MAR 20090016: CALLING LAKE

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FINAL REPORT

PART " B "

ASSESSMENT REPORT

CALLING LAKE PROJECT,ALBERTA

2007-2009 Mineral Exploration Summary

Metallic and Industrial Minerals Permit
No. 9305070817

Money Rock Resources / Halmco Inc

Submitted by Money Rock Resources

August 11, 2009

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SUMMARY

Monev Rock Resources's and Halmco Inc's diamond exploration at Calling Lake, AB

Previous exploration (1992-2002) of the Calling Lake Area of Alberta, Canada resulted in the discovery of anomalous numbers of diamond indicators located along the west and south shores of Calling Lake and along the Calling River. These "diamond indicator location sites" are significant because of the quality , the quantity and the variety of diamond indicators identified . Diamond Indicators identified include: diamond inclusion high pressure megacryst eclogitic garnets, chrome diopsides, pyroxenes, olivines, chromites, magnesium picroilmenites, a complete suite of pyrope garnets (G1 to G12), rubies, sapphires and a gem quality macro diamond discovered in basal till at one site along the Calling River. To date (2008) the Calling River and Calling Lake area have historically yielded some of the best known diamond indicator geochemistry in Alberta; including the largest concentration (seventy) of Gurney "G-10" pyropes observed in the province.

Previous exploration of the Calling Lake/River area (600 grid sampling sites and up-ice drilling) appears to provide a Northern cut-off to the highly anomalous diamond indicator sites located along the Calling River and on the south and west drainage beaches at Calling Lake.

In 2004, Halmco Inc. implemented an exploration project specific to finding the source of the anomalous diamond indicator sites. A program was designed to test significant resistive, magnetic and seismic anomalies that are at or south of the Northern cut-off to the diamond indicator sites. (Target Areas 1,2&3) Previous geophysical surveys (1995 -2000) identified over 150 magnetic anomalies and over 55 resistive anomalies in the Calling Lake area. Halmco Inc prioritized these anomalies according to the following criteria: (1) proximity to anomalous diamond indicator sites; (2) proximity to diamond indicator site drainages; (3) ground surveys to eliminate culture and vise-versa;

These remaining anomalies were then further prioritized: (1) anomalies with multiple geophysical signatures became **priority targets** and (2) priority targets with geophysical signatures indicating vertical structure became **High Priority Targets**. (ERT surveys/electrical resistive tomography: VLF surveys/very low frequency electromagnetic; and/or seismic diffractions with vertical disrupted reflectors) Eight **High Priority Targets** (anomalies showing vertical structure) have been discovered to date (2009)

Target Area I (Calling River East) ..2 resistive/magnetic anomalies with ERT-VLF structure
Target Area 2..(West drainage into Calling Lake)…3 resistive/magnetic with ERT and seismic structure
Target Area 3..(South drainage into Calling Lake)…3 resistive/magnetic with ERT structure

A Dighem High Priority anomaly (CL9) with coincidental seismic/ resistive/ERT signatures was drilled in December 2006. This structure is in Target Area 2, an area that drains onto the significant diamond indicator beaches on the southwest side of Calling Lake. Brecciated rock was encountered in said hole. Samples of breccia core (country rock/crustal fragments) were sent to: Calgary Rock and Materials for thin section preparation and X-ray diffraction.; and to CF Minerals lab for indicator identification and to Saskatchewan Research Center for indicator identification. To date, diamond indicator processing has identified: picroilmenites, kimberlitic chromite, diamond inclusion pyrope garnets, eclogitic pyroxene.

In June 2007, WorleyParsons Komex conducted an ERT survey on Halmco's Mineral Permit 9305070817. This geophysical survey identified 4 resistive anomalies with vertical structure being noted on each structure. In December 2007, WorleyParsons Komex conducted one ERT survey and one ground magnetic survey on Mineral Permit 9305070817 and two ERT surveys and one ground magnetic survey on Mineral Permit 9306060989. In July/08, review of the data from the ERT and Mag surveys on permit 9305070817; resulted in Halmco deciding that more geophysical data was needed regarding the four vertical structures discovered on Mineral Permit 9305070817. In June 2009, Money Rock Resources / Halmco, sighted and flagged three lines for ERT and VLF surveys on permit 9305070817.

Four of the Eight High Priority anomalies are being prepared for a 2009 - 2010 winter drill program.

Calling Lake Area History of Work (prospecting-geophysical surveys 1952-2008)

Money Rock Resources Halmco Inc.	2009	ongoing geophysical surveys, etc.
	2007	Electrical resistivity surveys (4)
	2006	Diamond drilling Hole CL9 180m Hole CL7 9.5m
	2004-2007	Staked twelve permits
Buffalo Diamonds Ltd. (±New Claymore Resources Ltd)	2002	BHP Billiton logged and sampled 2000 diamond drill core Holes: CLK001 to CLK010
	2000	10 diamond drillholes (1,041.5 m): holes CLK001 to CLK010
	1999-2000	**High Sense Geophysics Ltd.** Helicopter airborne magnetic survey 1,374 line-km, interpretation by Intrepid Geophysics Ltd (10 priority drill targets) - identified 10 priority target to drill
	1999	**Terraquest Ltd.** Fixed Wing Airborne Magnetic Survey, 11,507 line-km (200 m spacing): 978 line-km (100 m spacing), Interpretation by Intrepid Geophysics Ltd. One diamond drillhole CL9902 (52.4 m) Cost shared by Alberta Geological Survey and Buffalo Diamonds Ltd. Ground magnetic survey over SPECTRA/Dighem airborne targets - targets A41, A91 and CL-25M Overburden Drilling Program (71 holes, 2,204 m) - Hollow Stem Auger (55 holes, 1,922 m): 9BAH001-9BAH051 & 9BAH053-9BAH056 - Vibrating Sonic Drilling (14 holes, 137 m): 9BSH001-9BSH014 - Rotary Drilling (2 holes, 145 m): 9BAH052-9BAH057
	1998	Glacial Till, Stream Sediment, Beach Sand and Lake Sediment Sampling Program 584 samples+30 stream sediment samples, KIM analyses Interpretation of glacial history and ice direction using well data, air photos and LandSat Imagery **MACRO DIAMOND DISCOVERY** Calling River-Calling River East Target Area Ground ERT, Magnetic, VLF-EM Surveys - Surveyed by Komex International Ltd. (ERT lines CL01-03) **Geoterrex-Dighem** Helicopter Airborne EM and Magnetic Survey: 4,764 line-km – Interpretation by Intrepid Geophysics Ltd. in 1999
Raymond Haimila, Dr. N. Haimila, Dr. T. Yoshida and 656405 Alberta Ltd.	1997	**SPECTRA Aeromagnetic Survey** (666 line-km) 9 "High Priority" targets identified for kimberlite exploration
	1995	Ground magnetic survey
	1994-1997	7-30 kg sand samples (KIM analyses); 44 thin sections of rock grab samples
Raymond Haimila	1993	Staked four permits (Calling Lake beaches and river)
Alberta Geological	1992-95	10-25kg samples in region – one on property
Dr. N. Haimila	1992-93	Magnetic contouring of 1952 Aeromagnetic data (regional)
Geological Survey of Canada	1991-92	Till sampling program south of property
	1952	Aeromagnetic Survey

Work specific to Money Rock Resources Mineral Permit 9305070817 for the period July 2007 - July 2009

Clarion Mining had hired Watts, Griffis and McOuat Ltd (WGM), a Consulting Geologists and Engineers firm from Toronto, ON. to evaluate the diamond potential Of Halmco Inc's Calling Lake properties. From July 25-27, 2007; Raymond Haimila (Halmco consultant) provided Paul Dunbar, a senior associate geologist with WGM a tour of the property – due diligence. Paul Dunbar was shown the site specific to the Komex -ERT geophysical survey of June/07; on mineral permit 9305070817. It was also pointed out at the time, by R Haimila, that the high priority anomalies identified in the ERT survey of 2007 had also been identified as possible kimberlitic anomalies by Geoterrex-Dighem helicopter airborne EM and Magnetic survey in 1998. (see appendix 1) It was also pointed out that Mike Dufrense of Apex Geoscience, of Edmonton, (consultant to Buffalo Diamonds) had picked this specific area as a high priority target area. Paul Dunbar collected a composite grab sample CL-01 from the south of Calling Lake to recheck previous sample site 9803S (0357828 E/ 6117153 N) This is the area that is part of the drainage from permit 9305070817. (see results appendix 2). A second sample (CL-02) was taken on the west side of Calling Lake (0348753 E / 6122406 N) near Apex site 8SJT-321. This is the drainage system associated with anomaly / drillsite CL9. Both samples (5-8kg) are located off the Money Rock/Halmco permits.

The results/geochemistry was not exactly forth coming. The data was faxed to Halmco on June 16, 2008 R Haimila had CF Minerals classify the data on June 18, 2008 (see appendix 2 for minerals identified)

August 11-12, 2007 Meeting between L Halonen / Dr. Yoshida / R Haimila at Calling Lake to review recommendations, etc. of: Paul Dunbar., geologist (WGM), Chris Pooley geophysicist (WorleyParsons Komex) and S. Mlott engineer (President Clarion Mining and Carlisle Goldfields) regarding Halmco Calling Lake Property. It was decided that Halmco should inspect and keep access routes cleared to the high priority anomalies discovered on permit's 9306060989 and 9305070817. This to consist of cutting windfall and setting frost roads over muskeg in winter.

November 14, 2007. WorleyParsons Komex and Halmco agreed to do ERT / Mag survey in December at locations picked by R Haimila. Access roads cleared and frost driven down on Pemits 9306060989 and 9305070817.

December 17, 18, 19, 20, 2007. Roads cleared of snow, etc and Lines for ERT and grid lines for Magnetic survey set by snowmobile and foot. Halmco provided equipment and 2 men . R Haimila was project field manager for Halmco. Clarion provided funding. WorleyParsons Komes completed one magnetic and 2 ERT surveys on permit 9306060989 and completed one magnetic and 1 ERT survey on permit 9305070817 during this time. (see Part C of this report)

November 7, 2008. Halmco provided equipment and 2men to clear access to and set frost roads on permits 9306060989 and 9305070817.

June 13, 14, 15, 2009 Halmco provided equipment/camper and 2 men to clear access to anomalies on permits 9306060989 and 9305070817. R Haimila and Dr. Yoshida flagged access to and locations for 4 lines of ERT (electrical resistive tomography) and VLF (very low frequency) and magnetic surveys on permit 9305070817. One of 2 ERT surveys proposed on permit 9306060989 is a redo of a 1998 ERT survey over the existing north/south seismic line at drillsite CL9. (see proposed WorleyParsons Komex proposed geophysical survey for the summer/fall of 2009, appendix 1)
The proposed WorleyParsons Komex Calling Lake drill program is confidential and not included herein.

Geophysical surveys and data review are ongoing

Introduction and Terms of Reference

The following report was prepared to describe exploration activities that took place on the Calling Lake Project's Mineral permit No. 9305070817 during 2007-2009. This report has been structured to meet the assessment requirements of Alberta Resource Development and was not written to National Instrument Policy 43-101.

Property Location and Description

Metallic and Industrial Mineral Permit No. 9305070817 is centered south of Calling lake and about 50 kms. north of the town of Athabasca within the Pelican River. 1:250,000 scale National Topographic System (NTS) map sheet 83P.

Metallic and Industrial Minerals Permit NO. 9305070817

Term Commencement Date: July 11. 2005

Aggregate Area: 9216 Hectares

Description of Location and Permitted Substances

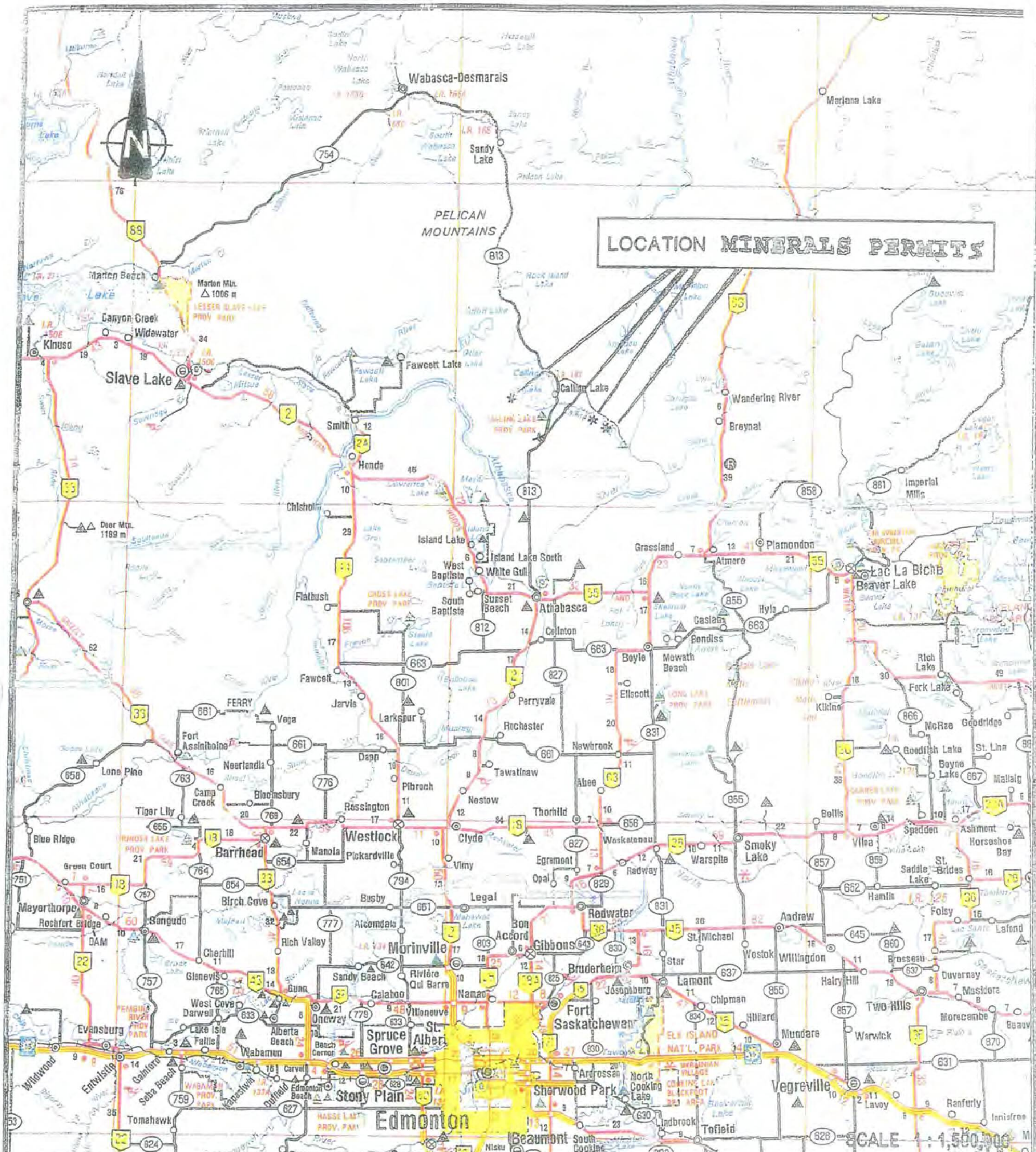
4-21-071: 6;7
4-22-070: 11-36
4-22-071: 1-4; 9-12

Descriptions and References that follow are from previous Calling Lake area Assessment Reports filed by: R. Haimila, 656405 Alberta Ltd., and Buffalo Diamonds, etc., (exploration periods 1994-2008)

Accessibility, Climate, Local Resources, Infrastructure and Physiography

The Calling Lake property may be accessed via Provincial Highway 813, gravel roads, trails and seismic lines. Portions of the permit area may be accessed by four-wheel drive vehicles or Quads. There are two small airfields within the Calling Lake area, one near Orloff Lake and the second just north of Calling Lake. Accommodation and food can be obtained at Calling Lake Lodge but fuel and supplies are best obtained in Athabasca. Camping facilities may be available in Calling Lake Provincial Campground

The Calling Lake property is situated near the northern border of the Alberta Plain physiographic zone and the southern border of the Alberta Plateau (Klassen, 1989). Relief is low-lying. Elevation in the region generally varies from 590 to 700 m above sea level

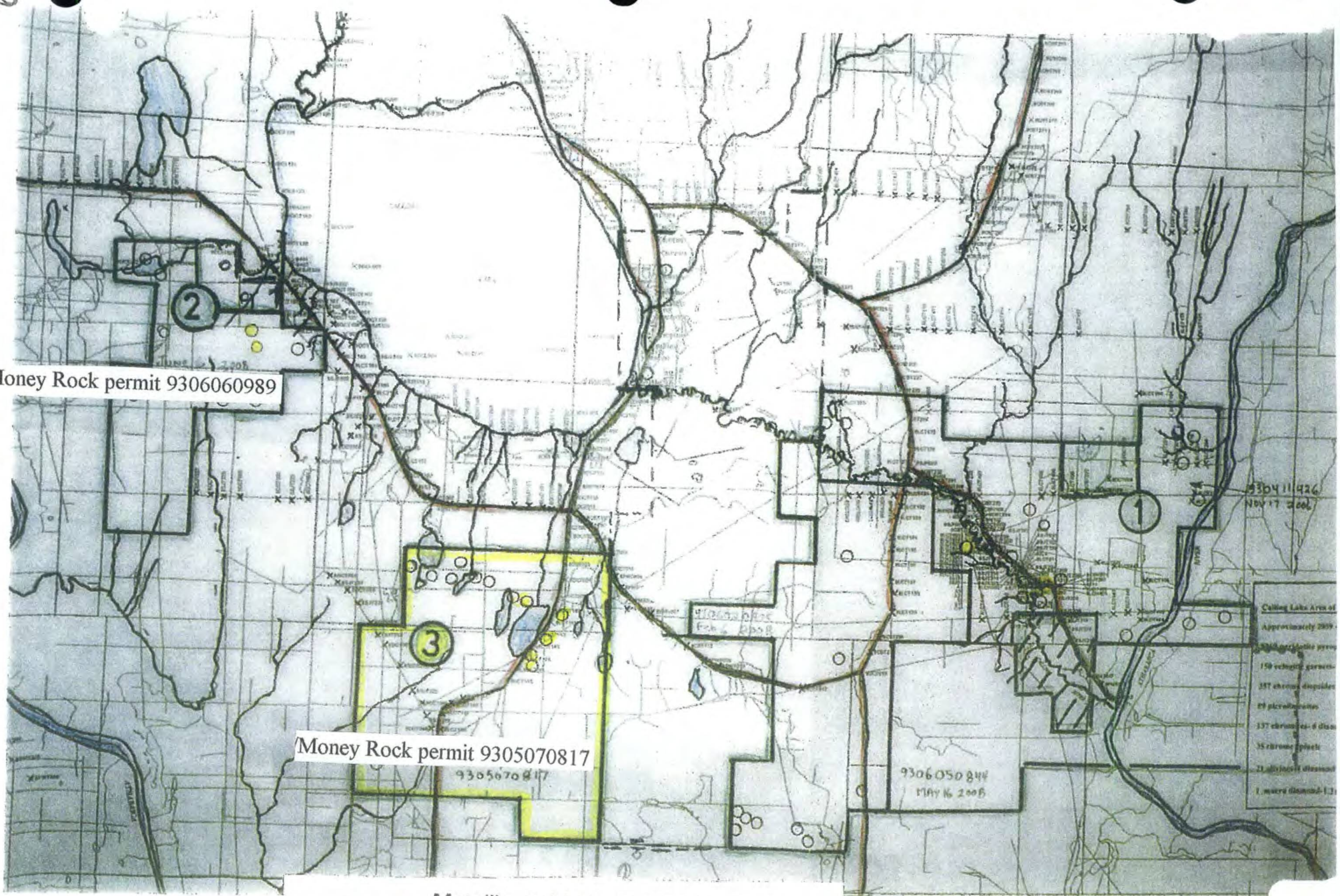


Money Rock Resources/

Calling Lake Project

Central Alberta, Canada

Permit Areas



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Metallic and Industrial Minerals Permit
No. 9305070817

(asl.), except along the Athabasca and Calling river valleys which drop steeply to approximately 480 m asl. Major topographic features in the region include: Calling Lake, situated in the centre of the property; Pelican Mountains to the northwest of the property; and the Athabasca and Calling rivers. Numerous streams and creeks drain the region, flowing into Calling Lake, which in turn drains into the Athabasca River via the Calling River or directly into the Athabasca River which wraps around the west, south and east borders of the property. In addition to the numerous small lakes and ponds, most of the property is covered by swamps, marshes and fens. A boreal forest containing mainly spruce and jack pine covers the property. Annual temperatures range from -40°C in January to 25°C in July.

Regional Geology

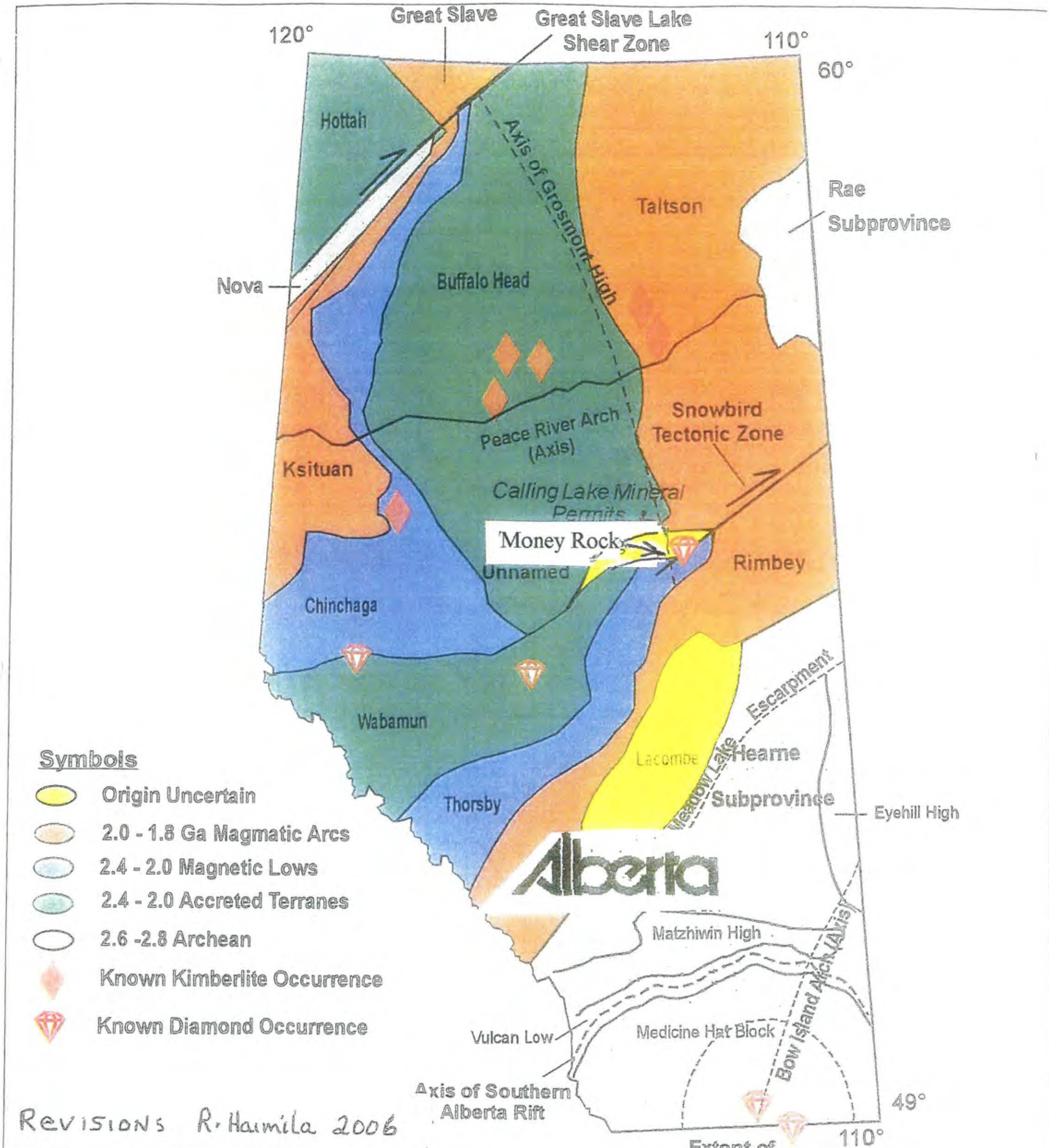
The Regional Geology description and references remains unchanged and has been reproduced from "Diamond Potential of Buffalo Diamonds Ltd's Calling Lake Property, Alberta" by Dufresne and Copeland (1999).

Precambrian

The Calling Lake permits lie in the Western Canadian Sedimentary Basin along the southern flank of the Peace River Arch (PRA). However, Precambrian rocks are not exposed within the Calling Lake area (NTS 83P). The basement underlying the PRA is comprised of several terranes including the Buffalo Head and the Chinchaga, both of which collectively form the Buffalo Head Craton (Ross *et al.*, 1991, 1998). The Buffalo Head Craton was accreted to the western edge of the Churchill Structural Province (Rae Subprovince) approximately 1.8 to 2.4 billion years ago (Ga). Due to their relatively stable history since accretion, the Buffalo Head and Chinchaga terranes are currently the focus of extensive diamond exploration in northern Alberta.

The basement underlying the Calling Lake permits borders the Buffalo Head Terrane (BHT), the Talston Magmatic Zone (TMZ) and an unnamed domain (Figure 3). Basement underlying the northeast portion of the Calling Lake Permits is part of the Talston Magmatic Zone (TMZ), a 2.0 to 1.8 Ga aged terrane that represents a magmatic arc related to collisional orogeny during the Proterozoic. The TMZ is characterised by a highly corrugated internal fabric comprised of extremely high relief, north-trending sinuous magnetic anomalies. The northwestern portion of the Calling Lake permits is underlain by basement of the BHT, an area of high positive magnetic relief with a north to northeasterly fabric (Villeneuve *et al.*, 1993). The area of Ashton Mining of Canada Inc.'s (Ashton) Buffalo Head Hills kimberlite discovery is underlain by basement of the BHT.

The bulk of the basement underlying the Calling Lake permits is part of an unnamed domain (Figure 3). The gravity and magnetic signatures of the unnamed domain are very similar to those of the BHT and Wabamun Terrane and, therefore, may in fact be an extension of either one of these terranes. The Wabamun Terrane is geologically and magnetically similar to the BHT and was likely accreted to the western edge of the Churchill Structural Province between 2.4 to 1.8 Ga. The BHT and the Wabamun Terrane are thought to represent either Archean crust that has been thermally reworked during the Hudsonian (Proterozoic) Orogeny (Burwash *et al.*, 1962; Burwash and Culbert, 1976; Burwash *et al.*, 1994) or accreted Proterozoic terranes that may or may not have an Archean component (Ross and Stephenson, 1989; Ross *et al.*, 1991; Villeneuve *et al.*, 1993). Precambrian rocks which have been intersected in drill core from the BHT and the Wabamun Terrane comprise felsic to intermediate metaplutonic rocks, felsic metavolcanic rocks and high-grade gneisses (Villeneuve *et al.*, 1993). The presence of a large number of eclogitic garnets and eclogitic pyroxenes in association with kimberlites or related intrusions in northern Alberta may indicate the presence of a significant volume of subducted basaltic and sedimentary protolith in the upper mantle and lower crust beneath the Buffalo Head Craton. The Calling Lake permits lie within an area with an intermediate to high residual gravity signature. Seismic refraction and reflection studies indicate that the crust in the Calling Lake region is likely around 35



Revisions R. Haimila 2006

ALBERTA

BASEMENT GEOLOGY

Scale 0 100 200 Kilometres

APEX Geoscience Ltd.

EDMONTON, ALBERTA December, 1999

(Modified after Ross *et al.*, 1991)

FIGURE 2.

to 40 km thick, a trait favourable for the formation and preservation of diamonds in the upper mantle (Dufresne *et al.*, 1996). In addition, studies by Lithoprobe have indicated that a deep mantle root, as illustrated by Figure 25 in Helmstaedt (1993), exists proximal to the area (Haimila, 1997).

