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# ASSESSMENT REPORT



December 6,  
2022

Crystal Lake Project – 2021 Field Program

**For:**

Duffey Lake Holdings Inc.  
666 Burrard Street, 25 Floor  
Vancouver, BC  
V6C 2X8

**Prepared By:**

Jake Dove, HBSoc.  
Steven Flank, P.Geo, MSc.

Bayside Geoscience Inc.  
1179 Carrick St. Unit C  
Thunder Bay, ON  
P7B 6M3



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# Assessment Report

## CRYSTAL LAKE PROJECT – 2021 FIELD PROGRAM

### SUMMARY

Between July 27<sup>th</sup> and October 26<sup>th</sup>, 2021, a mapping and prospecting field program was completed on the Crystal Lake Project, a joint venture between Duffey Lake Holdings Inc. and Rio Tinto Exploration Canada Inc. The property is located in the Thunder Bay Mining Division approximately 40 km south of Thunder Bay Ontario, just north of the Minnesota border. Bayside Geoscience, based out of Thunder Bay Ontario completed the mapping and prospecting program with two geologists. The individuals mobilized to site daily by road, from Thunder Bay along Highway 61.

The goal of this field program was to investigate 6 targets identified by Duffey Lake Holdings in order to determine the source of two surface electromagnetic anomalies, map and sample mafic dykes surrounding the Crystal Lake Gabbro to capture their geochemical signature and to map the historic McCuaig Float mineralized boulder field and collect data to aid in locating its bedrock source.

A total of 89 outcrop stations were recorded with 77 grab samples being collected and submitted for geochemical analysis.

### INTRODUCTION

Between July 27<sup>th</sup> and October 26<sup>th</sup>, 2021, Duffey Lake Holdings Inc. initiated a prospecting and mapping program on joint venture Crystal Lake Project which is 100% owned by Rio Tinto Exploration Canada Inc., located in the Thunder Bay Mining Division, Ontario, Canada. Duffey Lake Holdings contracted Bayside Geoscience of Thunder Bay Ontario to complete the program. Personnel included Steven Flank (Principal Geologist), Sasan Maleki (Field Geologist), Derek Defranceschi (Field Technician) and Heather Platnick (Field Technician). Wilson Bonner, Project Geologist for Duffey Lakes Holdings also joined Bayside Geoscience personnel for 5 days of the program.

The co-ordinate system used throughout this report is in UTM NAD 83 Zone 16N.

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## 1. LOCATION AND ACCESS

The Crystal Lake Property is located within the Thunder Bay Mining Division in northwestern Ontario approximately 40 km south of Thunder Bay (Figure 1).

The Crystal Lake Property is accessible by road indirectly off of Highway 61 approximately 40 km south of Thunder Bay, continuing west for several kilometers along the Great Lakes Nickel gravel road. The Great Lakes Nickel Road is gated in 2 locations and crosses private property, therefore permission of landowners is required to access the property. Various grown in drill roads and trails are accessible off of the Great Lake Nickel Road via UTV/ATV.

During the 2021 field program the geologists spent approximately 15 days between the period of July 27<sup>th</sup> and October 26<sup>th</sup>, with the majority of field work being completed in August. A daily commute was completed by truck from Thunder Bay to access the property, occasionally using an ATV/UTV to access areas with unfavorable road conditions.

## 2. PROPERTY OWNERSHIP AND CLAIMS

The Crystal Lake Property is located in the Thunder Bay Mining Division and is comprised of 226 mining claims, 27 leased claims, and 34 mine land patents totaling 7, 345 ha. All claims are 100% owned by Rio Tinto Exploration Canada Inc. with operations being carried out by Duffey Lake Holding Inc. Claim locations are shown in Figure 2.

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Figure 1: Crystal Lake Property Location.

### 3. EXPLORATION HISTORY

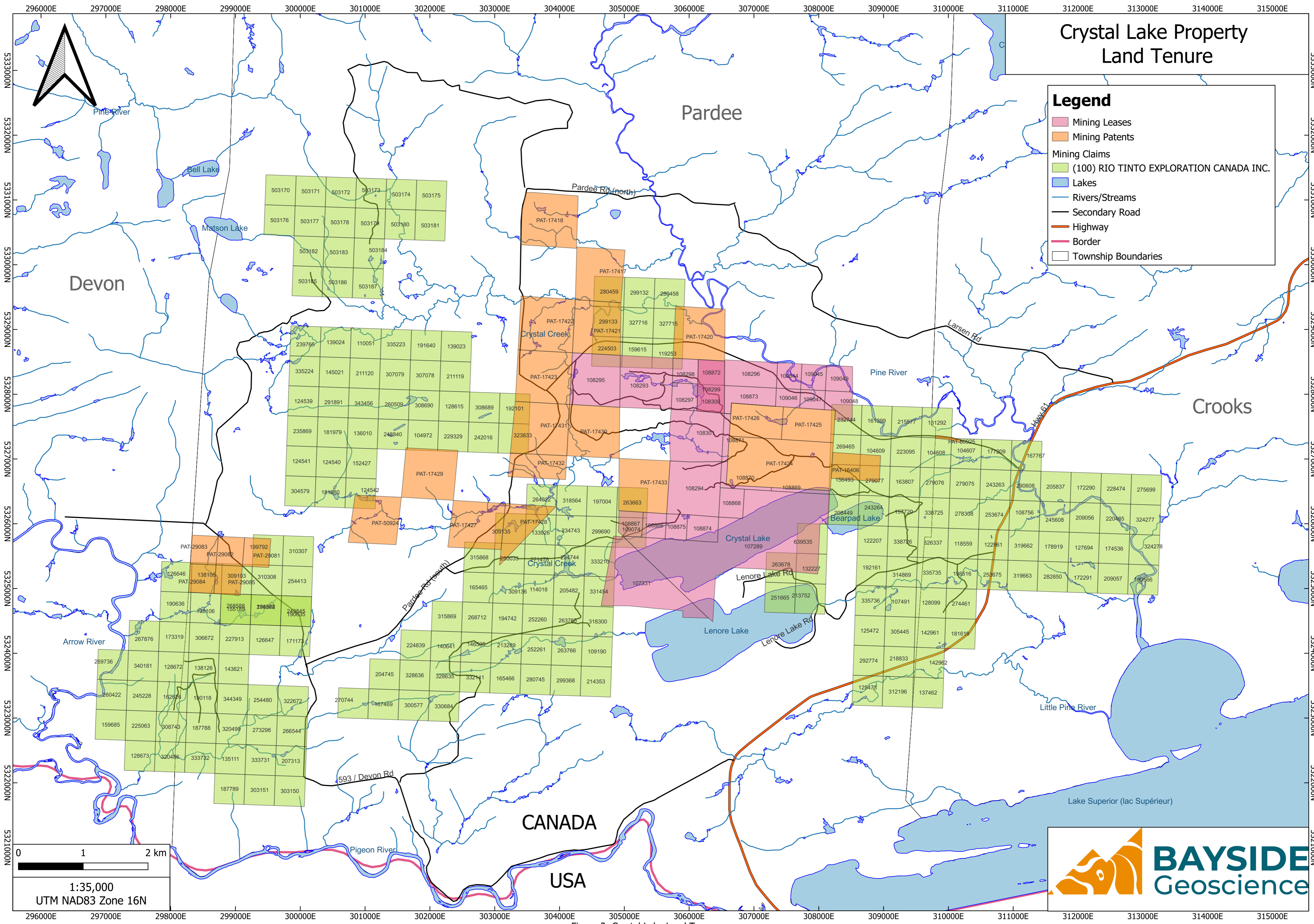
Extensive mineral exploration has occurred in the Crystal Lake area since the discovery of copper-nickel mineralized float in 1936. A summary of exploration is presented below in Table 1.

*Table 1: Summary of Exploration History on the Crystal Lake Property.*

<b>Company</b>	<b>Year</b>	<b>Activity</b>	<b>Target Area</b>
United States Smelting, Refining and Mining Co.	1936	Conducted exploration looking for the source of copper-nickel mineralized float boulders.	Crystal Lake Area
Mattawin Gold Mines Ltd.	1952	Staked property and optioned to Falconbridge Nickel Mines	Crystal Lake Area
Falconbridge Nickel Mines	1952-1953	Surface work including trenching	Crystal Lake Area
Mattawin Gold Mines Ltd.	1954	6 DDH totaling 3471 ft	Crystal Lake Area
Mogul Mining Corp. Ltd.	1957	Optioned property and drilled 7 DDH totaling 5556 ft and undertook mill testing	Crystal Lake Area
Great Lakes Nickel Corp. Ltd.	1964-1970	Acquired option for property and conducted surface exploration including 47, 803m of drilling and started 37m adit. 19 underground DDH were completed totaling 392 m.	Crystal Lake Area
Great Lakes Nickel Corp. Ltd.	1972	Drove 522 m development portal and drift. Conducted over 12, 000 m of surface and underground diamond drilling. Plant-site surveys, bulk sampling, metallurgical and feasibility tests were conducted, largely financed by a Swedish company, Boliden Aktiebolag.  A reserve was defined on the tip of the northern	Crystal Lake Area

		CLG arm containing proven and indicated reserves of 41.4 MT grading 0.334% Cu, 0.183% Ni, 0.69 g/t Pd, 0.21 g/t Pt, 0.01 g/t Rh, 0.04 g/t Au, and 2.06 g/t Ag.	
Great Lakes Nickel Corp. Ltd.	1974	Mine development suspended in October due to escalating costs, high interest rates and uncertain metal prices.	Crystal Lake Area
Fleck Resources Ltd.	1986-87	Completed geological mapping and sampling, relogged and assayed more than 9, 144 m of historic drill core and drilled 6 DDH.	Crystal Lake Area
Great Lakes Nickel Corp. Ltd.	2000	Sampling of historical drill core and block modelling to develop a resource estimate.	Crystal Lake Area
Kennecott Canada Exploration Inc.	2007	Staked, airborne electromagnetic survey, airborne magnetic survey.	Crystal Lake Area
Rio Tinto Exploration Canada Inc.	2011	Optioned the property from Great Lakes Nickel in November	Crystal Lake Area
Rio Tinto Exploration Canada Inc.	2013-2014	Re-assayed historic drill holes, drilled 5 DDH totaling 3, 170.03 m and conducted downhole geophysics.	Crystal Lake Area
Rio Tinto Exploration Canada Inc.	2015	Completed 2 of 3 reported holes along the Great Lakes Nickel plunge trend.	Crystal Lake Area
Sean Obrien	2018	Master's thesis on the petrology of the Crystal Lake Gabbro and the Mount Mollie Dyke, Midcontinent Rift, Northwest Ontario	Crystal Lake and Mount Mollie Area





# Crystal Lake Property Land Tenure

**Legend**

- Mining Leases
- Mining Patents
- Mining Claims**
- (100) RIO TINTO EXPLORATION CANADA INC.
- Lakes
- Rivers/Streams
- Secondary Road
- Highway
- Border
- Township Boundaries

0 1 2 km

1:35,000  
UTM NAD83 Zone 16N

Figure 2: Crystal Lake Land Tenure



## 4. REGIONAL GEOLOGY

The following is a summary of the Regional Geology of the Midcontinent Rift from Obrien, 2018.

The western Lake Superior region has had a long geological history recorded in a variety of rock types. These include Archean granites, greenstones, and gneisses of the Superior Province, Paleoproterozoic sedimentary rocks of the Animikie Basin, Mesoproterozoic redbed sedimentary rocks of the Sibley Group, younger Mesoproterozoic sedimentary, volcanic, and intrusive rocks of the MCR, and Quaternary glacial deposits. The key geologic terranes specifically related to the CLG and MMD are the Superior Province, the Animikie Basin, and the Midcontinent Rift. The main geological attributes of these terranes in the western Lake Superior area are described below.

### **Superior Province**

The underlying crust of the MCR is largely the Archean basement of the Superior Province. The Superior Province was developed by the amalgamation of distinct protocontinental and oceanic terranes, that ranged in age between 3.7 and 2.65 Ga, during the accretionary Kenoran Orogeny occurring between 2.72 to 2.68 Ga (Card and Ciesielski, 1986; Percival et al., 2006). The Superior Province is comprised of a series of east-trending belts that are composed of granite-greenstone, metasedimentary, plutonic, and high-grade gneisses and that have been metamorphosed to greenschist-granulite facies (Card and Ciesielski, 1986; Card, 1990). The belts have been subdivided into multiple subprovinces or terranes based on their lithologic, metamorphic, geochemical, isotopic, geochronologic and geophysical characteristics (Card and Ciesielski, 1986; Stott et al., 2010) (Figure 3).

The Wawa subprovince underlies the section of the MCR that hosts the CLG and MMD. The Wawa subprovince is the western portion of the Wawa-Abitibi terrane with the Abitibi subprovince comprising the eastern portion, separated by the Kapuskasing structural zone (Stott et al., 2010). The Wawa subprovince is dominantly comprised of large masses of granitoid plutons with isolated arcuate to linear greenstone belts comprising 20 to 30% of the subprovince (Williams et al., 1990).

### **Animikie Basin**

Paleoproterozoic sedimentary rocks of the Animikie Group, which extends through Ontario, Minnesota, Wisconsin, and Michigan, were deposited on Archean crust in a continental shelf/back arc basin about 1.85 Ga (Johnston et al., 2006) (Figure 4). The area of the Animikie Basin intruded by the CLG and MMD is termed the Logan Basin. The Animikie Group contains three conformable sedimentary formations: a basal conglomerate/quartzite unit, a chemically precipitated iron formation, and a shale/greywacke formation (Hemming et al., 1995; Fralick et al., 2002; Johnston et al., 2006). The MCR separated the basin into two segments located in Ontario-Minnesota and Wisconsin-Michigan. Local naming of the stratigraphy has occurred over a century of research, although each segment shares similar characteristics and can be

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correlated with each other; the basal conglomerate/quartzite is known as the Mahnomen, Pokegama, and Kakabeka Formations, the iron formation is known as Trommald, Biwabik and Gunflint Formations, and the

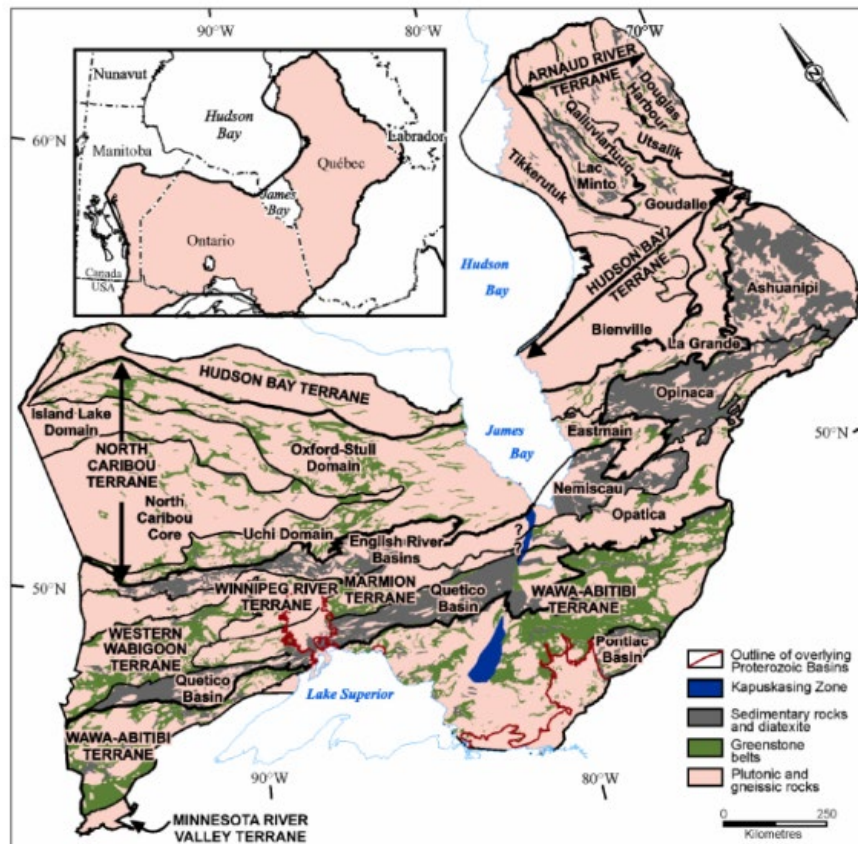


Figure 3: Map of the Archean Superior Province from Stott et al. (2010).

shale/grainstone is known as Thompson, Virginia, and Rove Formation (Hemming et al., 1995; Ojakangas et al., 2001). For simplicity Kakabeka, Gunflint, and Rove will be used for the remainder of this document as these are the names most widely used in the study area.

Development of a passive margin between two land masses on the present southern edge of the Superior Province, was associated with rift development at ~2450 Ma (Johnston et al., 2006). The formation of the passive margin is thought to have occurred in three stages, an intrarift stage, a rift stage, and a post breakup stage (Southwick and Morey, 1991; Ojakangas et al., 2001). Two models have been proposed to explain how the Animikie Basin was formed. One model, outlined in Hoffman (1987), Morey and Southwick (1995), and Ojakangas et al. (2001) suggested that, after initial continental rifting, further development led to the creation of a sea-floor which eventually closed as a result of northward subduction and creation of an island arc. This was followed by southward subduction and creation of a volcanic arc, known as the

Wisconsin Magmatic Terrane. Eventually complete closure of the ocean occurred with an arc-continent collision.

Due to the collision, a foredeep was created in response to the loading during the Penokean Orogeny, in which the Animikie Group was deposited (Ojakangas et al., 2001). During the evolution of the foredeep there were changes in water depth creating the three formations of the Animikie group; a tidal flat environment where quartzite of the Kakabeka group formed, a shallow water environment where the Gunflint iron formation precipitated and finally to deep-water environment where the turbidities of the Rove Formation formed. The second model, outlined in Bond et al. (1988) for the Cenozoic Aleutian Basin formation and later expanded upon by Pufahl and Fralick (1995), Hemming et al. (1995) and Pufahl et al. (2000), suggests that the Animikie Basin evolved in a back-arc basin which formed as a result of extension created by a northward subduction zone during the sea-floor closure. The back-arc basin was subsequently destroyed by initiation of a fold and thrust belt being formed due to a change in the direction of plate convergence.

### **Animikie Group in the Logan Basin**

#### ***Kakabeka Formation***

The Ontario portion of the Animikie Group contains a sporadically discontinuous basal conglomerate/ quartzite is not present, the overlying Gunflint Formation lies unconformably on top of the Archean basement rock (Simonson and Hassler, 1996). The conglomerate represents an iron-poor shallow water deposit that contains stromatolitic cherts and coarse-grained clastic 12 fragments. This formation is thought to have been deposited due to a transgression of the sea-level in shallow water (Simonson and Hassler, 1996). The depositional environment is suggested to have been near shoreline influenced by tides, with the sediments/clastics sourced from Archean basement rocks to the North (Hoffman, 1987; Ojakangas et al., 2001).

#### ***Gunflint Formation***

The Gunflint Formation hosts one of the most diverse Precambrian fossil communities in the world, including stromatolites with cellular level preservation (Fralick et al., 2002). This formation is 120 to 185 m thick and dips 5° to the south (Goodwin, 1956). Fining and coarsening upward successions found in the formation suggests that there were transgressive and regressive events during deposition (Fralick and Barrett, 1995). The environment during formation was an open and wave dominated shelf where water depth did not exceed 10 m (Pufahl and Fralick, 2004). The chemically precipitated rocks are thought to have formed by the introduction of iron-rich anoxic bottoms to the oxygenated shelf waters (Pufahl and Fralick, 2004). The Gunflint Formation has been divided into a lower member comprised of stromatolite bioherms, chert-carbonate, grainstones and chemical mud layers and a similar upper member that also contains shales and volcanic ash layers (Fralick et al., 2002). One of the ash layers has an age determined to be 1878 ± 1.3 Ma, which is believed to be the age of deposition (Fralick et al., 2002). The upper most portion of the

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Gunflint Formation contains agate and pyrite veins and vugs, which suggests that after deposition, during the Penokean Orogen (1860 to 1835 Ma) it was subareally exposed and altered (Johnston et al., 2006). Also, during this hiatus in deposition, an ejecta layer was deposited from the Sudbury Impact which took place  $1850 \pm 1$  Ma (Krogh et al., 1984).

### Rove Formation

Overlying the Gunflint, a sharp contact defines the bottom of the Rove Formation. The basal section of the Rove Formation consists of black carbonaceous shale with interbedded siltstone and very fine-grained sandstone, with friable tuffaceous layers (Maric and Fralick, 2005). Starting at around 5 m above the basal contact the siltstone and sandstone interlayers become less abundant and are followed by 100 to 150 m of black fissile shale (Maric and Fralick, 2005). This is overlain by a gradational contact to a sequence of over 100 stacked coarsening upward parasequences of a sandstone-shale unit of up to 350 m thickness (Maric and Fralick, 2005). The water depth for these successions is estimated to have been 100 to 200 m (Johnston et al., 2006). The uppermost unit consists of a black shale with wave and current rippled sandstones (Maric and Fralick, 2005). This unit also contains fine-grained and finely dispersed pyrite, suggesting formation in anoxic bottom waters with persistent sulphidic conditions and unrestricted access to open ocean waters (Poulton et al., 2004). The age of deposition was determined by zircons found in the basal and upper units of the Rove Formation that yielded ages of 1835 Ma and 1780 Ma (Heaman, 2005; Addison et al., 2005).

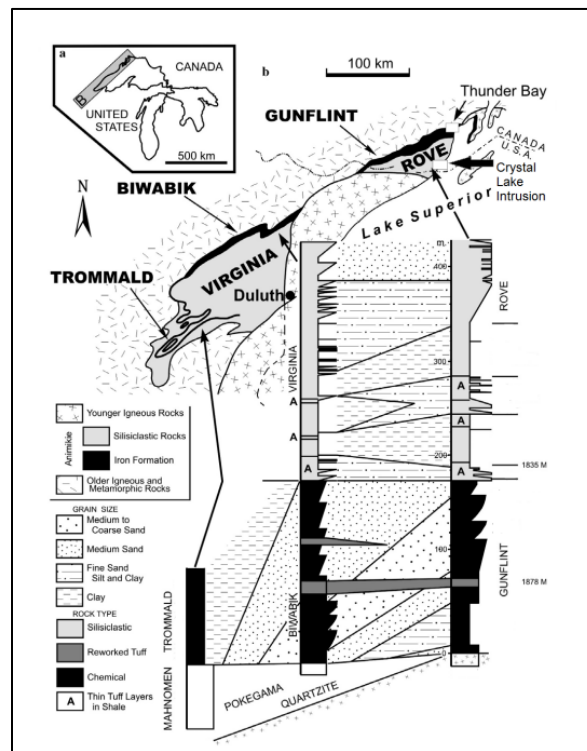


Figure 4: Location, geology and generalized stratigraphy of the Animikie Group. From O'Brien, 2018. Modified from Johnston et al. (2006).

### ***Midcontinent Rift***

The Midcontinent Rift (MCR) extends approximately 2,500 km from the Grenville front through northwestern Ontario to Kansas (Davis and Green, 1997). It is estimated to contain 1,300,000 km<sup>3</sup> of volcanic and intrusive rocks, although it is difficult to determine an accurate estimate due to loss to erosion, sills, dykes, intrusions still at depth, and magma that has been underplated (Hutchinson et al., 1990; Heaman et al., 2007). The evolution of the MCR started with a broad depression that has a correlated fluvial sequence ~100 m thick at the base of the supracrustal sequence (Ojakangas and Dickas, 2002). Extensive volcanism began around 1100 Ma over a broad area but was ultimately focused into a central graben with approximately 25 km of basalt and lesser rhyolite fill (Cannon, 1992). Around 1086 Ma, extension and volcanism waned and the rift transitioned into a protracted period of subsidence and creation of a sedimentary basin, which was filled by ~8 km of post-rift sediments (Heaman et al., 2007).

The MCR formed from ~1115 to 1084 Ma, with the majority of the igneous activity occurring in two pulses from ~1115 to 1105 Ma and ~1100 to 1094 Ma (Heaman et al., 2007; Vervoort et al., 2007). A plume model has been suggested and is generally regarded as the most likely scenario for causing the rift, due to the amount and volume of magmatic activity, as well as the isotopic and chemical character of the associated rocks (Hutchinson et al., 1990; Nicholson and Shirey, 1990; Shirey et al., 1994; Nicholson et al., 1997; Shirey, 1997). There are also suggestions that there are some inconsistencies when comparing the MCR to other large igneous provinces (LIPs), largely due to the longer than normal time span of magmatism and lack of an associated radiating dyke swarm (Hollings and Heggie, 2014).

Along the length of the MCR there are a variety of pre-rift rocks into which the intrusions were emplaced. These crustal rocks range in age from 3.6 to 1.5 Ga, with the most voluminous intrusions in Ontario emplaced in the 2.7 Ga crust of the late Archean (Van Schmus, 1992). Hypabyssal rocks dominate the Ontario portion of the MCR related intrusions (Hollings et al., 2010). These intrusions, dykes, and sills are found from the Lake Nipigon area to the Ontario-Minnesota border (Figure 5). These rocks are part of the proposed Logan Igneous Suite and subdivided into two informal groups; the Logan sills south of Thunder Bay and Nipigon sills north of Thunder Bay (Hollings et al., 2007a). Logan sills and Nipigon sills have a uniform paleomagnetic signature but are geochemically distinct from each other (Hollings et al., 2010 and references therein).

### ***MCR Intrusions in the Logan Basin***

#### ***Logan Sills***

The 70 km x 30 km area of the rugged terrane of mesas and ridges towering above flat lying valleys, between Thunder Bay and the Ontario-Minnesota border, was termed the Logan Basin by North (2000). The first published geological map and rock descriptions of the area is that of T. L. Tanton (1931, 1935, and 1936). Further mapping and descriptions of the area was undertaken by Pye and Fenwick (1965), Geul (1970, 1973), and Smith and Sutcliffe (1987, 1989). Whereas the Nipigon sills and intrusions are underlain

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by the English River, Wabigoon, and Quetico subprovinces of the Superior Province, the Logan Basin is underlain by the Wawa subprovince.

Logan sills were originally classified with the Nipigon Sills based on a similar paleomagnetic signature, but more recently a geochemical difference between the sills north and south of Thunder Bay, has resulted in them being subdivided into two populations (Hollings et al., 2010 and references therein). Sills in the Logan Basin area have higher TiO<sub>2</sub> and more depleted heavy rare earth elements (HREE) than the Nipigon Sills (Hollings et al., 2007a). The sills are mainly composed of equigranular tholeiitic diabase with chill zones at the contact with the sedimentary rocks of the Animikie Group. From the contact the sills grade upward to fine-grained ophitic diabase, medium-grained megacrystic plagioclase phyric diabase, and an iron-rich diabase which is usually found at surface (Smith and Sutcliffe, 1987). Bulk compositions of the sills are equivalent to an iron-rich quartz tholeiite basalt (Hollings et al., 2010). Thicker sills in the area may contain coarse grained gabbro with granophyre in the interior of the sills (Hollings et al., 2010). The flat lying Rove Formation, into which most of the sills are emplaced, is the main control on the thickness and morphology, often capping mesas and cuestas in the area (Cundari, 2012). Heaman et al. (2007) determined a U-Pb baddeleyite age of  $1114.7 \pm 1.1$  Ma for a Logan Sill within the basin.

### ***Logan Basin Dykes***

Three dyke suites have been recognized in the Logan basin; the Pigeon River dykes, Cloud River dykes, and the Mount Mollie Dyke (MMD), they are classified mainly by their orientation and age (Cundari, 2012).

Pigeon River dykes trend east-northeast to northeast, dip steeply to the southeast, and are the most abundant in the area. These dykes are thought to have followed preexisting normal faults, as suggested by warping of the Rove Formation on the southern sides of the dykes and slickensides on some contacts that suggests further reactivation of the faults (Smith and Sutcliffe, 1989). The observed contacts of the dykes and Rove Formation are either < 5 cm aphanitic to fine-grained diabase chill zones or 0.5 m to 1 m thick gradational contacts of fine- to medium-grained diorite containing xenoliths of Rove Formation (Smith and Sutcliffe, 1989). Most commonly the rocks are fine- to medium-grained ophitic diabase with oikocrystic clinopyroxene and glomeroporphyritic plagioclase, with a typical mineral assemblage of 60% plagioclase, 20% augite  $\pm$  hypersthene, up to 15% olivine and up to 5% magnetite, and trace ilmeno-magnetite and sulphides (Geul 1973; Smith and Sutcliffe, 1989). The Pigeon River dykes range in thickness from an average of 50 m to 70 m and up to 150 m, and extend for up to 15 km. Two U-Pb baddeleyite ages have been determined for the Pigeon River dykes  $1141 \pm 20$  Ma and  $1078 \pm 4$  Ma (Heaman et al., 2007).

Cloud River dykes trend northwest and consist mainly of plagioclase-phyric quartz diabase with a U-Pb baddeleyite age of  $1109.3 \pm 4.2$  Ma (Hollings et al., 2010). Inconsistent and contradicting paleomagnetic signatures have also been reported for the Cloud River dykes with Piispa et al. (2011) reporting a N polarity and Hollings et al. (2010) reporting a R polarity, where the N polarity is more likely due to a higher sample size.

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Extending east from the Crystal Lake Gabbro (CLG) lies the 35 km long 60 to 350 m wide MMD which dips between near vertically to 35° north (Geul, 1973). The MMD extends into a series of islands in Lake Superior where it shows a northeast trend compared to the east trend on the mainland. The MMD is a composite dyke with a variety of rock types and textures. Variations in modal mineralogy result in rock types ranging from olivine gabbro to gabbro to hornblende diorite to granophyre. Grain size within the dyke varies from fine to coarse-grained to locally pegmatitic patches. Though typically massive, locally the gabbros display foliation and modal layering (Smith and Sutcliffe, 1989). With increasing quartz and hornblende in the core of the dyke, the gabbro grades into a fine- to coarse-grained diorite with either gradational or sharp contacts with a fine- to medium-grained granophyre (Smith and Sutcliffe, 1989). Smith and Sutcliffe (1989) also note textural evidence for magma mixing of mafic and felsic magmas as noted by apophyses and net veining of granophyre within the diorite and gabbro.

Geul (1970, 1973) and Cundari (2012) have mapped this area to determine relationships between the dyke sets. Based on the cross-cutting relationships as well as textural similarities found in outcrop, Cundari (2012) proposed that the emplacement sequence of the dykes was likely Pigeon River followed by Cloud River and lastly Mount Mollie. Recent geochronological, geochemical, and paleomagnetic studies have attempted to understand the evolution of the dyke sets (Hollings et al., 2007a, 2010, 2012; Heaman et al., 2007; Piispa et al., 2011), though contradictions in geochronology and paleomagnetism still exist.

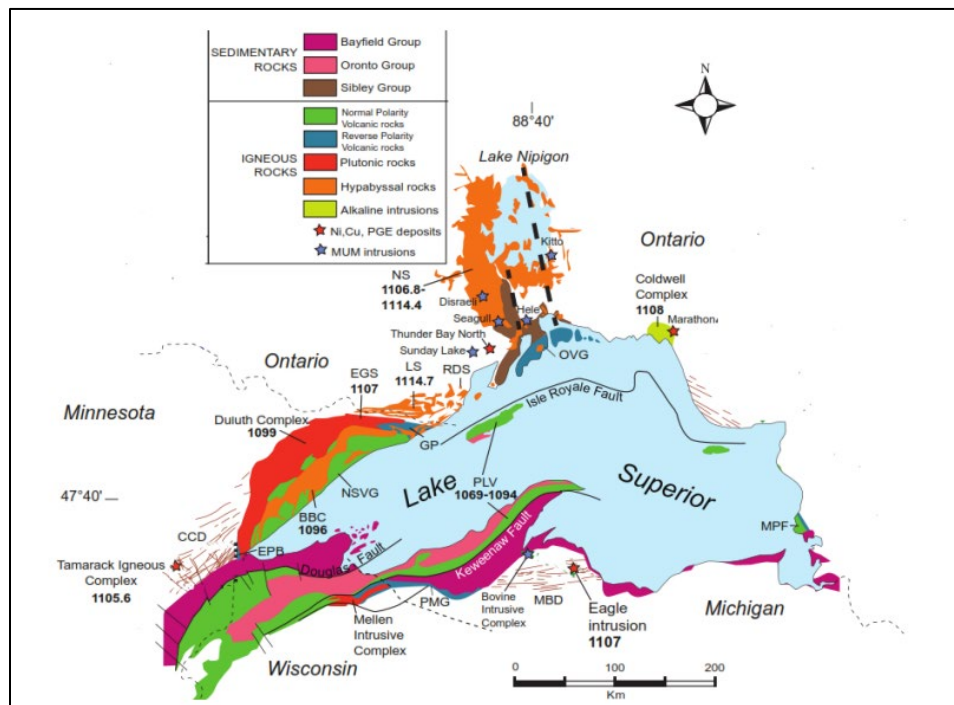


Figure 5: Generalized map of MCR related rocks from O'Brien, 2018. Modified from Paces and Miller (1993) and Miller (pers. comm.) Abbreviations: EGS- Early Gabbro Series; BBC-Beaver Bay Complex; NSVG-North Shore Volcanic Group; GP-Grand Portage volcanics; EPB- Ely's Peak basalts; CCD- Carlton County dykes; LS- Logan sills;



*RDS- Riverdale sill; NS- Nipigon sills; OVG- Osler Group; MPF- Mamainse Point Formation; MBD- Marquette-Baraga dykes; PLV- Portage Lake Volcanics; PMG- Powder Mill Group.*

### **Crystal Lake Gabbro**

The CLG is Y-shaped in plan view with a 5 km long northern limb trending east and a 2.75 km long southern arm trending east northeast (Figure 6). Based upon layering, foliation, and surface geometry it is thought to be a tilted canoe shaped body which plunges 15 to 20°, opening of the western end of the intrusion (Smith and Sutcliffe, 1989; Cogulu, 1993a).

Based on field observations of the western portion of the northern limb of the CLG, the intrusion has been subdivided into four zones: Basal, Lower, Middle, and Upper. The base of the intrusion consists of a <7 m thick chilled zone of aphanitic to fine-grained gabbro, with partial assimilated xenoliths of the Rove Formation and oval inclusions of Pigeon River Dyke (Smith and Sutcliffe, 1989). The Lower Zone reaches a maximum thickness of 50 m. The lower part of the zone consists of medium- to coarse-grained gabbro with patches and blocks of pegmatitic gabbro and leucotroctolite as well as disseminated sulphides (Smith and Sutcliffe, 1989). The upper portion of the Lower Zone consists of coarse-grained to pegmatitic leucogabbro and leucotroctolite with elliptical-shaped segregations rich in disseminated chromite that elongate parallel to layering (Smith and Sutcliffe, 1989). The Middle Zone is 30 m thick and defined by distinct phase layering of anorthosite, olivine leucogabbro, chromite rich anorthosite and melanocratic olivine gabbro. The Upper Zone is 80 m thick, defined by the disappearance of chromite rich layers and consists of coarse-grained olivine gabbro with an overlying medium-grained troctolite (Smith and Sutcliffe, 1989).

Cogulu (1993a) reported a great diversity in the chrome spinels in regard to composition, reflecting a complex history of crystallization and reequilibration during post cumulus reactions. Observed textures suggest that the chrome spinels were the first mineral to crystallize, as a result of magma mixing during influxes of new magma (Cogulu, 1993a). Cogulu (1993b) describes two sulphide populations, both consisting of pyrrhotite, chalcopyrite, cubanite, and pentlandite. The first sulphide population forms massive and disseminated ore and is found in the Basal and Lower Zones and the second population is found in the Middle Zone and forms low grade disseminated sulphides (Cogulu, 1993b). The Se/S ratios and sulfur isotopes suggest that assimilation and devolatilization of the sulphidic Rove Formation was the principal source of Cu-Ni mineralization, which was generated from a segregation of a Fe-Ni rich monosulphide solid solution (mss) and later, through fractional crystallization, a Cu rich intermediate solid solution (iss; Cogulu, 1993b; Thomas, 2015).

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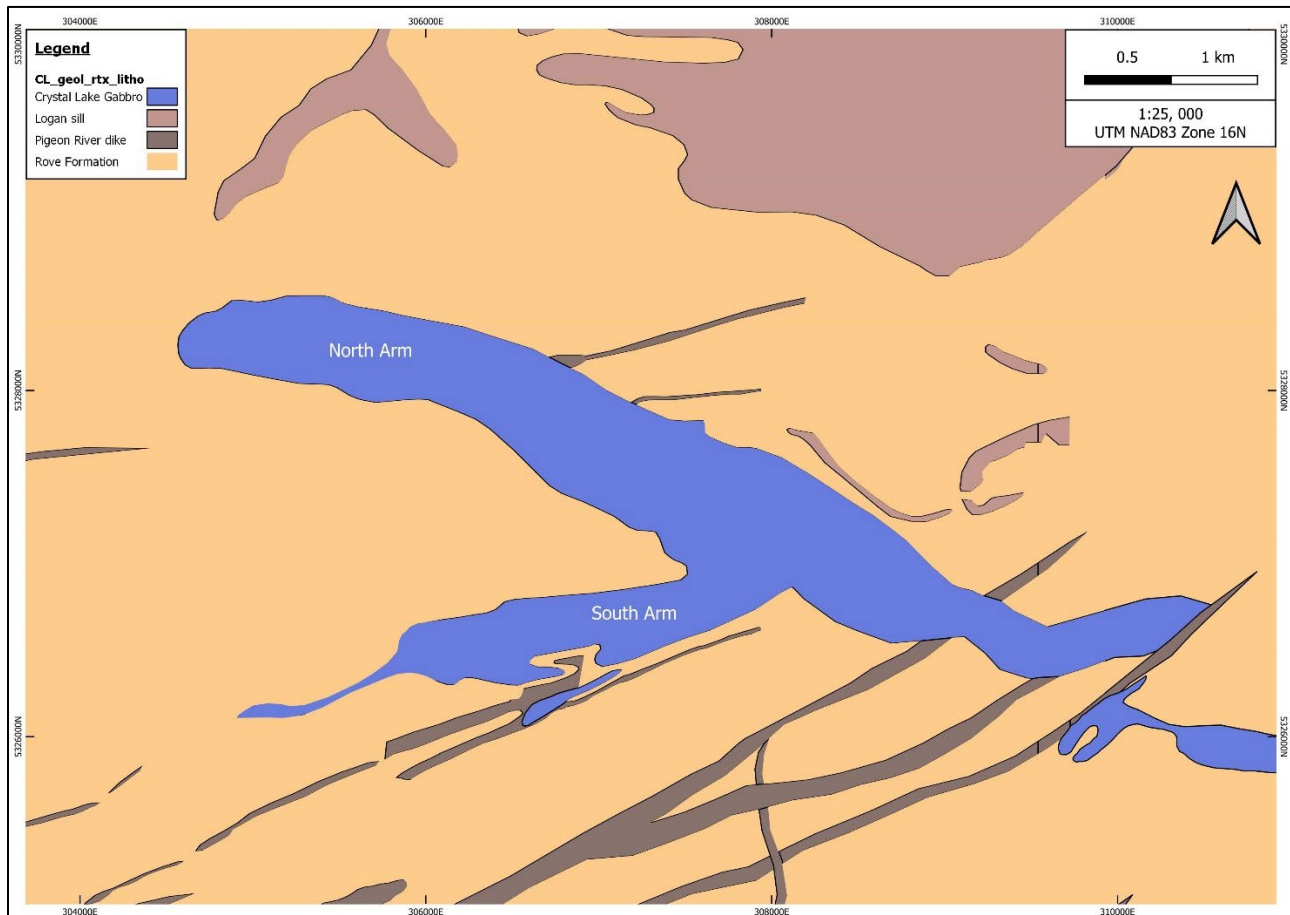


Figure 3: Illustration of the Crystal Lake Gabbro and surrounding geology.

## 5. 2021 PROSPECTING AND SAMPLING PROGRAM

### Summary

Work during the 2021 field program was systematically completed by day trips to the Crystal Lake property between July 27<sup>th</sup>, 2021, and October 26<sup>th</sup>, 2021. A total of 15 days were spent in the field by the team with daily logs of their activities included in Appendix B. The objectives of the program were to map and prospect in the area of the 6 targets identified by Duffey Lake Holdings, which included two EM anomalies (Targets 1, 2), mafic dykes surrounding the Crystal Lake Gabbro (Targets 3, 4, 5) and the historic McCuaig Float boulder field (Target 6). All targets were investigated during fieldwork with the exception of target 5.

A total of 89 geological stations were recorded utilizing the QField application on a Samsung Tab A tablet (Figure 6). A sample database was setup in QField for the geological stations to capture predetermined fields consisting of sample ID, sample medium, lithology, structure, alteration, mineralization, photos and notes. A Garmin 64s handheld GPS was utilized to collect waypoints at each station as well as tracks. All coordinates are recorded in NAD 83 UTM Zone 16N.

A digital printout of the station databases is included in Appendix C. Maps showing station and sample locations, as well as GPS tracks from each traverse are included in Appendix D. A total of 77 grab samples were collected during the program (excluding QA/QC inserts). Sample locations are included in Appendix E.

## **Sampling Procedures & QA/QC**

Rock samples were collected by field personnel utilizing rock hammers and placed into poly bags labelled with a unique station ID and sample number. Field personnel recorded sample information in a digital data collector and recorded GPS coordinates, geological observations, and photographs at each sample location.

During the collection of all grab samples, quartz blank material was inserted at the beginning of a 50 sample batch, then at every 20<sup>th</sup> sample following that. Reference standards were inserted at every 10<sup>th</sup> sample within the batch of 50. Additionally, blank material was also inserted after any significantly mineralized samples.

All grab samples were refined by cutting off as much oxidized outer material as possible with a diamond rock saw before being transported by Bayside Geoscience personnel to the ALS Geochemistry Lab for preparation and analysis in Thunder Bay, Ontario.

Samples were prepared by crushing to 70% less than 2mm, riffle split off of 250g, then pulverize split to better than 85% passing 75 microns (PREP-31). Samples were analyzed using a complete characterization package which combines whole rock analysis, trace elements by fusion, aqua regia digestion for the volatile trace elements, carbon and sulfur by combustion analysis, and several detection limit options for the base metals (CCP-PKG01). Additionally, samples were also assayed for super trace Pt, Pd and Au by fire assay and ICP-MS finish using a 30g nominal sample weight (PGM-MS23L).

Bulk densities were also conducted on the grab samples at the lab by water displacement method (OA-GRA09).

Sample pulps received barcode labels attached to the sample bag at the lab. These pulps were weighed and logged into a global tracking system. At least one out of every 50 samples was selected at random for routine QC tests. The default specification is 85% passing 75 microns (LOG-23).

