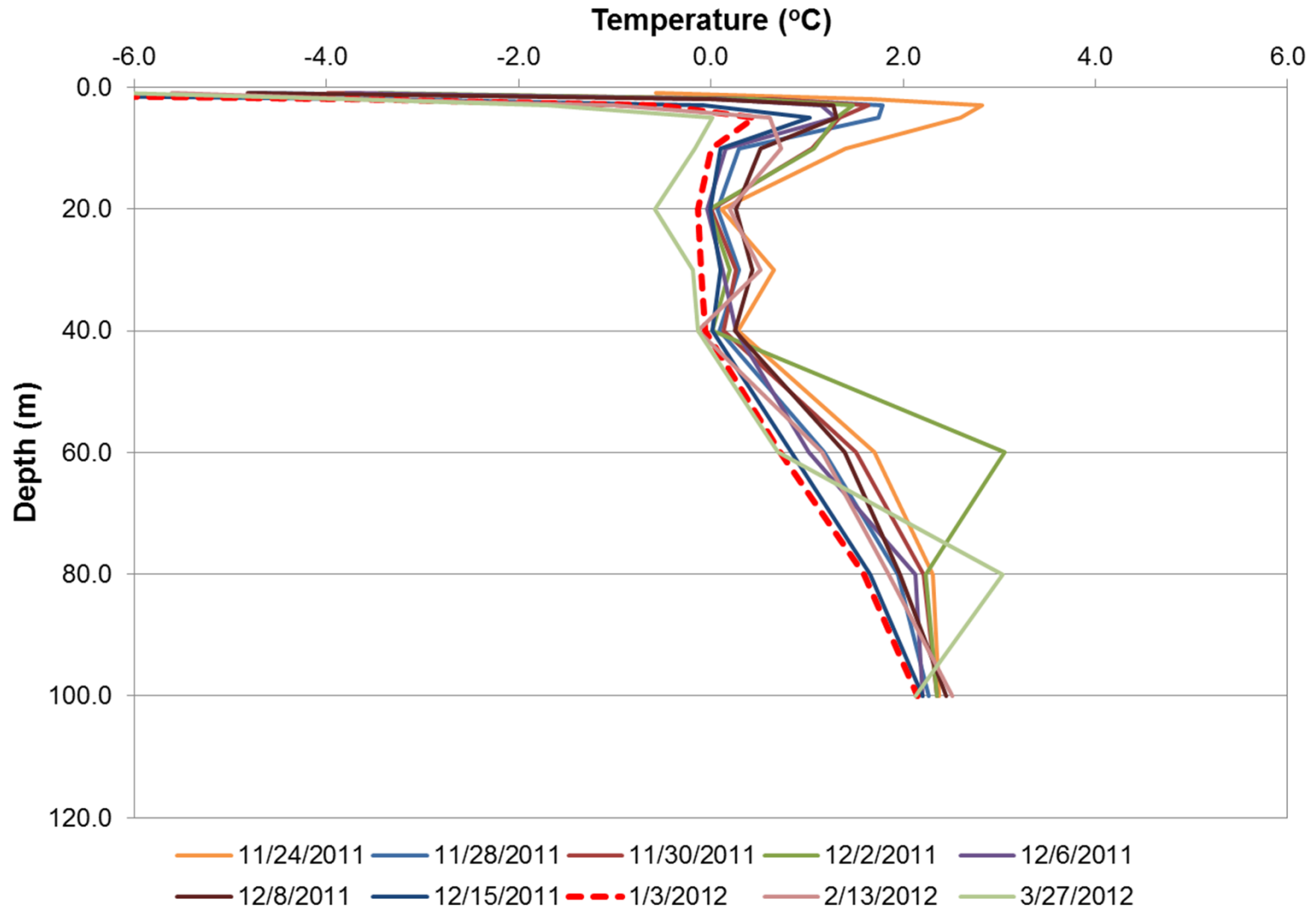
**Site Plan  
Permafrost Distribution**

DATE: May 2013	APPROVED: JA	FIGURE: 4	
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# MW11-01A



Phase V/VI Hydrogeological  
Characterization Report

## Temperature Profile – MW11-01A

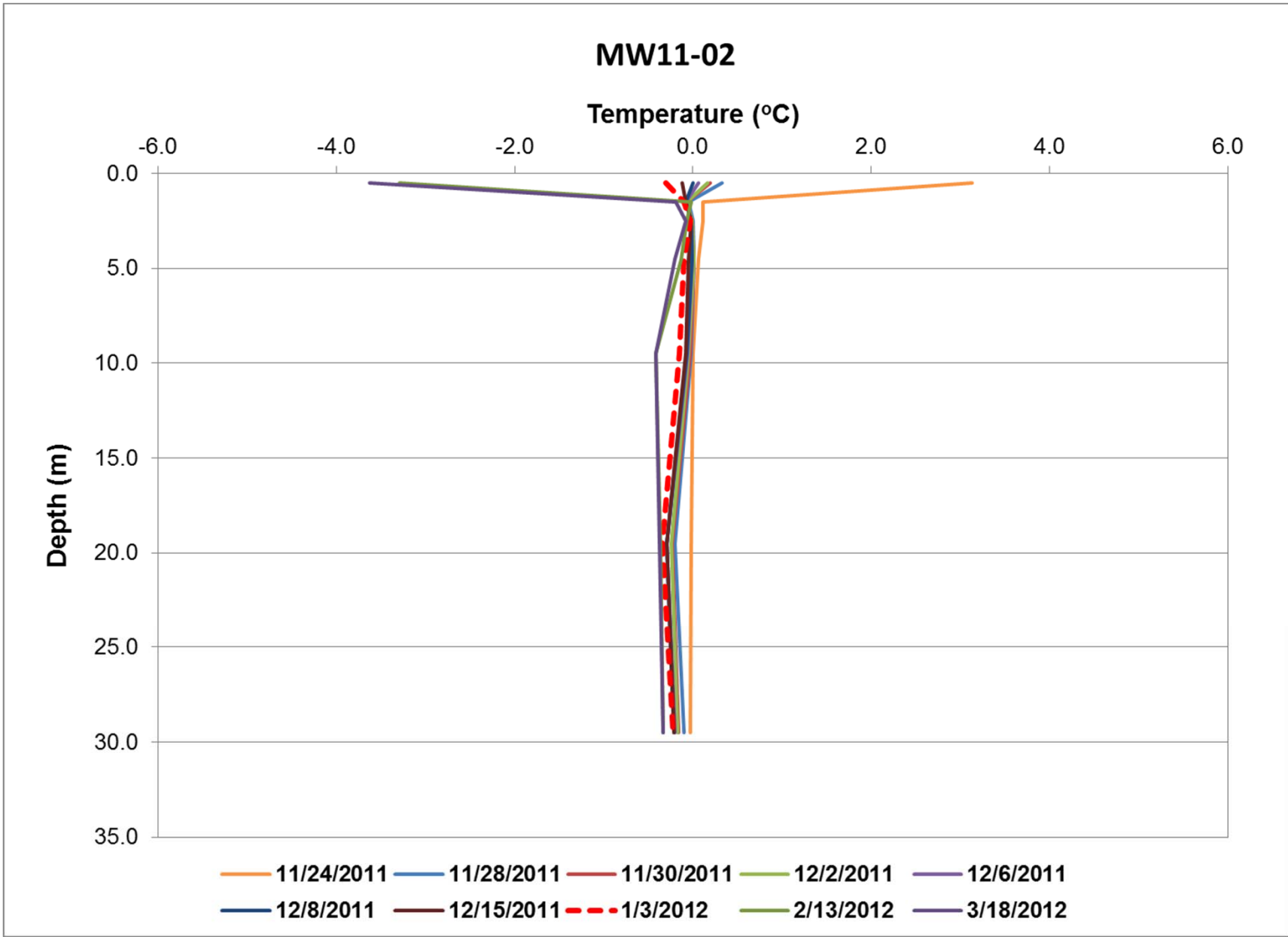
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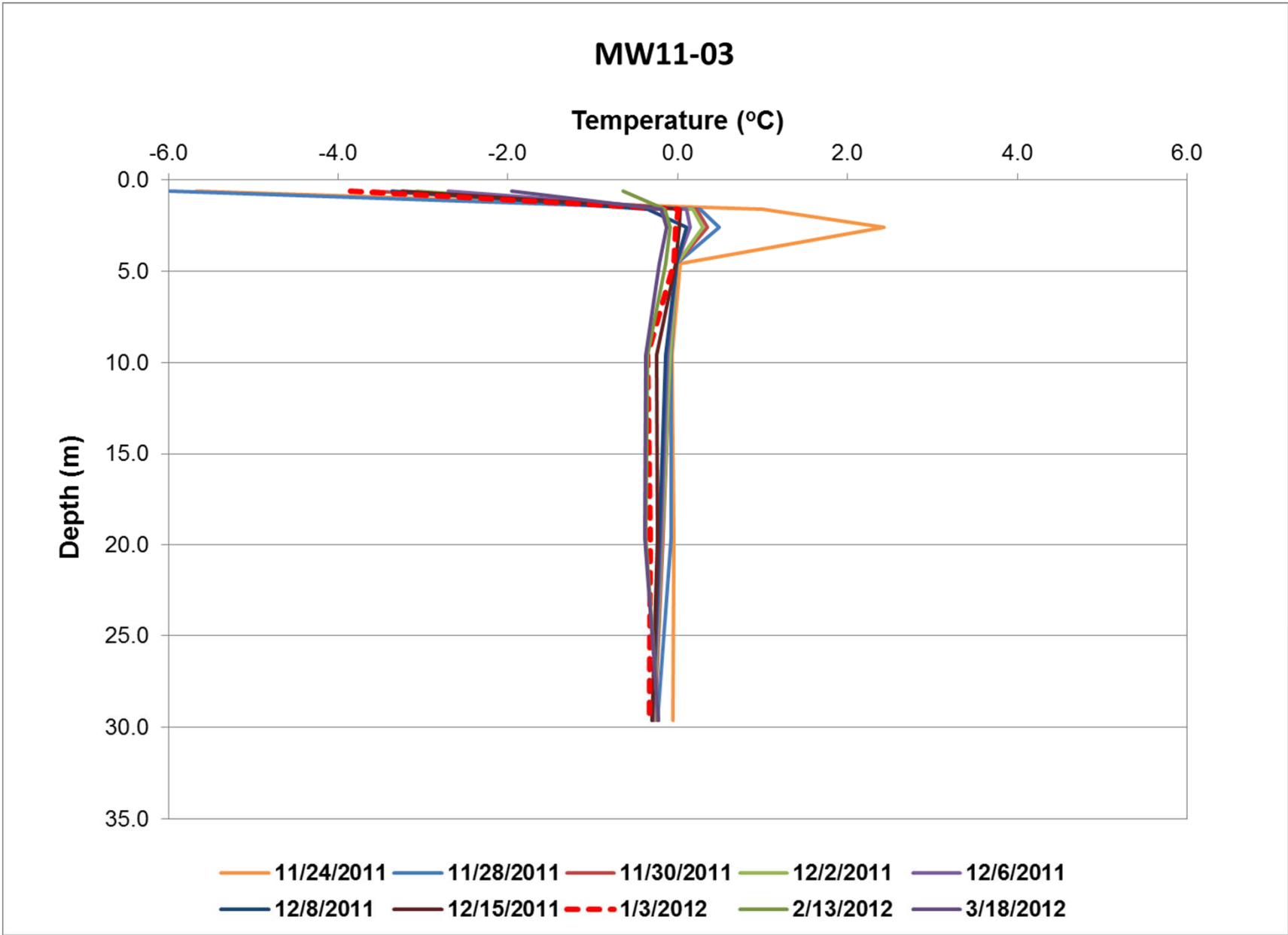
Minto Mine

Date:  
May 2013

Approved:  
JA

Figure: **5**





Phase V/VI Hydrogeological  
Characterization Report

**Temperature Profile – MW11-03**

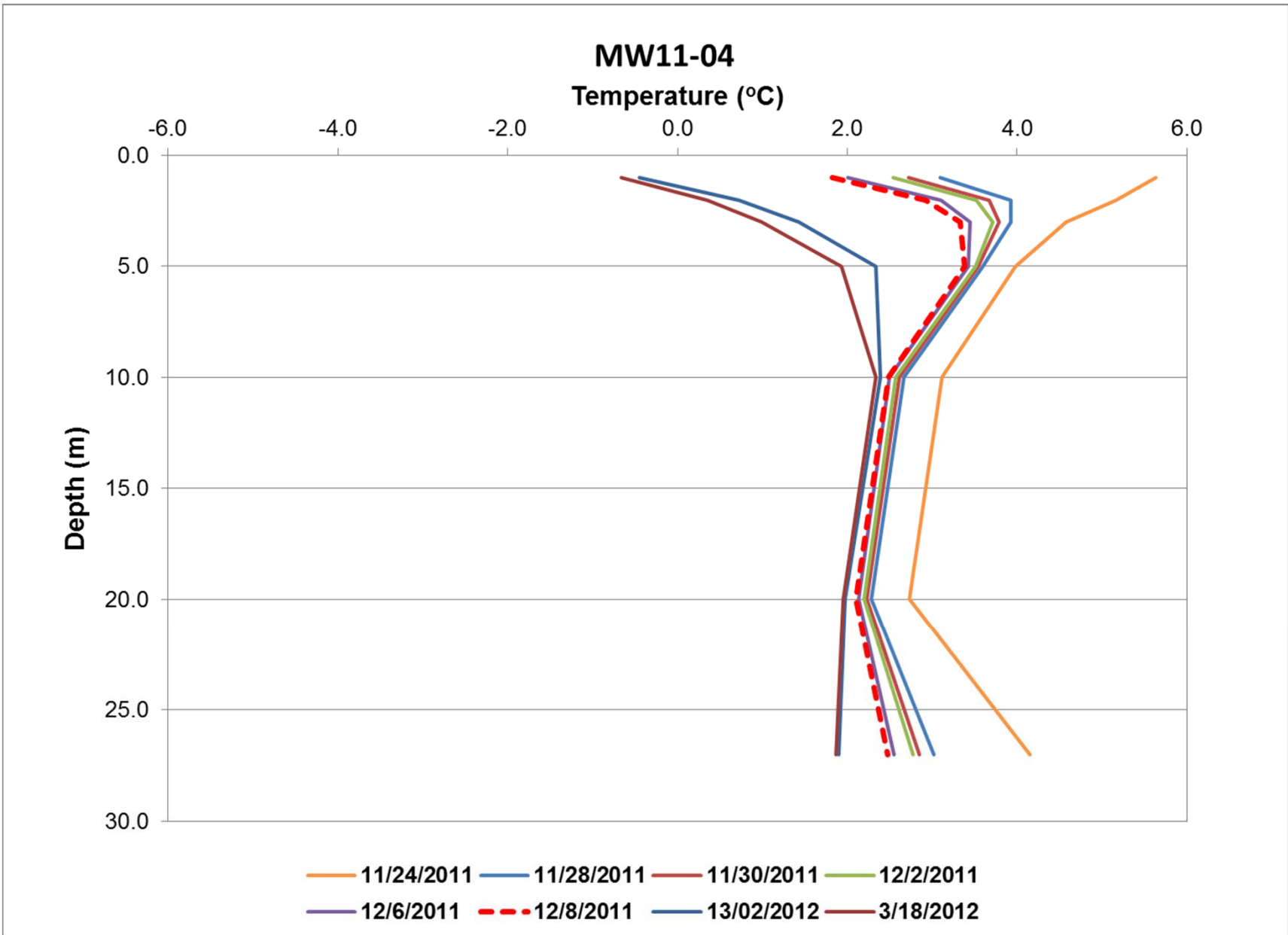
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Filename: Fig 5-8Temperature\_Profile\_Minto\_1CM002.008.pptx

Minto Mine

Date:  
May 2013

Approved:  
JA

Figure: **7**



Phase V/VI Hydrogeological  
Characterization Report

**Temperature Profile – MW11-04A**

Job No: 1CM002.008  
Filename: Fig 5-8Temperature\_Profile\_Minto\_1CM002.008.pptx

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Date:  
May 2013

Approved:  
JA

Figure: **8**





**Legend**

- Monitoring Well
- Cross Section Line

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Job No: 1CM002.008.301  
 Filename: Fig9-19\_Minto\_crossSections\_V2\_1CM002.008.pptx

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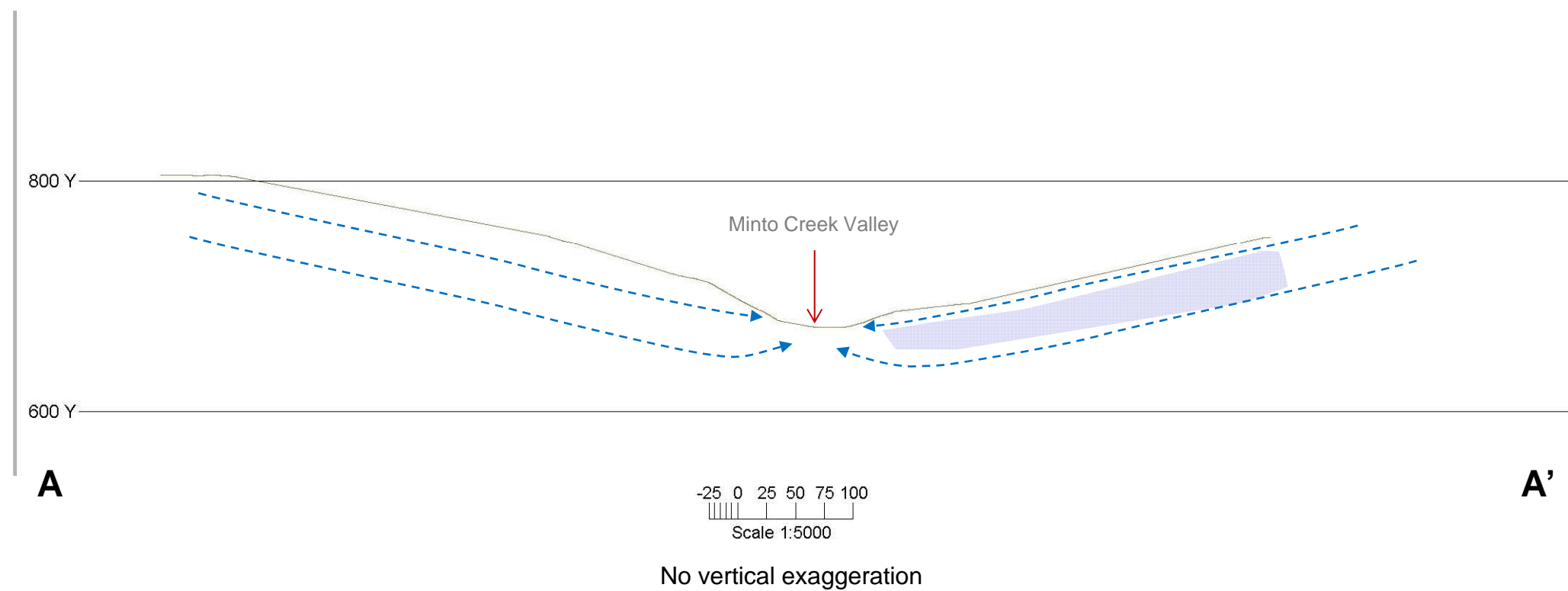
Minto Mine

Phase V/VI Hydrogeological Characterization Report

**Plan View of Section Lines**

Date: May 2013	Approved: JA	Figure: <b>9</b>
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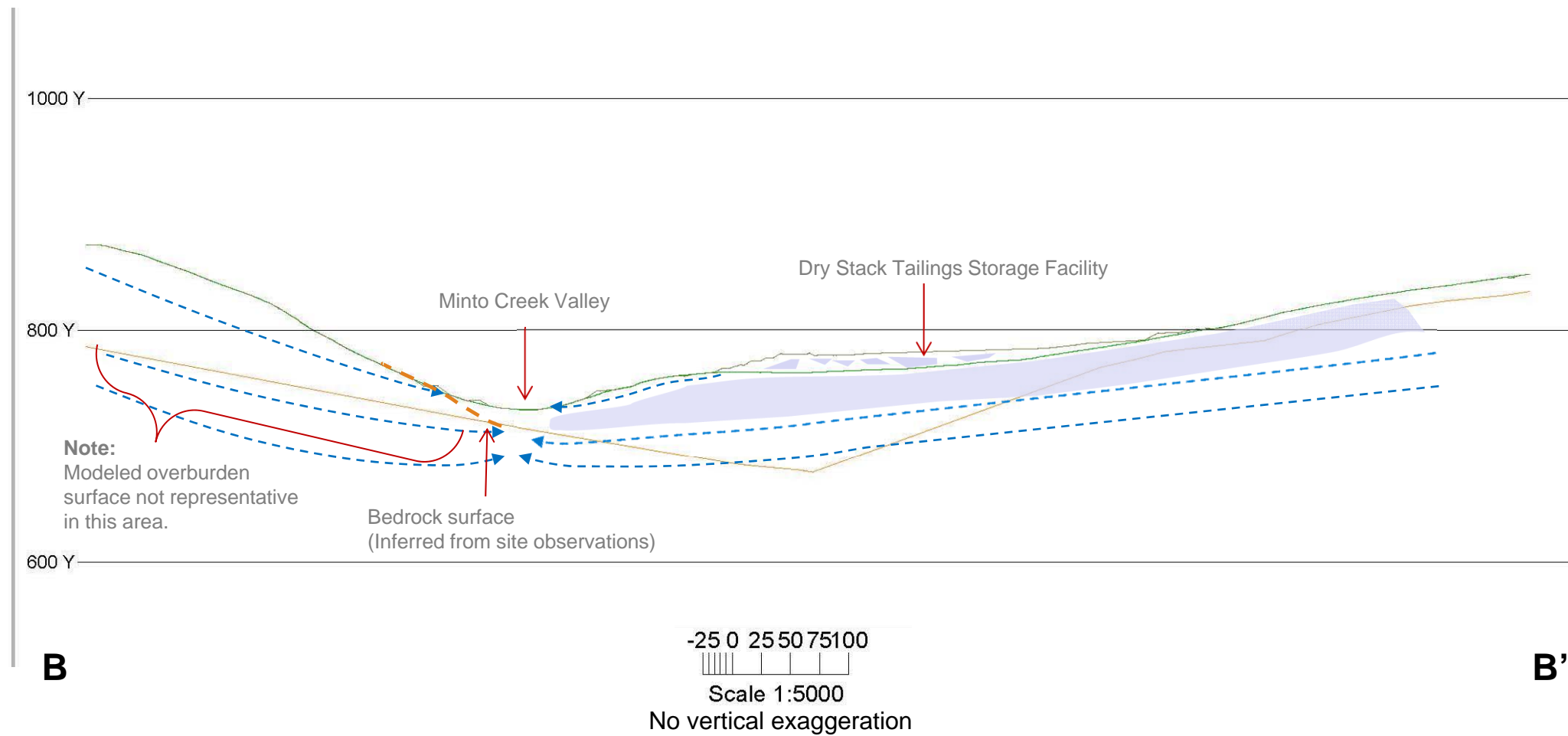
- Notes:**
1. Original ground surface provided by Minto Mine.
  2. Only original ground surface available for this area (no depth of overburden available). This part of the valley has not been significantly altered by the mine.
  3. No data available for permafrost. Permafrost has been observed on north facing slopes and is reflected in this section due to the common geomorphologic and vegetation characteristics with known permafrost areas further west..

**Legend**

- Current inferred permafrost (depth not to scale)
- Current topography
- Original Ground Surface
- Bedrock surface (modeled)
- Inferred groundwater pathway

		Phase V/VI Hydrogeological Characterization Report		
		<b>Section A-A'</b>		
Job No: 1CM002.008.301 Filename: Fig9-19_Minto_crossSections_V2_1CM002.008.pptx	Minto Mine	Date: May 2013	Approved: JA	Figure: <b>10</b>

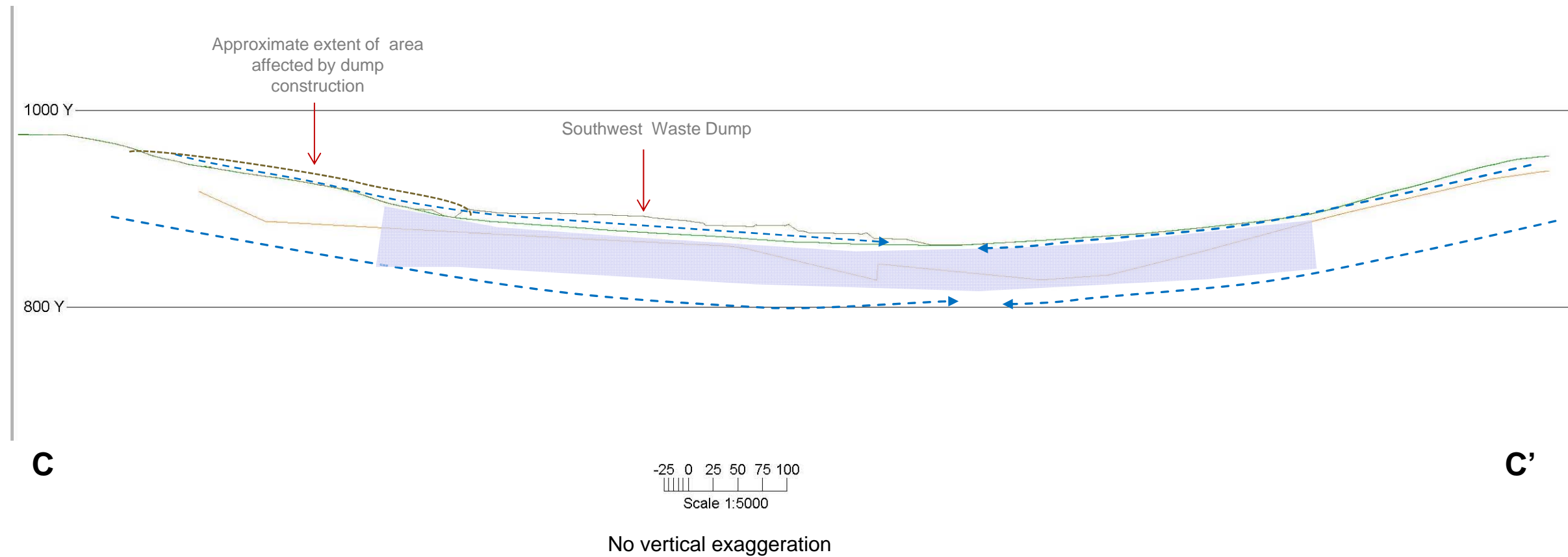




Legend	
	Current inferred permafrost (depth not to scale)
	Current topography
	Original Ground Surface
	Bedrock surface (modeled)
	Inferred groundwater pathway

- Notes:**
1. Topography data provided by Minto Mine in 2012.
  2. Original ground surface provided by Minto Mine.
  3. Bedrock surface modeled from drillhole data.

		Phase V/VI Hydrogeological Characterization Report		
		<b>Section B-B'</b>		
Job No: 1CM002.008.301 Filename: Fig9-19_Minto_crossSections_V2_1CM002.008.pptx	Minto Mine	Date: May 2013	Approved: JA	Figure: <b>11</b>



Legend	
	Current inferred permafrost (depth not to scale)
	Current topography
	Original Ground Surface
	Bedrock surface (modeled)
	Inferred groundwater pathway

- Notes:**
1. Topography data provided by Minto Mine in 2012.
  2. Original ground surface provided by Minto Mine.
  3. Bedrock surface modeled from drillhole data.



Phase V/VI Hydrogeological Characterization Report

Section C-C'

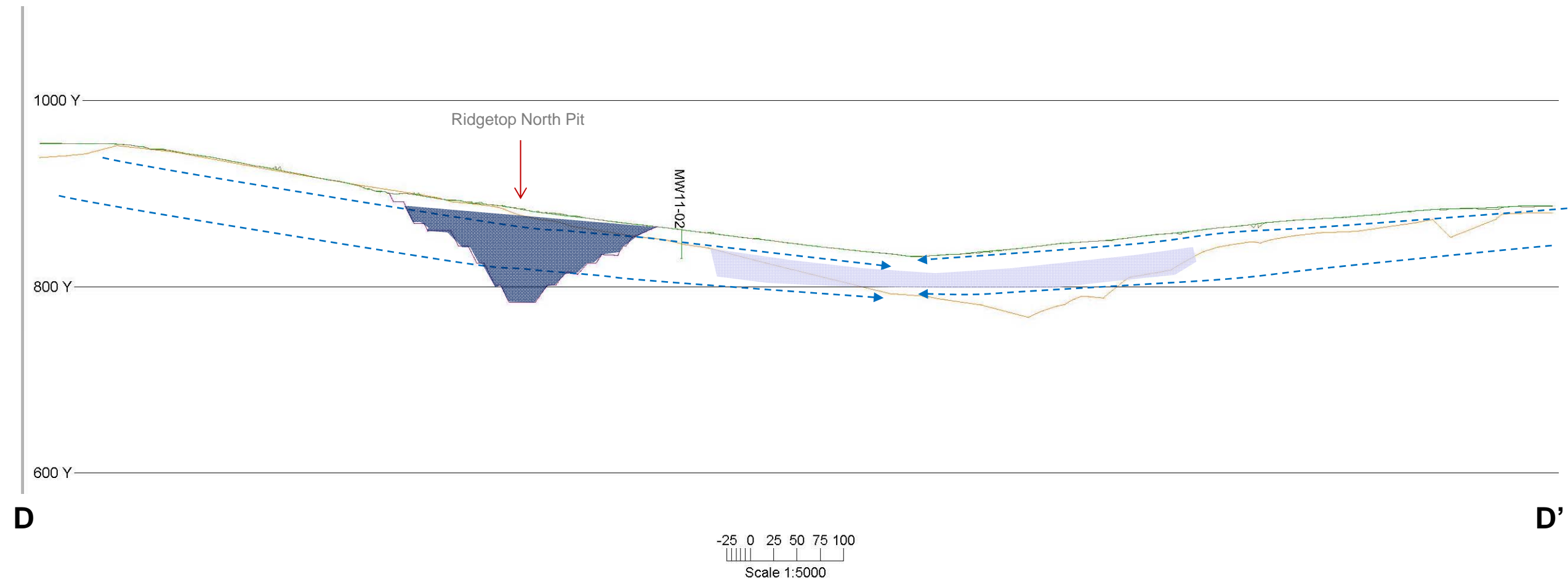
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Minto Mine

Date: May 2013

Approved: JA

Figure: 12

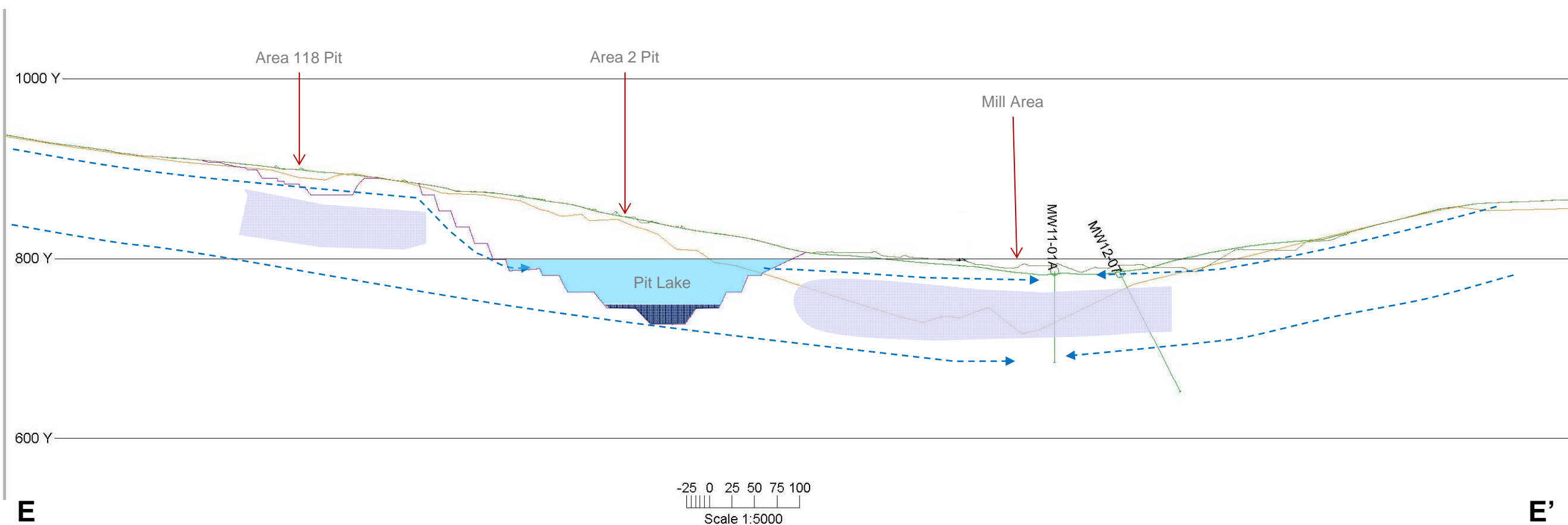


- Notes:**
1. Topography data provided by Minto Mine in 2012.
  2. Original ground surface provided by Minto Mine.
  3. Bedrock surface modeled from drillhole data.
  4. Groundwater inferred flow paths assume pits have flooded and reached static water levels.

**Legend**

- Current inferred permafrost (depth not to scale)
- Tailings
- Current topography
- Original Ground Surface
- Bedrock surface (modeled)
- Inferred groundwater pathway







		Phase V/VI Hydrogeological Characterization Report		
		<b>Section D-D'</b>		
Job No: 1CM002.008.301 Filename: Fig9-19_Minto_crossSections_V2_1CM002.008.pptx	Minto Mine	Date: May 2013	Approved: JA	Figure: <b>13</b>



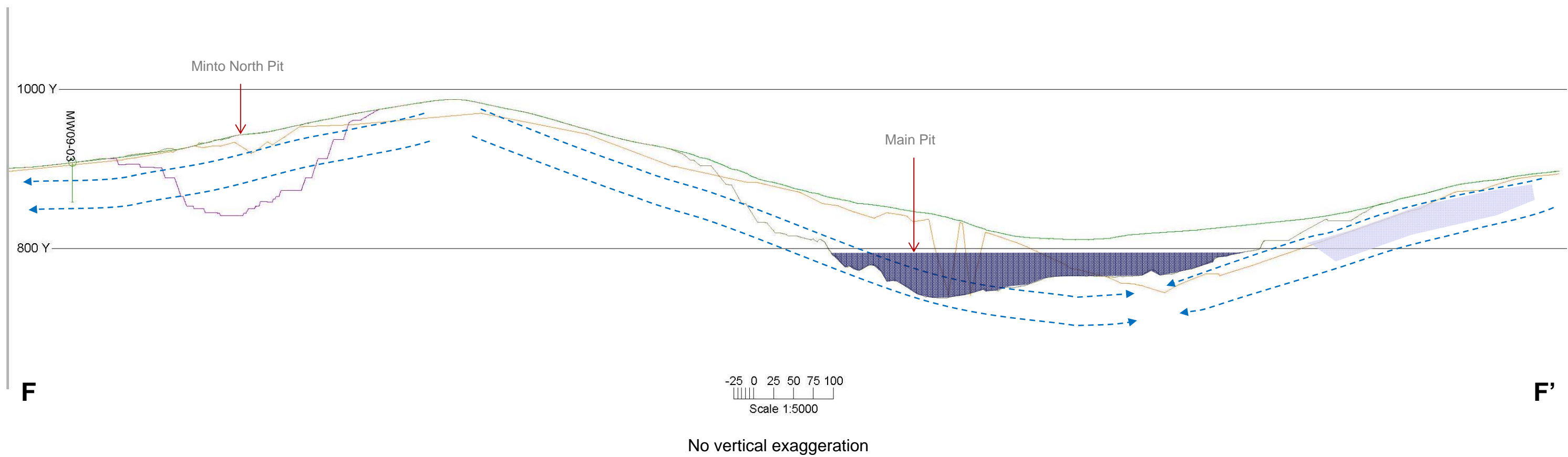
No vertical exaggeration

- Notes:**
1. Topography data provided by Minto Mine in 2012.
  2. Original ground surface provided by Minto Mine.
  3. Bedrock surface modeled from drillhole data.
  4. Groundwater inferred flow paths assume pits have flooded and reached static water levels.







**Legend**

-  Current inferred permafrost (depth not to scale)
-  Tailings
-  Current topography
-  Original Ground Surface
-  Bedrock surface (modeled)
-  Inferred groundwater pathway

		Phase V/VI Hydrogeological Characterization Report		
		<b>Section E-E'</b>		
Job No: 1CM002.008.301 Filename: Fig9-19_Minto_crossSections_V2_1CM002.008.pptx	Minto Mine	Date: May 2013	Approved: JA	Figure: <b>14</b>



**Legend**

-  Current inferred permafrost (depth not to scale)
-  Tailings
-  Current topography
-  Original Ground Surface
-  Bedrock surface (modeled)
-  Inferred groundwater pathway

- Notes:**
1. Topography data provided by Minto Mine in 2012.
  2. Original ground surface provided by Minto Mine.
  3. Bedrock surface modeled from drillhole data. Bedrock surface through the Main Pit is not representative of site conditions.
  4. Groundwater inferred flow paths assume pits have flooded and reached static water levels.



Phase V/VI Hydrogeological Characterization Report

**Section F-F'**

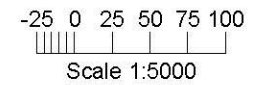
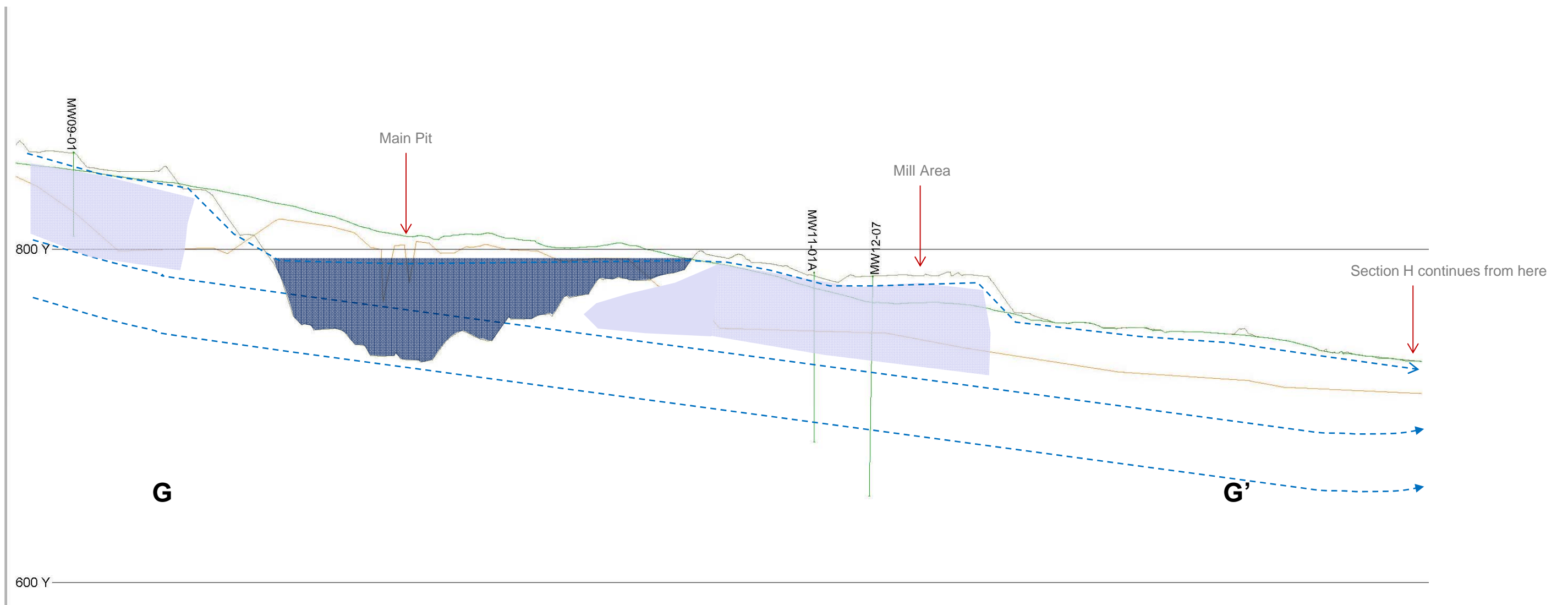
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Minto Mine

Date: May 2013

Approved: JA

Figure: 15



2x vertical exaggeration

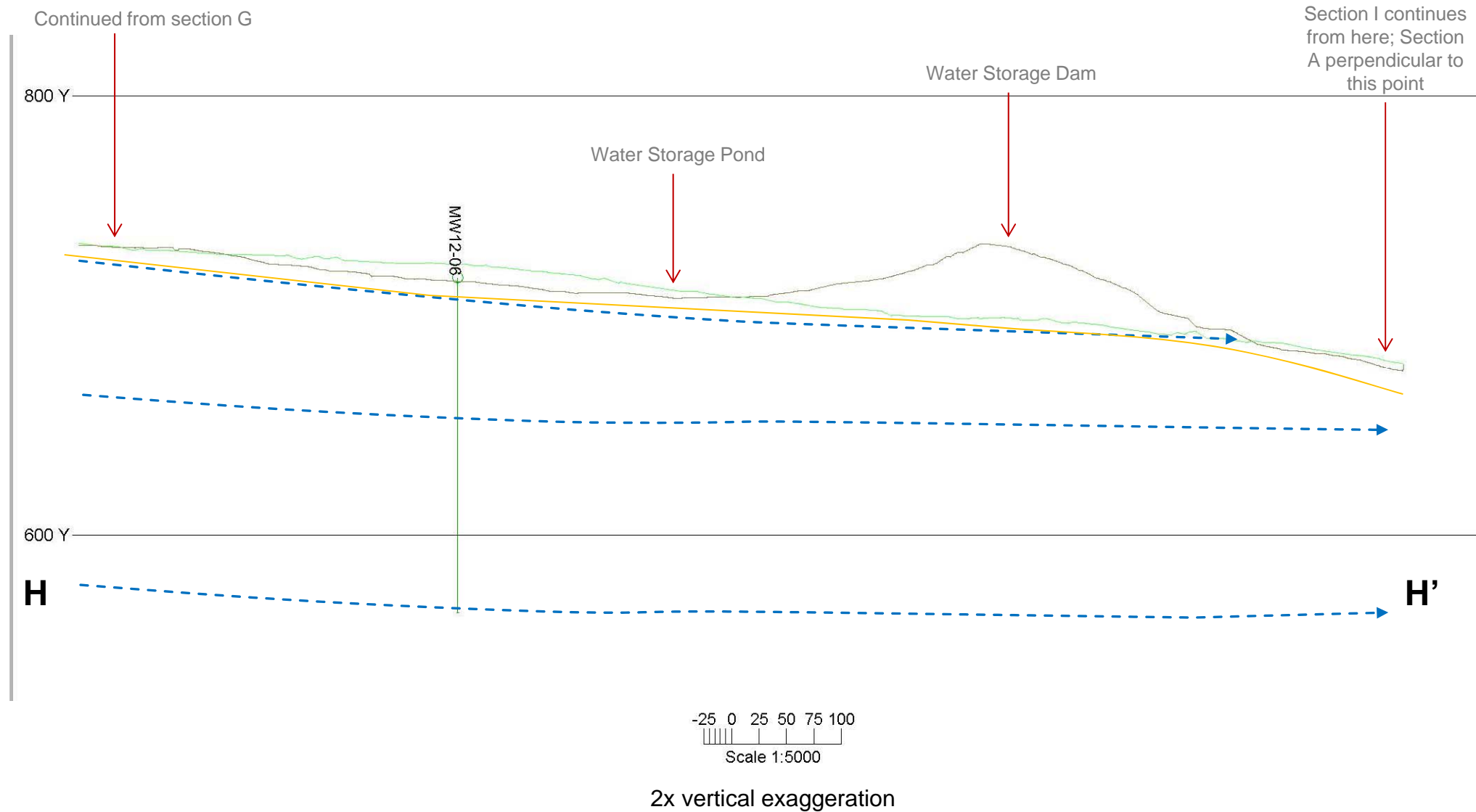
**Legend**

- Current inferred permafrost (depth not to scale)
- Tailings
- Current topography
- Original Ground Surface
- Bedrock surface (modeled)
- Inferred groundwater pathway

- Notes:**
1. Topography data provided by Minto Mine in 2012.
  2. Bedrock surface modeled from drillhole data.
  3. Original ground surface provided by Minto Mine.
  4. Groundwater inferred flow paths assume pits have flooded and reached static water levels.
  5. Section is near permafrost boundary.

		Phase V/VI Hydrogeological Characterization Report		
		Section G-G'		
Job No: 1CM002.008.301 Filename: Fig9-19_Minto_crossSections_V2_1CM002.008.pptx	Minto Mine	Date: May 2013	Approved: JA	Figure: <b>16</b>





**Legend**

- Current inferred permafrost (depth not to scale)
- Current topography
- Original Ground Surface
- Bedrock surface (modeled)
- Inferred groundwater pathway

**Notes:**

1. Topography data provided by Minto Mine in 2012.
2. Original ground surface provided by Minto Mine.
3. Bedrock surface modeled from drill hole data.
4. Water storage pond footprint is expected to remain saturated (e.g. wetlands) post closure.



Phase V/VI Hydrogeological Characterization Report

**Section H-H'**

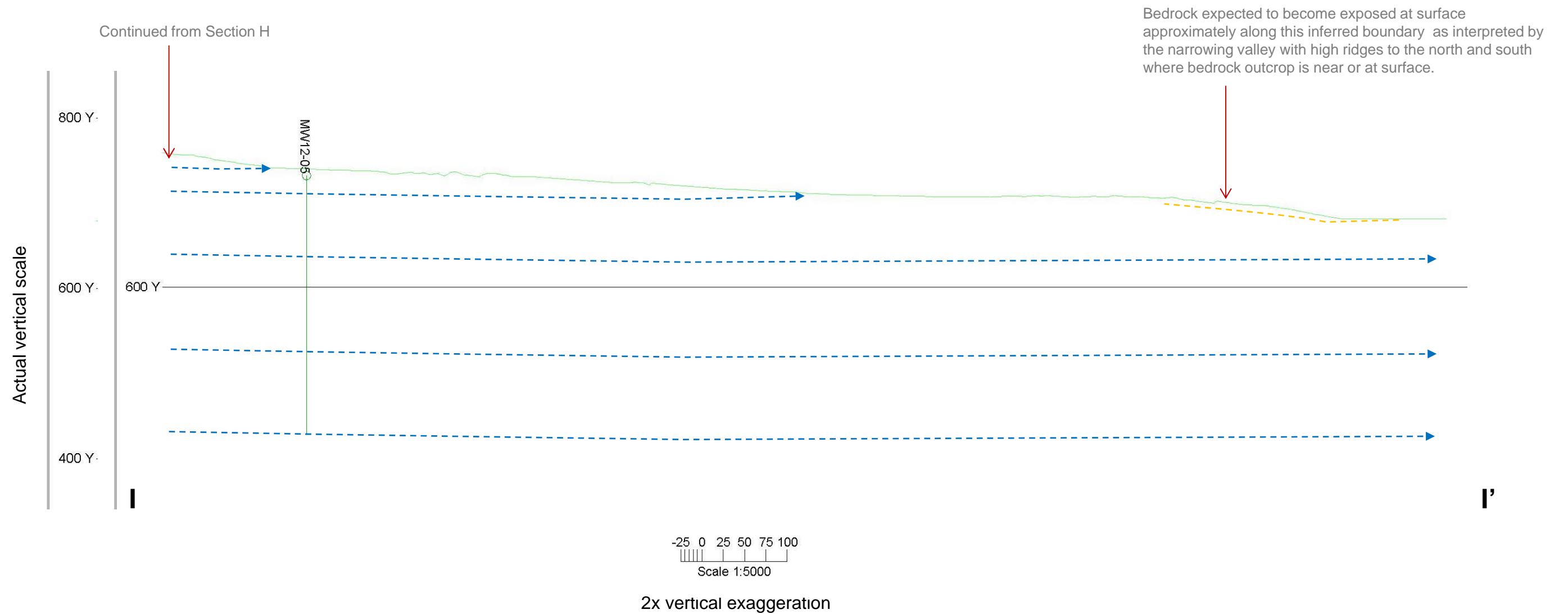
Job No: 1CM002.008.301  
 Filename: Fig9-19\_Minto\_crossSections\_V2\_1CM002.008.pptx

Minto Mine

Date: May 2013

Approved: JA

Figure: 17



Legend	
	Current inferred permafrost (depth not to scale)
	Current topography
	Original Ground Surface
	Bedrock surface (modeled)
	Inferred groundwater pathway

**Notes:** 1. Only original ground surface available for this section. Provided by Minto Mine.

		Phase V/VI Hydrogeological Characterization Report		
		<b>Section I-I'</b>		
Job No: 1CM002.008.301 Filename: Fig9-19_Minto_crossSections_V2_1CM002.008.pptx	Minto Mine	Date: May 2013	Approved: JA	Figure: <b>18</b>

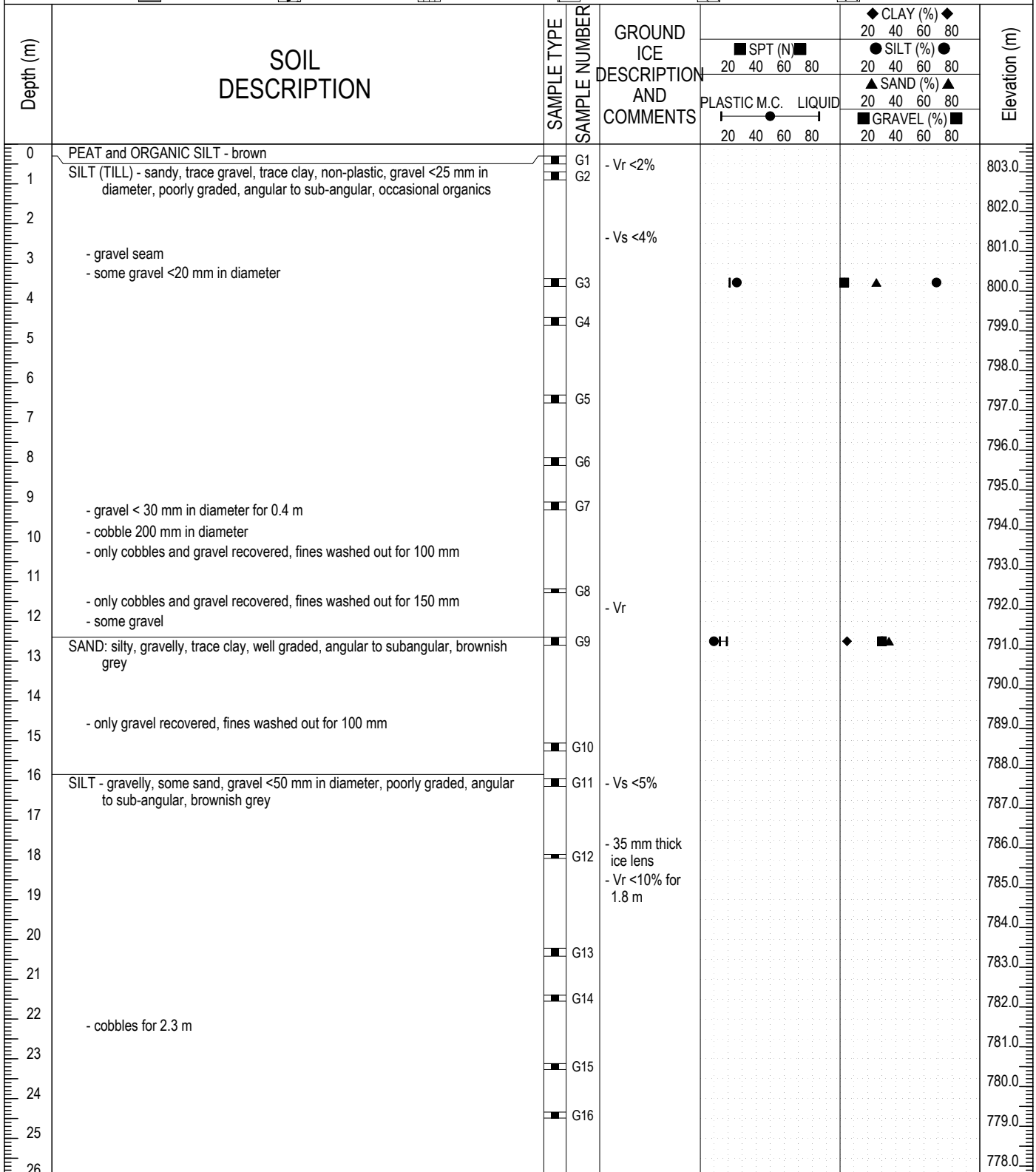



## Appendix A: Drill Hole Logs

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Winter 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G03
Area 2 Open Pit	DRILL: 3000 Diamond Drill, HQ Core	PROJECT NO: W14101068.033
Minto Mine, YT	6944782.093N; 384948.312E; Zone 8	ELEVATION: 803.697m

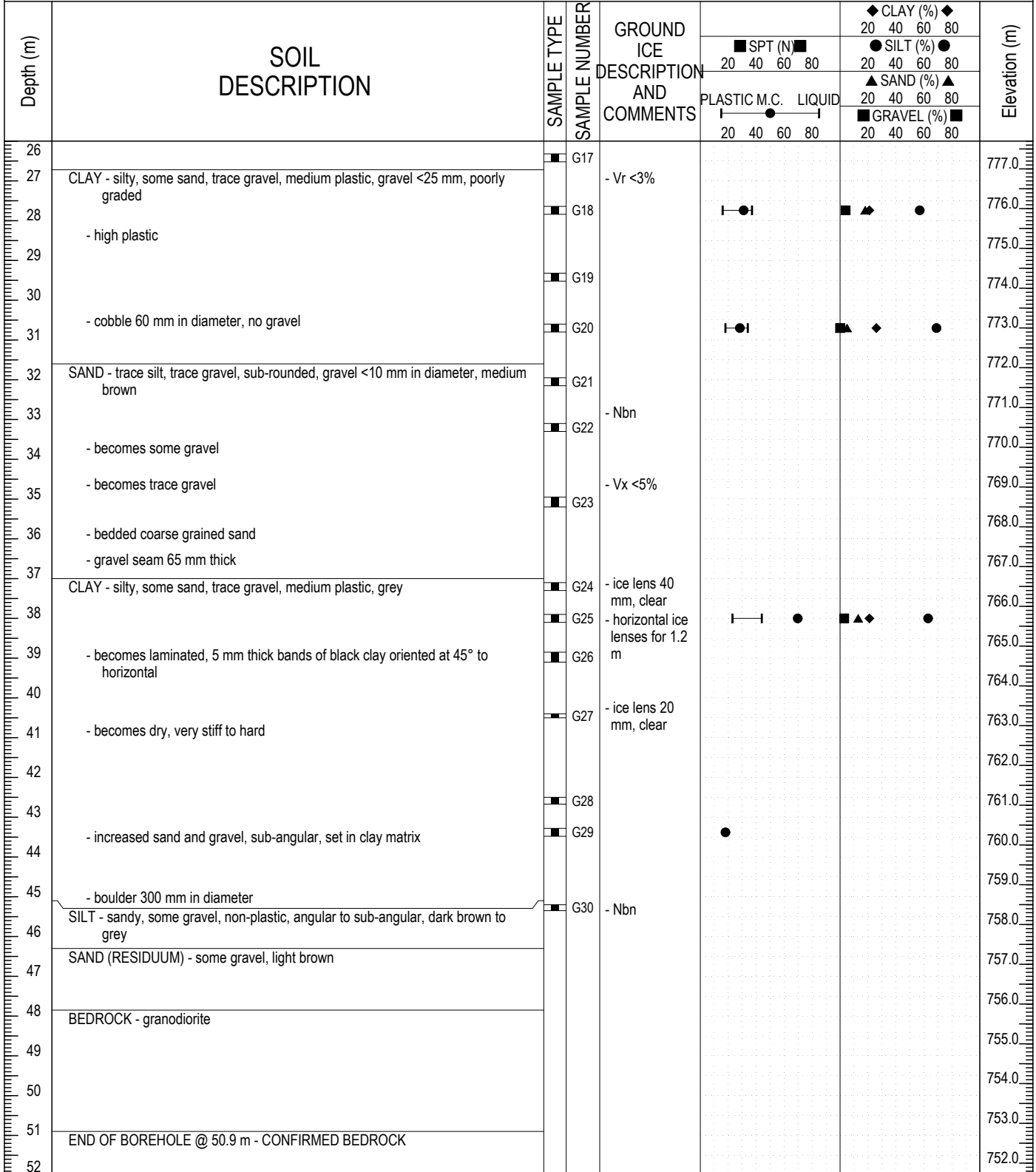
SAMPLE TYPE	GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE
BACKFILL TYPE	BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND





	LOGGED BY: AT & SMC	COMPLETION DEPTH: 50.9m
	REVIEWED BY: JGD	COMPLETE: 1/18/2011
	DRAWING NO:	Page 1 of 2

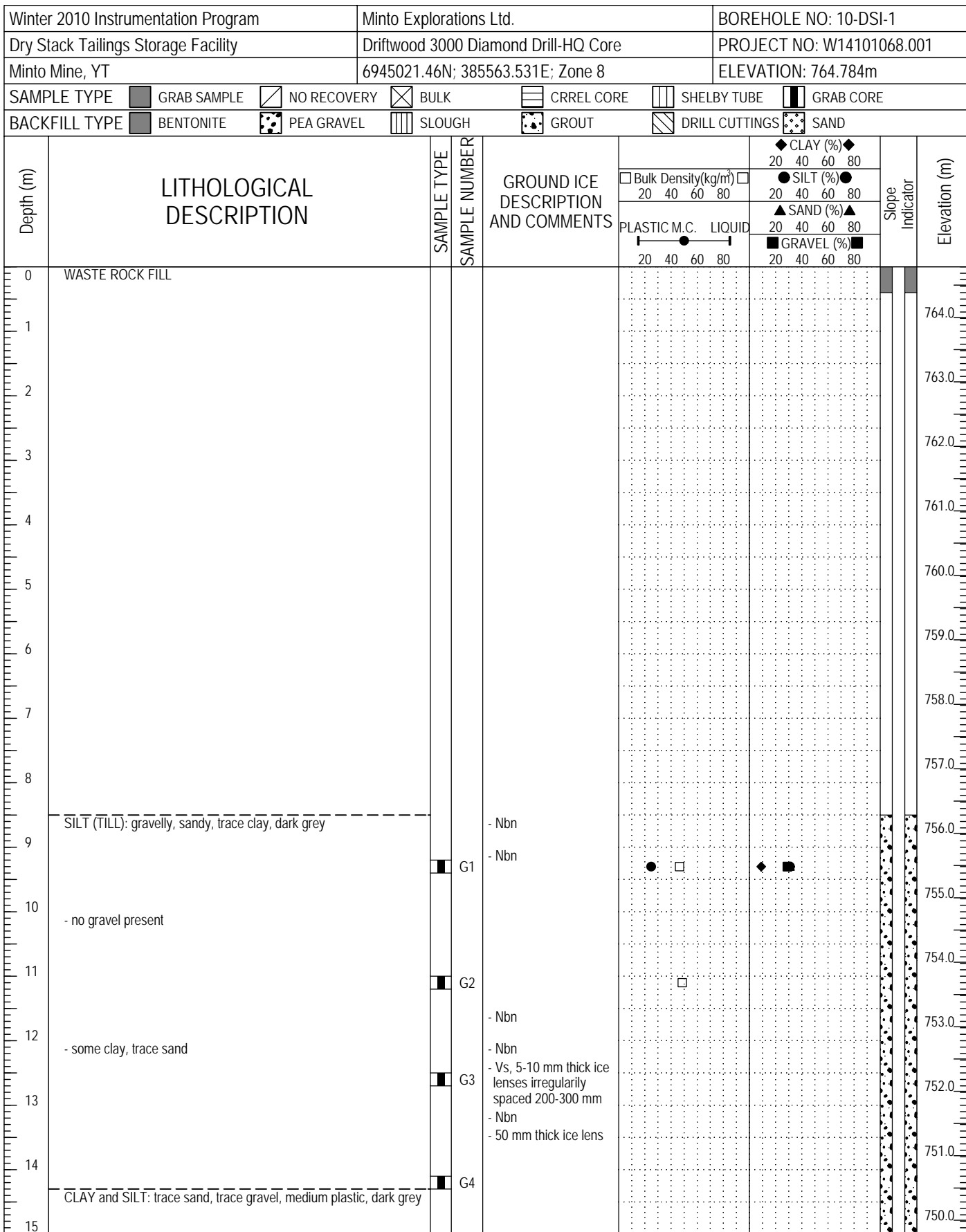
Winter 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G03
Area 2 Open Pit	DRILL: 3000 Diamond Drill, HQ Core	PROJECT NO: W14101068.033
Minto Mine, YT	6944782.093N; 384948.312E; Zone 8	ELEVATION: 803.697m

SAMPLE TYPE	GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE
BACKFILL TYPE	BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND



	LOGGED BY: AT & SMC	COMPLETION DEPTH: 50.9m
	REVIEWED BY: JGD	COMPLETE: 1/18/2011
	DRAWING NO:	Page 2 of 2

Winter 2011 Geotechnical Drilling		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 11-G04							
Area 2 Open Pit		DRILL: 3000 Diamond Drill, HQ Core		PROJECT NO: W14101068.033							
Minto Mine, YT		6944576.52N; 384922.911E; Zone 8		ELEVATION: 836.303m							
SAMPLE TYPE		GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE				
BACKFILL TYPE		BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND				
Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C.		LIQUID		Elevation (m)
					20	40	60	80	20	40	
0	SAND - silty, some gravel, light brown, organics - organic layer 150 mm thick			- Vx <15%							836.0
1	SILT - some sand, trace clay, faint organic smell		G1	- Nbn							835.0
2				- ice lens 100 mm, cloudy, porous							834.0
3	SAND (RESIDUUM) - some silt, some gravel, <20 mm in diameter		G2	- Vx <50%							833.0
4			G3								832.0
5	BEDROCK										831.0
6											830.0
7											829.0
8											828.0
9	END OF BOREHOLE @ 8.2 m - CONFIRMED BEDROCK										827.0
10											
				LOGGED BY: AT & SMC		COMPLETION DEPTH: 8.23m					
				REVIEWED BY: JGD		COMPLETE: 1/18/2011					
				DRAWING NO:		Page 1 of 1					



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REVIEWED BY: JPB

DRAWING NO:

COMPLETION DEPTH: 43.3m

COMPLETE: 1/25/2010

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Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-1								
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001								
Minto Mine, YT		6945021.46N; 385563.531E; Zone 8		ELEVATION: 764.784m								
SAMPLE TYPE		GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE					
BACKFILL TYPE		BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND					
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		CLAY (%)	SILT (%)	SAND (%)	GRAVEL (%)	Slope Indicator	Elevation (m)
					PLASTIC M.C.	LIQUID						
15			G5	- Vx, 5-10% - Vs, 5-10 mm thick ice lenses irregularly spaced 200-400 mm								749.0
16			G6	- Nbn - Nbe								748.0
17			G7	- Nbn								747.0
18			G8	- Vx, 15-20% - Vs, 5-10 mm thick ice lenses, irregularly spaced 200-300 mm								746.0
19			G9									745.0
20			G10	- Nbn								744.0
21			G11	- Nbe - Vx, 5-10% - Vs, 10-30 mm thick ice lenses, irregularly spaced 300-350 mm								743.0
22			G12									742.0
23			G13	- Nbe - Vx, 5-10% - Vs, 10-30 mm thick ice lenses, irregularly spaced 300-350 mm								741.0
24			G14	- Nbe - Vr < 45%, lenses 10-20 mm thick - Vx, 10% - Vc < 5%								740.0
25	- at 24.3 m cobble - some gravel, fine to medium grained											739.0
26												738.0
27	- gravel, coarse grained, < 40 mm											737.0
28	BEDROCK: poor quality, weathered, moderately friable orangy brown											736.0
29												735.0
30												735.0



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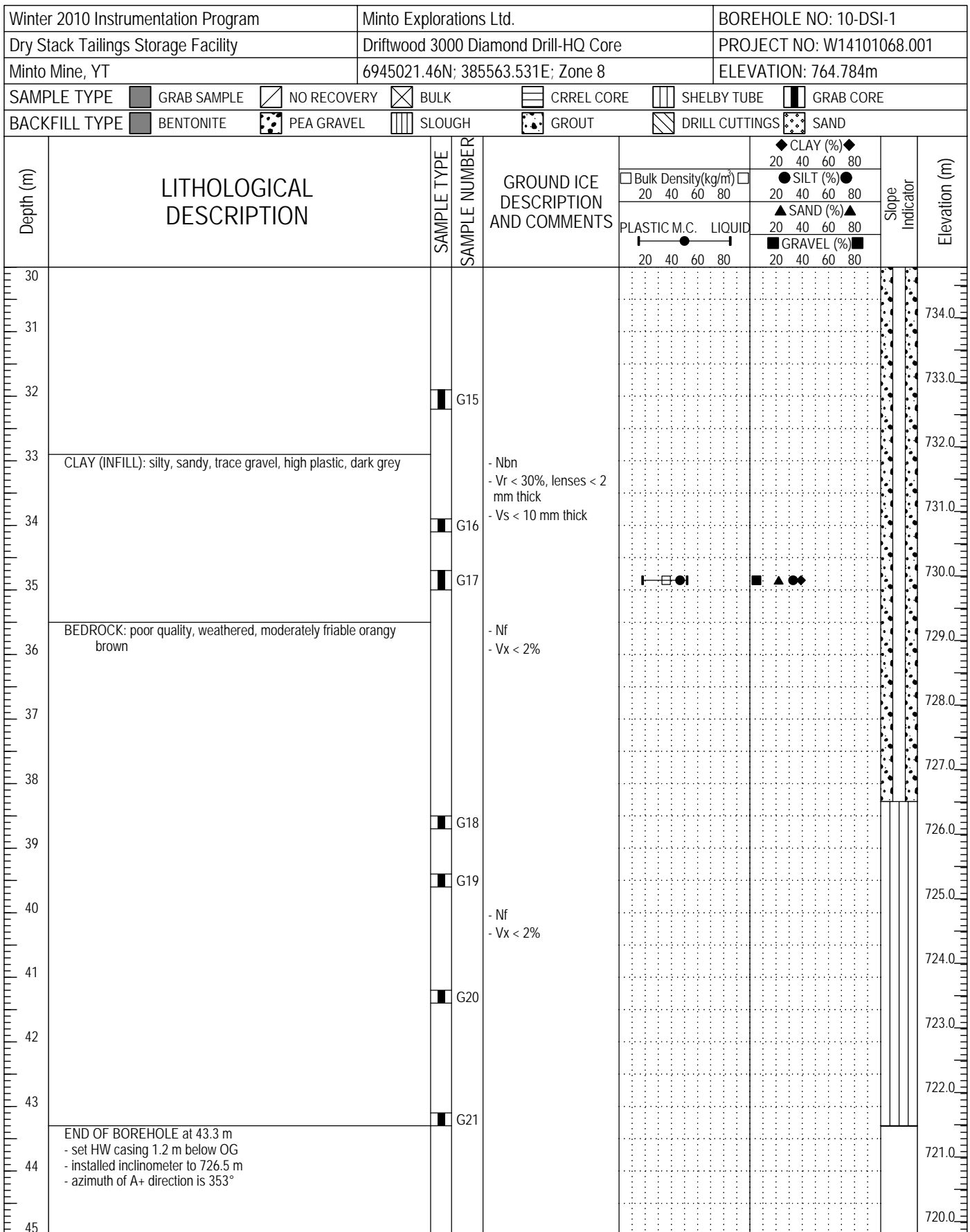
REVIEWED BY: JPB

DRAWING NO:

COMPLETION DEPTH: 43.3m

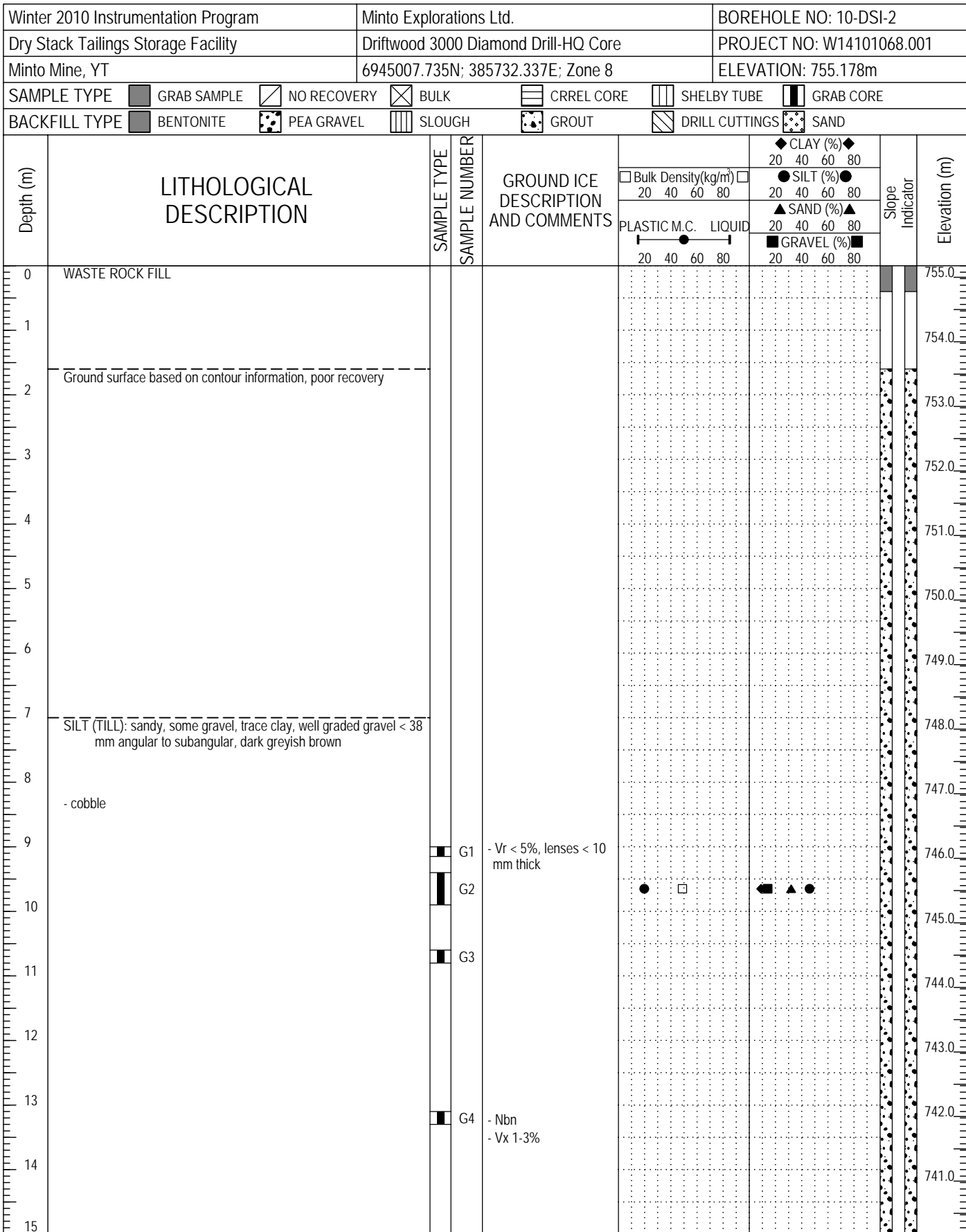
COMPLETE: 1/25/2010

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REVIEWED BY: JPB

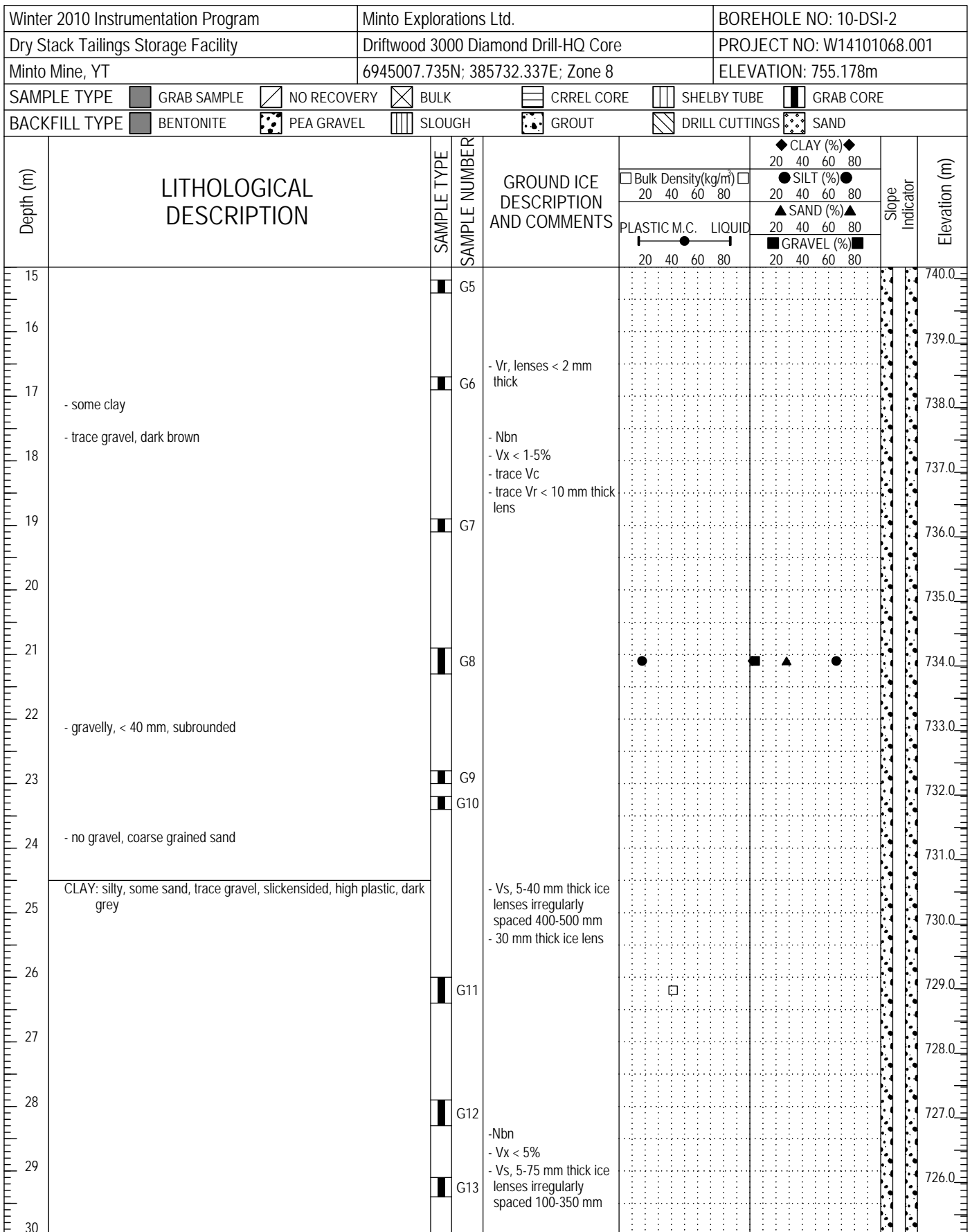
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COMPLETION DEPTH: 50m

COMPLETE: 1/24/2010

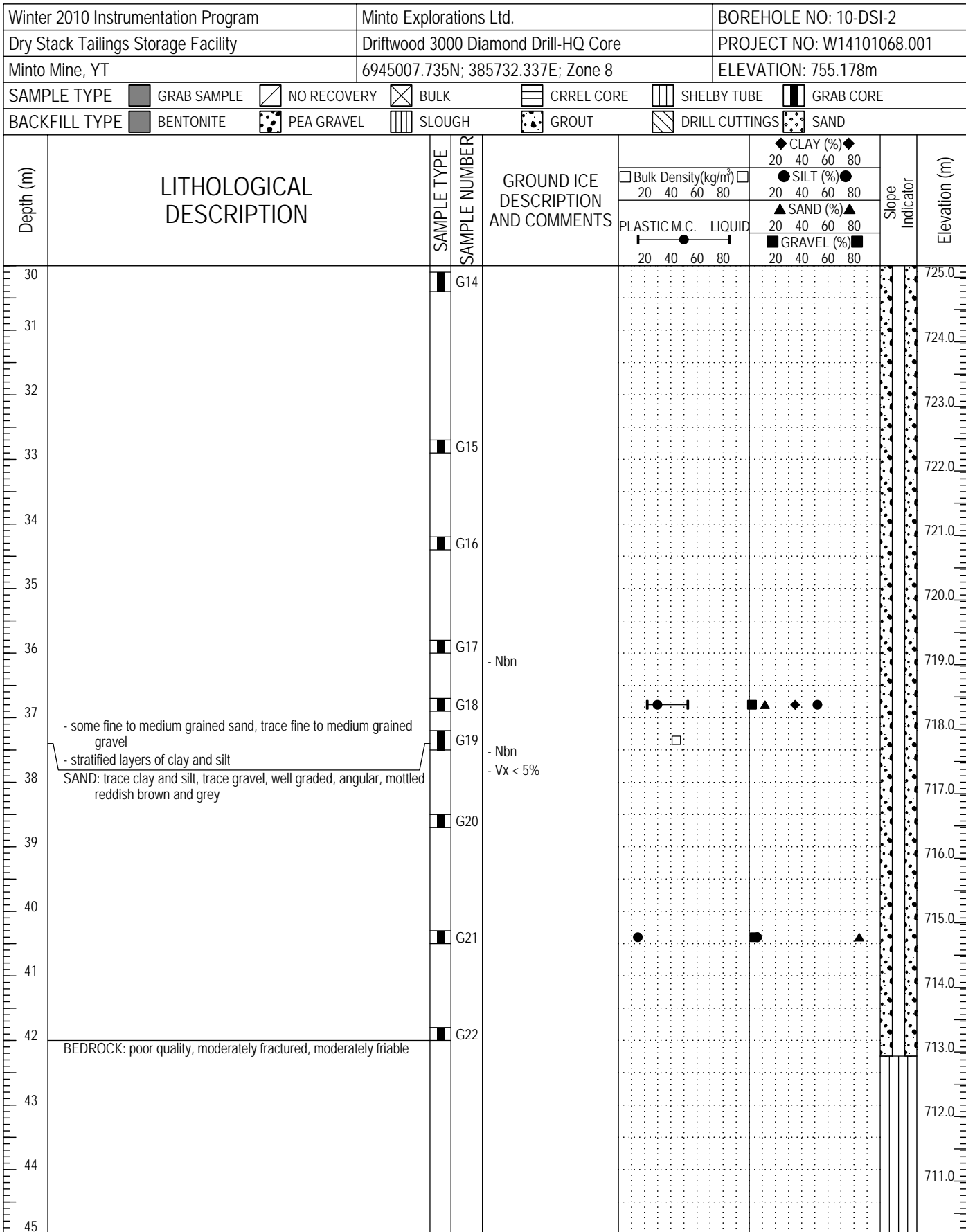
Page 1 of 4





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COMPLETION DEPTH: 50m

COMPLETE: 1/24/2010

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Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-2				
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001				
Minto Mine, YT		6945007.735N; 385732.337E; Zone 8		ELEVATION: 755.178m				
SAMPLE TYPE		<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80		
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		
45								710.0
46								709.0
47								708.0
48								707.0
49								706.0
50								705.0
51	END OF BOREHOLE at 50 m - set HW casing 1.2 m below OG - installed inclinometer to 712.9 m - azimuth of A+ direction is 25°							704.0
52								703.0
53								702.0
54								701.0
55								700.0
56								699.0
57								698.0
58								697.0
59								696.0
60								

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REVIEWED BY: JPB	COMPLETE: 1/24/2010
DRAWING NO:	Page 4 of 4

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-3				
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001				
Minto Mine, YT		6944901.582N; 385505.363E; Zone 8		ELEVATION: 775.671m				
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		
					20 40 60 80	20 40 60 80		
					20 40 60 80	20 40 60 80		
					20 40 60 80	20 40 60 80		
0	TAILINGS			- Nbn				775.0
1								774.0
2								773.0
3				- 40 mm thick ice lens, clear, white inclusions, tailings inclusions				772.0
4	- occasional cobbles and boulders							771.0
5								770.0
6								769.0
7								768.0
8								767.0
9								766.0
10	ORGANICS							765.0
11	SAND - gravelly, brown, occasional cobbles - silty, fine grained			- Nbe				764.0
12	CLAY (TILL) - some silt, trace gravel, high plastic - gravel < 50 mm		G1					763.0
13	- 100 mm cobbles - some gravel, gravel < 20 mm, subrounded to angular, medium plastic, brown							762.0
14	SAND (TILL) - some silt, trace gravel, fine to medium grained gravel, grey brown			- Nbe				761.0
15	CLAY (TILL) - sandy, some silt, some gravel, gravel < 20 mm, subrounded to angular, medium plastic, brown - poor recovery							760.0
16								759.0
17								



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Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-3						
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001						
Minto Mine, YT		6944901.582N; 385505.363E; Zone 8		ELEVATION: 775.671m						
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE			
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input checked="" type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input checked="" type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input checked="" type="checkbox"/> SAND			
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C. LIQUID		Slope Indicator	Elevation (m)
					20	40	60	80		
17										758.0
18	SILT (TILL) - some sand, some gravel, gravel < 10 mm, low plastic	<input checked="" type="checkbox"/>	G2	- Vx/Vr < 10%						757.0
19	- trace fine grained gravel, trace cobbles									756.0
20										755.0
21	CLAY (TILL) - gravelly, some cobbles, some silt, trace sand, subrounded gravel, medium plastic, grey									754.0
22	- poor recovery from 20.7 m - 22.2 m									753.0
23	- some sand, some gravel, some silt, high plastic			- Vx/Vr/Vc < 30%						752.0
24	- poor recovery from 23.7 m - 25.3 m, recovered subrounded to subangular gravels < 50 mm									751.0
25		<input checked="" type="checkbox"/>	G3							750.0
26	- some silt, trace sand, trace gravel, high plastic			- Vr/Vx < 40%						749.0
27		<input checked="" type="checkbox"/>	G4							748.0
28	SILT (TILL) - some sand, trace clay, trace gravel, low to non-plastic, brown	<input checked="" type="checkbox"/>	G6	- Vr/Vx < 20%						747.0
29	- some gravel, trace cobbles	<input checked="" type="checkbox"/>	G7	- Vx < 10%						746.0
30				- Vs < 1%, lenses < 3 mm thick						745.0
31	CLAY (TILL) - some silt, some gravel, medium to coarse grained gravel, high plastic			- Vx < 20%						744.0
32	SILT (TILL) - clayey, some sand, trace gravel, trace cobbles, fine grained sand	<input checked="" type="checkbox"/>	G8	- Vr < 10%						743.0
33	CLAY - silty, trace sand, trace gravel, medium plastic, grey			- Vx/Vr < 10%						742.0
34		<input checked="" type="checkbox"/>	G9							
	- trace to some gravel, medium plastic			- Nbn						
	- 300 mm thick sand layer	<input checked="" type="checkbox"/>	G10							



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DRAWING NO:	Page 2 of 4

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-3								
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001								
Minto Mine, YT		6944901.582N; 385505.363E; Zone 8		ELEVATION: 775.671m								
SAMPLE TYPE		GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE					
BACKFILL TYPE		BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND					
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density (kg/m <sup>3</sup> )		CLAY (%)	SILT (%)	SAND (%)	GRAVEL (%)	Slope Indicator	Elevation (m)
					PLASTIC M.C.	LIQUID						
34				- Vx < 40%								741.0
35	- gravel < 40 mm subrounded, mottled brown and dark grey sections	■	G11	- 400 mm thick broken ice lens, clear								740.0
36				- Nbn								739.0
37	- some sand, gravelly, subrounded gravel < 30 mm	■	G12	- Vr < 2%, 1 mm thick ice lenses	—●—	—■—	◆	●	▲	■		738.0
38	- mottled clay			- Vx < 3%, crystals < 30 mm								737.0
39				- 100 mm thick ice lens, clear								736.0
40	- high plastic, dark grey, occasional angular gravel < 30 mm	■	G13	- Nbn								735.0
41				- Vs < 3%, lenses < 30 mm thick, clear								734.0
42		■	G14	- Vr < 1%, ice lenses < 1 mm thick								733.0
43	- clay intermixed with ice from 42.1 to 42.4 m (50/50)	■	G15	- Nbn								732.0
44	- slickensided, very shiny, no gravel present, occasional cobble			- Vx < 1%, crystals < 2 mm								731.0
45		■	G16	- Vs < 2%, lenses < 20 mm thick								730.0
46	- occasional horizontal silt layers < 1 mm thick, slickensided	■	G17	- Nbe								729.0
47				- Nbn								728.0
48		■	G18	- Vr < 1%, ice lenses < 1 mm thick								727.0
49	- occasional silt layers < 2mm thick, greyish brown silt	■	G19	- Vs < 2%, lenses < 10 mm thick								726.0
50				- Nbn								725.0
51	- no silt lenses, no slickensides visible, ice intermixed with clay	■	G20	- Vr < 5%, ice lenses < 4 mm thick	—●—	—■—	◆	●	▲	■		
	- occasional silt layers < 1 mm thick, dark brownish grey silt			- Vx < 1%								
	- gravelly < 40 mm, subangular			- Vx < 30 mm, cubic crystals < 30 mm								
				- Vs < 5%, lenses < 5 mm thick								
				- Nbe								
				- Vx < 30%, crystals < 20 mm								
				- 200 mm of broken up ice	—●—	—■—	◆	●	▲	■		
				- Nbn								
				- Vx < 10%, crystal <								



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Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-3				
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001				
Minto Mine, YT		6944901.582N; 385505.363E; Zone 8		ELEVATION: 775.671m				
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80		
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		
							◆ CLAY (%) ◆	
							20 40 60 80	
							● SILT (%) ●	
							20 40 60 80	
							▲ SAND (%) ▲	
							20 40 60 80	
							■ GRAVEL (%) ■	
							20 40 60 80	
51	- gravel < 20 mm, angular to subangular, silt layers < 30 mm thick	■	G21	10 mm				724.0
52		■	G22	- Nbn - Vs < 2%, lenses < 3 mm thick				723.0
53								722.0
54		■	G23					721.0
55								720.0
56	SAND (RESIDUUM)- some gravel, well graded sand, gravel < 10 mm angular, brown	■	G24	- Nbn				719.0
57		■	G25					718.0
58	BEDROCK - highly weathered oxidized joints							717.0
59								716.0
60	- rock becomes more competent with depth							715.0
61								714.0
62								713.0
63								712.0
64	END OF BOREHOLE 63.4 m - set HW casing 1.2 m below OG - installed inclinometer to 713.5 m - azimuth of A+ direction is 42°							711.0
65								710.0
66								709.0
67								708.0
68								



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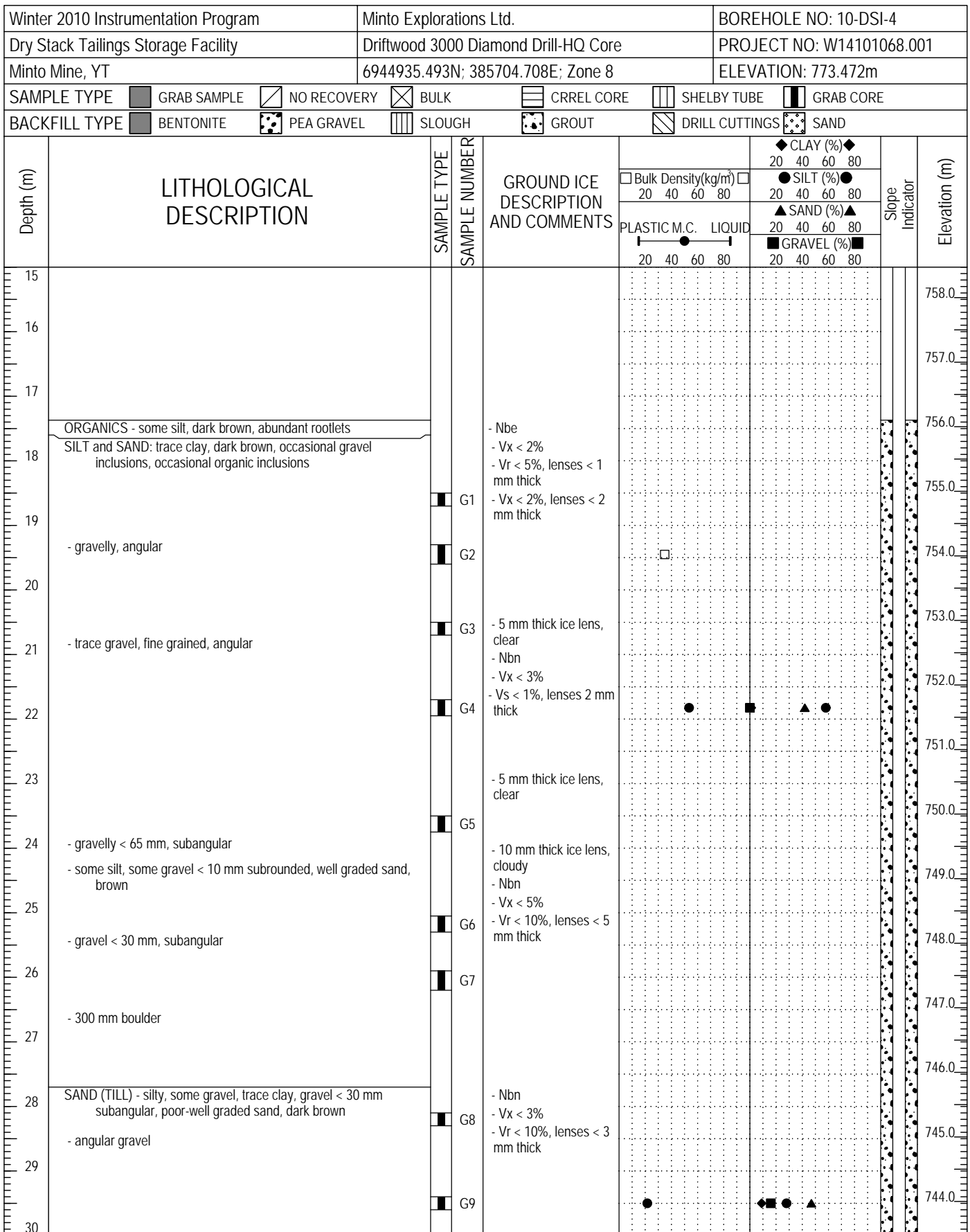
Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-4						
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001						
Minto Mine, YT		6944935.493N; 385704.708E; Zone 8		ELEVATION: 773.472m						
SAMPLE TYPE		<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE			
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND			
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C. LIQUID		Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80		
0	WASTE ROCK FILL									773.0
1										772.0
2										771.0
3										770.0
4										769.0
5										768.0
6										767.0
7										766.0
8										765.0
9	TAILINGS									764.0
10										763.0
11										762.0
12										761.0
13	WASTE ROCK FILL									760.0
14										759.0
15										



**EBA Engineering Consultants Ltd.**

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REVIEWED BY: JPB	COMPLETE: 4/4/2010
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**EBA Engineering Consultants Ltd.**

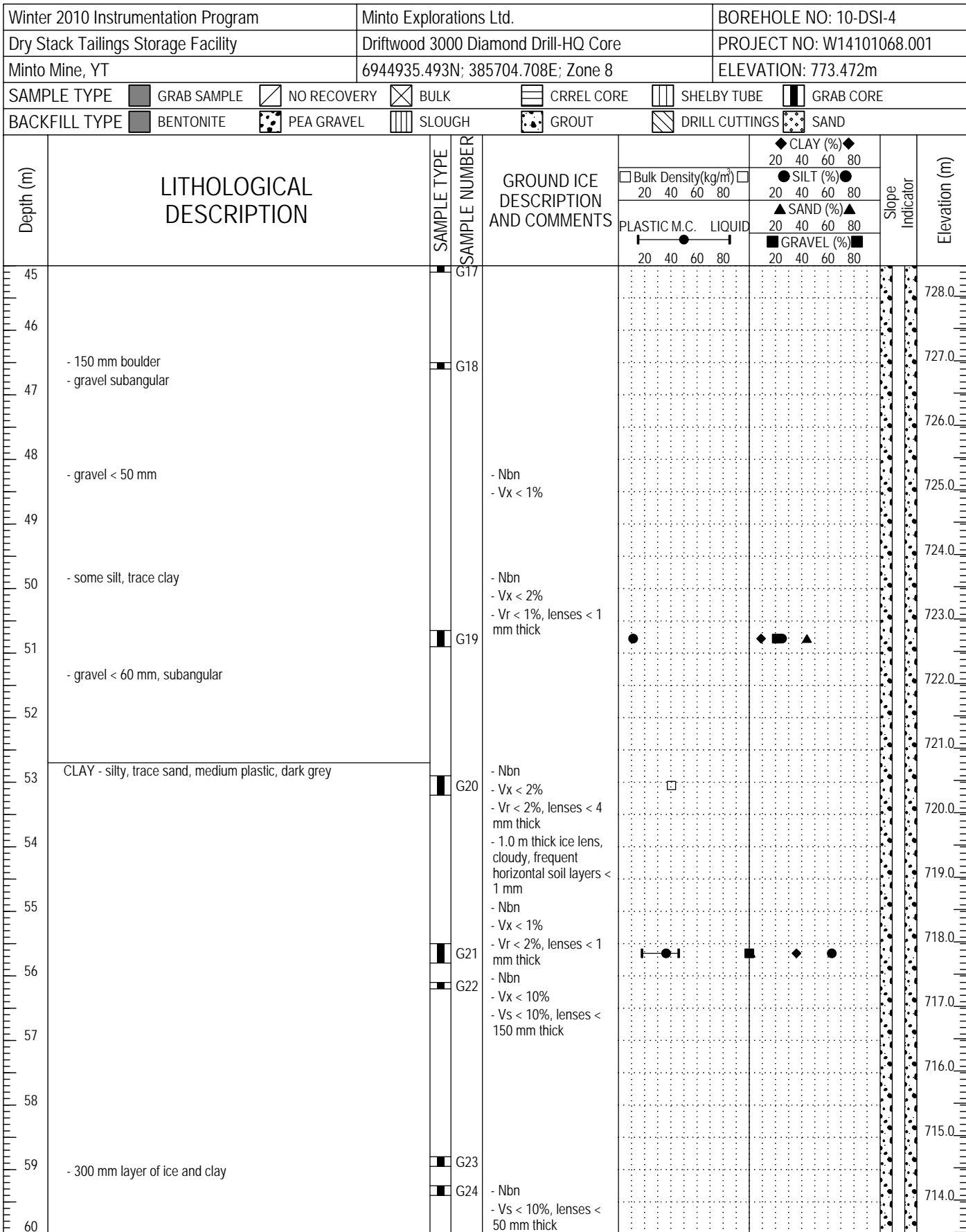
LOGGED BY: JGD & MD	COMPLETION DEPTH: 85.6m
REVIEWED BY: JPB	COMPLETE: 4/4/2010
DRAWING NO:	Page 2 of 6

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-4								
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001								
Minto Mine, YT		6944935.493N; 385704.708E; Zone 8		ELEVATION: 773.472m								
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE					
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND					
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C.		LIQUID		Slope Indicator	Elevation (m)
					20	40	60	80	20	40		
30	- subangular to subrounded gravel			- Vr < 1%, lenses < 2mm thick								743.0
31		<input checked="" type="checkbox"/>	G10	- Vr < 3%, lenses < 5mm thick								742.0
32	- some gravel < 30 mm, subangular											741.0
33	- silt lenses < 5 mm thick, low to non plastic											740.0
34	- 100 mm sand pocket, poorly graded, fine grained, brown			- Nbn								739.0
35	- trace to some silt, gravel < 15 mm, subangular, brown			- Vr < 2%								738.0
36	- 400 mm silt till layer, sandy, some gravel, gravel < 10 mm, non plastic	<input checked="" type="checkbox"/>	G11	- Vr < 3%, lenses < 2 mm thick								737.0
37	- gravel < 60 mm	<input checked="" type="checkbox"/>	G12	- Vr = 15 mm thick, clear								736.0
38		<input checked="" type="checkbox"/>	G13	- Vr = 10 mm thick, vertical, cloudy								735.0
39	CLAY - silty, trace sand, medium plastic, dark grey			- Nbn								734.0
40	- 1.1 m of clay intermixed with ice	<input checked="" type="checkbox"/>	G14	- Vr < 40%, crystals < 2 mm, cubical								733.0
41	- occasional slickensides, blocky			- Nbn								732.0
42		<input checked="" type="checkbox"/>	G15	- Vr < 2%, lenses < 1 mm thick								731.0
43	- sandy, some gravel, gravel < 15 mm, occasional silt lenses < 15 mm thick											730.0
44	SAND AND GRAVEL - well graded sand, gravel < 75 mm subrounded to angular, dark brown, occasional cobbles < 170 mm											729.0
45	- silty, poorly graded sand, no cobbles present			- Nbn								
				- Vr < 1%								



**EBA Engineering Consultants Ltd.**

LOGGED BY: JGD & MD	COMPLETION DEPTH: 85.6m
REVIEWED BY: JPB	COMPLETE: 4/4/2010
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**EBA Engineering Consultants Ltd.**

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COMPLETION DEPTH: 85.6m

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Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-4								
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001								
Minto Mine, YT		6944935.493N; 385704.708E; Zone 8		ELEVATION: 773.472m								
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE					
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND					
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C.		LIQUID		Slope Indicator	Elevation (m)
					20	40	60	80	20	40		
60		<input checked="" type="checkbox"/>	G25									713.0
61												712.0
62												711.0
63		<input checked="" type="checkbox"/>	G26	- Vs < 5%, lenses < 20 mm thick								710.0
64												709.0
65		<input checked="" type="checkbox"/>	G27	- Vs < 20%, lenses < 80 mm thick								708.0
66												707.0
67												706.0
68		<input checked="" type="checkbox"/>	G28	- Nbn								705.0
69	- frequent sand seams, fine grained, < 3 mm											704.0
70												703.0
71												702.0
72												701.0
73	- some sand, grey - occasional gravel, coarse grained - brownie grey											700.0
74												699.0
75												



**EBA Engineering Consultants Ltd.**

LOGGED BY: JGD & MD	COMPLETION DEPTH: 85.6m
REVIEWED BY: JPB	COMPLETE: 4/4/2010
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Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-4				
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001				
Minto Mine, YT		6944935.493N; 385704.708E; Zone 8		ELEVATION: 773.472m				
SAMPLE TYPE		<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80		
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		
75								698.0
76								697.0
77								696.0
78								695.0
79	BEDROCK - highly weathered fractures spaced 30-50 mm apart							694.0
80	- oxide staining							693.0
81								692.0
82								691.0
83	- moderately to closely spaced joints, sand infilled joints							690.0
84								689.0
85								688.0
86	END OF BOREHOLE 85.6 m - set HW casing 1.5 m below OG - installed inclinometer to 687.9 m - azimuth of A+ direction is 10°							687.0
87								686.0
88								685.0
89								684.0
90								684.0



**EBA Engineering Consultants Ltd.**

LOGGED BY: JGD & MD	COMPLETION DEPTH: 85.6m
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Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-5						
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001						
Minto Mine, YT		6944583.35N; 385509.075E; Zone 8		ELEVATION: 790.66m						
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE			
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND			
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C. LIQUID		Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80		
0	TAILINGS									790.0
1										789.0
2										788.0
3										787.0
4	ORGANICS SAND - gravelly, coarse grained sand, occasional cobbles - poor recovery from 3.6 to 10.1 m									786.0
5										785.0
6										784.0
7										783.0
8										782.0
9										781.0
10										780.0
11	CLAY - silty, trace sand, medium plastic, dark grey, silt pockets			- Nbn - Vx/Vs < 10%						779.0
12			G1							778.0
13	SAND - clayey, trace silt, medium grained, greyish brown		G2	- Nbn						777.0
14	SILT - some clay, low plastic, brown		G3	- Nbn						776.0
15	SAND - trace silt, trace gravel, medium to coarse grained sand, poorly graded									
	SILT - trace sand, low plastic, dark grey									



**EBA Engineering Consultants Ltd.**

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REVIEWED BY: JPB	COMPLETE: 4/5/2010
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Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-5					
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001					
Minto Mine, YT		6944583.35N; 385509.075E; Zone 8		ELEVATION: 790.66m					
SAMPLE TYPE		GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE		
BACKFILL TYPE		BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND		
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		CLAY (%)	Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80	20 40 60 80		
					PLASTIC M.C.	LIQUID	SILT (%)		
					20 40 60 80	20 40 60 80	20 40 60 80		
							SAND (%)		
							20 40 60 80		
							GRAVEL (%)		
							20 40 60 80		
15									775.0
16	SAND AND GRAVEL - trace silt, well graded, brown		G4	- Nbn - Vx < 5%, occasional cubes < 1 mm					
17	SILT and SAND - trace clay, trace gravel, low plastic, brown		G5	- Nbe - Vr < 15% - frequent 10 mm thick ice lenses					774.0
18									773.0
19	- gravelly, grey		G6	- Nbn - Vx/Vr < 10% - Vs < 5%, lenses < 80 mm thick, clear					772.0
20	- 200 mm thick ice and clay layer		G7						771.0
21									770.0
22			G8	- Vx < 20% - Vs, lenses < 150 mm thick, clear					769.0
23	- frequent sand layers < 250 mm thick			- Vx < 40%					768.0
24	CLAY (TILL) - some sand, some silt, medium plastic, grey			- Nbe					767.0
25	- gravelly		G9	- Vx < 30% - 150 mm thick ice lens, clear, trace soil inclusions					766.0
26	- sandy, trace silt, trace gravel, high plastic			- Nbn					765.0
27	SAND (TILL) - some clay, trace gravel, well graded, greyish brown		G10						764.0
28	CLAY (TILL) - some sand, trace gravel			- Nbn					763.0
	SILT (TILL) - sandy, trace gravel, brown			- Vs < 10% - Vx < 5%					
29	CLAY (TILL) - silty, trace sand, high plastic, grey			- Vx < 30%					762.0
	- brown		G11	- Nbn - Vx < 30% - Vs, lenses < 150 mm thick					761.0



**EBA Engineering Consultants Ltd.**

LOGGED BY: JGD & MD	COMPLETION DEPTH: 55.8m
REVIEWED BY: JPB	COMPLETE: 4/5/2010
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Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-5						
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001						
Minto Mine, YT		6944583.35N; 385509.075E; Zone 8		ELEVATION: 790.66m						
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE			
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND			
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density (kg/m <sup>3</sup> )		PLASTIC M.C. LIQUID		Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80		
30	- grey		G12	- Vx < 40%						760.0
31			G13							759.0
32	- 300 mm ice and clay layer (~60% ice) - bedding planes 5 mm thick			- Vx < 15%						758.0
33										757.0
34	- 500 mm ice and clay layer (~50% ice)		G14	- Vs, lenses < 200 mm thick						756.0
35			G15	- Vx < 20%						755.0
36										754.0
37			G16	- Vs, lenses < 100 mm thick - Vx/Vr < 40%						753.0
38	- dark grey, occasional dark greyish brown silt lenses < 1 m thick		G17	- Nbn - Vx < 2% - Vr < 3% - Vr < 3%, lenses < 2 mm thick - Vs < 5%, lenses < 40 mm						752.0
39										751.0
40			G18	- Nbe						750.0
41	- occasional greyish brown silt pockets, occasional gravel < 20 mm		G19	- Nbn						749.0
42										748.0
43	- trace to some gravel < 40 mm, subrounded									747.0
44	SAND - gravelly, trace silt, well graded sand, gravel < 10 mm, angular, orangey brown, occasional cobbles < 120 mm		G20	- Nbn						746.0
45			G21							



**EBA Engineering Consultants Ltd.**

LOGGED BY: JGD & MD	COMPLETION DEPTH: 55.8m
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Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-5				
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001				
Minto Mine, YT		6944583.35N; 385509.075E; Zone 8		ELEVATION: 790.66m				
SAMPLE TYPE		<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80		
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		
45								745.0
46								744.0
47								743.0
48	BEDROCK - highly weathered, friable oxidized joints, joints infilled with sand and gravel pieces, brown							742.0
49	- competent							741.0
50								740.0
51								739.0
52	- joints spaced 200-600 mm							738.0
53								737.0
54								736.0
55								735.0
56	END OF BOREHOLE 55.8 m							734.0
57	- installed inclinometer to 737.1 m							733.0
58	- azimuth of A+ direction is 16°							732.0
59								731.0
60								



**EBA Engineering Consultants Ltd.**

LOGGED BY: JGD & MD	COMPLETION DEPTH: 55.8m
REVIEWED BY: JPB	COMPLETE: 4/5/2010
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Fall 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-6						
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001						
Minto Mine, YT		6944972N; 385653.5E; Zone 8		ELEVATION: 766.496m						
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE			
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND			
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density (kg/m <sup>3</sup> )		PLASTIC M.C. LIQUID		Slope Indicator	Elevation (m)
					20	40	60	80		
0	ROCK FILL									766.0
1										765.0
2										764.0
3										763.0
4										762.0
5										761.0
6										760.0
7										759.0
8										758.0
9	MUSKEG - organics		G1							757.0
10										756.0
11										755.0
12	SAND - trace silt, poorly graded, fine grained, brown			- Nbe						754.0
13			G2							753.0
14										752.0
15										751.0
16			G3	- Nbn, Vx < 1%						750.0
17	SAND (TILL) - some silt, trace clay, trace gravel, well graded, medium-coarse grained, subgranular, brown		G4							749.0
18										748.0
19	- poorly graded, fine grained, dark grey, peat bog odour, abundant organic lenses < 20 mm (thick brown fibrous)		G5							747.0
20			G6							746.0
21	- trace gravel, well graded, medium-coarse grained, subgranular, brown		G7							745.0
22										744.0
23	- poorly graded, fine grained, dark grey, odor rotten clams, abundant organic lenses < 20 mm thick, brown roots		G8	- Nbe, occasional ice lenses < 30 mm, clear - 70 mm ice lense, clear						743.0
24										742.0
25	- round, brown		G9							742.0



**EBA Engineering Consultants Ltd.**

LOGGED BY: MD & KDJ	COMPLETION DEPTH: 71.6m
REVIEWED BY: BC & JGD	COMPLETE: 11/9/2010
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Fall 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-6				
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001				
Minto Mine, YT		6944972N; 385653.5E; Zone 8		ELEVATION: 766.496m				
SAMPLE TYPE		GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE	
BACKFILL TYPE		BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		
					20 40 60 80	20 40 60 80		
					20 40 60 80	20 40 60 80		
					20 40 60 80	20 40 60 80		
25			G10					741.0
26								740.0
27				- Nbn, Vr < 2%				739.0
28			G11					738.0
29			G12					737.0
30	SILT - some sand, trace gravel, low-medium plastic, brown		G13	- 30 mm ice lense, clear - Ice and soil, abundant ice lenses < 50 mm thick, clear				736.0
31								735.0
32	- gravelly, silty, some clay, low-non plastic, greyish brown, occasional cobble		G14	- Abundant ice lenses < 150 mm thick, clear, some cloudy				734.0
33								733.0
34			G15	- Abundant ice lenses < 100 mm thick				732.0
35								731.0
36	CLAY - silty, trace sand, slickensided, high plastic, dark grey		G16					730.0
37			G17					729.0
38			G18	- Clay and ice 50/50				728.0
39								727.0
40			G19	- 100 mm ice lense, clear - 80 mm ice lense, half clear, half cloudy				726.0
41			G20	- Nbn, frequent ice lenses < 120 mm thick				725.0
42								724.0
43			G21	- 50 mm ice lense, clear - Ice lense, clear				723.0
44			G22	- Vr < 2%, < 2 mm thick, Nbn				722.0
45								721.0
46			G23	- Abundant ice lenses < 70 mm thick, clear, Vr < 1%, < 2 mm thick				720.0
47			G24	- Nbn, Vr < 2%, < 2 mm thick				719.0
48								718.0
49			G25	- Vertical ice lense ~5 mm thick - Ice and clay 50/50				717.0
50								



**EBA Engineering Consultants Ltd.**

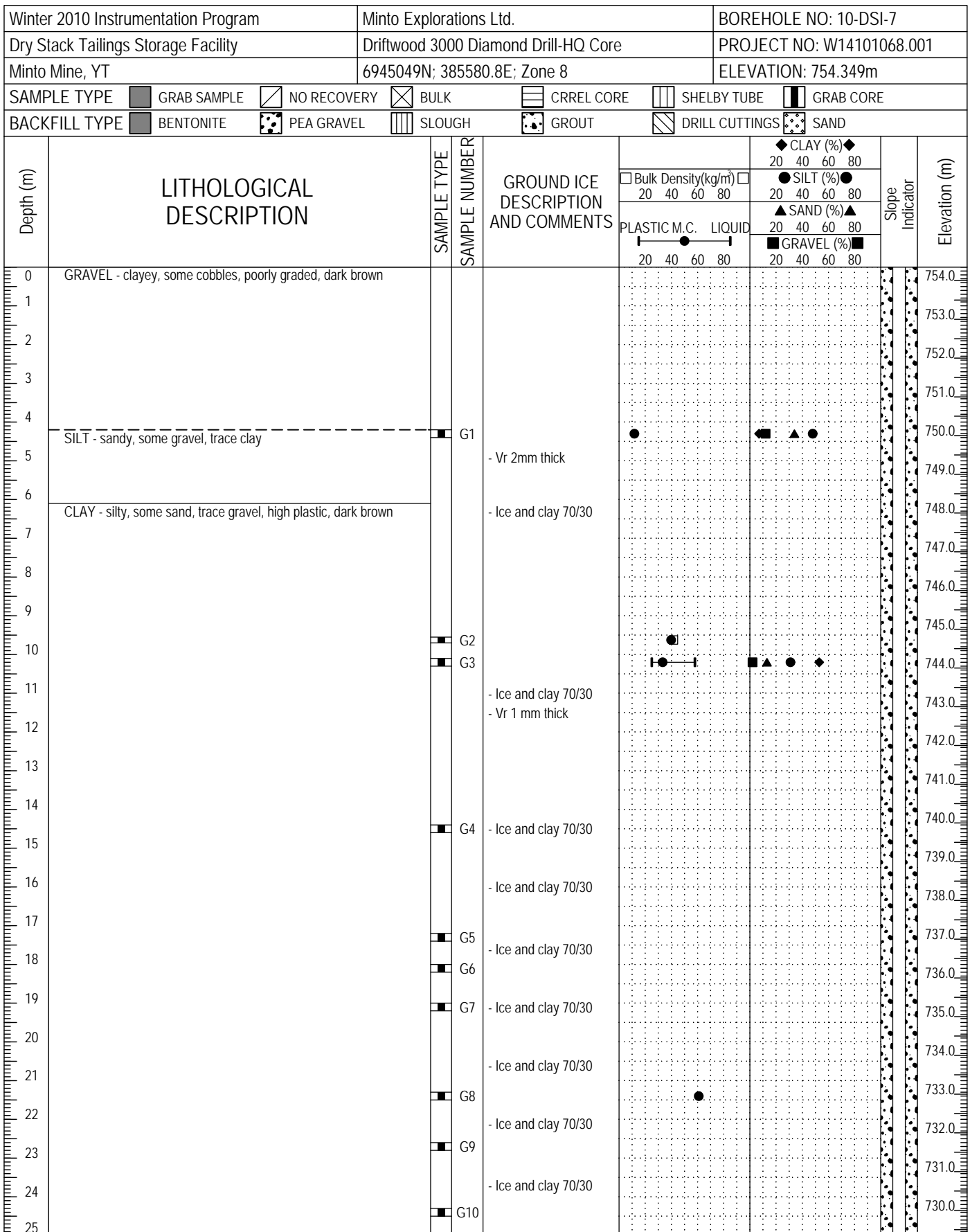
LOGGED BY: MD & KDJ	COMPLETION DEPTH: 71.6m
REVIEWED BY: BC & JGD	COMPLETE: 11/9/2010
DRAWING NO:	Page 2 of 3

Fall 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-6				
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001				
Minto Mine, YT		6944972N; 385653.5E; Zone 8		ELEVATION: 766.496m				
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input checked="" type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input checked="" type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input checked="" type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		
					20 40 60 80	20 40 60 80		
					20 40 60 80	20 40 60 80		
					20 40 60 80	20 40 60 80		
50			G26	- 150 mm ice lense, clear				716.0
51				- Abundant ice lenses < 40 mm thick, clear, high plastic, blocky				715.0
52				- Ice and clay 50/50				714.0
53			G27					713.0
54			G28					712.0
55			G29					711.0
56	- silty, gravelly, some sand, high plastic		G30	- Nbn	●	●		710.0
57			G31					709.0
58			G32					708.0
59	SAND (RESIDUUM) - silty, trace clay, trace gravel, poorly graded, dark brown		G33					707.0
60								706.0
61								705.0
62	BEDROCK - highly weathered, light brown, more competent with depth		G34					704.0
63			G35					703.0
64								702.0
65			G36					701.0
66								700.0
67			G37					699.0
68								698.0
69								697.0
70								696.0
71								695.0
72	END OF BOREHOLE at 71.6 m							694.0
73	- installed inclinometer to 697.2 m							693.0
74	- azimuth of A+ direction is ____ °							692.0
75								



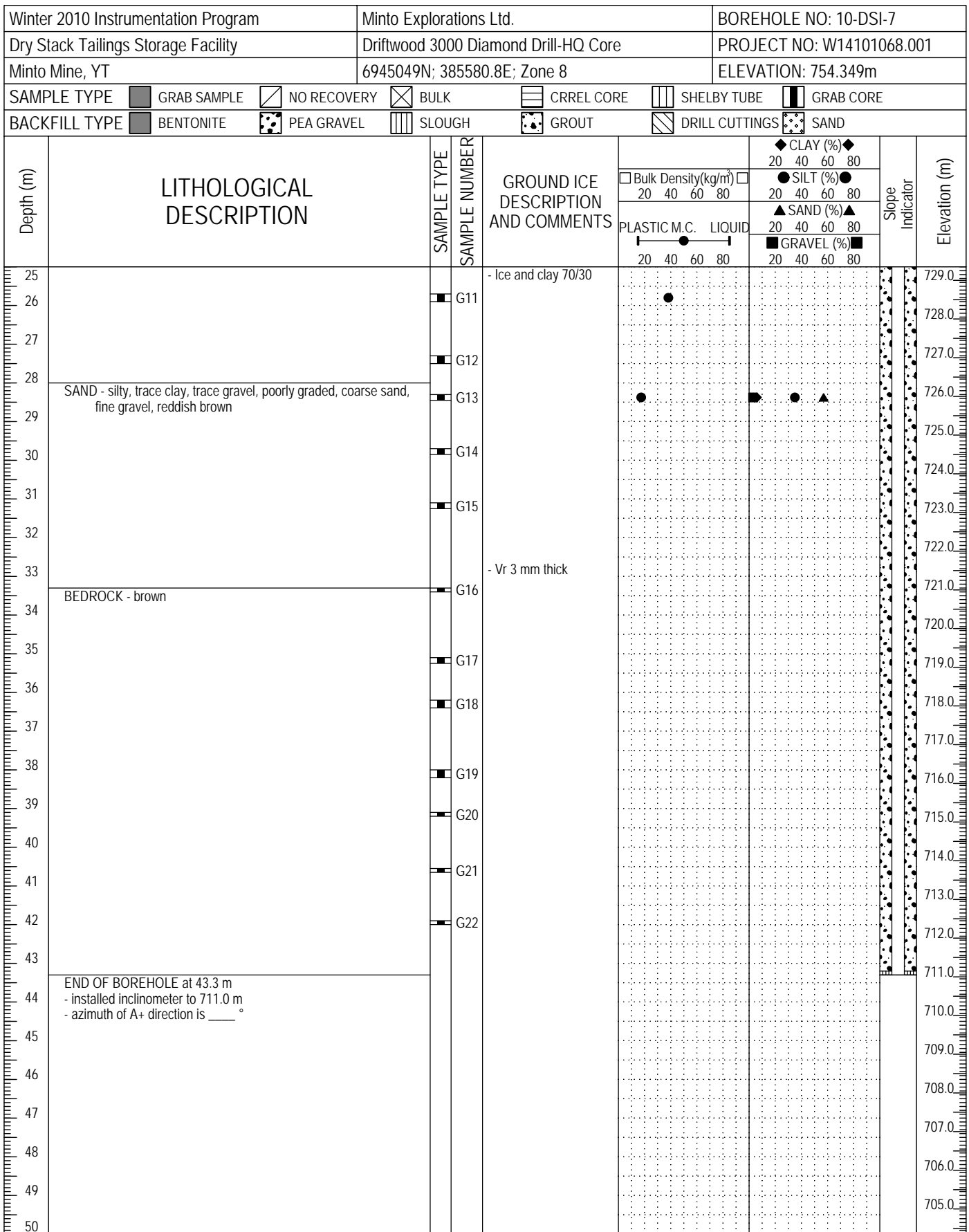
**EBA Engineering Consultants Ltd.**

LOGGED BY: MD & KDJ	COMPLETION DEPTH: 71.6m
REVIEWED BY: BC & JGD	COMPLETE: 11/9/2010
DRAWING NO:	Page 3 of 3



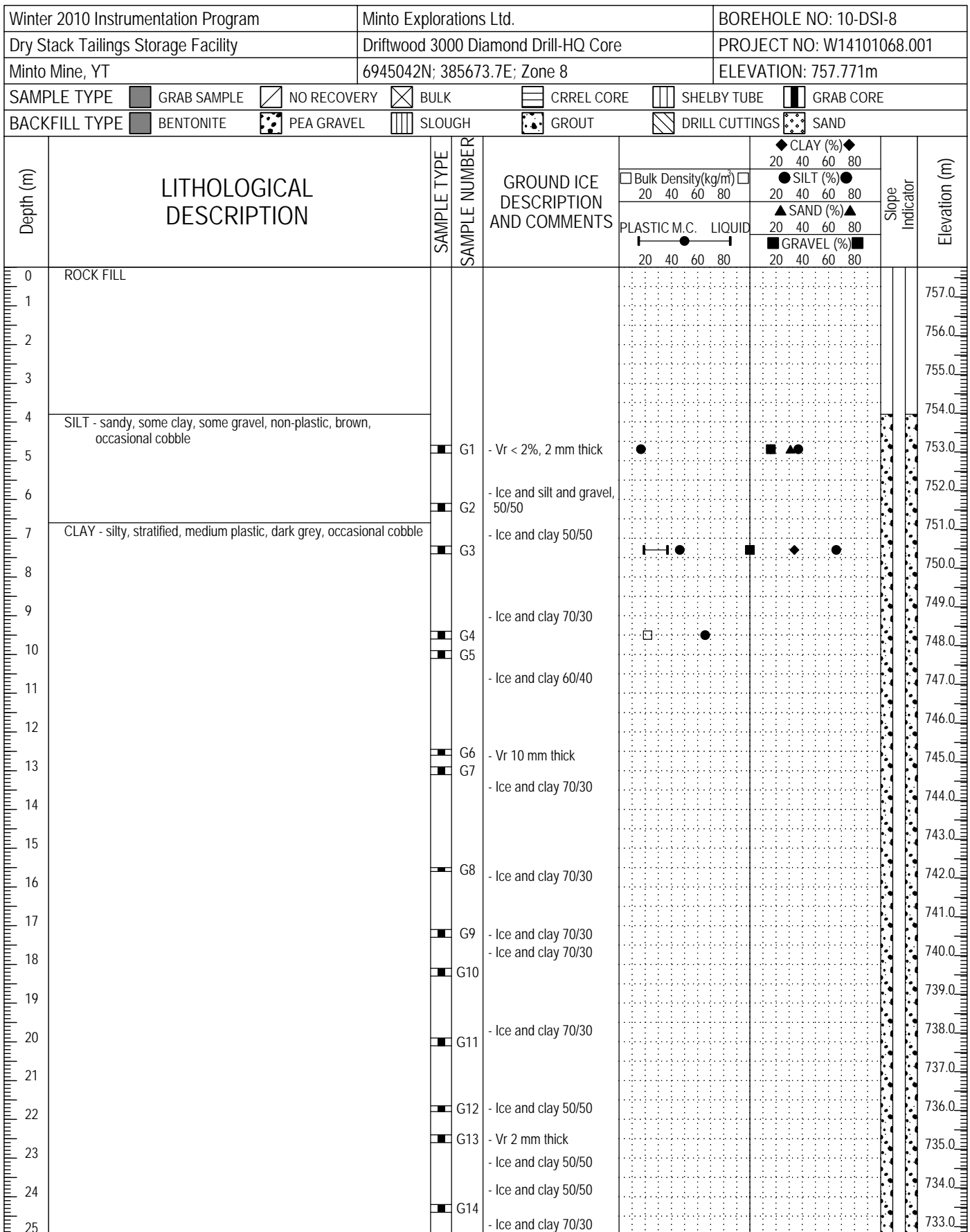
**EBA Engineering Consultants Ltd.**

LOGGED BY: KDJ	COMPLETION DEPTH: 43.3m
REVIEWED BY: BC & JGD	COMPLETE: 11/10/2010
DRAWING NO:	Page 1 of 2



**EBA Engineering Consultants Ltd.**

LOGGED BY: KDJ	COMPLETION DEPTH: 43.3m
REVIEWED BY: BC & JGD	COMPLETE: 11/10/2010
DRAWING NO:	Page 2 of 2



**EBA Engineering Consultants Ltd.**

LOGGED BY: MD & KDJ	COMPLETION DEPTH: 43.2m
REVIEWED BY: BC & JGD	COMPLETE: 11/10/2010
DRAWING NO:	Page 1 of 2

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-8				
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001				
Minto Mine, YT		6945042N; 385673.7E; Zone 8		ELEVATION: 757.771m				
SAMPLE TYPE		GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE	
BACKFILL TYPE		BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		
					20 40 60 80	20 40 60 80		
					20 40 60 80	20 40 60 80		
					20 40 60 80	20 40 60 80		
25	- trace sand	■	G15	- Ice and clay 70/30	20 40 60 80	20 40 60 80		732.0
26								
27				- Ice and clay 50/50				731.0
28		■	G16					730.0
29		■	G17	- Ice and clay 70/30				729.0
30		■	G18	- Ice and clay 70/30				728.0
31				- Ice and clay 70/30				727.0
32		■	G19	- Ice and clay 70/30				726.0
33				- Ice and clay 50/50				725.0
34		■	G20	- Ice and clay 50/50				724.0
35				- Ice and clay 50/50				723.0
36		■	G21	- Ice and clay 50/50				722.0
37								721.0
38		■	G22					720.0
39	SAND (RESIDUUM) - gravelly, some cobbles, poorly graded, medium grained sand, brown							719.0
40	BEDROCK - light brown							718.0
41		■	G23					717.0
42		■	G24					716.0
43		■	G25					715.0
44	END OF BOREHOLE at 43.2 m - installed inclinometer to 715.4 m - azimuth of A+ direction is ____ °							714.0
45								713.0
46								712.0
47								711.0
48								710.0
49								709.0
50								708.0



**EBA Engineering Consultants Ltd.**

LOGGED BY: MD & KDJ	COMPLETION DEPTH: 43.2m
REVIEWED BY: BC & JGD	COMPLETE: 11/10/2010
DRAWING NO:	Page 2 of 2

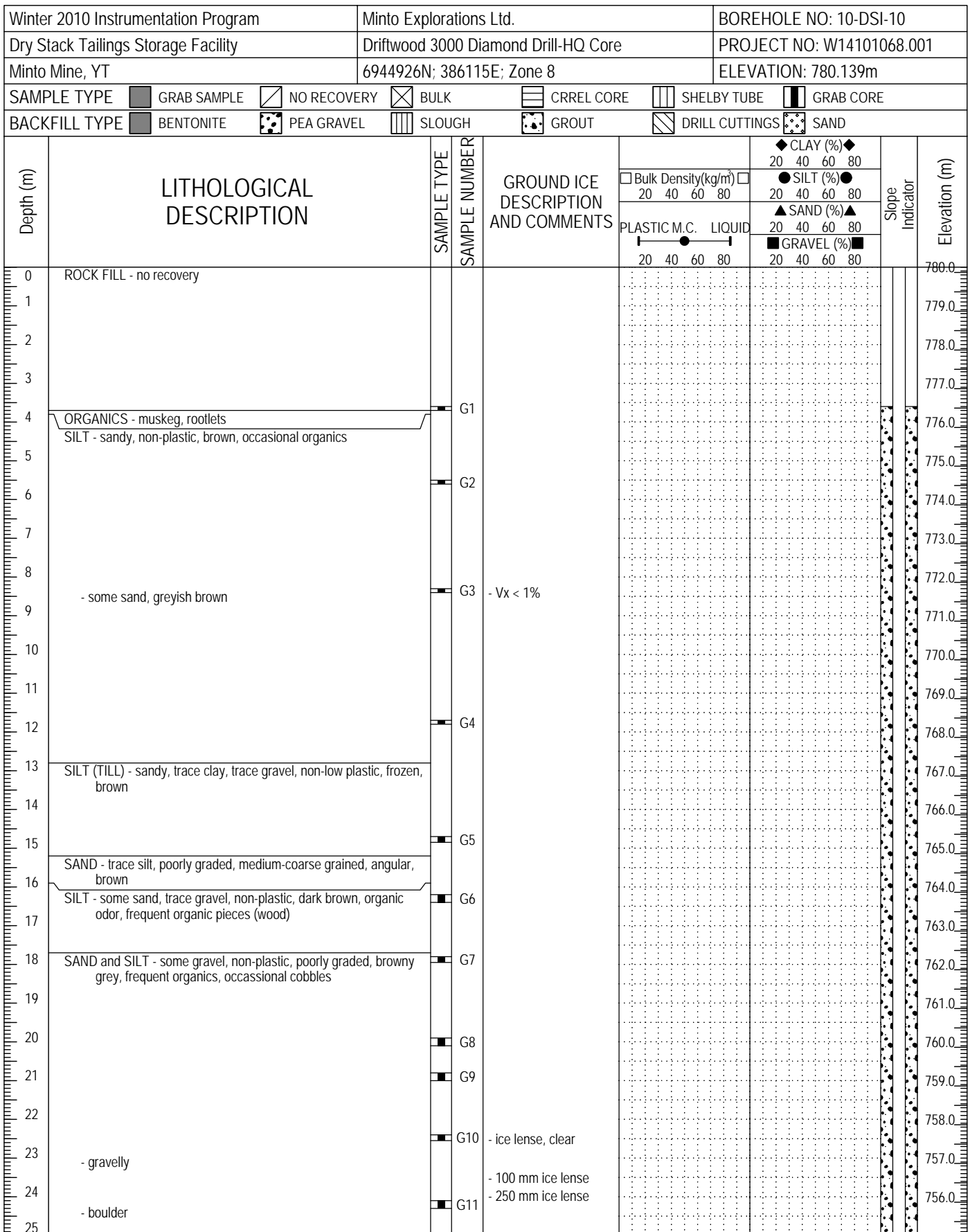


Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-9				
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001				
Minto Mine, YT		6945136N; 385762.9E; Zone 8		ELEVATION: 737.042m				
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80		
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		
							◆ CLAY (%) ◆	
							20 40 60 80	
							● SILT (%) ●	
							20 40 60 80	
							▲ SAND (%) ▲	
							20 40 60 80	
							■ GRAVEL (%) ■	
							20 40 60 80	
0	NO RECOVERY							737.0
1	BEDROCK - greyish brown		G1					736.0
2								735.0
3								734.0
4								733.0
5			G2					732.0
6			G3					731.0
7	END OF BOREHOLE at 6.7 m - installed inclinometer to 731.5 m - azimuth of A+ direction is ____ m							730.0
8								729.0
9								728.0
10								



**EBA Engineering Consultants Ltd.**

LOGGED BY: KDJ	COMPLETION DEPTH: 6.7m
REVIEWED BY: BC & JGD	COMPLETE: 11/11/2010
DRAWING NO:	Page 1 of 1



**EBA Engineering Consultants Ltd.**

LOGGED BY: MD	COMPLETION DEPTH: 87.8m
REVIEWED BY: BC & JGD	COMPLETE: 11/7/2010
DRAWING NO:	Page 1 of 4

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-10				
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001				
Minto Mine, YT		6944926N; 386115E; Zone 8		ELEVATION: 780.139m				
SAMPLE TYPE		<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		
					20 40 60 80	20 40 60 80		
					20 40 60 80	20 40 60 80		
					20 40 60 80	20 40 60 80		
25	SAND (TILL) - some silt, gravelly, poorly graded, subangular gravel, brown							755.0
26			G12					754.0
27	- gravel < 40 mm subangular-angular							753.0
28			G13					752.0
29			G14					751.0
30	- silty			- 100 mm ice lense, clear				750.0
31			G15	- Vr < 1%				749.0
32								748.0
33	- boulder		G16					747.0
34	SILT (TILL) - trace to some clay, trace sand, low plastic, dark grey		G17					746.0
35			G18					745.0
36								744.0
37	- sandy, trace clay, trace gravel, low-non plastic, occasional cobble							743.0
38	- gravelly, subangular < 50 mm diameter		G19					742.0
39			G20					741.0
40			G21					740.0
41	- frequent cobbles		G22					739.0
42								738.0
43			G23					737.0
44			G24					736.0
45								735.0
46	- 300 mm boulder							734.0
47			G25					733.0
48			G26					732.0
49			G27					731.0
50	SILT AND SAND (TILL) - gravelly, trace clay, low-non plastic, dark		G28	- Nbn, Vx < 1%				730.0



**EBA Engineering Consultants Ltd.**

LOGGED BY: MD	COMPLETION DEPTH: 87.8m
REVIEWED BY: BC & JGD	COMPLETE: 11/7/2010
DRAWING NO:	Page 2 of 4



Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-10				
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001				
Minto Mine, YT		6944926N; 386115E; Zone 8		ELEVATION: 780.139m				
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input checked="" type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input checked="" type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input checked="" type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80		
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		
50	grey, occasional cobbles							730.0
51		<input checked="" type="checkbox"/>	G29					729.0
52								728.0
53	SAND (TILL) - silty, gravelly, poorly graded, dark grey, occasional cobbles			- Nbe				727.0
54	- trace to some gravel	<input checked="" type="checkbox"/>	G30					726.0
55		<input checked="" type="checkbox"/>	G31					725.0
56								724.0
57	SILT AND SAND (TILL) - some gravel, low-non plastic, dark grey, occasional cobbles	<input checked="" type="checkbox"/>	G32	- Nbn				723.0
58		<input checked="" type="checkbox"/>	G33					722.0
59								721.0
60		<input checked="" type="checkbox"/>	G34	- Nbn, Vx < 1%				720.0
61				- Nbn				719.0
62		<input checked="" type="checkbox"/>	G35					718.0
63		<input checked="" type="checkbox"/>	G36					717.0
64	CLAY - silty, trace sand, trace gravel, medium plastic, dark grey, occasional fine grained sand pockets < 2 mm diameter	<input checked="" type="checkbox"/>	G37	- Nbn				716.0
65	- slickensided, no sand pockets, no gravel	<input checked="" type="checkbox"/>	G38					715.0
66								714.0
67	- sandy			- Nbn				713.0
68	- slickensided, medium-high plastic			- Nbn				712.0
69	- occasional light grey silt lenses < 4 mm thick	<input checked="" type="checkbox"/>	G39	- Nbn				711.0
70	- high plastic, occasional lighter grey silt pockets ~10 mm diameter	<input checked="" type="checkbox"/>	G40					710.0
71		<input checked="" type="checkbox"/>	G41					709.0
72	- stratified layers							708.0
73		<input checked="" type="checkbox"/>	G42					707.0
74	- high plastic, slickensided							706.0
75		<input checked="" type="checkbox"/>	G43					



**EBA Engineering Consultants Ltd.**

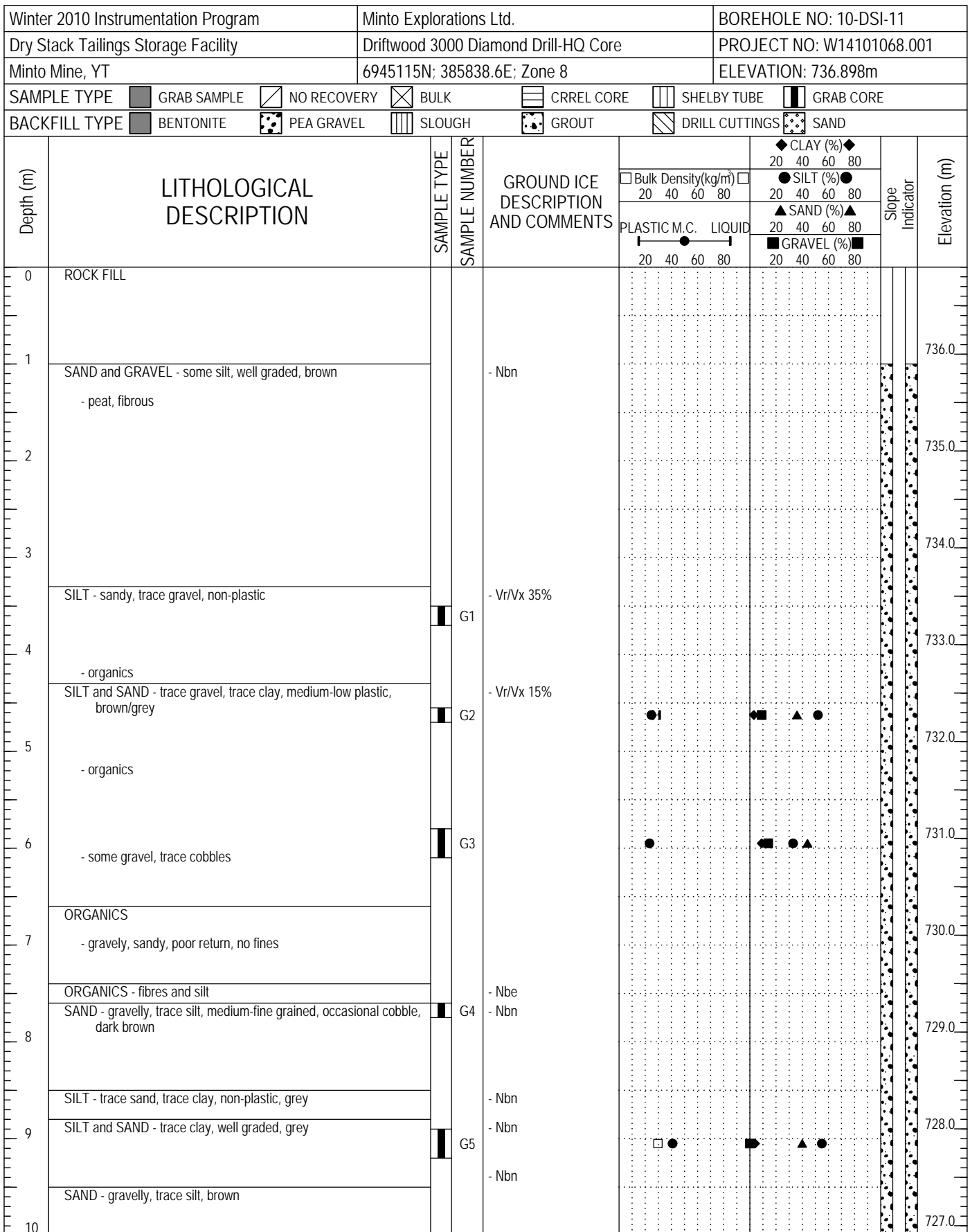
LOGGED BY: MD	COMPLETION DEPTH: 87.8m
REVIEWED BY: BC & JGD	COMPLETE: 11/7/2010
DRAWING NO:	Page 3 of 4

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-10				
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001				
Minto Mine, YT		6944926N; 386115E; Zone 8		ELEVATION: 780.139m				
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		705.0
75			G44					704.0
76			G45					703.0
77			G46					702.0
78	- sand, fine grained, grey sand lenses < 2 mm thick		G47					701.0
79			G48					700.0
80			G49					699.0
81			G50					698.0
82			G51					697.0
83	SAND - some silt, some gravel, poorly-well graded, angular to subangular, dark greyish brown		G52					696.0
84	CLAY - silty, high plastic, brown and dark grey - occasional sand and gravel							695.0
85	SAND (RESIDUUM) - gravelly, trace silt, poorly-well graded, angular, brown, frequent coarse grained sand lenses < 20 mm thick							694.0
86	BEDROCK - highly weathered to sand and gravel sizes, orangy brown							693.0
87								692.0
88	END OF BOREHOLE at 87.8 m							691.0
89	- installed inclinometer to 694.9 m							690.0
90	- azimuth of A+ direction is ____°							689.0
91								688.0
92								687.0
93								686.0
94								685.0
95								684.0
96								683.0
97								682.0
98								681.0
99								680.0
100								679.0



**EBA Engineering Consultants Ltd.**

LOGGED BY: MD	COMPLETION DEPTH: 87.8m
REVIEWED BY: BC & JGD	COMPLETE: 11/7/2010
DRAWING NO:	Page 4 of 4



**EBA Engineering Consultants Ltd.**

LOGGED BY: JGD	COMPLETION DEPTH: 17.4m
REVIEWED BY: BC & JGD	COMPLETE: 11/15/2010
DRAWING NO:	Page 1 of 2

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DSI-11				
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001				
Minto Mine, YT		6945115N; 385838.6E; Zone 8		ELEVATION: 736.898m				
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80		
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		
10								
11								726.0
12			G6					725.0
13	BEDROCK - granite with pegmatite inclusions, highly weathered							724.0
14								723.0
15								722.0
16								721.0
17								720.0
18	END OF BOREHOLE at 17.4 m - installed inclinometer to 720.2 m - azimuth of A+ direction is ____ m							719.0
19								718.0
20								717.0



