BC Geological Survey Assessment Report 29840

ASSESSMENT REPORT:

AIRBORNE TDEM GEOPHYSICAL SURVEY, DRILL CORE RE-SAMPLING, AND RESOURCE ESTIMATE

LARA POLYMETALLIC PROPERTY

VICTORIA MINING DIVISION 48° 53' N AND 123° 52' W NTS SHEET 092B/13 BRITISH COLUMBIA, CANADA



LARAMIDE RESOURCES LTD.
130 KING STREET WEST, SUITE 3680
PO BOX 99, THE EXCHANGE TOWER
TORONTO, ONTARIO, CANADA M5X 1B1

VOLUME 1

December 23rd, 2007

Prepared By:



Caracle Creek International Consulting Inc. Suite 2 – 17 Frood Rd. Sudbury, Ontario, Canada P3C 4Y9

lain Kelso, H.B.Sc., P.Geo. Stephen Wetherup, B.Sc., P.Geo.



TABLE OF CONTENTS

| | OF CONTENTS | |
|---------------|-----------------------------------------------------------------------|--------|
| | FIGURES | |
| | TABLES | |
| LIOI U | F APPENDICESRODUCTION AND TERMS OF REFERENCE | |
| | | |
| 1.1 1.2 | INTRODUCTION TERMS OF REFERENCE AND UNITS | |
| 1.2 | CCIC QUALIFICATIONS | |
| | PERTY DESCRIPTION AND LOCATION | |
| 2.0PRC 2.1 | LOCATION | |
| 2.1 | DESCRIPTION AND OWNERSHIP | |
| | ESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY |) د |
| 3.0ACC | ACCESS | |
| 3.1 | CLIMATE AND VEGETATION | |
| 3.3 | Physiography | |
| 3.4 | INFRASTRUCTURE AND LOCAL RESOURCES | |
| | PERTY HISTORY | |
| 4.01 | EXPLORATION HISTORY | |
| | 1.1. Underground Exploration | |
| 4.2 | HISTORICAL DRILLING | |
| 4.3 | HISTORICAL RESOURCE ESTIMATES | |
| 4.4 | HISTORICAL PRODUCTION | |
| | DLOGICAL SETTING | |
| 5.1 | REGIONAL GEOLOGY | |
| 5.2 | DISTRICT GEOLOGY | |
| 5.3 | Local Geology | |
| | OSIT TYPE | |
| 6.1 | VOLCANOGENIC MASSIVE SULPHIDE | |
| | ERALIZATION | |
| 7.1 | CORONATION TREND | |
| 7.2 | "126" ZONE | |
| 7.3 | ANITA ZONE | |
| 7.4 | Randy (North) Zone | |
| 7.5 | Sharon Copper – Silver Creek Trend | |
| 7.6 | "262" ZONE | |
| _ | LORATION | |
| 8.1 | HELICOPTER-BORNE GEOPHYSICAL SURVEY – 2007 | |
| | 1.1. Heliborne Survey Equipment | |
| | 1.2. Results | |
| | A VERIFICATION | |
| 9.1 | CCIC SITE VISIT | _ |
| 9.2 | DUE DILIGENCE SAMPLING OF DRILL CORE | |
| 10.0 | MINERAL PROCESSING AND METALLURGICAL TESTING | |
| 11.0 | MINERAL RESOURCE AND RESERVE ESTIMATES | |
| 11.1 | DATABASE GENERATION | |
| 11.2 | DIGITAL ELEVATION MODEL | |
| 11.3 | WIREFRAME MODELLING | |
| 11.4 | SPECIFIC GRAVITY | |
| 11.5 | SAMPLE COMPOSITES AND TOP CUTS | |
| 11.6 | BLOCK MODEL | |
| 11.7 | ESTIMATION PARAMETERS | |
| 11.8 | GRADE INTERPOLATION | |
| 12.0 | CONCLUSIONS | |
| 13.0 | RECOMMENDATIONS | |



| 14.0 15.0 | PROPOSED BUDGETSUMMARY OF EXPLORATION EXPENSES | 54 |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 16.0 | STATEMENT OF AUTHORSHIP | |
| 17.0 | REFERENCES | |
| LIST | OF FIGURES | |
| | e 2–1. LOCATION OF LARA POLYMETALLIC PROPERTY ON VANCOUVER ISLAND, BRITISH COLUMBIA, | |
| | CANADA | |
| (| E 2–2. REGIONAL MAP OF SOUTHERN VANCOUVER ISLAND SHOWING THE LOCATION OF LARAMIDE MINEF CLAIMS THAT COMPRISE THE LARA PROPERTY (REFER TO TABLE 4–1) E 2–3. LOCATION OF LARA POLYMETALLIC PROPERTY ON SOUTHEASTERN VANCOUVER ISLAND, BC, | |
| | CANADA | 10 |
| Figuri | E 5–1. GEOLOGY OF VANCOUVER ISLAND SHOWING MAJOR GEOLOGICAL FEATURES, STRUCTURES AND COMPONENTS OF THE INSULAR SUPERTERRANE OF THE WRANGELLIA TERRANE (AFTER EARLE, 2004) E 5–2 REGIONAL GEOLOGY OF THE SOUTH CENTRAL PORTION OF VANCOUVER ISLAND, BRITISH COLUME | 18 |
| _ (| AFTER MASSEY ET AL. 2005A) | 22 |
| | E 5–3. BEDROCK GEOLOGY UNDERLYING THE LARA PROPERTY (SOUTH VANCOUVER ISLAND, B.C.) AFTE MASSEY ET AL. 2005A. | |
| FIGUR | E 6–1. IDEALIZED CHARACTERISTICS OF A BIMODAL-FELSIC VMS DEPOSIT (AFTER GALLEY, ET. AL., 2007 | 7). |
| FIGUR | E 7–1 LOCATION OF MINERALIZED ZONES WITHIN MINERAL CLAIMS OF LARA PROPERTY, VANCOUVER SLAND, BC, CANADA | |
| | E 8-1. LOCATION OF THE HELIBORNE GEOPHYSICAL SURVEY OVER THE LARA PROPERTY, 2007 | ∠1 |
| | SUPERIMPOSED ON THE GENERAL GEOLOGY | |
| C | E 8-2. HELIBORNE SURVEY FLIGHT PATHS WITH SCHEMATIC REPRESENTATION OF THE UNDERLYING MINII CLAIMS. | |
| | E 9-1. STORAGE SITE OF SIGNIFICANT INTERVALS PRIMARILY FROM THE CORONATION ZONE (SIDING | |
| | REMOVED BY CCIC)EMOVED BY CCIC'S SITE VISIT | |
| | E 9-1. LOCATION MAP FOR GRAB SAMPLES COLLECTED DURING CCIC'S SITE VISIT E 9-3. SCATTER PLOT OF PRIMARY VERSUS RE-ASSAYED ZN (%) | |
| | E 9-4. SCATTER PLOT OF PRIMARY VERSOS RE-ASSATED ZIN (70) | |
| | E 9–5. SCATTER PLOT OF PRIMARY VERSUS RE-ASSAYED G AG/T. | |
| | E 9–6. SCATTER PLOT OF PRIMARY G AG/T VS. RELATIVE DIFFERENCE OF RE-ASSAY / PRIMARY | |
| | E 9-7. SCATTER PLOT OF PRIMARY VERSUS RE-ASSAYED CU (%) | |
| FIGUR | E 9–8. SCATTER PLOT OF PRIMARY CU (%) VS. RELATIVE DIFFERENCE OF RE-ASSAY / PRIMARY | 41 |
| | E 9–9. SCATTER PLOT OF PRIMARY VERSUS RE-ASSAYED PB (%). | |
| FIGUR | E 9–10. SCATTER PLOT OF PRIMARY PB (%) VS. RELATIVE DIFFERENCE OF RE-ASSAY / PRIMARY | |
| FIGUR | ASSIGNED TO EACH LENSEAST FACING PERSPECTIVE VIEW OF CORONATION ZONE MODELS WITH ZONE NUMBERS ASSIGN TO EACH LENS. | ED |
| | E 11-3. SCATTER PLOT OF SAMPLED PERCENT ZN AND SPECIFIC GRAVITY WITH REGRESSION | |
| FIGUR | E 11-4. SCATTER PLOT OF PERCENT ZN VERSUS RELATIVE DIFFERENCE OF CALCULATED AND SAMPLED SPECIFIC GRAVITY. | |
| | E 11–5. HISTOGRAM OF NON-COMPOSITE SAMPLE LENGTHS | |
| LIST | OF TABLES | |
| TABLE | 2–1. MINERAL CLAIMS COMPRISING THE LARA PROPERTY, BRITISH COLUMBIA, CANADA AS OF NOVEMB | ER |
| 1 | 15, 2007, INCLUDING DOLLAR AMOUNTS OF ASSESSMENT WORK REQUIRED FOR THE PERIOD OCTOBER 3 | , |
| TABLE | 4-1. SUMMARY OF PROPERTY OWNERSHIP ON THE ORIGINAL LARA PROPERTY (ARCHIBALD, 1999; LARAMIDE, 2007). | |
| | | |



| Table 4–2. Summary of property ownership on the original Chemainus Property (Stewart, 1991 |).13 |
|---------------------------------------------------------------------------------------------|------|
| Table 4–3. Exploration history of the Lara Property (Archibald, 1999; Peatfield and Walker, | |
| 1994) | 14 |
| Table 4–4. Exploration history of the Chemainus Property (Archibald, 1999; Stewart, 1991) | 15 |
| Table 4–5. Summary of historical drilling programs on Lara Property | 16 |
| Table 4–6. Historical resource estimates for the Lara Deposit in the Coronation Trend | 17 |
| Table 5–1 Stratigraphy of the Buttle Lake and Sicker Groups underlying the Lara Property ar | ŁΕΑ |
| (AFTER MASSEY 1992) | 21 |
| Table 7–1. Mineralized zones within the Lara Property | 26 |
| Table 9–1. GPS waypoints recorded during CCIC site visit | 36 |
| Table 9–2. Locations of grab samples collected during CCIC site visit. | 36 |
| Table 9–3. Assay results of grab samples collected during CCIC site visit | 36 |
| Table 11-1. Mineralized intercepts from drill hole 85-44 | 45 |
| Table 11-2. Calculated equivalents for mineralized interval in drill hole 85-44 | 45 |
| Table 11-3. Moving average values (USD) utilized to calculate metal equivalents | 46 |
| Table 11-4. Summary of sample top capping | 50 |
| Table 11-5. Block model parameters used for the Posse deposit model | 51 |
| Table 11-6. Summary of search parameters. | 51 |
| Table 11-7. Coronation Trend Mineral Resource Estimate | 52 |
| Table 11-8. Metal content of Mineral Resource Estimate | 52 |
| Table 14–1. Summary budget for recommendations on the Lara VMS Property | 54 |
| Table 15–1. Summary of exploration expenses. | 55 |

LIST OF APPENDICES

APPENDIX 1 Certificates of Qualification

APPENDIX 2 Sections: Drill Holes and Mineralization

APPENDIX 3 Summary of QA/QC Sampling and Assay Certificates

APPENDIX 4 Aeroquest AeroTEM Report and AeroTEM Off-Time Maps

VOLUME 2

APPENDIX 4 Aeroquest Geophysical Maps

VOLUME 3

APPENDIX 4 Aeroquest Geophysical Maps



1.0 INTRODUCTION AND TERMS OF REFERENCE

1.1 Introduction

Caracle Creek International Consulting Inc. has been retained by Laramide Resources Ltd. to conduct an Independent Mineral Resource Estimate of the base and precious metal resources located on the Lara Polymetallic Property and conduct exploration on the Property comprised by an airborne geophysical survey of the entire Property and drill core re-sampling. In addition, Laramide requested CCIC to provide recommendations and to propose an exploration program and a budget for further exploration and development on the Property.

The Lara Property, located in the southern portion of Vancouver Island, lies about 75 km north of Victoria, ~15 km northwest of Duncan and ~12 km west of the Village of Chemainus, British Columbia, Canada. Situated in the Victoria Mining Division, the Property is centred at approximately 48°52'52" N and 123°54'18" W.

The Property comprises 32 mineral claims (6,844 ha) held 100% by Laramide Resources Ltd., with eight (8) of the mineral claims subject to a 1% Net Smelter Return Royalty ("NSR") to Bluerock Resources Ltd.

The Property hosts the Lara copper-lead-zinc-gold-silver deposit ("Lara Deposit") which comprises two main sulphide zones referred to as the Coronation and Coronation Extension zones. Critical intersections of sulphide mineralization in diamond drill core are currently stored in sheltered core racks on the Property.

During the course of the exploration program, total of 500.1 line-km of airborne geophysical lines were flown of which 477.8 line-km were on Laramide controlled claims. This work encompassed the entire claim package owned by Laramide. Drill core sampling, totalling 78 samples, occurred within a few meters of a core storage facility on the Property (on claim 260344) but the drill holes that were sampled we originally drilled on claims 260344, 260342 and 512327. A total of \$112,500 was spent during the course of this work.

1.2 Terms of Reference and Units

The Metric System is the primary system of measure and length used in this Report and is generally expressed in kilometres (km), metres (m) and centimetres (cm); volume is expressed as cubic metres (m³), mass expressed as metric tonnes (t), area as hectares (ha), and gold and silver concentrations as grams per tonne (g/t). Conversions from the Metric System to the Imperial System are provided below and quoted where practical. Many of the geologic publications and more recent documents now use the Metric System but older documents almost exclusively refer to the Imperial System. Metals and minerals acronyms in this report conform to mineral industry accepted usage and the reader is directed to www.maden.hacettepe.edu.tr/dmmrt/index.html for a glossary.



Conversion factors utilized in this report include:

- 1 troy ounce/ton = 34.285714 grams/tonne
- 1 gram/tonne = 0.029167 troy ounces/ton
- 1 troy ounce = 31.103477 grams
- 1 gram = 0.032151 troy ounces

The term gram/tonne or g/t is expressed as "gram per tonne" where 1 gram/tonne = 1 ppm (part per million) = 1000 ppb (part per billion). The mineral industry accepted terms Au g/t and g/t Au are substituted for "grams gold per metric tonne" or "g Au/t". Other abbreviations include ppb = parts per billion; ppm = parts per million; oz/t = troy ounce per short ton; Moz = million ounces; Mt = million tonne; t = tonne (1000 kilograms); SG = specific gravity; lb/t = pound/ton; and, st = short ton (2000 pounds).

Dollars are expressed in Canadian currency (CAD\$) unless otherwise noted. Zinc (Zn), copper (Cu) and lead (Pb) are reported in US\$ per pound (US\$/lb) or US\$ per metric tonne (US\$/t). Gold (Au) and silver (Ag) are stated in US\$ per troy ounce (US\$/oz). Where quoted, Universal Transverse Mercator (UTM) coordinates are provided in the datum of Canada, NAD83 Zone 10 North.

1.3 CCIC Qualifications

Caracle Creek International Consulting Inc. is an international consulting company with the head office of Canadian operations based in Sudbury, Ontario, Canada. CCIC provides a wide range of geological and engineering services to the mineral industry. With offices in Canada (Sudbury and Toronto, Ontario and Abbotsford, British Columbia) and South Africa (Johannesburg), CCIC is well positioned to service its international client base.

CCIC's mandate is to provide professional geological and engineering services to the mineral exploration and development industry at competitive rates and without compromise. CCIC's professionals have international experience in a variety of disciplines with services that include:

- Exploration Project Generation, Design and Management
- Data Compilation and Exploration Target Generation
- Property Evaluation and Due Diligence Studies
- Independent Technical Reports (43-101)/Competent Person Reports
- Mineral Resource/Reserve Modelling, Estimation, Audit; Conditional Simulation
- 3D Geological Modelling, Visualization and Database Management

In addition, CCIC has access to the most current software for data management, interpretation and viewing, manipulation and target generation.

The Qualified Person and principal author for this Report is Mr. Iain Kelso, Technical Manager for CCIC and a geoscientist in good standing with the Association of Professional Geoscientists of Ontario (APGO



#1345). Mr. Kelso has several years experience in geological modelling and resource calculations, and in the management of quality control-quality assurance programs. Mr. Kelso has written or co-written numerous NI43-101 compliant Independent Technical Reports and Mineral Resource Estimates.

Mr. Stephen Wetherup, co-author of this Report, is General Manager of CCIC Canada, and a geologist in good standing with the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC #27770). Mr. Wetherup has more than 10 years of experience in the mineral exploration industry, specializing in structural geological mapping and interpretation, with exploration experience in base metals, gold, uranium, diamonds and platinum-group elements. Mr. Wetherup has written or co-written numerous NI43-101 compliant Independent Technical Reports.

Certificates of Author are provided in Appendix 1.

2.0 PROPERTY DESCRIPTION AND LOCATION

2.1 Location

The Lara Property, located in the southern part of Vancouver Island, lies approximately 75 km north of Victoria, 15 km northwest of Duncan and 12 km west of the Village of Chemainus, British Columbia, Canada (Figures 2-1 and 2-2). The Property, situated in the Victoria Mining Division, is centered at 48°52'52" N and 123°54'18" W (NAD83 Zone 10 North: 5414789mN and 433651mE) and is covered by the 1:50 000 National Topographic Series ("NTS") map sheet 92B/13 [Duncan] and 92C/16 [Cowichan Lake].

2.2 Description and Ownership

The Lara Property is 100% held by Laramide Resources Ltd. and comprises 32 mineral claims covering 6,844 hectares (Table 2–1; Figure 2–3). Eight (8) mineral claims, previously held by Bluerock Resources Ltd., are subject to a 1% NSR as per a *Mineral Property Purchase and Sale Agreement* dated May 25th,

3.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

3.1 Access

A network of logging roads and rough drill trails extend to most areas on the Property (Figure 2-3). Vehicle access to the Property is via the Chemainus River Logging Trunk Road (MacMillan Bloedel) for 12 km from Highway No. 1 at Chemainus. From the Chemainus River Road, the Property is accessed by a network of secondary logging and forestry roads, at Mile 10, Mile 12 and C-7 to the power line service road to reach the different parts of the claim group. The B.C. Hydro Right of Way (a cleared power line right-of-way) cuts across the Property (northwest to southeast). Although these roads provide access, they go through rough terrain and steep grades. The northern and northeastern sections of the Property





Figure 2–1. Location of Lara Polymetallic Property on Vancouver Island, British Columbia, Canada.



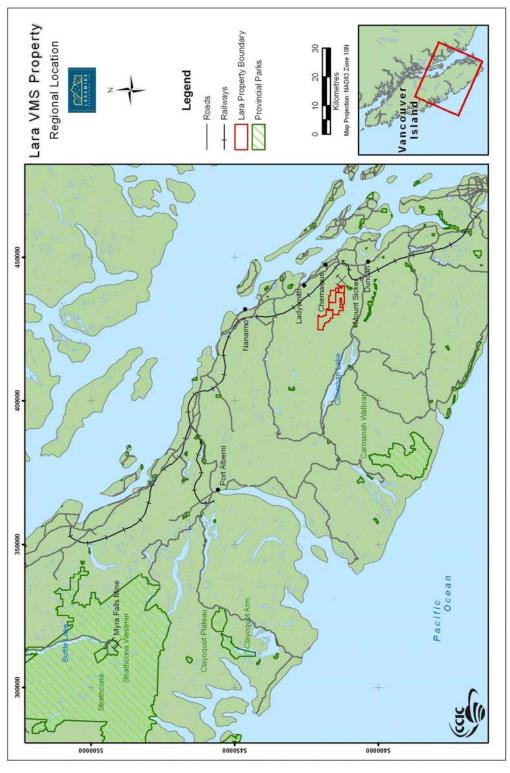


Figure 2–2. Regional map of Southern Vancouver Island showing the location of Laramide mineral claims that comprise the Lara Property (refer to Table 4–1).