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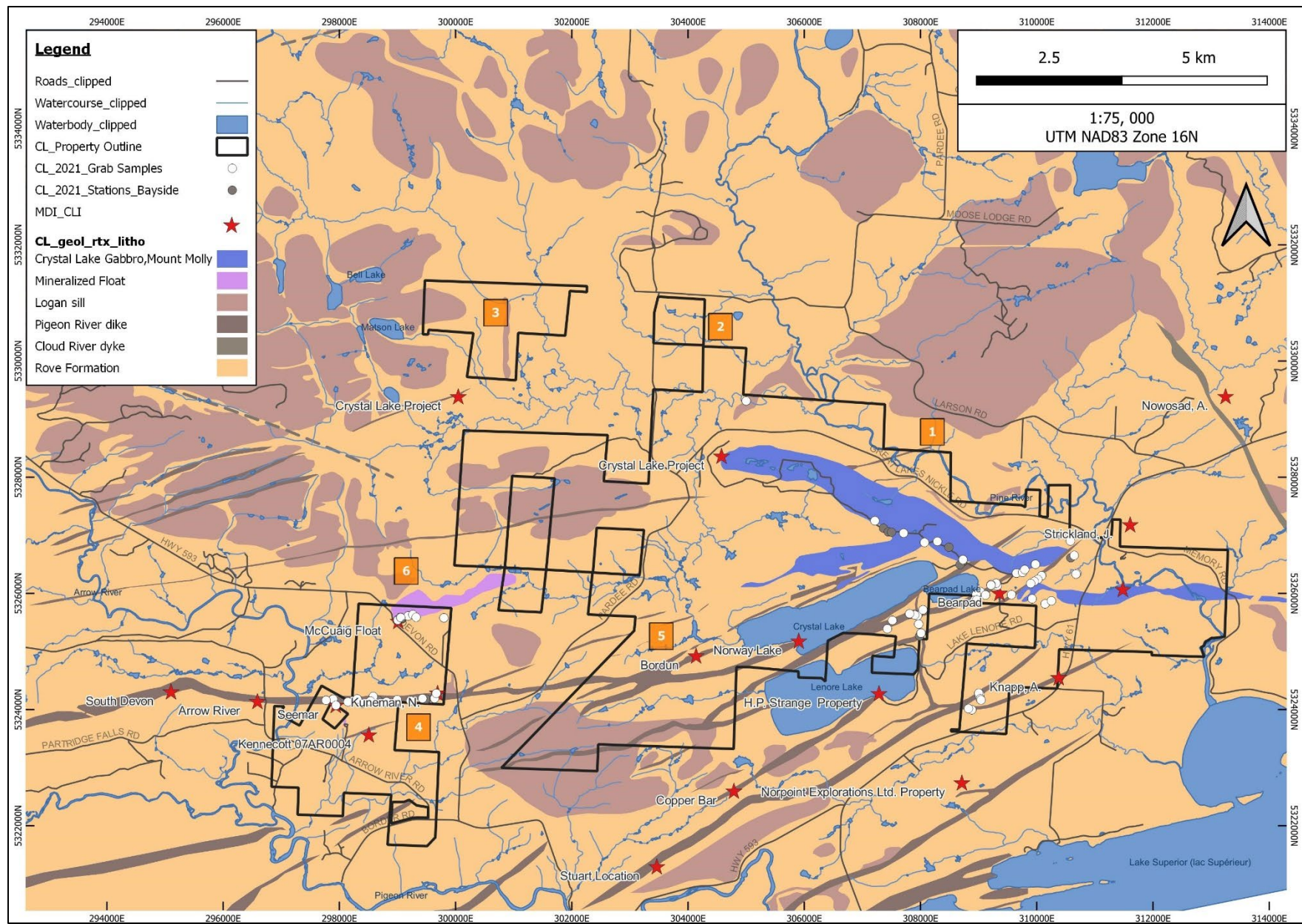


Figure 6: 2021 mapping stations, grab sample locations, exploration targets 1 to 6 (in orange), and historical mineral occurrences underlain by Rio Tinto property scale geology and surrounded by OGS bedrock geology.

## Results

Geochemical results for all 77 samples have been completed and are presented in Appendix E.

A total of 8 samples collected throughout the Crystal Lake Property during the 2021 field work season returned anomalous copper and/or nickel values of greater than 1000 ppm (0.1%).

When investigating targets 1 and 2, no definitive bedrock sources for the electromagnetic anomalies were found at surface. Targets 3, 4, and 5 which were chosen to collect geochemical information from the surrounding mafic dykes, returned mixed success. No outcrops were discovered while investigating target 3. Several exposures were encountered, and samples collected during a traverse across target 4 (Arrow River target area), which included the collection of mineralized sample D579664 proximal to the historic Kuneman Showing. Target 5 was never investigated due to time constraints and a change in priority sequence. Target 6, located in the McCuaig Float boulder field returned the majority of mineralized assays, confirming the presence of Ni, Cu, and local PGE grade within gabbro float.

One notable mineralized grab sample was collected on the east side of the property while investigating the central Bearpad Lake target, south of the Crystal Lake Gabbro junction. Sample D579694, located directly east of Bearpad Lake returned assay values of 0.21% Cu, 0.17% Ni, and low PGE concentrations from gossanous gabbro containing up to 2% disseminated pyrite-lesser-pyrrhotite-chalcopyrite. This large ridge outcrop was previously mapped as a northeast-southwest trending Pigeon River Dyke and hosts two historic trenches with evidence of past sampling from the historic Bearpad Showing.

A second sample containing anomalous assay values was collected from a large, strongly oxidized piece of gabbro float containing approximately 20-25% disseminated pyrrhotite-lesser chalcopyrite located in the southwest portion of the property near the Arrow River target area (target 4), proximal to a previously mapped east-west trending Pigeon River Dyke. Sample D579664 returned values of 0.26% Cu, 0.12% Ni, with negligible PGE concentrations.

The remainder of the notable samples were collected from mineralized taxitic, pegmatitic, and locally leucocratic gabbro float from the historic McCuaig Float boulder field, on the west side of the Crystal Lake Property (target 6). Samples D579667, D579668, D579671, D579672, D579673, and D579674 all returned anomalous values ranging from 0.12-1.46% Cu and 0.03-0.50% Ni with average values of 0.28% Cu and 0.18% Ni. The majority of PGE concentrations throughout these samples were low, with the exception of samples D579667 and D579671 which contained 0.83 g/t Pt, 3.9 g/t Pd, 0.34 g/t Au and 0.22 g/t Pt, 1.24 g/t Pd, 0.12 g/t Au respectively. These mineralized gabbro samples contained varied amounts of sulphide between trace to 7% disseminated-blebby pyrrhotite and chalcopyrite, with elevated Cu-Ni and PGE values directly correlated with greater modal sulphide content.

Table 2: Significant assay results from the 2021 field program

Sample ID	Easting	Northing	Target Area	Cu (%)	Ni (%)	Pt (g/t)	Pd (g/t)	Au (g/t)
D579664	299634	5324199	Arrow River	0.26	0.12	0.02	0.04	0.01
D579694	309215	5326154	Bearpad Lake	0.21	0.17	0.05	0.11	0.04
D579667	299008	5325549	McCuaig Float	1.46	0.50	0.83	3.9	0.34
D579668	299007	5325543	McCuaig Float	0.14	0.09	0.04	0.02	0.03
D579671	299055	5325586	McCuaig Float	0.62	0.25	0.22	1.24	0.12
D579672	299184	5325613	McCuaig Float	0.29	0.08	0.11	0.57	0.05
D579673	299265	5325636	McCuaig Float	0.12	0.03	0.03	0.18	0.02
D579674	299322	5325590	McCuaig Float	0.23	0.11	0.1	0.41	0.04

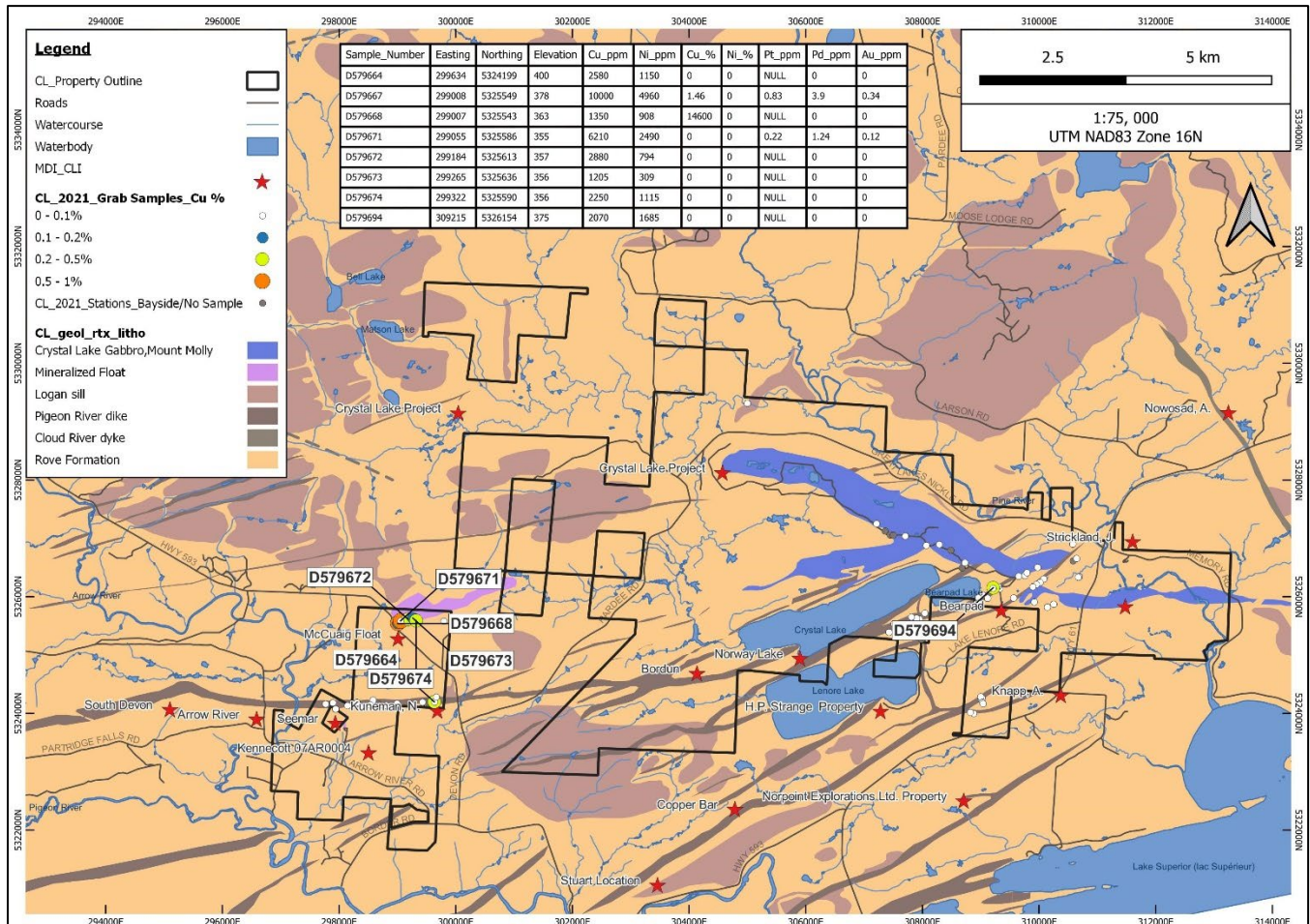


Figure 7: 2021 grab samples and station locations with mineralized samples labelled.



*Figure 8: Grab sample D579664 returned values of 0.26% Cu, 0.12% Ni, with negligible Pt and Pd concentrations from a strongly oxidized piece of gabbro float with 20-25% disseminated pyrrhotite-lesser chalcopyrite located in the southwest portion of the property near the Arrow River target area.*



*Figure 9: Sample D579694 which returned values of 0.21% Cu, 0.17% Ni, and low Pt and Pd concentrations from gossanous gabbro containing up to 2% disseminated pyrite-lesser-pyrrhotite-chalcopyrite collected from the Central Bearpad Lake target area, near the Crystal Lake Gabbro junction.*

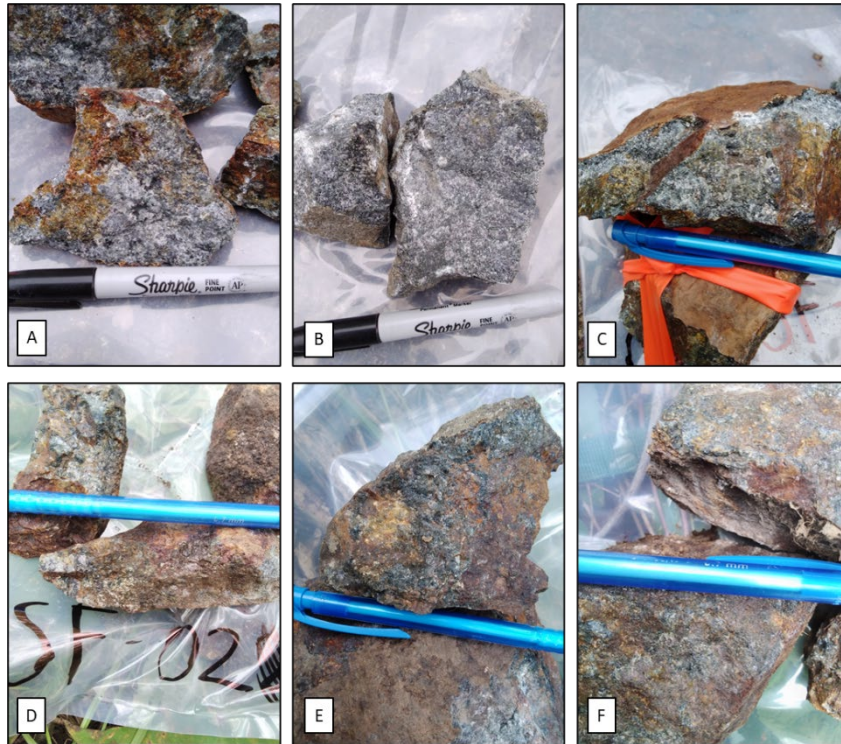


Figure 10: Mineralized gabbro float samples collected from the McCuaig Float boulder field. A) D579667 B) D579668 C) D579671 D) D579672 E) D579673 F) D579674.

## 6. CONCLUSIONS

Assays returned from the 2021 field program on the Crystal Lake Property confirmed the presence of copper, nickel, and local PGE mineralization proximal to 3 historical showings including the Kuneman, Bearpad, and McCuaig Float showings.

No bedrock sources were found to explain the electromagnetic anomalies at Targets 1 and 2 due to a lack of outcrop exposure in those areas. Mapping and geochemical data was successfully collected from mafic dykes in the Arrow River target/target 4 and other additional areas surrounding the Crystal Lake Gabbro, which will aid in the comparison of magmatic sources between the two.

The majority of mineralized samples collected during the field program were from the historic McCuaig Float boulder field/target 6 and were consistent with, and occasional exceeding nickel and copper values noted in past reports of up to 0.23% Cu, 0.18% Ni (Geul, 1970) and 0.44% Cu, 0.11% Ni (McGorgan, 1991). Mineralization in this area is hosted with taxitic, pegmatic, and locally leucocratic gabbro float containing trace to 7% pyrrhotite-chalcopyrite. The bedrock source of mineralization was not discovered during the 2021 mapping program, therefore this area should be the focus of further exploration to delineate the source bedrock based on glacial transport directions and trends.



Geochemical modelling of the various dykes and intrusions that were sampled will be undertaken to confirm current interpretations and better understand the magmatic framework of the Crystal Lake area.

## 7. STATEMENT OF EXPENDITURES

The total value of work completed during the 2021 Crystal Lake Project is summarized in Table 3. Allocations of expenditures by individual claim cell is summarized in Table 4.

Table 3: Total expenditures on the 2021 Crystal Lake Property field program.

Description	Cost
Mapping Team Fixed Cost	\$21,450.00
Additional Bayside Geoscience Consulting Services	\$825.00
Truck Rental	\$100.00
KT-20 Magnetic Susceptibility Rental and Insurance	\$1,772.00
Field QAQC Standards	\$256.30
Sample Shipment	\$149.72
Sample Analysis	\$13,854.00
<b>Total</b>	<b>\$38,407.02</b>

Table 4: Expenditure distribution on Crystal Lake Property claim cells.

Tenure Number	Grab Sample Count	Sample Analysis Costs	Mapping Station Count	Proportion of Stations/Cell	Labour/ Fixed Costs	Total Cost/Cell
118559	2	\$ 359.84	2	2.25%	\$ 551.75	\$911.60
122207	2	\$ 359.84	2	2.25%	\$ 551.75	\$911.60
125472	1	\$ 179.92	1	1.12%	\$ 275.88	\$455.80
126647	6	\$ 1,079.53	8	8.99%	\$ 2,206.89	\$3,286.42
132227	2	\$ 359.84	3	3.37%	\$ 827.63	\$1,187.50
156493	1	\$ 179.92	2	2.25%	\$ 551.75	\$731.70
157720	5	\$ 899.61	5	5.62%	\$ 1,379.38	\$2,279.00
173319	5	\$ 899.61	5	5.62%	\$ 1,379.38	\$2,279.00
177209	1	\$ 179.92	1	1.12%	\$ 275.88	\$455.80
199792	1	\$ 179.92	1	1.12%	\$ 275.88	\$455.80
227913	5	\$ 899.61	5	5.62%	\$ 1,379.38	\$2,279.00
243263	1	\$ 179.92	2	2.25%	\$ 551.75	\$731.70
243264	2	\$ 359.84	2	2.25%	\$ 551.75	\$911.60
253674	2	\$ 359.84	2	2.25%	\$ 551.75	\$911.60
263678	2	\$ 359.84	2	2.25%	\$ 551.75	\$911.60
267876	1	\$ 179.92	1	1.12%	\$ 275.88	\$455.80
278308	2	\$ 359.84	2	2.25%	\$ 551.75	\$911.60
279076	2	\$ 359.84	2	2.25%	\$ 551.75	\$911.60
279077	1	\$ 179.92	2	2.25%	\$ 551.75	\$731.70
292774	2	\$ 359.84	2	2.25%	\$ 551.75	\$911.60
305445	4	\$ 719.69	4	4.49%	\$ 1,103.51	\$1,823.20
306672	5	\$ 899.61	6	6.74%	\$ 1,655.26	\$2,554.90
310307	1	\$ 179.92	1	1.12%	\$ 275.88	\$455.80
326337	1	\$ 179.92	1	1.12%	\$ 275.88	\$455.80
327716	1	\$ 179.92	1	1.12%	\$ 275.88	\$455.80
338725	5	\$ 899.61	5	5.62%	\$ 1,379.38	\$2,279.00
639535	4	\$ 719.69	4	4.49%	\$ 1,103.51	\$1,823.20
PAT-29081	2	\$ 359.84	2	2.25%	\$ 551.75	\$911.60
PAT-29082	5	\$ 899.61	7	7.87%	\$ 1,931.14	\$2,830.70
PAT-17424	3	\$ 539.77	6	6.74%	\$ 1,655.26	\$2,195.00
Total	77	\$ 13,854	89	100%	\$ 24,553	\$38,407.02

## 8. SIGNATURES

I, Steven D. Flank, of the City of Thunder Bay, in the Province of Ontario, do hereby certify that:

1. I am the President and Principal Geoscientist of Bayside Geoscience Inc., a geological consulting company based in Thunder Bay, Ontario.
2. I am a member in good standing with the Association of Professional Geoscientists of Ontario (#2695), residing at 124 Sherwood Drive, Thunder Bay, Ontario, P7B 6L1.
3. I attained an H.BSc. in Geology from Lakehead University in Thunder Bay, Ontario (2011) and an M.Sc. in Mineral Exploration from Laurentian University in Sudbury, Ontario (2017).
4. I have worked as an exploration geologist for over 11 years focusing on project generation and early-stage gold projects including shear zone hosted lode gold and intrusion related disseminated gold deposits and intrusion related Ni-Cu-PGE deposits.
5. I personally conducted and supervised the 2021 Crystal Lake Prospecting and Sampling Program as described in this report.

Dated

December 6, 2022

Thunder Bay, Ontario, Canada



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Steven D. Flank, M.Sc., P.Geo.

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## MINING LEASES

CLAIM_NUM	AREA_HECTARES	OWNER	EXPIRY_DATE
109045	15.02	Rio Tinto Exploration Canada Inc.	2033-Feb-28
108872	15.6	Rio Tinto Exploration Canada Inc.	2032-Jul-31
109049	16.11	Rio Tinto Exploration Canada Inc.	2033-Feb-28
108866	13.97	Rio Tinto Exploration Canada Inc.	2031-Mar-31
108870	7.24	Rio Tinto Exploration Canada Inc.	2032-Sep-30
108871	7.01	Rio Tinto Exploration Canada Inc.	2032-Sep-30
108298	14.72	Rio Tinto Exploration Canada Inc.	2029-Nov-30
108874	18.96	Rio Tinto Exploration Canada Inc.	2031-Mar-31
108867	14.01	Rio Tinto Exploration Canada Inc.	2031-Mar-31
108297	16.33	Rio Tinto Exploration Canada Inc.	2029-Nov-30
109044	14.88	Rio Tinto Exploration Canada Inc.	2033-Feb-28
109048	16.53	Rio Tinto Exploration Canada Inc.	2033-Feb-28
108300	17.64	Rio Tinto Exploration Canada Inc.	2029-Nov-30
108873	23.35	Rio Tinto Exploration Canada Inc.	2032-Jul-31
109046	10.68	Rio Tinto Exploration Canada Inc.	2033-Feb-28
108868	16.83	Rio Tinto Exploration Canada Inc.	2032-Sep-30
108875	12.66	Rio Tinto Exploration Canada Inc.	2031-Mar-31
109047	11.15	Rio Tinto Exploration Canada Inc.	2033-Feb-28
108869	4.79	Rio Tinto Exploration Canada Inc.	2032-Sep-30
108294	66.24	Rio Tinto Exploration Canada Inc.	Unknown
108301	63.76	Rio Tinto Exploration Canada Inc.	2029-Nov-30
108293	64.2	Rio Tinto Exploration Canada Inc.	2029-Nov-30
108295	60.35	Rio Tinto Exploration Canada Inc.	2029-Nov-30
108296	32.1	Rio Tinto Exploration Canada Inc.	2029-Nov-30
107289	272.81	Rio Tinto Exploration Canada Inc.	Unknown
107331	94.42	Rio Tinto Exploration Canada Inc.	Unknown
108299	33.18	Rio Tinto Exploration Canada Inc.	Unknown

## MINING LAND PATENTS

Tenure_Num	Area_Hectares	Owner
PAT-16406	32.38	Rio Tinto Exploration Canada Inc.
PAT-17417	64.75	Rio Tinto Exploration Canada Inc.
PAT-17418	64.75	Rio Tinto Exploration Canada Inc.
PAT-17420	64.75	Rio Tinto Exploration Canada Inc.
PAT-17421	64.75	Rio Tinto Exploration Canada Inc.
PAT-17422	64.75	Rio Tinto Exploration Canada Inc.
PAT-17423	64.75	Rio Tinto Exploration Canada Inc.
PAT-17424	127.07	Rio Tinto Exploration Canada Inc.
PAT-17425	32.38	Rio Tinto Exploration Canada Inc.
PAT-17426	32.38	Rio Tinto Exploration Canada Inc.
PAT-17427	64.75	Rio Tinto Exploration Canada Inc.
PAT-17428	32.78	Rio Tinto Exploration Canada Inc.
PAT-17429	64.75	Rio Tinto Exploration Canada Inc.
PAT-17430	64.75	Rio Tinto Exploration Canada Inc.
PAT-17431	64.75	Rio Tinto Exploration Canada Inc.
PAT-17432	32.38	Rio Tinto Exploration Canada Inc.
PAT-17433	64.75	Rio Tinto Exploration Canada Inc.
PAT-29081	16.19	Rio Tinto Exploration Canada Inc.
PAT-29082	16.19	Rio Tinto Exploration Canada Inc.
PAT-29083	16.19	Rio Tinto Exploration Canada Inc.
PAT-29084	16.19	Rio Tinto Exploration Canada Inc.
PAT-29085	16.19	Rio Tinto Exploration Canada Inc.
PAT-50924	64.75	Rio Tinto Exploration Canada Inc.
PAT-50925	1.92	Rio Tinto Exploration Canada Inc.

## APPENDIX B: DAILY WORK LOGS

Date	Workers	Details
July 26, 2021	SM	Checked all access routes and asses property areas for access.
July 27, 2021	SM	Mapping at EM anomaly 1 target area .Traversed north of the Crystal Lake Gabbro north arm, north of GLN Road to the Pine River. No outcrops encountered.
July 28, 2021	SF	Mapping at EM anomaly 2 target area. Traversed north of the Crystal Lake Gabbro north arm. Encountered a homogeneous, diabase/gabbro. No mineralization.
July 30, 2021	SF	Mapping at Arrow River Target. Encountered several gabbroic outcrops with notable sulphide mineralization at stations CL-SF-014 and 015. Attempted to locate the Kuneman showing but was unsuccessful.
August 6, 2021	SF/WB	Mapping at McCuaig Float area with W. Bonner. Several mineralized gabbro float samples collected from stations CL-SF-017, 018, 020, 024, 025, 026.
August 9, 2021	SF/WB	Mapping at Arrow River Target with W. Bonner. Continued finishing the same traverse trend left from July 30th. Encouctered all gabbroic outcrops. Located Seemar Cu-Ni mineralized shoing at stations CL-SF-035 and 036.
August 10, 2021	SF/WB	Mapping at NE Bearpad Lake Target with W. Bonner. Encountered mainly gabbro outcrops. Trace pyrrhotite observed. No GPS track recorded.
August 11, 2021	SF	Mapping along access trail through Bearpad area on Wronoski property. Encountered one gabbro and one sedimentary/Rove outcrop. No mineralization noted.
August 12, 2021	SF/WB	Mapping at central Bearpad Lake Target with W. Bonner. Encountered all gabbro outcrops. Noteable sulphide mineralization at stations CL-SF-045 and 046.
August 13, 2021	SF/WB	Geotour of Crystal Lake with W. Bonner. Traversed the "junction" portion of the CLG. Encountered all gabbro-local anorthositic outcrops. 5-10% oxide/possible chromite noted in station CL-SF-053. No GPS track recorded.
August 19, 2021	SF	Mapping at Bearpad Lake Target. All gabbro outcrops encountered. No notable mineralization.
August 20, 2021	SF	Mapping at Finley Target. Encountered all gabbro outcrops. No notable mineralization.
August 26, 2021	SF	Traversed between Lenore Lake and HWY 61. All gabbro outcrops encountered. Notable sulphide mineralization at station CL-SF-073.
August 27, 2021	SF	Traversed in southwest corner of property. No outcrops recorded.
October 26, 2021	SF	Mapping West Bearpad Lake area from Lake Lenore Rd. Encountered all gabbro outcrops. No notable mineralizaiton.

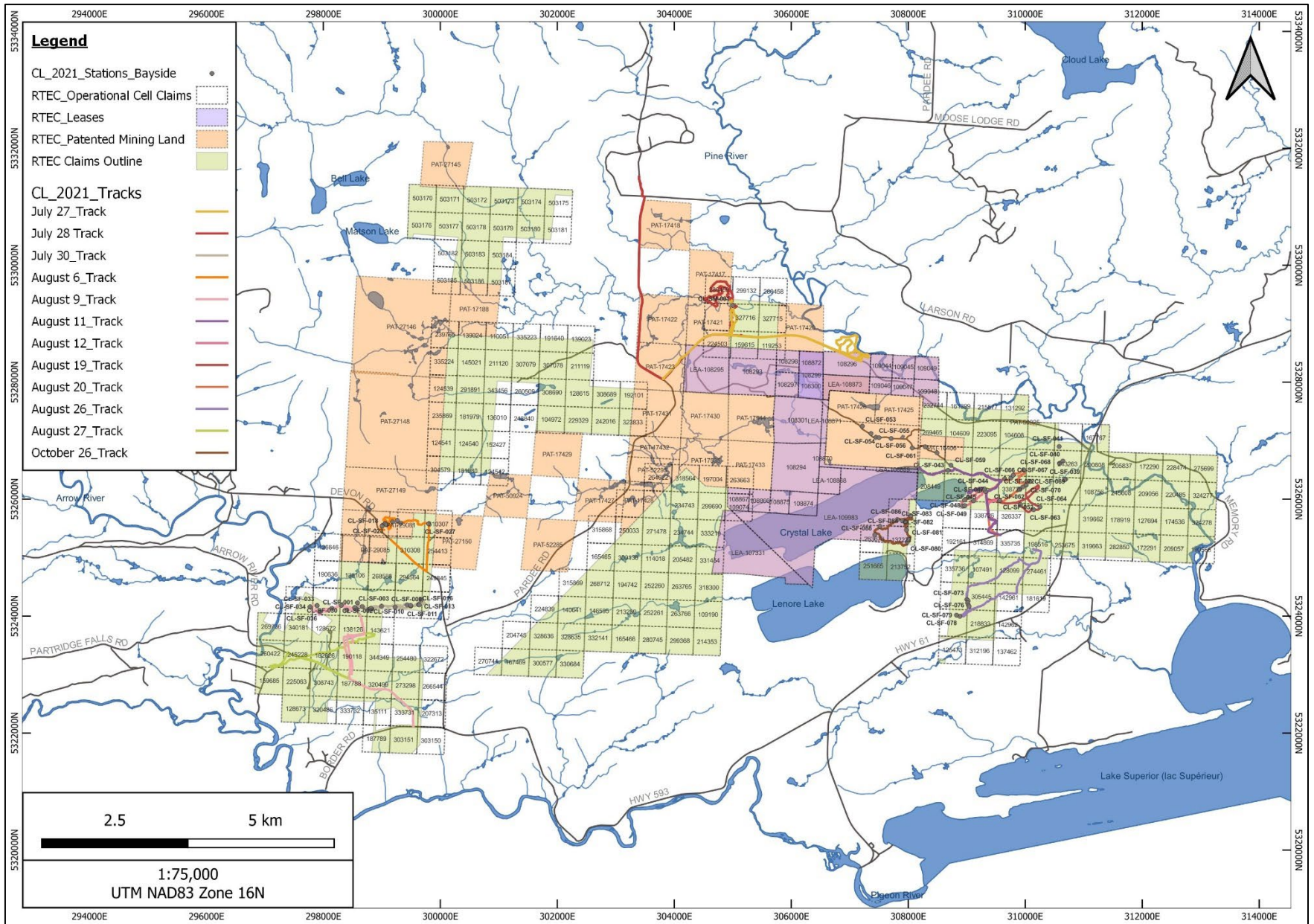
APPENDIX C: STATION DESCRIPTIONS

Station ID	Sample ID	Easting	Northing	elevation	Date	geologist	kt 20 conductivity avg	kt 20 magus avg	observed extent	exposure type	rock type	intrusive lith	Texture modifier	Location Modifier	total sulfide %	sulfide texture	sulfide mineral 1	sulfide mineral 2	sulfide mineral 3
CL-SM-001	D579652	305001	5329315	277	7/27/2021	S. Malecki	0.96	2.8	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none				
CL-SF-001	D579653	298564	5324125	437	7/30/2021	S. Flank	0	6.73	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none				
CL-SF-002	D579654	298584	5324227	427	7/30/2021	S. Flank	0	3.35	500-5000m2 (portion of football field)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none				
CL-SF-003	D579655	298666	5324166	440	7/30/2021	S. Flank	0	7.8	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none				
CL-SF-004	D579656	298776	5324115	439	7/30/2021	S. Flank	0	4.47	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none				
CL-SF-005	D579656	298828	5324123	427	7/30/2021	S. Flank	0	3.24	50-500m2 (portion of endzone)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none				
CL-SF-006	D579657	298823	5324128	429	7/30/2021	S. Flank	0	2.8	50-500m2 (portion of endzone)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none				
CL-SF-008	D579658	298995	5324170	415	7/30/2021	S. Flank	0	9.19	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none	2			
CL-SF-009	D579659	299227	5324155	410	7/30/2021	S. Flank	0	4.02	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none				
CL-SF-010	D579661	299431	5324192	409	7/30/2021	S. Flank	0	3	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none				
CL-SF-007	D579662	298813	5324136	440	7/30/2021	S. Flank	0	7.2	50-500m2 (portion of endzone)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none				
CL-SF-011		299495	5324172	408	7/30/2021	S. Flank	1.27	0.945	5-50m2 (hotel room)	outcrop	SEDIMENTARY			West Arrow Dyke	trace - 1	disseminated	pyrite		
CL-SF-012		299493	5324185	416	7/30/2021	S. Flank	0	4.43	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none				
CL-SF-014	D579663	299629	5324197	406	7/30/2021	S. Flank	0	2.72	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	2	disseminated	pyrrhotite	chalcocopyrite	
CL-SF-015	D579664	299634	5324199	400	7/30/2021	S. Flank	0	39.7	5-50m2 (hotel room)	float	INTRUSIVE	gabbro		West Arrow Dyke	20 - 30	disseminated	pyrrhotite	chalcocopyrite	
CL-SF-016	D579665	299640	5324193	415	7/30/2021	S. Flank	0	1.27	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none				
CL-SF-013	D579666	299669	5324280	393	7/30/2021	S. Flank	0	7.76	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none				
CL-SF-017	D579667	299008	5325549	378	8/6/2021	S. Flank	0	17.4	5-50m2 (hotel room)	float	INTRUSIVE	gabbro	PTG	McCuaig Float	7	blebby	chalcocopyrite	pyrrhotite	pentlandite
CL-SF-018	D579668	299007	5325543	363	8/6/2021	S. Flank	0	5.08	5-50m2 (hotel room)	float	INTRUSIVE	gabbro	PTG	McCuaig Float	trace - 1	disseminated	chalcocopyrite	pyrrhotite	
CL-SF-019	D579669	299007	5325542	361	8/6/2021	S. Flank	0	8.69	5-50m2 (hotel room)	float	INTRUSIVE	gabbro	PTG	McCuaig Float	none				
CL-SF-020	D579671	299055	5325586	355	8/6/2021	S. Flank	0	8.3	1-5m2 (hot tub)	float	INTRUSIVE	gabbro	PTG	McCuaig Float	10-Jan	blebby	pyrrhotite	chalcocopyrite	
CL-SF-024	D579672	299184	5325613	357	8/6/2021	S. Flank	0	5.56	< 1m2 (stove)	float	INTRUSIVE	gabbro	PTG	McCuaig Float	3	blebby	chalcocopyrite	pyrrhotite	
CL-SF-022	299079	5325563	354	8/6/2021	S. Flank	0	0	< 1m2 (stove)	float	INTRUSIVE	gabbro	PTG	McCuaig Float	trace - 3	blebby				
CL-SF-023	299077	5325570	356	8/6/2021	S. Flank	0	0	< 1m2 (stove)	float	INTRUSIVE	gabbro	PTG	McCuaig Float	trace - 1	blebby				
CL-SF-025	D579673	299265	5325636	356	8/6/2021	S. Flank	0	11.8	< 1m2 (stove)	float	INTRUSIVE	gabbro		McCuaig Float	trace - 1	disseminated	chalcocopyrite	pyrrhotite	
CL-SF-026	D579674	299322	5325590	356	8/6/2021	S. Flank	0	0	< 1m2 (stove)	float	INTRUSIVE	gabbro		McCuaig Float	none				
CL-SF-027	D579675	299800	5325580	367	8/6/2021	S. Flank	0	40.1	< 1m2 (stove)	float	INTRUSIVE	gabbro		McCuaig Float	none				
CL-SF-028	D579676	298536	5324147	412	8/9/2021	S. Flank	0	31	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none				
CL-SF-029	D579677	298402	5324104	420	8/9/2021	S. Flank	0	13.2	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none				
CL-SF-030	D579678	298309	5324186	432	8/9/2021	S. Flank	0	33.2	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none				
CL-SF-031	D579679	298148	5324134	443	8/9/2021	S. Flank	0	22	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none				
CL-SF-032	D579681	297893	5324183	435	8/9/2021	S. Flank	0	56	500-5000m2 (portion of football field)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none				
CL-SF-033	D579682	297895	5324181	438	8/9/2021	S. Flank	0	44.6	50-500m2 (portion of endzone)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none				
CL-SF-034	D579683	297772	5324161	419	8/9/2021	S. Flank	0	34.3	500-5000m2 (portion of football field)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	none				
CL-SF-035	D579684	297942	5324075	422	8/9/2021	S. Flank	0.39	1.79	1-5m2 (hot tub)	outcrop	INTRUSIVE	gabbro		West Arrow Dyke	2	disseminated	pyrrhotite		
CL-SF-036	D579685	297942	5324075	422	8/9/2021	S. Flank	0	0.79	1-5m2 (hot tub)	outcrop	INTRUSIVE	gabbro	Anorthositic	West Arrow Dyke	none				
CL-SF-038	D579686	310692	5326343	256	8/10/2021	S. Flank	0	14.8	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		Bearpad	trace - 1	disseminated	pyrrhotite		
CL-SF-037	310587	5326614	286	8/10/2021	S. Flank	0	0.7	1-5m2 (hot tub)	outcrop	SEDIMENTARY				Bearpad	none				
CL-SF-039	D579687	310676	5326334	260	8/10/2021	S. Flank	0	26.2	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		Bearpad	trace - 1	disseminated	pyrrhotite		
CL-SF-040	D579688	310646	5326655	284	8/10/2021	S. Flank	0	0	50-500m2 (portion of endzone)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-041	D579689	310581	5326902	308	8/10/2021	S. Flank	0	0	50-500m2 (portion of endzone)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-021	D579691	299058	5325584	356	8/6/2021	S. Flank	0	7.92	1-5m2 (hot tub)	float	INTRUSIVE	gabbro		McCuaig Float	none				
CL-SF-042	D579692	309322	5326132	373	8/11/2021	S. Flank	0	4.25	1-5m2 (hot tub)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-043	308681	5326494	407	8/11/2021	S. Flank	0	0.56	5-50m2 (hotel room)	outcrop	SEDIMENTARY				Bearpad	none				
CL-SF-044	D579693	309302	5326176	375	8/12/2021	S. Flank	0	24	1-5m2 (hot tub)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-045	D579694	309215	5326154	375	8/12/2021	S. Flank	0	2.33	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		Bearpad	2	disseminated	pyrite	pyrrhotite	chalcocopyrite
CL-SF-046	D579695	309214	5326143	370	8/12/2021	S. Flank	0	1.36	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		Bearpad	4	disseminated	pyrite	pyrrhotite	chalcocopyrite
CL-SF-047	D579696	309033	5326031	402	8/12/2021	S. Flank	0	14.3	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-048	D579697	308961	5325985	408	8/12/2021	S. Flank	0	15.4	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		Bearpad	none				

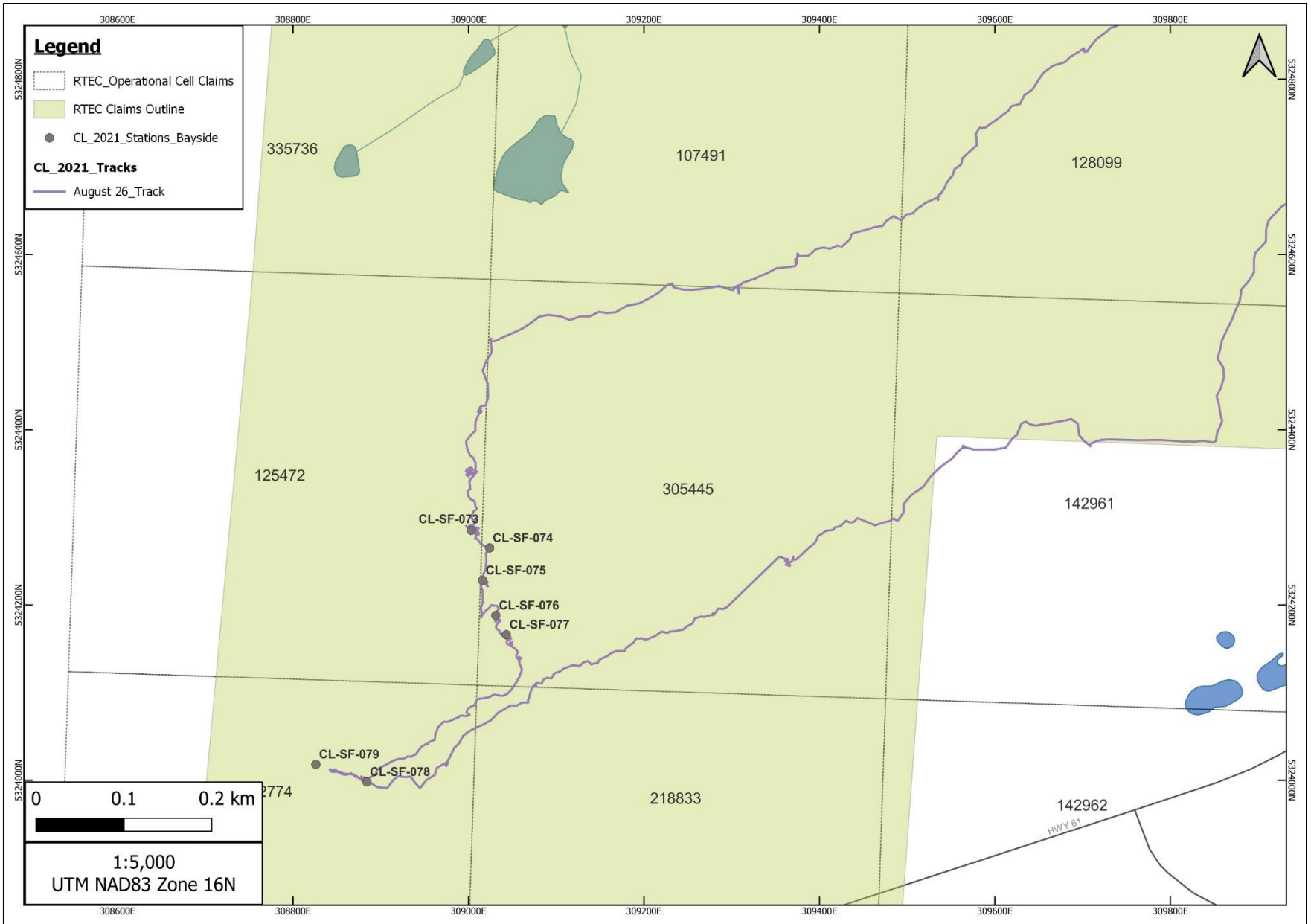
Station ID	Sample ID	Easting	Northing	elevation	Date	geologist	kt_20	conductivity_avg	kt_20_magnus_avg	observed_extent	exposure_type	rock_type	intrusive_lth	Texture_modifier	Location_Modifier	total_sulfide_%	sulfide_texture	sulfide_mineral_1	sulfide_mineral_2	sulfide_mineral_3
CL-SF-049	D579698	308934	5325885	403	8/12/2021	S. Flank		0	14.7	1-5m2 (hot tub)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-050	D579699	308969	5325890	395	8/12/2021	S. Flank		0	5.67	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		Bearpad	trace - 1	disseminated	pyrite		
CL-SF-051	D579701	309120	5325973	392	8/12/2021	S. Flank		0	10.4	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		Bearpad	trace - 1	disseminated	pyrite	chalcopyrite	
CL-SF-052	D579702	309567	5325978	370	8/12/2021	S. Flank		0	24.4	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-053	D579703	307216	5327251	453	8/13/2021	S. Flank		0	22.1	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro	PTG	Crystal Lake	none				
CL-SF-054		307364	5327124	470	8/13/2021	S. Flank		0	10.6	< 1m2 (stove)	outcrop	INTRUSIVE	gabbro		Crystal Lake	none				
CL-SF-055		307447	5327060	472	8/13/2021	S. Flank		0	6.79	< 1m2 (stove)	outcrop	INTRUSIVE	gabbro		Crystal Lake	none				
CL-SF-056		307502	5327054	471	8/13/2021	S. Flank		0	7.36	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro	Anorthositic	Crystal Lake	none				
CL-SF-057	D579704	307710	5327039	455	8/13/2021	S. Flank		0	7.92	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro	Layered	Crystal Lake	none				
CL-SF-058	D579705	308292	5326896	442	8/13/2021	S. Flank		0	1.12	1-5m2 (hot tub)	outcrop	INTRUSIVE	gabbro	Layered	Crystal Lake	none				
CL-SF-059	D579706	308732	5326582	444	8/13/2021	S. Flank		0	1	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-060		308490	5326796	450	8/13/2021	S. Flank		0	17.7	1-5m2 (hot tub)	outcrop	INTRUSIVE	gabbro		Crystal Lake	none				
CL-SF-061	D579707	308070	5326878	439	8/13/2021	S. Flank		0	22.7	1-5m2 (hot tub)	outcrop	INTRUSIVE	gabbro		Crystal Lake	none				
CL-SF-062	D579708	309922	5325909	323	8/19/2021	S. Flank		0	31.6	1-5m2 (hot tub)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-063	D579709	310145	5325821	302	8/19/2021	S. Flank		0	23.4	50-500m2 (portion of endzone)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-064	D579711	310254	5325872	289	8/19/2021	S. Flank		0	11.5	50-500m2 (portion of endzone)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-065	D579712	309652	5326350	405	8/20/2021	S. Flank		0	0.92	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro	Varitextured	Bearpad	none				
CL-SF-066	D579713	309757	5326363	433	8/20/2021	S. Flank		0	11.3	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-067	D579714	309794	5326411	441	8/20/2021	S. Flank		0	17.7	1-5m2 (hot tub)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-068	D579715	309979	5326502	400	8/20/2021	S. Flank		0	12.8	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		Bearpad	trace - 1	disseminated	pyrrhotite	pyrite	
CL-SF-069	D579716	310084	5326304	378	8/20/2021	S. Flank		0	7.57	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro	Coarse	Bearpad	none				
CL-SF-070	D579717	310020	5326244	381	8/20/2021	S. Flank		0	8.49	1-5m2 (hot tub)	outcrop	INTRUSIVE	gabbro	Coarse	Bearpad	none				
CL-SF-071	D579718	309959	5326209	392	8/20/2021	S. Flank		0	17.3	50-500m2 (portion of endzone)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-072	D579719	309897	5326171	411	8/20/2021	S. Flank		0	5.26	50-500m2 (portion of endzone)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-075	D579721	309016	5324228	409	8/26/2021	S. Flank		0	6.8	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		Finley	none				
CL-SF-074	D579722	309024	5324265	413	8/26/2021	S. Flank		0	7.98	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		Finley	none				
CL-SF-073	D579723	309003	5324285	398	8/26/2021	S. Flank		0	0.7	1-5m2 (hot tub)	outcrop	INTRUSIVE	gabbro	Varitextured	Finley	2	disseminated	pyrrhotite	pyrite	
CL-SF-076	D579724	309031	5324188	390	8/26/2021	S. Flank		0	0.8	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro	Anorthositic	Finley	none				
CL-SF-077	D579725	309043	5324166	374	8/26/2021	S. Flank		0	37.4	1-5m2 (hot tub)	outcrop	INTRUSIVE	gabbro		Finley	none				
CL-SF-078	D579726	308884	5323998	372	8/26/2021	S. Flank		0	19.3	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro	Porphyritic	Finley	none				
CL-SF-079	D579727	308826	5324018	388	8/26/2021	S. Flank		0	24.7	500-5000m2 (portion of football field)	outcrop	INTRUSIVE	gabbro	Porphyritic	Finley	none				
CL-SF-080		307985	5325268	407	10/26/2021	S. Flank				< 1m2 (stove)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-081	K0005010	308010	5325318	423	10/26/2021	S. Flank		0	3.44	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-082	K0005002	307970	5325473	458	10/26/2021	S. Flank		0	9.52	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-083	K0005003	307950	5325618	451	10/26/2021	S. Flank		0	10.04	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-084	K0005004	307903	5325630	442	10/26/2021	S. Flank		0	5.26	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-085	K0005005	308043	5325719	428	10/26/2021	S. Flank		0	8.76	5-50m2 (hotel room)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-086	K0005006	307814	5325652	449	10/26/2021	S. Flank		0	5.34	1-5m2 (hot tub)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-087	K0005007	307517	5325536	426	10/26/2021	S. Flank		0	2.78	1-5m2 (hot tub)	outcrop	INTRUSIVE	gabbro		Bearpad	none				
CL-SF-088	K0005008	307430	5325391	441	10/26/2021	S. Flank		0	8.66	50-500m2 (portion of endzone)	outcrop	INTRUSIVE	gabbro		Bearpad	none				

