**Assessment Report for**

**Quaternary (overburden) Drilling performed**

**on the**

**PUCK Property**

**Between July 25th and September 2nd, 2005**

**List of claims and Grant Numbers**

| Grant Number | Claim Name |
|---|---|
| YB58651-YB58676 | FOOT 95-120 |
| YB58727-YB58730 | FOOT 171-174 |
| YB61006-YB61037 | FOOT 233-264 |
| YB61048-YB61058 | FOOT 275-285 |
| YB61314-YB61315 | FOOT 549-550 |
| YB61756 | FOOT 575 |
| YB61760-YB61767 | FOOT 579-586 |
| YB70735 | FOOT FRA 603 |
| YB87695-YB87718 | CUP 1-24 |
| YB55979-YB56058 | PUCK 1-80 |

**NTS Map sheet number**

**105G/08, Wolverine Lake**

In the

**Watson Lake Mining District, Yukon Territory**

Prepared by:
Gilles R. Dessureau, M.Sc.
Project Geologist, Yukon Zinc Corporation.

Supervised by:
Jason K. Dunning, M.Sc., P.Geo
V.P. Exploration, Yukon Zinc Corporation.

Submitted:
February, 2006

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## Introduction

Yukon Zinc Corporation (formerly Expatriate Resources Ltd.) holds a 100% interest in the FOOT, CUP, and PUCK claims, covering approximately 10 kilometres of a thick sequence of felsic stratigraphy along strike with the polymetalic Wolverine deposit (Figure 1.), called the Puck Property. The Wolverine Stratigraphy has been the focus of exploration for several periods between 1995 and 2004 that includes 132 drill holes that tested moderate to strong multi element (zinc, lead, and copper) soil geochemistry anomaly associated with moderate to strong geophysical anomalies from airborne EM and magnetic surveys. This multidisciplinary approach of exploration near Wolverine Lake resulted in the discovery of the Wolverine Deposit. The Puck Property consists of 189 contiguous claims adjacent to the contiguous group of FOOT claims covering the Wolverine Deposit, and may provide additional land for development of the Wolverine Project, if necessary.

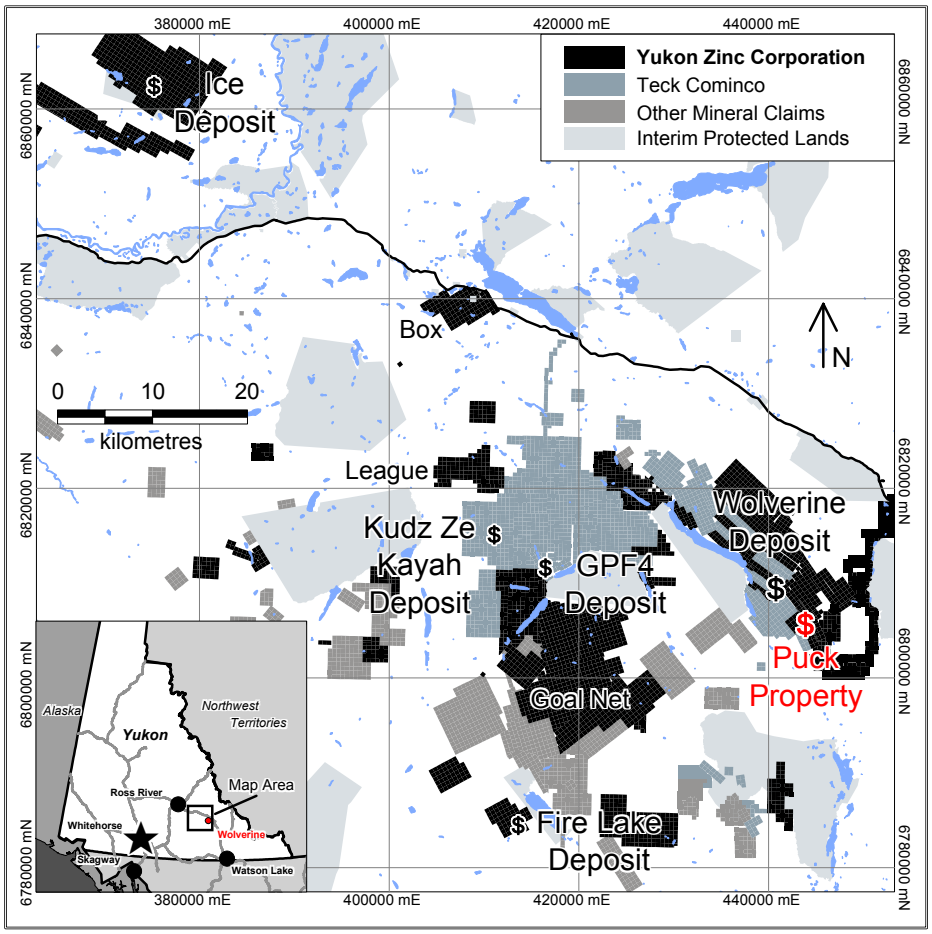



**Figure 1.** Map of the Finlayson District showing the location of the Wolverine Deposit and surrounding deposits.

In 2005, a quaternary drilling and test pitting program was conducted on the Puck Property, to investigate depth to bedrock and overburden quality. Several of these drill sites were used as water monitoring sites as well, and have been fitted with instruments to measure water quality and quantity. Klohn Crippen Berger Ltd. was contracted to supervise the project with the onsite help from two Yukon Zinc Geologists.

The drilling was preformed on two claims PUCK 26, and PUCK 28, and cost $127,919.03, with $5,245.45 in wages for two geologist totalling $133,164.48. This money was used to renew the following claims for 4 years per claim (Table 1.):