Table 2–1. Mineral claims comprising the Lara Property, British Columbia, Canada as of November 15, 2007, including dollar amounts of assessment work required for the period October 3, 2006 to January 21, 2010.

| Tenure | Name | ed for the period October 3, 20 Expiry (dd/mm/yy) | Area (ha) | Assessment Work (\$) | Submission Fee (\$) |
|---------|-----------|----------------------------------------------------|------------|----------------------|------------------------|
| 260341 | FANG | 21/01/10 | 500 | 8007.73 | 400.55 |
| 260342 | SILVER 1 | 21/01/10 | 300 | 4804.64 | 240.33 |
| 260343 | SILVER 2 | 21/01/10 | 225 | 3603.48 | 180.25 |
| 260344 | SOLLY | 21/01/10 | 225 | 3603.48 | 180.25 |
| 260345 | TL | 21/01/10 | 500 | 8007.73 | 400.55 |
| 260393 | | 21/01/10 | 25 | 400.13 | 20.03 |
| 260394 | | 21/01/10 | 25 | 400.13 | 20.03 |
| 260395 | | 21/01/10 | 25 | 400.13 | 20.03 |
| 260419 | UGLY | 21/01/10 | 150 | 2403.12 | 120.16 |
| 260420 | WIMP | 21/01/10 | 50 | 801.04 | 40.05 |
| 260421 | NERO | 21/01/10 | 25 | 400.52 | 20.03 |
| 260521 | JENNIE | 21/01/10 | 100 | 1600.38 | 80.11 |
| 260606 | TOOTH | 21/01/10 | 125 | 2000.56 | 100.14 |
| 260607 | COR 1 FR. | 21/01/10 | 25 | 400.11 | 20.03 |
| 260608 | COR 2 FR. | 21/01/10 | 25 | 400.11 | 20.03 |
| 260609 | COR 3 FR. | 21/01/10 | 25 | 400.11 | 20.03 |
| 260610 | COR 4 FR. | 21/01/10 | 25 | 400.11 | 20.03 |
| 260611 | COR 5 FR. | 21/01/10 | 25 | 400.11 | 20.03 |
| 260612 | COR 6 FR. | 21/01/10 | 25 | 400.11 | 20.03 |
| 260613 | COR 7 FR. | 21/01/10 | 25 | 400.11 | 20.03 |
| 260624 | TOUCHE | 21/01/10 | 300 | 4800.00 | 240.33 |
| 260625 | CAVITY | 21/01/10 | 300 | 4800.00 | 240.33 |
| 260626 | PLANT | 21/01/10 | 500 | 8010.87 | 400.55 |
| 260627 | FACE | 21/01/10 | 300 | 4803.52 | 240.33 |
| 512321* | | 21/01/10 | 84.965 | 1023.3 | 78.59 |
| 512325* | LADY 6 | 21/01/10 | 382.311 | 4604.49 | 353.61 |
| 512327* | LADY 7 | 21/01/10 | 530.958 | 6394.77 | 491.10 |
| 512331* | LADY 8 | 21/01/10 | 360.994 | 4347.75 | 333.89 |
| 512355* | LADY 9 | 21/01/10 | 530.847 | 6393.43 | 491.00 |
| 512358* | | 21/01/10 | 530.552 | 6389.88 | 490.72 |
| 512359* | | 21/01/10 | 530.506 | 6389.33 | 490.68 |
| 512362* | | 21/01/10 | 42.465 | 511.44 | 39.28 |
| | | TOTALS: | 6,843.6 ha | \$97,702.62 | \$5,853.13 |

^{*}subject to 1% NSR held by Bluerock Resources Ltd.



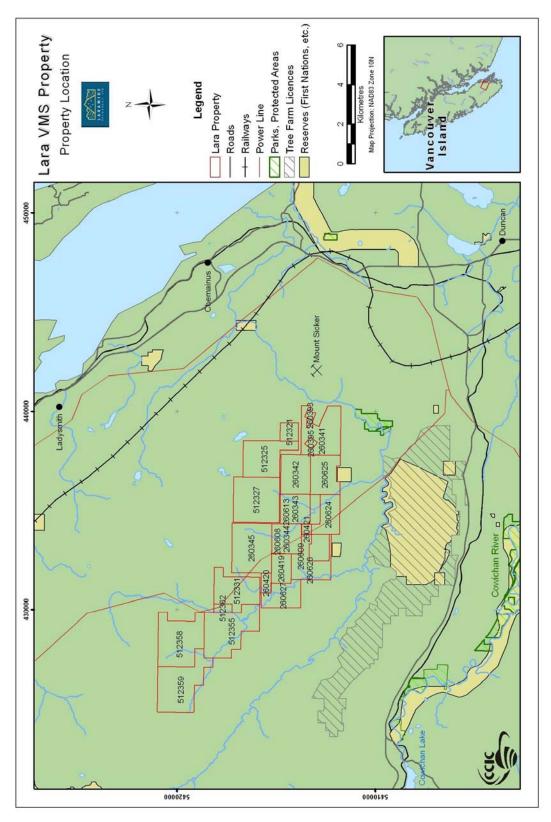


Figure 2–3. Location of Lara Polymetallic Property on southeastern Vancouver Island, BC, Canada.



in particular are difficult because the terrain is steep and broken by numerous gullies: access to these areas is limited to an existing grid between the access roads. The Trans Canada Highway (Highway No. 1) provides access to these roads from Chemainus and Victoria. This route also provides the best access for heavy equipment to the Property.

3.2 Climate and Vegetation

The climate in the Duncan – Port Alberni area is a typical continental climate with moderating influences of the Pacific air throughout the year. The area lies within a rain shadow leeward of the coastal mountains. In summer there is intense surface heating and convective showers, and in the winter there are frequent outbreaks of Arctic air. The mean annual temperature and precipitation varies to some extent within the region, depending on the location's elevation and proximity to salt water. At sea level snow fall is infrequent, although it increases with elevation. The January mean temperatures are also moderated with an average temperature of 2.7°C (37°F). Duncan has a July mean maximum of 25.2°C (77.4°F) and a July mean minimum of 11.6°C (52.9°F). However, precipitation (with the most falling between October and March) varies from 96.1 cm (37.85 in) in Cowichan Bay, 109.2 cm (41.04 in) in Duncan, and 117.6 cm (46.28 in) in Chemainus. Vegetation is dominated by dense mixed forest of pine, spruce, cedar, alder, poplar and local low lying swamps and marshes.

3.3 Physiography

The Property straddles the southern flank of the Coronation Mountains which include both Mount Brenton and Mount Hall. Total relief on the Property is on the order of 1,000 metres ranging from 200 m above sea level ("ASL") near the Chemainus River at the southeast end of the claims to about 1,200 m near the top of Mount Brenton and on the high hills to the northwest. Elevation on the Property generally increases towards the north and west with the lowest point in the southeast at 174 m. The topography is gentle to steep where creeks have deeply incised the terrain. Outcrop is abundant along creek valleys and roads, but in general there exists extensive thick deposits of glacial overburden and little outcrop. The entire Property lies in a heavily forested area, although there has been extensive logging activity for the past 40 years and most of the tree cover is second or even third growth. Much of the Property has been logged by clear-cutting methods over the past 40 years with present vegetation consisting of secondary growths of spruce, balsam, fir and cedar with thick undergrowth cover (Archibald, 1999; Peatfield and Walker, 1994; Roscoe, 1988).

3.4 Infrastructure and Local Resources

The Property, located between Victoria (population 325,000) and Nanaimo (population 78,700), lies within the southern part of Vancouver Island which also supports most of the population base of the island. Services include hospital, medical and dental facilities, pharmacy, restaurants, grocery stores, hotels, service stations and major automobile dealerships, small airports, banks, building supply centers and



other small businesses. The regional government of the Cowichan Valley Regional District (includes the towns of Cowichan (population 2,830), Ladysmith (population 8,000) and the City of Duncan (population 5,500), Chemainus, and Nanaimo support the service needs of the local communities.

A British Columbia hydro line crosses the Lara Property and is a source of power for any development on the Property (Peatfield and Walker, 1994). The Myra Falls Operating Facility, the milling site for the Buttle Lake/Myra Falls mine (operated by NVI, a subsidiary of Breakwater Inc.) is a potential facility for the processing of future ore of the Lara mine and is located 140 km due north (300 km by road) of the centre of the Lara Property (Roberts, 2007).

4.0 PROPERTY HISTORY

The original claims on the Lara Property were staked by Laramide in 1981. The original Lara Property encompassed the Coronation Zone, Coronation Extension, Randy North and the "262" mineralized zones (see Figure 7-1). The Property boundaries were expanded in 1992 when Laramide acquired claims within the northwest and northeast blocks of Chemainus claims from Falconbridge. The new group of claims includes the northernmost mineralized zones; Anita, Silver Creek, "126" and Sharon zones (see Figure 7-1). The Chemainus Property option agreement between Falconbridge and Laramide executed in June 1992 resulted in the addition of approximately 3,725 ha. Exploration of the two properties prior to their amalgamation was carried out separately with different operators, the Chemainus Property having the longer history of exploration work. Several operators were involved in the exploration of these properties. For clarity, the historic group names will be retained for much of this report: the Lara Property makes up the central portion of the final Property boundary comprising mostly of mineral legacy claims (Figure 2–3) and the Chemainus Property is made up of mineral cell claims to the northeast and west.

Abermin Resources Ltd. carried out the exploration programs after the first claims on the Lara Property were staked in 1981. Minnova Inc. purchased the Abermin interests in 1988 and took over as operator of the exploration programs. Nucanolan Resources Ltd. entered into an option agreement with Laramide in 1998 to conduct exploration programs on the Lara Property.

Interest in the area of the Chemainus Property, in particular west of the Chemainus River began when rights to the Esquimalt and Nanaimo Railway Land Grant were surrendered back to the Crown and became available for staking. In 1903, an adit was excavated near a copper showing in the area of the Sharon Zone – it was dominated by pyrite with minor chalcopyrite. In 1915, a 50-foot shaft was sunk near the Anita Zone and revealed a chalcopyrite-bearing pyrrhotite lens in schist. In the 1960's, exploration accelerated with increasing number of geological mapping and geophysical surveys: Cominco working in the west and Imperial Oil Resources working in the east. The subsequent operators and their interests in the properties are outlined in Tables 4–1 and 4–2.



Table 4-1. Summary of property ownership on the original Lara Property (Archibald, 1999; Laramide, 2007).

| Year | Company | Property | | |
|---------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| 1981 | Laramide | Laramide staked claims for Lara Property [Coronation Trend area] south and east of Chemainus Property | | |
| 1982-88 | Abermin | Abermin [originally Aberford Resources] entered into a Joint Venture agreement with Laramide | | |
| 1987 | Abermin | The Lara Property is owned 65% by Abermin Corporation and 35% by Laramide: Abermin is the operator | | |
| 1988-91 | Minnova | Minnova Inc. purchased Abermin's interest (65% ownership in 1988) and acquired exclusive exploration rights to the Lara Property | | |
| 1992 | Falconbridge | Chemainus Property option agreement between Falconbridge and Laramide was finalized; work done on Property by Minnova under option with Falconbridge | | |
| 1998 | Nucanolan | Nucanolan Resources Ltd. under option to Laramide becomes operator of Lara Property exploration programs with the right to earn 50% interest in the Property in consideration of an annual payment and exploration of development work | | |
| 2006 | Laramide | Laramide acquired 8 mineral claims, from Bluerock, for \$125,000 and a 1% NSR to be held by Bluerock | | |

Table 4-2. Summary of property ownership on the original Chemainus Property (Stewart, 1991).

| Year | Company | Property | | |
|----------------------------------------------------------------------------------------------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| 1966-67 | Cominco Ltd. | base metal rights were optioned from Canadian Pacific Oil and Gas Limited (controlled E&N Railway Land grant). | | |
| 1976 Imperial Oil Ltd staked mineral claims on the southern flank of Mt. Brenton and Silver Creek Zone a | | staked mineral claims on the southern flank of Mt. Brenton and Silver Creek Zone area as Brent and Holyoak claims | | |
| 1977-83 | Esso Minerals | original Chemainus Property [Chemainus NW and NE blocks] includes Anita, Randy, Silver Creek, 126 and Sharon zones | | |
| 1983 | Esso Minerals | conducted exploration program for Kidd Creek Mines | | |
| 1984 | Kidd Creek | Kidd Creek Mines Ltd entered into a Joint venture agreement with Esso | | |
| 1989 | Falconbridge | Falconbridge purchased Esso's interest | | |
| 1992 | Falconbridge | Chemainus Property option agreement between Falconbridge and Laramide was finalized; work done on Property by Minnova under option with Falconbridge | | |

4.1 Exploration History

Exploration and prospecting on Vancouver Island began in 1862 with small-scale placer gold mining on China Creek near Port Alberni. By the 1890s more gold mining took place along the Alberni Inlet at China Creek and Mineral Creek and several gold veins were found. Exploration for gold continued over the years with peaks in 1930s and 1960s (Massey and Friday 1989). In 1865, the John Buttle expedition was the first to explore the Buttle Lake area (Chong, 2005); and the Price Ellison Expedition arrived in 1910. The Strathcona Park Act was legislated in 1911 and the first claims in the Buttle Lake area were staked on 1918. Further south, the first claim to be staked in the Big Sicker Mountain area was in 1895 (MINFILE, 1997); the Lenora and Tyee mines were discovered in 1897 and production began in 1898 and lasted until 1909. The Tyee, Lenora and Richard deposits of the Mt. Sicker mine were eventually amalgamated into the Twin J mine which operated intermittently between 1942 and 1952.

Following the discovery of the HW polymetallic massive sulphide orebody at Buttle Lake (1979), nearly all areas of Sicker Group outcrop in the Alberni-Nanaimo Lakes and the Duncan area have been staked. Polymetallic massive sulphide deposits have been a major target within the Sicker Group since the development of the Myra Falls mine at Buttle Lake (1960's), and extensive drilling has occurred since



then. Deposits associated with felsic volcanic rocks continue to be discovered within the McLaughlin Ridge Formation of the Cowichan uplift (Massey and Friday 1989).

Table 4-3. Exploration history of the Lara Property (Archibald, 1999; Peatfield and Walker, 1994).

| Year | Company | Exploration Activity | |
|---------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1981-83 | Abermin | Geological mapping, geophysical and geochemical surveys and backhoe trenching | |
| 1984 | Abermin | 12 diamond drill holes, 1,346 metres; backhoe trenching. Discovery of Coronation Zone - intersected true thickness of 7.95 m of 0.68% Cu, 0.45% Pb, 3.01% Zn, 67.54 g/t Ag, 3.46 g/t Au; | |
| 1985 | Abermin | 61 diamond drill holes, 7,437 m Discovery of Coronation Extension - intersected over 3.08 m of 1.16% Cu, 2.53% Pb, 9.22% Zn, 8.6 g/t Ag, 0.213 oz/Au | |
| 1986 | Abermin | Discovery of Randy north - over a true width of 3.51 metres returned 3.04% Cu, 43.01% Zn, 8.3% Pb, 513.6 g/t Ag, 24.58 g/t Au 75 Diamond drill holes, 11,339 m; Mineralogical testing by CANMET | |
| 1987 | Abermin | Delineate Coronation Trend, Randy North Zone 83 Diamond drill holes, 15,038 m Metallurgical testing by Coastech Research Inc | |
| 1988 | Minnova | 1988-91, Minnova under option for exclusive exploration rights to Lara Property Underground exploration program Diamond drilling (surface included); Metallurgical testing from Coronation Trend Trenching (770 m of ramping and drifting in Coronation Zone) | |
| 1989 | Minnova | Exploration program to delineate extent of Coronation Trend, geological work, lithological sampling, line-cutting, geophysical surveys (EM and IP) 43 Diamond drill holes, 10,328 m; Reclamation and closure plan prepared | |
| 1990 | Minnova | Exploration program by Minnova, focussed on the 262 Felsic volcanic rocks which define the structural hangingwall to the Coronation Trend 49 Diamond drill holes, 11,167 m | |
| 1992 | Falconbridge | option agreement between Falconbridge and Laramide was completed (executed); work done on Property by Minnova under option with Falconbridge | |
| 1998 | Nucanolan | Coronation Trend area, exploration program with 12 drill holes (2,559 m) | |

Exploration work includes geophysical work, geochemistry and geological mapping (and prospecting), as well as diamond drilling. The geophysical surveys were determined to be mostly ineffective due to terrain conditions, low chargeability contrast of the rock units and poor conductivity of the zinc-rich massive sulphides (Wells and Kapusta, 1990). However, magnetometer and VLF-electromagnetic surveys were useful in delineating zones along strike of conductivity of the sulphide mineralization for locating drilling locations (Archibald, 1999). Geochemical data tends to be inconclusive due to the thick overburden cover in many areas; some degree of oxidation and weathering; and a lack of corroboration by visual identification or drilling as to the continuity of the underlying sulphide zones (Wells and Kapusta, 1990).



Drilling was the most effective exploration tool for the Lara project area primarily due to these accessibility and challenges to interpreting the geophysical data in the area (Peatfield and Walker, 1994).

Table 4-4. Exploration history of the Chemainus Property (Archibald, 1999; Stewart, 1991).

| Year | Company | Exploration Activity | | |
|---------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| 1903 | unknown | Sharon "copper" Zone was discovered (Sharon Copper Mine Limited 1963) | | |
| 1915 | unknown | Anita occurrence discovery and 50-foot shaft excavated | | |
| 1966-67 | Cominco | Geological mapping and IP survey on claims in the northwest | | |
| 1977-83 | Esso | Covers Anita, Randy North, Silver Creek, 126 and Sharon zones. Exploration program included airborne EM survey, Genie-EM survey, drilling, soil sampling | | |
| 1984 | Kidd Creek | Joint Venture Esso Minerals and Kidd Creek: geophysical surveys | | |
| 1985-90 | Falconbridge | Falconbridge operated geophysical (IP, VLF, Magnetic) surveys; drilling in 1988 and onwards; Property purchased by Falconbridge from Esso | | |
| 1990 | Falconbridge | Drilling, testing anomalies, VLF and EM | | |
| 1992 | Falconbridge | option agreement between Falconbridge and Laramide was completed; work done on Property by Minnova under option with Falconbridge | | |

4.1.1. Underground Exploration

In 1988, an underground exploration program tested the continuity of the Coronation Zone, evaluated rock conditions for mining cost estimates and provided a bulk sample for metallurgical tests (see Section 10.0). The program included ramping (from the footwall side) and crosscutting to access the high-grade mineralized zone and was followed by geological mapping (1:100 and 1:50 scales) and sampling (muck; test hole, diamond drilling (NQ size) and chip-channel) (Harris, 1988).

The results of the program confirm the presence of several potentially economic, continuous pods of zinc and gold rich mineralization along the Coronation Trend. Zinc and gold provide the gross metal value of the deposit with lesser silver, copper and lead. The dominant mineralization style is not massive, but consists of a structurally complicated mixture of sulphide bands, laminae, stringers and isolated massive pods in a siliceous, somewhat fragmental rhyolitic host rock. Reverse and normal faulting has juxtaposed the differing mineralization modes within this zone. Remobilization of primary sulphide into new modes of occurrence appears to determine the final morphology of the deposit. The presence of gold and silver not tied to any particular mineralization type or host rock also indicates secondary mineralization.

The underground mapping program delineated four major structural-mineralogical domains in the Coronation Zone that differ with respect to grade, structural setting, mineralization styles and implications for future mine design. The eastern section showed the discontinuous and poddy character of the highgrade mineralization and therefore the disadvantages to widely spaced drilling. This complex high-grade mineralized and multi-directionally faulted zone transitions to a thinner structurally simpler low- to



medium-grade section to the west. The mineralization was a mixed sequence of banded, to poddy semimassive material containing impersistent boudinaged pods and bands of massive pyrite. The western section contained mineralization that approached significant grades and widths. It consisted mainly of pyrite (85%) with locally enriched sphalerite and chalcopyrite banded and brecciated zones. The entire zone was strongly sericitized and appeared shattered and brecciated (Harris, 1988).

4.2 Historical Drilling

Drilling primarily focused on delineating the mineralization extent of the Coronation Trend. A total of 490 diamond drill holes, totalling ~101,686 metres, have been reported as completed on the Property (Table 4-5). Twenty-four (24) of these drill holes, totalling 473.20 m, were completed from underground by Minnova (Peatfield and Walker, 1994). The most recent drilling was by Nucanolan, who in 1998 completed 12 drill holes totalling 2,559 m (Archibald, 1999). **There has been no diamond drilling on the Property since 1998**.

Table 4-5. Summary of historical drilling programs on Lara Property.

| Company | No. of Holes | Length (m) |
|--------------|--------------|------------|
| Abermin | | |
| 1984 | 12 | 1,346 |
| 1985 | 61 | 7,437 |
| 1986 | 75 | 11,339 |
| 1987 | 83 | 15,038 |
| Minnova | | |
| 1988 | 24 | 473 |
| 1989 | 43 | 10,328 |
| 1990 | 49 | 11,123 |
| Falconbridge | | |
| 1977 to 1990 | 131 | 42,043 |
| Nucanolan | | |
| 1998 | 12 | 2,559 |
| Total: | 490 | 101,686 |

4.3 Historical Resource Estimates

The historical estimates of resources were calculated by several operators and consultants. They were determined on the basis of best intersections from diamond drill core and using various cut-off grades and values (Table 4-6).

CCIC considers all of the historical resource estimates to be non-compliant with National Instrument 43-101 standards and as such they should not be relied upon.



The inventory files of the British Columbia government (MINFILE 092B 129) report the Lara Deposit as 528,839 tonnes grading 5.87% Zn, 1.22% Pb, 1.01% Cu, 100.09 g/t Ag and 4.73 g/t Au which has a reported source of the "George Cross News Letter No. 188, September 29, 1992".

Table 4–6. Historical resource estimates for the Lara Deposit in the Coronation Trend.

| DATE | COMPANY | RESOURCE ESTIMATE |
|------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | |
| 1986 | Abermin | Reserves to the end of 1986: estimated at 837,332 tonnes, grading 0.61% Cu, 3.59% Zn, 0.81% Pb, 3.26 g/t Au (0.085 opt Au), 89.49 g/t Ag (2.61 opt Ag) (Bailes et al., 1987) |
| 1988 | Abermin | Probable Reserve: 199,000 tons grading 0.72% Cu, 0.89% Pb, 4.68% Zn, 2.90 opt Ag and 0.110 opt Au. |
| | | Possible Reserve : 272,000 tons grading 0.75% Cu, 0.95% Pb, 4.15% Zn, 2.17 opt Ag and 0.10 opt Au. |
| | | Reserves estimated using \$US80 cut-off grade, minimum width of 2m and average thickness of 3 m (Roscoe and Postle, 1988) |
| 1989 | Minnova | Reported 324,100 tonnes grading 0.91% Cu, 6.01% Zn, 1.26% Pb, 111.07 g/t Ag and 4.70 g/t Au |
| | | Resource estimated using cut-off of \$50 NSR over 2.0 metre (NSR = \$101.67 per tonne) (Wells and Kapusta, 1990a) |
| 1997 | Laramide | Resource: 580,000 tons averaging 1.01% Cu, 1.22% Pb, 5.87% Zn, 2.92 opt Ag, 0.138 opt Au averaging 8.3 feet thick (Nucanolan, 1998 ; Peatfield and Walker, 1994) |
| 1998 | Nucanolan | Resource: 583,000 tons averaging 1.01% Cu, 1.22% Pb, 5.87% Zn, 2.92 opt Ag and 0.138 opt Au over an average thickness of 8.3 feet (Archibald, 1999; Nucanolan Resources Ltd., 1998) |

4.4 Historical Production

To the best of the authors' knowledge that has not been any historical production on the Property.

