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EMPRESS PROJECT
2015 SURFACE TILL AND BEDROCK SAMPLING PROGRAMS
SYINE TOWNSHIP
NORTHWESTERN ONTARIO
NTS 42D/15

Mike Koziol, P. Geo., P. Eng.
September 24, 2015

SUMMARY

The Empress property is located approximately 100 km west of Hemlo and 15 km east of Terrace Bay, Ontario. The property comprises 12 contiguous mining claims (covering 736 ha) and lies within the Schreiber portion of the Archean aged Schreiber-Hemlo greenstone belt. Recent exploration by prospectors Wayne Richards and Rudy Wahl resulted in new gold discoveries within the Terrace Bay batholith on their respective properties that adjoin Alto's Empress Property to the east and south

Previous work on the property focused on the Empress Structure which traverses the supracrustal rocks near the north end. The work included trenching, overburden stripping and diamond drilling. The diamond drilling was limited to tracing the Empress Mine ore zone and extended only 400 m onto the Alto claims east of the Empress Mine. Historical drilling did intersect the shear zone with locally significant gold results including 44.23 g/t over 0.61 m core length. Surface stripping was completed on Alto's claims over a 1.6 km length of the structure northeast of the Empress Mine and several areas of significant surface gold mineralization were uncovered including Trench 6E. Previous saw-cut channel sampling is reported to have averaged 1.3 g/t gold across a 16.2 m wide section of the Empress Structure, including 5.3 g/t gold across 2.8 m. However, only limited work was completed by Alto near the north and northeast contacts of the Terrace Bay batholith at the south end of the property.

A program consisting of glacial till sampling, grab sampling of bedrock and prospecting along a major shear zone was carried out on the Empress property between May 19 and July 22, 2015. The main objectives of the 2015 summer program were to (a) sample glacial tills and process for gold grains and Kimberlite Indicator Minerals and (b) grab sample outcrops along a major East-trending shear zone located within claim 1210334 to test for gold mineralization. In total, 23 glacial till samples were processed for gold grain counts and kimberlite indicator minerals (KIMs). In addition, 38 grab rock samples were assayed for gold and analysed for 30 other elements.

Gold grains were recovered from 21 of the 23 till samples processed ranging in counts from one grain to 14 grains. Eleven of the samples contain one or more gold grains classified as "Pristine", including one sample that contains two pristine grains one of which is coarse, measuring 150x400x700 microns.

KIMs were recovered from seven of the 23 samples including three samples that each contains one pyrope garnet. The sampling program has identified a possible KIM dispersion train that comprises the three garnet bearing samples which align along the predicted glacial retreat direction for this area.

Rock grab sampling was completed along a 300 m portion of a major EW trending shear zone which contains folded and dismembered quartz bands and veins. Assay results from the 29 samples collected from the area of the shear zone returned weakly anomalous gold values, up to a maximum of 0.013 ppm. Nine other samples were collected from other locations of quartz vein and sheared rock and these returned only weakly anomalous

values, up to a maximum of 0.019 ppm.

Further work is recommended: (1) re-sample the gold and KIM anomalous till sites to confirm and reproduce the original anomalies; (2) follow-up glacial till sampling up-ice from sample EMT-008 to help establish a possible source for the pristine gold grains; (3) follow-up till sampling up ice from EMT001 and EMT019 to help establish a possible source for the KIMs; and (4) continue to prospected and rock sample bedrock near the contacts of the Terrace Bay pluton.

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1.0 INTRODUCTION

This report describes the summer 2015 surface glacial till sampling and bedrock grab-sampling programs completed by Alto Ventures Ltd. on its 100% owned Empress Project. The field work was carried out between May 19 and July 22, 2015.

1.1 Location and Access

The Empress Project is located approximately 100 km west of Hemlo and 15 km east of Terrace Bay, Ontario. The property lies in the Syine Township and it is covered by NTS sheet 42D/15 (see Fig. 1).

The Trans-Canada Highway 17 passes at the south end of the property and old logging and mining roads which are overgrown and now reduced to ATV trails provide some access to the claims further north from the highway.

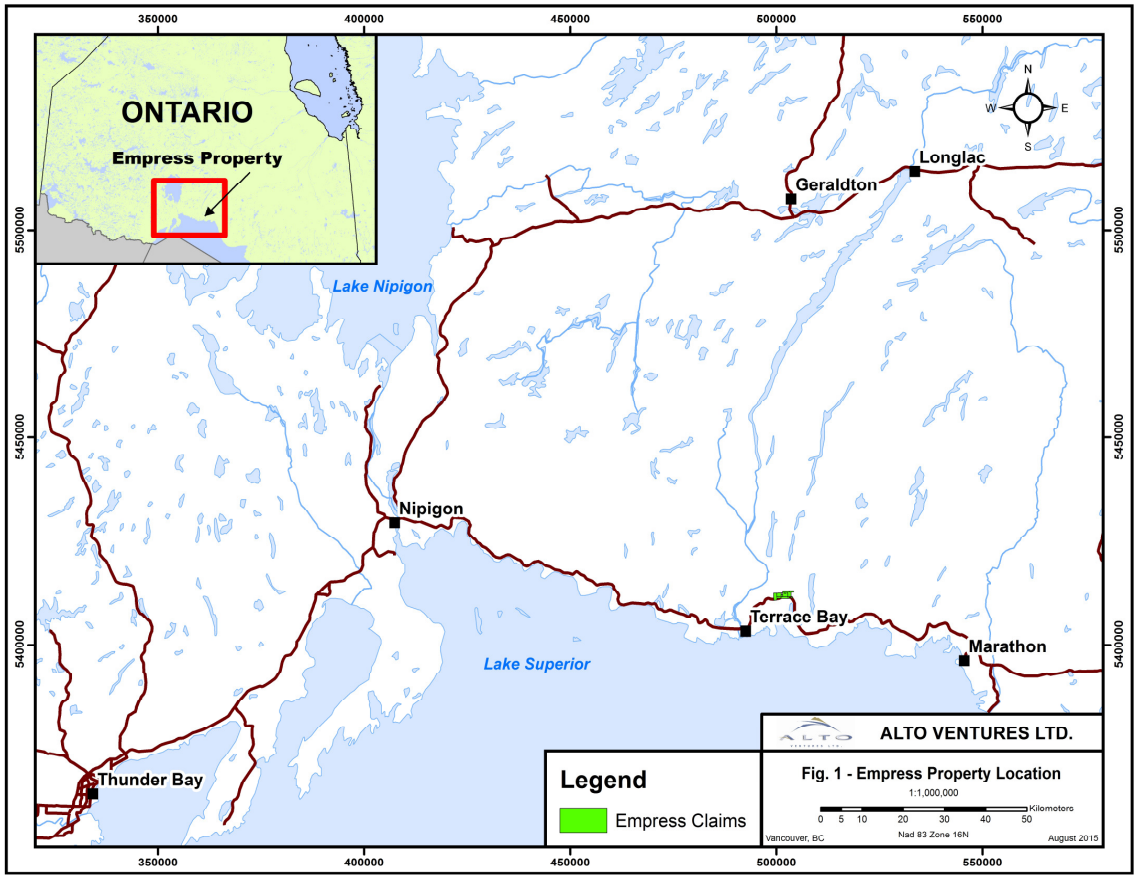

Figure 1 Empress Property location map

1.2 Physiography

Topographic relief on the Empress Property is variable with elevations ranging from 240

m to over 470 m above mean sea level. Steep hills and ridges are commonly flanked by rock cliffs and deep ravines. The ravines are often occupied by beaver ponds and swamps which predominantly extend in an east-west direction. Locally the Empress Hill rises 410 m above mean sea level and is a dominant feature on the property. It is also visible from Highway 17. These rugged topographic features present some challenges to moving heavy equipment on the property and should be factored into the planning of future drilling programs.

Vegetation cover is moderate, dominated by spruce, white birch, balsam fir, and small amounts of trembling aspen. Undergrowth is thick, and consists of mountain maple, alders and young conifers. Parts of Empress Hill and low-lying areas from the foot of Empress Hill and east towards Christie Lake were clear-cut by logging operations and are now occupied by sparse white birch, young balsam fir, and thick moose maple making prospecting and mapping in these areas difficult and unpleasant.

There is a moderate amount of outcrop on the property, but exposure is commonly masked by undergrowth of bush and by a thin cover of moss and detrital material. There are numerous bedrock exposures of the Terrace Bay batholith in road cuts and nearby ridges along the Trans-Canada Highway at the south end of the property.

1.3 Cultural Features

Cultural features found on the property are mostly related to the past mining activities at the Empress Mine (claim 459728 – not part of Alto's Empress Project) in the early 1900's. These features include old adits and shafts, rock dams and steel water lines, cement foundations, waste dumps, trenches, casings, pipes, and metal debris.

1.4 Property and Tenure

The property consists of 12 contiguous unpatented mining claims, for a total of 46 units covering 736 hectares. The claim group lies within the Thunder Bay Mining Division and is represented on claim map G634, Syine Township.

Certain parts of the property are also held by private individuals who own the surface rights. Claims making up the Empress Property are listed in Table 1 and illustrated in Figure 2.

Table 1: List of Claims - Empress Project

Claim	Record Date	Units	Township	Surface Rights
1195779	Jul 15/96	6	Syine	
1196616	Mar 28/96	1	Syine	Yes R569
1208187	Feb 13/96	4	Syine	
1208188	May 17/96	1	Syine	Yes R567
1208189	Feb 13/96	3	Syine	
1208190	May 17/96	8	Syine	Yes R567
1208719	Apr 16/96	4	Syine	
1210334	Feb 12/97	1	Syine	
1224854	May 21/96	6	Syine	Yes R569
1224888	Dec 11/96	3	Syine	
3008228	Jul 11/05	8	Syine	
845646	Dec 27/85	1	Syine	

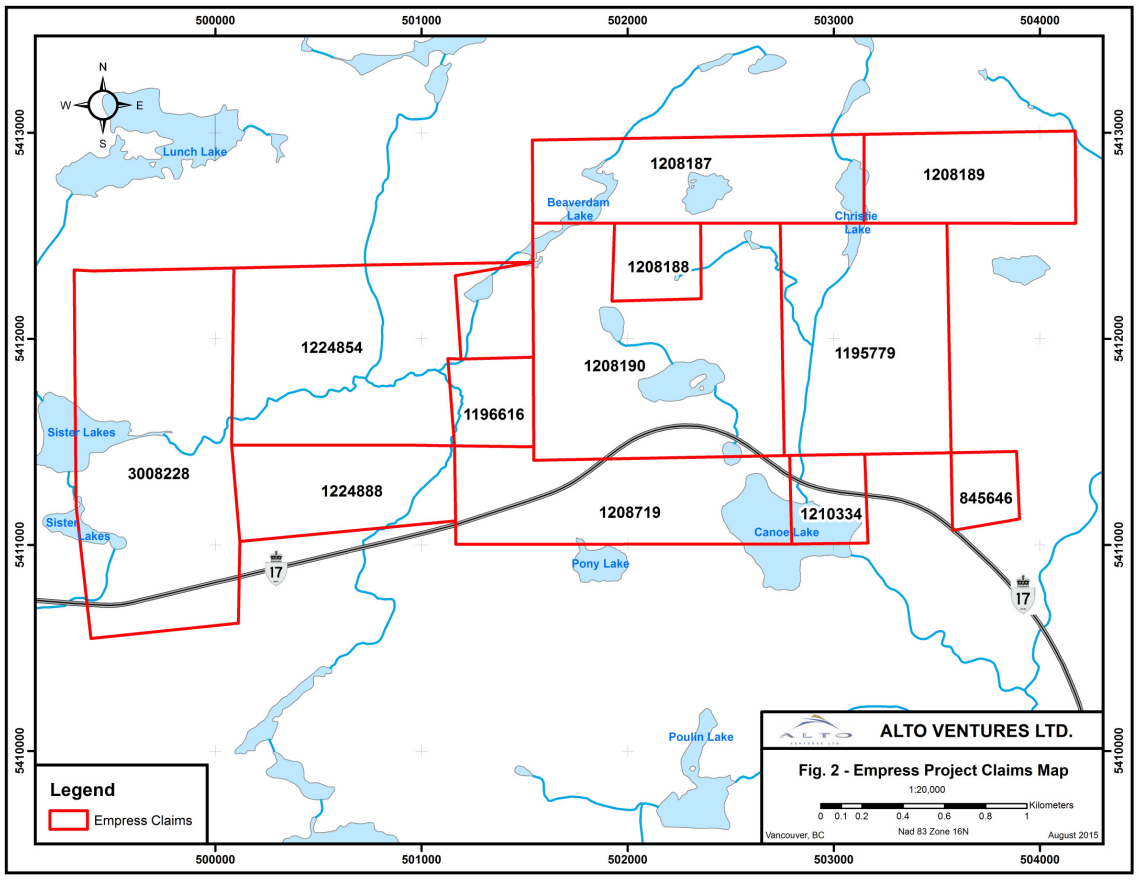

Figure 2 Empress Project claims map

1.5 Previous Work

Exploration interest within the Schreiber-Hemlo District began in 1851 with the

discovery of Canada's first molybdenite occurrence in the Terrace Bay area. Subsequently there were several periods when significant work was completed prior to Alto's acquisition of the Empress property (McCracken, 2000, Samson, 1999, Schnieders et al., 1996). Some of the more significant past work includes:

1895 - 1900: The Empress Gold Mining Company was incorporated and various test shafts, adits and pits were sunk on a series of gold-bearing quartz veins. A 10-stamp mill was erected, and 112 ounces of gold were produced from 1100 tons of ore (calculated average of 0.1 oz. /ton or 3.5 g/t Au). Operations were eventually shut down due to lack of funds.

1936 - 1937: The Empress Consolidated Gold Mines Ltd. was incorporated and signed an option agreement with Czarina Gold Mines in order to extensively re-evaluate the Empress mine. Dozens of trenches now found on the Empress claims are attributed to this period of activity.

1984 - 1987: Micham Exploration Inc. conducted a diamond drilling program in 1984 consisting of 1557 m (5106 ft.) in 12 holes, testing various anomalies detected in the vicinity of the Ursa Major occurrence (486 m in 4 holes), the Empress Mine (587 m in 4 holes), and along the Empress Structure (483 m in 4 holes). The most encouraging results included 44.23 g/t over 0.61 m (ddh 441-84-8), the presence of visible gold in ddh 441-84-1, and several sub economic intersections hosted by a "carbonatized sericitic shear" coincident with the Empress Structure. Another follow-up program further testing the Empress Structure was completed in 1987 (1674 m in 10 holes); The drill logs for this last program were submitted for assessment with the MNDM, but the corresponding report and assay results were not found.

1998-2005: Cameco Gold Inc. (a subsidiary of Cameco Corporation (Cameco) acquired the property in 1998 and started work in 1999. Cameco's 1999 program involved an intensive review of the northern portion of the current Empress property and surface work included line cutting and geological mapping (Samson, 1999). The mapping program was followed by the stripping of eight historical trenches distributed over a strike length of 1.4 km to the east of the former Empress Mine. The stripped areas were mapped and 308 channel samples were collected. Sampling at Trench 6E averaged 1.3 g/t gold across a 16.2 m wide section of the Empress Shear, including 5.3 g/t gold across 2.8 m.

To enhance the understanding of the Empress mineralized system Cameco completed 8.8 km of dipole-dipole IP surveying in 1999 on selected grid lines at locations northeast and southwest of the Empress Mine. Twelve diamond drill holes totaling 1800 metres drilled previously by Micham Resource in 1984 and 1987 were re-logged and re-sampled by Cameco. In 2000, Cameco performed a geological survey and bulk till sampling program to follow-up previous year's results and to further explore the property (McCracken, 2000).

Alto Ventures Limited purchased the property from Cameco Corporation in 2005. In

2006 Alto completed geological work and recommended diamond drilling (Koziol, 2007).

In 2008, Alto Ventures drilled two holes, totaling 332 m to test sections of the Empress Structure (Koziol, 2008). Results returned several anomalous gold values, including 2.04 g/t gold over 0.5 m.

In 2012, Alto Ventures completed sampling of the 2008 drill cores that were not sampled previously and analyzed these samples for gold plus other trace elements (Koziol, 2012). In 2012, Alto also completed a surface channel sampling program testing targets along the Empress Structure (Koziol, 2013). Results confirmed significant gold mineralization in Trench 6 area, returning 3.97 g/t gold across 2.8 m including 6.15 g/t gold over 0.8 m.

In 2013, Alto Ventures completed a small bedrock sampling program near the south end of the property focusing on the Terrace Bay Batholith (Koziol, 2014a). In 2014 Alto completed small prospecting and soil sampling programs, again focused on the Terrace Bay Batholith (Koziol, 2014b).

1.6 Recent Developments Close to the Empress Project

Alto's Empress Property is situated near the north-northeast contact of the Terrace Bay batholith and it is an excellent target for gold mineralization. This contact has not been subjected to significant exploration in the past. However, recent new gold discoveries have been reported on adjoining properties on the eastern edge of the Terrace Bay batholith by prospectors Wayne Richards and Rudy Wahl. Richards reported up to 1.28 oz./ton gold on his Jackfish Lake property and Wahl has reported gold values up to 39 g/t on the adjoining Wahl Jackfish Lake property (source of info: 2013-2104 Recommendations for Exploration booklet, produced by the OGS Resident Geologist Program). Both properties are located immediately east and south of Alto's Empress Property. Figure 3 is a reproduction of a promotional map produced by Wayne Richards showing the location of gold occurrences to east and south of Alto's Empress Property.

New gold discoveries were reported at the west edge of the Terrace Bay batholith near Schreiber by GTA Resources Inc. in 2012 from drilling on the North Shore Property. Drill results include intersections of 3.21 g/t Au over 149.5 m. The North Shore Property is located approximately 20 km west-southwest of the Empress Property.

Exploration work by Alto Ventures within the Terrace Bay batholith and along its contact with the rocks to the north and northeast was minimal and consisted of mainly prospecting and grab rock sampling (Koziol 2014a, 2014b). Several areas of small white and clear-white quartz veins and micro-veinlets have been identified within the batholith near its north and northeast contact with the supracrustal rocks. The veins occur in narrow shear zones and areas of intense fracturing. At several locations, minor amounts of pyrite are associated with the quartz veins and pyrite also occurs disseminated along alteration halos near some of the fractures and as veinlets filling open-fractures. However, no significant gold values have been obtained from the quartz veins and

sulphide-filled fractures on the Empress property to date (Koziol 2014a, 2014b). This is in stark contrast to exploration results reported from properties owned by Wayne Richards and Rudy Wahl to the east and southeast of Empress. High-grade gold mineralization was reported from both properties (see Fig 3 and Puumala et al., 2014).