| Grant Number | Claim Name | Years Requested | New Expiry Date | Grant Number | Claim Name | Years Requested | New Expiry Date |
|---|---|---|---|---|---|---|---|
| YB58651 | FOOT 95 | 4 | 31/03/2014 | YB87705 | CUP 11 | 4 | 17/03/2015 |
| YB58652 | FOOT 96 | 4 | 31/03/2014 | YB87706 | CUP 12 | 4 | 17/03/2015 |
| YB58653 | FOOT 97 | 4 | 31/03/2014 | YB87707 | CUP 13 | 4 | 17/03/2015 |
| YB58654 | FOOT 98 | 4 | 31/03/2014 | YB87708 | CUP 14 | 4 | 17/03/2015 |
| YB58655 | FOOT 99 | 4 | 31/03/2014 | YB87709 | CUP 15 | 4 | 17/03/2015 |
| YB58656 | FOOT 100 | 4 | 31/03/2014 | YB87710 | CUP 16 | 4 | 17/03/2015 |
| YB58657 | FOOT 101 | 4 | 31/03/2014 | YB87711 | CUP 17 | 4 | 17/03/2015 |
| YB58658 | FOOT 102 | 4 | 31/03/2014 | YB87712 | CUP 18 | 4 | 17/03/2015 |
| YB58659 | FOOT 103 | 4 | 31/03/2014 | YB87713 | CUP 19 | 4 | 17/03/2011 |
| YB58660 | FOOT 104 | 4 | 31/03/2014 | YB87714 | CUP 20 | 4 | 17/03/2011 |
| YB58661 | FOOT 105 | 4 | 31/03/2014 | YB87715 | CUP 21 | 4 | 17/03/2011 |
| YB58662 | FOOT 106 | 4 | 31/03/2014 | YB87716 | CUP 22 | 4 | 17/03/2011 |
| YB58663 | FOOT 107 | 4 | 31/03/2014 | YB87717 | CUP 23 | 4 | 17/03/2011 |
| YB58664 | FOOT 108 | 4 | 31/03/2014 | YB87718 | CUP 24 | 4 | 17/03/2011 |
| YB58665 | FOOT 109 | 4 | 31/03/2014 | YB55979 | PUCK 1 | 4 | 17/03/2018 |
| YB58666 | FOOT 110 | 4 | 31/03/2014 | YB55980 | PUCK 2 | 4 | 17/03/2014 |
| YB58667 | FOOT 111 | 4 | 31/03/2014 | YB55981 | PUCK 3 | 4 | 17/03/2018 |
| YB58668 | FOOT 112 | 4 | 31/03/2014 | YB55982 | PUCK 4 | 4 | 17/03/2018 |
| YB58669 | FOOT 113 | 4 | 31/03/2014 | YB55983 | PUCK 5 | 4 | 17/03/2018 |
| YB58670 | FOOT 114 | 4 | 31/03/2014 | YB55984 | PUCK 6 | 4 | 17/03/2018 |
| YB58671 | FOOT 115 | 4 | 31/03/2014 | YB55985 | PUCK 7 | 4 | 17/03/2018 |
| YB58672 | FOOT 116 | 4 | 31/03/2014 | YB55986 | PUCK 8 | 4 | 17/03/2018 |
| YB58673 | FOOT 117 | 4 | 31/03/2014 | YB55987 | PUCK 9 | 4 | 17/03/2018 |
| YB58674 | FOOT 118 | 4 | 31/03/2014 | YB55988 | PUCK 10 | 4 | 17/03/2018 |
| YB58675 | FOOT 119 | 4 | 31/03/2014 | YB55989 | PUCK 11 | 4 | 17/03/2018 |
| YB58676 | FOOT 120 | 4 | 31/03/2014 | YB55990 | PUCK 12 | 4 | 17/03/2018 |
| YB58727 | FOOT 171 | 4 | 31/03/2014 | YB55991 | PUCK 13 | 4 | 17/03/2018 |
| YB58728 | FOOT 172 | 4 | 31/03/2014 | YB55992 | PUCK 14 | 4 | 17/03/2018 |
| YB58729 | FOOT 173 | 4 | 31/03/2014 | YB55993 | PUCK 15 | 4 | 17/03/2014 |
| YB58730 | FOOT 174 | 4 | 31/03/2014 | YB55994 | PUCK 16 | 4 | 17/03/2014 |
| YB61006 | FOOT 233 | 4 | 07/03/2014 | YB55995 | PUCK 17 | 4 | 17/03/2014 |
| YB61007 | FOOT 234 | 4 | 07/03/2014 | YB55996 | PUCK 18 | 4 | 17/03/2014 |
| YB61008 | FOOT 235 | 4 | 07/03/2014 | YB55997 | PUCK 19 | 4 | 17/03/2018 |
| YB61009 | FOOT 236 | 4 | 07/03/2014 | YB55998 | PUCK 20 | 4 | 17/03/2018 |
| YB61010 | FOOT 237 | 4 | 07/03/2014 | YB55999 | PUCK 21 | 4 | 17/03/2018 |
| YB61011 | FOOT 238 | 4 | 07/03/2014 | YB56000 | PUCK 22 | 4 | 17/03/2018 |
| YB61012 | FOOT 239 | 4 | 07/03/2014 | YB56001 | PUCK 23 | 4 | 17/03/2018 |
| YB61013 | FOOT 240 | 4 | 07/03/2014 | YB56002 | PUCK 24 | 4 | 17/03/2018 |
| YB61014 | FOOT 241 | 4 | 07/03/2014 | YB56003 | PUCK 25 | 4 | 17/03/2018 |
| YB61015 | FOOT 242 | 4 | 07/03/2014 | YB56004 | PUCK 26 | 4 | 17/03/2018 |
| YB61016 | FOOT 243 | 4 | 07/03/2014 | YB56005 | PUCK 27 | 4 | 17/03/2018 |
| YB61017 | FOOT 244 | 4 | 07/03/2014 | YB56006 | PUCK 28 | 4 | 17/03/2018 |
| YB61018 | FOOT 245 | 4 | 07/03/2014 | YB56007 | PUCK 29 | 4 | 17/03/2018 |
| YB61019 | FOOT 246 | 4 | 07/03/2014 | YB56008 | PUCK 30 | 4 | 17/03/2018 |
| YB61020 | FOOT 247 | 4 | 07/03/2014 | YB56009 | PUCK 31 | 4 | 17/03/2014 |
| YB61021 | FOOT 248 | 4 | 07/03/2014 | YB56010 | PUCK 32 | 4 | 17/03/2014 |
| YB61022 | FOOT 249 | 4 | 07/03/2014 | YB56011 | PUCK 33 | 4 | 17/03/2014 |
| YB61023 | FOOT 250 | 4 | 07/03/2014 | YB56012 | PUCK 34 | 4 | 17/03/2014 |
| YB61024 | FOOT 251 | 4 | 07/03/2014 | YB56013 | PUCK 35 | 4 | 17/03/2018 |
| YB61025 | FOOT 252 | 4 | 07/03/2014 | YB56014 | PUCK 36 | 4 | 17/03/2018 |
| YB61026 | FOOT 253 | 4 | 07/03/2014 | YB56015 | PUCK 37 | 4 | 17/03/2018 |
| YB61027 | FOOT 254 | 4 | 07/03/2014 | YB56016 | PUCK 38 | 4 | 17/03/2018 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| YB61028 | FOOT 255 | 4 | 07/03/2014 | YB56017 | PUCK 39 | 4 | 17/03/2018 |
| YB61029 | FOOT 256 | 4 | 07/03/2014 | YB56018 | PUCK 40 | 4 | 17/03/2018 |
| YB61030 | FOOT 257 | 4 | 07/03/2014 | YB56019 | PUCK 41 | 4 | 17/03/2018 |
| YB61031 | FOOT 258 | 4 | 07/03/2014 | YB56020 | PUCK 42 | 4 | 17/03/2018 |
| YB61032 | FOOT 259 | 4 | 07/03/2014 | YB56021 | PUCK 43 | 4 | 17/03/2018 |
| YB61033 | FOOT 260 | 4 | 07/03/2014 | YB56022 | PUCK 44 | 4 | 17/03/2018 |
| YB61034 | FOOT 261 | 4 | 07/03/2014 | YB56023 | PUCK 45 | 4 | 17/03/2014 |
| YB61035 | FOOT 262 | 4 | 07/03/2014 | YB56024 | PUCK 46 | 4 | 17/03/2014 |
| YB61036 | FOOT 263 | 4 | 07/03/2014 | YB56025 | PUCK 47 | 4 | 17/03/2014 |
| YB61037 | FOOT 264 | 4 | 07/03/2014 | YB56026 | PUCK 48 | 4 | 17/03/2014 |
| YB61048 | FOOT 275 | 4 | 07/03/2014 | YB56027 | PUCK 49 | 4 | 17/03/2014 |
| YB61049 | FOOT 276 | 4 | 07/03/2014 | YB56028 | PUCK 50 | 4 | 17/03/2014 |
| YB61050 | FOOT 277 | 4 | 07/03/2014 | YB56029 | PUCK 51 | 4 | 17/03/2014 |
| YB61051 | FOOT 278 | 4 | 07/03/2014 | YB56030 | PUCK 52 | 4 | 17/03/2014 |
| YB61052 | FOOT 279 | 4 | 07/03/2014 | YB56031 | PUCK 53 | 4 | 17/03/2014 |
| YB61053 | FOOT 280 | 4 | 07/03/2014 | YB56032 | PUCK 54 | 4 | 17/03/2014 |
| YB61054 | FOOT 281 | 4 | 07/03/2014 | YB56033 | PUCK 55 | 4 | 17/03/2014 |
| YB61055 | FOOT 282 | 4 | 07/03/2014 | YB56034 | PUCK 56 | 4 | 17/03/2014 |
| YB61056 | FOOT 283 | 4 | 07/03/2014 | YB56035 | PUCK 57 | 4 | 17/03/2014 |
| YB61057 | FOOT 284 | 4 | 07/03/2014 | YB56036 | PUCK 58 | 4 | 17/03/2014 |
| YB61058 | FOOT 285 | 4 | 07/03/2014 | YB56037 | PUCK 59 | 4 | 17/03/2014 |
| YB61314 | FOOT 549 | 4 | 07/03/2014 | YB56038 | PUCK 60 | 4 | 17/03/2014 |
| YB61315 | FOOT 550 | 4 | 07/03/2014 | YB56039 | PUCK 61 | 4 | 17/03/2014 |
| YB61756 | FOOT 575 | 4 | 07/03/2014 | YB56040 | PUCK 62 | 4 | 17/03/2014 |
| YB61760 | FOOT 579 | 4 | 07/03/2014 | YB56041 | PUCK 63 | 4 | 17/03/2014 |
| YB61761 | FOOT 580 | 4 | 07/03/2014 | YB56042 | PUCK 64 | 4 | 17/03/2014 |
| YB61762 | FOOT 581 | 4 | 07/03/2014 | YB56043 | PUCK 65 | 4 | 17/03/2014 |
| YB61763 | FOOT 582 | 4 | 20/03/2014 | YB56044 | PUCK 66 | 4 | 17/03/2014 |
| YB61764 | FOOT 583 | 4 | 20/03/2014 | YB56045 | PUCK 67 | 4 | 17/03/2014 |
| YB61765 | FOOT 584 | 4 | 20/03/2014 | YB56046 | PUCK 68 | 4 | 17/03/2014 |
| YB61766 | FOOT 585 | 4 | 07/03/2014 | YB56047 | PUCK 69 | 4 | 17/03/2014 |
| YB61767 | FOOT 586 | 4 | 07/03/2014 | YB56048 | PUCK 70 | 4 | 17/03/2014 |
| YB70735 | FOOT FRA 603 | 4 | 07/03/2018 | YB56049 | PUCK 71 | 4 | 17/03/2014 |
| YB87695 | CUP 1 | 4 | 17/03/2015 | YB56050 | PUCK 72 | 4 | 17/03/2014 |
| YB87696 | CUP 2 | 4 | 17/03/2015 | YB56051 | PUCK 73 | 4 | 17/03/2014 |
| YB87697 | CUP 3 | 4 | 17/03/2015 | YB56052 | PUCK 74 | 4 | 17/03/2014 |
| YB87698 | CUP 4 | 4 | 17/03/2015 | YB56053 | PUCK 75 | 4 | 17/03/2014 |
| YB87699 | CUP 5 | 4 | 17/03/2015 | YB56054 | PUCK 76 | 4 | 17/03/2014 |
| YB87700 | CUP 6 | 4 | 17/03/2015 | YB56055 | PUCK 77 | 4 | 17/03/2014 |
| YB87701 | CUP 7 | 4 | 17/03/2015 | YB56056 | PUCK 78 | 4 | 17/03/2014 |
| YB87702 | CUP 8 | 4 | 17/03/2015 | YB56057 | PUCK 79 | 4 | 17/03/2014 |
| YB87703 | CUP 9 | 4 | 17/03/2011 | YB56058 | PUCK 80 | 4 | 17/03/2014 |
| YB87704 | CUP 10 | 4 | 17/03/2011 | | | | |