**EBA Engineering Consultants Ltd.**

LOGGED BY: JGD	COMPLETION DEPTH: 17.4m
REVIEWED BY: BC & JGD	COMPLETE: 11/15/2010
DRAWING NO:	Page 2 of 2



Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DST-6								
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001								
Minto Mine, YT		6944832.401N; 385729.963E; Zone 8		ELEVATION: 774.958m								
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE					
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND					
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C.		LIQUID		Thermistor	Elevation (m)
					20	40	60	80	20	40		
0	TAILINGS											
1				- Nbn, potential seasonal frost								
2												
3	SAND AND GRAVEL (FILL): trace silt, gravel < 40mm, subangular gravel, orangy brown TAILINGS			- Nbn								
4												
5												
6												
7												
8												
9												
10	SAND AND GRAVEL (FILL): trace silt, gravel < 20 mm, subangular gravel, orangy brown TAILINGS			- Nbn								
11												
12	ORGANICS: some silt, trace gravel, gravel subrounded, dark brown SAND: some silt, trace gravel, subrounded gravel, dark brown			- Nbn - Vr < 2%, lenses 1-2 mm thick								
13			G1									
14	- silty		G2									
15												



**EBA Engineering Consultants Ltd.**

LOGGED BY: JSB & MD

REVIEWED BY: JPB

DRAWING NO:

COMPLETION DEPTH: 20.7m

COMPLETE: 1/27/2010

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Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DST-6								
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001								
Minto Mine, YT		6944832.401N; 385729.963E; Zone 8		ELEVATION: 774.958m								
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE					
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND					
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C.		LIQUID		Thermistor	Elevation (m)
					20	40	60	80	20	40		
15												
16												759.0
17												758.0
18	- organic inclusions, dark brown		G3									757.0
19	- gravelly, < 6 mm, subangular to angular		G4	- Vs < 5%, lenses < 2mm thick - Vc < 10%								756.0
20												755.0
21	END OF BOREHOLE at 20.7 m - backfilled with grout 20.7 m to surface - DST-6 beads between 778.3 m and 786.7 m (three beads above ground)											754.0
22												753.0
23												752.0
24												751.0
25												750.0
26												749.0
27												748.0
28												747.0
29												746.0
30												745.0



**EBA Engineering Consultants Ltd.**

LOGGED BY: JSB & MD	COMPLETION DEPTH: 20.7m
REVIEWED BY: JPB	COMPLETE: 1/27/2010
DRAWING NO:	Page 2 of 2

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DST-7							
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001							
Minto Mine, YT		6944855.942N; 385482.201E; Zone 8		ELEVATION: 777.599m							
SAMPLE TYPE		<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE				
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND				
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C.		LIQUID		Thermistor	Elevation (m)
				20	40	60	80	20	40		
0	TAILINGS		- Nbn								777.0
1											776.0
2											775.0
3	- at 2.4 m, sandy silty, some gravel, angular to subangular, dark grey										774.0
4	ROCK FILL: gravelly, subrounded, medium to dark brown										773.0
5											772.0
6											771.0
7	SAND (TILL): some silt, gravelly, well graded, fine to medium grained, subrounded particles, dark grey										770.0
8											769.0
9	- some cobbles										768.0
10											767.0
11											766.0
12											765.0
13											764.0
14	- trace gravel, fine grained										763.0
15											



**EBA Engineering Consultants Ltd.**

LOGGED BY: JSB & MD	COMPLETION DEPTH: 28.3m
REVIEWED BY: JPB	COMPLETE: 1/28/2010
DRAWING NO:	Page 1 of 2

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DST-7				
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001				
Minto Mine, YT		6944855.942N; 385482.201E; Zone 8		ELEVATION: 777.599m				
SAMPLE TYPE		<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		CLAY (%)	Thermistor	Elevation (m)
				20 40 60 80	20 40 60 80	20 40 60 80		
				PLASTIC M.C.	LIQUID	SILT (%)		
				20 40 60 80	20 40 60 80	20 40 60 80		
						SAND (%)		
						20 40 60 80		
						GRAVEL (%)		
						20 40 60 80		
15								762.0
16	- some sand, some clay							761.0
17								760.0
18								759.0
19								758.0
20								757.0
21								756.0
22								755.0
23	- trace to no clay, gravel < 60 mm, dark greyish brown		- Vs, 100 mm thick ice lens					754.0
24								753.0
25			- Nbn					752.0
26								751.0
27								750.0
28								749.0
29	END OF BOREHOLE at 28.3 m - backfilled with grout from 28.3 m to 2.4 m - backfilled with tailings from 2.4 m to surface - DST-7 beads between 770.5 m and 750.5 m							748.0
30								



**EBA Engineering Consultants Ltd.**

LOGGED BY: JSB & MD

REVIEWED BY: JPB

DRAWING NO:

COMPLETION DEPTH: 28.3m

COMPLETE: 1/28/2010

Page 2 of 2



Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DST /P-3					
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001					
Minto Mine, YT		6944995.395N; 385750.646E; Zone 8		ELEVATION: 756.633m					
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE		
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input checked="" type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input checked="" type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input checked="" type="checkbox"/> SAND		
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	<input type="checkbox"/> Bulk Density(kg/m <sup>3</sup> ) <input type="checkbox"/>		◆ CLAY (%) ◆ 20 40 60 80 ● SILT (%) ● 20 40 60 80 ▲ SAND (%) ▲ 20 40 60 80 ■ GRAVEL (%) ■ 20 40 60 80	Vibrating Wire Vibrating Wire Thermistor	Elevation (m)
					PLASTIC M.C. LIQUID 20 40 60 80				
0	WASTE ROCK FILL								756.0
1									755.0
2									754.0
3	GRAVEL: sandy, silty, well graded sub-rounded gravel, medium to coarse grained angular sand, dark greyish brown								753.0
4									752.0
5	- at 4.5 m, gravel and sand								751.0
6			G1	- Nbn - Vx < 1-2%					750.0
7									749.0
8			G2						748.0
9	SILT (TILL): sandy, some gravel, subrounded gravel, dark greyish brown		G3	- Nbn - Vx < 2%					747.0
10			G4						746.0
11			G5	- from 10-10.1 m Vr < 10 mm thick					745.0
12			G6	- occasional ice lenses < 15 mm					744.0
13	END OF BOREHOLE at 12.3 m - backfilled with grout from 12.3 m to 2.1 m - backfilled with bentonite chips from 2.1 m to surface - DSP-3A tip elevation at 753.5 m - DSP-3B tip elevation at 752.8 m - DST-3 beads between 755.5 m and 744.5 m		G7						743.0
14									742.0
15									



**EBA Engineering Consultants Ltd.**

LOGGED BY: JSB & MD

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DRAWING NO:

COMPLETION DEPTH: 12.3m

COMPLETE: 1/22/2010

Page 1 of 1

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DST/P-4					
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001					
Minto Mine, YT		6944927.605N; 385731.584E; Zone 8		ELEVATION: 773.141m					
SAMPLE TYPE		<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE		
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND		
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	<input type="checkbox"/> Bulk Density(kg/m <sup>3</sup> ) <input type="checkbox"/> 20 40 60 80		<input checked="" type="checkbox"/> CLAY (%) <input checked="" type="checkbox"/> 20 40 60 80	Vibrating Wire Vibrating Wire Thermistor	Elevation (m)
					PLASTIC M.C. LIQUID 20 40 60 80	<input type="checkbox"/> SILT (%) <input type="checkbox"/> 20 40 60 80	<input type="checkbox"/> SAND (%) <input type="checkbox"/> 20 40 60 80		
0	WASTE ROCK FILL								773.0
1									772.0
2									771.0
3									770.0
4									769.0
5									768.0
6									767.0
7									766.0
8									765.0
9									764.0
10									763.0
11									762.0
12									761.0
13									760.0
14	Ground surface based on contour information, poor recovery								759.0
15									758.0
16									



**EBA Engineering Consultants Ltd.**

LOGGED BY: JSB & MD	COMPLETION DEPTH: 28.3m
REVIEWED BY: JPB	COMPLETE: 1/26/2010
DRAWING NO:	Page 1 of 2

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-DST/P-4												
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001												
Minto Mine, YT		6944927.605N; 385731.584E; Zone 8		ELEVATION: 773.141m												
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE									
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND									
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density (kg/m <sup>3</sup> )		PLASTIC M.C. LIQUID		CLAY (%)	SILT (%)	SAND (%)	GRAVEL (%)	Vibrating Wire	Vibrating Wire	Thermistor	Elevation (m)
					20	40	60	80								
16																757.0
17	SAND: some silt, trace organics, fine grained, dark brown, slight organic odour			- Nbn - Vx < 1%												756.0
18	- no organics		G1													755.0
19	- some coarse grained sand, trace fine grained subangular gravel		G2	- Nbn - Vx < 1.0% - Vr < 1-2%, lenses 1-5 mm thick												754.0
20	- cobbles < 120 mm		G3	- Vc < 20%												753.0
21																752.0
22																751.0
23	SAND (TILL): silty, gravelly, trace clay, gravel < 200 mm, gravel subangular and angular, dark greyish brown			- Nbn - Vr < 2.5%, lenses 1-2 mm thick												750.0
24			G4													749.0
25																748.0
26			G5	- Vc < 10%												747.0
27																746.0
28																745.0
29	END OF BOREHOLE at 28.3 m - core barrel left in ground from 25.3 m to 28.3 m - backfilled with grout from 28.3 m to 0.5 m - backfilled with bentonite chips from 0.5 m to surface - DSP-4A tip elevation at 755.2 m - DSP-4B tip elevation at 754.5 m - DST-4 beads between 773.1 m and 752.1 m															744.0
30																743.0
31																742.0
32																



**EBA Engineering Consultants Ltd.**

LOGGED BY: JSB & MD

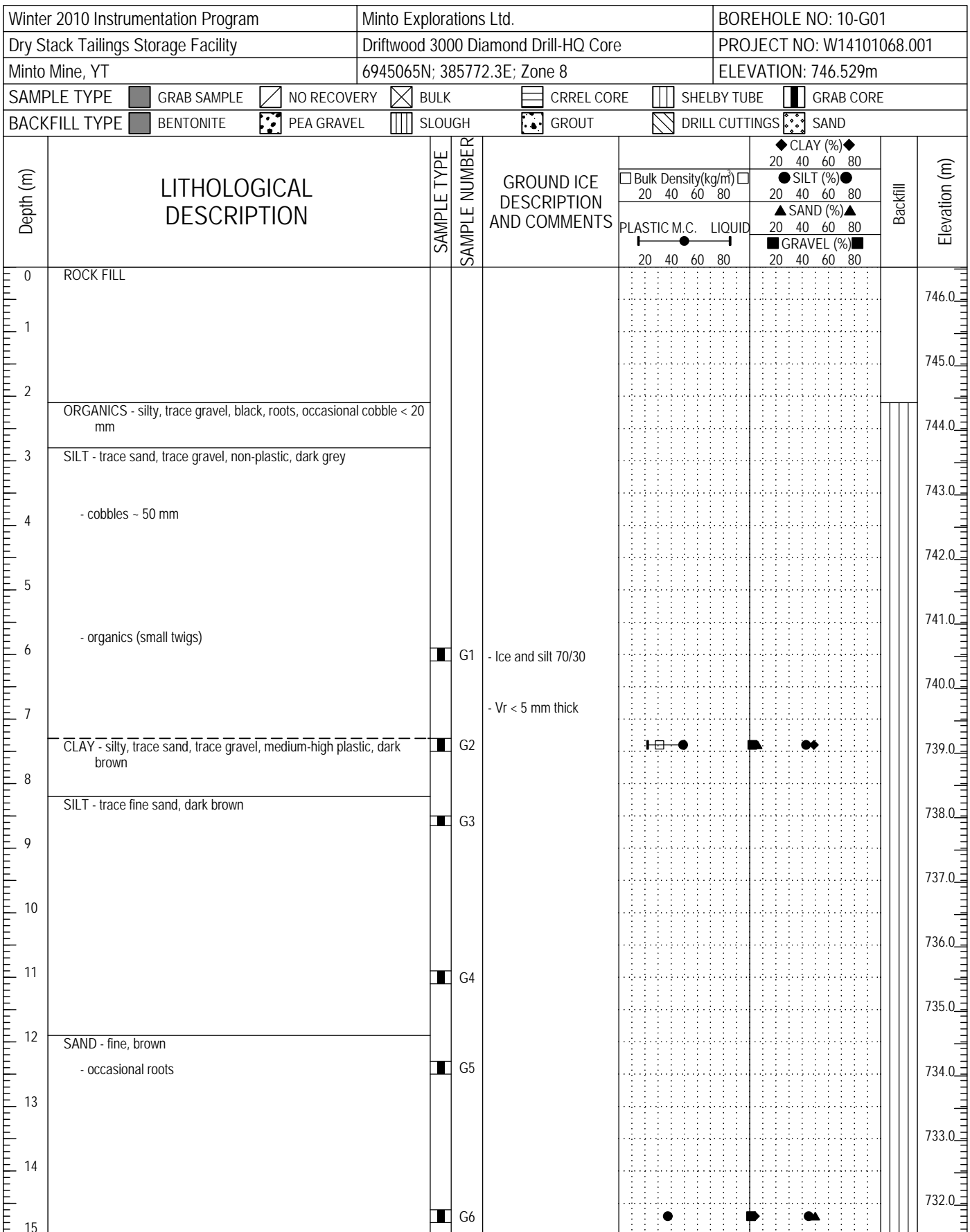
REVIEWED BY: JPB

DRAWING NO:

COMPLETION DEPTH: 28.3m

COMPLETE: 1/26/2010

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**EBA Engineering Consultants Ltd.**

LOGGED BY: KDJ	COMPLETION DEPTH: 22m
REVIEWED BY: BC & JGD	COMPLETE: 11/14/2010
DRAWING NO:	Page 1 of 2



Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-G01								
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001								
Minto Mine, YT		6945065N; 385772.3E; Zone 8		ELEVATION: 746.529m								
SAMPLE TYPE		<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE					
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND					
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C. LIQUID		Backfill	Elevation (m)		
					20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80				
15	BEDROCK - boulder then highly weathered, orangy brown	<input checked="" type="checkbox"/>	G7							731.0		
16											730.0	
17											729.0	
18											728.0	
19					G8						728.0	
20											727.0	
21											726.0	
22											725.0	
23											724.0	
24											723.0	
25											722.0	
26											721.0	
27											720.0	
28											719.0	
29											718.0	
30											717.0	
			END OF BOREHOLE at 22.0 m									724.0



**EBA Engineering Consultants Ltd.**

LOGGED BY: KDJ	COMPLETION DEPTH: 22m
REVIEWED BY: BC & JGD	COMPLETE: 11/14/2010
DRAWING NO:	Page 2 of 2

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-G02								
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001								
Minto Mine, YT		6945062N; 385856.1E; Zone 8		ELEVATION: 752.619m								
SAMPLE TYPE		GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE					
BACKFILL TYPE		BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND					
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C.		LIQUID		Backfill	Elevation (m)
					20	40	20	40	60	80		
0	FILL - sand and gravel, trace fines, cobbles and boulders (waste rock)											752.0
1	ORGANIC SILT - some sand, dark brown		G1	- Nbn - Vs - Ice and silt, stratified layers ~10-15 mm thick								751.0
2												
3	SILT AND SAND - some clay, trace gravel, low to medium plastic, dark brown to grey		G2	- Vs 8-10 mm thick lenses - Ice and silt								750.0
4			G3									749.0
5	CLAY - silty, trace sand, trace gravel, medium to high plastic, brown to grey		G4	- Vr 20%								748.0
6												747.0
7	ICE AND CLAY - some silt, trace sand, medium to high plastic, grey		G5	- Vr/Vs 35 %								746.0
8			G6									745.0
9												744.0
10			G7									743.0
11			G8									742.0
12	CLAY - trace silt, trace sand, medium plastic, grey		G9									741.0
13												740.0
14			G10									739.0
15												738.0



**EBA Engineering Consultants Ltd.**

LOGGED BY: JGD & KDJ	COMPLETION DEPTH: 26.5m
REVIEWED BY: BC & JGD	COMPLETE: 11/15/2010
DRAWING NO:	Page 1 of 2

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-G02						
Dry Stack Tailings Storage Facility		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.001						
Minto Mine, YT		6945062N; 385856.1E; Zone 8		ELEVATION: 752.619m						
SAMPLE TYPE		<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE			
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND			
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C. LIQUID		Backfill	Elevation (m)
					20	40	60	80		
15		<input checked="" type="checkbox"/>	G11							737.0
16		<input checked="" type="checkbox"/>	G12							736.0
17	- trace fine gravel			-Vr 30%						735.0
18		<input checked="" type="checkbox"/>	G13	- Ice and clay 50/50						734.0
19										733.0
20	SAND - some gravel, some clay, poorly graded, fine grained gravel, medium grained sand, greyish brown, frozen	<input checked="" type="checkbox"/>	G14							732.0
21	CLAY - trace gravel, medium plastic, greyish brown	<input checked="" type="checkbox"/>	G15							731.0
22	SAND (RESIDUUM) - trace gravel, poorly graded, fine grained sand, brown									730.0
23	BEDROCK - grey	<input checked="" type="checkbox"/>	G16							729.0
24										728.0
25										727.0
26	- becomes reddish brown	<input checked="" type="checkbox"/>	G17							726.0
27	END OF BOREHOLE at 26.5 m									725.0
28										724.0
29										723.0
30										

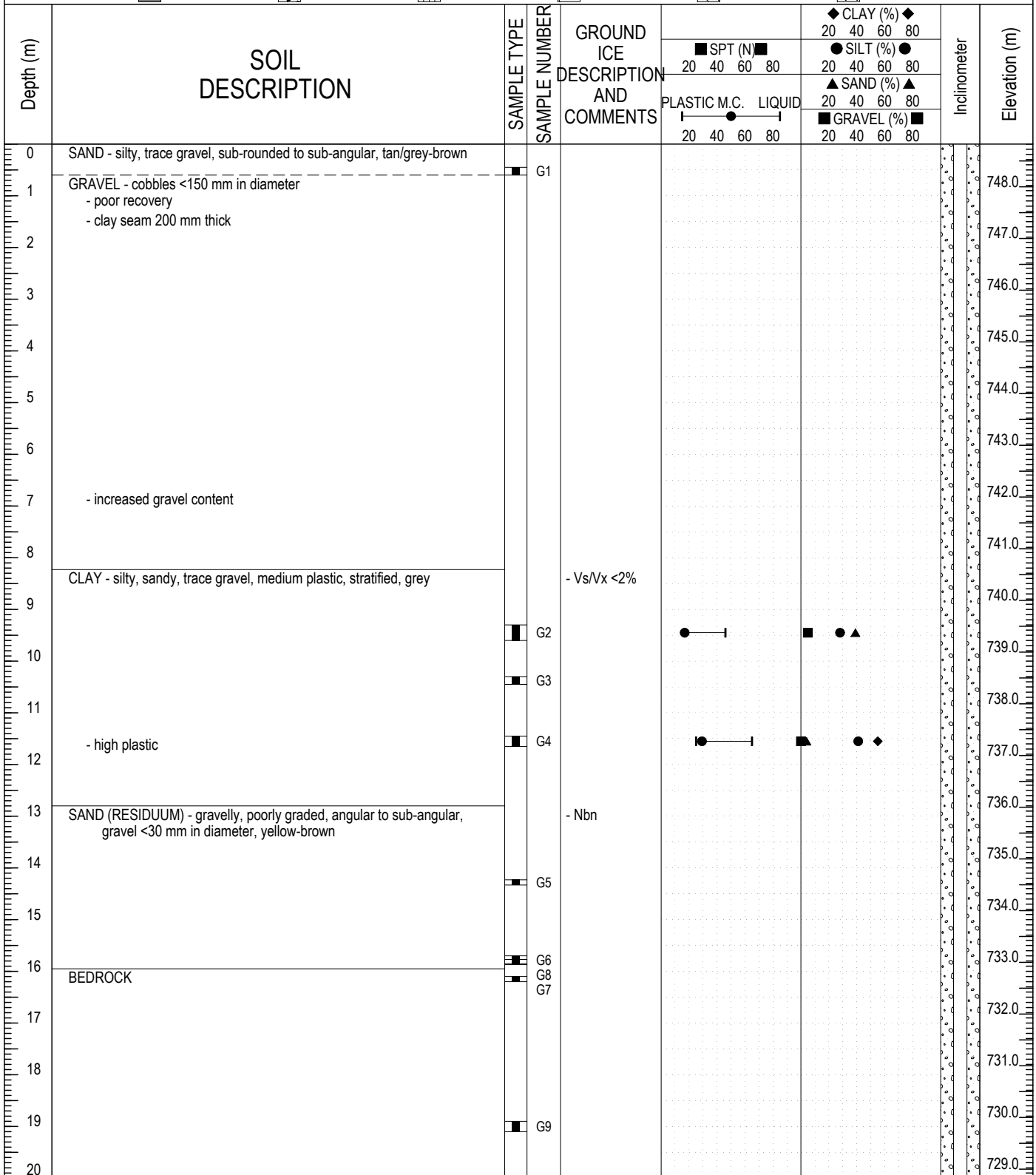



**EBA Engineering Consultants Ltd.**

LOGGED BY: JGD & KDJ	COMPLETION DEPTH: 26.5m
REVIEWED BY: BC & JGD	COMPLETE: 11/15/2010
DRAWING NO:	Page 2 of 2

Winter 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-DSI-12
Dry Stack Tailings Storage Facility	DRILL: 3000 Diamond Drill, HQ Core	PROJECT NO: W14101068.033
Minto Mine, YT	6945117.38N; 385981.036E; Zone 8	ELEVATION: 748.826m

SAMPLE TYPE	GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE
BACKFILL TYPE	BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND




 A TETRA TECH COMPANY	LOGGED BY: AT & SMC	COMPLETION DEPTH: 37.19m
	REVIEWED BY: JGD	COMPLETE: 1/14/2011
	DRAWING NO:	Page 1 of 2



Winter 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-DSI-12
Dry Stack Tailings Storage Facility	DRILL: 3000 Diamond Drill, HQ Core	PROJECT NO: W14101068.033
Minto Mine, YT	6945117.38N; 385981.036E; Zone 8	ELEVATION: 748.826m

SAMPLE TYPE	<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND


Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C. LIQUID		CLAY (%) SILT (%) SAND (%) GRAVEL (%)		Inclinometer	Elevation (m)
					20	40	60	80	20	40		
20												728.0
21												727.0
22			G10 G11									726.0
23												725.0
24			G12									724.0
25			G13									723.0
26												722.0
27												721.0
28												720.0
29												719.0
30												718.0
31												717.0
32												716.0
33												715.0
34												714.0
35												713.0
36												712.0
37												711.0
38	END OF BOREHOLE @ 37.2 m - CONFIRMED BEDROCK											710.0
39												709.0
40												709.0

 A TETRA TECH COMPANY	LOGGED BY: AT & SMC	COMPLETION DEPTH: 37.19m
	REVIEWED BY: JGD	COMPLETE: 1/14/2011
	DRAWING NO:	Page 2 of 2

Winter 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G01
Dry Stack Tailings Storage Facility	DRILL: 3000 Diamond Drill, HQ Core	PROJECT NO: W14101068.033
Minto Mine, YT	6945149.321N; 3856934E; Zone 8	ELEVATION: 735.267m

SAMPLE TYPE	<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND


Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C.		LIQUID		Elevation (m)
					20	40	20	40	60	80	
0	ROCK FILL		G1								735.0
0.5	ORGANICS - peat			- 2 mm thick ice lens							
1	SAND - silty, some gravel, trace clay, poorly graded, sub-rounded to sub-angular, greyish brown, occasional organics		G2								734.0
2			G3								733.0
4	- becomes gravelly, trace cobbles <150 mm in diameter		G4								731.0
5											730.0
6	- some cobbles - boulder										729.0
7											728.0
8											727.0
9	SILT - sandy, trace gravel, trace clay, non-plastic, dark brown, occasional organics, strong organic odour		G5	Nbn							726.0
10	- boulder										725.0
10	SAND - gravelly, trace silt, trace cobbles, poorly graded sub-angular to angular, cobbles <75 mm in diameter, grey		G6								724.0
11											723.0
12	GRAVEL and SAND (RESIDUUM) - trace silt and clay, some cobbles, poorly graded, sub-angular to angular, cobbles <100 mm in diameter, grey										722.0
13			G7								721.0
13	BEDROCK										

	LOGGED BY: AT & SMC	COMPLETION DEPTH: 21.95m
	REVIEWED BY: JGD	COMPLETE: 1/11/2011
	DRAWING NO:	Page 1 of 2

Winter 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G01
Dry Stack Tailings Storage Facility	DRILL: 3000 Diamond Drill, HQ Core	PROJECT NO: W14101068.033
Minto Mine, YT	6945149.321N; 3856934E; Zone 8	ELEVATION: 735.267m

SAMPLE TYPE	<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND


Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C.		LIQUID		Elevation (m)
					20	40	20	40	60	80	
15			G8								720.0
16			G9								719.0
17											718.0
18			G10								717.0
19											716.0
20											715.0
21											714.0
22	END OF BOREHOLE @ 22.0 m - CONFIRMED BEDROCK										713.0
23											712.0
24											711.0
25											710.0
26											709.0
27											708.0
28											707.0
29											706.0
30											706.0

 A TETRA TECH COMPANY	LOGGED BY: AT & SMC	COMPLETION DEPTH: 21.95m
	REVIEWED BY: JGD	COMPLETE: 1/11/2011
	DRAWING NO:	Page 2 of 2

Winter 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G08
Dry Stack Tailings Storage Facility	DRILL: 3000 Diamond Drill, HQ Core	PROJECT NO: W14101068.033
Minto Mine, YT	6945210.147N; 386049.964E; Zone 8	ELEVATION: 730.693m

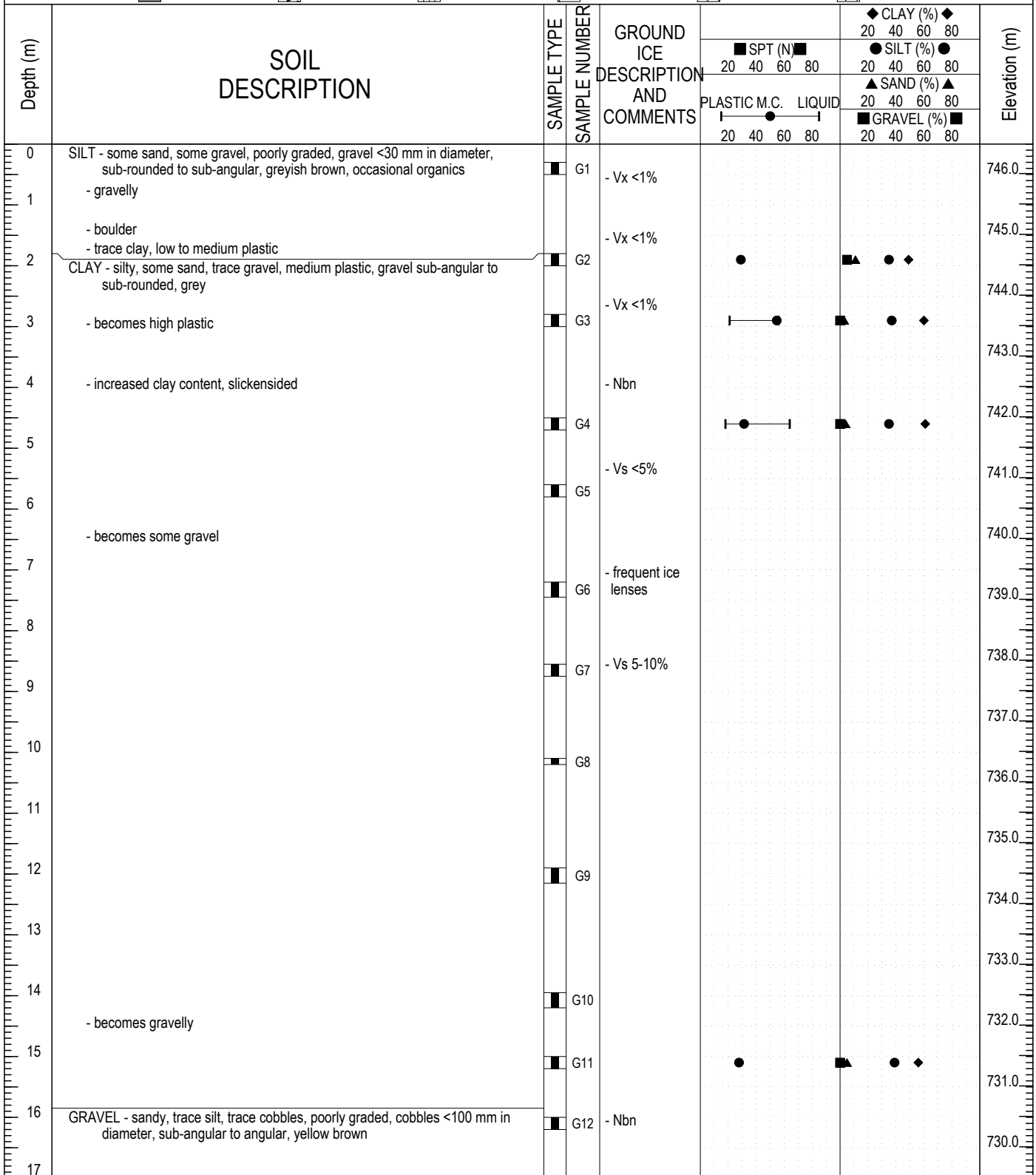
SAMPLE TYPE	GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE
BACKFILL TYPE	BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND


Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C.		LIQUID		Elevation (m)
					20	40	20	40	60	80	
0	ORGANICS - peat, gravelly CLAY - silty, sandy, trace gravel, medium plastic, dark brown, occasional roots	■	G1	- Nbn, Vx <1%							730.0
1	- no roots	■	G2	- Nbn, Vx <3%, Vr <10%	—	●	■	◆	●		729.0
2											
3		■	G3	- Nbn, Vx <1%, Vr <1%							728.0
4	SILT and SAND - some gravel, trace cobbles, non plastic, dark brown			- Nbn, Vx <1%, Vr							727.0
5	CLAY - silty, sandy, gravelly, non plastic, dark brown, foul odour, abundant organics	■	G4	- Vr				●			726.0
6		■	G5								725.0
7	SAND (RESIDUUM) - gravelly, trace silt and clay, sub-angular to angular, brown			- Nbn to Nbe, Vx <4%							724.0
8	- becomes more coarse and angular - light brown to orange	■	G6					●	■	▲	723.0
9	BEDROCK - highly weathered, angular			- Nbn to Nbe							722.0
10	- bedrock becomes more competent			- 10 mm thick ice lens, clear							721.0
11											720.0
12											719.0
13											718.0
14	END OF BOREHOLE @ 13.4 m - CONFIRMED BEDROCK										717.0
15											716.0

	LOGGED BY: AT & SMC	COMPLETION DEPTH: 13.4m
	REVIEWED BY: JGD	COMPLETE: 1/12/2011
	DRAWING NO:	Page 1 of 1

Winter 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G09
Dry Stack Tailings Storage Facility	DRILL: 3000 Diamond Drill, HQ Core	PROJECT NO: W14101068.033
Minto Mine, YT	6945164.655N; 386080.323E; Zone 8	ELEVATION: 746.484m

SAMPLE TYPE	GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE
BACKFILL TYPE	BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND




	LOGGED BY: AT & SMC	COMPLETION DEPTH: 31.1m
	REVIEWED BY: JGD	COMPLETE: 1/12/2011
	DRAWING NO:	Page 1 of 2



Winter 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G09
Dry Stack Tailings Storage Facility	DRILL: 3000 Diamond Drill, HQ Core	PROJECT NO: W14101068.033
Minto Mine, YT	6945164.655N; 386080.323E; Zone 8	ELEVATION: 746.484m

<b>SAMPLE TYPE</b>	<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE
<b>BACKFILL TYPE</b>	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C. LIQUID		CLAY (%)	SILT (%)	SAND (%)	GRAVEL (%)	Elevation (m)
					20	40	60	80	20	40	60	80	
17	SAND (RESIDUUM) - gravelly, trace silt, poorly graded, gravel <30 mm in diameter, sub-angular to angular  - angular	█	G13	- Nbn									729.0
18													728.0
19													727.0
20													726.0
21	BEDROCK - highly weathered												725.0
22													724.0
23													723.0
24													722.0
25													721.0
26													720.0
27													719.0
28													718.0
29													717.0
30													716.0
31	END OF BOREHOLE @ 31.1 m - CONFIRMED BEDROCK												715.0
32													714.0
33													713.0
34													713.0


 A TETRA TECH COMPANY	LOGGED BY: AT & SMC	COMPLETION DEPTH: 31.1m
	REVIEWED BY: JGD	COMPLETE: 1/12/2011
	DRAWING NO:	Page 2 of 2

Winter 2011 Geotechnical Drilling		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 11-G10							
Dry Stack Tailings Storage Facility		DRILL: 3000 Diamond Drill, HQ Core		PROJECT NO: W14101068.033							
Minto Mine, YT		6945102.749N; 385514.177E; Zone 8		ELEVATION: 751.715m							
SAMPLE TYPE		GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE				
BACKFILL TYPE		BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND				
Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C.		LIQUID		Elevation (m)
					20	40	60	80	20	40	
0	SAND - some silt, trace clay, trace gravel, yellow brown, occasional organics	█	G1	- Nbn							751.0
1	- no more organics										
2	- becomes some gravel	█	G2								750.0
3		█	G3								749.0
4	SAND - trace gravel, trace silt and clay, angular to sub-angular, greyish brown	█	G4	- Vs <2%							748.0
5											747.0
6	SILT and SAND - trace clay, trace gravel <15 mm in diameter, angular to sub-angular, non-plastic, brownish grey	█	G5	- Vs <2%							746.0
7	- some gravel for 400 mm	█	G6								745.0
8	- boulder										744.0
9	SAND - gravelly, gravel <25 mm in diameter, angular, yellow brown	█	G7								743.0
10	SAND (RESIDUUM) - some gravel, trace silt and clay, trace boulders, poorly graded, angular, yellow brown										742.0
11		█	G8								741.0
12		█	G9								740.0
LOGGED BY: AT & SMC				COMPLETION DEPTH: 21.95m							
REVIEWED BY: JGD				COMPLETE: 1/16/2011							
DRAWING NO:				Page 1 of 2							

Winter 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G10
Dry Stack Tailings Storage Facility	DRILL: 3000 Diamond Drill, HQ Core	PROJECT NO: W14101068.033
Minto Mine, YT	6945102.749N; 385514.177E; Zone 8	ELEVATION: 751.715m

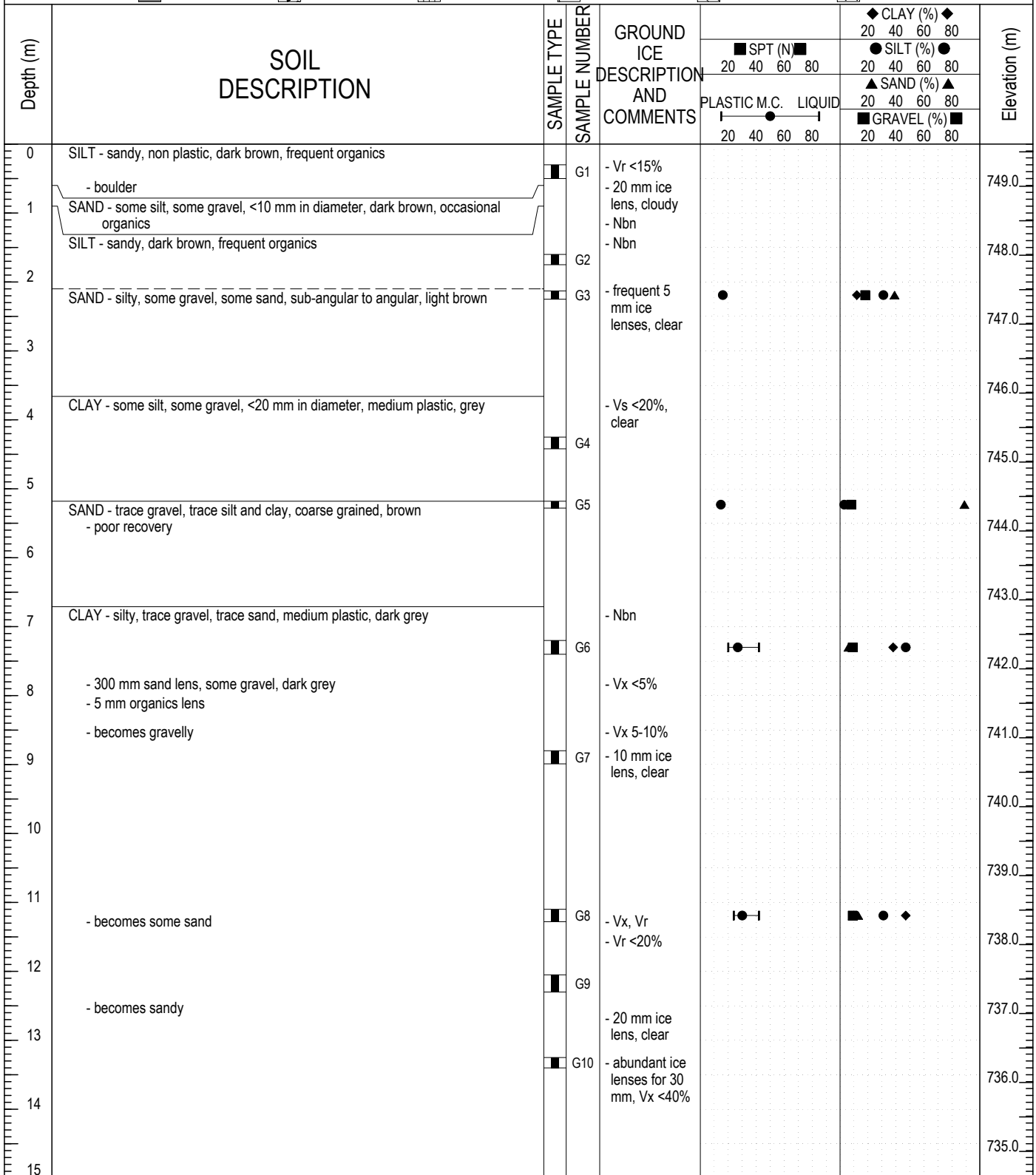
SAMPLE TYPE	<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C.		LIQUID		Elevation (m)
					20	40	20	40	60	80	
12											739.0
13											738.0
14	- some cobbles and boulders		G10								737.0
15											736.0
16	- becomes trace silt										735.0
17	BEDROCK - weathered		G11								734.0
18											733.0
19	- bedrock more competent		G12								732.0
20											731.0
21											730.0
22	END OF BOREHOLE @ 21.9 m - CONFIRMED BEDROCK										729.0
23											728.0
24											728.0


 A TETRA TECH COMPANY	LOGGED BY: AT & SMC	COMPLETION DEPTH: 21.95m
	REVIEWED BY: JGD	COMPLETE: 1/16/2011
	DRAWING NO:	Page 2 of 2

Winter 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G11
Dry Stack Tailings Storage Facility	DRILL: 3000 Diamond Drill, HQ Core	PROJECT NO: W14101068.033
Minto Mine, YT	6945094.013N; 385571.438E; Zone 8	ELEVATION: 749.612m

SAMPLE TYPE	GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE
BACKFILL TYPE	BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND



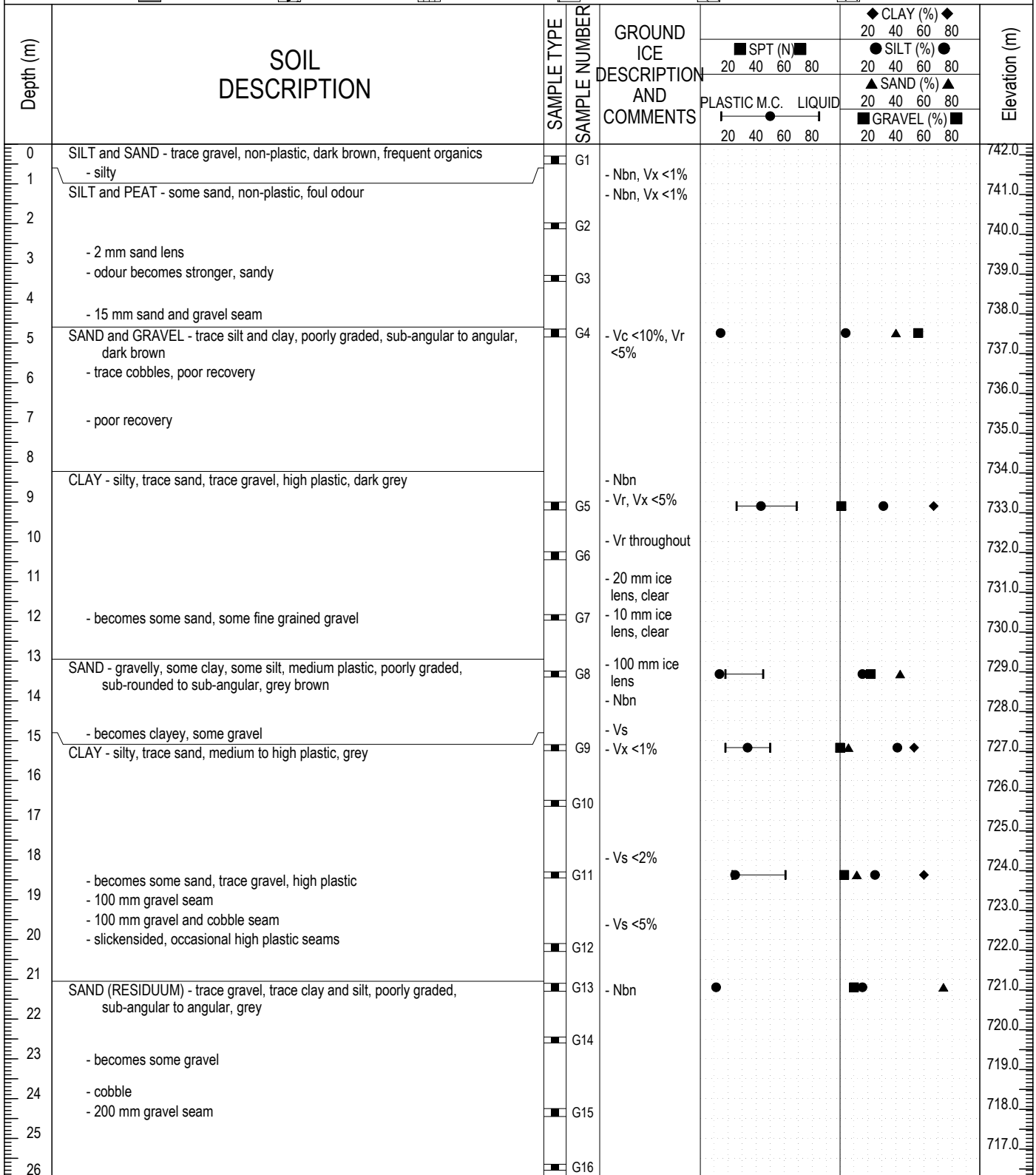
	LOGGED BY: AT & SMC	COMPLETION DEPTH: 26.52m
	REVIEWED BY: JGD	COMPLETE: 1/17/2011
	DRAWING NO:	Page 1 of 2


Winter 2011 Geotechnical Drilling		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 11-G11							
Dry Stack Tailings Storage Facility		DRILL: 3000 Diamond Drill, HQ Core		PROJECT NO: W14101068.033							
Minto Mine, YT		6945094.013N; 385571.438E; Zone 8		ELEVATION: 749.612m							
SAMPLE TYPE		GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE				
BACKFILL TYPE		BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND				
Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C.		LIQUID		Elevation (m)
					20	40	20	40	60	80	
15											734.0
16	- some silt, trace to some gravel, medium plastic			- Nbn, Vs - 20 mm ice lens, clear							733.0
17	- becomes trace sand  - becomes some gravel and sand	█	G11								732.0
18	SAND - some silt, some gravel, light reddish brown			- Nbn							
19	SILT - sandy, some gravel, trace clay, <10 mm in diameter, sub-angular to angular, non to low plastic, brown	█	G12	- Vs							731.0
20	SAND - silty, trace gravel, trace clay, non to low plastic, brown	█	G13	- Vx <1% - 5 mm thick ice lens, clear							730.0
21											729.0
22	SAND (RESIDUUM)										728.0
23	BEDROCK										727.0
24											726.0
25											725.0
26											724.0
27	END OF BOREHOLE @ 26.5 m - CONFIRMED BEDROCK										723.0
28											722.0
29											721.0
30											720.0
				LOGGED BY: AT & SMC		COMPLETION DEPTH: 26.52m					
				REVIEWED BY: JGD		COMPLETE: 1/17/2011					
				DRAWING NO:		Page 2 of 2					



Winter 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G13
Dry Stack Tailings Storage Facility	DRILL: 3000 Diamond Drill, HQ Core	PROJECT NO: W14101068.033
Minto Mine, YT	6945191.54N; 386140.942E; Zone 8	ELEVATION: 742.269m

<b>SAMPLE TYPE</b>	GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE
<b>BACKFILL TYPE</b>	BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND




	LOGGED BY: AT & SMC	COMPLETION DEPTH: 49.38m
	REVIEWED BY: JGD	COMPLETE: 1/13/2011
	DRAWING NO:	Page 1 of 2

Winter 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G13
Dry Stack Tailings Storage Facility	DRILL: 3000 Diamond Drill, HQ Core	PROJECT NO: W14101068.033
Minto Mine, YT	6945191.54N; 386140.942E; Zone 8	ELEVATION: 742.269m

SAMPLE TYPE	<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C.		LIQUID		Elevation (m)
					20	40	20	40	60	80	
26	- gravel <50 mm										716.0
27											715.0
28			G17								714.0
29											713.0
30			G18								712.0
31	- becomes gravelly, brown										711.0
32	- 100 mm cobble										710.0
33	- cobble		G19								709.0
34	- becomes coarse grained										708.0
35	- abundant cobbles and boulders		G20								707.0
36											706.0
37											705.0
38	BEDROCK - highly fractured, silt and gravel filled joints		G21								704.0
39											703.0
40			G22								702.0
41											701.0
42											700.0
43											699.0
44	- 500 mm sand seam, trace gravel, angular		G23								698.0
45											697.0
46	- rock becomes more competent										696.0
47											695.0
48											694.0
49											693.0
50	END OF BOREHOLE @ 49.4 m - CONFIRMED BEDROCK		G24								692.0
51											691.0
52											690.0

 A TETRA TECH COMPANY	LOGGED BY: AT & SMC	COMPLETION DEPTH: 49.38m
	REVIEWED BY: JGD	COMPLETE: 1/13/2011
	DRAWING NO:	Page 2 of 2

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-MDI-1				
Main Waste Dump		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.008				
Minto Mine, YT		6944923.137N; 384117.207E; Zone 8		ELEVATION: 858.6001m				
SAMPLE TYPE		<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		CLAY (%)	Slope Indicator	Elevation (m)
				20 40 60 80	20 40 60 80	20 40 60 80		
				PLASTIC M.C.	LIQUID	SILT (%)		
				20 40 60 80	20 40 60 80	20 40 60 80		
						SAND (%)		
						20 40 60 80		
						GRAVEL (%)		
						20 40 60 80		
0	WASTE ROCK FILL							858.0
1								857.0
2								856.0
3	SAND (TILL): silty, some gravel, poorly graded, medium grained sand, trace cobbles < 80 mm, angular, brown, slightly to highly weathered granite cobbles of medium strength							855.0
4	- gravelly, < 75 mm, subangular							854.0
5								853.0
6	- gravel < 50 mm, angular							852.0
7								851.0
8	- 80 mm cobble							850.0
9								849.0
10								848.0
11	- dark brown							847.0
12								846.0
13	- trace gravel, coarse grained sand							845.0
14	- gravel < 60 mm, subangular							844.0
15	- gravel < 30 mm, subangular							



**EBA Engineering Consultants Ltd.**

LOGGED BY: RM & MD	COMPLETION DEPTH: 23.8m
REVIEWED BY: JPB	COMPLETE: 2/6/2010
DRAWING NO:	Page 1 of 2

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-MDI-1			
Main Waste Dump		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.008			
Minto Mine, YT		6944923.137N; 384117.207E; Zone 8		ELEVATION: 858.6001m			
SAMPLE TYPE		<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
				20 40 60 80	20 40 60 80		
				PLASTIC M.C.	LIQUID		
				20 40 60 80	20 40 60 80		
15							843.0
16	BEDROCK: granite, slightly weathered, slightly friable, oxide stained joints						842.0
17							841.0
18	- no longer friable						840.0
19							839.0
20	- friable						838.0
21							837.0
22							836.0
23							835.0
24	END OF BOREHOLE at 23.8 m - set HW casing 1.2 m below OG - installed inclinometer to 836.3 m - azimuth of A+ direction is 130°						834.0
25							833.0
26							832.0
27							831.0
28							830.0
29							829.0
30							



**EBA Engineering Consultants Ltd.**

LOGGED BY: RM & MD

REVIEWED BY: JPB

DRAWING NO:

COMPLETION DEPTH: 23.8m

COMPLETE: 2/6/2010

Page 2 of 2

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-MDI-2						
Main Waste Dump		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.008						
Minto Mine, YT		6945013.0801N; 384217.204E; Zone 8		ELEVATION: 858.3001m						
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE			
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND			
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C. LIQUID		Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80		
0	WASTE ROCK FILL									858.0
1										857.0
2										856.0
3										855.0
4										854.0
5										853.0
6										852.0
7										851.0
8										850.0
9	SAND AND GRAVEL FILL									849.0
10										848.0
11	PEAT: fine fibrous, graded to amorphous granular, brown to black SAND: silty, trace gravel, poorly graded, fine grained sand, gravel < 10 mm angular to subangular, brown									847.0
12	- some gravel, < 20 mm subrounded to subangular									846.0
13		<input checked="" type="checkbox"/>	G1							845.0
14	- trace silt, well graded, fine to medium grained sand, gravel < 10 mm angular and subangular	<input checked="" type="checkbox"/>	G2							844.0
15	- gravel < 30 mm subangular									844.0



**EBA Engineering Consultants Ltd.**

LOGGED BY: RM, MD & JD	COMPLETION DEPTH: 51.6m
REVIEWED BY: JPB	COMPLETE: 2/5/2010
DRAWING NO:	Page 1 of 4



Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-MDI-2				
Main Waste Dump		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.008				
Minto Mine, YT		6945013.0801N; 384217.204E; Zone 8		ELEVATION: 858.3001m				
SAMPLE TYPE		GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE	
BACKFILL TYPE		BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80		
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		
							CLAY (%)	
							20 40 60 80	
							SILT (%)	
							20 40 60 80	
							SAND (%)	
							20 40 60 80	
							GRAVEL (%)	
							20 40 60 80	
15								843.0
16								842.0
17								841.0
18	- gravel < 40 mm subangular							840.0
19	- 100 mm cobble							839.0
20	SAND (TILL): silty, some gravel, poorly graded sand, fine grained gravel < 20 mm subangular greyish brown							838.0
21		G3						837.0
22		G4		- Vs, abundant 5 mm thick ice lenses, clear				836.0
23								835.0
24		G5		- Nbn - Vs, abundant 1-4 mm thick ice lenses, clear				834.0
25		G6						833.0
26		G7		- 20 mm thick ice lens, cloudy				832.0
27	- 300 mm boulder							831.0
28		G8						830.0
29	- gravelly, < 40 mm subangular - sand and gravel, trace silt, coarse grained sand							829.0
30								



**EBA Engineering Consultants Ltd.**

LOGGED BY: RM, MD & JD  
 REVIEWED BY: JPB  
 DRAWING NO:

COMPLETION DEPTH: 51.6m  
 COMPLETE: 2/5/2010  
 Page 2 of 4

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-MDI-2											
Main Waste Dump		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.008											
Minto Mine, YT		6945013.0801N; 384217.204E; Zone 8		ELEVATION: 858.3001m											
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE								
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND								
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)	Slope Indicator	Elevation (m)
					20	40	60	80	20	40	60	80			
30	- trace silt - frequent cobbles, 100-150 mm														828.0
31															827.0
32	SILT (TILL): sandy, trace clay, trace gravel, gravel < 20 mm subangular, firm, low to non plastic, dark greyish brown	<input checked="" type="checkbox"/>	G9												826.0
33		<input checked="" type="checkbox"/>	G10												825.0
34	SAND: trace silt, poorly graded, medium grained, greyish brown - becomes gravelly, < 15 mm subangular														824.0
35	SAND (TILL): silty, gravelly, fine grained sand, gravel < 40 mm subangular, greyish brown														823.0
36															822.0
37															821.0
38	- some silt, trace gravel, trace clay, angular sand, fine grained gravel, occasional cobbles < 80 mm														820.0
39	SILT (TILL): some sand, trace gravel, trace clay, gravel < 20 mm, low to non plastic, grey														819.0
40	SAND (RESIDUUM): trace gravel, trace silt, well graded, fine grained sand, brown, oxidized														818.0
41	BEDROCK: fine to coarse particles, sharp, extremely weak, oxide staining to grey, intermitent indicators of silt infill at former joints														817.0
42	- granite, residual, very weak moderately weathered, very closely spaced discontinuities, fair quality, oxide stained joints														816.0
43															815.0
44															814.0
45															813.0



**EBA Engineering Consultants Ltd.**

LOGGED BY: RM, MD & JD	COMPLETION DEPTH: 51.6m
REVIEWED BY: JPB	COMPLETE: 2/5/2010
DRAWING NO:	Page 3 of 4

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-MDI-2				
Main Waste Dump		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.008				
Minto Mine, YT		6945013.0801N; 384217.204E; Zone 8		ELEVATION: 858.3001m				
SAMPLE TYPE		<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80		
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		
45								813.0
46								812.0
47	- medium grained							811.0
48								810.0
49								809.0
50								808.0
51								807.0
52	END OF BOREHOLE at 51.6 m - set HW casing 1.4 m below OG - installed inclinometer to 806.9 m - azimuth of A+ is 93°							806.0
53								805.0
54								804.0
55								803.0
56								802.0
57								801.0
58								800.0
59								799.0
60								



**EBA Engineering Consultants Ltd.**

LOGGED BY: RM, MD & JD	COMPLETION DEPTH: 51.6m
REVIEWED BY: JPB	COMPLETE: 2/5/2010
DRAWING NO:	Page 4 of 4

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-MDI-2						
Main Waste Dump		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.008						
Minto Mine, YT		6945013.0801N; 384217.204E; Zone 8		ELEVATION: 858.3001m						
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE			
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND			
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C. LIQUID		Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80		
0	WASTE ROCK FILL									858.0
1										857.0
2										856.0
3										855.0
4										854.0
5										853.0
6										852.0
7										851.0
8										850.0
9	SAND AND GRAVEL FILL									849.0
10										848.0
11	PEAT: fine fibrous, graded to amorphous granular, brown to black SAND: silty, trace gravel, poorly graded, fine grained sand, gravel < 10 mm angular to subangular, brown									847.0
12	- some gravel, < 20 mm subrounded to subangular									846.0
13		<input checked="" type="checkbox"/>	G1							845.0
14	- trace silt, well graded, fine to medium grained sand, gravel < 10 mm angular and subangular	<input checked="" type="checkbox"/>	G2							844.0
15	- gravel < 30 mm subangular									844.0



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Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-MDI-2				
Main Waste Dump		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.008				
Minto Mine, YT		6945013.0801N; 384217.204E; Zone 8		ELEVATION: 858.3001m				
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		
15								843.0
16								842.0
17								841.0
18	- gravel < 40 mm subangular							840.0
19	- 100 mm cobble							839.0
20	SAND (TILL): silty, some gravel, poorly graded sand, fine grained gravel < 20 mm subangular greyish brown							838.0
21		<input checked="" type="checkbox"/>	G3					837.0
22		<input checked="" type="checkbox"/>	G4	- Vs, abundant 5 mm thick ice lenses, clear				836.0
23								835.0
24		<input checked="" type="checkbox"/>	G5	- Nbn - Vs, abundant 1-4 mm thick ice lenses, clear				834.0
25		<input checked="" type="checkbox"/>	G6					833.0
26		<input checked="" type="checkbox"/>	G7	- 20 mm thick ice lens, cloudy				832.0
27	- 300 mm boulder							831.0
28		<input checked="" type="checkbox"/>	G8					830.0
29	- gravelly, < 40 mm subangular - sand and gravel, trace silt, coarse grained sand							829.0
30								



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Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-MDI-2											
Main Waste Dump		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.008											
Minto Mine, YT		6945013.0801N; 384217.204E; Zone 8		ELEVATION: 858.3001m											
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE								
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND								
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)	Slope Indicator	Elevation (m)
					20	40	60	80	20	40	60	80			
30	- trace silt - frequent cobbles, 100-150 mm														828.0
31															827.0
32	SILT (TILL): sandy, trace clay, trace gravel, gravel < 20 mm subangular, firm, low to non plastic, dark greyish brown	<input checked="" type="checkbox"/>	G9												826.0
33		<input checked="" type="checkbox"/>	G10												825.0
34	SAND: trace silt, poorly graded, medium grained, greyish brown - becomes gravelly, < 15 mm subangular														824.0
35	SAND (TILL): silty, gravelly, fine grained sand, gravel < 40 mm subangular, greyish brown														823.0
36															822.0
37															821.0
38	- some silt, trace gravel, trace clay, angular sand, fine grained gravel, occasional cobbles < 80 mm														820.0
39	SILT (TILL): some sand, trace gravel, trace clay, gravel < 20 mm, low to non plastic, grey														819.0
40	SAND (RESIDUUM): trace gravel, trace silt, well graded, fine grained sand, brown, oxidized														818.0
41	BEDROCK: fine to coarse particles, sharp, extremely weak, oxide staining to grey, intermitent indicators of silt infill at former joints														817.0
42	- granite, residual, very weak moderately weathered, very closely spaced discontinuities, fair quality, oxide stained joints														816.0
43															815.0
44															814.0
45															813.0



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Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-MDI-2				
Main Waste Dump		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.008				
Minto Mine, YT		6945013.0801N; 384217.204E; Zone 8		ELEVATION: 858.3001m				
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80		
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		
45								813.0
46								812.0
47	- medium grained							811.0
48								810.0
49								809.0
50								808.0
51								807.0
52	END OF BOREHOLE at 51.6 m - set HW casing 1.4 m below OG - installed inclinometer to 806.9 m - azimuth of A+ is 93°							806.0
53								805.0
54								804.0
55								803.0
56								802.0
57								801.0
58								800.0
59								799.0
60								



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Winter 2010 Instrumentation Program		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 10-SWFI-5											
Area 1 Open Pit		DRILL: Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.012											
Minto Mine, YT		6944695.774N; 384376.689E; Zone 8		ELEVATION: 835.299m											
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE								
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input checked="" type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input checked="" type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input checked="" type="checkbox"/> SAND								
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)	Slope Indicator	Elevation (m)
					20	40	60	80	20	40	60	80			
0	WASTE ROCK FILL														835.0
1															834.0
2															833.0
3															832.0
4															831.0
5	PEAT: amorphous granular, some fine fibres, trace wood peices, dark brown			- Nbe - Nbn											830.0
6	SILT: some sand, trace clay, thinly laminated, fine grained sand, dark brown														829.0
7	SAND (TILL): silty, some gravel, medium grained sand, gravel < 50 mm, angular to subangular, brown														828.0
8	- gravel < 40 mm, greyish brown		G1	- Vs < 25%, 3-12 mm thick ice lenses - Vx < 10 %											827.0
9															826.0
10			G2	- Nbn - Vs < 15%, < 20 mm thick ice lensws - Vr < 10%, 4 mm thick ice lensws - Vc < 1%, 2 mm thick ice coatings - Vx, 2-5%, < 4-12 mm thick - Nbn											825.0
11	SILT (TILL): sandy, some gravel, gravel < 50 mm, low to non plastic, greyish brown														824.0
12	- gravel < 75 mm		G3												823.0
13			G4												822.0
14	SAND (TILL): gravelly, some silt, gravel < 20 mm, greyish brown														821.0
15	- trace cobbles < 250 mm		G5	- Nbn - Vx 10-20%, <20 mm thick											821.0



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Winter 2010 Instrumentation Program		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 10-SWFI-5											
Area 1 Open Pit		DRILL: Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.012											
Minto Mine, YT		6944695.774N; 384376.689E; Zone 8		ELEVATION: 835.299m											
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE								
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input checked="" type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input checked="" type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input checked="" type="checkbox"/> SAND								
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)	Slope Indicator	Elevation (m)
					20	40	60	80	20	40	60	80			
15				- 60 mm thick ice lens, clear to white											820.0
16	- gravel < 50 mm		G6	- Vx < 2%, < 25 mm thick											819.0
17			G7	- Vx, 15 mm thick vertical lens											818.0
18			G8												817.0
19	- gravel < 30 mm			- 70 mm thick ice lens, clear to white											816.0
20	- medium grained sand, cobbles < 120 mm			- 50 mm thick ice lens, clear, white inclusions											815.0
21	- boulder, granite		G9	- Nbn											814.0
22	- gravel < 40 mm			- Vx, 10-20%											813.0
23			G10												812.0
24	SILT (TILL): gravelly, some silt, some clay, gravel < 20 mm greyish brown			- Vx, Vc, 15-20%, < 10 mm thick											811.0
25	- sandy, some gravel < 10 mm, medium grained sand		G11												810.0
26	- 100 mm cobble			- Vx/Vr, 10-15%, < 20 mm thick											809.0
27			G12	- 300 mm thick ice lens											808.0
28	- some sand, trace gravel, trace clay, low to non plastic, gravel < 75 mm subangular														807.0
29			G13												806.0
30	- 480 mm boulder, granite			- Nbn											
			G14	- Vx < 12 mm thick											



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Winter 2010 Instrumentation Program		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 10-SWFI-5												
Area 1 Open Pit		DRILL: Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.012												
Minto Mine, YT		6944695.774N; 384376.689E; Zone 8		ELEVATION: 835.299m												
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE									
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input checked="" type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input checked="" type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input checked="" type="checkbox"/> SAND									
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C.		LIQUID	CLAY (%)		SILT (%)	SAND (%)	GRAVEL (%)	Slope Indicator	Elevation (m)
					20	40	60	80		20	40					
30																805.0
31																804.0
32																803.0
33	- and clay, some gravel, low plastic		G15													802.0
34	CLAY (TILL): silt, trace fine grained sand, occasional brown laminations, very stiff, medium to high plastic, dark grey		G16													801.0
35	- 300 mm boulder - no recovery															800.0
36	SAND (TILL): silty, trace clay, poorly graded fine grained sand, greyish brown, occasional brown laminations < 2 mm															799.0
37			G17													798.0
38	- brown and grey laminations < 3 mm				- Vr < 5%, < 1 mm thick lenses - Nbn											797.0
39	- slight organic odour detected		G18													796.0
40	SAND (TILL): silty, some gravel, trace sand, gravel < 60 mm subangular, medium plastic, dark grey, occasional fine grained sand pockets < 2 mm															795.0
41	- gravel < 25 mm subangular		G19													794.0
42	CLAY (TILL): silty, some gravel, trace sand, gravel < 60 mm subangular, medium plastic, dark grey, occasional fine grained sand pockets < 2 mm		G20													793.0
43	- some sand, medium to high plastic, occasional brown silt pockets		G21													792.0
44	- gravel < 20 mm angular to subangular, high plastic															791.0
45	- 100 mm cobble		G22													



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Winter 2010 Instrumentation Program		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 10-SWFI-5								
Area 1 Open Pit		DRILL: Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.012								
Minto Mine, YT		6944695.774N; 384376.689E; Zone 8		ELEVATION: 835.299m								
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE					
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input checked="" type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input checked="" type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input checked="" type="checkbox"/> SAND					
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C.		LIQUID		Slope Indicator	Elevation (m)
					20	40	60	80	20	40		
45	CLAY: silty, trace to no gravel, fine grained gravel, slickensided, high plastic, dark grey											790.0
46	CLAY (TILL): some silt, some gravel, trace sand, gravel < 40 mm angular to subangular, high plastic, dark grey											789.0
47	SAND: gravelly, trace silt, medium to coarse grained sand, gravel < 75 mm angular to subangular, brown											788.0
48	- poor recovery, sample dropping out of inner tube											787.0
49	- granite pieces, rough, highly weathered, weak, medium grained, oxide stained joints, very poor quality, grey											786.0
50	- granite pieces, weak to very weak, moderate to slightly weathered, trace residual											785.0
51												784.0
52												783.0
53												782.0
54	- trace fine grained gravel, uniformly graded, medium grained sand, brown grey, occasional coarse gravel to cobble < 100 mm											781.0
55												780.0
56												779.0
57	- no recovery											778.0
58												777.0
59												776.0
60												



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Winter 2010 Instrumentation Program		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 10-SWFI-5				
Area 1 Open Pit		DRILL: Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.012				
Minto Mine, YT		6944695.774N; 384376.689E; Zone 8		ELEVATION: 835.299m				
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80		
					PLASTIC M.C.	LIQUID	<input type="checkbox"/> CLAY (%) <input type="checkbox"/> SILT (%) <input type="checkbox"/> SAND (%) <input type="checkbox"/> GRAVEL (%)	
					20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80
60								775.0
61	- no recovery							774.0
62								773.0
63								772.0
64								771.0
65								770.0
66								769.0
67								768.0
68								767.0
69								766.0
70								765.0
71								764.0
72								763.0
73								762.0
74								761.0
75								



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Winter 2010 Instrumentation Program		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 10-SWFI-5				
Area 1 Open Pit		DRILL: Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.012				
Minto Mine, YT		6944695.774N; 384376.689E; Zone 8		ELEVATION: 835.299m				
SAMPLE TYPE		<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80		
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		
75								760.0
76								759.0
77	gravel < 70 mm subangular and angular							758.0
78	BEDROCK: granite, poor quality, weathered, oxide stained joints, light and dark grey							757.0
79								756.0
80								755.0
81	END OF BOREHOLE at 80.8 - set HW casing 1.2 m below OG - installed inclinometer to 755.3 m - azimuth of A+ direction is 44°							754.0
82								753.0
83								752.0
84								751.0
85								750.0
86								749.0
87								748.0
88								747.0
89								746.0
90								



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Winter 2010 Instrumentation Program		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 10-SWFI-6												
Area 1 Open Pit		DRILL: Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.012												
Minto Mine, YT		6944567.726N; 384384.236E; Zone 8		ELEVATION: 845.616m												
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE									
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input checked="" type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input checked="" type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input checked="" type="checkbox"/> SAND									
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C.		LIQUID	CLAY (%)		SILT (%)	SAND (%)	GRAVEL (%)	Slope Indicator	Elevation (m)
					20	40	60	80		20	40					
0	CLAY: silty, some sand, low plastic, occasional roots			- seasonal frost												845.0
1																844.0
2	SILT: sandy, low plastic, brown															843.0
3	SILT (TILL): sandy, trace clay, trace fine gravel, medium grained sand, brown			- Nbn												842.0
4	- clay lens, silty, laminated, low plastic, greyish brown															841.0
5	CLAY (TILL): sandy, silty, trace gravel, gravel < 20 mm, low plastic, dark grey, oxide stains			- Nbn												840.0
6	- brown			- Vx < 5%												839.0
7	SILT (TILL): snady, trace fine gravel, low to non plastic, dark grey, oxide stained															838.0
8	- gravelly															837.0
9	- no oxide staining visible															836.0
10	- gravel < 20 mm		G1	- Vx < 20%, < 12 mm thick												835.0
11	- clay pockets, high plastic		G2	- Nbn												834.0
12	CLAY (TILL): silty, some sand, trace gravel, gravel < 20 mm, dark grey to black		G3	- 100 mm thick ice lens, clear, laminar												833.0
13	- clay lens, high plastic, dark grey		G4	- < 40 mm thick ice lens, clear												832.0
14	- medium plastic, gravel < 40 mm, dark grey		G5	- Nbn												831.0
15	SILT (TILL): sandy, trace clay, trace gravel, fine grained gravel < 15 mm, low to non plastic, dark grey		G6													
	SAND (TILL): silty, some gravel, medium grained gravel < 25 mm, dark grey															



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LOGGED BY: RM & MD

REVIEWED BY: JPB

DRAWING NO:

COMPLETION DEPTH: 24.1m

COMPLETE: 2/9/2010

Page 1 of 2

Winter 2010 Instrumentation Program		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 10-SWFI-6										
Area 1 Open Pit		DRILL: Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.012										
Minto Mine, YT		6944567.726N; 384384.236E; Zone 8		ELEVATION: 845.616m										
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE							
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input checked="" type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input checked="" type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input checked="" type="checkbox"/> SAND							
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		CLAY (%)		SILT (%)		SAND (%)		Slope Indicator	Elevation (m)
					20	40	60	80	20	40	60	80		
15	SAND: trace silt, uniformly graded, fine grained, dark brown to grey			- Vx < 15%										830.0
16		<input checked="" type="checkbox"/>	G7											829.0
17	- coarse gravel lens, sandy, trace silt, well graded gravel < 40 mm - sand lens, trace fine gravel, well graded, coarse grained	<input checked="" type="checkbox"/>	G8											828.0
18	- sand lens, well graded, medium grained sand, dark brown	<input checked="" type="checkbox"/>	G9											827.0
19	SAND: some gravel, trace silt, well graded sand, coarse grained gravel < 12 mm, dark brown grey - gravelly, gravel < 20 mm, subangular to subrounded, brown, orange staining	<input checked="" type="checkbox"/>	G10	- Nbn - 6 mm thick ice lens, clear										826.0
20														825.0
21	BEDROCK: poor quality, weathered, weak, oxide stained joints, light and dark brown													824.0
22	- pink quartz and mica inclusions													823.0
23														822.0
24	END OF BOREHOLE at 24.1 m - installed inclinometer to 822.7m - azimuth of A+ direction is 6°													821.0
25														820.0
26														819.0
27														818.0
28														817.0
29														816.0
30														



**EBA Engineering Consultants Ltd.**

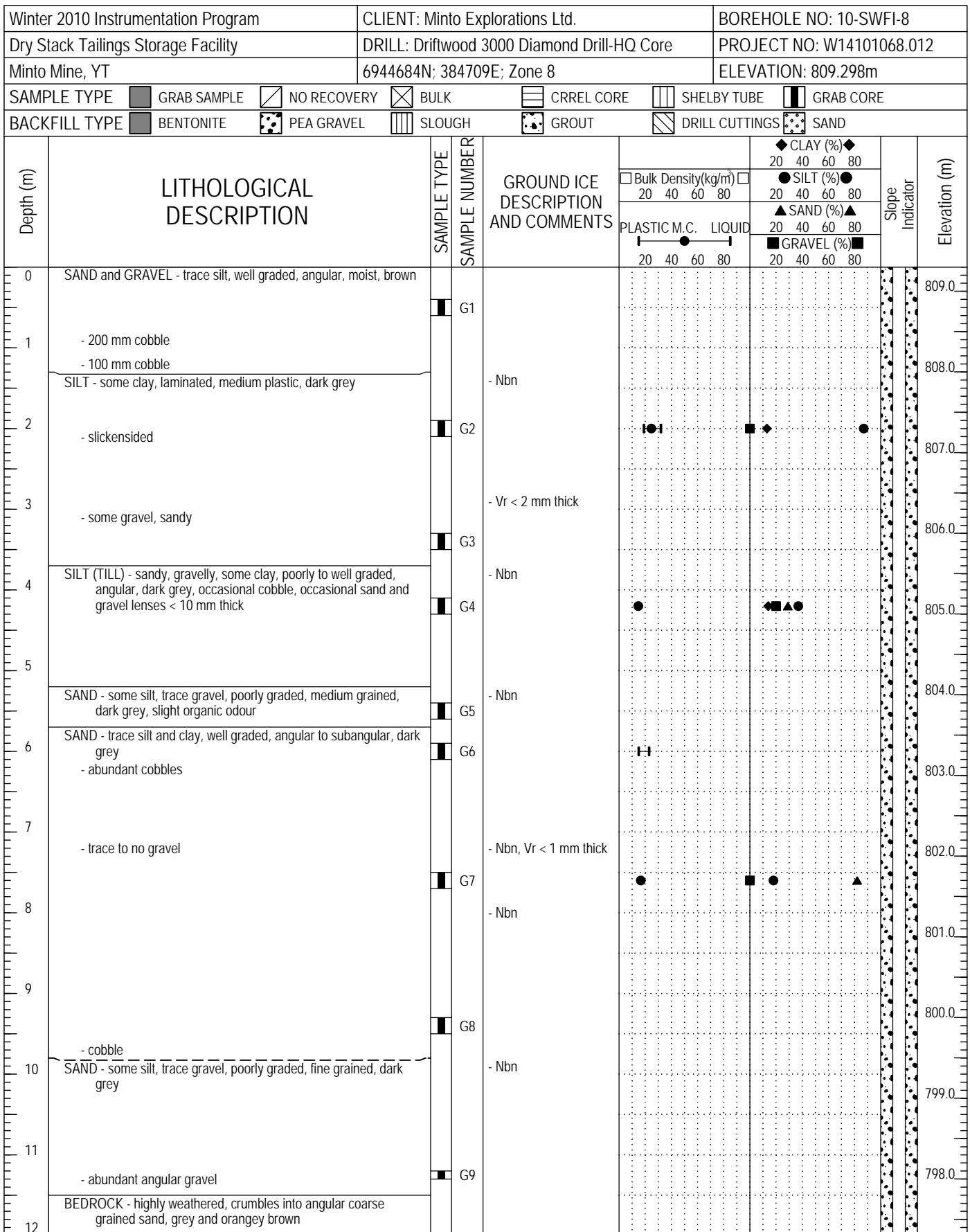
LOGGED BY: RM & MD	COMPLETION DEPTH: 24.1m
REVIEWED BY: JPB	COMPLETE: 2/9/2010
DRAWING NO:	Page 2 of 2

Winter 2010 Instrumentation Program		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 10-SWFI-7												
Area 1 Open Pit		DRILL: Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.012												
Minto Mine, YT		6944515.201N; 384665.486E; Zone 8		ELEVATION: 864.732m												
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE									
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input checked="" type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input checked="" type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input checked="" type="checkbox"/> SAND									
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C.		LIQUID	CLAY (%)		SILT (%)	SAND (%)	GRAVEL (%)	Slope Indicator	Elevation (m)
					20	40	60	80		20	40					
0	SILT: clayey, some fine sand, low to non plastic, brown			- seasonal frost												864.0
1																863.0
2	- cobble															862.0
3																861.0
4	CLAY (TILL): silty, some sand, trace gravel, gravel < 30 mm, low plastic, brown			- Nbn												860.0
5																859.0
6	- occasional cobble < 100 mm			- Nbe												858.0
7																857.0
8				- Vx, 1-5%, < 10 mm thick												856.0
9			G1	- Nbn												855.0
10	- some gravel < 50 mm, cobbles < 120 mm															854.0
11			G2													853.0
12	- no more cobbles		G3													852.0
13	SAND (TILL): sandy, gravelly, some silt, gravel angular to subangular															851.0
14	BEDROCK: granite, slightly weathered, medium strong, fair quality, very close spaced discontinuities, silt infill															850.0
15	- poor quality, clay till and sand till infill up to 70 mm thick															849.0
16	- fair quality, stained joints, some residual infill < 30 mm thick															848.0
17	- faintly weathered trace sand infill < 2 mm thick															847.0
18	END OF BOREHOLE at 17.7 m															846.0
19	- installed inclinometer to 847.4 m															845.0
20	- azimuth of A+ direction is 93°															845.0



**EBA Engineering Consultants Ltd.**

LOGGED BY: RM	COMPLETION DEPTH: 17.7m
REVIEWED BY: JPB	COMPLETE: 2/9/2010
DRAWING NO:	Page 1 of 1



**EBA Engineering Consultants Ltd.**

LOGGED BY: MD & RR	COMPLETION DEPTH: 20.4m
REVIEWED BY: BC & JGD	COMPLETE: 11/3/2010
DRAWING NO:	Page 1 of 2

Winter 2010 Instrumentation Program		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 10-SWFI-8								
Dry Stack Tailings Storage Facility		DRILL: Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.012								
Minto Mine, YT		6944684N; 384709E; Zone 8		ELEVATION: 809.298m								
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE					
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND					
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C.		LIQUID		Slope Indicator	Elevation (m)
					20	40	60	80	20	40		
12			G10									797.0
13												796.0
14			G11									795.0
15	- rust stains, grey											794.0
16												793.0
17												792.0
18												791.0
19												790.0
20												789.0
21	END OF BOREHOLE at 20.4 m - installed inclinometer to 793.4 m - azimuth of A+ direction is 109°											788.0
22												787.0
23												786.0
24												



**EBA Engineering Consultants Ltd.**

LOGGED BY: MD & RR	COMPLETION DEPTH: 20.4m
REVIEWED BY: BC & JGD	COMPLETE: 11/3/2010
DRAWING NO:	Page 2 of 2




Winter 2010 Instrumentation Program		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 10-SWFI-9								
Dry Stack Tailings Storage Facility		DRILL: Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.012								
Minto Mine, YT		6944775N; 384431.1E; Zone 8		ELEVATION: 810.703m								
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE					
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input checked="" type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input checked="" type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input checked="" type="checkbox"/> SAND					
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C.		LIQUID		Slope Indicator	Elevation (m)
					20	40	60	80	20	40		
0	BOULDER - granite, weathered											810.0
1												809.0
2												808.0
3	SILT (TILL) - sandy, clayey, trace gravel, poorly graded, fine grained, dark grey		G1	- Nbn								807.0
4				- Ice, slightly cloudy, mainly clear								806.0
5			G2	- Ice lense, cloudy								805.0
6				- Ice lense, clear								804.0
7	- becomes more silty		G3	- Ice lense 40 mm, clear	●				■	▲	●	803.0
8				- Ice lense 30 mm, clear								802.0
9	SILT and SAND (TILL) - some gravel, some clay, low plastic, dark grey, occasional cobble		G4	- Ice lense 110 mm, clear								801.0
10			G5	- Vr < 5 mm thick, clear, vertical								800.0
11				- Nbn, occasional Vr < 1 mm thick	●							799.0
12			G6	- Ice lense 30 mm, clear	●				■	▲	●	798.0
13				- Vr < 5 mm thick, clear, vertical								797.0
14	- low-medium plastic, trace clay		G7	- Ice lense, clear								796.0
15			G8	- 30 mm ice lense, clear								795.0
16	- boulder (granite)		G9	- Ice and soil intermixed, < 40 mm thick lenses, clear								794.0
17				- Ice lense 50 mm, clear								793.0
18	CLAY (TILL) - silty, trace sand, blocky, slickensided, medium plastic, dark grey, occasional gravel or cobble		G10	- Nbn	●	■	▲	●				792.0
19	- sandy, some gravel											791.0
20	- 120 mm cobble		G11									790.0
21	SILT (TILL) - sandy, non-plastic, dark grey		G12	- Nbn								789.0
22	- sand, trace gravel		G13	- Nbn								788.0
23	SAND (TILL) - silty, some gravel, poorly graded, angular, dark brown grey		G14									787.0
24	- frequent visible organic lense (brown organics)		G15									786.0
25	- coarse grained sand											
	SILT (TILL) - sandy, non plastic, dark grey		G16	- Nbn, Vr < 1 mm thick								



**EBA Engineering Consultants Ltd.**

LOGGED BY: MD & RR	COMPLETION DEPTH: 58.5m
REVIEWED BY: BC & JGD	COMPLETE: 11/4/2010
DRAWING NO:	Page 1 of 3

Winter 2010 Instrumentation Program		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 10-SWFI-9											
Dry Stack Tailings Storage Facility		DRILL: Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.012											
Minto Mine, YT		6944775N; 384431.1E; Zone 8		ELEVATION: 810.703m											
SAMPLE TYPE		GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE								
BACKFILL TYPE		BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND								
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)	Slope Indicator	Elevation (m)
					20	40	60	80	20	40	60	80			
25	CLAY (TILL) - silty, trace sand, medium plastic, dark grey, occasional gravel	■	G17	- Nbn - Ice and soil intermixed - Ice lense 25 mm, clear											785.0
26															
27	- laminated layers with brownly grey clay, blocky	■	G18												784.0
28	- medium-high plastic, slickensided														
29	SILT (TILL) - sandy, some clay, non-plastic, dark grey, occasional cobble	■	G19	- Nbn											783.0
30	SILT (TILL) - trace clay, laminated, low-medium plastic, dark grey and brownly grey, occasional cobble	■	G20	- Nbn - Vs < 15 mm thick, clear - Ice and soil lenses < 30 mm, clear											782.0
31															
32	- trace sand	■	G21	- Nbn, occasional Vs < 20 mm lenses, clear											781.0
33	- trace gravel														
34		■	G22												780.0
35		■	G23												779.0
36		■	G24	- Nbn											778.0
37		■	G25	- Nbn											777.0
38		■	G26	- Ice 50 mm thick											776.0
39		■	G27	- Vr 10 mm thick											775.0
40		■	G29	- Vr 5 mm thick											774.0
41		■	G30												773.0
42		■													772.0
43		■													771.0
44		■													770.0
45		■													769.0
46		■													768.0
47	- boulder, grey SILT (TILL)- trace clay, trace sand, frozen, dark grey	■													767.0
48		■													766.0
49		■													765.0
50		■													764.0

 <b>EBA Engineering Consultants Ltd.</b>	LOGGED BY: MD & RR	COMPLETION DEPTH: 58.5m
	REVIEWED BY: BC & JGD	COMPLETE: 11/4/2010
	DRAWING NO:	Page 2 of 3

Winter 2010 Instrumentation Program		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 10-SWFI-9						
Dry Stack Tailings Storage Facility		DRILL: Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.012						
Minto Mine, YT		6944775N; 384431.1E; Zone 8		ELEVATION: 810.703m						
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE			
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND			
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C. LIQUID		Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80		
50	CLAY (TILL)- silty, trace sand, medium plastic, dark grey		G31							760.0
51										759.0
52			G32							758.0
53	BEDROCK - 100 mm boulder, then highly weathered, dark grey									757.0
54										756.0
55										755.0
56										754.0
57										753.0
58										752.0
59	END OF BOREHOLE at 58.5 m - installed inclinometer to 754.4 m - azimuth of A+ direction is 29°									751.0
60										750.0
61										749.0
62										748.0
63										747.0
64										746.0
65										745.0
66										744.0
67										743.0
68										742.0
69										741.0
70										740.0
71										739.0
72										738.0
73										737.0
74										736.0
75										736.0



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LOGGED BY: MD & RR	COMPLETION DEPTH: 58.5m
REVIEWED BY: BC & JGD	COMPLETE: 11/4/2010
DRAWING NO:	Page 3 of 3

Winter 2010 Instrumentation Program		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 10-SWFI-10								
Dry Stack Tailings Storage Facility		DRILL: Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.012								
Minto Mine, YT		6944856N; 384435.8E; Zone 8		ELEVATION: 810.014m								
SAMPLE TYPE		GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE					
BACKFILL TYPE		BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND					
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density (kg/m <sup>3</sup> )		PLASTIC M.C.		LIQUID		Slope Indicator	Elevation (m)
					20	40	60	80	20	40		
0	No recovery											810.0
1												809.0
2												808.0
3	SILT - some clay, some sand, trace gravel, medium plastic, dark grey, occasional gravel			- Nbn, abundant ice lenses <50 mm, clear								807.0
4			G1									806.0
5												805.0
6			G2	- Nbe - Abundant ice lenses <100 mm, clear								804.0
7	- slickensided											803.0
8			G3	- Occasional ice lenses <30 mm, clear								802.0
9	SAND (TILL) - silty, some to trace gravel, trace clay, poorly graded, dark grey											801.0
10			G4	- Occasional ice lenses <20 mm, clear - Nbe								800.0
11	- some gravel, angular											799.0
12			G5	- Ice lens, clear - Vr, <10 mm - Nbn, occasional ice lenses <15 mm thick, clear								798.0
13			G6									797.0
14			G7	- Nbn, occasional ice lenses <15 mm thick, clear								796.0
15												795.0
16			G8	- 15 mm ice lens, clear - Vr <2 mm thick								794.0
17	SILT and SAND (TILL) - trace clay, trace gravel, frozen, dark brown											793.0
18			G9									792.0
19			G10	- 25 mm ice lens, clear								791.0
20	- occasional gravel											790.0
			G11									789.0



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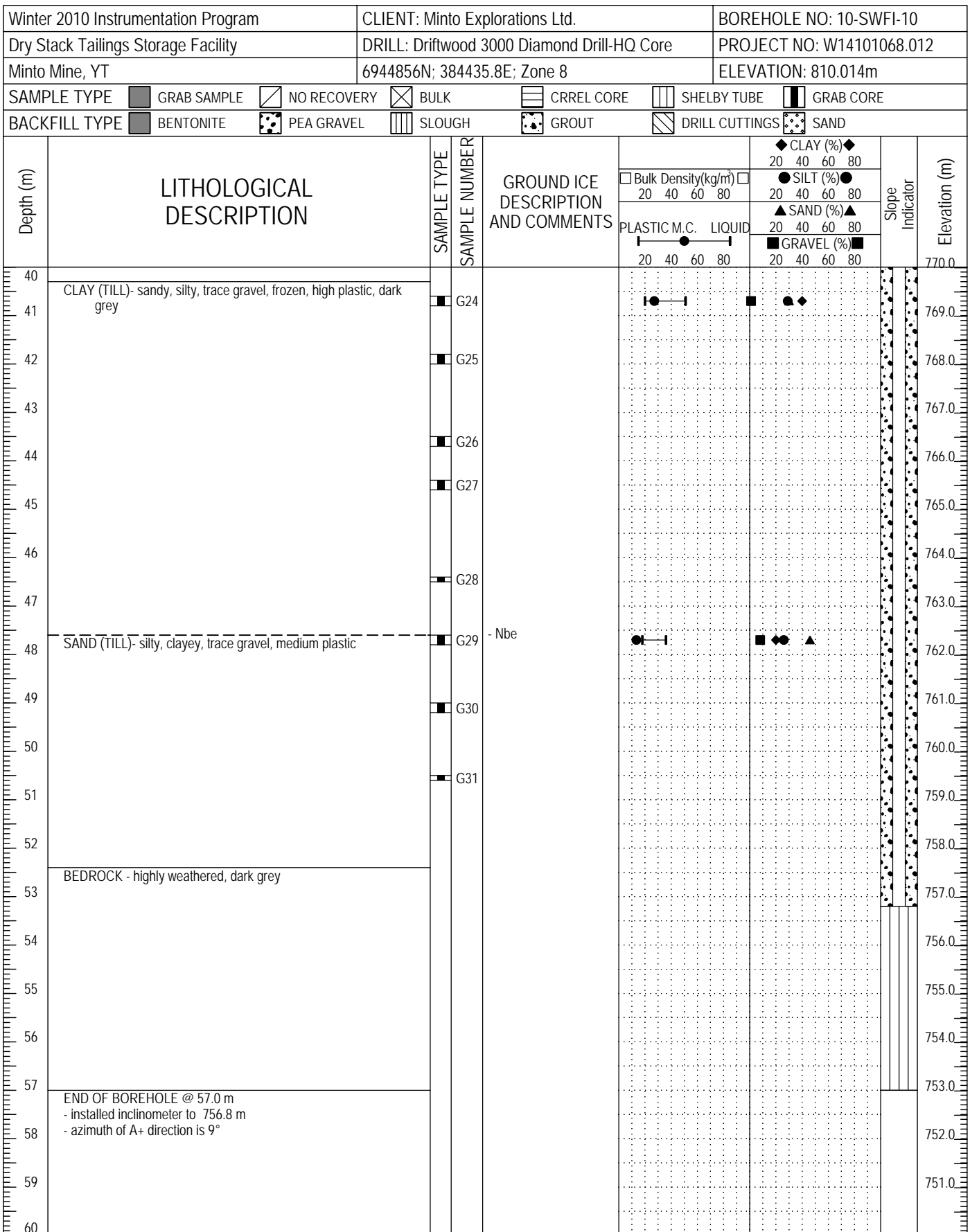
LOGGED BY: MD & RR	COMPLETION DEPTH: 57m
REVIEWED BY: BC & JGD	COMPLETE: 11/5/2010
DRAWING NO:	Page 1 of 3

Winter 2010 Instrumentation Program		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 10-SWFI-10				
Dry Stack Tailings Storage Facility		DRILL: Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.012				
Minto Mine, YT		6944856N; 384435.8E; Zone 8		ELEVATION: 810.014m				
SAMPLE TYPE		<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		790.0
20								
21			G12					789.0
22				- 25 mm ice lens, clear				788.0
23	- granite pieces <100 mm		G13					787.0
24			G14	- Nbn, ice lenses				786.0
25								785.0
26	- occasional gravel		G15					784.0
27			G16					783.0
28								782.0
29			G17	- Ice lens				781.0
30								780.0
31			G18					779.0
32			G19					778.0
33								777.0
34			G20					776.0
35								775.0
36			G21					774.0
37			G22	- 75 mm ice lens, clear				773.0
38								772.0
39								771.0
40			G23					



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LOGGED BY: MD & RR	COMPLETION DEPTH: 57m
REVIEWED BY: BC & JGD	COMPLETE: 11/5/2010
DRAWING NO:	Page 2 of 3



**EBA Engineering Consultants Ltd.**

LOGGED BY: MD & RR	COMPLETION DEPTH: 57m
REVIEWED BY: BC & JGD	COMPLETE: 11/5/2010
DRAWING NO:	Page 3 of 3



Winter 2010 Instrumentation Program		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 10-SWFI-11								
Dry Stack Tailings Storage Facility		DRILL: Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.012								
Minto Mine, YT		6944847N; 384308.2E; Zone 8		ELEVATION: 827.565m								
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE					
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND					
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C.		LIQUID		Slope Indicator	Elevation (m)
					20	40	20	40	60	80		
0	MUSKEG											827.0
1												826.0
2												825.0
3	ORGANICS - muskeg, some silt, some sand, frequent angular gravel, rootlets			- Nbe, Vc <10%, V<sub>c</sub> <2%								824.0
4			G1									823.0
5	- boulder											822.0
6												821.0
7	SAND (TILL) - silty, some gravel, poorly graded, dark grey			- Nf								820.0
8			G2									819.0
9	SILT (TILL) - sandy, some gravel, trace clay, non plastic, dark grey, occasional cobble			- Nf								818.0
10			G3									817.0
11			G4	- Nf, occasional Vs <20 mm thick, clear								816.0
12			G5	- Nf, Vx <1%								815.0
13	- sand, frequent cobbles <150 mm											814.0
14			G6	- Occasional Vs <15 mm thick, clear								813.0
15			G7									812.0
16	- frequent cobbles											811.0
17			G8	- 80 mm ice lens, clear - Nbn, frequent ice lenses <30 mm								810.0
18	- sand											809.0
19			G9	- Nbn								808.0
20			G10	- Nbn, Vr <1%								807.0
21												806.0
22			G11	- Nbn								805.0
23												804.0
24			G12	- 20 mm ice lens, verticle, clear - Occasional ice lens <15 mm thick								803.0
25	- low plastic											803.0
			G13									803.0



**EBA Engineering Consultants Ltd.**

LOGGED BY: MD & RR	COMPLETION DEPTH: 67.7m
REVIEWED BY: BC & JGD	COMPLETE: 11/6/2010
DRAWING NO:	Page 1 of 3

Winter 2010 Instrumentation Program		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 10-SWFI-11			
Dry Stack Tailings Storage Facility		DRILL: Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.012			
Minto Mine, YT		6944847N; 384308.2E; Zone 8		ELEVATION: 827.565m			
SAMPLE TYPE		GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE
BACKFILL TYPE		BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND

Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density (kg/m <sup>3</sup> )		PLASTIC M.C.		LIQUID		Slope Indicator	Elevation (m)
				20	40	60	80	20	40		
25			- Nbn								802.0
26		G14									801.0
27											800.0
28		G15									799.0
29		G16	- Nbn								798.0
30		G17									797.0
31		G18	- 15 mm ice lens								796.0
32											795.0
33		G19	- Nbn								794.0
34		G20									793.0
35	- slight increase in clay content	G21									792.0
36		G22									791.0
37		G23	- boulder, granite ~150 mm								790.0
38		G24	- Ice lens, clear								789.0
39		G25	- 75 mm ice lens, clear								788.0
40		G26									787.0
41		G27	- Nbn								786.0
42		G28									785.0
43		G29									784.0
44		G30									783.0
45											782.0
46											781.0
47											780.0
48	CLAY (TILL)- sandy, silty, trace gravel, medium plastic, frozen, grey, occasional weathered bedrock particles ~ 150 mm long										779.0
49											778.0



**EBA Engineering Consultants Ltd.**

LOGGED BY: MD & RR	COMPLETION DEPTH: 67.7m
REVIEWED BY: BC & JGD	COMPLETE: 11/6/2010
DRAWING NO:	Page 2 of 3

Winter 2010 Instrumentation Program		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 10-SWFI-11				
Dry Stack Tailings Storage Facility		DRILL: Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.012				
Minto Mine, YT		6944847N; 384308.2E; Zone 8		ELEVATION: 827.565m				
SAMPLE TYPE		<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		
50								777.0
51			G31					776.0
52								775.0
53			G32					774.0
54			G33	- Vx				773.0
55	- weathered rock		G34					772.0
56								771.0
57			G35	- Vx				770.0
58								769.0
59			G36	- Vx				768.0
60	- becomes gravelly		G37					767.0
61								766.0
62	BEDROCK - weathered, frozen, light brown							765.0
63								764.0
64								763.0
65								762.0
66								761.0
67								760.0
68	END OF BOREHOLE @ 67.7 m							759.0
69	- installed inclinometer to 762.3 m							758.0
70	- azimuth of A+ direction is 350°							757.0
71								756.0
72								755.0
73								754.0
74								753.0
75								




**EBA Engineering Consultants Ltd.**

LOGGED BY: MD & RR	COMPLETION DEPTH: 67.7m
REVIEWED BY: BC & JGD	COMPLETE: 11/6/2010
DRAWING NO:	Page 3 of 3

Winter 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G05b
Pelly Laydown (SW Waste Dump)	DRILL: 3000 Diamond Drill, HQ Core	PROJECT NO: W14101068.033
Minto Mine, YT	6944820N; 383817E; Zone 8	ELEVATION: 861.7m

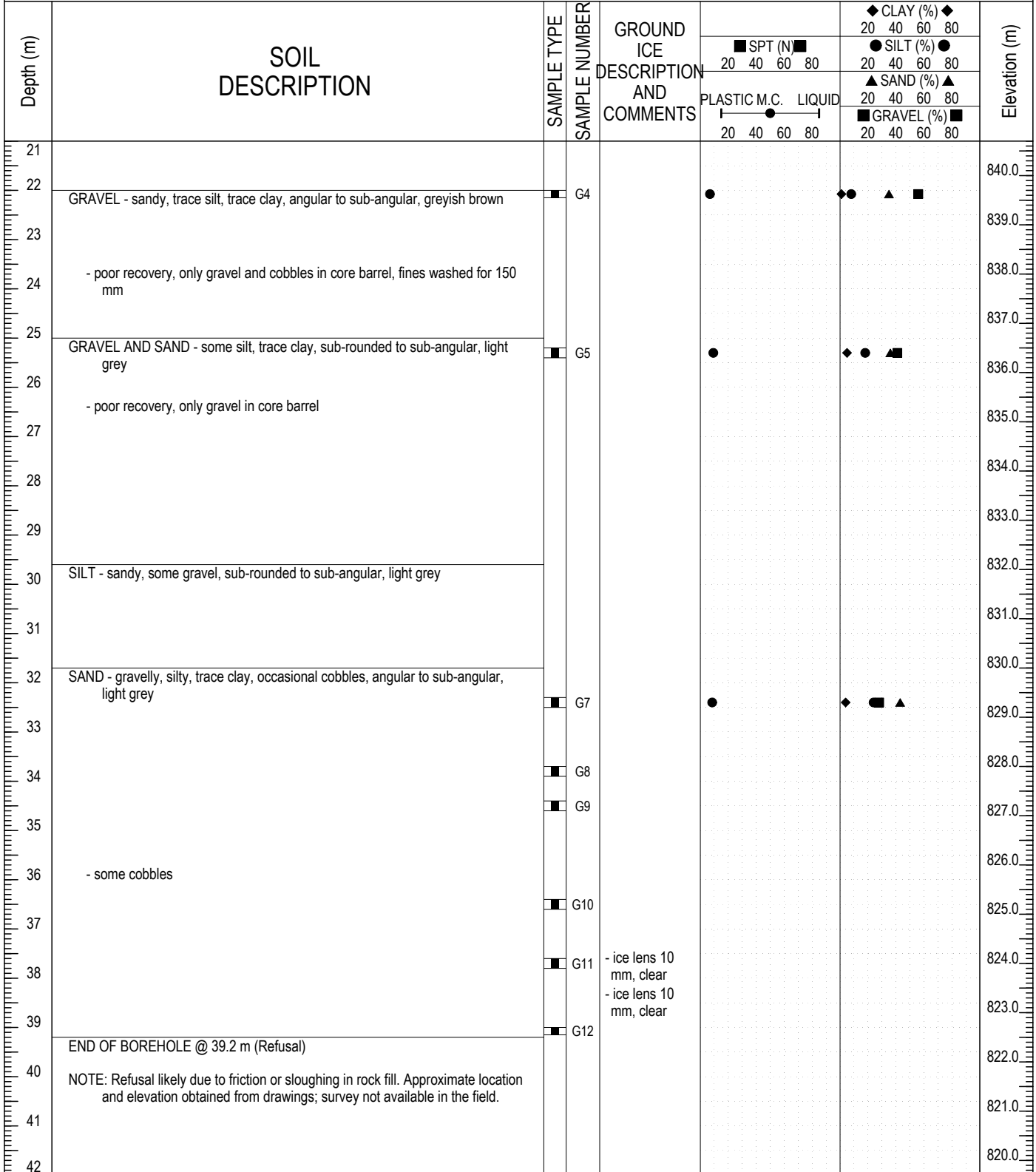
SAMPLE TYPE	<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND


Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C.		LIQUID		Elevation (m)
					20	40	20	40	60	80	
0	ROCK FILL - no samples taken due to problems with coring										861.0
1											860.0
2											859.0
3											858.0
4											857.0
5											856.0
6											855.0
7											854.0
8											853.0
9											852.0
10											851.0
11											850.0
12											849.0
13											848.0
14											847.0
15											846.0
16											845.0
17											844.0
18	SAND - gravelly, silty, trace clay, angular to sub-angular, brownish grey	<input checked="" type="checkbox"/>	G1								844.0
19		<input checked="" type="checkbox"/>	G2			●		◆	●	■	843.0
20											842.0
21		<input checked="" type="checkbox"/>	G3								841.0

 A TETRA TECH COMPANY	LOGGED BY: AT & SMC	COMPLETION DEPTH: 39.2m
	REVIEWED BY: JGD	COMPLETE: 1/18/2011
	DRAWING NO:	Page 1 of 2

Winter 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G05b
Pelly Laydown (SW Waste Dump)	DRILL: 3000 Diamond Drill, HQ Core	PROJECT NO: W14101068.033
Minto Mine, YT	6944820N; 383817E; Zone 8	ELEVATION: 861.7m

SAMPLE TYPE	GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE
BACKFILL TYPE	BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND




	LOGGED BY: AT & SMC	COMPLETION DEPTH: 39.2m
	REVIEWED BY: JGD	COMPLETE: 1/18/2011
	DRAWING NO:	Page 2 of 2

Winter 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G06
Pelly Laydown (SW Waste Dump)	DRILL: 3000 Diamond Drill, HQ Core	PROJECT NO: W14101068.033
Minto Mine, YT	6944819N; 383970E; Zone 8	ELEVATION: 860.5m

SAMPLE TYPE	<input type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C.		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)		Elevation (m)
					20	40	20	40	20	40	60	80	20	40	60	80	
0	SAND FILL		G1														860.0
1	ROCK FILL																859.0
2																	858.0
3																	857.0
4																	856.0
5																	855.0
6																	854.0
7																	853.0
8																	852.0
9																	851.0
10																	850.0
11																	849.0
12																	848.0
13	SILT - some sand, some gravel, gravel <10 mm in diameter, angular to sub-angular, low plastic, dark brown, frequent organic peat inclusions		G2														847.0
14																	846.0
15																	845.0
16	GRAVEL - silty, sandy, some clay, rounded to sub-angular, dark brown		G3														844.0
17																	843.0
18			G4														842.0
19	SAND - gravelly, trace silt and clay, dark brown		G5														841.0
20	- boulder																840.0
21	- some cobbles, rounded to sub-rounded																839.0
22	- hard drilling																838.0
23	SILT - sandy, some gravel, trace clay, compact to dense, non to low plastic, dark brown		G6														837.0
24																	836.0
25																	835.0
26			G7														834.0
27																	833.0
28	END OF BOREHOLE @ 27.2 m (Refusal)		G8														832.0
29																	831.0
30																	831.0


 A TETRA TECH COMPANY	LOGGED BY: AT & SMC	COMPLETION DEPTH: 27.15m
	REVIEWED BY: JGD	COMPLETE: 1/22/2011
	DRAWING NO:	Page 1 of 1



Winter 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G07
Pelly Laydown (SW Waste Dump)	DRILL: 3000 Diamond Drill, HQ Core	PROJECT NO: W14101068.033
Minto Mine, YT	6944805.928N; 384054.999E; Zone 8	ELEVATION: 858.878m

SAMPLE TYPE	GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE
BACKFILL TYPE	BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND


Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C.		LIQUID		Elevation (m)
					20	40	20	40	60	80	
0	ROCK FILL										858.0
1											857.0
2											856.0
3	- boulder										855.0
4											854.0
5											853.0
6											852.0
7											851.0
8											850.0
9	SILT - sandy, some gravel, low plastic, dark blackish grey										850.0
10	- cobble	G1		- Nbn							849.0
11	SAND - silty, some gravel, fine grained sand, poorly graded, dark grey	G2									848.0
12	- trace gravel										847.0
13				- Nbn							846.0
14	CLAY - silty, medium plastic, dark grey	G3		- Nbn							845.0
15	SAND - silty, some gravel, fine grained sand, poorly graded, dark grey										844.0
16		G4									843.0
17	CLAY - silty, trace sand, medium plastic, dark grey	G5		- Vs <30%, clear							842.0
18	- trace gravel	G6									841.0
19		G7									840.0
20	SILT - some sand, trace clay, trace gravel, non plastic, brownish grey			- 20 mm ice lens, clear							839.0
21		G8		- Nbn							838.0
22											837.0
23	- sandy, some gravel, sub-angular to angular gravel, occasional cobbles	G9		- Nbn, Vs							836.0
24	- cobble										835.0
25		G10		- 20 mm ice lens, clear							834.0
26	- gravelly			- Nbn							833.0
27	- cobble	G11		- Vx <2%							832.0
28		G12		- 15 mm ice lens, clear							831.0
29	- some clay			- 50 mm ice lens, clear							830.0
30		G13		- 40 mm ice lens, clear							829.0
	- cobble			- 10 mm ice							


	LOGGED BY: AT & SMC	COMPLETION DEPTH: 55.47m
	REVIEWED BY: JGD	COMPLETE: 1/22/2011
	DRAWING NO:	Page 1 of 2

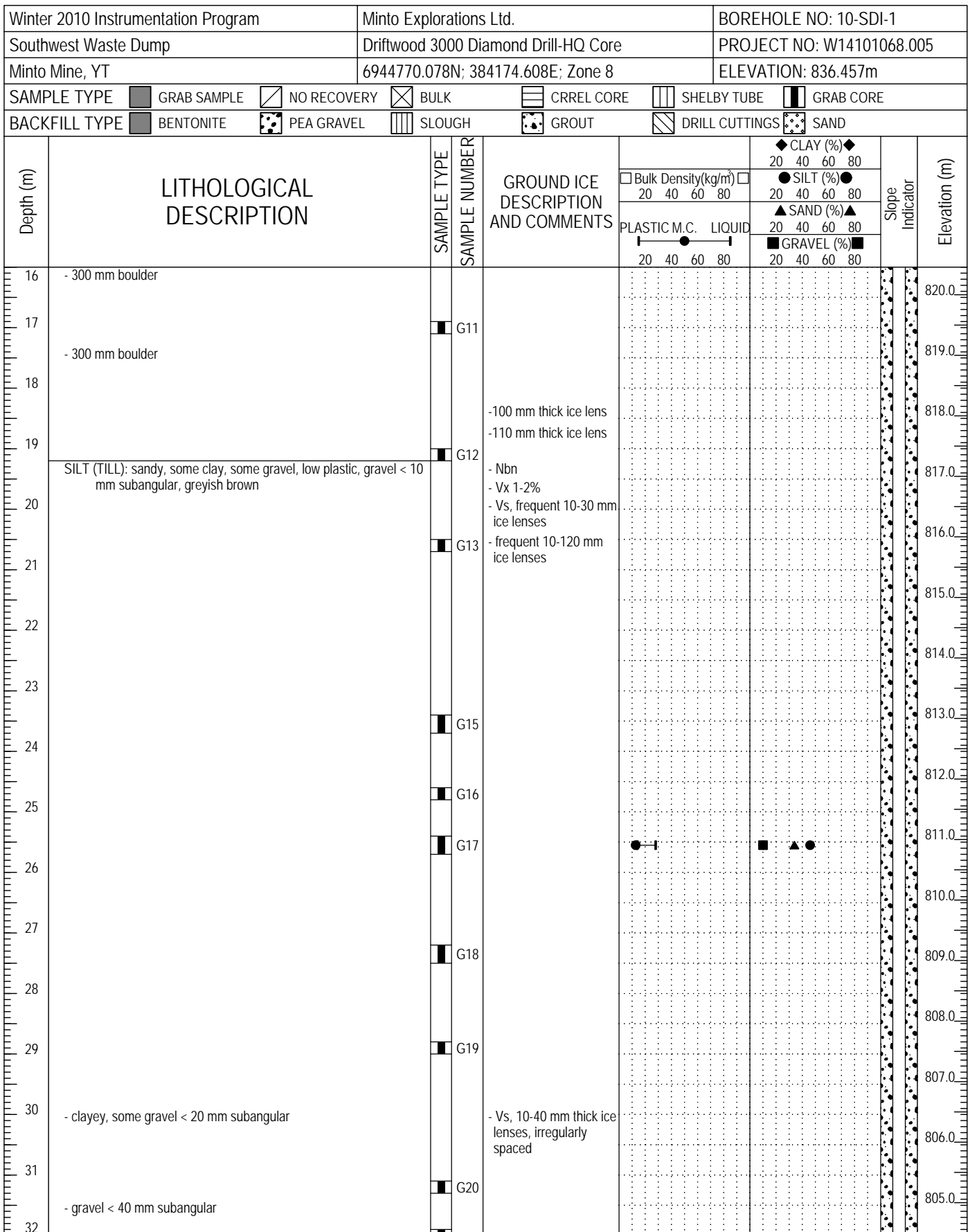
Winter 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G07
Pelly Laydown (SW Waste Dump)	DRILL: 3000 Diamond Drill, HQ Core	PROJECT NO: W14101068.033
Minto Mine, YT	6944805.928N; 384054.999E; Zone 8	ELEVATION: 858.878m

SAMPLE TYPE	GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE
BACKFILL TYPE	BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C. LIQUID		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)		Elevation (m)
					20	40	60	80	20	40	60	80	20	40	60	80	
30	- cobble		G14	lens, clear													828.0
31																	827.0
32			G15	- 20 mm ice lens, clear													826.0
33	- cobble			- 10 mm ice lens, clear													825.0
34	- some gravel, angular, medium plastic, grey		G16	- 30 mm ice lens, clear	●	—				■	▲	●					824.0
35			G17	- Vs <1%													823.0
36	- gravelly, some cobbles			- 60 mm ice lens, clear													822.0
37				- 90 mm ice lens, clear													821.0
38	- boulder		G19	- ice lens, clear													820.0
39			G20	- 20 mm ice lens, clear													819.0
40																	818.0
41			G21														817.0
42																	816.0
43	- strong odour, frequent brown organics		G22														815.0
44	SAND and SILT - trace gravel, trace clay, angular, non plastic, dark blackish grey		G23	- Nbn, Vx <1%	●					■		●					814.0
45	- abundant coarse sand seams																813.0
46	- cobble		G24	- 40 mm ice lens, clear													812.0
47				- 100 mm ice lens, clear													811.0
48	- cobble		G25														810.0
49	- some gravel, sub-rounded to sub-angular		G26														809.0
50	- increased sand content		G27														808.0
51	- gravelly, sub-angular to sub-rounded, dark grey		G28														807.0
52																	806.0
53	- boulder		G29	- Nbn													805.0
54	SAND (RESIDUUM)- silty, gravelly, trace clay, poorly graded, gravel <30 mm in diameter, sub-angular to angular, grey																804.0
55	WEATHERED BEDROCK - fractured bedrock																803.0
56	END OF BOREHOLE @ 55.5 m - CONFIRMED BEDROCK																802.0
57																	801.0
58																	800.0
59																	799.0

	LOGGED BY: AT & SMC	COMPLETION DEPTH: 55.47m
	REVIEWED BY: JGD	COMPLETE: 1/22/2011
	DRAWING NO:	Page 2 of 2

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-SDI-1						
Southwest Waste Dump		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.005						
Minto Mine, YT		6944770.078N; 384174.608E; Zone 8		ELEVATION: 836.457m						
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE			
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND			
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density (kg/m <sup>3</sup> )		PLASTIC M.C. LIQUID		Slope Indicator	Elevation (m)
					20	40	60	80		
0	WASTE ROCK FILL									836.0
1										835.0
2	ORGANICS: peat, some fine fibers, trace wood pieces and rootlets, dark brown	<input checked="" type="checkbox"/>	G1	- Nbe - Vr < 2%, 1 mm thick lenses						834.0
3	SAND: some gravel, trace silt, well graded sand, gravel < 20 mm subangular, brown - cobbles < 100 mm, angular	<input checked="" type="checkbox"/>	G2	- Nbn - Vx < 2%						833.0
4		<input checked="" type="checkbox"/>	G3							832.0
5	- 300 mm boulder									831.0
6		<input checked="" type="checkbox"/>	G4							830.0
7	SAND (TILL): silty, some gravel, trace sand, gravel < 20 mm subangular, greyish brown, frequent 100-200 mm cobbles	<input checked="" type="checkbox"/>	G4	- Nbn - Vx < 1-2%						829.0
8		<input checked="" type="checkbox"/>	G5		●	□	◆	●	▲	828.0
9	- clayey									827.0
10		<input checked="" type="checkbox"/>	G6	- Vr < 5%, approx. 1 mm thick lenses						826.0
11		<input checked="" type="checkbox"/>	G7							825.0
12		<input checked="" type="checkbox"/>	G8	- Vs, 1-2 mm thick ice lenses						824.0
13	- some clay	<input checked="" type="checkbox"/>	G9	- Vs, 5-15 mm thick ice lenses						823.0
14		<input checked="" type="checkbox"/>	G10							822.0
15										821.0
16										820.0
 <b>EBA Engineering Consultants Ltd.</b>				LOGGED BY: JSB & MD	COMPLETION DEPTH: 60m					
				REVIEWED BY: JPB	COMPLETE: 2/3/2010					
				DRAWING NO:	Page 1 of 4					



**EBA Engineering Consultants Ltd.**

LOGGED BY: JSB & MD	COMPLETION DEPTH: 60m
REVIEWED BY: JPB	COMPLETE: 2/3/2010
DRAWING NO:	Page 2 of 4

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-SDI-1						
Southwest Waste Dump		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.005						
Minto Mine, YT		6944770.078N; 384174.608E; Zone 8		ELEVATION: 836.457m						
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE			
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND			
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C. LIQUID		Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80		
32			G21							804.0
33										803.0
34			G22							802.0
35										801.0
36	- some sand, fine grained sand, massive to thinly bedded, low plastic, dark grey - trace slickensides		G24	- Nbn						800.0
37	- coarse sand lens, clean, well graded, medium grained, dark grey			- trace clear ice infill						799.0
38	CLAY (TILL): silty, some sand, trace coarse grained gravel, gravel < 50 mm subangular - sand pocket, well graded, medium grained, black		G23							798.0
39	- high plastic			- Nbn						797.0
40	- clayey, some fine sand, trace fine gravel, dark grey		G25	- Vs, 4-5 mm thick ice lenses						796.0
41				- Vs, 6 mm thick ice lens						795.0
42	- intermitent clayey silt pockets		G26	- Nbn	●	—	▲	●		795.0
43				- Vs, 5 mm thick ice lens						794.0
44	- 120 mm cobble		G27							793.0
45	- some medium to fine grained sand									792.0
46			G28							791.0
47	- 100 mm cobbles, intermitent clayey silt bedding planes - some clay									790.0
48										789.0



**EBA Engineering Consultants Ltd.**

LOGGED BY: JSB & MD	COMPLETION DEPTH: 60m
REVIEWED BY: JPB	COMPLETE: 2/3/2010
DRAWING NO:	Page 3 of 4

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-SDI-1				
Southwest Waste Dump		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.005				
Minto Mine, YT		6944770.078N; 384174.608E; Zone 8		ELEVATION: 836.457m				
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE	
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					20 40 60 80	20 40 60 80		
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		
48	- 70 mm thick sand seam							788.0
49								787.0
50	SAND: gravely, some to trace silt, coarse grained sand, brown							786.0
51	- gravel < 60 mm			- Nf				785.0
52								784.0
53	- gravelly							783.0
	- oxidized zone, reddish brown							782.0
	- grey							781.0
54	GRAVEL (RESIDUUM): sandy, trace silt, coarse grained, angular, matrix supported							780.0
	BEDROCK: granite, diagonal fracture, oxide staining 500 mm							779.0
55	- granite, medium strong, faintly weathered, close spaced discontinuities, good quality, grey, diagonal fractures, coarse grained infill 3-20 mm thick							778.0
56	- occasional quartz inclusions							777.0
57								776.0
58								775.0
59	- medium grained, weak to very weak, slightly weathered							774.0
60	END OF BOREHOLE at 60.0 m							773.0
	- set HW casing 1.2 m below OG							
	- installed inclinometer to 776.4 m							
	- azimuth of A+ direction is 0°							
61								
62								
63								
64								



**EBA Engineering Consultants Ltd.**

LOGGED BY: JSB & MD

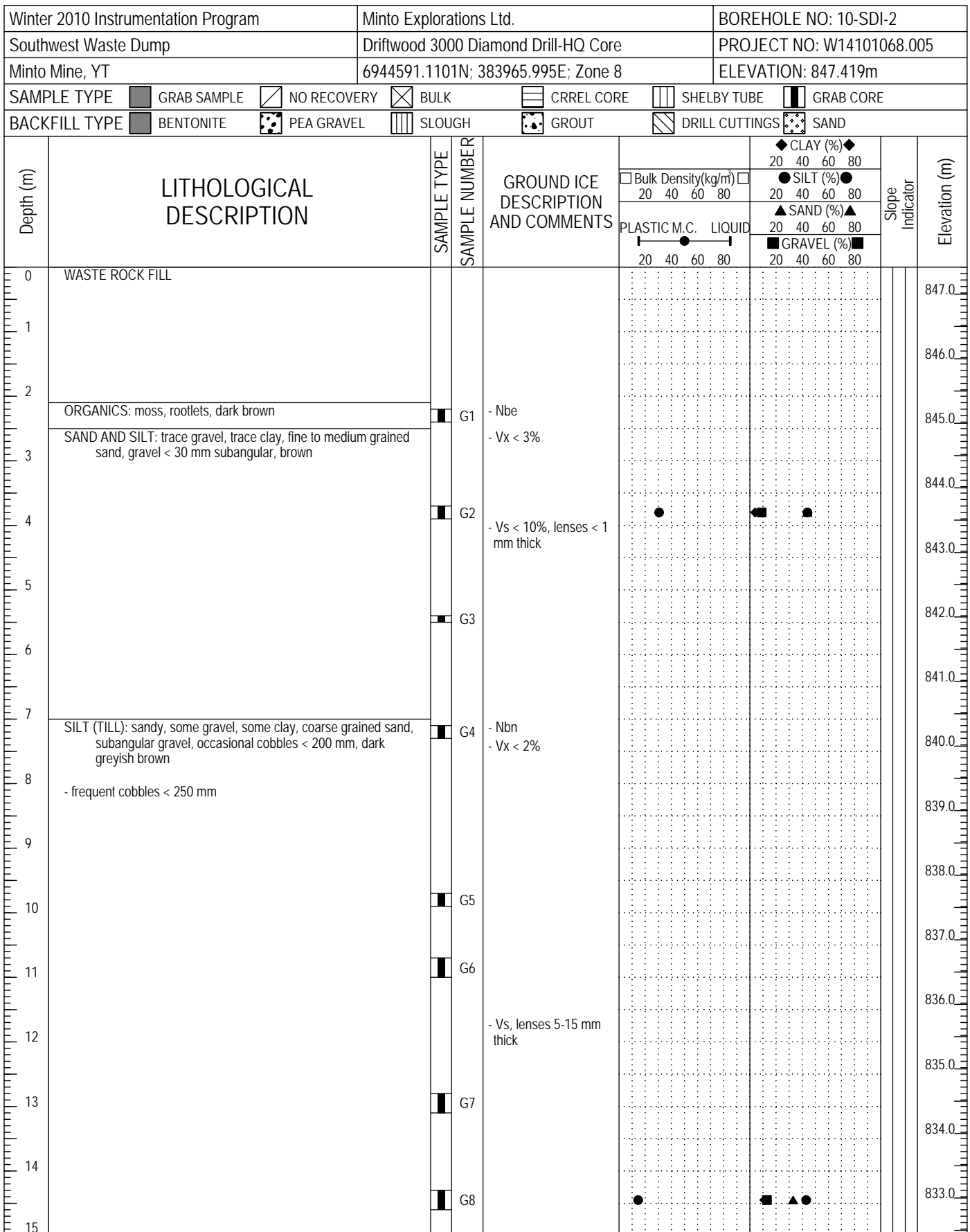
REVIEWED BY: JPB

DRAWING NO:

COMPLETION DEPTH: 60m

COMPLETE: 2/3/2010

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**EBA Engineering Consultants Ltd.**

LOGGED BY: JSB & MD	COMPLETION DEPTH: 54.3m
REVIEWED BY: JPB	COMPLETE: 1/31/2010
DRAWING NO:	Page 1 of 4



Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-SDI-2								
Southwest Waste Dump		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.005								
Minto Mine, YT		6944591.1101N; 383965.995E; Zone 8		ELEVATION: 847.419m								
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE					
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND					
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		PLASTIC M.C.		LIQUID		Slope Indicator	Elevation (m)
					20	40	60	80	20	40		
15												832.0
16			G9	- Nbn - Vx < 5%								831.0
17												830.0
18			G10									829.0
19			G11									828.0
20												827.0
21			G12									826.0
22												825.0
23												824.0
24	- cobble		G13 G14	- Nbn - Vx trace - Vs, lenses 4-25 mm thick								823.0
25			G15									822.0
26												821.0
27												820.0
28			G16									819.0
29												818.0
30			G17									818.0



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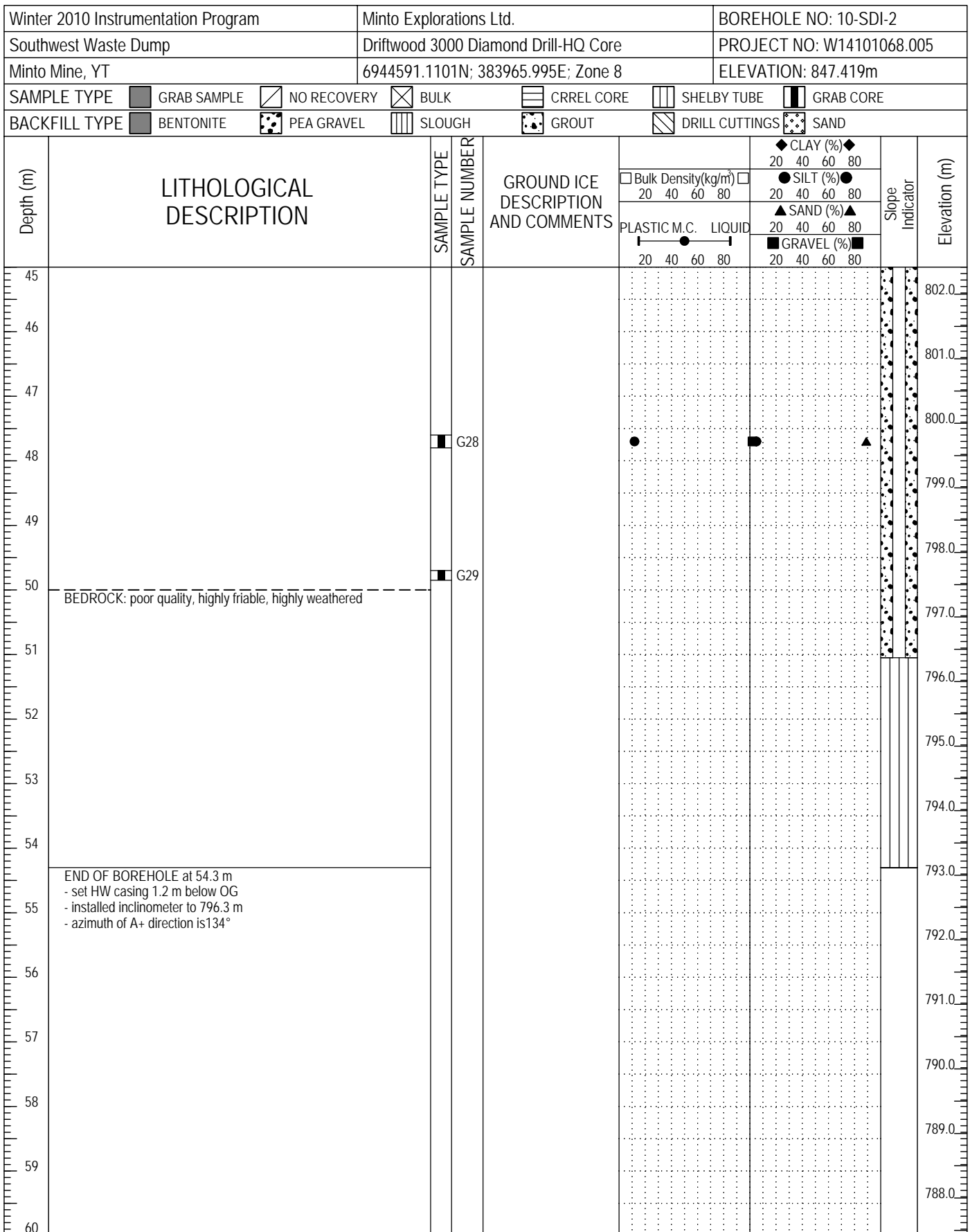
LOGGED BY: JSB & MD	COMPLETION DEPTH: 54.3m
REVIEWED BY: JPB	COMPLETE: 1/31/2010
DRAWING NO:	Page 2 of 4

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-SDI-2					
Southwest Waste Dump		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.005					
Minto Mine, YT		6944591.1101N; 383965.995E; Zone 8		ELEVATION: 847.419m					
SAMPLE TYPE		GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE		
BACKFILL TYPE		BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND		
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		CLAY (%)	SLOPE INDICATOR	Elevation (m)
					PLASTIC M.C.	LIQUID	SILT (%)		
30					20 40 60 80	20 40 60 80	20 40 60 80		817.0
31	CLAY (TILL): silty, some gravel, trace sand, medium plastic, fine grained sand, dark grey - occasional cobbles	GRAB CORE	G18	- Nbn					816.0
32				- Vs, lenses 5-30 mm thick					815.0
33			G19		- Vx trace				814.0
34		- trace to some gravel, fine to medium grained, subrounded		G20					
35			G21		60 70	60 70	60 70		812.0
36									811.0
37			G22						810.0
38				- Vs, 30-40 mm thick ice lens					809.0
39			G23						808.0
40				- Vs, 40-50 mm thick ice lens					807.0
41			G24						806.0
42	SILT (TILL): sandy, gravelly, trace clay, low to medium plastic, dark grey		G25		60 70	60 70	60 70		805.0
43				- Nf					804.0
44	SAND (RESIDUUM): trace fines, trace gravel, well graded, angular, frequent cobbles and boulders		G26						803.0
45			G27						



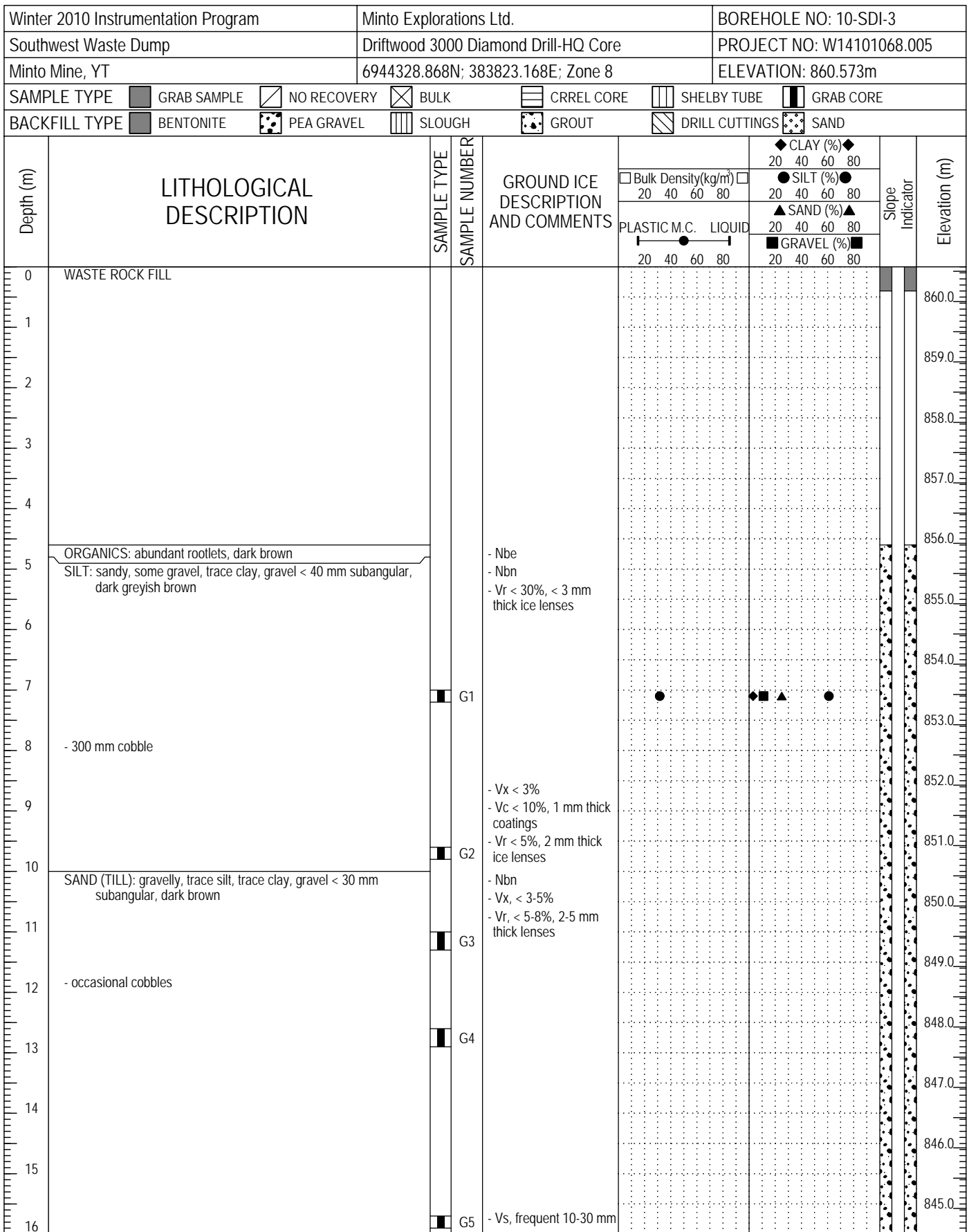
**EBA Engineering Consultants Ltd.**

LOGGED BY: JSB & MD	COMPLETION DEPTH: 54.3m
REVIEWED BY: JPB	COMPLETE: 1/31/2010
DRAWING NO:	Page 3 of 4



**EBA Engineering Consultants Ltd.**

LOGGED BY: JSB & MD	COMPLETION DEPTH: 54.3m
REVIEWED BY: JPB	COMPLETE: 1/31/2010
DRAWING NO:	Page 4 of 4



**EBA Engineering Consultants Ltd.**

LOGGED BY: JSB & MD

REVIEWED BY: JPB

DRAWING NO:

COMPLETION DEPTH: 46.6m

COMPLETE: 1/29/2010

Page 1 of 3

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-SDI-3				
Southwest Waste Dump		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.005				
Minto Mine, YT		6944328.868N; 383823.168E; Zone 8		ELEVATION: 860.573m				
SAMPLE TYPE		GRAB SAMPLE	NO RECOVERY	BULK	CRREL CORE	SHELBY TUBE	GRAB CORE	
BACKFILL TYPE		BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND	
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density(kg/m <sup>3</sup> )		Slope Indicator	Elevation (m)
					PLASTIC M.C.	LIQUID		
					20 40 60 80	20 40 60 80		
					20 40 60 80	20 40 60 80		
					20 40 60 80	20 40 60 80		
16				thick ice lenses				844.0
17								843.0
18			G6					842.0
19			G7					841.0
20			G8					840.0
21								839.0
22			G9					838.0
23			G10					837.0
24			G11					836.0
25	- 200 mm cobble							835.0
26	- gravelly < 15 mm, subangular							834.0
27	- gravel < 40 mm, subangular		G12					833.0
28								832.0
29				- Nbn - Vx 2% - Vs < 5%, 20 mm thick ice lenses				831.0
30			G13					830.0
31								829.0
32	- trace to no gravel			- Nbn - Vx < 5%				



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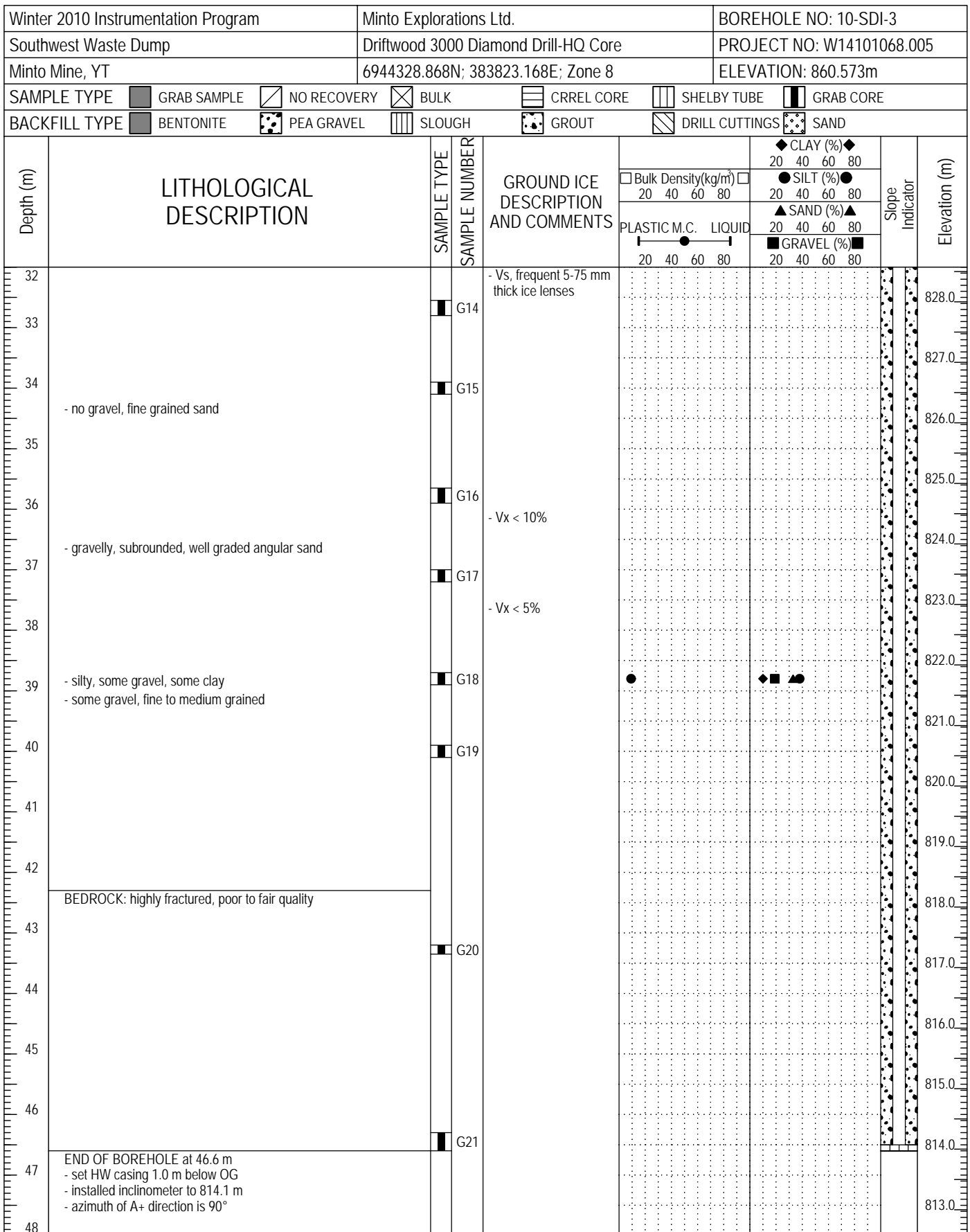
REVIEWED BY: JPB

DRAWING NO:

COMPLETION DEPTH: 46.6m

COMPLETE: 1/29/2010

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**EBA Engineering Consultants Ltd.**

LOGGED BY: JSB & MD	COMPLETION DEPTH: 46.6m
REVIEWED BY: JPB	COMPLETE: 1/29/2010
DRAWING NO:	Page 3 of 3

Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-SDT/P-2							
Southwest Waste Dump		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.005							
Minto Mine, YT		6944595.056N; 383971.298E; Zone 8		ELEVATION: 847.114m							
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input checked="" type="checkbox"/> GRAB CORE				
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input checked="" type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input checked="" type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input checked="" type="checkbox"/> SAND				
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	<input type="checkbox"/> Bulk Density (kg/m <sup>3</sup> ) 20 40 60 80		<input checked="" type="checkbox"/> CLAY (%) 20 40 60 80	Vibrating Wire	Vibrating Wire	Thermistor	Elevation (m)
					PLASTIC M.C. LIQUID 20 40 60 80	<input checked="" type="checkbox"/> SILT (%) 20 40 60 80	<input checked="" type="checkbox"/> SAND (%) 20 40 60 80				
0	WASTE ROCK FILL										847.0
1											846.0
2											845.0
3	ORGANICS: moss rootlets, dark brown		G1	- Nbn							844.0
4	SAND: gravelly, silty, well graded, subrounded gravel, medium brown		G2	- Vx < 5%							843.0
5	- no gravels below 4.5 m, fine to medium grained sand, olive grey to blackish		G3								842.0
6	- gravelly fine to medium grained subrounded, sand angular, some cobbles		G4								841.0
7			G4	- Nbn							840.0
8	SAND (TILL): some gravel, trace silt, fine grained sand, gravel < 20 mm, subangular, dark greyish brown		G5	- Vx < 5%, lenses 10-15 mm thick							839.0
9			G5	- Nbn							838.0
10			G6	- Vx < 2%							837.0
11			G7	- Vs < 5%, lenses 5-10 mm thick							836.0
12			G7								835.0
13			G8	- Vs, lenses 10-25 mm thick							834.0
14			G8								833.0
15	END OF BOREHOLE at 14.6 m		G9								832.0
16	- backfilled with grout from 14.6 m to 2.7 m										831.0
17	- backfilled with bentonite chips from 0.4 m to surface										
	-SDP-2A tip elevation at 843.4 m										
	-SDP-2B tip elevation at 842.7 m										
	-SDT-2 beads between 845.4 m and 834.4 m										



**EBA Engineering Consultants Ltd.**

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DRAWING NO:

COMPLETION DEPTH: 14.6m

COMPLETE: 1/31/2010

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Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-SDT/P-3							
Southwest Waste Dump		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.005							
Minto Mine, YT		6944333.873N; 383824.672E; Zone 8		ELEVATION: 860.166m							
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE				
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND				
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	<input type="checkbox"/> Bulk Density (kg/m <sup>3</sup> ) 20 40 60 80		<input checked="" type="checkbox"/> CLAY (%) 20 40 60 80	Vibrating Wire	Vibrating Wire	Thermistor	Elevation (m)
					PLASTIC M.C. LIQUID 20 40 60 80	<input type="checkbox"/> SILT (%) 20 40 60 80	<input type="checkbox"/> SAND (%) 20 40 60 80				
0	WASTE ROCK FILL										860.0
1											859.0
2											858.0
3											857.0
4											856.0
5	SAND AND SILT: well graded sand, blackish brown		G1	- Nbn							855.0
6											854.0
7	SAND (TILL): gravelly, silty, trace of clay, well graded subangular sand, subrounded gravel, medium to dark grey		G2	- Vs, 2-3 mm thick ice lenses - Nbn							853.0
8											852.0
9	- boulder		G3								851.0
10	- some cobbles		G4	- Nbn - Vs, 3-5 mm thick ice lenses							850.0
11	- some silt to silty			- Nbn							849.0
12			G5								848.0
13	- trace cobbles			- Vx, 5-10%							847.0
14											846.0
15			G6								845.0
16	END OF BOREHOLE at 15.2 - backfilled with cement from 15.2 m to 4.9 m - backfilled with bentonite chips from 0.5 m to surface - SDP-3A tip elevation at 854.3 - SDP-3B tip elevation at 853.6 - SDT-3 beads between 858.4 m and 845.4 m		G7	- Vs, 5-10 mm thick ice lenses, spaced 300-400 mm							844.0
17											