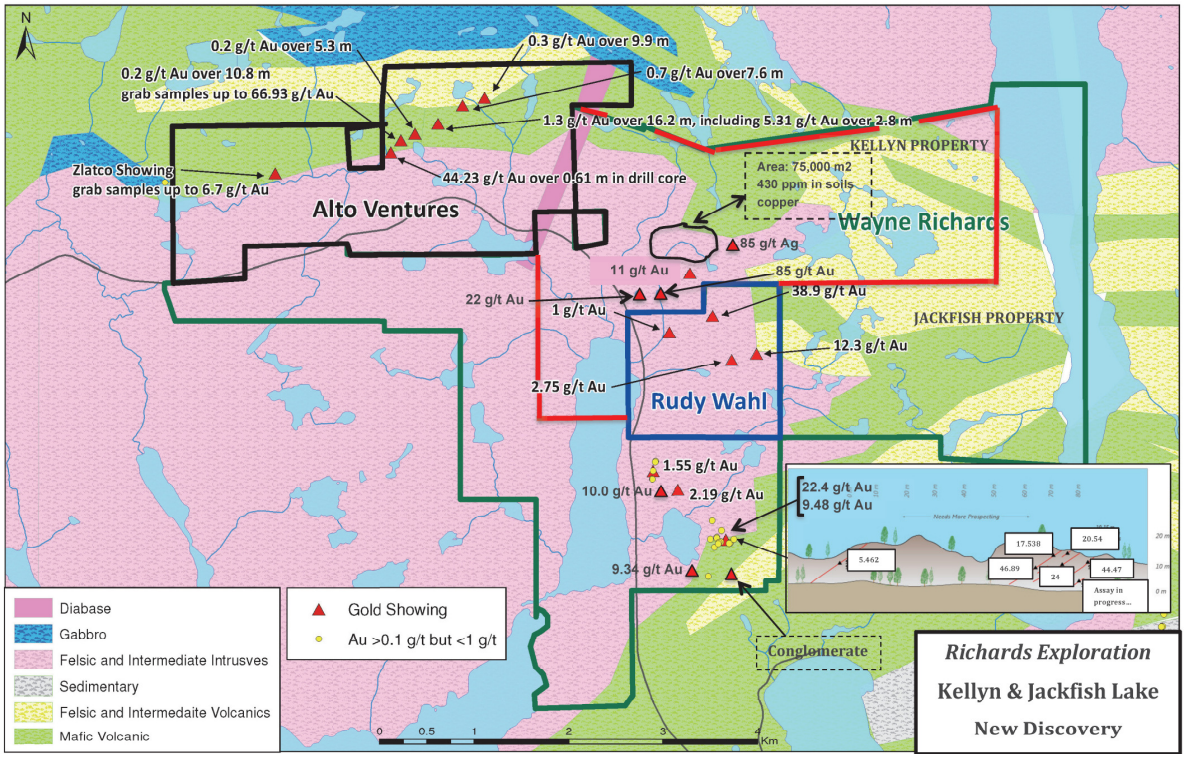

Figure 3 Reproduction of map from Wayne Richards showing gold occurrences to the east and south of Alto's Empress Property, April 2014

2.0 PROPERTY GEOLOGY

The Empress property lies within the Schreiber portion of the Archean aged Schreiber-Hemlo greenstone belt. It is comprised of tholeiitic and calc-alkalic mafic to felsic flows, inter-layered with coarse to fine fragmental volcanic and minor sedimentary rocks. In the Jackfish Bay area, these rocks are folded into a series of tight isoclinal folds with sub-horizontal to gently plunging east to east-southeasterly oriented fold axes (Walker 1967, Carter 1988). Large and small sill-like intrusions of gabbro, peridotite and minor quartz-feldspar porphyries have intruded the supracrustal sequences. The supracrustal and associated intrusive rocks are bounded to the northeast, north, west and south by the Black-Pic batholith, by rocks of the Quetico metasedimentary subprovince, the Crossman batholith and Terrace Bay batholith, respectively. Recently, several new gold occurrences have been discovered associated with the Terrace Bay batholith in the Schreiber area and near Jackfish Lake east of Terrace Bay.

The Terrace Bay batholith is a late tectonic intrusion that extends for 25 km from Schreiber eastward to Jackfish Lake. The batholith is dominated by massive equigranular, fine to medium grained granodiorite that for the most part is homogenous

but locally it is feldspar porphyritic. Most of the batholith on the Empress property appears un-deformed but there are areas near the contacts where the intrusion contains penetrative fabric and is intensely fractured. Narrow shear zones also occur within the intrusion. White and clear-white quartz veins are associated with some of the shear zones and fracturing as open fracture-fill veins. The batholith is cut by several generations of dykes including aplite and granitic pegmatite, diorite and diabase.

Metamorphic grade is generally upper greenschist but increases to upper amphibolite proximal to the granitoid plutons.

On a regional scale, the property lies within the Trans-Superior Tectonic Zone (TSTZ) which extends from Michigan northeast into Ontario west of Marathon. The TSTZ represents a fault system that has tapped mantel material (Sage, 1999). Kimberlites straddle the structure in Michigan (Cannon and Mudrey, 1981) and a kimberlite has been mapped at Killala Lake approximately 25 km northeast of the Empress Property.

All glacial landforms and materials within the Empress area were deposited during the Wisconsin glaciation. Ice flow directions are reported by Morris (2000) to be oriented at 220° and 170-190°. The 220° direction is the oldest and is observed throughout the area and represents an earlier regional ice flow. The younger set is more localized and represents later ice flow controlled by bedrock topography (Morris, 2000). Landforms and materials associated with ice retreat are commonly located in bedrock controlled valleys and include tills, gravels and outwash sand in the lower flat lying areas.

2.1 Empress Structure

The dominant gold bearing feature on the property is the Empress Structure which traverses the northern part of the property (see Map 5). The Empress Structure has been the focus of most of the exploration to date and has been described in detail by Samson, 1999, McCracken, 2000 and Koziol, 2007. The following is the description given by Koziol, 2007.

"The Empress structure is a zone of shearing and deformation that has been previously exposed by trenching and stripping at various locations (Samson, 1999). The stripped area extends for approximately 1.6 km from the eastern property boundary of the former Empress Mine (Cameco's L0E) and extending eastward to L15+00E. The most sheared portion of the structure varies from less than 15 to 25 m in width, and strikes slightly oblique to stratigraphy, at roughly 070° azimuth, dipping variably to the south at 90° to less than 50° but it is confined to an area between mafic flows.

The sheared rocks within the structure include quartz-sericite schist and chemical sediments bordered in the north by a ±graphitic quartz-sericite schist which can be followed eastward past L15+00E and moderately deformed clastic metasediments found discontinuously along the southern edge of the quartz-sericite schist. A 15 to 25 cm wide lamprophyre dyke occupies the centre of the shear on L1+00E.

Structural work by Alto in Trench 1+00E indicates that there are only a few fold closures that are defined sufficiently for determining reliable plunge directions. In Trench 1+00E lineation rods along the shear dip plane varied from 105° to 115°in azimuth and dipping 43°. The strike of the shear zone varies from 70° to 95°.

The rocks in Trench 2+50E are similar to those in Trench 1+00E but the intensity of alteration and mineralization associated with the Empress structure is reduced at this location. The work by Alto has identified a fold with an axial plane striking 050° and dipping 43°. A number of lineation rods were measured down the dip plane showing an azimuth of 85°and a dip of 42°.

In Trench 6+00E, the Empress structure is over 25 metres wide and strongly silicified, sericitized, and injected with narrow quartz veins. The structure carries 1 to 5% sulphides and displays strong shearing and folding. Measurements by Alto indicate that the axial plane strikes 85° and dips 40°. Lineation rods trend down the dip plane at 125° azimuth with 42° dips.

The rocks exposed in Trench 15+00E are similar to the other areas trenched but the deformation and alteration normally associated with the Empress structure is considerably diminished both in intensity and mineralization. No significant structural measurements were obtained in 2006 other than several sets of quartz micro-veins that strike at 82° and dip at 43° and other sets strike at 200° and dip at 70°.

General observations for along the Empress Structure include pinching and swelling on a scale of one metre to tens of metres in the individual stripped areas as well as in between the stripped areas. Similar observations were made for the quartz veins while walking past the Empress Mine where a vertical cross section in a trench shows a one metre wide quartz vein on surface pinching to 10 cm at a depth of two metres. To date, the two best exposures of the Empress Structure (including shearing, alteration, mineralization and width of zone) are (1) between the former mine and L1+00E and (2) the area of the trench on L6+00E. The best gold values obtained east of the former mine are from these two areas."

3.0 THE 2015 SUMMER PROGRAM

3.1 Objectives

The main objectives of the 2015 summer program were to (a) sample glacial tills and process for gold grains and Kimberlite Indicator Minerals and (b) grab sample outcrops along a major East-trending shear zone located within claim 1210334 to test for gold mineralization.

3.2 Description of the 2015 Work and Logistics

The 2015 summer work program included surface sampling of glacial tills and the sampling of selected outcrops along a major shear zone. In total, 23 till samples were

collected as well as 38 grab rock samples. This work was completed at various time from May 19 to July 22, 2015 by prospector Wayne Richards and geologist Mike Koziol, P. Geo. The geology and rock sample descriptions included in Appendix C were completed by Mike Koziol, P. Geo.

Till sampling was completed by a two person crew, Koziol and Richards, with the support of an all-terrain vehicle and four-wheel drive truck for those sites easily accessible and by foot traverses to the more remote sites. The work was based out of Jackfish Lake Efficiency Cottages in the hamlet of Jackfish Lake. Sample sites were selected mainly down-ice from the Empress gold structure. The samples were also processed for kimberlite indicator minerals (KIMs) as the regional geology of this area is considered to be potentially favourable for hosting kimberlite bodies and possibly diamonds. Till sample locations are plotted on Map 1and the UTM coordinates with corresponding sample are included in Appendix A.

Potential sample sites were predetermined from geology maps and scouted in the field to determine if suitable sampling material can be found. Once a suitable till was found, the crew removed the organic layer and dug out material by hand shovel. Approximately 20 kg of material was bagged, removing by hand and discarding the pebbles greater than 2 cm. The samples were then taken to camp where the bags were cut open and the samples were dried and then shaken through a 6 mm square mesh screen. The objectives were to prepare samples of screened materials of approximately 10 kg each but actual weights varied from 7.7 to 12.3 kg.

Depths of sample pits ranged from 0.2 m to 1.5 m (along road cut) but averaged approximately 0.4 m as digging deeper was still difficult because of frost in the ground. A flag with the sample number was left tied to a nearby bush to mark the specific sample locations as the deeper pits were backfilled. The samples were described on a paper sheet with a GPS waypoint collected for each site.

During the screening process, a number, ranging from 15 to 50 of random pebbles were collect from each sample. These were washed in camp and examined later to gather information on the pebble lithologies, shapes (roundness and angularity) and intensity of clay coatings of the pebbles. This information is useful to help determine if the till is sampling material from local or distal sources.

The screened till samples were shipped for processing to Overburden Drilling Management Ltd (ODM) in Ottawa by bus. The samples were processed as described in the flow chart included in Appendix A to determine the number of gold grains and kimberlite indicator minerals (KIMs) in each till sample. The gold grains were classified by their shapes (pristine, modified, reshaped) and inferring their relative distance of transport. The visually picked KIMs were sent to the Saskatchewan Research Council for microprobe analysis to determine if their chemistry is consistent with kimberlite emplacement.

Gold assays for rock samples were performed at Accurassay Laboratories in Thunder

Bay, Ontario. The samples are first entered into Accurassay Laboratories' Laboratory Information Management System (LIMS) upon reception and the samples are unpacked and dried, if necessary.

Rock samples are then jaw crushed to 85% <10 mesh and a 500 to 1000 gram sub-sample is normally taken for analysis. The size of the sub-sample depends on the requested analytical scope. The sub-sample is pulverized to 85% <200 mesh. Either silica or a non-silica based sand is used to clean out the pulverizing dishes between each sample to prevent cross contamination.

The samples go to the fire assay laboratory or the wet chemistry laboratory depending on the analysis required. The gold assaying method uses a standard Fire Assay with AA finish technique on a 30 gram sub-sample taken from a 500 gram split from the submitted sample. Commercially prepared standards were inserted by Alto to ensure precision of the results. The laboratory ran internal check assays every 10 samples to ensure lab quality control. The samples were also tested for 30 other elements using ICP scan methods.

In total, 38 rock samples (plus one standard) were analyzed for gold and 30 other elements at Accurassay Laboratories. Assay certificates for rock samples are included in Appendix C.

3.3 Glacial Till Results

Gold

The till sampling program has recovered gold grains in 21 of the 23 samples processed ranging in counts from 1 gold grain to a maximum of 14 gold grains. Eleven of the samples contain one or more gold grains classified as "Pristine", including sample EMT008 which contains two pristine gold grains, one of which is a coarse grain measuring 150x400x700 microns (see Figure 4). Table 2 provides a summary of the visible gold grains in each till sample processed and the gold grain results are plotted on Map 2. The ODM sample processing certificates along with the sample processing flow-chart are included in Appendix A.

Table 2 Summary of visible gold grains in processed till samples

Sample Number	Number of Visible Gold Grains			
	Total	Reshaped	Modified	Pristine
EMT-001	13	10	3	0
EMT-002	7	0	5	2
EMT-003	3	2	1	0
EMT-004	7	2	3	2
EMT-005	2	1	1	0
EMT-006	1	0	0	1
EMT-007	10	4	4	2
EMT-008	8	4	2	2
EMT-009	5	2	1	2
EMT-010	8	4	1	3
EMT-011	5	2	1	2
EMT-012	14	7	4	3
EMT-013	2	0	2	0
EMT-014	6	3	2	1
EMT-015	6	5	0	1
EMT-016	0	0	0	0
EMT-017	9	6	3	0
EMT-018	1	1	0	0
EMT-019	1	1	0	0
EMT-020	5	2	3	0
EMT-021	0	0	0	0
EMT-022	1	0	1	0
EMT-023	4	3	1	0

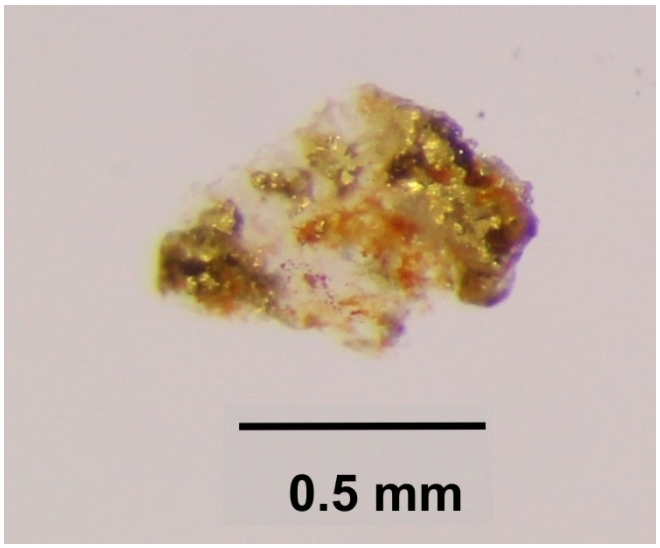

Figure 4 Photo Pristine gold grain in quartz recovered from sample EMP008, measuring 150x400x700 microns

Kimberlite Indicator Minerals

Kimberlite Indicator Minerals (KIMs) were confirmed by microprobe analysis from seven of the 23 samples including three samples that each contained one pyrope garnet. Table 3 provides a summary of the till samples that contain microprobe-confirmed KIM results. These results are plotted on Map 4 and Map 3 illustrates the distribution of mineral grains that were picked visually by ODM as possible KIMs and then forwarded to the SRC for microprobe analysis. The ODM sample processing certificates and the SRC microanalysis certificates are included in Appendix A.

Table 3Empress till samples that contain microprobe-confirmed KIMs; possibly kimberlitic grains (PK) in the same sample are included in this table.

Sample Number	Cr-Pyrope	Eclogite Garnet	Chrome Diopside	Chromite	Mg Ilmenite	Olivine
EMT-001	1	0	0	3(PK)	0	0
EMT-006	0	0	0	0	1	0
EMT-009	0	0	0	1(PK)	1	0
EMT-012	0	0	0	0	0	1
EMT-018	1	0	0	0	0	0
EMT-019	1	0	0	1(PK)	0	3 (2PK)
EMT-023	0	0	0	0	1	2

Results from the KIM microanalysis were review by Dr. Harrison Cookenboo, P. Geo, an expert in kimberlite indicator mineral geochemistry. Dr. Cookenboo concludes:
"The Empress property till sampling program has identified a probable KIM dispersion train in till. The train comprises samples EMT-001, EMT-018 and EM-019. These samples each returned a single Cr-pyrope KIM. Sample EMT-001 also returned 3

possibly kimberlitic (PK) chromites. Sample EMT-018 also returned a olivine that was not analyzed by microprobe, and sample EMT-019 also returned 1 olivine KIM as well as 2 olivines classified as PK, and and PK chromite. These low count samples align precisely along the predicted sediment transport direction the author derived from glacial retreat maps (Dyke and Prest, 1987). The three Cr pyropes, plus the forsteritic olivine (Mg#s 91. 85 and 84) point to a probable kimberlite sources somewhere up-ice. Little can be inferred confidently as to diamond potential of the presumed kimberlite source given the low KIM counts. No DIMs were recovered among the few KIMs."

The complete text of Dr. Cookenboo's review is presented in Appendix B.

3.4 Rock Grab Sampling and Prospecting Results

A major shear zone is exposed in a road cut in claim 1210334 and trends approximately EW (see Map 5 and Figure 5). The shear occurs near the contact of granodiorite to the south and mafic volcanic rocks to the north. Narrow bands and veins of quartz were emplaced along this contact and subsequently folded and dismembered (see Figure 6). For the most part, the veins and sheared rocks are barren of sulphides but there were several isolated areas where cubes of fine disseminated pyrite were observed. This shear was prospected and grab sampled for approximately 300 m along strike. In total, 29 samples of various rock grab samples were collected and analysed to determine if they contain anomalous amounts of gold and other metals. Gold values are low, best being 0.013 ppm Au. Complete results and sample descriptions are presented in Appendix C.

Two grab samples, 808556 and 808557 were analysed from a massive white quartz vein in claim 1195779. The vein is 0.5 m wide and was traced for 50m along 210° strike direction. The vein dips at 70°W and is clear white and contains only minor amounts of pyrite. Gold assays from these two samples are weakly anomalous with 0.019 ppm Au reported from sample 808557.

Three grab samples, 808558 to 808560 were analysed from a historical blasted pit that measures approximately 3 m by 5 m on surface with an inclined shaft measuring approximately 2 m by 1.5m. The shaft is flooded but is believed to exceed 6 m in depth. The shaft follows quartz veins in a north striking shear zone. Results from the three samples returned up to 0.013 ppm Au in sample 808559.

Two grab samples were collected from the basal highway fill boulders used to fill a low lying area in claim 1208719. Samples 808561 and 808562 are from large blocks, up to 2 m square of fine grained intermediate volcanic or dyke rock cut by white quartz veins, up to 20 cm wide and massive bands of coarse grained pyrite. The bands are up to 5 cm wide and individual pyrite cubes are up to 1 cm. Gold results were low, with maximum 0.008 ppm Au.

Grab samples 808592 and 808593 were collected in claims 1195779 and 1210334 near the contact between granodiorite and mafic volcanic rocks. These are samples of strongly weathered brittle fault breccia. Gold values in the breccia are below detection levels of

<0.005 ppm.

Figure 5Photo Shear zone in highway road cut in claim 1210334 at the contact between granodiorite in the footwall and mafic volcanic in hanging wall; contains brecciated and dismembered quartz bands and veins

4.0 CONCLUSIONS

A program consisting of glacial till sampling, grab sampling of bedrock and prospecting along a major shear zone was carried out on the Empress property between May 19 and July 22, 2015. The main objectives of the 2015 summer program were to (a) sample glacial tills and process for gold grains and Kimberlite Indicator Minerals and (b) grab sample outcrops along a major East-trending shear zone located within claim 1210334 to test for gold mineralization. Continued exploration on the property was encouraged by the success in discovery of new gold occurrences within the Terrace Bay batholith by prospectors Wayne Richards and Rudy Wahl on properties adjoining Alto's Empress Property to the east and south. In total, 23 glacial till samples were processed for gold grain counts and kimberlite indicator minerals (KIMs). In addition, 38 grab rock samples were assayed for gold and analysed for 30 other elements.

Gold grains were recovered from 21 of the 23 till samples processed ranging in counts from one grain to 14 grains. Eleven of the samples contain one or more gold grains classified as "Pristine", including sample EMT008 which contains two pristine grains one of which is coarse, measuring 150x400x700 microns.

KIMs were recovered from seven of the 23 samples including three samples that each contains one pyrope garnet. The sampling program has identified a possible KIM

dispersion train that comprises the three garnet bearing samples EMT001, 018 and 019. These samples align along the predicted glacial retreat direction for this area.

Rock grab sampling was completed along a 300 m portion of a major EW trending shear zone which contains folded and dismembered quartz bands and veins. Assay results from the 29 samples collected from the shear zone returned weakly anomalous gold values, up to a maximum of 0.013 ppm. Nine other samples were collected from other locations of quartz vein and sheared rock and these returned only weakly anomalous values, up to a maximum of 0.019 ppm.

Figure 6 Photo Folded and dismembered quartz bands and veins in shear zone in 1210334

5.0 RECCOMENDATIONS

The following recommendations are based on the results of this program, previous exploration work that has been completed on the Empress Property and the recent success in discovering gold on adjoining properties to the east and south.

(1) Re-sample the gold and KIM anomalous till sites to confirm and reproduce the original anomalies;
(2) Follow-up glacial till sampling up-ice from the sample EMT-008 to help establish a possible source for the gold grains;
(3) Follow-up till sampling up ice from EMT001 and EMT019 to help establish a possible source for the KIMs.
(4) Continue prospecting and rock sampling near the contacts of the Terrace Bay pluton.