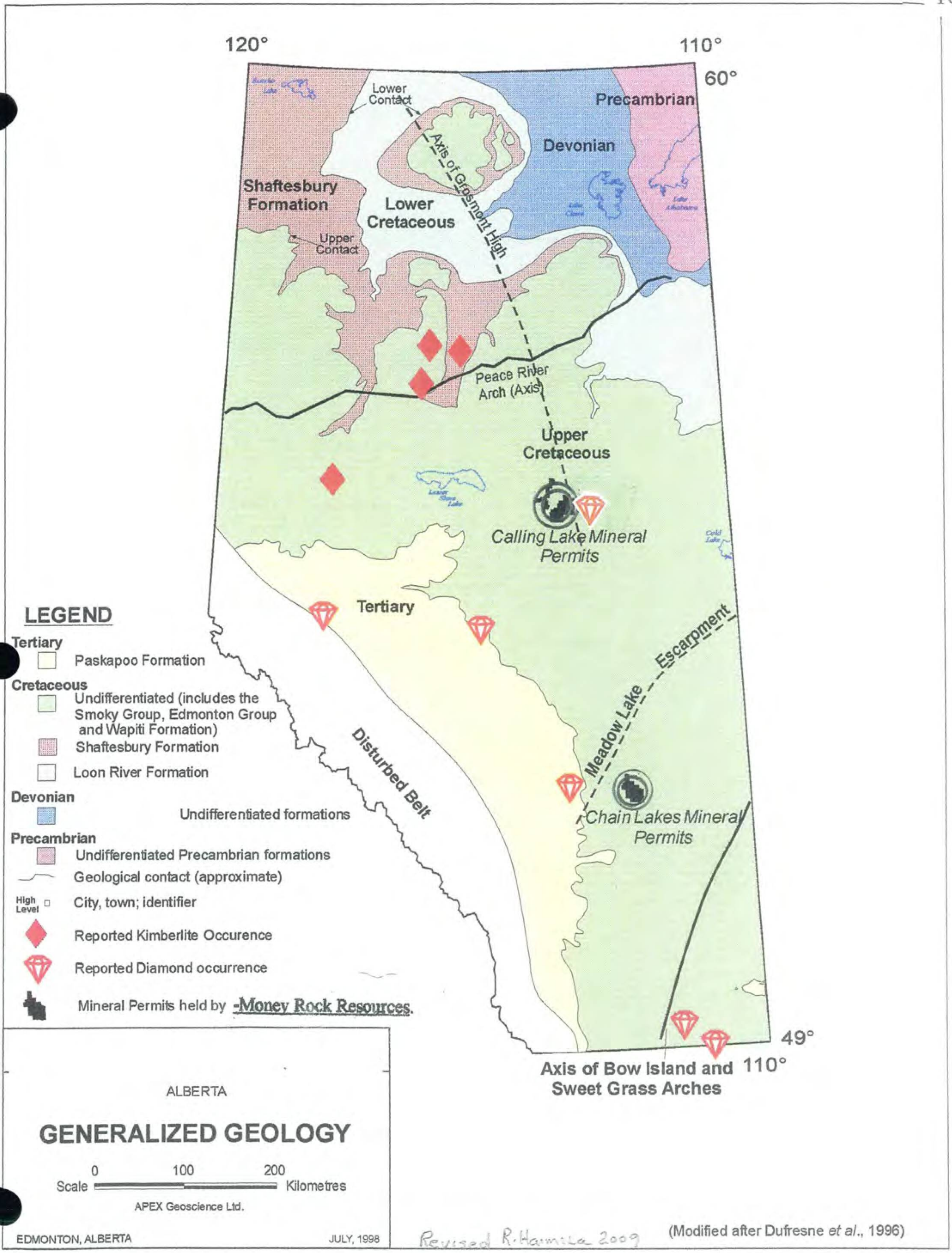
Directly south of the Calling Lake permits, the basement is part of the Proterozoic Thorsby Magnetic Low (2.4 – 2.0 Ga), which merges into the Snowbird Tectonic Zone to the northeast (Figure 3). The Thorsby Low is a narrow northeasterly trending, curvilinear aeromagnetic low that is similar in character to the Chinchaga Low. It is collinear with a gravity gradient between the adjacent domains and contains numerous basement faults that extend into the overlying Paleozoic and Mesozoic succession (Edwards and Brown, 1994). The Snowbird Tectonic Zone (STZ) is a major northeast-trending crustal lineament that is a prominent lineament on both the aeromagnetic and the gravity maps of Canada (Geological Survey of Canada, 1990a, b). The STZ separates the Churchill Structural Province into two distinct basement domains, the Rae and Hearne Subprovinces, and extends to the northeast as far as Baker Lake, Nunavut (Ross *et al.*, 1991).

Phanerozoic

Overlying the basement in the Calling Lake region is a thick sequence of Phanerozoic rocks comprised mainly of Cretaceous sandstones and shales near surface and Mississippian to Devonian carbonates and salts at depth (Glass, 1990). Bedrock exposure within the permit blocks is limited primarily to river and stream cuts and topographic highs. Table 1 shows the upper units found in the region. Further information pertaining to the distribution and character of these and older units can be obtained from well log data in government databases and various geological and hydrogeological reports (Carrigy, 1971; Green *et al.*, 1970; Glass, 1990).

Underlying the near surface Cretaceous units in the Calling Lake area is a thick succession of Devonian to Mississippian carbonates, calcareous shales and salt horizons (Mossop and Shetson, 1994). Several of the Devonian carbonate units are part of the Grosmont Reef Complex, a large structure that extends in a northwesterly direction from the Calling Lake area to the N.W.T. (Bloy and Hadley, 1989). The Grosmont Reef Complex is likely the result of tectonic uplift during the Devonian along this trend (the Grosmont High on Figure 4). This structure in conjunction with the PRA could have played a significant role in the localisation of faults and other structures that could have provided favourable pathways for kimberlite volcanism.

In general, the Cretaceous strata underlying the Calling Lake permits is composed of alternating units of marine and nonmarine sandstones, shales, siltstones, mudstones and bentonites. The oldest documented units exposed in the permit area belong to the Smoky Group, a sequence of Upper Cretaceous calcareous and noncalcareous shales (Figure 4). However, older units from the base of the Fort St. John and/or the top of the Colorado groups may be exposed in river and stream cuts.



120°
110°
60°
Lower Contact
Precambrian
Devonian
Axis of Grosmont High
Shaftesbury Formation
Lower Cretaceous
Upper Contact
Peace River Arch (Axis)
Upper Cretaceous
Calling Lake Mineral Permits
Tertiary
Escarpment
Meadow Lake
Disturbed Belt
Chain Lakes Mineral Permits
49°
110°
Axis of Bow Island and Sweet Grass Arches
LEGEND
Tertiary
Paskapoo Formation
Cretaceous
Undifferentiated (includes the Smoky Group, Edmonton Group and Wapiti Formation)
Shaftesbury Formation
Loon River Formation
Devonian
Undifferentiated formations
Precambrian
Undifferentiated Precambrian formations
Geological contact (approximate)
High Level
City, town; identifier
Reported Kimberlite Occurence
Reported Diamond occurrence
Mineral Permits held by -Money Rock Resources.
ALBERTA
GENERALIZED GEOLOGY
0
100
200
Scale
Kilometres
APEX Geoscience Ltd.
EDMONTON, ALBERTA
JULY, 1998
Revised R. Hamila 2009
(Modified after Dufresne et al., 1996)

FIGURE 3

TABLE 2
GENERALIZED STRATIGRAPHY
CALLING LAKE PERMIT AREA

SYSTEM	GROUP	FORMATION	AGE* (MA)	DOMINANT LITHOLOGY
PLEISTOCENE			Recent	Glacial till and associated sediments
TERTIARY			6.5 to Recent	Preglacial sand and gravels
UPPER CRETACEOUS		Wapiti	70 to 80	Sandstone, minor coal seams and conglomerate lenses
	Smoky	Puskwaskau	75 to 86	Shale, silty-shale and ironstone, First White Specks
		Bad Heart	86 to 88	Sandstone
		Kaskapau	88 to 92	Shale, silty-shale and ironstone, Second White Specks
		Dunvegan	92 to 95	Sandstone and siltstone
	Fort St. John	Shaftesbury	95 to 98	Shale, bentonites, Fish-Scale Fm.
LOWER CRETACEOUS	Colorado	Pelican	98 to 100	Glauconitic sands, siltstone, mudstone and conglomerate
		Joli Fou	100 to 103	Shale, glauconitic sandstone and bentonite

*Ages approximated from Green *et al.* (1970), Glass (1990), Dufresne *et al.* (1996) and Leckie *et al.* (1997).

The Colorado Group is Lower Cretaceous in age and contains numerous formations, including the Joli Fou and the Pelican formations, which are correlative with the Peace River Formation of the Fort St. John Group further west (Dufresne *et al.*, 1996). The Joli Fou Formation is comprised of shale with interbedded, bioturbated to glauconitic sandstones and minor amounts of bentonite, pelecypod coquinas, nodular phosphorite and concretionary layers of calcite, siderite and pyrite (Glass, 1990). The Pelican Formation disconformably overlies the Joli Fou Formation and is gradational with the overlying Shaftesbury Formation (shales of the Colorado Group) and is correlative with the Cadotte and Paddy Sands of the Peace River area (Fort St. John Group). The Pelican Formation is comprised of glauconitic sands, interbedded siltstone and mudstone with minor amounts of conglomerate. Coalified plant fragments and bioturbated sandstones are locally abundant.

The La Biche Formation is a frequently incorrectly used term correlative to units of the Shaftesbury Formation and other formations within the Smoky and Colorado groups (Glass, 1990). In the Calling Lake permit area, the term Shaftesbury Formation (Fort St. John Group) is more commonly used. This unit is correlative with the shales overlying and underlying the Fish Scale unit in the Colorado Group. The Shaftesbury Formation is lower Upper Cretaceous in age and is comprised of marine shales with fish- scale bearing silts, thin bentonitic streaks and ironstones. The upper contact is conformable and transitional with the Dunvegan Formation, however, the Dunvegan Formation may be absent in the Calling Lake region. The Shaftesbury Formation may be exposed along deep river and stream cuts. Evidence of extensive volcanism during deposition of the Kaskapau and the Shaftesbury formations exists in the form of bentonites of variable thickness, distribution and composition. Numerous bentonitic horizons exist throughout the Shaftesbury Formation, especially within and near the Fish Scales horizon across much of Alberta (Leckie *et al.*, 1992; Bloch *et al.*, 1993). The time span of deposition of the Shaftesbury Formation is also chronologically correlative with the deposition of the Crowsnest Formation volcanics of southwest Alberta (Olson *et al.*, 1994; Dufresne *et al.*, 1995) and with kimberlitic volcanism near Fort à la Corne in Saskatchewan (Lehnert–Thiel *et al.*, 1992; Scott Smith *et al.*, 1994). In addition, there is documented igneous activity associated with the Steen River Anomaly, a possible impact structure, which formed in northwestern Alberta about this time (Carrigy, 1968; Dufresne *et al.*, 1995).

The Smoky Group is Upper Cretaceous in age and is comprised of thinly bedded, marine, silty shale with occasional ironstone and claystone nodules and thin bentonite streaks. The group is divided into three formations: (a) a lower shale unit, Kaskapau, which includes the Second White Specks marker unit; (b) a middle sandstone, named the Bad Heart; and, (c) an upper shale, Puskwaskau, which contains the First White Specks marker unit. The Smoky Group is conformably and transitionally overlain by the Wapiti Formation. Ammonite fossils and concretions are present in both the Puskwaskau and the Kaskapau formations. In addition, foraminifera are present in the lower arenaceous units (Glass, 1990). The upper formations of the Smoky Group are correlative with the Lea Park Formation. The lower portions of the Smoky Group are correlative with the middle to upper units of the Colorado Group, including the First and Second White Speckled Shale marker units (Glass, 1990). Bedrock exposures in the Calling Lake permits are likely comprised of the Kaskapau Formation, in particular, the Second White Specks unit or lower, since most of the upper portions of the Smoky Group have been eroded away by glacial and/or post-depositional processes. However, areas, where the Smoky Group is overlain by the Wapiti Formation, may still have most of the Bad Heart and/or Puskwaskau formations still intact with minimal erosion. In general, exposures of the Smoky Group are limited to river and stream cuts, topographic highs, and regions with thin drift veneer. There is strong evidence of volcanism associated within the depositional time span of the Smoky Group in the vicinity of the PRA (Auston, 1998; Carlson *et al.*, 1998). Ashton's recently discovered Buffalo Head Hills kimberlites intrude Kaskapau shale and yield emplacement ages of 86 to 88 Ma (Auston, 1998; Carlson *et al.*, 1998).

The youngest bedrock unit in the Calling Lake area is the Wapiti Formation of Upper Cretaceous age, comprised of non-marine, thinly bedded to massive sandstone with minor coal seams and thin conglomerate lenses. The upper surface of the Wapiti Formation is generally erosional. Thickness of the unit may exceed 100 m (Glass, 1990). The Wapiti Formation is exposed in the northwestern portions of the Calling Lake permits west of Calling Lake. In addition, smaller outliers or remnants of the Wapiti Formation are known to be present south and east of the permits (Green *et al.*, 1970). The Mountain Lake Kimberlite near Grande Prairie intrudes the Wapiti Formation sediments and yields an emplacement age of 75 Ma (Leckie *et al.*, 1997).

Quaternary

Data and information about the surficial geology in central to northern Alberta is sparse and regional in nature. Prior to continental glaciation during the Pleistocene, most of Alberta, including the Calling Lake region, had reached a mature stage of erosion. Large, broad paleochannels and their tributaries drained much of the region, flowing in an east to northeasterly direction (Dufresne *et al.*, 1996). In addition, Late Tertiary to Quaternary fluvial sand and gravel was deposited preglacially over much of the region.

During the Pleistocene, multiple southwesterly and southerly glacial advances of the Laurentide Ice Sheet across the region resulted in the deposition of ground moraine and associated sediments (Figure 5 in Dufresne *et al.*, 1996). In addition, the advance of glacial ice resulted in the erosion and glaciotectonism of the underlying bedrock. Ice thrusted bedrock has been documented just south of the Athabasca River (Klassen, 1989) and smaller occurrences of glaciotectonism within the Calling Lake permits are possible. Remnants of preglacial sands and gravel have been documented on topographic highs, including the Pelican Mountains just northwest of the Calling Lake permits (Dufresne *et al.*, 1996). Glacial sediments infilled low-lying and depressional areas, draped topographic highs and covered much of the Calling Lake area as veneers and/or blankets of till and diamict. Localised pockets of deposits from glacial meltwater and proglacial lakes infill the numerous spillway channels present near the area.

Glacial ice is believed to have receded from the area about 15,000 years ago. After the final glacial retreat, lacustrine clays and silts were deposited in low-lying regions along with organic sediments. Rivers previously re-routed due to glaciation, re-established easterly to northeasterly drainage regimes similar to that of the pre-Pleistocene. Extensive colluvial and alluvial sediments accompanied post-glacial river and stream incision.

The majority of area within the Calling Lake permits is underlain by drift of variable thickness, ranging from less than 2 m to likely over 45 m (Pawlowicz and Fenton, 1995a,b). Drift thickness decreases considerably outside of infilled depressions and meltwater channels and in areas of high topographic relief, in particular near the Pelican Mountains. However, local drift thicknesses can not be confirmed without detailed compilation of available drill hole data. Information regarding bedrock topography and drift thickness in northwest Alberta is available from the logs of holes drilled for petroleum, coal or groundwater exploration and from regional government compilations (Pawlowicz and Fenton, 1995a,b; Dufresne *et al.*, 1996).

Structural Geology

In north-central Alberta, the PRA is a region where the younger Phanerozoic rocks which overlie the Precambrian basement, have undergone periodic vertical and, possibly, compressive deformation from the Proterozoic into Tertiary time (Cant, 1988; O'Connell *et al.*, 1990; Dufresne *et al.*, 1995, 1996). This pattern of long-lived, periodic uplift and subsidence has imposed a structural control on the deposition patterns of the Phanerozoic strata in northern Alberta. In addition, this periodic movement has resulted in a rectilinear pattern of faults that not only is responsible for structurally controlled oil and gas pools, but may have provided potential pathways for later deep-seated intrusive kimberlitic magmas.

During the mid-Cretaceous and Early Tertiary, compressive deformation occurred as a result of the orogenic event that eventually led to the formation of the Rocky Mountains. The PRA was emergent during this period resulting in the reactivation of many prominent basement faults. The Phanerozoic rocks beneath the Calling Lake permits lie within the southeastern edge of the PRA and are underlain by and proximal to basement faults related to the STZ and the underlying Grosmont Reef Complex, which was formed over the Grosmont High (Bloy and Hadley, 1990; Dufresne *et al.*, 1996). Basement faults may have controlled the emplacement of the Mountain Lake Kimberlite and the Buffalo Head Hills kimberlites northwest of the Calling Lake permits (Dufresne *et al.*, 1996; Leckie *et al.*, 1997). Therefore, structures in the Calling Lake area resulting from tectonic activity associated with movement along the PRA, the Grosmont High, the STZ or even along contacts between different basement terranes could be pathways for kimberlitic volcanism.

Previous Exploration

Alberta Geological Survey website under the heading – Reports (ags.gov.ab.ca/publications)

For Calling Lake

…see Mineral Assessment Reports Nos: 19950029, 19960018, 19970001, 19970013, 19980010, 19980017, 19980023, 20000010, 20000016, 20060033 and 20070022 (one other report still confidential)

CONCLUSION AND OVERVIEW

In 1992, two prospectors began searching for diamonds in Alberta, Canada.
Ted Yoshida and Raymond Haimila (under the guidance of Dr. N Haimila -geophysicist/geologist) began searching oil and gas data bases and the data bases at the Geological Survey of Canada. We were looking for any unusual basement features as well as geophysical signatures that might indicate vertical structure- ie intrusive bodies/kimberlites, as well as diamond indicators. Dr. Haimila was told of two areas that had "unusual seismic structures". The two areas were: the Chain Lakes located near Hanna in south central Alberta; and the Calling Lake area in north central Alberta.

Seventeen years and some $3.5 million dollars later; these two Alberta Diamond Exploration projects are in the process of being placed under one corporate entity- Money Rock Resources. This entity is controlled by three principals- T Yoshida, L Halonen and R Haimila.

Leo Halonen has been involved since 1995 when he was hired to drill an exploratory hole near Hanna. The core/cuttings contained kimberlitic and diamond indicators. The discovery of high priority anomalies with multiple geophysical signatures (resistive/ magnetic/ seismic) and the discovery of phlogopite bearing alkaline boulders, an eclogitic boulder and diamond indicators, etc., has made **the Hanna-Chain Lakes a high priority area for diamond exploration**.
Chain Lakes approximate expenditures (1992 -2009)…… $850,000.00

In 1993, prospectors Raymond Haimila and Tetsuo Yoshida discovered the highly anomalous diamond indicator beaches at Calling Lake and Calling river. The Calling Lake beach sands have yielded more than 500 diamond indicators at 4 separate sites on the south and southwest shores of Calling Lake. The Calling Lake area hosts the largest concentration of "Gurney G10" pyropes (seventy) observed in Alberta to date. Other indicators identified include: diamond inclusion eclogitic garnets, chrome diopsides, olivines, chromites, picroilmenites, rubies, sapphires, and a gem quality macro diamond discovered in basal till along the Calling River. This area has historically yielded some of the best known diamond indicator geochemistry in Alberta. see Appendix 2

Since 1993, prospecting and multiple geophysical surveys have resulted in the discovery of three separate High Priority Target areas. Each area has high priority anomalies with multiple geophysical signatures – seismic / magnetic / resistive -suggestive of vertical structure. The anomalies are proximal to anomalous numbers of diamond indicators that have historically yielded some of the best known diamond indicator geochemistry in Alberta, and has made **the Calling Lake area a high priority for diamond exploration. The discovery of a kimberlite would be complimented with geochemistry that is suggestive of a diamond bearing source.**
Calling Lake approximate expenditures (1992-2009)…….$2,718,000.00

The high priority anomalies identified by Geoterrex-Dighem in the1998- resistive, magnetic- helicopter surveys at Calling Lake and Chain Lakes were never drill tested. Halmco Inc. drill tested anomaly CL9 at Calling Lake in 2006. CL9 is a large seismic structure coincidental with a very high priority resistive/magnetic anomaly identified by Geoterrex-Dighem in 1998. The drill hole ended in breccia. Said breccia contains country rock and exotic crustal fragments as well as diamond indicators>

<u>To date, there have been nine high priority anomalies discovered at Calling Lake, where the geophysics are suggestive of vertical structure. This number includes the four discovered on permit 9305070817 in 2007-08</u>

<u>A winter drill program is proposed for 2009-2010</u>

5. CLOSURE

We trust that this report satisfies your current requirements and provides suitable documentation for your records. If you have any questions or require further details, please contact the undersigned at any time.

Report Prepared by
WorleyParsons Komex

[redacted]

Chris Pooley, B.Sc., Geoph.I.T.
Geophysicist

[redacted]

Kimberly Hume, B.A.Sc., P.Eng.
Geoscientist

Senior Review by

Paul Bauman, M.Sc., P.Eng., P.Geoph.
Technical Director, Geophysics

PERMIT TO PRACTICE
WORLEYPARSONS CANADA LTD.
Signature
Date Jun 6, 2008
PERMIT NUMBER: P 2306
The Association of Professional Engineers Geologists and Geophysicists of Alberta

As co-author of this report, I, Raymond Haimila; consent to the use of this report by Halmco Inc. and Money Rock Resources' for assessment purposes only.

Background in Earth Sciences

.1963-64: Integrated Velocity Services (Oil and Gas well-log interpretation)

1977 to present: Researching for industrial and metallic minerals in western Canada. This is a continuing project based on: remote sensing (geotechnical interpretations of satellite imagery developed by Dr. N. Haimila as well as reviewing and interpreting seismic/magnetic/gravity data bases of western Canada.)

1991-92: Gained Intervenor Status between the Alberta Governments Natural Resources Conservation Board and Three Sisters Golf Resorts. Presentation was oral/visual showing the geotechnical hazards associated with abandoned underground mining operations.

1993: Term Paper (The Environmental Geology of the Canmore Mine Site) for Geology 1159, Mount Royal College, Calgary

1993: The Natural Resources Conservation Board recommended the Town of Canmore (3 Sisters Decision Report) utilize my geotechnical expertise. Appointed as a committee member of the Town of Canmore's Geotechnical Advisory Group. The mandate was to develop a set of undermining guidelines that would allow for safe development on undermined lands. The povince of Alberta adopted these guidelines in1997.

1994-98: Co-owner of 656405 Alberta Ltd. (diamond exploration company). Discovered the highly anomalous diamond indicator sites in the Calling Lake area-1993- with partner Dr. T. Yoshida

1996-98: Authored Alberta Mineral Assessment reports For Dr. Yoshida/DR. Haimila and co-authored assessment reports for Buffalo Diamonds

1998-2002; Co-founder/director/president of Buffalo Diamonds (Public Company)

2003: Thesis Paper (Rheology and the Genesis of Diamonds) Theory demonstrates the mechanics of rocks and the rheological response of rock initiates a primary force that allows for a single species/element (carbon) to be converted to and/or deposited as the allotropic form of pure carbon- diamond

2004 to present: Designed and implemented a diamond exploration program in the Calling Lake area of Alberta for Hamco Inc and Clarion Mining, Money Rock Resources

Raymond Haimila
Box 8264 Stn. Main, Canmore,AB. T1W 2V1

[redacted]

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ACTUAL EXPENDITURE STATEMENT OF WORK BREAKDOWN

	Amount Spent
1. Prospecting	$
2. Geological mapping and petrography	$
3. Geophysical Surveys a. Airborne b. Ground	$28,747.63
4. Geochemical Surveys	$
5. Trenching and Stripping	$
6. Drilling	$
7. Assaying and whole rock analysis	$
8. Other Work Report Costs	$1200.00
Subtotal	$29,947.63
9. Administration (10% of subtotal)	$2,994.76
TOTAL	**$32,942.39**

[redacted]

SIGNATURE

DATE July 7,2009

Raymond Haimila
PRINT NAME

APPENDIX 1

WorleyParsons

resources & energy

Infrastructure & Environment
4500 16th Avenue NW
Calgary, AB T3B 0M6 CANADA
Phone: +1 403 247 0200
Toll-Free: 1 800 668 6772
Facsimile: +1 403 247 4811
www.worleyparsons.com

16 June 2009

Proj. No.: CPR09051
File Loc.: Calgary

Money Rock Resources
Box 8264 Station Main
Canmore, Alberta
T1W 2V2
403 609 0153

Attention: Raymond Haimila

Dear Raymond:

RE: WORK PLAN AND COST ESTIMATE FOR A GEOPHYSICA INVESTIGATIONL AND DRILLING PROGRAM FOR KIMBERLITE EXPLORATION, CALLING LAKE, ALBERTA

1. INTRODUCTION

WorleyParsons is pleased to submit to Money Rock Resources this proposal for a geophysical exploration program in the vicinity of Calling Lake, Alberta. This proposal has been prepared in response to various telephone conversations with Raymond Haimila. Based upon our conversations, Money Rock Resources would like WorleyParsons to submit a work plan and cost estimate for an electrical resistivity tomography (ERT) and total field magnetometer investigation at two locations near Calling Lake, Alberta. The objective of the proposed investigation is to further investigate features imaged in ERT and magnetometer surveys conducted by WorleyParsons in 2007, and to conduct magnetometer surveys in areas identified as possible targets through airborne geophysical methods. This proposal contains the work plan and associated costs for the ERT and magnetometer surveys.

In addition to the proposed geophysical program, Money Rock Resources has requested a cost estimate and work plan for a drilling program to assess high priority targets identified in the previously conducted geophysical investigations (WorleyParsons Komex, 2007). The work plan and cost estimate for a drilling and geophysical logging program will be submitted as an additional proposal.

2. GEOPHYSICAL METHODOLOGIES

2.1 Electrical Resistivity Tomography

ERT is a technique for mapping the distribution of subsurface electrical resistivity (or its inverse conductivity) in a cross-sectional format. Resistivity data are collected through a linear array of 81 electrodes coupled to a DC resistivity transmitter and receiver, and an electronic switching box. Data collection is carried out in a sequential and automated fashion that takes advantage of all possible combinations of current and measure electrodes. The data are downloaded to a computer for processing and analysis. The data are inverted using a 2-D finite difference or finite element inversion routine. The final product is a two-dimensional cross-section plotting resistivity (in ohm-m) versus depth.

2.2 Total Field Magnetometer

A total field magnetometer measures the intensity of the earth's magnetic field in units of nanoteslas (nT). Ferromagnetic materials such as iron alloys, when placed in the earth's magnetic field, tend to alter the field. Such materials, therefore, can be recognized as total field anomalies. The GSM-19 Overhauser memory magnetometer is ideal for site reconnaissance surveys as it is extremely accurate and fast to operate. All magnetic data will be collected continuously and be GPS coupled. A second magnetometer will be used as a base station to allow for diurnal correction of the magnetometer data.

3. PROPOSED GEOPHYSICAL SURVEY

The purpose of the ERT program is to identify if vertical structures are present in the subsurface. The ERT program conducted in 2007 successfully imaged several structures which are to be investigated further in the proposed 2009 geophysical program. The proposed geophysical survey will consist of six 1800 m ERT cross-sections being collected using 22.5 m minimum electrode spacing for a maximum depth of investigation of 270 mbgs. The locations of the proposed ERT lines will be selected by the client with attention to line access and location of previously identified ERT features. It is proposed that three ERT lines will be collected in the area identified as Area A in the 2007 survey, and three ERT lines will be collected in the area identified as Area B in the 2007 survey (Figure 1). Total field magnetometer surveys will be conducted in areas specified by the client. It is expected that magnetometer data will be collected for the duration of the ERT program, unless fewer survey locations are requested by the client. It is expected that the above geophysical surveys could be conducted over a period of 12 days, excluding preparation and mobilization to the field site. Factors that could limit the amount of data collected include difficult terrain conditions, poor site access, adverse weather, etc.