**EBA Engineering Consultants Ltd.**

LOGGED BY: JSB

REVIEWED BY: JPB

DRAWING NO:

COMPLETION DEPTH: 15.2m

COMPLETE: 1/28/2010

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Winter 2010 Instrumentation Program		Minto Explorations Ltd.		BOREHOLE NO: 10-SDT/P-4														
Southwest Waste Dump		Driftwood 3000 Diamond Drill-HQ Core		PROJECT NO: W14101068.005														
Minto Mine, YT		6944163.622N; 383783.542E; Zone 8		ELEVATION: 860.994m														
SAMPLE TYPE		<input checked="" type="checkbox"/> GRAB SAMPLE	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> BULK	<input type="checkbox"/> CRREL CORE	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> GRAB CORE											
BACKFILL TYPE		<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND											
Depth (m)	LITHOLOGICAL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	GROUND ICE DESCRIPTION AND COMMENTS	Bulk Density (kg/m <sup>3</sup> )		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)		Vibrating Wire	Vibrating Wire	Thermistor	Elevation (m)
					20	40	60	80	20	40	60	80	20	40				
0	WASTE ROCK FILL																	
1																		
2	ORGANICS: peat, abundant rootlets, very dark brown			- Nbe														
3	SAND: gravelly, trace silt, gravel < 30 mm subrounded, brown			- Nbn - Vr < 10%, 2-3 mm thick lenses														
4			G1															
5																		
6	- increasing gravel content, frequent cobbles < 150 mm, subangular		G2															
7																		
8	SAND (TILL): some gravel, trace silt, gravel < 20 mm subangular, dark greyish brown		G3															
9	- 100 mm cobble		G4															
10	- 150 mm cobble																	
11	- gravelly																	
12			G5															
13			G6															
14	END OF BOREHOLE at 13.1 m - backfilled with cement from 11.6 m to 1.5 m - SDP-4A tip elevation at 858.5 m - SDP-4B tip elevation at 862.4 m - SDT-4 beads between 860.6 m and 849.4 (one bead located above OG)																	
15																		



**EBA Engineering Consultants Ltd.**

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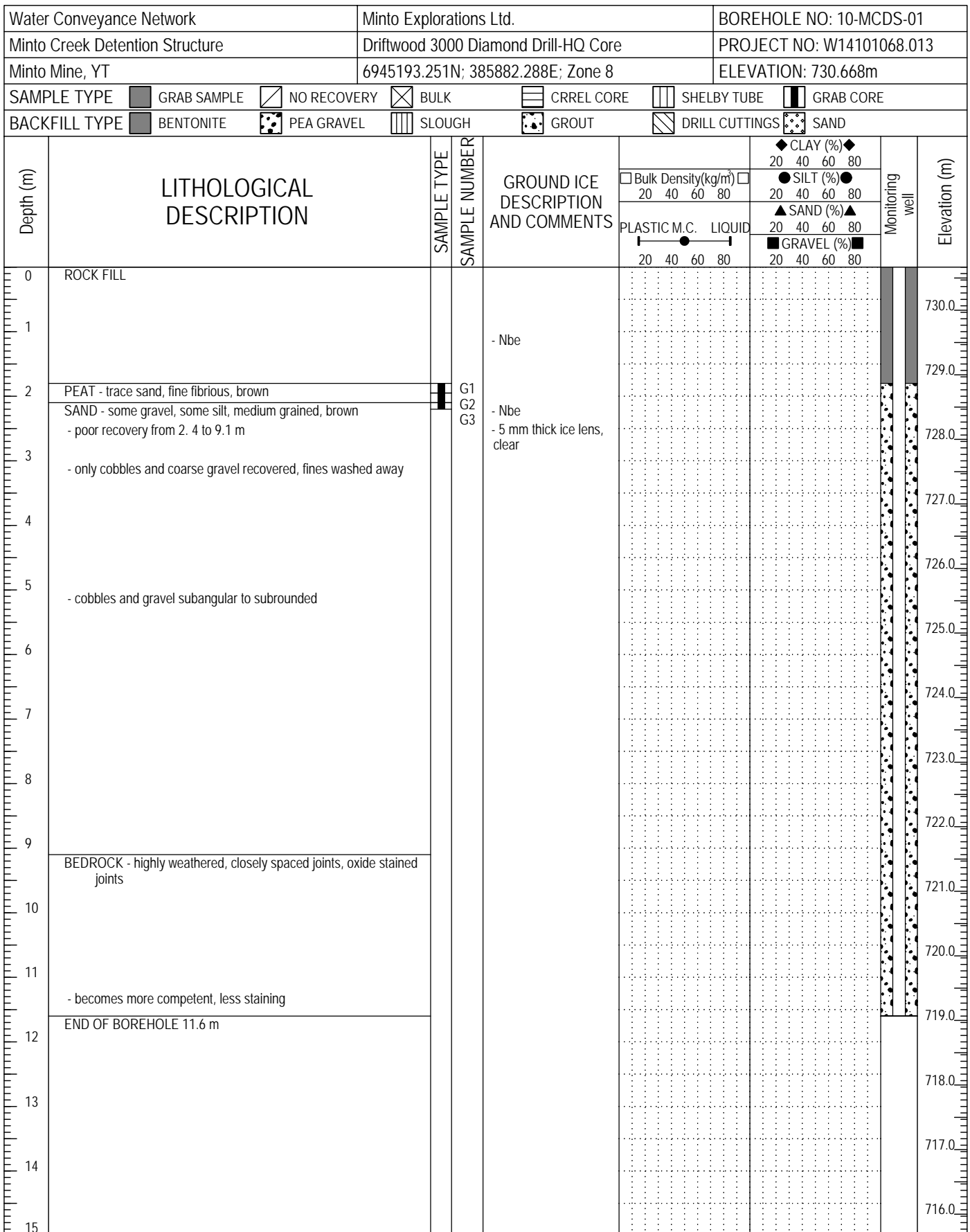
REVIEWED BY: JPB

DRAWING NO:

COMPLETION DEPTH: 13.1m

COMPLETE: 1/30/2010

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**EBA Engineering Consultants Ltd.**

LOGGED BY: JGD	COMPLETION DEPTH: 11.6m
REVIEWED BY: JPB	COMPLETE:
DRAWING NO:	Page 1 of 1

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G13
Pelly Laydown	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944734N; 383997.9E; Zone 8	ELEVATION: 859.9m

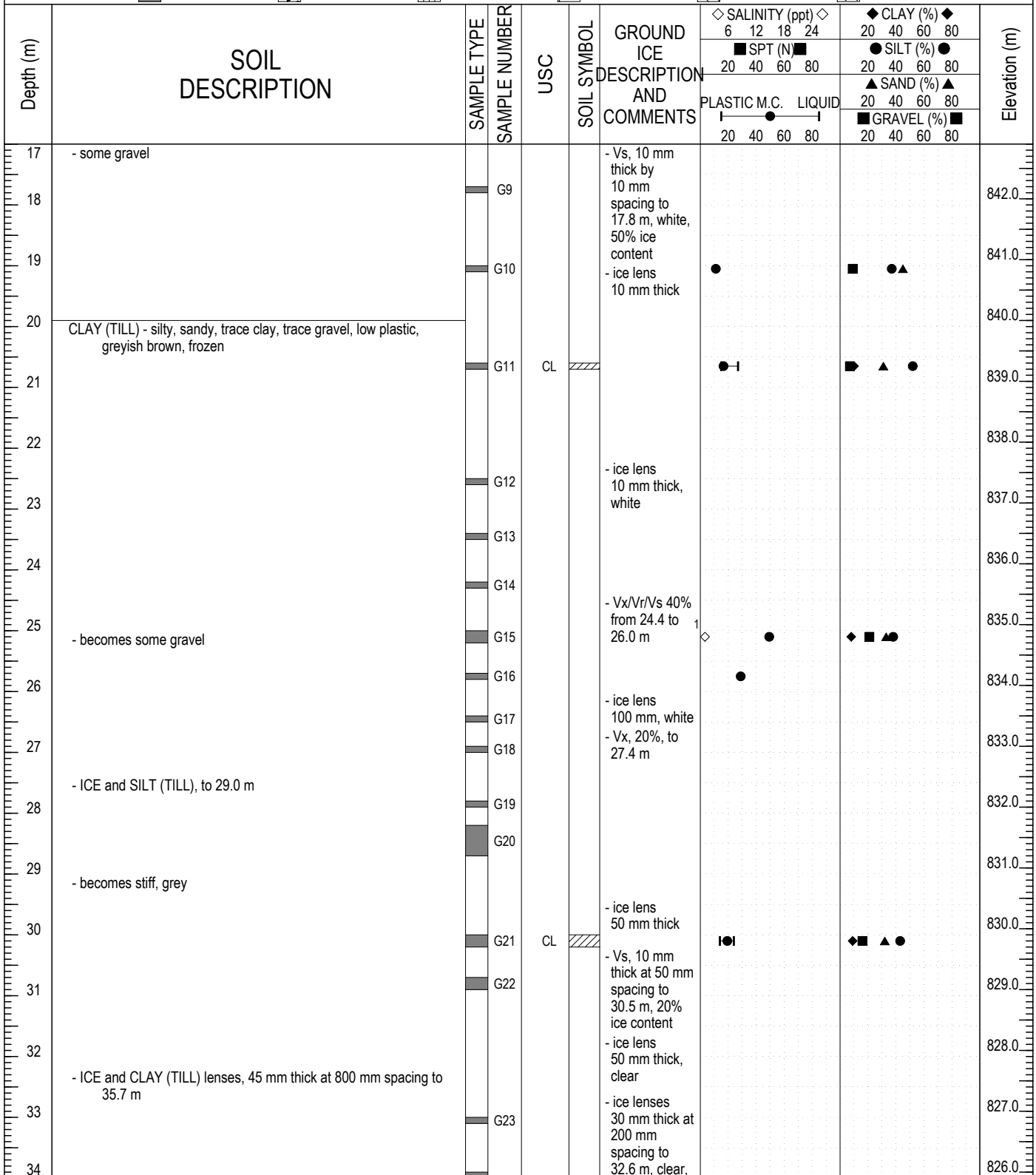
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BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	GROUND ICE DESCRIPTION AND COMMENTS	SALINITY (ppt)		CLAY (%)		SILT (%)		SAND (%)		Elevation (m)
							6	12	18	24	20	40	60	80	
0	GRAVEL (WASTE ROCK FILL) - sandy, some silt, some cobbles, angular, well graded, <75 mm, loose, brown													859.0	
1	- boulder		G1												
2	GRAVEL and SAND - trace silt, trace cobbles, sub-angular, well graded, <20 mm, damp, brown		G2											858.0	
3	- boulders, sample washed to 6.1 m													857.0	
4														856.0	
5														855.0	
6	- becomes silty, some cobbles, some sand, trace clay, sub-rounded, <30 mm, moist													854.0	
7	- becomes grey		G3											853.0	
8	SAND (FILL) - silty, some gravel, trace clay, fine to medium grained, moist, loose, brown		G4											852.0	
9	- cobble, 200 mm thick													851.0	
10	- becomes some silt													850.0	
11														849.0	
12			G5											848.0	
13	- sample washed, high boulder content													847.0	
14														846.0	
15														845.0	
16	ORGANICS - root inclusions		G6											844.0	
	SAND - some clay, some gravel, well graded, wet, loose, brown		G7												
17	SAND and SILT (TILL) - trace gravel, trace clay, well graded, firm, low plastic, brown, frozen		G8											843.0	

	LOGGED BY: KAE	COMPLETION DEPTH: 65.5m
	REVIEWED BY: JGD	COMPLETE: 9/23/2011
	DRAWING NO:	Page 1 of 4

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G13
Pelly Laydown	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944734N; 383997.9E; Zone 8	ELEVATION: 859.9m

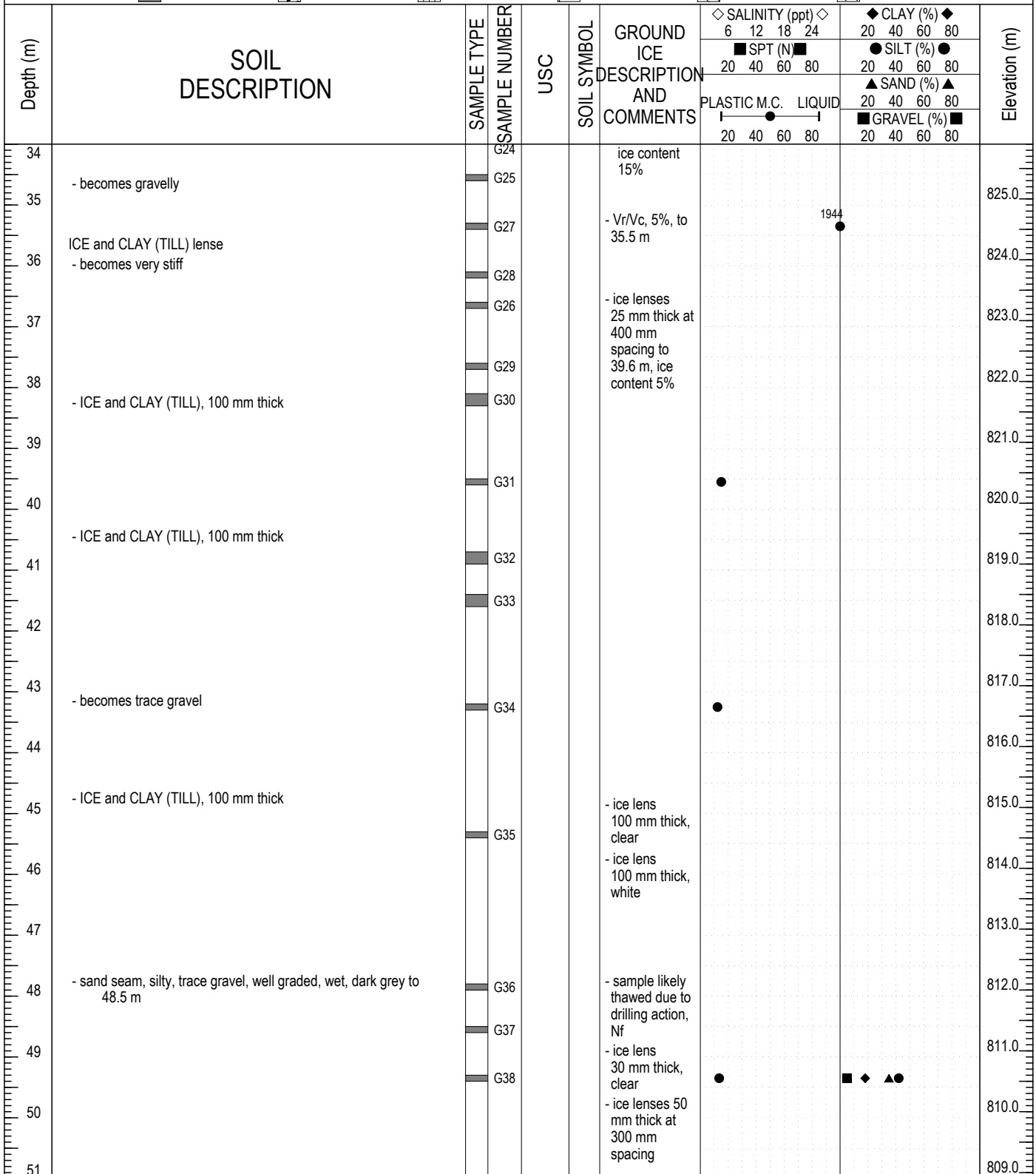
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BACKFILL TYPE	BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND




 A TETRA TECH COMPANY	LOGGED BY: KAE	COMPLETION DEPTH: 65.5m
	REVIEWED BY: JGD	COMPLETE: 9/23/2011
	DRAWING NO:	Page 2 of 4

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G13
Pelly Laydown	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944734N; 383997.9E; Zone 8	ELEVATION: 859.9m

SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND




 A TETRA TECH COMPANY	LOGGED BY: KAE	COMPLETION DEPTH: 65.5m
	REVIEWED BY: JGD	COMPLETE: 9/23/2011
	DRAWING NO:	Page 3 of 4

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G13
Pelly Laydown	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944734N; 383997.9E; Zone 8	ELEVATION: 859.9m

SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

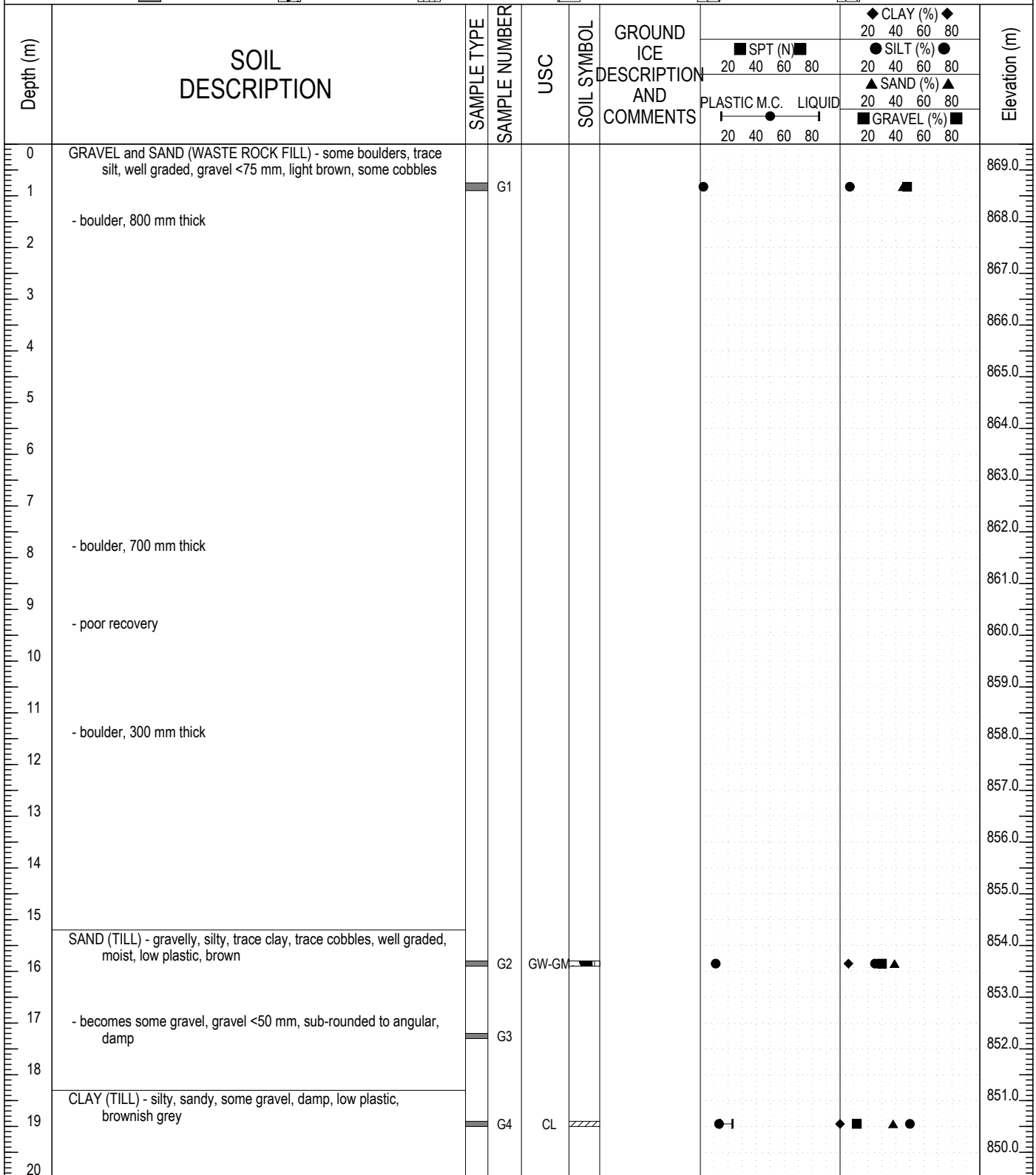
Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C.		LIQUID		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)		Elevation (m)
							20	40	60	80	20	40	60	80	20	40	60	80	20	40	
51	- very stiff		G39																		
52	- becomes some sand, no gravel, dark grey - sand seam 20 mm thick		G40																		808.0
53			G42			- ice lens 10 mm thick, clear															807.0
54			G41			- Vs, 5 mm thick at 10 mm spacing tp 53.4 m; 35% ice content															806.0
55	- becomes sandy, some gravel, trace cobbles, stiff - becomes very stiff		G43			- ice lens 10 mm thick, clear															805.0
56			G44		CL	- sample likely thawed due to drilling action															804.0
57			G44			- ice lenses up to 200 mm thick at 300 mm spacing to 61.1 m, 35% ice content															803.0
58			G45																		802.0
59	SILT (TILL) - sandy, some clay, some gravel, very stiff, low to non-plastic, dark grey, frozen		G45																		801.0
60			G46																		800.0
61			G47																		799.0
62			G46																		798.0
63			G47																		797.0
64			G48																		796.0
65			G48																		795.0
66	END OF BOREHOLE @ 65.5 m (maximum depth of drill) NOTE: Modified USC Symbols shown where data available.																				794.0
67																					793.0
68																					792.0


	LOGGED BY: KAE	COMPLETION DEPTH: 65.5m
	REVIEWED BY: JGD	COMPLETE: 9/23/2011
	DRAWING NO:	Page 4 of 4



Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G14
Southwest Dump	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944414N; 383801E; Zone 8	ELEVATION: 869.5m

SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND




 A TETRA TECH COMPANY	LOGGED BY: KAE	COMPLETION DEPTH: 36.6m
	REVIEWED BY: JGD	COMPLETE: 9/18/2011
	DRAWING NO:	Page 1 of 2

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G14
Southwest Dump	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944414N; 383801E; Zone 8	ELEVATION: 869.5m

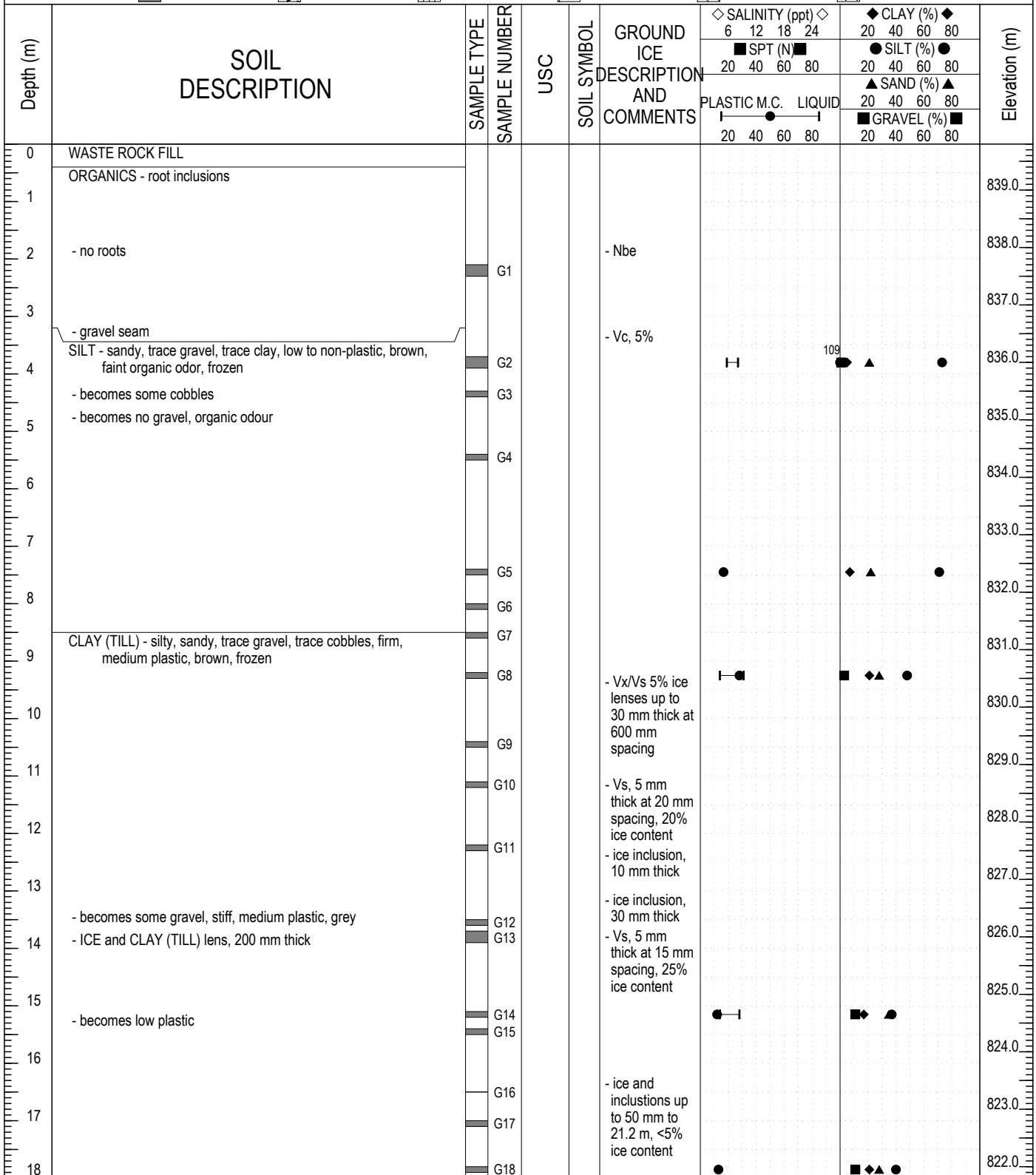
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BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND


Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C. LIQUID		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)		Elevation (m)
							20	40	20	40	20	40	20	40	20	40	20	40	
20			G5																849.0
21																			848.0
22			G6																847.0
23																			846.0
24			G7																845.0
25						- Vx <5%													844.0
26			G8																843.0
27			G9																842.0
28	- becomes some gravel		G10			- ice lenses and inclusions up to 15 mm to 29.1 m, 30-35% ice content, clear													841.0
29			G11																840.0
30	- cobble, 200 mm thick																		839.0
31	SAND - silty, some gravel, trace clay, well graded, moist, dark brown, some oxidization, frozen		G13																838.0
32																			837.0
33	CLAY - sandy, some gravel, damp, medium plastic, grey		G14																836.0
34			G15																835.0
35	- slow, hard drilling @ 30.7 m - switched to wet coring BEDROCK - fractured, sample washed of fines																		834.0
36																			833.0
37	END OF BOREHOLE @ 36.6 m																		832.0
38	Note: installed 25 mm PVC to 15.2 m; hole sloughed at 15.2 m; 60 gal of grout tremmied into hole																		831.0
39																			830.0
40																			830.0

	LOGGED BY: KAE	COMPLETION DEPTH: 36.6m
	REVIEWED BY: JGD	COMPLETE: 9/18/2011
	DRAWING NO:	Page 2 of 2

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G16
W15, Upper Minto Valley	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944633N; 384122.2E; Zone 8	ELEVATION: 839.8m

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND




	LOGGED BY: KAE	COMPLETION DEPTH: 65.5m
	REVIEWED BY: JGD	COMPLETE: 9/26/2011
	DRAWING NO:	Page 1 of 4

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G16
W15, Upper Minto Valley	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944633N; 384122.2E; Zone 8	ELEVATION: 839.8m

SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND


Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	GROUND ICE DESCRIPTION AND COMMENTS	SALINITY (ppt)		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)	Elevation (m)
							6	12	18	24	20	40	60	80		
18															821.0	
19			G19												820.0	
20	SAND and SILT (TILL) - some clay, trace gravel, well graded sand, stiff, non-plastic silt, brown, frozen		G20												819.0	
21			G21												818.0	
22	- varved		G22			- ice lens, cloudy									817.0	
23			G23												816.0	
24	- organic seam, 30 mm thick - becomes trace gravel, very stiff, low to medium plastic - ICE and SAND and SILT (TILL) lens, 100 mm thick		G24												815.0	
25	CLAY (TILL) - silty, sandy, trace gravel, very stiff, low to medium plastic, brown, frozen		G25			- Vx/Vs, 10%									814.0	
26			G26												813.0	
27			G27												812.0	
28			G28												811.0	
29	- sand seam, coarse		G29												810.0	
30			G30			- ice lens, 35 mm thick, clear									809.0	
31			G31												808.0	
32			G32			- ice inclusion, 40 mm thick, white - ice lenses up to 40 mm thick at 500 mm spacing, to 35.4 m, <10% ice content									807.0	
33			G33			- Vs, 4 mm thick at 25 mm spacing, 100 mm thick, 15% ice									806.0	
34															805.0	
35	SILT - sandy, some clay, trace gravel, very stiff, low to medium plastic, brown, frozen														804.0	

	LOGGED BY: KAE	COMPLETION DEPTH: 65.5m
	REVIEWED BY: JGD	COMPLETE: 9/26/2011
	DRAWING NO:	Page 2 of 4

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G16
W15, Upper Minto Valley	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944633N; 384122.2E; Zone 8	ELEVATION: 839.8m

SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND


Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C. LIQUID		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)		Elevation (m)
							6	12	18	24	20	40	60	80	20	40	60	80	
36			G34			content, Nbn following													803.0
37	-clay seam, silty, some sand, soft, high plastic, brown, 100 mm thick		G35																802.0
38	- clay seam, silty, some sand, soft, high plastic, brown, 100 mm thick		G36																801.0
39	- becomes dark grey		G37																800.0
40	- clay seam, silty, some sand, soft, high plastic, brown		G38																799.0
41			G39																798.0
42	- cobble		G40																797.0
43	- becomes some cobbles, some oxidization staining		G41																796.0
44	- becomes trace cobbles, low to non-plastic, dark grey		G42																795.0
45			G43																794.0
46			G44																793.0
47																			792.0
48	- becomes sandy, gravelly																		791.0
49																			790.0
50																			789.0
51																			788.0
52	- becomes some sand, some clay - sandy seams, 30 mm thick at 400 mm spacing to 59.4 m					- Nbe													787.0
53			G45																786.0

 A TETRA TECH COMPANY	LOGGED BY: KAE	COMPLETION DEPTH: 65.5m
	REVIEWED BY: JGD	COMPLETE: 9/26/2011
	DRAWING NO:	Page 3 of 4

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G16
W15, Upper Minto Valley	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944633N; 384122.2E; Zone 8	ELEVATION: 839.8m

SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND


Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C.		LIQUID		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)		Elevation (m)
							6	12	18	24	20	40	60	80	20	40	60	80	20	40	
54			G46																		785.0
55						- Nbn															784.0
56	- becomes trace gravel		G47																		783.0
57																					782.0
58	- becomes brown																				781.0
59			G48																		780.0
60	- becomes stiff, dark grey		G49																		779.0
61	CLAY (TILL) - some silt, trace sand, trace gravel, firm, high plastic, brown, frozen		G50																		778.0
62			G51																		777.0
63	SILT (TILL) - sandy, some clay, trace gravel, stiff, low to medium plastic, dark grey, frozen		G52																		776.0
64	- becomes some sand, trace clay, low plastic, very stiff																				775.0
65			G53	CL-ML																	774.0
66	END OF BOREHOLE @ 65.5 m (maximum depth of drill)																				773.0
67	NOTE: Modified USC Symbols shown where data available																				772.0
68																					771.0
69																					770.0
70																					769.0
71																					768.0
72																					

	LOGGED BY: KAE	COMPLETION DEPTH: 65.5m
	REVIEWED BY: JGD	COMPLETE: 9/26/2011
	DRAWING NO:	Page 4 of 4

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G15
Southwest Dump	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944235N; 383762.8E; Zone 8	ELEVATION: 869.5m

SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C. LIQUID		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)		Elevation (m)
							6	12	18	24	20	40	60	80	20	40	60	80	
0	SAND and GRAVEL (WASTE ROCK FILL) - some silt, some cobbles, damp, light brown																		869.0
1			G1	SW-SM															868.0
2																			867.0
3																			866.0
4																			865.0
5																			864.0
6			G2																863.0
7																			862.0
8																			861.0
9	SILT - gravelly, some sand, moist, soft, low plastic, brown, organic inclusions		G3																860.0
10	ORGANIC SILT (TILL) - sandy, some clay, trace gravel, dark brown		G4			- Vs, <30%													859.0
11	SILT - sandy, some gravel, some clay, firm, low to non-plastic, brown, trace organic odour, frozen		G5			- Vr/Vx, 30%													858.0
12			G6			- Vs, 2 mm thick at 10 mm spacing, 15-20%													857.0
13	- becomes sandy, some gravel, medium plastic, fine to medium grained sand		G7																856.0
14	- boulder, 200 mm		G8																855.0
15	- sand seam		G9																854.0
16	SAND - silty, gravelly, trace clay, some cobbles <150 mm, well graded, damp, firm, dark brown, frozen		G10																853.0
17																			852.0
18			G11	SM															851.0
19	- switched to 5 ft runs																		850.0
20	- becomes some gravel		G12			- Vx, <5%													849.0
21	- becomes coarse grained, trace gravel, no clay		G13			- ice inclusions 15 mm diameter													849.0
			G14																849.0

 A TETRA TECH COMPANY	LOGGED BY: KAE	COMPLETION DEPTH: 57.9m
	REVIEWED BY: JGD	COMPLETE: 9/19/2011
	DRAWING NO:	Page 1 of 3



Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G15
Southwest Dump	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944235N; 383762.8E; Zone 8	ELEVATION: 869.5m

SAMPLE TYPE	DISTURBED	NO RECOVERY	SPT	A-CASING	SHELBY TUBE	CORE
BACKFILL TYPE	BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C.		LIQUID		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)		Elevation (m)
							20	40	60	80	20	40	60	80	20	40	60	80	20	40	
21	- clay seam, high plastic, 15 mm																				848.0
22			G15																		847.0
23			G16																		846.0
24						- Vx, 10%															845.0
25			G17			- ice inclusion 50 mm diameter															844.0
26	- ICE and SILT, 200 mm thick		G18																		843.0
27			G19			- Vx, 50%															842.0
28	- ICE and SILT, 100 mm thick		G20																		841.0
29	- ICE and SILT, 100 mm thick																				840.0
30	SILT and SAND - trace gravel, firm, dark brown		G21	SC		- Vs, 3 mm thick at 30 mm spacing, 10% ice content															839.0
31			G22																		838.0
32	- sand seam		G23			- ice lens, clear															837.0
33	- becomes some gravel		G24																		836.0
34	- ICE and SAND, 50 mm thick		G25																		835.0
35	- ICE and SAND					- Vx, 5%															834.0
36	- ICE and SAND		G26																		833.0
37	- becomes stiff, begin lifting sample at signs of resistance in order to preserve permafrost samples		G27			- ice lens 50 mm thick															832.0
38	- ICE and SAND, 50 mm thick		G28																		831.0
39	- becomes trace gravel, trace clay					- ice lens 15 mm thick, clear															830.0
40	- ICE and SAND, 50 mm thick		G29																		829.0
41	SILT (TILL) - some gravel, trace sand, stiff, low plastic, dark grey, frozen		G30																		828.0
42			G31			- ice lens 50 mm thick															

 A TETRA TECH COMPANY	LOGGED BY: KAE	COMPLETION DEPTH: 57.9m
	REVIEWED BY: JGD	COMPLETE: 9/19/2011
	DRAWING NO:	Page 2 of 3

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G18
W15, Upper Minto Valley	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944482N; 384008.9E; Zone 8	ELEVATION: 848.8m

SAMPLE TYPE	DISTURBED	NO RECOVERY	SPT	A-CASING	SHELBY TUBE	CORE
BACKFILL TYPE	BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND


Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	GROUND ICE DESCRIPTION AND COMMENTS	SALINITY (ppt)		CLAY (%)		SILT (%)		SAND (%)		Elevation (m)
							6	12	18	24	20	40	60	80	
0	GRAVEL WASTE ROCK FILL) - sandy, trace silt, well graded, sub-rounded, dry, loose, grey													848.0	
1															
2	- root inclusions - boulder 600 mm diameter		G1	GW										847.0	
3	ORGANICS - wood and root inclusions, frozen		G2			- Nbe								846.0	
4	SILT - some sand, trace clay, stiff, low plastic, dark grey, organic odor, frozen		G3			- Vs, 1 mm thick at 10 mm spacing, 10% to 4.7 m								845.0	
5														844.0	
6			G4											843.0	
7	SAND - silty, some gravel, trace clay, well graded, moist, soft, low plastic, tan, frozen		G5	SM		- sample likely frozen but thawed by drill action								842.0	
8	- becomes some gravel - becomes sandy, some silt, low to medium plastic		G6											841.0	
9														840.0	
10	CLAY (TILL) - silty, sandy, trace gravel, firm, low to non-plastic, dark grey, frozen		G7	CL										839.0	
11	- becomes some sand, some silt, trace gravel, stiff, medium plastic					- sample likely frozen but thawed by drill action								838.0	
12			G8											837.0	
13			G9											836.0	
14						- ice lens 40 mm thick, clear								835.0	
15			G10			- Vx/Vs, 10% to 14.5 m - ice inclusions, 40 mm thick, white								834.0	
16						- ice lens 5 mm thick, white								833.0	
17	- ICE and CLAY (TILL), 100 mm thick		G11			- ice lens 50 mm thick,								832.0	

 A TETRA TECH COMPANY	LOGGED BY: KAE	COMPLETION DEPTH: 65.5m
	REVIEWED BY: JGD	COMPLETE: 10/1/2011
	DRAWING NO:	Page 1 of 4

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G18
W15, Upper Minto Valley	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944482N; 384008.9E; Zone 8	ELEVATION: 848.8m

SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C. LIQUID		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)		Elevation (m)
							20	40	60	80	20	40	60	80	20	40	60	80	
17						clear													831.0
18			G12			- Vx, 30% to 17.7 m													830.0
19						- ice lens 40 mm thick, clear													829.0
20			G13			- Vx, 5% to 19.0 m													828.0
21	- ICE and CLAY (TILL), 100 mm thick - becomes some gravel		G14			- ice lenses 50 mm thick at 500 mm spacing, 10% ice content													827.0
22																			826.0
23																			825.0
24			G16																824.0
25			G15																823.0
26	- becomes trace gravel, medium to high plastic		G17																822.0
27	- ICE and CLAY (TILL), 200 mm thick																		821.0
28			G18																820.0
29																			819.0
30			G19																818.0
31	- becomes low plastic		G20																817.0
32	- ICE and CLAY (TILL), 100 mm thick																		816.0
33	- ICE and CLAY (TILL), 500 mm thick		G21																815.0
34			G22			- ice lens 30 mm thick, white													815.0

	LOGGED BY: KAE	COMPLETION DEPTH: 65.5m
	REVIEWED BY: JGD	COMPLETE: 10/1/2011
	DRAWING NO:	Page 2 of 4

Fall 2011 Geotechnical Drilling		CLIENT: Minto Explorations Ltd.		BOREHOLE NO: 11-G18											
W15, Upper Minto Valley		DRILL: Mini Sonic		PROJECT NO: W14101068.033											
Minto Mine, YT		6944482N; 384008.9E; Zone 8		ELEVATION: 848.8m											
SAMPLE TYPE		<input type="checkbox"/> DISTURBED <input type="checkbox"/> NO RECOVERY <input type="checkbox"/> SPT <input type="checkbox"/> A-CASING <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> CORE													
BACKFILL TYPE		<input type="checkbox"/> BENTONITE <input type="checkbox"/> PEA GRAVEL <input type="checkbox"/> SLOUGH <input type="checkbox"/> GROUT <input type="checkbox"/> DRILL CUTTINGS <input type="checkbox"/> SAND													
Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	GROUND ICE DESCRIPTION AND COMMENTS	SALINITY (ppt)		CLAY (%)		SILT (%)		SAND (%)		Elevation (m)
							6	12	18	24	20	40	60	80	
							SPT (N)		PLASTIC M.C.		LIQUID		GRAVEL (%)		
							20	40	60	80	20	40	60	80	
34			G23											814.0	
35						- ice lenses 20 mm thick at 500 mm spacing, clear to 37.7 m								813.0	
36														812.0	
37														811.0	
38	- becomes silty, sandy		G24				1							810.0	
39	- ICE and CLAY (TILL), 70 mm thick													810.0	
40	- becomes medium plastic		G25			- ice inclusion 20 mm diameter								809.0	
41	- cobble, 80 mm diameter		G26											808.0	
42			G27											807.0	
43	- becomes very stiff		G28											806.0	
44			G29											805.0	
45			G29											804.0	
46	- clay seam, high plastic		G30			- Nbe								803.0	
47	- sand seam, 50 mm thick, coarse													802.0	
48	- becomes sandy, organic odor													801.0	
48	SAND - some gravel, some clay, trace silt, coarse, loose, grey, frozen		G31			- Nf								801.0	
49	CLAY (TILL) - silty, some sand, trace gravel, stiff, medium plastic, grey, frozen		G32		Cl									800.0	
50			G32											799.0	
50	- ICE and CLAY (TILL), 300 mm thick		G33											799.0	
51	- varved clay, grey and olive brown, medium to high plastic		G34											798.0	

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G18
W15, Upper Minto Valley	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944482N; 384008.9E; Zone 8	ELEVATION: 848.8m

SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND


Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C. LIQUID		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)		Elevation (m)
							6	12	18	24	20	40	60	80	20	40	60	80	
51	- becomes some gravel		G35																797.0
52			G36																796.0
53			G37			- sample likely frozen but thawed by drill action, likely Nbn													795.0
54																			794.0
55	SILT (TILL) - some sand, trace clay, trace gravel, damp, stiff, low to medium plastic, grey, likely frozen		G38			- sample likely frozen but thawed by drill action, likely Nbn													793.0
56																			792.0
57	CLAY (TILL) - silty, trace gravel, trace sand, damp, stiff, medium plastic, grey, frozen		G39	Cl		- sample likely frozen but thawed by drill action, likely Nbn			●	—		■	●	◆					791.0
58																			790.0
59			G40																789.0
60			G41																788.0
61	SILT - sandy, firm, non plastic, dark grey, likely frozen		G42																787.0
62			G43																786.0
63	- becomes soft, organic odor																		785.0
64																			784.0
65			G44																783.0
66	END OF BOREHOLE @ 65.5 m (maximum depth of drill)																		782.0
67	NOTE: Modified USC Symbols shown where data available																		781.0

 A TETRA TECH COMPANY	LOGGED BY: KAE	COMPLETION DEPTH: 65.5m
	REVIEWED BY: JGD	COMPLETE: 10/1/2011
	DRAWING NO:	Page 4 of 4

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G19
Pelly Laydown	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944875N; 383826E; Zone 8	ELEVATION: 862.3m

SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND


Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C.		LIQUID		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)		Elevation (m)
							6	12	18	24	20	40	60	80	20	40	60	80	20	40	
0	SAND (RESIDUUM FILL) - some gravel, some silt, trace cobbles, well graded, firm, reddish brown																				862.0
1			G1																		861.0
2																					860.0
3																					859.0
4																					858.0
5	ORGANICS - root inclusions																				858.0
5	SILT and SAND - some gravel, trace clay, wet, soft, low plastic, light brown		G2	SC																	857.0
6																					856.0
7	- becomes frozen		G3			- Nbn															855.0
8																					854.0
9	- ICE with SILT and SAND, 300 mm thick		G4																		853.0
10			G5			- Vx, 5% to 10.3 m															852.0
11																					851.0
12	SILT (TILL) - sandy, some clay, trace gravel, very stiff, low to non-plastic, grey, frozen		G6																		850.0
13	- becomes firm, brown		G7			- ice inclusion, 20 mm thick															849.0
14																					848.0
14	- sand seam, coarse, 200 mm thick		G8																		848.0
15																					847.0
15	- ICE and SILT, 30 mm thick																				847.0
16	- sand seam, coarse, 200 mm thick																				846.0
16	- becomes some gravel		G9																		846.0
17																					845.0
17	- gravel seam, coarse, 500 mm thick		G10																		845.0
18																					844.0
18			G11																		844.0
19																					843.0
19			G12			- ice lens, 30 mm thick															843.0
20																					842.0
20	SAND - silty, some gravel, trace clay, stiff, coarse, stiff, grey, frozen		G13																		842.0
21			G14																		841.0
22																					841.0
22	- ICE and SAND lens, 20 mm thick		G15																		840.0
23	SAND - silty, some gravel, trace clay, stiff, well graded, grey,		G16																		840.0

	LOGGED BY: KAE	COMPLETION DEPTH: 65.5m
	REVIEWED BY: JGD	COMPLETE: 9/24/2011
	DRAWING NO:	Page 1 of 3

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G19
Pelly Laydown	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944875N; 383826E; Zone 8	ELEVATION: 862.3m

SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C.		LIQUID		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)		Elevation (m)
							6	12	18	24	20	40	60	80	20	40	60	80	20	40	
23	frozen																				839.0
24	- becomes very stiff, trace cobbles		G17	SC		- ice lens, 10 mm thick															838.0
25			G18																		837.0
26			G19																		836.0
27	- ICE and SILT lens, 20 mm thick		G20																		835.0
28	CLAY (TILL) - silty, some gravel, trace sand, firm, plastic, grey, frozen																				834.0
29	- becomes trace gravel		G21			- ice inclusions, 10 mm thick by 300 mm spacing to 29.0 m, Vs, Vx <5%															833.0
30	SILT (TILL) - sandy, some gravel, trace clay, very stiff, low to non-plastic, dark grey, frozen		G22																		832.0
31	CLAY (TILL) - silty, some gravel, trace sand, firm, plastic, grey, frozen		G23																		831.0
32																					830.0
33	- silt (till) seam, 200 mm thick		G24																		829.0
34																					828.0
35			G25																		827.0
36			G26																		826.0
37	SILT and SAND (TILL) - trace clay, trace gravel, very stiff, low to non-plastic, dark grey, frozen		G27	SC		- ice inclusion, 30 mm thick, clear															825.0
38	- ICE and SILT inclusion, 50 mm thick		G28																		824.0
39			G30																		823.0
40			G29			- ice lens, 120 mm thick, clear															822.0
41	CLAY (TILL) - silty, trace sand, trace gravel, firm, low to medium plastic, frozen		G31			- ice lens, 3 mm thick, clear															821.0
42	- becomes low to medium plastic		G32			- ice inclusion, 40 mm thick, clear															820.0
43	- becomes stiff		G33																		819.0
44			G34																		818.0
45	SILT (TILL) - sandy, some gravel, trace clay, very stiff, low to non-plastic, dark grey, frozen		G35			- Nbn															817.0
46	CLAY (TILL) - silty, some sand, trace gravel, stiff, low to medium plastic, dark grey, frozen		G36 G37																		817.0


	LOGGED BY: KAE	COMPLETION DEPTH: 65.5m
	REVIEWED BY: JGD	COMPLETE: 9/24/2011
	DRAWING NO:	Page 2 of 3



Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G19
Pelly Laydown	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944875N; 383826E; Zone 8	ELEVATION: 862.3m

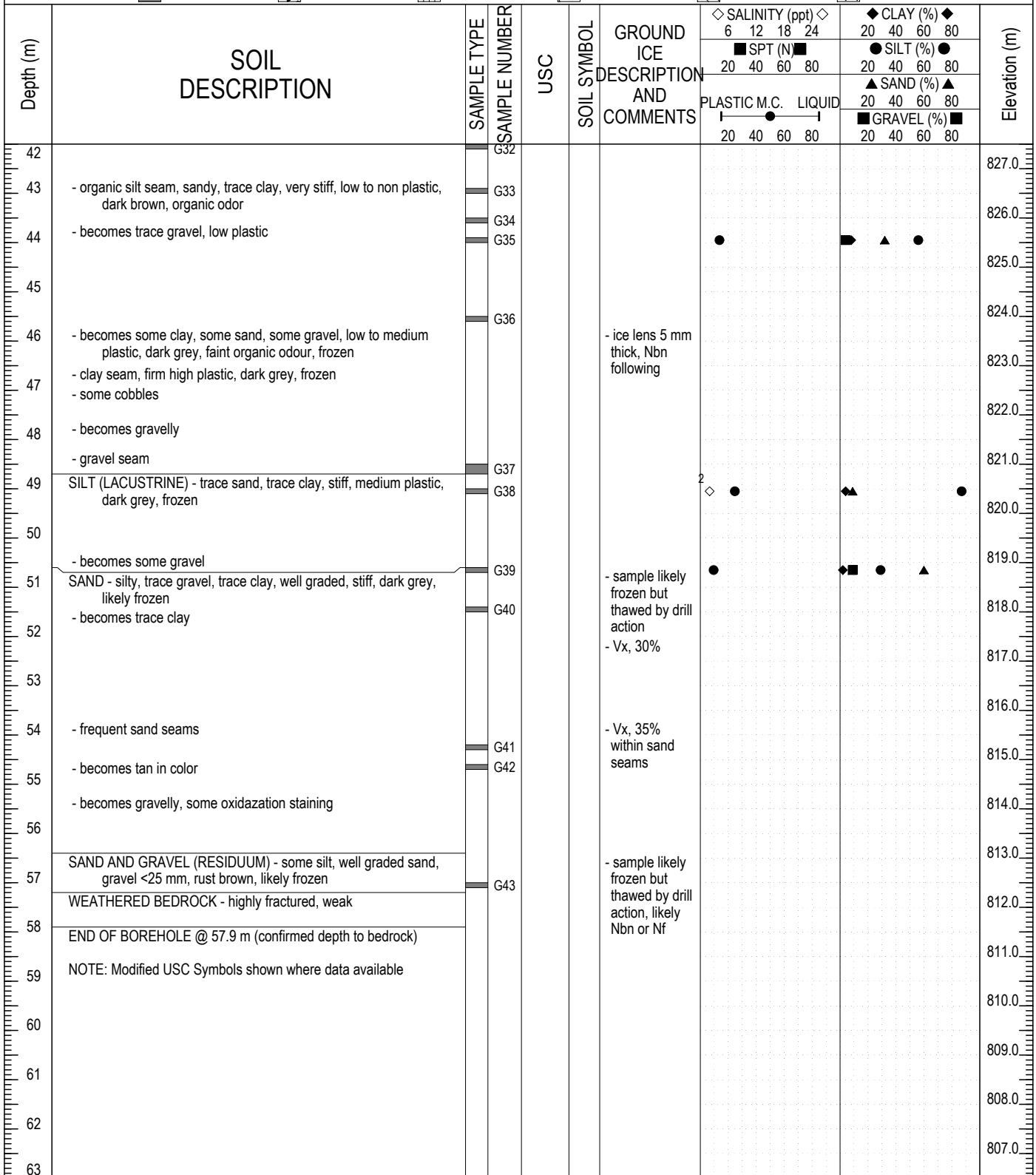
SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	GROUND ICE DESCRIPTION AND COMMENTS	SALINITY (ppt)		CLAY (%)		SILT (%)		SAND (%)		Elevation (m)
							6	12	18	24	20	40	60	80	
46														816.0	
47	- becomes sandy		G38											815.0	
48	- sand seam, coarse		G39											814.0	
49	- clay seam, trace sand, high plastic		G40											813.0	
50	- sand seam, coarse													812.0	
51	- boulder		G41											811.0	
52	SILT (TILL) - sandy, some gravel, trace clay, very stiff, medium plastic, dark grey, frozen													810.0	
53														809.0	
54			G42											808.0	
55														807.0	
56														806.0	
57														805.0	
58	- becomes trace gravel		G43											804.0	
59	- becomes some gravel													803.0	
60	- becomes gravelly													802.0	
61	- becomes trace cobbles		G44											801.0	
62	CLAY (TILL) - some sand, some silt, trace gravel, stiff, medium to high plastic, brown, frozen		G45											800.0	
63	SILT (TILL) - sandy, some gravel, trace clay, very stiff, low to medium plastic, dark grey, some oxidization staining, frozen		G46											799.0	
64	SAND - some clay, trace gravel, well graded, moist, loose, brown to reddish brown, frozen													798.0	
65	- becomes silty, trace clay		G47											797.0	
66	END OF BOREHOLE @ 65.5 m (maximum depth of drill)													796.0	
67	NOTE: Modified USC Symbols shown where data available													795.0	
68														794.0	
69														794.0	

 A TETRA TECH COMPANY	LOGGED BY: KAE	COMPLETION DEPTH: 65.5m
	REVIEWED BY: JGD	COMPLETE: 9/24/2011
	DRAWING NO:	Page 3 of 3

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G15
Southwest Dump	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944235N; 383762.8E; Zone 8	ELEVATION: 869.5m

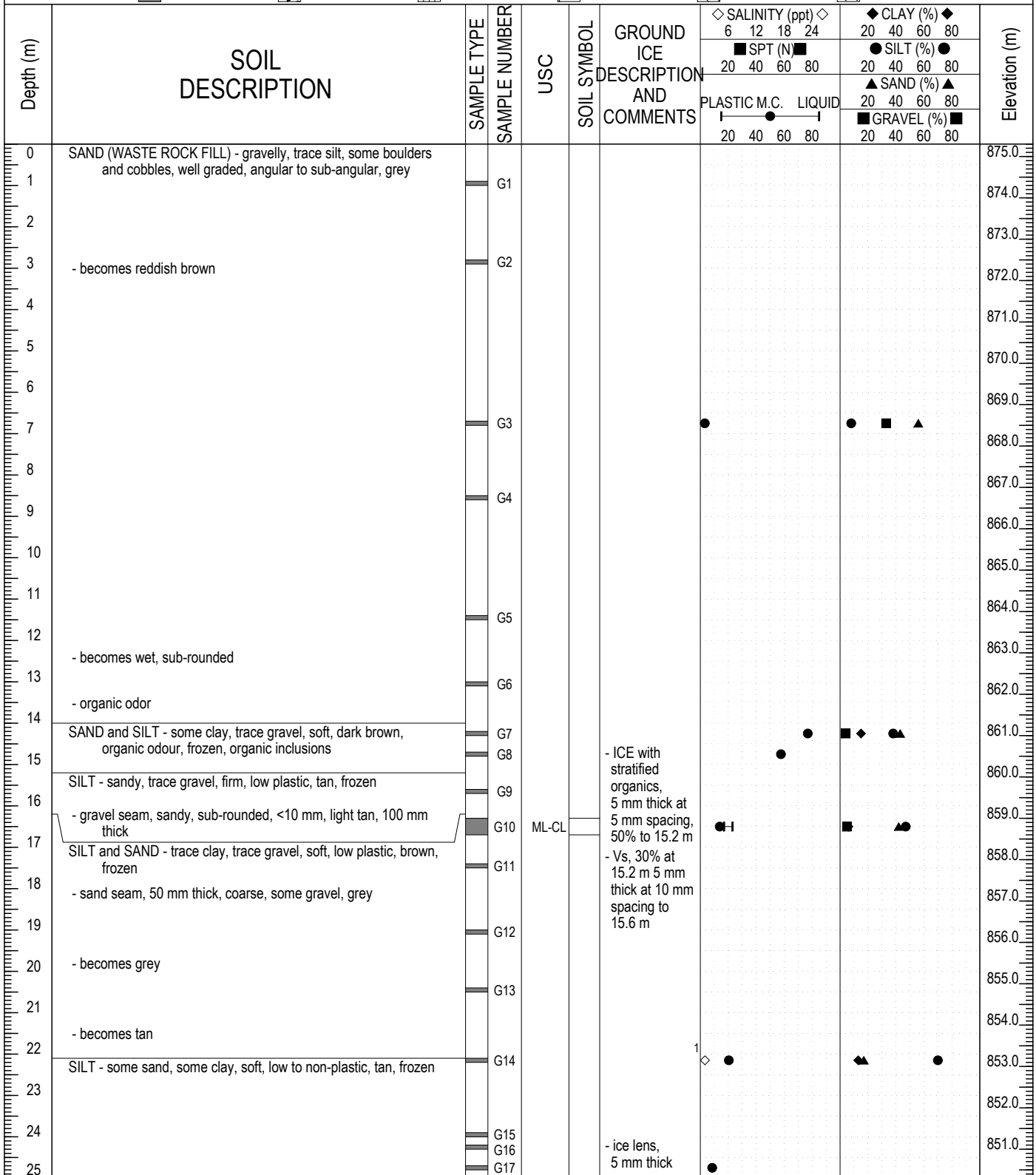
SAMPLE TYPE	DISTURBED	NO RECOVERY	SPT	A-CASING	SHELBY TUBE	CORE
BACKFILL TYPE	BENTONITE	PEA GRAVEL	SLOUGH	GROUT	DRILL CUTTINGS	SAND




 A TETRA TECH COMPANY	LOGGED BY: KAE	COMPLETION DEPTH: 57.9m
	REVIEWED BY: JGD	COMPLETE: 9/19/2011
	DRAWING NO:	Page 3 of 3

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G20
Southwest Dump	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944312N; 383721.7E; Zone 8	ELEVATION: 875.3m

SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND




	LOGGED BY: KAE	COMPLETION DEPTH: 45.7m
	REVIEWED BY: JGD	COMPLETE: 9/28/2011
	DRAWING NO:	Page 1 of 2

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G20
Southwest Dump	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944312N; 383721.7E; Zone 8	ELEVATION: 875.3m

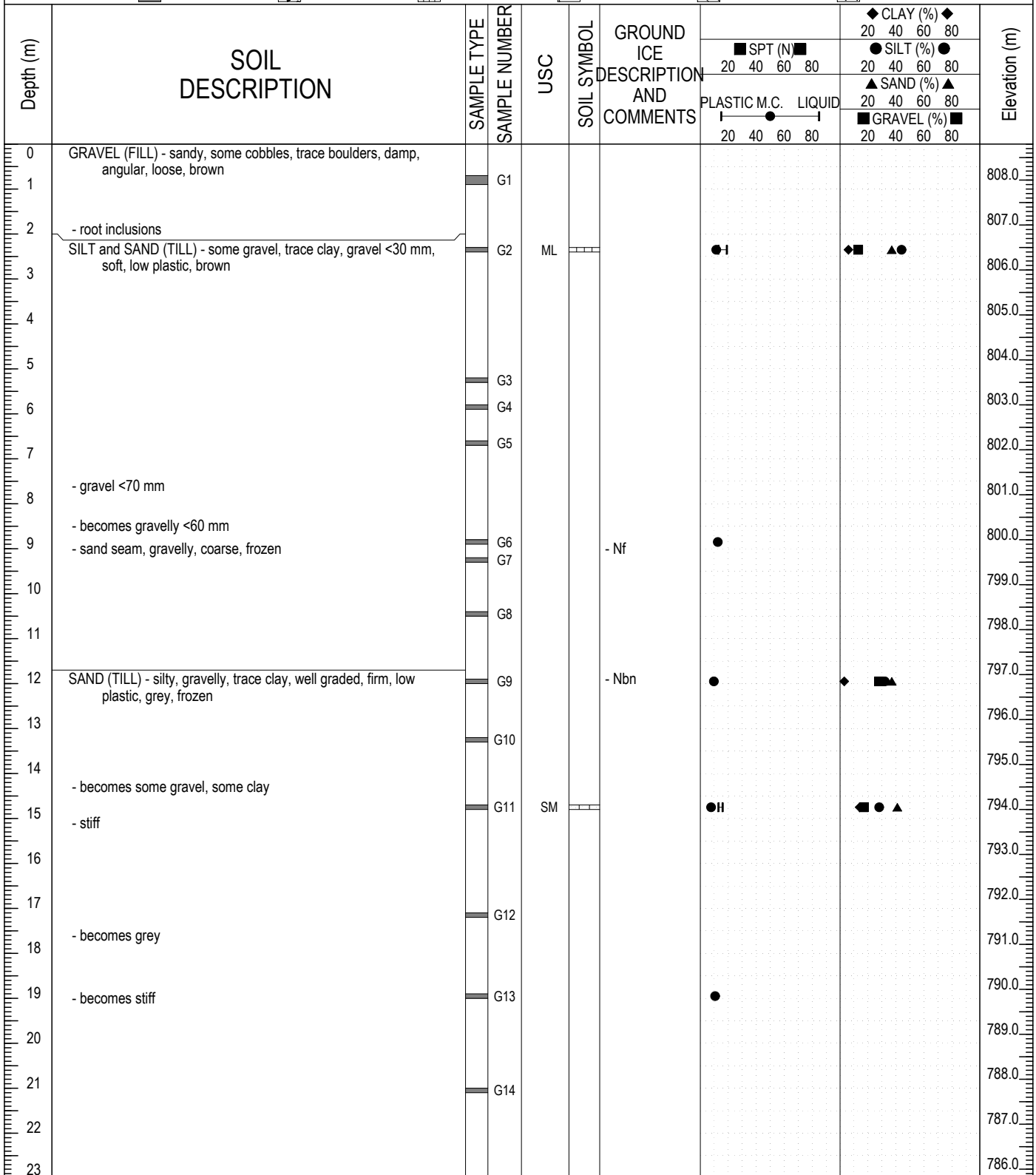
SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND


Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	GROUND ICE DESCRIPTION AND COMMENTS	SALINITY (ppt)		CLAY (%)		SILT (%)		SAND (%)		Elevation (m)
							6	12	18	24	20	40	60	80	
25						- ice inclusions, 10 mm thick								850.0	
26	- cobble													849.0	
27	- becomes some gravel		G18											848.0	
28						- ice lenses 30 mm thick at 400 mm spacing to 29.4 m, 5-10% ice content								847.0	
29			G19											846.0	
30			G20											845.0	
31	SAND and SILT (TILL) - some gravel, some cobbles, trace clay, stiff, low plastic, brown, frozen					- ice lens, 70 mm thick, clear								844.0	
32			G21											843.0	
33	- boulder					- ice lenses, 30 mm thick at 300 mm spacing to 33.5 m, 10% ice content								842.0	
34			G22	SM			● H		◆	■	●	▲		841.0	
35	- cobble 200 mm													840.0	
36			G23											839.0	
37			G24			- Vs, 20 m thick at 50 mm spacing, ice lenses up to 50 mm thick, 30 % ice content to 37.0 m								838.0	
38	SAND (TILL) - silty, some gravel, stiff, brown, frozen						●							837.0	
39			G25											836.0	
40	- cobble 100 mm													835.0	
41	- becomes gravelly													834.0	
42	- gravel seam		G27				●		◆	■	●	▲		833.0	
43	- gravelly, some weathered rock													832.0	
44	SAND and GRAVEL (RESIDUUM) - some silt, some cobbles, coarse grained, tan													831.0	
45			G28											830.0	
46	- oxidization staining													829.0	
47			G29											828.0	
48														827.0	
49														826.0	
50	WEATHERED BEDROCK - estimated weak, pulverized by drill													825.0	
	END OF BOREHOLE @ 45.7 m (likely bedrock, drilling stopped due to slow, hard drilling and poor sample recovery)													824.0	
	NOTE: Modified USC Symbols shown where data available													823.0	

 A TETRA TECH COMPANY	LOGGED BY: KAE	COMPLETION DEPTH: 45.7m
	REVIEWED BY: JGD	COMPLETE: 9/28/2011
	DRAWING NO:	Page 2 of 2

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G23
Boulder Laydown	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944838N; 384839.6E; Zone 8	ELEVATION: 808.8m

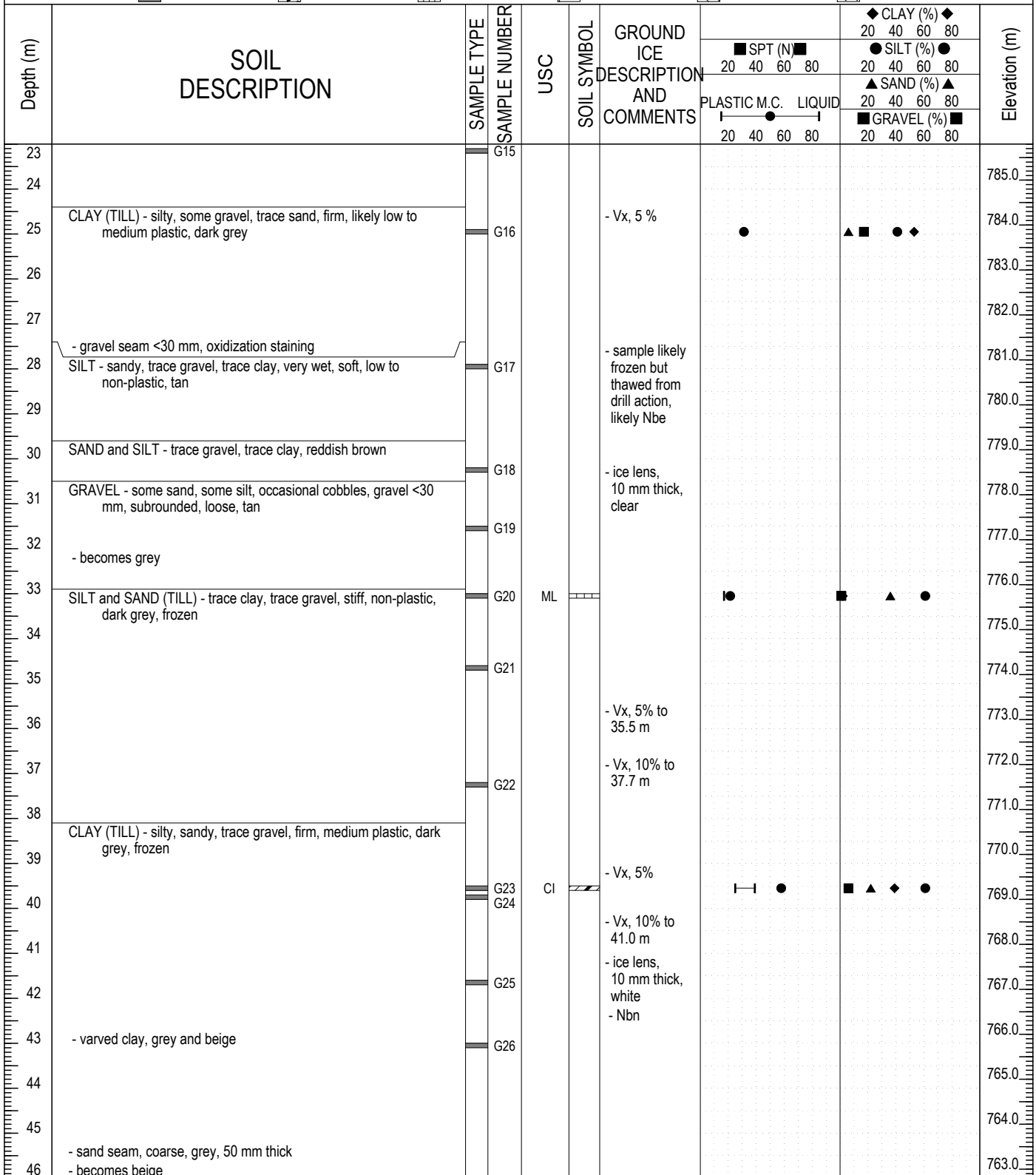
SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND




	LOGGED BY: KAE	COMPLETION DEPTH: 65.5m
	REVIEWED BY: JGD	COMPLETE: 9/30/2011
	DRAWING NO:	Page 1 of 3

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G23
Boulder Laydown	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944838N; 384839.6E; Zone 8	ELEVATION: 808.8m

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND




	LOGGED BY: KAE	COMPLETION DEPTH: 65.5m
	REVIEWED BY: JGD	COMPLETE: 9/30/2011
	DRAWING NO:	Page 2 of 3

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G23
Boulder Laydown	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944838N; 384839.6E; Zone 8	ELEVATION: 808.8m

SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C.		LIQUID		Elevation (m)
							20	40	20	40	60	80	
46												762.0	
47	- becomes stiff		G27									761.0	
48												760.0	
49												759.0	
50			G28									758.0	
51												757.0	
52	- trace gravel, grey											756.0	
53			G29									755.0	
54												754.0	
55	- cobble 150 mm thick - becomes some gavel, some silt											753.0	
56			G30									752.0	
57						- sample likely frozen but thawed from drill action, likely Nbn						751.0	
58			G31				●			■ ◆ ▲ ●		750.0	
59												749.0	
60	- boulder											748.0	
61												747.0	
62						- sample likely frozen but thawed from drill action, likely Nbn						746.0	
63			G33				●			■ ◆ ▲ ●		745.0	
64	- cobble 75 mm thick - becomes silty - sample could not be retrieved, no recovery											744.0	
65												743.0	
66	END OF BOREHOLE @ 65.5 m (maximum depth of drill)											742.0	
67	NOTE: Modified USC Symbols shown where data available.											741.0	
68												740.0	
69												740.0	


	LOGGED BY: KAE	COMPLETION DEPTH: 65.5m
	REVIEWED BY: JGD	COMPLETE: 9/30/2011
	DRAWING NO:	Page 3 of 3



Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: 11-G22
W37, Lower Minto Valley	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6945176N; 385893E; Zone 8	ELEVATION: 730.1m

SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND


Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C.		LIQUID		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)		Elevation (m)
							20	40	60	80	20	40	60	80	20	40	60	80	20	40	
0	SAND and GRAVEL (RESIDUUM FILL) - trace organics, well graded sand, gravel <30 mm, sub-angular, wet, loose, brown, slight organic odor		G1																		730.0
1	SAND and SILT (TILL) - some clay, some gravel, low plastic, brown, frozen					- Vx, 15%															729.0
2																					728.0
3	SAND (TILL) - silty, trace clay, trace gravel, frozen, organic odour and inclusions		G2	SM		- Nbe															727.0
4	- cobbles <200 mm diameter, some high plastic clay within voids of cobbles		G3																		726.0
5	SAND (TILL) - gravelly, some silt, trace clay, well graded, moist, brown, frozen		G4																		725.0
6	SAND and GRAVEL (RESIDUUM) - trace clay, well graded sand, gravel <30 mm, loose, brown to reddish brown, frozen					- Nf															724.0
7	BEDROCK - highly weathered, estimated weak, pulverized by drill, reddish brown		G5																		723.0
8	- cobble in BIR		G6																		722.0
9			G7																		721.0
10			G8																		720.0
11	END OF BOREHOLE @ 10.7 m (confirmed depth to bedrock) NOTE: Modified USC Symbols shwn wehre data available																				719.0

	LOGGED BY: KAE	COMPLETION DEPTH: 10.7m
	REVIEWED BY: JGD	COMPLETE: 9/30/2011
	DRAWING NO:	Page 1 of 1

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: SDI-5
Southwest Dump	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944582N; 383895E; Zone 8	ELEVATION: 869.2m

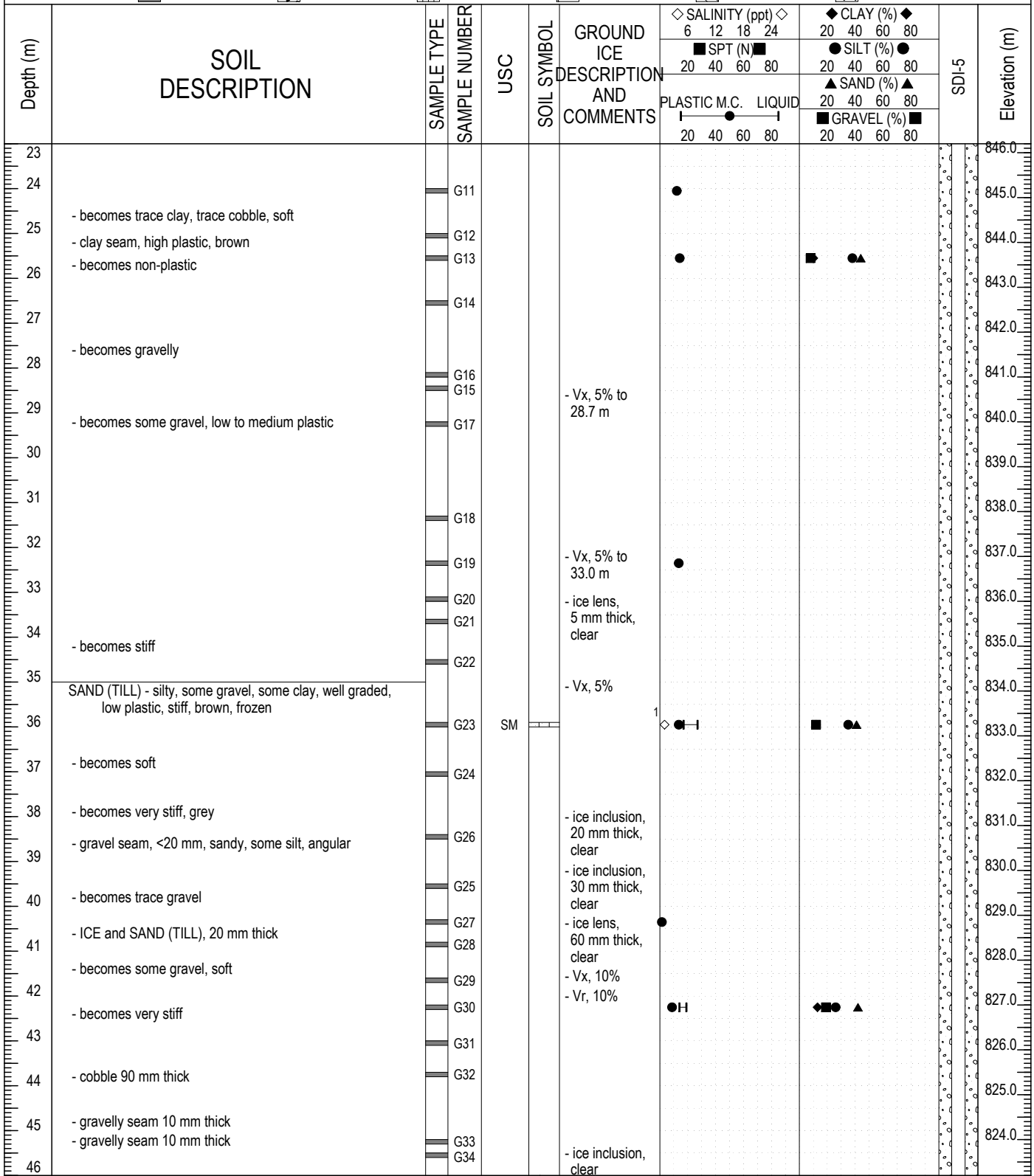
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BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND


Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C. LIQUID		CLAY (%)		SILT (%)		SAND (%)		GRAVEL (%)		SDI-5	Elevation (m)
							20	40	60	80	20	40	60	80	20	40	60	80		
0	GRAVEL (WASTE ROCK FILL) - sandy, trace silt, some cobbles, occasional boulders, dry, brown		G1	GP																869.0
1																				868.0
2																				867.0
3																				866.0
4																				865.0
5	- cobble 200 mm thick		G2																	864.0
6																				863.0
7																				862.0
8																				861.0
9	- becomes trace cobbles																			860.0
10			G3																	859.0
11																				858.0
12			G4																	857.0
13	- becomes some cobbles																			856.0
14			G5																	855.0
15			G6																	854.0
16	- becomes some silt, damp																			853.0
17			G7																	852.0
18	- becomes frozen																			851.0
19			G8																	850.0
20																				849.0
21	- ICE and GRAVEL, 100 mm thick																			848.0
22	ORGANICS - silty, moist, root and wood inclusions, frozen		G9																	847.0
23	SAND and SILT (TILL) - some clay, trace gravel, stiff, non-plastic, dark brown, frozen		G10	SM																847.0

	LOGGED BY: KAE	COMPLETION DEPTH: 61m
	REVIEWED BY: JGD	COMPLETE: 9/21/2011
	DRAWING NO:	Page 1 of 3

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: SDI-5
Southwest Dump	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944582N; 383895E; Zone 8	ELEVATION: 869.2m

SAMPLE TYPE	<input type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND




	LOGGED BY: KAE	COMPLETION DEPTH: 61m
	REVIEWED BY: JGD	COMPLETE: 9/21/2011
	DRAWING NO:	Page 2 of 3

Fall 2011 Geotechnical Drilling	CLIENT: Minto Explorations Ltd.	BOREHOLE NO: SDI-5
Southwest Dump	DRILL: Mini Sonic	PROJECT NO: W14101068.033
Minto Mine, YT	6944582N; 383895E; Zone 8	ELEVATION: 869.2m

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

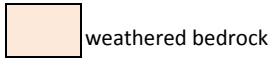
Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	GROUND ICE DESCRIPTION AND COMMENTS	SPT (N)		PLASTIC M.C.		LIQUID		SDI-5	Elevation (m)
							6	12	18	24	20	40		
46													823.0	
47			G35										822.0	
48			G36										821.0	
49			G37										820.0	
50	- becomes trace gravel, coarse sand		G38										819.0	
51	- sample thawing from drilling action, switched to 5 ft runs												818.0	
52													817.0	
53			G39										816.0	
54	- becomes well graded		G40										815.0	
55	- becomes reddish brown, some oxidization		G41										814.0	
56	- sample liquified, likely due to drilling action and excess drilling fluid, possibly melted ice, hard drilling at this depth		G42 G43										813.0	
57	- becomes tan												812.0	
58	SAND (RESIDUUM) - gravelly, trace silt, coarse grained, angular, oxide stained, heavily weathered, broken down with drilling action		G44										811.0	
59	WEATHERED BEDROCK - estimated weak												810.0	
60													809.0	
61	END OF BOREHOLE @ 61.0 m (Confirmed Bedrock)												808.0	
62	NOTE: installed SDI-5, backfilled with grout to original ground, slough to surface of waste rock; azimuth of A <sup>1</sup> direction is 41°												807.0	
63	Modified USC Symbols shown where data available												806.0	
64													805.0	
65													804.0	
66													803.0	
67													802.0	
68													801.0	
69														

 A TETRA TECH COMPANY	LOGGED BY: KAE	COMPLETION DEPTH: 61m
	REVIEWED BY: JGD	COMPLETE: 9/21/2011
	DRAWING NO:	Page 3 of 3

# MW09-1



overburden



weathered bedrock



fresh bedrock

## Geotechnical log (basic+)

\* 10ft rods were used, with 5ft core barrel,  
HQ3 bit, with split tubes; casing depth 10ft

Run #	Run Interval				TCR					IRS		comment
	From	To	From	To	ft	inches	decimal ft	m	%	strong	weak	
	ft	ft	m	m								
1	10	15	3.05	4.57	1.5		1.50	0.46	30			
2	15	20	4.57	6.10	2		2.00	0.61	40			
3	20	25	6.10	7.62	3	2	3.17	0.97	63		S2	
4	25	30	7.62	9.14	1.5		1.50	0.46	30		S3	diamicton material (possibly reworked till)
5	30	35	9.14	10.67	1		1.00	0.30	20			
6	35	40	10.67	12.19	1	3	1.25	0.38	25			
7	40	45	12.19	13.72		8	0.67	0.20	13			
8	45	50	13.72	15.24	0		0.00	0.00	0			
9	50	55	15.24	16.76	1	9	1.75	0.53	35			
10	55	60	16.76	18.29	2	10	2.83	0.86	57		S1	
11	60	65	18.29	19.81		5	0.42	0.13	8			
12	65	70	19.81	21.34		5	0.42	0.13	8			
13	70	75	21.34	22.86	1		1.00	0.30	20			
14	75	77.5	22.86	23.62	4.5		4.50	1.37	180			sluff from drilling (c.sand), not actual recovery
15	77.5	85	23.62	25.91	2.5		2.50	0.76	33			overburden bottom

Run #	Run Interval				TCR					OF	J	CJ	+J from RZ	RQD		IRS		micro def. 0 to 3	J - properties	comment
	From	To	From	To	ft	inches	decimal ft	m	%					cm	%	strong	weak			
	ft	ft	m	m																
16	85	88	25.91	26.82	3.5		3.50	1.07	117	10	10		0.70	66%	R3			rusty colour fill + clay, J surface rough undulating	weathered bedrock, jointed, altered near joints and stained, but fresh away from joints, high FF	
18	88	97	26.82	29.57	3	6	3.50	1.07	39					65%	R3				poor recovery	
19	97	100	29.57	30.48	3		3.00	0.91	100	10	10		0.56	61%	R3					
20	100	105	30.48	32.00	5		5.00	1.52	100	7	6			90%	R4	RO		at 104.6ft v.weathered near Js, R0 near Js, clay in Js, orange colour		
21	105	110	32.00	33.53	5		5.00	1.52	100	8	7	1		90%	R4			same as above		
22	110	115	33.53	35.05	5		5.00	1.52	100	18	14	3	1.20	79%	R4	RO		same as above	10 cm R0 zone at 112.5ft	
23	115	120	35.05	36.58	5		5.00	1.52	100	11	7			60%	R4			same as above	Qz vein present	
24	120	125	36.58	38.10	5		5.00	1.52	100	8	7		1.40	92%	R4			high weathering at 3 J's; other Js only stained rusty or black	felsic dike present at 120.3ft	
25	125	130	38.10	39.62	5		5.00	1.52	100	7	5		1.45	95%	R4			rusty stained Js		
26	130	135	39.62	41.15	5		5.00	1.52	100	12	12		1.25	82%	R4			rusty stained Js		
27	135	140	41.15	42.67	5		5.00	1.52	100	7	5		1.47	96%	R4			rusty stained Js, or weathered Js		
28	140	145	42.67	44.20	4	9	4.75	1.45	95	8	5			100%	R4			black or rusty staining on Js		
29	145	150	44.20	45.72	5		5.00	1.52	100	6	4	2	1.35	89%	R4			black staining on Js	pink alteration colour at 148ft	
30	150	155	45.72	47.24	5		5.00	1.52	100	7	6	2	1.40	92%	R4			clean J walls, no weathering		
31	155	160	47.24	48.77	5		5.00	1.52	100	8	7		1.25	82%	R4			rusty/black stained Js, some weathered J walls		
32	160	165	48.77	50.29	5		5.00	1.52	100	4				100%	R4			rusty/black staining	EOH	

# MW09-1

## Overburden Properties

\* core runs with the same properties were combined

Domain interval				description	permafrost	samples	clay plasticity	clay hardness	
From	To	From	To					description (as found)	ISRM code
ft	ft	m	m						
10	25	3.05	7.62	artificial fill of cobbles, boulders, gravel, soil/reworked till	core hot from drilling, cannot determine ice presence in this borehole			soft	S2
25	30	7.62	9.14	fill: brown moist clayey sand (f-c), with f.gravel (angular) + c.gravel pieces, crumbly		S1 at 29.5ft			
30	55	9.14	16.76	fill: cobbles, boulders, gravel (voids found during drilling), fine gr. materials washed out if present			medium to low	very soft (reworked by drilling process)	S1
55	60	16.76	18.29	grey moist/wet diamict with silty clay matrix, containing angular to sub-round gravel, broken sharp rock pieces, and coarse sand		S2 at 59.5 ft	medium to low	very soft (reworked by drilling process)	S1
65	70	19.81	21.34	grey/white wet clean sub round to ang fine gravel					
70	75	21.34	22.86	sandy clay and grey wet clayey f-med sand with f-c gravel, sub ang to round			low	very soft (reworked by drilling process)	S1
75	85	22.86	25.91	m. gravel, rounded to sub ang, trace silt/clay (washed out)					

### clay hardness - quantitative measurements

Tor Vane (* 0.1 kg/cm <sup>2</sup> )	Penetrometer (kg/cm <sup>2</sup> )	Tor Vane (MPa)	Penetrometer (MPa)
1.1		0.01	
1.1		0.01	
0.8		0.01	

### ISRM Standard - Field Estimate of Rock Strength

Index	Description	Field Test	~ UCS (MPa)
<b>S1</b>	Very Soft Clay	Easily penetrated by fist (flows between fingers)	< 0.025
<b>S2</b>	Soft Clay	Easily penetrated by thumb (>1")	0.025 - 0.05
<b>S3</b>	Firm Clay	Penetrated by thumb with moderate effort (>1")	0.05 - 0.10
<b>S4</b>	Stiff Clay	Indented by thumb but penetrated with great effort	0.10 - 0.25
<b>S5</b>	Very Stiff Clay	Readily indented with thumbnail	0.25 - 0.50
<b>S6</b>	Hard Clay	Indented with difficulty by thumbnail	> 0.50
<b>R0</b>	Extremely Weak	indented by thumbnail, crumbles under soft blow of blunt end of hammer; breaks apart when crushed by fingers	0.25 - 1.0
<b>R1</b>	Very Weak	crumbles under firm blow of geologic hammer pick; peeled by knife	1.0 - 5.0
<b>R2</b>	Weak	shallow indentation under firm blow of pick end of geologic hammer	5.0 - 25
<b>R3</b>	Medium Strong	fractured with single firm blow of geologic hammer	25 - 50
<b>R4</b>	Strong	requires more than one blow of hammer to fracture	50 - 100
<b>R5</b>	Very Strong	requires many blows of hammer to fracture	100 - 250
<b>R6</b>	Extremely Strong	can only be chipped with strong blows of hammer	> 250



overburden



weathered bedrock



fresh bedrock

Geotechnical log (basic+)

\* 10ft rods were used, with 5ft core barrel, HQ3 bit, with split tubes; casing depth 10ft

Run #	Run Interval				TCR					OF	J	CJ	+J from RZ	RQD		IRS		micro def.	J - properties	comment
	From	To	From	To	ft	inches	decimal ft	m	%					cm	%	strong	weak			
	ft	ft	m	m																
1	10	15	3.05	4.57	1.5		1.50	0.46	30						0%					
2	15	17	4.57	5.18	2	6	2.50	0.76	125						0%					
3	17	25	5.18	7.62	5	3	5.25	1.60	66						0%	S4				
4	25	30	7.62	9.14	5		5.00	1.52	100						0%					
5	30	35	9.14	10.67	5		5.00	1.52	100						0%	S5				
6	35	40	10.67	12.19	4	10	4.83	1.47	97						0%	S4				
7	40	45	12.19	13.72	5		5.00	1.52	100						0%	S4				
8	45	50	13.72	15.24	5	2	5.17	1.57	103						0%	S4				
9	50	55	15.24	16.76	5		5.00	1.52	100						0%	S4				
10	55	60	16.76	18.29	5		5.00	1.52	100						0%	S4				
11	60	65	18.29	19.81	5		5.00	1.52	100						0%	S4				
12	65	70	19.81	21.34	5		5.00	1.52	100						0%	S5				
13	70	75	21.34	22.86	4		4.00	1.22	80						0%	S5				
14	75	80	22.86	24.38	5		5.00	1.52	100						0%	S5				
15	80	85	24.38	25.91	5		5.00	1.52	100						0%	S5				
16	85	90	25.91	27.43	3.5		3.50	1.07	70						0%	S5				
18	90	95	27.43	28.96	5		5.00	1.52	100						0%	S5				
19	95	100	28.96	30.48	2	3	2.25	0.69	45						0%	S5				
20	100	105	30.48	32.00	5		5.00	1.52	100						0%	S5				
21	105	110	32.00	33.53	3.5		3.50	1.07	70						0%	S5				
22	110	115	33.53	35.05	0		0.00	0.00	0							S5				
23	115	120	35.05	36.58	5		5.00	1.52	100						0%	S5				
24	120	125	36.58	38.10	5		5.00	1.52	100						0%	S3				
25	125	130	38.10	39.62	5	2	5.17	1.57	103						0%	S3				
26	130	135	39.62	41.15	5		5.00	1.52	100						0%	S4				
27	135	140	41.15	42.67	5		5.00	1.52	100						0%	S5	S4			
28	140	145	42.67	44.20	4		4.00	1.22	80						0%	S3				
29	145	150	44.20	45.72	5		5.00	1.52	100						0%					
30	150	155	45.72	47.24	5		5.00	1.52	100		38		38		0%	R0				
31	155	160	47.24	48.77	0.5		0.50	0.15	10		6		6		0%	R0				grey brown highly weahered curmbly / jointed rock
32	160	165	48.77	50.29	4.9		4.90	1.49	98		30		30		0%	R2	R0			stained J's, smooth, no gouge R0 crumbly to 163ft, then weak jointed
33	165	170	50.29	51.82	5		5.00	1.52	100	6	25		20		0%	R2	R0			red stained J's, weathered at J's highly weathered rock
34	170	173	51.82	52.73	2		2.00	0.61	67		16		16		0%	R2	R0			red stained J's, weathered at J's highly weathered rock
35	173	178	52.73	54.25	1	11	1.92	0.58	38	5	25		20		0%	R2	R0			red stained J's, weathered at J's highly weathered rock + one Qz vein
36	178	180	54.25	54.86		9	0.75	0.23	38	4	8		4		0%	R3	R0			black staining highly weathered rock
37	180	185	54.86	56.39		10	0.83	0.25	17		32		32		0%	R0				highly weathered rock
38	185	190	56.39	57.91		9	0.75	0.23	15	4	4				0%	R1				broken Qz pieces of Qz vein included
39	190	195	57.91	59.44	1	8	1.67	0.51	33		40		40		0%	R0				red stained J's





# MW09-3



overburden



weathered bedrock



fresh bedrock

## Geotechnical log (basic+)

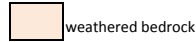
\* 10ft rods were used, with 5ft core barrel,  
HQ3 bit, with split tubes; casing depth 10ft

Run #	Run Interval				TCR					OF	J	CJ	+J from RZ	RQD		IRS		micro def. 0 to 3	J - properties	comment
	From	To	From	To	ft	inches	decimal ft	m	%					cm	%	strong	weak			
	ft	ft	m	m																
1	10	15	3.05	4.57	3.5		3.50	1.07	70	8	28	0	24	15	14%	R2	R0	2	brown stained J's	crumbly R0 zones, highly weathered
2	15	20	4.57	6.10	3	1	3.08	0.94	62	7	12	0	6	30	32%	R3	R0	2	planar rough, stained, alpha 45 deg	weathered rock, jointed, RZ (15cm) R0, minor Qz vein
3	20	25	6.10	7.62	5		5.00	1.52	100	13	9	0		123	81%	R3		2	7, 4   9   0 staining only; alpha 50 to 60 degrees	weathered rock, jointed
4	25	30	7.62	9.14	5	1	5.08	1.55	102	10	9	0		145	94%	R4	R3	1	4, 7, 8   1, 3, 0   0 brown non softening fill, alpha 60 to 80 degrees	slightly weathered rock / competent rock
5	30	35	9.14	10.67	5		5.00	1.52	100	6	3	0		147	96%	R4	R3	0	4 to 7   0   0, stained brown-orange	1 Qz vein
6	35	40	10.67	12.19	5		5.00	1.52	100	8	5	0		150	98%	R4	R3	0	4 to 8   0   0, stained brown-orange, alpha 50 to 70 degrees	
7	40	45	12.19	13.72	4	9	4.75	1.45	95	12	10	0		108	75%	R4	R3	0	7   0 to 3   0 stained orange, alpha 30 to 70 degrees	slightly altered from 41 to 43'
8	45	50	13.72	15.24	5	3	5.25	1.60	105	9	7	1		148	92%	R4	R3	0	7   0   0 stained orange, alpha 45	
9	50	55	15.24	16.76	5		5.00	1.52	100	6	3	0		150	98%	R5	R4	0	4 to 7   0   0, stained, alpha 45 to 70 degrees	
10	55	60	16.76	18.29	4	10.5	4.88	1.49	98	7	4	0		149	100%	R5	R4	0	4 to 7   0   0, slightly stained	very competent fresh rock, crs grained, 1 large vein
11	60	65	18.29	19.81	4	10.5	4.88	1.49	98	6	5	0		149	100%	R5	R4	0	4 to 7   0   0, no staining	
12	65	67	19.81	20.42	2	2	2.17	0.66	108	5	4	1		66	100%	R5	R3	0		competent grey/pink rock (logged from photo)
13	67	70	20.42	21.34	3	6	3.50	1.07	117	2	1	0		100	94%	R5	R4	0		
14	70	75	21.34	22.86	4	10	4.83	1.47	97	6	3	0		148	100%	R5	R4	0	J walls planar, undulating, rough, brown & altered; alpha 30 to 80 degrees	
15	75	80	22.86	24.38	4	10	4.83	1.47	97	6	5	0		138	94%	R5	R4	0	stained J's	grey brown rock, slightly altered
16	80	85	24.38	25.91	4	7.5	4.63	1.41	93	6	3	0		141	100%	R5	R4	0	all J's weathered with non softening fill, altered J wall; alpha 45 to 90 degrees	fluid flow evidence
18	85	90	25.91	27.43	5	2	5.17	1.57	103	4	4	0		149	95%	R5	R4	1		
19	90	95	27.43	28.96	5		5.00	1.52	100	11	6	4		149	98%	R5	R4	1	1 J with soft fill 0.5mm brown clay, alpha 15 degrees	
20	95	100	28.96	30.48	5	2	5.17	1.57	103	12	13	0	4	133	84%	R4	R2	0	1 J at 99' has 1 cm brown clay gauge fill (alpha 50 degrees)	RZ (10cm) jointed at 96'; R2 rock highly altered, brown from 95-96'
21	100	105	30.48	32.00	5		5.00	1.52	100	6	5	1		150	98%	R5	R4	0		
22	105	110	32.00	33.53	5	2	5.17	1.57	103	7	5	1		146	93%	R5	R4	1	1 J has 0.5mm soft fill	
23	110	115	33.53	35.05	5	1	5.08	1.55	102	10	11	3		122	79%	R5	R4	0		mineralization around micro defects at 111.5'
24	115	120	35.05	36.58	5	1	5.08	1.55	102	12	7	1		103	66%	R5	R4	1	hard fill in Js	
25	120	125	36.58	38.10	5	2	5.17	1.57	103	12	6	2		140	89%	R5	R4	1		
26	125	130	38.10	39.62	4	11	4.92	1.50	98	10	5	1		135	90%	R5	R4	1	1 J has 2mm soft fill	
27	130	135	39.62	41.15	5		5.00	1.52	100	14	14	0		62	41%	R5	R3	1		
28	135	140	41.15	42.67	5	2	5.17	1.57	103	8	6	1		141	90%	R5	R4	1		
29	140	145	42.67	44.20	5		5.00	1.52	100	9	7	0		150	98%	R5	R4	1		
30	145	150	44.20	45.72	5		5.00	1.52	100	7	5	0		137	90%	R5	R4	1		
31	150	155	45.72	47.24	5		5.00	1.52	100	7	4	1		144	94%	R5	R4	0		
32	155	160	47.24	48.77	4	10	4.83	1.47	97	10	5	1		133	90%	R5	R4	1	1 J has 2mm soft fill	
33	160	165	48.77	50.29	4	9	4.75	1.45	95	9	7	0		139	96%	R5	R4	0	Js betw 162-163' have 2mm of soft fill	

MW09-4



overburden



weathered bedrock



fresh bedrock

Geotechnical log (basic+)

\* 10ft rods were used, with 5ft core barrel, HQ3 bit, with split tubes; casing depth 10ft

Run #	Run Interval				TCR					OF	J	CJ	+J from RZ	RQD		IRS		micro def.	J - properties	comment	
	From	To	From	To	ft	inches	decimal ft	m	%					cm	%	strong	weak				0 to 3
	ft	ft	m	m																	
1	5	6	1.52	1.83	1		1.00	0.30	100					0%	S3						
2	6	11	1.83	3.35	2.2		2.20	0.67	44					0%	S4						
3	11	15	3.35	4.57	3		3.00	0.91	75					0%	S4						
4	15	20	4.57	6.10	3.6		3.60	1.10	72					0%	S3						
5	20	25	6.10	7.62	5		5.00	1.52	100					0%	S4	S2					
6	25	30	7.62	9.14	5		5.00	1.52	100					0%	S4						
7	30	35	9.14	10.67	5		5.00	1.52	100					0%	S4						
8	35	40	10.67	12.19	5		5.00	1.52	100					0%	S4	S3					
9	40	45	12.19	13.72	4		4.00	1.22	80					0%	S4						
10	45	50	13.72	15.24	5		5.00	1.52	100					0%	S4						
11	50	55	15.24	16.76	4.2		4.20	1.28	84					0%	S4						
12	55	60	16.76	18.29	5		5.00	1.52	100					0%	S4						
13	60	65	18.29	19.81	5		5.00	1.52	100					0%	S4						
14	65	70	19.81	21.34	5		5.00	1.52	100					0%	S4	S3					
15	70	75	21.34	22.86	5		5.00	1.52	100					0%	S4						
16	75	80	22.86	24.38	5		5.00	1.52	100					0%	S4						
18	80	85	24.38	25.91	5		5.00	1.52	100					0%	S4						
19	85	90	25.91	27.43	5		5.00	1.52	100					0%	S4						
20	90	95	27.43	28.96	0		0.00	0.00	0						S4						
21	95	100	28.96	30.48	5		5.00	1.52	100					0%	S4						
22	100	105	30.48	32.00	3		3.00	0.91	60					0%	S4						
23	105	110	32.00	33.53	5.2		5.20	1.58	104					0%	S4						
24	110	115	33.53	35.05	5		5.00	1.52	100					0%	S4						
25	115	120	35.05	36.58	5		5.00	1.52	100					0%	S4						
26	120	125	36.58	38.10	5		5.00	1.52	100					0%	S4						
27	125	130	38.10	39.62	5		5.00	1.52	100					0%	S4						
28	130	135	39.62	41.15	5		5.00	1.52	100					0%	S4						
29	135	140	41.15	42.67	5		5.00	1.52	100					0%	S4						
30	140	145	42.67	44.20	4.2		4.20	1.28	84					0%	S4						
31	145	150	44.20	45.72	4.8		4.80	1.46	96		60	60	0	0%	R0	S4			highly weathered rock (brown and pink rock fragments, light brown-orange crs.sand and f.gravel), low clay content (10%)		
32	150	155	45.72	47.24	5		5.00	1.52	100	51	51	0	48	0	0%	R2	R0	1	R0 rock most of this run	highly wethered rock (brown-orange c.sand, clayey, altered rock frags, Qz vein, very weak rock)	
33	155	160	47.24	48.77	5		5.00	1.52	100	7	9	0	8	152	100%	R3	R0	1	R0 zone 20cm (also jointed)	highly wethered rock, orange-brown alteration, black/white coarse grains remaining of rock; competent rock at 159ft	
34	160	165	48.77	50.29	3	4	3.33	1.02	67	7	6	0		24	24%	R3	R1	1	soft/hard fill in J's	very weathered jointed rock	
35	165	170	50.29	51.82	5		5.00	1.52	100	6	5	0		80	52%	R3	R2	1	soft fill in J's or red staining,	weathered jointed rock	
36	170	175	51.82	53.34	5		5.00	1.52	100	9	4	0		140	92%	R3		0	crs. fill in J's, red staining	weathered jointed rock	
37	175	180	53.34	54.86	5	3	5.25	1.60	105	8	7	0		136	85%	R4	R2	0			
38	180	185	54.86	56.39	4	10	4.83	1.47	97	9	8	0	4	137	93%	R4	R0	2	black stained J's or crs.fill	RZ (10cm) at litho change, R0 rock	
39	185	190	56.39	57.91	5	2	5.17	1.57	103	8	2	0		140	89%	R4	R2	0	black rusty staining on all J's		
40	190	195	57.91	59.44	5	1	5.08	1.55	102	10	8	0		143	92%	R4		0	black rusty staining on all J's		
41	195	199.5	59.44	60.81	4	5	4.42	1.35	98	12	8	0		82	61%	R4		0	stained J's, various colours and minerals		
42	199.5	205	60.81	62.48	5	3	5.25	1.60	95	9	6	1		136	85%	R5	R3	0	hard fill on J surfaces		
43	205	210	62.48	64.01	5		5.00	1.52	100	9	7	0		137	90%	R5	R4	0	hard fill on J surfaces		
44	210	215	64.01	65.53	5		5.00	1.52	100	10	10	0		78	51%	R4	R3	0	hard fill on J surfaces		
45	215	220	65.53	67.06	5	2	5.17	1.57	103	14	10	0		93	59%	R4	R1	0	hard fill on J surfaces		
46	220	225	67.06	68.58	5	2	5.17	1.57	103	7	5	0		158	100%	R4	R3	0	hard fill on J surfaces		
47	225	230	68.58	70.10	5		5.00	1.52	100	11	8	0		135	89%	R4		1			
48	230	235	70.10	71.63	5		5.00	1.52	100	13	9	0		85	56%	R4	R2				
49	235	240	71.63	73.15	4		4.92	1.50	98	6	1	0		150	100%	R5					
50	240	245	73.15	74.68	5		5.00	1.52	100	10	9	0		132	87%	R4	R3				
51	245	250	74.68	76.20	4	9	4.75	1.45	95	10	8	0		70	48%	R4				bright green mineralization on J surfaces	





**DEFINITIONS**

FF/m: Fracture Frequency per metre  
 TCR: Total Core Recovery  
 RQD: Rock Quality Designation  
 IRS: Intact Rock Strength (field est.)

**Lithology**

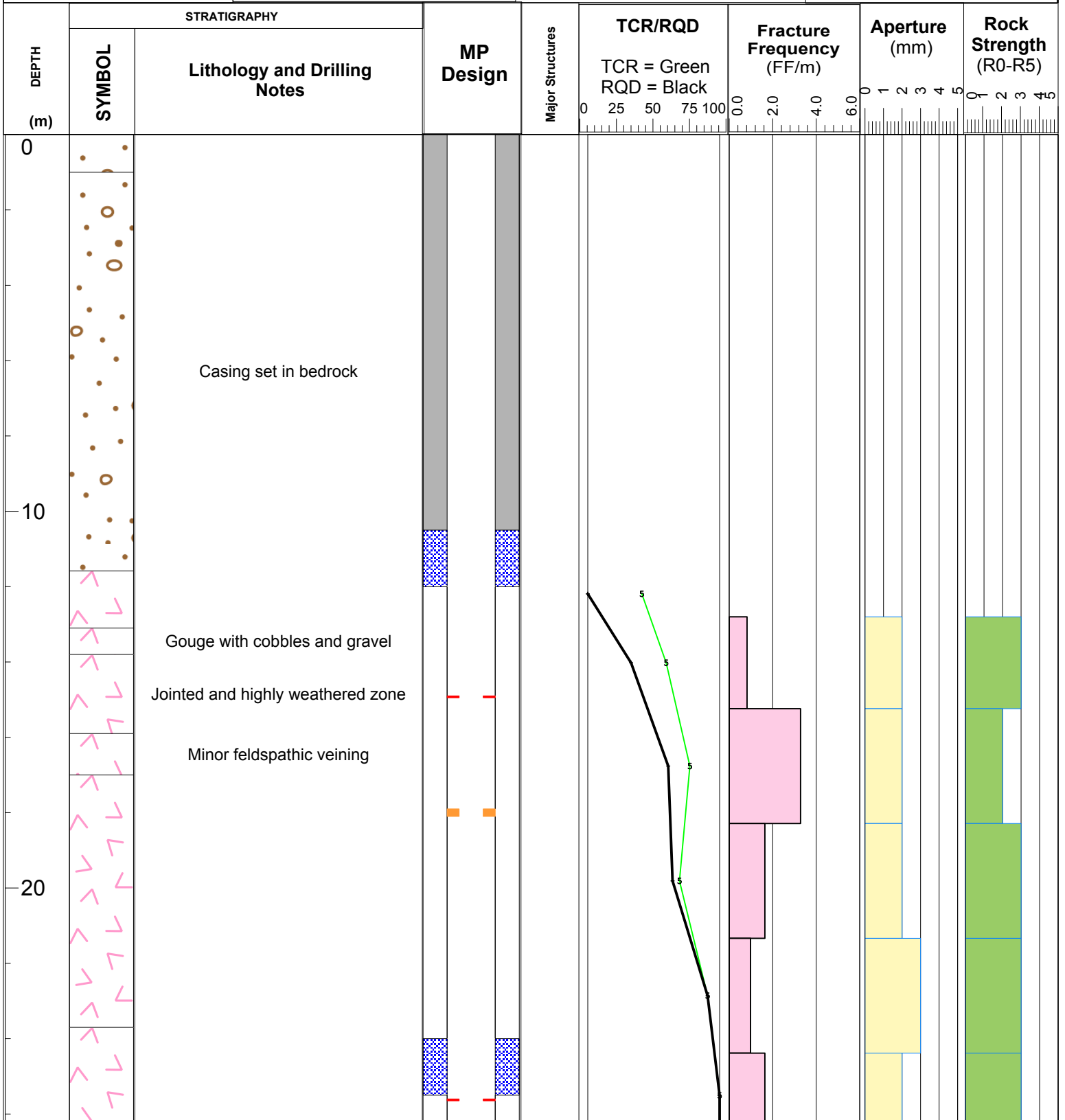
- Overburden
- Weathered Granodiorite
- Mafic Intrusive
- Granodiorite

**MP components**

- Casing
- PVC
- PPort
- MPort
- Packer

**Major Structures Legend**

- gouge
- broken gouge
- broken
- contact
- jointed





**DEFINITIONS**

FF/m: Fracture Frequency per metre  
 TCR: Total Core Recovery  
 RQD: Rock Quality Designation  
 IRS: Intact Rock Strength (field est.)

**Lithology**

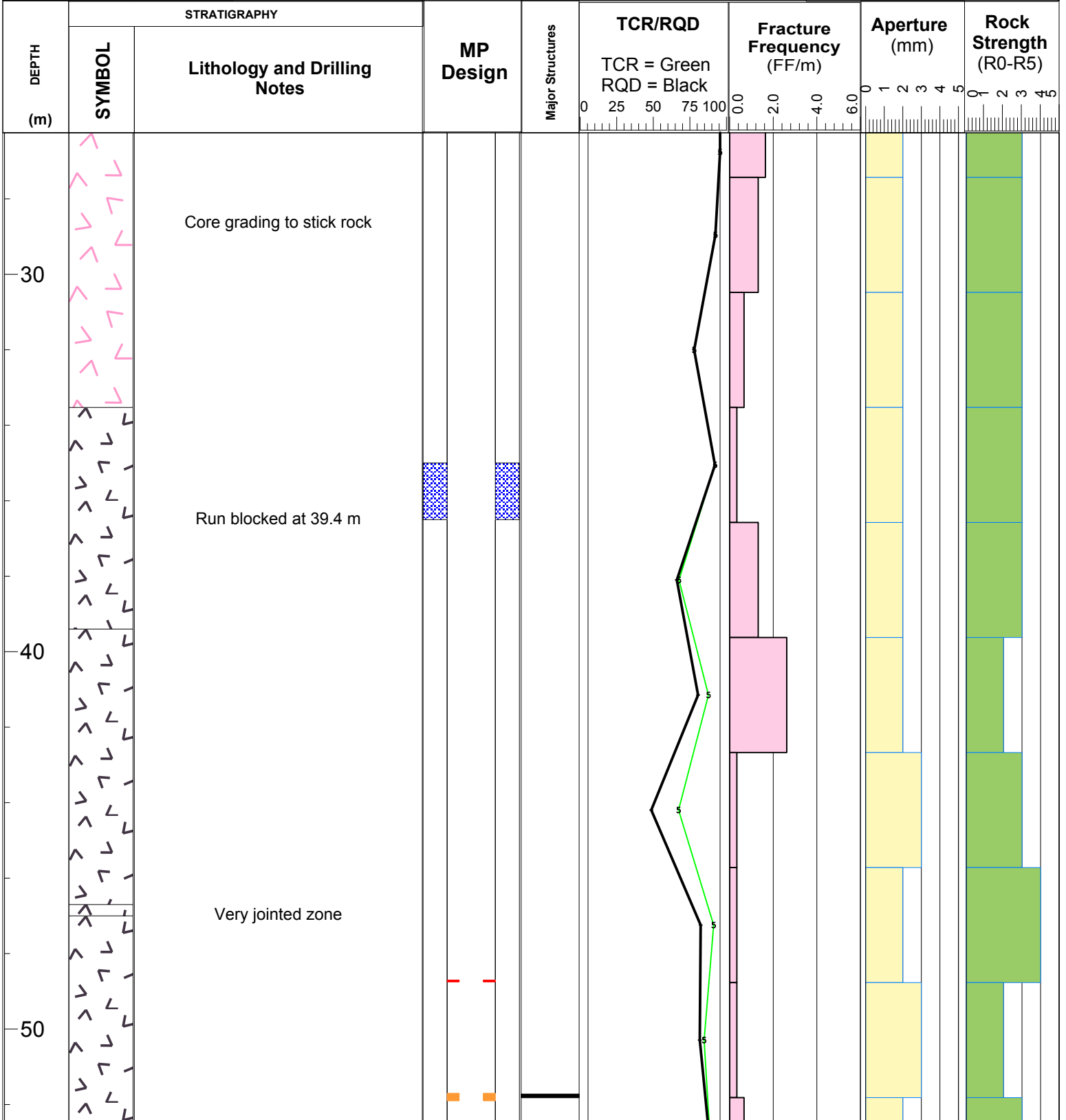
- Overburden
- Weathered Granodiorite
- Mafic Intrusive
- Granodiorite

**MP components**

- Casing
- PVC
- PPort
- Packer
- MPort

**Major Structures Legend**

- gouge
- broken gouge
- broken
- contact
- jointed













**DEFINITIONS**

FF/m: Fracture Frequency per metre  
 TCR: Total Core Recovery  
 RQD: Rock Quality Designation  
 IRS: Intact Rock Strength (field est.)

**Lithology**

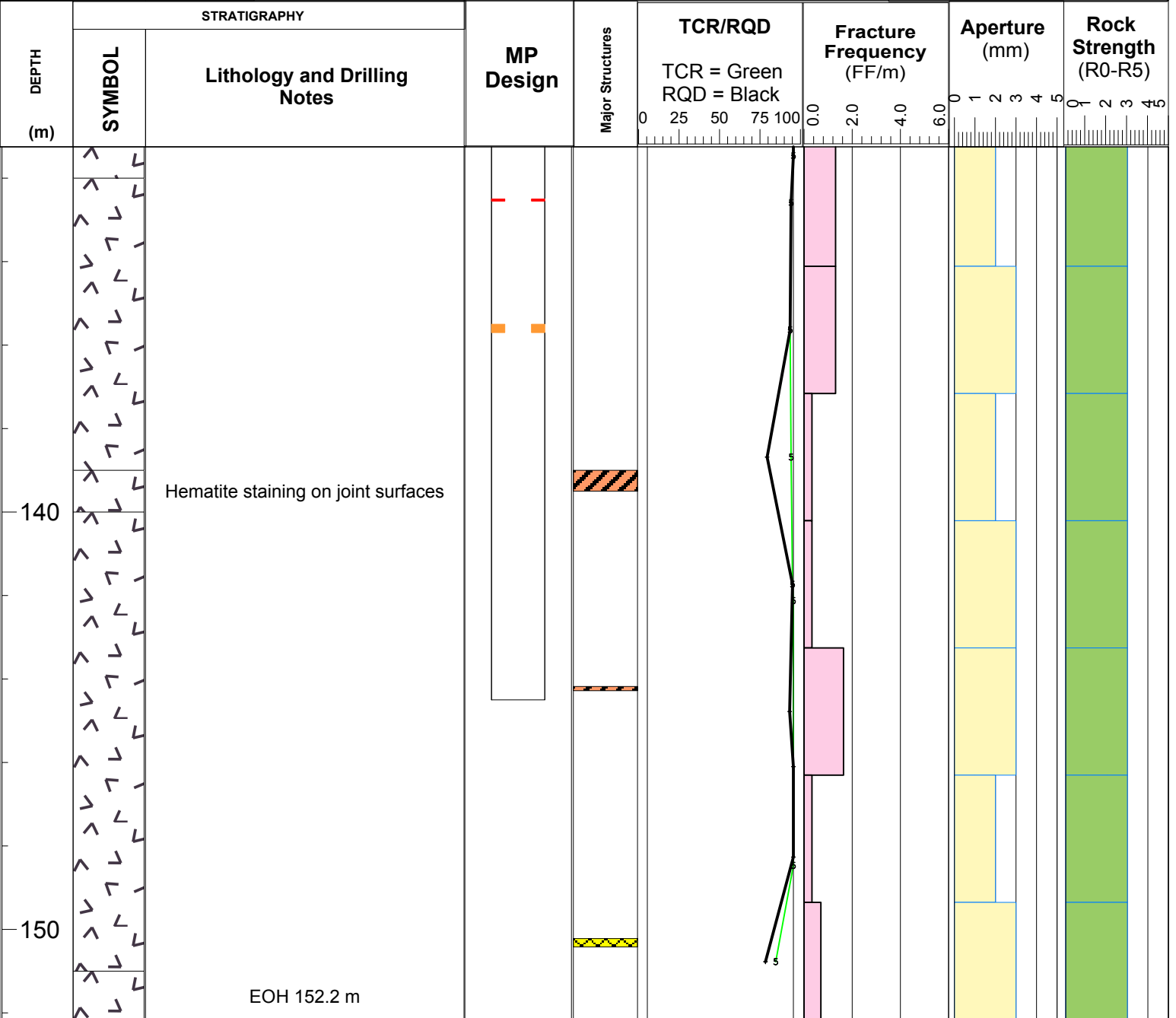
- Overburden
- Weathered Granodiorite
- Mafic Intrusive
- Granodiorite

**MP components**

- Casing
- PVC
- Packer
- PPort
- MPort

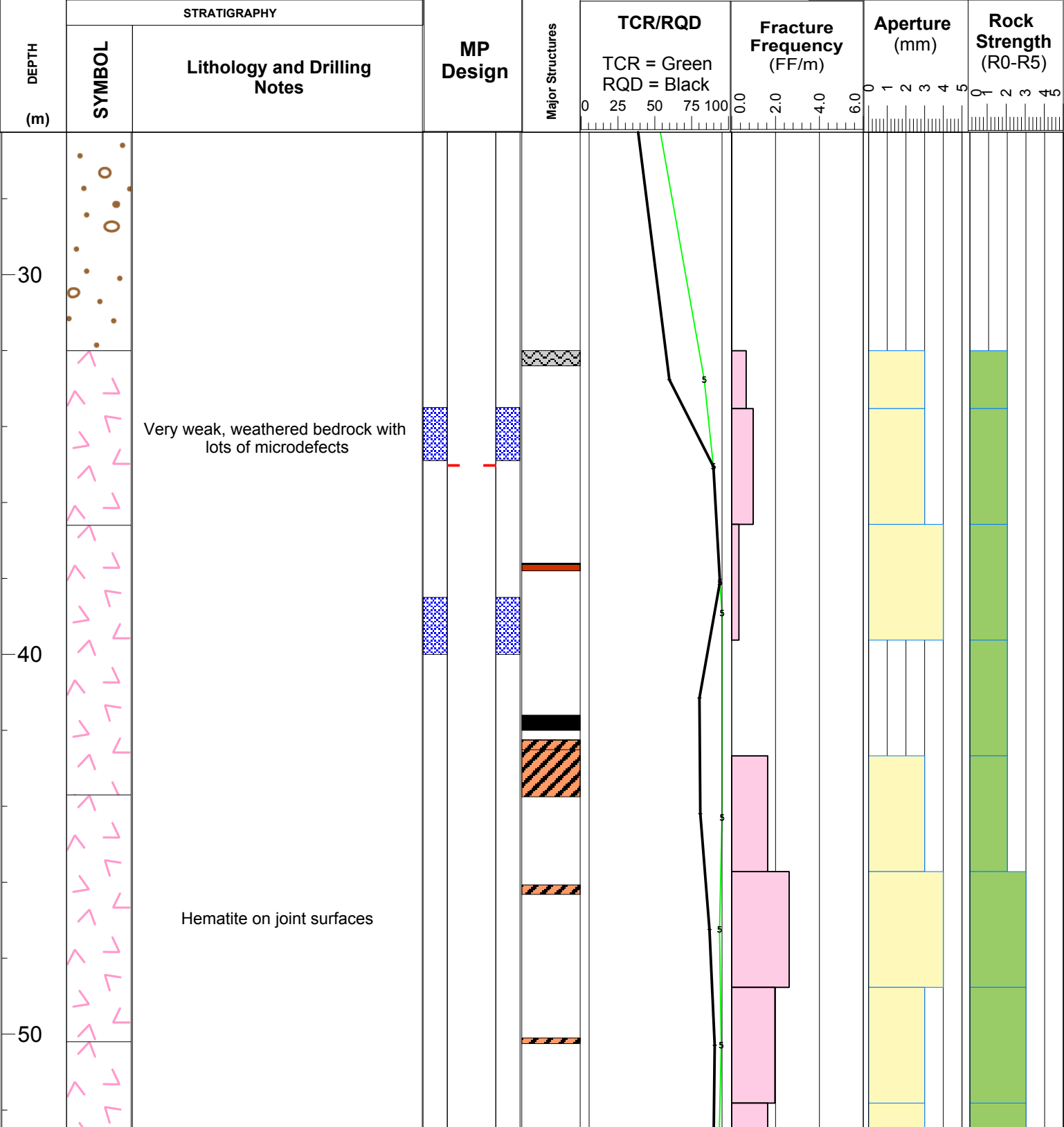
**Major Structures Legend**

- gouge
- broken gouge
- broken
- contact
- jointed





<b>DEFINITIONS</b> FF/m: Fracture Frequency per metre TCR: Total Core Recovery RQD: Rock Quality Designation IRS: Intact Rock Strength (field est.)	<b>Lithology</b> Overburden (white box) Mafic Intrusive (diagonal lines) Weathered Granodiorite (pink triangle) Granodiorite (white triangle)		<b>MP components</b> Casing (grey box) Packer (blue box) PVC (white box) MPort (red box)		<b>Major Structures Legend</b> gouge (black box) broken (diagonal lines) jointed (yellow box) broken gouge (cross-hatched) contact (orange box)	
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**DEFINITIONS**

FF/m: Fracture Frequency per metre  
 TCR: Total Core Recovery  
 RQD: Rock Quality Designation  
 IRS: Intact Rock Strength (field est.)

**Lithology**

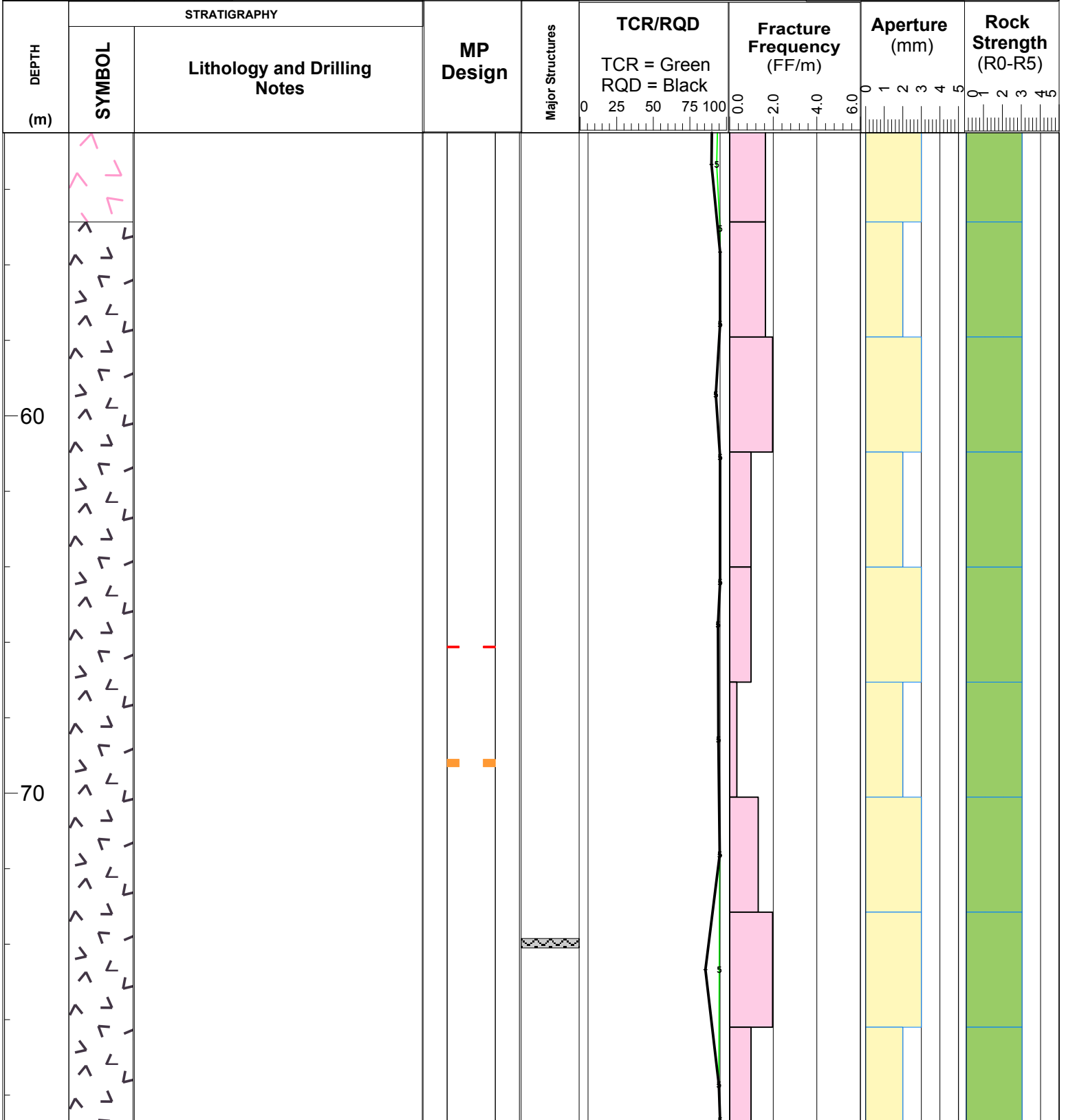
- Overburden
- Weathered Granodiorite
- Mafic Intrusive
- Granodiorite

**MP components**

- Casing
- PVC
- Packer
- PPort
- MPort

**Major Structures Legend**

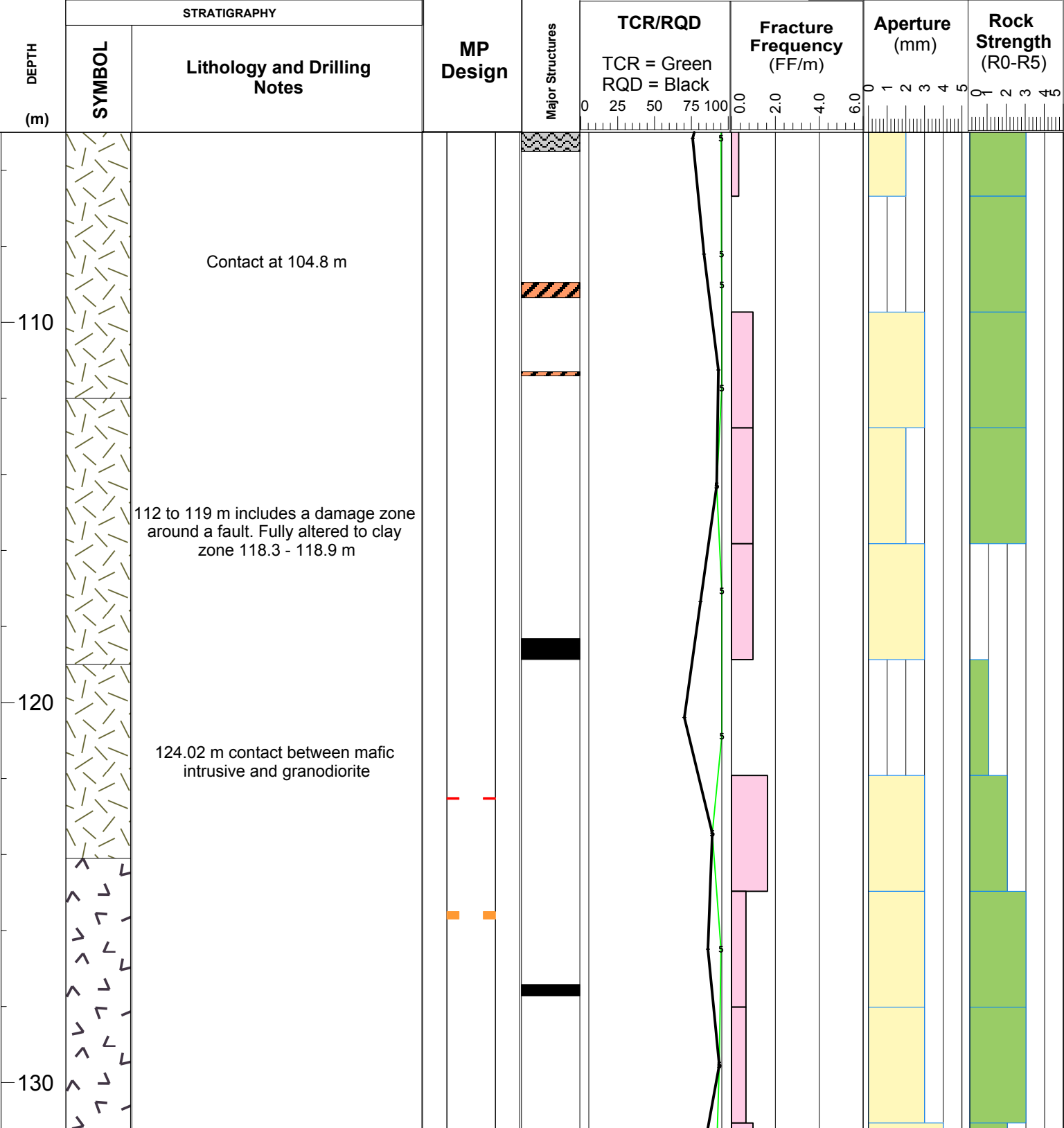
- gouge
- broken gouge
- broken
- contact
- jointed







<b>DEFINITIONS</b> FF/m: Fracture Frequency per metre TCR: Total Core Recovery RQD: Rock Quality Designation IRS: Intact Rock Strength (field est.)	<b>Lithology</b> Overburden (diagonal lines) Weathered Granodiorite (pink) Mafic Intrusive (diagonal lines) Granodiorite (white)		<b>MP components</b> Casing (grey) PVC (white) Packer (blue) MPort (red) PPort (orange)		<b>Major Structures Legend</b> gouge (black) broken gouge (cross-hatch) broken (diagonal lines) contact (red) jointed (yellow)
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**DEFINITIONS**

FF/m: Fracture Frequency per metre  
 TCR: Total Core Recovery  
 RQD: Rock Quality Designation  
 IRS: Intact Rock Strength (field est.)

**Lithology**

- Overburden
- Weathered Granodiorite
- Mafic Intrusive
- Granodiorite

**MP components**

- Casing
- PVC
- PPort
- Packer
- MPort

**Major Structures Legend**

- gouge
- broken gouge
- broken
- contact
- jointed

DEPTH (m)	STRATIGRAPHY		MP Design	Major Structures	TCR/RQD	Fracture Frequency (FF/m)	Aperture (mm)	Rock Strength (R0-R5)
	SYMBOL	Lithology and Drilling Notes			TCR = Green RQD = Black			
30								
40								
50								

Casing into bedrock. Could not remove casing after MP installation, so it was left in the ground.





**DEFINITIONS**

FF/m: Fracture Frequency per metre  
 TCR: Total Core Recovery  
 RQD: Rock Quality Designation  
 IRS: Intact Rock Strength (field est.)

**Lithology**

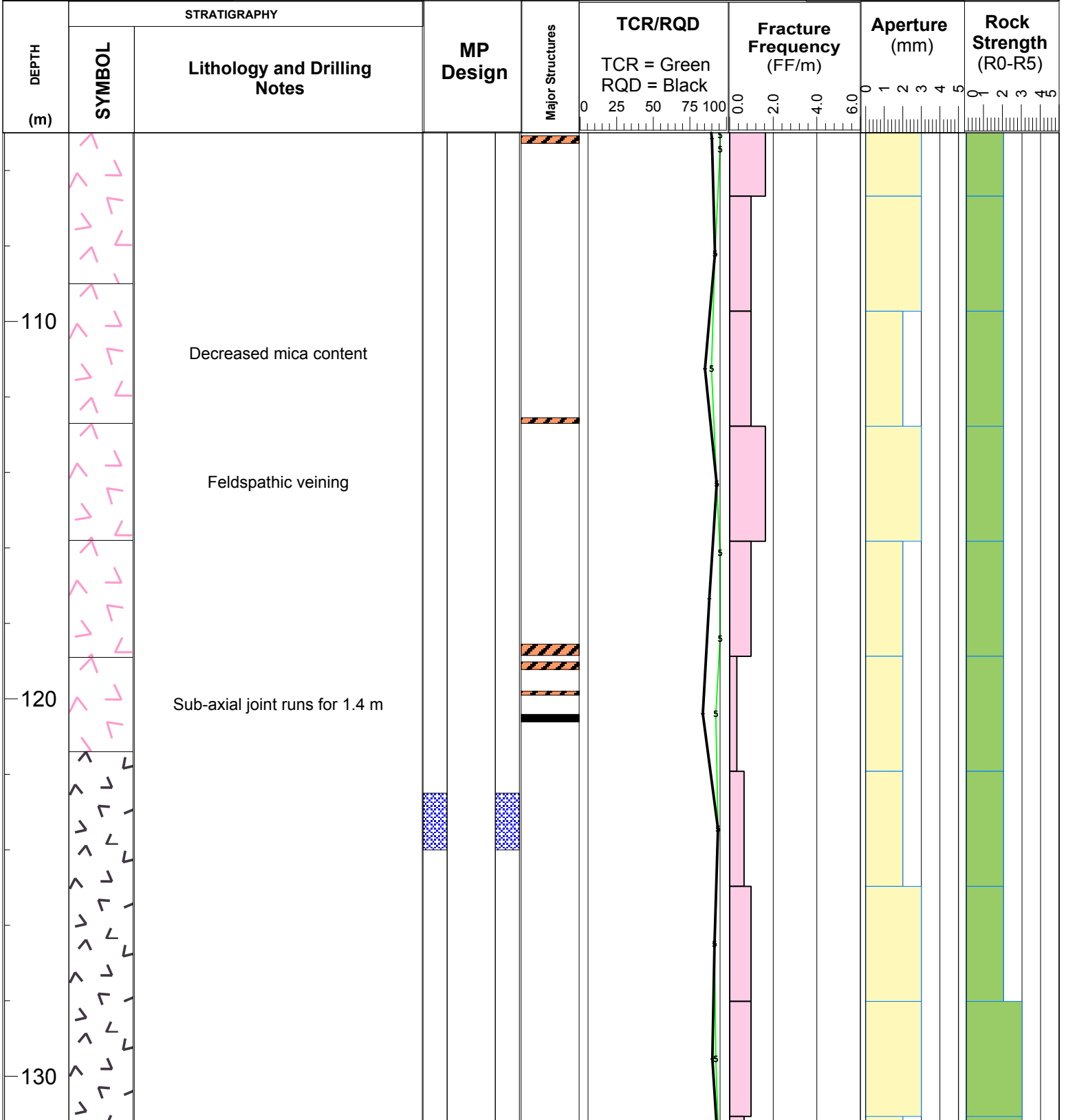
- Overburden
- Weathered Granodiorite
- Mafic Intrusive
- Granodiorite

**MP components**

- Casing
- PVC
- Packer
- PPort
- MPort

**Major Structures Legend**

- gouge
- broken gouge
- broken
- contact
- jointed





**DEFINITIONS**

FF/m: Fracture Frequency per metre  
 TCR: Total Core Recovery  
 RQD: Rock Quality Designation  
 IRS: Intact Rock Strength (field est.)