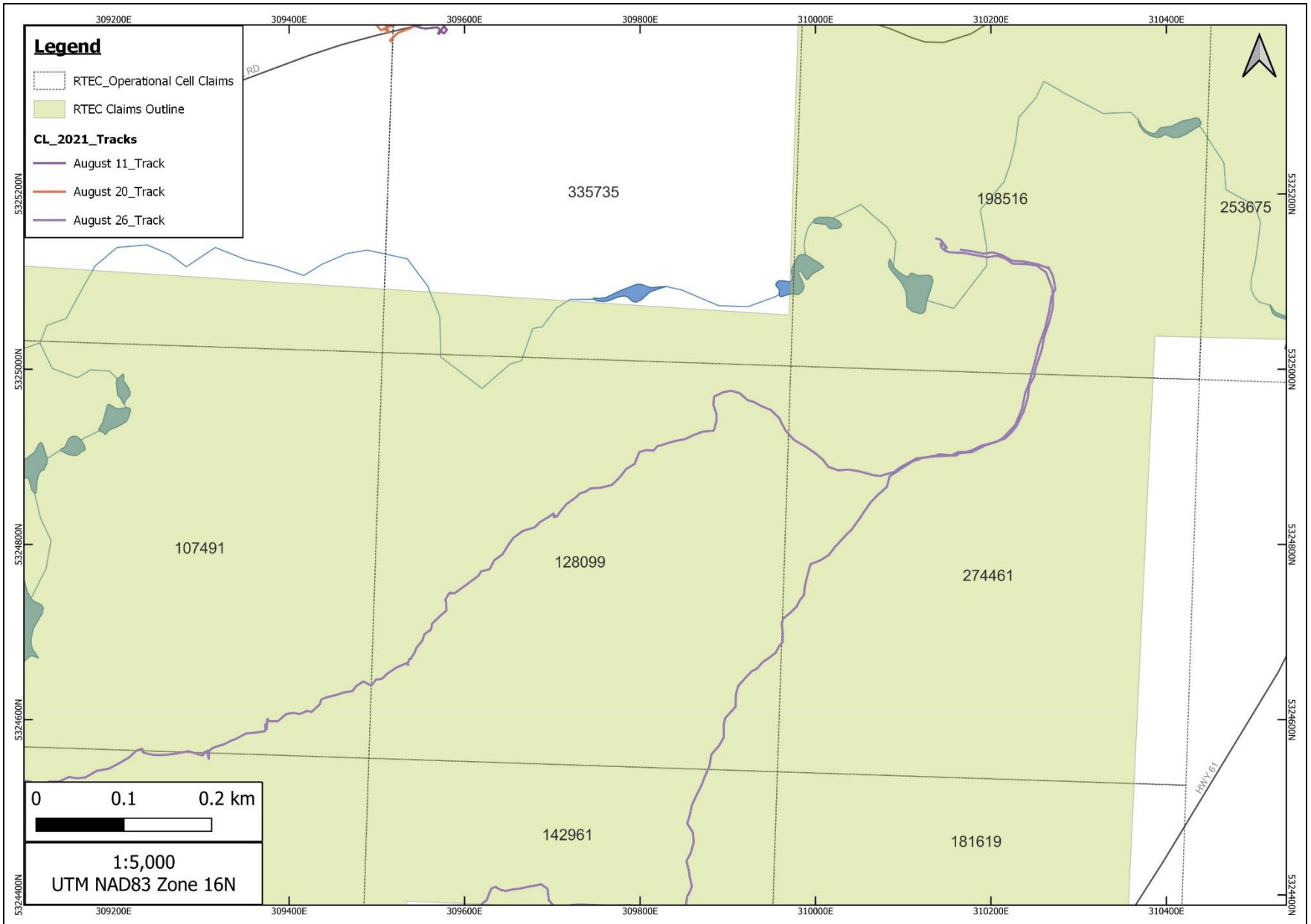
Station ID	Sample ID	Easting	Northing	elevation	carbon_content	alteration_intensity	metamorphic_intensity	vein_intensity	breccia_intensity	sample_description	photo_ID
CL-SF-049	D579698	308934	5325885	403	absent	absent	absent	absent	absent	Low lying outcrop on west end of traverse. M.g., subophitic olivine gabbro. 45% cpx, 45% plagioclase, 10% olivine.	CL-SF-049
CL-SF-050	D579699	308969	5325890	395	absent	absent	absent	absent	absent	South facing ridge. 15-20m tall cliff. Sampled rusty zone near bottom of outcrop exposure. Rust appears to trend subhorizontally. Trace py/po observed.	CL-SF-050
CL-SF-051	D579701	309120	5325973	392	absent	absent	absent	absent	absent	Rusty zone on south facing ridge of gabbro. Gossanous, with silicates altered to amphibole (green, f.g. replacement groundmass), 2% sulfide is strongly weathered. Likely cpy/po. Noted ~1cm <sup>2</sup> 'blowouts' of c.g. silicate minerals. Pods. Associated spatially with sulfide mineralization.	No Photo
CL-SF-052	D579702	309567	5325978	370	absent	absent	absent	absent	absent	Ridge o/c on top high. Cpx/Plagioclase cumulate. 60% euhedral cpx, 40% euhedral plagioclase. Some areas on O/C show c.g textured 'blowouts' so overall the outcrop is slightly heterogeneous.	CL-SF-052
CL-SF-053	D579703	307216	5327251	453	absent	absent	absent	absent	absent	Pegmatitic, taxitic gabbro on side of trail. 10m long O/C. Euhedral plag laths are up to 3cm long with euhedral, prismatic cpx also up to 3cm long. 5-10% oxide may be chromite?	CL-SF-053
CL-SF-054	307364	5327124	470	absent	absent	absent	absent	absent	absent	Small trailside outcrop of c.g. olivine gabbro.	CL-SF-054
CL-SF-055	307447	5327060	472	absent	absent	absent	absent	absent	absent	Small trailside outcrop of c.g. olivine gabbro. Slight variations in grainsize observed. Rock is deeply weathered.	CL-SF-055
CL-SF-056	307502	5327054	471	absent	absent	absent	absent	absent	absent	C.g. euhedral anorthositic gabbro on roadside o/c. Green chloritic veins cut rock and alter cpx where in contact.	CL-SF-056
CL-SF-057	D579704	307710	5327039	455	absent	absent	absent	absent	absent	Trailside outcrop is 5m tall x 10m long. Layered, anorthositic and gabbro. Magmatic foliation observed in plag and cpx orientation. This foliation parallels internal layering contacts with a NE dip. Anorthositic layer is 10 cm wide, and above this a c.g. oikocrystic gabbro is observed. Sample taken from gabbro.	CL-SF-057
CL-SF-058	D579705	308292	5326896	442	absent	absent	absent	absent	absent	Low lying outcrop on trail. M.g. cpx + plagioclase cumulate (60/40%). Trace biotite. Further up trail rock type switches to anorthositic. Likely still in layered sequence.	CL-SF-058
CL-SF-059	D579706	308732	5326582	444	absent	absent	absent	absent	absent	Ridge outcrop along side trail. Subophitic m.g. gabbro. Likely Pigeon River dyke.	CL-SF-059
CL-SF-060	308490	5326796	450	absent	absent	absent	absent	absent	absent	Trailside outcrop of c.g. leucocratic gabbro. Possible CLG. Not possible to sample here.	CL-SF-060
CL-SF-061	D579707	308070	5326878	439	absent	absent	absent	absent	absent	Sampled low lying outcrop of weathered gabbro on trail. Pegmatitic. Not possible to collect unweathered sample.	CL-SF-061
CL-SF-062	D579708	309922	5325909	323	absent	absent	absent	absent	absent	Low lying outcrop, mostly covered with blown down trees. Plag + cpx cumulate, both phases are euhedral, m.g. with 55% cpx, 45% plag. Plagioclase looks weakly sericitized. Some grainsize variation noted but not vari-textured.	CL-SF-062
CL-SF-063	D579709	310145	5325821	302	absent	absent	absent	absent	absent	Low lying outcrop ridge with m.g. optitic gabbro. Oikocrysts of cpx give rock a 'leopard' texture. Cpx oikocrysts are 1cm wide with lath shaped plagioclase enclosed. 50/50 plag/cpx.	CL-SF-063
CL-SF-064	D579711	310254	5325872	289	absent	absent	absent	absent	absent	Followed a series of ridge outcrops from 063 to this station of similar optitic gabbro. 50/50 plag cpx. Same as above.	CL-SF-064
CL-SF-065	D579712	309652	5326350	405	absent	absent	absent	absent	absent	10m long outcrop of pink, potassic? gabbro. Looks like either k feldspar or hematized plagioclase. Texture and alteration similar to 'early rift' type ultramafic intrusions. Weakly varitextured with diffuse clasts of similar gabbro within main gabbroic matrix. Rare quartz 'blebs' up to 3cm long. Minor carbonate/chlorite blebs, and in places these are dissolved leaving voids.	CL-SF-065
CL-SF-066	D579713	309757	5326363	433	absent	absent	absent	absent	absent	Outcrop on top of hill is typical Pigeon River type subophitic gabbro. CPX oikocrysts are subhedral/anhedral with tabular, subhedral plagioclase. 55% plag, 35% cpx, 10% olivine.	CL-SF-066
CL-SF-067	D579714	309794	5326411	441	absent	absent	absent	absent	absent	North side of topo high. 5m <sup>2</sup> outcrop ridge of subophitic gabbro. 50/50 cpx/plag.	CL-SF-067
CL-SF-068	D579715	309979	5326502	400	absent	absent	absent	absent	absent	Cliff top outcrop on north side of hill. Got as close to historic Cu mineralized samples as possible but large cliff prevented descent. Subophitic gabbro with 50/50 plag/cpx. Sampled area of crumbly, weathered gabbro with trace po/py. Not possible to collect a 'fresh' sample.	CL-SF-068
CL-SF-069	D579716	310084	5326304	378	absent	absent	absent	absent	absent	Cliff top outcrop facing SE. M.g. c.g. leucocratic gabbro with 60% plag, 40% cpx. Both plag and cpx are oikocrystic, with smaller cpx/plag grains enclosed by either phase.	CL-SF-069
CL-SF-070	D579717	310020	5326244	381	absent	absent	absent	absent	absent	Hillside outcrop. Very hackly textured outcrop and deeply weathered. Not possible to get unweathered sample. C.g. plag/cpx cumulate. Heterogeneous. Possibly CLG type? 55% cpx, 45% plag.	CL-SF-070
CL-SF-071	D579718	309959	5326209	392	absent	absent	absent	absent	absent	High standing going on large o/c ridge. Subophitic gabbro that looks more akin to Pigeon River diabase. 50/50 cpx/plag.	CL-SF-071
CL-SF-072	D579719	309897	5326171	411	absent	absent	absent	absent	absent	Flat outcrop on top of top ridge. >100m <sup>2</sup> . Subophitic gabbro with 50/50 plag/cpx. Likely Pigeon River type.	CL-SF-072
CL-SF-075	D579721	309016	5324228	409	absent	absent	absent	absent	absent	Small outcrop of gabbro near SE edge of ridge. M.g., equigranular gabbro. Plag/cpx cumulate. Rock crumbles easily and weathers deeply. 60% plagioclase, 35% cpx, 5% olivine.	CL-SF-075
CL-SF-074	D579722	309024	5324265	413	absent	absent	absent	absent	absent	Very top of Pigeon River dyke ridge. M.g. subophitic gabbro with 55%plag, 40% cpx, 5% olivine.	CL-SF-074
CL-SF-073	D579723	309003	5324285	398	absent	absent	absent	absent	absent	North side of Pigeon River dyke near top of mountain. Contact between dyke and Rove Fm. Mudstone. Gabbro is a mix of f.g. chilled gabbro with c.g. leucocratic pods and pyrrhotite mineralization. 2-3% po-py is disseminated and blebby.	CL-SF-073
CL-SF-076	D579724	309031	5324188	390	absent	absent	absent	absent	absent	Small outcrop located during descent down ridge face. Crumbly, coarse grained, leucocratic gabbro. Anorthositic patches surrounded by a m.g. groundmass. Coarse cpx form glomeroporphyritic texture.. Up to 2cm long. Weak sericite alteration on plagioclase.	CL-SF-076
CL-SF-077	D579725	309043	5324166	374	absent	absent	absent	absent	absent	Outcrop located on steep face of mntn. M.g. euhedral plag (55%)+cpx(45%) cumulate.	CL-SF-077
CL-SF-078	D579726	308884	5323998	372	absent	absent	absent	absent	absent	Ridge outcrop of second dyke, located about 20m lower in elevation than Pigeon River dyke. Distinct plagioclase porphyritic texture, with euhedral, weakly sericitized tabular plagioclase is up to 5cm long. Groundmass weathers a deep brown compared to Pig River. 55% cpx, 45% plagioclase.	CL-SF-078
CL-SF-079	D579727	308826	5324018	388	absent	absent	absent	absent	absent	Followed second dyke towards contact with Pigeon River. Unable to climb up to confirm but rock here is still porphyritic gabbro. Possibly x-cuts Pigeon River dyke.	CL-SF-079
CL-SF-080		307985	5325268	407	absent	absent	absent	absent	absent	Top of hill, 25m north of Pin that marks private property to the south. C.g. crumbly/soft oikocrystic gabbro. Deeply weathered. Cannot take a fresh sample from here.	CL-SF-080
CL-SF-081	K0005010	308010	5325318	423	absent	absent	absent	absent	absent	Ledge of small cliff along N-S trending topo high. Subophitic gabbro with c.g. cpx oikocrysts. 50/50 cpx/plagioclase	CL-SF-081
CL-SF-082	K0005002	307970	5325473	458	absent	absent	absent	absent	absent	Higher up in elevation along N-S topo high. Subophitic gabbro with up to 10% olivine, 45% cpx, 45% plagioclase.	CL-SF-082
CL-SF-083	K0005003	307950	5325618	451	absent	absent	absent	absent	absent	Northernmost terminus of N-S ridge as E-W trending dyke is approached. Texture is slightly finer here than previous, and looks more equigranular. Slightly more mafic with 55-60% cpx and 40-45% plagioclase.	CL-SF-083
CL-SF-084	K0005004	307903	5325630	442	absent	absent	absent	absent	absent	Subophitic gabbro on trend with N-S topo high. Looks similar to previous stations and suggests N-S feature cross cuts the E-W dykes.	CL-SF-084
CL-SF-085	K0005005	308043	5325719	428	absent	absent	absent	absent	absent	Northern margin of E-W dyke. Olivine gabbro with 10% olivine, 50% cpx, 40% plag. M.g. with weak subophitic texture.	CL-SF-085
CL-SF-086	K0005006	307814	5325652	449	absent	absent	absent	absent	absent	North margin of E-W dyke. Appears to be just west of N-S dyke feature. Olivine gabbro with 5% olivine, 60% plag, 35% cpx. Cpx is intercumulus here, with plagioclase forming weak oikocrysts.	CL-SF-086
CL-SF-087	K0005007	307517	5325536	426	absent	absent	absent	absent	absent	North margin of E-W dyke. 55% cpx, 5% olivine, 40% plagioclase.	CL-SF-087
CL-SF-088	K0005008	307430	5325391	441	absent	absent	absent	absent	absent	South margin of E-W dyke at top of cliff overlooking cottage access road. Subophitic to equigranular gabbro. 55% plagioclase, 45% cpx.	CL-SF-088