**Table 1.** List of claims, grant numbers, and expiry dates.

## Property Location and Access

The Puck Property is located adjacent to the FOOT Claims which cover the Wolverine deposit. The Wolverine Camp is located 275.5km east-north-east of Whitehorse in the Yukon Territories. It is located about 15km from the Robert Campbell Highway (kilometre 198) about halfway between Ross River and Watson Lake in the Campbell Range of the Pelly Mountains (Figure 2.). Access to Wolverine camp is restricted to airplane (a 1 kilometre gravel airstrip is located 6.6 kilometre away from camp with road access between them) or helicopter. The drill, which was on site for work on the Wolverine Deposit, was moved to the drill sites using a D6C Cat

on pre-existing roads or trails where available, or new trials were created keeping ground disturbance to a minimum (Figure 3.).

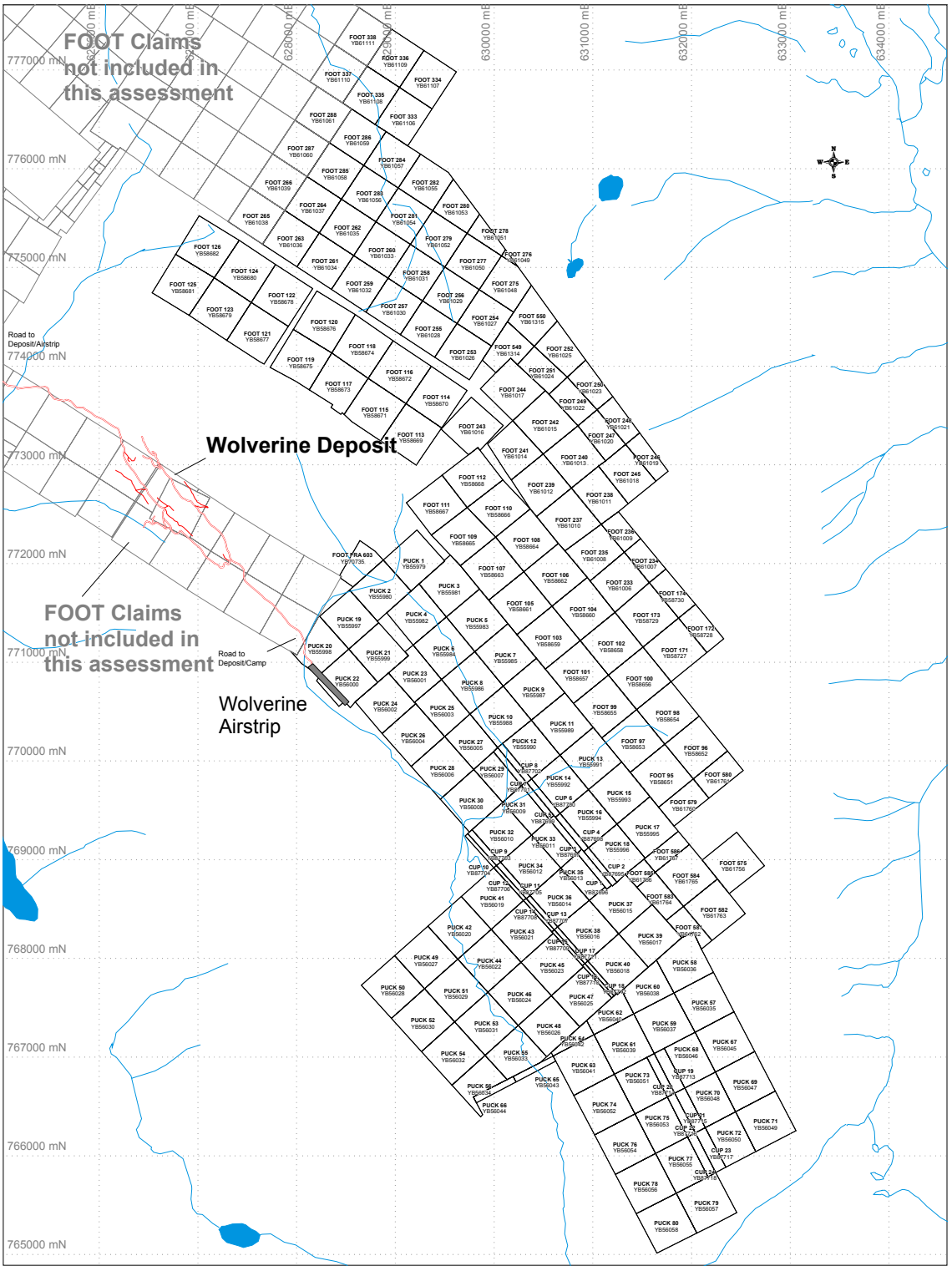



**Figure 2.** Map of the Puck Property showing the location of the FOOT, CUP and PUCK claims, the Wolverine deposit (and associated FOOT Claims not included in this report), and the Wolverine Airstrip.