Preliminary processing of the ERT data will be conducted in the field upon completion of each line. Processed data will be reviewed at the end of each work day to assess the location of the following day's geophysical surveys. Upon completion of the field investigation, the data will be processed and compared to previous surveys conducted in the area. ERT data will be presented as cross-sections, and, if line geometry allows, as three-dimensional fence diagrams. Magnetometer data will be presented as colour shaded, contoured plan view maps. A report detailing the field investigation, ERT and magnetometer results, and interpretation will be prepared.

WorleyParsons
resources & energy

4. SCHEDULE

We will develop a schedule with Money Rock Resources to meet the project needs. The geophysical crew could mobilize as early as July, 2009, to complete the ERT and magnetic surveys pending staff and equipment availability and site conditions. The geophysical surveys are expected to take 12 field days to complete. Preliminary results from the ERT and magnetic surveys will be available within two weeks of completion of the field portion of the survey. These results will be made available to the client in preparation for the drilling program.

The final report will be available early 2010, dependant on completion of the drilling phase in 2009.

5. ESTIMATED COSTS

A detailed break-down of the estimated costs for the ERT and magnetometer surveys is presented in Table 1. The total estimated cost to complete the proposed ERT and magnetometer surveys is approximately **$190,880** (exclusive of GST). This cost includes project initiation and preparation, mobilization and demobilization, data acquisition, equipment rentals and field disbursements, and data processing and reporting. The cost required to complete this project will be based on hours and disbursements actually and necessarily incurred to complete the scope of work as approved by Money Rock Resources.

WorleyParsons

resources & energy

Infrastructure & Environment
4500 16th Avenue NW
Calgary, AB T3B 0M6 CANADA
Phone: +1 403 247 0200
Toll-Free: 1 800 668 6772
Facsimile: +1 403 247 4811
www.worleyparsons.com

6. CLOSURE

We trust that this proposal satisfies your current requirements and provides suitable documentation for your records. If you have any questions or require further details, please contact Jennifer MacDonald or Chris Pooley at 403-247-0200.

Sincerely,
WorleyParsons

Jennifer MacDonald, M.Sc.
Geological Engineer, E.I.T.

Chris Pooley, P.Geoph
Geophysicist

WorleyParsons
resources & energy

Infrastructure & Environment
Suite 100, 4500 - 16 Avenue NW
Calgary, AB T3B 0M6 Canada
Telephone: +1 403 247 0200
Toll-Free: 1 800 668 6772
Facsimile: +1 403 247 4811
worleyparsons.com

Table 1: Cost Estimate for ERT and Magnetic Surveys

CLIENT: Money Rock Resources
Proposal No.: CPR09051
LOCATION: Calling Lake, Alberta
PROJECT DESCRIPTION: Cost Estimate for ERT and Magnetometer Suverys for Kimberlite Exploration

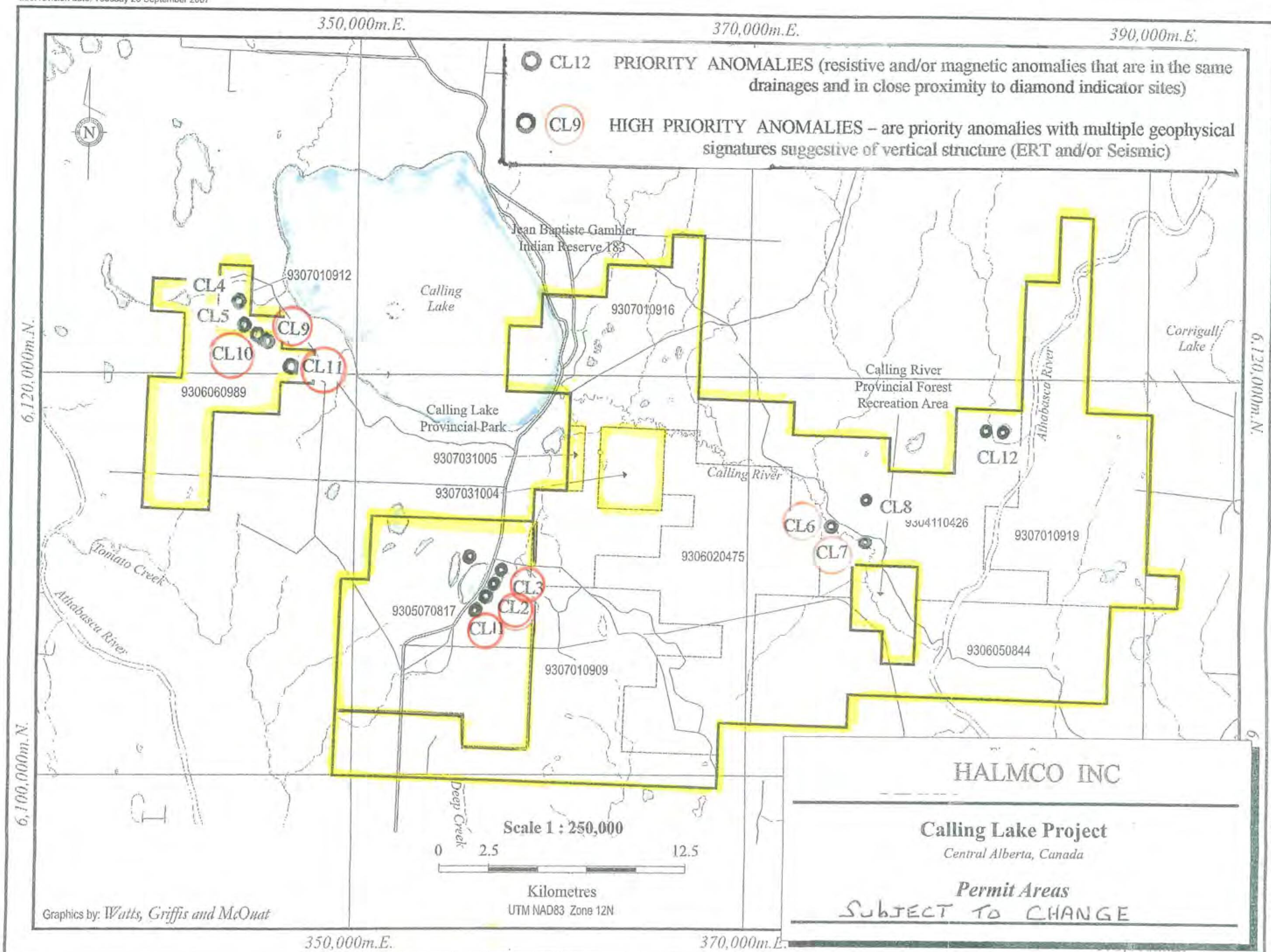
DATE: 16/06/2009
BY: MACJ
REVISION: A

	Qty Units	$/Unit	Total
1. Site Assessment - Task 1			
1. Project Management (Initiation, Planning, etc.)	8 hrs	$125	$1,000
2. Field Preparation (Equipment,Safety,etc.)	4 hrs	110	440
Field Program			
3. Mob/demob (6 personnel)	16 hrs	690	11,040
4. Field work (6 personnel)	144 hrs	690	99,360
5. Vehicle (incl. fuel, 2 vehicles)	14 days	500	7,000
6. Per Diem (6 personnel), Mob days only	2 days	420	840
7. Accomodation (6 personnel)	13 nights	900	11,700
8. Quad Rental (3 quads plus trailer)	7 days	575	4,025
8. Office Support (8% of Professional Fees)	lump sum		998
		Subtotal	**$136,403**
Geophysics Equipment Rental			
1. ERT System	13 days	1,600	20,800
2. GPS/Laptop	12 days	415	4,980
3. Radios	12 days	120	1,440
4. Magnetometer System	12 days	250	3,000
		Subtotal	**$30,220**
		Subtotal- Task 1	**$166,623**
2. Data Processing and Report Preparation - Task 2			
1. Project Management	4 hrs	$125	$500
2. Data Processing	32 hrs	110	3,520
3. Report Writing	16 hrs	110	1,760
4. Senior Review	2 hrs	210	420
5. Drafting	1 hrs	100	100
6. Office Support (8% of Professional Fees)	lump sum		504
7. Report Reproduction	lump sum		100
		Subtotal - Task 2	**$6,904**
		Project Subtotal	**$173,527**
		10% Contingency	**$17,353**
		PROJECT TOTAL	**$190,880**

Notes:

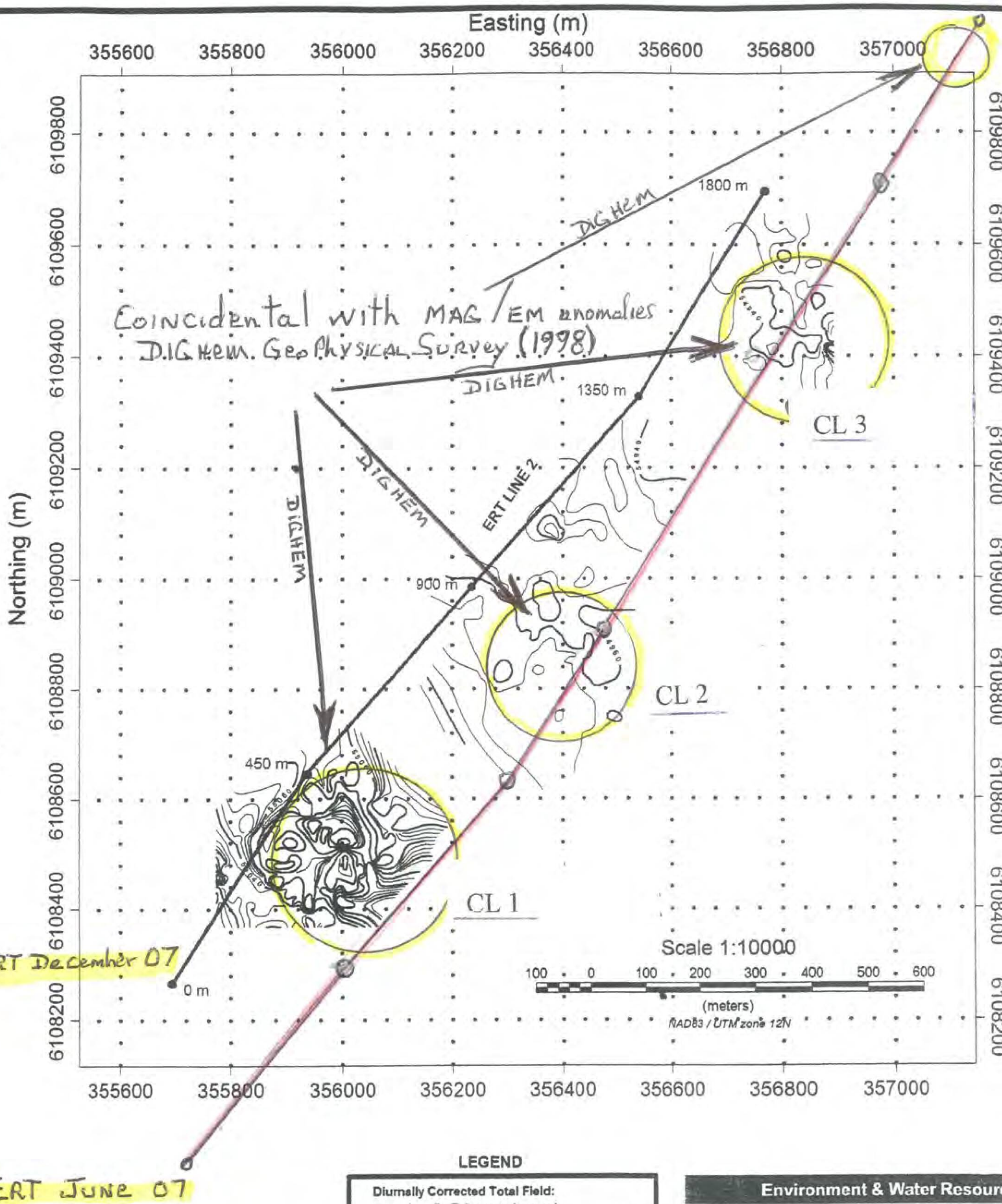
1. The above costs assumes the maximum number of survey lines as outlined in the proposal are to be completed. If fewer ERT lines are requested, the costs will be adjusted to reflect the new scope.
2. The above assumes terrain will be quad accessable for 3 of the 6 ERT lines. Difficult terrain may result in an increase of survey time thus increasing costs.
3. Per Diem will only be charged if applicable.
4. Accomodation costs assume availability of the Calling Lake Camp. If hotel accomodations are required, additonal costs will be charg
5. Accomodation costs are budgeted for 6 geophysics personnel. Expenses for any additional personnel will be paid for by the client
6. The above costs do not include GST.

CMC REV \ CMC_02_Permit_Map.cdr
Last revision date: Tuesday 26 September 2007



modified R. Haimila 2008

1:6



LEGEND

Diurnally Corrected Total Field:
- 5 nT Contour Interval
- 20 nT Contour Interval
- ERT Line Position

FIELD PARAMETERS

Data Collected: Dec 18-22, 2008
Station Spacing: 1 m

Environment & Water Resources

WorleyParsons Komex
resources & energy

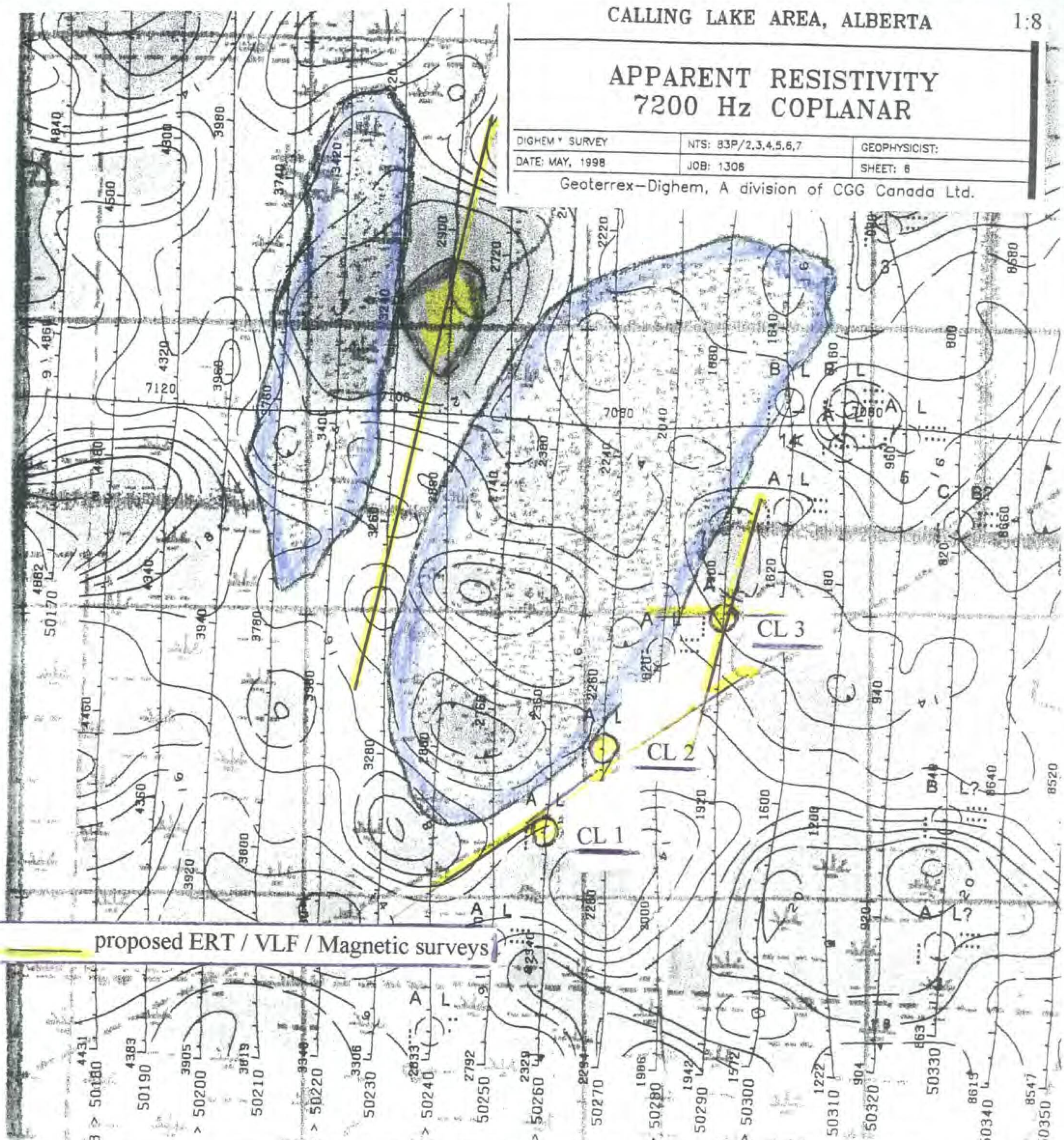
PROJECT NUMBER:	FIGURE:
C66630100	4

CALLING LAKE AREA, ALBERTA 1:8

APPARENT RESISTIVITY 7200 Hz COPLANAR

DIGHEM* SURVEY	NTS: 83P/2,3,4,5,6,7	GEOPHYSICIST:
DATE: MAY, 1998	JOB: 1306	SHEET: 6

Geoterrex–Dighem, A division of CGG Canada Ltd.



Label	Fid	Interp	XUTM m	YUTM m	CX 6431 HZ Real ppm	Quad ppm	C. 7176 HZ Real ppm	Quad ppm	CP 335 HZ Real ppm	Quad ppm	Vertical Dike COND siemens	DEPTH* m	Mag Corr NT
LINE L50290													
A	1904.0	L	356494	6108992	34.9	35.5	72.8	69.8	14.2	12.2	0.6	90	CL 3
LINE L50260													
A	2350.0	L	355858	6108237	26.5	25.1	58.6	51.8	11.2	12.7	0.6	104	CL 1
LINE L50270													
A	2266.0	L	356067	6108532	10.2	8.6	3.2	13.8	1.5	12.9	0.5	157	CL 2

CX = COAXIAL
CP = COPLANAR

Note: EM values shown above are local amplitudes

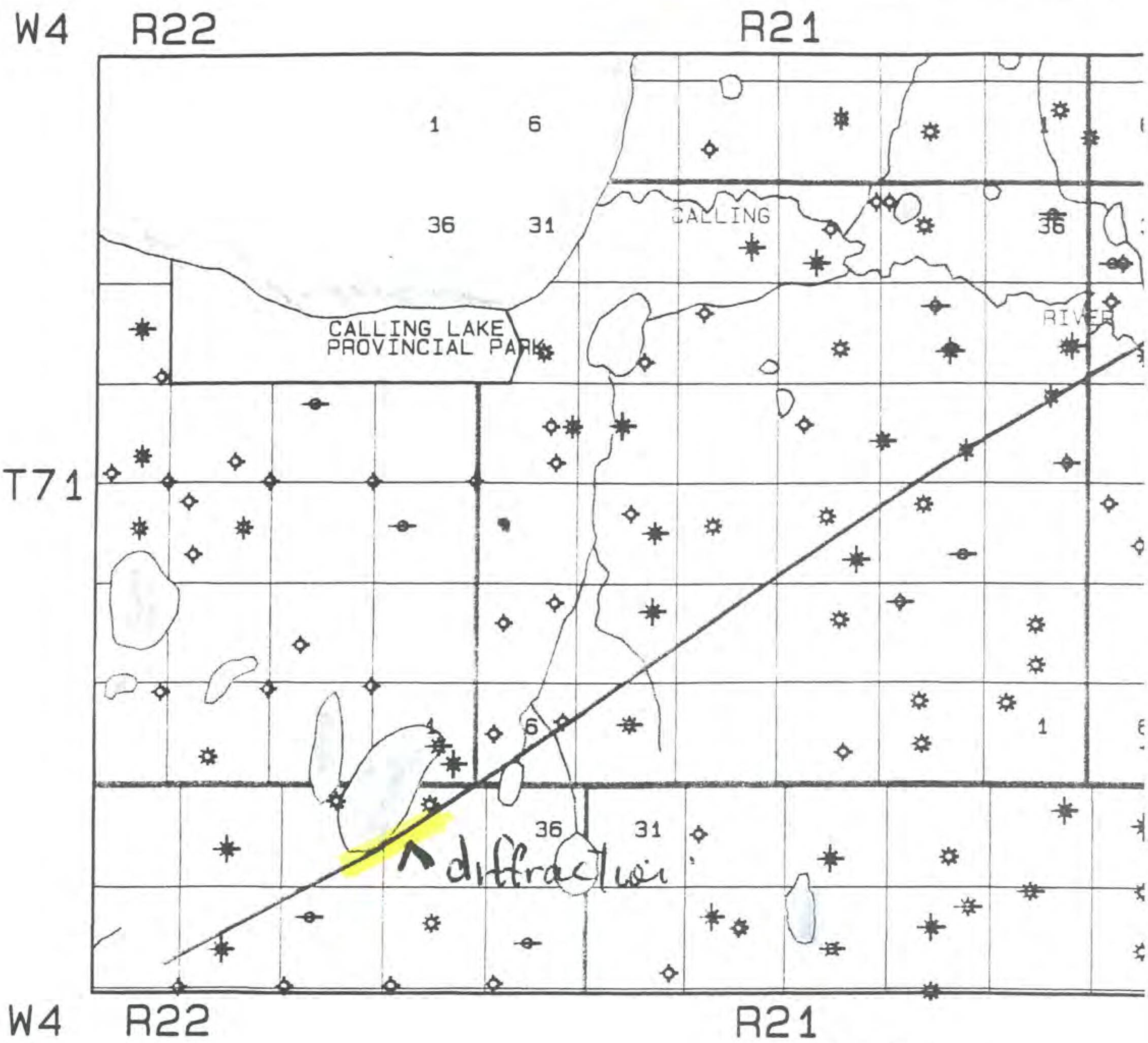
EM Anomaly List

JOB 1306

* Estimated Depth may be unreliable because the stronger part of the conductor may be deeper or to one side of the flight line, or because of a shallow dip or magnetite/overburden effects.