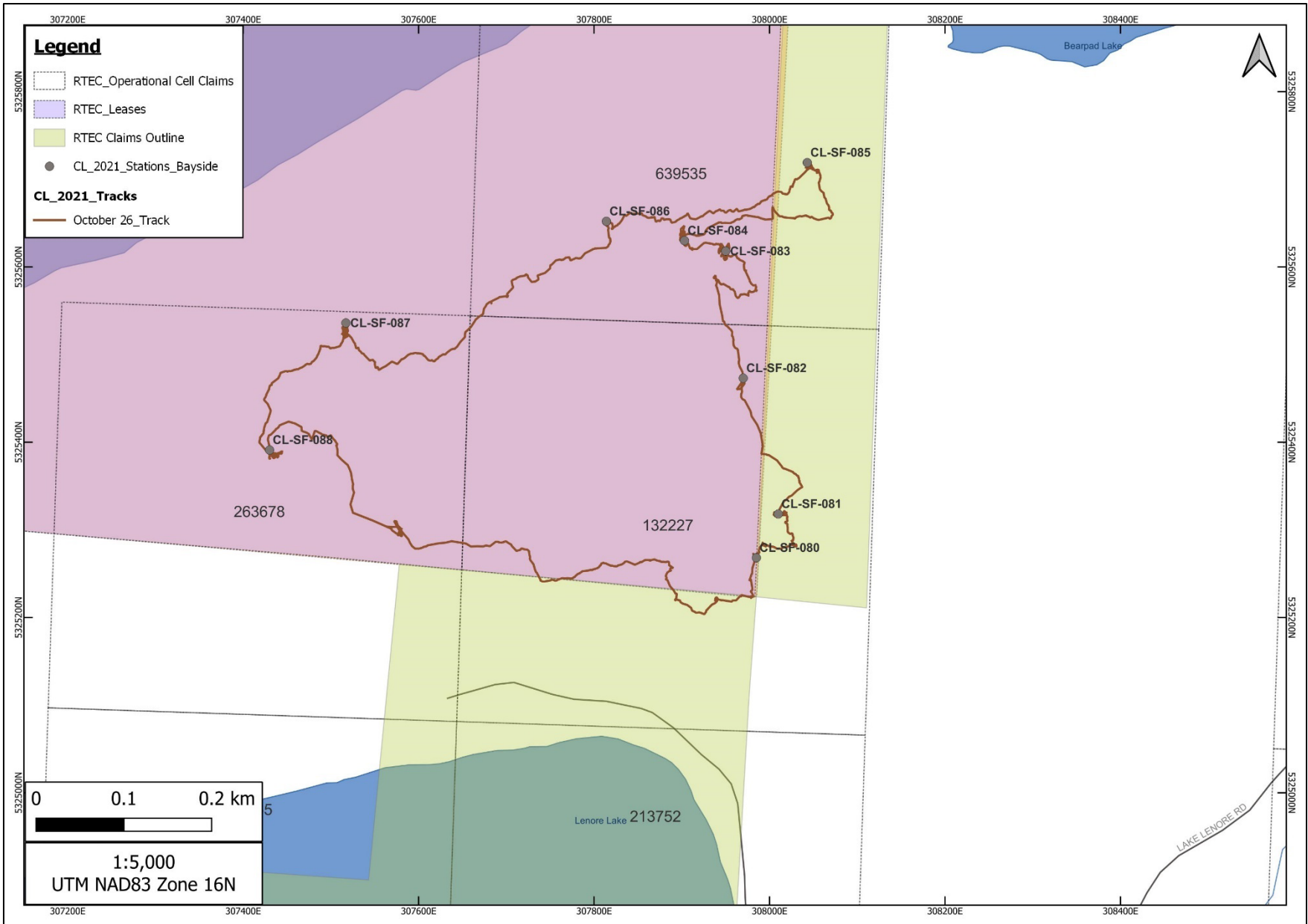
APPENDIX D: MAPS

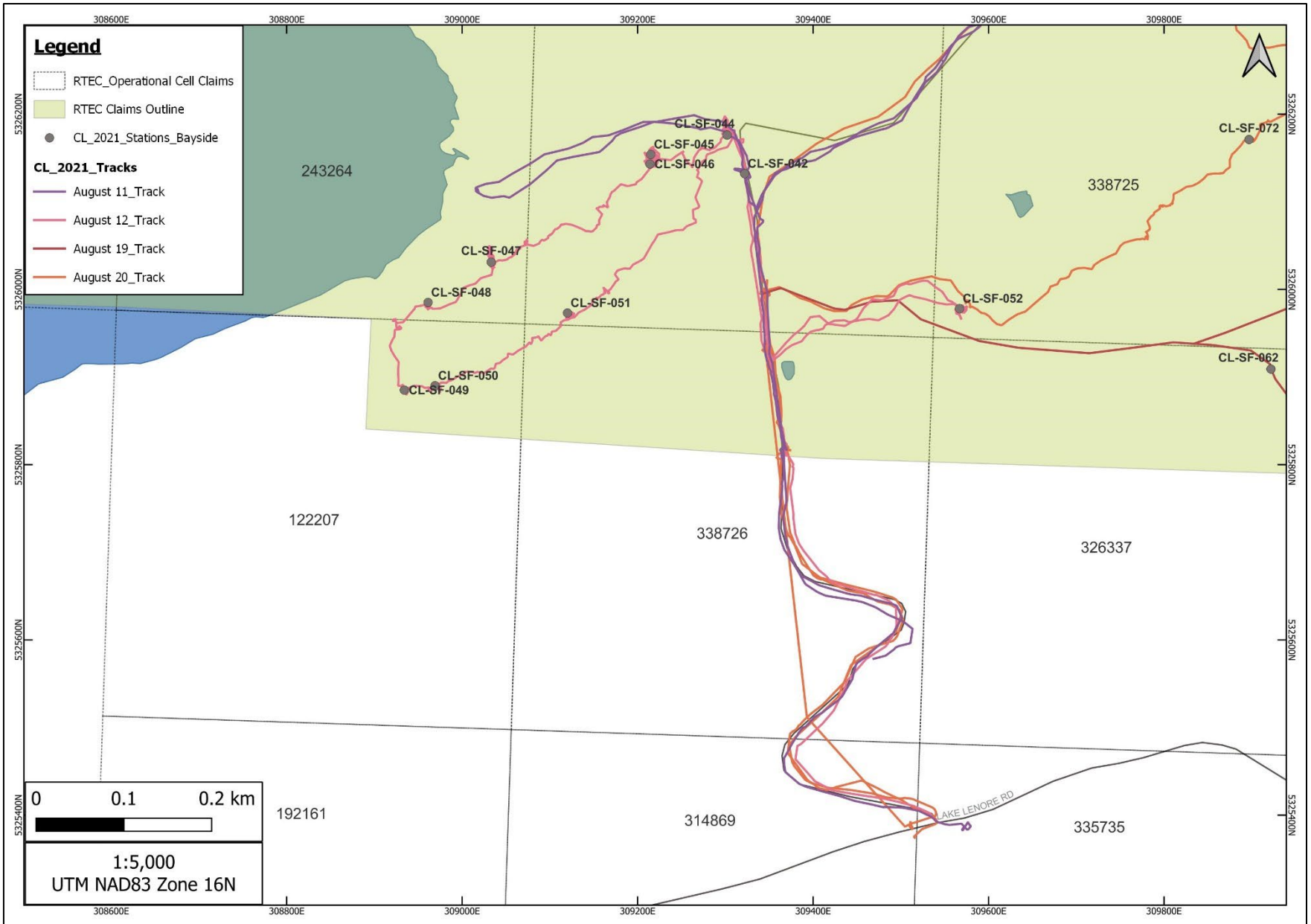


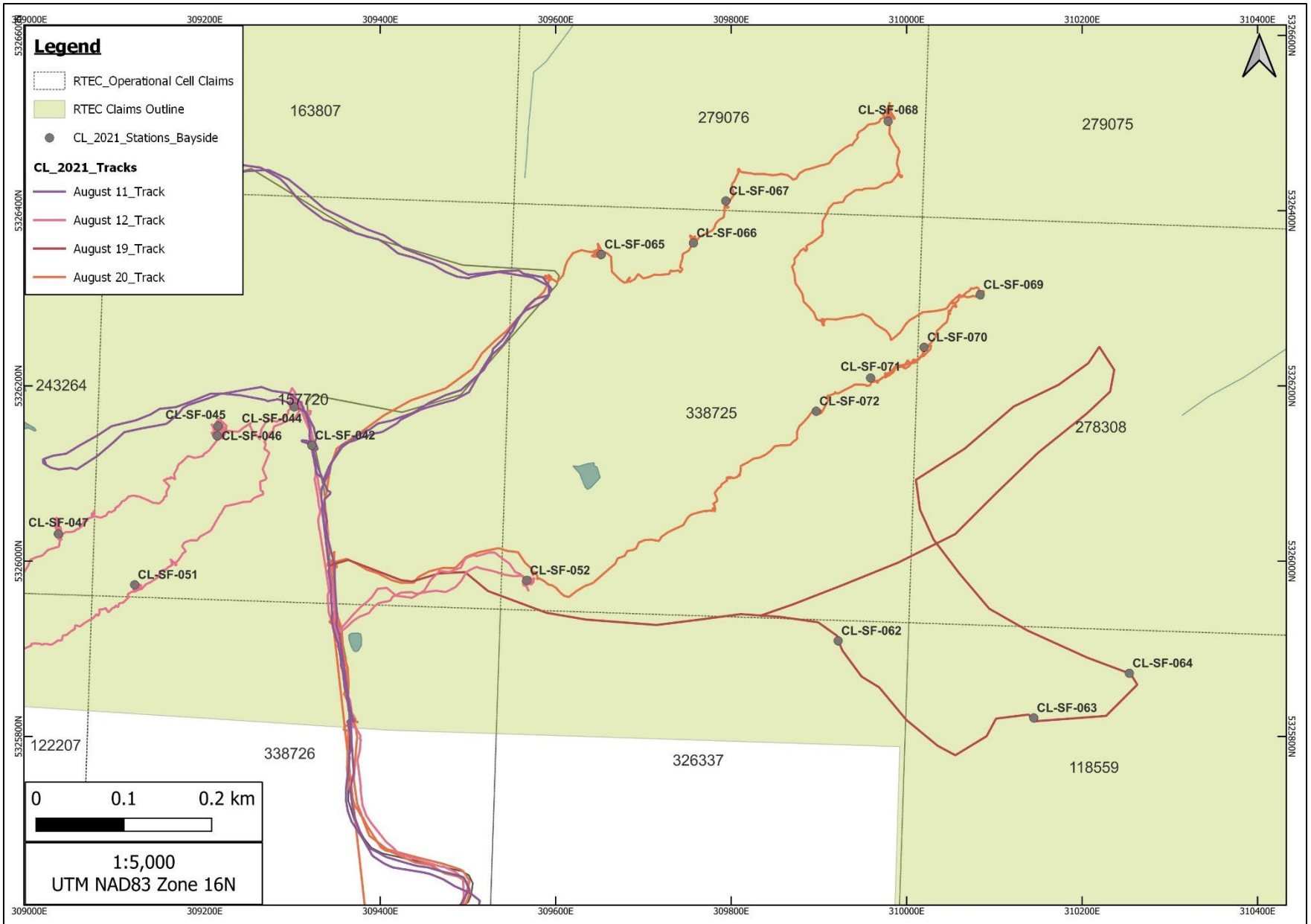


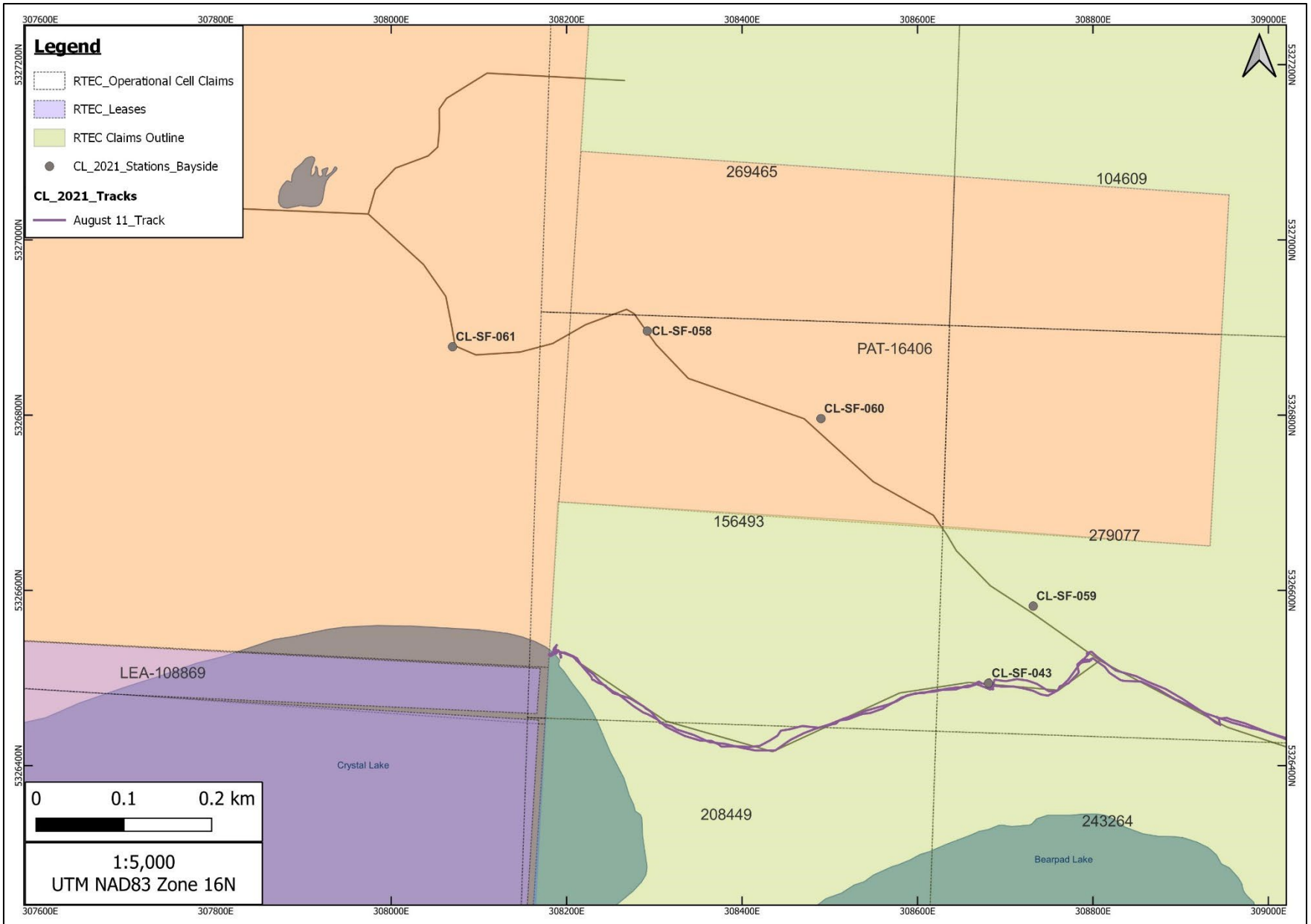


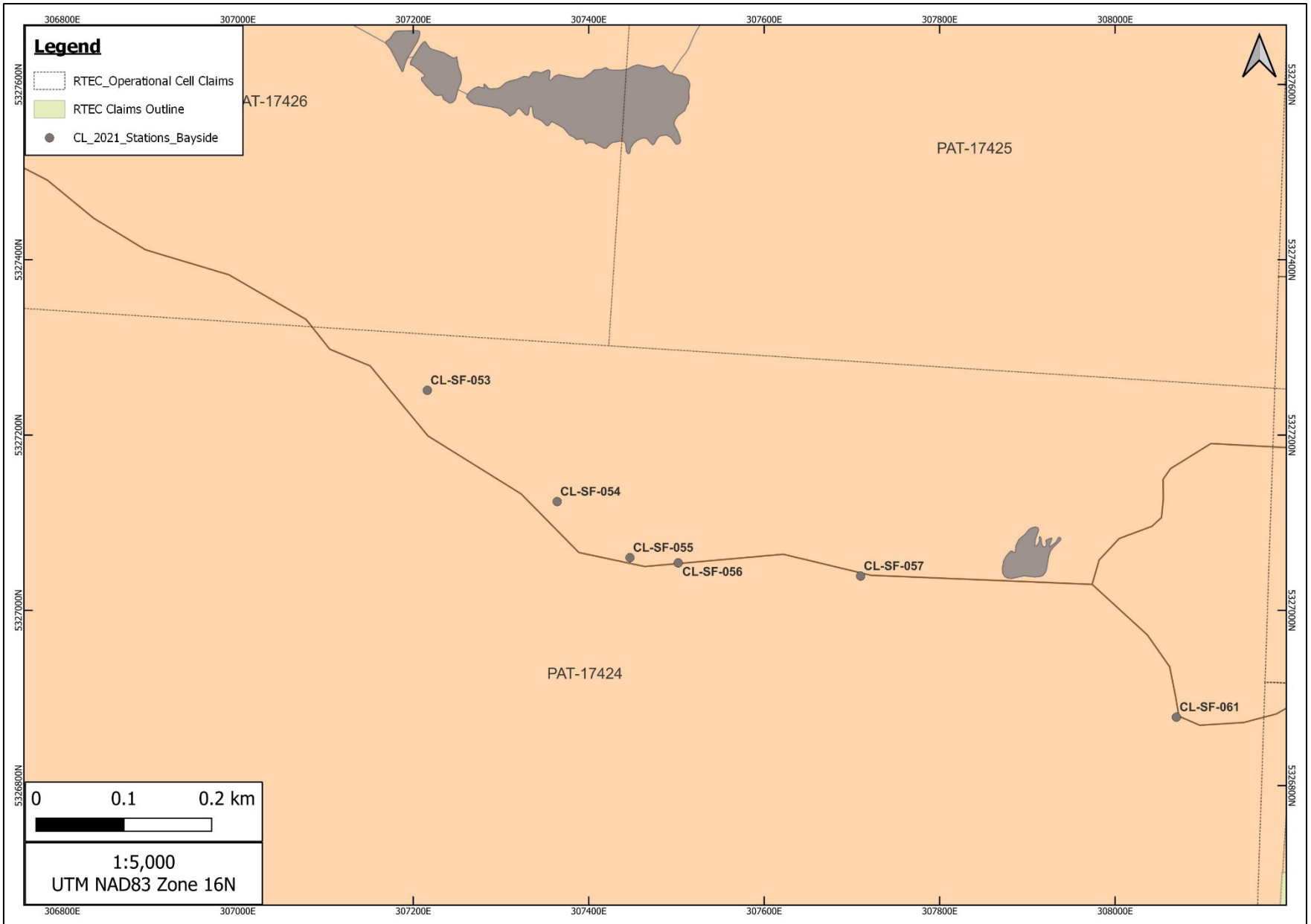


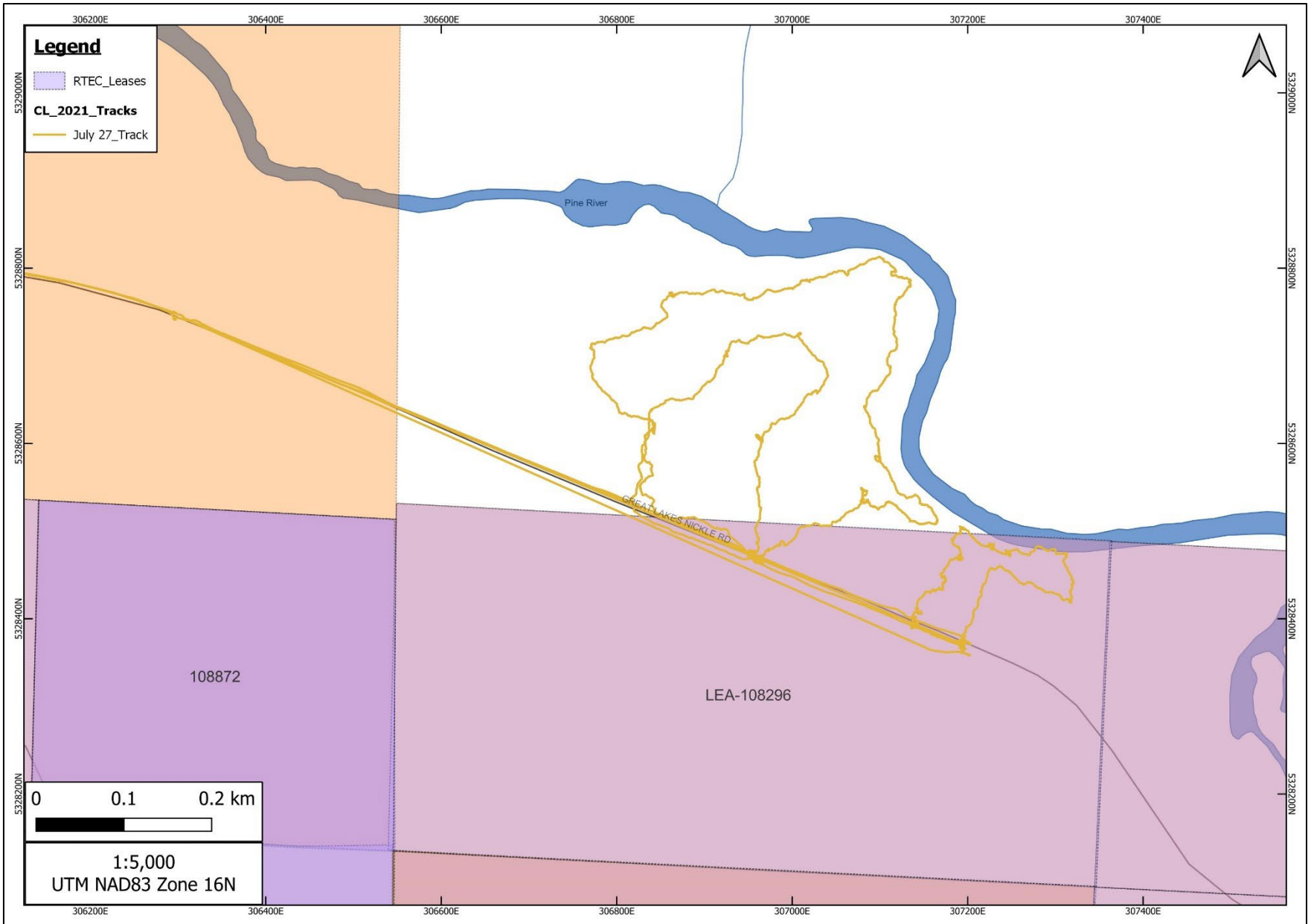




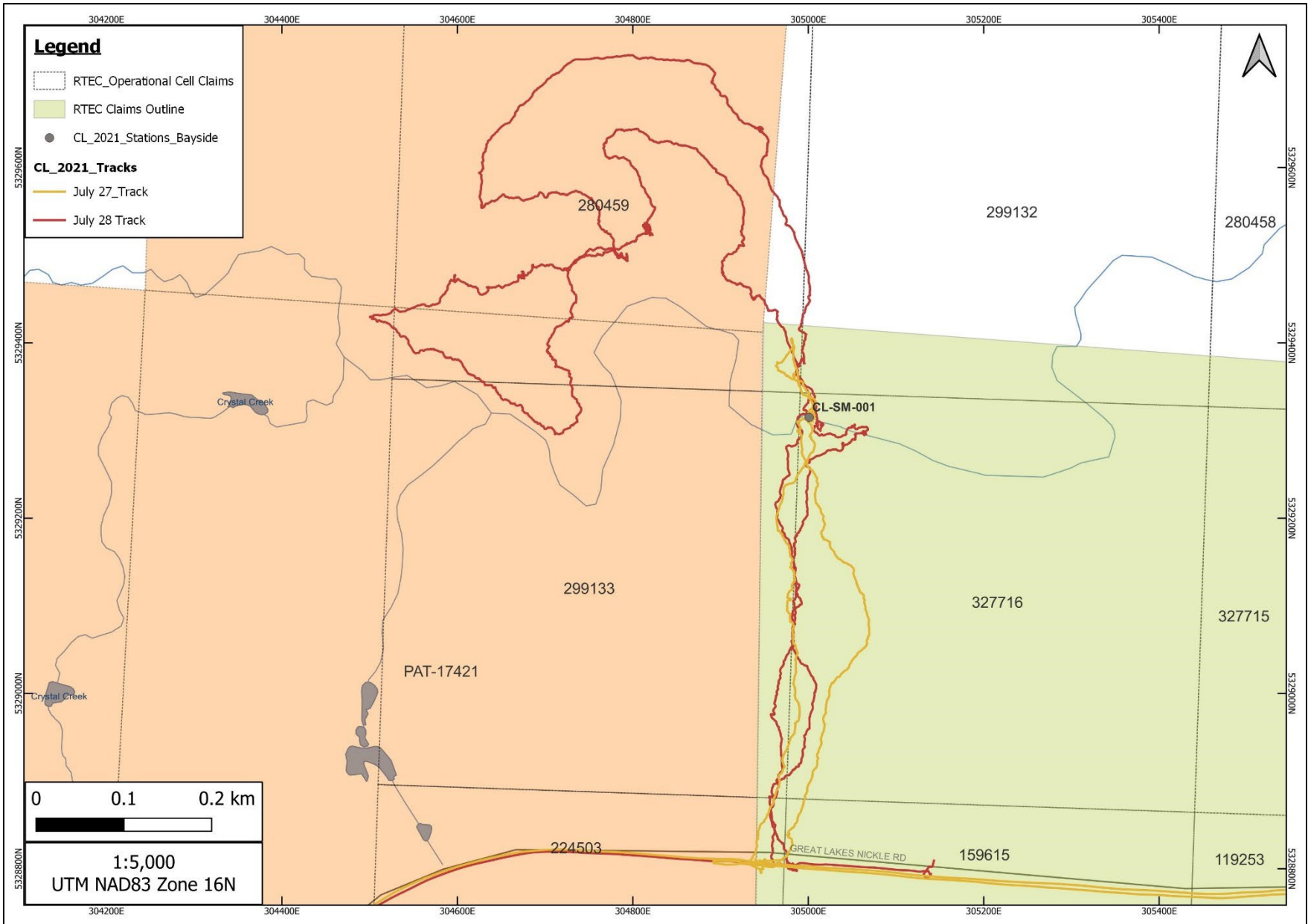


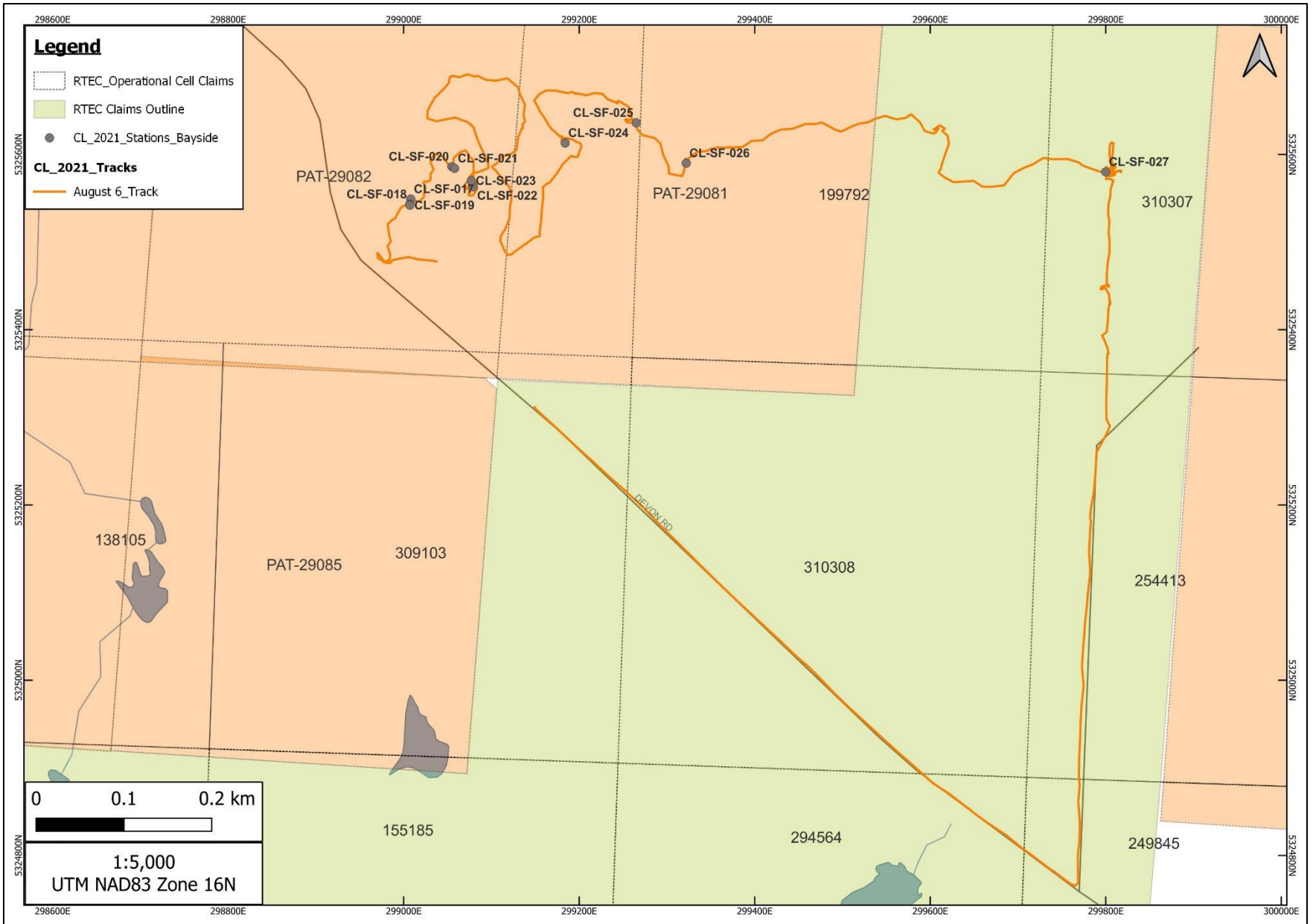


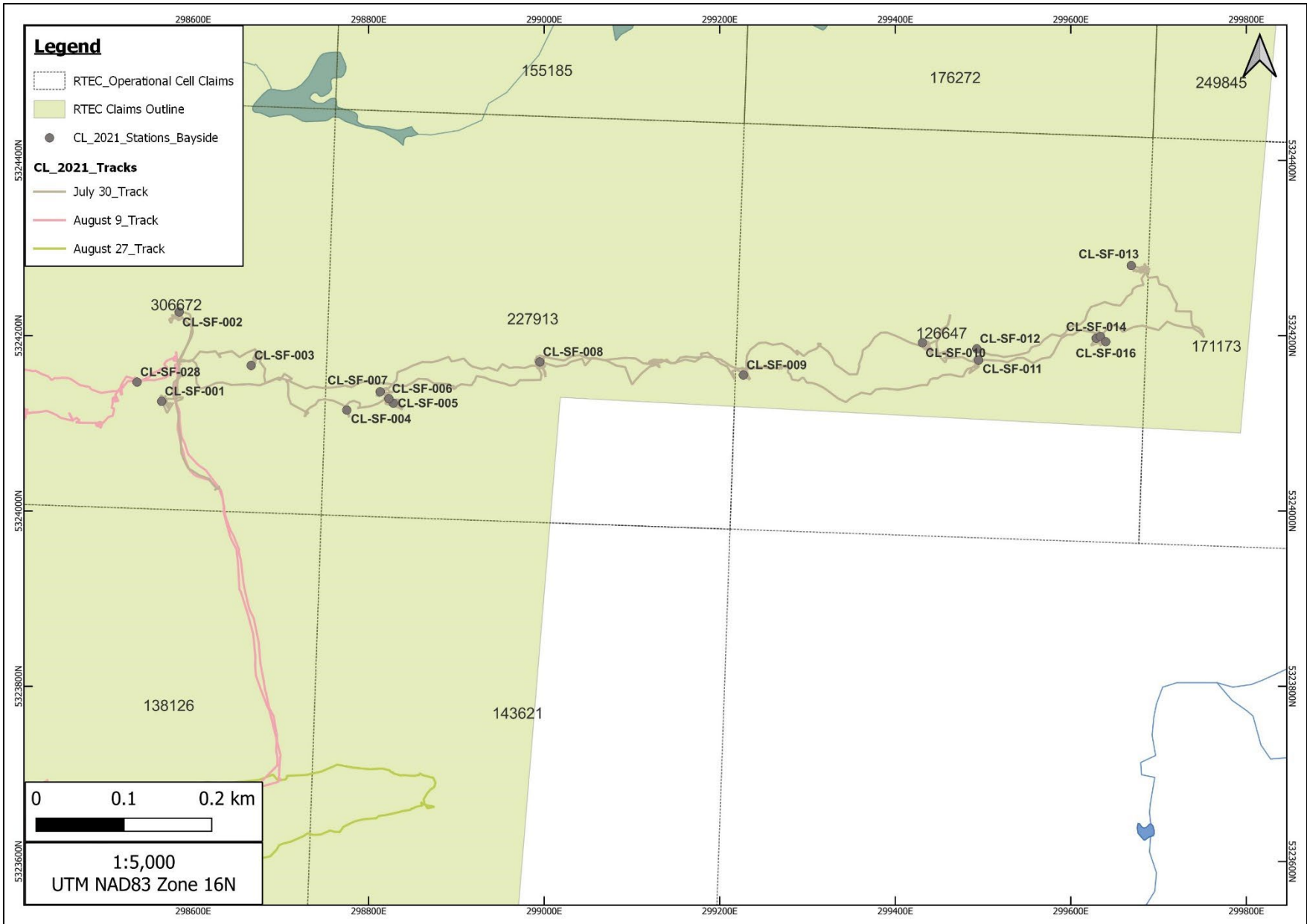


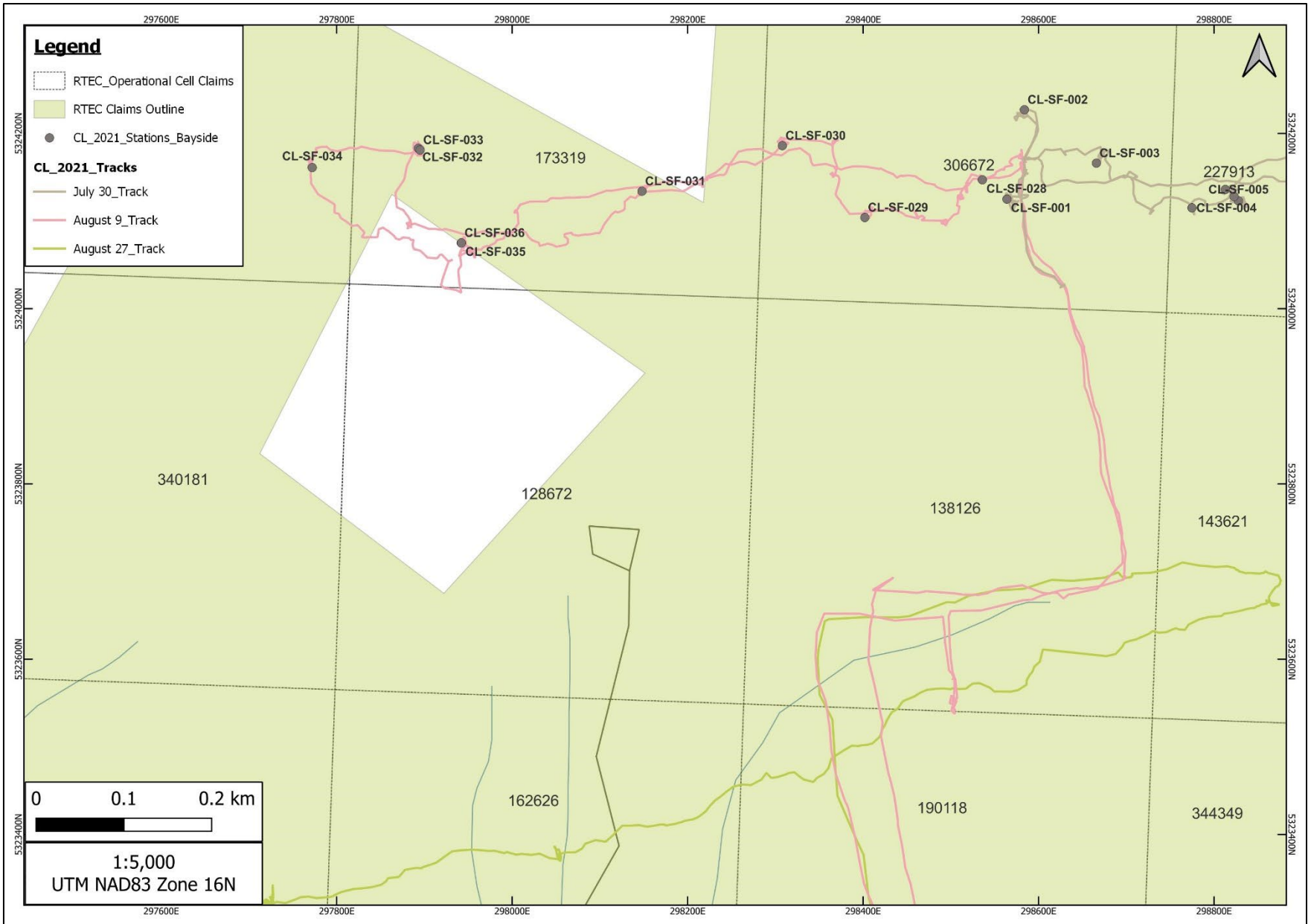


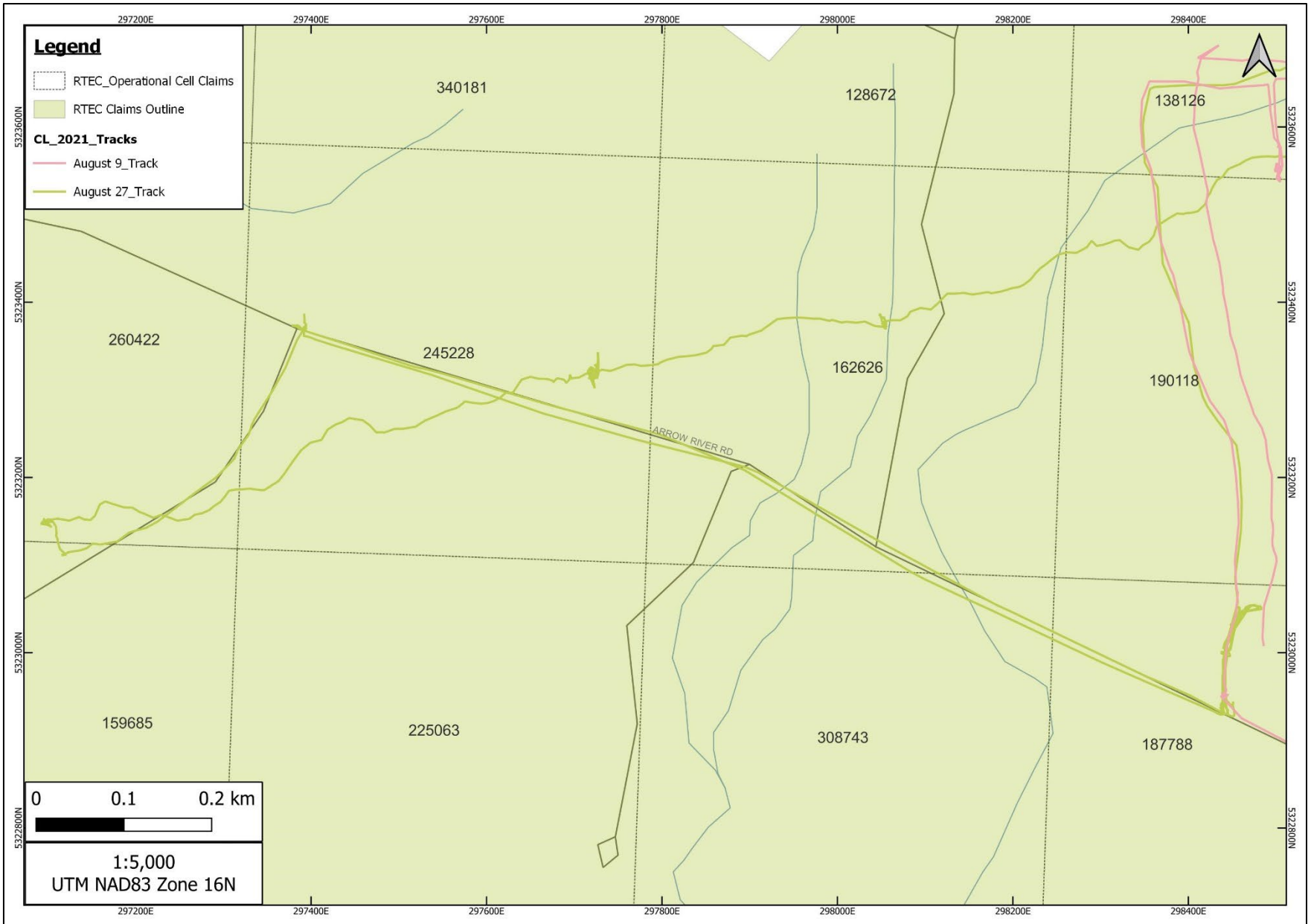












APPENDIX E: SAMPLE LOCATIONS AND GEOCHEMICAL RESULTS

Method Analyzed								WEI-21	CRU-QC	PUL-QC	OA-GRA08	PGM-MS23L	PGM-MS23L	PGM-MS23L	PGM-ICP27	PGM-ICP27	PGM-ICP27
Sequence	Sample_Number	Station_ID	Area	QAQC	Easting_UTM_NAD83	Northing_UTM_NAD83	Elevation_m	kg 0.02	Pass2mm %	Pass75um %	S.G. Unity 0.01	Au ppb 1	Pt ppb 0.1	Pd ppb 0.2	Au ppm 0.01	Pt ppm 0.01	Pd ppm 0.01
1	D579651		Crystal Lake	Qtz Blank				1.18		95.5		3	0.2	0.5			
2	D579652	CL-SM-001	Crystal Lake		305001	5329315	277	0.94	82.2	89.9	3.02	5	2.2	9.4			
3	D579653	CL-SF-001	Crystal Lake		298564	5324125	437	1.23			3.03	3	4.2	4.5			
4	D579654	CL-SF-002	Crystal Lake		298584	5324227	427	1.21			3.08	3	3.9	4.6			
5	D579655	CL-SF-004	Crystal Lake		298775	5324115	439	0.92			3.09	4	5.1	5.2			
6	D579656	CL-SF-005	Crystal Lake		298828	5324123	427	1.32			3.07	3	4.7	4.9			
7	D579657	CL-SF-006	Crystal Lake		298823	5324128	429	1.51			3.04	3	3.9	4.4			
8	D579658	CL-SF-008	Crystal Lake		298995	5324170	419	0.98			3.05	3	4.9	5.1			
9	D579659	CL-SF-009	Crystal Lake		299227	5324155	410	0.9			3.1	3	4.9	4.9			
10	D579660		Crystal Lake	CRM				0.06				138	399	206			
11	D579661	CL-SF-010	Crystal Lake		299431	5324192	409	0.9			3.08	3	4.3	4.5			
12	D579662	CL-SF-007	Crystal Lake		298813	5324136	440	1.1			3.08	3	5.1	5.1			
13	D579663	CL-SF-014	Crystal Lake		299629	5324197	406	1.64			2.92	12	21.6	25.6			
14	D579664	CL-SF-015	Crystal Lake		299634	5324199	400	1.05			2.61	14	19.3	41.3			
15	D579665	CL-SF-016	Crystal Lake		299640	5324193	415	1.23			3.12	6	7.5	5.7			
16	D579666	CL-SF-013	Crystal Lake		299669	5324280	393	1.01			3.01	3	4.1	2.3			
17	D579667	CL-SF-017	Crystal Lake		299008	5325549	378	1.34			2.97	320	911	>1000	0.34	0.83	3.9
18	D579668	CL-SF-018	Crystal Lake		299007	5325543	363	1			2.99	25	40.7	223			
19	D579669	CL-SF-019	Crystal Lake		299007	5325542	361	1.06			2.91	9	16.3	108.5			
20	D579670		Crystal Lake	Qtz Blank				1.03				3	0.2	1.7			
21	D579671	CL-SF-020	Crystal Lake		299055	5325586	355	0.62			2.99	114	214	>1000	0.12	0.22	1.24
22	D579672	CL-SF-024	Crystal Lake		299184	5325613	357	0.72			2.91	51	110.5	567			
23	D579673	CL-SF-025	Crystal Lake		299265	5325636	356	1			3.04	18	27.2	180.5			
24	D579674	CL-SF-026	Crystal Lake		299322	5325590	356	0.98			3.02	35	104.5	411			
25	D579675	CL-SF-027	Crystal Lake		299800	5325580	367	1.06			3.12	7	3.6	22.3			
26	D579676	CL-SF-028	Crystal Lake		298536	5324147	412	0.83			3.1	4	4.5	7.8			
27	D579677	CL-SF-029	Crystal Lake		298402	5324104	420	0.86			3.1	3	5.1	6			
28	D579678	CL-SF-030	Crystal Lake		298308	5324186	433	1.59			3.05	3	4.4	4.7			
29	D579679	CL-SF-031	Crystal Lake		298148	5324134	443	0.82			3.08	4	5.4	53			
30	D579680		Crystal Lake	CRM				0.06				143	413	211			
31	D579681	CL-SF-032	Crystal Lake		297893	5324183	435	0.47			3.17	5	12.1	6.7			
32	D579682	CL-SF-033	Crystal Lake		297895	5324181	438	0.71			3.14	3	5.7	5.1			
33	D579683	CL-SF-034	Crystal Lake		297772	5324161	419	0.61			3.14	3	4.4	6.8			
34	D579684	CL-SF-035	Crystal Lake		297942	5324075	422	1.24			2.88	14	19.6	34.6			
35	D579685	CL-SF-036	Crystal Lake		297942	5324075	422	1.95			2.8	9	7.4	12.2			
36	D579686	CL-SF-038	Crystal Lake		310692	5326343	256	0.92			3.05	2	5.6	5.7			
37	D579687	CL-SF-039	Crystal Lake		310676	5326334	260	0.87			3.07	4	6.5	6			
38	D579688	CL-SF-040	Crystal Lake		310646	5326655	284	1.21			2.97	4	8.5	11.9			
39	D579689	CL-SF-041	Crystal Lake		310581	5326902	308	1.59			3.02	4	6.7	7.2			
40	D579690		Crystal Lake	Qtz Blank				1.32				3	0.2	0.4			
41	D579691	CL-SF-021	Crystal Lake		299058	5325584	356	0.09	89.6	98.7	2.87	2	2.3	0.3			
42	D579692	CL-SF-042	Crystal Lake		309322	5326132	373	1.4			2.95	3	3.3	3.5			
43	D579693	CL-SF-044	Crystal Lake		309302	5326176	375	0.47			3.14	3	3.6	3			
44	D579694	CL-SF-045	Crystal Lake		309215	5326154	375	1.22			3.03	39	55.2	106.5			
45	D579695	CL-SF-046	Crystal Lake		309214	5326143	370	1.3			3.01	15	22.6	30.9			
46	D579696	CL-SF-047	Crystal Lake		309033	5326031	402	1			3.03	3	4.5	4.8			
47	D579697	CL-SF-048	Crystal Lake		308961	5325985	408	0.49			3.11	3	3.5	4.3			
48	D579698	CL-SF-049	Crystal Lake		308934	5325885	403	1.11			3.05	4	5.1	5.5			
49	D579699	CL-SF-050	Crystal Lake		308969	5325890	395	0.73			3.07	12	14.8	19.8			
50	D579700		Crystal Lake	CRM				0.06				168	414	212			
51	D579701	CL-SF-051	Crystal Lake		309120	5325973	392	0.82			2.96	4	2.8	3.6			
52	D579702	CL-SF-052	Crystal Lake		309567	5325978	370	0.81			3.04	3	6.1	5			
53	D579703	CL-SF-053	Crystal Lake		307216	5327251	453	0.88			3.15	2	0.2	<0.2			
54	D579704	CL-SF-057	Crystal Lake		307110	5327039	455	0.79			2.85	10	33.5	13.8			
55	D579705	CL-SF-058	Crystal Lake		308292	5326896	442	0.52			2.93	6	63.5	115			
56	D579706	CL-SF-059	Crystal Lake		308732	5326582	444	0.98			2.94	2	5.5	5.4			
57	D579707	CL-SF-061	Crystal Lake		308070	5326878	439	0.53			96.8	6	14.8	8.9			
58	D579708	CL-SF-062	Crystal Lake		309922	5325909	323	0.9			3.06	3	4.3	6.4			
59	D579709	CL-SF-063	Crystal Lake		310145	5325821	302	0.93			3.08	3	4.3	3.2			
60	D579710		Crystal Lake	Qtz Blank				1.06				2	0.2	0.5			

Method Analyzed								ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06
								SiO2	Al2O3	Fe2O3	CaO	MgO	Na2O	K2O	Cr2O3	TiO2	MnO
Sequence	Sample Number	Station ID	Area	QAQC	Easting UTM_NAD83	Northing UTM_NAD83	Elevation_m	%	%	%	%	%	%	%	%	%	%
								0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01
1	D579651		Crystal Lake	Qtz Blank				11.15	0.22	0.25	49.6	2.57	0.08	0.02	<0.002	0.02	0.01
2	D579652	CL-SM-001	Crystal Lake		305001	5329315	277	47.7	13	16.5	7.06	4.05	2.9	1.16	0.002	3.49	0.18
3	D579653	CL-SF-001	Crystal Lake		298564	5324125	437	45.9	17.05	12.9	9.94	8.45	2.61	0.36	0.018	1.3	0.16
4	D579654	CL-SF-002	Crystal Lake		298584	5324227	427	46.5	17.35	12.55	10.05	8.58	2.44	0.27	0.02	1.26	0.16
5	D579655	CL-SF-004	Crystal Lake		298775	5324115	439	46.5	17	13.3	10.1	7.59	2.47	0.33	0.021	1.42	0.17
6	D579656	CL-SF-005	Crystal Lake		298828	5324123	427	46.8	16.4	13.75	9.97	8.37	2.42	0.32	0.021	1.48	0.18
7	D579657	CL-SF-006	Crystal Lake		298823	5324128	429	46.7	17.55	13	9.93	8.93	2.42	0.28	0.018	1.22	0.17
8	D579658	CL-SF-008	Crystal Lake		298995	5324170	419	46.7	16.9	13.25	9.59	8.41	2.47	0.42	0.023	1.26	0.17
9	D579659	CL-SF-009	Crystal Lake		299227	5324155	410	46.7	16.3	14	9.74	9.14	2.36	0.3	0.021	1.43	0.18
10	D579660		Crystal Lake	CRM				42	13.45	16.9	7.98	6.11	1.95	1.45	0.312	0.87	0.16
11	D579661	CL-SF-010	Crystal Lake		299431	5324192	409	45.9	17.25	13	9.63	10.25	2.22	0.26	0.019	1.08	0.16
12	D579662	CL-SF-007	Crystal Lake		298813	5324136	440	46.4	16.95	13.1	10.05	8.31	2.43	0.3	0.024	1.3	0.17
13	D579663	CL-SF-014	Crystal Lake		299629	5324197	406	44.7	17.45	14.55	9.46	8.34	1.99	0.47	0.047	0.74	0.13
14	D579664	CL-SF-015	Crystal Lake		299634	5324199	400	32	10.5	31	4.81	6.66	0.88	0.2	0.034	0.46	0.12
15	D579665	CL-SF-016	Crystal Lake		299640	5324193	415	43.6	14.7	16.2	9.33	7.46	2.34	0.45	0.035	4.06	0.19
16	D579666	CL-SF-013	Crystal Lake		299669	5324280	393	46.6	19.2	11.65	10.45	9.69	2.24	0.22	0.016	0.9	0.15
17	D579667	CL-SF-017	Crystal Lake		299008	5325549	378	42.4	22	13.2	11.2	2.83	2.39	0.63	0.019	1.15	0.09
18	D579668	CL-SF-018	Crystal Lake		299007	5325543	363	45.8	20.6	11.3	10.75	7.19	2.28	0.51	0.025	1.2	0.13
19	D579669	CL-SF-019	Crystal Lake		299007	5325542	361	46.9	23.7	8.03	12	3.96	2.62	0.65	0.021	1.18	0.11
20	D579670		Crystal Lake	Qtz Blank				10.35	0.22	0.21	50.4	2.97	0.05	0.03	<0.002	0.01	0.01
21	D579671	CL-SF-020	Crystal Lake		299055	5325586	355	44.8	22.4	10.2	12.3	3.33	2.66	0.62	0.018	1.22	0.09
22	D579672	CL-SF-024	Crystal Lake		299184	5325613	357	46	20.1	11.45	8.63	5.22	2.8	1.66	0.012	1.3	0.12
23	D579673	CL-SF-025	Crystal Lake		299265	5325636	356	46.5	14.15	15.45	8.66	6.55	2.58	0.98	0.031	2.48	0.19
24	D579674	CL-SF-026	Crystal Lake		299322	5325590	356	46.2	17.6	14.2	9.66	6.52	2.58	0.76	0.029	1.78	0.16
25	D579675	CL-SF-027	Crystal Lake		299800	5325580	367	49.5	13.7	15.4	10.1	6.34	2.44	0.41	0.016	1.41	0.21
26	D579676	CL-SF-028	Crystal Lake		298536	5324147	412	49.9	15.95	13.65	10.35	7.57	2.58	0.3	0.029	1.53	0.18
27	D579677	CL-SF-029	Crystal Lake		298402	5324104	420	47.1	15.65	13.7	10.2	7.54	2.57	0.34	0.023	1.53	0.18
28	D579678	CL-SF-030	Crystal Lake		298308	5324186	433	48.1	16	14.5	10.05	7.86	2.6	0.34	0.021	1.52	0.19
29	D579679	CL-SF-031	Crystal Lake		298148	5324134	443	48.1	17.2	12.6	10.55	8.31	2.63	0.22	0.023	1.03	0.16
30	D579680		Crystal Lake	CRM				45.7	13.55	16.95	8.06	6.32	1.95	1.49	0.312	0.89	0.16
31	D579681	CL-SF-032	Crystal Lake		297893	5324183	435	48.8	15.65	10.75	14.95	6.8	2.66	0.38	0.059	1	0.15
32	D579682	CL-SF-033	Crystal Lake		297895	5324181	438	47	15.25	14.3	10.1	7.43	2.65	0.33	0.021	1.69	0.19
33	D579683	CL-SF-034	Crystal Lake		297772	5324161	419	46.9	17.05	13.35	10.35	8.18	2.66	0.27	0.025	1.35	0.17
34	D579684	CL-SF-035	Crystal Lake		297942	5324075	422	41.9	18.8	14.75	8.77	8.09	1.69	0.35	0.027	0.3	0.09
35	D579685	CL-SF-036	Crystal Lake		297942	5324075	422	44.9	17.85	14.15	7.35	8.72	1.37	0.71	0.064	0.64	0.11
36	D579686	CL-SF-038	Crystal Lake		310692	5326343	256	47.8	16	13.55	8.72	7.18	2.39	1.52	0.018	1.63	0.18
37	D579687	CL-SF-039	Crystal Lake		310676	5326334	260	48.2	15.35	14	9.22	7.16	2.61	0.53	0.015	1.59	0.18
38	D579688	CL-SF-040	Crystal Lake		310646	5326655	284	47.6	16.75	12.9	9.36	6.78	2.54	0.73	0.024	1.42	0.17
39	D579689	CL-SF-041	Crystal Lake		310581	5326902	308	47.2	16.05	14.3	10.3	7.3	2.7	0.39	0.027	1.74	0.18
40	D579690		Crystal Lake	Qtz Blank				9.32	0.26	0.27	51.5	2.15	0.08	0.03	<0.002	0.03	0.01
41	D579691	CL-SF-021	Crystal Lake		299058	5325584	356	47.7	20.6	8.39	12.35	4.04	2.57	0.67	0.012	1.62	0.11
42	D579692	CL-SF-042	Crystal Lake		309322	5326132	373	45.7	18.85	10.65	9.91	8.72	2.05	0.66	0.016	0.85	0.13
43	D579693	CL-SF-044	Crystal Lake		309302	5326176	375	47.5	15.7	14	9.96	8.41	2.48	0.38	0.024	1.54	0.18
44	D579694	CL-SF-045	Crystal Lake		309215	5326154	375	43.7	15.4	15.6	8.51	11.9	1.64	0.27	0.054	0.47	0.14
45	D579695	CL-SF-046	Crystal Lake		309214	5326143	370	46	16.65	16.2	7.78	7.86	1.95	0.51	0.028	0.57	0.14
46	D579696	CL-SF-047	Crystal Lake		309033	5326031	402	47.1	17.65	12.7	10.25	8.74	2.46	0.22	0.019	1.08	0.16
47	D579697	CL-SF-048	Crystal Lake		308961	5325985	408	47.1	17.35	11.5	10.8	7.84	2.5	0.31	0.038	0.99	0.15
48	D579698	CL-SF-049	Crystal Lake		308934	5325885	403	46.6	16.55	13.5	9.78	8.41	2.44	0.29	0.017	1.32	0.17
49	D579699	CL-SF-050	Crystal Lake		308969	5325890	395	46.1	17.5	14.45	10.2	6.78	2.48	0.25	0.02	1.19	0.15
50	D579700		Crystal Lake	CRM				46	13.55	17	8.09	6.33	1.95	1.48	0.313	0.88	0.16
51	D579701	CL-SF-051	Crystal Lake		309120	5325973	392	46.3	17.25	13.6	10	7.33	2.47	0.25	0.017	1.15	0.15
52	D579702	CL-SF-052	Crystal Lake		309567	5325978	370	47.4	15.35	13.8	9.82	7.46	2.45	0.48	0.024	1.76	0.18
53	D579703	CL-SF-053	Crystal Lake		307216	5327251	453	44.5	11.35	18.5	9.46	5.21	2.97	0.64	<0.002	4.84	0.24
54	D579704	CL-SF-057	Crystal Lake		307710	5327039	455	49.1	22.2	7.17	9.15	4.64	2.66	2.48	0.026	0.91	0.11
55	D579705	CL-SF-058	Crystal Lake		308292	5326896	442	43.5	20.4	8.91	9.89	7.39	1.82	1.23	0.008	0.94	0.13
56	D579706	CL-SF-059	Crystal Lake		308732	5326582	444	47.7	14.85	11.25	8.34	8.62	1.48	2.97	0.037	1.29	0.2
57	D579707	CL-SF-061	Crystal Lake		308070	5326878	439	48.3	18.65	11.25	10.2	7.2	2.52	0.78	0.045	1.26	0.14
58	D579708	CL-SF-062	Crystal Lake		309922	5325909	323	48.3	14.8	14.05	9.21	5.91	2.5	0.89	0.046	2.06	0.19
59	D579709	CL-SF-063	Crystal Lake		310145	5325821	302	48.6	16.2	14.35	9.96	6.78	2.61	0.49	0.016	1.75	0.19
60	D579710		Crystal Lake	Qtz Blank				9.36	0.16	0.22	51.2	1.94	0.05	0.01	<0.002	0.02	0.01

Method Analyzed								ME-ICP06	ME-ICP06	ME-ICP06	OA-GRA05	TOT-ICP06	C-IR07	S-IR08	ME-MS81	ME-MS81	ME-MS81
Sequence	Sample_Number	Station_ID	Area	QAQC	Easting_UTM_NAD83	Northing_UTM_NAD83	Elevation_m	P2O5 %	SrO %	BaO %	LOI %	Total %	C %	S %	Ba ppm	Ce ppm	Cr ppm
								0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.5	0.1	10
1	D579651		Crystal Lake	Qtz Blank				0.01	0.01	<0.01	36.9	100.84	10.3	0.02	15.4	1.2	10
2	D579652	CL-SM-001	Crystal Lake		305001	5329315	277	0.38	0.05	0.04	2.16	98.67	0.37	0.24	377	71.6	20
3	D579653	CL-SF-001	Crystal Lake		298564	5324125	437	0.13	0.03	0.01	-0.21	98.65	0.04	0.02	118.5	20.7	110
4	D579654	CL-SF-002	Crystal Lake		298584	5324227	427	0.13	0.03	0.01	-0.36	98.99	0.02	0.03	115.5	19.2	140
5	D579655	CL-SF-004	Crystal Lake		298775	5324115	439	0.15	0.03	0.01	-0.32	98.77	0.01	0.02	127.5	21.4	150
6	D579656	CL-SF-005	Crystal Lake		298828	5324123	427	0.15	0.03	0.01	-0.32	99.58	0.01	0.02	129.5	22.3	150
7	D579657	CL-SF-006	Crystal Lake		298823	5324128	429	0.12	0.03	0.01	-0.36	100.02	0.01	0.02	110	18.6	130
8	D579658	CL-SF-008	Crystal Lake		298995	5324170	419	0.15	0.03	0.02	-0.31	99.08	0.01	0.03	139.5	20.1	160
9	D579659	CL-SF-009	Crystal Lake		299227	5324155	410	0.15	0.03	0.01	-0.42	99.94	0.01	0.03	125	21.8	150
10	D579660		Crystal Lake	CRM				0.31	0.05	0.08	2.53	94.15	0.05	4.92	686	39.2	2230
11	D579661	CL-SF-010	Crystal Lake		299431	5324192	409	0.13	0.03	0.01	-0.31	99.63	0.02	0.03	101.5	16.9	130
12	D579662	CL-SF-007	Crystal Lake		298813	5324136	440	0.14	0.03	0.01	-0.41	98.8	0.02	0.02	124.5	20.9	170
13	D579663	CL-SF-014	Crystal Lake		299629	5324197	406	0.07	0.04	0.01	3	101	0.02	1.54	85.4	10.2	330
14	D579664	CL-SF-015	Crystal Lake		299634	5324199	400	0.06	0.02	0.01	12.35	99.1	0.05	5.51	79.7	15.7	240
15	D579665	CL-SF-016	Crystal Lake		299640	5324193	415	0.05	0.03	0.01	-0.37	98.09	0.01	0.09	74.1	7.4	140
16	D579666	CL-SF-013	Crystal Lake		299669	5324280	393	0.09	0.04	0.01	-0.34	100.92	0.02	0.04	91.9	13.3	120
17	D579667	CL-SF-017	Crystal Lake		299008	5325549	378	0.14	0.04	0.02	2.47	98.58	0.02	2.69	142	22.8	120
18	D579668	CL-SF-018	Crystal Lake		299007	5325543	363	0.13	0.04	0.02	0.29	100.27	0.02	0.32	151.5	25.1	180
19	D579669	CL-SF-019	Crystal Lake		299007	5325542	361	0.13	0.05	0.02	0.78	100.15	0.02	0.07	178	27.3	150
20	D579670		Crystal Lake	Qtz Blank				0.03	0.01	<0.01	37.5	101.79	10.4	0.01	18.9	2.9	<10
21	D579671	CL-SF-020	Crystal Lake		299055	5325586	355	0.13	0.05	0.02	1.75	99.59	0.09	1.52	167	24.7	120
22	D579672	CL-SF-024	Crystal Lake		299184	5325613	357	0.21	0.08	0.05	1.97	99.6	0.11	0.44	393	36.6	70
23	D579673	CL-SF-025	Crystal Lake		299265	5325636	356	0.3	0.04	0.06	0.96	98.93	0.04	0.18	497	52	240
24	D579674	CL-SF-026	Crystal Lake		299322	5325590	356	0.23	0.04	0.02	0.78	100.56	0.03	0.72	215	37.1	230
25	D579675	CL-SF-027	Crystal Lake		299800	5325580	367	0.15	0.02	0.02	-0.28	99.44	0.02	0.01	148	21.9	120
26	D579676	CL-SF-028	Crystal Lake		298536	5324147	412	0.15	0.03	0.01	-0.42	101.81	0.02	0.02	125	21.6	220
27	D579677	CL-SF-029	Crystal Lake		298402	5324104	420	0.17	0.03	0.01	-0.48	98.56	0.02	0.03	132	23.6	180
28	D579678	CL-SF-030	Crystal Lake		298308	5324186	433	0.17	0.03	0.02	-0.4	101	0.02	0.03	134.5	24.7	150
29	D579679	CL-SF-031	Crystal Lake		298148	5324134	443	0.09	0.03	0.01	-0.49	100.46	0.02	<0.01	100.5	14	180
30	D579680		Crystal Lake	CRM				0.31	0.05	0.08	2.26	98.08	0.05	5.23	676	38.6	2420
31	D579681	CL-SF-032	Crystal Lake		297893	5324183	435	0.08	0.03	0.02	0.52	101.85	0.03	<0.01	207	16.8	410
32	D579682	CL-SF-033	Crystal Lake		297895	5324181	438	0.19	0.03	0.02	-0.4	98.8	0.02	0.02	148	26.8	160
33	D579683	CL-SF-034	Crystal Lake		297772	5324161	419	0.12	0.03	0.01	-0.55	99.92	0.02	0.02	116	19.2	180
34	D579684	CL-SF-035	Crystal Lake		297942	5324075	422	0.02	0.04	0.01	5.38	100.22	0.03	2.23	75.5	7	180
35	D579685	CL-SF-036	Crystal Lake		297942	5324075	422	0.06	0.03	0.01	4.43	100.39	0.08	0.81	122	12.6	470
36	D579686	CL-SF-038	Crystal Lake		310692	5326343	256	0.16	0.06	0.04	1.73	100.98	0.02	0.06	383	24.3	120
37	D579687	CL-SF-039	Crystal Lake		310676	5326334	260	0.18	0.03	0.02	0.94	100.03	0.02	0.03	149	25.6	120
38	D579688	CL-SF-040	Crystal Lake		310646	5326655	284	0.17	0.05	0.02	1.84	100.35	0.02	0.02	228	25.3	170
39	D579689	CL-SF-041	Crystal Lake		310581	5326902	308	0.16	0.04	0.02	0.06	100.47	0.04	<0.01	151.5	26	190
40	D579690		Crystal Lake	Qtz Blank				0.01	0.01	<0.01	38.3	101.97	10.6	0.01	15	1.1	<10
41	D579691	CL-SF-021	Crystal Lake		299058	5325584	356	0.15	0.04	0.02	1.87	100.14	0.2	0.04	168.5	24.8	90
42	D579692	CL-SF-042	Crystal Lake		309322	5326132	373	0.11	0.05	0.03	1.43	99.16	0.08	0.04	322	13.8	110
43	D579693	CL-SF-044	Crystal Lake		309302	5326176	375	0.17	0.03	0.02	0.24	100.63	0.03	0.02	134.5	24	160
44	D579694	CL-SF-045	Crystal Lake		309215	5326154	375	0.07	0.03	0.01	1.77	99.56	0.03	1.67	76.4	10.1	400
45	D579695	CL-SF-046	Crystal Lake		309214	5326143	370	0.06	0.03	0.03	2.21	100.02	0.02	1.78	245	15	200
46	D579696	CL-SF-047	Crystal Lake		309033	5326031	402	0.11	0.03	0.01	-0.13	100.4	0.02	0.03	98.6	17.1	140
47	D579697	CL-SF-048	Crystal Lake		308961	5325985	408	0.09	0.04	0.01	-0.11	98.61	0.02	0.01	104.5	14.9	280
48	D579698	CL-SF-049	Crystal Lake		308934	5325885	403	0.17	0.03	0.01	-0.12	99.17	0.02	0.02	118.5	22.1	120
49	D579699	CL-SF-050	Crystal Lake		308969	5325890	395	0.09	0.03	0.01	0.75	100	0.02	0.97	107.5	14.7	150
50	D579700		Crystal Lake	CRM				0.31	0.05	0.08	2.31	98.5	0.06	5.12	693	39	2230
51	D579701	CL-SF-051	Crystal Lake		309120	5325973	392	0.1	0.03	0.01	0.82	99.48	0.04	0.06	127	18.5	130
52	D579702	CL-SF-052	Crystal Lake		309567	5325978	370	0.18	0.04	0.02	1.57	100.53	0.02	0.03	154	29.1	170
53	D579703	CL-SF-053	Crystal Lake		307216	5327251	453	0.57	0.04	0.02	1.53	99.87	0.02	0.09	167	70	10
54	D579704	CL-SF-057	Crystal Lake		307710	5327039	455	0.09	0.12	0.18	2.61	101.45	0.03	0.02	1595	18	170
55	D579705	CL-SF-058	Crystal Lake		308292	5326896	442	0.12	0.06	0.06	4.54	99	0.03	0.02	610	17.3	60
56	D579706	CL-SF-059	Crystal Lake		308732	5326582	444	0.14	0.1	0.17	3.37	100.52	0.03	0.01	1615	20.3	270
57	D579707	CL-SF-061	Crystal Lake		308070	5326878	439	0.11	0.05	0.02	0.84	101.37	0.04	0.02	163.5	21.2	340
58	D579708	CL-SF-062	Crystal Lake		309922	5325909	323	0.21	0.05	0.02	1.24	99.48	0.02	0.08	194	31	350
59	D579709	CL-SF-063	Crystal Lake		310145	5325821	302	0.19	0.03	0.01	0.1	101.28	0.02	0.04	129.5	26.1	120
60	D579710		Crystal Lake	Qtz Blank				0.01	0.01	<0.01	38.2	101.19	10.45	0.01	17	1.1	<10