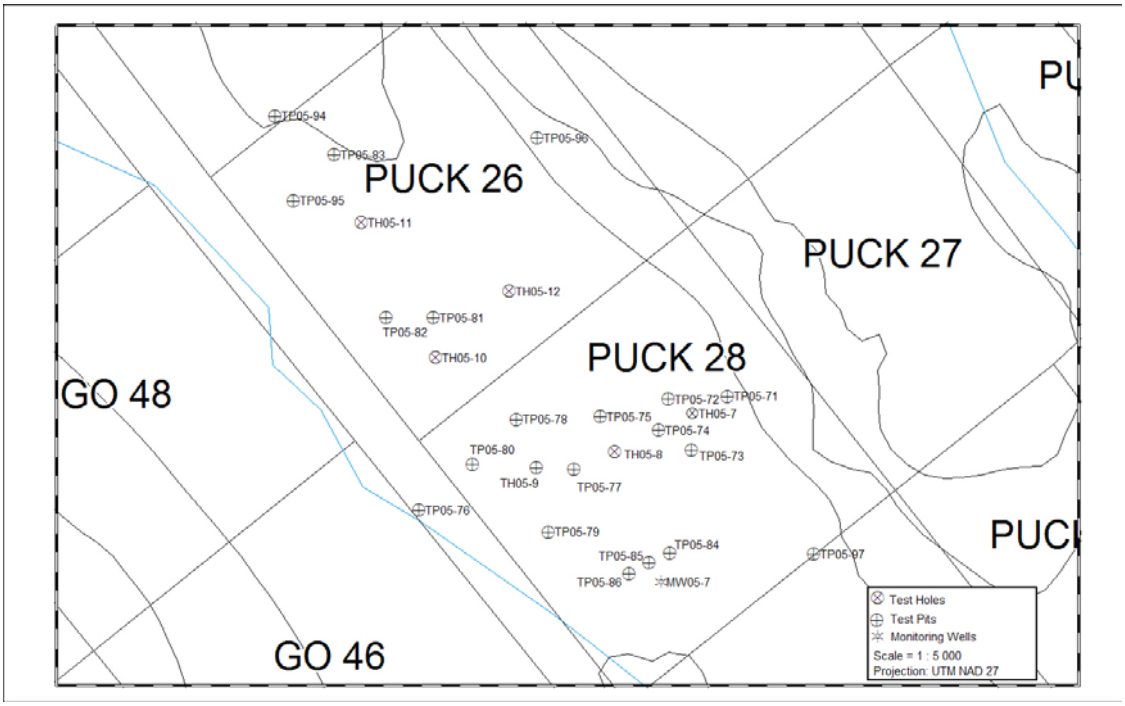



**Figure 3.** Close up of the PUCK 26, and PUCK 28 Claims showing the distribution of test holes, test pits and monitoring wells.

## Regional Geology

The Yukon-Tanana Terrane is a large autochthonous geological province extending from Alaska, through The Yukon Territory and into north-central British Columbia (Figure 4.). It consists of mid-late Paleozoic volcanic, plutonic, and sedimentary rocks (References). The volcanic-hosted massive sulphide deposits of the Finlayson Lake District are located in the eastern most section of the Yukon Tanana Terrrane, which has been displaced to the south-east by the Tintina Fault Zone (Figure 1). The Finlayson Lake District has been divided into 3 distinct successions separated by regional unconformities (Murphy, 1998; Piercey and Murphy, 2000). The lower most unit (called the Grass Lakes Succession) consists of mafic and felsic metavolcanic rocks, carbonaceous metaclastic rocks, marbles, and granitic orthogneiss. The Kudz Ze Kayah and GP4F deposits are located within the upper portion of this succession. The middle unit (called the Wolverine Succession) consists of carbonaceous argillite, felsic volcanics and high level intrusions, and as well as exhalative carbonate and/or iron oxides. The Wolverine (polymetalic, sediment hosted, massive sulphide) deposit occurs near the base of Wolverine Succession. The upper most unit (called the Campbell Range Succession) consists of mafic metavolcanic rocks and wackes.

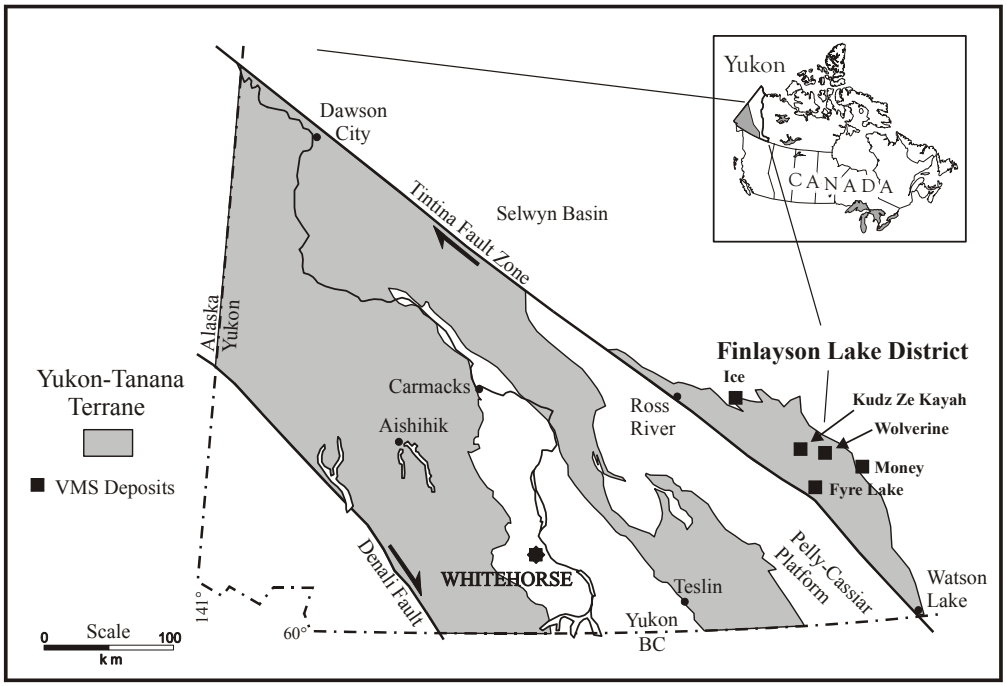



**Figure 4.** Location of the Wolverine Deposit (in the Wolverine Succession), and other VHMS deposits with respect to the Yukon-Tanana Terrane, Yukon, Canada (modified from Piercey, 2001; Wheeler and McFeely, 1991 and Hunt, 1998).

**Quaternary Geology**

The following description of the Quaternary geology of the Wolverine, and Puck properties, and surrounding area is taken from Yukon Zinc's Environmental Assessment Report prepared for the Wolverine Project in 2005.

Regional Context

The landscape of the area is typical of an area that has undergone intense modification by ice and subsequent meltwater. Its glacial history is complex due to the history of multiple glaciations that have directly affected the area. Mougeot Geoanalysis (1996) described the Yukon as being subjected to four glacial episodes over the last two millions years; these glaciations include the Nansen and Klaza (oldest) glaciations and Reid and McConnell (youngest) glaciations. All have been described as moving in a northerly direction into central Yukon. The project area has also been modified by erosion, solifluction, and volcanic ash deposition. The Quaternary history of the project area however is dominated by the impact of the last ice age with periglacial, colluvial, fluvial and volcanic processes playing a lesser role.

During the last glacial period (McConnell Glaciation), between 14 000 and 35 000 years ago, ice including complex ice caps and cirque glaciers moved across the eastern part of the project area in a northwesterly to westerly direction and extended to heights of about 1,525 m (Hatch 2004 in Crippen 2004; Anonymous 2002). As the glaciers slowly retreated, they down-wasted and developed a complex network of ice tongues in the valley bottoms (Crippen 2004; Gartner Lee Limited 2004; Mougeot Geoanalysis 1996).

This resulted in morainal deposits dominating the lower slope and valley bottom positions, and to a lesser extent, created complex assemblages of glaciofluvial, glaciolacustrine and fluvial sediments. In lower slope areas where deposition is common, colluvial and fluvial deposits have masked pre-existing sediments. For example, colluvium has created cones and fans on the lower slopes that effectively mask the pre-existing sediments. Morainal materials also dominate mountain tops, depressions and smaller valleys (generally with a narrow band of fluvial materials). Upper slopes contain both colluvial and morainal materials intermixed with bedrock outcrops. The colluvium in this area originates from weathered and frost shattered bedrock as well as colluviated moraine. Steep upper slopes are dominated by colluvium and bedrock outcroppings that are often weathered and frost shattered. These features as well as avalanches can probably be attributed to slope

steepening that occurred during glaciation. Gullying, active floodplains and organic soils are also found throughout the project area.