6.0 REFERENCES

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7.0 CERTIFICATE OF AUTHOR

I, Marian (Mike) Koziol, P. Geo., P. Eng., resident at 26 Cognac Court, Sudbury, Ontario, P3E 6L4 do hereby certify that:

1. I am currently employed as President and Director of Alto Ventures Ltd.

2. I graduated from McGill University, Montreal, Quebec with a B.Sc. degree in Geological Sciences in 1978.

3. I am a licensed member of the Professional Engineers of Ontario (No. 100026045) and a licensed member of the Association of Professional Geoscientists of Ontario (No. 1009). I am also a member of the Association of Professional Engineers and Geoscientists of Saskatchewan (No. 05638).

4. I have worked continuously as an exploration geologist since my graduation, exploring for gold and base metals deposits in the Canadian Shield including the Churchill Province of Saskatchewan and Manitoba and the Superior Province of Manitoba, Ontario and Quebec.

5. I have read the definition of "Qualified Person" as set out in National Instrument 43-101 and certify that I fulfill the requirements to be a Qualified Person for the purposes of NI43-101 by reason of my education, relevant past work experience and affiliation with professional association as defined in NI43-101.

6. I have personally worked on the Empress property and supervised the programs described in this report.

8. As of the date of this certification, I am not aware of any material fact or change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.

9. I do not hold a direct interest in the property but I do own shares of Alto Ventures Ltd and am an Officer and Director of the Company and for the purposes of this report I am not an independent Qualified Person as defined by Section 1.5 of NI43-101.

Original Signed in Sudbury, Ontario on this 24th day of September, 2015

Marian (Mike) Koziol, P. Geo., P. Eng.

APPENDIX A

EMPRESS 2015 TILL SAMPLE LOCATIONS, GOLD GRAINS AND KIMBERLITE INDICATOR MINERAL VISUALLY PICKED GRAINS, AND KIM MICROPROBE ANALYSIS RESULTS

Empress Till Sample Locations

May-June 2015 NAD 83 Zone 16

Number	East	North	Depth
EMT001	502714	5411460	0.3
EMT002	502356	5411526	0.3
EMT003	501729	5411383	0.5
EMT004	501241	5411174	0.5
EMT005	501983	5411427	0.6
EMY006	503119	5411292	0.7
EMT007	502856	5411334	0.3
EMT008	501677	5411179	0.7
EMT009	500705	5411226	0.6
EMT010	500526	5411051	0.4
EMT011	499416	5410672	0.4
EMT012	499797	5410703	0.6
EMT013	500071	5410791	0.2
EMT014	500198	5411023	0.3
EMT015	503506	5411775	0.6
EMT016	503309	5411484	0.6
EMT017	502849	5412111	0.5
EMT018	502868	5411933	0.8
EMT019	502770	5411573	1
EMT020	501642	5412049	0.7
EMT021	501797	5412098	0.6
EMT022	501567	5411801	0.7
EMT023	501566	5411276	1.5

OVERBURDEN DRILLING MANAGEMENT LIMITED
107-15 CAPELLA COURT, NEPEAN, ONTARIO, K2E 7X1
TELEPHONE: (613) 226-1771
FAX NO.: (613) 226-8753
EMAIL: odm@storm.ca

DATA TRANSMITTAL REPORT

DATE: **18-Jun-2015**

ATTENTION: **Mr. Koziol**

CLIENT: **Alto Ventures Ltd.**
Unit 7 - 1351C Kelly Lake Rd
Sudbury On
P3E 5P5

E-mail **Koziol@altoventures.com**

NO. OF PAGES: 9

PROJECT: **EMT**

FILE NAME: **20156931 - Alto Ventures - Koziol - KIMs (EMT) - May 2015**

SAMPLE NUMBERS: **EMT-001 to EMT-023**

BATCH NUMBER: **6931**

NO. OF SAMPLES: **23**

THESE SAMPLES WERE PROCESSED FOR: **KIMBERLITE INDICATORS**
GOLD

SPECIFICATIONS:

1. Submitted by client: 8.4 to 12.9 kg till samples prescreened to <4.0 mm in the field.
2. One ±500 g archival split taken.
3. All samples panned for gold and metallic minerals.
4. Heavy liquid separation specific gravity: 3.20.
5. 0.25-2.0 mm nonferromagnetic heavy mineral fraction picked for indicator minerals.

REMARKS: _____

Remy Huneault, P.Geo.
President

OVERBURDEN DRILLING MANAGEMENT LIMITED
LABORATORY SAMPLE LOG

File Name: 20156931 - Alto Ventures - Koziol - KIMs (EMT) - May 2015
Total Number of Samples in this Report = 23
Batch Number: 6937

Sample Number	Weight (kg wet)					Sample Description												CLASS
						Clasts (> 2.0 mm)*					Matrix (<2.0 mm)							
							Percentage				Distribution					Colour		
	Bulk Rec'd	Archived Split	Table Split	+2.0 mm Clasts*	Table Feed	Size	V/S	GR	LS	OT	S/U	SD	ST	CY	ORG	SD	CY	
EMT-001	10.7	0.5	10.2	0.9	9.3	G	10	90	0	0	U	+	Y	-	Y	OC	OC	TILL
EMT-002	10.9	0.5	10.4	1.0	9.4	G	20	80	0	0	U	+	Y	-	Y	OC	OC	TILL
EMT-003	10.8	0.5	10.3	0.4	9.9	G	20	80	0	0	U	+	Y	-	Y	OC	OC	TILL
EMT-004	10.0	0.5	9.5	0.8	8.7	G	20	80	0	0	U	+	Y	-	Y	OC	OC	TILL
EMT-005	12.9	0.5	12.4	1.6	10.8	G	30	70	0	0	U	+	Y	-	Y	OC	OC	TILL
EMT-006	10.4	0.5	9.9	0.8	9.1	G	20	80	0	0	U	+	Y	-	Y	OC	OC	TILL
EMT-007	8.8	0.5	8.3	1.1	7.2	G	20	80	0	0	U	+	Y	-	Y	OC	OC	TILL
EMT-008	11.1	0.5	10.6	0.8	9.8	G	30	70	0	0	U	+	Y	-	Y	OC	OC	TILL
EMT-009	10.0	0.5	9.5	0.4	9.1	G	30	70	0	0	U	+	Y	-	Y	OC	OC	TILL
EMT-010	9.2	0.5	8.7	1.0	7.7	G	40	60	0	0	U	+	Y	-	Y	OC	OC	TILL
EMT-011	10.4	0.5	9.9	1.2	8.7	G	20	80	0	0	U	+	Y	-	Y	OC	OC	TILL
EMT-012	11.5	0.5	11.0	0.4	10.6	G	20	80	0	0	U	+	Y	-	Y	LOC	LOC	TILL
EMT-013	8.4	0.5	7.9	0.7	7.2	G	10	90	0	0	U	+	Y	-	Y	OC	OC	TILL
EMT-014	9.1	0.5	8.6	0.8	7.8	G	20	80	0	0	U	+	Y	-	Y	LOC	LOC	TILL
EMT-015	10.2	0.5	9.7	1.2	8.5	G	30	70	0	0	U	+	Y	-	Y	OC	OC	TILL
EMT-016	8.8	0.5	8.3	0.5	7.8	G	20	80	0	0	U	+	Y	-	Y	OC	OC	TILL
EMT-017	11.0	0.5	10.5	0.2	10.3	G	40	60	0	0	U	+	Y	-	Y	LOC	LOC	TILL
EMT-018	7.7	0.5	7.2	1.0	6.2	G	40	60	0	0	U	+	Y	-	Y	OC	OC	TILL
EMT-019	10.3	0.5	9.8	4.0	5.8	G	40	60	0	0	U	+	Y	-	Y	OC	OC	TILL
EMT-020	10.9	0.5	10.4	0.5	9.9	G	30	70	0	0	U	+	Y	-	Y	OC	OC	TILL
EMT-021	11.1	0.5	10.6	1.0	9.6	G	40	60	0	0	U	+	Y	-	Y	OC	OC	TILL
EMT-022	10.4	0.5	9.9	0.2	9.7	G	40	60	Tr	0	U	+	Y	-	Y	LOC	LOC	TILL
EMT-023	12.3	0.5	11.8	0.6	11.2	G	40	50	10	0	U	+	Y	-	Y	GB	GB	TILL

*Samples prescreened to <4.0 mm in the field.

OVERBURDEN DRILLING MANAGEMENT LIMITED

GOLD GRAIN SUMMARY SHEET

File Name: 20156931 - Alto Ventures - Koziol - KIMs (EMT) - May 2015
Total Number of Samples in this Report = 23
Batch Number: 6937

Sample Number	Number of Visible Gold Grains				Nonmag HMC Weight (g) *	Calculated PPB Visible Gold in HMC			
	Total	Reshaped	Modified	Pristine		Total	Reshaped	Modified	Pristine
EMT-001	13	10	3	0	37.2	105	97	8	0
EMT-002	7	0	5	2	37.2	13	0	12	1
EMT-003	3	2	1	0	37.6	10	10	<1	0
EMT-004	7	2	3	2	39.6	5	<1	2	2
EMT-005	2	1	1	0	34.8	6	6	<1	0
EMT-006	1	0	0	1	43.2	15	0	0	15
EMT-007	10	4	4	2	36.4	44	8	33	2
EMT-008	8	4	2	2	28.8	11826	7	3	11817
EMT-009	5	2	1	2	39.2	2	<1	<1	2
EMT-010	8	4	1	3	36.4	153	100	41	11
EMT-011	5	2	1	2	30.8	1	1	<1	<1
EMT-012	14	7	4	3	34.8	16	12	1	3
EMT-013	2	0	2	0	42.4	18	0	18	0
EMT-014	6	3	2	1	28.8	36	26	10	1
EMT-015	6	5	0	1	31.2	4	4	0	<1
EMT-016	0	0	0	0	34.0	0	0	0	0
EMT-017	9	6	3	0	31.2	6	3	3	0
EMT-018	1	1	0	0	41.2	16	16	0	0
EMT-019	1	1	0	0	24.8	26	26	0	0
EMT-020	5	2	3	0	23.2	2	<1	2	0
EMT-021	0	0	0	0	39.6	0	0	0	0
EMT-022	1	0	1	0	38.4	<1	0	<1	0
EMT-023	4	3	1	0	38.8	2	1	1	0

* Calculated PPB Au based on assumed nonmagnetic HMC weight equivalent to 1/250th of the table feed.

OVERBURDEN DRILLING MANAGEMENT LIMITED
DETAILED GOLD GRAIN SHEET

File Name: 20156931 - Alto Ventures - Koziol - KIMs (EMT) - May 2015
Total Number of Samples in this Report = 23
Batch Number: 6937

Sample Number	Panned Yes/No	Dimensions (microns)			Number of Visible Gold Grains				Nonmag HMC Weight* (g)	Calculated V.G. Assay in HMC (ppb)	Metallic Minerals in Pan Concentrate
		Thickness	Width	Length	Reshaped	Modified	Pristine	Total			
EMT-001	Yes	5 C	25	25	4	1		5			No sulphides.
		8 C	25	50	3	1		4			
		10 C	25	75	1	1		2			
		10 C	50	50	1			1			
		25 C	100	150	1			1			
								13	37.2	105	
EMT-002	Yes	3 C	15	15		1	1	2			2 grains pyrite (25µm).
		5 C	25	25		2	1	3			
		10 C	25	75		1		1			
		10 C	50	50		1		1			
								7	37.2	13	
EMT-003	Yes	3 C	15	15	1	1		2			No sulphides.
		13 C	50	75	1			1			
								3	37.6	10	
											1 grain pyrite (25µm).
EMT-004	Yes	3 C	15	15	2	2	1	5			
		8 C	25	50		1	1	2			
								7	39.6	5	
EMT-005	Yes	3 C	15	15		1		1			No sulphides.
		10 C	25	75	1			1			
								2	34.8	6	
EMT-006	Yes	15 C	50	100			1	1			3 grains pyrite (25µm).
								1	43.2	15	
EMT-007	Yes	3 C	15	15	1		1	2			3 grains pyrite (25-50µm).
		5 C	25	25	1	1		2			
		8 C	25	50	1	2	1	4			
		10 C	25	75	1			1			
		18 C	50	125		1		1			
								10	36.4	44	
EMT-008	Yes	3 C	15	15	1	1	1	3			No sulphides.
		5 C	25	25	1			1			Largest grain consists of gold + quartz.
		8 C	25	50	2	1		3			
		150 M	400	700			1	1			
								8	28.8	11826	
EMT-009	Yes	3 C	15	15	2	1	1	4			No sulphides.
		8 C	25	50			1	1			
								5	39.2	3	
EMT-010	Yes	3 C	15	15	1		1	2			1 grain copper (25µm; contamination).
		5 C	25	25	1		1	2			No sulphides.
		13 C	50	75			1	1			
		20 C	75	125	1	1		2			
		22 C	100	125	1			1			
								8	36.4	153	
EMT-011	Yes	3 C	15	15	1	1	2	4			1 grain copper (25µm; contamination).
		5 C	25	25	1			1			No sulphides.
								5	30.8	1	

*Calculated PPB Au based on assumed nonmagnetic HMC weight equivalent to 1/250th of the table feed.

OVERBURDEN DRILLING MANAGEMENT LIMITED
DETAILED GOLD GRAIN SHEET

File Name: 20156931 - Alto Ventures - Koziol - KIMs (EMT) - May 2015
Total Number of Samples in this Report = 23
Batch Number: 6937

Sample Number	Panned Yes/No	Dimensions (microns)			Number of Visible Gold Grains				Nonmag HMC Weight* (g)	Calculated V.G. Assay in HMC (ppb)	Metallic Minerals in Pan Concentrate
		Thickness	Width	Length	Reshaped	Modified	Pristine	Total			
EMT-012	Yes	3 C	15	15	2	3	1	6			1 grain cinnabar (25µm).
		5 C	25	25	2	1	1	4			
		8 C	25	50	2		1	3			
		10 C	50	50	1			1			
								14	34.8	16	
EMT-013	Yes	13 C	50	75		2		2			No sulphides.
								2	42.4	18	
EMT-014	Yes	5 C	25	25	1		1	2			No sulphides.
		8 C	25	50	1	1		2			
		10 C	50	50		1		1			
		15 C	75	75	1			1			
								6	28.8	36	
EMT-015	Yes	3 C	15	15	3		1	4			No sulphides.
		5 C	25	25	1			1			
		8 C	25	50	1			1			
								6	31.2	4	
EMT-016	Yes	NO VISIBLE GOLD									No sulphides.
EMT-017	Yes	3 C	15	15	3	2		5			No sulphides.
		5 C	25	25	3			3			
		8 C	25	50		1		1			
								9	31.2	6	
EMT-018	Yes	15 C	75	75	1			1			No sulphides.
								1	41.2	16	
EMT-019	Yes	15 C	50	100	1			1			No sulphides.
								1	24.8	26	
EMT-020	Yes	3 C	15	15	2	2		4			No sulphides.
		5 C	25	25		1		1			
								5	23.2	2	
EMT-021	Yes	NO VISIBLE GOLD									No sulphides.
EMT-022	Yes	3 C	15	15		1		1			1 grain copper (25µm; contamination).
								1	38.4	<1	No sulphides.
EMT-023	Yes	3 C	15	15	2			2			1 grain arsenopyrite (200µm).
		5 C	25	25	1	1		2			
								4	38.8	2	

*Calculated PPB Au based on assumed nonmagnetic HMC weight equivalent to 1/250th of the table feed.

OVERBURDEN DRILLING MANAGEMENT LIMITED
LABORATORY SAMPLE LOG

File Name: 20156931 - Alto Ventures - Koziol - KIMs (EMT) - May 2015
Total Number of Samples in this Report = 23
Batch Number: 6931

Sample Number	Weight (g)										
	-2.0 mm Table Concentrate										
			0.25 to 2.0 mm Heavy Liquid Separation S.G 3.2								
					HMC S.G >3.2						
								Nonferromagnetic HMC			
	Total	-0.25 mm	Total	Lights SG <3.2	Total	<0.25 mm (wash)	Mag HMC	Total	0.25 to 0.5 mm	0.5 to 1.0 mm	1.0 to 2.0 mm
EMT-001	837.4	735.4	102.0	87.8	17.2	3.0	3.6	10.6	8.1	1.5	1.0
EMT-002	967.8	744.1	223.7	216.2	9.0	1.5	1.2	6.3	4.4	1.5	0.4
EMT-003	1,015.9	800.2	215.7	201.0	16.5	1.8	2.6	12.1	8.7	2.6	0.8
EMT-004	849.7	653.2	196.5	184.6	13.8	1.9	1.6	10.3	7.0	2.4	0.9
EMT-005	1,293.9	908.7	385.2	377.1	10.0	1.9	2.0	6.1	3.7	1.7	0.7
EMT-006	987.1	757.2	229.9	210.6	22.1	2.8	4.4	14.9	8.1	3.9	2.9
EMT-007	777.0	592.6	184.4	167.0	20.2	2.8	5.7	11.7	6.6	3.1	2.0
EMT-008	1,014.3	752.5	261.8	248.4	15.0	1.6	3.6	9.8	5.9	2.4	1.5
EMT-009	648.2	496.2	152.0	144.0	9.7	1.7	1.5	6.5	3.5	1.9	1.1
EMT-010	941.1	678.0	263.1	238.8	27.7	3.4	2.1	22.2	10.1	6.8	5.3
EMT-011	899.0	771.5	127.5	120.2	10.0	2.7	1.2	6.1	3.7	1.5	0.9
EMT-012	794.1	657.3	136.8	128.9	9.5	1.6	1.4	6.5	3.6	2.0	0.9
EMT-013	817.3	650.5	166.8	161.6	7.5	2.3	1.8	3.4	2.1	0.8	0.5
EMT-014	904.9	664.3	240.6	226.7	17.0	3.1	1.1	12.8	6.9	3.3	2.6
EMT-015	980.0	717.4	262.6	253.3	12.4	3.1	2.3	7.0	3.9	2.3	0.8
EMT-016	812.8	637.6	175.2	169.0	8.1	1.9	1.0	5.2	2.8	1.5	0.9
EMT-017	922.5	749.5	173.0	163.9	10.1	1.0	2.2	6.9	4.7	1.3	0.9
EMT-018	916.5	577.8	338.7	301.5	51.5	14.3	16.2	21.0	13.8	4.2	3.0
EMT-019	1,240.1	452.8	787.3	714.2	77.7	4.6	21.9	51.2	20.4	17.0	13.8
EMT-020	1,262.2	960.1	302.1	288.2	17.1	3.2	3.4	10.5	6.7	2.7	1.1
EMT-021	1,747.4	1,043.8	703.6	680.8	26.3	3.5	4.7	18.1	12.1	3.7	2.3
EMT-022	767.2	625.0	142.2	131.8	11.1	0.7	2.4	8.0	5.0	2.0	1.0
EMT-023	1,104.8	777.6	327.2	310.6	17.9	1.3	3.6	13.0	8.1	3.3	1.6

OVERBURDEN DRILLING MANAGEMENT LIMITED
KIMBERLITE INDICATOR MINERAL COUNTS

File Name: 20156931 - Alto Ventures - Koziol - KIMs (EMT) - May 2015
Total Number of Samples in this Report = 23

Batch Number: 6937

Sample Number	Number of Grains																																								Total (KIMs)	
	Selected MMSIMs												KIMs																													
	1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm						1.0 to 2.0 mm										0.5 to 1.0 mm										0.25 to 0.5 mm							
	Low-Cr diopside		Cpy		Gh		Low-Cr diopside		Cpy		Gh		Low-Cr diopside		Cpy		Gh		GP		GO		DC		IM		CR		FO		GP		GO		DC		IM		CR		FO			
	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P
EMT-001	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	6	6
EMT-002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2
EMT-003	0	0	0	0	0	0	0	0	0	0	0	0	11	11	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EMT-004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
EMT-005	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
EMT-006	0	0	0	0	0	0	2	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	10	10	0	0	0	0	0	0	40	26	0	0	51	37
EMT-007	0	0	0	0	0	0	1	1	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EMT-008	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1
EMT-009	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2
EMT-010	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EMT-011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1
EMT-012	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
EMT-013	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EMT-014	0	0	0	0	0	0	0	0	0	0	0	0	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EMT-015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	40	25	0	0	43	28
EMT-016	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13	0	0	13	13
EMT-017	0	0	0	0	0	0	1	1	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	2	2
EMT-018	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	2	2
EMT-019	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	2	6	6
EMT-020	0	0	0	0	0	0	1	1	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EMT-021	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EMT-022	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EMT-023	0	0	0	0	0	0	0	0	0	0	0	0	12	12	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2	3	3

E = Estimated number of grains in Sample.