Method Analyzed								ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
Sequence	Sample_Number	Station_ID	Area	QAQC	Easting_UTM_NAD83	Northing_UTM_NAD83	Elevation_m	Cs ppm 0.01	Dy ppm 0.05	Er ppm 0.03	Eu ppm 0.02	Ga ppm 0.1	Gd ppm 0.05	Ge ppm 5	Hf ppm 0.1	Ho ppm 0.01
1	D579651		Crystal Lake	Qtz Blank				0.02	0.23	0.16	0.04	0.4	0.25	<5	0.1	0.06
2	D579652	CL-SM-001	Crystal Lake		305001	5329315	277	5.31	7.33	3.41	2.72	23.9	9.26	<5	6.5	1.37
3	D579653	CL-SF-001	Crystal Lake		298564	5324125	437	0.52	3.39	1.62	1.24	18.8	3.32	<5	2	0.6
4	D579654	CL-SF-002	Crystal Lake		298584	5324227	427	0.44	3.5	1.84	1.14	18	3.5	<5	2	0.64
5	D579655	CL-SF-004	Crystal Lake		298775	5324115	439	0.55	3.78	1.99	1.23	19.1	3.71	<5	2.3	0.73
6	D579656	CL-SF-005	Crystal Lake		298828	5324123	427	0.63	3.83	2.11	1.22	18.7	3.86	<5	2.3	0.76
7	D579657	CL-SF-006	Crystal Lake		298823	5324128	429	0.66	3.21	1.81	1.08	18.4	3.31	<5	2	0.66
8	D579658	CL-SF-008	Crystal Lake		298995	5324170	419	1.4	3.56	1.64	1.11	18.8	3.46	<5	2	0.7
9	D579659	CL-SF-009	Crystal Lake		299227	5324155	410	1.06	4	2.01	1.29	18	3.9	<5	2.3	0.71
10	D579660		Crystal Lake	CRM				3.55	3.26	1.7	1.23	15.9	3.84	<5	2.3	0.56
11	D579661	CL-SF-010	Crystal Lake		299431	5324192	409	0.81	2.83	1.46	0.99	16.7	3.04	<5	1.8	0.54
12	D579662	CL-SF-007	Crystal Lake		298813	5324136	440	0.76	3.78	1.83	1.15	18.8	3.78	<5	2.4	0.7
13	D579663	CL-SF-014	Crystal Lake		299629	5324197	406	2.12	1.85	0.94	0.96	16.4	1.81	<5	1.1	0.32
14	D579664	CL-SF-015	Crystal Lake		299634	5324199	400	3.55	2.4	1.09	0.81	11.2	2.24	<5	1	0.42
15	D579665	CL-SF-016	Crystal Lake		299640	5324193	415	1.36	1.46	0.76	0.75	10.8	1.69	<5	0.9	0.27
16	D579666	CL-SF-013	Crystal Lake		299669	5324280	393	0.51	2.25	1.3	0.92	17.7	2.22	<5	1.5	0.42
17	D579667	CL-SF-017	Crystal Lake		299008	5325549	378	2.16	3.13	1.71	1.22	19.9	3.07	<5	2.2	0.55
18	D579668	CL-SF-018	Crystal Lake		299007	5325543	363	1.79	3.23	1.73	1.22	20.3	3.68	<5	2.3	0.66
19	D579669	CL-SF-019	Crystal Lake		299007	5325542	361	2.01	3.51	1.85	1.37	21.6	3.91	<5	2.6	0.67
20	D579670		Crystal Lake	Qtz Blank				0.03	0.29	0.11	0.08	0.4	0.32	<5	0.1	0.04
21	D579671	CL-SF-020	Crystal Lake		299055	5325586	355	2.6	3.17	1.7	1.17	20.3	3.71	<5	2.1	0.67
22	D579672	CL-SF-024	Crystal Lake		299184	5325613	357	3.31	4.08	2.46	1.5	21.7	4.4	<5	3.4	0.89
23	D579673	CL-SF-025	Crystal Lake		299265	5325636	356	1.95	6.81	3.97	2.06	23.5	7.31	<5	5.1	1.4
24	D579674	CL-SF-026	Crystal Lake		299322	5325590	356	1.33	4.61	2.63	1.63	21.3	4.88	<5	3.4	0.95
25	D579675	CL-SF-027	Crystal Lake		299800	5325580	367	0.29	5.28	3.24	1.27	20.7	4.62	<5	2.8	1.18
26	D579676	CL-SF-028	Crystal Lake		298536	5324147	412	0.69	3.61	2.1	1.3	20	3.89	<5	2.5	0.79
27	D579677	CL-SF-029	Crystal Lake		298402	5324104	420	0.62	4.04	2.26	1.33	20	4.17	<5	2.7	0.83
28	D579678	CL-SF-030	Crystal Lake		298308	5324186	433	0.62	4.07	2.31	1.36	19.3	4.1	<5	2.7	0.82
29	D579679	CL-SF-031	Crystal Lake		298148	5324134	443	0.53	2.55	1.59	1.01	19.6	2.6	<5	1.5	0.55
30	D579680		Crystal Lake	CRM				3.74	2.93	1.72	1.24	15.7	3.49	<5	2.1	0.64
31	D579681	CL-SF-032	Crystal Lake		297893	5324183	435	0.42	3.44	2.06	1.04	17.4	3.33	<5	1.8	0.67
32	D579682	CL-SF-033	Crystal Lake		297895	5324181	438	0.39	4.47	2.58	1.47	20.3	4.56	<5	3.1	0.94
33	D579683	CL-SF-034	Crystal Lake		297772	5324161	419	0.23	3.2	1.93	1.17	19.3	3.26	<5	2.2	0.64
34	D579684	CL-SF-035	Crystal Lake		297942	5324075	422	4.15	0.76	0.44	0.66	15	0.9	<5	0.6	0.17
35	D579685	CL-SF-036	Crystal Lake		297942	5324075	422	4.47	1.36	0.9	1.15	17.2	1.59	<5	1	0.29
36	D579686	CL-SF-038	Crystal Lake		310692	5326343	256	2.27	4.28	2.15	1.23	19.6	4.2	<5	2.7	0.79
37	D579687	CL-SF-039	Crystal Lake		310676	5326334	260	2.46	4.48	2.18	1.41	20.2	4.34	<5	3.1	0.86
38	D579688	CL-SF-040	Crystal Lake		310646	5326655	284	4.68	4.37	2.36	1.26	21	4.09	<5	2.6	0.83
39	D579689	CL-SF-041	Crystal Lake		310581	5326902	308	1.4	4.31	2.7	1.36	21.7	4.38	<5	2.9	0.87
40	D579690		Crystal Lake	Qtz Blank				0.02	0.29	0.2	0.05	0.4	0.26	<5	0.1	0.06
41	D579691	CL-SF-021	Crystal Lake		299058	5325584	356	2.02	3.36	2.08	1.28	22.2	4.17	<5	2.7	0.69
42	D579692	CL-SF-042	Crystal Lake		309322	5326132	373	3.5	2.21	1.28	0.75	17.9	2.45	<5	1.5	0.46
43	D579693	CL-SF-044	Crystal Lake		309302	5326176	375	1.39	4.13	2.18	1.33	18.9	3.86	<5	2.7	0.77
44	D579694	CL-SF-045	Crystal Lake		309215	5326154	375	2.07	1.36	0.75	0.64	13.7	1.42	<5	0.9	0.28
45	D579695	CL-SF-046	Crystal Lake		309214	5326143	370	3.31	1.84	1	0.84	18.3	1.82	<5	1.2	0.32
46	D579696	CL-SF-047	Crystal Lake		309033	5326031	402	1.53	2.73	1.56	0.95	18.7	2.83	<5	1.9	0.56
47	D579697	CL-SF-048	Crystal Lake		308961	5325985	408	1.59	2.67	1.47	1	19	2.48	<5	1.6	0.51
48	D579698	CL-SF-049	Crystal Lake		308934	5325885	403	2.47	3.61	2.03	1.17	19.1	3.58	<5	2.2	0.71
49	D579699	CL-SF-050	Crystal Lake		308969	5325890	395	1.75	2.38	1.47	1.13	19.4	2.35	<5	1.5	0.49
50	D579700		Crystal Lake	CRM				3.78	3.24	1.69	1.15	16.5	3.78	<5	2	0.6
51	D579701	CL-SF-051	Crystal Lake		309120	5325973	392	1.38	3.13	1.56	1.12	19.7	2.96	<5	2	0.62
52	D579702	CL-SF-052	Crystal Lake		309567	5325978	370	2.19	4.9	2.55	1.44	20.5	4.69	<5	3.3	0.88
53	D579703	CL-SF-053	Crystal Lake		307216	5327251	453	0.5	10.5	5.86	2.65	26.4	11.8	<5	6.6	2.07
54	D579704	CL-SF-057	Crystal Lake		307710	5327039	455	5.13	2.44	1.58	0.89	23.3	2.6	<5	1.7	0.46
55	D579705	CL-SF-058	Crystal Lake		308292	5326896	442	4.06	2.45	1.59	1.09	17.4	2.73	<5	1.8	0.51
56	D579706	CL-SF-059	Crystal Lake		308732	5326582	444	5.11	3.96	2.14	1.05	16.3	3.86	<5	2.2	0.69
57	D579707	CL-SF-061	Crystal Lake		308070	5326878	439	2.22	3.14	1.78	1.24	20.5	3.12	<5	1.9	0.63
58	D579708	CL-SF-062	Crystal Lake		309922	5325909	323	1.29	4.86	2.68	1.55	20.6	5.1	<5	3.2	0.96
59	D579709	CL-SF-063	Crystal Lake		310145	5325821	302	2.78	4.83	2.83	1.51	20.9	4.9	<5	3.2	1
60	D579710		Crystal Lake	Qtz Blank				0.02	0.2	0.17	0.04	0.1	0.23	<5	0.1	0.05

Method Analyzed								ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
Sequence	Sample Number	Station ID	Area	QAQC	Easting UTM_NAD83	Northing UTM_NAD83	Elevation_m	La ppm 0.1	Lu ppm 0.01	Nb ppm 0.1	Nd ppm 0.1	Pr ppm 0.02	Rb ppm 0.2	Sm ppm 0.03	Sn ppm <1	Sr ppm 0.1	Ta ppm 0.1
1	D579651		Crystal Lake	Qtz Blank				1.1	0.02	0.1	1	0.2	0.3	0.18	<1	70.6	<0.1
2	D579652	CL-SM-001	Crystal Lake		305001	5329315	277	30.5	0.42	25.2	40.7	9.44	38.9	9.03	2	443	1.5
3	D579653	CL-SF-001	Crystal Lake		298564	5324125	437	10.2	0.23	6.3	12.3	2.65	4	3.2	1	268	0.2
4	D579654	CL-SF-002	Crystal Lake		298584	5324227	427	8.3	0.24	5.9	12.2	2.51	4.7	3.23	1	272	0.3
5	D579655	CL-SF-004	Crystal Lake		298775	5324115	439	9.2	0.28	6.9	13.4	2.77	6.2	3.28	1	286	0.3
6	D579656	CL-SF-005	Crystal Lake		298828	5324123	427	9.6	0.26	7.6	14.1	2.96	5.7	3.59	1	271	0.4
7	D579657	CL-SF-006	Crystal Lake		298823	5324128	429	7.8	0.21	5.7	11.5	2.49	5.5	2.96	1	278	0.3
8	D579658	CL-SF-008	Crystal Lake		298995	5324170	419	8.5	0.23	6.3	12.6	2.71	11.5	3.25	1	284	0.3
9	D579659	CL-SF-009	Crystal Lake		299227	5324155	410	9.5	0.25	7.1	13.8	2.98	6.1	3.51	1	262	0.3
10	D579660		Crystal Lake	CRM				18.2	0.23	5.7	20.5	4.84	71.5	4.28	2	419	0.3
11	D579661	CL-SF-010	Crystal Lake		299431	5324192	409	7.4	0.2	5.4	10.4	2.3	5.4	2.84	1	274	0.2
12	D579662	CL-SF-007	Crystal Lake		298813	5324136	440	8.8	0.25	6.3	13	2.71	6.1	3.2	1	281	0.3
13	D579663	CL-SF-014	Crystal Lake		299629	5324197	406	4.5	0.15	3.2	6.5	1.35	11.8	1.74	1	317	0.1
14	D579664	CL-SF-015	Crystal Lake		299634	5324199	400	6.6	0.16	2.7	9.2	2.17	7.3	2.42	1	154.5	0.1
15	D579665	CL-SF-016	Crystal Lake		299640	5324193	415	3.2	0.09	4.2	4.9	1.02	8.2	1.44	<1	169	0.3
16	D579666	CL-SF-013	Crystal Lake		299669	5324280	393	5.8	0.14	4.2	8.4	1.84	3.8	1.92	1	289	0.2
17	D579667	CL-SF-017	Crystal Lake		299008	5325549	378	10.1	0.21	7	13.2	2.91	21.1	3.12	2	356	0.4
18	D579668	CL-SF-018	Crystal Lake		299007	5325543	363	11.3	0.25	7.7	14.8	3.18	15.9	3.3	1	334	0.4
19	D579669	CL-SF-019	Crystal Lake		299007	5325542	361	12.1	0.22	7.6	15.7	3.49	22	3.6	1	392	0.4
20	D579670		Crystal Lake	Qtz Blank				2	0.02	1.6	1.9	0.44	0.8	0.26	<1	79.3	<0.1
21	D579671	CL-SF-020	Crystal Lake		299055	5325586	355	11	0.23	7.2	14.4	3.19	18.1	3.54	1	373	0.3
22	D579672	CL-SF-024	Crystal Lake		299184	5325613	357	17	0.34	10	20.2	4.62	51.2	4.75	1	648	0.5
23	D579673	CL-SF-025	Crystal Lake		299265	5325636	356	23.1	0.48	15.7	29.2	6.71	25.2	6.97	2	320	0.9
24	D579674	CL-SF-026	Crystal Lake		299322	5325590	356	16.9	0.33	11	21	4.71	17.5	5.05	1	358	0.5
25	D579675	CL-SF-027	Crystal Lake		299800	5325580	367	9.5	0.46	5.7	14.2	2.93	9.9	4.2	1	139.5	0.3
26	D579676	CL-SF-028	Crystal Lake		298536	5324147	412	9.3	0.25	7.1	13.5	2.87	5.2	3.32	1	265	0.4
27	D579677	CL-SF-029	Crystal Lake		298402	5324104	420	10.1	0.3	7.6	14.7	3.2	6.4	3.63	1	271	0.4
28	D579678	CL-SF-030	Crystal Lake		298308	5324186	433	10.6	0.29	7.7	15.4	3.25	6.3	3.78	1	261	0.5
29	D579679	CL-SF-031	Crystal Lake		298148	5324134	443	6.1	0.2	4.1	9.3	1.97	3	2.26	<1	280	0.2
30	D579680		Crystal Lake	CRM				17.9	0.21	5.6	19.8	4.74	65.9	4.21	2	416	0.3
31	D579681	CL-SF-032	Crystal Lake		297893	5324183	435	7.2	0.24	6	10.3	2.19	7.4	2.74	1	240	0.2
32	D579682	CL-SF-033	Crystal Lake		297895	5324181	438	11.7	0.31	8.4	16.8	3.6	5.8	4.3	1	265	0.5
33	D579683	CL-SF-034	Crystal Lake		297772	5324161	419	8.1	0.25	6	12.3	2.58	4	2.99	1	273	0.4
34	D579684	CL-SF-035	Crystal Lake		297942	5324075	422	3.4	0.05	1.5	4	0.89	13	0.8	1	295	0.1
35	D579685	CL-SF-036	Crystal Lake		297942	5324075	422	5.7	0.1	3.2	6.6	1.49	30.3	1.61	1	228	0.2
36	D579686	CL-SF-038	Crystal Lake		310692	5326343	256	10.6	0.29	7.2	15.8	3.27	56.3	3.66	1	465	0.4
37	D579687	CL-SF-039	Crystal Lake		310676	5326334	260	11	0.33	7.8	15.2	3.57	18.2	4	1	273	0.5
38	D579688	CL-SF-040	Crystal Lake		310646	5326655	284	10.8	0.32	7.5	15.8	3.32	27.8	3.9	1	390	0.3
39	D579689	CL-SF-041	Crystal Lake		310581	5326902	308	11	0.31	8.2	16.6	3.44	8.8	3.96	1	280	0.4
40	D579690		Crystal Lake	Qtz Blank				1.3	0.03	0.2	1.1	0.22	0.5	0.15	<1	75.1	<0.1
41	D579691	CL-SF-021	Crystal Lake		299058	5325584	356	11	0.25	7.9	14.4	3.29	22.4	3.48	1	360	0.4
42	D579692	CL-SF-042	Crystal Lake		309322	5326132	373	6.1	0.15	4.3	8.4	1.87	21.3	2.03	1	402	0.2
43	D579693	CL-SF-044	Crystal Lake		309302	5326176	375	10.4	0.28	7.6	14.4	3.21	10	3.49	1	284	0.4
44	D579694	CL-SF-045	Crystal Lake		309215	5326154	375	4.8	0.12	2.5	5.7	1.28	8.4	1.24	1	235	0.1
45	D579695	CL-SF-046	Crystal Lake		309214	5326143	370	7.1	0.13	3.1	7.7	1.9	20.7	1.86	1	246	0.1
46	D579696	CL-SF-047	Crystal Lake		309033	5326031	402	7.2	0.2	5.2	10.3	2.23	4.8	2.55	1	289	0.3
47	D579697	CL-SF-048	Crystal Lake		308961	5325985	408	6.5	0.2	4.5	9.4	1.95	8.9	2.26	1	305	0.3
48	D579698	CL-SF-049	Crystal Lake		308934	5325885	403	9.6	0.26	6.8	13.4	3.02	6.4	3.39	1	275	0.4
49	D579699	CL-SF-050	Crystal Lake		308969	5325890	395	6.4	0.18	5.3	8.9	1.99	4.9	2.13	1	292	0.3
50	D579700		Crystal Lake	CRM				18.1	0.22	5.7	20.5	4.74	71.3	4.19	2	416	0.2
51	D579701	CL-SF-051	Crystal Lake		309120	5325973	392	7.9	0.23	6	11.1	2.54	5.3	2.72	1	294	0.3
52	D579702	CL-SF-052	Crystal Lake		309567	5325978	370	13.1	0.33	8.8	17.9	3.86	15.2	3.99	1	304	0.4
53	D579703	CL-SF-053	Crystal Lake		307216	5327251	453	30.1	0.76	26.9	44.2	9.5	21.5	10.9	2	300	1.4
54	D579704	CL-SF-057	Crystal Lake		307710	5327039	455	8.3	0.17	5.2	10.4	2.29	87.1	2.73	1	998	0.2
55	D579705	CL-SF-058	Crystal Lake		308292	5326896	442	7.6	0.16	5.5	10.4	2.31	46.8	2.5	1	515	0.2
56	D579706	CL-SF-059	Crystal Lake		308732	5326582	444	8.3	0.29	6.2	13.3	2.9	102.5	3.3	2	838	0.2
57	D579707	CL-SF-061	Crystal Lake		308070	5326878	439	9.3	0.22	6.1	12	2.77	27.1	2.56	1	411	0.4
58	D579708	CL-SF-062	Crystal Lake		309922	5325909	323	13.1	0.37	9.6	18.8	4.11	33	4.21	1	441	0.5
59	D579709	CL-SF-063	Crystal Lake		310145	5325821	302	10.8	0.32	7.9	16.5	3.6	15.4	4.15	1	292	0.5
60	D579710		Crystal Lake	Qtz Blank				1.2	0.02	0.2	1	0.22	<0.2	0.16	<1	85.5	<0.1

Method Analyzed								ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
Sequence	Sample_Number	Station_ID	Area	QAQC	Easting_UTM_NAD83	Northing_UTM_NAD83	Elevation_m	Tb ppm 0.01	Th ppm 0.05	Tm ppm 0.01	U ppm 0.05	V ppm 5	W ppm 1	Y ppm 0.1	Yb ppm 0.03	Zr ppm 2	As ppm 0.1		
1	D579651		Crystal Lake	Qtz Blank				0.04	0.07	0.02	0.17	7	<1	2.1	0.16	3	<0.1		
2	D579652	CL-SM-001	Crystal Lake		305001	5329315	277	1.21	3.9	0.45	1.2	385	1	33.8	2.62	252	1.8		
3	D579653	CL-SF-001	Crystal Lake		298564	5324125	437	0.49	0.66	0.24	0.18	193	1	16.6	1.46	78	0.3		
4	D579654	CL-SF-002	Crystal Lake		298584	5324227	427	0.5	0.59	0.24	0.17	189	<1	16.4	1.5	78	0.1		
5	D579655	CL-SF-004	Crystal Lake		298775	5324115	439	0.56	0.72	0.28	0.19	207	<1	18.5	1.65	89	0.2		
6	D579656	CL-SF-005	Crystal Lake		298828	5324123	427	0.57	0.72	0.3	0.16	213	<1	19.4	1.7	99	0.2		
7	D579657	CL-SF-006	Crystal Lake		298823	5324128	429	0.5	0.62	0.24	0.29	172	<1	16.1	1.54	76	0.1		
8	D579658	CL-SF-008	Crystal Lake		298995	5324170	419	0.47	0.69	0.25	0.19	175	<1	16.8	1.51	85	0.2		
9	D579659	CL-SF-009	Crystal Lake		299227	5324155	410	0.6	0.72	0.3	0.21	209	<1	19.3	1.69	94	0.2		
10	D579660		Crystal Lake	CRM				0.47	6.11	0.23	1.4	207	2	15.8	1.5	93	121		
11	D579661	CL-SF-010	Crystal Lake		299431	5324192	409	0.43	0.59	0.22	0.16	161	<1	14.2	1.26	71	0.3		
12	D579662	CL-SF-007	Crystal Lake		298813	5324136	440	0.53	0.64	0.25	0.16	201	<1	17.7	1.67	90	0.2		
13	D579663	CL-SF-014	Crystal Lake		299629	5324197	406	0.26	0.36	0.14	0.09	204	1	9.2	0.81	42	10.5		
14	D579664	CL-SF-015	Crystal Lake		299634	5324199	400	0.32	0.67	0.19	0.33	114	<1	10.2	1.01	39	29		
15	D579665	CL-SF-016	Crystal Lake		299640	5324193	415	0.22	0.44	0.09	0.23	199	<1	7.3	0.71	28	1.3		
16	D579666	CL-SF-013	Crystal Lake		299669	5324280	393	0.34	0.46	0.17	0.13	127	<1	11.4	1.04	54	0.3		
17	D579667	CL-SF-017	Crystal Lake		299008	5325549	378	0.46	0.87	0.22	0.23	104	<1	15.1	1.32	85	11		
18	D579668	CL-SF-018	Crystal Lake		299007	5325543	363	0.51	1.05	0.23	0.25	123	<1	16.8	1.51	95	3.1		
19	D579669	CL-SF-019	Crystal Lake		299007	5325542	361	0.55	1.14	0.28	0.26	125	<1	17.9	1.62	103	0.5		
20	D579670		Crystal Lake	Qtz Blank				0.03	0.19	0.02	0.1	<5	<1	2.1	0.11	5	1.5		
21	D579671	CL-SF-020	Crystal Lake		299055	5325586	355	0.49	1.05	0.25	0.26	121	<1	16.5	1.6	89	4.8		
22	D579672	CL-SF-024	Crystal Lake		299184	5325613	357	0.71	1.55	0.32	0.44	123	<1	21.1	2.18	133	4.9		
23	D579673	CL-SF-025	Crystal Lake		299265	5325636	356	1.18	2.16	0.52	0.55	327	<1	34.8	3.51	201	32.8		
24	D579674	CL-SF-026	Crystal Lake		299322	5325590	356	0.81	1.43	0.36	0.35	224	<1	23.8	2.54	139	2.1		
25	D579675	CL-SF-027	Crystal Lake		299800	5325580	367	0.82	1.43	0.44	0.43	456	<1	27.7	3.11	108	0.9		
26	D579676	CL-SF-028	Crystal Lake		299536	5324147	412	0.6	0.71	0.28	0.19	310	<1	18.7	1.89	94	0.2		
27	D579677	CL-SF-029	Crystal Lake		298402	5324104	420	0.65	0.79	0.31	0.2	307	<1	19.8	2	100	0.4		
28	D579678	CL-SF-030	Crystal Lake		298308	5324186	433	0.66	0.86	0.3	0.23	272	<1	20.4	2.04	108	0.3		
29	D579679	CL-SF-031	Crystal Lake		298148	5324134	443	0.4	0.42	0.2	0.13	240	<1	13	1.24	57	0.2		
30	D579680		Crystal Lake	CRM				0.52	5.76	0.21	1.54	239	2	14.9	1.52	79	120.5		
31	D579681	CL-SF-032	Crystal Lake		297893	5324183	435	0.53	0.97	0.26	0.54	330	<1	17.6	1.84	68	1.5		
32	D579682	CL-SF-033	Crystal Lake		297895	5324181	438	0.74	0.93	0.35	0.22	293	<1	22.4	2.35	113	0.2		
33	D579683	CL-SF-034	Crystal Lake		297772	5324161	419	0.54	0.62	0.24	0.15	259	<1	16.3	1.66	81	0.2		
34	D579684	CL-SF-035	Crystal Lake		297942	5324075	422	0.16	0.42	0.06	0.22	101	<1	4.2	0.4	19	29.5		
35	D579685	CL-SF-036	Crystal Lake		297942	5324075	422	0.21	0.86	0.12	0.56	341	<1	7.1	0.84	39	28.4		
36	D579686	CL-SF-038	Crystal Lake		310692	5326343	256	0.65	1.15	0.36	0.36	252	<1	21	2.1	113	1		
37	D579687	CL-SF-039	Crystal Lake		310676	5326334	260	0.68	1.18	0.32	0.36	310	<1	21.8	2.27	116	0.9		
38	D579688	CL-SF-040	Crystal Lake		310646	5326655	284	0.66	0.93	0.3	0.27	233	<1	20.7	2.1	100	1.4		
39	D579689	CL-SF-041	Crystal Lake		310581	5326902	308	0.67	0.92	0.35	0.23	286	<1	22.5	2.25	109	0.5		
40	D579690		Crystal Lake	Qtz Blank				0.04	0.06	0.02	0.08	9	<1	2.3	0.14	3	<0.1		
41	D579691	CL-SF-021	Crystal Lake		299058	5325584	356	0.54	1	0.27	0.23	203	<1	18.2	1.82	106	0.4		
42	D579692	CL-SF-042	Crystal Lake		309322	5326132	373	0.34	0.44	0.18	0.12	135	<1	11.3	1.14	57	0.7		
43	D579693	CL-SF-044	Crystal Lake		309302	5326176	375	0.62	0.82	0.29	0.37	267	<1	20.6	1.84	103	0.4		
44	D579694	CL-SF-045	Crystal Lake		309215	5326154	375	0.21	0.56	0.11	0.26	173	<1	7.1	0.62	37	44		
45	D579695	CL-SF-046	Crystal Lake		309214	5326143	370	0.28	1.15	0.15	0.66	167	<1	9	0.99	46	19.9		
46	D579696	CL-SF-047	Crystal Lake		309033	5326031	402	0.46	0.59	0.21	0.16	186	<1	14.8	1.27	74	0.7		
47	D579697	CL-SF-048	Crystal Lake		308961	5325985	408	0.4	0.47	0.2	0.14	208	<1	13.7	1.19	62	0.5		
48	D579698	CL-SF-049	Crystal Lake		308934	5325885	403	0.57	0.74	0.25	0.2	210	<1	18.6	1.71	91	0.2		
49	D579699	CL-SF-050	Crystal Lake		308969	5325890	395	0.4	0.47	0.2	0.12	236	<1	12.8	1.18	58	9.7		
50	D579700		Crystal Lake	CRM				0.5	6.04	0.21	1.42	230	2	16	1.59	78	114		
51	D579701	CL-SF-051	Crystal Lake		309120	5325973	392	0.5	0.64	0.24	0.15	204	2	15.9	1.4	77	9.4		
52	D579702	CL-SF-052	Crystal Lake		309567	5325978	370	0.7	1.11	0.38	0.62	317	1	23.2	2.26	125	0.4		
53	D579703	CL-SF-053	Crystal Lake		307216	5327251	453	1.69	2.38	0.78	0.7	677	1	53.4	5	254	0.5		
54	D579704	CL-SF-057	Crystal Lake		307710	5327039	455	0.38	0.81	0.19	0.27	117	<1	12.7	1.22	71	4.7		
55	D579705	CL-SF-058	Crystal Lake		308292	5326896	442	0.42	0.75	0.17	0.2	105	<1	12.9	1.22	69	0.6		
56	D579706	CL-SF-059	Crystal Lake		308732	5326582	444	0.58	0.77	0.31	0.22	243	1	19.4	1.92	92	29.4		
57	D579707	CL-SF-061	Crystal Lake		308070	5326878	439	0.5	0.92	0.24	0.32	231	<1	16.7	1.6	82	0.7		
58	D579708	CL-SF-062	Crystal Lake		309922	5325909	323	0.81	1.15	0.37	0.31	371	<1	26	2.38	128	0.5		
59	D579709	CL-SF-063	Crystal Lake		310145	5325821	302	0.76	1.03	0.38	0.34	325	<1	26	2.35	124	0.3		
60	D579710		Crystal Lake	Qtz Blank				0.04	0.09	0.02	0.1	<5	<1	2.4	0.11	2	0.1		

Method Analyzed								ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-4ACD81	ME-4ACD81
Sequence	Sample_Number	Station_ID	Area	QAQC	Easting_UTM_NAD83	Northing_UTM_NAD83	Elevation_m	Bi ppm 0.01	Hg ppm 0.005	In ppm 0.005	Re ppm 0.001	Sb ppm 0.05	Se ppm 0.2	Te ppm 0.01	Tl ppm 0.02	Ag ppm 0.5	Cd ppm 0.5
1	D579651		Crystal Lake	Qtz Blank				<0.01	<0.005	<0.005	<0.001	<0.05	0.7	<0.01	<0.02	<0.5	<0.5
2	D579652	CL-SM-001	Crystal Lake		305001	5329315	277	0.06	0.03	0.042	0.001	0.37	0.3	0.01	0.26	<0.5	0.5
3	D579653	CL-SF-001	Crystal Lake		298564	5324125	437	0.01	<0.005	0.015	<0.001	<0.05	0.2	0.01	<0.02	<0.5	<0.5
4	D579654	CL-SF-002	Crystal Lake		298584	5324227	427	0.01	<0.005	0.014	<0.001	<0.05	<0.2	<0.01	<0.02	<0.5	<0.5
5	D579655	CL-SF-004	Crystal Lake		298775	5324115	439	0.01	<0.005	0.016	<0.001	<0.05	0.2	<0.01	0.02	<0.5	0.5
6	D579656	CL-SF-005	Crystal Lake		298828	5324123	427	<0.01	<0.005	0.017	<0.001	<0.05	0.2	<0.01	0.02	<0.5	<0.5
7	D579657	CL-SF-006	Crystal Lake		298823	5324128	429	0.01	<0.005	0.016	<0.001	<0.05	0.2	<0.01	0.02	<0.5	<0.5
8	D579658	CL-SF-008	Crystal Lake		298995	5324170	419	0.01	<0.005	0.014	<0.001	<0.05	0.2	<0.01	0.03	<0.5	<0.5
9	D579659	CL-SF-009	Crystal Lake		299227	5324155	410	0.01	<0.005	0.016	<0.001	<0.05	0.2	<0.01	0.04	<0.5	<0.5
10	D579660		Crystal Lake	CRM				1.62	0.235	0.084	0.005	16.6	4.9	0.71	0.35	10.6	8
11	D579661	CL-SF-010	Crystal Lake		299431	5324192	409	0.01	<0.005	0.014	0.001	<0.05	0.3	0.01	0.07	<0.5	<0.5
12	D579662	CL-SF-007	Crystal Lake		298813	5324136	440	0.01	<0.005	0.016	<0.001	<0.05	0.2	<0.01	0.02	<0.5	<0.5
13	D579663	CL-SF-014	Crystal Lake		299629	5324197	406	0.39	<0.005	0.049	0.004	0.08	1.6	0.07	0.18	0.7	0.8
14	D579664	CL-SF-015	Crystal Lake		299634	5324199	400	0.33	<0.005	0.107	0.037	0.21	4.8	0.09	0.34	0.7	1.3
15	D579665	CL-SF-016	Crystal Lake		299640	5324193	415	0.03	<0.005	0.017	0.001	0.06	0.3	0.01	0.14	<0.5	<0.5
16	D579666	CL-SF-013	Crystal Lake		299669	5324280	393	0.01	<0.005	0.013	<0.001	<0.05	0.2	0.01	0.02	<0.5	<0.5
17	D579667	CL-SF-017	Crystal Lake		299008	5325549	378	1.83	<0.005	0.119	0.019	1.38	11.8	0.86	0.08	5.1	0.6
18	D579668	CL-SF-018	Crystal Lake		299007	5325543	363	0.17	<0.005	0.027	0.003	0.11	1	0.05	0.03	0.7	<0.5
19	D579669	CL-SF-019	Crystal Lake		299007	5325542	361	0.03	<0.005	0.014	0.001	<0.05	0.4	0.02	0.03	<0.5	<0.5
20	D579670		Crystal Lake	Qtz Blank				<0.01	<0.005	<0.005	<0.001	0.06	0.8	<0.01	<0.02	<0.5	<0.5
21	D579671	CL-SF-020	Crystal Lake		299055	5325586	355	0.68	0.006	0.06	0.013	0.18	4.1	0.22	0.04	2.6	0.7
22	D579672	CL-SF-024	Crystal Lake		299184	5325613	357	0.42	0.011	0.05	0.002	0.16	2.1	0.14	0.3	1.1	0.5
23	D579673	CL-SF-025	Crystal Lake		299265	5325636	356	0.05	0.012	0.038	0.001	1.49	0.7	0.1	0.38	0.7	0.5
24	D579674	CL-SF-026	Crystal Lake		299322	5325590	356	0.39	0.01	0.043	0.003	0.08	1.8	0.09	0.27	1.2	0.6
25	D579675	CL-SF-027	Crystal Lake		299800	5325580	367	0.02	0.006	0.013	0.001	<0.05	0.3	<0.01	0.04	<0.5	<0.5
26	D579676	CL-SF-028	Crystal Lake		298536	5324147	412	0.01	0.009	0.016	<0.001	<0.05	0.2	<0.01	0.02	<0.5	<0.5
27	D579677	CL-SF-029	Crystal Lake		298402	5324104	420	0.01	0.007	0.016	<0.001	<0.05	0.3	<0.01	0.04	<0.5	<0.5
28	D579678	CL-SF-030	Crystal Lake		298308	5324186	433	0.01	0.005	0.019	0.001	<0.05	0.3	<0.01	0.02	<0.5	<0.5
29	D579679	CL-SF-031	Crystal Lake		298148	5324134	443	0.01	0.009	0.011	<0.001	<0.05	0.2	<0.01	<0.02	<0.5	<0.5
30	D579680		Crystal Lake	CRM				1.58	0.243	0.085	0.004	17.15	4.6	0.63	0.32	10.9	8
31	D579681	CL-SF-032	Crystal Lake		297893	5324183	435	0.01	0.006	0.006	<0.001	<0.05	<0.2	0.11	<0.02	<0.5	1.1
32	D579682	CL-SF-033	Crystal Lake		297895	5324181	438	0.01	0.006	0.017	<0.001	<0.05	0.2	<0.01	0.02	<0.5	<0.5
33	D579683	CL-SF-034	Crystal Lake		297772	5324161	419	0.01	<0.005	0.016	<0.001	<0.05	0.2	0.01	<0.02	<0.5	<0.5
34	D579684	CL-SF-035	Crystal Lake		297942	5324075	422	0.43	0.009	0.033	0.003	0.35	1.4	0.07	0.47	0.6	0.8
35	D579685	CL-SF-036	Crystal Lake		297942	5324075	422	0.21	0.013	0.025	0.002	0.28	1.2	0.04	0.18	<0.5	0.7
36	D579686	CL-SF-038	Crystal Lake		310692	5326343	256	0.01	0.007	0.015	0.001	<0.05	0.3	0.01	0.04	<0.5	<0.5
37	D579687	CL-SF-039	Crystal Lake		310676	5326334	260	0.01	0.005	0.017	0.001	<0.05	0.3	0.01	0.18	<0.5	<0.5
38	D579688	CL-SF-040	Crystal Lake		310646	5326655	284	0.02	0.006	0.015	0.001	0.1	0.3	0.01	0.85	<0.5	<0.5
39	D579689	CL-SF-041	Crystal Lake		310581	5326902	308	0.05	0.006	0.019	<0.001	<0.05	0.2	<0.01	0.08	<0.5	<0.5
40	D579690		Crystal Lake	Qtz Blank				<0.01	<0.005	<0.005	<0.001	<0.05	0.8	<0.01	<0.02	<0.5	<0.5
41	D579691	CL-SF-021	Crystal Lake		299058	5325584	356	0.01	<0.005	0.014	0.001	<0.05	0.2	<0.01	0.02	<0.5	<0.5
42	D579692	CL-SF-042	Crystal Lake		309322	5326132	373	0.03	0.013	0.012	0.001	<0.05	0.3	0.01	1.21	<0.5	<0.5
43	D579693	CL-SF-044	Crystal Lake		309302	5326176	375	0.01	<0.005	0.016	0.001	<0.05	0.3	<0.01	0.13	<0.5	<0.5
44	D579694	CL-SF-045	Crystal Lake		309215	5326154	375	1.08	0.006	0.048	0.01	0.87	2.8	0.21	1.25	1.1	0.9
45	D579695	CL-SF-046	Crystal Lake		309214	5326143	370	0.25	0.011	0.015	0.005	0.28	1.6	0.07	1.09	<0.5	0.7
46	D579696	CL-SF-047	Crystal Lake		309033	5326031	402	0.01	0.005	0.015	<0.001	<0.05	0.2	<0.01	0.07	<0.5	<0.5
47	D579697	CL-SF-048	Crystal Lake		308961	5325985	408	0.01	<0.005	0.012	<0.001	<0.05	0.2	0.01	0.05	<0.5	<0.5
48	D579698	CL-SF-049	Crystal Lake		308934	5325885	403	0.01	<0.005	0.016	<0.001	<0.05	0.3	<0.01	0.05	<0.5	<0.5
49	D579699	CL-SF-050	Crystal Lake		308969	5325890	395	0.46	<0.005	0.03	0.003	0.15	0.9	0.05	0.2	<0.5	0.6
50	D579700		Crystal Lake	CRM				1.5	0.225	0.079	0.004	16.35	4.3	0.6	0.31	10.6	7.9
51	D579701	CL-SF-051	Crystal Lake		309120	5325973	392	0.09	<0.005	0.018	<0.001	0.15	0.2	0.01	0.13	<0.5	0.6
52	D579702	CL-SF-052	Crystal Lake		309567	5325978	370	0.01	<0.005	0.012	0.001	<0.05	0.3	0.01	0.06	<0.5	0.5
53	D579703	CL-SF-053	Crystal Lake		307216	5327251	453	0.02	0.005	0.034	0.003	0.07	0.4	0.01	0.02	<0.5	0.8
54	D579704	CL-SF-057	Crystal Lake		307710	5327039	455	0.01	0.014	0.011	<0.001	0.09	0.2	0.01	0.07	<0.5	<0.5
55	D579705	CL-SF-058	Crystal Lake		308292	5326896	442	0.06	0.045	0.013	0.001	0.28	0.4	0.03	0.19	<0.5	<0.5
56	D579706	CL-SF-059	Crystal Lake		308732	5326582	444	0.07	0.015	0.021	<0.001	0.76	<0.2	0.01	0.1	<0.5	<0.5
57	D579707	CL-SF-061	Crystal Lake		308070	5326878	439	0.02	<0.005	0.014	0.001	0.14	0.2	0.01	0.1	<0.5	<0.5
58	D579708	CL-SF-062	Crystal Lake		309922	5325909	323	0.01	<0.005	0.012	0.001	<0.05	0.4	0.01	0.06	<0.5	0.6
59	D579709	CL-SF-063	Crystal Lake		310145	5325821	302	0.01	<0.005	0.017	<0.001	<0.05	0.2	<0.01	0.19	<0.5	<0.5
60	D579710		Crystal Lake	Qtz Blank				<0.01	<0.005	<0.005	<0.001	<0.05	0.9	<0.01	<0.02	<0.5	<0.5

Method Analyzed								ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	Cu-OG62	Ni-OG62
Sequence	Sample Number	Station ID	Area	QAQC	Easting UTM_NAD83	Northing UTM_NAD83	Elevation_m	Co ppm 1	Cu ppm 1	Li ppm 10	Mo ppm 1	Ni ppm 1	Pb ppm 2	Sc ppm 1	Zn ppm 2	Cu % 0.001	Ni % 0.001	
1	D579651		Crystal Lake	Qtz Blank				<1	4	<10	<1	3	<2	1	3			
2	D579652	CL-SM-001	Crystal Lake		305001	5329315	277	53	264	20	1	69	5	26	154			
3	D579653	CL-SF-001	Crystal Lake		298564	5324125	437	63	129	10	<1	255	2	19	99			
4	D579654	CL-SF-002	Crystal Lake		298584	5324227	427	62	127	10	<1	242	<2	21	96			
5	D579655	CL-SF-004	Crystal Lake		298775	5324115	439	59	151	10	<1	187	2	25	105			
6	D579656	CL-SF-005	Crystal Lake		298828	5324123	427	63	151	10	<1	222	<2	24	107			
7	D579657	CL-SF-006	Crystal Lake		298823	5324128	429	65	125	10	<1	243	3	16	98			
8	D579658	CL-SF-008	Crystal Lake		298995	5324170	419	65	132	10	<1	231	<2	22	104			
9	D579659	CL-SF-009	Crystal Lake		299227	5324155	410	69	144	10	<1	261	<2	24	109			
10	D579660		Crystal Lake	CRM				333	9180	10	1	>10000	2590	22	2270		2.13	
11	D579661	CL-SF-010	Crystal Lake		299431	5324192	409	72	131	10	<1	350	<2	15	97			
12	D579662	CL-SF-007	Crystal Lake		298813	5324136	440	64	143	10	<1	222	2	23	106			
13	D579663	CL-SF-014	Crystal Lake		299629	5324197	406	128	956	20	5	500	13	19	97			
14	D579664	CL-SF-015	Crystal Lake		299634	5324199	400	409	2580	30	46	1150	11	12	146			
15	D579665	CL-SF-016	Crystal Lake		299640	5324193	415	70	459	20	1	180	4	35	118			
16	D579666	CL-SF-013	Crystal Lake		299669	5324280	393	69	108	10	<1	342	<2	12	86			
17	D579667	CL-SF-017	Crystal Lake		299008	5325549	378	143	>10000	20	1	4960	4	10	85	1.46		
18	D579668	CL-SF-018	Crystal Lake		299007	5325543	363	72	1350	10	1	908	8	15	97			
19	D579669	CL-SF-019	Crystal Lake		299007	5325542	361	37	421	20	1	290	4	12	73			
20	D579670		Crystal Lake	Qtz Blank				<1	13	<10	<1	7	<2	<1	3			
21	D579671	CL-SF-020	Crystal Lake		299055	5325586	355	93	6210	10	1	2490	14	14	67			
22	D579672	CL-SF-024	Crystal Lake		299184	5325613	357	58	2880	20	1	794	8	11	92			
23	D579673	CL-SF-025	Crystal Lake		299265	5325636	356	61	1205	20	1	309	8	33	141			
24	D579674	CL-SF-026	Crystal Lake		299322	5325590	356	92	2250	20	1	1115	10	21	114			
25	D579675	CL-SF-027	Crystal Lake		299800	5325580	367	53	256	10	<1	98	2	38	123			
26	D579676	CL-SF-028	Crystal Lake		298536	5324147	412	59	175	10	<1	168	3	28	109			
27	D579677	CL-SF-029	Crystal Lake		298402	5324104	420	61	157	10	<1	183	3	30	110			
28	D579678	CL-SF-030	Crystal Lake		298308	5324186	433	63	171	10	1	191	2	24	115			
29	D579679	CL-SF-031	Crystal Lake		298148	5324134	443	61	117	10	<1	213	2	22	93			
30	D579680		Crystal Lake	CRM				339	9360	10	2	>10000	2640	22	2300		2.15	
31	D579681	CL-SF-032	Crystal Lake		297893	5324183	435	54	251	20	<1	242	3	33	73			
32	D579682	CL-SF-033	Crystal Lake		297895	5324181	438	60	205	10	<1	174	3	30	119			
33	D579683	CL-SF-034	Crystal Lake		297772	5324161	419	65	145	10	<1	213	<2	26	103			
34	D579684	CL-SF-035	Crystal Lake		297942	5324075	422	154	713	40	8	807	13	8	92			
35	D579685	CL-SF-036	Crystal Lake		297942	5324075	422	92	408	40	8	362	14	18	145			
36	D579686	CL-SF-038	Crystal Lake		310692	5326343	256	56	178	40	<1	168	3	26	103			
37	D579687	CL-SF-039	Crystal Lake		310676	5326334	260	58	167	20	<1	168	3	27	110			
38	D579688	CL-SF-040	Crystal Lake		310646	5326655	284	57	236	30	<1	202	<2	24	104			
39	D579689	CL-SF-041	Crystal Lake		310581	5326902	308	59	164	10	<1	164	2	30	110			
40	D579690		Crystal Lake	Qtz Blank				2	4	<10	<1	<1	<2	<1	3			
41	D579691	CL-SF-021	Crystal Lake		299058	5325584	356	34	116	10	<1	158	3	19	68			
42	D579692	CL-SF-042	Crystal Lake		309322	5326132	373	61	86	40	<1	285	<2	12	76			
43	D579693	CL-SF-044	Crystal Lake		309302	5326176	375	63	148	10	<1	231	<2	24	106			
44	D579694	CL-SF-045	Crystal Lake		309215	5326154	375	200	2070	20	10	1685	10	15	78			
45	D579695	CL-SF-046	Crystal Lake		309214	5326143	370	138	654	30	7	826	11	16	120			
46	D579696	CL-SF-047	Crystal Lake		309033	5326031	402	65	123	10	<1	246	<2	18	88			
47	D579697	CL-SF-048	Crystal Lake		308961	5325985	408	57	99	10	<1	197	<2	26	82			
48	D579698	CL-SF-049	Crystal Lake		308934	5325885	403	65	146	10	<1	219	2	21	101			
49	D579699	CL-SF-050	Crystal Lake		308969	5325890	395	108	642	10	2	461	9	22	97			
50	D579700		Crystal Lake	CRM				337	9350	10	<1	>10000	2680	22	2300		2.12	
51	D579701	CL-SF-051	Crystal Lake		309120	5325973	392	67	185	10	<1	326	5	22	102			
52	D579702	CL-SF-052	Crystal Lake		309567	5325978	370	57	188	20	<1	179	<2	30	110			
53	D579703	CL-SF-053	Crystal Lake		307216	5327251	453	49	240	20	1	45	5	46	181			
54	D579704	CL-SF-057	Crystal Lake		307710	5327039	455	28	144	70	<1	53	<2	11	49			
55	D579705	CL-SF-058	Crystal Lake		308292	5326896	442	42	334	50	<1	227	<2	8	52			
56	D579706	CL-SF-059	Crystal Lake		308732	5326582	444	52	63	80	<1	204	5	26	127			
57	D579707	CL-SF-061	Crystal Lake		308070	5326878	439	46	132	20	<1	138	2	21	82			
58	D579708	CL-SF-062	Crystal Lake		309922	5325909	323	53	163	30	<1	117	2	32	138			
59	D579709	CL-SF-063	Crystal Lake		310145	5325821	302	58	180	10	<1	146	<2	31	112			
60	D579710		Crystal Lake	Qtz Blank				<1	3	<10	<1	<1	<2	<1	3			