The presence of permafrost was difficult to determine at the survey intensity level of this study. This is complicated by the fact that the project area is located within the northern part of the discontinuous permafrost zone (Burns 2002). Mougeot Geoanalysis (1996) estimated that permafrost was extensive and described mud and stone circles, stripes and pushed up stones at high elevations and solifluction and soil creep on many slopes. Mougeot Geoanalysis (1996) also described the large peat palsas (up to 2.5 meters thick) occurring southeast of the project. This study also found evidence of cryoturbated soils in the floodplain immediately east of the airstrip and in all alpine areas (mountain tops) visited during the field inventory reconnaissance program. All of the following periglacial processes were found in the alpine areas of this study: solifluction lobes, blockfields, sorted polygons, stripes and pushed up stones. Ground ice was also found overlain by organic materials in one of the high elevation soil profiles sampled. Crippen (2004) also described permafrost as occurring within the overburden (0 m to 7.9 m) in the log of Puck Drillhole PK96-6. A thermokarst feature was also found in the glaciolacustrine materials of Light Creek. In general, this study found that permafrost was more or less continuous in the alpine areas (mountain tops) and discontinuous in the upper elevational valleys and the headwaters of Go Creek. There is likely less permafrost present in the lower elevations of the Bunker and Light Creek valleys.

Morainal materials are the most widespread sediment type, occupying approximately 64% of the project area. These materials were deposited directly by glacier ice in a sub, or supra-glacial setting. Colluvial surficial materials are also common, occupying about 24% of the project area. These materials are most common on steeper slopes. Organic and fluvial materials co-dominate valley bottoms and lower slopes each representing approximately five percent of the total project area. Lesser amounts of glaciolacustrine (<1%), glaciofluvial (about 2%) and lacustrine (<1%) materials are also present. Bedrock outcroppings account for <1% of the study area.

A detailed description of the map units shown in Figure 5 is given in the Environmental Assessment Report, and can be found online on Yukon Zinc's website at http://www.yukonzinc.com or directly through the Yukon Government website at http://www.gov.yk.ca/depts/eco/dap/projects/wolverine/index.html.

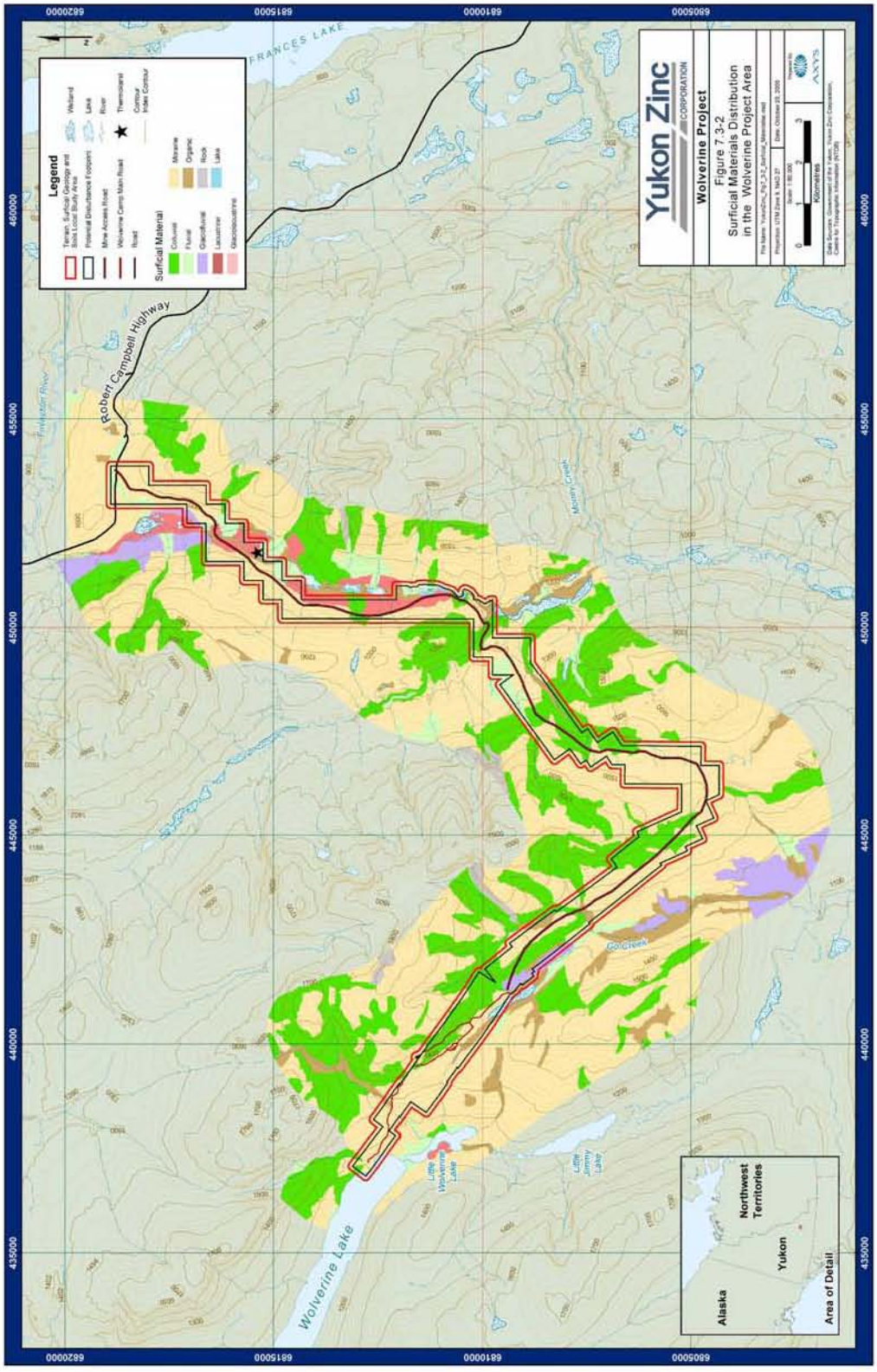



**Figure 5.** (Figure 7.3-2 of the Environmental Assessment Report) provides a simplified visual representation on how the surficial materials are distributed in the Wolverine and Puck area.

## Methods

The following methods and results are taken from the Klohn Crippen Report (2005).

The site investigation programs were mainly carried out using a 420D Cat backhoe mounted on rubber tires from Yukon Zinc, and a BBS-25A diamond drill rig from Advanced Drilling Ltd. of Surrey, B.C. Manuel Reyes of Klohn Crippen carried out initial investigations for both phases with the assistance of Yukon Zinc's geologists: Robin Black and Eleanor Alesi, who completed the investigations with ongoing monitoring by Manuel Reyes from off site. Locations of test pits, test holes and groundwater monitoring wells for the proposed tailings facility are shown in Figure 7.3.1 for an alternate site, Site 1 and Figure 7.3.2 for the proposed site, Site 2. The results for the proposed site are included with this report, whereas the results form the alternate site will not be included with this report.

The drilling program consisted of Standard or Large Penetration tests and falling-head permeability tests in overburden materials; and performing packer permeability tests and diamond coring with HQ3 core barrel in bedrock. The penetration tests were carried out to retrieve soil samples for further laboratory testing as well as to evaluate in situ soil density. Similarly, core samples of bedrock were obtained by diamond coring. All core recovered is stored at the Wolverine Camp lower core storage area. In situ permeability of subsoil and bedrock were obtained by the falling-head and packer tests.

Most of the test pits were excavated to a maximum depth of about 5 m using the 420D Cat backhoe. In areas inaccessible to the backhoe shallower test pits were excavated manually or drilled manually using a hand-operated auger drill to a maximum depth of 1 m. All test hole and test pit locations were surveyed using a GPS unit owned by Yukon Zinc, and the ground surface elevations were estimated using the site contour map with 2 m contour intervals. Samples retrieved from the drillholes and test pits were further tested in Klohn Crippen's laboratory in Vancouver. Geotechnical laboratory testing included visual classification, moisture content, and gradation tests. Additional standard Proctor compaction tests, triaxial permeability and shear strength tests were either carried out or are planned using the potential borrow materials for the dam fill.