P = Picked number of garins from sample.

OVERBURDEN DRILLING MANAGEMENT LIMITED
KIMBERLITE INDICATOR MINERAL PICKING FOOTNOTES

File Name: 20156931 - Alto Ventures - Koziol - KIMs (EMT) - May 2015
Total Number of Samples in this Report = 23
Batch Number: 6937

SAMPLE NUMBERS	REMARKS:
EMT-001	Almandine-hornblende-ilmenite-hematite/epidote-titanite assemblage. SEM checks from 0.25-0.5 mm fraction: 2 GP versus ruby corundum candidates = 1 GP and 1 ruby corundum; 5 GO versus grossular candidates = 5 grossular; 10 IM versus crustal ilmenite candidates = 9 crustal ilmenite and 1 CR; and 2 CR candidates = 2 CR.
EMT-002	Almandine-hornblende-orthopyroxene/diopside-epidote-titanite assemblage. SEM checks from 0.25-0.5 mm fraction: 2 CR versus hercynite candidates = 2 CR; and 1 FO versus diopside candidate = 1 titanite.
EMT-003	Hornblende-almandine/epidote-diopside assemblage. SEM check from 0.25-0.5 mm fraction: 1 FO versus diopside candidate = 1 zoisite.
EMT-004	Hornblende-almandine/diopside-epidote-titanite assemblage. SEM checks from 0.25-0.5 mm fraction: 3 IM versus crustal ilmenite candidates = 3 crustal ilmenite; and 2 CR versus hercynite candidates = 1 CR and 1 crustal ilmenite.
EMT-005	Almandine-hornblende/epidote-diopside-titanite assemblage. SEM check from 1.0-2.0 mm fraction: 1 chromatite candidate = 1 crustal ilmenite. SEM checks from 0.25-0.5 mm fraction: 5 CR candidates = 1 CR and 4 crustal ilmenite.
EMT-006	Orthopyroxene-hornblende-almandine/epidote-diopside assemblage. SEM checks from 1.0-2.0 mm fraction: 1 IM versus crustal ilmenite candidate = 1 IM; and 1 FO versus zoisite candidate = 1 apatite. SEM checks from 0.5-1.0 mm fraction: 4 IM versus crustal ilmenite candidates = 2 crustal ilmenite and 2 CR; and 2 CR candidates = 2 CR. SEM checks from 0.25-0.5 mm fraction: 2 IM versus crustal ilmenite candidates = 1 crustal ilmenite and 1 CR.
EMT-007	Almandine-augite-hornblende/epidote-diopside assemblage.
EMT-008	Hornblende-almandine-hematite/epidote-diopside assemblage. Also picked 1 composite (gold + quartz) 150x400x700µm grain from 0.25-0.5 mm fraction (see detailed gold grain page).
EMT-009	Hornblende-almandine-hematite/epidote-diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 2 GO versus grossular candidates = 2 grossular; and 3 IM versus crustal ilmenite candidates = 1 IM, 1 crustal ilmenite and 1 CR.
EMT-010	Hornblende-almandine/diopside-epidote assemblage. SEM checks from 0.25-0.5 mm fraction: 1 GO versus grossular candidate = 1 grossular; and 3 IM versus crustal ilmenite candidates = 3 crustal ilmenite.
EMT-011	Hornblende-almandine/epidote-diopside-titanite assemblage. SEM checks from 0.25-0.5 mm fraction: 2 IM versus crustal ilmenite candidates = 1 crustal ilmenite and 1 CR.
EMT-012	Hornblende-almandine-augite/epidote-diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 5 IM versus crustal ilmenite candidates = 5 crustal ilmenite; 1 FO versus zoisite candidate = 1 FO; and 1 dark green gahnite versus spinel candidate = 1 spinel.
EMT-013	Almandine-hornblende-hematite/diopside-epidote assemblage. SEM checks from 0.25-0.5 mm fraction: 2 IM versus crustal ilmenite candidates = 2 crustal ilmenite.
EMT-014	Hornblende-almandine-augite/diopside-epidote assemblage. SEM check from 0.25-0.5 mm fraction: 1 GP versus zircon candidate = 1 zircon.
EMT-015	Augite-almandine/epidote-diopside assemblage.
EMT-016	Almandine-augite-hornblende-hematite/diopside-epidote assemblage. SEM checks from 0.25-0.5 mm fraction: 2 IM versus crustal ilmenite candidates = 2 CR.
EMT-017	Augite-hornblende-almandine/diopside-epidote assemblage. SEM check from 0.5-1.0 mm fraction: 1 CR candidate = 1 CR.

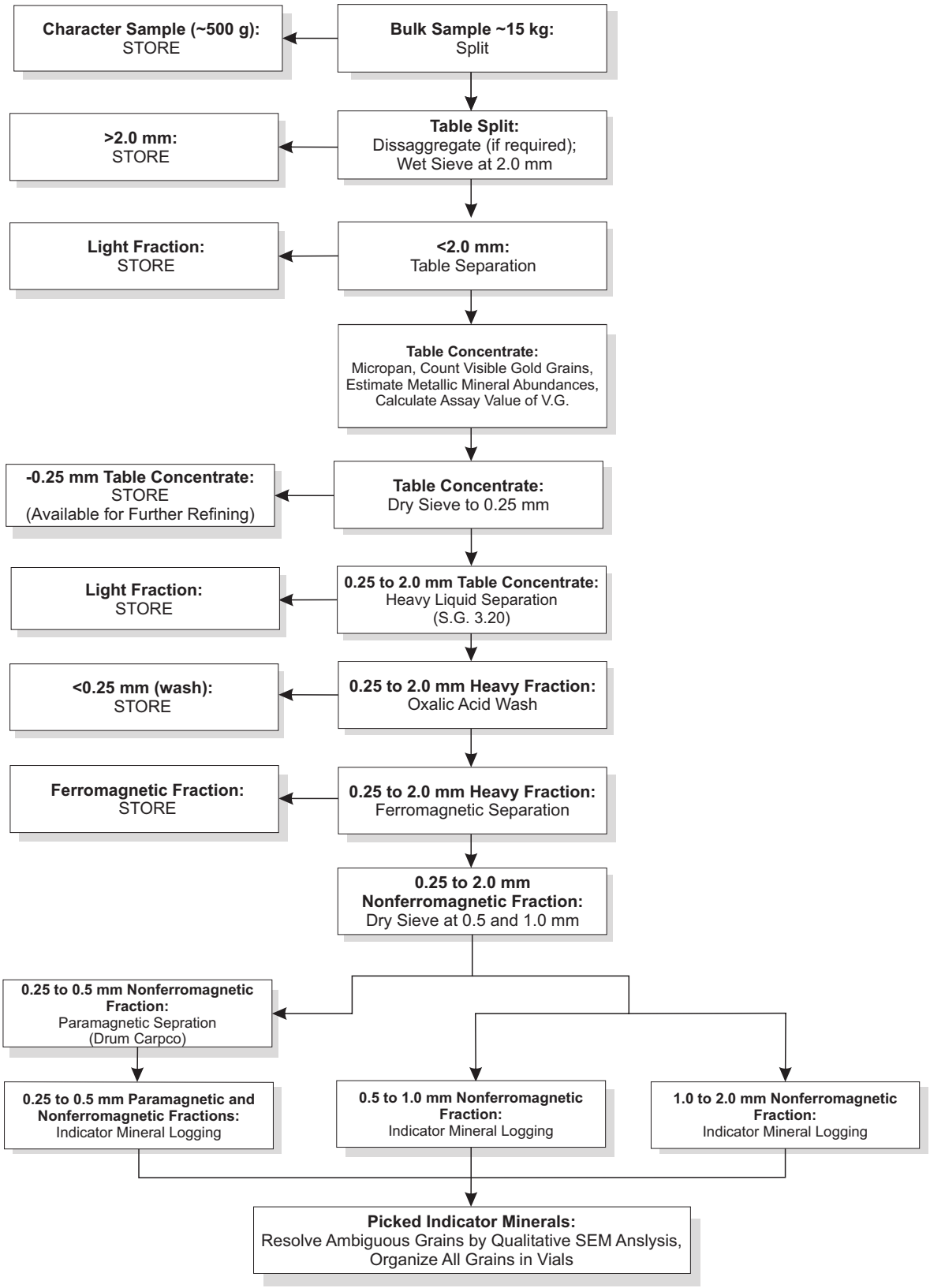
OVERBURDEN DRILLING MANAGEMENT LIMITED
KIMBERLITE INDICATOR MINERAL PICKING FOOTNOTES

File Name: 20156931 - Alto Ventures - Koziol - KIMs (EMT) - May 2015
Total Number of Samples in this Report = 23
Batch Number: 6937

SAMPLE NUMBERS	REMARKS:
EMT-018	Almandine-augite-hornblende/epidote-diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 1 pink GP versus ruby corundum candidate = 1 ruby corundum; 1 GO versus grossular candidate = 1 grossular; 6 IM versus crustal ilmenite candidates = 6 crustal ilmenite; 1 CR candidate = 1 crustal ilmenite; and 1 FO versus diopside candidate = 1 FO.
EMT-019	Hornblende-augite-almandine/epidote-diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 1 GO versus grossular candidate = 1 grossular; and 6 FO versus diopside candidates = 2 FO, 1 diopside, 2 epidote and 1 titanite.
EMT-020	Hornblende-almandine/diopside-epidote assemblage. SEM check from 0.25-0.5 mm fraction: 1 pink GP versus ruby corundum candidate = 1 ruby corundum.
EMT-021	Hornblende-almandine/diopside-epidote assemblage. SEM check from 0.25-0.5 mm fraction: 1 pink GP versus ruby corundum candidate = 1 ruby corundum.
EMT-022	Hornblende-almandine/diopside-epidote assemblage. SEM check from 0.25-0.5 mm fraction: 1 blue-grey GP versus sapphire corundum candidate = 1 sapphire corundum.
EMT-023	Hornblende-almandine-augite/epidote-diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 2 IM versus crustal ilmenite candidates = 1 IM and 1 crustal ilmenite; and 2 FO versus diopside candidates = 2 FO.

Sample Number	Grain Type	No. of Grains in Vial	Size (mm)	Comments
EMT-001	GP	1	0.25-0.5	SEM
EMT-001	CR	3	0.25-0.5	SEM
EMT-001	CR	2	0.25-0.5	
EMT-002	CR	2	0.25-0.5	SEM
EMT-004	CR	1	0.25-0.5	SEM
EMT-005	CR	1	0.25-0.5	SEM
EMT-006	IM	1	1.0-2.0	SEM
EMT-006	CR	4	0.5-1.0	SEM
EMT-006	CR	6	0.5-1.0	
EMT-006	CR	1	0.25-0.5	SEM
EMT-006	CR	25	0.25-0.5	
EMT-008	CR	1	0.25-0.5	
EMT-009	IM	1	0.25-0.5	SEM
EMT-009	CR	1	0.25-0.5	SEM
EMT-011	CR	1	0.25-0.5	SEM
EMT-012	FO	1	0.25-0.5	SEM
EMT-015	CR	3	0.5-1.0	
EMT-015	CR	25	0.25-0.5	
EMT-016	CR	2	0.25-0.5	SEM
EMT-016	CR	11	0.25-0.5	
EMT-017	CR	1	0.25-0.5	SEM
EMT-017	CR	1	0.25-0.5	
EMT-018	GP	1	0.25-0.5	
EMT-018	FO	1	0.25-0.5	SEM
EMT-019	GP	1	0.25-0.5	
EMT-019	CR	3	0.25-0.5	
EMT-019	FO	2	0.25-0.5	SEM
EMT-023	IM	1	0.25-0.5	SEM
EMT-023	FO	2	0.25-0.5	SEM

Overburden Drilling Management Limited



Processing flow sheet for gold grains + indicator minerals.

SASKATCHEWAN RESEARCH COUNCIL

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July 2, 2015

Results of electron probe microanalysis contained in this report were produced at the Advanced Microanalysis Centre at the Saskatchewan Research Council according to the ISO 22489:2006 and 14594:2003 standards for

Alto Ventures
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Compositional analyses were acquired on a Cameca SX100 electron probe microanalyzer equipped with 5 tunable wavelength dispersive spectrometers operating with a 40 degree takeoff angle, an accelerating voltage of 20 kV and 20 nA beam current. The beam diameter was fully focused (approximately 100 nm).

X-ray intensities were acquired using to following analyzer crystals and emission lines: LLIF for Fe kα, Mn kα, Ni kα, Zn kα, V kα, LPET for Ti kα, Ca kα, Cr kα, K kα, Nb lα, TAP for Si kα, Al kα, and LTAP for Na kα, and Mg kα. Spectrometer PHA settings were optimized for analysis in integral mode.

Oxygen was calculated by cation stoichiometry and included in the matrix correction.

The matrix correction method used was ϕ-ρ-Z, using algorithms of Pouchou and Pichoir.

Analytical uncertainties (1σ minimum limit of detection) were evaluated from the counting statistics of the calibration standards and unknowns. Detection limits are included in the accompanying report and values falling below the limit are indicated using “less than” symbols. For example, a value of “<0.005” indicates a result below 0.005 wt.% (50 ppm) of the elemental oxide being reported.

Analyses of a secondary standard (GOR128) is also included in the report for quality control tracking and for assessing the analytical accuracy.

Respectfully,

Dr. Steven Creighton, Ph.D.
Research Scientist
Mining and Minerals

Alto Ventures Ltd.
Mike Koziol
Samples: 107

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Group No.: AMC2015-104

Date of Report: Jul. 02, 2015

Electron Probe Microanalysis

Sample ID	Grain No.	Mineral	SiO_2 wt%	TiO_2 wt%	Al_2O_3 wt%	Cr_2O_3 wt%	V_2O_3 wt%	FeO wt%	MnO wt%	NiO wt%	ZnO wt%	MgO wt%	CaO wt%	Na_2O wt%	K_2O wt%	Nb_2O_5 wt%	Total
GOR128			45.957	0.250	9.736	0.299	0.013	9.816	0.170	0.115	<0.01	25.879	6.375	0.592	0.036	<0.012	99.239
GOR128			46.087	0.257	9.863	0.303	0.025	9.899	0.181	0.113	<0.01	25.918	6.273	0.600	0.037	<0.012	99.556
GOR128			46.076	0.266	9.834	0.301	0.034	9.879	0.165	0.093	<0.01	25.810	6.314	0.592	0.039	<0.012	99.403
GOR128			46.154	0.268	10.011	0.301	0.025	9.761	0.165	0.104	<0.01	25.977	6.300	0.578	0.039	<0.012	99.684
GOR128			46.148	0.260	9.930	0.301	0.025	9.874	0.163	0.100	<0.01	25.761	6.285	0.574	0.037	0.016	99.473
EMT-001 GP	1	garnet	42.019	0.394	20.659	2.734	0.039	7.714	0.293	<0.006	<0.01	21.183	4.658	0.025	0.003	<0.011	99.723
EMT-001 CR	1	chromite	0.028	0.198	2.267	47.688	0.103	42.838	0.582	0.050	0.139	2.662	<0.002	<0.006	<0.002	<0.013	96.556
EMT-001 CR	2	chromite	0.064	0.138	17.657	52.038	0.110	15.318	0.207	0.065	<0.011	13.597	<0.002	<0.005	<0.002	<0.012	99.195
EMT-001 CR	3	chromite	0.151	0.220	36.590	31.169	0.116	13.968	0.120	0.221	0.027	17.708	<0.002	<0.005	<0.002	<0.012	100.290
EMT-001 CR	1	chromite	<0.02	5.880	10.364	37.169	0.380	40.092	0.598	0.076	0.446	2.931	<0.002	<0.006	<0.002	<0.013	97.934
EMT-001 CR	2	titanite	26.940	40.905	0.505	<0.003	0.165	6.511	0.320	<0.007	<0.011	0.021	25.096	0.006	<0.002	<0.012	100.471
EMT-002 CR	1	chromite	0.034	0.293	34.425	27.861	0.193	22.949	0.200	0.138	0.038	13.222	<0.002	<0.005	<0.002	<0.012	99.353
EMT-002 CR	2	chromite	0.094	<0.003	19.381	51.102	0.206	14.131	0.174	0.017	0.157	14.167	<0.002	<0.005	<0.002	<0.012	99.428
EMT-004 CR	1	chromite	0.122	0.295	9.000	53.559	0.057	26.345	0.995	0.154	0.139	7.591	<0.002	<0.006	<0.002	<0.012	98.257
EMT-004 CR	2	unknown	23.239	51.927	1.979	<0.003	0.171	0.423	<0.006	<0.007	<0.011	0.006	22.197	<0.005	<0.002	0.023	99.966
EMT-005 CR	1	chromite	0.057	0.214	7.332	50.936	0.043	34.461	1.958	<0.008	2.322	0.541	<0.002	<0.006	<0.002	<0.013	97.864
EMT-006 IM	1	ilmenite	<0.019	51.218	0.596	4.879	0.233	28.656	0.320	0.148	<0.011	12.686	<0.002	0.024	<0.002	0.125	98.884
EMT-006 CR	1	chromite	0.106	0.291	7.120	53.274	0.105	32.389	1.655	<0.008	2.836	0.351	<0.002	<0.006	<0.002	<0.013	98.128
EMT-006 CR	2	chromite	0.142	0.284	4.385	56.735	0.055	31.801	1.854	<0.008	2.423	0.332	<0.002	<0.006	<0.002	<0.013	98.010
EMT-006 CR	3	chromite	0.098	0.270	7.682	52.729	0.101	32.946	1.449	0.042	2.213	0.585	<0.002	<0.006	<0.002	<0.013	98.114
EMT-006 CR	4	chromite	0.168	0.203	6.924	53.580	0.076	33.317	1.165	<0.008	2.368	0.354	0.006	<0.006	0.006	<0.013	98.168
EMT-006 CR	1	chromite	0.119	0.279	4.370	57.057	0.054	31.889	1.832	<0.008	2.304	0.392	<0.002	<0.006	<0.002	<0.013	98.296
EMT-006 CR	2	chromite	0.113	0.262	6.223	54.502	0.072	32.217	1.650	<0.008	2.654	0.349	<0.002	<0.006	<0.002	0.017	98.060
EMT-006 CR	3	chromite	0.136	0.278	7.569	53.168	0.089	32.003	1.856	0.013	2.724	0.550	<0.002	<0.006	<0.002	0.027	98.413
EMT-006 CR	4	chromite	0.108	0.277	9.125	50.710	0.113	33.408	1.520	<0.008	2.583	0.467	<0.002	<0.006	<0.002	<0.013	98.312
EMT-006 CR	5	chromite	0.104	0.263	6.424	54.534	0.102	32.541	1.536	0.009	2.401	0.424	<0.002	<0.006	<0.002	<0.013	98.336
EMT-006 CR	6	chromite	0.131	0.273	7.538	52.876	0.097	32.897	1.527	<0.008	2.379	0.430	<0.002	<0.006	<0.002	<0.013	98.148
EMT-006 CR	1	chromite	0.113	0.272	7.884	52.312	0.083	32.384	1.776	<0.008	2.846	0.435	<0.002	<0.006	<0.002	0.023	98.128
EMT-006 CR	1	chromite	0.165	0.253	5.427	56.229	0.069	31.647	1.677	<0.008	2.377	0.369	<0.002	<0.006	<0.002	<0.013	98.214
EMT-006 CR	2	chromite	0.139	0.276	7.610	52.539	0.112	32.984	1.685	<0.008	2.448	0.408	<0.002	<0.006	<0.002	<0.013	98.201
EMT-006 CR	3	chromite	0.133	0.282	5.465	55.437	0.084	31.478	1.909	<0.008	2.677	0.389	<0.002	<0.006	<0.002	<0.013	97.854