Method Analyzed								WEI-Z1	CRU-QC	PUL-QC	OA-GRA08	PGM-MS23L	PGM-MS23L	PGM-MS23L	PGM-ICP27	PGM-ICP27	PGM-ICP27
Sequence	Sample_Number	Station_ID	Area	QAQC	Easting_UTM_NAD83	Northing_UTM_NAD83	Elevation_m	Recvd Wt. kg 0.02	Pass2mm % 0.01	Pass75um % 0.01	S.G. Unity 0.01	Au ppb 1	Pt ppb 0.1	Pd ppb 0.2	Au ppm 0.01	Pt ppm 0.01	Pd ppm 0.01
61	D579711	CL-SF-064	Crystal Lake		310254	5325872	289	0.86			3.09	3	3.9	2.7			
62	D579712	CL-SF-065	Crystal Lake		309652	5326350	405	1.08			2.57	2	5.6	8.7			
63	D579713	CL-SF-066	Crystal Lake		309757	5326363	433	0.65			3.03	2	2	1.9			
64	D579714	CL-SF-067	Crystal Lake		309794	5326411	441	1.27			2.93	12	17.9	24.4			
65	D579715	CL-SF-068	Crystal Lake		309979	5326502	400	1.46			2.96	3	3.1	1.1			
66	D579716	CL-SF-069	Crystal Lake		310084	5326304	378	1.35			2.97	4	4.1	5.2			
67	D579717	CL-SF-070	Crystal Lake		310020	5326244	381	0.67			2.97	2	3.3	3.5			
68	D579718	CL-SF-071	Crystal Lake		309959	5326209	392	0.72			3.04	3	4.6	4.3			
69	D579719	CL-SF-072	Crystal Lake		309897	5326171	411	0.84			3.05	3	4.2	3.8			
70	D579720	Crystal Lake		CRM				0.06				168	418	209			
71	D579721	CL-SF-075	Crystal Lake		309016	5324228	409	0.94			2.98	3	3.2	2.4			
72	D579722	CL-SF-074	Crystal Lake		309024	5324265	413	1.22			3.07	3	3.7	3.7			
73	D579723	CL-SF-073	Crystal Lake		309003	5324285	398	1.36			2.79	2	17	28			
74	D579724	CL-SF-076	Crystal Lake		309031	5324188	390	1.11			2.82	3	2.3	1.9			
75	D579725	CL-SF-077	Crystal Lake		309043	5324166	374	1			3.05	3	5	4			
76	D579726	CL-SF-078	Crystal Lake		308884	5323998	372	2.23			2.96	3	3.7	2.2			
77	D579727	CL-SF-079	Crystal Lake		308826	5324018	388	1.38			2.93	2	1.9	1.6			
78	K0005001	Crystal Lake		Qtz Blank						92.8		3	0.4	1.4			
79	K0005002	CL-SF-082	Crystal Lake		307970	5325473	458		85.3	93	3.03	2	4.4	4.8			
80	K0005003	CL-SF-083	Crystal Lake		307950	5325618	451				3.11	5	7.9	11.2			
81	K0005004	CL-SF-084	Crystal Lake		307903	5325630	442				3.07	2	4.4	6.6			
82	K0005005	CL-SF-085	Crystal Lake		308043	5325719	428				3.06	2	5.5	6			
83	K0005006	CL-SF-086	Crystal Lake		307814	5325652	449				3	2	4.7	5.5			
84	K0005007	CL-SF-087	Crystal Lake		307517	5325536	426				3.04	1	3.8	4.8			
85	K0005008	CL-SF-088	Crystal Lake		307430	5325391	441				3.01	2	5.4	5.9			
86	K0005009	Crystal Lake		CRM								246	>1000	>1000	0.26	3.88	1.74
87	K0005010	CL-SF-081	Crystal Lake		308010	5325318	423				3	2	5.2	5.1			

Method Analyzed				ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06		
Sequence	Sample_Number	Station_ID	Area	QAQC	Easting_UTM_NAD83	Northing_UTM_NAD83	Elevation_m	SiO2	Al2O3	Fe2O3	CaO	MgO	Na2O	K2O	Cr2O3	TiO2	MnO
								%	%	%	%	%	%	%	%	%	%
								0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	0.01	0.01
61	D579711	CL-SF-064	Crystal Lake		310254	5325872	289	47.5	15.95	13.85	10.15	6.76	2.61	0.42	0.017	1.66	0.18
62	D579712	CL-SF-065	Crystal Lake		309652	5326350	405	58.3	15.35	9.63	1.34	3.84	3.03	4.23	0.021	1.28	0.07
63	D579713	CL-SF-066	Crystal Lake		309757	5326363	433	46.7	20.5	10.05	10.45	9.94	2.03	0.22	0.011	0.66	0.12
64	D579714	CL-SF-067	Crystal Lake		309794	5326411	441	45	17.9	12.95	8.5	8.9	1.85	1.11	0.022	0.83	0.13
65	D579715	CL-SF-068	Crystal Lake		309979	5326502	400	47.3	16.85	12.65	10.55	7.75	2.64	0.35	0.04	1.51	0.16
66	D579716	CL-SF-069	Crystal Lake		310084	5326304	378	47.2	18.95	10.95	9.63	8.6	2.29	0.76	0.015	0.91	0.14
67	D579717	CL-SF-070	Crystal Lake		310020	5326244	381	49.2	16.8	9.46	11.35	7.29	2.43	0.4	0.063	0.91	0.12
68	D579718	CL-SF-071	Crystal Lake		309959	5326209	392	48.3	15.8	12.95	9.37	7.44	2.34	0.43	0.023	1.5	0.17
69	D579719	CL-SF-072	Crystal Lake		309897	5326171	411	47.6	15.85	14.5	9.19	7.92	2.39	0.54	0.017	1.71	0.19
70	D579720		Crystal Lake	CRM				46.3	13.6	17	8.13	6.3	1.94	1.47	0.307	0.86	0.16
71	D579721	CL-SF-075	Crystal Lake		309016	5324228	409	48.3	17.65	11.05	9.37	6.89	2.49	0.56	0.012	1.1	0.14
72	D579722	CL-SF-074	Crystal Lake		309024	5324265	413	47.6	15.6	13.15	8.76	10.05	2.17	0.31	0.012	0.96	0.16
73	D579723	CL-SF-073	Crystal Lake		309003	5324285	398	57.4	14.6	12.3	2.75	2.5	2.67	1.39	0.008	2.21	0.09
74	D579724	CL-SF-076	Crystal Lake		309031	5324188	390	53.3	17	8.43	7.36	4.34	3.27	2.68	0.009	1.71	0.12
75	D579725	CL-SF-077	Crystal Lake		309043	5324166	374	49	17.4	13.3	10.05	7.19	2.56	0.4	0.014	1.36	0.17
76	D579726	CL-SF-078	Crystal Lake		308884	5323998	372	50.1	14	14.9	7.43	3.72	2.74	1.43	0.009	2.36	0.19
77	D579727	CL-SF-079	Crystal Lake		308826	5324018	388	52.2	13.85	15.5	7.17	3.19	2.83	1.58	0.005	2.57	0.19
78	K0005001		Crystal Lake	Qtz Blank				11.3	0.12	0.2	48.2	2.37	0.04	0.01	<0.002	0.01	0.01
79	K0005002	CL-SF-082	Crystal Lake		307970	5325473	458	48.1	16.15	13.75	9.93	7.17	2.58	0.52	0.018	1.55	0.18
80	K0005003	CL-SF-083	Crystal Lake		307950	5325618	451	46.4	16.4	15.15	10.65	7.83	2.35	0.19	0.018	1.76	0.19
81	K0005004	CL-SF-084	Crystal Lake		307903	5325630	442	47.1	16.6	13.85	10.05	9.37	2.34	0.24	0.023	1.21	0.18
82	K0005005	CL-SF-085	Crystal Lake		308043	5325719	428	47.7	16.35	13.85	10	8.02	2.54	0.29	0.022	1.53	0.18
83	K0005006	CL-SF-086	Crystal Lake		307814	5325652	449	48.1	17.25	13.45	10.15	8.76	2.48	0.27	0.019	1.4	0.17
84	K0005007	CL-SF-087	Crystal Lake		307517	5325536	426	47.3	17.55	12.85	10.1	8.5	2.46	0.24	0.021	1.1	0.17
85	K0005008	CL-SF-088	Crystal Lake		307430	5325391	441	46.8	16.75	13.45	10.4	7.11	2.59	0.33	0.019	1.6	0.17
86	K0005009		Crystal Lake	CRM				48.2	11.45	11.45	6.36	18	0.91	0.18	1.985	0.24	0.17
87	K0005010	CL-SF-081	Crystal Lake		308010	5325318	423	48.1	15.65	13.85	10.1	6.98	2.51	0.46	0.019	1.64	0.2

Method Analyzed								ME-ICP06	ME-ICP06	ME-ICP06	OA-GRA05	TOT-ICP06	C-IR07	S-IR08	ME-MS81	ME-MS81	ME-MS81
Sequence	Sample Number	Station ID	Area	QAQC	Easting_UTM_NAD83	Northing_UTM_NAD83	Elevation_m	P2O5 %	SrO %	BaO %	LOI %	Total %	C %	S %	Ba ppm	Ce ppm	Cr ppm
								0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.5	0.1	10
61	D579711	CL-SF-064	Crystal Lake		310254	5325872	289	0.16	0.03	0.01	-0.02	99.28	0.08	0.04	118	23.4	120
62	D579712	CL-SF-065	Crystal Lake		309652	5326350	405	0.18	0.02	0.08	3.68	101.05	0.19	0.01	705	39.4	160
63	D579713	CL-SF-066	Crystal Lake		309757	5326363	433	0.09	0.04	0.01	0.28	101.1	0.04	0.02	72.9	11.9	90
64	D579714	CL-SF-067	Crystal Lake		309794	5326411	441	0.07	0.07	0.02	3.64	100.99	0.03	0.09	162.5	12.4	150
65	D579715	CL-SF-068	Crystal Lake		309979	5326502	400	0.12	0.04	0.01	0.71	100.68	0.06	0.03	93.9	17.9	230
66	D579716	CL-SF-069	Crystal Lake		310084	5326304	378	0.09	0.05	0.02	1.37	100.98	0.02	0.01	177	16.3	110
67	D579717	CL-SF-070	Crystal Lake		310020	5326244	381	0.09	0.03	0.01	2.24	100.39	0.02	0.01	112.5	22.1	470
68	D579718	CL-SF-071	Crystal Lake		309959	5326209	392	0.17	0.03	0.02	1.2	99.74	0.02	0.02	146.5	26.2	170
69	D579719	CL-SF-072	Crystal Lake		309897	5326171	411	0.16	0.04	0.02	0.94	101.07	0.02	0.03	150.5	26.4	120
70	D579720		Crystal Lake	CRM				0.29	0.05	0.08	2.55	99.04	0.06	5.23	652	39.2	2260
71	D579721	CL-SF-075	Crystal Lake		309016	5324228	409	0.11	0.04	0.01	0.75	98.47	0.02	0.02	118	17	80
72	D579722	CL-SF-074	Crystal Lake		309024	5324265	413	0.1	0.03	0.01	-0.05	98.86	0.02	0.03	88	14.7	90
73	D579723	CL-SF-073	Crystal Lake		309003	5324285	398	0.18	0.04	0.04	2.89	99.07	0.04	0.9	384	63.2	50
74	D579724	CL-SF-076	Crystal Lake		309031	5324188	390	0.05	0.04	0.04	3.28	101.63	0.12	0.03	382	25.5	70
75	D579725	CL-SF-077	Crystal Lake		309043	5324166	374	0.14	0.03	0.01	0.09	101.71	0.02	0.02	112.5	20.7	100
76	D579726	CL-SF-078	Crystal Lake		308884	5323998	372	0.32	0.04	0.04	1.03	98.31	0.02	0.11	349	54.4	70
77	D579727	CL-SF-079	Crystal Lake		308826	5324018	388	0.39	0.04	0.05	1.66	101.23	0.01	0.11	402	68	30
78	K0005001		Crystal Lake	Qtz Blank				0.02	0.01	<0.01	37	99.29	10.4	0.01	13.2	0.8	10
79	K0005002	CL-SF-082	Crystal Lake		307970	5325473	458	0.17	0.03	0.02	0.3	100.47	0.04	0.02	140	23.9	130
80	K0005003	CL-SF-083	Crystal Lake		307950	5325618	451	0.03	0.03	0.01	-0.28	100.73	0.01	0.41	55.1	5.3	120
81	K0005004	CL-SF-084	Crystal Lake		307903	5325630	442	0.12	0.03	0.01	-0.43	100.69	0.04	0.02	99.2	17.2	160
82	K0005005	CL-SF-085	Crystal Lake		308043	5325719	428	0.16	0.03	0.01	-0.3	100.38	0.01	0.02	121.5	23.5	150
83	K0005006	CL-SF-086	Crystal Lake		307814	5325652	449	0.15	0.03	0.01	-0.42	101.82	0.01	0.02	110.5	21	130
84	K0005007	CL-SF-087	Crystal Lake		307517	5325536	426	0.12	0.03	0.01	-0.41	100.04	0.01	0.01	99.3	17.3	150
85	K0005008	CL-SF-088	Crystal Lake		307430	5325391	441	0.17	0.04	0.02	-0.47	98.98	0.01	0.03	129.5	24.5	120
86	K0005009		Crystal Lake	CRM				0.03	0.02	0.01	1.48	100.49	0.11	0.46	65.4	6.2	>10000
87	K0005010	CL-SF-081	Crystal Lake		308010	5325318	423	0.18	0.03	0.02	1.04	100.78	0.01	0.04	172.5	24.7	130



Method Analyzed								ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
Sequence	Sample Number	Station ID	Area	QAQC	Easting UTM_NAD83	Northing UTM_NAD83	Elevation m	Cs ppm 0.01	Dy ppm 0.05	Er ppm 0.03	Eu ppm 0.02	Ga ppm 0.1	Gd ppm 0.05	Ge ppm 5	Hf ppm 0.1	Ho ppm 0.01	La ppm 0.1
61	D579711	CL-SF-064	Crystal Lake		310254	5325872	289	1.48	4.41	2.4	1.44	20.5	4.31	<5	2.9	0.92	9.6
62	D579712	CL-SF-065	Crystal Lake		309652	5326350	405	1.07	4.59	2.5	1.07	21.1	4.35	<5	4.6	0.89	18.1
63	D579713	CL-SF-066	Crystal Lake		309757	5326363	433	1.63	1.77	1.04	0.78	17.7	1.89	<5	1.2	0.39	5.1
64	D579714	CL-SF-067	Crystal Lake		309794	5326411	441	3.14	1.9	1.11	0.96	17.2	1.91	<5	1.3	0.41	5.4
65	D579715	CL-SF-068	Crystal Lake		309979	5326502	400	0.72	2.87	1.65	1.06	16.2	3.12	<5	2	0.61	7.4
66	D579716	CL-SF-069	Crystal Lake		310084	5326304	378	3.87	2.45	1.41	0.96	17.8	2.43	<5	1.7	0.49	7
67	D579717	CL-SF-070	Crystal Lake		310020	5326244	381	3.33	2.68	1.51	1.08	20.4	3	<5	1.7	0.52	9.7
68	D579718	CL-SF-071	Crystal Lake		309959	5326209	392	2.25	3.9	2.14	1.38	19.5	3.92	<5	2.6	0.76	11.2
69	D579719	CL-SF-072	Crystal Lake		309897	5326171	411	2.35	4.1	2.24	1.35	20.3	4.29	<5	2.7	0.8	11.3
70	D579720	Crystal Lake	CRM					3.76	3.11	1.68	1.21	16.2	3.62	<5	2.2	0.63	18.2
71	D579721	CL-SF-075	Crystal Lake		309016	5324228	409	1.98	2.78	1.62	1.07	19.2	2.95	<5	1.8	0.56	7.3
72	D579722	CL-SF-074	Crystal Lake		309024	5324265	413	1.65	2.54	1.48	0.89	16.8	2.5	<5	1.6	0.5	6.2
73	D579723	CL-SF-073	Crystal Lake		309003	5324285	398	3.59	5.45	3	1.93	22.4	5.91	<5	4.8	1.02	29.2
74	D579724	CL-SF-076	Crystal Lake		309031	5324188	390	1.89	2.22	1.35	0.75	19.7	2.52	<5	1.8	0.53	12
75	D579725	CL-SF-077	Crystal Lake		309043	5324166	374	1.87	3.57	2.1	1.24	20.2	3.66	<5	2.5	0.71	8.7
76	D579726	CL-SF-078	Crystal Lake		308884	5323998	372	3.95	6.47	3.8	2.03	22.5	6.47	<5	5.2	1.32	23.6
77	D579727	CL-SF-079	Crystal Lake		308826	5324018	388	4.66	7.54	4.53	2.3	24.6	8.27	<5	6.4	1.58	30
78	K0005001	Crystal Lake	Qtz Blank					<0.01	0.14	0.1	0.02	0.4	0.2	<5	<0.1	0.03	0.9
79	K0005002	CL-SF-082	Crystal Lake		307970	5325473	458	2.13	4.3	2.55	1.32	19.5	4.34	<5	2.8	0.89	10
80	K0005003	CL-SF-083	Crystal Lake		307950	5325618	451	1.06	1.3	0.71	0.61	16.4	1.26	<5	0.6	0.27	2.2
81	K0005004	CL-SF-084	Crystal Lake		307903	5325630	442	1.14	2.85	1.52	1	18	2.89	<5	1.8	0.59	7.4
82	K0005005	CL-SF-085	Crystal Lake		308043	5325719	428	1.65	3.76	2.28	1.27	19.1	3.87	<5	2.5	0.81	10.1
83	K0005006	CL-SF-086	Crystal Lake		307814	5325652	449	1.06	3.32	1.98	1.11	18.9	3.57	<5	2.2	0.69	8.8
84	K0005007	CL-SF-087	Crystal Lake		307517	5325536	426	0.88	2.65	1.75	1.01	18.6	2.83	<5	2	0.57	7.4
85	K0005008	CL-SF-088	Crystal Lake		307430	5325391	441	0.56	3.66	2.28	1.21	19.2	4.2	<5	2.6	0.79	10.3
86	K0005009	Crystal Lake	CRM					0.16	0.67	0.47	0.21	10.9	0.66	<5	0.5	0.15	3.1
87	K0005010	CL-SF-081	Crystal Lake		308010	5325318	423	2.23	4.37	2.51	1.34	19.4	4.53	<5	2.8	0.9	10.2

Method Analyzed								ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
Sequence	Sample_Number	Station_ID	Area	QAQC	Easting_UTM_NAD83	Northing_UTM_NAD83	Elevation_m	Lu ppm 0.01	Nb ppm 0.1	Nd ppm 0.1	Pr ppm 0.02	Rb ppm 0.2	Sm ppm 0.03	Sn ppm 1	Sr ppm 0.1	Ta ppm 0.1	Tb ppm 0.01
61	D579711	CL-SF-064	Crystal Lake		310254	5325872	289	0.35	7.2	14.7	3.2	11.4	3.75	1	259	0.4	0.72
62	D579712	CL-SF-065	Crystal Lake		309652	5326350	405	0.36	12.9	19.8	5.07	149.5	4.27	2	130	0.8	0.72
63	D579713	CL-SF-066	Crystal Lake		309757	5326363	433	0.13	3.5	7.4	1.61	6.3	1.66	<1	334	0.2	0.27
64	D579714	CL-SF-067	Crystal Lake		309794	5326411	441	0.14	3.8	7.5	1.65	44.1	1.65	3	581	0.2	0.31
65	D579715	CL-SF-068	Crystal Lake		309979	5326502	400	0.21	5.8	10.7	2.4	6.7	2.68	1	258	0.3	0.48
66	D579716	CL-SF-069	Crystal Lake		310084	5326304	378	0.19	4.9	9.9	2.19	26.4	2.12	1	392	0.3	0.4
67	D579717	CL-SF-070	Crystal Lake		310020	5326244	381	0.21	7.6	12.2	2.9	12.3	2.61	1	284	0.3	0.46
68	D579718	CL-SF-071	Crystal Lake		309959	5326209	392	0.3	8.5	15.3	3.5	11.8	3.47	1	288	0.5	0.64
69	D579719	CL-SF-072	Crystal Lake		309897	5326171	411	0.31	8.8	15.4	3.53	17.1	3.7	1	319	0.5	0.67
70	D579720		Crystal Lake	CRM				0.23	6	20	4.95	72.9	4.05	1	442	0.4	0.53
71	D579721	CL-SF-075	Crystal Lake		309016	5324228	409	0.22	5.2	10.1	2.29	18.3	2.52	1	344	0.3	0.46
72	D579722	CL-SF-074	Crystal Lake		309024	5324265	413	0.2	4.3	8.8	2.01	9.2	2.05	1	257	0.3	0.42
73	D579723	CL-SF-073	Crystal Lake		309003	5324285	398	0.39	15.4	31.5	7.91	58.9	6.11	2	354	0.9	0.88
74	D579724	CL-SF-076	Crystal Lake		309031	5324188	390	0.19	5.6	12.4	3.14	95.2	2.58	1	368	0.4	0.37
75	D579725	CL-SF-077	Crystal Lake		309043	5324166	374	0.29	6.2	12.4	2.79	11.5	3.31	1	281	0.4	0.58
76	D579726	CL-SF-078	Crystal Lake		308884	5323998	372	0.44	13.8	29.7	6.84	48	6.36	2	312	0.8	1.05
77	D579727	CL-SF-079	Crystal Lake		308826	5324018	388	0.65	17	37.1	8.72	55	8.28	2	299	1	1.27
78	K0005001		Crystal Lake	Qtz Blank				0.01	0.1	0.6	0.15	0.2	0.11	<1	70.2	<0.1	0.02
79	K0005002	CL-SF-082	Crystal Lake		307970	5325473	458	0.32	6.8	13.9	3.32	17.3	4.22	1	264	0.5	0.65
80	K0005003	CL-SF-083	Crystal Lake		307950	5325618	451	0.1	1.3	3.1	0.66	3	1.07	<1	218	0.1	0.19
81	K0005004	CL-SF-084	Crystal Lake		307903	5325630	442	0.22	5.3	9.6	2.3	4.3	2.79	1	262	0.4	0.47
82	K0005005	CL-SF-085	Crystal Lake		308043	5325719	428	0.3	7.2	13.7	3.29	6	3.76	1	272	0.5	0.63
83	K0005006	CL-SF-086	Crystal Lake		307814	5325652	449	0.26	6.4	12	2.83	5.1	3.56	1	291	0.4	0.6
84	K0005007	CL-SF-087	Crystal Lake		307517	5325536	426	0.22	5.1	9.9	2.25	4.3	3.15	1	294	0.3	0.43
85	K0005008	CL-SF-088	Crystal Lake		307430	5325391	441	0.27	7.4	14	3.23	6.2	4.03	1	272	0.5	0.66
86	K0005009		Crystal Lake	CRM				0.07	1.2	2.8	0.7	5.2	0.58	1	142.5	0.1	0.11
87	K0005010	CL-SF-081	Crystal Lake		308010	5325318	423	0.36	7.2	14.2	3.42	12.3	4.19	1	294	0.5	0.73

Method Analyzed								ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS42	ME-MS42
Sequence	Sample_Number	Station_ID	Area	QAQC	Easting_UTM_NAD83	Northing_UTM_NAD83	Elevation_m	Th ppm 0.05	Tm ppm 0.01	U ppm 0.05	V ppm 5	W ppm 1	Y ppm 0.1	Yb ppm 0.03	Zr ppm 2	As ppm 0.1	Bi ppm 0.01
61	D579711	CL-SF-064	Crystal Lake		310254	5325872	289	0.96	0.35	0.3	319	<1	23.6	2.19	108	0.3	0.01
62	D579712	CL-SF-065	Crystal Lake		309652	5326350	405	6.9	0.35	4.36	205	1	24.1	2.46	181	1	0.02
63	D579713	CL-SF-066	Crystal Lake		309757	5326363	433	0.46	0.13	0.13	109	<1	9.7	0.86	47	0.3	<0.01
64	D579714	CL-SF-067	Crystal Lake		309794	5326411	441	0.53	0.17	0.35	150	<1	10.6	0.93	53	9	0.04
65	D579715	CL-SF-068	Crystal Lake		309979	5326502	400	0.64	0.22	0.18	229	<1	16	1.47	79	0.2	0.03
66	D579716	CL-SF-069	Crystal Lake		310084	5326304	378	0.64	0.19	0.2	146	<1	13.1	1.27	64	25.2	0.01
67	D579717	CL-SF-070	Crystal Lake		310020	5326244	381	1.2	0.21	0.4	290	<1	14.4	1.36	67	1	0.01
68	D579718	CL-SF-071	Crystal Lake		309959	5326209	392	1.01	0.32	0.27	253	<1	20.9	1.86	105	1	0.01
69	D579719	CL-SF-072	Crystal Lake		309897	5326171	411	1	0.33	0.31	289	<1	21.7	1.91	106	0.3	0.01
70	D579720		Crystal Lake	CRM				5.93	0.23	1.57	246	2	16.6	1.49	83	118.5	1.62
71	D579721	CL-SF-075	Crystal Lake		309016	5324228	409	0.8	0.22	0.21	184	<1	15.4	1.44	71	0.2	0.01
72	D579722	CL-SF-074	Crystal Lake		309024	5324265	413	0.68	0.19	0.19	169	1	13.7	1.36	66	0.1	0.01
73	D579723	CL-SF-073	Crystal Lake		309003	5324285	398	6.76	0.41	3.54	206	1	28.6	2.7	190	9	0.17
74	D579724	CL-SF-076	Crystal Lake		309031	5324188	390	3.01	0.21	1.82	547	1	13	1.26	67	2.8	0.02
75	D579725	CL-SF-077	Crystal Lake		309043	5324166	374	0.9	0.29	0.29	277	<1	20.2	1.95	95	1	0.01
76	D579726	CL-SF-078	Crystal Lake		308884	5323998	372	3.93	0.5	1.16	320	<1	34.7	3.16	215	1.2	0.04
77	D579727	CL-SF-079	Crystal Lake		308826	5324018	388	4.76	0.61	1.35	264	1	42.9	3.98	263	1.1	0.03
78	K0005001		Crystal Lake	Qtz Blank				<0.05	0.01	0.08	<5	<1	1.9	0.1	<2	0.1	<0.01
79	K0005002	CL-SF-082	Crystal Lake		307970	5325473	458	0.92	0.35	0.31	277	<1	23	2.39	113	0.4	0.01
80	K0005003	CL-SF-083	Crystal Lake		307950	5325618	451	0.15	0.08	<0.05	319	<1	6.5	0.66	20	0.4	0.14
81	K0005004	CL-SF-084	Crystal Lake		307903	5325630	442	0.53	0.22	0.14	203	<1	14.7	1.48	70	0.4	0.01
82	K0005005	CL-SF-085	Crystal Lake		308043	5325719	428	0.73	0.32	0.22	241	<1	20.1	1.78	100	0.3	0.01
83	K0005006	CL-SF-086	Crystal Lake		307814	5325652	449	0.61	0.27	0.17	219	<1	17.8	1.7	86	0.3	<0.01
84	K0005007	CL-SF-087	Crystal Lake		307517	5325536	426	0.52	0.24	0.14	187	<1	14.7	1.38	76	0.2	<0.01
85	K0005008	CL-SF-088	Crystal Lake		307430	5325391	441	0.73	0.29	0.23	239	<1	20.2	1.98	105	0.4	<0.01
86	K0005009		Crystal Lake	CRM				0.67	0.07	0.18	178	1	4.2	0.46	18	0.8	0.34
87	K0005010	CL-SF-081	Crystal Lake		308010	5325318	423	1.04	0.36	0.77	275	<1	23.3	2.31	116	1.5	0.02

Method Analyzed								ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-4ACD81	ME-4ACD81	ME-4ACD81
Sequence	Sample_Number	Station_ID	Area	QAQC	Easting_UTM_NAD83	Northing_UTM_NAD83	Elevation_m	Hg ppm 0.005	In ppm 0.005	Re ppm 0.001	Sb ppm 0.05	Se ppm 0.2	Te ppm 0.01	Tl ppm 0.02	Ag ppm 0.5	Cd ppm 0.5	Co ppm 1	
61	D579711	CL-SF-064	Crystal Lake		310254	5325872	289	<0.005	0.016	0.001	<0.05	<0.2	<0.01	0.11	<0.5	<0.5	58	
62	D579712	CL-SF-065	Crystal Lake		309652	5326350	405	0.007	0.054	0.005	0.21	<0.2	0.01	0.06	<0.5	0.7	36	
63	D579713	CL-SF-066	Crystal Lake		309757	5326363	433	<0.005	0.012	<0.001	<0.05	0.2	<0.01	0.03	<0.5	<0.5	66	
64	D579714	CL-SF-067	Crystal Lake		309794	5326411	441	0.006	0.023	0.004	0.18	0.4	0.03	0.06	<0.5	0.6	120	
65	D579715	CL-SF-068	Crystal Lake		309979	5326502	400	<0.005	0.013	0.001	<0.05	<0.2	<0.01	0.02	<0.5	0.5	57	
66	D579716	CL-SF-069	Crystal Lake		310084	5326304	378	<0.005	0.015	<0.001	0.39	<0.2	0.01	0.07	<0.5	<0.5	58	
67	D579717	CL-SF-070	Crystal Lake		310020	5326244	381	<0.005	0.009	<0.001	<0.05	<0.2	<0.01	0.06	<0.5	0.5	52	
68	D579718	CL-SF-071	Crystal Lake		309959	5326209	392	<0.005	0.015	0.001	<0.05	0.2	<0.01	0.24	<0.5	0.6	63	
69	D579719	CL-SF-072	Crystal Lake		309897	5326171	411	<0.005	0.017	<0.001	<0.05	0.2	0.01	0.11	<0.5	0.5	65	
70	D579720		Crystal Lake	CRM				0.238	0.083	0.005	16.75	4.6	0.61	0.31	11	7.8	334	
71	D579721	CL-SF-075	Crystal Lake		309016	5324228	409	0.005	0.012	<0.001	<0.05	<0.2	<0.01	0.08	<0.5	<0.5	59	
72	D579722	CL-SF-074	Crystal Lake		309024	5324265	413	<0.005	0.015	<0.001	<0.05	<0.2	0.01	0.07	<0.5	<0.5	79	
73	D579723	CL-SF-073	Crystal Lake		309003	5324285	398	0.009	0.065	0.001	0.17	1.2	0.07	0.49	0.5	0.7	52	
74	D579724	CL-SF-076	Crystal Lake		309031	5324188	390	0.007	0.015	<0.001	0.16	<0.2	<0.01	0.05	<0.5	<0.5	30	
75	D579725	CL-SF-077	Crystal Lake		309043	5324166	374	<0.005	0.017	<0.001	<0.05	0.2	<0.01	0.08	<0.5	0.5	60	
76	D579726	CL-SF-078	Crystal Lake		308884	5323998	372	<0.005	0.023	0.001	0.09	0.3	0.01	0.17	<0.5	0.6	44	
77	D579727	CL-SF-079	Crystal Lake		308826	5324018	388	<0.005	0.027	0.001	0.08	0.3	<0.01	0.14	<0.5	0.5	41	
78	K0005001		Crystal Lake	Qtz Blank				<0.005	<0.005	<0.001	<0.05	<0.2	<0.01	<0.02	<0.5	<0.5	<1	
79	K0005002	CL-SF-082	Crystal Lake		307970	5325473	458	<0.005	0.015	<0.001	<0.05	0.2	<0.01	0.11	<0.5	0.6	54	
80	K0005003	CL-SF-083	Crystal Lake		307950	5325618	451	<0.005	0.012	0.002	<0.05	0.3	0.02	0.02	<0.5	<0.5	76	
81	K0005004	CL-SF-084	Crystal Lake		307903	5325630	442	<0.005	0.017	0.001	<0.05	<0.2	<0.01	<0.02	<0.5	0.5	67	
82	K0005005	CL-SF-085	Crystal Lake		308043	5325719	428	<0.005	0.018	0.001	<0.05	0.3	<0.01	0.05	<0.5	0.5	57	
83	K0005006	CL-SF-086	Crystal Lake		307814	5325652	449	<0.005	0.016	<0.001	<0.05	0.2	<0.01	<0.02	<0.5	0.6	60	
84	K0005007	CL-SF-087	Crystal Lake		307517	5325536	426	<0.005	0.015	0.001	<0.05	<0.2	<0.01	0.03	<0.5	<0.5	60	
85	K0005008	CL-SF-088	Crystal Lake		307430	5325391	441	<0.005	0.016	0.001	<0.05	0.3	<0.01	0.02	<0.5	0.6	56	
86	K0005009		Crystal Lake	CRM				0.013	0.009	0.004	0.09	1.8	0.68	0.05	<0.5	0.5	110	
87	K0005010	CL-SF-081	Crystal Lake		308010	5325318	423	0.005	0.019	0.001	0.1	<0.2	<0.01	0.07	<0.5	0.5	52	

Method Analyzed																	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	Cu-OG62	Ni-OG62
Sequence	Sample_Number	Station_ID	Area	QAQC	Easting_UTM_NAD83	Northing_UTM_NAD83	Elevation_m	Cu ppm 1	Li ppm 10	Mo ppm 1	Ni ppm 1	Pb ppm 2	Sc ppm 1	Zn ppm 2	Cu % 0.001	Ni % 0.001									
61	D579711	CL-SF-064	Crystal Lake		310254	5325872	289	172	10	<1	144	<2	31	107											
62	D579712	CL-SF-065	Crystal Lake		309652	5326350	405	247	80	4	215	4	20	243											
63	D579713	CL-SF-066	Crystal Lake		309757	5326363	433	71	20	<1	391	2	8	68											
64	D579714	CL-SF-067	Crystal Lake		309794	5326411	441	470	60	<1	477	12	11	79											
65	D579715	CL-SF-068	Crystal Lake		309979	5326502	400	98	10	<1	147	<2	26	89											
66	D579716	CL-SF-069	Crystal Lake		310084	5326304	378	60	40	<1	304	<2	12	86											
67	D579717	CL-SF-070	Crystal Lake		310020	5326244	381	110	20	<1	156	<2	34	69											
68	D579718	CL-SF-071	Crystal Lake		309959	5326209	392	162	20	<1	201	<2	25	112											
69	D579719	CL-SF-072	Crystal Lake		309897	5326171	411	159	20	<1	234	<2	26	115											
70	D579720		Crystal Lake	CRM				9250	10	1	>10000	2580	22	2230		2.09									
71	D579721	CL-SF-075	Crystal Lake		309016	5324228	409	128	20	<1	205	2	18	92											
72	D579722	CL-SF-074	Crystal Lake		309024	5324265	413	133	20	<1	374	<2	20	99											
73	D579723	CL-SF-073	Crystal Lake		309003	5324285	398	804	80	2	363	19	24	143											
74	D579724	CL-SF-076	Crystal Lake		309031	5324188	390	47	40	<1	54	4	32	78											
75	D579725	CL-SF-077	Crystal Lake		309043	5324166	374	163	20	<1	164	<2	26	101											
76	D579726	CL-SF-078	Crystal Lake		308884	5323998	372	226	20	1	50	4	31	147											
77	D579727	CL-SF-079	Crystal Lake		308826	5324018	388	191	20	1	33	5	31	156											
78	K0005001		Crystal Lake	Qtz Blank				9	<10	1	17	<2	<1	8											
79	K0005002	CL-SF-082	Crystal Lake		307970	5325473	458	174	20	1	147	5	28	107											
80	K0005003	CL-SF-083	Crystal Lake		307950	5325618	451	299	10	1	301	5	31	106											
81	K0005004	CL-SF-084	Crystal Lake		307903	5325630	442	121	10	1	274	<2	23	97											
82	K0005005	CL-SF-085	Crystal Lake		308043	5325719	428	145	10	1	200	3	26	103											
83	K0005006	CL-SF-086	Crystal Lake		307814	5325652	449	127	10	1	230	4	23	94											
84	K0005007	CL-SF-087	Crystal Lake		307517	5325536	426	107	10	1	225	<2	21	90											
85	K0005008	CL-SF-088	Crystal Lake		307430	5325391	441	161	10	1	188	<2	25	105											
86	K0005009		Crystal Lake	CRM				972	10	2	2270	12	18	104											
87	K0005010	CL-SF-081	Crystal Lake		308010	5325318	423	187	30	1	143	9	30	152											

# APPENDIX F: ASSAY CERTIFICATES



ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
 www.alsglobal.com/geochemistry

To: **DUFFEY LAKE HOLDINGS INC.**  
**666 BURRARD STREET, 25TH FLOOR**  
**VANCOUVER BC V6C 2X8**

Page: 1  
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 Plus Appendix Pages  
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 Account: DLHIBMXL

## CERTIFICATE SD21299036

This report is for 91 samples of Rock submitted to our lab in Sudbury, ON, Canada on 3-NOV-2021.