**Lithology**

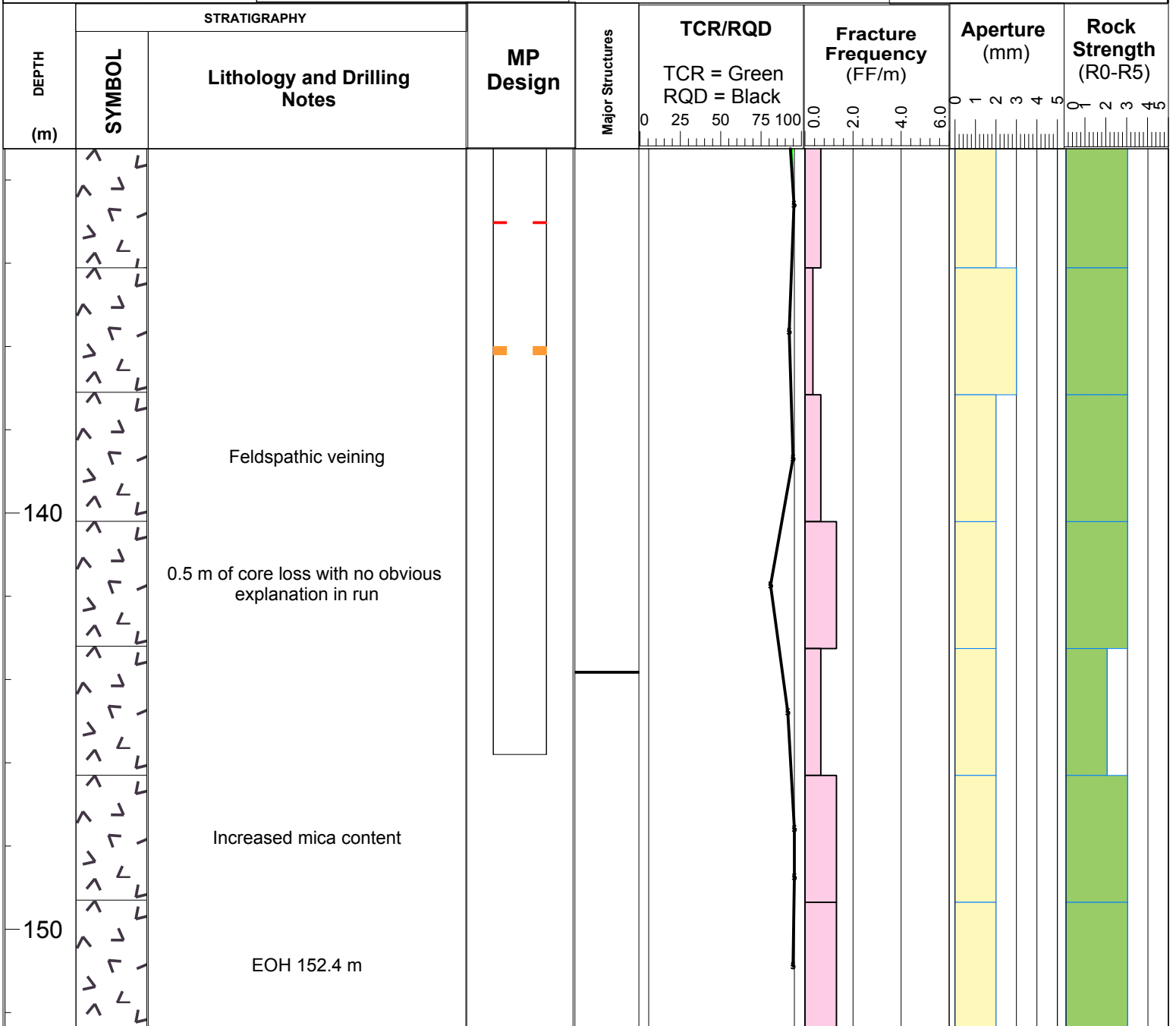
- Overburden
- Weathered Granodiorite
- Mafic Intrusive
- Granodiorite

**MP components**

- Casing
- PVC
- Packer
- PPort
- MPort

**Major Structures Legend**

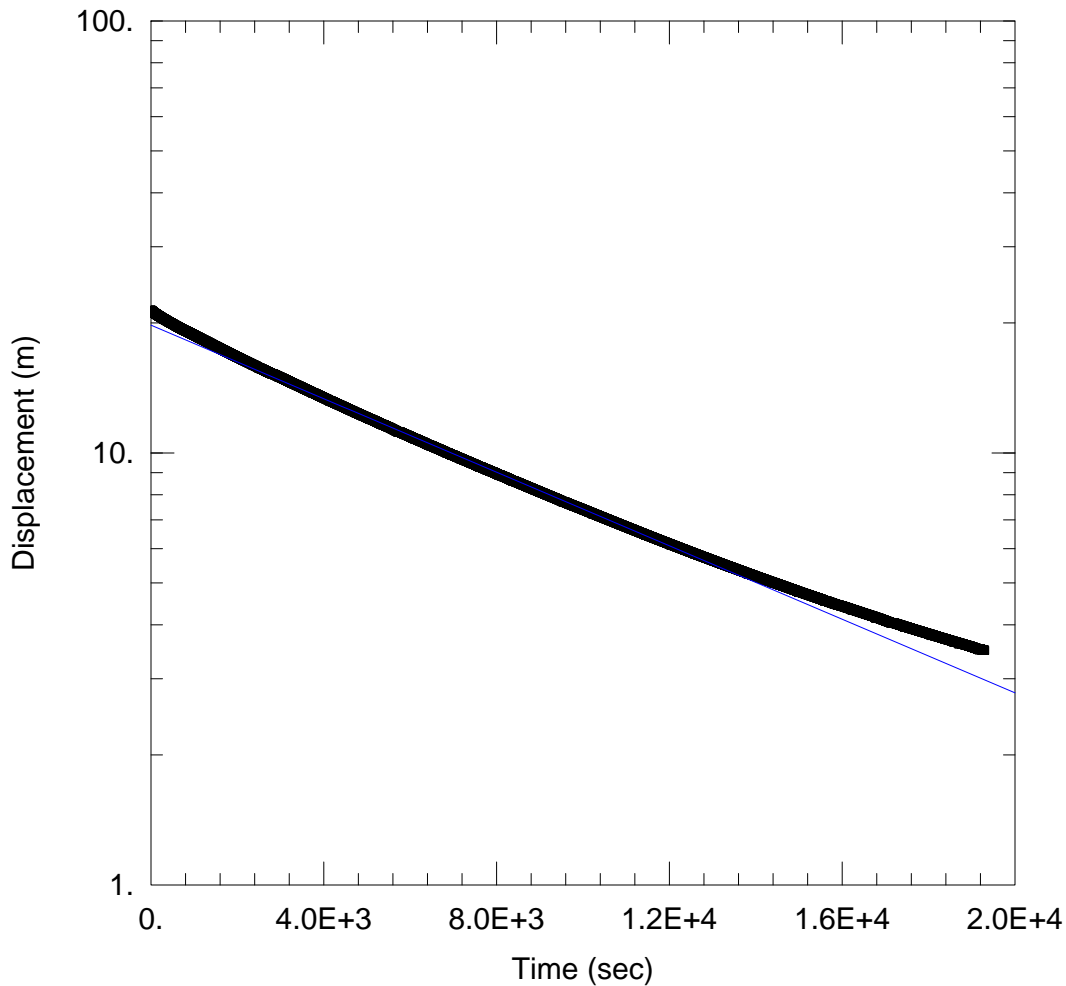
- gouge
- broken gouge
- broken
- contact
- jointed





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## Appendix B: Rising Head Test Analyses



### WELL TEST ANALYSIS

Data Set: \...\Aqtw1 MW12-05-01 Test1 PosDisp Cut.aqt

Date: 03/15/13

Time: 09:41:40

### PROJECT INFORMATION

Company: SRK

Client: Capstone - Minto

Project: 1CM002.008

Location: Minto Mine, YT

Test Well: MW12-07-01

Test Date: November 3, 2012

### AQUIFER DATA

Saturated Thickness: 141.1 m

Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (MW12-05-01)

Initial Displacement: 21.41 m

Static Water Column Height: 141.1 m

Total Well Penetration Depth: 141.1 m

Screen Length: 18.5 m

Casing Radius: 0.019 m

Well Radius: 0.3175 m

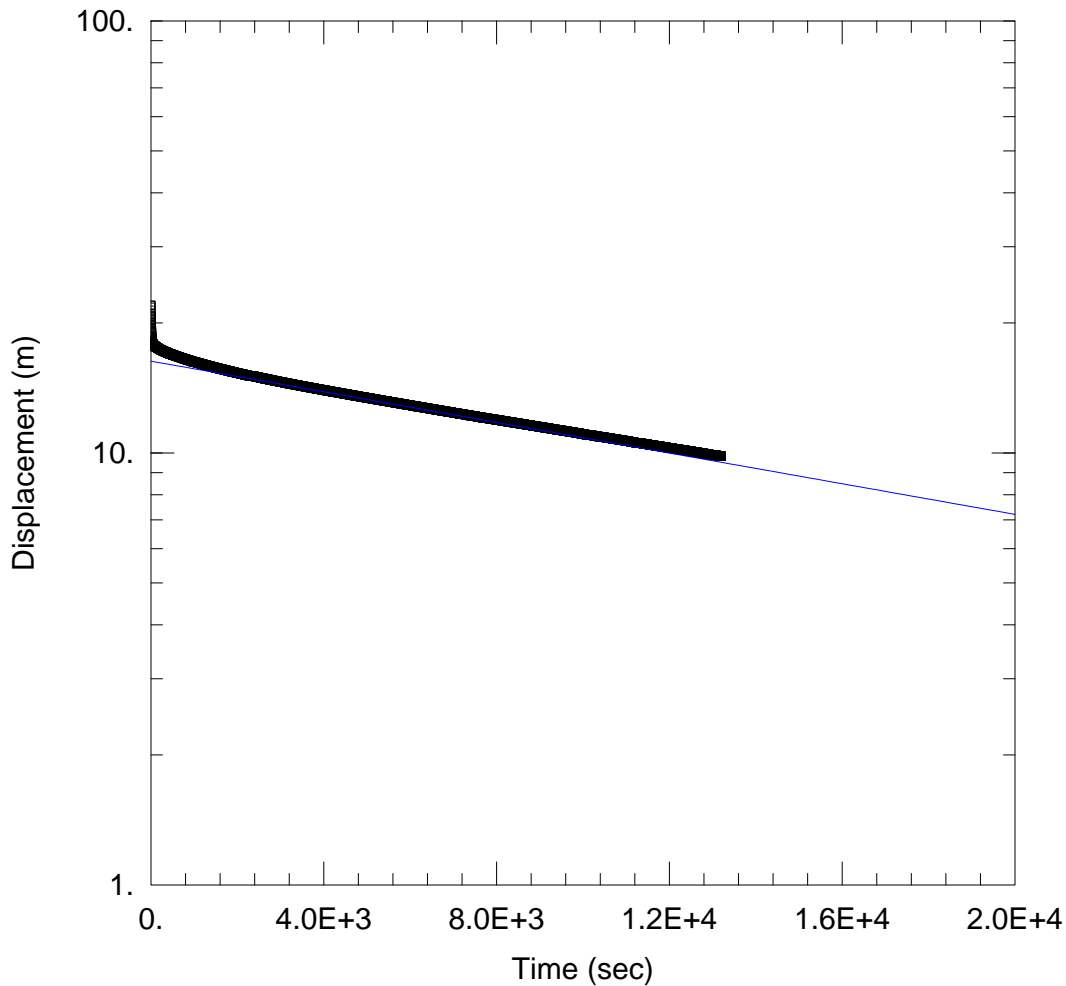
### SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 4.144E-9 m/sec

y0 = 19.76 m



### WELL TEST ANALYSIS

Data Set: \...\Aqtw1 MW12-05-02 Test1 PosDisp Cut.aqt

Date: 03/15/13

Time: 09:44:12

### PROJECT INFORMATION

Company: SRK

Client: Capstone - Minto

Project: 1CM002.008

Location: Minto Mine, YT

Test Well: MW12-07-01

Test Date: November 3, 2012

### AQUIFER DATA

Saturated Thickness: 104.5 m

Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (MW12-05-02 T1)

Initial Displacement: 21.98 m

Static Water Column Height: 104.5 m

Total Well Penetration Depth: 104.5 m

Screen Length: 23. m

Casing Radius: 0.019 m

Well Radius: 0.3175 m

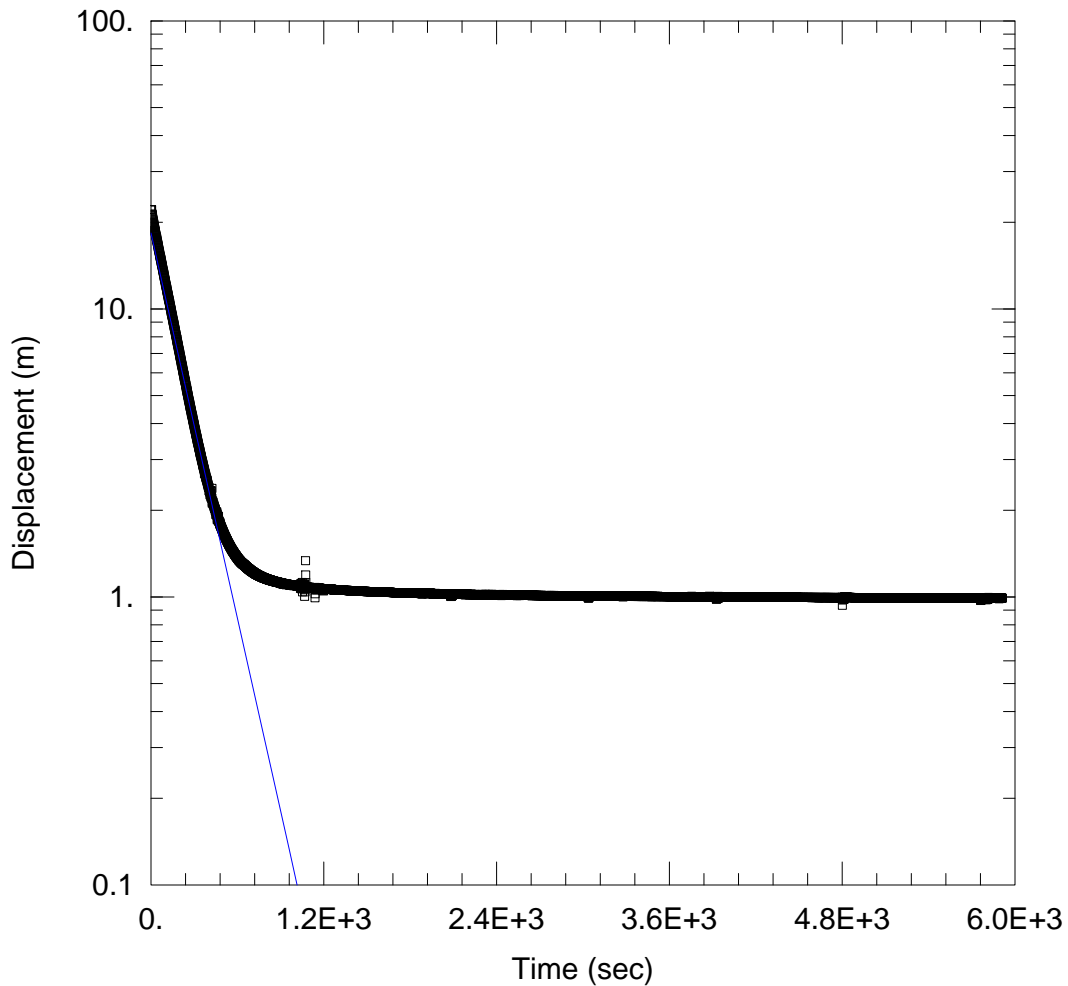
### SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 1.352E-9 m/sec

y0 = 16.31 m



### WELL TEST ANALYSIS

Data Set: C:\...\Aqtw1 MW12-05-02 Test2 PosDisp Cut.aqt

Date: 03/15/13

Time: 09:45:45

### PROJECT INFORMATION

Company: SRK

Client: Capstone - Minto

Project: 1CM002.008

Location: Minto Mine, YT

Test Well: MW12-07-01

Test Date: November 3, 2012

### AQUIFER DATA

Saturated Thickness: 104.5 m

Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (MW12-05-02 T2)

Initial Displacement: 22.12 m

Static Water Column Height: 104.5 m

Total Well Penetration Depth: 104.5 m

Screen Length: 23. m

Casing Radius: 0.019 m

Well Radius: 0.3175 m

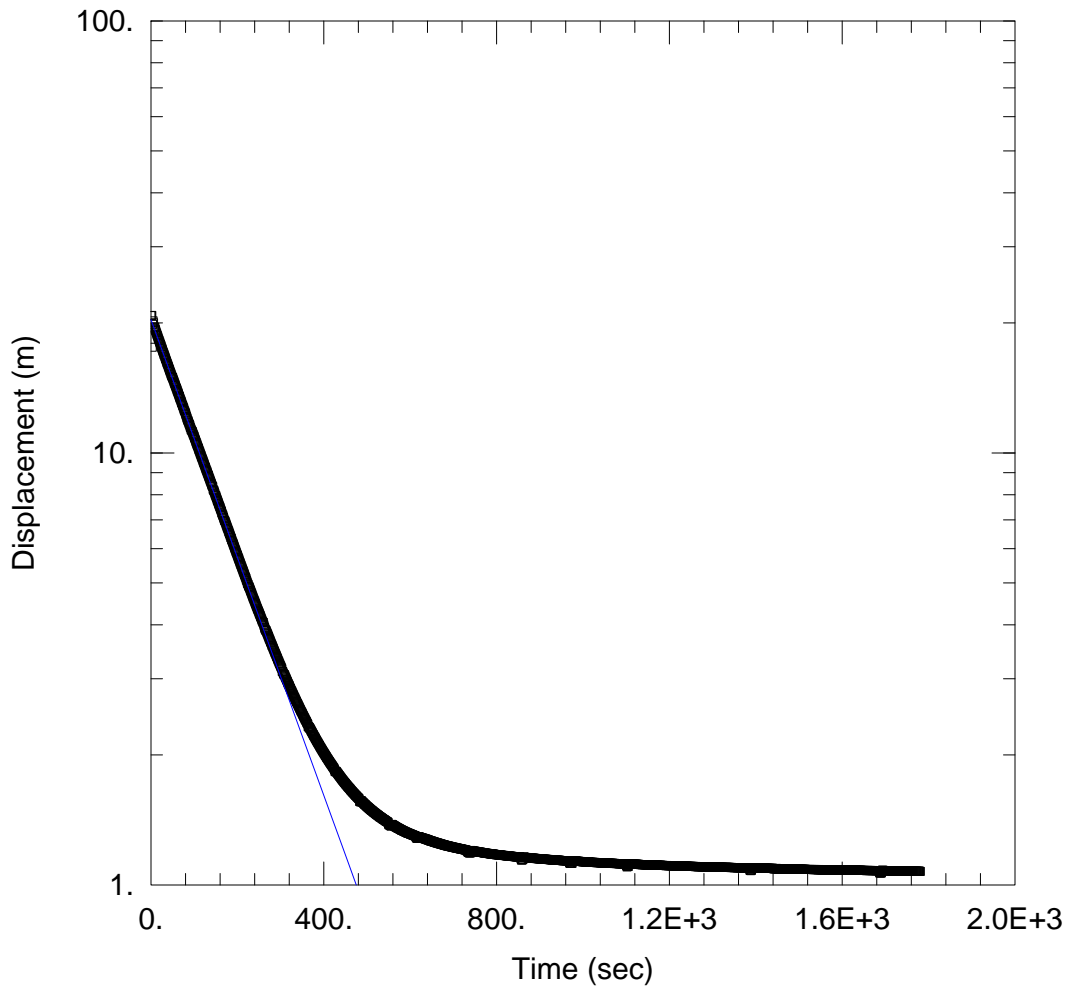
### SOLUTION

Aquifer Model: Unconfined

Solution Method: Bower-Rice

K = 1.7E-7 m/sec

y0 = 18.35 m



WELL TEST ANALYSIS

Data Set: C:\...\Aqtw1 MW12-05-02 Test3 PosDisp Cut.aqt

Date: 03/15/13

Time: 09:46:03

PROJECT INFORMATION

Company: SRK

Client: Capstone - Minto

Project: 1CM002.008

Location: Minto Mine, YT

Test Well: MW12-07-01

Test Date: November 3, 2012

AQUIFER DATA

Saturated Thickness: 104.5 m

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW12-05-02 T3)

Initial Displacement: 20.79 m

Static Water Column Height: 104.5 m

Total Well Penetration Depth: 104.5 m

Screen Length: 23. m

Casing Radius: 0.019 m

Well Radius: 0.3175 m

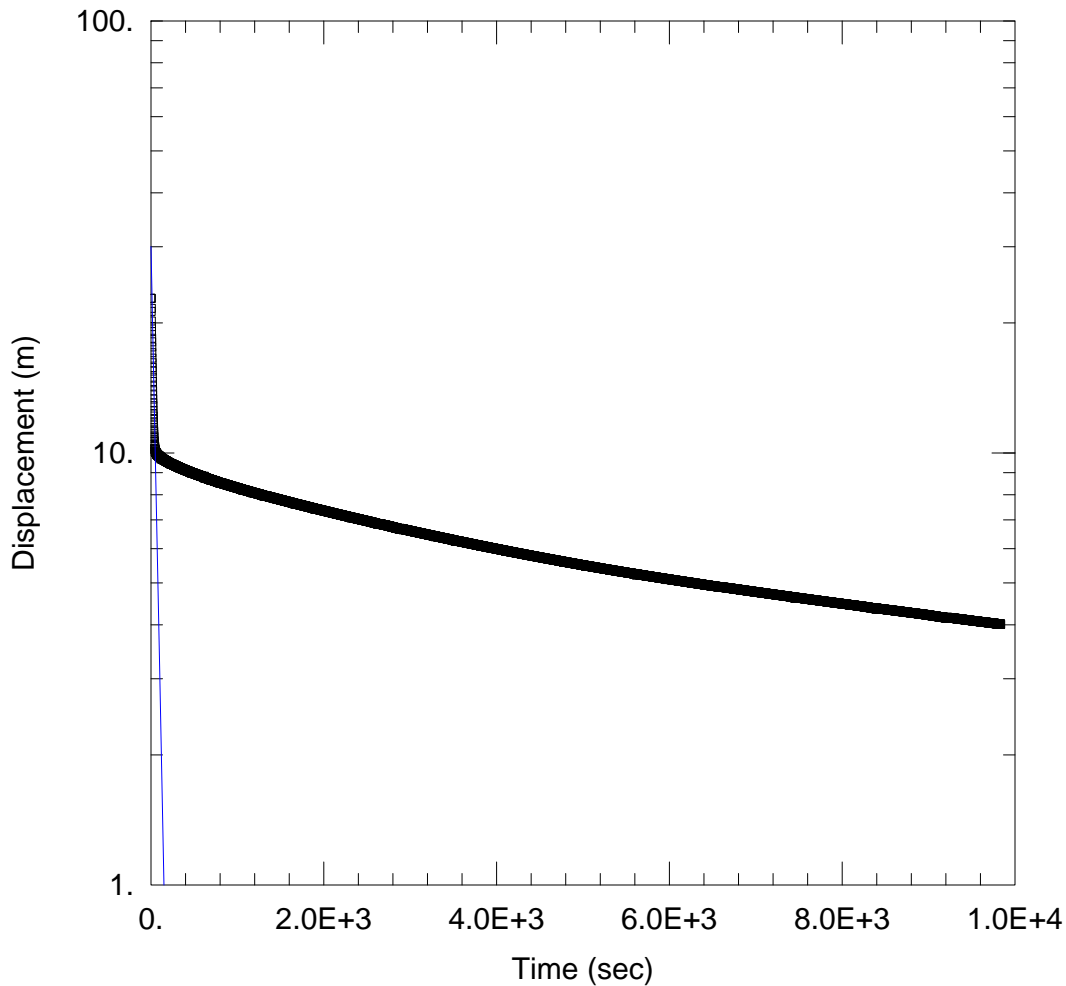
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 2.099E-7 m/sec

y0 = 20.34 m



### WELL TEST ANALYSIS

Data Set: C:\...\Aqtw1 MW12-05-03 Test1 PosDisp Cut.aqt  
 Date: 03/15/13 Time: 09:47:00

### PROJECT INFORMATION

Company: SRK  
 Client: Capstone - Minto  
 Project: 1CM002.008  
 Location: Minto Mine, YT  
 Test Well: MW12-07-01  
 Test Date: November 3, 2012

### AQUIFER DATA

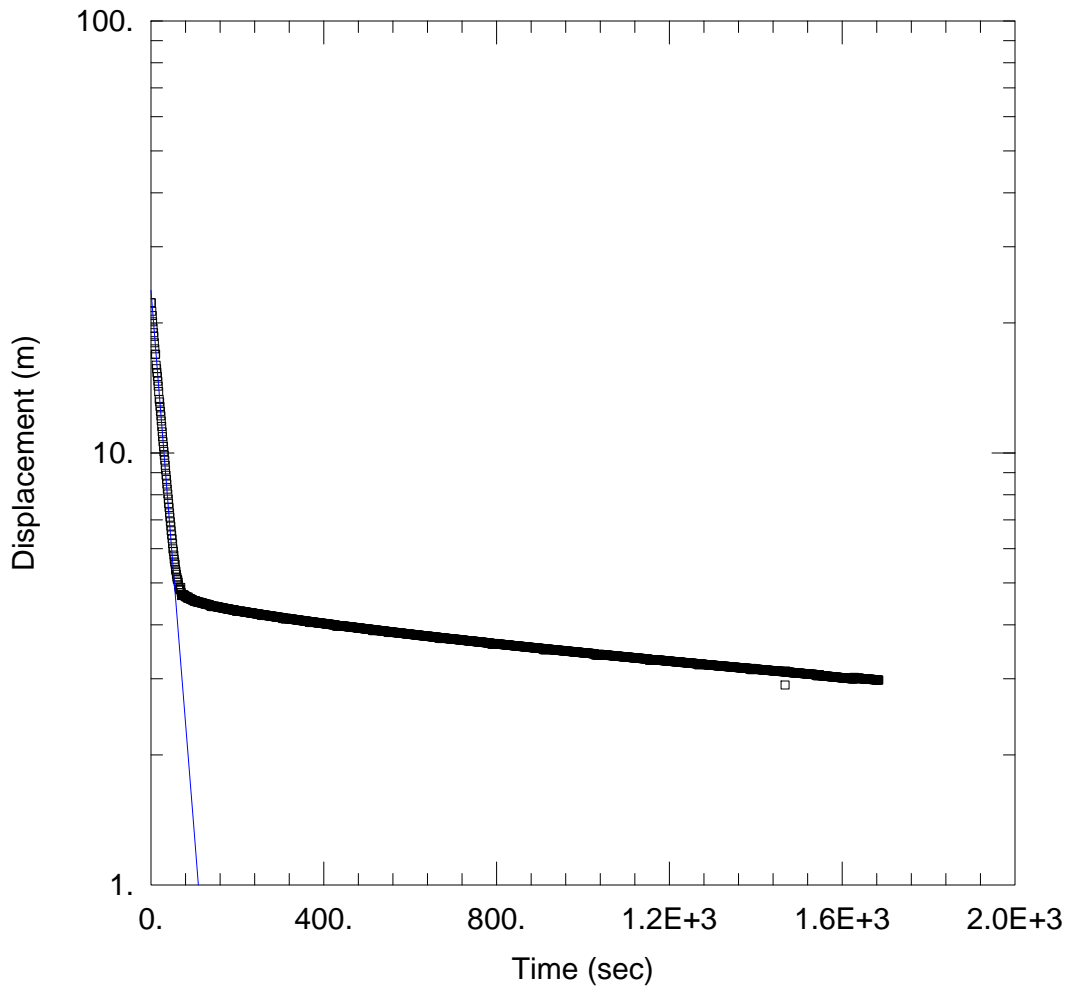
Saturated Thickness: 63.7 m Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (MW12-05-03 T1)

Initial Displacement: 22.81 m Static Water Column Height: 63.7 m  
 Total Well Penetration Depth: 63.7 m Screen Length: 31. m  
 Casing Radius: 0.019 m Well Radius: 0.3175 m

### SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice  
 K = 5.199E-7 m/sec y0 = 30.05 m



WELL TEST ANALYSIS

Data Set: C:\...\Aqtw1 MW12-05-03 Test3 PosDisp Cut.aqt

Date: 03/15/13

Time: 09:47:22

PROJECT INFORMATION

Company: SRK

Client: Capstone - Minto

Project: 1CM002.008

Location: Minto Mine, YT

Test Well: MW12-07-01

Test Date: November 3, 2012

AQUIFER DATA

Saturated Thickness: 63.7 m

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW12-05-03 T3)

Initial Displacement: 22.26 m

Static Water Column Height: 63.7 m

Total Well Penetration Depth: 63.7 m

Screen Length: 31. m

Casing Radius: 0.019 m

Well Radius: 0.3175 m

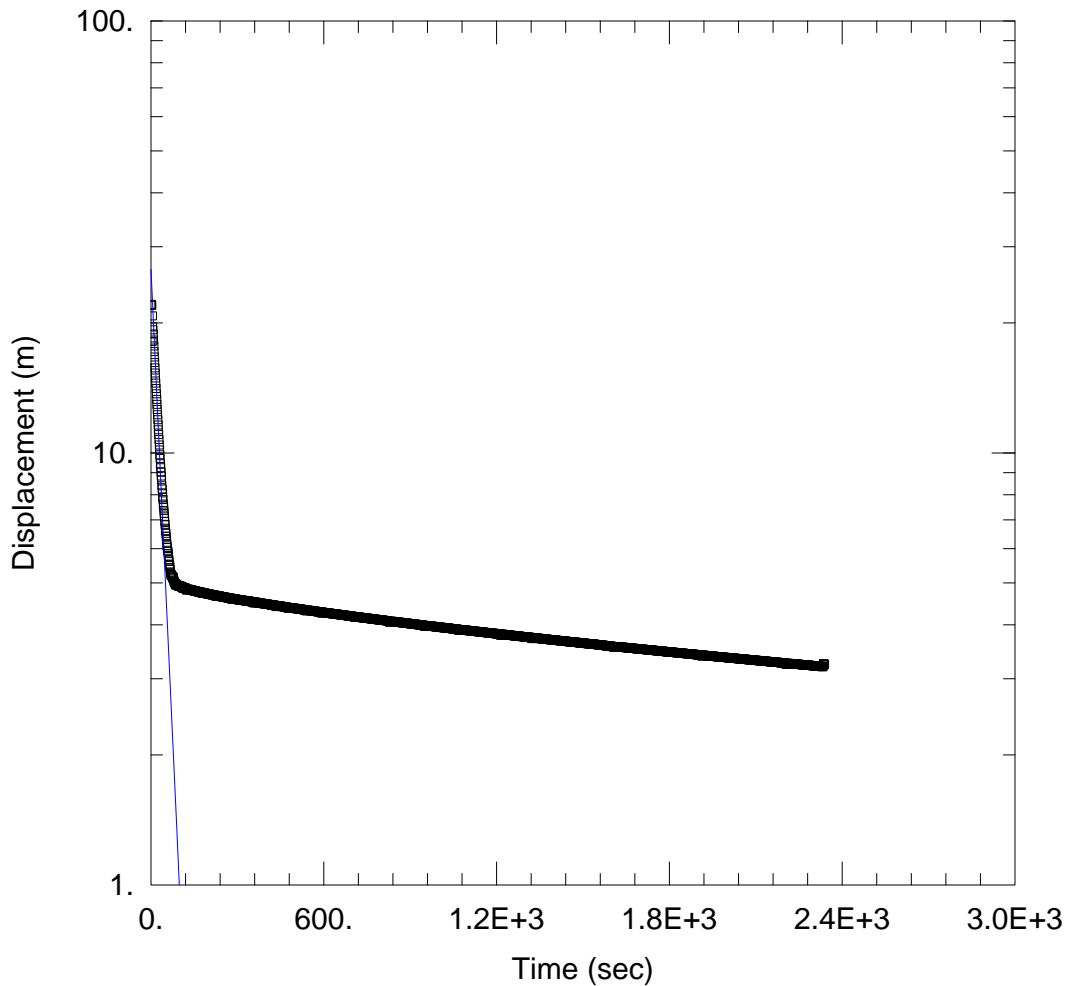
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 6.69E-7 m/sec

y0 = 23.77 m



### WELL TEST ANALYSIS

Data Set: C:\...\Aqtw1 MW12-05-03 Test4 PosDisp Cut.aqt

Date: 03/15/13

Time: 09:47:34

### PROJECT INFORMATION

Company: SRK

Client: Capstone - Minto

Project: 1CM002.008

Location: Minto Mine, YT

Test Well: MW12-07-01

Test Date: November 3, 2012

### AQUIFER DATA

Saturated Thickness: 63.7 m

Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (MW12-05-03 T4)

Initial Displacement: 21.99 m

Static Water Column Height: 63.7 m

Total Well Penetration Depth: 63.7 m

Screen Length: 31. m

Casing Radius: 0.019 m

Well Radius: 0.3175 m

### SOLUTION

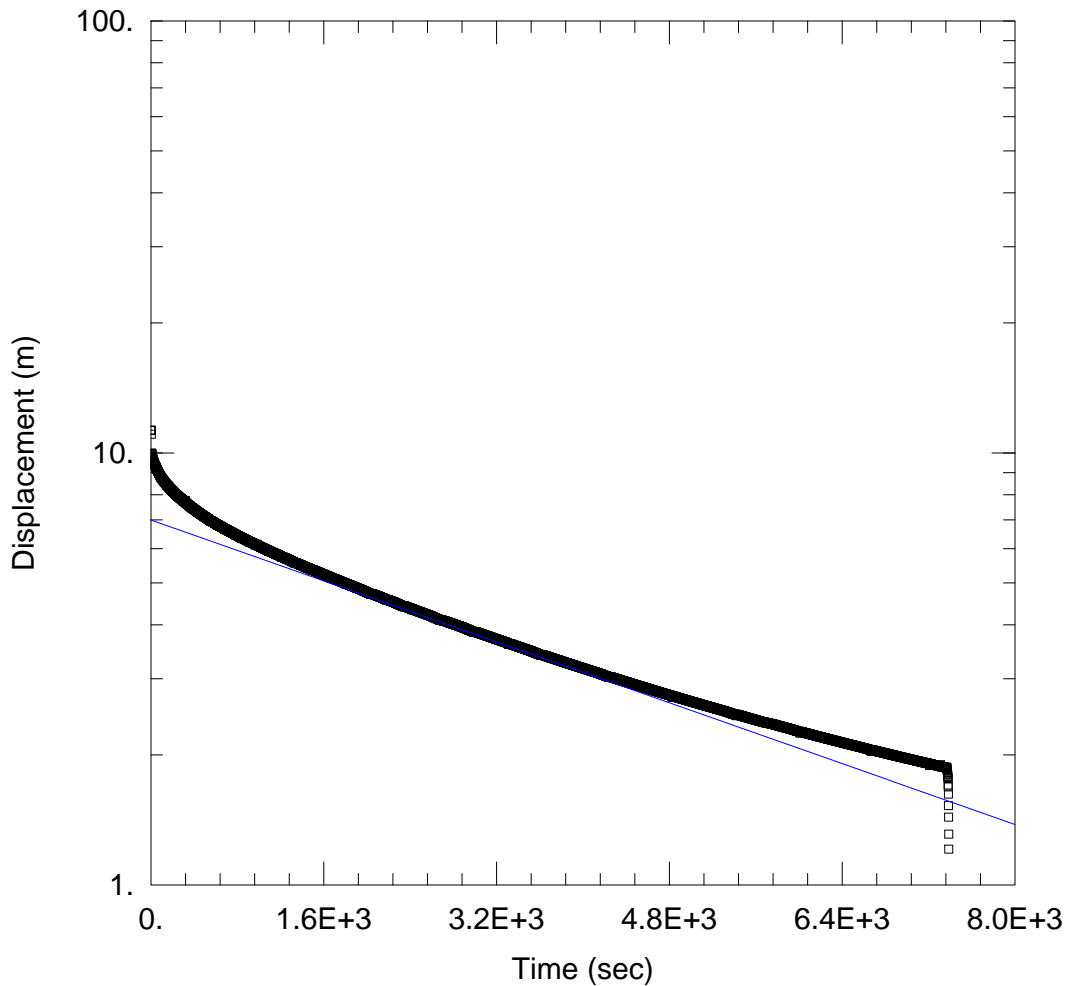
Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 7.715E-7 m/sec

y0 = 26.6 m





### WELL TEST ANALYSIS

Data Set: C:\...\Aqtw1 MW12-05-04 Test1 PosDisp Cut.aqt

Date: 03/15/13

Time: 09:48:39

### PROJECT INFORMATION

Company: SRK

Client: Capstone - Minto

Project: 1CM002.008

Location: Minto Mine, YT

Test Well: MW12-07-01

Test Date: November 3, 2012

### AQUIFER DATA

Saturated Thickness: 20.9 m

Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (MW12-05-04 T1)

Initial Displacement: 11.28 m

Static Water Column Height: 20.9 m

Total Well Penetration Depth: 20.9 m

Screen Length: 12. m

Casing Radius: 0.019 m

Well Radius: 0.3175 m

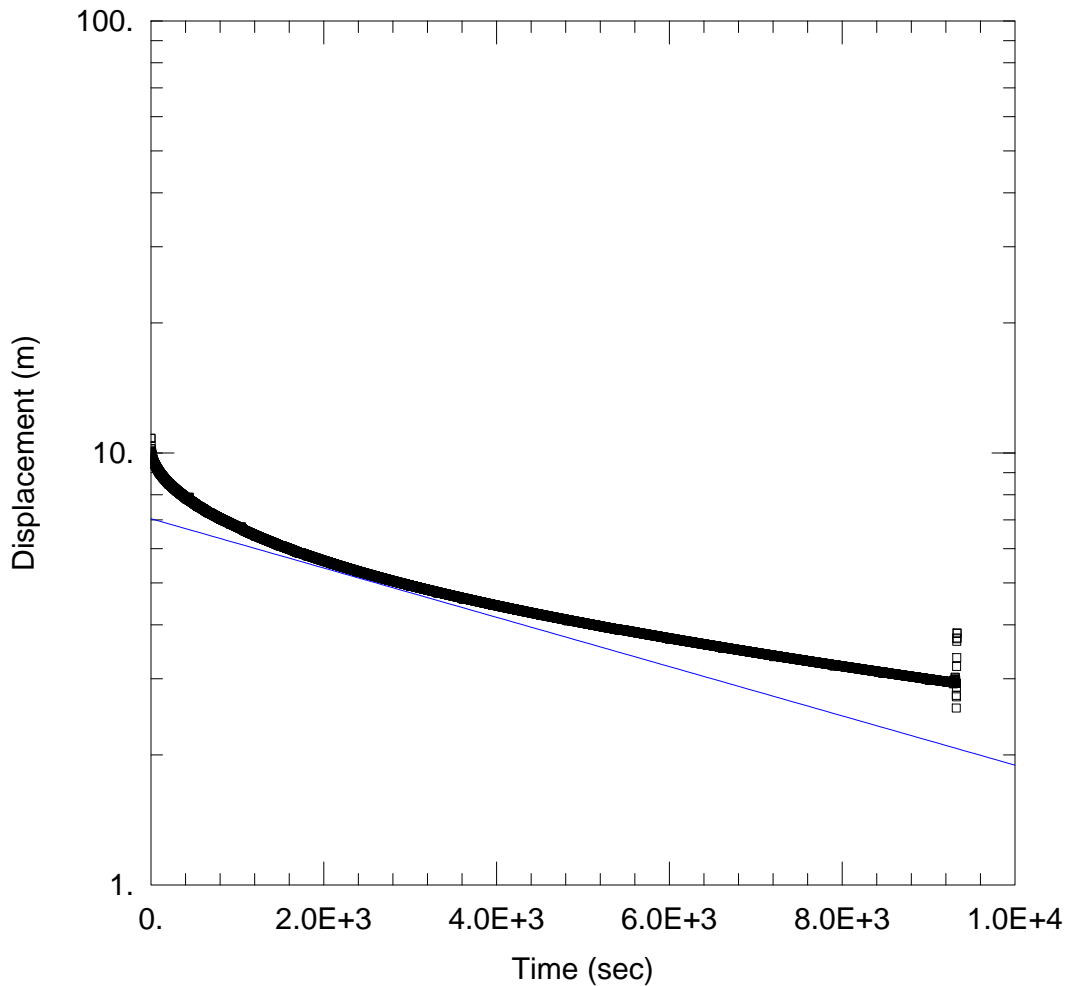
### SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 9.49E-9 m/sec

y0 = 6.993 m



### WELL TEST ANALYSIS

Data Set: C:\...\Aqtw1 MW12-05-04 Test2 PosDisp Cut.aqt

Date: 03/15/13

Time: 09:49:00

### PROJECT INFORMATION

Company: SRK

Client: Capstone - Minto

Project: 1CM002.008

Location: Minto Mine, YT

Test Well: MW12-07-01

Test Date: November 3, 2012

### AQUIFER DATA

Saturated Thickness: 20.9 m

Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (MW12-05-04 T1)

Initial Displacement: 10.82 m

Static Water Column Height: 20.9 m

Total Well Penetration Depth: 20.9 m

Screen Length: 12. m

Casing Radius: 0.019 m

Well Radius: 0.3175 m

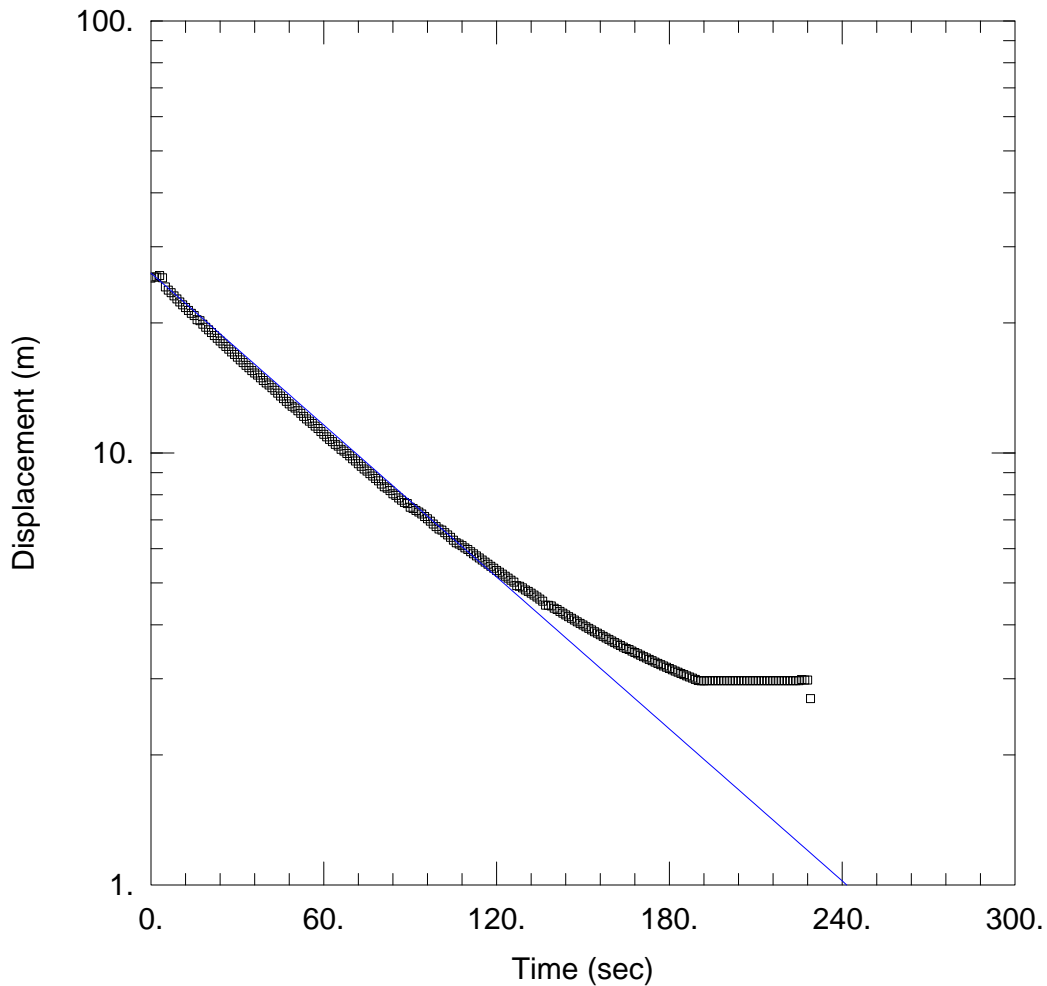
### SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 6.144E-9 m/sec

y0 = 7.04 m



### RISING HEAD TEST

Data Set: C:\...\Aqtw1 MW12-06-01 Test1 PosDisp Cut rev1.aqt  
 Date: 03/15/13 Time: 09:50:14

### PROJECT INFORMATION

Company: SRK  
 Client: Capstone - Minto  
 Project: 1CM002.008  
 Location: Minto Mine, YT  
 Test Well: MW12-07-01  
 Test Date: October 31, 2012

### AQUIFER DATA

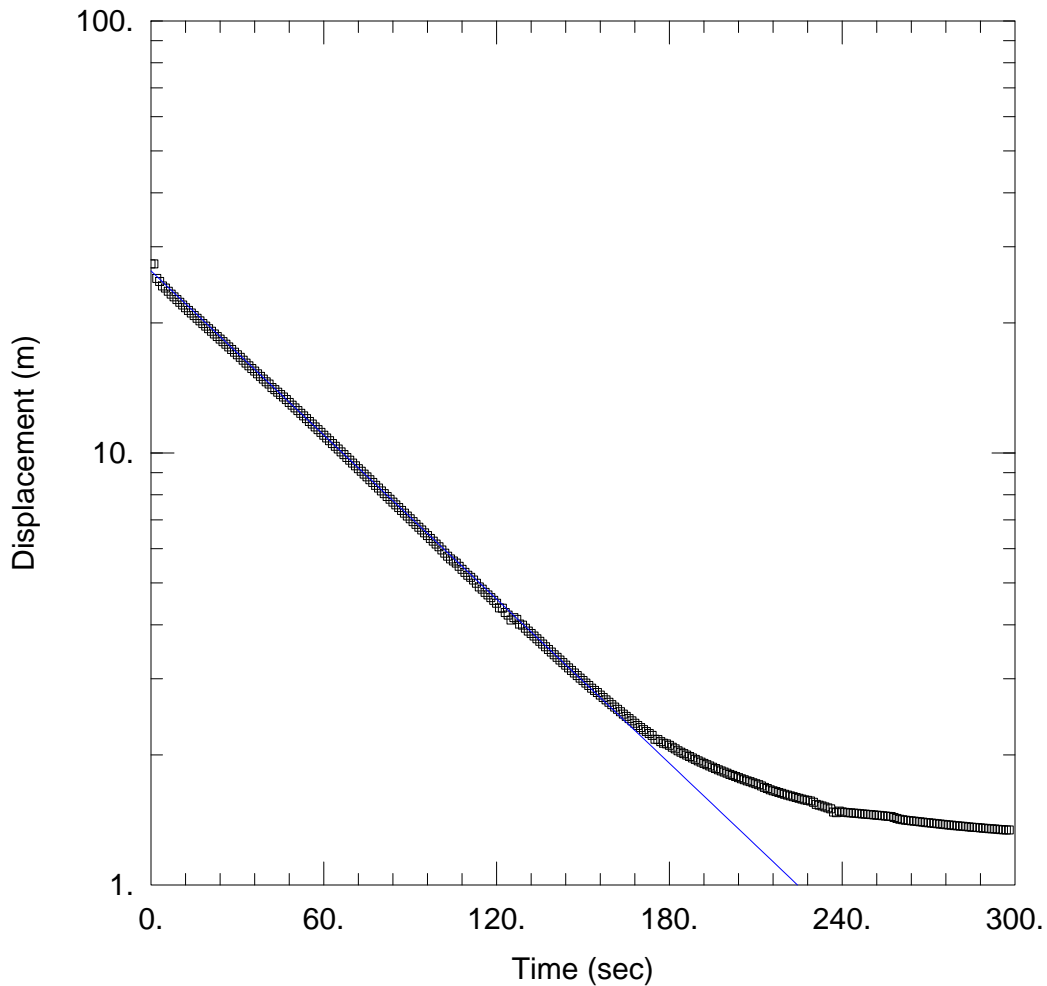
Saturated Thickness: 146.7 m Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (MW12-06-01)

Initial Displacement: 25.39 m Static Water Column Height: 146.7 m  
 Total Well Penetration Depth: 144.7 m Screen Length: 38. m  
 Casing Radius: 0.019 m Well Radius: 0.03175 m

### SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice  
 K = 4.311E-7 m/sec y0 = 26.08 m



### WELL TEST ANALYSIS

Data Set: C:\...\Aqtw1 MW12-06-02 Test1 PosDisp Cut rev1.aqt  
 Date: 03/15/13 Time: 09:50:55

### PROJECT INFORMATION

Company: SRK  
 Client: Capstone - Minto  
 Project: 1CM002.008  
 Location: Minto Mine, YT  
 Test Well: MW12-07-01  
 Test Date: November 3, 2012

### AQUIFER DATA

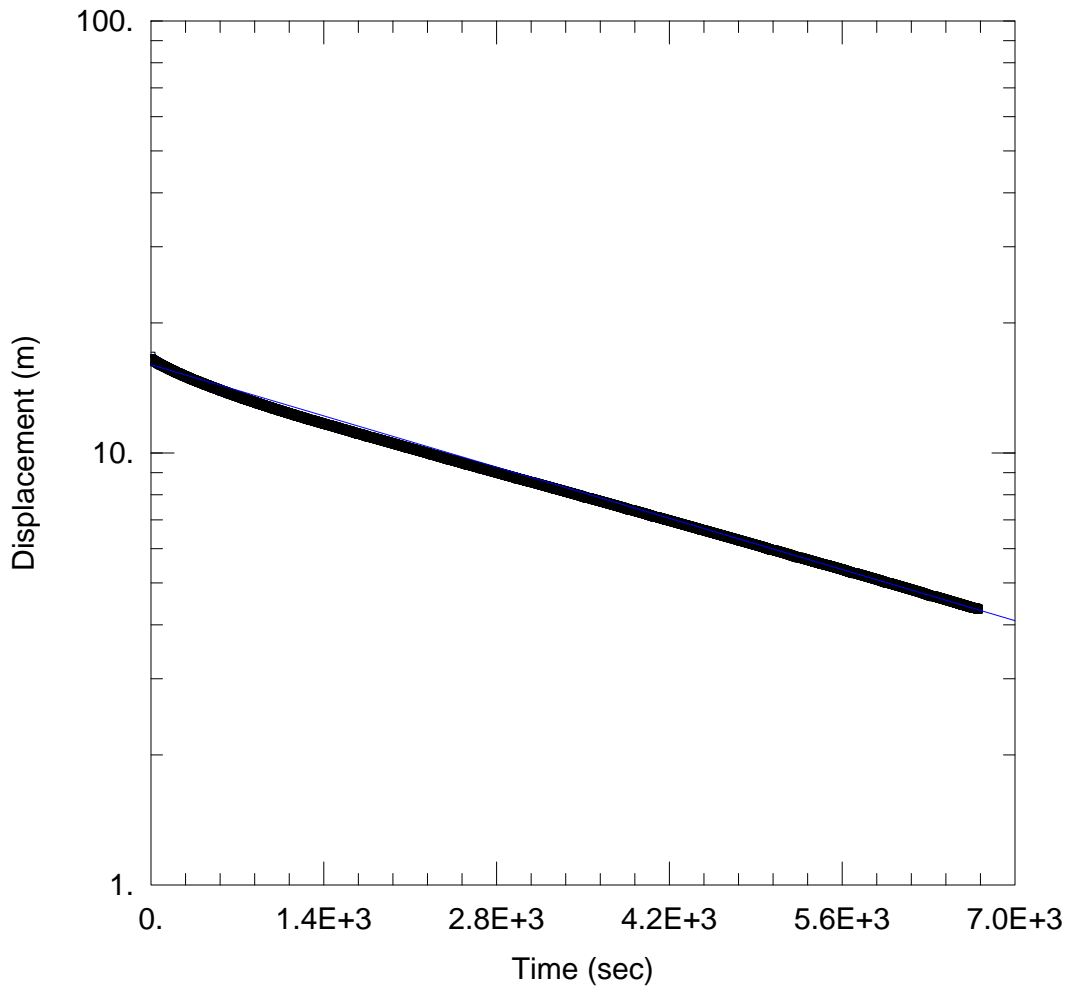
Saturated Thickness: 94.3 m Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (MW12-06-02)

Initial Displacement: 27.4 m Static Water Column Height: 94.3 m  
 Total Well Penetration Depth: 94.3 m Screen Length: 52. m  
 Casing Radius: 0.019 m Well Radius: 0.3175 m

### SOLUTION

Aquifer Model: Confined Solution Method: Bower-Rice  
 K = 2.196E-7 m/sec y0 = 26.38 m



### WELL TEST ANALYSIS

Data Set: C:\...\Aqtw1 MW12-06-03 Test1 PosDisp Cut.aqt

Date: 03/15/13

Time: 09:51:42

### PROJECT INFORMATION

Company: SRK

Client: Capstone - Minto

Project: 1CM002.008

Location: Minto Mine, YT

Test Well: MW12-07-01

Test Date: November 3, 2012

### AQUIFER DATA

Saturated Thickness: 32.5 m

Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (MW12-06-03)

Initial Displacement: 16.75 m

Static Water Column Height: 32.5 m

Total Well Penetration Depth: 32.5 m

Screen Length: 28. m

Casing Radius: 0.019 m

Well Radius: 0.3175 m

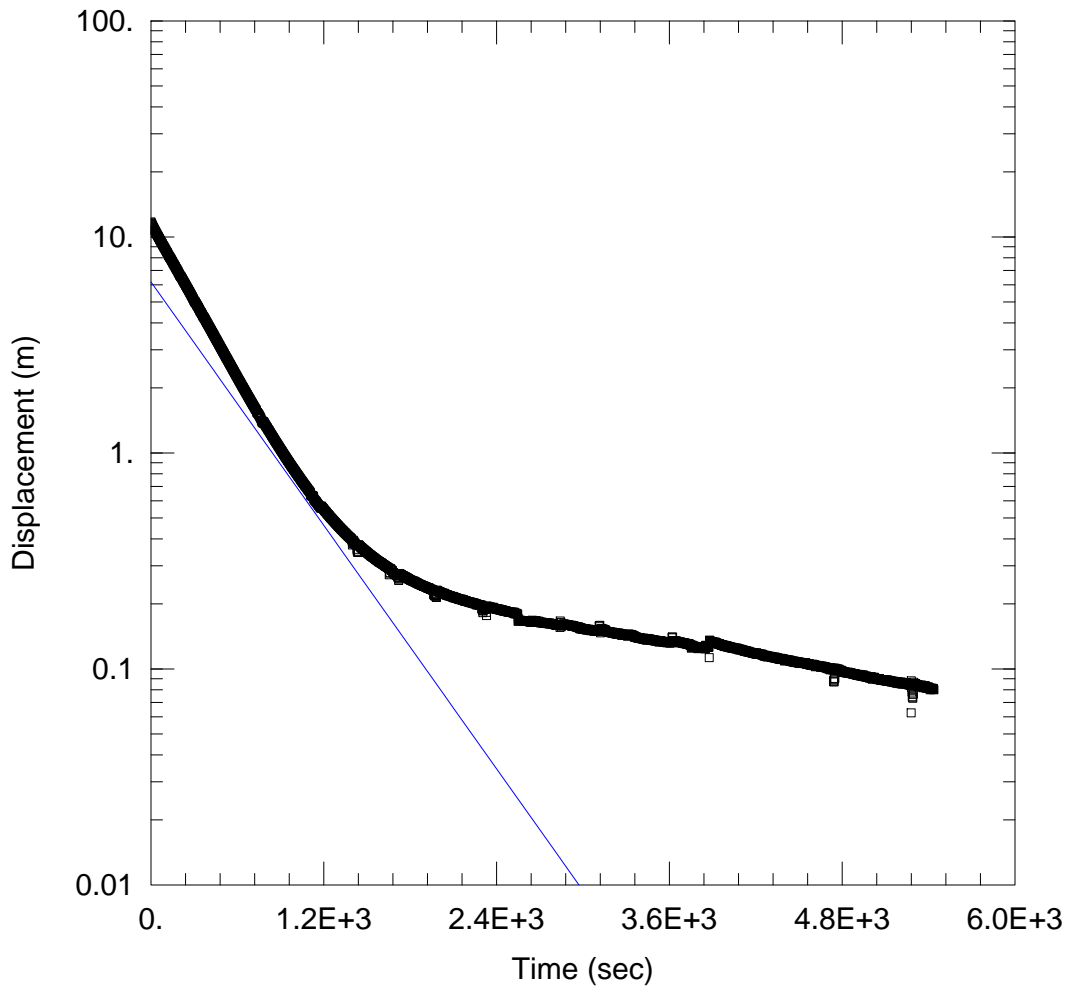
### SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 4.45E-9 m/sec

y0 = 16.01 m



### RISING HEAD TEST

Data Set: C:\...\Aqtw1 MW12-07-01 Test2 PosDisp Cut rev3.aqt

Date: 03/15/13

Time: 09:52:21

### PROJECT INFORMATION

Company: SRK

Client: Capstone - Minto

Project: 1CM002.008

Location: Minto Mine, YT

Test Well: MW12-07-01

Test Date: October 31, 2012

### AQUIFER DATA

Saturated Thickness: 111. m

Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (MW12-07-01)

Initial Displacement: 11.7 m

Static Water Column Height: 111. m

Total Well Penetration Depth: 111. m

Screen Length: 19. m

Casing Radius: 0.019 m

Well Radius: 0.03175 m

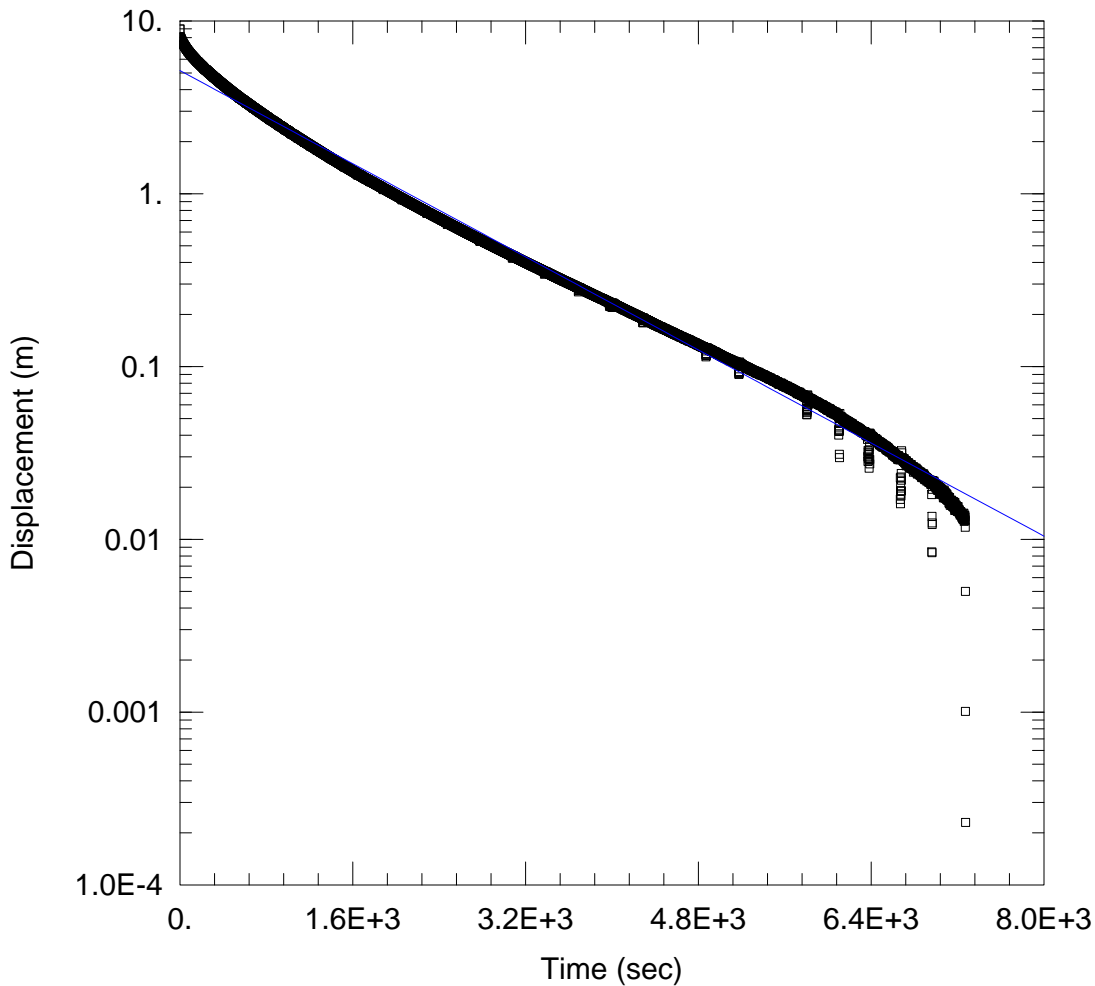
### SOLUTION

Aquifer Model: Unconfined

Solution Method: Bower-Rice

K = 1.338E-7 m/sec

y0 = 6.188 m



WELL TEST ANALYSIS

Data Set: C:\...\Aqtw1 MW12-07-02 Test1 PosDisp Cut.aqt  
 Date: 03/15/13 Time: 09:52:53

PROJECT INFORMATION

Company: SRK  
 Client: Capstone - Minto  
 Project: 1CM002.008  
 Location: Minto Mine, YT  
 Test Well: MW12-07-01  
 Test Date: November 3, 2012

AQUIFER DATA

Saturated Thickness: 86.42 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW12-07-02)

Initial Displacement: 8.983 m Static Water Column Height: 86.42 m  
 Total Well Penetration Depth: 86.42 m Screen Length: 31. m  
 Casing Radius: 0.019 m Well Radius: 0.3175 m

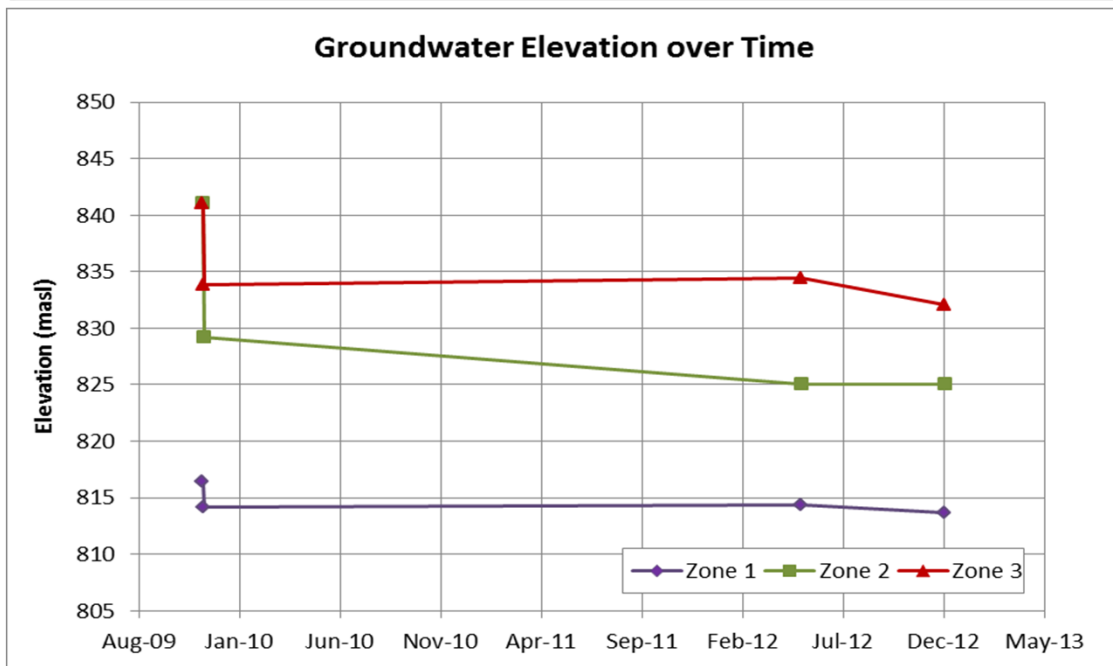
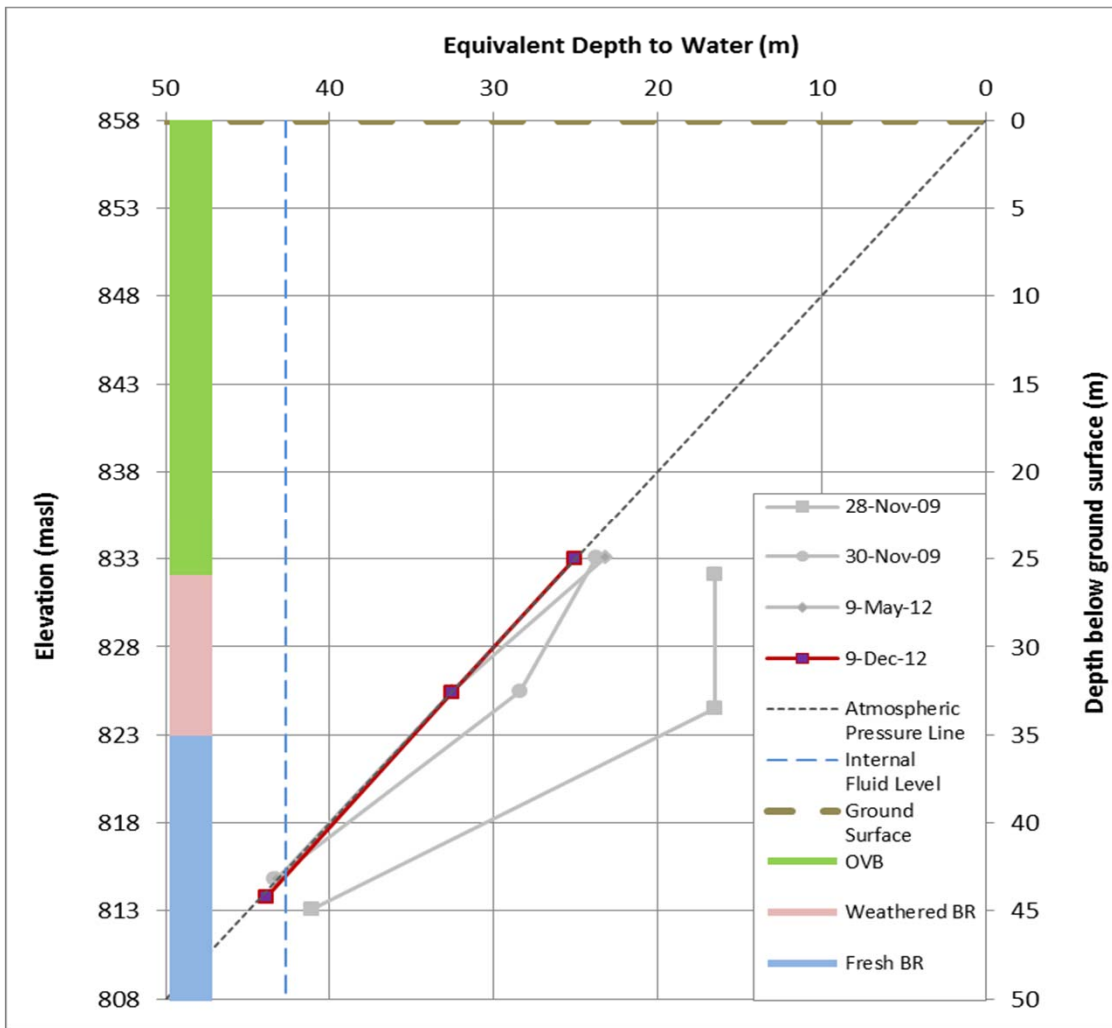
SOLUTION

Aquifer Model: Unconfined Solution Method: Bower-Rice  
 K = 1.883E-8 m/sec y0 = 5.156 m

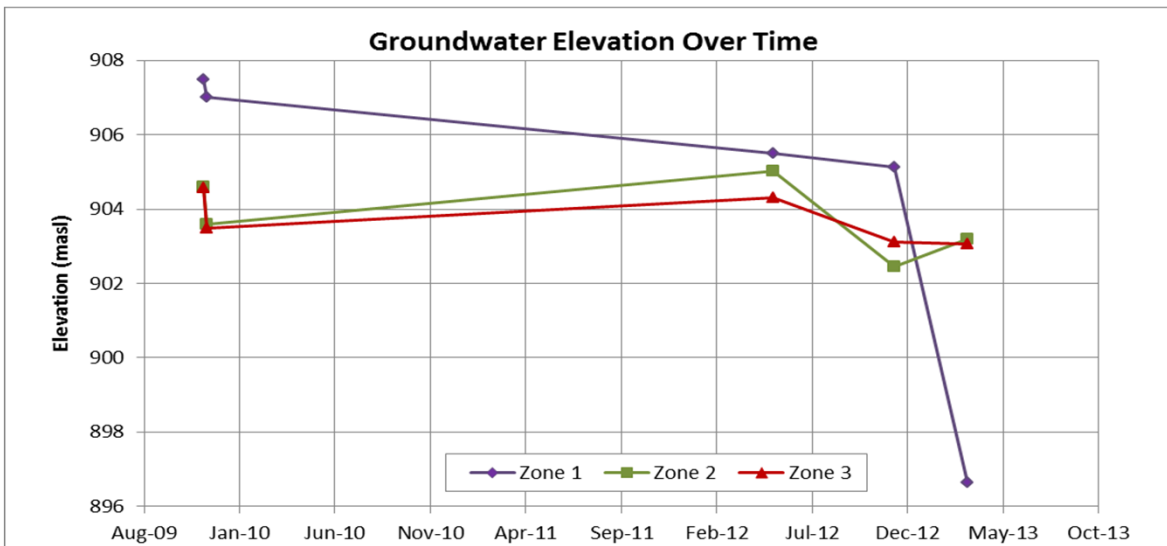
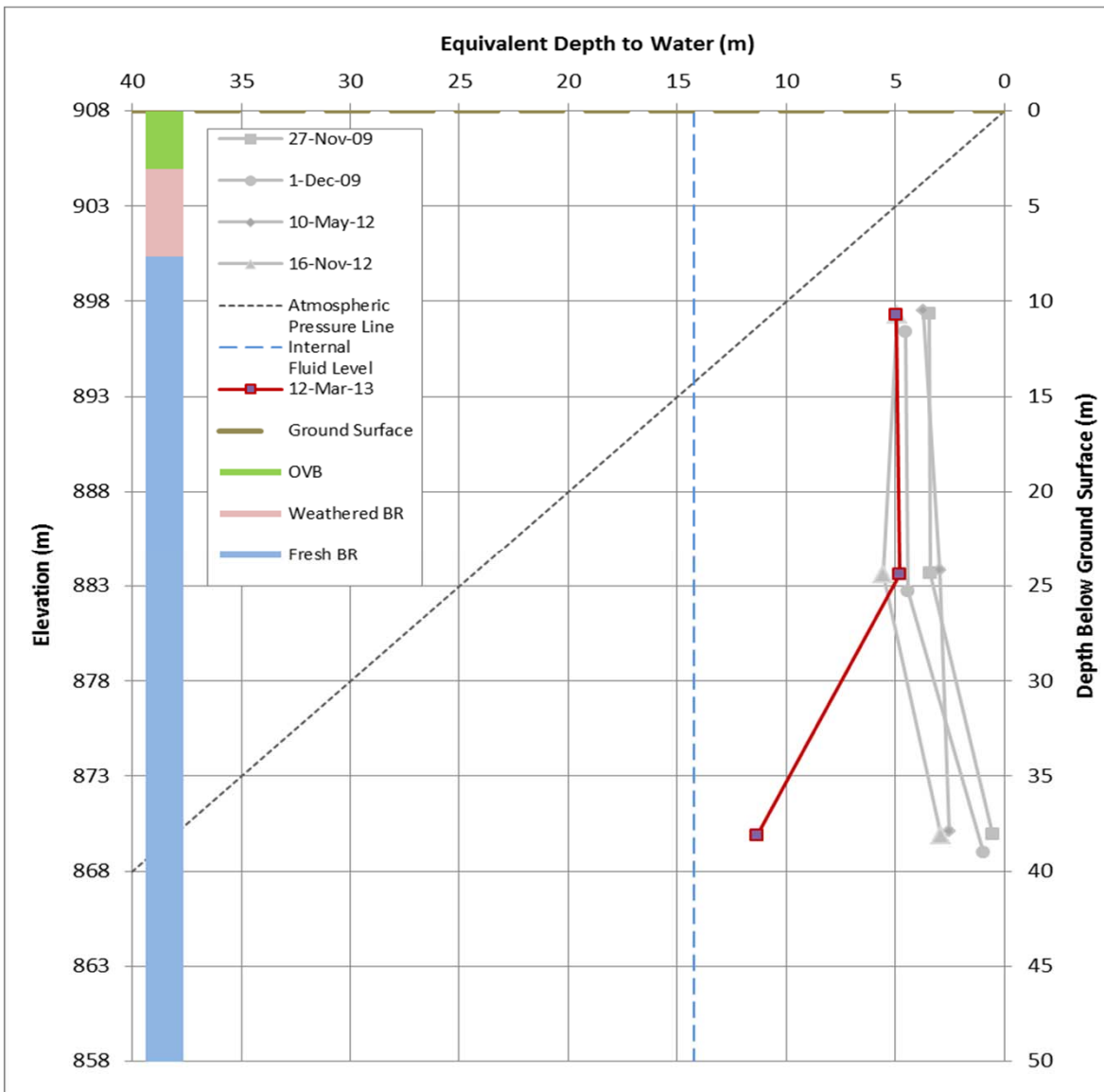
Appendix C: Depth to Water Pressure Profiles in Multi-Port Monitoring Wells