Sample ID	Grain No.	Mineral	SiO_2 wt%	TiO_2 wt%	Al_2O_3 wt%	Cr_2O_3 wt%	V_2O_3 wt%	FeO wt%	MnO wt%	NiO wt%	ZnO wt%	MgO wt%	CaO wt%	Na_2O wt%	K_2O wt%	Nb_2O_5 wt%	Total
EMT-006 CR	4	chromite	0.126	0.288	7.851	51.913	0.119	33.007	1.714	<0.008	2.512	0.473	<0.002	<0.006	<0.002	<0.013	98.005
EMT-006 CR	5	chromite	0.103	0.273	5.368	55.730	0.072	32.102	1.563	<0.008	2.415	0.370	<0.002	<0.006	<0.002	<0.013	97.996
EMT-006 CR	6	chromite	0.101	0.275	4.474	56.697	0.055	31.007	2.003	<0.008	3.429	0.225	<0.002	<0.006	0.003	<0.013	98.269
EMT-006 CR	7	chromite	0.089	0.250	8.878	50.873	0.079	33.044	1.657	0.016	2.571	0.580	<0.002	<0.006	<0.002	<0.013	98.037
EMT-006 CR	8	chromite	0.120	0.382	8.039	52.059	0.117	32.472	1.469	<0.008	2.879	0.512	<0.002	<0.006	<0.002	<0.013	98.050
EMT-006 CR	9	chromite	0.133	0.316	8.411	51.444	0.070	33.048	1.554	<0.008	2.747	0.418	<0.002	<0.006	<0.002	<0.013	98.141
EMT-006 CR	10	chromite	0.140	0.280	9.013	50.511	0.115	33.786	1.450	<0.008	2.587	0.456	<0.002	<0.006	<0.002	<0.013	98.338
EMT-006 CR	11	chromite	0.135	0.262	7.519	52.893	0.077	32.573	1.517	<0.008	2.675	0.411	<0.002	<0.006	<0.002	<0.013	98.062
EMT-006 CR	12	chromite	0.107	0.323	7.603	52.509	0.106	33.550	0.954	<0.008	2.343	0.571	<0.002	<0.006	<0.002	<0.013	98.067
EMT-006 CR	13	chromite	0.093	0.266	8.188	51.940	0.093	33.323	1.238	<0.008	2.487	0.569	<0.002	<0.006	<0.002	<0.013	98.197
EMT-006 CR	14	ilmenite	<0.02	47.099	0.531	<0.003	0.427	47.754	0.351	<0.008	<0.012	2.037	<0.002	<0.006	<0.002	0.021	98.219
EMT-006 CR	15	chromite	0.099	0.272	6.473	54.060	0.097	32.287	1.567	<0.008	2.653	0.433	<0.002	<0.006	<0.002	<0.013	97.941
EMT-006 CR	16	chromite	0.110	0.254	7.381	52.658	0.093	32.019	1.517	<0.008	3.330	0.530	<0.002	<0.006	<0.002	<0.013	97.891
EMT-006 CR	17	chromite	0.116	0.289	7.173	52.548	0.092	32.131	1.945	<0.008	3.428	0.404	<0.002	<0.006	<0.002	<0.013	98.124
EMT-006 CR	18	chromite	0.163	0.267	4.389	56.935	0.067	32.121	1.578	<0.008	2.378	0.348	<0.002	<0.006	<0.002	<0.013	98.246
EMT-006 CR	19	chromite	0.119	0.276	4.430	56.670	0.054	31.765	1.789	<0.008	2.315	0.376	<0.002	<0.006	<0.002	<0.013	97.795
EMT-006 CR	20	chromite	0.134	0.268	7.290	53.101	0.101	32.727	1.481	<0.008	2.517	0.435	<0.002	<0.006	<0.002	<0.013	98.054
EMT-006 CR	21	chromite	0.100	0.294	7.657	52.361	0.088	32.948	1.519	<0.008	2.622	0.425	<0.002	<0.006	<0.002	<0.013	98.014
EMT-006 CR	22	chromite	0.129	0.302	7.699	52.161	0.099	33.220	1.510	0.010	2.518	0.437	<0.002	<0.006	<0.002	<0.013	98.084
EMT-006 CR	23	chromite	0.097	0.261	7.435	52.505	0.102	32.347	1.960	<0.008	2.730	0.470	<0.002	<0.006	<0.002	<0.013	97.908
EMT-006 CR	24	chromite	0.105	0.286	7.427	52.777	0.075	32.639	1.497	0.015	2.816	0.505	<0.002	<0.006	<0.002	<0.013	98.143
EMT-006 CR	25	chromite	0.146	0.290	7.901	51.977	0.092	33.244	1.516	<0.008	2.634	0.444	<0.002	<0.006	<0.002	<0.013	98.245
EMT-008 CR	1	ilmenite	<0.02	48.059	0.562	<0.003	0.334	46.762	0.355	<0.008	<0.012	2.186	<0.002	<0.006	<0.002	0.033	98.291
EMT-009 IM	1	ilmenite	<0.019	48.334	0.533	2.697	0.362	37.362	0.363	0.044	<0.011	8.862	0.002	0.024	<0.002	0.161	98.743
EMT-009 CR	1	chromite	0.037	0.209	16.442	53.479	0.109	13.878	0.195	0.083	<0.011	14.537	<0.002	<0.005	<0.002	<0.012	98.971
EMT-011 CR	1	chromite	0.110	0.898	36.147	27.904	0.158	18.295	0.192	0.188	0.045	15.701	<0.002	<0.005	<0.002	<0.012	99.638
EMT-012 FO	1	olivine	40.545	<0.003	<0.017	<0.002	<0.006	7.914	0.109	0.353	<0.01	51.337	0.020	<0.003	<0.002	<0.011	100.279
EMT-015 CR	1	chromite	0.113	0.277	6.991	53.394	0.109	32.522	1.588	<0.008	2.871	0.396	<0.002	<0.006	<0.002	<0.013	98.258
EMT-015 CR	2	chromite	0.075	1.018	7.211	51.610	0.079	32.778	1.616	<0.008	3.004	0.545	<0.002	<0.006	0.003	<0.013	97.937
EMT-015 CR	3	chromite	0.119	0.279	7.098	53.171	0.094	32.481	1.668	0.010	2.695	0.443	<0.002	<0.006	<0.002	<0.013	98.057
EMT-015 CR	1	chromite	0.065	0.336	8.725	49.086	0.120	34.250	1.658	<0.008	3.212	0.443	<0.002	<0.006	<0.002	0.018	97.912
EMT-015 CR	2	chromite	0.107	0.267	7.423	52.620	0.089	33.192	1.043	<0.008	2.877	0.457	<0.002	<0.006	<0.002	<0.013	98.075
EMT-015 CR	3	chromite	0.086	0.273	7.096	51.642	0.070	33.684	1.670	<0.008	2.880	0.509	<0.002	<0.006	<0.002	0.014	97.924
EMT-015 CR	4	chromite	0.097	0.217	5.026	56.141	0.076	31.470	1.812	<0.008	2.887	0.380	<0.002	<0.006	<0.002	<0.013	98.106
EMT-015 CR	5	chromite	0.134	0.287	6.950	53.453	0.078	32.477	1.641	<0.008	3.088	0.370	<0.002	<0.006	<0.002	<0.013	98.479
EMT-015 CR	6	chromite	0.140	0.228	4.113	57.509	0.052	30.924	1.752	<0.008	3.045	0.339	<0.002	<0.006	<0.002	<0.013	98.101
EMT-015 CR	7	chromite	0.054	0.503	8.566	50.301	0.077	32.923	1.848	<0.008	3.516	0.401	<0.002	<0.006	<0.002	<0.013	98.189
EMT-015 CR	8	chromite	0.138	0.279	7.813	52.152	0.081	30.512	1.449	<0.008	5.384	0.474	<0.002	<0.006	<0.002	<0.013	98.283

Sample ID	Grain No.	Mineral	SiO_2 wt%	TiO_2 wt%	Al_2O_3 wt%	Cr_2O_3 wt%	V_2O_3 wt%	FeO wt%	MnO wt%	NiO wt%	ZnO wt%	MgO wt%	CaO wt%	Na_2O wt%	K_2O wt%	Nb_2O_5 wt%	Total
EMT-015 CR	9	chromite	0.137	0.195	8.727	51.150	0.086	33.743	1.563	<0.008	2.409	0.492	<0.002	<0.006	<0.002	<0.013	98.502
EMT-015 CR	10	chromite	0.068	0.271	8.865	50.559	0.093	33.730	1.691	<0.008	2.375	0.494	<0.002	<0.006	<0.002	<0.013	98.148
EMT-015 CR	11	chromite	0.103	0.247	7.290	53.252	0.092	32.102	1.630	<0.008	2.961	0.512	<0.002	<0.006	<0.002	<0.013	98.189
EMT-015 CR	12	chromite	0.109	0.305	7.830	52.092	0.098	32.894	1.531	<0.008	2.976	0.443	<0.002	<0.006	<0.002	<0.013	98.277
EMT-015 CR	13	chromite	0.143	0.251	4.219	57.227	0.054	31.310	1.828	<0.008	2.766	0.285	<0.002	<0.006	<0.002	<0.013	98.083
EMT-015 CR	14	chromite	0.147	0.329	10.316	48.839	0.076	33.205	1.509	<0.008	3.050	0.563	<0.002	<0.006	<0.002	<0.013	98.035
EMT-015 CR	15	chromite	0.079	0.246	9.441	50.624	0.063	33.248	1.608	<0.008	2.406	0.709	<0.002	<0.006	<0.002	0.015	98.438
EMT-015 CR	16	chromite	0.069	0.320	8.040	51.564	0.101	32.708	1.692	<0.008	2.805	0.552	<0.002	<0.006	<0.002	<0.013	97.851
EMT-015 CR	17	chromite	0.082	0.177	8.146	52.947	0.049	31.510	1.652	<0.008	3.196	0.487	<0.002	<0.006	<0.002	0.028	98.274
EMT-015 CR	18	chromite	0.120	0.274	8.037	51.907	0.094	32.295	1.442	0.016	3.258	0.494	<0.002	<0.006	<0.002	<0.013	97.937
EMT-015 CR	19	chromite	0.106	0.266	4.662	56.682	0.071	31.643	1.708	<0.008	2.391	0.355	<0.002	<0.006	<0.002	<0.013	97.883
EMT-015 CR	20	chromite	0.046	0.122	5.226	48.586	0.109	38.452	1.920	<0.008	2.471	0.365	<0.002	<0.006	<0.002	<0.013	97.298
EMT-015 CR	21	chromite	0.128	0.247	7.913	51.665	0.084	32.977	1.405	<0.008	3.222	0.449	<0.002	<0.006	<0.002	0.032	98.121
EMT-015 CR	22	chromite	0.040	0.382	7.270	52.105	0.052	33.007	1.731	<0.008	3.167	0.452	<0.002	<0.006	<0.002	0.014	98.220
EMT-015 CR	23	chromite	0.101	0.331	8.130	51.345	0.088	33.165	1.491	<0.008	2.884	0.457	<0.002	<0.006	<0.002	<0.013	97.992
EMT-015 CR	24	chromite	0.285	0.215	7.797	52.979	0.058	31.519	1.556	<0.008	3.095	0.507	<0.002	<0.006	0.006	<0.013	98.016
EMT-015 CR	25	chromite	0.333	0.400	7.672	53.636	0.043	30.824	1.363	<0.008	3.563	0.511	<0.002	<0.006	<0.002	<0.013	98.345
EMT-016 CR	1	chromite	0.069	0.216	8.293	52.232	0.047	33.010	0.827	<0.008	2.732	0.511	<0.002	<0.006	<0.002	<0.013	97.937
EMT-016 CR	2	chromite	0.218	0.168	25.871	42.178	0.091	13.763	0.145	0.179	<0.011	16.688	<0.002	<0.005	<0.002	<0.012	99.299
EMT-016 CR	1	chromite	0.131	0.227	3.708	58.058	0.054	27.306	1.583	<0.008	6.825	0.235	<0.002	<0.006	<0.002	<0.013	98.126
EMT-016 CR	2	chromite	0.096	0.297	7.569	52.940	0.102	32.034	1.191	0.009	3.005	0.649	<0.002	<0.006	<0.002	<0.013	97.891
EMT-016 CR	3	chromite	0.133	0.231	7.428	53.935	0.050	31.755	1.683	<0.008	2.459	0.547	<0.002	<0.006	<0.002	<0.013	98.221
EMT-016 CR	4	chromite	0.104	0.306	7.449	52.688	0.109	32.216	1.254	<0.008	3.255	0.556	<0.002	<0.006	<0.002	<0.013	97.938
EMT-016 CR	5	chromite	0.141	0.295	9.427	50.346	0.081	33.433	1.536	<0.008	2.502	0.610	<0.002	<0.006	<0.002	<0.013	98.372
EMT-016 CR	6	chromite	0.097	0.306	7.709	51.854	0.088	33.342	1.415	<0.008	2.604	0.390	<0.002	<0.006	<0.002	<0.013	97.804
EMT-016 CR	7	chromite	0.180	0.129	17.384	48.096	0.050	22.275	0.253	0.092	0.036	10.578	<0.002	<0.005	<0.002	<0.012	99.072
EMT-016 CR	8	chromite	0.151	0.262	7.350	53.439	0.078	32.250	1.306	<0.008	2.991	0.501	<0.002	<0.006	<0.002	<0.013	98.329
EMT-016 CR	9	chromite	0.166	0.253	7.298	52.948	0.088	30.199	1.209	<0.008	5.709	0.397	<0.002	<0.006	<0.002	<0.013	98.267
EMT-016 CR	10	chromite	0.085	0.300	7.582	52.409	0.102	33.008	1.518	<0.008	2.651	0.443	<0.002	<0.006	<0.002	<0.013	98.098
EMT-016 CR	11	chromite	0.093	0.184	7.830	52.131	0.096	33.009	1.112	<0.008	3.028	0.610	<0.002	<0.006	<0.002	<0.013	98.093
EMT-017 CR	1	chromite	0.077	0.194	17.672	52.280	0.128	13.898	0.181	0.128	<0.011	14.474	<0.002	<0.005	<0.002	<0.012	99.032
EMT-017 CR	1	chromite	0.134	0.265	7.039	53.943	0.096	31.200	1.671	0.022	3.434	0.557	<0.002	<0.006	<0.002	<0.013	98.363
EMT-018 GP	1	garnet	41.271	0.026	20.861	4.236	0.056	7.700	0.335	<0.006	<0.01	20.727	5.335	0.010	<0.002	<0.012	100.556
EMT-019 FO	1	olivine	39.629	<0.003	<0.017	0.067	<0.006	14.377	0.173	0.333	<0.01	45.578	0.247	0.014	<0.002	<0.012	100.417
EMT-019 GP	1	garnet	40.946	0.123	19.298	6.212	0.027	7.495	0.439	<0.007	<0.01	20.192	5.581	0.027	<0.002	<0.012	100.338
EMT-019 CR	1	chromite	0.275	0.081	16.916	52.817	0.068	13.068	0.136	0.141	<0.011	15.683	<0.002	<0.005	<0.002	<0.012	99.185
EMT-019 CR	2	ilmenite	<0.02	50.907	0.484	<0.003	0.105	45.337	2.522	<0.008	0.036	0.051	<0.002	0.008	<0.002	0.198	99.648
EMT-019 CR	3	andradite	33.553	2.212	2.684	<0.003	0.231	24.471	0.487	<0.007	<0.011	0.184	32.868	0.047	<0.002	<0.012	96.738

Sample ID	Grain No.	Mineral	SiO_2 wt%	TiO_2 wt%	Al_2O_3 wt%	Cr_2O_3 wt%	V_2O_3 wt%	FeO wt%	MnO wt%	NiO wt%	ZnO wt%	MgO wt%	CaO wt%	Na_2O wt%	K_2O wt%	Nb_2O_5 wt%	Total
EMT-019 FO	1	olivine	40.649	<0.003	<0.017	0.103	<0.006	8.480	0.150	0.265	<0.01	50.370	0.438	0.013	<0.002	<0.011	100.466
EMT-019 FO	2	olivine	39.065	0.011	<0.017	0.057	0.013	15.233	0.213	0.301	<0.01	44.700	0.326	0.015	<0.002	0.021	99.955
EMT-023 IM	1	ilmenite	<0.019	51.276	0.619	2.642	0.272	31.860	0.339	0.075	<0.011	11.549	<0.002	0.023	<0.002	0.234	98.889
EMT-023 FO	1	olivine	40.120	<0.003	<0.017	<0.002	<0.006	10.252	0.150	0.348	<0.01	49.190	0.021	<0.003	<0.002	0.020	100.102
EMT-023 FO	2	olivine	39.770	<0.003	<0.017	0.069	<0.006	10.979	0.182	0.310	<0.01	48.307	0.383	0.014	<0.002	<0.012	100.014

APPENDIX B

EMPRESS PROPERTY KIMBERLITE INDICATOR RESULTS
BY HARRISON COOKENBOO, Ph.D, P.Geo,
JULY 16, 2015

Empress Property Kimberlite Indicator Mineral results

Harrison Cookenboo, Ph.D., P.Geo.

July 16, 2015

Executive Summary: *A probable KIM dispersion train occurs on the Empress property. This probable dispersion train occurs in three samples (EMT-001, EMT-018 and EMT-019) and is represented by low counts of Cr-pyrope and olivine KIMs, and possibly kimberlitic chromite. The alignment of these three samples closely parallels glacial sediment transport directions a predicted from ice retreat data of Dyke and Prest (1987).*

No DIMs were recovered, but their lack does not reveal much about the potential of the source kimberlite due to the low counts.

Introduction

Alto Ventures collected 23 till samples on the Empress property, located approximately 15 km east of Terrace Bay, Ontario in 2015. The samples were passed through a 6 mm screen in the field, and then were shipped to Overburden Drilling Management Laboratory (ODM) in Nepean Ontario. Samples weighed between 7.7 and 12.9 kgs (wet) upon arrival at ODM, where they were processed to produce a heavy mineral concentrate (HMC) that was visually picked for potential kimberlite indicator minerals (KIMs). The HMC was produced by tabling, followed by heavy liquid separation at 3.2 density. The dense concentrate was further processed by magnetic separation to produce the non-ferromagnetic picking concentrate. The HMC was visually picked under binocular microscopes in three size fractions: coarse (2.0 to 1.0 mm); medium (1.0 to 0.5 mm) and fine (0.5 to 0.25 mm).

Visually picked potential KIMs (107 in total, see Figure 1) were mounted and analyzed by electron microprobe at the Saskatchewan Research Council (SRC) in Saskatoon, Saskatchewan. The microprobe results were analyzed by the author to determine whether potential KIMS can be classified as probe-confirmed KIMs or diamond indicator minerals (DIMs) using methods summarized in Fipke, *et al*. (1995) and Cookenboo and Grütter (2009). In summary, 10 grains were classified as KIMs, and none were DIMs (Table 1). An additional 10 chromites and 2 olivines were classified as possibly kimberlitic (PK). Where those PK grains occur in samples or dispersion trains with KIMs they may help to better define the source. Results of the probe data analysis are described below.

Figure 1: Map of ODM's visually picked indicaor grains. A total of 10 microprobe confirmed KIMs occur in 7 samples (black boxes) amongst the 107 visual picks. Till dispersion direction as inferred from Dyke and Prest (1987).