The following have access to data associated with this certificate:

ABDEL ALFAHAM      WILSON BONNER      TRACI PARAMORE

## SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-21	Sample logging - ClientBarCode
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize up to 250g 85% <75 um
LOG-23	Pulp Login - Rcvd with Barcode
CRU-QC	Crushing QC Test
PUL-QC	Pulverizing QC Test

## ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
PGM-MS23L	Low level PGM - FA ICPMS	ICP-MS
PGM-ICP27	Ore grade Pt, Pd and Au by ICP	ICP-AES
ME-ICP06	Whole Rock Package - ICP-AES	ICP-AES
C-IR07	Total Carbon (IR Spectroscopy)	LECO
S-IR08	Total Sulphur (IR Spectroscopy)	LECO
ME-MS81	Lithium Borate Fusion ICP-MS	ICP-MS
ME-MS42	Up to 34 elements by ICP-MS	ICP-MS
OA-GRA05	Loss on Ignition at 1000C	WST-SEQ
TOT-ICP06	Total Calculation for ICP06	
ME-4ACD81	Base Metals by 4-acid dia.	ICP-AES
ME-OG62	Ore Grade Elements - Four Acid	ICP-AES
Cu-OG62	Ore Grade Cu - Four Acid	
Ni-OG62	Ore Grade Ni - Four Acid	
OA-GRA08	Specific Gravity - Bulk Sample	WST-SEQ

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.  
 \*\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*\*

Signature:

Saa Traxler, General Manager, North Vancouver



ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
 www.alsglobal.com/geochemistry

To: **DUFFEY LAKE HOLDINGS INC.**  
**666 BARRARD STREET, 25TH FLOOR**  
**VANCOUVER BC V6C 2X8**

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**CERTIFICATE OF ANALYSIS SD21299036**

Sample Description	Method Analyte Units LOD	WEI-21	CRU-QC	PUL-QC	QA-GRA08	PGM-MS23L	PGM-MS23L	PGM-MS23L	PGM-ICP27	PGM-ICP27	PGM-ICP27	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06
		Recvd Wt. kg 0.02	Pass2mm % 0.01	Pass75um % 0.01	S.C. Unity 0.01	Au ppb 1	Pt ppb 0.1	Pd ppb 0.2	Au ppm 0.01	Pt ppm 0.01	Pd ppm 0.01	SiO2 % 0.01	Al2O3 % 0.01	Fe2O3 % 0.01	CuO % 0.01	MgO % 0.01
D579651		1.18		95.5		3	0.2	0.5				11.15	0.22	0.25	49.6	2.57
D579652		0.94	82.2	89.9	3.02	5	2.2	9.4				47.7	13.00	16.50	7.06	4.05
D579653		1.23			3.03	3	4.2	4.5				45.9	17.05	12.90	9.94	8.45
D579654		1.21			3.08	3	3.9	4.6				46.5	17.35	12.55	10.05	8.58
D579655		0.92			3.09	4	5.1	5.2				46.5	17.00	13.30	10.10	7.59
D579656		1.32			3.07	3	4.7	4.9				46.8	16.40	13.75	9.97	8.37
D579657		1.51			3.04	3	3.9	4.4				46.7	17.55	13.00	9.93	8.93
D579658		0.98			3.05	3	4.9	5.1				46.7	16.90	13.25	9.59	8.41
D579659		0.90			3.10	3	4.9	4.9				46.7	16.30	14.00	9.74	9.14
D579660		0.06				138	399	206				42.0	13.45	16.90	7.98	6.11
D579661		0.90			3.08	3	4.3	4.5				45.9	17.25	13.00	9.63	10.25
D579662		1.10			3.08	3	5.1	5.1				46.4	16.95	13.10	10.05	8.31
D579663		1.64			2.92	12	21.6	25.6				44.7	17.45	14.55	9.46	8.34
D579664		1.05			2.61	14	19.3	41.3				32.0	10.50	31.0	4.81	6.66
D579665		1.23			3.12	6	7.5	5.7				43.6	14.70	16.20	9.33	7.46
D579666		1.01			3.01	3	4.1	2.3				46.6	19.20	11.65	10.45	9.69
D579667		1.34			2.97	320	911	>1000	0.34	0.83	3.90	42.4	22.0	13.20	11.20	2.83
D579668		1.00			2.99	25	40.7	223				45.8	20.6	11.30	10.75	7.19
D579669		1.06			2.91	9	16.3	108.5				46.9	23.7	8.03	12.00	3.96
D579670		1.03				3	0.2	1.7				10.35	0.22	0.21	50.4	2.97
D579671		0.62			2.99	114	214	>1000	0.12	0.22	1.24	44.8	22.4	10.20	12.30	3.33
D579672		0.72			2.91	51	110.5	567				46.0	20.1	11.45	8.63	5.22
D579673		1.00			3.04	18	27.2	180.5				46.5	14.15	15.45	8.66	6.55
D579674		0.98			3.02	35	104.5	411				46.2	17.60	14.20	9.66	6.52
D579675		1.06			3.12	7	3.6	22.3				49.5	13.70	15.40	10.10	6.34
D579676		0.83			3.10	4	4.5	7.8				49.9	15.95	13.65	10.35	7.57
D579677		0.86			3.10	3	5.1	6.0				47.1	15.65	13.70	10.20	7.54
D579678		1.59			3.05	3	4.4	4.7				48.1	16.00	14.50	10.05	7.86
D579679		0.82			3.08	4	5.4	53.0				48.1	17.20	12.60	10.55	8.31
D579680		0.06				143	413	211				45.7	13.55	16.95	8.06	6.32
D579681		0.47			3.17	5	12.1	6.7				48.8	15.65	10.75	14.95	6.80
D579682		0.71			3.14	3	5.7	5.1				47.0	15.25	14.30	10.10	7.43
D579683		0.61			3.14	3	4.4	6.8				46.9	17.05	13.35	10.35	8.18
D579684		1.24			2.88	14	19.6	34.6				41.9	18.80	14.75	8.77	8.09
D579685		1.95			2.80	9	7.4	12.2				44.9	17.85	14.15	7.35	8.72
D579686		0.92			3.05	2	5.6	5.7				47.8	16.00	13.55	8.72	7.18
D579687		0.87			3.07	4	6.5	6.0				48.2	15.35	14.00	9.22	7.16
D579688		1.21			2.97	4	8.5	11.9				47.6	16.75	12.90	9.36	6.78
D579689		1.59			3.02	4	6.7	7.2				47.2	16.05	14.30	10.30	7.30
D579690		1.32				3	0.2	0.4				9.32	0.26	0.27	51.5	2.15

\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*



ALS Canada Ltd.  
2103 Dollarton Hwy  
North Vancouver BC V7H 0A7  
Phone: +1 604 984 0221 Fax: +1 604 984 0218  
www.alsglobal.com/geochemistry

To: DUFFEY LAKE HOLDINGS INC.  
666 BURRARD STREET, 25TH FLOOR  
VANCOUVER BC V6C 2X8

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CERTIFICATE OF ANALYSIS SD21299036

Sample Description	Method Analyte Units LOD	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	OA-GRA05	TOT-ICP06	C-IR07	S-IR08	ME-MS81	ME-MS81	ME-MS81
		Na2O %	K2O %	Cr2O3 %	TiO2 %	MnO %	P2O5 %	SrO %	BaO %	LOI %	Total %	C %	S %	Ba ppm	Ce ppm	Cr ppm
D579651		0.08	0.02	-0.002	0.02	0.01	0.01	0.01	-0.01	96.9	100.84	10.30	0.02	15.4	1.2	10
D579652		2.90	1.16	0.002	3.49	0.18	0.38	0.05	0.04	2.16	98.67	0.37	0.24	377	71.6	20
D579653		2.61	0.36	0.018	1.30	0.16	0.13	0.03	0.01	-0.21	98.65	0.04	0.02	118.5	20.7	110
D579654		2.44	0.27	0.020	1.26	0.16	0.13	0.03	0.01	-0.36	98.99	0.02	0.03	115.5	19.2	140
D579655		2.47	0.33	0.021	1.42	0.17	0.15	0.03	0.01	-0.32	98.77	0.01	0.02	127.5	21.4	150
D579656		2.42	0.32	0.021	1.48	0.18	0.15	0.03	0.01	-0.32	99.58	0.01	0.02	129.5	22.3	150
D579657		2.42	0.28	0.018	1.22	0.17	0.12	0.03	0.01	-0.36	100.02	0.01	0.02	110.0	18.6	130
D579658		2.47	0.42	0.023	1.26	0.17	0.15	0.03	0.02	-0.31	99.08	0.01	0.03	139.5	20.1	160
D579659		2.36	0.30	0.021	1.43	0.18	0.15	0.03	0.01	-0.42	99.94	0.01	0.03	125.0	21.8	150
D579660		1.95	1.45	0.312	0.87	0.16	0.31	0.05	0.08	2.53	94.15	0.05	4.92	686	39.2	2230
D579661		2.22	0.26	0.019	1.08	0.16	0.13	0.03	0.01	-0.31	99.63	0.02	0.03	101.5	16.9	130
D579662		2.43	0.30	0.024	1.30	0.17	0.14	0.03	0.01	-0.41	98.80	0.02	0.02	124.5	20.9	170
D579663		1.99	0.47	0.047	0.74	0.13	0.07	0.04	0.01	3.00	101.00	0.02	1.54	85.4	10.2	330
D579664		0.88	0.20	0.034	0.46	0.12	0.06	0.02	0.01	12.35	99.10	0.05	5.51	79.7	15.7	240
D579665		2.34	0.45	0.035	4.06	0.19	0.05	0.03	0.01	-0.37	98.09	0.01	0.09	74.1	7.4	140
D579666		2.24	0.22	0.016	0.90	0.15	0.09	0.04	0.01	-0.34	100.92	0.02	0.04	91.9	13.3	120
D579667		2.39	0.63	0.019	1.15	0.09	0.14	0.04	0.02	2.47	98.58	0.02	2.69	142.0	22.8	120
D579668		2.28	0.51	0.025	1.20	0.13	0.13	0.04	0.02	0.29	100.27	0.02	0.32	151.5	25.1	180
D579669		2.62	0.65	0.021	1.18	0.11	0.13	0.05	0.02	0.78	100.15	0.02	0.07	178.0	27.3	150
D579670		0.05	0.03	-0.002	0.01	0.01	0.03	0.01	-0.01	37.5	101.79	10.40	0.01	18.9	2.9	<10
D579671		2.66	0.62	0.018	1.22	0.09	0.13	0.05	0.02	1.75	99.59	0.09	1.52	167.0	24.7	120
D579672		2.80	1.66	0.012	1.30	0.12	0.21	0.08	0.05	1.97	99.60	0.11	0.44	393	36.6	70
D579673		2.58	0.98	0.031	2.48	0.19	0.30	0.04	0.06	0.96	98.93	0.04	0.18	497	52.0	240
D579674		2.58	0.76	0.029	1.78	0.16	0.23	0.04	0.02	0.78	100.56	0.03	0.72	215	37.1	230
D579675		2.44	0.41	0.016	1.41	0.21	0.15	0.02	0.02	-0.28	99.44	0.02	0.01	148.0	21.9	120
D579676		2.58	0.30	0.029	1.53	0.18	0.15	0.03	0.01	-0.42	101.81	0.02	0.02	125.0	21.6	220
D579677		2.57	0.34	0.023	1.53	0.18	0.17	0.03	0.01	-0.48	98.56	0.02	0.03	132.0	23.6	180
D579678		2.60	0.34	0.021	1.52	0.19	0.17	0.03	0.02	-0.40	101.00	0.02	0.03	134.5	24.7	150
D579679		2.63	0.22	0.023	1.03	0.16	0.09	0.03	0.01	-0.49	100.46	0.02	-0.01	100.5	14.0	180
D579680		1.95	1.49	0.312	0.89	0.16	0.31	0.05	0.08	2.26	98.08	0.05	5.23	676	38.6	2420
D579681		2.66	0.38	0.059	1.00	0.15	0.08	0.03	0.02	0.52	101.85	0.03	-0.01	207	16.8	410
D579682		2.65	0.33	0.021	1.69	0.19	0.19	0.03	0.02	-0.40	98.80	0.02	0.02	148.0	26.8	160
D579683		2.66	0.27	0.025	1.35	0.17	0.12	0.03	0.01	-0.55	99.92	0.02	0.02	116.0	19.2	180
D579684		1.89	0.35	0.027	0.30	0.09	0.02	0.04	0.01	5.38	100.22	0.03	2.23	75.5	7.0	180
D579685		1.37	0.71	0.064	0.64	0.11	0.06	0.03	0.01	4.43	100.39	0.08	0.81	122.0	12.6	470
D579686		2.39	1.52	0.018	1.63	0.18	0.16	0.06	0.04	1.73	100.98	0.02	0.06	383	24.3	120
D579687		2.61	0.53	0.015	1.59	0.18	0.18	0.03	0.02	0.94	100.03	0.02	0.03	149.0	25.6	120
D579688		2.54	0.73	0.024	1.42	0.17	0.17	0.05	0.02	1.84	100.35	0.02	0.02	228	25.3	170
D579689		2.70	0.39	0.027	1.74	0.18	0.16	0.04	0.02	0.06	100.47	0.04	-0.01	151.5	26.0	190
D579690		0.08	0.03	-0.002	0.03	0.01	0.01	0.01	-0.01	38.3	101.97	10.60	0.01	15.0	1.1	<10

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ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
 www.alsglobal.com/geochemistry

To: DUFFEY LAKE HOLDINGS INC.  
 666 BURNARD STREET, 25TH FLOOR  
 VANCOUVER BC V6C 2X8

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 Total # Pages: 4 (A - F)  
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 Account: DLHBMXL

**CERTIFICATE OF ANALYSIS SD21299036**

Sample Description	Method Analyte Units LOD	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
		Cs ppm 0.01	Dy ppm 0.05	Er ppm 0.03	Eu ppm 0.02	Ga ppm 0.1	Gd ppm 0.05	Ce ppm 5	Hf ppm 0.1	Ho ppm 0.01	La ppm 0.1	Lu ppm 0.01	Nb ppm 0.1	Nd ppm 0.1	Pr ppm 0.02	Rb ppm 0.2	
D579651		0.02	0.23	0.16	0.04	0.4	0.25	<5	0.1	0.06	1.1	0.02	0.1	1.0	0.20	0.3	
D579652		5.31	7.33	3.41	2.72	23.9	9.26	<5	6.5	1.37	30.5	0.42	25.2	40.7	9.44	38.9	
D579653		0.52	3.39	1.62	1.24	18.8	3.32	<5	2.0	0.60	10.2	0.23	6.3	12.3	2.65	4.0	
D579654		0.44	3.50	1.84	1.14	18.0	3.50	<5	2.0	0.64	8.3	0.24	5.9	12.2	2.51	4.7	
D579655		0.55	3.78	1.99	1.23	19.1	3.71	<5	2.3	0.73	9.2	0.28	6.9	13.4	2.77	6.2	
D579656		0.63	3.83	2.11	1.22	18.7	3.86	<5	2.3	0.76	9.6	0.26	7.6	14.1	2.96	5.7	
D579657		0.66	3.21	1.81	1.08	18.4	3.31	<5	2.0	0.66	7.8	0.21	5.7	11.5	2.49	5.5	
D579658		1.40	3.56	1.64	1.11	18.8	3.46	<5	2.0	0.70	8.5	0.23	6.3	12.6	2.71	11.5	
D579659		1.06	4.00	2.01	1.29	18.0	3.90	<5	2.3	0.71	9.5	0.25	7.1	13.8	2.98	6.1	
D579660		3.55	3.26	1.70	1.23	15.9	3.84	<5	2.3	0.56	18.2	0.23	5.7	20.5	4.84	71.5	
D579661		0.81	2.83	1.46	0.99	16.7	3.04	<5	1.8	0.54	7.4	0.20	5.4	10.4	2.30	5.4	
D579662		0.76	3.78	1.83	1.15	18.8	3.78	<5	2.4	0.70	8.8	0.25	6.3	13.0	2.71	6.1	
D579663		2.12	1.85	0.94	0.96	16.4	1.81	<5	1.1	0.32	4.5	0.15	3.2	6.5	1.35	11.8	
D579664		3.55	2.40	1.09	0.81	11.2	2.24	<5	1.0	0.42	6.6	0.16	2.7	9.2	2.17	7.3	
D579665		1.36	1.46	0.76	0.75	10.8	1.69	<5	0.9	0.27	3.2	0.09	4.2	4.9	1.02	8.2	
D579666		0.51	2.25	1.30	0.92	17.7	2.22	<5	1.5	0.42	5.8	0.14	4.2	8.4	1.84	3.8	
D579667		2.16	3.13	1.71	1.22	19.9	3.07	<5	2.2	0.55	10.1	0.21	7.0	13.2	2.91	21.1	
D579668		1.79	3.23	1.73	1.22	20.3	3.68	<5	2.3	0.66	11.3	0.25	7.7	14.8	3.18	15.9	
D579669		2.01	3.51	1.85	1.37	21.6	3.91	<5	2.6	0.67	12.1	0.22	7.6	15.7	3.49	22.0	
D579670		0.03	0.29	0.11	0.08	0.4	0.32	<5	0.1	0.04	2.0	0.02	1.6	1.9	0.44	0.8	
D579671		2.60	3.17	1.70	1.17	20.3	3.71	<5	2.1	0.67	11.0	0.23	7.2	14.4	3.19	18.1	
D579672		3.31	4.08	2.46	1.50	21.7	4.40	<5	3.4	0.89	17.0	0.34	10.0	20.2	4.62	51.2	
D579673		1.95	6.81	3.97	2.06	23.5	7.31	<5	5.1	1.40	23.1	0.48	15.7	29.2	6.71	25.2	
D579674		1.33	4.61	2.63	1.63	21.3	4.88	<5	3.4	0.95	16.9	0.33	11.0	21.0	4.71	17.5	
D579675		0.29	5.28	3.24	1.27	20.7	4.62	<5	2.8	1.18	9.5	0.46	5.7	14.2	2.93	9.9	
D579676		0.69	3.61	2.10	1.30	20.0	3.89	<5	2.5	0.79	9.3	0.25	7.1	13.5	2.87	5.2	
D579677		0.62	4.04	2.26	1.33	20.0	4.17	<5	2.7	0.83	10.1	0.30	7.6	14.7	3.20	6.4	
D579678		0.62	4.07	2.31	1.36	19.3	4.10	<5	2.7	0.82	10.6	0.29	7.7	15.4	3.25	6.3	
D579679		0.53	2.55	1.59	1.01	19.6	2.60	<5	1.5	0.55	6.1	0.20	4.1	9.3	1.97	3.0	
D579680		3.74	2.93	1.72	1.24	15.7	3.49	<5	2.1	0.64	17.9	0.21	5.6	19.8	4.74	65.9	
D579681		0.42	3.44	2.06	1.04	17.4	3.33	<5	1.8	0.67	7.2	0.24	6.0	10.3	2.19	7.4	
D579682		0.39	4.47	2.58	1.47	20.3	4.56	<5	3.1	0.94	11.7	0.31	8.4	16.8	3.60	5.8	
D579683		0.23	3.20	1.93	1.17	19.3	3.26	<5	2.2	0.64	8.1	0.25	6.0	12.3	2.58	4.0	
D579684		4.15	0.76	0.44	0.66	15.0	0.90	<5	0.6	0.17	3.4	0.05	1.5	4.0	0.89	13.0	
D579685		4.47	1.36	0.90	1.15	17.2	1.59	<5	1.0	0.29	5.7	0.10	3.2	6.6	1.48	30.3	
D579686		2.27	4.28	2.15	1.23	19.6	4.20	<5	2.7	0.79	10.6	0.29	7.2	15.8	3.27	56.3	
D579687		2.46	4.48	2.18	1.41	20.2	4.34	<5	3.1	0.86	11.0	0.33	7.8	15.2	3.57	18.2	
D579688		4.68	4.37	2.36	1.26	21.0	4.09	<5	2.6	0.83	10.8	0.32	7.5	15.8	3.32	27.8	
D579689		1.40	4.31	2.70	1.36	21.7	4.38	<5	2.9	0.87	11.0	0.31	8.2	16.6	3.44	8.8	
D579690		0.02	0.29	0.20	0.05	0.4	0.26	<5	0.1	0.06	1.3	0.03	0.2	1.1	0.22	0.5	

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ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
 www.alsglobal.com/geochemistry

To: DUFFEY LAKE HOLDINGS INC.  
 666 BURRARD STREET, 25TH FLOOR  
 VANCOUVER BC V6C 2X8

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**CERTIFICATE OF ANALYSIS SD21299036**

Sample Description	Method Analyte Units LOD	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS42	ME-MS42
		Sm ppm 0.03	Sn ppm 1	Sr ppm 0.1	Ta ppm 0.1	Tb ppm 0.01	Th ppm 0.05	Tm ppm 0.01	U ppm 0.05	V ppm 5	W ppm 1	Y ppm 0.1	Yb ppm 0.03	Zr ppm 2	As ppm 0.1	Bi ppm 0.01
D579651		0.18	<1	70.6	<0.1	0.04	0.07	0.02	0.17	7	<1	2.1	0.16	3	<0.1	<0.01
D579652		9.03	2	443	1.5	1.21	3.90	0.45	1.20	385	1	33.8	2.62	252	1.8	0.06
D579653		3.20	1	268	0.2	0.49	0.66	0.24	0.18	193	1	16.6	1.46	78	0.3	0.01
D579654		3.23	1	272	0.3	0.50	0.59	0.24	0.17	189	<1	16.4	1.50	78	0.1	0.01
D579655		3.28	1	286	0.3	0.56	0.72	0.28	0.19	207	<1	18.5	1.65	89	0.2	0.01
D579656		3.59	1	271	0.4	0.57	0.72	0.30	0.16	213	<1	19.4	1.70	99	0.2	<0.01
D579657		2.96	1	278	0.3	0.50	0.62	0.24	0.29	172	<1	16.1	1.54	76	0.1	0.01
D579658		3.25	1	284	0.3	0.47	0.69	0.25	0.19	175	<1	16.8	1.51	85	0.2	0.01
D579659		3.51	1	262	0.3	0.60	0.72	0.30	0.21	209	<1	19.3	1.69	94	0.2	0.01
D579660		4.28	2	419	0.3	0.47	6.11	0.23	1.40	207	2	15.8	1.50	93	121.0	1.62
D579661		2.84	1	274	0.2	0.43	0.59	0.22	0.16	161	<1	14.2	1.26	71	0.3	0.01
D579662		3.20	1	281	0.3	0.53	0.64	0.25	0.16	201	<1	17.7	1.67	90	0.2	0.01
D579663		1.74	1	317	0.1	0.26	0.36	0.14	0.09	204	1	9.2	0.81	42	10.5	0.39
D579664		2.42	1	154.5	0.1	0.32	0.67	0.19	0.33	114	<1	10.2	1.01	39	29.0	0.33
D579665		1.44	<1	169.0	0.3	0.22	0.44	0.09	0.23	199	<1	7.3	0.71	28	1.3	0.03
D579666		1.92	1	289	0.2	0.34	0.46	0.17	0.13	127	<1	11.4	1.04	54	0.3	0.01
D579667		3.12	2	356	0.4	0.46	0.87	0.22	0.23	104	<1	15.1	1.32	85	11.0	1.83
D579668		3.30	1	334	0.4	0.51	1.05	0.23	0.25	123	<1	16.8	1.51	95	3.1	0.17
D579669		3.60	1	392	0.4	0.55	1.14	0.28	0.26	125	<1	17.9	1.62	103	0.5	0.03
D579670		0.26	<1	79.3	<0.1	0.03	0.19	0.02	0.10	<5	<1	2.1	0.11	5	1.5	<0.01
D579671		3.54	1	373	0.3	0.49	1.05	0.25	0.26	121	<1	16.5	1.60	89	4.8	0.68
D579672		4.75	1	648	0.5	0.71	1.55	0.32	0.44	123	<1	21.1	2.18	133	4.9	0.42
D579673		6.97	2	320	0.9	1.18	2.16	0.52	0.55	327	<1	34.8	3.51	201	32.8	0.05
D579674		5.05	1	358	0.5	0.81	1.43	0.36	0.35	224	<1	23.8	2.54	139	2.1	0.39
D579675		4.20	1	139.5	0.3	0.82	1.43	0.44	0.43	456	<1	27.7	3.11	108	0.9	0.02
D579676		3.32	1	265	0.4	0.60	0.71	0.28	0.19	310	<1	18.7	1.89	94	0.2	0.01
D579677		3.63	1	271	0.4	0.65	0.79	0.31	0.20	307	<1	19.8	2.00	100	0.4	0.01
D579678		3.78	1	261	0.5	0.66	0.86	0.30	0.23	272	<1	20.4	2.04	108	0.3	0.01
D579679		2.26	<1	280	0.2	0.40	0.42	0.20	0.13	240	<1	13.0	1.24	57	0.2	0.01
D579680		4.21	2	416	0.3	0.52	5.76	0.21	1.54	239	2	14.9	1.52	79	120.5	1.58
D579681		2.74	1	240	0.2	0.53	0.97	0.26	0.54	330	<1	17.6	1.84	68	1.5	0.01
D579682		4.30	1	265	0.5	0.74	0.93	0.35	0.22	293	<1	22.4	2.35	113	0.2	0.01
D579683		2.99	1	273	0.4	0.54	0.62	0.24	0.15	259	<1	16.3	1.66	81	0.2	0.01
D579684		0.80	1	295	0.1	0.16	0.42	0.06	0.22	101	<1	4.2	0.40	19	29.5	0.43
D579685		1.81	1	228	0.2	0.21	0.86	0.12	0.56	341	<1	7.1	0.84	39	28.4	0.21
D579686		3.66	1	465	0.4	0.65	1.15	0.36	0.36	252	<1	21.0	2.10	113	1.0	0.01
D579687		4.00	1	273	0.5	0.68	1.18	0.32	0.36	310	<1	21.8	2.27	116	0.9	0.01
D579688		3.90	1	390	0.3	0.66	0.93	0.30	0.27	233	<1	20.7	2.10	100	1.4	0.02
D579689		3.96	1	280	0.4	0.67	0.92	0.35	0.23	286	<1	22.5	2.25	109	0.5	0.05
D579690		0.15	<1	75.1	<0.1	0.04	0.06	0.02	0.08	9	<1	2.3	0.14	3	<0.1	<0.01

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ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
 www.alsglobal.com/geochemistry

To: **DUFFEY LAKE HOLDINGS INC.**  
**666 BURRARD STREET, 25TH FLOOR**  
**VANCOUVER BC V6C 2X8**

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**CERTIFICATE OF ANALYSIS SD21299036**

Sample Description	Method Analyte Units LOD	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	
		Hg ppm 0.005	In ppm 0.005	Re ppm 0.001	Sb ppm 0.05	Se ppm 0.2	Te ppm 0.01	Tl ppm 0.02	Ag ppm 0.5	Cd ppm 0.5	Co ppm 1	Cu ppm 1	Li ppm 10	Mo ppm 1	Ni ppm 1	Pb ppm 2
D579651		<0.005	<0.005	<0.001	<0.05	0.7	<0.01	<0.02	<0.5	<0.5	<1	4	<10	<1	3	<2
D579652		0.030	0.042	0.001	0.37	0.3	0.01	0.26	<0.5	0.5	53	264	20	1	69	5
D579653		<0.005	0.015	<0.001	<0.05	0.2	0.01	<0.02	<0.5	<0.5	63	129	10	<1	255	2
D579654		<0.005	0.014	<0.001	<0.05	<0.2	<0.01	<0.02	<0.5	<0.5	62	127	10	<1	242	<2
D579655		<0.005	0.016	<0.001	<0.05	0.2	<0.01	0.02	<0.5	0.5	59	151	10	<1	187	2
D579656		<0.005	0.017	<0.001	<0.05	0.2	<0.01	0.02	<0.5	<0.5	63	151	10	<1	222	<2
D579657		<0.005	0.016	<0.001	<0.05	0.2	<0.01	0.02	<0.5	<0.5	65	125	10	<1	243	3
D579658		<0.005	0.014	<0.001	<0.05	0.2	<0.01	0.03	<0.5	<0.5	65	132	10	<1	231	<2
D579659		<0.005	0.016	<0.001	<0.05	0.2	<0.01	0.04	<0.5	<0.5	69	144	10	<1	261	<2
D579660		0.235	0.084	0.005	16.60	4.9	0.71	0.35	10.6	8.0	333	9180	10	1	>10000	2590
D579661		<0.005	0.014	0.001	<0.05	0.3	0.01	0.07	<0.5	<0.5	72	131	10	<1	350	<2
D579662		<0.005	0.016	<0.001	<0.05	0.2	<0.01	0.02	<0.5	<0.5	64	143	10	<1	222	2
D579663		<0.005	0.049	0.004	0.08	1.6	0.07	0.18	0.7	0.8	128	956	20	5	500	13
D579664		<0.005	0.107	0.037	0.21	4.8	0.09	0.34	0.7	1.3	409	2580	30	46	1150	11
D579665		<0.005	0.017	0.001	0.06	0.3	0.01	0.14	<0.5	<0.5	70	459	20	1	180	4
D579666		<0.005	0.013	<0.001	<0.05	0.2	0.01	0.02	<0.5	<0.5	69	108	10	<1	342	<2
D579667		<0.005	0.119	0.019	1.38	11.8	0.86	0.08	5.1	0.6	143	>10000	20	1	4960	4
D579668		<0.005	0.027	0.003	0.11	1.0	0.05	0.03	0.7	<0.5	72	1350	10	1	908	8
D579669		<0.005	0.014	0.001	<0.05	0.4	0.02	0.03	<0.5	<0.5	37	421	20	1	290	4
D579670		<0.005	<0.005	<0.001	0.06	0.8	<0.01	<0.02	<0.5	<0.5	<1	13	<10	<1	7	<2
D579671		0.006	0.060	0.013	0.18	4.1	0.22	0.04	2.6	0.7	93	6210	10	1	2490	14
D579672		0.011	0.050	0.002	0.16	2.1	0.14	0.30	1.1	0.5	58	2880	20	1	794	8
D579673		0.012	0.038	0.001	1.49	0.7	0.10	0.38	0.7	0.5	61	1205	20	1	309	8
D579674		0.010	0.043	0.003	0.08	1.8	0.09	0.27	1.2	0.6	92	2250	20	1	1115	10
D579675		0.006	0.013	0.001	<0.05	0.3	<0.01	0.04	<0.5	<0.5	53	256	10	<1	98	2
D579676		0.009	0.016	<0.001	<0.05	0.2	<0.01	0.02	<0.5	<0.5	59	175	10	<1	168	3
D579677		0.007	0.016	<0.001	<0.05	0.3	<0.01	0.04	<0.5	<0.5	61	157	10	<1	183	3
D579678		0.005	0.019	0.001	<0.05	0.3	<0.01	0.02	<0.5	<0.5	63	171	10	1	191	2
D579679		0.009	0.011	<0.001	<0.05	0.2	<0.01	<0.02	<0.5	<0.5	61	117	10	<1	213	2
D579680		0.243	0.085	0.004	17.15	4.6	0.63	0.32	10.9	8.0	339	9360	10	2	>10000	2640
D579681		0.006	0.006	<0.001	<0.05	<0.2	0.11	<0.02	<0.5	1.1	54	251	20	<1	242	3
D579682		0.006	0.017	0.001	<0.05	0.2	<0.01	0.02	<0.5	<0.5	60	205	10	<1	174	3
D579683		<0.005	0.016	<0.001	<0.05	0.2	0.01	<0.02	<0.5	<0.5	65	145	10	<1	213	<2
D579684		0.009	0.033	0.003	0.35	1.4	0.07	0.47	0.6	0.8	154	713	40	8	807	13
D579685		0.013	0.025	0.002	0.28	1.2	0.04	0.18	<0.5	0.7	92	408	40	8	362	14
D579686		0.007	0.015	0.001	<0.05	0.3	0.01	0.04	<0.5	<0.5	56	178	40	<1	168	3
D579687		0.005	0.017	0.001	<0.05	0.3	0.01	0.18	<0.5	<0.5	58	167	20	<1	168	3
D579688		0.006	0.015	0.001	0.10	0.3	0.01	0.85	<0.5	<0.5	57	236	30	<1	202	<2
D579689		0.006	0.019	<0.001	<0.05	0.2	<0.01	0.08	<0.5	<0.5	59	164	10	<1	164	2
D579690		<0.005	<0.005	<0.001	<0.05	0.8	<0.01	<0.02	<0.5	<0.5	2	4	<10	<1	<1	<2

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ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
 www.alsglobal.com/geochemistry

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 666 BURRARD STREET, 25TH FLOOR  
 VANCOUVER BC V6C 2X8

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**CERTIFICATE OF ANALYSIS SD21299036**

Sample Description	Method Analyte Units LOD	ME-4ACD81	ME-4ACD81	Cu-OG62	NI-OG62
		Sc	Zn	Cu	NI
		ppm	ppm	%	%
		1	3		
D579651		26	154		
D579652		19	99		
D579653		21	96		
D579654		25	105		
D579655					
D579656		24	107		
D579657		16	98		
D579658		22	104		
D579659		24	109		
D579660		22	2270		2.13
D579661		15	97		
D579662		23	106		
D579663		19	97		
D579664		12	146		
D579665		35	118		
D579666		12	86		
D579667		10	85	1.460	
D579668		15	97		
D579669		12	73		
D579670		<1	3		
D579671		14	67		
D579672		11	92		
D579673		33	141		
D579674		21	114		
D579675		38	123		
D579676		28	109		
D579677		30	110		
D579678		24	115		
D579679		22	93		
D579680		22	2300		2.15
D579681		33	73		
D579682		30	119		
D579683		26	103		
D579684		8	92		
D579685		18	145		
D579686		26	103		
D579687		27	110		
D579688		24	104		
D579689		30	110		
D579690		<1	3		

\*\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*\*



ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
 www.alsglobal.com/geochemistry

To: **DUFFEY LAKE HOLDINGS INC.**  
**666 BURRARD STREET, 25TH FLOOR**  
**VANCOUVER BC V6C 2X8**

Page: 3 - A  
 Total # Pages: 4 (A - F)  
 Plus Appendix Pages  
 Finalized Date: 22-DEC-2021  
 Account: DLHBMXL

**CERTIFICATE OF ANALYSIS SD21299036**

Sample Description	Method Analyte Units LOD	WEI-21	CRU-QC	PUL-QC	QA-GRA08	PCM-M523L	PCM-M523L	PCM-M523L	PCM-ICP27	PCM-ICP27	PCM-ICP27	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06
		Recvd Wt. kg 0.02	Pass2mm % 0.01	Pass75um % 0.01	S.G. Unity 0.01	Au ppb 1	Pt ppb 0.1	Pd ppb 0.2	Au ppm 0.01	Pt ppm 0.01	Pd ppm 0.01	SiO2 % 0.01	Al2O3 % 0.01	Fe2O3 % 0.01	CaO % 0.01	MgO % 0.01
D579691		0.09	89.6	98.7	2.87	2	2.3	0.3				47.7	20.6	8.39	12.35	4.04
D579692		1.40		93.0	2.95	3	3.3	3.5				45.7	18.85	10.65	9.91	8.72
D579693		0.47			3.14	3	3.6	3.0				47.5	15.70	14.00	9.96	8.41
D579694		1.22			3.03	39	55.2	106.5				43.7	15.40	15.60	8.51	11.90
D579695		1.30			3.01	15	22.6	30.9				46.0	16.65	16.20	7.78	7.86
D579696		1.00			3.03	3	4.5	4.8				47.1	17.65	12.70	10.25	8.74
D579697		0.49			3.11	3	3.5	4.3				47.1	17.35	11.50	10.80	7.84
D579698		1.11			3.05	4	5.1	5.5				46.6	16.55	13.50	9.78	8.41
D579699		0.73			3.07	12	14.8	19.8				46.1	17.50	14.45	10.20	6.78
D579700		0.06				168	414	212				46.0	13.55	17.00	8.09	6.33
D579701		0.82			2.96	4	2.8	3.6				46.3	17.25	13.60	10.00	7.33
D579702		0.81			3.04	3	6.1	5.0				47.4	15.35	13.80	9.82	7.46
D579703		0.88			3.15	2	0.2	-0.2				44.5	11.35	18.50	9.46	5.21
D579704		0.79			2.85	10	33.5	13.8				49.1	22.2	7.17	9.15	4.64
D579705		0.52			2.93	6	63.5	115.0				43.5	20.4	8.91	9.89	7.39
D579706		0.98		90.5	2.94	2	5.5	5.4				47.7	14.85	11.25	8.34	8.62
D579707		0.53		96.8	2.89	6	14.8	8.9				48.3	18.65	11.25	10.20	7.20
D579708		0.90			3.06	3	4.3	6.4				48.3	14.80	14.05	9.21	5.91
D579709		0.93			3.08	3	4.3	3.2				48.6	16.20	14.35	9.96	6.78
D579710		1.06				2	0.2	0.5				9.36	0.16	0.22	51.2	1.94
D579711		0.86			3.09	3	3.9	2.7				47.5	15.95	13.85	10.15	6.76
D579712		1.08			2.57	2	5.6	8.7				58.3	15.35	9.63	1.34	3.84
D579713		0.65			3.03	2	2.0	1.9				46.7	20.5	10.05	10.45	9.94
D579714		1.27			2.93	12	17.9	24.4				45.0	17.90	12.95	8.50	8.90
D579715		1.46			2.96	3	3.1	1.1				47.3	16.85	12.65	10.55	7.75
D579716		1.35			2.97	4	4.1	5.2				47.2	18.95	10.95	9.63	8.60
D579717		0.67			2.97	2	3.3	3.5				49.2	16.80	9.46	11.35	7.29
D579718		0.72			3.04	3	4.6	4.3				48.3	15.80	12.95	9.37	7.44
D579719		0.84			3.05	3	4.2	3.8				47.6	15.85	14.50	9.19	7.92
D579720		0.06				168	418	209				46.3	13.60	17.00	8.13	6.30
D579721		0.94			2.98	3	3.2	2.4				48.3	17.65	11.05	9.37	6.89
D579722		1.22			3.07	3	3.7	3.7				47.6	15.60	13.15	8.76	10.05
D579723		1.36			2.79	2	17.0	28.0				57.4	14.60	12.30	2.75	2.50
D579724		1.11			2.82	3	2.3	1.9				53.3	17.00	8.43	7.36	4.34
D579725		1.00			3.05	3	5.0	4.0				49.0	17.40	13.30	10.05	7.19
D579726		2.23			2.96	3	3.7	2.2				50.1	14.00	14.90	7.43	3.72
D579727		1.38			2.93	2	1.9	1.6				52.2	13.85	15.50	7.17	3.19
K0003542		0.29			3.02	172	99.3	>1000	0.18	0.09	2.04	40.2	16.55	20.1	8.42	6.50
K0003543		0.35		94.7	2.89	236	234	>1000	0.22	0.24	2.41	43.8	21.7	12.35	10.55	4.29
K0003544		0.44	86.1	96.7	2.88	50	68.6	486				47.0	21.5	11.00	11.10	4.97

\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*



ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
 www.alsglobal.com/geochemistry

To: **DUFFEY LAKE HOLDINGS INC.**  
**666 BURRARD STREET, 25TH FLOOR**  
**VANCOUVER BC V6C 2X8**

Page: 3 - B  
 Total # Pages: 4 (A - F)  
 Plus Appendix Pages  
 Finalized Date: 22-DEC-2021  
 Account: DLHIBMXL

**CERTIFICATE OF ANALYSIS SD21299036**

Sample Description	Method Analyte Units LOD	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	QA-GRAD5	TOT-ICP06	C-IR07	S-IR08	ME-MS81	ME-MS81	ME-MS81
		Na2O %	K2O %	Cr2O3 %	TiO2 %	MnO %	P2O5 %	SrO %	BaO %	LOI %	Total %	C %	S %	Ba ppm	Ce ppm	Cr ppm
D579691		2.57	0.67	0.012	1.62	0.11	0.15	0.04	0.02	1.87	100.14	0.20	0.04	168.5	24.8	90
D579692		2.05	0.66	0.016	0.85	0.13	0.11	0.05	0.03	1.43	99.16	0.08	0.04	322	13.8	110
D579693		2.48	0.38	0.024	1.54	0.18	0.17	0.03	0.02	0.24	100.63	0.03	0.02	134.5	24.0	160
D579694		1.64	0.27	0.054	0.47	0.14	0.07	0.03	0.01	1.77	99.56	0.03	1.67	76.4	10.1	400
D579695		1.95	0.51	0.028	0.57	0.14	0.06	0.03	0.03	2.21	100.02	0.02	1.78	245	15.0	200
D579696		2.46	0.22	0.019	1.08	0.16	0.11	0.03	0.01	-0.13	100.40	0.02	0.03	98.6	17.1	140
D579697		2.50	0.31	0.038	0.99	0.15	0.09	0.04	0.01	-0.11	98.61	0.02	0.01	104.5	14.9	280
D579698		2.44	0.29	0.017	1.32	0.17	0.17	0.03	0.01	-0.12	99.17	0.02	0.02	118.5	22.1	120
D579699		2.48	0.25	0.020	1.19	0.15	0.09	0.03	0.01	0.75	100.00	0.02	0.97	107.5	14.7	150
D579700		1.95	1.48	0.313	0.88	0.16	0.31	0.05	0.08	2.31	98.50	0.06	5.12	693	39.0	2230
D579701		2.47	0.25	0.017	1.15	0.15	0.10	0.03	0.01	0.82	99.48	0.04	0.06	127.0	18.5	130
D579702		2.45	0.48	0.024	1.76	0.18	0.18	0.04	0.02	1.57	100.53	0.02	0.03	154.0	29.1	170
D579703		2.97	0.64	-0.002	4.84	0.24	0.57	0.04	0.02	1.53	99.87	0.02	0.09	167.0	70.0	10
D579704		2.66	2.48	0.026	0.91	0.11	0.09	0.12	0.18	2.61	101.45	0.03	0.02	1595	18.0	170
D579705		1.82	1.23	0.008	0.94	0.13	0.12	0.06	0.06	4.54	99.00	0.03	0.02	610	17.3	60
D579706		1.48	2.97	0.037	1.29	0.20	0.14	0.10	0.17	3.37	100.52	0.03	0.01	1615	20.3	270
D579707		2.52	0.78	0.045	1.26	0.14	0.11	0.05	0.02	0.84	101.37	0.04	0.02	163.5	21.2	340
D579708		2.50	0.89	0.046	2.06	0.19	0.21	0.05	0.02	1.24	99.48	0.02	0.08	194.0	31.0	350
D579709		2.61	0.49	0.016	1.75	0.19	0.19	0.03	0.01	0.10	101.28	0.02	0.04	129.5	26.1	120
D579710		0.05	0.01	-0.002	0.02	0.01	0.01	0.01	<0.01	38.2	101.19	10.45	0.01	17.0	1.1	<10
D579711		2.61	0.42	0.017	1.66	0.18	0.16	0.03	0.01	-0.02	99.28	0.08	0.04	118.0	23.4	120
D579712		3.03	4.23	0.021	1.28	0.07	0.18	0.02	0.08	3.68	101.05	0.19	0.01	705	39.4	160
D579713		2.03	0.22	0.011	0.66	0.12	0.09	0.04	0.01	0.28	101.10	0.04	0.02	72.9	11.9	90
D579714		1.85	1.11	0.022	0.83	0.13	0.07	0.07	0.02	3.64	100.99	0.03	0.09	162.5	12.4	150
D579715		2.64	0.35	0.040	1.51	0.16	0.12	0.04	0.01	0.71	100.88	0.06	0.03	93.9	17.9	230
D579716		2.29	0.76	0.015	0.91	0.14	0.09	0.05	0.02	1.37	100.98	0.02	0.01	177.0	16.3	110
D579717		2.43	0.40	0.063	0.91	0.12	0.09	0.03	0.01	2.24	100.39	0.02	0.01	112.5	22.1	470
D579718		2.34	0.43	0.023	1.50	0.17	0.17	0.03	0.02	1.20	99.74	0.02	0.02	146.5	26.2	170
D579719		2.39	0.54	0.017	1.71	0.19	0.16	0.04	0.02	0.94	101.07	0.02	0.03	150.5	26.4	120
D579720		1.94	1.47	0.307	0.86	0.16	0.29	0.05	0.08	2.55	99.04	0.06	5.23	652	39.2	2260
D579721		2.49	0.56	0.012	1.10	0.14	0.11	0.04	0.01	0.75	98.47	0.02	0.02	118.0	17.0	80
D579722		2.17	0.31	0.012	0.96	0.16	0.10	0.03	0.01	-0.05	98.86	0.02	0.03	88.0	14.7	90
D579723		2.67	1.39	0.008	2.21	0.09	0.18	0.04	0.04	2.89	99.07	0.04	0.90	384	63.2	50
D579724		3.27	2.68	0.009	1.71	0.12	0.05	0.04	0.04	3.28	101.63	0.12	0.03	382	25.5	70
D579725		2.56	0.40	0.014	1.36	0.17	0.14	0.03	0.01	0.09	101.71	0.02	0.02	112.5	20.7	100
D579726		2.74	1.43	0.009	2.36	0.19	0.32	0.04	0.04	1.03	98.31	0.02	0.11	349	54.4	70
D579727		2.83	1.58	0.005	2.57	0.19	0.39	0.04	0.05	1.66	101.23	0.01	0.11	402	68.0	30
K0003542		2.11	0.38	0.031	1.63	0.14	0.08	0.03	0.01	1.99	98.17	0.03	3.88	110.0	15.9	220
K0003543		2.39	0.50	0.035	1.05	0.11	0.11	0.04	0.02	1.35	98.30	0.02	1.92	134.0	20.8	250
K0003544		2.58	0.63	0.021	1.36	0.12	0.15	0.05	0.02	1.05	101.55	0.02	0.61	163.0	26.8	150

\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*



ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
 www.alsglobal.com/geochemistry

To: **DUFFEY LAKE HOLDINGS INC.**  
**666 BURRARD STREET, 25TH FLOOR**  
**VANCOUVER BC V6C 2X8**

Page: 3 - C  
 Total # Pages: 4 (A - F)  
 Plus Appendix Pages  
 Finalized Date: 22-DEC-2021  
 Account: DLHIBMXL