modified R Heimlo 2009

proposed ERT / VLF / Magnetic surveys

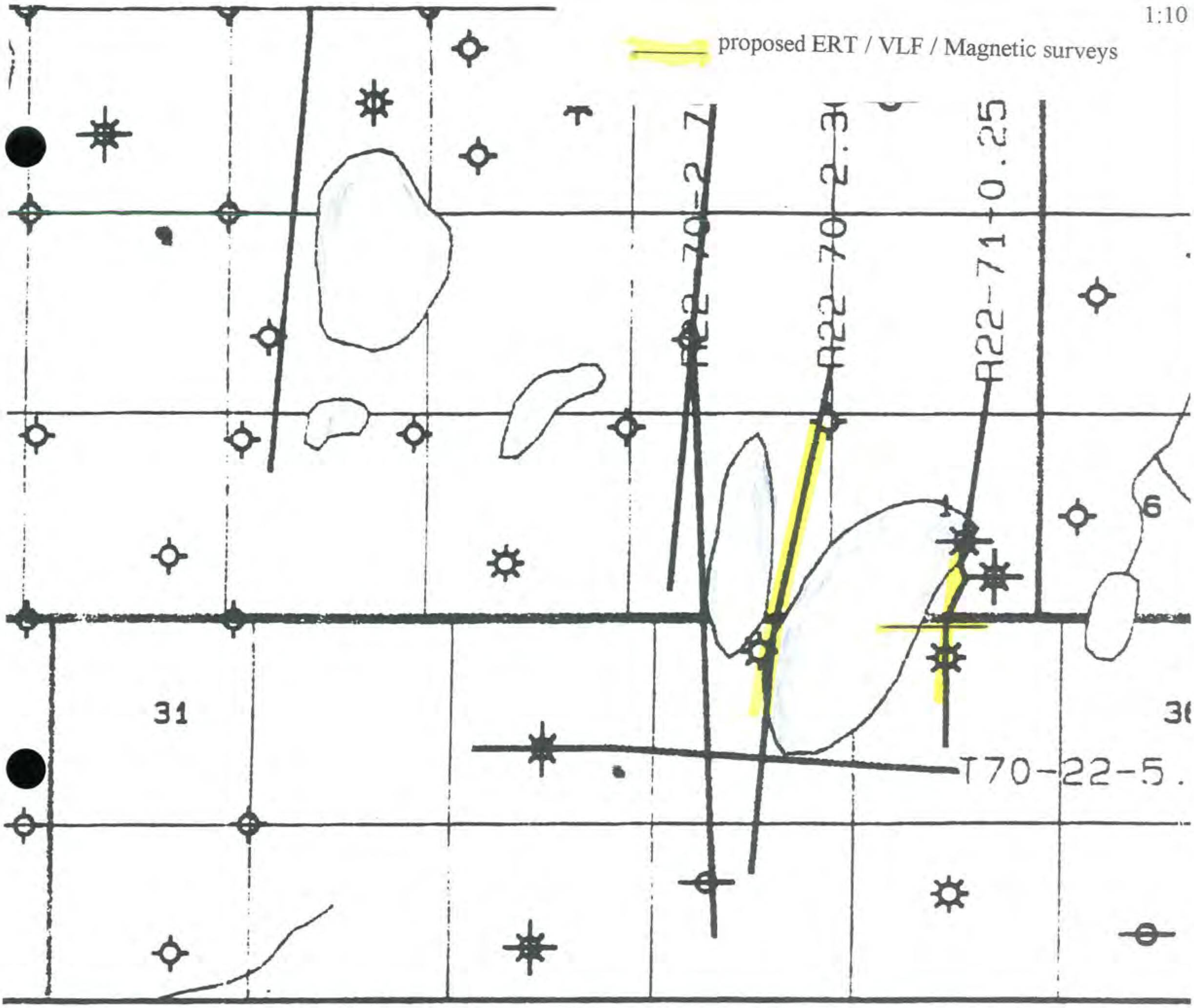


#7162

Scale 1: 150000

2D Trade

Line#	Year	Fold	Source
54X_A2E35	1969	6.0	DYN



R22

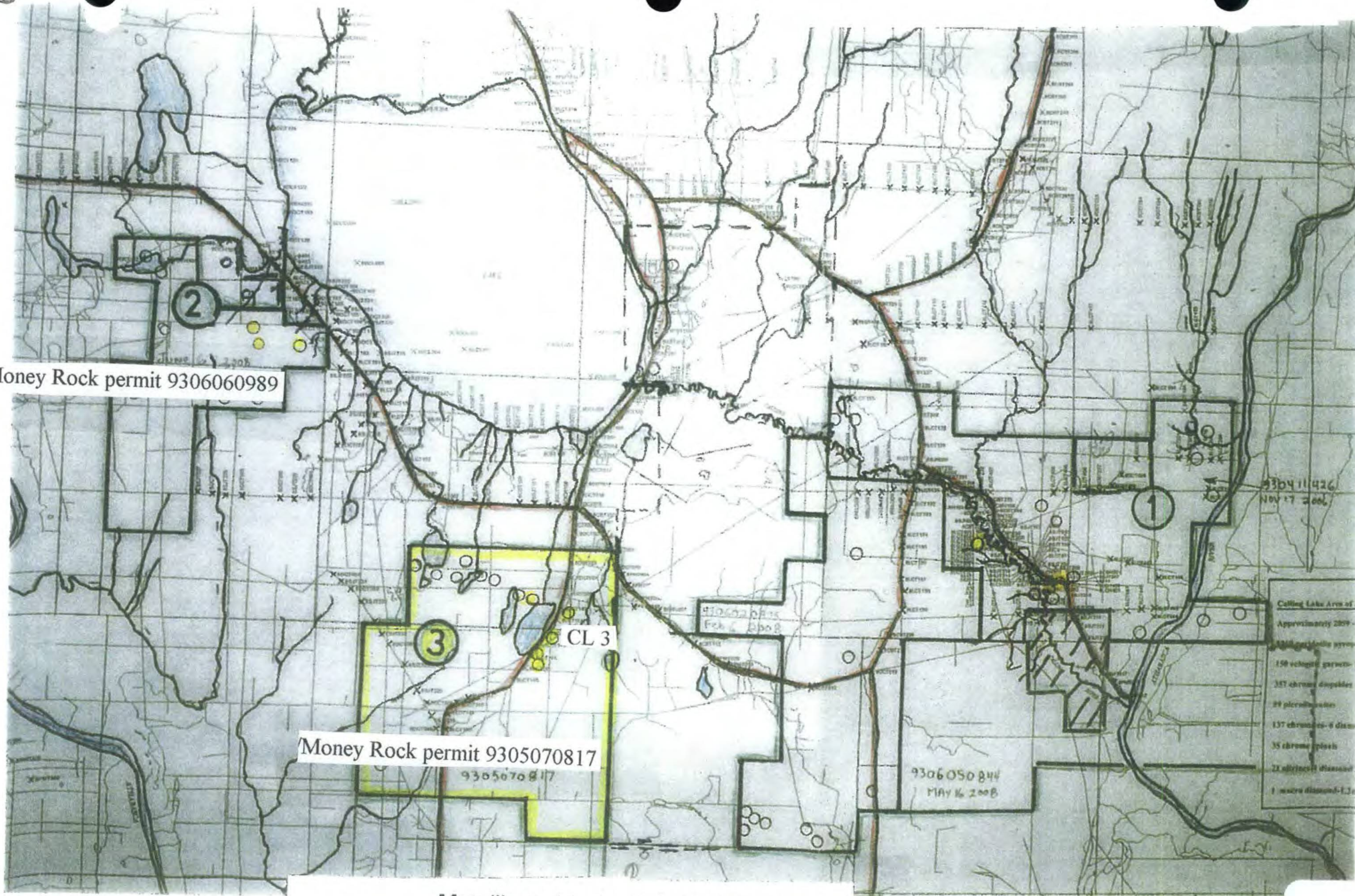
#7294

2D Trade

ear Fold Source

NOT AVAILABLE

6



3

Metallic and Industrial Minerals Permit
No. 9305070817

1:11

For comparison purposes only

1: 12

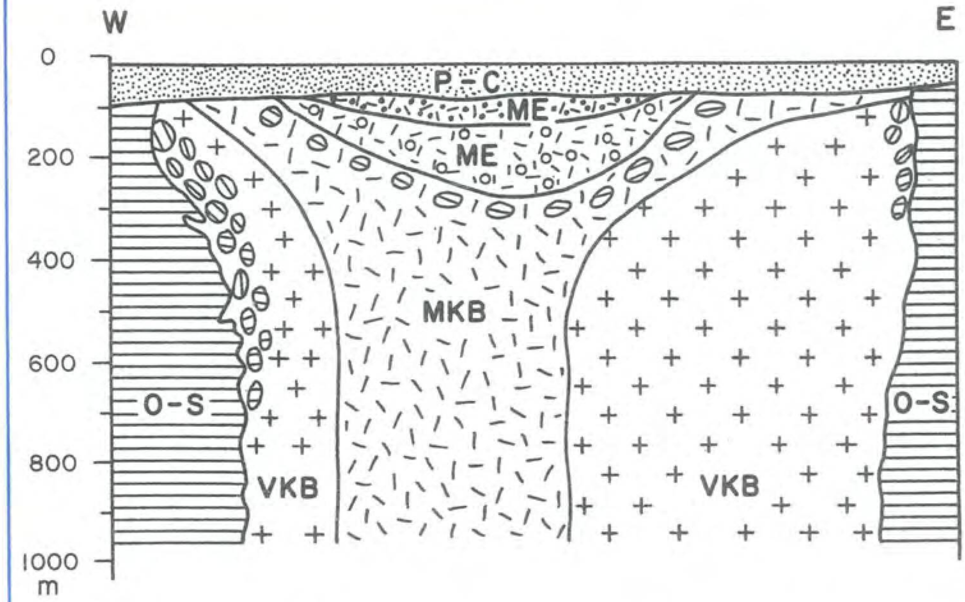
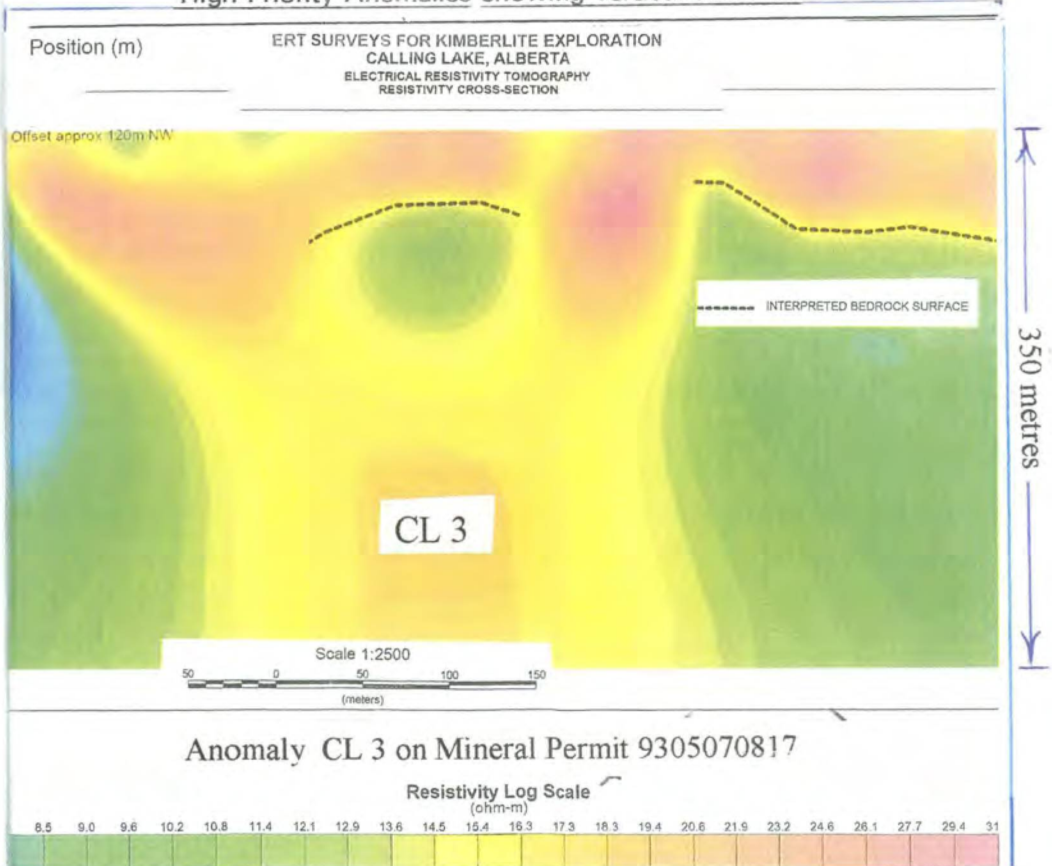


Figure 1.24. Cross section of the Yubileinaya kimberlite, Alakit field, Yakutia. The intrusion consists of an early volcaniclastic kimberlite breccia (VKB) which has been intruded by a macrocrystal hypabyssal kimberlite breccia (MKB). Note the "flaring" of the latter unit at the top of the pipe. The bowl-shaped depression above the MKB is filled with metachronous volcanogenic (epiclastic) sedimentary rocks (ME), and the whole intrusion is capped by Permo–Carboniferous (P–C) sediments (after Kharkiv 1990).

AREA 3...(South drainage into Calling Lake)...

High Priority Anomalies showing vertical structure



High Prioity Anomalies are resistive/magnetic anomalies with geophysical signatures indicating vertical structure (electrical resistivity tomography (ERT),

APPENDIX 2

How Geochemistry relates to the Diamond Potential of the Calling Lake area of Alberta

Comparison of geochemistry of diamond indicators and how they can relate to: (a) the diamond grade of source intrusive/kimberlite (GSC Bulletin 423-"Fipke/Gurney/Moore 1995" and CF Mineral's Probe classification Descriptions) And (b) garnet inclusion geochemistry form a linear array- an indication for the maximum depth of highly depleted cratonic lithosphere in certain areas; ie lac de Gras garnet inclusion form a linear array parallel to 60 kbar isobar (The origin of cratonic diamonds-constraints from mineral inclusions.-"T Stachel, J Harris 2006")

Figure 1 Diamond Friendly Mantle Roots of North America with modifications /Haimila
Figure 2 Alberta Basement Geology – Aeromagnetic Anomaly Map with modifications /Haimila
Figure 3 Calling Lake Sample Location Map / Apex Geoscience with modifications /Haimila /08
Figure 4. photo of garnet beach on west side of Calling Lake (1997)
. photo of table concentrating beach sand
. photo of diamond discovered in basal till, east Calling River
. data from Calling Lake sample 318;due diligence-Diamet, June 2000; no geochemistry
Figure 5. geochemistry and probe classification of some of the indicator minerals discovered at Calling Lake from 1993-2008, this data overlayed the Lac de Gras data for comparison.
... And shows Fig 20 modified with a 60 kbar isobar linear array (Slave Craton)
.... Also shows Calling Lake garnets form a linear array of approximately 57-58 kbar isobar

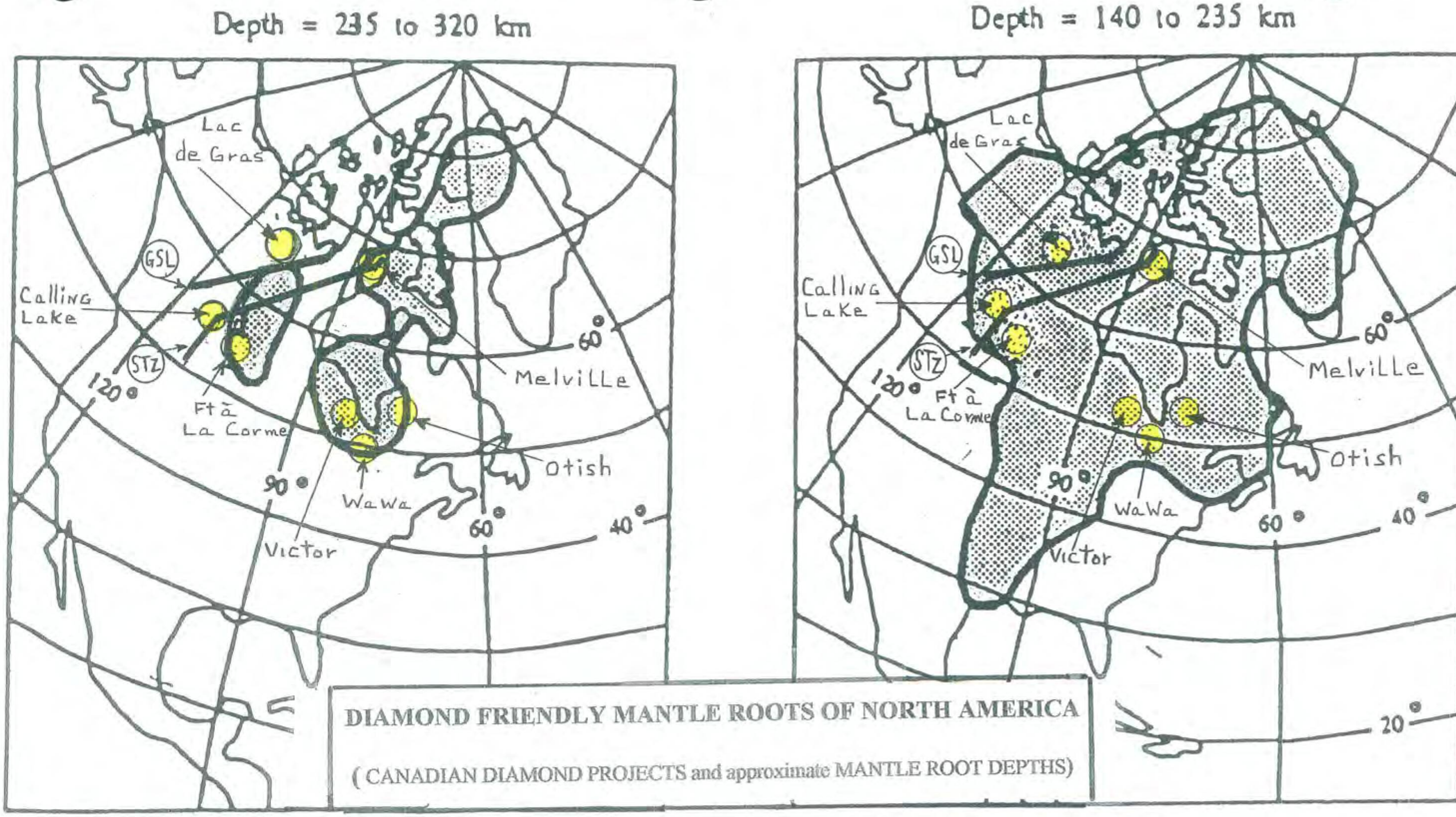
Probe Geochemistry and CF Mineral Identification – two pages: 2:6 and 2:7 (1994-2006 data)
Probe Geochemistry and CF Mineral Identification – three pages: 2:8 to 2:10 (2007 due diligence)

Probe Classification Descriptions – CF Mineral Research Ltd. –eight pages: 2:11 to2:18
.....special attention to page 2:14- high lighted page 4 of 9 of Probe Classification Descriptions
" this demonstrates that geochemisty of garnets can be related to diamond grades of source kimberlites. for example a pyrope score of 5 implies a grade of 75 carats/100 tonnes or 0.75 carats per tonne (cpt) -attributable to garnet harzburgite."

Below are quotes from Geological Survey of Canada Bulletin 423 - "Diamond Exploration Techniques Emphasing Indicator Mineral Geochemistry and Canadian Examples" (Fipke,Gurney and Moore; 1995)

Eclogitic paragenesis - diamonds are found only in association with Group 1 eclogites, and the most diagnostic chemical parameter for the recognition of diamond potential, based on empirical evidence, is the presence of trace enrichments of sodium in the garnets. This is accompanied by moderate to high levels of titanium……sodium
Content equal or greater than 0.07% Na_2O is considered to indicate equilibration at pressures high enough to be compatable with the presence of diamonds (pp31-32)
Chromite -Chromite is used in a similar manner to garnet to provide an indication of the amount of diamonds in diatremes derived from disaggregated chromite harzburgite….Chromites Associated with diamonds have a high average chrome content (>60% Cr_2O_3) together with moderate to high levels of magnesium …and very low contents of titanium..(p28).
Clinopyroxene -It is concluded that where bright green Cr-diopside (CP) is a useful visual pathfinder mineral for the location of kimberlite and/or lamproite diatremes, an abundance of elevated potassium (K_2O > 0.07%) CE or CP clinopyroxenes provides further encouragement for diamond potential. (p 65).

"In general, the target with the best sub-calcic garnets, the highest chrome chromites, the biggest population of high sodium eclogitic garnets and the most magnesium ilmenites should be accorded highest priority in an exploration program."… (page 35)



revised R. Haimila

revised R. Haimila

B

GSL = Great Slave Lake shear zone

STZ = Snowbird Tectonic Zone.

A

GSL = Great Slave Lake shear

STZ = Snowbird Tectonic Zone

DEEP MANTLE ROOTS -shear wave velocity perturbations under North America- after Grand, 1987. (reprinted from Geological Ass. of Canada- "Diamonds-Theory and Exploration" - 1995) with modifications and locations of diamond explorations- R. Haimila, 2004

Figure 1

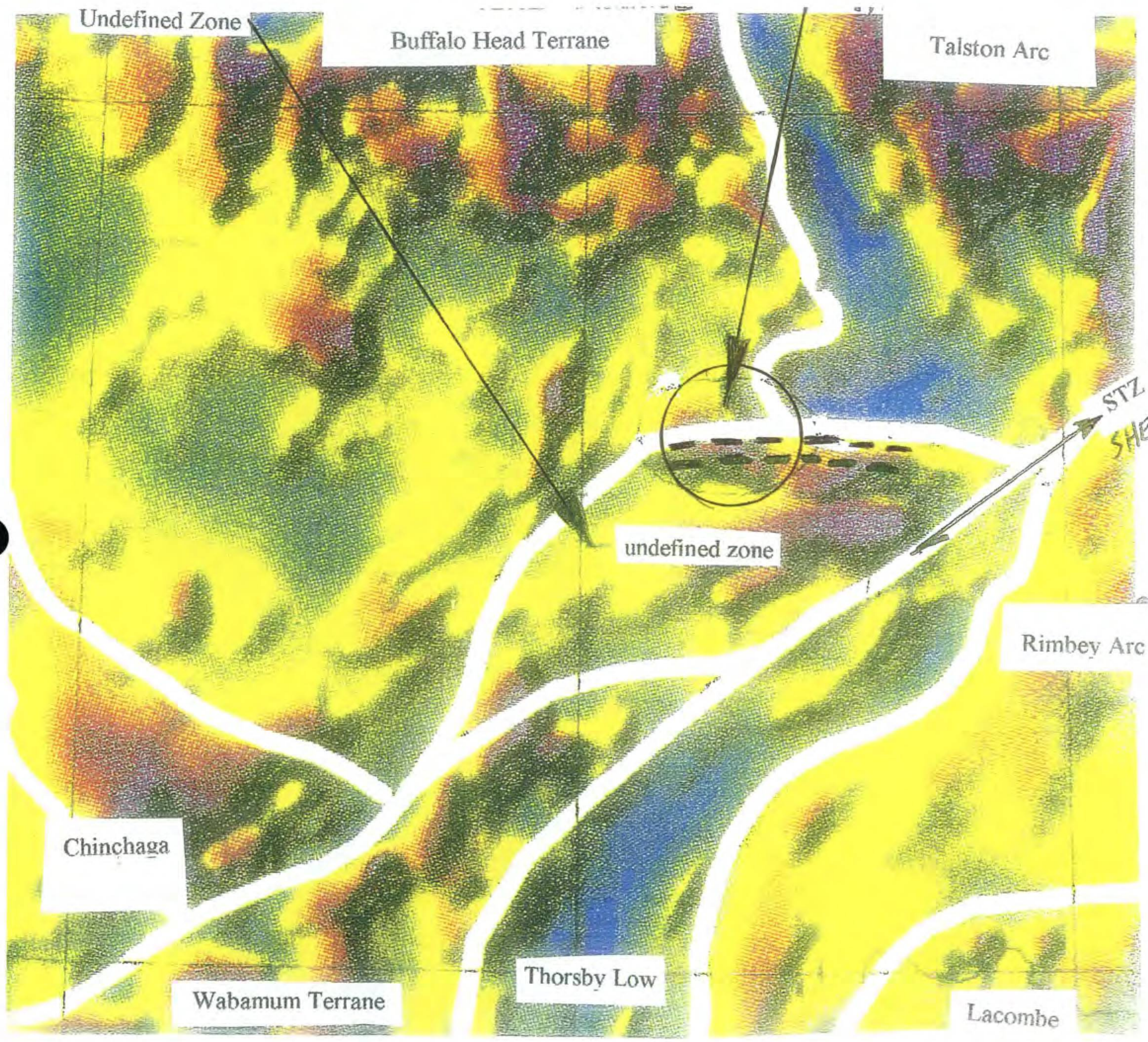
2:1

Figure 2

ALBERTA BASEMENT GEOLOGY – Alberta Aeromagnetic Anomaly Map

Reprinted from GSC Bulletin 447 (1993)

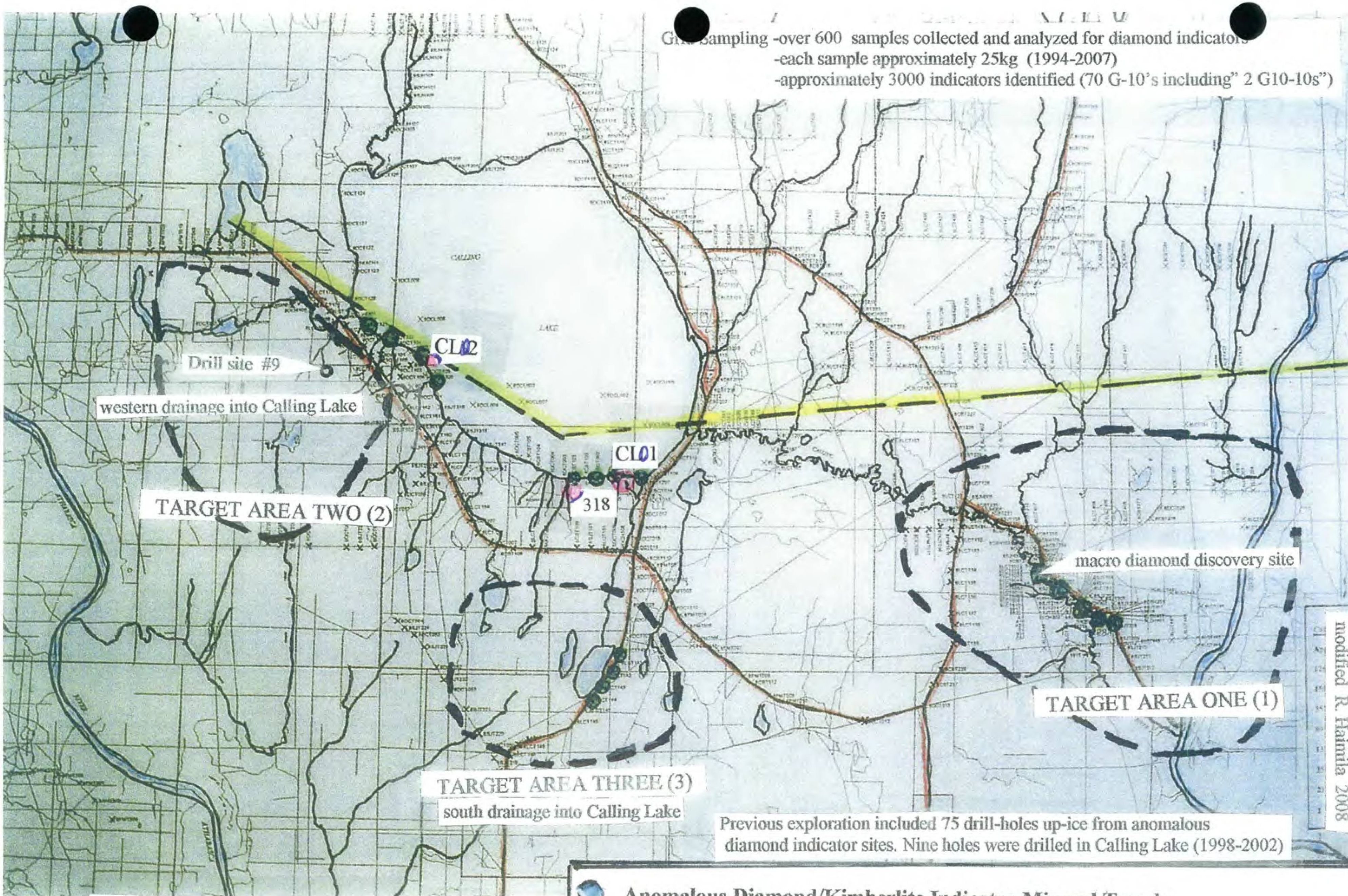
Alberta Aeromagnetic Anomaly Map modified and reprinted (R Haimila-2004)



-- this 30-45km east/west trend of high quality diamond indicators appears to be specifically related to this basement structure

Calling Lake initial mineral permits (1993)

STZ snowbird tectonic shear zone



Diamet sample site 318
and Watts, Griffis and McOuat sample sites CL01 and CL02

Anomalous Diamond/Kimberlite Indicator Mineral Trends in the Calling Lake and Calling River area of Alberta

- - - -Approximate Location of a northern cut-off to anomalous indicator sites

- - - -Location of Halmco Inc's Target Areas

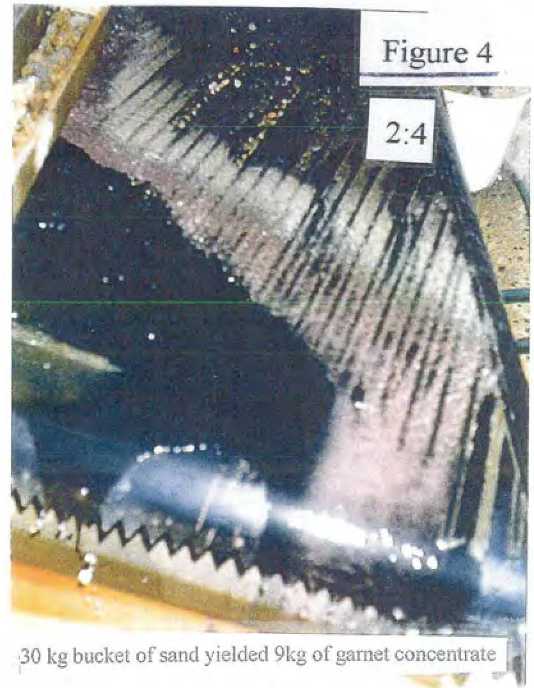
Sample location map/Apex Geoscience
modified R. Haimila 2008

Figure 3

Figure 4

2:4

Garnets concentrated on shoreline



30 kg bucket of sand yielded 9kg of garnet concentrate

Calling Lake Sample 318

SamNo	Batch	PickedDate	CheckedDate	Picking_Interval	ConcWt	PickWt	Ppl	Org	CrD	Other	Olv/Opx	Black
CL-318	00-1608	Nov 15,00	Dec 7,00	20-80 HM	42.48	42.48			2 Cpx		1	
CL-318	00-1608	Nov 15,00	Dec 7,00	20-80H-L	3521.50	3407.31	64	3	35	31(21 uvarov, 1 mouss, 5 sapph, 4 ruby)	9	132 (77 Chr, 51 Pil, 4 Chr lampr)
CL-318	00-1608	Nov 15,00	Dec 7,00	20-80H Py Crd	62.55	62.55	33	10	20	8 (3 uvarov, 3 ruby, 2 sapph)	1	
CL-318	00-1608	Nov 15,00	Dec 7,00	20-80H D	18.18	18.18			2 (1 Cpx, 1 Crd)	14 (4 ruby, 10 Sapph)	1	
CL-318	00-1608	Nov 15,00	Dec 7,00	80-200 HM	82.04	12.4						1 Cax
CL-318	00-1608	Nov 15,00	Dec 7,00	80-200H L	281.77	261.5	2		2	1 uvarov		37 (34 Chr, 3 Pil)
CL-318	00-1608	Nov 15,00	Dec 7,00	80-200H Py Crd	11.85	11.65	4	3	6	6 uvarov	1	1 Chr
CL-318	00-1608	Nov 15,00	Dec 7,00	80-200H D	5.25	5.25				3 (2 sapph, 1 ruby)		
CL-318	00-1608	Nov 15,00	Dec 7,00	200H	0.71	0.71						
CL-318	00-1608	Nov 15,00	Dec 7,00	20 L	9.16	9.16						

CALLING LAKE SAMPLE 318 (one of six samples taken for due diligence June 2000)

- 119 pyropes
- 70 chrome diopsides
- 31 uvarolite garnet
- 19 sapphires
- 12 rubies
- 13 olivine/orthopyroxene
- 117 chromite (4 lamproite)
- 54 picroilmenites

HIGH PRIORITY ANOMALY CL6 the site of the discovery

the East Calling River Diamond

DIAMOND: SIZE 1-1 2: W-1 0:T-0 1mm

Reprinted from GSC Bulletin 423 (1995) .. Fipke/Gurney/ Moore
"Diamond Exploration Techniques Emphasising Diamond Indicator Geochemistry & Canadian Examples"