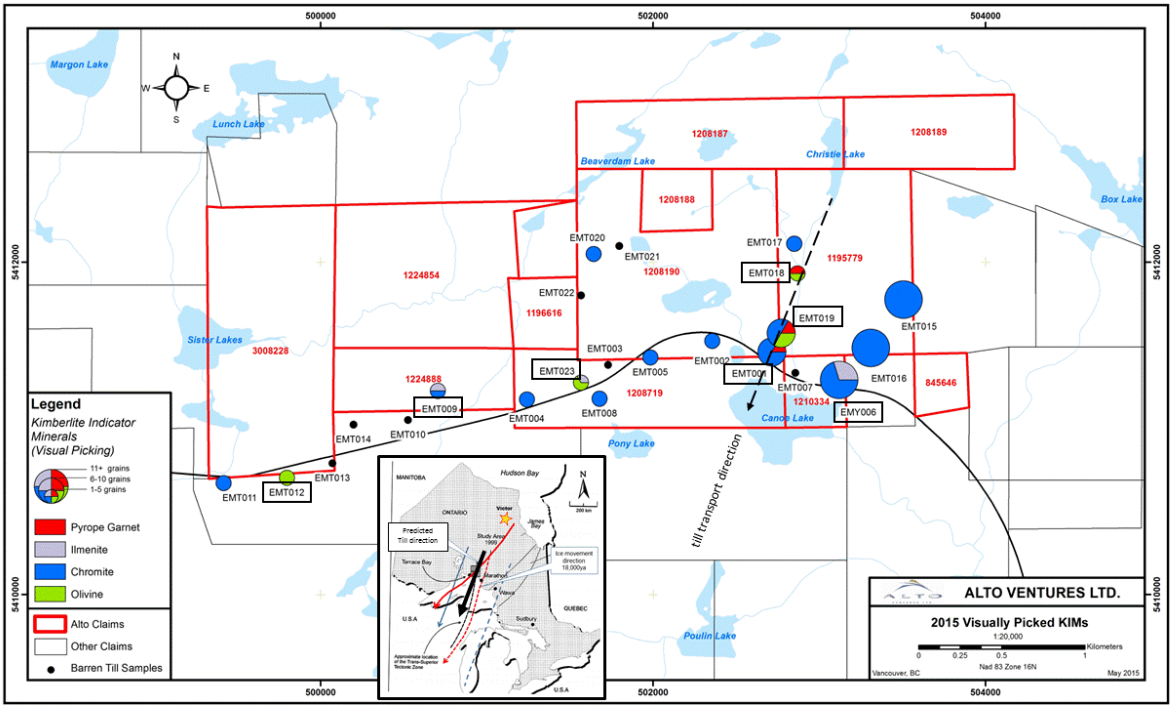


Table 1: The seven samples that returned 10 microprobe-confirmed KIMs. Possibly kimberlitic (PK) grains in the same samples are included in the table.

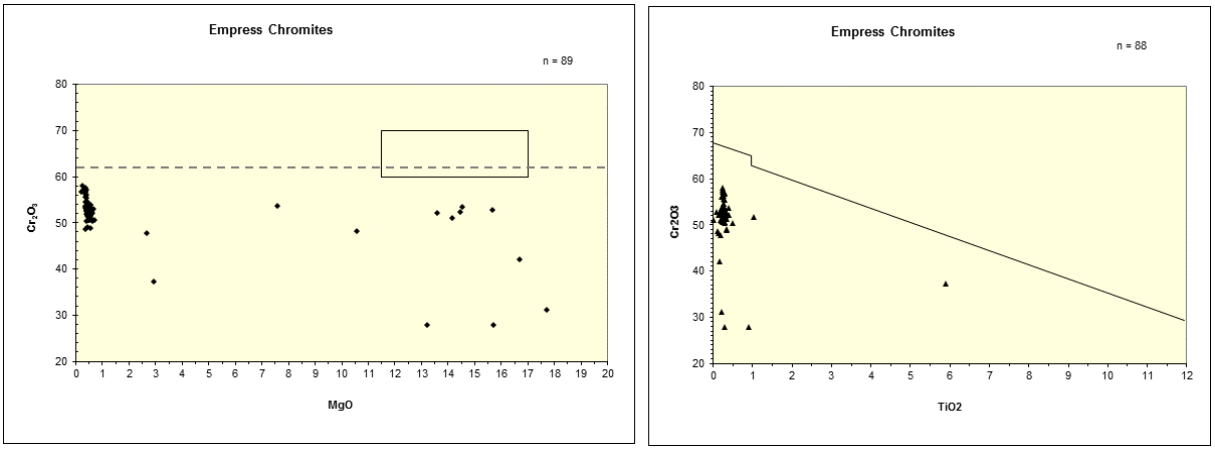
Sample #	Cr Pyrope	Eclogite Gamet	Chrome diopside	Chromite	Mg Ilmenite	Olivine
EMT-001	**1**	0	0	**3 (PK)**	0	0
EMT-006	0	0	0	0	**1**	0
EMT-009	0	0	0	**1 (PK)**	**1**	0
EMT-012	0	0	0	0	0	**1**
EMT-018	**1**	0	0	0	0	0
EMT-019	**1**	0	0	**1 (PK)**	0	**3 (2PK)**
EMT-023	0	0	0	0	**1**	**2**

Chromite

Chromite was the most abundant of the visually picked potential KIMS, but the majority (85%) of the visually picked chromites are strongly enriched in ZnO (gahnite component) and depleted in MgO (Fig. 2), suggesting a non-kimberlitic origin involving hydrothermal fluids in the range of 275º to 325ºC.

None of the chromites have DIM or umambiguously kimberlitic chemical signatures. The most chromium-rich chromite is 53.56% Cr_2O_3 among those grains not enriched in gahnite and/or depleted in MgO. Some of these moderately chromium-rich chromites are classified as possibly kimberlitic (PK) in the accompanying Table 1.

Figure 2: Chromite grains visually picked as potential kimberlite indicators. Most (85%) are depleted in MgO (and enriched in ZnO), reflecting a strong gahnite component associated with hydrothermal fluids. None are unambiguously KIMs, nor are any DIMs identified.

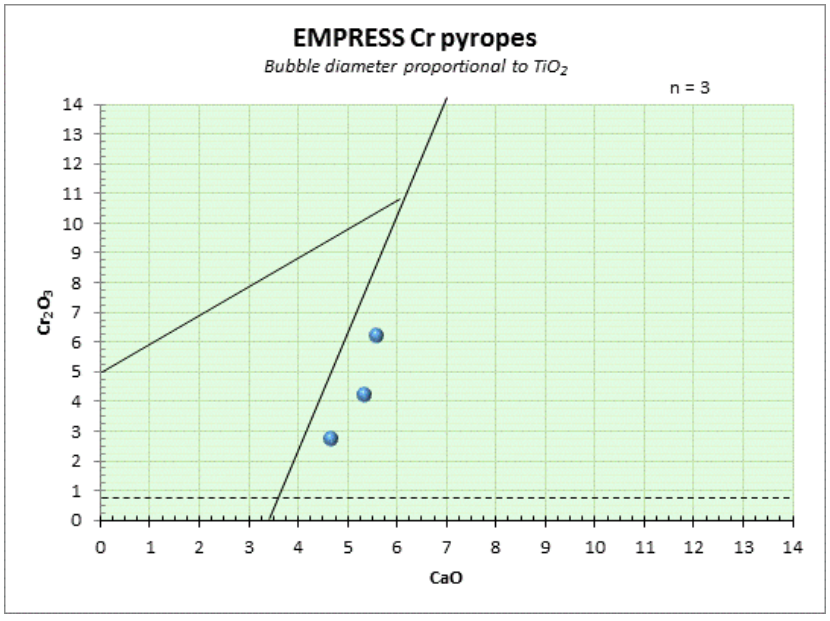


Garnet

Probe analyses were received for four garnets: three Cr-pyrope KIMs and one NK grossular visually picked as a chromite (the presumed black color likely resulting from its titanium enrichment at 2.21% TiO_2).

The three Cr-pyrope KIMs returned between 2.73% and 6.21% Cr_2O_3 as well as 4.66% and 5.38% CaO, plotting as likely derived from mantle lherzolite and good indicators of a kimberlite origin (Fig. 3). Cr-saturation calculations suggest origins between 21.6 and 30.0 Kbar, assuming a geotherm of 38 mW/m^2.

Figure 3: Cr pyrope KIMs plot on the lzerzolite trend



Temperatures of origin are suggested between 970º and 1253ºC using the MnO thermometer, although there is considerable error in applying this method to single grains from typical electron microprobe data (Table 2).

Table 2: Microprobe data for Cr pyrope KIMs, showing calulated Cr saturation pressure and MnO temperature of origin.

Sample	Type	SIO2	TIO2	Al_2O_3	Cr_2O_3	FEO	MGO	MNO	CAO	NA2O	V2O5	TOTAL	Mineral	KIM?	P_{38}Kbar	MnO Temp
EMT-019 GP	garnet	40.95	0.12	19.30	6.21	7.50	20.19	0.44	5.58	0.03	0.03	100.34	Cr-PY	KIM	**30.0**	967 C
EMT-018 GP	garnet	41.27	0.03	20.86	4.24	7.70	20.73	0.34	5.34	0.01	0.06	100.56	Cr-PY	KIM	**24.4**	1144 C
EMT-001 GP	garnet	42.02	0.39	20.66	2.73	7.71	21.18	0.29	4.66	0.03	0.04	99.72	Cr-PY	KIM	**21.6**	1253 C

Olivine

Olivine from kimberlite includes a wide range of Mg-rich compositions (Fo 82 to 96), with the most magnesian ($FO_{90.2.\ to\ 96.6}$) being equivalent to inclusions in diamond (Fipke, *et al*., 1995). The less magnesian compositions may be phenocrysts from the kimberlite magma commonly including tablet shaped grain. The compositional range overlaps olivine from other crustal sources, making the chemistry of individual grains ambiguous in regards to a kimberlitic origin.

The Empress data set contained 6 visually picked olivine grains (Table 3). Four of those grains have Mg# between 89 and 92 and are classified as KIMs herein. The other two grains have Mg#s of 84 and 85 respectively, and are classified as PK. However, both of the PK olivines occur in sample EMT-019, which also contains one Cr-pyope KIM and one of the olivine KIMs (Mg# 91), as well as a PK chromite. Given the other KIMs in sample EMT-019, the two PK olivines should be weighted strongly, although they could be derived from other mafic rock types.

Notably, an olivine was reported recovered from sample EMT-018 in the fine fraction by ODM, but was not reported from the probe data. This olivine has not been counted as a KIM, but should not be ignored given that it occurs with a Cr-pyrope KIM in sample EMT-018. The authors also notes that 3 olivines were reported as analyzed in the SRC microprobe data, but only two were reported picked by ODM. Possibly one of the reported EMT-019 olivines was in fact the olivine from EMT-018 mislabeled.

Table 3: Olivine classified as KIMs and PK.

Sample	#	Type	SIO2	FEO	MGO	MNO	CAO	NIO	TOTAL	Mineral	KIM?	Ni ppm	Mg	Fe	Mg#
EMT-012 FO	1	olivine	40.55	7.91	51.34	0.11	0.02	0.35	100.28	Olivine Forserite	KIM	4492	30.96	6.15	**0.92**
EMT-019 FO	1	olivine	40.65	8.48	50.37	0.15	0.44	0.27	100.47	Olivine Forserite	KIM	3372	30.38	6.59	**0.91**
EMT-019 FO	1	olivine	39.63	14.38	45.58	0.17	0.25	0.33	100.42	Olivine Forserite	PK	4238	27.49	11.18	**0.85**
EMT-019 FO	2	olivine	39.07	15.23	44.70	0.21	0.33	0.30	99.96	Olivine Forserite	PK	3830	26.96	11.84	**0.84**
EMT-023 FO	1	olivine	40.12	10.25	49.19	0.15	0.02	0.35	100.10	Olivine Forserite	KIM	4428	29.67	7.97	**0.90**
EMT-023 FO	2	olivine	39.77	10.98	48.31	0.18	0.38	0.31	100.01	Olivine Forserite	KIM	3945	29.13	8.53	**0.89**

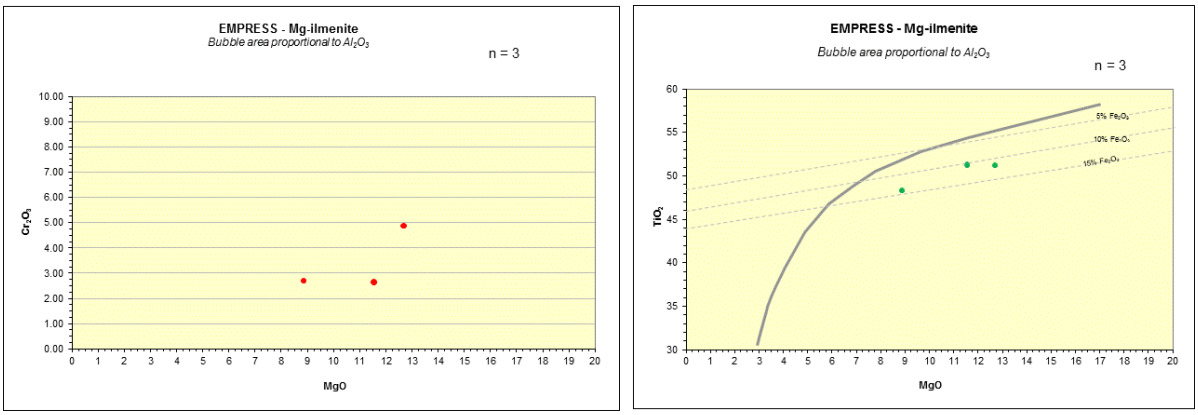
Mg-ilmenite (picroilmentite)

Ilmenite from kimberlite is Mg-rich picro-ilmenite, and is distinguished from common crustal ilmenite by its high concentrations of MgO (> 3.0%) and Cr_2O_3 (> 0.3%). The major elements evolve from Mg- and Cr-rich with low Fe^{3+} (calculated from stoichiometry) to Mg-poor compositions, with elevated Fe^{3+} concentrations. The elevated Fe^{3+} suggests more oxidizing conditions in the kimberlite magma, and thus greater probabilities of resorption of diamond during kimberlite emplacement.

Three of 6 ilmenite grains analyzed by electron microprobe returned >3.0% MgO (minimum 8.86% MgO) and >0.3% Cr_2O_3 (minimum 2.70% Cr_2O_3), and thus are classified as KIMs (Fig. 4). These three Mg Ilmenite KIMs do not occur in any of the 3 samples with Cr-pyropes. One of the Mg-ilmenite KIMs occurs in sample EMT-023 with 2 olivine KIMs.

ODM reported sample EMT-006 contained 11 visually picked ilmenite KIMs. One of those form the 1.0 to 2.0 mm fraction was SEM confirmed by ODM. Only one ilmenite from sample EMT-006 were analyzed by SRC microprobe; it is classified as a KIM.

Figure 4: Mg-ilmenite KIMs.



Conclusions

The Empress property till sampling program has identified a probable KIM dispersion train in till. The train comprises samples EMT-001, EMT-018 and EM-019. These samples each returned a single Cr-pyrope KIM. Sample EMT-001 also returned 3 possibly kimberlitic (PK) chromites. Sample EMT-018 also returned a olivine that was not analyzed by microprobe, and sample EMT-019 also returned 1 olivine KIM as well as 2 olivines classified as PK, and and PK chromite. These low count samples align precisely along the predicted sediment transport direction the author derived from glacial retreat maps (Dyke and Prest, 1987). The three Cr pyropes, plus the forsteritic olivine (Mg#s 91. 85 and 84) point to a probable kimberlite sources somewhere up-ice. Little can be inferred confidently as to diamond potential

of the presumed kimberlite source given the low KIM counts. No DIMs were recovered among the few KIMs.

This probable KIM dispersion train warrants follow-up. Up-ice samples should be used to determine if the train is cut-off on the Empress property, and replicate samples of +20 kgs should be collected to determine whether any further insight into the diamond potential of the presumed kimberlite source can be determined.

Mg ilmenite KIMs were recovered from three samples outside the probable dispersion train (samples EMT-006, EMT-009, and EMT-023). In sample EMT-023, the Mg ilmenite KIM is supported by two olivine KIMs (Mg#s 90 and 89). Replicate samples +20 kgs could be collected to help determine if these anomalous samples present distinct dispersion trains.

Sample EMT-012 returned the most forsteritic olivine KIM in the dataset (Mg# 92), comparable to mantle xenocryst olivine in kimberlites. This sample deserves replication to try and recover additional KIMs.

References

Dyke, A.S., and Prest, V.K., 1987. Late Wisconsonian and Holocene History of the Laurentide Ice Sheet. Geographie physique et Quaternaire, v. 41, p 237 to 263 plus 4 map sheets.

Cookenboo, H.O., and Grütter, H.S., 2009. Mantle-derived indicator mineral compositions as applied to diamond exploration. Geochemistry: Exporation, Environment, Analysis 2010, v. 10; p. 81-95.

Fipke, C.E., Gurney, J.J., and Moore, R.O., 1995. Diamond exploration techniques emphasising indicator mineral geochemistry and Canadian examples. Geological Survey of Canada Bulletin 423, 86 p.

APPENDIX C

EMPRESS 2015 ROCK GRAB SAMPLE DESCRIPTIONS

AND ASSAY CERTIFICATES

Empress 2015 Rock Grab Sample Results and Descriptions

Sample #	Easting*	Northing*	Au (ppm)	Description
808556	503359	5411548	.009	Quartz vein, 30cm wide sheet vin dipping 70°W, strike 210°, on cliff face in diorite, vein is vuggy along contacts with some hematite staining within the vugs, sample is of barren-looking quartz vein except for one very small pocket of silver metallic mineral, possible arsenopyrite or pyrrhotite. (photo)
808557	503368	5411574	.019	Quartz vein, continuation of same vein as in 808556 along same cliff face, vein is white, massive locally vuggy and locally limonite stained
808558	502600	5411516	<.005	From historical pit/shaft, Surface pit has dimensions 3m by 5m, inclined shaft 2m by 2m?, depth unknown but may exceed 6m; sample of quartz vein of blasted material from a N striking shear zone; sample consists of 80% white massive quartz vein, 2% pink feldspathic material and 18% dark green chlorite.
808559	502601	5411516	.013	Quartz vein breccia, vein is fractured and fractures are filled with chlorite and minor hematite
808560	503601	5411516	<.005	Granodiorite host to vein and shear zone, Gd is medium grained, massive, not altered other than chlorite and quartz veinlets immediately associated with the N shear, sample is 60% Gd and 40% quartz vein material
808561	501482	5411232	.009	Large blocks, up to 2m by 1m of coarse road fill at base of highway of fine grained mafic /intermediate dyke cut by quartz veins, veins are up to 20cm wide and contain pockets of coarse pyrite, locally crystals exceed 1 cm, sample is of white quartz vein containing 5% coarse pyrite.
808562	501485	5411232	.005	Same area of road fill, sample is of fine grained, grey, massive dyke cut by quartz veins containing coarse pyrite, sample consists of 90% dyke material containing 1% fine disseminated pyrite and 10% white quartz vein, marrow chlorite selvedge is formed along vein-dyke contact.
808563	503115	5411264	.008	Wayne S Zone #1; sheared pyroxenite, chlorite-talc hosting 30% crystals of pyroxene, crystals are up to 2mm, sample contains blobs of calcite veins, making up 5%, and 0.5% fine disseminated pyrite crystals, sample does not pull magnet
808564	503109	5411266	.007	Wayne S Zone #2 sheared pyroxenite contains ribbons of shear parallel quartz-carbonate veins, veins are up to 1.5cm thick

				and form 30% of sample, quartz is white to smoky, locally 0.1% very fine disseminated pyrite is associated with one of the thin (1mm) quartz veinlets
808565	503106	5411271	.013/.020	Wayne S Zone #3; Sheared mafic (?), chlorite-sericite-talc schist contains discontinuous ribbons of quartz-carbonate veins up to 1cm wide. Alteration in veins includes pink feldspathic sections and localized silica flooding (on mm scale), pyrite occurs disseminated near contacts of vein and country rock and forms 0.3% of the sample
808566	503106	5411271	.006	Wayne S Zone # 4; shear zone, mafic black-chlorite talc rock contains 40% quartz-carbonate veins up to 3cm wide, pink feldspathic material in areas where there is local silica flooding, no sulphides observed
808567	503102	5411268	.009	Wayne S Zone #5; sheared pyroxenite no response on magnet, sample contains quartz-carbonate veins 2 to 3 cm wide making up 30%, pyroxenite also contains phlogophite mica
808568	503099	5411267	.007	Wayne S Zone #6; shear zone, black chlorite cut by white quartz-feldspar veins up to 2cm wide, veins form 50% of sample, no sulphides observed
808569	503099	5411267	.012	Wayne S Zone #7; shear zone, black chlorite cut by 30% quartz veins, veins contain minor pink feldspathic material, 2 very small grains of chalcopyrite observed in quartz vein
808570	503096	5411270	.008	Wayne S Zone #8; shear zone contains 40% quartz-carbonate veinlets 1-2mm wide, contorted and dismembered, also contains pieces of clear quartz vein up to 1cm wide
808571	503092	5411270	.007	Wayne S Zone #9; Non-altered pyroxenite with inclusions of medium grained quartz diorite that contains 1% disseminated crystals of pyrite, diorite makes up 40% of sample
808572	503091	5411275	<.005	Wayne S Zone #10; shear zone black chlorite cut by discontinuous white quartz veins, veins form 30% of sample, no sulphides observed
808573	503087	5411267	.008	Wayne S Zone #11; shear zone, micro-fractured fine grained diorite (?), fractures filled with amorphous silica and discontinuous quartz veins up to 1cm wide, veins and silicified sections for 30% of sample, fine disseminated pyrite occurs within the silicified diorite and forms 0.5% of the entire sample
808574	503087	5411267	<.005	Wayne S Zone #12; granodiorite, massive medium grained euhedral to subhedral crystals up to 0.6cm of feldspars and quartz, biotite forms 10%, sample contains 1% crystals of pyrite disseminated throughout the sample, sample is from near edge of shear zone