5.0 GEOLOGICAL SETTING

5.1 Regional Geology

Vancouver Island lies wholly within the Insular Superterrane of the Canadian Cordillera that makes up one of the five tectonic belts produced by the collisions and accretions along the Canadian northwest edge of North America (Lithoprobe, 2007). The island is dominated by rocks of the Wrangellia Terrane, that consist of three volcano-sedimentary cycles: the oldest volcanic cycle is made up of the volcanic rocks of the Upper Palaeozoic Sicker Group which are conformably overlain by the limestone rocks of the Buttle Lake Group; the second cycle is made up of the tholeitic volcanic rocks of the Karmutsen Formation of the Vancouver Group which are overlain by the limestone of the Quatsino Formation; and the third cycle is made up of the volcanic rocks of the Lower Jurassic Bonanza Group (Figure 5–1). These cycles have been intruded by mafic sills of the Mount Hall Gabbro (coeval with the overlying Karmutsen



Formation) and subsequently intruded by various granodioritic stocks. The sedimentary rocks of the Cretaceous Nanaimo Group unconformabley overlie these older sequences (Massey, 1992).

Regional-scale warping of the Vancouver Island rocks produced the 3 major geanticlinal uplifts cored by Sicker Group rocks, including the Cowichan (Horne Lake – Cowichan), Buttle and Nanoose uplifts. The oldest rocks of Wrangellia lie at the top of an imbricated stack of northeast-dipping thrust sheets and are Late Silurian to Early Permian arc sequences (Green, Scoates and Weis, 2005). The Sicker and Buttle Lake groups, the main target for volcanogenic massive sulphide deposits, are primarily exposed in the Cowichan Lake area, at the southeastern extent of the Cowichan uplift (BCMEMPR, 2007a) (Figure 5–2).

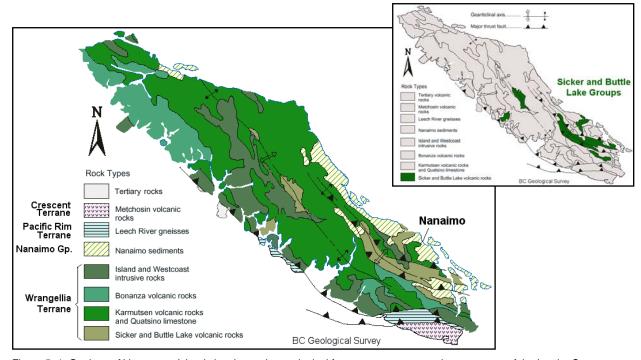


Figure 5–1. Geology of Vancouver Island showing major geological features, structures and components of the Insular Superterrane of the Wrangellia Terrane (after Earle, 2004).

Vancouver Island has undergone at least six periods of deformation (Massey and Friday, 1987) giving rise to a broad antiform structure with a west-northwesterly axis, with younger units towards the west and plunging from 5° to 15° to the west-northwest to east-southeast. The schistosity and cleavage is moderate to steeply dipping to the northeast. Large-scale west to northwesterly trending thrust faults cut the Cowichan-Horne Lake uplift into multiple slices (Figure 5–2). These in turn these are transected by northeast trending block faults. The over-thrusting of these faults pushed the older units up over the younger. Two major fault zones are recognized. The Cameron River fault runs southeast along the Cameron River valley, and joins the Fulford fault. The Fulford fault is a regional west-northwest trending fault that dips at about 47° and crosscuts bedding in the volcanic rocks (McLaughlin Ridge Formation) at a shallow angle The thrusts (where exposed) are high-angle reverse faults which dip between 45° and



90° to the east or northeast, generally place older rocks over younger and become listric at mid-crustal depths. The metamorphic grade in the area is generally low, but increases with the age and structural position of the rocks (Massey and Friday, 1989; MINFILE, 1990a).

The surficial geology and stratigraphy of the southern Vancouver Island have been studied in the area, and the glacial events established by Blyth and Rutter (1993). The surficial geology of area is characterized by glaciomarine drift, beach materials, till and/or glaciofluvial/fluvial sand and gravel in the low-lying (200-300 metres) coastal areas. Higher elevations (from 600 to 900 m ASL) are covered by till or colluviated till, glaciofluvial sand and gravel and more recent colluvium. Diamicton deposits are found in low-lying areas of Ladysmith (up to 12 m of massive, indurated and clay-rich). Chemainus is draped by 1 to 2 metres of silty diamicton directly on bedrock or over silty clay unit and in upland areas overlying glaciofluvial sand and gravel. Sand and gravel deposits are found west of Victoria and in the Chemainus area, throughout the lower and upper Cowichan Valley (area east of Cowichan Lake). Convoluted, interbedded sand, gravel and diamicton combined with pitted, kame and kettle topography occurs just south of Duncan. Economic aggregate deposits have been established at Metchosin, Lanford, Goldstream, Duncan and parts of the Cowichan Valley. The mountainous inland areas appear to have been completely covered by ice. Surficial materials consist of colluviated diamicton over bedrock. Exposures of well-indurated clay-rich diamicton or sandy diamicton occur locally in valley basins. These diamictons are usually overlain by recent fluvial sands, gravels and lacustrine silts and clays.

5.2 District Geology

The Sicker Group is a package of volcanic and volcaniclastic rocks that forms the exposed basement on Vancouver Island (Massey 1992). The Kuroko-type exhalite massive sulphide deposits (zoned and stratabound) occur in this group of rocks with the largest ore deposits located in the Lynx and Myra properties and adjacent mineral showings at Buttle Lake. The mineralization is related to the rhyolitic or rhyodacitic volcanic rocks of the Myra Formation and its equivalent in the lower section of McLaughlin Ridge of the Lara Property area. The significant rock types are rhyolite and mixed breccias, quartz porphyries and finegrained rhyolite (Massey and Friday, 1989).

The rocks of the Sicker Group comprise a bimodal assemblage of felsic and mafic metavolcanic rocks which range from fine tuffs to coarse fragmental units along with massive flows and apparently intrusive rocks, interbedded, cherty to argillaceous and sulphidic sediment horizons are a minor but significant component of the stratigraphy. Mafic volcanic and volcaniclastic rocks are intimately interlayered with felsic units and intermixed as heterolithic clasts. Mafic rocks dominate an upper volcanic package which is variably hematitic (purple and green) and contains beds and lenses of jasper, green to grey chert and carbonaceous black chert and argillite. This upper sequence flanks the felsic-rich stratigraphy near both sides of the Property and is capped, at least in places, by the thickest and richest lenses of iron formation



known in the Sicker Group. The iron formation includes jasper, grey chert and massive magnetite and is locally anomalous in gold and base metals (Peatfield and Walker, 1994; Massey et al., 2005a).

The metamorphic grade in the area is generally low, but increases with the age and structural position of the rocks. The sediments of the Sicker Group rocks are un-metamorphosed except in areas of intense shearing where chlorite and sericite have developed along foliation planes. The Sicker Group volcanic rocks show the effects of greenschist metamorphism. Intermediate to mafic rocks have chloritic schistose matrices with epidote alteration of feldspars and uralitization of pyroxenes. Granodiorite stocks and plutons only show sporadic development of contact metamorphic aureoles around their perimeters (Massey and Friday 1989).

The Sicker Group rocks have been affected by several intrusive events: Tyee intrusions are the oldest and emplaced concurrently with deposition and extrusion of the Myra Formation. Diabase and gabbro are younger than Tyee Intrusions and were injected as dikes and sills probably in conjunction with extrusions of the Karmutsen basalt Island intrusions are result of Early Jurassic plutonism and formed elongate bodies of granodiorite, diorite and minor agmatite in Sicker Group and younger rocks (Massey and Friday, 1988).

The Sicker Group volcanic rocks are overlain by the sedimentary rocks of the Buttle Lake Group. The rocks can be found in fault contact with the lower volcanic units of the Sicker Group or more commonly in unconformable contact with the volcanic rocks. The Buttle Lake Group is dominated by epiclastic and limestone sedimentary package. The base is made up of a sequence of radiolarian ribbon cherts, laminated cherts and cherty tuffs within thin argillite interbeds that pass upwards into sandstone-siltstoneargillite intercalations of the Fourth Lake Formation. Minor though significant volcanic rocks are found interbedded with the sediments on the northeast limb of the Cowichan uplift. On the north slopes of Coronation Mountain, the rocks comprise hornfelsed, amygdaloidal diabasic flows and interbedded cherty tuffs and sediments. The Fourth Lake Formation is overlain by the Mount Mark Formation which is composed of massive and laminated crinoidal calcarenites with chert and argillite interbeds. However, this unit is absent north of the Cowichan River, where the Fourth Lake Formation is unconformably overlain by the Nanaimo Group sediments. The Fourth Lake Formation is intruded by the thick mafic sills and dikes of the Mount Hall Gabbro. The intrusions are coeval with the Karmutsen Formation of the Vancouver Group that overlies the Buttle Group sedimentary rocks. The Mount Hall Gabbro rocks are characterized by medium- to coarse-grained diabase, gabbro and leucogabbro with minor diorite and glomeroporphyritic feldspar gabbro (Massey, 1992).

5.3 Local Geology

The Lara Property area is underlain primarily by the McLaughlin Ridge Formation, the uppermost unit of the Sicker Group which has been thrust over the younger rocks of the Fourth Lake Formation and the



Nanaimo Group by the Fulford fault; this is referred to as the Cowichan Uplift. The McLaughlin Ridge Formation, which hosts the VMS deposits, consists of northerly dipping, west-northwest striking rhyolitic to andesitic rocks. Bedding generally dips steeply at 60° to 75° north, although dips of between 30° and 45° north are common (MINFILE, 1990a; Massey et al. 2005a). The principal stratigraphic units of the Eastern Belt of the Cowichan Uplift are presented in Table 5–1 and Figure 5–2 (Massey, 1992).

The McLaughlin Ridge Formation is a sequence of volcaniclastic sediments dominated by thickly bedded, massive tuffites and lithic tuffites with interbedded laminated tuffaceous sandstone, siltstone and argillite. Associated breccias and lapilli tuffs are usually heterolithic and include aphyric and porphyritic (feldspar, pyroxene, hornblende) lithologies, commonly mafic to intermediate in composition; felsic tuffs are rare.

In the region east (Duncan area) of the Lara Property, the tuffaceous sediments thin out and the strata is dominated by volcanic rocks with only minor tuffaceous sediments. The volcanic rocks are predominantly intermediate to felsic pyroclastic rocks, commonly feldspar-crystal lapilli tuffs and heterolithic lapilli tuffs and breccias. A thick package of quartz- crystal, quartz-feldspar-crystal and fine dust tuffs is developed in the Chipman Creek-Mount Sicker area and is host to the massive sulphides. This package thins to the west where it intercalates with andesitic lapilli tuffs and breccias. It appears to be stratigraphically high within the formation. A distinctive maroon schistose heterolithic breccia and lapilli tuff forms the uppermost unit within the McLaughlin Ridge Formation and is seen in the southern claims of the Lara Property (Figure 5-3).

The McLaughlin Ridge Formation is correlative to the Myra Formation of the Buttle Lake uplift (Massey and Friday, 1989; Massey, 1992). The unit is 450 metres thick and its components have been subdivided into four discrete structural packages which are believed to be fault bounded. A number of quartz-feldspar porphyry dikes that are coeval with the felsic volcanic rocks of the McLaughlin Ridge Formation. Each volcanic series is referred to as a member. The members are separated by "break" sequences which are dominated by near vertical mafic intrusions emplaced along faults. All four member sequences host polymetallic mineralization (Roscoe, 1988).

Table 5–1 Stratigraphy of the Buttle Lake and Sicker Groups underlying the Lara Property area (after Massey 1992).

| Formation | Туре |
|----------------------------|---------------------------------------------------------------------------------------|
| Buttle Lake Group | Sedimentary rocks |
| St. Mary's Formation | Sandstone, conglomerate |
| Mount Mark Formation | Massive and laminated crinoidal calcarenites, chert and argillite interbeds |
| Fourth Lake Formation | Cherts grade into tuffs, argillite to turbiditic sandstone, siltstone, argillite |
| Sicker Group | Volcanic rocks |
| McLaughlin Ridge Formation | Heterogeneous sequence of mafic to felsic volcanic rocks and volcaniclastic sediments |
| Nitinat Formation | Pyroxene-feldspar-porphyritic basalt and basaltic andesite rocks |
| Duck Lake Formation | Pillowed, amygdaloidal basalts with minor chert and cherty tuffs |



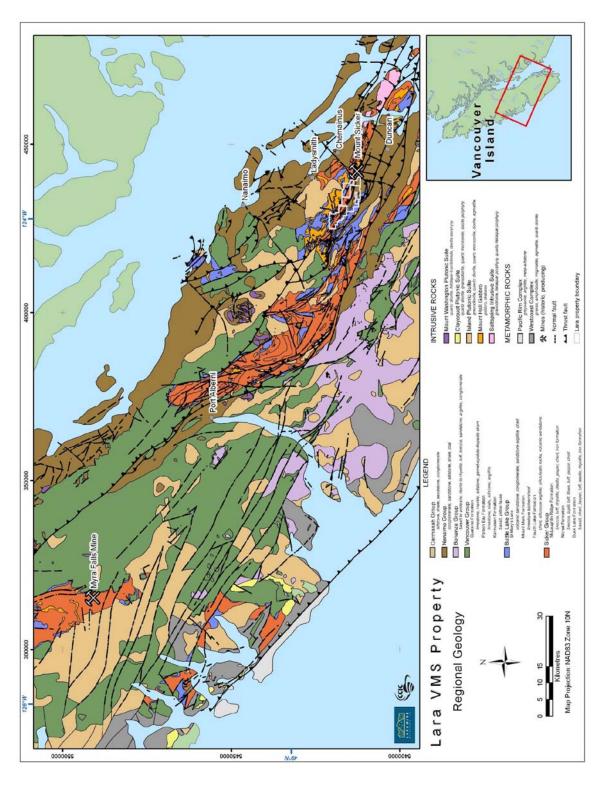


Figure 5–2 Regional geology of the south central portion of Vancouver Island, British Columbia (after Massey et al. 2005a).



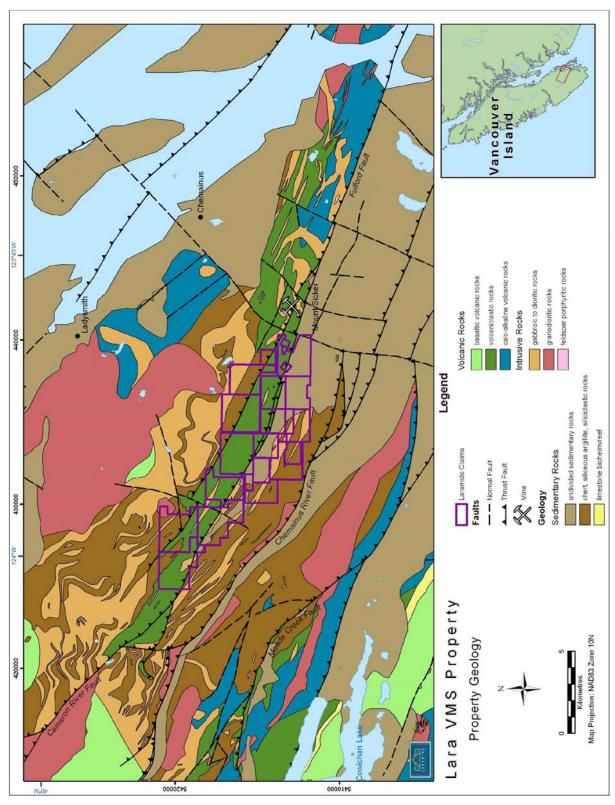


Figure 5–3. Bedrock geology underlying the Lara Property (south Vancouver Island, B.C.) after Massey et al. 2005a.



6.0 DEPOSIT TYPE

6.1 Volcanogenic Massive Sulphide

Franklin et. al. (2005) defined volcanogenic massive sulphide deposits as stratabound accumulations of sulphide minerals that precipitated at or near the sea floor. All VMS deposits occur in terrains dominated by volcanic rocks, although individual deposits may be hosted by volcanic or sedimentary rocks that form part of the overall volcanic complex (Franklin, 1996). VMS deposits primarily occur in subaqueous, rift related environments (i.e. oceanic, fore-arc, back-arc, continental margins or continental) and hosted by bi-modal mafic-felsic successions, where the felsic volcanic rocks have specific geochemical characteristics and are referred to as FI, FII, FIII, and FIV (Hart et. al., 2004) based on the REE classification scheme of Lesher et al. (1986).

A typical VMS deposit (Figure 6–1) consists of a concordant synvolcanic lens or body of massive sulphides that stratigraphically overlies a cross cutting, discordant zone of intense alteration and stockwork veining. The discordant alteration and stockwork-veining zone is interpreted to be the channel-way or conduit for hydrothermal fluids that precipitated massive sulphides at or near the seafloor. A heat source, such as a subvolcanic intrusion is required to induce the water-rock reactions that result in metal leaching from the surrounding rocks and create the hydrothermal convection system (Höy, 1991; Franklin et. al., 2005).

The massive sulphide body is generally in sharp contact with the overlying sedimentary or volcanic stratigraphy (hangingwall stratigraphy), while the massive sulphide body may be in sharp or gradational contact with the underlying stringer and alteration zone (footwall stratigraphy) (Höy, 1991).

Most VMS deposits, including Achaean VMS deposits, are surrounded by alteration zones, which are spatially much larger than the deposits themselves. A number of zones of alteration are commonly recognized; the footwall alteration pipe, alteration within the ore zone, a large semi-conformable zone beneath the ore zone and alteration of the hanging wall. Figure 6–1 is a synthesis of alteration zones associated with Zn-Cu-Pb (minor Au, Ag) deposits that formed in bimodal mafic-felsic volcanic sequences. The core of the alteration pipe can be up to 2 km in diameter and is reflected mineralogically by a strong chloritic core surrounded by sericitic and chloritic alteration. Chemically, the alteration pipe zone in Figure 6–1 is represented by additions of Si, K, Mg and Fe and depletions in Ca and Na. According to Franklin (1996), alteration zones adjacent to the main alteration pipe are not well defined. He also noted that Na depletions are laterally extensive, but are confined only to a few hundred metres vertically in this type of deposit. Virtually all alteration pipes are characterized by Na depletion and the resulting alkali depletion common to many alteration zones is manifested as abundant aluminosilicate minerals (Franklin 1999; Höy, 1991).



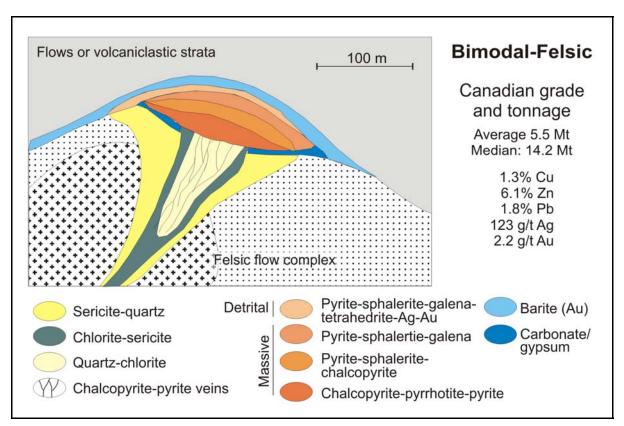


Figure 6-1. Idealized characteristics of a bimodal-felsic VMS deposit (after Galley, et. al., 2007).

The Property has previously been classified as a VMS deposit because of the apparent stratabound nature of the mineralized zone. However, the Property also has affinities to epithermal deposits and the reported conformable nature of the mineralized zone could be due to the development of preferred mineralization along zones of structural weakness. The most common deposit types in the area are porphyry deposits, polymetallic base metal veins and the subvolcanic Cu-Ag-Au (As-Sb) deposit type. These and other deposit types are described by the British Columbia Mineral Deposit Profiles (www.em.gov.bc.ca/mining/Geolsurv/MetallicMinerals/MineralDepositProfiles/).

7.0 MINERALIZATION

The polymetallic, VMS deposits on Vancouver Island are hosted in the structural uplifts of the Palaeozoic Sicker Group: the Myra Falls deposit within the Buttle Lake uplift, while the Lara and Mt. Sicker mine workings are located in the Horne Lake-Cowichan uplift. The felsic volcanic rocks of the McLaughlin Ridge Formation (Horne Lake-Cowichan uplift) and the Myra Formation (Buttle Lake uplift) host the deposits of Cu, Pb, Zn, Ag and Au within several stratigraphic levels (Crick, 2003; Massey, 1992).