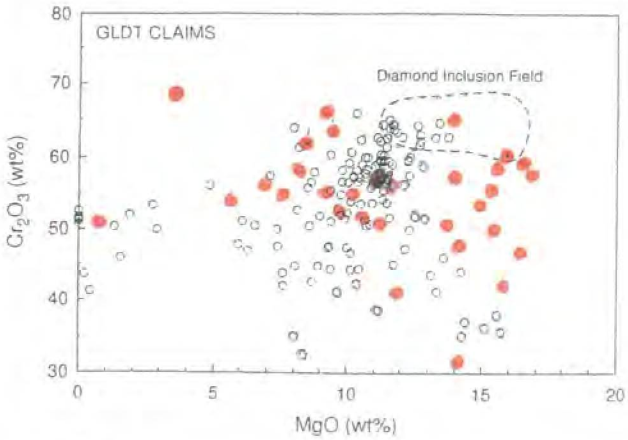


Figure 19. *Chromites composition plot. Reproduced from Minerale Dienste "GLDT" report on claims in DiaMet's property block, N.W.T., 1990. (see text)*

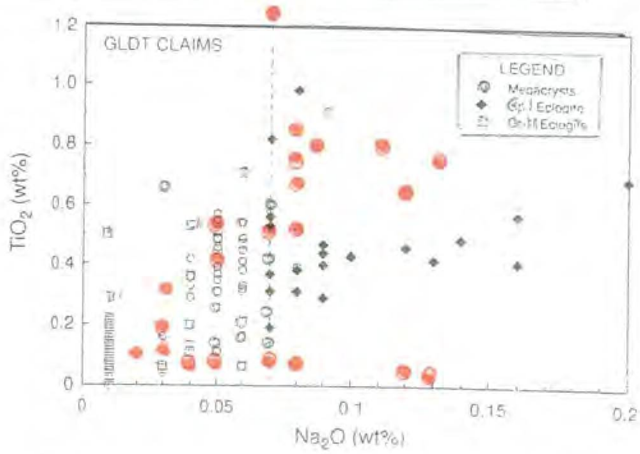


Figure 21. *Low-Cr garnet composition plot. Reproduced from Minerale Dienste "GLDT" report on claims in DiaMet's property block, N.W.T., 1990. (see text)*

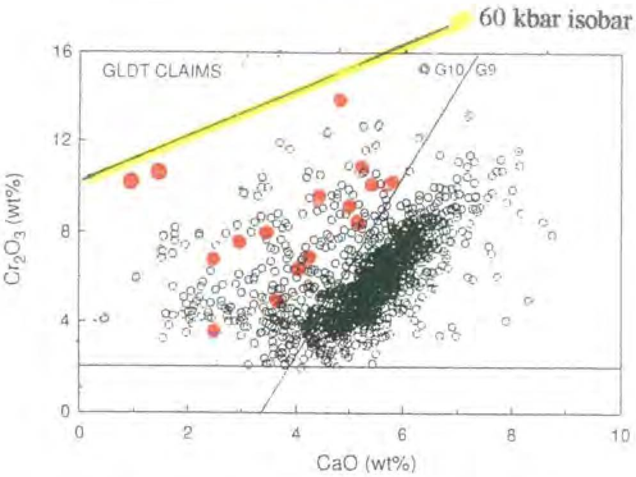


Figure 20. *Peridotitic garnet composition plot. Reproduced from Minerale Dienste "GLDT" report on claims in DiaMet's property block, N.W.T., 1990. (see text)*

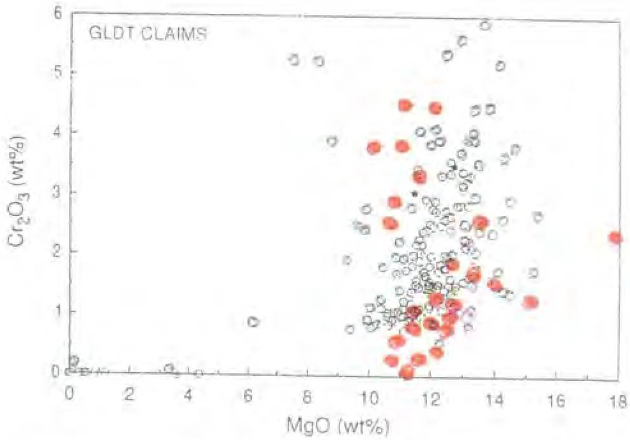


Figure 22. *Ilmenite composition plot. Reproduced from Minerale Dienste "GLDT" report on claims in DiaMet's property block, N.W.T., 1990. (see text)*

Figures 19 to 22 (page 35) Lac de Gras
.... **with modifications by** R Hamula / 2008
.....overlayed with (●) used to identify some of the Chromites / Low-Cr garnets / G10 garnets and **Ilmenites discovered in the Calling Lake area of AB.**

3 garnet diamond indicators from Calling Lake form a linear array (approx. 57-58 kbar)

For the Slave craton, three inclusions form a linear array parallel to the 60 kbar isobar –..Gritter et al (2006) considered such isobaric linear arrays (inclusions) as an indication for maximum depth of highly depleted cratonic lithosphere in certain areas (T. Stachel, J. Harris, 2006; **The origin of cratonic diamonds-constraints from mineral inclusions)**

DRG Diamond Research Group
(extremely informative web site)

Figures 19 to 22 was compiled. The data indicated a very high potential for peridotitic diamonds from chromite harzburgite and garnet harzburgite sources (Figs. 19, 20), Group I eclogite sources (Fig. 21), and ilmenite compositions (Fig. 22) consistent with high potential for diamond preservation. In concluding that report, the authors predicted the following about the overall diamond potential of the area: "The indicator mineral compositions from the GLDT claims leave no doubt that a very positive potential for the presence of both peridotitic and eclogitic diamonds exists in the area. In both parageneses large numbers of grains show exceptionally favourable compositional characteristics which are consistent with high diamond grades. The GLDT dataset represents the best for diamond potential that we have seen anywhere in the world and we have no doubt that highly diamondiferous kimberlite is the source of the heavy minerals."

Customer: HD47
Probe Batch: dec (P07)
Comment: 48 grains to classify from file Rayhaimila151207.xls

ELECTRON MICROPROBE ANALYSIS FROM C.F. MINERAL RESEARCH LTD.
Batch File: 07-3904

2-Jan-2008 2:29 pm
File: PRB3904.PRN

Sample Name	Grn	SA	Classification CFM	DI	Rock Type M C	T(Zn)°*	SiO2	TiO2	Al2O3	V2O3	Cr2O3	Fe2O3	FeO	MgO	CaO	MnO	NiO	ZnO	Nb2O5	Na2O	Max Trace Na2O	K2O	Total
Calling Lake - Chromite	2		CR07	DI	G K		.05	.11	6.37		65.22		16.19	9.19		.26							97.60
Calling Lake - Chromite	3		CR05	DI	G K		0.00	.03	5.03		63.32		20.24	9.50		.34							98.66
Calling Lake - Chromite	5		CR01	DI	K K		.07	.09	8.49		59.31		15.15	16.50		.27							
Calling Lake - Chromite	6		CR07	DI	G K		.04	.17	4.12		65.06		16.81	13.92		.48							100.94
Calling Lake - Chromite	6		CR	-	K G		.17	.04	1.61		67.61		26.14	3.52		.53							100.28
Calling Lake - Chromite	13		CR	-	G K		0.00	.05	4.66		61.16		24.52	8.48		.48							99.75
Calling Lake - Chromite	112		CR	-	K K		0.00	.11	5.47		60.39		16.54	15.95		.41							99.12
Calling Lake - Garnet Low Cr	1		EPID*				38.09	.13	25.79		.09		9.51	.04	23.78	.14				.12		0.00	
Calling Lake - Garnet Low Cr	2		EPID*			D.I	37.91	.06	25.62		.03		9.56	.02	23.68	.04				.13		.02	
Calling Lake - Garnet Low Cr	3	E	G 4	G1/HPM		Eclogitic	41.52	.76	22.20		.22		11.99	17.92	5.01	.31				.13		0.00	
Calling Lake - Garnet Low Cr	4	E	G 9	HPM/G1			42.30	1.31	22.43		.48		9.35	20.66	3.78	.32				.07		0.00	
Calling Lake - Garnet Low Cr	5	E	G 3	HPM/G1			41.20	.52	22.12		.42		13.91	16.53	5.25	.57				.08		0.00	
Calling Lake - High Cr CPX	1	CP	CPX				51.81	.68	5.97		1.86		3.75	20.03	12.08	.11				1.20		.45	
Calling Lake - High Cr CPX	2	CP	CP1				56.40	.33	1.78		.91		3.22	21.50	12.02	.08				.72		.17	
Calling Lake - High Cr CPX	3	CE	CP4	-			53.59	.61	.94		.30		5.91	15.31	22.65	.19				.47		.04	
Calling Lake - High Cr CPX	4	CP*	CP2	-			53.58	.06	2.53		.88		4.24	15.82	20.95	.11				1.30		.16	
Calling Lake - High Cr CPX	5	CP	CPX				51.99	.49	2.12		1.02		2.56	14.46	19.90	.11				7.19		.03	
Calling Lake - High Cr CPX	6	CP*	CP5	-			53.29	.26	2.78		1.02		3.19	15.74	21.85	.12				.58		1.16	
Calling Lake - Low Cr CPX	1	CE	CPX	-			54.86	.25	2.05		.49		4.04	18.48	18.44	.21				1.33		.05	
Calling Lake - Low Cr CPX	2	CE	CP4	-			53.59	.61	.94		.30		5.91	15.31	22.65	.19				.47		.04	
Calling Lake - Olivine	1						42.51	.20	.84		.06		2.68	39.41	.02	.06				0.00		0.00	85.87
Calling Lake - Olivine	2		OLV-FORS	-			41.34	.02	0.00		.04		8.08	50.63	.09	.16				0.00		0.00	100.35
Calling Lake - Olivine	3		OLV-FORS	-			40.98	0.00	.02		.06		8.57	49.57	.05	.07				.01		0.00	99.64
Calling Lake - Olivine	4		OLV-FORS	DIO			41.73	0.00	0.00		.10		7.32	49.46	.07	.10				.08		0.00	98.86
Calling Lake - Olivine	5		OLV-FORS	-			40.81	0.00	.03		.08		9.64	49.29	.12	.25				.02		0.00	100.59
Calling Lake - Olivine	6		OLV-FORS	-			40.83	0.00	.03		.06		9.58	49.13	.07	.09				0.00		.01	100.14
Calling Lake - Olivine	7		OLV	-			40.68	0.00	0.00		0.00		9.98	48.94	.02	.04				.03			100.02
Calling Lake - Olivine	8		OLV	-			40.75	0.00	.02		.08		10.02	48.62	.11	.17				.02		.02	100.16
Calling Lake - Olivine	9		OLV	-			40.67	.02	0.00		.05		10.57	48.13	.11	.16				.01		.01	100.27
Calling Lake - Olivine	10		OLV	-			39.67	0.00	.04		.05		14.97	44.56	.11	.28				.02		.02	100.27
Calling Lake - Olivine	11		OLV	-			39.79	0.00	.03		.07		16.00	43.57	.17	.21				0.00		.02	100.08
Calling Lake - Pyropes High Cr	1						41.00	.26			9.97		6.95	19.30	5.54	.37				16.88			100.27
Calling Lake - Pyropes High Cr	1	P	G10-5*				41.66	.16	15.48		9.46		6.83	20.90	4.44	.34				0.00		0.00	99.28
Calling Lake - Pyropes High Cr	7	P	G10-6				41.80	0.00	18.35		7.06		6.33	21.90	2.53	.24				.33		.29	98.82

2:6

Customer: H047
Probe Batch: dec (P07)
Comment: 48 grains to classify from file Rayhaimila151207.xls

ELECTRON MICROPROBE ANALYSIS FROM C.F. MINERAL RESEARCH LTD.
Batch File: 07-3904

2-Jan-2008 2:29 pm
File: PRB3904.PRN

Sample Name	Grn	SA	Classification CFM	DI	Rock Type M	C	T(Zn)°*	SiO2	TiO2	Al2O3	V2O3	Cr2O3	Fe2O3	FeO	MgO	CaO	MnO	NiO	ZnO	Nb2O5	Na2O	Max Trace Na2O	K2O	Total
Calling Lake - Pyropes High Cr	15	P	G11					40.59	.13	14.53		10.88		7.49	17.29	7.71	.42				.08		0.00	99.12
Calling Lake - Pyropes High Cr	20	P	GT					40.77	1.20	11.63		11.54		7.95	18.63	6.42	.30				.11		.01	98.56
Calling Lake - Pyropes High Cr	33	P	G10-10*					42.07	.02	15.35		10.39		6.43	23.36	.97	.32				.02		0.00	98.93
Calling Lake - Pyropes High Cr	75	P	G10-2					41.51	.53	15.12		10.01		6.87	19.55	5.94	.29				.04		0.00	99.85
Calling Lake - Pyropes High Cr	95	P	G11-1					40.77	.72	14.90		10.68		6.52	19.17	6.60	.23				.08		0.00	99.67
Calling Lake - Pyropes High Cr	114	P	G10-5*					41.91	.13	15.20		10.30		6.46	20.62	4.88	.26				.05		0.00	99.82
Calling Lake - Pyropes High Cr	150	P	G10-3*					41.68	.34	15.09		10.73		6.51	20.50	5.21	.33				.01		0.00	100.39
Calling Lake - Pyropes High Cr	194	P	G10-6					42.47	.30	17.87		7.89		5.90	22.15	3.11	.32				.03		.12	99.87
Calling Lake - Pyropes High Cr	198	P	G10-4					41.87	.27	16.17		8.87		6.53	21.00	4.23	.29				.04		0.00	99.25
Calling Lake - Pyropes High Cr	236	P	G11-1					40.90	.60	14.05		10.83		6.60	18.82	6.71	.32				.06		0.00	98.88
Calling Lake - Pyropes High Cr	297	P	G10-3*					41.62	.14	15.16		10.50		6.67	19.81	5.30	.32				0.00		0.00	99.52
Calling Lake - Pyropes High Cr	328	P	G10-7*					40.32	.23	12.02		14.08		6.51	19.80	4.87	.35				.05		0.00	98.24
Calling Lake - Pyropes High Cr	411	P	G11-1					40.49	.42	13.98		10.99		7.09	17.82	7.00	.39				.02		0.00	98.20
Calling Lake - Pyropes High Cr	422	P	G10-2					41.13	.46	16.10		8.76		6.56	20.46	5.23	.30				0.00		0.00	99.00

classification Descriptions) And (b) garnet inclusion geochemistry form a linear array- an indication for the maximum depth of highly depleted cratonic lithosphere in certain areas; ie lac de Gras garnet inclusion form a linear array parallel to 60 kbar isobar (The origin of cratonic diamonds-constraints from mineral inclusions.-"T Stachel, J Harris 2006")

two G10 -10*s and one G10 -7* (underlined) from Calling Lake indicator geochemistry form a linear array parallel to the 60kbar isobar for the Slave Craton Calling Lake linear array approximates 57-58 kbar isobar

..a very important point - The Calling Lake G10-10*s have a greater calcium depletion than published data for the three inclusions that form the linear array for the Lac de Gras/Slave Craton. (T Stachel, J Harris, 2006; "The Origin of Cratonic Diamonds-Constraints from Mineral Inclusions" -Fig. 29 page 79.)

Calling Lake G10-10*s , calcium are 0.97 Ca and 1.17 Ca respectfully; where as the lowest calcium depleted garnet from published data re: Slave Craton - Calcium is 1.4 Ca

2:7

Customer: IA53

Probe Batch:

Comment: 116 grains data to classify

ELECTRON MICROPROBE ANALYSIS FROM C.F. MINERAL RESEARCH LTD.
Batch File: 08-4168

22-Sep-2008 8:07 am
File: prb4168.prn

Watts, Griffis and McOuat sample CL02

Calling Lake - Pyropes

Sample Name	Comment	Mount	Cel	Grn	SA (=== Classifications =======)	CFM	DI	SiO2	TiO2	Al2O3	V2O3	Cr2O3	Fe2O3	FeO	MgO	CaO	MnO	NiO	ZnO	Nb2O5	Na2O	Max Trace Na2O	K2O	Total
	SUBGROUP 2	PYR 10			P	G 9		41.51	.28	18.56		3.42		8.11	21.94	5.61	.41				.05			99.88
	SUBGROUP 2	PYR 13			P	G 9		41.92	.89	19.28		3.43		8.13	20.30	5.87	.33				.06			100.22
	SUBGROUP 2	PYR 15			P	G 9		41.36	.55	17.85		4.23		8.28	21.02	6.29	.19				.08			99.85
	SUBGROUP 2	PYR 16			P	G 9		41.76	.19	20.91		2.60		7.72	21.47	5.08	.34				.01			100.10
	SUBGROUP 2	PYR 22			P	G 9		42.01	.17	20.62		2.60		8.16	21.23	5.21	.37				.05			100.42
	SUBGROUP 2	PYR 24			P	G 9		41.45	.69	17.95		4.33		7.90	21.39	5.95	.29				.05			99.99
	SUBGROUP 2	PYR 25			P	G 9		41.62	.09	18.12		4.21		8.31	21.04	6.23	.41				.07			100.09
	SUBGROUP 2	PYR 29			P	G 9		41.92	.25	19.83		3.29		7.50	21.48	5.89	.23				.02			100.41
	SUBGROUP 2	PYR 31			P	G 9		41.53	0.00	18.65		4.19		7.52	21.29	6.73	.33				.02			100.25
	SUBGROUP 2	PYR 32			P	G 9		41.63	.33	18.83		4.16		8.08	20.68	5.98	.48				.05			100.22
	SUBGROUP 2	PYR 33			P	G 9		41.45	.27	18.55		4.18		8.00	21.08	5.91	.26				.04			99.73
	SUBGROUP 2	PYR 38			P	G 9		41.61	.58	18.39		3.21		8.05	21.70	6.15	.32				.04			100.05
	SUBGROUP 2	PYR 53			P	G 9		41.12	.91	21.44		2.03		9.03	20.24	4.82	.22				.01			99.82
	SUBGROUP 2	PYR 7			P	G 9		41.88	.76	17.78		4.09		8.12	21.53	5.67	.24				.08			100.16
	SUBGROUP 2	PYR 9			P	G 9		41.72	.60	18.74		3.08		8.30	21.77	5.66	.33				.09			100.28
	SUBGROUP 2	PYR 46			P	G 9-1		41.04	0.00	22.26		3.83		8.19	19.65	5.19	.40				0.00			100.55
	SUBGROUP 2	PYR 47			P	G 9-1		40.94	.22	21.67		4.11		8.23	19.91	4.98	.31				.07			100.42
	SUBGROUP 2	PYR 48			P	G 9-1		41.28	.08	21.37		4.35		7.79	19.47	5.14	.25				.06			99.79
	SUBGROUP 2	PYR 49			P	G 9-1		41.46	.11	21.63		4.15		7.45	20.03	5.25	.35				.03			100.46
	SUBGROUP 2	PYR 6			P	G 9-1		41.82	.40	18.57		3.67		8.39	21.45	5.17	.30				.06			99.84
	SUBGROUP 2	PYR 45			P	G10-10*		41.21	.16	16.72		10.80		7.06	22.76	1.17	.23				0.00			100.10
	SUBGROUP 2	PYR 41			P	G10-2		41.15	.69	19.80		6.39		7.24	20.29	4.72	.24				.07			100.59
	SUBGROUP 2	PYR 44			P	G10-2		40.30	0.00	20.53		6.74		6.99	21.15	4.46	.28				.04			100.49
	SUBGROUP 2	PYR 26			P	G11		41.74	.53	17.42		5.39		7.03	21.18	6.61	.22				.05			100.18
	SUBGROUP 2	PYR 27			P	G11		41.25	.25	17.54		6.40		8.05	19.40	7.32	.31				.06			100.56
	SUBGROUP 2	PYR 28			P	G11		41.21	.44	17.56		5.57		6.81	21.61	6.31	.16				.07			99.74
	SUBGROUP 2	PYR 3			P	G11		41.24	.35	18.06		5.54		8.49	19.72	5.91	.52				.04			99.88
	SUBGROUP 2	PYR 34			P	G11		41.27	0.00	17.59		6.10		7.82	20.55	6.74	.47				.02			100.56
	SUBGROUP 2	PYR 35			P	G11		41.01	.02	18.06		5.80		7.98	20.33	6.90	.45				.01			100.56
	SUBGROUP 2	PYR 36			P	G11		40.56	.23	14.80		9.16		7.47	20.43	7.50	.39				0.00			100.55
	SUBGROUP 2	PYR 37			P	G11		40.72	.03	14.62		8.88		7.98	19.66	8.00	.41				0.00			100.30
	SUBGROUP 2	PYR 40			P	G11		41.37	0.00	19.20		6.00		7.56	19.52	6.00	.41				.02			100.07
	SUBGROUP 2	PYR 43			P	G11		41.30	.82	19.43		5.19		7.55	20.22	5.81	.16				.07			100.54
	SUBGROUP 2	PYR 5			P	G11		41.57	.88	16.21		7.07		7.42	20.15	6.67	.28				.10			100.35
	SUBGROUP 2	PYR 1			P	G11-1		42.03	.16	19.48		4.63		7.59	20.83	4.94	.39				.04			100.09
	SUBGROUP 2	PYR 2			P	G11-1		41.36	.05	17.48		7.52		8.02	19.21	6.19	.42				.02			100.27
	SUBGROUP 2	PYR 39			P	G11-1		41.31	.35	16.09		10.30		6.44	18.35	7.17	.32				.01			100.32
	SUBGROUP 2	PYR 4			P	G11-1		41.91	.16	18.36		5.47		8.13	20.01	5.39	.28				.06			99.77
	SUBGROUP 2	PYR 42			P	G11-1		41.28	.65	19.39		5.48		7.49	20.10	5.74	.22				.03			100.38

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Customer: IA53
Probe Batch:
Comment: 116 grains data to classify

ELECTRON MICROPROBE ANALYSIS FROM C.F. MINERAL RESEARCH LTD.
Batch File: 08-4168

22-Sep-2008 8:07 am
File: prb4168.prn

Calling Lake - Pyropes

Watts, Griffis and McOuat sample CL01

Sample Name	Comment	Mount	Cel	Grn	SA	CFM	DI	SiO2	TiO2	Al2O3	V2O3	Cr2O3	Fe2O3	FeO	MgO	CaO	MnO	NiO	ZnO	Nb2O5	Na2O	Max Trace Na2O	K2O	Total
	SUBGROUP 2	PYR 18			P	G11-1		41.43	.22	18.03		6.54		6.90	21.15	5.16	.30				.05			99.78
	SUBGROUP 2	PYR 19			P	G11-1		40.95	.23	17.34		8.62		7.48	19.26	6.12	.39				.05			100.45
	SUBGROUP 2	PYR 2			P	G11-1		42.00	.63	18.96		4.80		6.76	21.96	5.03	.23				.07			100.44
	SUBGROUP 2	PYR 21			P	G11-1		41.69	.52	18.19		6.12		7.14	21.16	5.52	.19				.04			100.55
	SUBGROUP 2	PYR 22			P	G11-1		41.28	.08	18.54		6.54		7.19	20.38	5.90	.47				.04			100.41
	SUBGROUP 2	PYR 23			P	G11-1		41.21	.24	19.24		5.41		7.00	21.66	5.40	.18				.01			100.36
	SUBGROUP 2	PYR 27			P	G11-1		41.22	.06	19.83		5.80		7.05	21.52	4.79	.24				.01			100.51
	SUBGROUP 2	PYR 29			P	G11-1		40.93	.23	16.92		8.74		8.02	19.42	5.73	.44				.07			100.50
	SUBGROUP 2	PYR 3			P	G11-1		42.07	.64	18.39		5.35		7.43	20.28	5.44	.28				.01			99.89
	SUBGROUP 2	PYR 31			P	G11-1		41.39	.04	19.60		5.16		8.04	21.16	4.73	.39				.03			100.54
	SUBGROUP 2	PYR 32			P	G11-1		41.66	.02	20.26		4.72		8.40	19.76	5.33	.40				.02			100.57
	SUBGROUP 2	PYR 33			P	G11-1		41.77	.65	16.88		6.89		7.29	20.92	5.78	.28				.07			100.54
	SUBGROUP 2	PYR 36			P	G11-1		42.01	.07	19.95		4.61		8.24	19.81	5.40	.47				.02			100.57
	SUBGROUP 2	PYR 39			P	G11-1		41.31	.27	17.43		7.33		7.73	19.98	5.87	.33				.03			100.28
	SUBGROUP 2	PYR 4			P	G11-1		41.22	.13	18.78		5.91		7.49	20.46	5.74	.37				.01			100.10
	SUBGROUP 2	PYR 42			P	G11-1		41.21	.23	18.75		5.32		7.77	20.89	5.15	.39				.04			99.75
	SUBGROUP 2	PYR 46			P	G11-1		41.79	.19	18.40		6.11		7.22	20.05	5.74	.35				.03			99.88
	SUBGROUP 2	PYR 50			P	G11-1		41.02	.05	18.29		5.98		8.00	20.14	5.93	.53				.04			99.96
	SUBGROUP 2	PYR 1			P	GT		42.14	.28	20.21		4.47		7.69	20.78	4.49	.45				.07			100.58

Watts, Griffis and McOuat sample CL02

Sample Name	Comment	Mount	Cel	Grn	SA	CFM	DI	SiO2	TiO2	Al2O3	V2O3	Cr2O3	Fe2O3	FeO	MgO	CaO	MnO	NiO	ZnO	Nb2O5	Na2O	Max Trace Na2O	K2O	Total
	SUBGROUP 2	ECL 1			E	G 3	HPM	42.14	.86	21.65		1.51		9.58	19.53	4.76	.28				.08			100.37
	SUBGROUP 2	ECL 2			E	G 3	HPM	41.72	.74	21.91		1.73		9.21	19.27	5.60	.22				.05			100.46
	SUBGROUP 2	ECL 4			E	G 3	HPM	41.89	.77	21.44		.74		10.67	19.50	4.50	.17				.08			99.76
	SUBGROUP 2	PYR 14			E	G 3	HPM	41.43	.55	20.55		1.49		9.04	21.33	5.62	.25				.05			100.30
	SUBGROUP 2	PYR 50			E	G 3	HPM	41.43	.50	22.95		1.68		8.62	20.35	4.76	.23				.07			100.59
	SUBGROUP 2	ECL 3			E	G 3	HPM/G1	41.87	.80	21.88		2.00		9.21	19.21	5.20	.32				.10			100.58
	SUBGROUP 2	PYR 17			E	G 3	HPM/G1	41.83	.80	19.59		1.49		11.10	19.20	5.89	.34				.08			100.33
	SUBGROUP 2	ECL 5			E	G 9	HPM	41.70	.99	21.34		1.72		10.23	19.29	5.01	.24				.04			100.56
	SUBGROUP 2	PYR 20			E	G 9	HPM	41.65	.29	20.47		1.36		8.46	21.80	5.36	.32				.04			99.75
	SUBGROUP 2	PYR 23			E	G 9	HPM	41.57	.38	20.06		1.79		8.32	22.13	5.12	.31				.08			99.75
	SUBGROUP 2	PYR 11			P	G 3		41.69	.23	20.09		2.96		9.24	20.21	4.89	.40				.02			99.72
	SUBGROUP 2	PYR 12			P	G 3		41.99	.52	19.27		2.94		8.81	20.16	5.81	.32				.09			99.91
	SUBGROUP 2	PYR 18			P	G 3		41.14	.64	19.86		2.33		9.62	21.12	5.40	.37				.06			100.54
	SUBGROUP 2	PYR 19			P	G 3		41.17	.15	20.01		3.01		8.81	20.88	5.24	.52				.02			99.82
	SUBGROUP 2	PYR 21			P	G 3		41.40	.15	20.41		2.75		8.69	20.83	5.15	.47				.07			99.92
	SUBGROUP 2	PYR 30			P	G 3		41.56	.15	20.44		3.49		9.05	20.27	5.17	.37				.05			100.53
	SUBGROUP 2	PYR 51			P	G 3		41.46	.69	20.16		3.23		9.04	20.08	5.29	.26				.06			100.26
	SUBGROUP 2	PYR 52			P	G 3		41.54	.72	21.13		2.57		9.06	19.90	5.09	.27				.08			100.35
	SUBGROUP 2	PYR 8			P	G 3		41.65	.47	18.77		3.75		10.27	19.48	5.72	.36				.04			100.49