**CERTIFICATE OF ANALYSIS SD21299036**

Sample Description	Method Analyte Units LOD	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
		Cs ppm	Dy ppm	Er ppm	Eu ppm	Ga ppm	Gd ppm	Ge ppm	Hf ppm	Ho ppm	La ppm	Lu ppm	Nb ppm	Nd ppm	Pr ppm	Rb ppm
D579691		2.02	3.36	2.06	1.28	22.2	4.17	<5	2.7	0.69	11.0	0.25	7.9	14.4	3.29	22.4
D579692		3.50	2.21	1.28	0.75	17.9	2.45	<5	1.5	0.46	6.1	0.15	4.3	8.4	1.87	21.3
D579693		1.39	4.13	2.18	1.33	18.9	3.96	<5	2.7	0.77	10.4	0.28	7.6	14.4	3.21	10.0
D579694		2.07	1.36	0.75	0.64	13.7	1.42	<5	0.9	0.28	4.8	0.12	2.5	5.7	1.28	8.4
D579695		3.31	1.84	1.00	0.84	18.3	1.82	<5	1.2	0.32	7.1	0.13	3.1	7.7	1.90	20.7
D579696		1.53	2.73	1.56	0.95	18.7	2.83	<5	1.9	0.56	7.2	0.20	5.2	10.3	2.23	4.8
D579697		1.59	2.67	1.47	1.00	19.0	2.48	<5	1.6	0.51	6.5	0.20	4.5	9.4	1.95	8.9
D579698		2.47	3.61	2.03	1.17	19.1	3.58	<5	2.2	0.71	9.6	0.26	6.8	13.4	3.02	6.4
D579699		1.75	2.38	1.47	1.13	19.4	2.35	<5	1.5	0.49	6.4	0.18	5.3	8.9	1.99	4.9
D579700		3.78	3.24	1.69	1.15	16.5	3.78	<5	2.0	0.60	18.1	0.22	5.7	20.5	4.74	71.3
D579701		1.38	3.13	1.56	1.12	19.7	2.96	<5	2.0	0.62	7.9	0.23	6.0	11.1	2.54	5.3
D579702		2.19	4.90	2.55	1.44	20.5	4.69	<5	3.3	0.88	13.1	0.33	8.8	17.9	3.86	15.2
D579703		0.50	10.50	5.86	2.65	26.4	11.80	<5	6.6	2.07	30.1	0.76	26.9	44.2	9.50	21.5
D579704		5.13	2.44	1.58	0.89	23.3	2.60	<5	1.7	0.46	8.3	0.17	5.2	10.4	2.29	87.1
D579705		4.06	2.45	1.59	1.09	17.4	2.73	<5	1.8	0.51	7.6	0.16	5.5	10.4	2.31	46.8
D579706		5.11	3.96	2.14	1.05	16.3	3.86	<5	2.2	0.69	8.3	0.29	6.2	13.3	2.90	102.5
D579707		2.22	3.14	1.78	1.24	20.5	3.12	<5	1.9	0.63	9.3	0.22	6.1	12.0	2.77	27.1
D579708		1.29	4.86	2.68	1.55	20.6	5.10	<5	3.2	0.96	13.1	0.37	9.6	18.8	4.11	33.0
D579709		2.78	4.83	2.83	1.51	20.9	4.90	<5	3.2	1.00	10.8	0.32	7.9	16.5	3.60	15.4
D579710		0.02	0.20	0.17	0.04	0.1	0.23	<5	0.1	0.05	1.2	0.02	0.2	1.0	0.22	<0.2
D579711		1.48	4.41	2.40	1.44	20.5	4.31	<5	2.9	0.82	9.6	0.35	7.2	14.7	3.20	11.4
D579712		1.07	4.59	2.50	1.07	21.1	4.35	<5	4.6	0.89	18.1	0.36	12.9	19.8	5.07	149.5
D579713		1.63	1.77	1.04	0.78	17.7	1.89	<5	1.2	0.39	5.1	0.13	3.5	7.4	1.61	6.3
D579714		3.14	1.90	1.11	0.96	17.2	1.91	<5	1.3	0.41	5.4	0.14	3.8	7.5	1.65	44.1
D579715		0.72	2.87	1.65	1.06	16.2	3.12	<5	2.0	0.61	7.4	0.21	5.8	10.7	2.40	6.7
D579716		3.87	2.45	1.41	0.96	17.8	2.43	<5	1.7	0.49	7.0	0.19	4.9	9.9	2.19	26.4
D579717		3.33	2.68	1.51	1.08	20.4	3.00	<5	1.7	0.52	9.7	0.21	7.6	12.2	2.90	12.3
D579718		2.25	3.90	2.14	1.38	19.5	3.92	<5	2.6	0.76	11.2	0.30	8.5	15.3	3.50	11.8
D579719		2.35	4.10	2.24	1.35	20.3	4.29	<5	2.7	0.80	11.3	0.31	8.8	15.4	3.53	17.1
D579720		3.76	3.11	1.68	1.21	16.2	3.62	<5	2.2	0.63	18.2	0.23	6.0	20.0	4.95	72.9
D579721		1.98	2.78	1.62	1.07	19.2	2.95	<5	1.8	0.56	7.3	0.22	5.2	10.1	2.29	18.3
D579722		1.65	2.54	1.48	0.89	16.8	2.50	<5	1.6	0.50	6.2	0.20	4.3	8.8	2.01	9.2
D579723		3.59	5.45	3.00	1.93	22.4	5.91	<5	4.8	1.02	29.2	0.39	15.4	31.5	7.91	58.9
D579724		1.89	2.22	1.35	0.75	19.7	2.52	<5	1.8	0.53	12.0	0.19	5.6	12.4	3.14	95.2
D579725		1.87	3.57	2.10	1.24	20.2	3.66	<5	2.5	0.71	8.7	0.29	6.2	12.4	2.79	11.5
D579726		3.95	6.47	3.80	2.03	22.5	6.47	<5	5.2	1.32	23.6	0.44	13.8	29.7	6.84	48.0
D579727		4.66	7.54	4.53	2.30	24.6	8.27	<5	6.4	1.58	30.0	0.65	17.0	37.1	8.72	55.0
K0003542		1.64	2.21	1.33	0.95	18.2	2.37	<5	1.8	0.45	6.9	0.17	6.8	9.2	2.08	11.0
K0003543		1.90	2.59	1.46	1.11	19.9	2.68	<5	2.0	0.51	9.1	0.20	5.9	11.5	2.68	16.8
K0003544		2.10	3.41	1.96	1.30	21.2	3.70	<5	2.4	0.70	11.6	0.26	7.7	14.8	3.39	21.5

\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*



ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
 www.alsglobal.com/geochemistry

To: **DUFFEY LAKE HOLDINGS INC.**  
**666 BURRARD STREET, 25TH FLOOR**  
**VANCOUVER BC V6C 2X8**

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**CERTIFICATE OF ANALYSIS SD21299036**

Sample Description	Method Analyte Units LOD	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS42	ME-MS42
		Sm ppm	Sn ppm	Sr ppm	Ta ppm	Tb ppm	Th ppm	Tm ppm	U ppm	V ppm	W ppm	Y ppm	Yb ppm	Zr ppm	As ppm	Bi ppm
D579691		3.48	1	360	0.4	0.54	1.00	0.27	0.23	203	<1	18.2	1.82	106	0.4	0.01
D579692		2.03	1	402	0.2	0.34	0.44	0.18	0.12	135	<1	11.3	1.14	57	0.7	0.03
D579693		3.49	1	284	0.4	0.62	0.82	0.29	0.37	287	<1	20.6	1.84	103	0.4	0.01
D579694		1.24	1	235	0.1	0.21	0.56	0.11	0.26	173	<1	7.1	0.62	37	44.0	1.08
D579695		1.86	1	246	0.1	0.28	1.15	0.15	0.66	167	<1	9.0	0.99	46	19.9	0.25
D579696		2.55	1	289	0.3	0.46	0.59	0.21	0.16	186	<1	14.8	1.27	74	0.7	0.01
D579697		2.26	1	305	0.3	0.40	0.47	0.20	0.14	208	<1	13.7	1.19	62	0.5	0.01
D579698		3.39	1	275	0.4	0.57	0.74	0.25	0.20	210	<1	18.6	1.71	91	0.2	0.01
D579699		2.13	1	292	0.3	0.40	0.47	0.20	0.12	236	<1	12.8	1.18	58	9.7	0.46
D579700		4.19	2	416	0.2	0.50	6.04	0.21	1.42	230	2	16.0	1.59	78	114.0	1.50
D579701		2.72	1	294	0.3	0.50	0.64	0.24	0.15	204	2	15.9	1.40	77	9.4	0.09
D579702		3.99	1	304	0.4	0.70	1.11	0.38	0.62	317	1	23.2	2.26	125	0.4	0.01
D579703		10.90	2	300	1.4	1.69	2.38	0.78	0.70	677	1	53.4	5.00	254	0.5	0.02
D579704		2.73	1	998	0.2	0.38	0.81	0.19	0.27	117	<1	12.7	1.22	71	4.7	0.01
D579705		2.50	1	515	0.2	0.42	0.75	0.17	0.20	105	<1	12.9	1.22	69	0.6	0.06
D579706		3.30	2	838	0.2	0.58	0.77	0.31	0.22	243	1	19.4	1.92	92	29.4	0.07
D579707		2.56	1	411	0.4	0.50	0.92	0.24	0.32	231	<1	16.7	1.60	82	0.7	0.02
D579708		4.21	1	441	0.5	0.81	1.15	0.37	0.31	371	<1	26.0	2.38	128	0.5	0.01
D579709		4.15	1	292	0.5	0.76	1.03	0.38	0.34	325	<1	26.0	2.35	124	0.3	0.01
D579710		0.16	<1	85.5	<0.1	0.04	0.09	0.02	0.10	<5	<1	2.4	0.11	2	0.1	<0.01
D579711		3.75	1	259	0.4	0.72	0.96	0.35	0.30	319	<1	23.6	2.19	108	0.3	0.01
D579712		4.27	2	130.0	0.8	0.72	6.90	0.35	4.36	205	1	24.1	2.46	181	1.0	0.02
D579713		1.66	<1	334	0.2	0.27	0.46	0.13	0.13	109	<1	9.7	0.86	47	0.3	<0.01
D579714		1.65	3	581	0.2	0.31	0.53	0.17	0.35	150	<1	10.6	0.93	53	9.0	0.04
D579715		2.68	1	258	0.3	0.48	0.64	0.22	0.18	229	<1	16.0	1.47	79	0.2	0.03
D579716		2.12	1	392	0.3	0.40	0.64	0.19	0.20	146	<1	13.1	1.27	64	25.2	0.01
D579717		2.61	1	284	0.3	0.46	1.20	0.21	0.40	290	<1	14.4	1.36	67	1.0	0.01
D579718		3.47	1	288	0.5	0.64	1.01	0.32	0.27	253	<1	20.9	1.86	105	1.0	0.01
D579719		3.70	1	319	0.5	0.67	1.00	0.33	0.31	289	<1	21.7	1.91	106	0.3	0.01
D579720		4.05	1	442	0.4	0.53	5.93	0.23	1.57	246	2	16.6	1.49	83	118.5	1.62
D579721		2.52	1	344	0.3	0.46	0.80	0.22	0.21	184	<1	15.4	1.44	71	0.2	0.01
D579722		2.05	1	257	0.3	0.42	0.68	0.19	0.19	169	1	13.7	1.36	66	0.1	0.01
D579723		6.11	2	354	0.9	0.88	6.76	0.41	3.54	206	1	26.6	2.70	190	9.0	0.17
D579724		2.58	1	368	0.4	0.37	3.01	0.21	1.82	547	1	13.0	1.26	67	2.8	0.02
D579725		3.31	1	281	0.4	0.58	0.90	0.29	0.29	277	<1	20.2	1.95	95	1.0	0.01
D579726		6.36	2	312	0.8	1.05	3.93	0.50	1.16	320	<1	34.7	3.16	215	1.2	0.04
D579727		8.28	2	299	1.0	1.27	4.76	0.61	1.35	264	1	42.9	3.98	263	1.1	0.03
K0003542		2.12	3	291	0.2	0.29	0.63	0.17	0.17	206	<1	12.0	1.08	73	15.5	1.40
K0003543		2.62	3	382	0.4	0.44	0.79	0.22	0.18	128	<1	14.1	1.28	76	11.8	1.68
K0003544		3.45	1	389	0.5	0.58	1.10	0.27	0.25	163	<1	18.6	1.62	98	3.1	0.33

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ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
 www.alsglobal.com/geochemistry

To: **DUFFEY LAKE HOLDINGS INC.**  
**666 BURRARD STREET, 25TH FLOOR**  
**VANCOUVER BC V6C 2X8**

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**CERTIFICATE OF ANALYSIS SD21299036**

Sample Description	Method Analyte Units LOD	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81
		Hg ppm 0.005	In ppm 0.005	Re ppm 0.001	Sb ppm 0.05	Se ppm 0.2	Te ppm 0.01	Tl ppm 0.02	Ag ppm 0.5	Cd ppm 0.5	Co ppm 1	Cu ppm 1	Li ppm 10	Mo ppm 1	Ni ppm 1	Pb ppm 2
D579691		<0.005	0.014	0.001	<0.05	0.2	<0.01	0.02	<0.5	<0.5	34	116	10	<1	158	3
D579692		0.013	0.012	0.001	<0.05	0.3	0.01	1.21	<0.5	<0.5	61	86	40	<1	285	<2
D579693		<0.005	0.016	0.001	<0.05	0.3	<0.01	0.13	<0.5	<0.5	63	148	10	<1	231	<2
D579694		0.006	0.048	0.010	0.87	2.8	0.21	1.25	1.1	0.9	200	2070	20	10	1685	10
D579695		0.011	0.015	0.005	0.28	1.6	0.07	1.09	<0.5	0.7	138	654	30	7	826	11
D579696		0.005	0.015	<0.001	<0.05	0.2	<0.01	0.07	<0.5	<0.5	65	123	10	<1	246	<2
D579697		<0.005	0.012	<0.001	<0.05	0.2	0.01	0.05	<0.5	<0.5	57	99	10	<1	197	<2
D579698		<0.005	0.016	<0.001	<0.05	0.3	<0.01	0.05	<0.5	<0.5	65	146	10	<1	219	2
D579699		<0.005	0.030	0.003	0.15	0.9	0.05	0.20	<0.5	0.6	108	642	10	2	461	9
D579700		0.225	0.079	0.004	16.35	4.3	0.60	0.31	10.6	7.9	337	9350	10	<1	>10000	2680
D579701		<0.005	0.018	<0.001	0.15	0.2	0.01	0.13	<0.5	0.6	67	185	10	<1	326	5
D579702		<0.005	0.012	0.001	<0.05	0.3	0.01	0.06	<0.5	0.5	57	188	20	<1	179	<2
D579703		0.005	0.034	0.003	0.07	0.4	0.01	0.02	<0.5	0.8	49	240	20	1	45	5
D579704		0.014	0.011	<0.001	0.09	0.2	0.01	0.07	<0.5	<0.5	28	144	70	<1	53	<2
D579705		0.045	0.013	0.001	0.28	0.4	0.03	0.19	<0.5	<0.5	42	334	50	<1	227	<2
D579706		0.015	0.021	<0.001	0.76	<0.2	0.01	0.10	<0.5	<0.5	52	63	80	<1	204	5
D579707		<0.005	0.014	0.001	0.14	0.2	0.01	0.10	<0.5	<0.5	46	132	20	<1	138	2
D579708		<0.005	0.012	0.001	<0.05	0.4	0.01	0.06	<0.5	0.6	53	163	30	<1	117	2
D579709		<0.005	0.017	<0.001	<0.05	0.2	<0.01	0.19	<0.5	<0.5	58	180	10	<1	146	<2
D579710		<0.005	<0.005	<0.001	<0.05	0.9	<0.01	<0.02	<0.5	<0.5	<1	3	<10	<1	<1	<2
D579711		<0.005	0.016	0.001	<0.05	<0.2	<0.01	0.11	<0.5	<0.5	58	172	10	<1	144	<2
D579712		0.007	0.054	0.005	0.21	<0.2	0.01	0.06	<0.5	0.7	36	247	80	4	215	4
D579713		<0.005	0.012	<0.001	<0.05	0.2	<0.01	0.03	<0.5	<0.5	66	71	20	<1	391	2
D579714		0.006	0.023	0.004	0.18	0.4	0.03	0.06	<0.5	0.6	120	470	60	<1	477	12
D579715		<0.005	0.013	0.001	<0.05	<0.2	<0.01	0.02	<0.5	0.5	57	98	10	<1	147	<2
D579716		<0.005	0.015	<0.001	0.39	<0.2	0.01	0.07	<0.5	<0.5	58	60	40	<1	304	<2
D579717		<0.005	0.009	<0.001	<0.05	<0.2	<0.01	0.06	<0.5	0.5	52	110	20	<1	156	<2
D579718		<0.005	0.015	0.001	<0.05	0.2	<0.01	0.24	<0.5	0.6	63	162	20	<1	201	<2
D579719		<0.005	0.017	<0.001	<0.05	0.2	0.01	0.11	<0.5	0.5	65	159	20	<1	234	<2
D579720		0.238	0.083	0.005	16.75	4.6	0.61	0.31	11.0	7.8	334	9250	10	1	>10000	2580
D579721		0.005	0.012	<0.001	<0.05	<0.2	<0.01	0.08	<0.5	<0.5	59	128	20	<1	205	2
D579722		<0.005	0.015	<0.001	<0.05	<0.2	0.01	0.07	<0.5	<0.5	79	133	20	<1	374	<2
D579723		0.009	0.065	0.001	0.17	1.2	0.07	0.49	0.5	0.7	52	804	80	2	363	19
D579724		0.007	0.015	<0.001	0.16	<0.2	<0.01	0.05	<0.5	<0.5	30	47	40	<1	54	4
D579725		<0.005	0.017	<0.001	<0.05	0.2	<0.01	0.08	<0.5	0.5	60	163	20	<1	164	<2
D579726		<0.005	0.023	0.001	0.09	0.3	0.01	0.17	<0.5	0.6	44	226	20	1	50	4
D579727		<0.005	0.027	0.001	0.08	0.3	<0.01	0.14	<0.5	0.5	41	191	20	1	33	5
K0003542		<0.005	0.098	0.033	0.34	8.8	0.33	0.10	5.0	1.1	229	8980	10	2	6820	15
K0003543		<0.005	0.109	0.011	0.49	7.0	0.49	0.08	4.2	1.2	122	8930	10	<1	3630	12
K0003544		<0.005	0.036	0.004	0.10	1.5	0.08	0.04	1.1	0.7	70	2370	10	1	1215	8

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ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
 www.alsglobal.com/geochemistry

To: DUFFEY LAKE HOLDINGS INC.  
 666 BURRARD STREET, 25TH FLOOR  
 VANCOUVER BC V6C 2X8

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**CERTIFICATE OF ANALYSIS SD21299036**

Sample Description	Method Analyte Units LOD	ME-4ACDB1	ME-4ACDB1	Cu-OG62	Ni-OG62
		Sc	Zn	Cu	Ni
		ppm 1	ppm 2	% 0.001	% 0.001
D579691		19	68		
D579692		12	76		
D579693		24	106		
D579694		15	78		
D579695		16	120		
D579696		18	88		
D579697		26	82		
D579698		21	101		
D579699		22	97		
D579700		22	2300		2.12
D579701		22	102		
D579702		30	110		
D579703		46	181		
D579704		11	49		
D579705		8	52		
D579706		26	127		
D579707		21	82		
D579708		32	138		
D579709		31	112		
D579710		<1	3		
D579711		31	107		
D579712		20	243		
D579713		8	68		
D579714		11	79		
D579715		26	89		
D579716		12	86		
D579717		34	69		
D579718		25	112		
D579719		26	115		
D579720		22	2230		2.09
D579721		18	92		
D579722		20	99		
D579723		24	143		
D579724		32	78		
D579725		26	101		
D579726		31	147		
D579727		31	156		
K0003542		17	115		
K0003543		11	90		
K0003544		17	85		

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ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
 www.alsglobal.com/geochemistry

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**666 BURRARD STREET, 25TH FLOOR**  
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**CERTIFICATE OF ANALYSIS SD21299036**

Sample Description	Method Analyte Units LOD	WEI-21	CRU-QC	PUL-QC	OA-GRA08	PGM-MS23L	PCM-MS23L	PGM-MS23L	PGM-ICP27	PGM-ICP27	PGM-ICP27	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06
		Recvd Wt. kg	Pass2mm %	Pass75um %	S.C. Unity	Au ppb	Pt ppb	Pd ppb	Au ppm	Pt ppm	Pd ppm	SiO2 %	Al2O3 %	Fe2O3 %	CaO %	MgO %
K0003545	0.22				2.89	203	71.6	>1000	0.18	0.11	1.91	45.0	21.2	12.80	11.00	3.21
K0003546	0.50				2.98	744	>1000	>1000	0.62	4.11	6.47	42.0	20.1	16.40	10.30	2.51
K0003547	1.29					3	0.9	22.1				9.39	0.22	0.26	50.9	2.44
K0003548	0.37				2.86	109	302	>1000	0.12	0.34	1.34	48.1	21.4	9.19	11.75	3.75
K0003549	0.55				2.90	21	46.2	230				45.3	19.95	10.85	12.50	6.52
K0003550	0.48				2.86	18	27.7	151.5				47.3	23.0	8.85	11.45	5.26
K0003551	0.07					258	>1000	>1000	0.24	3.70	1.66	50.2	11.25	11.20	6.36	18.05
K0003552	0.52				2.89	26	56.1	343				46.4	22.0	10.00	11.05	7.15
K0003553	0.39				2.89	204	185.5	>1000	0.19	0.20	1.97	46.5	20.5	11.75	10.85	3.49
K0003554	0.25				2.93	4	4.6	11.7				51.3	16.30	12.20	8.27	6.03
K0003555	0.42				2.93	4	5.2	10.3				50.3	15.15	12.25	8.32	6.24

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ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
 www.alsglobal.com/geochemistry

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 666 BURRARD STREET, 25TH FLOOR  
 VANCOUVER BC V6C 2X8

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**CERTIFICATE OF ANALYSIS SD21299036**

Sample Description	Method Analyte Units LOD	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	OA-GRA05	TOT-ICP06	C-IR07	S-IR08	ME-MS81	ME-MS81	ME-MS81
		Na2O %	K2O %	CaO %	TiO2 %	MnO %	P2O5 %	SiO2 %	BaO %	LOI %	Total %	C %	S %	Ba ppm	Ce ppm	Cr ppm	
K0003545		2.64	0.61	0.024	1.48	0.11	0.15	0.04	0.02	1.72	100.00	0.02	2.06	161.5	26.0	170	
K0003546		2.28	0.50	0.027	1.07	0.09	0.11	0.04	0.02	3.06	98.51	0.02	5.52	134.0	20.6	200	
K0003547		0.05	0.01	<0.002	0.02	0.01	0.02	0.01	<0.01	37.7	101.03	10.40	0.02	16.7	1.2	<10	
K0003548		2.58	0.71	0.021	1.36	0.11	0.16	0.05	0.02	1.83	101.03	0.13	0.59	174.0	26.6	150	
K0003549		2.19	0.51	0.034	1.25	0.14	0.14	0.04	0.02	2.43	101.87	0.38	0.17	144.5	24.9	250	
K0003550		2.41	0.66	0.027	1.09	0.11	0.14	0.05	0.02	0.94	101.31	0.03	0.08	163.0	25.6	200	
K0003551		0.89	0.17	1.910	0.23	0.16	0.02	0.02	0.01	1.47	101.94	0.12	0.44	68.0	6.5	>10000	
K0003552		2.23	0.46	0.030	0.94	0.12	0.11	0.04	0.01	0.66	101.20	0.03	0.20	131.0	20.2	220	
K0003553		2.79	0.63	0.017	1.50	0.11	0.21	0.04	0.02	2.01	100.42	0.04	1.74	180.5	39.9	120	
K0003554		2.49	1.68	0.022	1.53	0.17	0.21	0.08	0.05	1.39	101.72	0.03	0.08	458	43.1	160	
K0003555		2.43	1.42	0.024	1.55	0.17	0.22	0.06	0.05	1.37	99.55	0.02	0.09	386	36.6	150	

\*\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*\*



ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
 www.alsglobal.com/geochemistry

To: DUFFEY LAKE HOLDINGS INC.  
 666 BARRARD STREET, 25TH FLOOR  
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**CERTIFICATE OF ANALYSIS SD21299036**

Sample Description	Method Analyte Units LOD	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
		Cs ppm	Dy ppm	Er ppm	Eu ppm	Ga ppm	Cd ppm	Ge ppm	HF ppm	Ho ppm	La ppm	Lu ppm	Nb ppm	Nd ppm	Pr ppm	Rb ppm
K0003545		2.05	3.49	1.98	1.34	21.7	3.66	<5	2.5	0.70	11.5	0.25	8.2	14.9	3.43	20.4
K0003546		1.92	2.76	1.50	1.11	18.9	2.86	<5	1.9	0.56	9.3	0.18	6.0	12.0	2.71	17.5
K0003547		0.06	0.20	0.17	0.04	0.4	0.23	<5	0.1	0.05	1.2	0.02	0.2	1.0	0.23	0.4
K0003548		2.48	3.78	2.02	1.34	21.0	4.11	<5	2.7	0.74	12.5	0.26	8.4	15.9	3.77	25.9
K0003549		2.09	3.15	1.80	1.19	19.7	3.68	<5	2.2	0.68	11.0	0.26	7.1	13.5	3.25	17.7
K0003550		2.17	3.06	1.76	1.15	20.8	3.47	<5	2.2	0.63	11.3	0.24	7.2	13.8	3.26	24.2
K0003551		0.24	0.70	0.42	0.22	11.4	0.65	<5	0.5	0.17	3.3	0.07	1.2	3.0	0.77	5.3
K0003552		1.68	2.38	1.49	1.03	19.4	2.56	<5	1.7	0.51	9.0	0.18	5.6	11.5	2.55	14.9
K0003553		2.21	4.83	2.86	1.62	22.6	5.20	<5	3.9	1.02	17.8	0.40	11.3	22.0	5.09	21.1
K0003554		1.32	4.92	2.66	1.57	20.6	5.12	<5	3.9	1.01	18.8	0.38	9.4	23.3	5.58	53.9
K0003555		1.15	4.38	2.41	1.45	18.0	4.36	<5	3.6	0.90	16.4	0.33	8.3	21.3	4.73	36.2

\*\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*\*



ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
 www.alsglobal.com/geochemistry

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**666 BURRARD STREET, 25TH FLOOR**  
**VANCOUVER BC V6C 2X8**

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**CERTIFICATE OF ANALYSIS SD21299036**

Sample Description	Method Analyte Units LOD	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS42	ME-MS42
		Sm ppm 0.03	Sn ppm 1	Sr ppm 0.1	Ta ppm 0.1	Tb ppm 0.01	Th ppm 0.05	Tm ppm 0.01	U ppm 0.05	V ppm 5	W ppm 1	Y ppm 0.1	Yb ppm 0.03	Zr ppm 2	As ppm 0.1	Bi ppm 0.01
K0003545		3.43	2	380	0.5	0.57	1.07	0.26	0.25	180	<1	18.7	1.68	99	13.9	0.86
K0003546		2.63	3	367	0.3	0.48	0.80	0.23	0.18	144	<1	14.8	1.39	79	21.8	2.23
K0003547		0.19	<1	85.1	<0.1	0.05	0.07	0.02	0.10	7	<1	2.5	0.14	3	0.1	0.01
K0003548		3.64	1	405	0.5	0.62	1.16	0.29	0.26	157	<1	20.0	1.76	111	1.7	0.34
K0003549		3.20	1	345	0.4	0.53	1.05	0.26	0.24	162	<1	17.6	1.65	92	0.8	0.07
K0003550		3.07	1	412	0.4	0.54	1.06	0.24	0.22	132	<1	17.3	1.55	96	0.6	0.08
K0003551		0.63	1	157.0	0.1	0.11	0.73	0.09	0.24	190	1	4.5	0.58	18	0.6	0.36
K0003552		2.40	1	377	0.3	0.41	0.84	0.18	0.20	108	<1	13.6	1.25	74	0.3	0.06
K0003553		4.75	2	382	0.7	0.83	1.93	0.39	0.44	177	<1	26.9	2.60	160	6.4	0.52
K0003554		5.07	1	656	0.5	0.78	1.49	0.38	0.28	285	<1	26.5	2.51	155	1.5	0.01
K0003555		4.71	1	469	0.5	0.71	1.25	0.34	0.27	261	<1	22.6	2.27	141	1.1	0.01

\*\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*\*



ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
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To: DUFFEY LAKE HOLDINGS INC.  
 666 BURRARD STREET, 25TH FLOOR  
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**CERTIFICATE OF ANALYSIS SD21299036**

Sample Description	Method Analyte Units LOD	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	
		Hg ppm 0.005	In ppm 0.005	Re ppm 0.001	Sb ppm 0.05	Se ppm 0.2	Te ppm 0.01	Tl ppm 0.02	Ag ppm 0.5	Cd ppm 0.5	Co ppm 1	Cu ppm 1	Li ppm 10	Mo ppm 1	Ni ppm 1	Pb ppm 2
K0003545		<0.005	0.080	0.012	0.30	5.6	0.31	0.06	3.7	1.1	120	7340	10	1	3510	9
K0003546		<0.005	0.309	0.026	0.43	23.2	1.76	0.10	13.4	2.7	216	>10000	10	1	8130	17
K0003547		<0.005	<0.005	<0.001	<0.05	1.0	0.01	<0.02	<0.5	<0.5	2	116	<10	<1	37	<2
K0003548		<0.005	0.038	0.006	0.16	3.0	0.20	0.04	1.4	0.7	55	3290	20	<1	1575	7
K0003549		<0.005	0.022	0.003	<0.05	1.0	0.04	0.04	0.7	0.6	56	1210	20	<1	628	17
K0003550		<0.005	0.016	0.001	<0.05	0.4	0.02	0.03	<0.5	<0.5	46	428	20	<1	374	7
K0003551		0.011	0.009	0.004	0.09	1.8	0.59	0.06	0.5	<0.5	121	1045	10	1	2400	9
K0003552		<0.005	0.017	0.004	<0.05	0.9	0.03	0.02	0.6	<0.5	62	1220	10	<1	1015	5
K0003553		<0.005	0.073	0.017	0.15	6.7	0.38	0.05	3.9	0.8	104	7830	20	1	4040	3
K0003554		0.017	0.016	0.001	0.05	<0.2	0.01	0.04	<0.5	0.5	49	161	40	1	174	<2
K0003555		0.025	0.018	0.001	<0.05	0.2	0.01	0.05	<0.5	<0.5	49	151	30	1	152	<2

\*\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*\*



ALS Canada Ltd.  
2103 Dollarton Hwy  
North Vancouver BC V7H 0A7  
Phone: +1 604 984 0221 Fax: +1 604 984 0218  
www.alsglobal.com/geochemistry

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**666 BURRARD STREET, 25TH FLOOR**  
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**CERTIFICATE OF ANALYSIS SD21299036**

Sample Description	Method Analyte Units LOD	ME-4ACD81	ME-4ACD81	Cu-OG62	Ni-OG62
		Sc ppm 1	Zn ppm 2	Cu % 0.001	Ni % 0.001
K0003545		18	90		
K0003546		11	125	3.02	
K0003547		<1	3		
K0003548		14	77		
K0003549		16	91		
K0003550		11	71		
K0003551		19	107		
K0003552		11	79		
K0003553		18	87		
K0003554		28	110		
K0003555		29	111		

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ALS Canada Ltd.  
2103 Dollarton Hwy  
North Vancouver BC V7H 0A7  
Phone: +1 604 984 0221 Fax: +1 604 984 0218  
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**CERTIFICATE OF ANALYSIS SD21299036**

	<b>CERTIFICATE COMMENTS</b>
	<p style="text-align: center;"><b>LABORATORY ADDRESSES</b></p>
Applies to Method:	Processed at ALS Sudbury located at 1351-B Kelly Lake Road, Unit #1, Sudbury, ON, Canada. CRU-31 CRU-QC LOG-21 LOG-23 OA-GRA08 PUL-31 PUL-QC SPL-21 WEI-21
Applies to Method:	Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada. C-IR07 Cu-OG62 ME-4ACD81 ME-ICP06 ME-MS42 ME-MS81 ME-OG62 Ni-OG62 OA-GRA05 PGM-ICP27 PGM-MS23L S-IR08 TOT-ICP06



ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
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 666 Burrard Street, 25th Floor  
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**CERTIFICATE SD21335094**

This report is for 11 samples of Rock submitted to our lab in Sudbury, ON, Canada on 8-DEC-2021.  
 The following have access to data associated with this certificate:  
 ABDEL ALFAHAM      SAVANNAH BLAKE      WILSON BONNER  
 IAN FIELDHOUSE

SAMPLE PREPARATION	
ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-23	Pulp Login - Rcvd with Barcode
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-32	Pulverize 1000g to 85% < 75 um
PUL-QC	Pulverizing QC Test
CRU-QC	Crushing QC Test
LOG-21	Sample logging - ClientBarcode

ANALYTICAL PROCEDURES		
ALS CODE	DESCRIPTION	INSTRUMENT
ME-OG62	Ore Grade Elements - Four Acid	ICP-AES
ME-ICP06	Whole Rock Package - ICP-AES	ICP-AES
NI-OG62	Ore Grade Ni - Four Acid	
PGM-MS23L	Low level PGM - FA ICPMS	ICP-MS
C-IR07	Total Carbon (IR Spectroscopy)	LECO
PGM-ICP27	Ore grade Pt, Pd and Au by ICP	ICP-AES
S-IR08	Total Sulphur (IR Spectroscopy)	LECO
OA-GRA08	Specific Gravity - Bulk Sample	WST-SEQ
ME-MS81	Lithium Borate Fusion ICP-MS	ICP-MS
ME-MS42	Up to 34 elements by ICP-MS	ICP-MS
OA-GRA05	Loss on Ignition at 1000C	WST-SEQ
TOT-ICP06	Total Calculation for ICP06	
ME-4ACD81	Base Metals by 4-acid diq.	ICP-AES

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.  
 \*\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*\*

Signature:   
 Saa Traxler, General Manager, North Vancouver



ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
 www.alsglobal.com/geochemistry

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**CERTIFICATE OF ANALYSIS SD21335094**

Sample Description	Method Analyte Units LOD	WEI-21	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	OA-GRA05
		Recvd Wt. kg	SiO2 %	Al2O3 %	Fe2O3 %	CaO %	MgO %	Na2O %	K2O %	Cr2O3 %	TiO2 %	MnO %	P2O5 %	SrO %	BaO %	LOI %	
K0001063		0.06	38.9	9.98	24.0	7.19	13.90	1.08	0.22	0.111	0.39	0.16	0.07	0.02	0.03	3.11	
K0005001		0.88	11.30	0.12	0.20	48.2	2.37	0.04	0.01	<-0.002	0.01	0.01	0.02	0.01	<-0.01	37.0	
K0005002		1.12	48.1	16.15	13.75	9.93	7.17	2.58	0.52	0.018	1.55	0.18	0.17	0.03	0.02	0.30	
K0005003		1.68	46.4	16.40	15.15	10.65	7.83	2.35	0.19	0.018	1.76	0.19	0.03	0.03	0.01	-0.28	
K0005004		1.26	47.1	16.60	13.85	10.05	9.37	2.34	0.24	0.023	1.21	0.18	0.12	0.03	0.01	-0.43	
K0005005		1.04	47.7	16.35	13.85	10.00	8.02	2.54	0.29	0.022	1.53	0.18	0.16	0.03	0.01	-0.30	
K0005006		1.38	48.1	17.25	13.45	10.15	8.76	2.48	0.27	0.019	1.40	0.17	0.15	0.03	0.01	-0.42	
K0005007		0.79	47.3	17.55	12.85	10.10	8.50	2.46	0.24	0.021	1.10	0.17	0.12	0.03	0.01	-0.41	
K0005008		2.02	46.8	16.75	13.45	10.40	7.11	2.59	0.33	0.019	1.60	0.17	0.17	0.04	0.02	-0.47	
K0005009		0.07	48.2	11.45	11.45	6.36	18.00	0.91	0.18	1.985	0.24	0.17	0.03	0.02	0.01	1.48	
K0005010		1.68	48.1	15.65	13.85	10.10	6.98	2.51	0.46	0.019	1.64	0.20	0.18	0.03	0.02	1.04	

\*\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*\*



ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
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**CERTIFICATE OF ANALYSIS SD21335094**

Sample Description	Method Analyte Units LOD	TOT-ICP06	C-IR07	S-IR08	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	
		Total %	C %	S %	Ba ppm	Ce ppm	Cr ppm	Cs ppm	Dy ppm	Er ppm	Eu ppm	Ga ppm	Gd ppm	Ge ppm	Hf ppm	Ho ppm
K0001063		99.16	0.17	6.81	154.0	8.7	830	0.32	1.35	0.96	0.41	8.8	1.56	<5	0.7	0.36
K0005001		99.29	10.40	0.01	13.2	0.8	10	<-0.01	0.14	0.10	0.02	0.4	0.20	<5	<0.1	0.03
K0005002		100.47	0.04	0.02	140.0	23.9	130	2.13	4.30	2.55	1.32	19.5	4.34	<5	2.8	0.89
K0005003		100.73	0.01	0.41	55.1	5.3	120	1.06	1.30	0.71	0.61	16.4	1.26	<5	0.6	0.27
K0005004		100.69	0.04	0.02	99.2	17.2	160	1.14	2.85	1.52	1.00	18.0	2.89	<5	1.8	0.59
K0005005		100.38	0.01	0.02	121.5	23.5	150	1.65	3.76	2.28	1.27	19.1	3.87	<5	2.5	0.81
K0005006		101.82	0.01	0.02	110.5	21.0	130	1.96	3.32	1.98	1.11	18.9	3.57	<5	2.2	0.69
K0005007		100.04	0.01	0.01	99.3	17.3	150	0.88	2.65	1.75	1.01	18.6	2.83	<5	2.0	0.57
K0005008		98.96	0.01	0.03	129.5	24.5	120	0.56	3.66	2.28	1.21	19.2	4.20	<5	2.6	0.79
K0005009		100.49	0.11	0.46	65.4	6.2	>10000	0.16	0.67	0.47	0.21	10.9	0.66	<5	0.5	0.15
K0005010		100.78	0.01	0.04	172.5	24.7	130	2.23	4.37	2.51	1.34	19.4	4.53	<5	2.8	0.90

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ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
 www.alsglobal.com/geochemistry

To: DUFFEY LAKE HOLDINGS INC.  
 666 BURRARD STREET, 25TH FLOOR  
 VANCOUVER BC V6C 2X8

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**CERTIFICATE OF ANALYSIS SD21335094**

Sample Description	Method Analyte Units LOD	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
		La ppm 0.1	Lu ppm 0.01	Nb ppm 0.1	Nd ppm 0.1	Pr ppm 0.02	Rb ppm 0.2	Sm ppm 0.03	Sr ppm 1	Sr ppm 0.1	Ta ppm 0.1	Tb ppm 0.01	Th ppm 0.05	Tm ppm 0.01	U ppm 0.05	V ppm 5
K0001063		3.7	0.13	1.2	4.7	1.12	5.8	1.38	<1	100.5	0.1	0.25	0.46	0.13	0.46	136
K0005001		0.9	0.01	0.1	0.6	0.15	0.2	0.11	<1	70.2	<0.1	0.02	<0.05	0.01	0.08	<5
K0005002		10.0	0.32	6.8	13.9	3.92	17.3	4.22	1	264	0.5	0.65	0.92	0.35	0.31	277
K0005003		2.2	0.10	1.3	3.1	0.66	3.0	1.07	<1	218	0.1	0.19	0.15	0.08	<0.05	319
K0005004		7.4	0.22	5.3	9.6	2.30	4.3	2.79	1	262	0.4	0.47	0.53	0.22	0.14	203
K0005005		10.1	0.30	7.2	13.7	3.29	6.0	3.76	1	272	0.5	0.63	0.73	0.32	0.22	241
K0005006		8.8	0.26	6.4	12.0	2.83	5.1	3.56	1	291	0.4	0.60	0.61	0.27	0.17	219
K0005007		7.4	0.22	5.1	9.9	2.25	4.3	3.15	1	294	0.3	0.43	0.52	0.24	0.14	187
K0005008		10.3	0.27	7.4	14.0	3.23	6.2	4.03	1	272	0.5	0.66	0.73	0.29	0.23	239
K0005009		3.1	0.07	1.2	2.8	0.70	5.2	0.58	1	142.5	0.1	0.11	0.67	0.07	0.18	178
K0005010		10.2	0.36	7.2	14.2	3.42	12.3	4.19	1	294	0.5	0.73	1.04	0.36	0.77	275

\*\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*\*



ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 604 984 0221 Fax: +1 604 984 0218  
 www.alsglobal.com/geochemistry

To: DUFFEY LAKE HOLDINGS INC.  
 666 BURRARD STREET, 25TH FLOOR  
 VANCOUVER BC V6C 2X8

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**CERTIFICATE OF ANALYSIS SD21335094**

Sample Description	Method Analyte Units LOD	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-MS42	ME-4ACD81	ME-4ACD81
		W ppm 1	Y ppm 0.1	Yb ppm 0.03	Zr ppm 2	As ppm 0.1	Bi ppm 0.01	Hg ppm 0.005	In ppm 0.005	Re ppm 0.001	Sb ppm 0.05	Se ppm 0.2	Te ppm 0.01	Tl ppm 0.02	Ag ppm 0.5	Cd ppm 0.5	
K0001063		1	8.7	0.95	27	8.5	0.69	0.013	0.025	0.082	0.79	16.6	0.69	0.04	1.0	1.0	
K0005001		<1	1.9	0.10	<2	0.1	<0.01	<0.005	<0.005	<0.001	<0.05	<0.2	<0.01	<0.02	<0.5	<0.5	
K0005002		<1	23.0	2.39	113	0.4	0.01	<0.005	0.015	<0.001	<0.05	0.2	<0.01	0.11	<0.5	0.6	
K0005003		<1	6.5	0.66	20	0.4	0.14	<0.005	0.012	0.002	<0.05	0.3	0.02	0.02	<0.5	<0.5	
K0005004		<1	14.7	1.48	70	0.4	0.01	<0.005	0.017	0.001	<0.05	<0.2	<0.01	<0.02	<0.5	0.5	
K0005005		<1	20.1	1.78	100	0.3	0.01	<0.005	0.018	0.001	<0.05	0.3	<0.01	0.05	<0.5	0.5	
K0005006		<1	17.8	1.70	86	0.3	<0.01	<0.005	0.016	<0.001	<0.05	0.2	<0.01	<0.02	<0.5	0.6	
K0005007		<1	14.7	1.38	76	0.2	<0.01	<0.005	0.015	0.001	<0.05	<0.2	<0.01	0.03	<0.5	<0.5	
K0005008		<1	20.2	1.98	105	0.4	<0.01	<0.005	0.016	0.001	<0.05	0.3	<0.01	0.02	<0.5	0.6	
K0005009		1	4.2	0.46	18	0.8	0.34	0.013	0.009	0.004	0.09	1.8	0.68	0.05	<0.5	0.5	
K0005010		<1	23.3	2.31	116	1.5	0.02	0.005	0.019	0.001	0.10	<0.2	<0.01	0.07	<0.5	0.5	

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**CERTIFICATE OF ANALYSIS SD21335094**

Sample Description	Method Analyte Units LOD	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	Ni-OG62	PGM-MS23L	PGM-MS23L	PGM-MS23L	PGM-ICP27	PGM-ICP27	PGM-ICP27
		Co	Cu	Li	Mo	Ni	Pb	Sc	Zn	Ni	Au	Pt	Pd	Au	Pt	Pd
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppb	ppb	ppb	ppm	ppm	ppm
K0001063		486	5420	10	3	>10000	13	20	100	1.255	84	7.0	19.0			
K0005001		<1	9	<10	1	17	<2	<1	9		3	0.4	1.4			
K0005002		54	174	20	1	147	5	28	107		2	4.4	4.8			
K0005003		76	299	10	1	301	5	31	106		5	7.9	11.2			
K0005004		67	121	10	1	274	<2	23	97		2	4.4	6.6			
K0005005		57	145	10	1	200	3	26	103		2	5.5	6.0			
K0005006		60	127	10	1	230	4	23	94		2	4.7	5.5			
K0005007		60	107	10	1	225	<2	21	90		1	3.8	4.8			
K0005008		56	161	10	1	188	<2	25	105		2	5.4	5.9			
K0005009		110	972	10	2	2270	12	18	104		246	>1000	>1000	0.26	3.88	1.74
K0005010		52	187	30	1	143	9	30	152		2	5.2	5.1			

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CERTIFICATE OF ANALYSIS SD21335094

Sample Description	Method Analyte Units LOD	OA-GRA08	PUL-QC	CRU-QC
		S.G. Unity 0.01	Pass75um % 0.01	Pass2mm % 0.01
K0001063			92.8	
K0005001		3.03	93.0	85.3
K0005002		3.11		
K0005003		3.07		
K0005004				
K0005005		3.06		
K0005006		3.00		
K0005007		3.04		
K0005008		3.01		
K0005009				
K0005010		3.00		

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**CERTIFICATE OF ANALYSIS SD21335094**

<b>CERTIFICATE COMMENTS</b>	
	<b>LABORATORY ADDRESSES</b>
Applies to Method:	Processed at ALS Sudbury located at 1351-B Kelly Lake Road, Unit #1, Sudbury, ON, Canada. CRU-31 CRU-QC LOG-21 LOG-23 OA-GRA08 PUL-32 PUL-QC SPL-21 WEI-21
Applies to Method:	Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada. C-IR07 ME-4ACD81 ME-ICP06 ME-MS42 ME-MS81 ME-OG62 Ni-OG62 OA-GRA05 PGM-ICP27 PGM-MS23L S-IR08 TOT-ICP06