Two 1-in diam. 30 cm long piezometer tips were installed in most test holes with 1-in Schedule 40 PVC riser pipes. One 2-in diam. well screen with Schedule 80 PVC well pipe was installed in each Monitoring Well. A pressure gauge with a by-pass valve set up was installed at the top of each artesian installation. Temperature profiles were also recorded at test holes.

As shown in Figure 6. (Figure 7.3.2 of Klohn Crippen Report 2005) (after page 12), this investigation included 6 test holes, 2 monitoring wells and 23 test pits. Test Holes TH05-7 to TH05-11 were drilled along the L-shaped dam proper, and Test Hole TH05-12 was drilled inside the tailings impoundment. Monitoring Well MW05-6 was drilled upstream of the impoundment, while MW05-7 drilled downstream of the Seepage Recovery Dam downstream of the Tailings Dam. Test Pits TP05-71 to TP05-83, TP05-94 and TP05-95 were excavated in the footprint of Tailings Dam, TP05-84 to TP05-86 excavated in the footprint of the Seepage Recovery Dam, and TP05-91 to TP05-93, TP05-96 and TP05-97 excavated along the diversion ditches and spillway channels.

Field procedures for Standard (or 3-in diameter) Large Penetrometer tests and permeability tests carried out in Phase 2 investigation are summarized in Tables Table 3, 4, 5, and 6 (Tables 7.3.4, 7.3.5, 7.3.6 and 7.3.7 or the Klohn Crippen report):

| Investigation Area | Type of Hole/Well | Hole No. | Location UTM NAD 27 Zone 9 Easting | Northing | Size of Core/ Hole | Target Depth | Est. Depth to Sound Bedrock ? |
|---|---|---|---|---|---|---|---|
| Tailings Dam | Test Hole | TH 05-7 | 442686 | 6808164 | HQ3 3.782" | min. 20 m and 5 m into bedrock | 10 m |
| | Test Hole | TH 05-8 | 442583 | 6808114 | HQ3 3.782" | min. 35 m and 5 m into bedrock | 25 m |
| | Test Hole | TH 05-9 | 442479 | 6808092 | HQ3 3.782" | min. 20 m and 5 m into bedrock | 15 m |
| | Test Hole | TH 05-10 | 442346 | 6808238 | HQ3 | min. 20 m and 5 m into bedrock | 15 m |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Test Hole | TH 05-11 | 442248 | 6808417 | 3.782" HQ3 3.782" | min. 20 m and 5 m into bedrock | 15 m |
| Tailings Basin | Test Hole | TH 05-12 | 442444 | 6808326 | No Core 3.782" | 5 m into bedrock | - |
| | Monitoring Well | MW 05-6A | 441655 | 6809322 | No Core 3.782" | 5 m into bedrock | - |
| | Monitoring Well | MW 05-6B | 441655 | 6809322 | No Core 3.782" | 5 m | - |
| | Monitoring Well | MW 05-7A | 442643 | 6807941 | No Core 3.782" | 5 m into bedrock | - |
| | Monitoring Well | MW 05-7B | 442643 | 6807941 | No Core 3.782" | 5 m | - |

**Table 2.** List of drill hole and monitoring wells on the Puck Property.

| Test Hole | Depth (m) | SPT or LPT | SPT or LPT Blow Count per foot, N | Converted SPT Blow Count, N | Converted $(N_1)_{60}$ |
|---|---|---|---|---|---|
| **TH05-7** | 1.52 | LPT | 101 | 65 | 112 |
| | 3.05 | LPT | 81 | 52 | 89 |
| | 4.57 | LPT | 29 blows per 6" | - | - |
| | 6.10 | LPT | 30 blows per 5" | - | - |
| | 9.14 | LPT | 35 blows per 6" | - | - |
| | 12.19 | LPT | 30+ blows per 1" | - | - |
| | 15.24 | LPT | 32+ blows per 4" | - | - |
| | 18.29 | LPT | 21+ blows per 2" | - | - |
| | 21.34 | LPT | 37 blows per 3" | - | - |
| | 24.38 | LPT | 21 blows per 3" | - | - |
| **TH05-8** | 1.52 | LPT | 20+ blows per 6" | - | - |
| | 3.05 | LPT | 47 blows per 12" | - | - |
| | 4.57 | LPT | 48+ blows per 12" | - | - |
| | 6.10 | LPT | 42+ blows per 10" | - | - |
| | 9.14 | LPT | 50+ blows per 12" | - | - |
| | 12.19 | LPT | 30+ blows per 6" | - | - |
| | 15.24 | LPT | 60 blows per 6" | - | - |
| | 18.29 | LPT | 80+ blows per 9" | - | - |
| **TH05-9** | 1.52 | SPT | 57 | 57 | 97 |
| | 3.05 | SPT | 51 | 51 | 86 |
| | 4.57 | SPT | 125 | 125 | 172 |
| | 6.10 | SPT | 20 blows per 6" | - | - |
| | 9.14 | SPT | 26 blows per 5" | - | - |
| | 12.19 | SPT | 23 blows per 2" | - | - |
| | 15.24 | SPT | 23 blows per 4" | - | - |
| | 18.29 | SPT | 23 blows per 2" | - | - |
| | 21.34 | SPT | 26 blows per 2" | - | - |
| | 24.38 | SPT | 24 blows per 3.5" | - | - |
| | 27.43 | SPT | 24 blows per 2.5" | - | - |
| | 30.48 | SPT | 25 blows per 3" | - | - |
| **TH05-10** | 1.52 | SPT | 20+ blows per 6" | - | - |
| | 3.05 | SPT | 20+ blows per 6" | - | - |

**Table 3.** (Table 7.3.3 of Klohn Crippen Report 2005) Summary of Large and Standard Penetrometer Test Results.

| Test Hole No. | Test Section Depth (m) | | Test Section Diam. (mm) | k |
|---|---|---|---|---|
| | From | To | | cm/sec |
| TH05-7 | 1.52 | 1.52 | 101.6 | 7.8E-02 |
| | 3.05 | 3.05 | 101.6 | 8.4E-03 |
| | 4.57 | 4.57 | 101.6 | 6.9E-02 |
| | 6.10 | 6.10 | 101.6 | 2.7E-02 |
| | 9.14 | 9.14 | 101.6 | 2.9E-02 |
| | 12.19 | 12.19 | 101.6 | 7.7E-03 |