The mineralized zones on the Lara Property were identified from drilling and extrapolating geological units along strike. The interpretive work by various exploration companies involved primarily comparison studies to the Buttle Lake/Myra Falls up strike deposits and the Mt. Sicker deposit down strike (Archibald,



1999). Seven zones, located at various stratigraphic levels were delineated on the Lara Property: Anita, Coronation Trend, Randy North, 262, Silver Creek, 126 and the Sharon zones (from west to east).

The deposit type on the Lara Property is classified as Kuroko-type massive sulphides consisting of volcanic-hosted, stratiform accumulations of copper, lead, zinc, silver and gold. The zones are described in Table 9–1 and their locations within Laramide's registered claim boundaries (superimposed on bedrock geology) are illustrated in Figure 7–1.

Table 7–1. Mineralized zones within the Lara Property.

| Ore Zone | Discovery | Type of Mineralization | Description | |
|---------------------|------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Anita | 1915 | main | Anita tuff; exhalative | |
| Randy North | 1986 | | pyrite horizon within alteration zone (Na depletion, Zn enrichment | |
| Coronation Trend | 1984 and 1985 | main | massive sulphide, banded/laminated and stringer facies in altered rhyolite-tuff sequence: hanging wall represents alteration zone (Na depletion, Zn enrichment | |
| Silver Creek | | | stringer zone in mafic tuff host | |
| 262 | 1989 | Sub-parallel | unaltered felsic rocks host semi-massive to massive sulphides at shallow depths; distal exhalite | |
| 126 | 1990 | | stringer-style mineralization | |
| Sharon Copper | 1903 | | stringer zone in mafic tuff host not within Lara Property | |

The most important of these zones is the Coronation Trend which is made up of the Coronation Zone, the Coronation Extension and the Hanging Wall deposit. Together the deposits of the Coronation mineralized trend make up most of the reserve and the historic resource calculations of the Lara Property. Of the mineralized zones tested, the Coronation Trend and Anita appear to be on a similar trend; whereas the "262" Zone may be a sub-parallel structure. The Randy North, Silver Creek, "126" and Sharon zones appear to be on a more northerly trend as part of the northern limb of a synclinal structure (Archibald, 1999; Wells and Kapusta, 1990a).

The package of rocks hosting the Lara deposits consists of an andesitic sequence referred to as the "Green volcaniclastic Sequence" overlying rhyolite which hosts to the massive sulphide ore. The rhyolite has been subdivided into two units which are referred to as the "Rhyolite Sequence" and the "Footwall Sequence", the latter underlying the lowermost sulphide sequence. Numerous minor faults occurring in



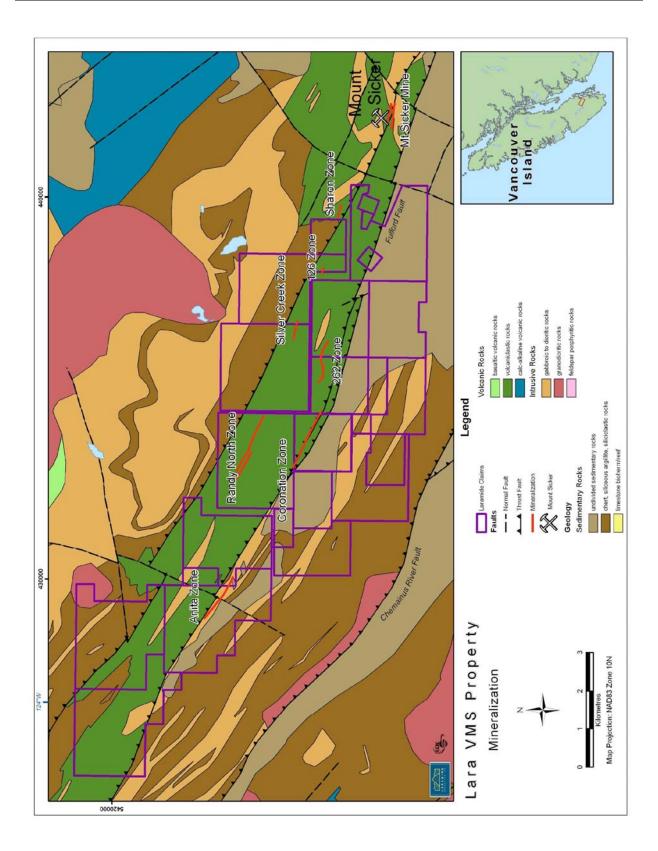


Figure 7–1 Location of mineralized zones within mineral claims of Lara Property, Vancouver Island, BC, Canada.



three or four directions have been observed on the Property resulting in displacement and gaps of the mineralized stratigraphy (MINFILE 1990a; Roscoe and Postle, 1988).

The mineralized zones are characterized by rapid facies changes and abrupt fault displacements. Mineralization that has been discovered above and below the Coronation Trend stratigraphy is likely repeated on the Property either by regional folds or faults.

VMS mineralization on the Property is characterized by hydrothermal alteration of the rhyolite host that is typical of VMS deposits. The mineralized zones are characterized by strong sodium depletion, enrichment in potassium (sericitization) and zinc, silicification and pyritization. The lithogeochemical surveys defined two areas of hydrothermal alteration: the Randy Zone with a strike extent of at least six kilometres where the pyritic cherts are interpreted as a distal exhalite; and the structural hanging wall east of the Coronation Zone (Peatfield and Walker, 1994; Wells and Kapusta, 1990a). The geological reconnaissance work by Nucanolan in 1998 (Archibald, 1999) suggests that the structural controls existing in the area and the alteration mineralization indicate secondary mineralization via hydrothermal processes. The original features of the host sedimentary rock appear to be upgraded or influenced by the cross-cutting fault structures and possibly by the late stage mafic or diorite intrusions.

7.1 Coronation Trend

The Coronation Trend consists of several stratiform massive sulphide lenses within an envelope of banded or laminated sulphides. The Trend is made up of three zones: the original discovery of the Coronation Zone, the Coronation Extension Zone (east and stratigraphically above the Coronation Zone) and the Hanging Wall Zone which consists of stringer mineralization that is also stratigraphically above the Coronation Zone (Roscoe and Postle, 1988). Although classified as massive sulphides, the predominant facies actually consists of bands, laminae and stringers of sulphide minerals in a strongly silicified rhyolite host (intercalated with siliceous and tuffaceous debris). The Coronation sulphide mineralization strikes west-northwest, dips to the northeast at 60° and exhibits variation in thickness from 3 to 16 metres, averaging about 6 metres (Crick, 2003; MINFILE, 1990a). The distribution of mineralization along the Coronation Trend is influenced by a strong linear structural fabric which plunges at a low angle to the east (Roscoe and Postle, 1988).

The Coronation Zone is hosted by the southern Rhyolite Sequence (one of the 4 members of the McLaughlin Ridge Formation) and which consists of coarse grained rhyolite crystal tuff and ash tuff. Black argillite beds and buff coloured mudstones occur at the boundaries of pyritic units and enclose the polymetallic zones. The Footwall Sequence underlying the Member 1 Rhyolite consists of coarse-grained quartz porphyries and feldspar porphyries. These appear to form domal structures which not only controlled palaeotopography and basin configuration but may have played a role in focussing mineralizing fluids. Only a few diamond drill holes have penetrated the Footwall Sequence and these have intersected



another similar rhyolite porphyry package which is mineralized and has potential. The Member 1 Rhyolite is in fault contact with the overlying Green Volcaniclastic Sequence consisting of a 250 m thick unit of dacite to andesite fragmental rocks, minor argillite and quartz feldspar porphyry dykes (Roscoe and Postle, 1988). The footwall sequence is dominantly quartz porphyritic massive rhyolitic rocks up to 40 m thick (Crick, 2003) and is clearly from a distinct stratigraphic level compared to the above. These rocks are texturally variable but are distinguishable by the presence of abundant large quartz eyes. Feldspar porphyry dykes, rhyolite dykes, rhyolite breccia and mudstone and argillite beds are also present (MINFILE, 1990a).

Mineralogical studies carried out on drill core samples in 1989 (Peatfield and Walker, 1994) show that the mineralogy of the Coronation Trend is complex. The minerals include sphalerite, pyrite, chalcopyrite, galena and tetrahedrite [(Cu, Ag, Zn, Fe)₁₂As₄S₁₃], with small amounts of bornite, rutile and arsenopyrite and locally abundant barite. Tetrahedrite appears to be the preferred host for gold whereas pyrite shows very few included gold grains, but gold and silver are found dispersed in tennantite [(Cu, Ag, Zn, Fe)₁₂As₄S₁₃]. Gangue consists mostly of quartz and calcite with lesser amounts of muscovite, feldspar, and barium-bearing feldspar (Peatfield and Walker, 1994; MINFILE, 1990a).

The predominant facies of the Coronation deposits is the banded and laminated facies which consist of sulphide laminae and bands up to a few cm thick in a siliceous host. The host rock varies from a silicified rhyolite to a very fine-grained siliceous mass with various amounts of felsic tuffaceous debris. The mineralization is broadly conformable, however, crosscutting features are common within the conformable zones. Crosscutting mineralization varies from occasional sulphide stringers to well-developed breccia zones with sulphides in the matrix. Sulphides also occur disseminated in the rhyolite host. Primary textures are masked by pronounced cataclastic overprint. Although these features to some extent mask the primary depositional style, the overall stratiform character of the facies is demonstrated by the presence of sedimentary units which enclose and occur within the deposit, and which can be correlated over considerable distances. The banded and laminated facies varies up to 16 metres true thickness. Although not as high grade as the massive sulphide facies, laminated and banded sulphides can achieve significant grade (MINFILE, 1990a). One massive sulphide lens exposed by trenching in the Coronation Zone graded 24.58 g/t Au, 513.6 g/t Ag, 3.04% Cu, 43.01% Zn and 8.30% Pb over 3.51 m.

7.2 "126" Zone

Diamond drill hole data indicates stringer style mineralization with long intersection of alteration and scattered mineralization at the "126" Zone. This zone consists of chalcopyrite in quartz veins hosted by chloritic volcanic flows/tuffs, which overlie a thick sequence of felsic volcanic rocks (Peatfield and Walker, 1994). Drilling indicates the presence of a gabbro intrusion (Peatfield and Walker, 1994). This zone is located in an area of deep overburden therefore geophysical and geochemical data cannot be interpreted.



7.3 Anita Zone

The Anita Zone encompasses the area of the original Anita showing, where a 50-foot shaft was excavated in 1915. The original Anita showing, which occurs along the Anita Horizon, consists of quartz lenses in schist traceable for at least 60 metres in an easterly direction. The "vein" is up to 4.5 metres wide and carries chalcopyrite and pyrite. The schist zone is a pyritic, sodium-depleted felsic tuff/lapilli (quartz-phyric sericite schist) unit also known as the Anita active tuff. Mineralization occurs in massive sulphides and as pyrite, sphalerite and chalcopyrite occurring as sparse veinlets, stringers and as polymetallic bands in barite-enriched pyritic zones known as the Anita Horizon. A major thrust fault occurs immediately north of the Anita active tuff (MINFILE, 1990b; Stewart, 1991).

The best mineralization within the Anita active tuff occurs along the Anita Horizon that is generally located within 15 metres north of the Anita felsic tuff-mafic tuffaceous sediment contact. The horizon can be traced discontinuously along a 3.3 km strike length and is made up of a 1 to 10 metre wide zone of disseminated to massive pyrite in foliation-parallel bands or beds up to 0.5 metres thick with traces to a few percent of associated chalcopyrite and sphalerite (Stewart, 1991).

The western end of the Coronation Zone of the Lara deposit occurs about 1.5 kilometres southeasterly (120°) from the eastern end of the Anita Horizon. The two deposits are almost along strike from each other but significant differences in their settings suggest that the horizons are not identical but significant differences in their settings indicate different positions in stratigraphy. Diamond drilling and geophysical (IP) evidence indicate that there is very little potential for near surface massive sulphide ore body. (MINFILE, 1990b; Stewart, 1991).

7.4 Randy (North) Zone

The Randy Zone is a pyrite horizon that is accompanied by weak base metal concentrations in rhyolite volcaniclastic rocks. There is a very strong alteration trend (sodium depletion) over a 200 metre thickness and it lies down section from a well defined oxide iron formation. The zone consists of 3 to 6 zinc-rich weakly polymetallic horizons over a stratigraphic thickness of about 150 metres. These horizons consist of laminated light brown sphalerite and pyrite with subordinate chalcopyrite and trace tetrahedrite hosted by a strongly schistose quartz-eye rhyolite tuff (sericite-quartz schist). The Randy Zone area is largely underlain by felsic volcanic rocks (MINFILE 1990c). The rhyolite sequence composed predominantly of quart-eye porphyry and feldspar porphyry rhyolite, rhyolite tuffs, and minor lapilli tuff, andesite and argillite. The upper contact of this sequence is marked by an argillite bed underlain by quartz-eye (Roscoe and Postle, 1988).

7.5 Sharon Copper – Silver Creek Trend



The Sharon Copper Zone is a chlorite-pyrite-chalcopyrite stringer zone exposed on surface and in drill core that is hosted in predominantly mafic tuffs approximately 10 m north of a large distinct unit of quartz phyric felsic tuff (coarse quartz eye sericite schist). A large gabbro body apparently truncates the favourable stratigraphy at depth. Most of the original rock textures and structures are obscured by late shearing and extensive faulting. The sulphides are hosted by extremely sheared chlorite-sericite schist, and appear to be concentrated in two 10-metre wide horizons forming the core of an antiform. The sulphides are re-crystallized after deformation but appear to have undergone some later shearing. Underground development includes 3 parallel adits 46 metres, 1.5 metres and 11 metres in length.

Similar results occur in the Silver Creek area where drilling and trenching located mineralization near surface that was cut off by a gently dipping gabbro. Drilling to date (1991) has not traced the mineralization below the gabbro (MINFILE 1990c; Stewart, 1991).

7.6 "262" Zone

Drilling in 1990 by Minnova tested the felsic sequence at variable depths over a strike length of 6.5 km. The "262" Zone felsic volcanic rocks host a distal exhalite composed of pyritic cherts, ashes, and thin, copper-rich, semi-massive to massive sulphides and occurs within 40 m of the contact between the felsic and the underlying andesite rocks. The best development of exhalative sulphides, cherts and stringer mineralization is found in shallow, near surface holes. At depth, there is a fine-grained, siliceous felsic ash that is depleted in base metals and hosted in unaltered felsic rocks, suggesting that this zone has limited opportunity for development (Wells and Kapusta, 1991).

8.0 EXPLORATION

Laramide completed comprehensive data compilation on the Property between January 2006 and June 2007. In addition to this work, Laramide contracted a property-wide heliborne geophysical survey in April 2007 which was completed in late September 2007. Prior to this more recent work by Laramide, the most recent exploration work on the Property was carried out in 1998 by Nucanolan Resources Ltd. while the Property was under option from Laramide. This work focused on the Coronation Trend, and included prospecting, geological mapping, diamond drilling (12 holes totalling 2,559 m), bedrock and stream sediment sampling and limited ground magnetic and electromagnetic geophysical surveys.

Also, Laramide in the fall of 2006 completed drill core re-sampling of random sections from the zones used in the resource calculation in order to verify previous resource estimates and bring them into NI43-101 standards. This is discussed in more detail in section 9.0. In total, \$112,500 in exploration expenditures was incurred by Laramide during the course of this field program.



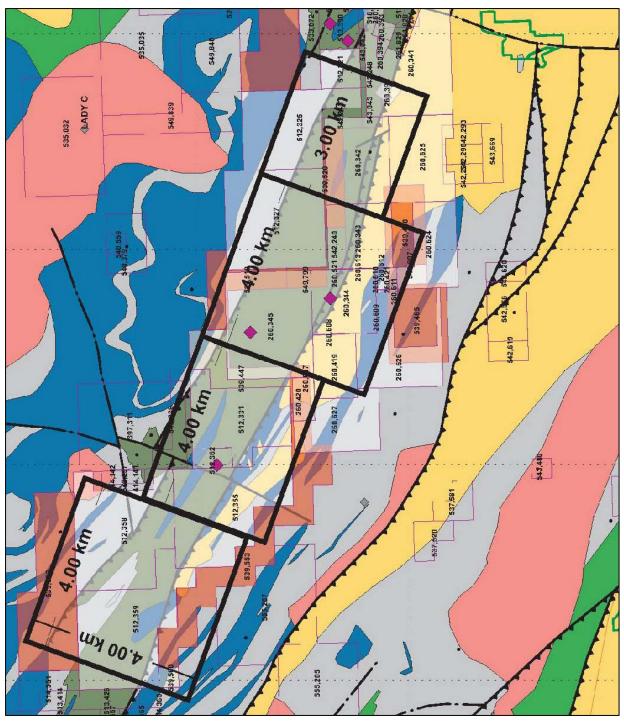


Figure 8-1. Location of the heliborne geophysical survey over the Lara Property, 2007 superimposed on the general geology.



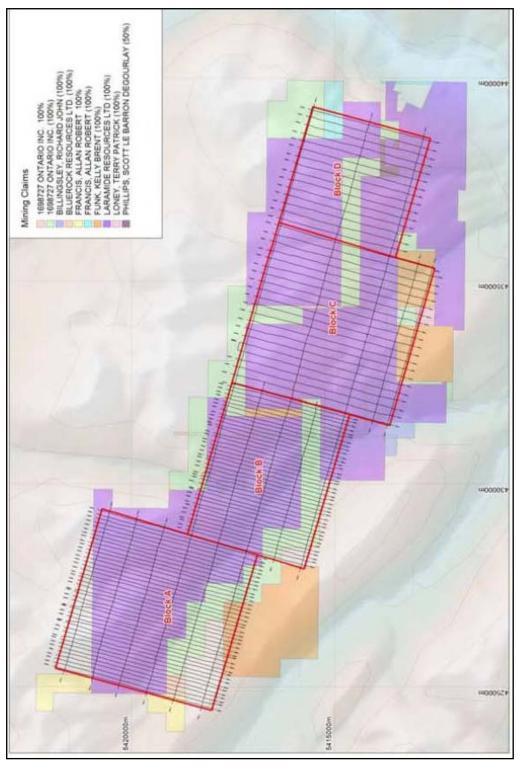


Figure 8-2. Heliborne survey flight paths with schematic representation of the underlying mining claims.



8.1 Helicopter-borne Geophysical Survey – 2007

In April 2007, Aeroquest International Ltd. ("Aeroquest") was contracted to compete a property-wide helicopter-borne geophysical survey. The total survey coverage was 500.1 line kilometres and the survey

was completed from September 22 to 26, 2007 (Figure 8-1). Survey flight direction was north-northeast-south-southwest (15°), flight spacing was 100 m and 200 m and the survey comprised a single area (53 km²) made up of 4 adjoining blocks (Figure 8-2).

A summary of the equipment used and the survey results are presented herein; further details are provided in the full report (Aeroquest, 2007).

8.1.1. Heliborne Survey Equipment

The principal geophysical sensor is Aeroquest's exclusive AeroTEM II (Bravo) time domain helicopter electromagnetic system which is employed in conjunction with a high-sensitivity caesium vapour magnetometer. The secondary sensor was Aeroquest's Airborne Gamma Ray Spectrometer (AGRS) system. The AGRS system utilizes four (4) downward looking sodium iodide (NaI) crystals used as the main gamma-ray sensors and one upward looking crystal for monitoring non-geologic sources. Ancillary equipment includes a real-time differential GPS navigation system, radar altimeter, video recorder, and a base station magnetometer. Full-waveform streaming EM data is recorded at 36,000 samples per second. The streaming data comprise the transmitted waveform, and the X component and Z component of the resultant field at the receivers. A secondary acquisition system (RMS) records the ancillary data.

8.1.2. Results

The survey was successful in mapping the magnetic and conductive properties of the geology throughout the survey area. Aeroquest provides a brief interpretation of the results in their report in Appendix 4. Appendix 4 contains the full report from Aeroquest and the maps with the data in Appendix 5.

Overall, the location of the Coronation Zone near the hydro-electric transmission line obscures much of its EM responses. There is certainly a broad moderate Off-Time Profile EM response associated south of the surface trace of the Coronation Zone which dips steeply southward. The Z1 Off-Time response is similar in that the surface expression of the Coronation Zone occurs directly north of the main anomaly which appears to terminate approximately 1 km along strike (WNW) from the decline entrance. The Anita Zone which was originally on Falconbridge's claims (now optioned from Bluerock) does not coincide with an EM anomaly. However, there is a pronounced EM anomaly at the south end of surveyed blocks A and B which have no documented VMS occurrence but with the paucity of outcrop in the area are attractive target areas.



Magnetic responses are dominated by the iron formation rocks stratigraphically north of the Coronation Zone. However, the magnetic maps identify general stratigraphy and will be an invaluable tool for mapping the area which does not have much outcrop.

Total count radiometric gamma-ray spectrometry outlines a very broad high count rate in the stratigraphy surrounding the Coronation Zone. It appears to terminate just west of the Anita Zone and may indicate that the same stratigraphy that encompasses the Coronation Zone extends to the Anita Zone. No significant trends were observed in the Thorium/Potassium ratio maps.