808575	503074	5411271	.012/.010	Wayne S Zone #13; granodiorite, silicified with smoky grey quartz eyes forming 10% of rock, sample contains 1% fine disseminated pyrite throughout
808576	503071	5411269	.007	Wayne S Zone #14; Granodiorite, block (augen) within shear zone, Gd is medium grained and contains 15%blue-grey quartz eyes up to 2mm in size, 0.2% fine disseminated pyrite in sample
808577	503071	5411269	.021	Wayne S Zone #15; granodiorite massive medium grained locally patches of green-cream colour alteration due to sericite alteration of feldspars, sample contains 1% disseminated pyrite, fine grained crystals averaging 0.5mm
808578	503071	5411269	.007	Wayne S Zone #16; shear zone cutting granodiorite, black chlorite shear bands envelope augens of relatively fresh-looking diorite, sample is 80% granodiorite, 10% chlorite shear bands
808579	502974	5411283	<.005	Wayne N Zone #1; mafic dyke (diabase?), fine grained massive, magnetic, cut by calcite-quartz veinlets that contain 1% pyrite+chalcopyrite, veins form 5% of the sample
808580	502971	5411285	.006	Wayne N Zone #2; shear zone, sheared intermediate/mafic volcanic or dyke, chloritized, silicified with quartz micro-veinlets forming 30% of sample, weak hematite staining along some of the vein-wall rock contacts
808581	502960	5411287	.007	Wayne N Zone #3; shear zone chloritized and silicified with micro-veinlets of quartz forming 10%, weak pink feldspathic alteration along some vein-wall rock, rock is dense and feels heavy, weak pull of magnet
808582	502951	5411296	.006	Wayne N Zone #4; granodiorite, medium grained massive euhedral to subhedral crystalline, contact with fault sheared portions are hematized, Gd contains 15% smoky grey quartz eyes
808583	502955	5411287	<.005	Wayne N Zone 5; shear zone cutting granodiorite/diorite injected with shear parallel quartz veinlets up to 0.5m wide, veinlets form 40% of sample, some are pink altered (k feldspar), weathered surfaces show patches of malachite green but no sulphides observed
808584	502928	5411296	<.005	Wayne N Zone #6; shear zone with blocks of granodiorite, no sulphides, granodiorite is not altered or deformed and forms "augens" within the shear
808585	502919	5411299	.007/ <.005	Wayne N Zone #7; granodiorite, massive medium grained, locally pervasive silicification
808586	502916	5411300	.005	Wayne N Zone #8; quartz vein from within chlorite, shear zone, quartz is fine grained

				smoky white to grey, no sulphides observed
808587	502909	5411294	.012	Wayne N Zone #9; mafic dyke, massive fine grained heavy (dense) non-magnetic, faint foliation fabric, microfractured with quartz in microfractures *5%), fine disseminated pyrite in microfractures
808588	502904	5411293	.006	Wayne N Zone #10; quartz-carbonate vein from boudin within chlorite shear zone, vein is 8cm maximum width, vein is finally laminated at the contacts with the shear zone, no sulphides observed
808589	502882	5411307	.006	Wayne N Zone #11; shear zone quartz vein contact, 2cm wide wide quartz vein in contact with silicified and seared diorite/granodiorite
808590	502877	5411309	.005	Wayne N Zone #12; quartz vein in granodiorite, vein is clear white, up to 2cm wide, GD is massive, medium grained and fractured, quartz vein and chlorite fill fractures, also abundant hematite along fractures
808591	502871	5411316	.012	Wayne N Zone #13; quartz vein in chloritized shear zone, vein is 2cm wide, white to smoky white with carbonate occurs along outer selvedges of quartz vein near contacts with the chlorite schist, 1 grain of pyrite observed in quartz vein
808592	502875	5411498	<.005	Granodiorite, weathered throughout, crumbly, medium grained massive rock
808593	502856	5411416	<.005	Breccia in fault zone, brittle subangular pieces of granodiorite in fine granodiorite matrix; fault breccia or diatreme??
808594			.458	Standard, CDN-GS-P4A 0.438+/-0.032 g/t Au

*Note: UTM NAD 83 Zone 16

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Wednesday, August 5, 2015

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Date Received: 07/13/2015
Date Completed: 08/05/2015
Job #: 201542919
Reference:
Sample #: 39

Acc #	Client ID	Au g/t (ppm)
259288	808556	0.009
259289	808557	0.019
259290	808558	<0.005
259291	808559	0.013
259292	808560	<0.005
259293	808561	0.009
259294	808562	0.005
259295	808563	0.008
259296	808564	0.007
259297	808565	0.013
259298	808565 Dup	0.020
259299	808566	0.006
259300	808567	0.009
259301	808568	0.007
259302	808569	0.012
259303	808570	0.008
259304	808571	0.007
259305	808572	<0.005
259306	808573	0.008
259307	808574	<0.005
259308	808575	0.012
259309	808575 Dup	0.010
259310	808576	0.007
259311	808577	0.021
259312	808578	0.007

APPLIED SCOPES: ALP1, ALFA1, ALAR1

Validated By:

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Assistant Manager - Thunder Bay

Certified By:

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Authorized By:

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Date Received: 07/13/2015
Date Completed: 08/05/2015
Job #: 201542919
Reference:
Sample #: 39

Acc #	Client ID	Au g/t (ppm)
259313	808579	<0.005
259314	808580	0.006
259315	808581	0.007
259316	808582	0.006
259317	808583	<0.005
259318	808584	<0.005
259319	808585	0.007
259320	808585 Dup	<0.005
259321	808586	0.005
259322	808587	0.012
259323	808588	0.006
259324	808589	0.006
259325	808590	0.005
259326	808591	0.012
259327	808592	<0.005
259328	808593	<0.005
259329	808594	0.458

APPLIED SCOPES: ALP1, ALFA1, ALAR1

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Date Completed: 08/05/2015
Job #: 201542919
Reference:
Sample #: 39

Control Standards

QC Type	QC Performance (ppm)	Mean (ppm)	Std Dev (ppm)

APPLIED SCOPES: ALP1, ALFA1, ALAR1

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Assistant Manager - Thunder Bay

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Authorized By:

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Date Received: 07/13/2015
Date Completed: 08/05/2015
Job #: 201542919
Reference:
Sample #: 39

Acc #	Client ID	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Se ppm	Si %	Sn ppm	Sr ppm	Ti ppm	Tl ppm	V ppm	W ppm	Y ppm	Zn ppm
259288	808556	<1	0.27	<2	57	27	<2	<1	0.08	<4	3	53	4	0.66	0.04	4	0.15	127	6	0.04	9	168	4	<5	<5	<0.01	<10	11	<100	<2	10	<10	4	14
259289	808557	6	0.01	2	54	13	<2	17	0.02	<4	<1	52	2	0.32	<0.01	<1	<0.01	<100	14	<0.01	2	<100	91	<5	<5	<0.01	<10	<3	<100	<2	<2	<10	<2	<1
259290	808558	<1	1.92	<2	78	128	<2	3	0.82	<4	13	284	1	3.22	0.04	36	2.34	465	10	0.02	61	666	5	<5	<5	0.01	<10	20	<100	2	62	<10	6	75
259291	808559	<1	1.07	3	74	21	<2	<1	2.09	<4	10	136	1	1.88	0.10	19	1.09	293	28	0.02	39	812	<1	<5	<5	<0.01	<10	71	<100	<2	43	<10	8	31
259292	808560	<1	0.58	<2	78	55	<2	11	0.90	<4	5	60	15	1.06	0.05	9	0.59	165	8	0.08	15	397	4	<5	<5	<0.01	<10	41	273	<2	21	<10	5	17
259293	808561	<1	0.84	<2	77	1367	2	12	1.16	<4	11	236	178	2.43	0.43	22	1.35	257	17	0.08	80	768	148	<5	<5	0.01	<10	135	814	<2	37	<10	13	79
259294	808562	<1	1.51	4	87	2135	4	<1	2.28	<4	21	258	73	2.95	1.66	36	2.34	503	7	0.13	103	1185	16	<5	<5	0.01	<10	266	2155	5	69	<10	22	75
259295	808563	<1	2.39	<2	82	2315	<2	19	3.50	<4	36	735	11	3.09	2.27	39	4.24	642	2	0.13	351	1698	4	<5	<5	0.01	<10	2798	2344	<2	73	<10	13	40
259296	808564	<1	1.73	2	83	3046	<2	10	6.67	<4	27	528	81	2.83	1.68	31	4.08	1083	3	0.13	255	1607	24	<5	6	0.01	<10	2647	1800	5	62	<10	18	29
259297	808565	<1	1.19	4	62	1574	<2	8	8.10	<4	23	326	135	2.59	0.98	30	3.02	943	5	0.09	207	1308	49	<5	<5	<0.01	<10	780	973	13	56	<10	19	34
259298D	808565	<1	1.22	5	83	1623	<2	7	8.33	<4	25	336	137	2.67	1.01	31	3.13	977	6	0.09	214	1356	54	<5	<5	<0.01	<10	792	997	13	57	<10	19	41
259299	808566	<1	1.33	<2	75	3645	<2	14	7.99	<4	23	426	28	2.71	1.36	28	4.33	1241	1	0.14	212	1301	9	<5	<5	<0.01	<10	1127	1453	23	54	<10	14	28
259300	808567	<1	2.17	<2	73	2977	<2	13	3.38	<4	28	586	266	2.85	2.13	42	3.76	569	1	0.14	218	2190	6	5	<5	<0.01	<10	3032	2064	<2	75	<10	16	28
259301	808568	<1	1.65	3	74	>5000	<2	11	>10.00	<4	24	483	329	2.99	1.63	35	4.59	1574	1	0.24	238	1703	29	<5	<5	<0.01	<10	1890	1649	8	56	<10	18	22
259302	808569	<1	1.68	<2	70	3262	<2	10	6.04	<4	22	492	32	2.78	1.69	34	3.82	1042	13	0.13	210	1462	9	<5	<5	0.01	<10	2578	1793	4	60	<10	14	27
259303	808570	<1	1.39	7	67	4752	<2	14	7.97	<4	24	395	89	2.42	1.38	30	4.19	988	3	0.16	236	1115	19	<5	<5	0.01	<10	>5000	1396	<2	50	<10	15	24
259304	808571	<1	1.82	<2	74	1434	<2	12	1.51	<4	26	618	92	2.74	1.50	30	2.84	408	5	0.15	221	1710	14	<5	<5	0.02	<10	826	1620	6	71	<10	15	41
259305	808572	<1	1.58	3	68	978	<2	7	3.97	<4	21	479	7	2.39	1.56	31	2.87	637	6	0.07	187	1239	5	<5	<5	0.01	<10	607	1671	<2	57	<10	11	30
259306	808573	<1	1.76	<2	67	1074	<2	8	6.58	<4	36	406	272	3.11	1.48	37	3.58	913	4	0.07	275	1440	5	<5	<5	<0.01	<10	815	1618	<2	82	<10	16	38
259307	808574	<1	0.75	2	68	3304	<2	11	6.08	<4	7	49	383	1.21	0.41	17	1.15	664	3	0.18	44	484	22	<5	<5	<0.01	<10	655	556	<2	22	<10	8	9

PROCEDURE CODES: ALP1, ALFA1, ALAR1

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Wednesday, August 12, 2015

Final Certificate

Alto Ventures Ltd.
Unit #7, 1351D Kelly Lake Rd.
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P3E5P5
Ph#: (705) 522-6372
Fax#: (705) 522-8856
Email: koziol@altoventures.com

Date Received: 07/13/2015
Date Completed: 08/05/2015
Job #: 201542919
Reference:
Sample #: 39

Acc #	Client ID	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Se ppm	Si %	Sn ppm	Sr ppm	Ti ppm	Tl ppm	V ppm	W ppm	Y ppm	Zn ppm
259308	808575	<1	0.58	3	54	895	<2	6	2.83	<4	11	52	122	1.18	0.19	7	0.89	343	6	0.13	29	617	20	<5	<5	<0.01	<10	363	217	<2	25	<10	8	10
259309D	808575	<1	0.58	<2	57	838	<2	9	2.77	<4	10	53	115	1.19	0.18	7	0.90	339	6	0.13	29	631	18	<5	<5	<0.01	<10	356	213	<2	25	<10	8	11
259310	808576	<1	0.85	<2	62	919	<2	8	3.39	<4	11	137	111	1.70	0.58	13	1.59	428	4	0.12	53	737	15	<5	<5	<0.01	<10	1438	693	<2	41	<10	10	27
259311	808577	<1	0.50	<2	52	555	<2	9	2.59	<4	7	61	335	1.32	0.28	8	1.03	410	8	0.10	35	521	16	<5	<5	<0.01	<10	1408	382	<2	27	<10	8	15
259312	808578	<1	0.78	<2	49	1679	<2	4	4.77	<4	10	172	35	1.58	0.36	13	1.39	581	4	0.11	80	871	12	<5	<5	<0.01	<10	2243	521	<2	38	<10	10	20
259313	808579	<1	2.45	2	50	603	<2	12	3.27	4	31	223	73	4.85	2.26	45	2.72	808	10	0.09	54	1408	8	<5	<5	0.01	<10	336	3176	13	133	<10	11	57
259314	808580	<1	0.68	<2	50	1374	<2	12	9.30	<4	18	323	6	2.76	0.57	15	3.93	918	2	0.07	132	830	8	<5	<5	<0.01	<10	2082	367	<2	57	<10	13	20
259315	808581	<1	2.53	2	53	418	2	21	6.50	4	39	833	39	4.74	1.17	48	3.61	666	9	0.05	282	1577	3	<5	<5	<0.01	<10	241	1192	14	92	<10	16	53
259316	808582	<1	0.64	2	41	1802	<2	14	6.47	<4	11	160	54	1.72	0.25	11	1.54	535	5	0.12	81	797	8	<5	<5	<0.01	<10	555	223	7	39	<10	14	18
259317	808583	<1	0.81	<2	54	>5000	<2	13	>10.00	<4	13	245	8	1.75	0.22	18	1.34	1131	4	0.18	139	691	5	<5	<5	<0.01	<10	652	<100	<2	42	<10	15	20
259318	808584	<1	1.09	<2	47	3310	<2	9	3.05	<4	10	517	37	1.87	0.24	18	1.56	450	5	0.19	49	512	6	<5	<5	0.01	<10	748	425	3	36	<10	6	17
259319	808585	<1	0.66	4	43	1897	<2	<1	3.76	<4	7	332	32	1.23	0.35	11	0.96	519	5	0.20	35	614	17	<5	<5	0.01	<10	1786	401	5	27	<10	14	9
259320D	808585	<1	0.66	2	43	1880	<2	3	3.80	<4	8	323	31	1.23	0.35	11	0.95	524	5	0.20	36	620	14	<5	<5	0.01	<10	1833	404	7	27	<10	14	7
259321	808586	<1	0.41	<2	43	265	<2	3	2.36	<4	5	170	7	0.93	0.36	9	1.16	458	7	0.03	44	276	2	<5	<5	<0.01	<10	1033	261	3	16	<10	4	8
259322	808587	<1	2.18	2	45	1413	2	7	3.22	<4	34	264	188	4.10	1.78	39	3.35	539	9	0.10	106	1215	3	<5	<5	<0.01	<10	287	2346	2	123	<10	10	58
259323	808588	<1	0.66	<2	45	1208	<2	9	2.54	<4	11	798	17	1.62	0.67	15	1.85	469	5	0.07	99	577	14	<5	<5	<0.01	<10	232	540	4	25	<10	6	12
259324	808589	<1	2.40	<2	32	2576	2	21	>10.00	<4	31	872	31	3.98	1.13	42	3.69	1197	5	0.12	248	1479	3	<5	<5	<0.01	<10	323	1607	9	99	<10	15	35
259325	808590	<1	0.42	3	16	233	2	<1	1.97	<4	9	424	40	1.32	0.15	19	0.62	348	4	0.09	27	581	13	<5	<5	<0.01	<10	117	179	<2	19	<10	24	18
259326	808591	<1	0.81	2	18	2768	<2	7	7.05	<4	14	733	46	1.80	0.74	22	1.82	883	5	0.11	129	685	46	<5	<5	0.01	<10	476	761	<2	37	<10	14	9
259327	808592	<1	0.65	5	10	125	<2	<1	0.42	<4	7	331	4	1.74	0.14	13	0.64	215	4	0.08	24	511	<1	<5	<5	<0.01	<10	42	672	<2	34	<10	6	25

PROCEDURE CODES: ALP1, ALFA1, ALAR1

Certified By: Jason Moore, VP Operations, Assayer

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Wednesday, August 12, 2015

Final Certificate

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Date Received: 07/13/2015
Date Completed: 08/05/2015
Job #: 201542919
Reference:
Sample #: 39

Acc #	Client ID	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Se ppm	Si %	Sn ppm	Sr ppm	Ti ppm	Tl ppm	V ppm	W ppm	Y ppm	Zn ppm
259328	808593	<1	1.99	<2	14	38	<2	5	2.37	4	48	194	60	4.87	0.09	32	1.18	695	10	0.06	95	834	<1	<5	<5	0.01	<10	45	4736	3	205	<10	12	46
259329	808594	<1	1.16	49	13	110	<2	12	1.36	<4	9	30	45	2.76	0.11	9	0.57	405	13	0.08	32	652	1	<5	<5	<0.01	<10	37	1173	<2	54	<10	9	46