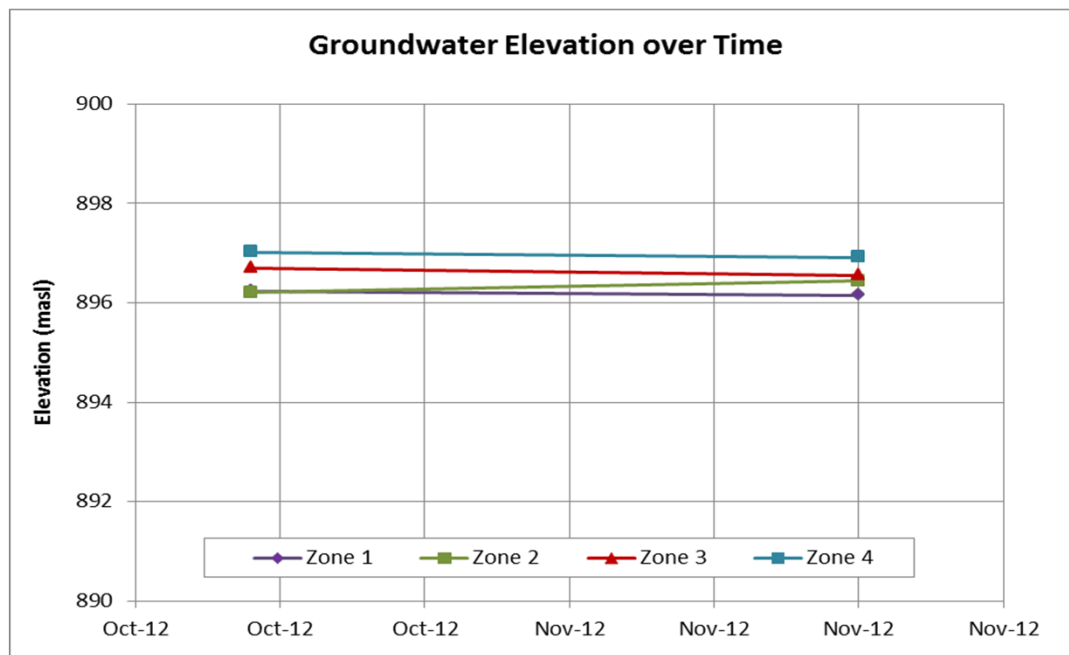
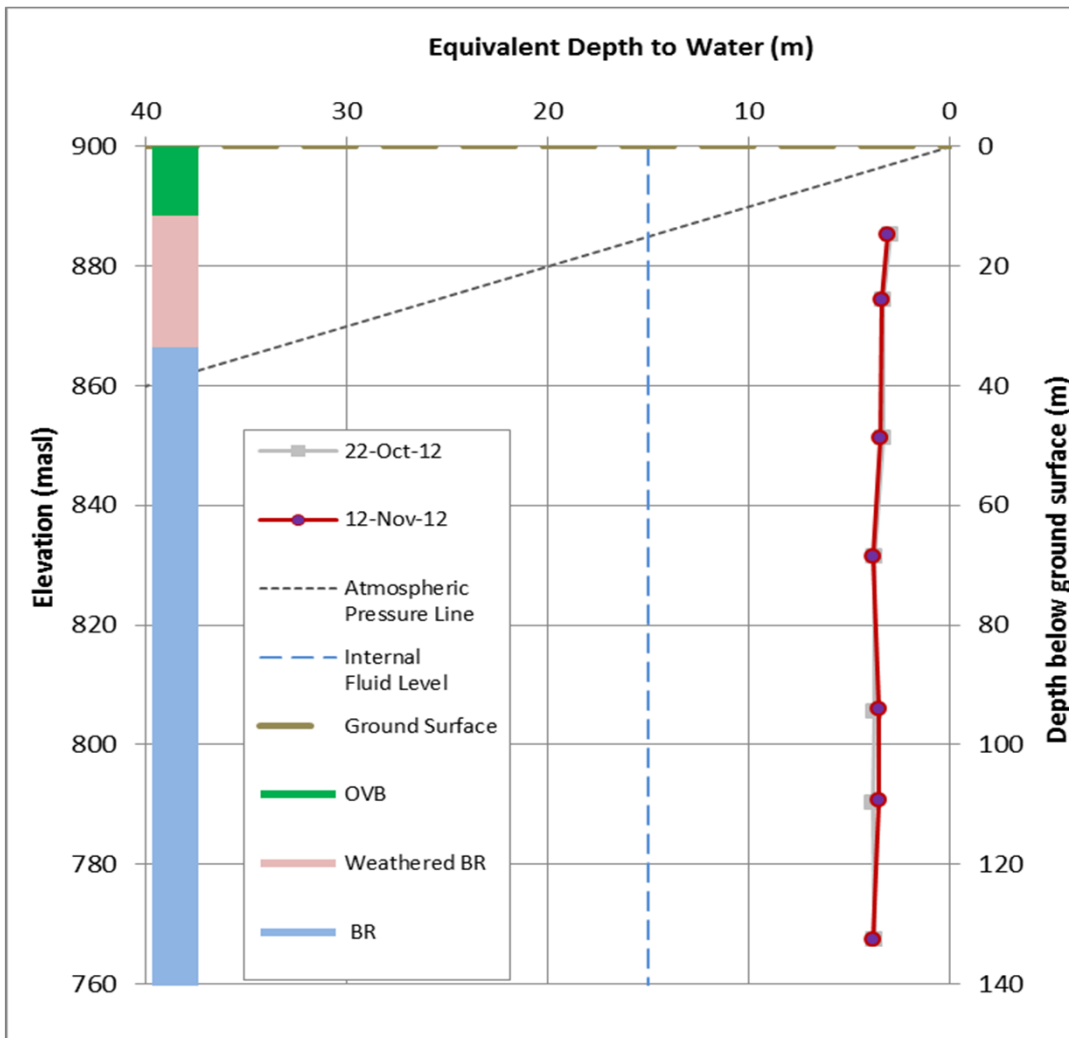
Hole ID : MW-09-01



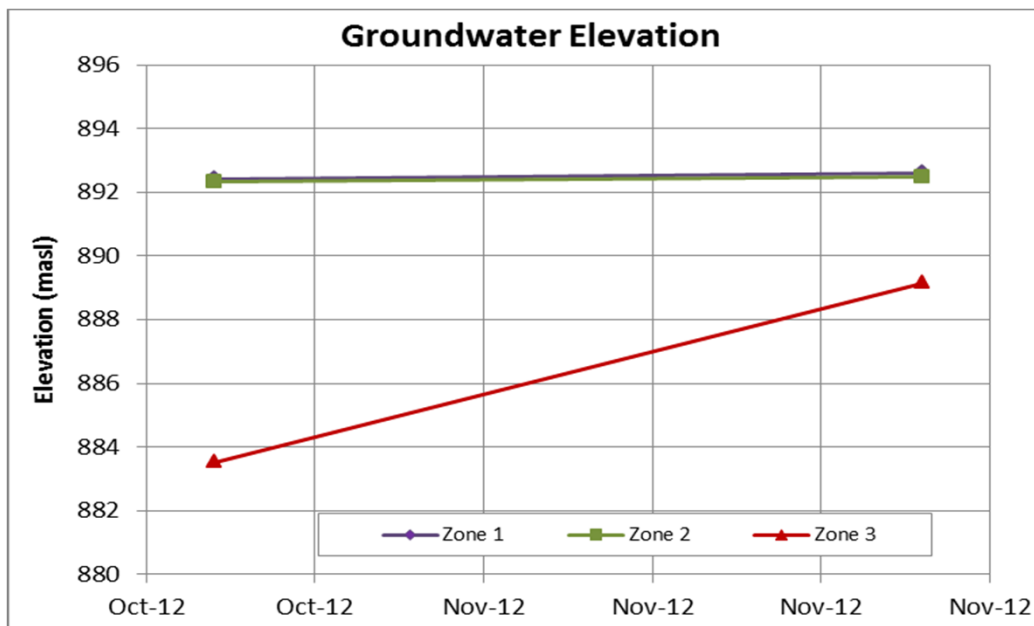
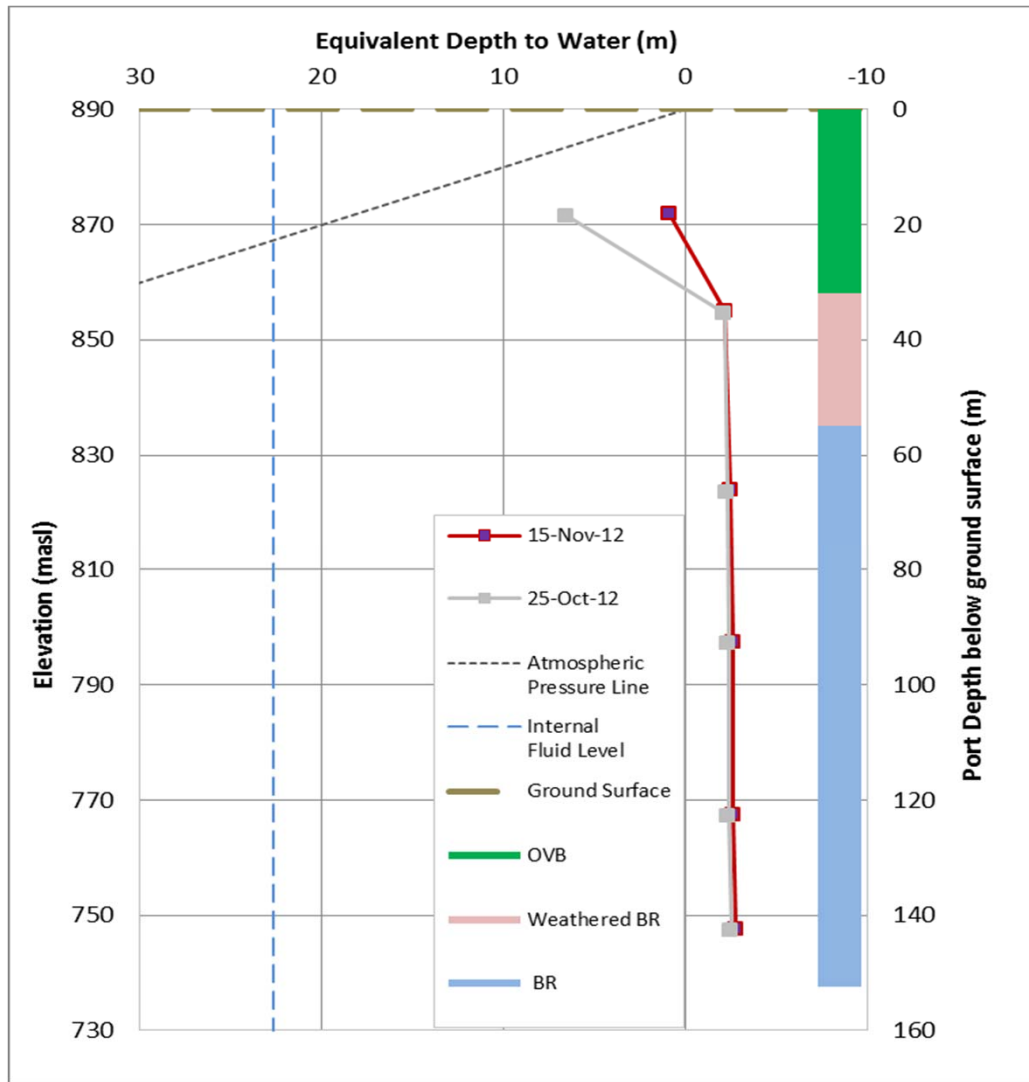
Hole ID : MW-09-03



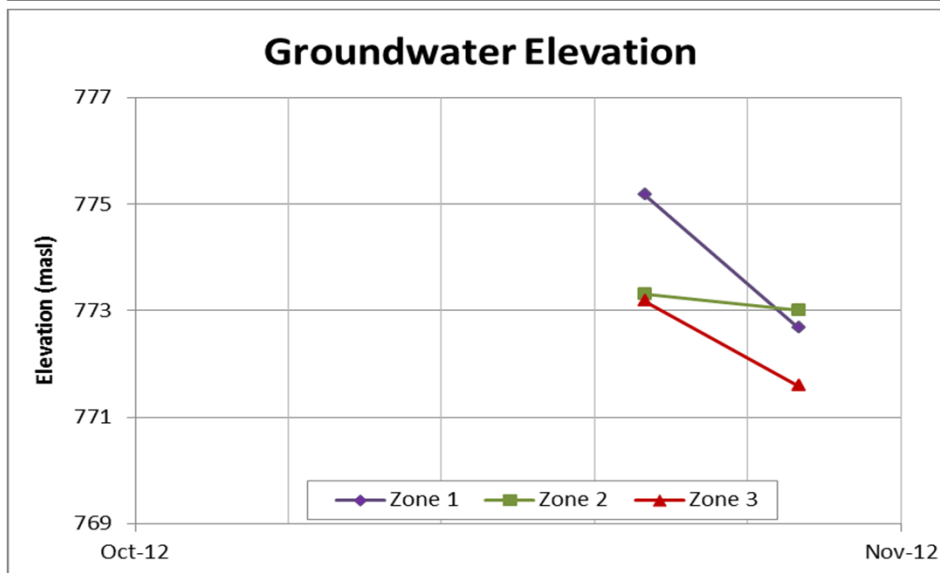
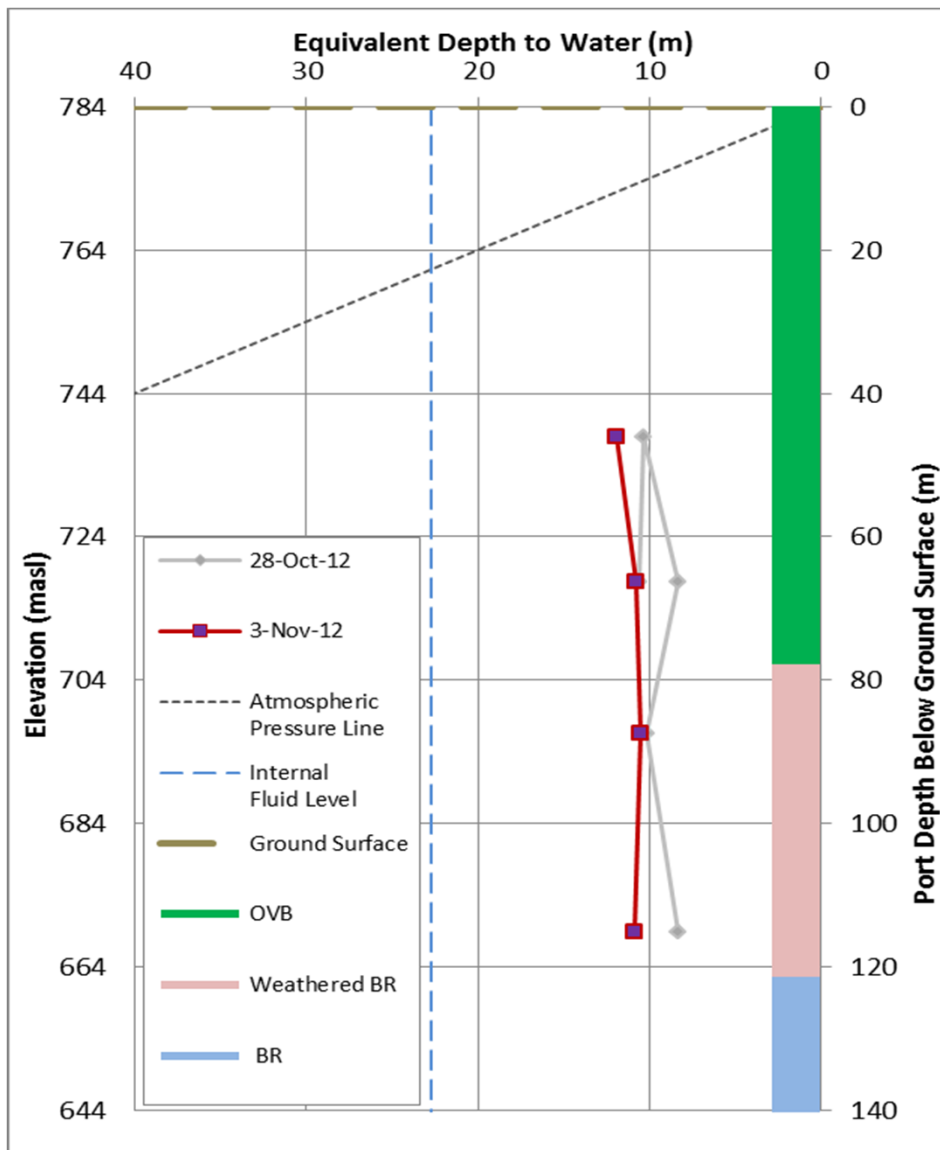
Hole ID : MW-12-05



Hole ID : MW-12-06



Hole ID : MW-12-07



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Appendix D: Multi-Port Monitoring Well Design

Project: MINTO 2CM022.007.001.10 WB Ref.: \_\_\_\_\_  
 Location: WEST PIT Hole No.: MW09-1 Installed by: JS, CD  
 Hole Depth: 165 FT MP Depth: 165 FT Hole Diameter: HQ Date Installed: 28 NOV '09  
 Measurement Datum: GROUND SURFACE Datum Elevation: 857.6 m Date Drawn: 19 JAN '10

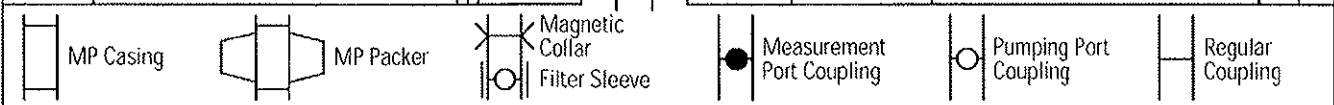
Depth, FT	Geological Description	Geologic Log	MP Casing Log	Serial No. Batch No.	Final Packer Pressure/Volume	Comments	Joint	
							Install	Test
	↑ FILL		18			0.23 m from ground surface to top of piece 17.		
10			17					
20			16					
30			15					
40			14					
50			13					
60			12					
70			11					
80			10					
90	↓ WEATHERED BEDROCK		9	2801				
100			8	17025	600 PSI 6.5 L	VALVE OPEN 170 PSI		

MP Casing	MP Packer	Magnetic Collar	Filter Sleeve	Measurement Port Coupling	Pumping Port Coupling	Regular Coupling
-----------	-----------	-----------------	---------------	---------------------------	-----------------------	------------------

Project: MINTO ZCM027.007.001.10 WB Ref.: \_\_\_\_\_  
 Location: WEST PIT Hole No.: MW09-1 Installed by: JS, CD  
 Hole Depth: 165 FT MP Depth: 165 FT Hole Diameter: HQ Date Installed: 28 NOV '09  
 Measurement Datum: GROUND SURFACE Datum Elevation: 857.6 m Date Drawn: 19 JAN '10

Depth, FT	Geological Description	Geologic Log	MP Casing Log	Serial No. Batch No.	Final Packer Pressure/Volume	Comments	Joint	
							Install	Test
100	WEATHERED BEDROCK		7					
110			6	2803				
120	COMPETENT BEDROCK		5	7955				
130			4	17026	670 PSI 4.0 L	VALVE OPEN 165 PSI		
140			3	2800				
150			2	7957				
160	END OF HOLE AT 165 FT		1					
170								






Project: MINTO 2CM022.007.001.10 WB Ref.: \_\_\_\_\_

Location: LOWER TAILINGS Hole No.: MW09-2 Installed by: JS, CD

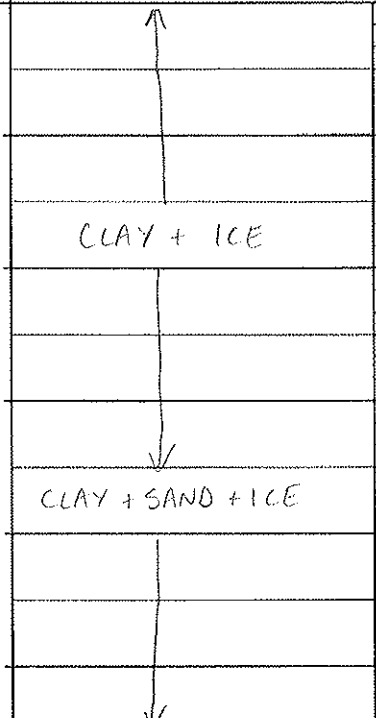
Hole Depth: 195 FT MP Depth: 195 FT Hole Diameter: HQ Date Installed: 26 NOV '09

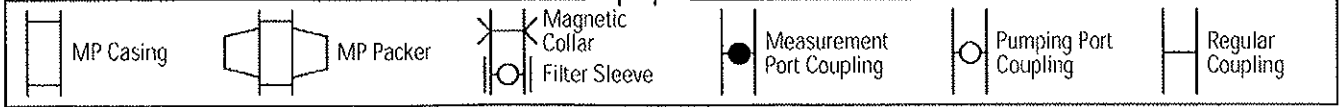
Measurement Datum: GROUND SURFACE Datum Elevation: 757.5 m Date Drawn: 19 JAN '10

Depth, FT	Geological Description	Geologic Log	MP Casing Log	Serial No. Batch No.	Final Packer Pressure/Volume	Comments	Joint	
							Install	Test
10	CLAY + ICE PERMAFROST		22					
			21					
20			20					
			19					
30			18					
			17					
40			16					
			15					
50			14					
			13					
60								
70								
80								
90								
100								



Project: MINTO 2CM022.007.001.10 WB Ref.: \_\_\_\_\_  
 Location: LOWER TAILINGS Hole No.: MW09-2 Installed by: JS, CD  
 Hole Depth: 195 FT MP Depth: 195 FT Hole Diameter: HQ Date Installed: 26 NOV '09  
 Measurement Datum: GROUND SURFACE Datum Elevation: 757.5 m Date Drawn: 19 JAN '10

Depth, FT	Geological Description	Geologic Log	MP Casing Log	Serial No. Batch No.	Final Packer Pressure/Volume	Comments	Joint		
							Install	Test	
100	 <p>CLAY + ICE</p> <p>CLAY + SAND + ICE</p> <p>WEATHERED BEDROCK</p> <p>WEAK JOINTED ROCK</p> <p>VERY POOR CORE RECOVERY</p> <p>END OF HOLE AT 195 FT</p>		12						
110			11						
120			10						
130			9						
140			8						
150			7	M	17022	760 PSI 4.75 L	MAG COLLAR AT TOP OF PACKER		
160			6		2799				
170			5		7958				
180			4	M	17021	760 PSI 1.75 L	MAG COLLAR AT TOP OF PACKER		
190			3		2794				
200	2		7951						
	1								

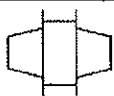


Project: MINTO 2CM027.007.001.10 WB Ref.: \_\_\_\_\_  
 Location: MINTO NORTH Hole No.: MW09-3 Installed by: JS, CD  
 Hole Depth: 165 FT MP Depth: 165 FT Hole Diameter: HQ Date Installed: 27 NOV '09  
 Measurement Datum: GROUND SURFACE Datum Elevation: 908.0 m Date Drawn: 19 JAN '10

Depth, FT	Geological Description	Geologic Log	MP Casing Log	Serial No. Batch No.	Final Packer Pressure/Volume	Comments	Joint	
							Install	Test
	WELL CASING		18			2.9 m from top of casing to top of piece 17.		
10	WEATHERED BEDROCK		17					
20	COMPETENT ROCK		16	17023	740 PSI 3.9 L	VALVE OPEN 170 PSI		
30			15	2805				
40	STAINED JOINTS, ALTERATION		14	7956				
50			13					
60			12	17028	740 PSI 3.75 L	VALVE OPEN 165 PSI		
70			11					
80			10	2802				
90	R2 ROCK, HIGHLY ALTERED		9	7949				
100			8					



MP Casing



MP Packer


 Magnetic Collar  
Filter Sleeve


Measurement Port Coupling



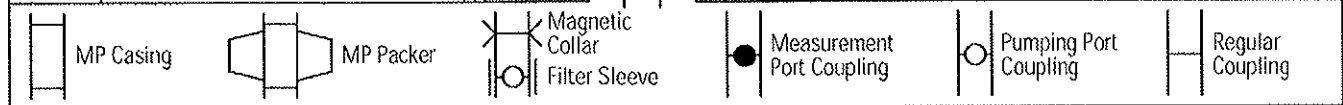
Pumping Port Coupling



Regular Coupling

Project: MINTO 2CM027.007.001.10 WB Ref.: \_\_\_\_\_  
 Location: MINTO NORTH Hole No.: MW09-3 Installed by: JS, CD  
 Hole Depth: 165 FT MP Depth: 165 FT Hole Diameter: HQ Date Installed: 27 NOV '09  
 Measurement Datum: GROUND SURFACE Datum Elevation: 908.0 m Date Drawn: 19 JAN '10

Depth	Geological Description	Geologic Log	MP Casing Log	Serial No. Batch No.	Final Packer Pressure/Volume	Comments	Joint	
							Install	Test
100	COMPETENT BEDROCK		7	17027	750 PSI 3.75 L	VALVE OPEN 170 PSI		
110			6					
120								
130			M75K 4	2804				
140			0	7950				
150			3					
160	END OF HOLE 165'		2					
170			1					



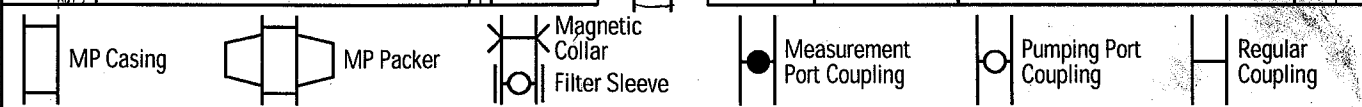
Project: Minto 2CM022.007 WB Ref.: \_\_\_\_\_

Location: Phase 1 confluence Hole No.: MW09-4 Installed by: M. Royle / J. Scib  
C. Dougherty

Hole Depth: 250 FT MP Depth: 250 FT Hole Diameter: HLR Date Installed: Nov 24 '09

Measurement Datum: \_\_\_\_\_ Datum Elevation: \_\_\_\_\_ Date Drawn: Nov 24 '09

Depth,	Geological Description	m ↓ FT	Geologic Log	MP Casing Log	Serial No. Batch No.	Final Packer Pressure/Volume	Comments	Joint	
								Install	Test
5			✓	27					
10									
15			✓	26					
20									
25			✓	25					
30									
35			✓	24					
40									
45			✓	23					
50									
55			✓	22					
60									
65			✓	21					
70									
75			✓	20					
80									
85			✓	19					
90									
95			✓	18					



Project: Minto 2CM022.007.001.100 WB Ref.: \_\_\_\_\_

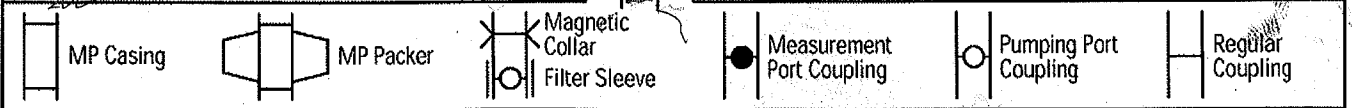
 Location: Phase 1 confluence Hole No.: MWD9-4 Installed by: M. Royle / J. Seibel

 Hole Depth: 250 FT MP Depth: 250 FT Hole Diameter: HQ Date Installed: Nov 24 '09

 Measurement Datum: ground surface Datum Elevation: \_\_\_\_\_ Date Drawn: Nov 24 '09

Depth	Geological Description	Geologic Log	MP Casing Log	Serial No. Batch No.	Final Packer Pressure/Volume	Comments	Joint	
							Install	Test
105		✓	17					
110								
115	mostly diamict (14 ft) or firm frozen clay	✓	16					
120	with ice inclusions							
125	note: clayey fine sand (frozen)	✓	15			W <sub>f</sub> = 74.52 m <sup>3</sup> -5 FT stuck after install (30 min)		
130								
135	small ice layer at 136.5'	✓	14					
140	firm clay diamict (compacted) - frozen	V <sub>0</sub> = 165 V <sub>r</sub> = 140	13					
145	highly weathered bedrock crumbly, clayey	✓						
150		✓ M	12			mag. collar		
155	weath. altered bedrock, R2 strength, core jointed	✓		2798				
160		✓	11					
165		✓		7954				
170		✓	10					
175		✓						
180	strong rock, jointed	✓ M	9	17031 2797		mag collar on bottom of packer		
185		✓	8					
190		✓		7953				
195		✓	7					
200								

Nov 25  
15:35  
bottom  
2 packers  
inflated  
with  
HQ shoe  
at 160 ft



Project: Minto 2CM022.007

WB Ref.: \_\_\_\_\_

Location: Phase 1 confluence

Hole No.: MWD9-4

Installed by: M. Royle / J. Scribek / C. Doughty

Hole Depth: 250 FT MP Depth: 250 FT

Hole Diameter: HQ

Date Installed: Nov 24 '09

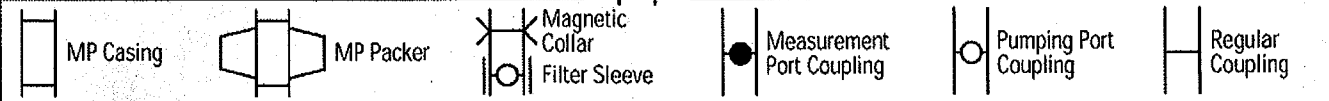
Measurement Datum: ground surface

Datum Elevation: \_\_\_\_\_

Date Drawn: Nov 24 '09

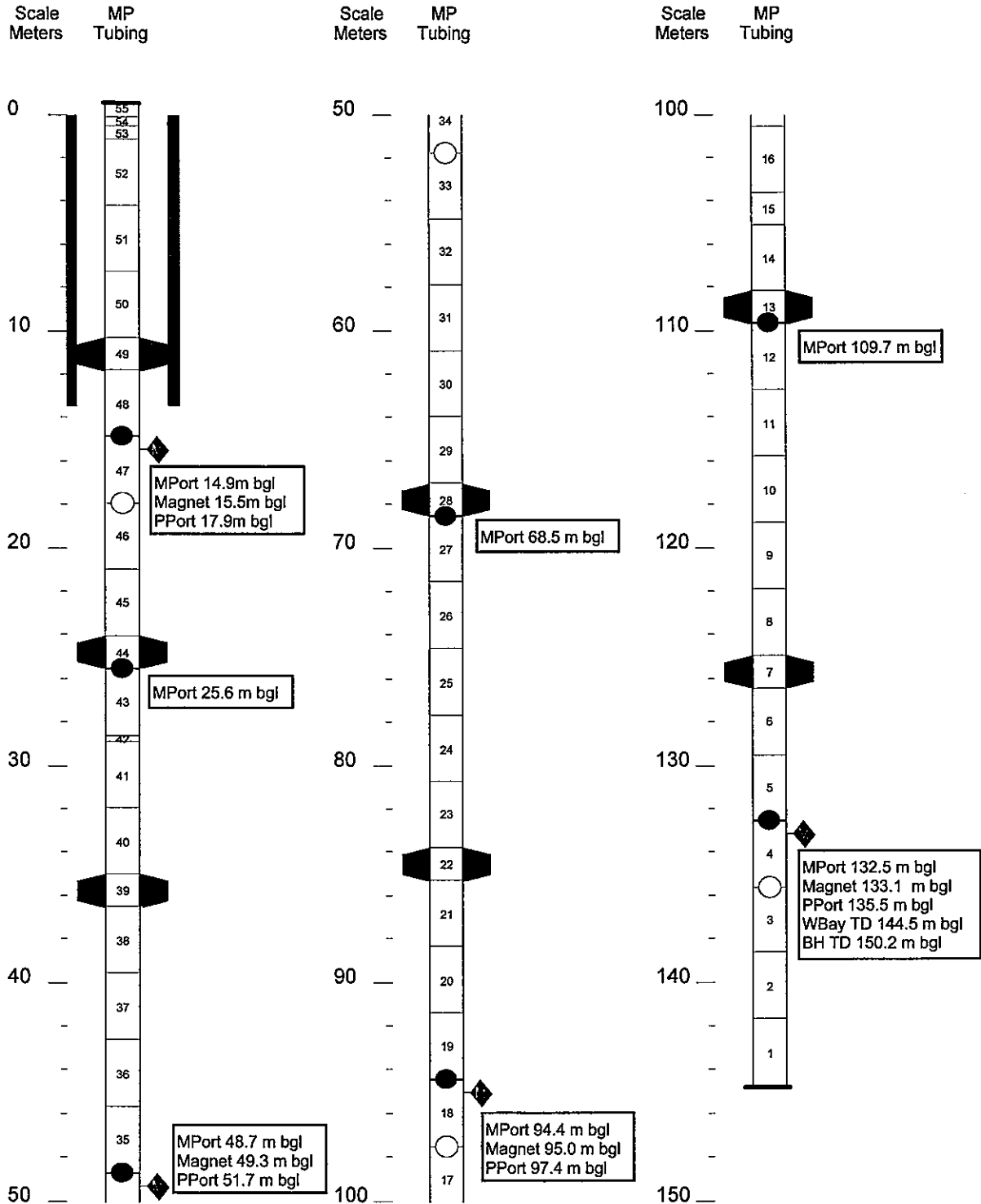
U.HQ

Depth	Geological Description	Geologic Log	MP Casing Log	Serial No. / Batch No.	Final Packer Pressure/Volume	Comments	Joint	
							Install	Test
205	strong rock, jointed	✓	6	17024				
210		1/8" TO 1/4" ASD ✓	5			don't put packer below 205'		
215								
220		✓	4					
225	✓	✓	3	M 2796		mag-collar		
230		✓	0	7952				
235		✓		7952				
240		✓						
245	EDH at 243'	EDH				end cap		
250	EDH at 250'					drill hole w.l. = ?		
						measure before install		
						probed hole = 243.1'		
						shortened orig design by 5' by remains		
						#2 pipe (5ft)		



# Summary Casing Log Schlumberger/SRK

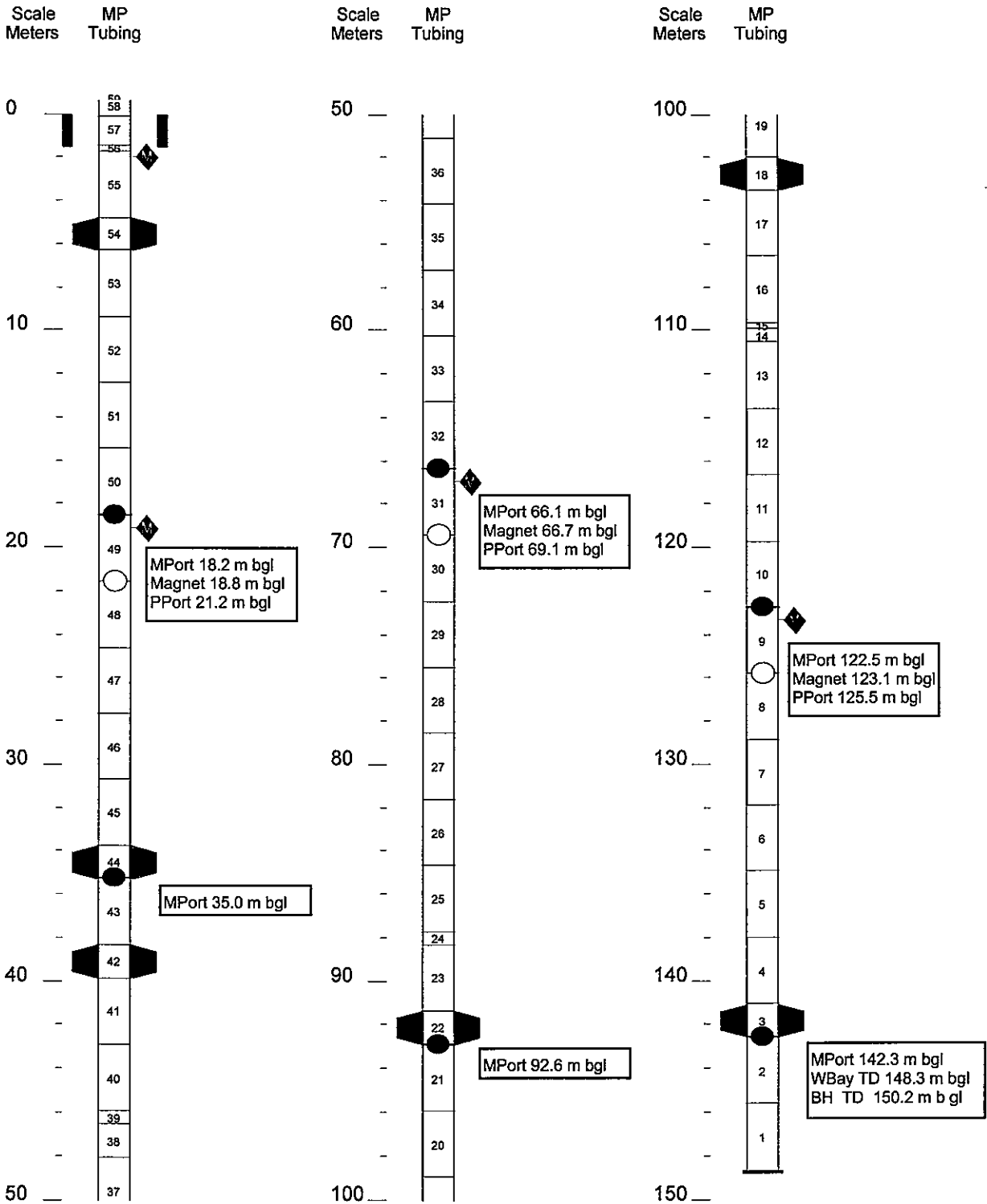
Job No: WB890  
Well: MW12-05



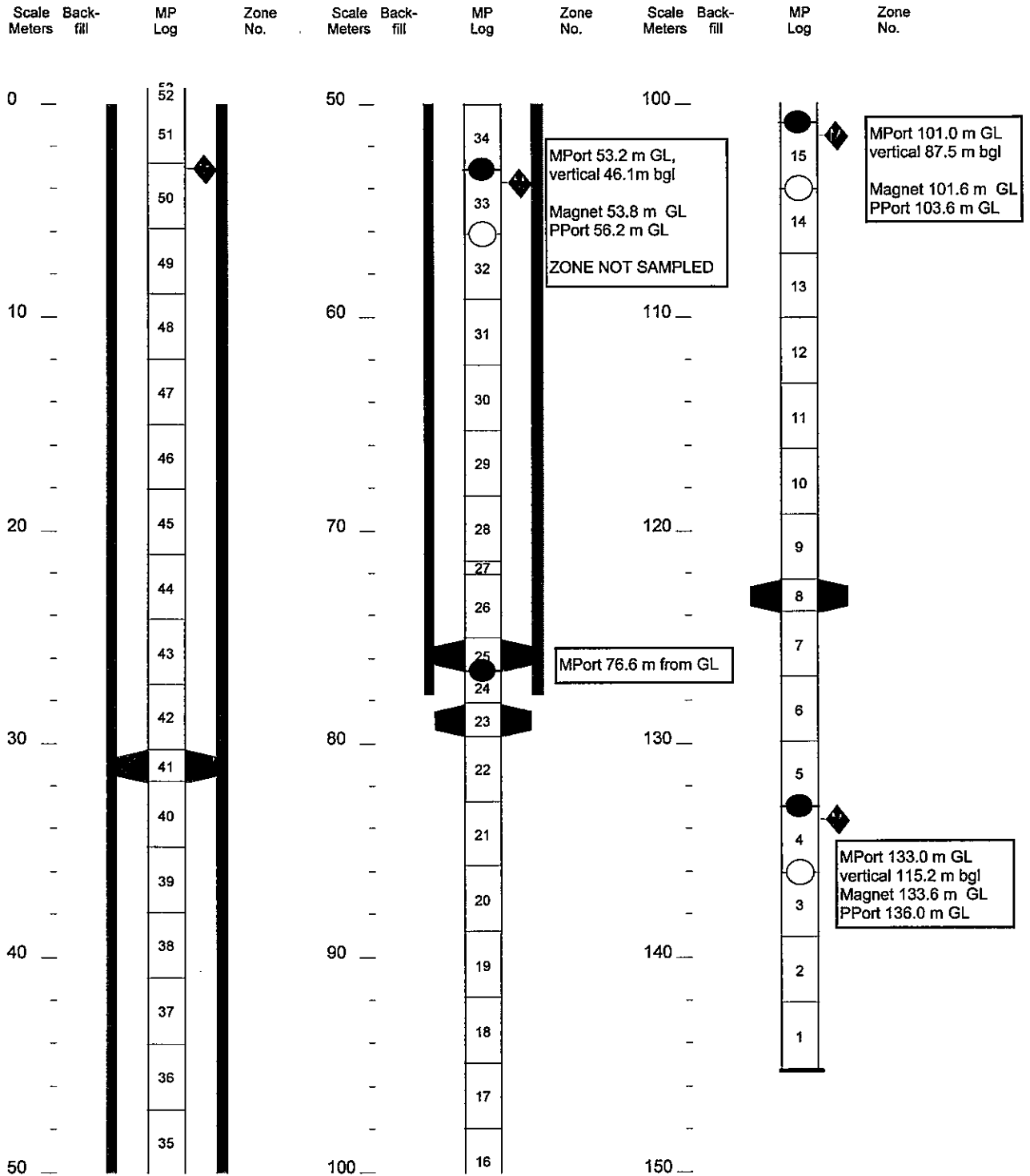


# Summary Casing Log Schlumberger/SRK

Job No: WB890  
Well: MW12-06



BOREHOLE PLUNGE ANGLE 60 DEGREES BELOW HORIZONTAL. PORT POSITIONS GIVEN ALONG PLUNGE LINE, EQUIVALENT VERTICAL DEPTH CALCULATED BASED ON PLUNGE ANGLE.



## Appendix E: Groundwater Chemistry Data

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Well ID	Zone	Date	Parameters (mg/L)															
			Ag-D	Ag-T	Al-D	Alk-Bicrb	Alk-Carb	Alk-OH	Alk-P	Alk-T	Al-T	Ammonia	Ammonium	As-D	As-T	Ba-D	Ba-T	B-D
MW09-01	2	11/30/2009	0.00019	0.00037	0.006	140	<6	<5		112	0.141		0.72	0.0002	0.0003	0.034	0.037	0.045
MW09-01	3	11/30/2009	<0.00001	0.00013	0.007	100	<6	<5		100	1.46		3.85	0.0002	0.0009	0.1	0.138	0.052
MW09-01	3	3/30/2010	<0.00001	0.00012	0.048	220	<6	<5		184	1.31		6.16	0.0007	0.0012	0.142	0.186	0.095
MW09-01	4	11/30/2009	0.00002	0.00013	<0.005	100	<6	<5		100	1.02		3.03	0.0003	0.0007	0.095	0.122	0.044
MW09-02	1	12/2/2009	<0.00001	0.00024	0.01	400	<6	<5		329	1.03		1.29	0.0041	0.0053	0.11	0.136	5.37
MW09-02	3	12/2/2009	<0.00001	0.00019	<0.005	410	<6	<5		333	0.765		1.26	0.0047	0.005	0.111	0.132	6.09
MW09-03	1	12/1/2009	0.00005	0.0104	0.01	100	<6	<5		93	15.3		5.79	0.0009	0.0068	0.106	1.35	0.32
MW09-03	1	3/29/2010	<0.00001	0.00006	<0.005	170	<6	<5		137	0.043		0.35	0.0002	0.0004	0.047	0.05	0.106
MW09-03	1	5/10/2012	<0.000020		0.0054	162	<0.50	<0.50	<0.50	133		0.073		<0.00010		0.0445		0.143
MW09-03	1	11/17/2012	<0.0000050		0.00492	164	<0.50	<0.50	<0.50	134		0.12		0.000037		0.0485		0.12
MW09-03	2	12/1/2009	0.00004	0.00613	0.008	100	<6	<5		85	3.85		5.32	0.0008	0.0007	0.088	0.183	0.218
MW09-03	2	3/29/2010	0.00001	0.00017	<0.005	160	<6	<5		130	0.03		0.99	0.0012	0.0015	0.035	0.036	1.99
MW09-03	2	5/10/2012	<0.000020		0.013	566	<0.50	<0.50	<0.50	464		0.23		0.00072		0.774		0.375
MW09-03	2	11/17/2012	<0.000025		0.0041	599	<0.50	<0.50	<0.50	491		0.23		0.00076		0.692		0.387
MW09-03	3	12/1/2009	0.00001	0.00154	0.007	70	<6	<5		55	0.681		0.26	0.0002	<0.0002	0.011	0.028	0.044
MW09-03	3	3/29/2010	<0.00001	0.00004	<0.005	80	<6	<5		63	0.01		<0.05	<0.0002	<0.0002	0.013	0.013	0.04
MW09-03	3	5/10/2012	<0.000020		0.0035	95.9	<0.50	<0.50	<0.50	78.6		<0.0050		<0.00010		0.0396		<0.05
MW09-03	3	11/17/2012	0.000009		0.00187	109	<0.50	<0.50	<0.50	89		0.0054		0.000103		0.0687		<0.05
MW09-03	5	5/10/2012	<0.000020		<0.0030	1.01	<0.50	<0.50	<0.50	0.83		0.0069		<0.00010		<0.0010		<0.05
MW09-03	5	11/17/2012	<0.0000050		0.00125	1.79	<0.50	<0.50	<0.50	1.47		<0.0050		<0.000020		0.00136		<0.05
MW12-05	1	11/11/2012	<0.000020	0.000095	0.0154	224	<0.50	<0.50	<0.50	183	0.183	<0.0050		0.00117	0.00098	0.463	0.429	0.146
MW12-05	3	11/12/2012	0.000005		0.0043	231	2.1	<0.50	1.75	193		0.019		0.000307		0.143		0.077
MW12-05	5	11/12/2012	<0.0000050		0.00459	269	<0.50	<0.50	<0.50	221		0.016		0.000329		0.0936		<0.05
MW12-05	7	11/12/2012	<0.0000050		0.00363	256	3.47	<0.50	2.89	216		0.21		0.000917		0.142		0.054
MW12-06	2	11/16/2012	0.000008		0.00317	380	<0.50	<0.50	<0.50	311		0.0074		0.00298		0.0519		0.115
MW12-06	4	11/16/2012	<0.0000050		0.0037	492	<0.50	<0.50	<0.50	403		0.0059		0.00163		0.0425		0.149
MW12-06	6	11/16/2012	<0.0000050		0.00239	421	<0.50	<0.50	<0.50	345		0.085		0.00009		0.0253		0.083
MW12-07	1	11/3/2012	<0.000020		0.0098	378	<0.50	<0.50	<0.50	310		0.012		0.00073		0.169		0.127
MW12-07	2	11/3/2012	<0.000020		0.006	240	<0.50	<0.50	<0.50	197		<0.0050		0.00024		0.0546		0.105

Well ID	Zone	Date	Parameters (mg/L)															
			Be-D	Be-T	Bi-D	Bi-T	B-T	Ca-D	Ca-T	Cd-D	Cd-T	Chloride	Co-D	Cond-L	Co-T	Cr-D	Cr-T	Cu-D
MW09-01	2	11/30/2009	<0.00004	<0.00004	<0.001	<0.001	0.046	89.7	85.9	0.00005	0.00004	7.22	0.00102	729	0.00109	<0.0004	0.0011	0.012
MW09-01	3	11/30/2009	<0.00004	<0.00004	<0.001	<0.001	0.068	75.4	73.2	0.00008	0.00008	7.28	0.00076	725	0.00156	<0.0004	0.0052	0.02
MW09-01	3	3/30/2010	<0.00004	0.00005	<0.001	<0.001	0.095	93.7	98.7	0.00015	0.00014	18.5	0.00045	941	0.00147	<0.0004	0.0072	0.021
MW09-01	4	11/30/2009	<0.00004	0.00004	<0.001	<0.001	0.048	78.2	70.9	0.00007	0.00008	7.27	0.00078	728	0.00145	<0.0004	0.0037	0.018
MW09-02	1	12/2/2009	<0.00004	0.00004	<0.001	<0.001	6.18	98.2	96	0.00009	0.00017	5.52	0.00065	1090	0.00144	0.0036	0.006	0.004
MW09-02	3	12/2/2009	<0.00004	<0.00004	<0.001	<0.001	6.25	99.2	95.1	0.00006	0.00016	5.73	0.00062	1090	0.00121	0.0038	0.0054	0.003
MW09-03	1	12/1/2009	<0.00004	0.00066	<0.001	<0.005	0.514	74.1	85.5	0.0002	0.00012	17.9	0.00045	976	0.0175	<0.0004	0.003	0.019
MW09-03	1	3/29/2010	<0.00004	<0.00004	<0.001	<0.001	0.29	41.2	42.5	0.00012	0.00011	0.4	0.00014	315	0.00019	0.001	0.0022	0.004
MW09-03	1	5/10/2012	<0.00010		<0.0010			42		0.000085		<0.50	<0.00050	302		<0.0010		0.00281
MW09-03	1	11/17/2012	<0.000010		<0.0000050			46.9		0.000683			0.000205	310		0.00014		0.00182
MW09-03	2	12/1/2009	<0.00004	0.00008	<0.001	<0.001	0.25	73.7	74	0.00008	0.00013	16	0.00057	932	0.00147	<0.0004	0.002	0.022
MW09-03	2	3/29/2010	<0.00004	<0.00004	<0.001	<0.001	1.92	56.3	59.3	0.00072	0.00004	3.82	0.0002	502	0.00022	0.0013	0.0014	0.006
MW09-03	2	5/10/2012	<0.00010		<0.0010			154		0.000028		4.3	0.00244	965		<0.0010		0.00107
MW09-03	2	11/17/2012	<0.000050		<0.000025			161		<0.000025			0.00123	979		0.00058		0.00073
MW09-03	3	12/1/2009	<0.00004	<0.00004	<0.001	<0.001	0.064	19.9	20.4	0.00007	0.00008	0.93	0.00024	158	0.00027	<0.0004	0.0013	0.005
MW09-03	3	3/29/2010	<0.00004	<0.00004	<0.001	<0.001	0.034	23.4	24.9	0.00002	0.00001	0.61	0.00009	158	0.00007	<0.0004	<0.0004	0.005
MW09-03	3	5/10/2012	<0.00010		<0.0010			28.1		0.000069		0.54	<0.00050	181		<0.0010		0.0032
MW09-03	3	11/17/2012	<0.000010		<0.0000050			31.9		0.000023			0.000149	200		0.00013		0.00174
MW09-03	5	5/10/2012	<0.00010		<0.0010			<0.050		<0.000010		<0.50	<0.00050	1.9		<0.0010		0.00022
MW09-03	5	11/17/2012	<0.000010		<0.0000050			<0.050		<0.0000050			<0.0000050	2.2		<0.00010		0.000107
MW12-05	1	11/11/2012	<0.00010	<0.00010	<0.0010	<0.0010	0.119	117	118	0.00014	0.000182		0.00379	1030	0.00353	<0.0010	<0.0010	0.00737
MW12-05	3	11/12/2012	<0.000010		<0.0000050			120		0.000214			0.00551	1240		<0.00010		0.0022
MW12-05	5	11/12/2012	<0.000010		<0.0000050			47.2		0.000016			0.000522	515		<0.00010		0.00154
MW12-05	7	11/12/2012	<0.000010		<0.0000050			49.4		<0.0000050			0.000249	486		<0.00010		0.000477
MW12-06	2	11/16/2012	0.00002		<0.0000050			111		0.000016			0.000309	957		<0.00010		0.000231
MW12-06	4	11/16/2012	0.000019		<0.0000050			97.2		0.000012			0.00021	1000		<0.00010		0.000106
MW12-06	6	11/16/2012	<0.000010		<0.0000050			81.2		0.000012			0.000218	905		<0.00010		0.000261
MW12-07	1	11/3/2012	<0.00010		<0.0010			176		0.000633			<0.00050	1250		<0.0010		0.0767
MW12-07	2	11/3/2012	<0.00010		<0.0010			140		0.000269			<0.00050	1070		<0.0010		0.0217

Well ID	Zone	Date	Parameters (mg/L)																
			Cu-T	Fe-D	Fe-T	Fluoride	Hard-D	Hard-T	Hg-D	Hg-T	K-D	K-T	Li-D	Li-T	Mg-D	Mg-T	Mn-D	Mn-T	Mo-D
MW09-01	2	11/30/2009	0.015	0.05	0.324		318		0.00003	0.00005	3.2	3.3	0.001	0.001	22.9	22	0.0802	0.0935	0.0341
MW09-01	3	11/30/2009	0.04	0.04	2.68		262		<0.00001	<0.00001	6.6	7.2	0.003	0.005	18	18	0.228	0.309	0.0892
MW09-01	3	3/30/2010	0.029	0.18	3.37		336		<0.00001	0.00001	7	7.2	0.003	0.003	24.7	26.8	0.168	0.225	0.148
MW09-01	4	11/30/2009	0.035	0.04	1.65		274		<0.00001	0.02	5.8	5.9	0.003	0.004	19.1	17.8	0.189	0.248	0.0733
MW09-02	1	12/2/2009	0.013	0.11	1.76		503		<0.00001	<0.00001	8.2	8.6	0.011	0.013	62.6	62.2	0.27	0.34	0.0442
MW09-02	3	12/2/2009	0.01	0.09	1.28		508		<0.00001	<0.00001	8.4	8.3	0.01	0.013	63.1	61.9	0.261	0.332	0.0487
MW09-03	1	12/1/2009	0.056	0.03	44		253		<0.00001	0.00002	27	31	0.012	0.02	16.5	21.8	0.161	6.78	0.0806
MW09-03	1	3/29/2010	0.006	0.04	0.183		144		<0.00001	<0.00001	4.4	4.2	0.003	0.003	9.9	10.4	0.109	0.123	0.0052
MW09-03	1	5/10/2012		<0.0050		0.87	146		<0.000010		2.7		<0.0050		10		0.0852		0.0054
MW09-03	1	11/17/2012		0.0116			159				3.08		0.00284		10.3		0.0961		0.00516
MW09-03	2	12/1/2009	0.047	0.02	4.93		242		<0.00001	0.00002	26	25.2	0.011	0.012	14.2	14.6	0.135	0.287	0.101
MW09-03	2	3/29/2010	0.008	<0.01	0.175		178		<0.0001	<0.00001	6.6	6.8	0.004	0.005	9.2	9.76	0.0616	0.0677	0.045
MW09-03	2	5/10/2012		19.2		0.75	481		<0.000010		4.44		<0.0050		23.4		22.1		0.0172
MW09-03	2	11/17/2012		19.4			499				4.66		<0.0025		23.4		17.8		0.0167
MW09-03	3	12/1/2009	0.01	0.02	0.673		60		0.00001	0.00001	2.6	3	0.001	0.001	2.4	2.54	0.0184	0.0384	0.0267
MW09-03	3	3/29/2010	0.004	<0.01	0.027		69		<0.0001	<0.00001	2.3	2.1	<0.001	<0.001	2.4	2.62	0.0129	0.0132	0.0064
MW09-03	3	5/10/2012		0.0164		0.3	84.1		<0.000010		1.8		<0.0050		3.36		0.234		0.0061
MW09-03	3	11/17/2012		0.0113			95.3				2.18		0.00086		3.8		0.385		0.0113
MW09-03	5	5/10/2012		<0.0050		<0.010	<0.50		<0.000010		<0.050		<0.0050		<0.050		<0.0010		<0.0010
MW09-03	5	11/17/2012		0.0016			<0.50				<0.050		<0.00050		<0.050		0.000227		0.000578
MW12-05	1	11/11/2012	0.00892	0.0085	0.209		407	402	<0.000010	<0.000010	3.57	3.1	0.0063	<0.0050	27.8	25.8	0.11	0.107	0.012
MW12-05	3	11/12/2012		0.0981			516				4.17		0.00476		52.7		0.647		0.0112
MW12-05	5	11/12/2012		0.0152			231				2.55		0.00439		27.4		0.198		0.0153
MW12-05	7	11/12/2012		0.867			214				1.79		0.00247		22.1		0.411		0.00346
MW12-06	2	11/16/2012		0.736			407				3.95		0.00892		31.7		0.0519		0.0164
MW12-06	4	11/16/2012		0.717			467				3.81		0.00654		54.4		0.057		0.0102
MW12-06	6	11/16/2012		0.0833			425				3.57		0.00509		53.9		0.1		0.0066
MW12-07	1	11/3/2012		0.189			592		<0.000010		5.68		0.0103		37.2		0.289		0.0196
MW12-07	2	11/3/2012		0.0069			496		<0.000010		5.92		0.022		35.5		0.0899		0.0334

Well ID	Zone	Date	Parameters (mg/L)																
			Mo-T	Na-D	Na-T	Ni-D	Ni-T	N-NO2	N-NO3	NO2+NO3	N-TKN	Pb-D	Pb-T	P-D	P-PO4-T	P-T	Sb-D	Sb-T	S-D
MW09-01	2	11/30/2009	0.0356	16.8	16.7	0.004	0.004			42.9	6.79	0.0001	0.0001	<0.01	0.04	<0.05	0.0053	0.0003	25.8
MW09-01	3	11/30/2009	0.0944	28	28.1	0.002	0.005			42.1	6	<0.0001	0.0007	<0.01	0.03	0.06	0.0032	0.0012	27.5
MW09-01	3	3/30/2010	0.146	53.3	56.9	0.002	0.006			21.6	8.89	0.0003	0.001	0.03	0.06	0.09	0.0011	0.0005	56.2
MW09-01	4	11/30/2009	0.0758	26.2	23.6	0.002	0.004			42.1	6.21	<0.0001	0.0005	<0.01	0.03	<0.05	0.0008	0.0003	27.8
MW09-02	1	12/2/2009	0.0481	70.4	73.4	0.004	0.006			23.2	1.13	0.0002	0.0008	<0.01	0.06	<0.05	0.0136	0.003	55.4
MW09-02	3	12/2/2009	0.0499	74.2	71.5	0.003	0.005			24.4	1.01	0.0002	0.0006	<0.01	0.06	<0.05	0.003	0.0038	56.7
MW09-03	1	12/1/2009	0.0742	70.5	65.4	0.008	0.01			60.9	11.7	0.0002	0.004	0.02	0.03	0.19	0.002	<0.001	39
MW09-03	1	3/29/2010	0.006	5.7	7.37	0.005	0.007			0.26	0.4	0.0011	0.0003	<0.01	0.06	<0.05	0.0009	0.0002	7.6
MW09-03	1	5/10/2012		5.59		0.0021		0.182	0.109	0.29		<0.00020		0.012	0.0158		<0.00050		8.3
MW09-03	1	11/17/2012		5.52		0.00562		0.118	0.069	0.187		0.000036				0.0042	0.000181		9.4
MW09-03	2	12/1/2009	0.108	63	66.1	0.004	0.005			58.2	12.2	0.0001	0.0008	<0.01	0.03	0.07	0.0021	0.0008	36.7
MW09-03	2	3/29/2010	0.0468	24.9	25.7	0.002	0.002			16.1	1.22	0.0003	0.0003	<0.01	0.07	<0.05	0.0018	<0.0002	16.3
MW09-03	2	5/10/2012		15.8		<0.0010		0.171	0.1	0.271		<0.00020		<0.01	0.0093		<0.00050		<3.0
MW09-03	2	11/17/2012		15.5		0.00123		0.0924	0.035	0.127		0.000152				<0.01	0.00024		<15
MW09-03	3	12/1/2009	0.0288	5.5	5.72	0.002	0.002			1.87	0.34	0.0001	0.0002	<0.01	0.04	<0.05	0.0021	0.0025	3.4
MW09-03	3	3/29/2010	0.0065	2.6	3.08	<0.001	<0.001			0.47	<0.06	0.0007	0.0002	<0.01	0.06	<0.05	0.0009	<0.0002	3.4
MW09-03	3	5/10/2012		3.13		<0.0010		0.0145	0.302	0.316		<0.00020		<0.01	<0.0050		<0.00050		4.1
MW09-03	3	11/17/2012		3.33		0.000266		0.0058	0.248	0.254		0.000016				0.004	0.000077		3.7
MW09-03	5	5/10/2012		0.222		<0.0010		<0.0050	<0.020	<0.020		<0.00020		<0.01	<0.0050		<0.00050		<3.0
MW09-03	5	11/17/2012		<0.050		<0.000020		<0.0050	<0.020	<0.020		0.000014				<0.0020	0.000033		<3.0
MW12-05	1	11/11/2012	0.0114	64.2	56.8	0.0043	0.0045	0.0517	0.368	0.42		<0.00020	0.00056	<0.01		0.018	0.00056	<0.00050	122
MW12-05	3	11/12/2012		67.6		0.00328		0.109	0.03	0.139		0.000124				0.0058	0.000197		166
MW12-05	5	11/12/2012		18.5		0.000905		0.195	0.817	1.01		0.000055				0.0035	0.000086		17.3
MW12-05	7	11/12/2012		17.9		0.00097		0.0298	<0.020	0.041		0.000039				0.0125	0.000134		14.4
MW12-06	2	11/16/2012		42.9		0.000949		0.263	0.081	0.343		0.000029				0.0265	0.000231		72.7
MW12-06	4	11/16/2012		33.7		0.000513		0.229	0.08	0.309		0.000031				0.0229	0.000116		58.3
MW12-06	6	11/16/2012		32.9		0.000514		0.0651	0.45	0.515		0.000061				0.0047	0.000096		58.3
MW12-07	1	11/3/2012		34.1		0.004		0.141	53.5	53.7		0.00058		<0.01			<0.00050		67.5
MW12-07	2	11/3/2012		38.9		0.0017		0.148	21.3	21.5		0.00056		<0.01			<0.00050		104

Well ID	Zone	Date	Parameters (mg/L)																
			Se-D	Se-T	Si-D	Si-T	Sn-D	Sn-T	SO4-D	Sr-D	Sr-T	S-T	Te-D	Te-T	Th-D	Th-T	Ti-D	Ti-T	TI-D
MW09-01	2	11/30/2009	0.0028	0.0029	4.37	4.54	<0.0001	<0.0001	77.4	1.04	1.27	27.6	<0.0001	<0.0001	<0.0004	<0.0004	<0.01		<0.00001
MW09-01	3	11/30/2009	0.0028	0.0032	2.87	7.01	0.0001	<0.0001	82.5	1.51	1.84	28.5	<0.0001	<0.0001	<0.0004	<0.0004	<0.01		<0.00001
MW09-01	3	3/30/2010	0.0018	0.0019	3.39	7	0.0003	<0.0001	169	1.41	1.43	58.3	<0.0001	<0.0001	<0.0004	<0.0004	<0.01		<0.00001
MW09-01	4	11/30/2009	0.003	0.0031	3.36	5.12	<0.0001	<0.0001	83.3	1.39	1.64	28.2	<0.0001	<0.0001	<0.0004	<0.0004	<0.01		<0.00001
MW09-02	1	12/2/2009	0.0067	0.0072	6.88	9.32	<0.0001	<0.0001	166	2.11	2.55	60.5	<0.0001	<0.0001	<0.0004	<0.0004	<0.01		<0.00001
MW09-02	3	12/2/2009	0.0068	0.0073	6.94	8.46	<0.0001	<0.0001	170	2.14	2.53	59.9	<0.0001	<0.0001	<0.0004	<0.0004	<0.01		<0.00001
MW09-03	1	12/1/2009	0.008	0.011	2.49	38.1	0.0002	<0.0005	117	2.21	2.41	41	<0.0001	<0.0005	<0.0004	<0.002	<0.01		<0.00001
MW09-03	1	3/29/2010	<0.0006	<0.0006	4	4.6	<0.0001	<0.0001	23	0.863	0.886	7.3	<0.0001	<0.0001	<0.0004	<0.0004	<0.01		<0.00001
MW09-03	1	5/10/2012	<0.00010		4.56		<0.0050		21.4	0.798							<0.0050		<0.000050
MW09-03	1	11/17/2012	0.000052		5.55		<0.00020		22.2	0.809							<0.00050		0.000003
MW09-03	2	12/1/2009	0.0067	0.0078	2.54	9.99	0.0002	0.0003	110	1.86	2.17	39.1	<0.0001	<0.0001	<0.0004	<0.0004	<0.01		<0.00001
MW09-03	2	3/29/2010	0.0028	0.0029	3.7	4.11	<0.0001	<0.0001	48.9	0.739	0.785	15.8	<0.0001	<0.0001	<0.0004	<0.0004	<0.01		<0.00001
MW09-03	2	5/10/2012	0.0002		9.03		<0.0050		<0.50	1.58							<0.0050		<0.000050
MW09-03	2	11/17/2012	<0.00020		10.9		<0.0010		<0.50	1.57							<0.0025		<0.000010
MW09-03	3	12/1/2009	<0.0006	0.0007	4.2	5.49	<0.0001	<0.0001	10	0.168	0.189	3.8	<0.0001	<0.0001	<0.0004	<0.0004	<0.01		<0.00001
MW09-03	3	3/29/2010	<0.0006	<0.0006	3.85	4.4	<0.0001	<0.0001	10	0.125	0.126	3.4	<0.0001	<0.0001	<0.0004	<0.0004	<0.01		<0.00001
MW09-03	3	5/10/2012	0.00031		4.31		<0.0050		11.2	0.158							<0.0050		<0.000050
MW09-03	3	11/17/2012	0.000414		4.96		<0.00020		9.79	0.2							<0.00050		0.000003
MW09-03	5	5/10/2012	<0.00010		<0.1		<0.0050		<0.50	<0.0010							<0.0050		<0.000050
MW09-03	5	11/17/2012	<0.000040		<0.1		<0.00020		<0.50	0.00387							<0.00050		<0.000020
MW12-05	1	11/11/2012	0.00047	0.00043	5.59	5.93	<0.0050	<0.0050	350	3.05	2.95	108					<0.0050	0.006	<0.000050
MW12-05	3	11/12/2012	0.000364		5.03		<0.00020		456	3.89							<0.00050		0.000004
MW12-05	5	11/12/2012	0.000164		5.8		<0.00020		46.3	0.816							<0.00050		0.000002
MW12-05	7	11/12/2012	0.000108		5.27		<0.00020		40.6	0.534							<0.00050		<0.000020
MW12-06	2	11/16/2012	0.00014		7.09		<0.00020		208	8.59							<0.00050		<0.000020
MW12-06	4	11/16/2012	0.000083		7.41		<0.00020		178	3.21							<0.00050		<0.000020
MW12-06	6	11/16/2012	0.000511		6.29		<0.00020		171	1.76							<0.00050		<0.000020
MW12-07	1	11/3/2012	0.0347		6.79		<0.0050		185	5.37							<0.0050		<0.000050
MW12-07	2	11/3/2012	0.0148		6.61		<0.0050		283	3.68							<0.0050		<0.000050



Well ID	Zone	Date	Parameters (mg/L)											pH-L	Turb (NTU)
			TI-T	U-D	U-T	V-D	V-T	Zn-D	Zn-T	Zr-D	Zr-T	TDS	TSS		
MW09-01	2	11/30/2009	<0.00001	0.0029	0.0032	0.0002	0.0006	0.009	0.007	<0.0001	0.0002	528	7	8.03	1.1
MW09-01	3	11/30/2009	0.00002	<0.0004	0.0004	0.0001	0.0046	0.006	0.029	0.0001	0.0006	364	92	8.02	32
MW09-01	3	3/30/2010	0.00002	<0.0004	<0.0004	0.0003	0.0049	0.016	0.025	0.0002	0.0005	630	70	8.04	64
MW09-01	4	11/30/2009	0.00001	0.0008	0.0008	0.0001	0.0033	0.004	0.019	<0.0001	0.0004	442	66	8.06	26
MW09-02	1	12/2/2009	0.00001	0.0038	0.0045	0.0011	0.0036	0.01	0.024	0.0001	0.0004	814	30	7.95	13
MW09-02	3	12/2/2009	<0.00001	0.0039	0.0044	0.0012	0.0029	0.007	0.018	0.0001	0.0004	812	31	7.95	16
MW09-03	1	12/1/2009	0.00016	0.001	0.002	0.0002	0.039	0.022	0.13	0.0001	0.0006	652	399	7.94	95
MW09-03	1	3/29/2010	<0.00001	0.0015	0.0015	0.0001	0.0003	0.014	0.016	<0.0001	0.0001	196	<4	8	2.5
MW09-03	1	5/10/2012		0.00158		<0.0050		0.0171		<0.00050		162		7.99	
MW09-03	1	11/17/2012		0.00155		<0.00020		0.0108		<0.00010		160			
MW09-03	2	12/1/2009	0.00002	0.0008	0.0009	0.0001	0.0065	0.01	0.036	<0.0001	0.0004	626	146	7.91	49
MW09-03	2	3/29/2010	<0.00001	0.0014	0.0014	0.0004	0.0005	0.005	0.01	<0.0001	<0.0001	324	<7	8.05	3
MW09-03	2	5/10/2012		0.00016		<0.0050		0.0053		<0.00050		716		7.59	
MW09-03	2	11/17/2012		0.000208		<0.0010		0.00795		<0.00050		648			
MW09-03	3	12/1/2009	<0.00001	<0.0004	<0.0004	0.0002	0.0012	0.012	0.033	<0.0001	0.0001	110	21	7.8	6.9
MW09-03	3	3/29/2010	<0.00001	<0.0004	<0.0004	0.0002	0.0003	0.005	0.01	<0.0001	<0.0001	114	<4	7.84	0.3
MW09-03	3	5/10/2012		0.00069		<0.0050		0.0078		<0.00050		106		7.92	
MW09-03	3	11/17/2012		0.000842		0.00028		0.00136		<0.00010		114			
MW09-03	5	5/10/2012		<0.00010		<0.0050		<0.0050		<0.00050		<10		5.93	
MW09-03	5	11/17/2012		0.000025		0.00038		0.00046		<0.00010		<10			
MW12-05	1	11/11/2012	<0.000050	0.00404	0.00386	<0.0050	<0.0050	0.0402	0.0388	<0.00050	<0.00050	706			
MW12-05	3	11/12/2012		0.0041		<0.00020		0.0312		<0.00010		880			
MW12-05	5	11/12/2012		0.00273		0.0005		0.00655		<0.00010		288			
MW12-05	7	11/12/2012		0.00227		0.00033		0.00538		<0.00010		260			
MW12-06	2	11/16/2012		0.00575		<0.00020		0.0111		<0.00010		636			
MW12-06	4	11/16/2012		0.00681		<0.00020		0.00807		<0.00010		618			
MW12-06	6	11/16/2012		0.00482		0.00026		0.00312		<0.00010		538			
MW12-07	1	11/3/2012		0.00609		<0.0050		0.0637		<0.00050		924			
MW12-07	2	11/3/2012		0.00575		<0.0050		0.0385		<0.00050		782			