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Customer: IA53
Probe Batch: from 2 Samples (dua Milligan 2007)
Comment: 116 grains data to classify

ELECTRON MICROPROBE ANALYSIS FROM C.F. MINERAL RESEARCH LTD.
Batch File: 08-4168

22-Sep-2008 8:07 am
File: prb4168.prn

Calling Lake - Pyropes

Watts, Griffis and McOuat sample CL01

Sample Name	Comment	Mount	Cel	Grn	SA	CFM	DI	SiO2	TiO2	Al2O3	V2O3	Cr2O3	Fe2O3	FeO	MgO	CaO	MnO	NiO	ZnO	Nb2O5	Na2O	Max Trace Na2O	K2O	Total
	SUBGROUP 2	ECL 4			E	G 3	HPM	42.25	.62	20.28		1.60		8.52	21.88	4.50	.27				.12			100.02
	SUBGROUP 2	ECL 2			P	G 3		42.27	.69	19.45		2.16		10.00	20.39	5.14	.28				.09			100.46
	SUBGROUP 2	ECL 3			P	G 3		42.51	.45	19.20		2.22		9.43	21.27	4.94	.29				.02			100.33
	SUBGROUP 2	PYR 28			P	G 3		41.67	.10	20.42		3.58		9.08	19.85	5.27	.55				.02			100.54
	SUBGROUP 2	PYR 45			P	G 3		41.90	.31	20.53		2.91		9.02	20.95	4.64	.16				.09			100.49
	SUBGROUP 2	PYR 8			P	G 3		40.94	.23	20.19		3.81		8.69	20.96	5.21	.50				0.00			100.53
	SUBGROUP 2	ECL 1			P	G 9		42.17	1.17	18.84		2.52		8.51	21.04	5.04	.29				.15			99.73
	SUBGROUP 2	PYR 35			P	G 9		41.06	.03	19.75		4.39		8.30	20.03	6.03	.56				.02			100.16
	SUBGROUP 2	PYR 37			P	G 9		41.94	.70	19.51		3.38		7.38	21.55	5.39	.18				.06			100.08
	SUBGROUP 2	PYR 40			P	G 9		41.58	.74	19.49		2.61		7.56	22.05	5.38	.24				.06			99.70
	SUBGROUP 2	PYR 51			P	G 9		41.48	.06	19.76		4.19		8.04	21.09	5.54	.37				.02			100.55
	SUBGROUP 2	PYR 52			P	G 9		41.38	.60	19.08		3.97		7.21	21.88	5.42	.34				.08			99.95
	SUBGROUP 2	PYR 12			P	G 9-1		41.25	.17	21.08		3.50		7.82	20.84	5.10	.44				.05			100.25
	SUBGROUP 2	PYR 13			P	G 9-1		41.69	.36	20.20		4.30		8.37	20.63	4.38	.40				.02			100.35
	SUBGROUP 2	PYR 20			P	G 9-1		41.21	.13	20.18		4.37		8.48	20.17	5.34	.37				0.00			100.24
	SUBGROUP 2	PYR 25			P	G 9-1		41.08	.16	20.14		4.35		8.47	20.67	5.14	.44				.02			100.45
	SUBGROUP 2	PYR 30			P	G 9-1		41.71	.10	21.54		3.12		8.35	20.80	4.57	.29				.05			100.52
	SUBGROUP 2	PYR 38			P	G 9-1		42.00	.09	21.36		2.38		7.69	21.85	4.31	.35				.05			100.06
	SUBGROUP 2	PYR 44			P	G 9-1		41.48	.38	19.83		3.32		7.42	22.24	4.90	.25				.04			99.86
	SUBGROUP 2	PYR 49			P	G 9-1		41.81	.12	19.70		4.08		7.93	21.50	4.89	.46				.06			100.54
	SUBGROUP 2	PYR 5			P	G 9-1		42.09	.22	20.17		3.68		6.50	22.26	5.11	.30				.02			100.35
	SUBGROUP 2	PYR 53			P	G 9-1		41.55	.38	19.55		4.40		8.20	20.80	5.26	.42				.03			100.57
	SUBGROUP 2	PYR 54			P	G 9-1		41.41	0.00	20.93		3.57		8.42	21.08	4.72	.36				0.00			100.48
	SUBGROUP 2	PYR 6			P	G 9-1		41.29	.24	20.07		3.90		8.38	20.40	5.14	.36				.02			99.79
	SUBGROUP 2	PYR 7			P	G 9-1		41.92	.20	21.00		3.50		7.71	21.14	4.71	.34				.03			100.56
	SUBGROUP 2	PYR 9			P	G 9-1		41.63	.10	20.17		4.24		7.55	21.21	5.13	.31				.04			100.38
	SUBGROUP 2	PYR 14			P	G10-2		41.17	.10	16.93		8.17		6.60	21.35	5.21	.23				.02			99.77
	SUBGROUP 2	PYR 24			P	G10-4		41.05	.01	18.10		8.12		6.43	23.00	3.58	.26				.02			100.57
	SUBGROUP 2	PYR 26			P	G11		41.03	.13	19.90		4.99		7.87	19.69	5.81	.53				.01			99.95
	SUBGROUP 2	PYR 34			P	G11		41.81	.04	17.31		6.75		8.95	18.49	6.46	.43				0.00			100.23
	SUBGROUP 2	PYR 41			P	G11		41.16	.70	16.14		7.71		7.03	20.47	6.58	.32				.04			100.14
	SUBGROUP 2	PYR 43			P	G11		41.45	.94	18.02		4.95		7.60	21.01	5.77	.25				.07			100.05
	SUBGROUP 2	PYR 47			P	G11		41.52	.01	18.17		6.95		7.80	18.48	6.78	.38				.01			100.10
	SUBGROUP 2	PYR 48			P	G11		41.92	.09	18.24		7.06		7.31	18.97	6.50	.45				.02			100.55
	SUBGROUP 2	PYR 10			P	G11-1		41.28	.53	19.91		4.95		6.91	21.25	5.35	.31				.07			100.56
	SUBGROUP 2	PYR 11			P	G11-1		41.33	.15	20.49		4.87		7.50	20.43	5.31	.40				.03			100.50
	SUBGROUP 2	PYR 15			P	G11-1		41.50	.14	17.43		7.50		8.11	19.20	6.16	.51				.02			100.57
	SUBGROUP 2	PYR 16			P	G11-1		41.43	.26	16.86		8.23		7.75	19.31	6.25	.48				.04			100.59
	SUBGROUP 2	PYR 17			P	G11-1		41.53	.03	19.43		4.49		8.58	20.35	5.14	.42				.02			99.98

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PROBE CLASSIFICATION DESCRIPTIONS

CFM-CONFIDENTIAL

	MINERAL	DESCRIPTION
1	ACTN	Actinolite
2	ACTN*	Actinolite with composition characteristic of skarn or massive sulfide deposits
3	AEG-AUGT	Aegirine-Augite
4	AEGR	Aegirine
5	AKER	Akermanite
6	AL-Si	Aluminum-Silicate
7	ALBT	Albite
8	ALM	Almandine
9	ALM-Mn	Almandine with high manganese
10	ALM-Mn-Di	Almandine with high manganese with diamond inclusion composition
11	ALM-Mn*	Almandine (high manganese) with composition characteristic of skarn or massive sulfide deposits
12	AMPH	Amphibole
13	AMPH-Al	Aluminum-Amphibole
14	ANAL	Analcime
15	ANDR	Andradite
16	ANDR-Mn	Andradite with high manganese
17	ANDR-Ti-Mn	Andradite with high titanium and manganese
18	ANKR	Ankerite
19	APAT	Apatite
20	APAT*	Apatite with composition characteristic of skarn or massive sulfide deposits
21	APAT-WILK	Apatite, Wilkeite Series
22	APOP	Apophyllite
23	ARFV	Arfvedsonite
24	ARFV-K	Potassium Arfvedsonite
25	ARMA	Armalcolite
26	ASTR	Astrophyllite Series
27	AUGT	Augite
28	AUGT-Ti	Augite with high titanium
29	BADL	Baddeleyite
30	BARK	Barkevikite
31	BART	Barite
32	BART-Si	Silica-Barite
33	BART-Sr	Strontium Barite

	MINERAL	DESCRIPTION
		CFM-CONFIDENTIAL
34	BARY	Barytocalcite
35	BIOT	Biotite
36	BIOT-Ti	Biotite with high titanium
37	BIOT*	Biotite with composition characteristic of skarn or massive sulfide deposits
38	BUST	Bustamite
39	CALC	Calcite
40	CANC	Cancrinite
41	CD	Chrome Diopside
42	CDRT	Cordierite
43	CE	Eclogitic Clinopyroxene
44	CE*	High pressure Clinopyroxene of eclogitic paragenesis
45	CELS	Celestite
46	CHLORT	Chlorite
47	CHLRTD	Chloritoid
48	CORO	Coronadite
49	CORU	Corundum
50	CP	Peridotitic Clinopyroxene
51	CP*	High pressure Clinopyroxene of peridotitic paragenesis
52	CP1	Clinopyroxene -Dawson's (modified by CFM) group 1
53	CP2	Clinopyroxene -Dawson's (modified by CFM) group 2
54	CP3	Clinopyroxene -Dawson's (modified by CFM) group 3
55	CP4	Clinopyroxene -Dawson's (modified by CFM) group 4
56	CP5	Clinopyroxene -Dawson's (modified by CFM) group 5
57	CP6	Clinopyroxene -Dawson's (modified by CFM) group 6
58	CP7	Clinopyroxene -Dawson's (modified by CFM) group 7
59	CP8	Clinopyroxene -Dawson's (modified by CFM) group 8
60	CP9	Clinopyroxene -Dawson's (modified by CFM) group 9
61	CP10	Clinopyroxene -Dawson's (modified by CFM) group 10
62	CPX	Clinopyroxene
63	CP DI	Clinopyroxene with diamond inclusion composition
64	CP DI$	Clinopyroxene with diamond inclusion composition which forms with large diamond
65	CP DIO	Clinopyroxene with diamond inclusion composition that overlaps with compositions of Clinopyroxenes that classify from non diamond inclusion sources
66	CP DI$O	Clinopyroxene with diamond inclusion composition which forms with large diamond that overlaps with compositions of Clinopyroxenes that classify from non diamond inclusion sources

	MINERAL	DESCRIPTION
67	CP DI*	Favorable high pressure Clinopyroxene with diamond inclusion composition
68	CP DI$*	Favorable high pressure Clinopyroxene with diamond inclusion composition which forms with large diamond
69	CP DIO*	High pressure Clinopyroxene with diamond inclusion composition that overlaps with compositions of Clinopyroxenes that classify from non diamond inclusion sources
70	CP DI$O*	High pressure Clinopyroxene with diamond inclusion composition which form with large diamond that overlaps with compositions of Clinopyroxenes that classify from non diamond inclusion sources
71	CR	Chromite
72	CR-Ca	Chromite with high calcium
73	CR-Si	Chromite with high silicon
74	CR DI	Chromite with major element diamond inclusion composition
75	CR DI*	Diamond inclusion Chromite from favorable harzburgite source
76	CR Ti	Chromite with high titanium (magmatic)
77	CR M/C	Mars/Cart classification of rock type provenance of chromites
78	CR K	Classified by Mars/Cart as being from Kimberlite sources
79	CR L	Classified by Mars/Cart as being from Lamproite sources
80	CR U	Classified by Mars/Cart as being from Ultramafic sources
81	CR G	Classified by Mars/Cart as being from Greenstone sources
82	CRIC	Crichtonite
83	CUMN	Cummingtonite
84	CUMN-Na	Cummingtonite with high sodium
85	CV	Volcanic Clinopyroxene
86	DIOP	Diopside
87	DOLM	Dolomite
88	E	Eclogitic Garnet
89	ECKR	Eckermannite
90	ENST	Enstatite
91	ENST-L	Lamproitic Enstatite
92	EPID	Epidote - Clinozoisite
93	EPID*	Epidote with composition characteristic of skarn or massive sulfide deposits
94	FLSP	Feldspar
95	FLSP-Ba	Feldspar with high barium
96	G 1	CFM modification after Dawson's group 1
97	G 2	CFM modification after Dawson's group 2

CFM-CONFIDENTIAL

	MINERAL	DESCRIPTION
98	G 3	CFM modification after Dawson's group 3
99	G 4	CFM modification after Dawson's group 4
100	G 5	CFM modification after Dawson's group 5
101	G 6	CFM modification after Dawson's group 6
102	G 7	CFM modification after Dawson's group 7
103	G 8-Grosp	CFM modification after Dawson's group 8 (Grospydite)
104	G 8-GrospD	CFM modification after Dawson's group 8 (Grospydite with diamond inclusion composition)
105	G 9	CFM modification after Dawson's group 9
106	G11	CFM modification after Dawson's group 11
107	G12	CFM modification after Dawson's group 12
108	G10	Gurney group 10 Pyrope
109	G10-10*	Gurney (Best) 10 score category of G10 garnet
110	G10-9*	Gurney 9 score category of G10 garnet
111	G10-8	Gurney 8 score category of G10 garnet
112	G10-7*	Gurney 7 score category of G10 garnet
113	G10-6	Gurney 6 score category of G10 garnet
114	G10-5*	Gurney 5 score category of G10 garnet
115	G10-4	Gurney 4 score category of G10 garnet
116	G10-3*	Gurney 3 score category of G10 garnet
117	G10-2	Gurney (Least) 2 score category of G10 garnet
118	G11-1	Gurney 1 score category of G11 garnet
119	G 9-1	Gurney 1 score category of G 9 garnet
120	G10-0	Score category of G10 garnet with non diamond inclusion composition
	*	Within the diamond stability region indicated by the graphite-diamond constraint of H.S. Grutter and R. J. Sweeney (2000), Ext. Abstract GAC/MAC Annual Joint Meeting, CD-ROM, GeoCanada 2000.

Note: Gurney scores (after J. Lee, 1993 PDAC meeting Toronto, Ont. pg.213-234), upgraded by CFM, has been demonstrated to be related to diamond grades of source kimberlites. An average pyrope score of 5, for example, implies a grade estimate of about 75carats/100 tonnes attributable to garnet harzburgite.

121	G1*	Best group 1 eclogitic Garnet (classifies in every diamond inclusion field)
122	G1	Group 1 eclogitic Garnet (classifies mostly in diamond inclusion fields and subordinate diamond inclusion overlap fields)
123	G2	Group 2 Garnet from non diamond bearing or regional eclogite sources
124	../..	Overlap fields; first field (before the /) is the most probable classification, second

field (after the /) is the less probable yet possible classification for example, the classification G1/LPM would indicate that the grain is most probably a group 1 eclogitic garnet but may be, although less likely, a low pressure megacrystic eclogitic garnet

125	GAHN	Gahnite
126	GLAS	Glass
127	GROS	Grossular
128	GROS-ANDR	Grossular-Andradite
129	GROS-Mn	Grossular with high manganese
130	GT	general Garnet
131	GT-Mn	Garnet with high manganese
132	GT-Zr-Ti	zirconium-titanium Garnet
133	HEDN	Hedenbergite
134	HOLN	Hollandite
135	HORN	Hornblende
136	HUMI	Humite Group
137	IL	Ilmenite -regional
138	IL-Ca	Ilmenite with high calcium
139	IL-Mn	Ilmenite with high manganese
140	KAER	Kaersutite
141	KALS	Kalsilite
142	KAOL	Kaolinite
143	KNEB	Knebelite
144	KUTN	Kutnohorite
145	KYAN	Kyanite/Andalusite/Sillimanite
146	LEUC	Leucite
147	LEUC-L	Lamproitic Leucite
148	LPM	Low pressure megacrystic eclogitic garnet (usually from kimberlite sources)
149	HPM	High pressure megacrystic eclogitic garnet (diamond indicator mineral from kimberlite and lamproite)
150	MAGN	Magnetite
151	MAGN-Ti	Magnetite with high titanium
152	MAGNS	Magnesite
153	MAJT-Di	Majorite with diamond inclusion composition
154	MARG	Margarite
155	MELA	Melanite

	MINERAL	DESCRIPTION
		CFM-CONFIDENTIAL
156	MELI	Melilite
157	MONT	Monticellite
158	NEPH	Nepheline
159	NEPT	Neptunite
160	NOSN	Nosean-Hauyne
161	OLV	Olivine
162	OLV-FORS	Olivine Forsterite
163	OLV-FAY	Olivine Fayalite
164	OLV-FAY*	Olivine Fayalite with composition characteristic of skarn or massive sulfide deposits
165	OLV-FAY-Mn	Olivine Fayalite with high manganese
166	OLV DI	Olivine with diamond inclusion composition
167	OLV DI$	Olivine with diamond inclusion composition which forms with large diamond
168	OLV DIO	Olivine with diamond inclusion composition that overlaps with composition of olivine from non-diamondiforous sources
169	OLV DIO$	Olivine with diamond inclusion composition which forms with large diamond that overlaps with composition of olivine from non-diamondiforous sources
170	OP1	Orthopyroxene -Dawson's (modified by CFM to classify all orthopyroxenes included in diamond) group 1
171	OP2	Orthopyroxene -Dawson's (modified by CFM to classify all orthopyroxenes included in diamond) group 2
172	OP3	Orthopyroxene -Dawson's (modified by CFM to classify all orthopyroxenes included in diamond) group 3
173	OP4	Orthopyroxene -Dawson's (modified by CFM to classify all orthopyroxenes included in diamond) group 4
174	OP5	Orthopyroxene -Dawson's (modified by CFM to classify all orthopyroxenes included in diamond) group 5
175	OPX	Orthopyroxene
176	OPX DI	Orthopyroxene with diamond inclusion composition
177	OPX-ENS	Enstatite
178	OPX-HY	Hypersthene
179	ORTHCL	Orthoclase
180	P	Peridotitic Garnet
181	PERC	Periclase
182	PERC-Fe	Periclase with high iron

	MINERAL	DESCRIPTION
183	PERV	Perovskite
184	PHLG	Phlogopite
185	PHLG-Ti	Phlogopite with high titanium
186	PIEM	Piemontite
187	PIL	Picroilmenite
188	PLAG	Plagioclase
189	PLEU	Pseudoleucite
190	PREH	Prehnite
191	PRID	Priderite
192	PSBK	Pseudobrookite
193	PSBK-Fe	Pseudobrookite with high iron
194	PYRL	Pyrolusite
195	PYROPH	Pyrophanite
196	PYROX	Pyroxmangite
197	PYRP	Pyrope
198	PYRP-Mn	Pyrope with high Manganese
199	QRTZ	Quartz
200	QRTZ-IMP	Impure Quartz
201	R	Regional Garnet
202	RHOD	Rhodonite
203	RICT	Richterite
204	RICT-K	K-Richterite
205	RIEB	Riebeckite
206	RIEB-K	Riebeckite with high potassium
207	RUTL	Rutile
208	RUTL-Nb	Rutile with high niobium
209	RUTL-Si	Rutile with high silicon
210	SALT	Salite
211	SAND	Sanidine
212	SAND-L	Lamproitic Sanidine
213	SAPH	Sapphirine
214	SERP	Serpentine
215	SHCH	Shcherbakovite
216	SIDR	Siderite
217	Si-Zr	Silica-Zircon
218	SODL	Sodalite
219	SPES	Spessartine
220	SPES*	Spessartine of Broken Hill Mine composition
221	SPHN	Sphene

	MINERAL	DESCRIPTION
222	SPNL	Spinel
223	SPNL-Si-Al	Silicon-aluminum Spinel
224	SPNL-Zn	Spinel with high zinc
225	STAU	Staurolite
226	STRN	Strontianite
227	TALC	Talc
228	TEPH	Tephroite
229	TOPZ	Topaz
230	Tour-D*	Round brown dravitic tourmaline of composition and morphology consistent with being pseudomorph after jadeitic diopside from group 1 (diamond bearing) eclogite
231	Tour-D	Round brown dravitic tourmaline from group 2 (non diamond bearing) eclogite
232	Tour-R*	Tourmaline (regional) with elevated K2O-TiO2 composition
233	Tour-R	Tourmaline with composition and morphology equivalent to regional tourmaline
234	Tourmalin	Tourmaline with no B2O3 analysis
235	TREM	Tremolite
236	UN01	Calcium-titanium Silicate (Ca-Ti Silicate)
237	UN02	Potassium-titanium-silicon Shcherbakovite like (K-Ti-Si Shcherbakovite like)
238	UN03	Manganese-titanium-silicon (Mn-Ti-Si)
239	UN04	Titanium silicate altered Sphene
240	UN05	Chromium-iron-silicon-magnesium-aluminum silicon altered chrome spinel (Ca-Fe-Si-Mg-Al silicon altered chrome spinel)
241	UN06	Siliceous Titanites
242	UN07	Calcium-magnesium-iron-silicon silicon Carbonate (Ca-Mg-Fe-Si silicon Carbonate)
243	UN08	Sodium-iron-silicon (Na-Fe-Si)
244	UN09	Silicon Corundum
245	UN10	Calcium-titanium-iron silicate altered Sphene (Ca-Ti-Fe silicate altered Sphene)
246	UN11	Iron-titanium-zirconium Silicate (Fe-Ti-Zr Silicate)
247	UN12	Tungsten-niobium-titanium-iron Oxide (W-Nb-Ti-Fe Oxide)
248	UN13	Niobium-titanium-iron-silicon (Nb-Ti-Fe-Si)
249	UN14	Iron-magnesium-aluminum-silicon (Fe-Mg-Al-Si)
250	UN16	Sodium-aluminum-silicon (Na-Al-Si)
251	UN21	Magnesium-calcium-titanium Oxide (Mg-Ca-Ti Oxide)
252	UN24	Calcium-aluminum-silicon (Ca-Al-Si)

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PART " C "

of Halmco Inc. and Money Rock Resources's Assessment Report

Industrial and Minerals Permit 9305070817

Geophysical Investigations for Kimberlite Exploration

Calling Lake, Alberta

C66630100

15 May 2008

Environment & Water Resources

Suite 100, 4500 – 16 Avenue NW
Calgary, AB T3B 0M6 Canada
Telephone: +1 403 247 0200
Toll-Free: 1 800 668 6772
Facsimile: +1 403 247 4811
worleyparsons.com

WorleyParsons Komex

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GEOPHYSICAL INVESTIGATIONS FOR KIMBERLITE EXPLORATION
CALLING LAKE, ALBERTA

PROJECT C66630100 - GEOPHYSICAL INVESTIGATIONS FOR KIMBERLITE EXPLORATION

FILE LOC.: CALGARY

REV	DESCRIPTION	ORIG	REVIEW	WORLEY-PARSONS APPROVAL	DATE	CLIENT APPROVAL	DATE
A	Issued for review	K.Hume	P.Bauman	P.Bauman	25-Mar-2008		
B	Issued for review	K. Hume	P. Bauman	P. Bauman	31-Mar-2008		
C	Issued for review	C.Pooley	P.Bauman	P.Bauman	15 May 2008	[redacted] for Holmes	June 1 2008

modified R Haimila 2009

GEOPHYSICAL INVESTIGATIONS FOR KIMBERLITE EXPLORATION
CALLING LAKE, ALBERTA

Disclaimer

The information presented in this document was compiled and interpreted exclusively for the purposes stated in Section 1.0 of the document. WorleyParsons Komex provided this report for Clarion Diamonds solely for the purposes noted above.

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Any questions concerning the information or its interpretation should be directed to Kimberly Hume, Chris Pooley or Paul Bauman at 403-247-0200.

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GEOPHYSICAL INVESTIGATIONS FOR KIMBERLITE EXPLORATION
CALLING LAKE, ALBERTA

CONTENTS

Figures

Appendices

1. INTRODUCTION

Clarion Diamonds (Clarion) retained WorleyParsons Komex to conduct a geophysical survey in the Calling Lake area (Figure 1) to attempt to map vertical structures in the subsurface. Two separate areas were explored (Areas A and B, Figure 2).

Clarion Diamonds identified potential targets using previous magnetic and electrical resistivity tomography (ERT) surveys (WorleyParsons Komex, 2007). The current survey was performed to provide further characterization of these anomalies using a magnetic total field survey and ERT. This report outlines the ERT and magnetic surveys completed in Areas A and B, and reports on the results of the survey.

2. SURVEY CONTROL

Geophysical survey control was established for the magnetic survey using the proprietary Global Positioning System (GPS) built-in to the GEMsys magnetometer. The positions of the ERT profiles were established using a Trimble GeoXT GPS unit. This unit has sub-meter accuracy.

All positions are presented in Universal Transverse Mercator (UTM) Zone 12 North coordinates, referenced to the North American Datum 1983 (NAD83).

3. GEOPHYSICAL FIELD SURVEY

Two areas were investigated during this project. A previous ERT survey completed in July 2007 was conducted in Area A (WorleyParsons Komex 2007). The current investigation continued the investigation with a second ERT section (Area A, ERT Line 2), a magnetic survey in Area A, and two ERT sections (Area B, ERT Lines 1 and 2) and a magnetic survey in Area B.

3.1 Electrical Resistivity Tomography (ERT)

Three ERT sections were surveyed in this program. A Wenner array with a minimum electrode separation of 22.5 m was utilised for this survey, providing a maximum depth of imaging of approximately 300 meters below ground surface (mbgs).

ERT data are presented as a colour shaded cross-section, extending from ground surface to a maximum depth of 300 mbgs, as noted above. Resistivity values are presented using the units of ohm-meters (ohm-m). Warm colours (pinks and reds) represent higher resistivity values, and cool colours (greens and blues) represent lower resistivity values.

3.2 Total Magnetic Field Surveys

A total field magnetometer survey was conducted in both regions of the survey. The regions in Area A were chosen from targets identified by Clarion based on a previous ERT survey (WorleyParsons Komex 2007).

Magnetic total field data are presented as contour and colour shaded maps. Magnetic values are presented using the units of nanoteslas (nT). Warm colours (pinks and reds) represent higher magnetic values, and cool colours (greens and blues) represent lower magnetic values. An independent base station was setup in the field and used to provide diurnal corrections to the data.

4. GEOPHYSICAL RESULTS

4.1 Area A Halmco/Money Rock permit 9305070817

A previous report (WorleyParsons Komex 2007) included ERT Line 1 in Area A.

4.1.1 ERT Line 2

ERT Line 2 was acquired from southwest to northeast in Area A (Figure 3). Moderate resistivities were detected within the top 100 meters of the section.

4.1.2 Total Magnetics Field Survey

Three separate regions of Area A were covered during the total field magnetic survey (Figure 4). The position of each region was determined using the ERT profile from the previous survey (WorleyParsons Komex 2007). The three regions of Area A indicate zones of high magnetic response in contrast to the background values of the surrounding region, with a trend to higher total field values toward the southwest.

4.2 Area B Halmco/Money Rock permit 9306060989

4.2.1 ERT Line 1

ERT Line 1 was acquired from southwest to northeast in Area B (Figure 5). A shallowly dipping resistive layer is imaged within the upper 100 m of the section.

4.2.2 ERT Line 2

ERT Line 2 was acquired from west to east in Area B (Figure 6 and Figure 7). High resistivities were detected within the top 100 meters of the section. A vertical, low resistivity, structure is apparent between line positions 1300 m and 1600 m, at approximately 50 mbgs. Figure 7 is a display of the conductivity section. The raw output from the 2D inversion software has been included as Figure 8.

4.2.3 Total Magnetics Field Survey

Two zones in Area B indicate an elevated magnetic response (Figure 9). The first zone, near line position 900 m on ERT Line 2, is likely due to the proximity of an above-ground pipeline. A second zone exists along the eastern edge of the survey area.