PROCEDURE CODES: ALP1, ALFA1, ALAR1

Certified By: Jason Moore, VP Operations, Assayer

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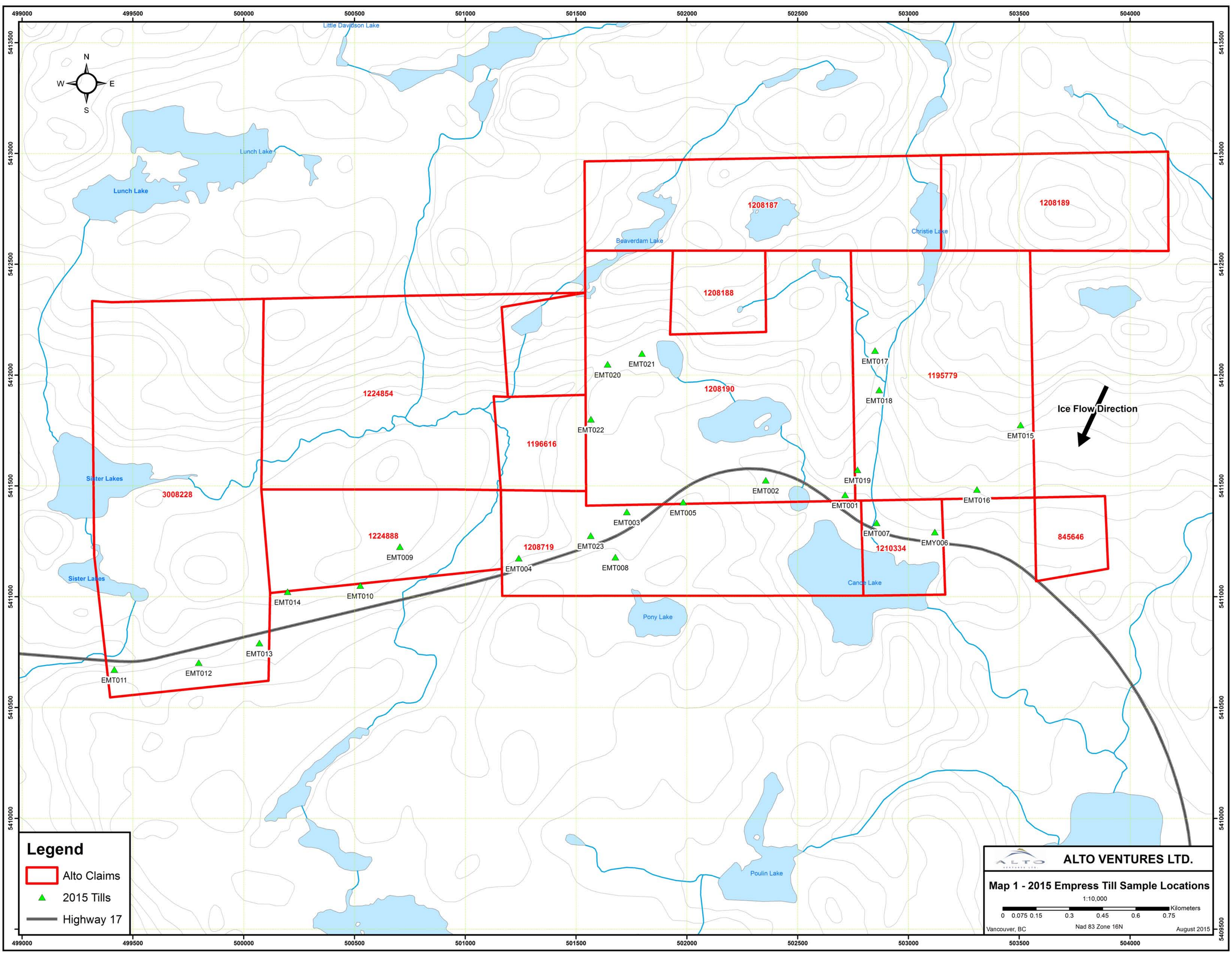
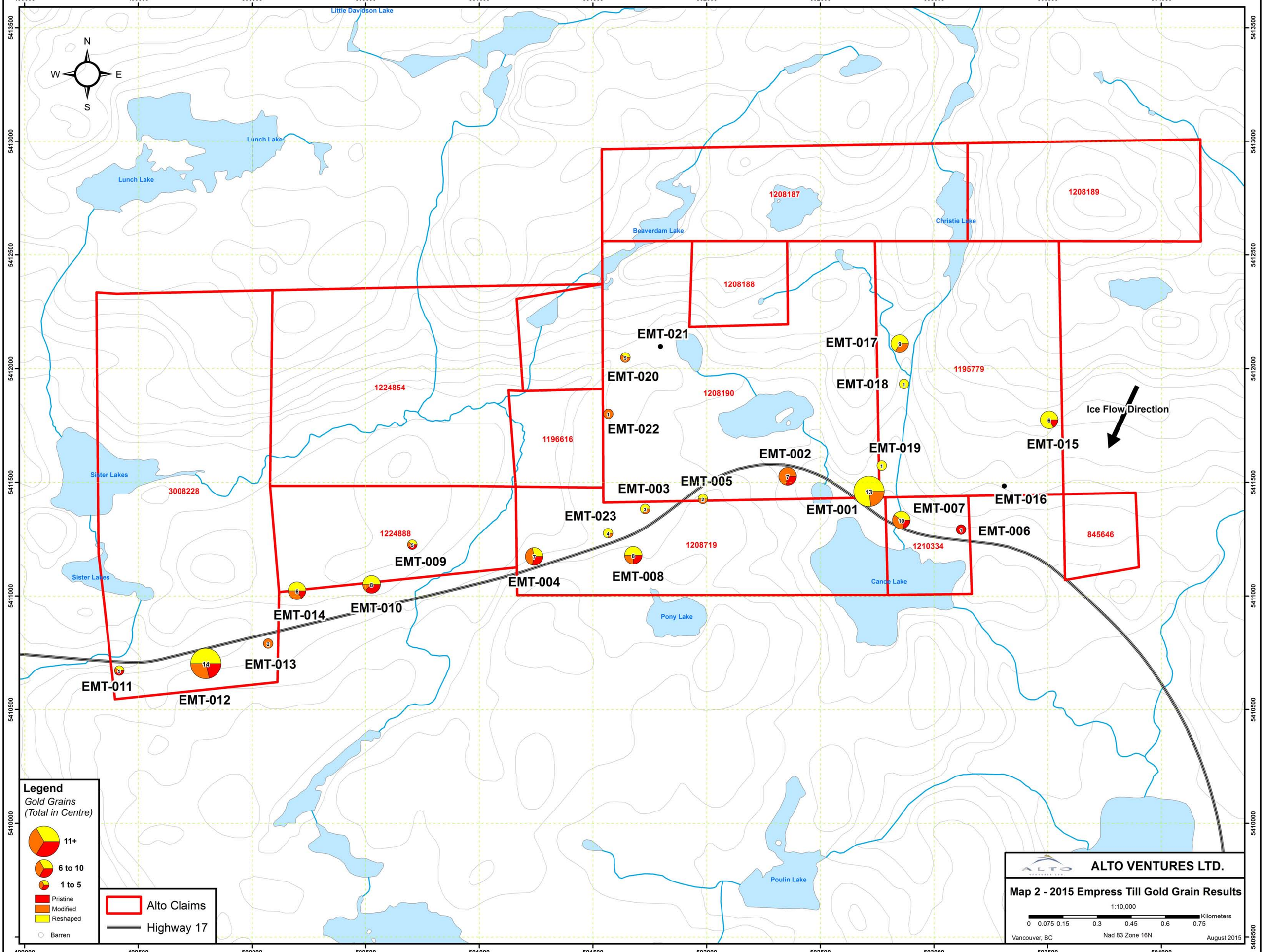

N
W
E
S
Little Davidson Lake
Lunch Lake
Lunch Lake
Beaverdam Lake
Christie Lake
Sister Lakes
Sister Lakes
Cance Lake
Pony Lake
Poulin Lake
1208187
1208189
1208188
1224854
1208190
1195779
1196616
3008228
1224888
1208719
1210334
845646
EMT020
EMT021
EMT017
EMT018
EMT022
EMT015
EMT019
EMT002
EMT001
EMT016
EMT003
EMT005
EMT007
EMY006
EMT023
EMT004
EMT008
EMT009
EMT014
EMT010
EMT013
EMT011
EMT012
Ice Flow Direction
Legend
Alto Claims
2015 Tills
Highway 17
ALTO VENTURES LTD.
Map 1 - 2015 Empress Till Sample Locations
1:10,000
0 0.075 0.15 0.3 0.45 0.6 0.75 Kilometers
Vancouver, BC
Nad 83 Zone 16N
August 2015
499000
499500
500000
500500
501000
501500
502000
502500
503000
503500
504000
5413500
5413000
5412500
5412000
5411500
5411000
5410500
5410000
5409500


N
W
E
S
Little Davidson Lake
Lunch Lake
Lunch Lake
Beaverdam Lake
Christie Lake
1208187
1208189
1208188
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1224854
1196616
1195779
3008228
1224888
1208719
1210334
845646
EMT-021
EMT-020
EMT-022
EMT-017
EMT-018
EMT-019
EMT-015
EMT-002
EMT-003
EMT-005
EMT-001
EMT-007
EMT-016
EMT-006
EMT-023
EMT-009
EMT-004
EMT-008
EMT-014
EMT-010
EMT-013
EMT-011
EMT-012
Ice Flow Direction
Sister Lakes
Sister Lakes
Cance Lake
Pony Lake
Poulin Lake
Legend
Gold Grains
(Total in Centre)
11+
6 to 10
1 to 5
Pristine
Modified
Reshaped
Barren
Alto Claims
Highway 17
ALTO VENTURES LTD.
Map 2 - 2015 Empress Till Gold Grain Results
1:10,000
0 0.075 0.15 0.3 0.45 0.6 0.75 Kilometers
Vancouver, BC
Nad 83 Zone 16N
August 2015

499000 499500 500000 500500 501000 501500 502000 502500 503000 503500 504000

5413500 5413000 5412500 5412000 5411500 5411000 5410500 5410000 5409500

N W E S

Little Davidson Lake

Lunch Lake

Lunch Lake

Beaverdam Lake

Christie Lake

Sister Lakes

Sister Lakes

Pony Lake

Cance Lake

Poulin Lake

1208187

1208189

1208188

1224854

1208190

1196616

3008228

1224888

1208719

1210334

845646

1195779

EMT-021

EMT-020

EMT-022

EMT-017

EMT-018

EMT-015

EMT-002

EMT-019

EMT-003

EMT-005

EMT-001

EMT-016

EMT-007

EMT-023

EMT-006

EMT-009

EMT-004

EMT-008

EMT-014

EMT-010

EMT-013

EMT-011

EMT-012

Ice Flow Direction

Legend

Kimberlite Indicator Minerals (Total in Centre)

11+

6-10

1-5

Pyrope Garnet

Ilmenite

Chromite

Olivine

Barren Till Samples

Alto Claims

Highway 17

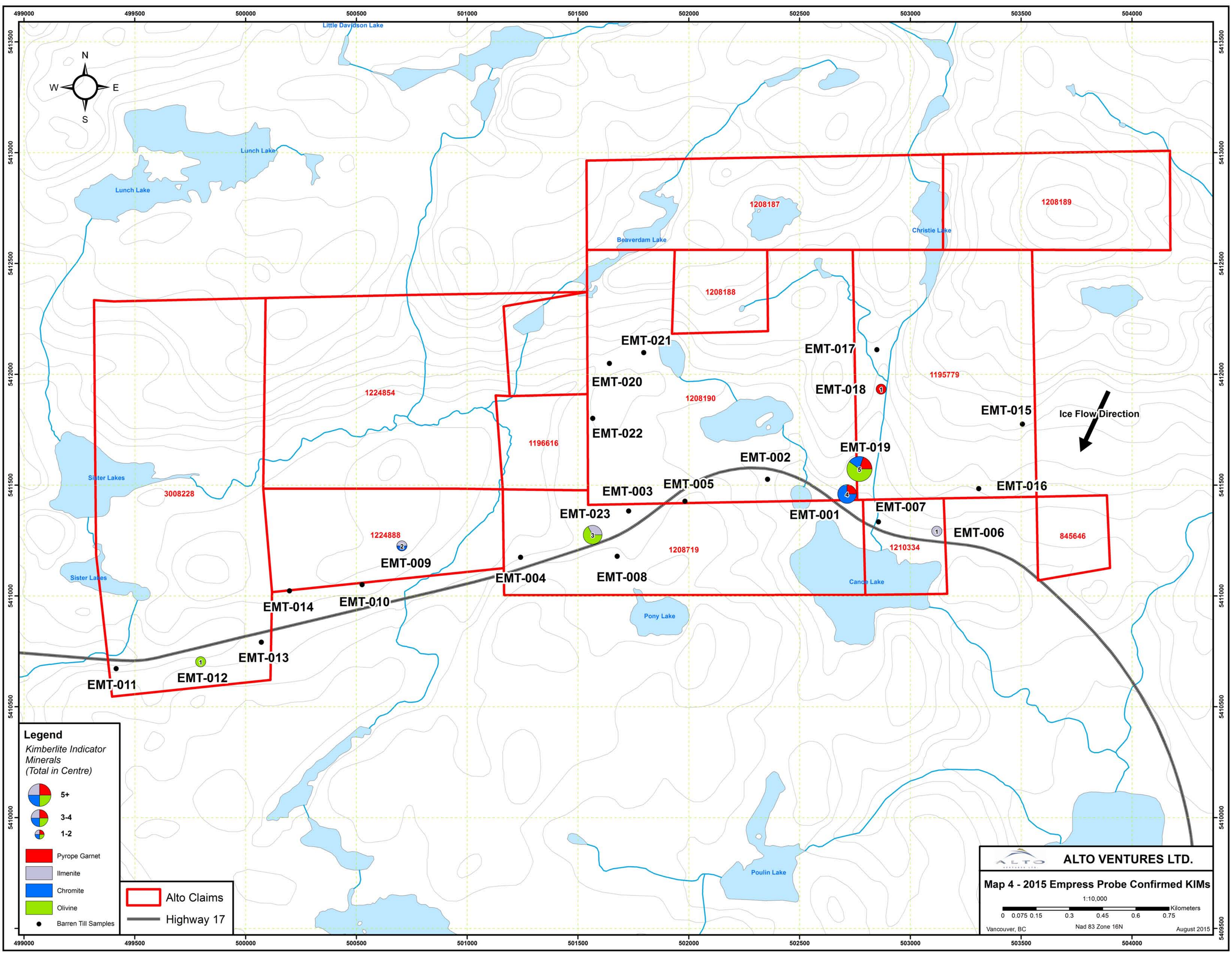
ALTO VENTURES LTD.

Map 3 - 2015 Empress Visually Picked KIMs

1:10,000

0 0.075 0.15 0.3 0.45 0.6 0.75 Kilometers

Vancouver, BC Nad 83 Zone 16N August 2015


499000
499500
500000
500500
501000
501500
502000
502500
503000
503500
504000
5413500
5413000
5412500
5412000
5411500
5411000
5410500
5410000
5409500
N
W
E
S
Little Davidson Lake
Lunch Lake
Lunch Lake
Beaverdam Lake
Christie Lake
Sister Lakes
Sister Lakes
Cance Lake
Pony Lake
Poulin Lake
1208187
1208189
1208188
1208190
1195779
1224854
1196616
3008228
1224888
1208719
1210334
845646
EMT-021
EMT-020
EMT-022
EMT-017
EMT-018
EMT-015
EMT-019
EMT-002
EMT-003
EMT-005
EMT-023
EMT-001
EMT-016
EMT-007
EMT-006
EMT-009
EMT-004
EMT-008
EMT-014
EMT-010
EMT-013
EMT-011
EMT-012
Ice Flow Direction
Legend
Kimberlite Indicator Minerals (Total in Centre)
5+
3-4
1-2
Pyrope Garnet
Ilmenite
Chromite
Olivine
Barren Till Samples
Alto Claims
Highway 17
ALTO VENTURES LTD.
Map 4 - 2015 Empress Probe Confirmed KIMs
1:10,000
0 0.075 0.15 0.3 0.45 0.6 0.75 Kilometers
Vancouver, BC
Nad 83 Zone 16N
August 2015

Legend

- Alto Claims
- Highway 17
- Mine Adit
- Gold Showings
- Drill Core Gold Showings
- 2015 Prospecting Grab Samples

Geology

- Late Archean Granitoid Rocks
- Empress Structure
- Mafic to Intermediate Intrusive Rocks
  - Gabbro
  - Diorite
- Mafic and Intermediate Metavolcanic Rocks
- Fault
- Outcrop

N
W E
S

Lunch Lake
Beaverdam Lake
Christie Lake
Sister Lakes
Sister Lakes
Pony Lake
Canoe Lake

1208187
1208189
1208188
1195779
1208190
1196616
1224854
3008228
1224888
1208719
1210334
845646

0.3 g/t over 9.9m
0.7 g/t over 7.6m
0.2 g/t over 5.3m
1.3 g/t over 16.2m, including 5.31 g/t over 2.8m
Creek Showing 0.25 g/t grab sample
Empress Mine Adit
0.2 g/t over 10.8m & grab samples up to 66.93 g/t
44.23 g/t over 0.61m
Zlatco Showing grab samples of up to 6.7 g/t

Ice Flow Direction

808557
808556
808558
808560
808559
808592
808593
808561
808562

Map Inset 1:1000

808591
808590
808589
808586
808585
808582
808588
808587
808584
808580
808579
808583
808581
808572
808571
808565
808570
808566
808575
808564
808576
808577
808578
808563
808573
808574
808568
808569
808567

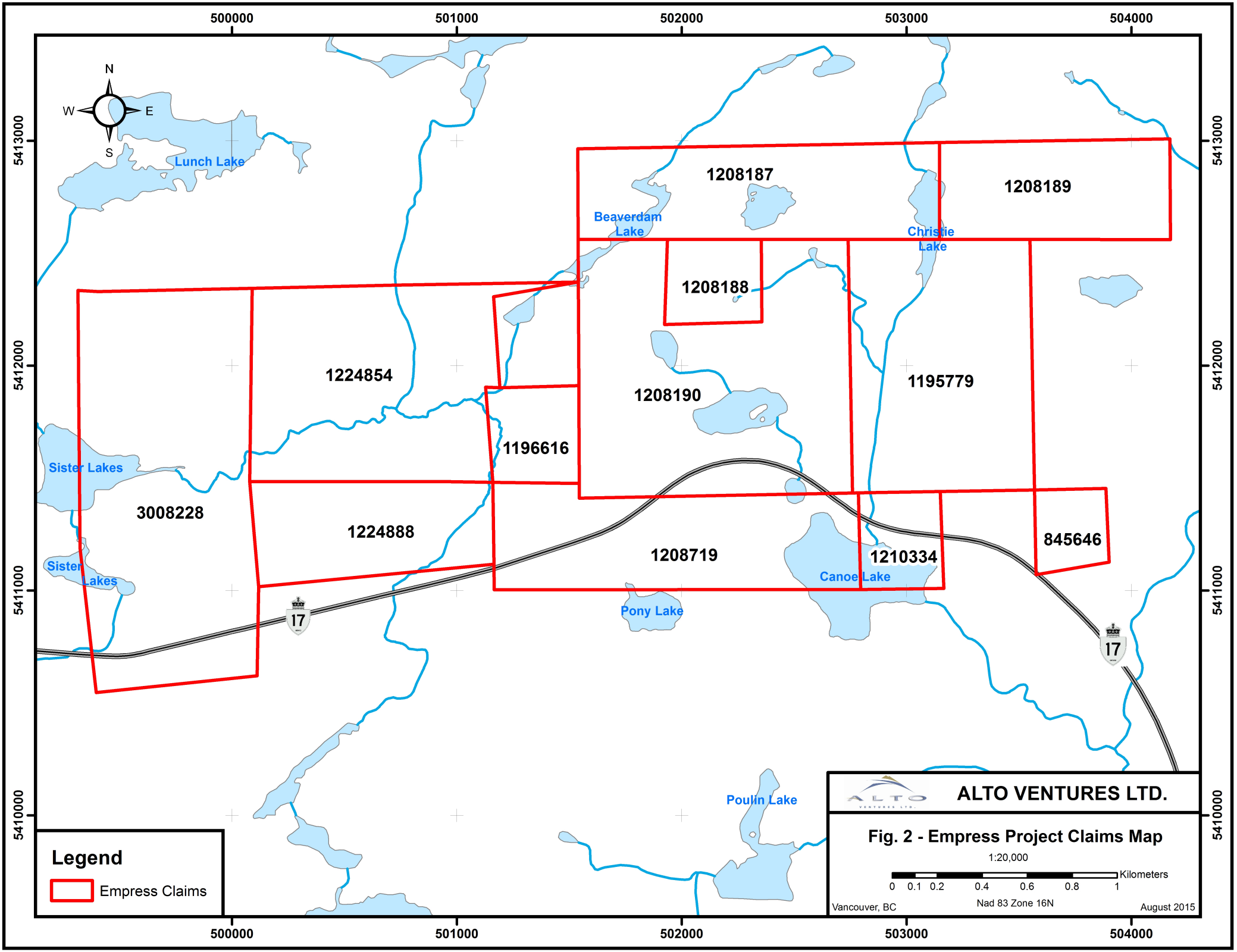
ALTO VENTURES LTD.

Map 5 - Empress Geology, Gold Occurrences and 2015 Prospecting Rock Grab Sample Locations

1:10,000

Kilometers
0 0.075 0.15 0.3 0.45 0.6 0.75

Vancouver, BC — Nad 83 Zone 16N — August 2015


500000
501000
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503000
504000
5413000
5412000
5411000
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N
W
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S
Lunch Lake
1208187
1208189
Beaverdam Lake
Christie Lake
1208188
1224854
1208190
1195779
1196616
Sister Lakes
3008228
1224888
1208719
1210334
845646
Canoe Lake
Pony Lake
17
Poulin Lake
Legend
Empress Claims
ALTO VENTURES LTD.
Fig. 2 - Empress Project Claims Map
1:20,000
0 0.1 0.2 0.4 0.6 0.8 1
Kilometers
Nad 83 Zone 16N
Vancouver, BC
August 2015