9.0 DATA VERIFICATION

9.1 CCIC Site Visit

As part of the data verification process, CCIC geologists visited the Property on August 6th, 2006 (Stephen Wetherup) and over August 30th and 31st, 2006 (Costs for these site visits are not included in the assessment totals). The storage site of drill core from previous exploration and resource delineation campaigns was located. Significantly mineralization intervals were stored separately in racks and

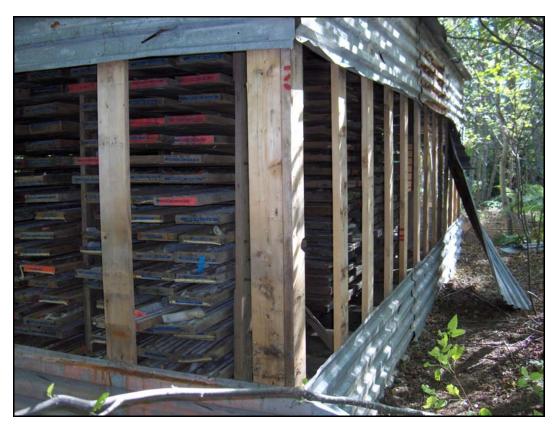


Figure 9-1. Storage site of significant intervals primarily from the Coronation Zone (siding removed by CCIC).

enclosed with metal siding by the previous operator (Figure 9-1). Non-significant hanging wall and footwall intervals were cross-piled in the same area but were not enclosed. During the second site visit, a



full inventory of all drill core stored in the enclosed shed was taken by CCIC. For the most part the core stored in the enclosed shed was found to be in excellent condition; a small percentage of the core boxes had rotted and collapsed.

Table 9-1. GPS waypoints recorded during CCIC site visit.

| Easting (m) | Northing (m) | Elevation (m) | Error | Comment |
|-------------|--------------|---------------|-------|------------------------------------|
| 436911 | 5413680 | 692 | 12 | Road Showing |
| 433480 | 5414835 | 631 | 7.5 | Massive sulphide showing in trench |
| 433514 | 5414844 | 642 | 15.3 | DDH-86-124 |
| 433565 | 5414974 | 643 | | DDH-87-172 |
| 433445 | 5414987 | 657 | 7.5 | DDH-85-22 & -23 |
| 433416 | 5414949 | 675 | 7.2 | DDH-85-20; collar in ground |
| 433378 | 5414942 | 666 | 5.9 | DDH-85-65 |
| 433287 | 5415041 | - | | DDH-89-246; collar in ground |
| 433361 | 5415014 | 671 | 6.2 | DDH-85-28 & -29 |
| 434048 | 5414629 | 651 | 6.2 | DDH-85-43 |
| 434072 | 5414612 | 661 | 6.2 | DDH-85-41 & -42 |

Numerous tracks and small clearings which appeared to be drill pads were located in the area over the Coronation Trend. Two (2) intact drill casings were located (85-20 and (89-246), and many more small

clearings with steel, labelled posts marking the position of casings which had apparently been pulled. In some instances the base of the post was resting in an angled hole in the ground; in other cases the posted were planted in within clearings but holes in the ground were located. A list of GPS waypoints with their description is presented in Table 9–1.

Table 9-2. Locations of grab samples collected during CCIC site visit.

| Sample | UTM East (m) | UTM North (m) | Description |
|--------|--------------|---------------|----------------------------------------|
| 926 | 436911 | 5413680 | Gossan |
| 927 | 436911 | 5413680 | Gossan |
| 928 | 436911 | 5413680 | Gossan |
| 929 | 433492 | 5414843 | Massive sphalerite-galena-tetrahedrite |
| 930 | 433492 | 5414843 | Massive sphalerite-galena-tetrahedrite |

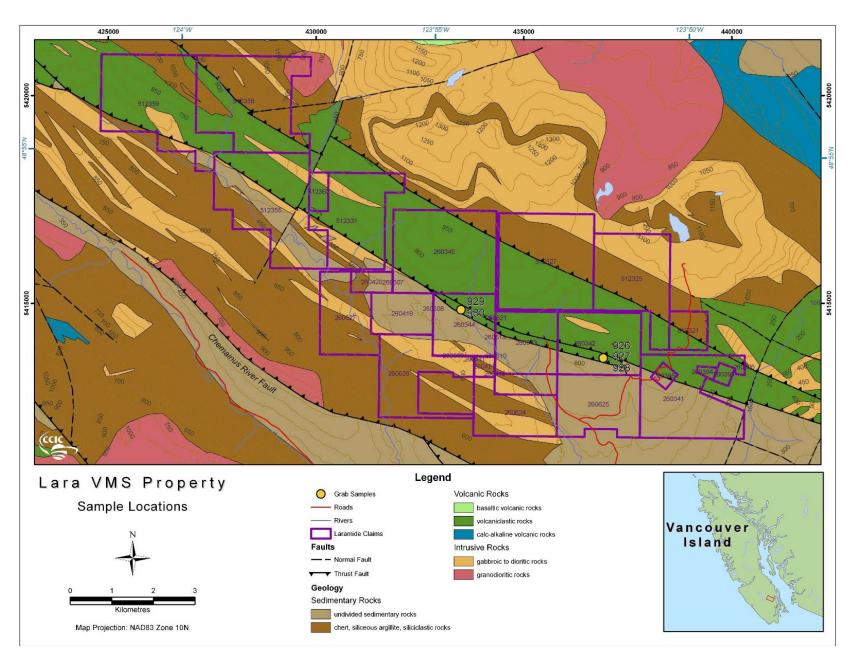
Table 9–3. Assay results of grab samples collected during CCIC site visit.

| Sample | Zn (ppm) | Zn (%) | Ag (ppm) | Cu (ppm) | Cu (%) | Pb (ppm) | Pb (%) | Au (ppb) | S (%) |
|--------|----------|--------|----------|----------|--------|-----------|--------|----------|-------|
| 926 | 295 | 0.03 | 25.3 | 913.8 | 0.09 | 1,454.1 | 0.15 | 401.4 | 0.5 |
| 927 | 559 | 0.06 | 2.4 | 438.4 | 0.04 | 522.8 | 0.05 | 69.9 | 1.6 |
| 928 | 1,521 | 0.15 | 2.5 | 1,009.7 | 0.10 | 139.7 | 0.01 | 126.2 | 2.9 |
| 929 | 571,300 | 57.13 | 285.0 | 34,020.0 | 3.40 | 19,800.0 | 1.98 | 5,359.1 | >10 |
| 930 | 475,000 | 47.50 | 581.0 | 13,360.0 | 1.34 | 212,000.0 | 21.20 | 6,905.8 | >10 |

In two areas where sulphide mineralization or gossan was observed in outcrop, grab samples were collected by CCIC to demonstrate the presence of metallic mineralization (Figure 9–2). The samples



Figure 9-1. Location map for grab samples collected during CCIC's site visit.





were packed at the site and submitted directly to ACME Analytical Laboratories Ltd. (Vancouver. BC) by CCIC on October 10th, 2006. The assay results were returned on November 19th, 2006. The sample locations, descriptions, and their assay results are presented in Tables 9–2 and 9–3. Assay certificates are provided in Appendix 3.

9.2 Due Diligence Sampling of Drill Core

To audit the veracity of the historic database, ninety-three (93) rock core samples were selected for reassay based their silver content and on the inventory of mineralized drill core intervals stored and available on site. In order to provide a wide grade-distribution, a randomized population of samples was selected from two ranges of Ag grade – below 10 g/t Ag and above 10 g/t Ag. Ten (10) samples were prejudicially selected for having the highest Ag grades in the database. A crew was dispatched by CCIC to collect the core samples September 29th and October 6th, 2006. Seventy eight (78) of the core samples from the list were located, sawn into quarters, and packed for submission to ACME Analytical Laboratories Ltd (Appendix 3). The remaining quarter was returned to the core box, which in turn was placed back in its position in the rack. Some core samples could not be sampled by the field crew because of broken core boxes, inconsistent interval labelling, and time constraints.

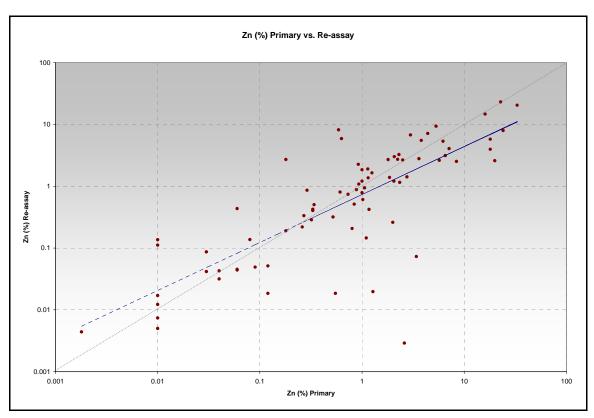


Figure 9-3. Scatter plot of primary versus re-assayed Zn (%).



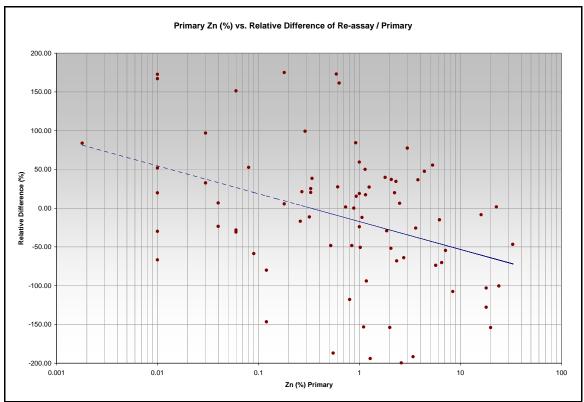


Figure 9–4. Scatter plot of primary Zn (%) vs. relative difference of re-assay / primary.

g Ag/t Primary vs. Re-assay

Figure 9–5. Scatter plot of primary versus re-assayed g Ag/t.



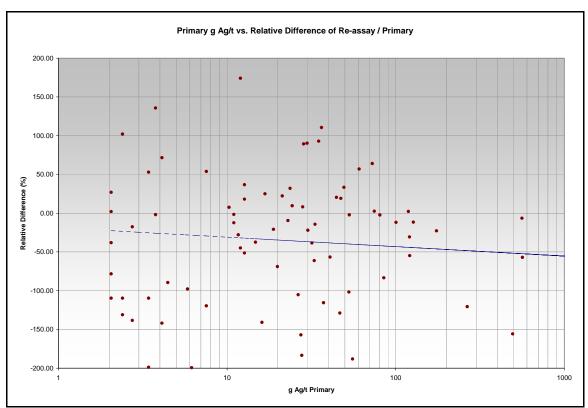


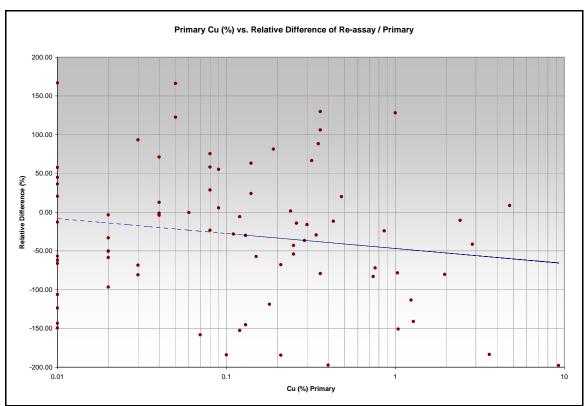
Figure 9–6. Scatter plot of primary g Ag/t vs. relative difference of re-assay / primary.

Cu (%) Primary vs. Re-assay

Out (%) Primary vs. Re-assay

Figure 9–7. Scatter plot of primary versus re-assayed Cu (%).





Pb (%) Primary vs. Re-assay

Pb (%) Primary vs. Re-assay

Pb (%) Primary vs. Re-assay

Figure 9–9. Scatter plot of primary versus re-assayed Pb (%).



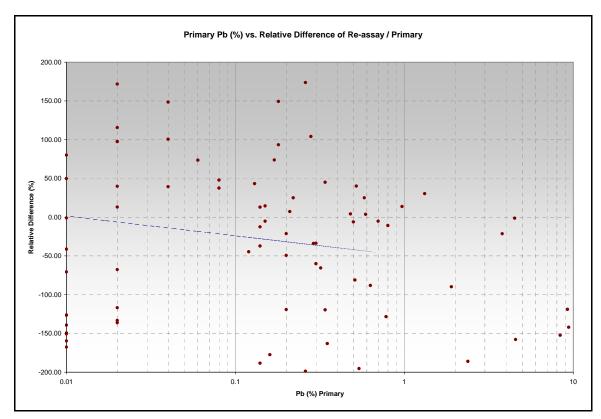


Figure 9–10. Scatter plot of primary Pb (%) vs. relative difference of re-assay / primary.

Control charting of the core duplicate result versus the primary (historic) value are presented for Zn, Ag, Cu, and Pb in Figures 9–3 through 9–10. Au has been charted because it was not part of the assay package.

Although the sample selection was randomized from within the available population (i.e. primarily "ore" samples kept in the storage shed), a selection bias has been introduced because samples of anomalous grade were chosen. Such selection is expected to result in lower estimates of average grade in the reassay results than in the original results (Long, 2003). As only half drill cores were available to CCIC, this was unavoidable. The split core also introduces variability because there is a small but quantifiable spatial separation of the two samples; this contributes variance which is a function of the geology of the deposit and not of the sampling method. Furthermore, CCIC has sampled 25% of the core volume while

the primary result represents 50% of the core volume. As expected, negative anomalies are observed in the re-assay result for Zn, Ag, Cu, and Pb (Figures 9–3, 9–5, 9–7, 9–9). Charting of the primary grade versus the relative difference between the primary and duplicate result demonstrate the relative difference is closer to zero in the low grade range, and becomes more negative in the higher grade ranges (Figures 9–4, 9–6, 9–8, 9–10).



It is the opinion of CCIC that the results of the core-duplicate assaying positively attest to the veracity of the historic sample database.

10.0 MINERAL PROCESSING AND METALLURGICAL TESTING

In 1986, two bulk samples from the Coronation Zone and the Coronation Extension were sent to CANMET for microprobe analysis to determine sulphide mineralogy and gangue, sulphide mineral associations and the grain size distribution of the sulphide minerals in the ore. The test involved grinding experiments and polished sections were prepared from drill core and examined under ore microscope to identify principal sulphide minerals. Quantitative energy dispersive analysis was used to determine the composition of the tetrahedrite/tennantite; quantitative electron microprobe analysis to determine the presence and level of silver in solid solution in galena; and x-ray diffraction analysis to confirm the identity of several ore and gangue minerals.

The results show that ore minerals within the 2 zones consist primarily of sphalerite, pyrite, chalcopyrite and galena, with minor amounts of tetrahedrite/tennantite together with minute to trace amounts of rutile, bornite, electrum, pearceite, arsenopyrite and barite. The gangue minerals are chiefly quartz and calcite with lesser amounts of muscovite, feldspar and barium-bearing feldspar. Some of the ore minerals show severe brecciation, particularly pyrite and occasionally sphalerite: the resultant fractures in the pyrite are filled with gangue minerals; chalcopyrite and occasionally galena and sphalerite. The mineralogy of Coronation and Extension zones of Lara Property are identical.

The mineral processing tests indicate that galena and chalcopyrite have similar associations and particle size; represented by grain sizes that can be liberated by a fine grind -325 mesh; that sphalerite has the coarsest average grain size of ore and contains locked grains of galena, chalcopyrite other ore and gangue. The major silver-bearing mineral by quantity in the ore is tetrahedrite/tennantite and that Ag in pearceite and electrum is small in comparison.

In July 1987, Coastech Research Inc. ("Coastech") of Vancouver carried out metallurgical testing of 23 drill core samples from two drill cores (Coronation Zone and Coronation Extension Zone) to determine the quality of concentrates can be produced. Elemental analyses showed that the two samples contained an average of 0.030 oz/t Au, 1.04 oz/t Ag, 0.57% Cu, 0.48% Pb and 2.91 % Zn; and 0.123 oz/t Au, 3.0 oz/t Ag, 1.11% Cu, 0.67% Pb and 5.69% Zn, respectively.

Duplicate assays indicated a minor nugget effect; that arsenic and antimony are at low levels and mercury below detection limit (contaminants in concentrate products would incur smelter penalties). Flotation results indicated a zinc recovery of 72.7% Zn; Cu recovery of 94.9% Cu, Pb recovery of 96.2% Pb in the bulk concentrates. Gold and Ag tend to report with copper where the recoveries to the bulk Cu/Pb concentrate were 86% Au and 84% Ag. Coastech concluded that separate copper, lead and zinc concentrates could be produced as marketable products. However, further test work was required to



optimize copper/lead separation, to improve gold and silver recovery to the copper concentrate; and to optimize zinc concentrate cleaning (Broughton, 1987).

11.0 MINERAL RESOURCE AND RESERVE ESTIMATES

11.1 Database Generation

The data was captured from 48 hard copy documents containing drill core logs, assay results, plan maps, and drill hole sections (Appendix 2). Assay certificates for drill core sections that were re-sampled by CCIC are provided in Appendix 3.

11.2 Digital Elevation Model

The Digital Elevation Model ("DEM") for the area around the Coronation Trend was obtained from Canadian Digital Elevation Data ("CDED") available at http://www.geobase.ca/geobase/en/. The Canadian Digital Elevation Data consists of an ordered array of ground elevations at regularly spaced intervals. The source digital data for CDED at scales of 1:50,000 and 1:250,000 is extracted from the hypsographic and hydrographic elements of the National Topographic Data Base ("NTDB") or various scaled positional data acquired from the provinces and territories (Geobase, 2007). The sources of digital or analogue data used to acquire data for the NTDB are aerial photography, reproduction material, MSS Landsat Images, TM Landsat Images, Spot XS Images, Spot PAN Images, and GPS Data (Geomatics Canada, 1997).

Previous operators have determined the drill collar elevations by various methods. Many of the elevations were found to be inconsistent with one another and with the CDED. To account for this variability, the elevations of the drill collars were projected to the CDED derived DEM.

For future revision of the Estimate and economic analysis, Laramide is encouraged to acquire a high resolution DEM of the Property area.

To deplete the vertical limit of the estimate, a bedrock surface, representing the base of overburden, was created by translating the CDED DEM minus 3 metres in the Z direction. Where drill hole data had justified a surface expression in the modelling of mineralized zones, the wireframe did not extend above the modelled bedrock surface.

11.3 Wireframe Modelling

The wireframe models generated represent a threshold above which a continuous zone of >1.0% Zinc-Equivalent ("ZnEq") could be consistently followed and modelled. In most instances, the significant intersections were reconciled from section to section without the inclusion of low-grade intervals.



The Zinc-Equivalent approach was utilized in order to capture significant intercepts of Zn and Ag, which in some cases are out of phase within the scale of a mineralized interval. Table 11-1 presents an example from drill hole 85-44, where significant Ag grades are associated with lower, though anomalous, Zn grades. The peak Cu and Au grades in this intercept are proximal to, but do not correspond directly to, the peak Zn or Ag grades.

Table 11-1. Mineralized intercepts from drill hole 85-44.

| BHID | FROM (m) | TO (m) | Zn (%) | Ag (g/t) | Cu (%) | Pb (%) | Au (g/t) |
|-------|----------|--------|--------|----------|--------|--------|----------|
| 85-44 | 76.26 | 76.68 | 0.03 | 8.71 | 0.16 | 0.01 | 3.67 |
| 85-44 | 76.68 | 77.35 | 1.04 | 26.44 | 0.27 | 0.34 | 6.00 |
| 85-44 | 77.35 | 78.40 | 0.92 | 22.08 | 0.52 | 0.23 | 3.45 |
| 85-44 | 78.40 | 78.88 | 33.00 | 447.89 | 0.36 | 8.37 | 2.27 |
| 85-44 | 78.88 | 79.39 | 0.42 | 16.48 | 0.32 | 0.14 | 2.67 |
| 85-44 | 79.39 | 80.56 | 0.08 | 5.29 | 0.06 | 0.02 | 3.79 |
| 85-44 | 80.56 | 81.02 | 0.95 | 74.34 | 1.36 | 0.28 | 35.02 |
| 85-44 | 81.02 | 81.30 | 0.08 | 21.15 | 0.51 | 0.01 | 0.47 |
| 85-44 | 81.30 | 81.93 | 0.28 | 3.73 | 0.05 | 0.04 | 1.99 |
| 85-44 | 81.93 | 82.14 | 22.10 | 84.60 | 0.63 | 2.46 | 4.67 |
| 85-44 | 82.14 | 82.64 | 0.07 | 13.37 | 0.24 | 0.02 | 0.84 |
| 85-44 | 82.64 | 83.11 | 0.58 | 7.46 | 0.02 | 0.36 | 0.72 |

Table 11-2 provides an example from drill hole 85-44 for calculation of the metal equivalents. The values per tonne for each sample interval were calculated for each commodity as follows:

- Zn, Pb, Cu: (grade (%) / 100) * 4 year USD value per tonne
- Ag, Au: (grade (g/t) / 31.1034768) * 4 year USD value per ounce

Table 11-2. Calculated equivalents for mineralized interval in drill hole 85-44.

| | | | | Value | per tone (| USD) | | Zn-Eq | Ag-Eq | Cu-Eq |
|-------|----------|--------|----------|----------|------------|---------|----------|-------|---------|-------|
| BHID | FROM (m) | TO (m) | Zn | Ag | Cu | Pb | Au | (%) | (g/t) | (%) |
| 85-44 | 76.26 | 76.68 | \$0.45 | \$1.96 | \$5.60 | \$0.10 | \$50.74 | 3.92 | 261.49 | 1.68 |
| 85-44 | 76.68 | 77.35 | \$15.60 | \$5.95 | \$9.45 | \$3.40 | \$82.99 | 7.83 | 521.61 | 3.35 |
| 85-44 | 77.35 | 78.40 | \$13.80 | \$4.97 | \$18.20 | \$2.30 | \$47.73 | 5.80 | 386.57 | 2.49 |
| 85-44 | 78.40 | 78.88 | \$495.00 | \$100.80 | \$12.60 | \$83.70 | \$31.39 | 48.23 | 3214.72 | 20.67 |
| 85-44 | 78.88 | 79.39 | \$6.30 | \$3.71 | \$11.20 | \$1.40 | \$36.98 | 3.97 | 264.78 | 1.70 |
| 85-44 | 79.39 | 80.56 | \$1.20 | \$1.19 | \$2.10 | \$0.20 | \$52.46 | 3.81 | 253.94 | 1.63 |
| 85-44 | 80.56 | 81.02 | \$14.25 | \$16.73 | \$47.60 | \$2.80 | \$484.18 | 37.70 | 2512.98 | 16.16 |
| 85-44 | 81.02 | 81.30 | \$1.20 | \$4.76 | \$17.85 | \$0.10 | \$6.45 | 2.02 | 134.90 | 0.87 |
| 85-44 | 81.30 | 81.93 | \$4.20 | \$0.84 | \$1.75 | \$0.40 | \$27.52 | 2.31 | 154.23 | 0.99 |
| 85-44 | 81.93 | 82.14 | \$331.50 | \$19.04 | \$22.05 | \$24.60 | \$64.50 | 30.78 | 2051.45 | 13.19 |
| 85-44 | 82.14 | 82.64 | \$1.05 | \$3.01 | \$8.40 | \$0.20 | \$11.61 | 1.62 | 107.84 | 0.69 |
| 85-44 | 82.64 | 83.11 | \$8.70 | \$1.68 | \$0.70 | \$3.60 | \$9.89 | 1.64 | 109.17 | 0.70 |



Table 11-3. Moving average values (USD) utilized to calculate metal equivalents.

| | Value per tonn | Value per troy ounce | | |
|------------|----------------|----------------------|--------|----------|
| Cu Pb Zn | | | Ag | Au |
| \$3,500.00 | \$1,000.00 | \$1,500.00 | \$7.00 | \$430.00 |

The 4 year moving average price was calculated in November 2006 and assigned as the value for each commodity (Table 17-3). The ZnEq was calculated as follows:

Zinc-Equivalent = (∑ values per tonne / Zn 4 year USD value per tonne) * 100

Using >1.0% ZnEq, the Coronation Trend was modelled as six (6) discrete zones with a total strike length of approximately 1,180 metres along a 118° trend. The average dip of the zones is approximately 65° to the north-northeast. The true width of the zone models ranges from 2 to 15 metres and averages approximately 5 metres. South and east facing perspective views of the models are presented in Figures 11-1 and 11-2. The zone number assigned to each lens, which was carried through sample selection, block modelling, and estimation, is indicated on each diagram.