PART C

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5. CLOSURE

We trust that this report satisfies your current requirements and provides suitable documentation for your records. If you have any questions or require further details, please contact the undersigned at any time.

Report Prepared by
WorleyParsons Komex

[redacted]

Chris Pooley, B.Sc., Geoph.I.T.
Geophysicist

[redacted]

Kimberly Hume, B.A.Sc., P.Eng.
Geoscientist

Senior Review by

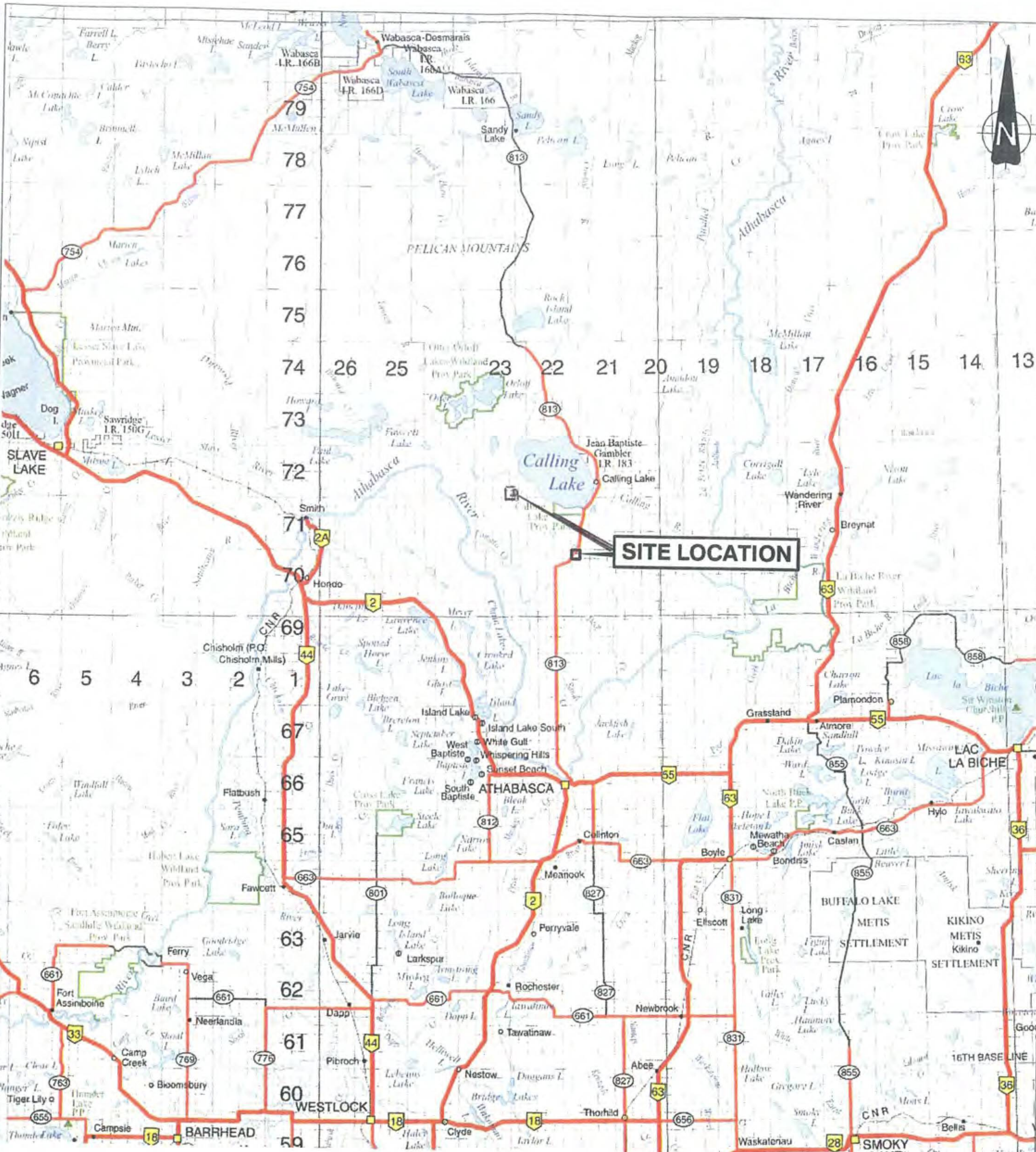
Paul Bauman, M.Sc., P.Eng., P.Geoph.
Technical Director – Geophysics

PERMIT TO PRACTICE
WORLEYPARSONS CANADA LTD.
Signature
Date Jun 6, 2008
PERMIT NUMBER: P 2306
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

6. REFERENCES

WorleyParsons Komex, 2007. ERT Survey for Kimberlite Exploration – Calling Lake, Alberta. C66630000. July 2007.

FIGURES



SOURCE: ALBERTA PROVINCIAL BASE MAP, ORIGINAL SCALE 1:1,000,000

Environment & Water Resources

CLARION DIAMONDS
GEOPHYSICAL SURVEYS FOR KIMBERLITE EXPLORATION
CALLING LAKE, ALBERTA

SITE LOCATION

WorleyParsons Komex
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09-APR-08	date	M.C.	edited by	MJC/OTHERS	drawn by	app by

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PROJECT NUMBER: C66630100

FIGURE: 1

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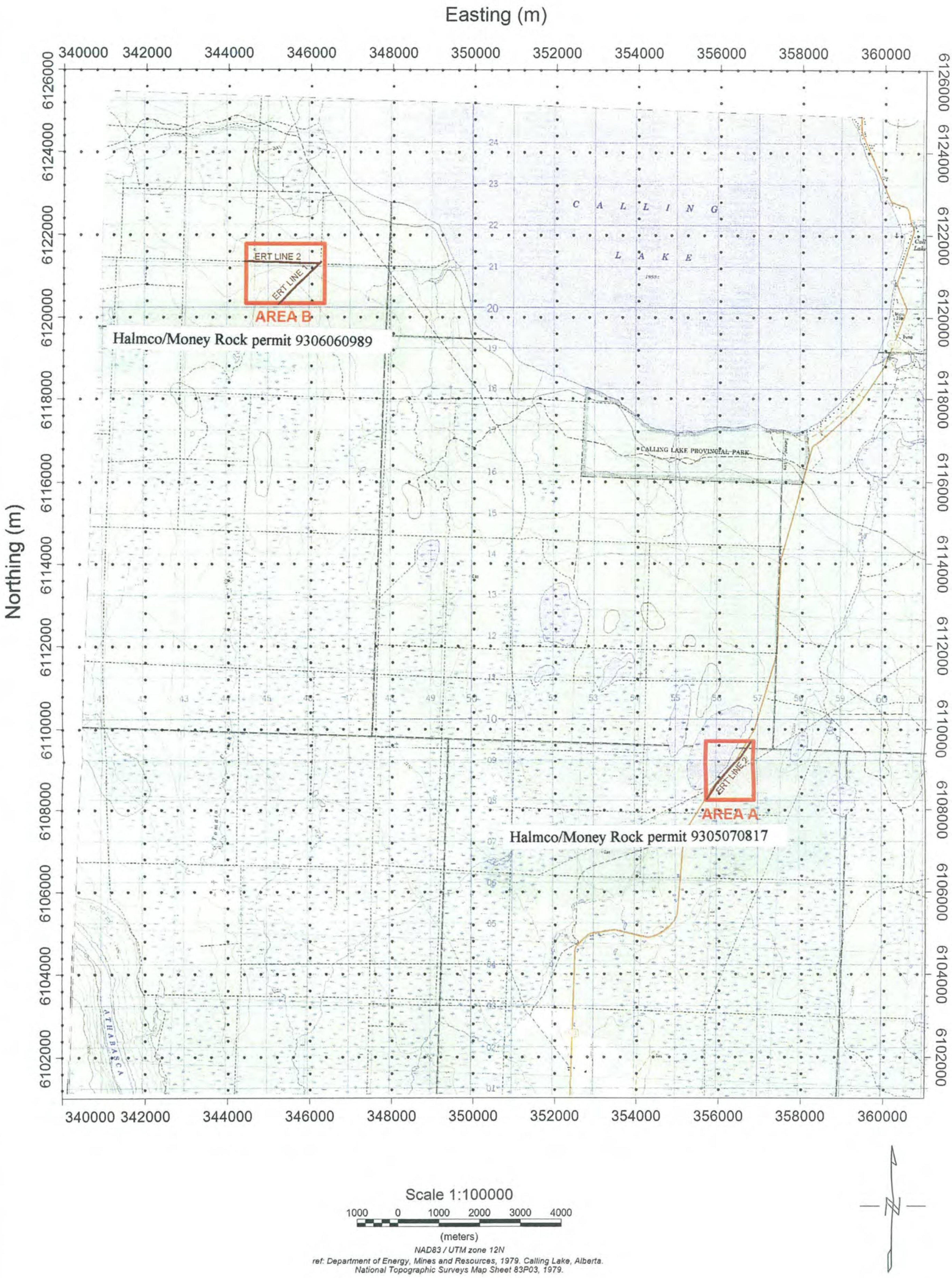

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CLARION DIAMONDS
GEOPHYSICAL SURVEYS FOR KIMBERLITE EXPLORATION
CALLING LAKE, ALBERTA
BASEMAP

WorleyParsons Komex
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01-04-08 date	K.A.H. edited by	K.A.H. drawn by	Approved

PROJECT NUMBER: C66630100

FIGURE: 2

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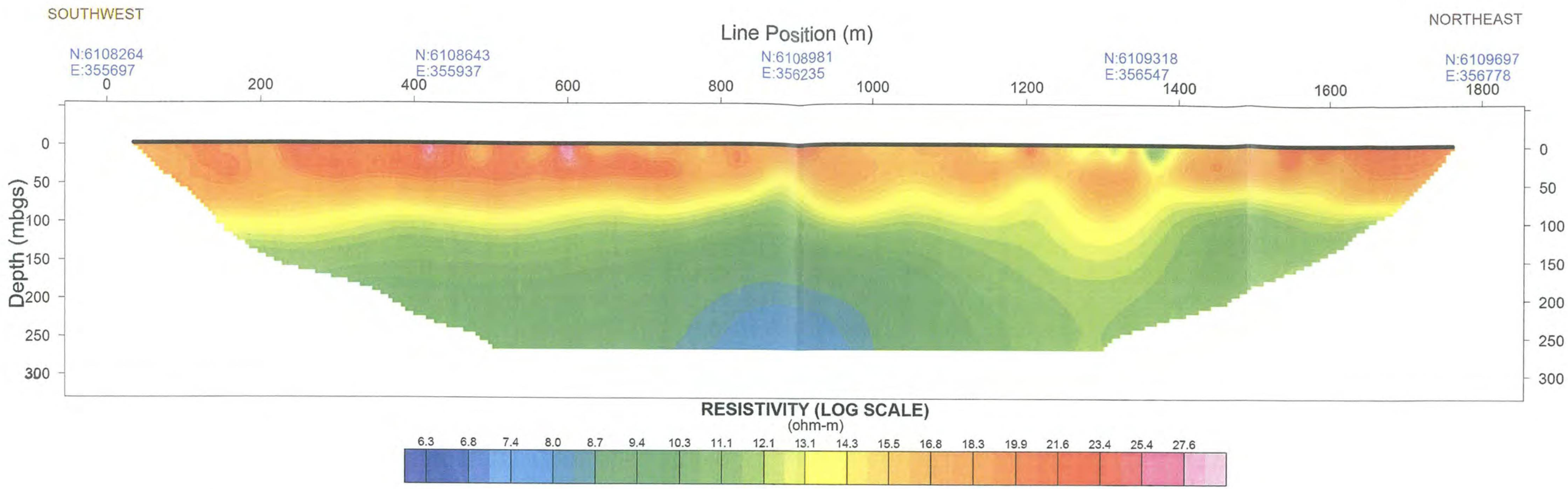
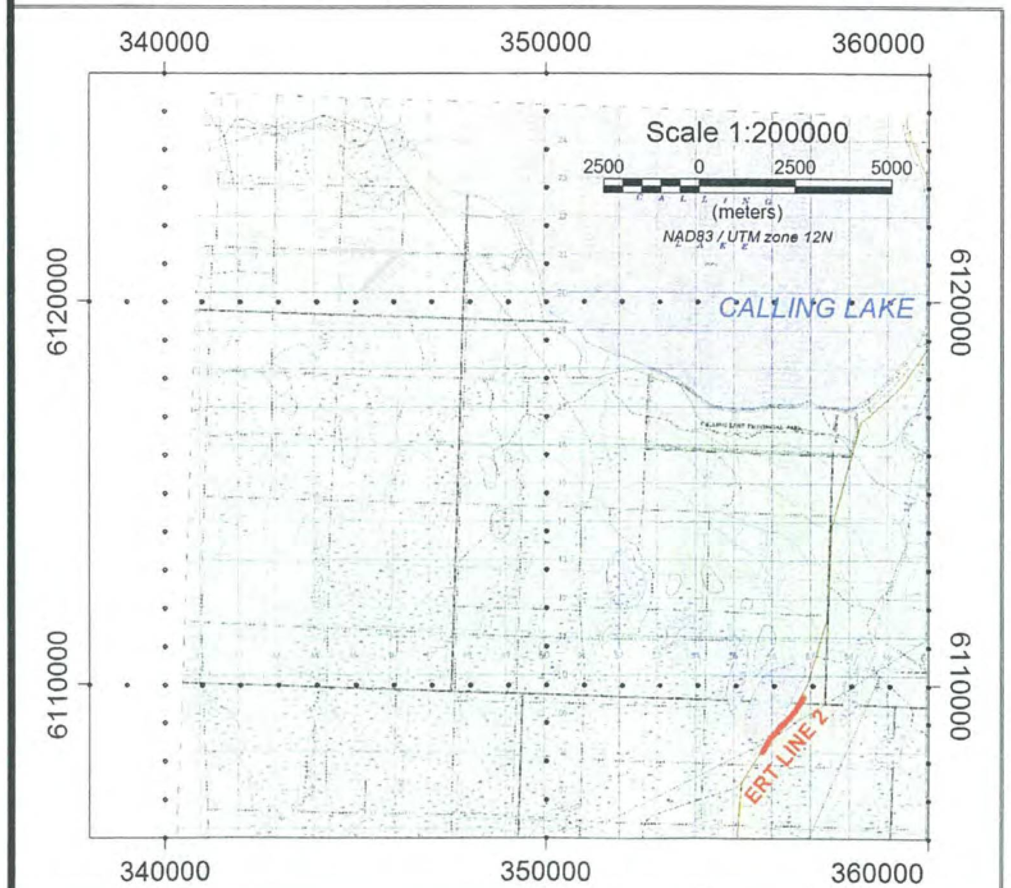


FIELD PARAMETERS:
Data Collected: 17-03-08
Electrode Configuration : Wenner Array
Electrode Spacing: 22.5 m

Scale 1:5500
100 0 100 200 300
(meters)
NAD83/UTM12N



Halmco/Money Rock permit 9305070817

Environment & Water Resources

CLARION DIAMONDS
GEOPHYSICAL SURVEYS FOR KIMBERLITE EXPLORATION
CALLING LAKE, ALBERTA
ELECTRICAL RESISTIVITY TOMOGRAPHY
RESISTIVITY CROSS-SECTION
AREA A, ERT LINE 2

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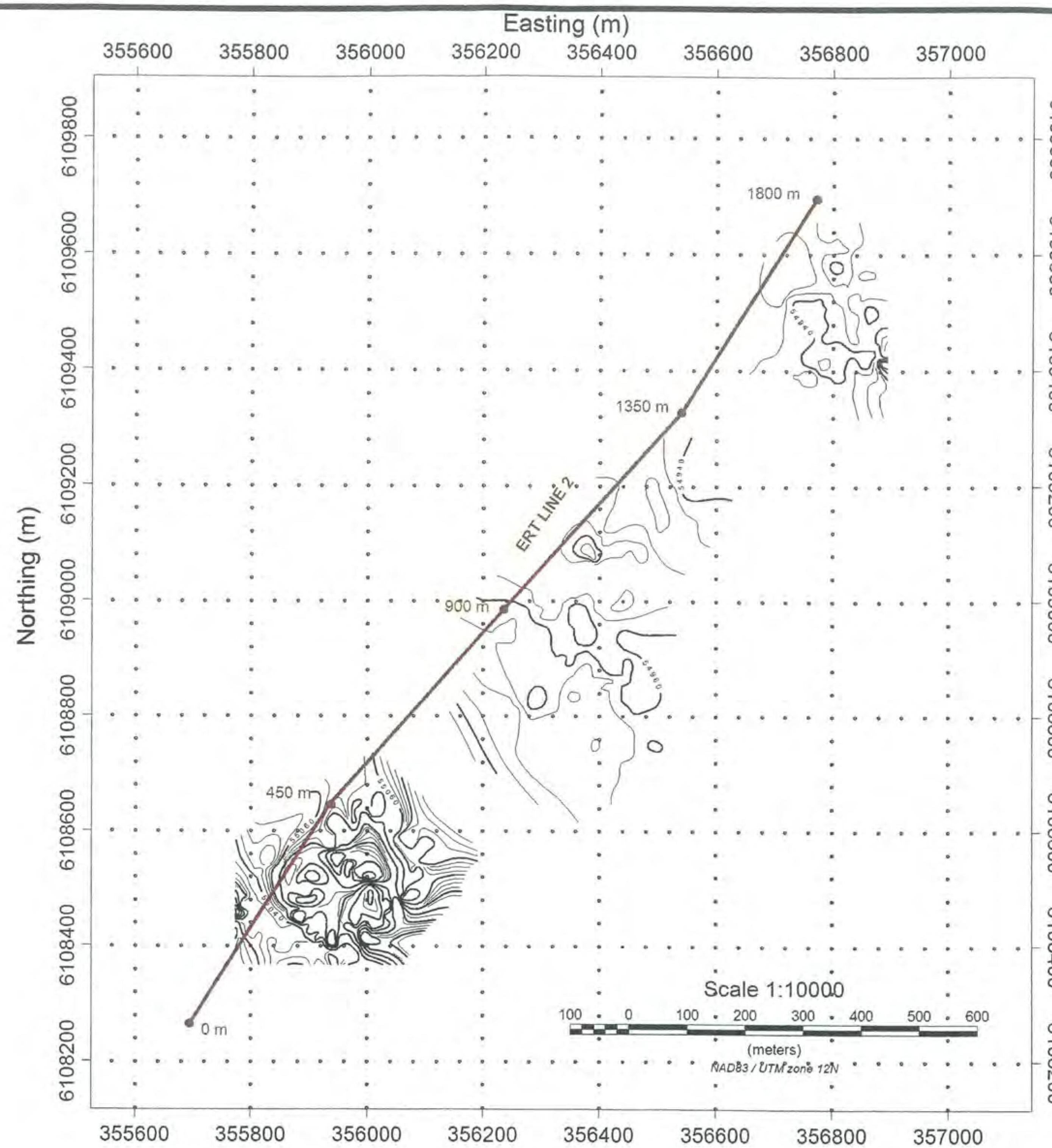
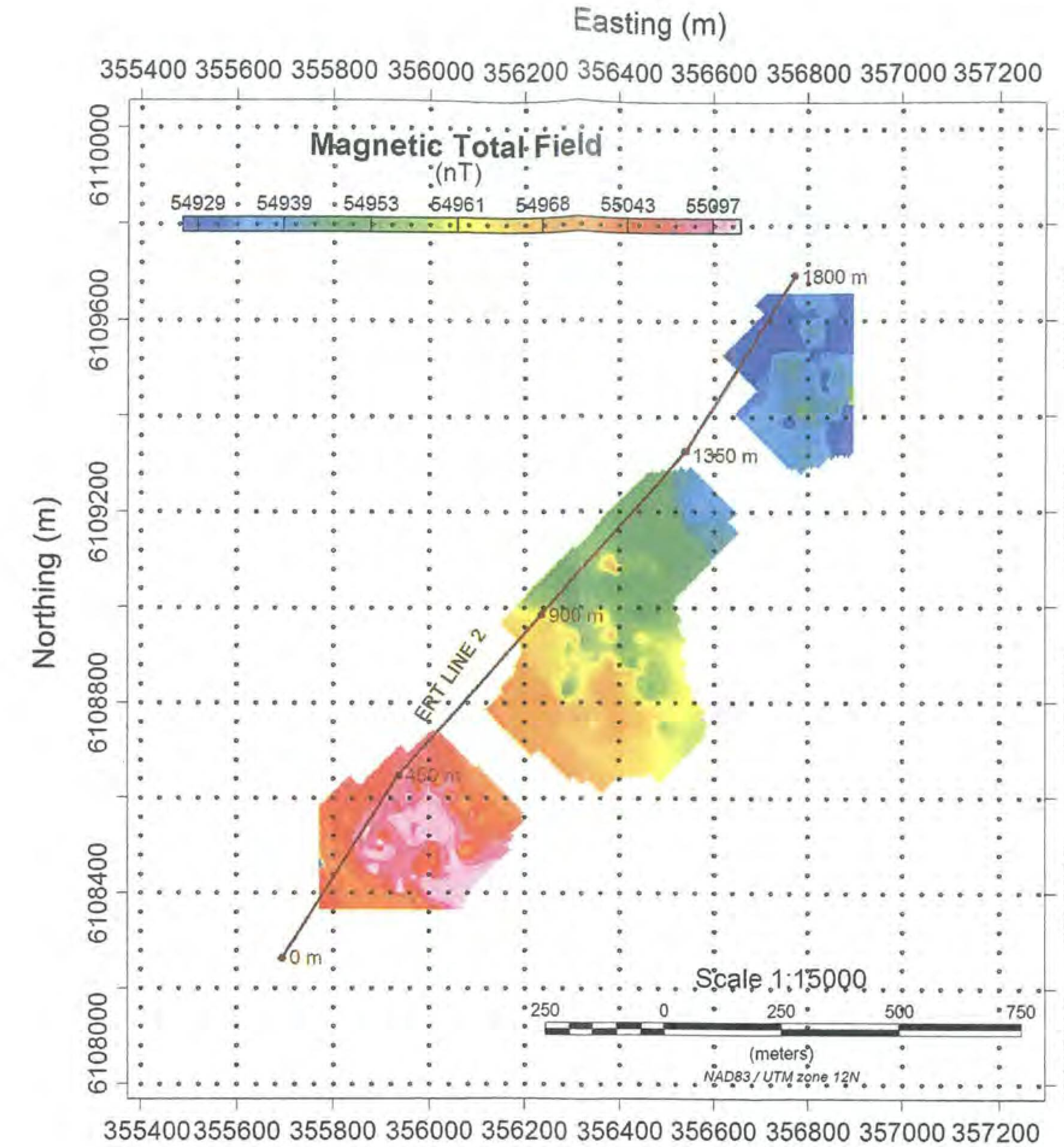
17-03-08 date	K.A.H. edited by	C.J.P. drawn by	Approved	PROJECT NUMBER: C66630100	FIGURE: 3

PREPARED SOLEY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS KOMEX HAS NOT ENTERED INTO CONTRACT.
FILE: J:/66630100/Geophysics/OASIS/Maps/ERT3.map





Halmco/Money Rock permit 9305070817

LEGEND

Diurnally Corrected Total Field:
- 5 nT Contour Interval
- 20 nT Contour Interval
- ERT Line Position

FIELD PARAMETERS

Data Collected: Dec 18-22, 2008
Station Spacing: 1 m

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CLARION DIAMONDS
GEOPHYSICAL SURVEYS FOR KIMBERLITE EXPLORATION
CALLING LAKE, ALBERTA
TOTAL FIELD
DIURNALLY CORRECTED MAGNETIC SURVEY
AREA A

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17-03-08	date	K.A.H.	edited by	K.A.H.	drawn by	Approved	PROJECT NUMBER: C66630100	FIGURE: 4

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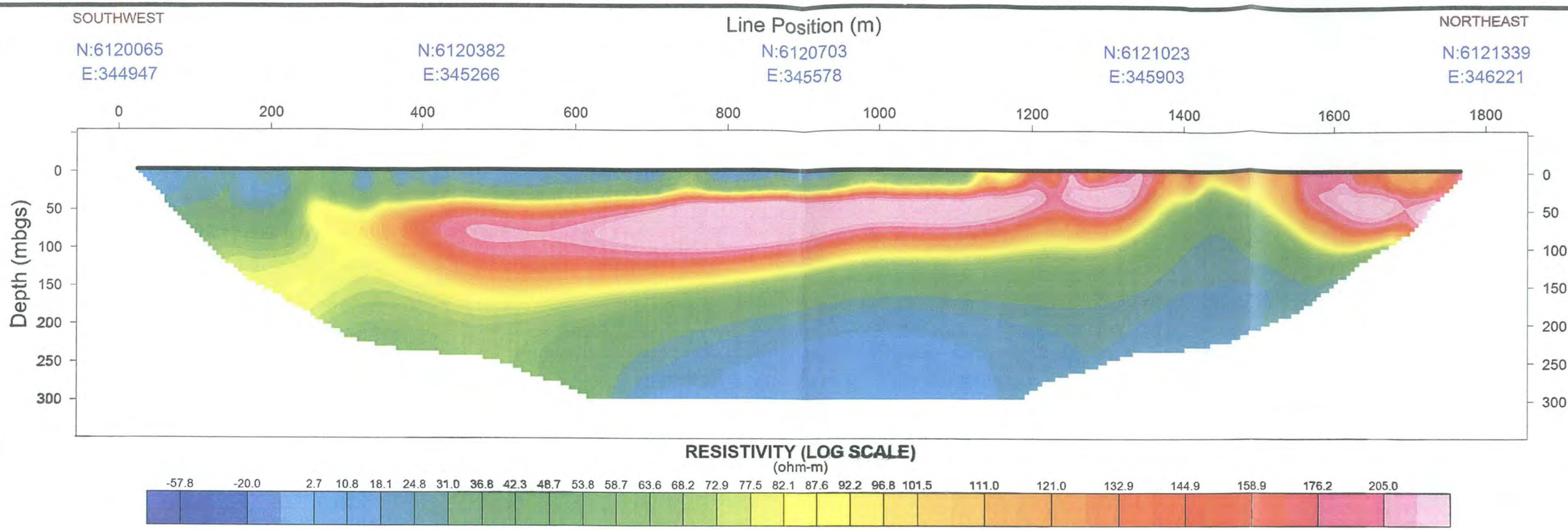
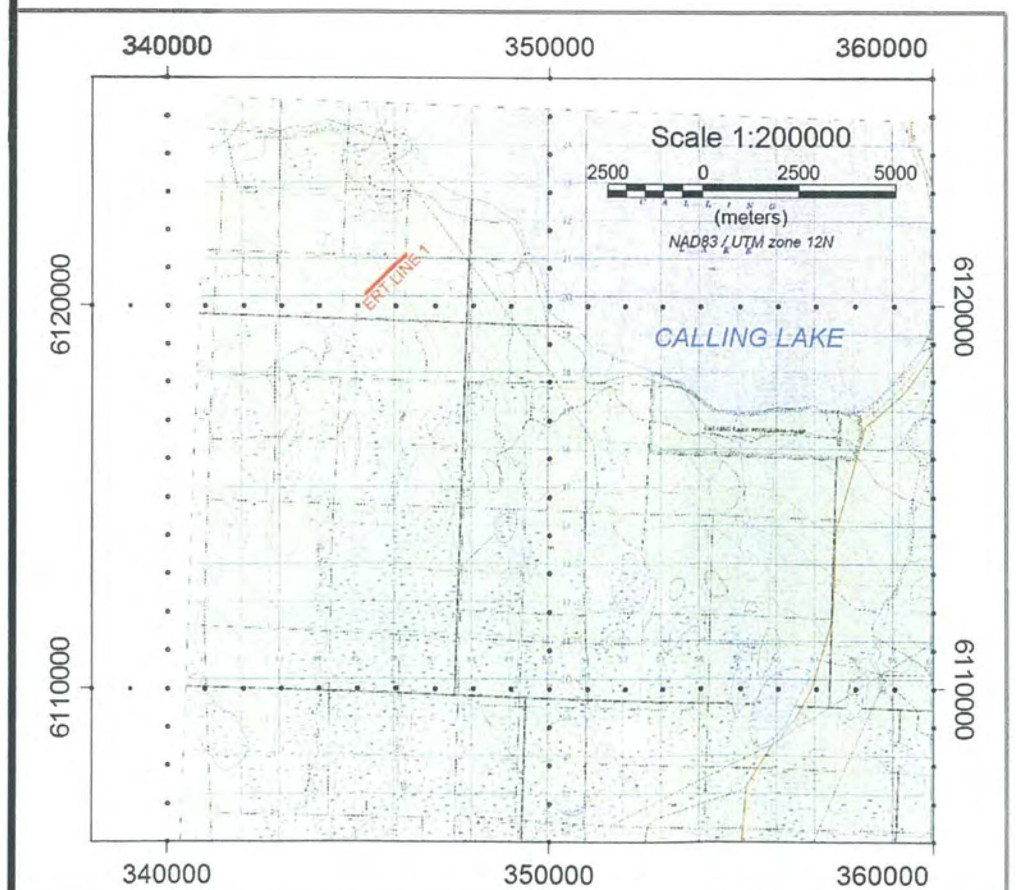
FILE: J:/66630100/Geophysics/OASIS/MAPS/MagMapSouth.map