| | | | | |
|---|---|---|---|---|
| | 15.24 | 15.24 | 101.6 | 1.0E-02 |
| | 18.29 | 18.29 | 101.6 | 2.8E-04 |
| | 21.34 | 21.34 | 101.6 | 1.4E-03 |
| | 24.38 | 24.38 | 101.6 | 4.3E-03 |
| TH05-8 | 1.52 | 1.52 | 101.6 | 1.7E-01 |
| | 3.05 | 3.05 | 101.6 | 7.0E-02 |
| | 4.57 | 4.57 | 101.6 | 2.9E-02 |
| | 6.10 | 6.10 | 101.6 | 6.9E-03 |
| TH05-9 | 1.52 | 1.52 | 76.2 | 1.3E-02 |
| | 3.05 | 3.05 | 76.2 | 2.3E-02 |
| | 6.10 | 6.10 | 76.2 | 9.5E-03 |
| | 9.14 | 9.14 | 76.2 | 5.7E-02 |
| | 12.19 | 12.19 | 76.2 | 1.0E-01 |
| | 15.24 | 15.24 | 76.2 | 4.1E-01 |
| | 18.29 | 18.29 | 76.2 | 5.2E-02 |
| | 21.34 | 21.34 | 76.2 | 1.5E-02 |
| | 24.38 | 24.38 | 76.2 | 5.7E-02 |
| | 27.43 | 27.43 | 76.2 | 9.2E-02 |
| | 30.48 | 30.48 | 76.2 | 3.1E-03 |
| TH05-10 | 1.52 | 1.52 | 76.2 | 5.7E-03 |
| | 4.57 | 4.57 | 76.2 | 4.4E-02 |
| | 6.10 | 6.10 | 76.2 | 5.0E-02 |
| | 9.14 | 9.14 | 76.2 | 3.4E-02 |
| | 12.19 | 12.19 | 76.2 | 2.5E-02 |
| | 15.24 | 15.24 | 76.2 | 5.0E-02 |
| | 18.29 | 18.29 | 76.2 | 7.1E-02 |
| | 31.09 | 31.09 | 76.2 | 3.6E-03 |
| | 33.53 | 33.53 | 76.2 | 4.0E-03 |
| TH05-11A | 3.05 | 3.05 | 76.2 | 1.2E-01 |
| | 4.57 | 4.57 | 76.2 | 3.6E-03 |
| | 6.10 | 6.10 | 76.2 | 7.7E-03 |
| | 9.14 | 9.14 | 76.2 | 4.1E-03 |
| TH05-11B | 6.10 | 6.10 | 76.2 | 6.6E-02 |
| | 9.14 | 9.14 | 76.2 | 6.0E-03 |
| | 12.19 | 12.19 | 76.2 | 1.1E-02 |
| | 21.34 | 21.34 | 76.2 | 2.1E-01 |
| | 24.38 | 24.38 | 76.2 | 9.4E-03 |
| | 28.35 | 28.35 | 76.2 | 2.6E-02 |
| | 30.48 | 30.48 | 76.2 | 1.9E-03 |
| | 33.53 | 33.53 | 76.2 | 6.6E-03 |
| | 36.58 | 36.58 | 76.2 | 6.8E-03 |
| | 42.67 | 42.67 | 76.2 | 1.8E-02 |
| | 1.52 | 1.52 | 76.2 | 2.6E-01 |
| | 3.05 | 3.05 | 76.2 | 6.1E-04 |
| | 4.57 | 4.57 | 76.2 | 6.9E-03 |
| | 6.10 | 6.10 | 76.2 | 4.1E-03 |
| | 9.14 | 9.14 | 76.2 | 3.1E-03 |
| TH05-12 | 12.19 | 12.19 | 76.2 | 1.1E-02 |
| | 18.29 | 18.29 | 76.2 | 1.4E-02 |
| | 21.34 | 21.34 | 76.2 | 1.6E-02 |
| | 24.38 | 24.38 | 76.2 | 1.5E-02 |

**Table 4.** (Table 7.3.4 of Klohn Crippen Report 2005) Summary of Falling-Head Permeability Test Results.

| Test Hole No. | Test Section Depth (m) | | Test Section Diam. (mm) | Average k |
|---|---|---|---|---|
| | From | From | | cm/s |
| TH05-8 | 24.70 | 30.80 | 96.0 | 5.5E-05 |
| TH05-9 | 30.50 | 35.10 | 75.7 | 3.1E-04 |
| TH05-10 | 35.05 | 38.10 | 75.7 | 1.5E-04 |
| TH05-11 | 44.20 | 46.30 | 75.7 | 1.4E-05 |
| TH05-12 | 27.58 | 29.60 | 75.7 | 1.6E-05 |

**Table 5.** (Table 7.3.5 of Klohn Crippen Report 2005) Summary of Packer Permeability Test Results.

| Test Hole No. | Depth (m) | | Hole Dia. (mm) | k |
|---|---|---|---|---|
| | From | To | | cm/sec |
| MW05-3A | 1.07 | 1.52 | 96 | 2.8E-04 |
| | 2.60 | 3.05 | 96 | 0.0E+00[1] |
| | 4.12 | 4.57 | 96 | 0.0E+00[1] |
| | 5.65 | 6.10 | 96 | 1.7E-04 |
| | 8.69 | 9.14 | 96 | 4.9E-04 |
| | 11.74 | 12.19 | 96 | 3.5E-04 |
| | 14.79 | 15.24 | 96 | 0.0E+00[1] |
| | 17.84 | 18.29 | 96 | 0.0E+00[1] |
| MW05-5A | 3.05 | 3.05 | 76 | 1.0E-01 |
| | 6.10 | 6.10 | 76 | 1.2E-02 |
| | 9.14 | 9.14 | 76 | 6.7E-03 |
| | 12.19 | 12.19 | 76 | 8.0E-03 |
| | 15.24 | 15.24 | 76 | 6.3E-03 |
| | 18.29 | 18.29 | 76 | 6.6E-03 |
| MW05-6 | 1.52 | 1.52 | 102 | 2.0E-04 |
| | 3.05 | 3.05 | 102 | 7.8E-04 |
| | 4.57 | 4.57 | 102 | 3.6E-03 |
| | 6.10 | 6.10 | 102 | 1.3E-03 |
| | 9.14 | 9.14 | 102 | 4.8E-03 |
| | 12.19 | 12.19 | 102 | 2.3E-04 |
| | 15.24 | 15.24 | 102 | 3.1E-03 |
| | 18.29 | 18.29 | 102 | 1.4E-02 |
| | 21.34 | 21.34 | 102 | 1.8E-02 |

Note: 1. No visible change in piezometric head during test.

**Table 6.** (Table 7.3.6 of Klohn Crippen Report 2005) Summary of Falling-Head Permeability Test Results – Monitoring Wells.

| Test Hole No. | Depth (m) | | Hole Dia. (mm) | Average k cm/s |
|---|---|---|---|---|
| | From | To | | |
| MW05-1A | 18.29 | 22.86 | 96 | 5.4E-04 |
| MW05-2A | 18.29 | 22.86 | 96 | 0.0E+00[1] |
| MW05-3A | 18.75 | 22.86 | 96 | 0.0E+00[1] |
| MW05-5 | 21.10 | 26.50 | 76 | 4.7E-05 |
| MW05-6A | 21.30 | 25.70 | 96 | 1.2E-05 |
| MW05-7A | 24.70 | 30.20 | 96 | 3.6E-05 |

Note: 1. No visible change in piezometric head during test.

**Table 7.** (Table 7.3.7 of Klohn Crippen Report 2005) Summary of Packer Permeability Test Results – Monitoring Wells.

**Implications for Exploration and Recommendations**

The data collected during this project will be used to assess the outlined areas on the Puck Property for potential use for infrastructure for the Wolverine Project. The quality and quantity of overburden will help define areas for potential tailings facilities, and/or building material.

**Statement of Expenditures**

I, Gilles Dessureau, as an agent for Yukon Zinc Corporation, #701-475 Howe Street, Vancouver, B.C. do solemnly declare that drilling work carried out on the Puck Claims (see attached list) between the dates of July 25th and September 2nd, 2005.

| Expenditure type | Description | Cost |
|---|---|---|
| Drilling Costs | Drilling Costs - 6 Drill Holes and test work | $127,919.03 |
| Labor | Two Geologists - 26 days combined | $5,245.45 |
| | Total Money Available for assessment | $133,164.48 |

| | Total Meters Drilled | Cost per meter |
|---|---|---|
| | 160 | $832.28 |
| **Claim** | **Meters drilled per claim** | **Money Available per claim** |
| PUCK 26 | 75 | **$62,420.85** |
| PUCK 28 | 85 | **$70,743.63** |
| | | **$133,164.48** |

**Table 8.** List of expenditures for the PUCK property 2005.

The drilling was preformed on two claims, PUCK 26, and PUCK 28. Drilling was distributed between the two claims based on the drilling performed on each claim.

**References**

Bradshaw, G.D., Tucker, T.L., Peter, J.M., Paradis, S., and Rowins, S.M., 2001. Geology of the Wolverine polymateallic volcanic hosted massive sulphide deposit, Finlayson Lake district, Yukon Territory, Canada. Yukon Exploration and Geology, 2001. D.S. Emond and L.H. Weston (eds), Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 269-287.

Hunt, J.A., 1998. Recent discoveries of volcanic-associated massive sulphide deposits in the Yukon: Canadian Institute of Mining and Metallurgy Bulletin, v. 90, p. 56-65.