11.4 Specific Gravity

Compiled from the historic data provided to CCIC were 420 measurements of specific gravity ("SG"); CCIC also completed SG measurements on 164 core samples (Appendix 3). The SG measurements were a component of the hard-copy assay database and therefore each measurement directly corresponds to a Zn, Ag, Cu, Pb, and Au assay value. The 420 measurements are associated with a wide range of Zn tenor. A scatter plot of sampled SG versus percent Zn is presented in Figure 11-3. As would be expected, the sampled SG increases with increasing Zn grade. To determine the slope of this relationship, a regression analysis was conducted against SG and Zn grade.

A plot of Zn grade versus the relative difference between calculated and actual SG for the sample population demonstrates the most erroneous SG estimates are negative values and more common in the range below 10% Zn (Figure 11-4). The mean relative difference (calculated – actual) is 0.148%; the mean absolute difference is 0.

SG measurements were also undertaken on 81 of the quarter core samples submitted by CCIC for reassay (see Section 9.0). The measurements were completed by ACME Laboratories on the sample pulps. In twelve (12) instances, insufficient pulp material remained to complete the SG measurement. The following is a summary of the results:

Minimum: 2.61 g/cm³

Maximum: 3.46 g/cm³

Median: 2.78 g/cm³

Average: 2.82 g/cm³



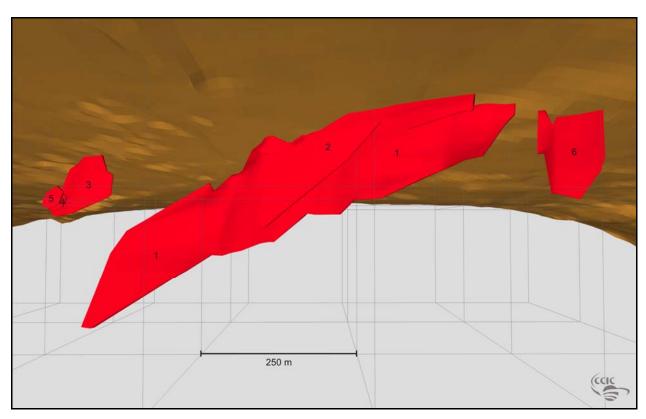


Figure 11–1. South facing perspective view of Coronation Zone models with zone numbers assigned to each lens.

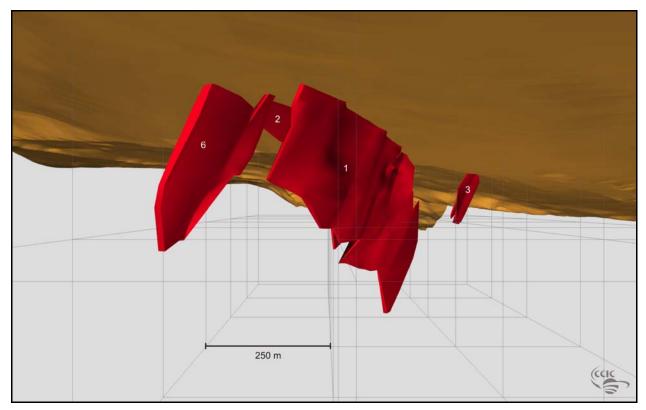


Figure 11–2. East facing perspective view of Coronation Zone models with zone numbers assigned to each lens.



The SG measurements on the pulps serve to verify the 420 historic measurements utilized for the regression. The 420 historic results are summarized as follows:

Minimum: 2.00 g/cm³
Maximum: 4.30 g/cm³
Median: 2.80 g/cm³
Average: 2.83 g/cm³

Following the completion of grade interpolation, the regression equation developed from the 420 measurements (y=0.288x + 2.8406) was utilized to allocate a SG value to each block based on the interpolated Zn grade.

11.5 Sample Composites and Top Cuts

The samples contained within the wireframe models were extracted to a separate sample database using the Datamine SELTRI operation; this database is composed of 653 samples or 5.4% of all assay records in the parent drill hole database. Charting was executed for Zn, Ag, Cu, Pb, and Au in order to identify outliers and distributions in the sample population and to determine an optimal composite length.

The average length of all samples (n=653) within the zone models was noted to be 0.75 m with a median of 0.64 m (Figure 11-5). All samples were set to a 1.0 m composite interval using the down-hole composite operation.

Following the composite operation, charting was re-executed for Zn, Ag, Cu, Pb, and Au to determine if top capping was necessary. Zn, Cu, and Pb samples were not top capped. A summary of sample capping for Ag and Au is presented in Table 11-4.

Drill hole 87-182 was excluded from the database as its composite interval of **2.02 m** @ **25.37% Zn, 200.3 g/t Ag, 5.88% Pb, 2.53% Cu, 4.43 g/t Au** was found to unduly influence the grade of the entire Inferred category. The position of 87-182 is over 100 m from surrounding samples within the plane of the zone, and therefore a large number of Inferred blocks were influenced by this interval. Drill hole 87-182 terminates within a high grade zone at a true depth of approximately 200 m; this portion of the Coronation Trend is an ideal location for definition drilling as this high grade area is open immediately up-dip (~75 m) and across strike to the east-southeast.



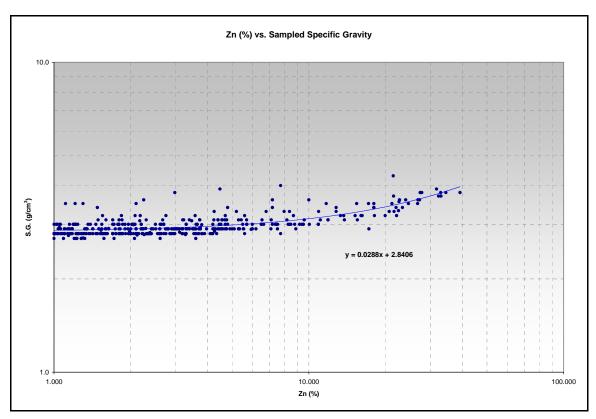


Figure 11-3. Scatter plot of sampled percent Zn and specific gravity with regression.

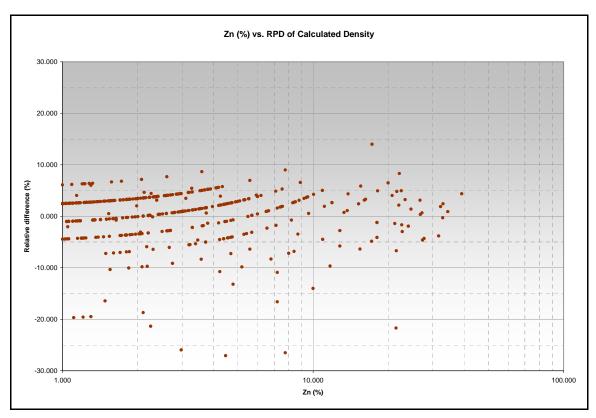


Figure 11-4. Scatter plot of percent Zn versus relative difference of calculated and sampled specific gravity.



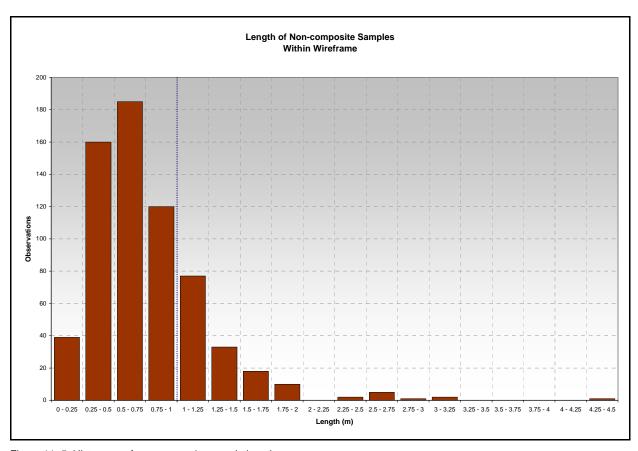


Figure 11–5. Histogram of non-composite sample lengths.

Table 11-4. Summary of sample top capping.

| | | | | Ag (g/t) | | Au (| (g/t) |
|--------|----------|--------|------------|-----------------------------------------|--------|----------|--------|
| BHID | From (m) | To (m) | Length (m) | Original | Capped | Original | Capped |
| 87-182 | 225.43 | 226.43 | 1.00 | | | | |
| 86-78 | 250.75 | 251.75 | 1.00 | | | | |
| 86-78 | 251.75 | 252.75 | 1.00 | | | | |
| 86-78 | 252.75 | 253.51 | 0.76 | | | | |
| 86-146 | 35.39 | 36.39 | 1.00 | 622.69 | 400.00 | | |
| 86-141 | 3.94 | 4.94 | 1.00 | 512.27 | 400.00 | | |
| 86-134 | 17.00 | 18.00 | 1.00 | 408.38 | 400.00 | | |
| 89-245 | 86.30 | 87.13 | 0.83 | | | 147.35 | 30.00 |
| 89-245 | 84.30 | 85.30 | 1.00 | | | 88.47 | 30.00 |
| 86-141 | 3.94 | 4.94 | 1.00 | | | 75.43 | 30.00 |
| 86-134 | 17.00 | 18.00 | 1.00 | | | 64.34 | 30.00 |
| 89-245 | 85.30 | 86.30 | 1.00 | | | 59.36 | 30.00 |
| 86-141 | 4.94 | 5.94 | 1.00 | *************************************** | | 44.00 | 30.00 |



11.6 Block Model

A summary of parameters used to generate the block model is presented in Table 11-5. The block dimensions were chosen to yield the best fill of the wireframe model more so than to reflect the spacing of drill hole pierce points or trend, as the wireframe model is quite narrow. Selected block model sections are provided in Appendix 4.

Table 11-5. Block model parameters used for the Posse deposit model.

| Axis | Parent Block | Subcell | Discretization Points | |
|------|--------------|---------|-----------------------|--|
| X | 5 m | 2.5 m | 2 | |
| Υ | 5 m | 2.5 m | 2 | |
| Z | 10 m | 5 m | 4 | |

11.7 Estimation Parameters

A variogram study was undertaken for each element to be included in the Mineral Resource Estimate. Using normal and relative pairwise experimental variograms, the ranges for Zn, Ag, Pb, and Cu were noted to be approximately 40 to 50 metres; the variogram range for Au was noted to be approximately 30 m. Due to the noisiness of the experimental downhole and across strike variograms, the nugget-sill ratio could not be properly established. As a result, Ordinary Kriging was not utilized as the interpolation method. The Inverse Power of Distance (squared) was utilized for grade interpolation. A summary of search distances and volume factors is presented in Table 11-6.

Table 11-6. Summary of search parameters.

| | Search Distance | | | 2nd Search | 3rd Search |
|---------|-----------------|-------|-------|---------------|---------------|
| Element | X (m) | Y (m) | Z (m) | Volume Factor | Volume Factor |
| Zn | 35 | 35 | 35 | 1.43 | 2.8 |
| Ag | 35 | 35 | 35 | 1.43 | 2.8 |
| Pb | 35 | 35 | 35 | 1.43 | 2.8 |
| Cu | 35 | 35 | 35 | 1.43 | 2.8 |
| Au | 35 | 35 | 35 | 1.43 | 2.8 |

Blocks which were calculated with the first search volume, along with a minimum of 4 samples from at least 2 drill holes, were assigned to the Indicated category. Blocks calculated with the second and third search volumes were assigned the Inferred category.

11.8 Grade Interpolation

Grade interpolation for the Coronation Trend was completed using the **Inverse Power of Distance Method**. The results are reported at 1.0%, 2.0%, and 3.0% Zn block cut-offs in Tables 11-7 and 11-8.



Table 11-7. Coronation Trend Mineral Resource Estimate.

1% Zn Block Cut-off

| Category | Tonnes | Zn (%) | Ag (g/t) | Cu (%) | Pb (%) | Au (g/t) |
|-----------|-----------|--------|----------|--------|--------|----------|
| Indicated | 1,146,700 | 3.01 | 32.97 | 1.05 | 0.58 | 1.97 |
| Inferred | 669,600 | 2.26 | 32.99 | 0.90 | 0.44 | 1.90 |

2% Zn Block Cut-off

| Category | Tonnes | Zn (%) | Ag (g/t) | Cu (%) | Pb (%) | Au (g/t) |
|-----------|---------|--------|----------|--------|--------|----------|
| Indicated | 428,600 | 5.65 | 47.04 | 2.25 | 1.18 | 2.39 |
| Inferred | 207,900 | 3.99 | 37.57 | 1.73 | 0.84 | 2.30 |

3% Zn Block Cut-off

| Category | Tonnes | Zn (%) | Ag (g/t) | Cu (%) | Pb (%) | Au (g/t) |
|-----------|---------|--------|----------|--------|--------|----------|
| Indicated | 189,600 | 9.74 | 60.85 | 4.44 | 2.23 | 3.07 |
| Inferred | 91,100 | 6.15 | 40.79 | 3.15 | 1.45 | 2.50 |

Table 11-8. Metal content of Mineral Resource Estimate.

1% Zn Block Cut-off

| Category | lbs Zn | oz Ag | lbs Cu | lbs Pb | oz Au |
|-----------|------------|-----------|------------|------------|--------|
| Indicated | 76,143,000 | 1,216,000 | 26,595,000 | 14,561,000 | 73,000 |
| Inferred | 33,422,000 | 710,000 | 13,316,000 | 6,510,000 | 41,000 |

2% Zn Block Cut-off

| Category | lbs Zn | oz Ag | lbs Cu | lbs Pb | oz Au |
|-----------|------------|---------|------------|------------|--------|
| Indicated | 53,339,000 | 648,000 | 21,250,000 | 11,102,000 | 33,000 |
| Inferred | 18,284,000 | 251,000 | 7,911,000 | 3,832,000 | 15,000 |

3% Zn Block Cut-off

| Category | lbs Zn | oz Ag | lbs Cu | lbs Pb | oz Au |
|-----------|------------|---------|------------|-----------|--------|
| Indicated | 40,707,000 | 371,000 | 18,575,000 | 9,340,000 | 19,000 |
| Inferred | 12,341,000 | 119,000 | 6,319,000 | 2,905,000 | 7,000 |

12.0 CONCLUSIONS

On the basis of a review of published and unpublished reports and data from previous exploration programs, and on the results of the current Mineral Resource Estimate, it is CCIC's professional opinion that there remains excellent potential to increase the current Resource Estimate (Coronation Trend) and for the discovery of additional massive sulphide mineralization at depth and along strike of known mineralized zones. Moreover, due to the similarities in structural, lithological and host stratigraphy and similar ore mineralogy to the Mount Sicker past producer and the Myra Falls Mine, there is potential along strike to the northwest and southeast for further discovery of potentially economic massive sulphide zones associated with the McLaughlin Ridge Formation and the Sicker Group.



The nature of stratigraphic and structural relationships of the mineralization in the area is not well understood and need to be better defined in order to improve targeting for future drill holes. Smaller zones of mineralization require follow-up drilling and geophysical investigation to fully define their extents both along strike and to depth. Furthermore, the known mineralized zones occur at what appears to be at least three stratigraphic levels (or three repetitions of the same stratigraphy) which suggest the presence of several stratigraphic horizons that host VMS mineralization. Drill testing along VMS prospective horizons is localized to a few small areas with a majority of their strike lengths (~70-80%) untested by drilling and largely concealed by overburden.

A modern, comprehensive data compilation and 3D model of the current drill core data and other technical information was completed during the past 18 months. This information can now be used to reinterpret the Lara Deposit and the surrounding geology and to develop new drill targets for further exploration programs.

Airborne geophysics flown by Aeroquest were successful in characterizing the geophysical attributes of the stratigraphy hosting the Coronation Zone and tracing it along strike. Specifically, the EM methods used were determined a strong EM response in the vicinity of the Coronation Zone and indicate that there are more similar conductors to the WNW and ESE along strike. Also, at least one additional conductive trend was observed at the south ends of survey blocks A and B which may represent another VMS horizon.

13.0 RECOMMENDATIONS

On the basis of the current geotechnical review and the Mineral Resource Estimate, CCIC recommends that further exploration work be completed on the Lara Property. **CCIC recommends a CAD\$500,000** work program to include surface geophysical survey and diamond drilling (see Table 14-1).

There are two main objectives to be considered in future work programs on the Lara Property:

- 1. Characterize existing mineralized zones and identify additional mineralized zones along strike and to depth through modern geophysical techniques, and,
- 2. Complete confirmatory drill holes within known mineralized zones and in areas of potential that have limited or no drilling, as identified from the compilation and 3D targeting work.

To address the first objective CCIC recommends implementation of "real section" induced-polarization geophysical methods to help map stratigraphy and trace previously identified mineralized zones. An orientation survey of approximately 30 line-kilometres is suggested initially to determine the geophysical signature of the known mineralized zones and whether the real section induced-polarization method is



capable of distinguishing the mineralized horizons. Additional geophysical investigation is contingent upon the results of this orientation survey.

CCIC also recommends that the current Mineral Resource Estimate be enhanced through confirmatory drilling and a high-accuracy differential GPS survey of the historical drill collars. Approximately 2,000 metres of drilling should be sufficient to enhance the current resources. The actual location of the drill holes has yet to be determined by CCIC but is part of their ongoing review of the Property.

14.0 PROPOSED BUDGET

CCIC proposes a budget which should allow Laramide Resources Ltd. to complete CCIC's recommended work program (Table14-1).