FIELD PARAMETERS:
Data Collected: Dec 18-22, 2008
Electrode Configuration : Wenner Array
Electrode Spacing: 22.5 m

Scale 1:5500
100 0 100 200 300
(meters)
NAD83/UTM12N

Halmco/Money Rock permit 9306060989

Environment & Water Resources

CLARION DIAMONDS
GEOPHYSICAL SURVEYS FOR KIMBERLITE EXPLORATION
CALLING LAKE, ALBERTA
ELECTRICAL RESISTIVITY TOMOGRAPHY
RESISTIVITY CROSS-SECTION
AREA B, ERT LINE 1

WorleyParsons Komex
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17-03-08 date	K.A.H. edited by	C.J.P. drawn by	Approved

PROJECT NUMBER: C66630100
FIGURE: 5

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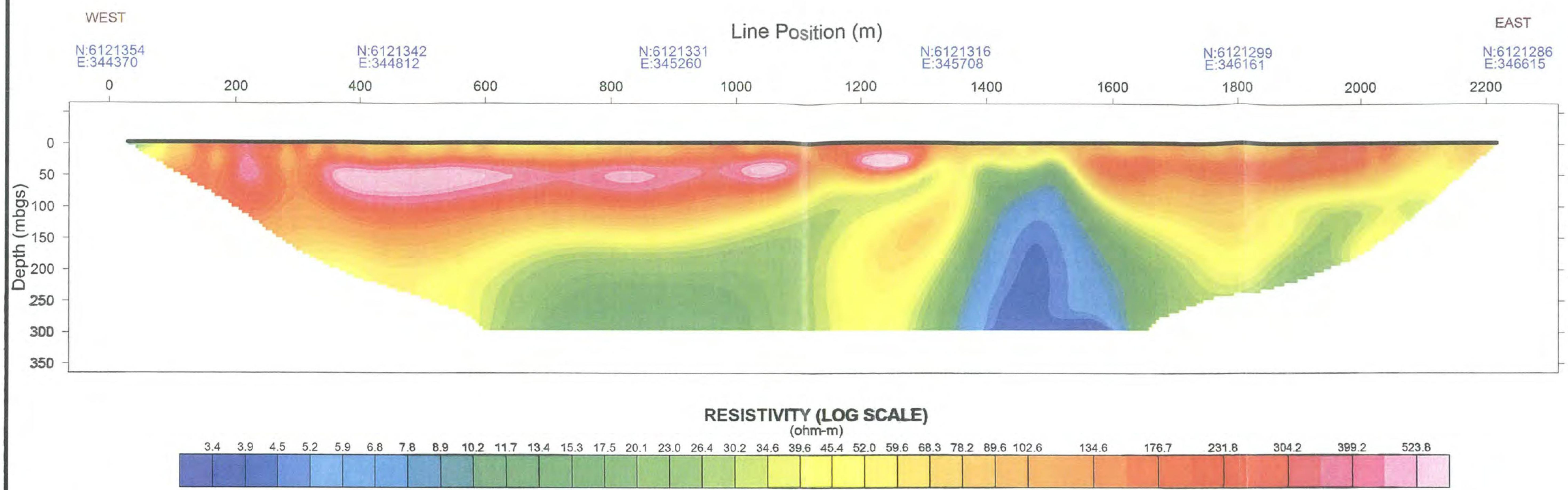

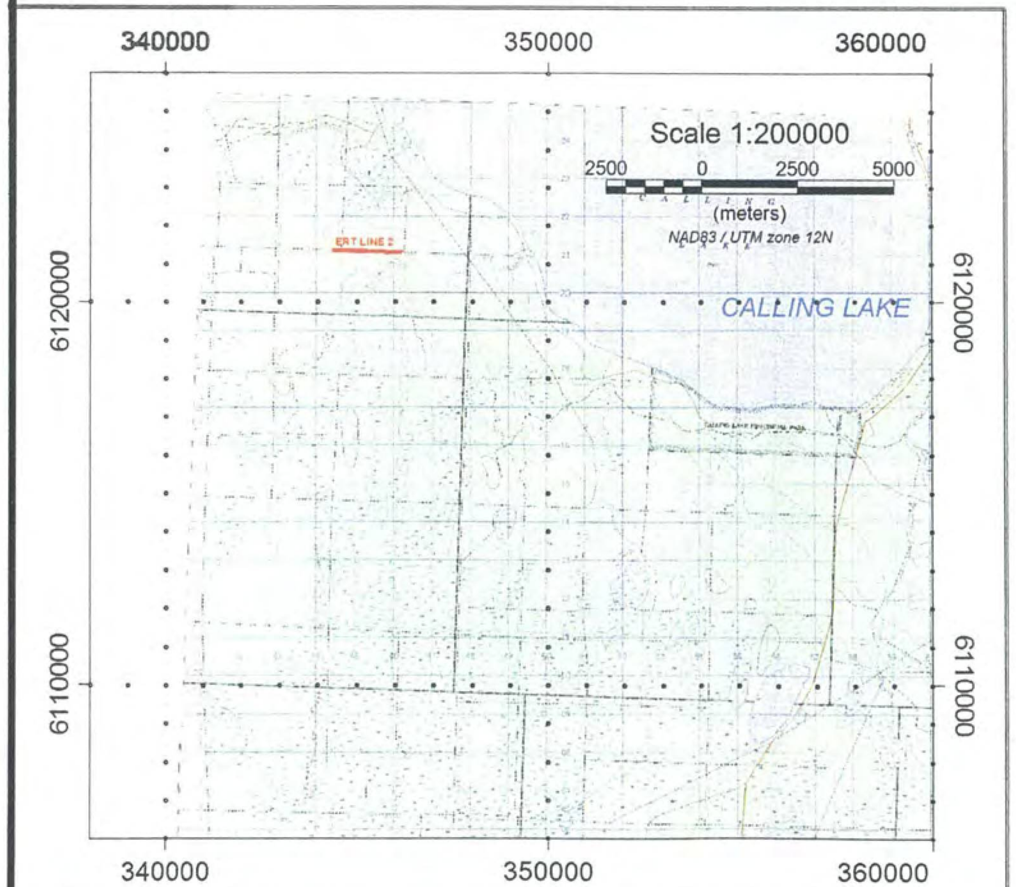

FIELD PARAMETERS:
Data Collected: 17-03-08
Electrode Configuration : Wenner Array
Electrode Spacing: 22.5 m

Scale 1:6500
100 0 100 200 300 400
(meters)
NAD83/UTM12N

Halmco/Money Rock permit 9306060989

Environment & Water Resources

CLARION DIAMONDS
GEOPHYSICAL SURVEYS FOR KIMBERLITE EXPLORATION
CALLING LAKE, ALBERTA
ELECTRICAL RESISTIVITY TOMOGRAPHY
RESISTIVITY CROSS-SECTION
AREA B, ERT LINE 2

WorleyParsons Komex
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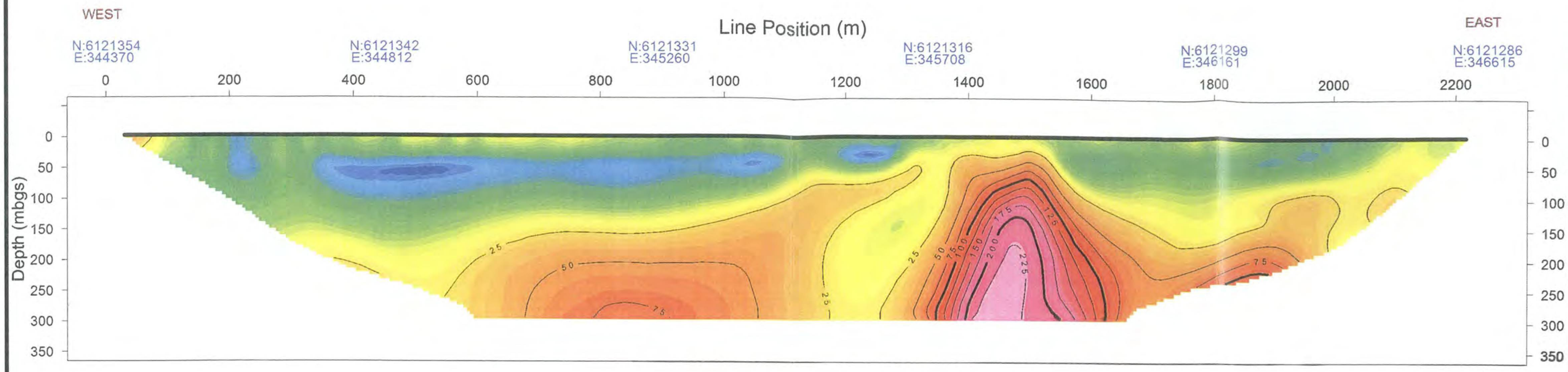
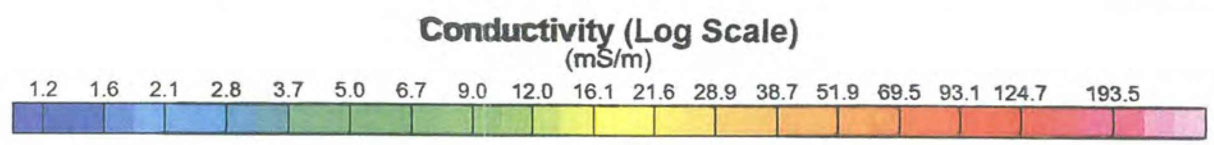
17-03-08 date	K.A.H. edited by	C.J.P. drawn by	Approved

PROJECT NUMBER: C66630100
FIGURE: 6

PREPARED SOLEY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS KOMEX HAS NOT ENTERED INTO CONTRACT.
FILE: J:/66630100/Geophysics/OASIS/Maps/ERT2.map



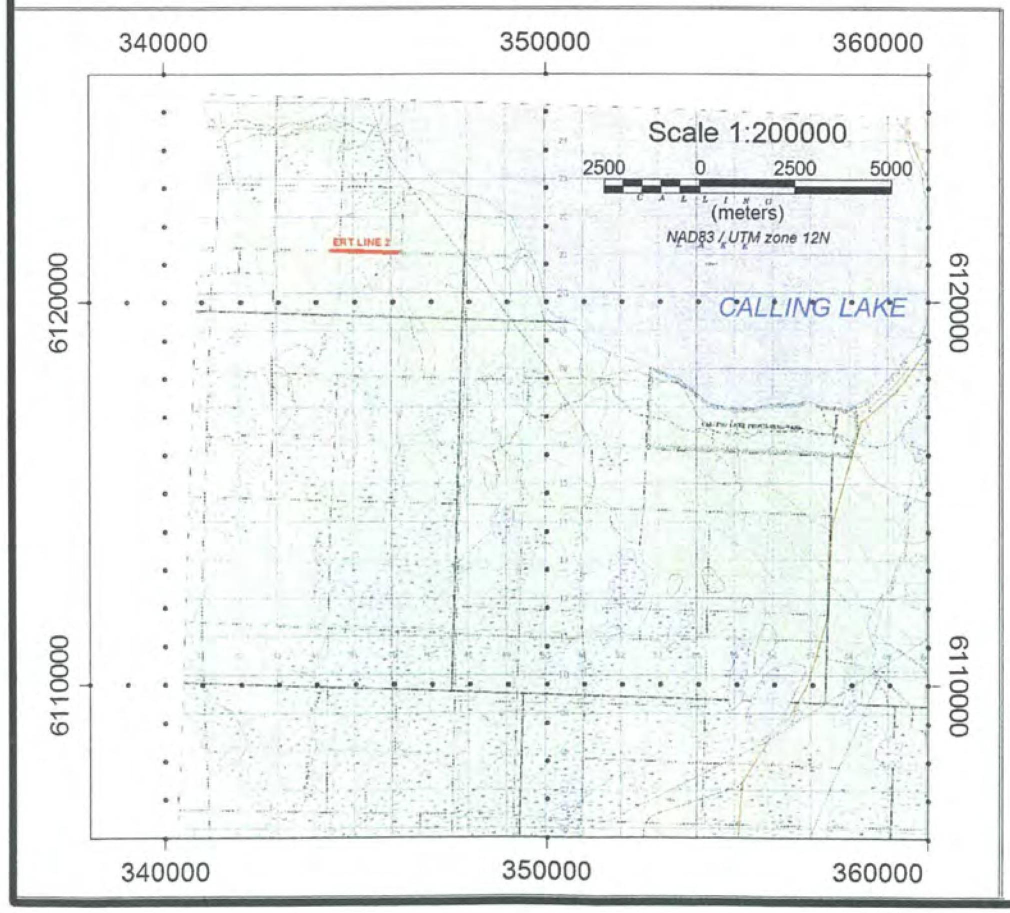


FIELD PARAMETERS:
Data Collected: 17-03-08
Electrode Configuration : Wenner Array
Electrode Spacing: 22.5 m

Scale 1:6500

100 0 100 200 300 400

(meters)
NAD83/UTM12N



Halmco/Money Rock permit 9306060989

Environment & Water Resources

CLARION DIAMONDS
GEOPHYSICAL SURVEYS FOR KIMBERLITE EXPLORATION
CALLING LAKE, ALBERTA
ELECTRICAL RESISTIVITY TOMOGRAPHY
CONDUCTIVITY CROSS-SECTION
AREA B, ERT LINE 2

WorleyParsons Komex
resources & energy

17-03-08 date	C.J.P. edited by	C.J.P. drawn by	Approved

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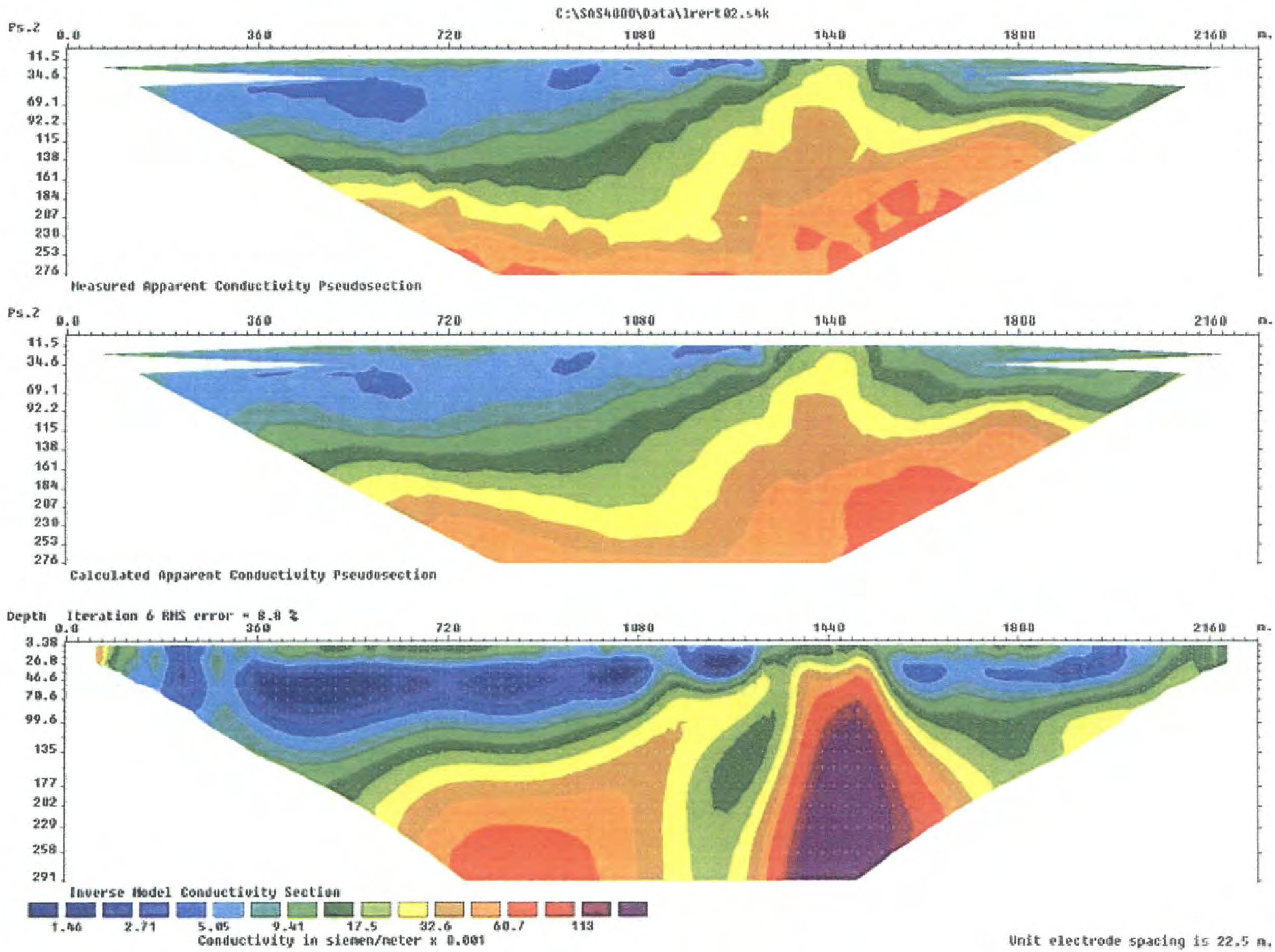
FILE: J:/66630100/Geophysics/OASIS/Maps/ERT2_Cond.map

PROJECT NUMBER: C66630100

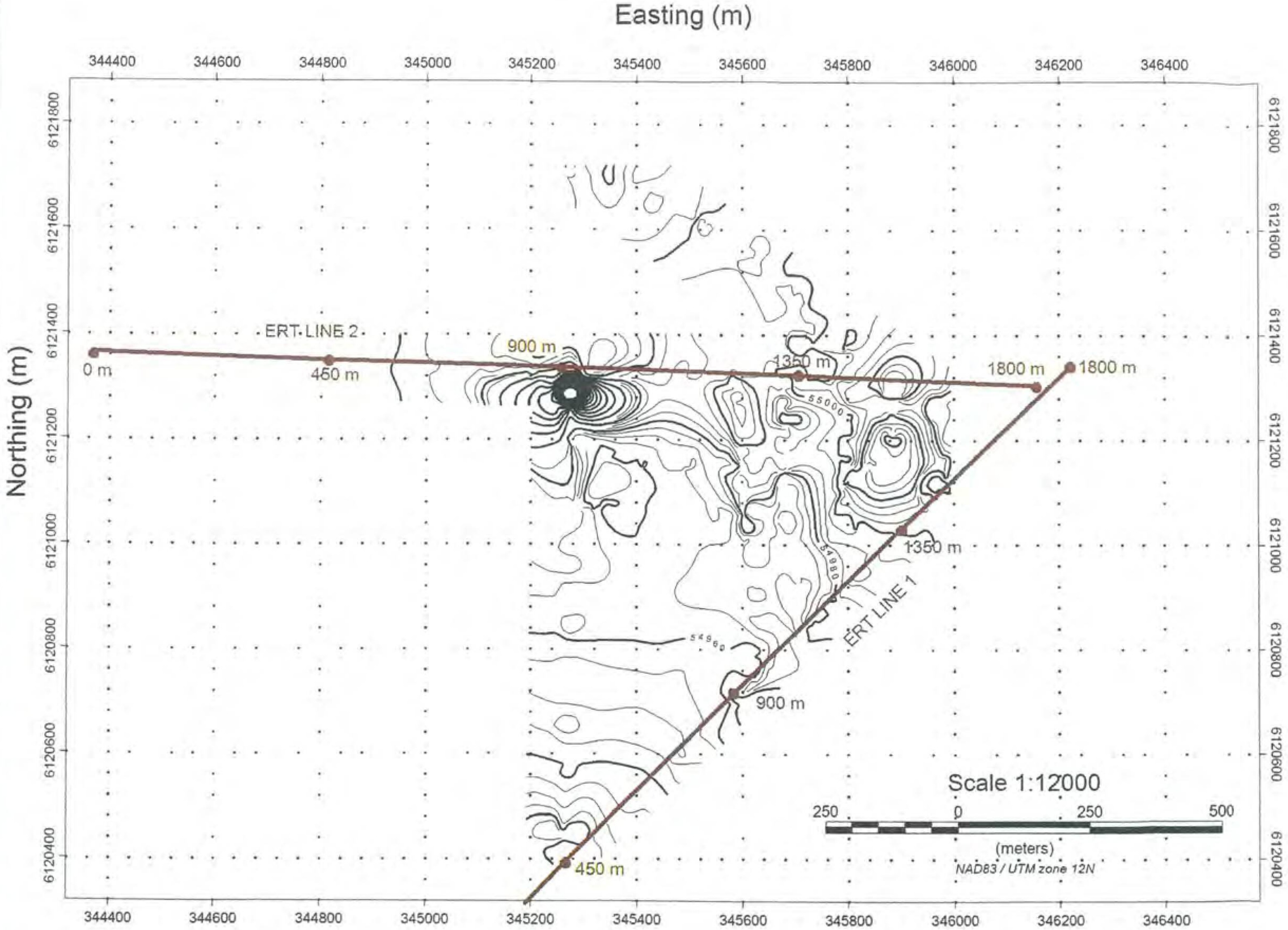
FIGURE: 7

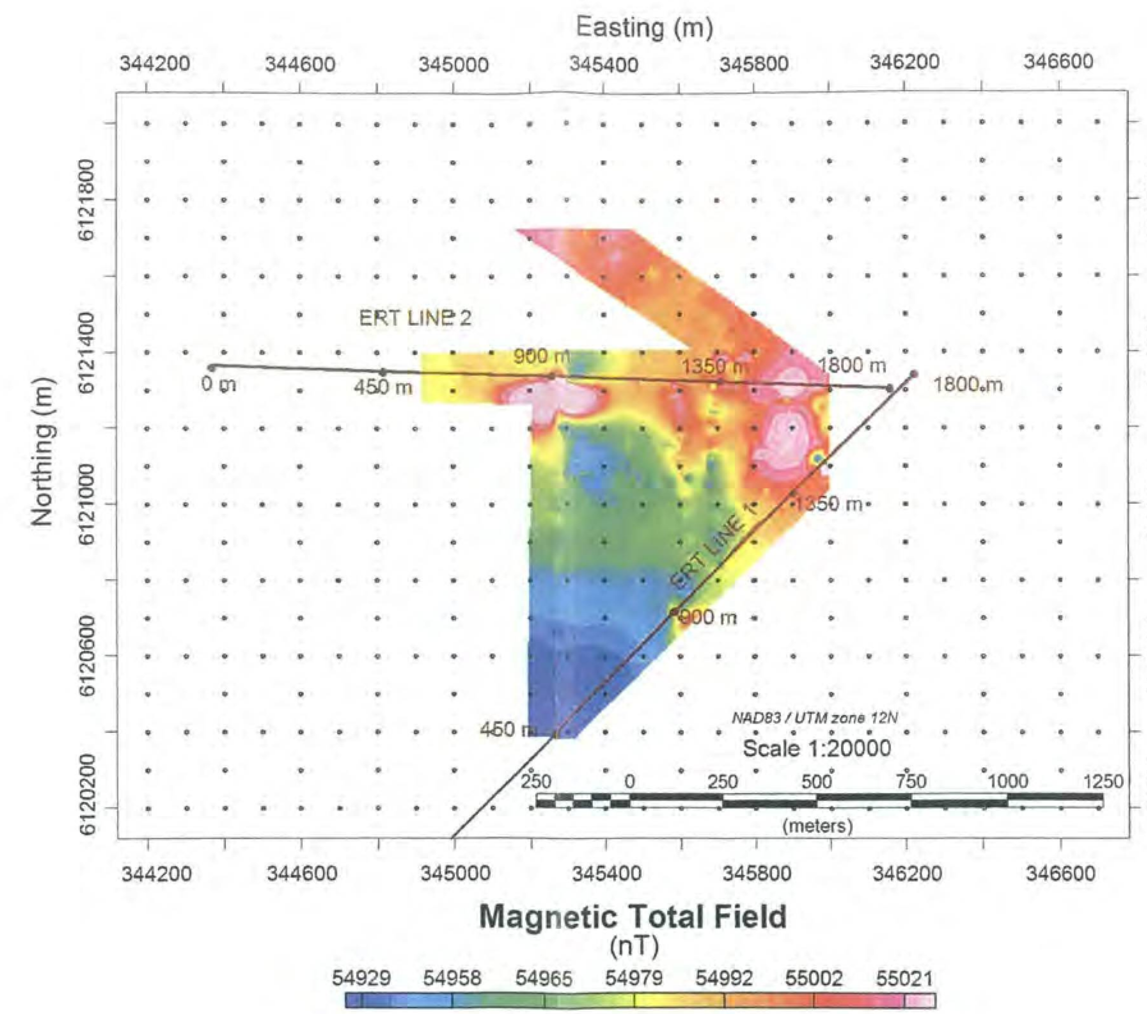


Calling Lake, Area B Line 2

Raw output from inversion software

Figure 8





LEGEND

Diurnally Corrected Total Field:
5 nT Contour Interval
20 nT Contour Interval
ERT Line Position

FIELD PARAMETERS

Data Collected: Dec 18-22, 2008
Station Spacing: 1 m

Halmco/Money Rock permit 9306060989

Environment & Water Resources

CLARION DIAMONDS
GEOPHYSICAL SURVEYS FOR KIMBERLITE EXPLORATION
CALLING LAKE, ALBERTA
TOTAL FIELD
DIURNALLY CORRECTED MAGNETIC SURVEY
AREA B

WorleyParsons Komex
resources & energy

17-03-08 date	K.A.H. edited by	C.J.P. drawn by	Approved	PROJECT NUMBER: C66630100	FIGURE: 9

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FILE: J:/66630100/Geophysics/OASIS/MAPS/magmapNorth.map

APPENDIX 1

Appendix 1 Geophysical Methodologies

Electrical Resistivity Tomography (ERT)

ERT is a technique for mapping the distribution of subsurface electrical resistivity (or its inverse conductivity) in a cross-sectional format. Resistivity data are collected through a linear array of 61 electrodes coupled to a DC resistivity transmitter and receiver, and an electronic switching box. Data collection is carried out in a sequential and automated fashion that takes advantage of all possible combinations of current and measure electrodes. The data are downloaded to a computer for processing and analysis. The data are inverted using a 2-D finite difference or finite element inversion routine. The final product is a two-dimensional cross-section plotting resistivity (in ohm-m) versus depth.

Magnetometer

A total field magnetometer measures the intensity of the earth's magnetic field in units of nanoteslas (nT). Ferromagnetic materials such as iron alloys, when placed in the earth's magnetic field, tend to alter the field. Such materials, therefore, can be recognized as total field anomalies. The GSM-19 Overhauser memory magnetometer is ideal for site reconnaissance surveys as it is extremely accurate and fast to operate. All magnetic data will be collected continuously and be GPS coupled.