Piercey, S.J. 2001. Petrology and tectonic setting of the feslic and mafic volcanic and intrusive rocks in the Finlayson Lake Volcanic-hosted massive sulphide (VHMS) District, Yukon, Canada: A record of Mid-Paleozoic Arc and Back Arc Magmatism and Metallogeny. PhD. Thesis, University of British Colombia, Canada.

Wheeler, J.O., and McFeely, P., 1991. Tectonic Assemblage Map of the Canadian Cordillera and Adjacent Parts of the United States of America: Geological Survey of Canada, Map 1712A, Scale 1: 2000 000.

Respectfully Submitted,

Gilles Dessureau, M.Sc.
Project Geologist
Yukon Zinc Corporation

Appendix I

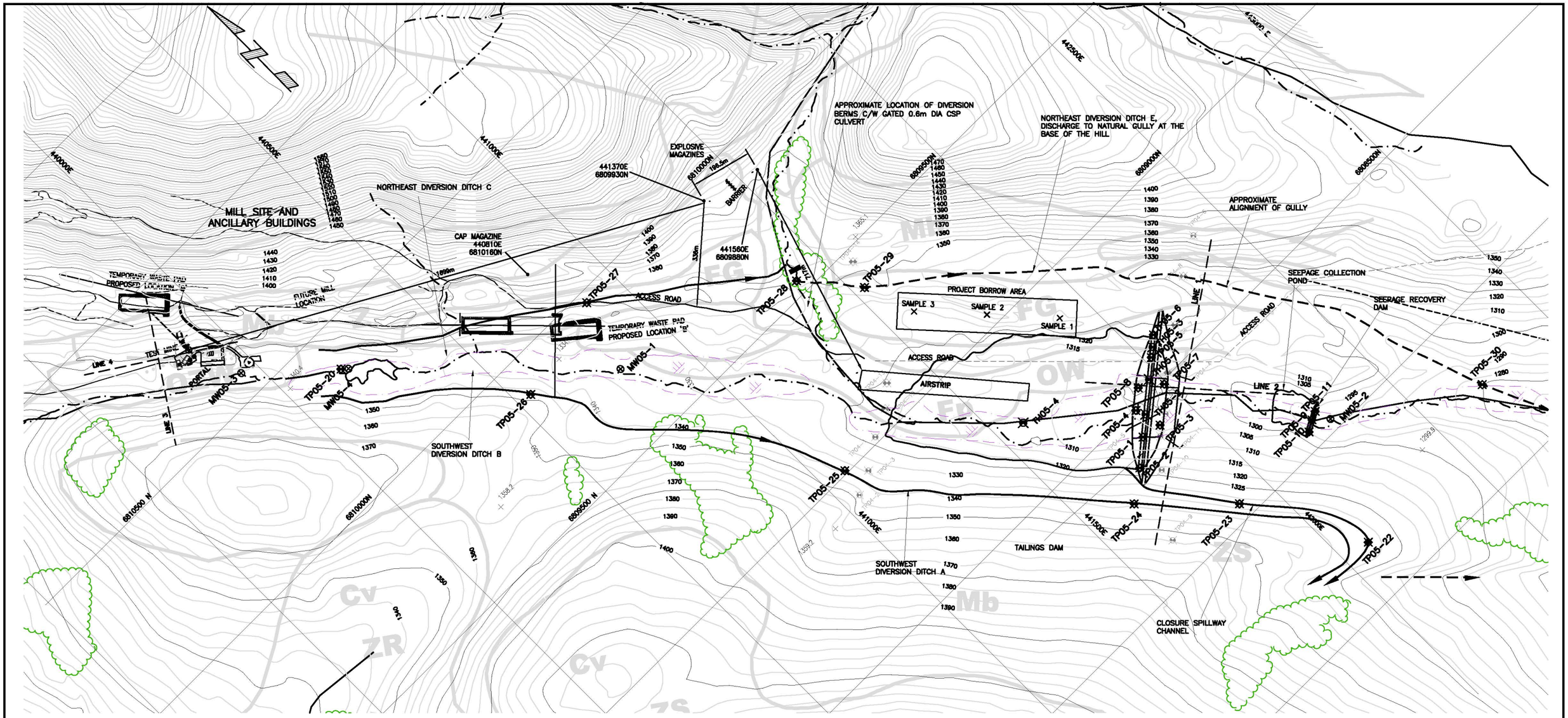
**Author's statement of qualifications**

I, Gilles Dessureau, Project Geologist, for Yukon Zinc Corporation, do herby certify that:

1. I graduated from St. Mary's University in Halifax, Nova Scotia with a Bachelor of Science with Honors in Geology in 1998.
2. I graduated from Laurentian University in Sudbury, Ontario with a Masters of Science in Geology in 2003.
3. From 2004 to present I have been an employee of Yukon Zinc Corporation (formerly Expatriate Resources Ltd.)
4. I have personally supervised and participated in the work described herein.

Respectfully Submitted,

Gilles Dessureau, M.Sc.
Project Geologist
Yukon Zinc Corporation




## LEGEND

| | |
|---|---|
| TH05–1 | TEST HOLE |
| TP05–1 | TEST PIT |
| MW05–1 | MONITORING HOLE |
| — — | MULTI–ELECTRODE RESISTIVITY SURVEY LINE |

## DIVERSION DITCH

| | | |
|---|---|---|
| TP05–20 | 440179E | 6810366N |
| TP05–22 | 442093E | 6807676N |
| TP05–23 | 441890E | 6808051N |
| TP05–24 | 441654E | 6808287N |
| TP05–25 | 441080E | 6809010N |
| TP05–26 | 440548E | 6809884N |
| TP05–28 | 441397E | 6809544N |
| TP05–29 | 441535E | 6809376N |
| TP05–30 | 442702E | 6807776N |

## SEEPAGE DAM

| | | |
|---|---|---|
| TP05–9 | 442241E | 6808076N |
| TP05–11 | 442268E | 6808088N |
| TP05–10 | 442208E | 6808056N |

## TAILINGS DAM

| | | |
|---|---|---|
| TH05–1 | 441966E | 6808534N |
| TH05–2 | 441881E | 6808462N |
| TH05–3 | 442048E | 6808597N |
| TH05–4 | 441587E | 6808717N |
| TH05–5 | 442021E | 6808577N |
| TH05–7 | 441990E | 6808488N |
| TP05–1 | 441824E | 6808417N |
| TP05–2 | 441748E | 6808355N |
| TP05–3 | 441889E | 6808406N |
| TP05–4 | 441867E | 6808492N |
| TP05–6 | 442077E | 6808622N |
| TP05–8 | 441923E | 6808538N |
| MW05–1 | 440806E | 6809740N |
| MW05–2 | 442285E | 6808037N |

## NOTE

1. DAM OUTLINE SHOWN HAS BEEN SUPERCEDED.

0 800 m

Scale: 1=40(PS)
Drawing File: K:\M09234A02-Wolverine Feasibility Design & Enviro. Assess\400 Design\410 Drawings\Feasibility-Study\fig7.3-2.dwg (cwong)
Xrefs: GEOLOGY, dem1325, Wolvcontourm1, Comp to Airport Roode



DWG. NO. | REFERENCE DRAWINGS

| NO | DESCRIPTION | BY | DATE |
|---|---|---|---|

ISSUE/REVISIONS

PROJECT | PROCESS | CIVIL | MECH. | STRUCT. | PIPING | SERVICES | ELECT. | INSTR.

SECTION:
SCALE: DATE
DESIGN. BY ---- ----
DRAWN BY: ---- ----
CHECK. BY ---- ----
APP. BY: ---- ----

| FILENAME: | PROJECT NUMBER | DRAWING NUMBER | REV. |
|---|---|---|---|
| ---------- | M09234A02 FIG. 7.3.1 | ---------- | A |

Klohn Crippen Berger

Yukon Zinc CORPORATION

WOLVERINE PROJECT

SITE INVESTIGATION PLAN – PHASE 1
FOR ALTIENATE TAILINGS IMPOUNDMENT SITE