Table 14-1. Summary budget for recommendations on the Lara VMS Property.

| Item | Amount | Units | Rate | Per | Cost |
|-------------------------------|--------|-------|------------|-----|--------------|
| Line-cutting | 35 | km | \$500.00 | km | \$17,500.00 |
| Real Section IP Geophysics | 30 | km | \$3,500.00 | km | \$105,000.00 |
| Magnetometer and DGPS survey | 30 | km | \$300.00 | km | \$9,000.00 |
| Drilling (with analyses) | 2000 | m | \$175.00 | m | \$350,000.00 |
| Reclamation | 10 | days | \$500.00 | day | \$5,000.00 |
| Report Writing/Interpretation | | | | | \$20,000.00 |
| | | | Total: | | \$506,500.00 |



15.0 SUMMARY OF EXPLORATION EXPENSES

Table 15–1. Summary of exploration expenses.

| Work Category/Contractor | Details | Dates | # Units | Units | *Unit Cost | Amount | | |
|--------------------------------------------------------------------------|----------------------------------|-------------------------|---------|---------|---------------|--------------|--|--|
| Accommodation, Food and Travel | | | | | | | | |
| CJL Enterprises | Car rental | Sept 26 - Oct 8, 2006 | 3560 | km | \$0.54 | \$1,909.44 | | |
| CJL Enterprises | A/C for crew of 2 | Sept 18 - Sept 22, 2006 | 5 | days | \$107.24 | \$536.22 | | |
| Acc and Board (Various) | Crew of 2 & geol. | Sept 23 to Oct 6, 2006 | 14 | days | \$185.12 | \$2,591.72 | | |
| Field Labour | | | | | | | | |
| CJL Enterprises – tech | Randy Russell | Sept 26 - Oct 8, 2006 | 11 | days | \$320.65 | \$3,527.15 | | |
| CJL Enterprises – tech | Grant Russell | Sept 26 - Oct 8, 2006 | 11 | days | \$320.65 | \$3,527.15 | | |
| CCIC – geologist | Stephen Wetherup | Sept 30 - Oct 3, 2006 | 2 | days | \$866.70 | \$1,733.40 | | |
| Airborne Geophysical Surv | ey | | | | | | | |
| Aeroquest | Heliborne TDEM-Rad | Heliborne TDEM-Rad-Mag | | line-km | \$171.56 | \$85,796.40 | | |
| Rock Samples – assays | | | | | | | | |
| Acme Analytical Labs | FA and ICP-MS | | 78 | samples | \$40.97 | \$3,196.04 | | |
| Acme Analytical Labs | Specific Gravity | | 78 | samples | \$12.44 | \$970.22 | | |
| Data Interpretation and Report Writing | | | | | | | | |
| CCIC | Stephen Wetherup | | 4 | days | \$866.70 | \$3,466.80 | | |
| CCIC | lain Kelso | | 5 | days | \$866.70 | \$4,333.50 | | |
| Field Expenses and supplie | es | | | | | | | |
| Core saw rental | incl diamond blade | | 7 | days | \$91.28 | \$638.97 | | |
| Various | Sample bags, fuel, flagging tape | | | | | \$150.33 | | |
| Courier/Shipping and Office |) | | | | | | | |
| Various Sample shipping, shipping field supplies and field office rental | | | | | \$122.66 | | | |
| | | | | | Total: | \$112.500.00 | | |



16.0 STATEMENT OF AUTHORSHIP

This Report, titled "Independent Technical Report and Mineral Resource Estimation, Lara Polymetallic Property, British Columbia, Canada", and dated December 23rd, 2007 was prepared and signed by the following authors:

"Stephen Wetherup"

Stephen Wetherup, B.Sc., P.Geo. December 23rd, 2007 Abbotsford, British Columbia

"lain Kelso"

Iain Kelso, H.B.Sc., P.Geo. December 23rd, 2007 Sudbury, Ontario



17.0 REFERENCES

- Aeroquest International Ltd. (2007) Report on a Helicopter-Borne AeroTEM System Electromagnetic, Radiometric & Magnetic Survey. Aeroquest Job # 08022, Lara Project, Vancouver Island, British Columbia, NTS 092B13, 092C16. For Laramide Resources Ltd., 38 pp, with data DVD.
- Archibald, J.C. (1999) Summary Report on the Laramide Property Diamond Drill Program, Lara VMS Project, Vancouver Island, B.C., 103 pp.
- Bailes, R.J., Blackadar, D.W. and Kapusta, J.D. (1987) The Lara Polymetallic massive Sulphide Deposit. Vancouver Island, British Columbia. Abermin Corporation, 31 pp.
- B.C. MEMPR (2006) Legacy Claim Conversion to Cell Claim *in* Information Update, Number 13, revision date November 26, 2006; British Columbia Ministry of Energy, Mines and Petroleum Resources, online http://www.em.gov.bc.ca/mining/titles/infoupdate/default.htm [accessed October 1, 2007].
- B.C. MEMPR (2007) Geology of Vancouver Island; British Columbia Ministry of Energy, Mines and Petroleum Resources online at http://www.em.gov.bc.ca/Mining/Geolsurv/GeologyBC/default.htm [accessed October 1, 2007].
- B.C. MEMPR (2007) Mineral Titles Online; British Columbia Ministry of Energy, Mines and Petroleum Resources; online at http://www.mtonline.gov.bc.ca/ [accessed October 1, 2007].
- Belik, G. and Associates Ltd. (1981) Trenching, geophysical and geochemical report on the Mt. Sicker Property; Victoria Mining Division, British Columbia (NTS 92B/13W) for Laramide Resources Ltd., 49 pp.
- Blyth, H.E. and Rutter, N.W. (1993) Quaternary Geology of Southeastern Vancouver Island and Gulf Islands (92B/5, 6, 11, 13 and 14); *in* Geological Fieldwork 1992, British Columbia Ministry of Energy, Mines and Petroleum Resources, Paper 1993-1, p. 209-220.
- Breakwater Resources Ltd. (2004) NVI Mining Ltd., A Wholly-owned subsidiary of Breakwater Resources Ltd. Myra Falls Operation; Vancouver Island, British Columbia, NI-43101 Technical Report. July 30, 2004 by Torben Jensen, 54 pp.
- Breakwater Resources Ltd. (2007a) 2006 Annual Report, <u>www.breakwater.ca</u> [accessed September 26, 2007].
- Breakwater Resources Ltd. (2007b) Operations: Myra Falls. www.breakwater.ca/operations/myra.cfm [accessed October 1, 2007].
- Broughton, L.J. (1987) Exploratory Metallurgical Testwork, Report No. 1; Prepare for Abermin Corporation, Lara Property by Coastech Research Inc., 39 pp.
- Earle, Steven (2004) The Geology and Geological History of Vancouver Island; a Powerpoint Presentation, accessed online at http://web.mala.bc.ca/geoscape/ [accessed October 1, 2007].
- Chong, A., Becherer, M., Sawyer, R., Wasteneys, H., Baldwin, R., Bakker, F. and McWIlliams, I. (2005) Massive Sulphide Deposits at Myra Falls Operations, Vancouver Island, British Columbia *in* GAC Field Trip Guide (Part 1) Cordilleran Round-Up Field Trip, January 2005, Geological Association of Canada Geofile 2005-20; B.C. Ministry of Energy, Mines and Petroleum Resources, GeoFile 2006-07, 42 pp.
- Crick, D. B. (2003) Vancouver Island Opportunities Junior Custom Feed Exploration Unpublished report to Laramide Resources Ltd.



- Franklin, J. M. (1996) Volcanic-Associated Massive Sulphide Base Metals; Geology of Canadian Mineral Deposit Types, (ed.) O.R. Eckstrand, W. D. Sinclair and R. I. Thorpe; Geological Survey of Canada, no. 8, p.158-183.
- Franklin, J. M. (1999). Systematic Analysis of Lithogeochemical Data in. Exploration Tools for Volcanogenic Massive Sulphide Deposits short course sponsored by Mineral Deposits Research Unit, University of British Columbia.
- Franklin, J. M., Gibson, H. L., Jonasson, I. R., and Galley, A. G. (2005) Volcanogenic Massive Sulphides; Economic Geology 100th Anniversary Volume p. 523-560.
- Galley, A.G., Hannington, M.D., and Jonasson, I.R. (2007) Volcanogenic Massive Sulphide Deposits *in* Goodfellow, W.D., ed. Mineral Deposits of Canada: A Synthesis of Major Deposit-Types, District Metallogeny, The Evolution of Geological Provinces, and Exploration Methods: Geological Association of Canada, Mineral Deposits Division, Special Publication No. 5, p. 141-161.
- Harris, M.W. (1989) Observations on the Geology, Structure and Mineralization of the Coronation Zone Polymetallic Horizon Lara Project, 1988 Underground Exploration Program. 112 pp.
- Hart, T. R., Gibson, H. L. and Lesher, C.M. (2004) Trace Element Geochemistry and Petrogenesis of Felsic Volcanic Rocks Associated with Volcanogenic Massive Cu-Zn-Pb Sulfide Deposits; Economic Geology, v.99, p. 1003-1013.
- Höy, T. (1991) Volcanogenic Massive Sulphide Deposits in British Columbia; Ore Deposits, Tectonics and Metallogeny in the Canadian Cordillera, W.J. McMillan, Coordinator, British Columbia Ministry of Energy, Mines and Petroleum Resources, Paper 1991-4, p. 89-123.
- Kapusta, J.D. (1991) 1990 Diamond Drilling Report on the Lara Group II: Solly, T.L., Jennie, Ugly, Wimp, Nero, Face and Plant claims, B.C. Ministry of Energy, Mines and Petroleum Resources, Assessment File #20980, 50 pp.
- Laramide Resources Inc (2007). 2006 Annual Report, available online at www.laramide.com.
- Lesher, C. M., Goodwin, A. M., Campbell, I. H., Gorton, M. P. (1986) Rare element geochemistry of ore-associated and barren, felsic metavolcanic rocks in the Superior Province Canada; Canadian Journal of Earth Sciences, v.23, p. 222-237.
- Lithoprobe Geoscience Project (2007) http://www.lithoprobe.ca/media/studies/terrane.asp [accessed October 1, 2007].
- Long, S. D. (2003): Assay Quality Assurance-Quality Control Program for Drilling Projects at the Pre-Feasibility to Feasibility Level (3rd Ed.). Amec Mining Consulting Group.
- Massey, N.W.D. and Friday, S.J. (1989) Geology of the Alberni-Nanaimo Lakes Area, Vancouver Island (92F/1W, 92F/2E and part of 92F/7); *in* Geological Fieldwork 1988; B.C. Ministry of Energy, Mines and Petroleum Resources, Paper 1989-1, p. 61-74.
- Massey, N.W.D. (1992) Geology and Mineral Resources of the Duncan Sheet, Vancouver Island (92B/13); British Columbia Ministry of Energy, Mines and Petroleum Resources, Paper 1992-4, 124 pp.
- Massey, N.W.D., MacIntyre, D.G., Desjardins, P.J., and Cooney, R.T. (2005a) Geology of British Columbia, B.C. Ministry of Energy, Mines and Petroleum Resources, Geoscience Map 2005-3, (3 sheets), scale 1:1 000 000.



- Massey, N.W.D., MacIntyre, D.G., Desjardins, P.J. and Cooney, R.T. (2005b) Digital Map of British Columbia: Tile NM9 Mid Coast, B.C. Ministry of Energy and Mines, GeoFile 2005-2, scale 1:250.000.
- Massey, N.W.D., MacIntyre, D.G., Desjardins, P.J. and Cooney, R.T. (2005c) Digital Geology Map of British Columbia: Tile NM10 Southwest British Columbia, B.C. Ministry of Energy and Mines, GeoFile 2005-3, scale 1:250,000.
- MINFILE (1990a) Lara, Coronation, 262, Coronation Extension, NTS 092B13W (1990/08/10), MinFile Number 092B-129; British Columbia Ministry of Energy, Mines and Petroleum Resources, MINFILE data.
- MINFILE (1990b) Anita NTS 092B 13W (1990/10/13), Minfile Number 092B-037; British Columbia Ministry of Energy, Mines and Petroleum Resources, MINFILE data.
- MINFILE (1990c). Sharon Copper NTS NTS 092B 13W (1990/08/02), Minfile Number 092B-040; British Columbia Ministry of Energy, Mines and Petroleum Resources, MINFILE data.
- MINFILE (1997) Mount Sicker Mine: Lenora (L.35G), Twin J Mine, Mount Sicker, Lenora-Tyee, Tyee, Richard III, barite Ore, NTS092B13W (1997/04/30), MinFile Number 092B-001; British Columbia Ministry of Energy, Mines and Petroleum Resources, MINFILE data.
- Mortensen, J. (2006) Stratigraphic and Paleotectonic Studies of the middle Paleozoic Sicker Group, Poster presented at Roundup 2006; Association for Mineral Exploration in British Columbia
- Nucanolan Resources Ltd. (1998) Update on the Lara Project in British Columbia, Press Release December 11, 1998.
- Peatfield, G. R. and Walker, R.R. (1994) Review of Technical Reports and Field Observations with a Reinterpretation of Geological Relationships on the Cowichan Uplift Polymetallic Mineral Property, Laramide Resources Summary Report; Victoria Mining Divisions, British Columbia (NTS 93B/13W; 93 C/16E.
- Roberts, S.A. (2007) Lara Project Order of Magnitude Study, Vancouver Island, BC for Laramide Resources Limited, Unpublished report by Watts, Griffis and McQuat Limited, Toronto, Canada, 46 pp.
- Roscoe, W. (1988) Report on the Lara Project, Vancouver Island, B.C. for Laramide Resources. Roscoe Postle Associates Inc., Toronto, Ontario, 46 pp.
- Roscoe and Postle Associates (1988) Report on the Lara Project, Vancouver Island, British Columbia, for Laramide Resources Ltd.
- Stewart, R. (1991) Project 116: Project Summary of Chemainus Property (NTS 92B/13 and 92C/16), Falconbridge Ltd.
- Wells, G.S. and Kapusta, J.D. (1990a) 1989 Exploration Program, Lara Property, Victoria Mining Division (NTS 92B/13W), Minnova Inc.
- Wells, G.S. (1990b) Summary Report, Mount Sicker Property: 1983-1990. Minnova Inc.
- Wells, G.S. and Kapusta, J.D. (1991) 1990 Exploration Program, Lara Property, Victoria Mining Division (NTS 92B/13W), Minnova Inc.



APPENDIX 1

Certificates of Author



Stephen William Wetherup
34176 Cedar Ave
Abbotsford, British Columbia
Canada, V2S 2W1
Telephone: 604-617-5955
Email: swetherup@cciconline.com

CERTIFICATE OF AUTHOR

- I, Stephen Wetherup, do hereby certify that,
- 1. I am the General Manager of and senior geologist for the geological consulting form of Caracle Creek International Consulting Inc. (CCIC).
- 2. I am a graduate of the University of Manitoba ((Winnipeg) with a B.Sc. Honours in Geology.
- 3. I am a member of the Association of Association of Professional Engineers and Geoscientists of British Columbia (APEGBC, #27770). I am a member of the Society of Economic Geologists, Geological Association of Canada, and the Vancouver Mining Exploration Group.
- 4. I have been operating a business as a geological consultant under my own name since June 200, and under the name of Caracle Creek International Consulting Inc. since March 2004.
- 5. I am a qualified person under the definition for "qualified persons" as set out by NI43-101.
- 6. I have had no prior involvement with the Property that forms the subject of this Technical Report.
- 7. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
- 8. I am independent of the parties involved in the transaction for which this report is required, other than providing consulting services.
- 10. I am jointly responsible for the preparation of the Technical Report titled "Assessment Report: Airborne TDEM Survey, Drill Core Re-Sampling and Resource Estimate, Lara Polymetallic Property, British Columbia, Canada", (the "Technical Report"), dated December 23rd, 2007.
- 11. I last visited the Lara Polymetallic Property, Vancouver Island, British Columbia on September 30th, 2006.

Dated this 23rd Day of December, 2007.

SIGNED AND SEALED

"Stephen Wetherup"

Stephen William Wetherup, BSc., P.Geo. (APEGBC, #27770)



lain Kelso, B.Sc., P.Geo. 17 Frood Rd, Suite 2 Sudbury, Ontario Canada, P3C 4Y9 Telephone: 705-671-1801 Email: kelso@cciconline.ca

CERTIFICATE OF AUTHOR

I, lain Kelso, do hereby certify that,

- 1. I am the technical manager of the Sudbury office of the geological consulting firm of Caracle Creek International Consulting Inc Canada (CCIC).
- I graduated with a Bachelor of Science Honours degree in geology from Lakehead University in 2002.
- 3. I am a member of the Association of Professional Geoscientists of Ontario (#1345).
- 4. I have worked as a geologist within the mineral industry for 5 years.
- 5. I have had no prior involvement with the Property that forms the subject of this Technical Report,
- 6. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
- 7. I am independent of the parties involved in the transaction for which this report is required, other than providing consulting services.
- 9. I am jointly responsible for the preparation of the Technical Report titled "Assessment Report: Airborne TDEM Survey, Drill Core Re-Sampling and Resource Estimate, Lara Polymetallic Property, British Columbia, Canada", (the "Technical Report"), dated December 23rd, 2007.
- 10. I last visited the Lara Polymetallic Property, British Columbia, Canada on August 30th to 31st, 2006.

Dated this 23rd Day of December, 2007

SIGNED AND SEALED

"lain Kelso"

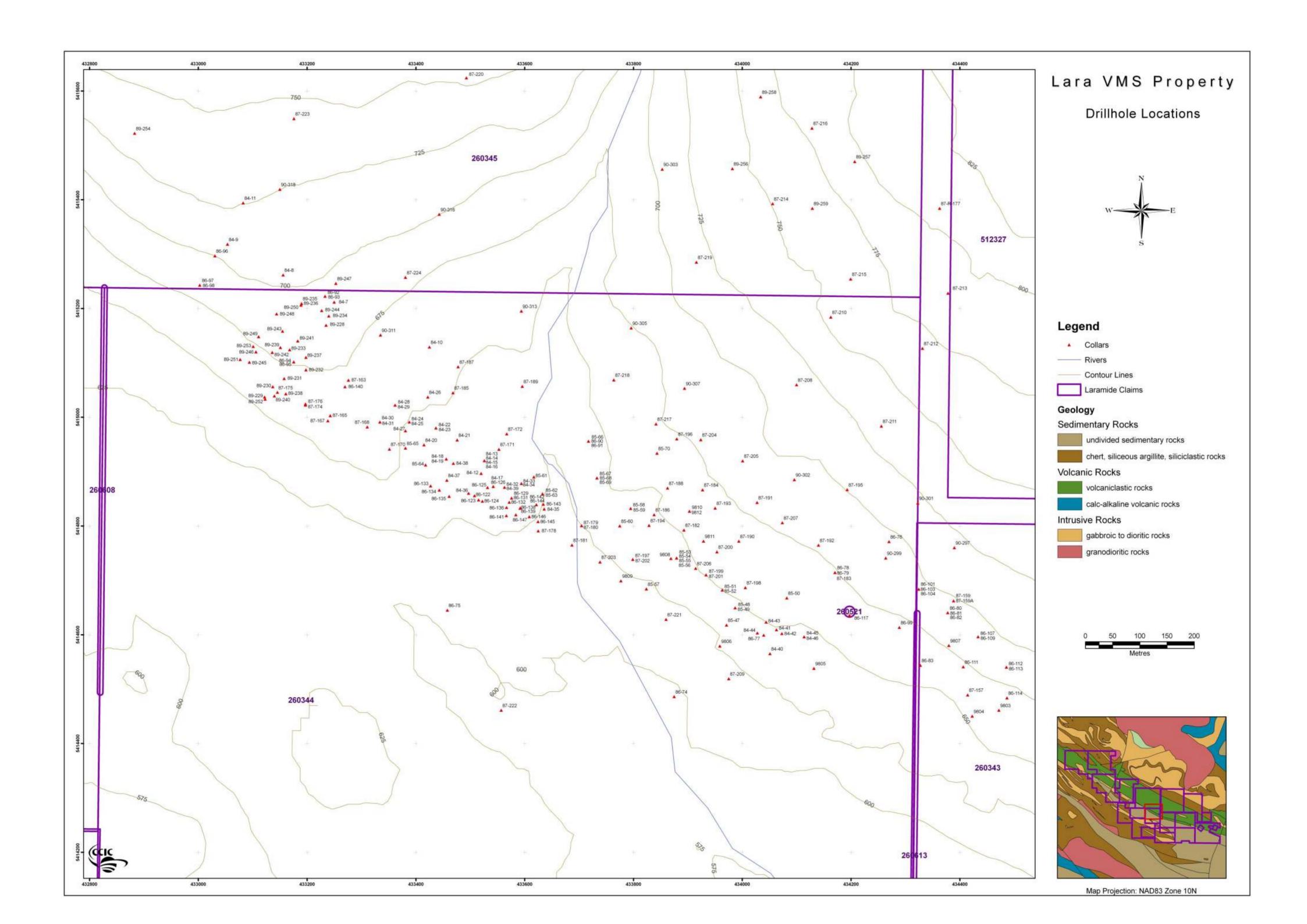
lain Kelso,

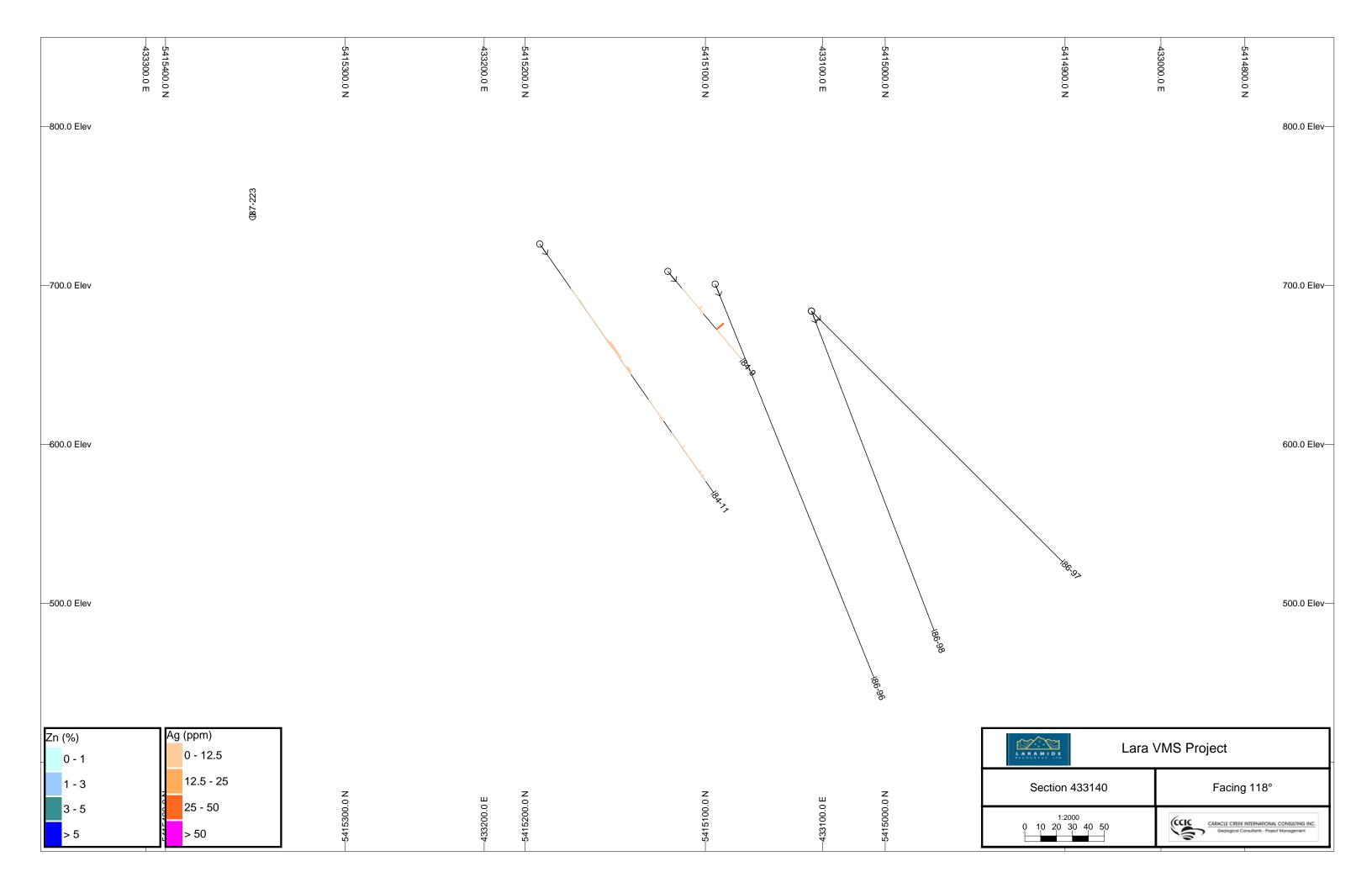
H.BSc., P.Geo. (APGO # 1345)

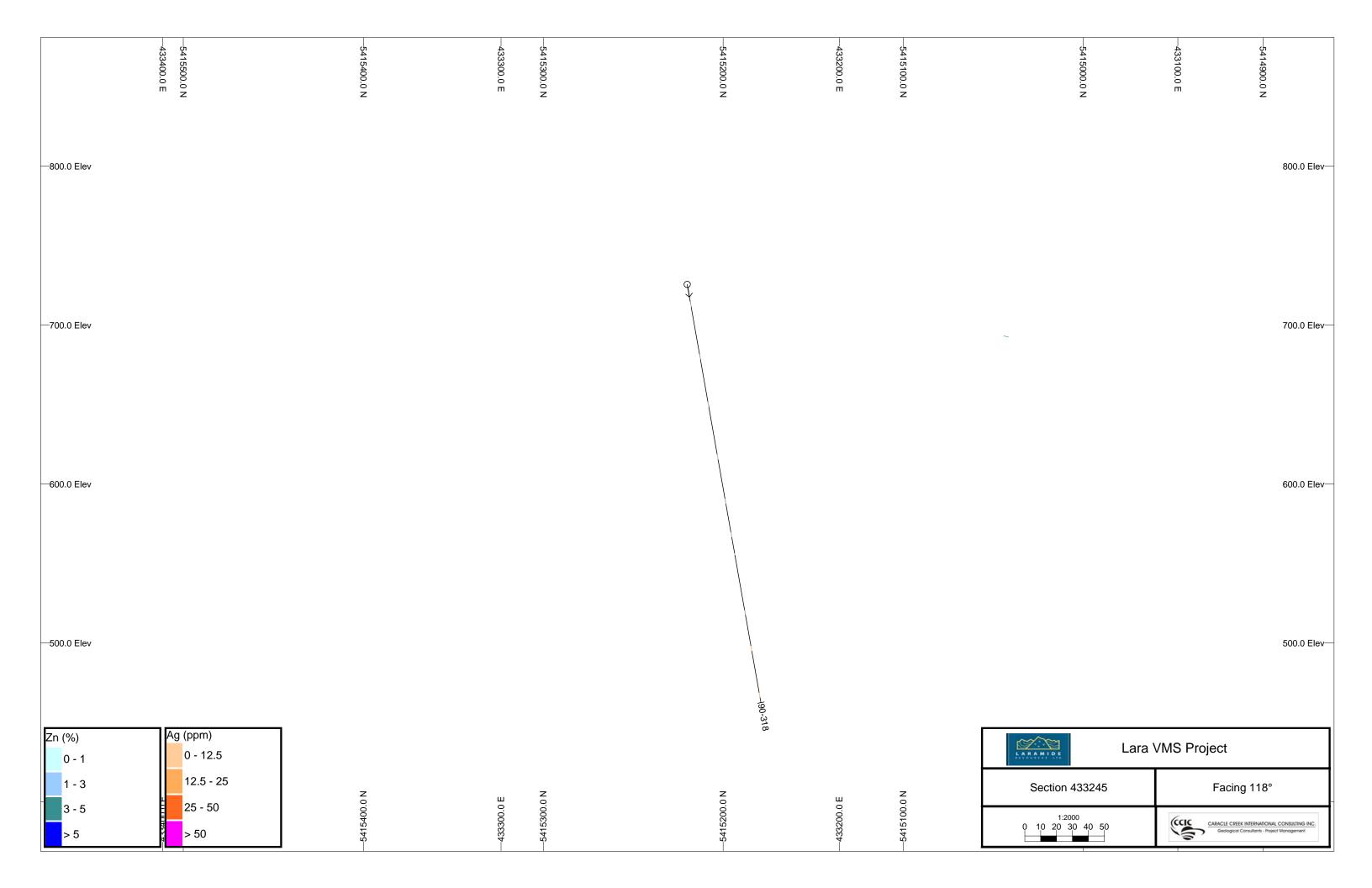


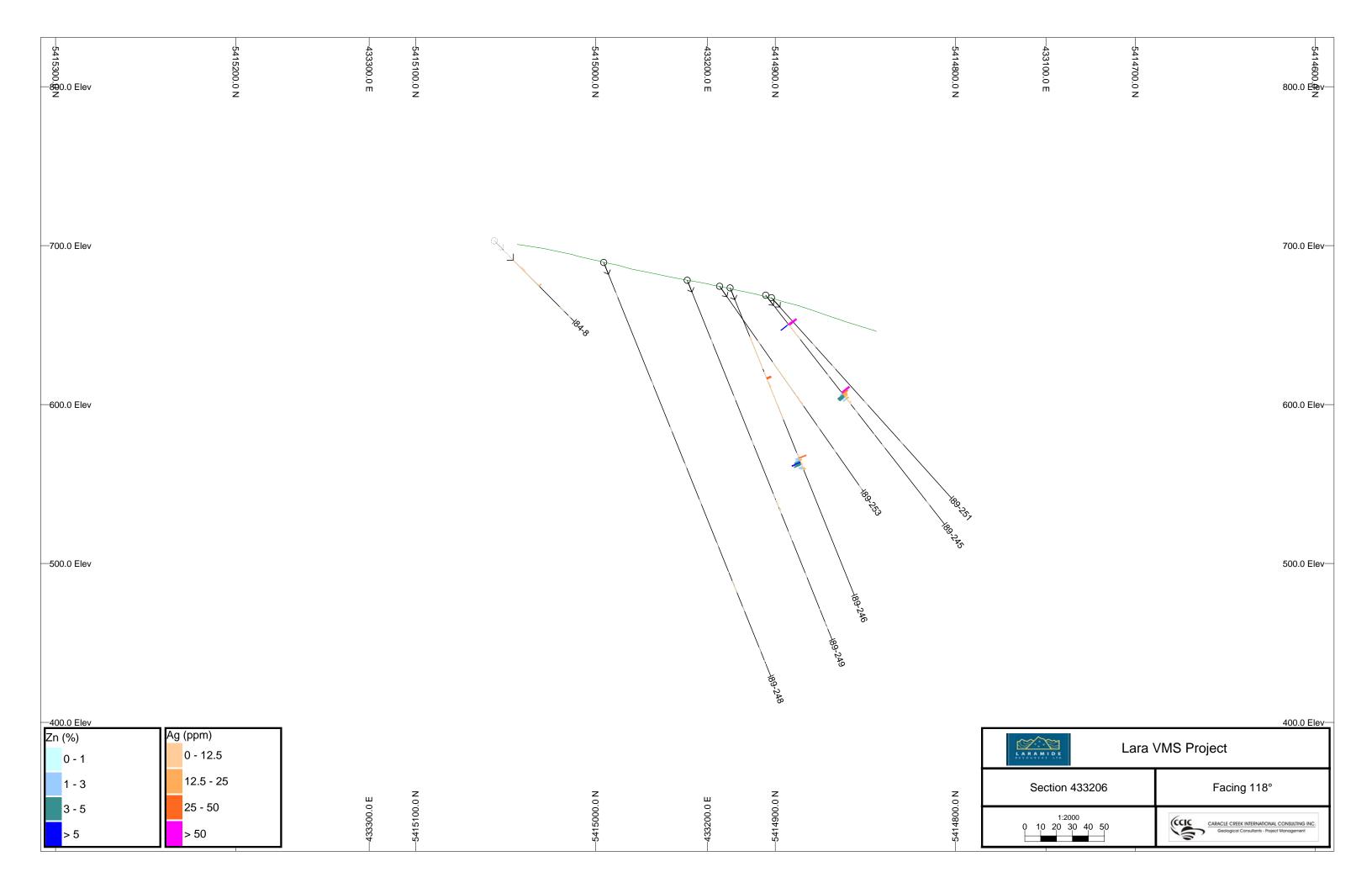
APPENDIX 2

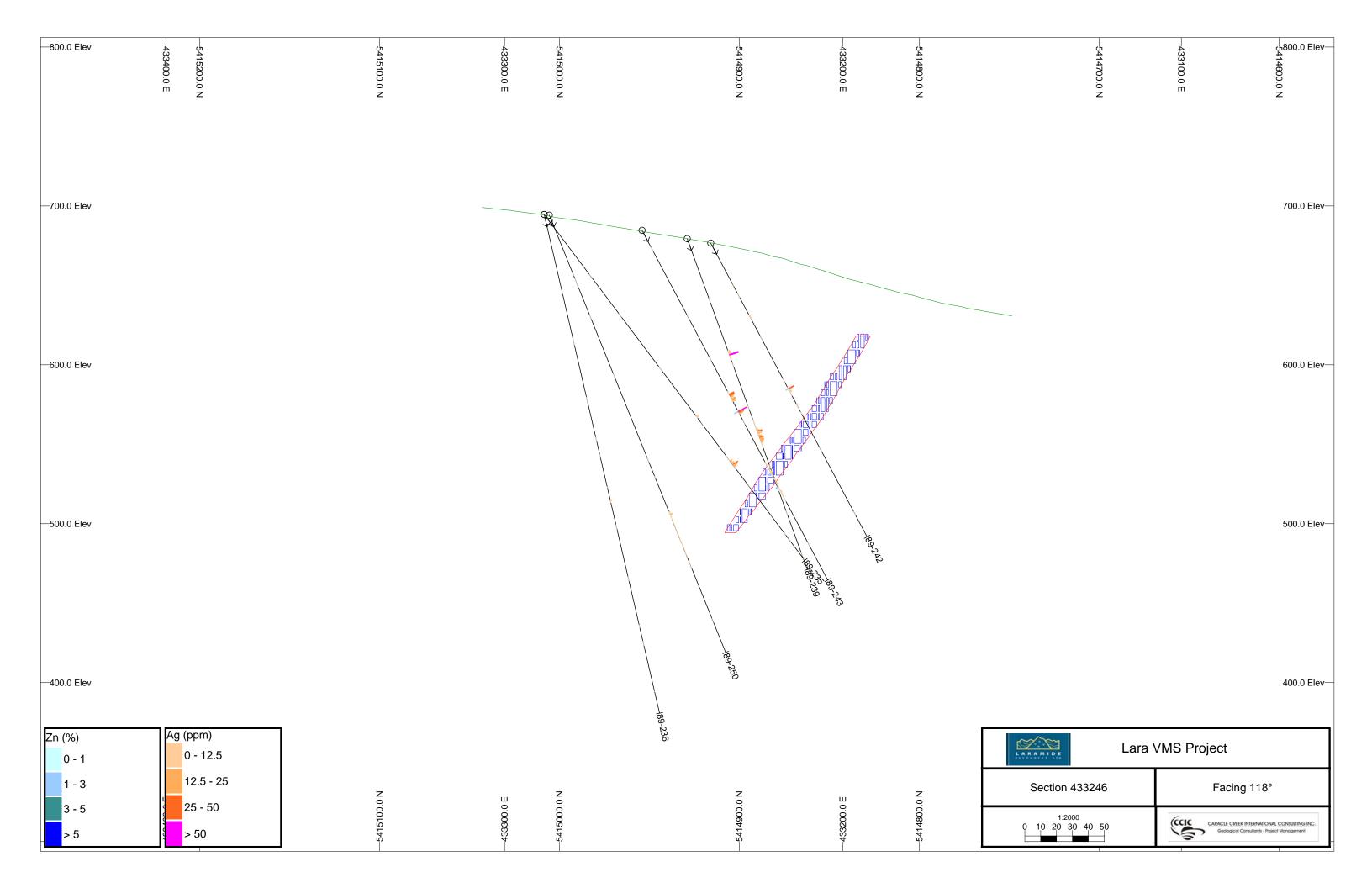
Sections: Drill Holes and Resource Block Model

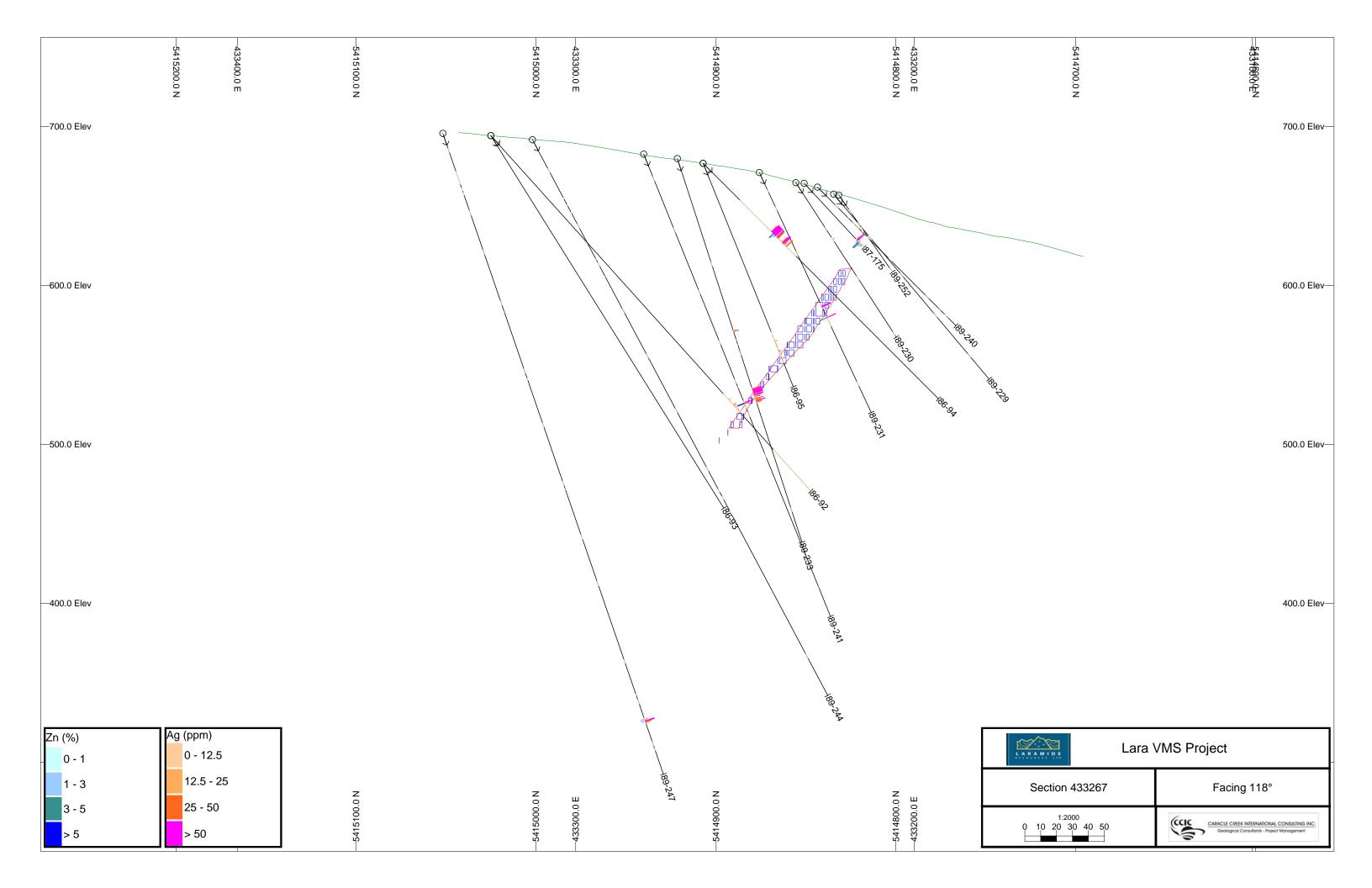


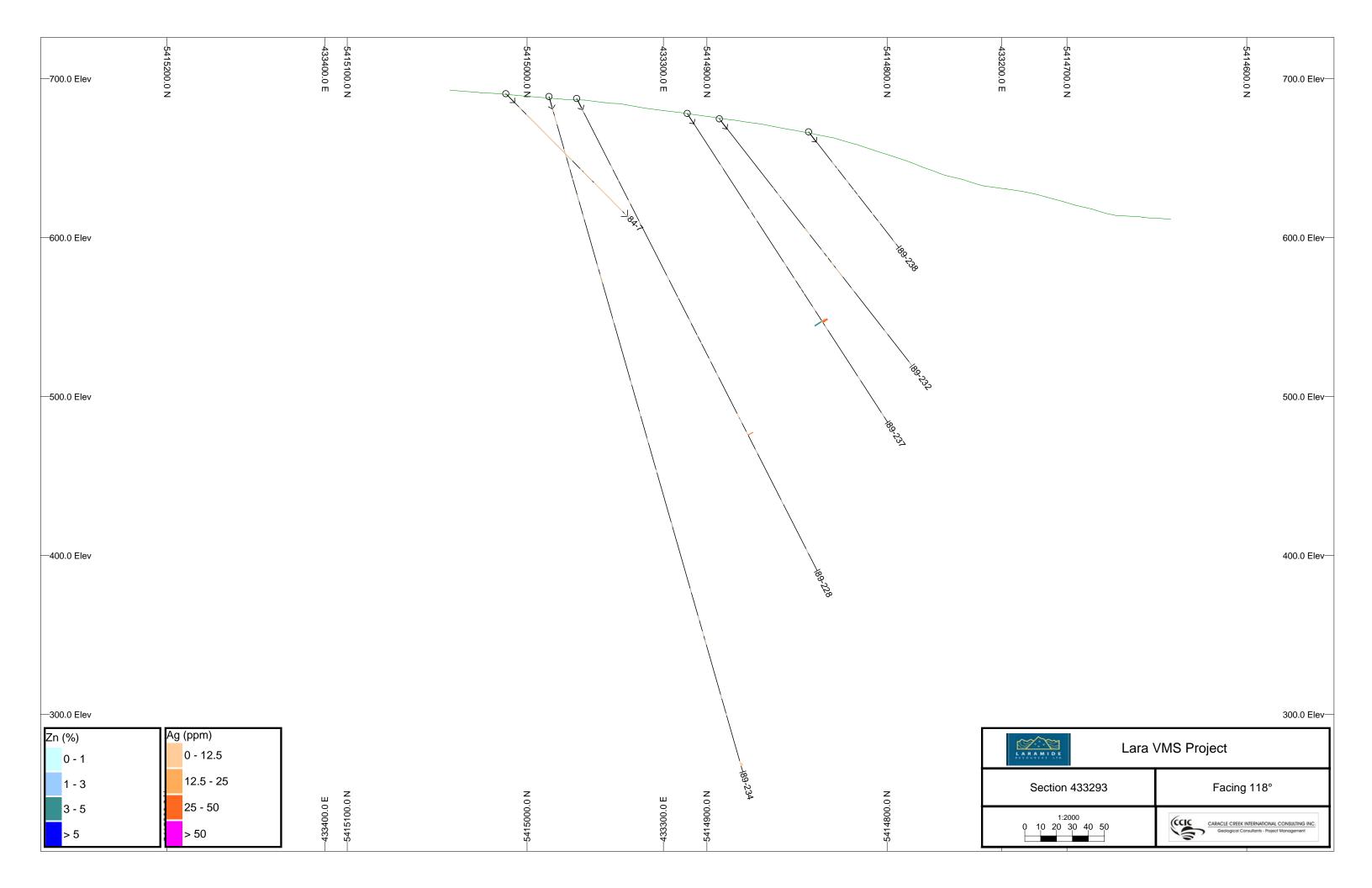


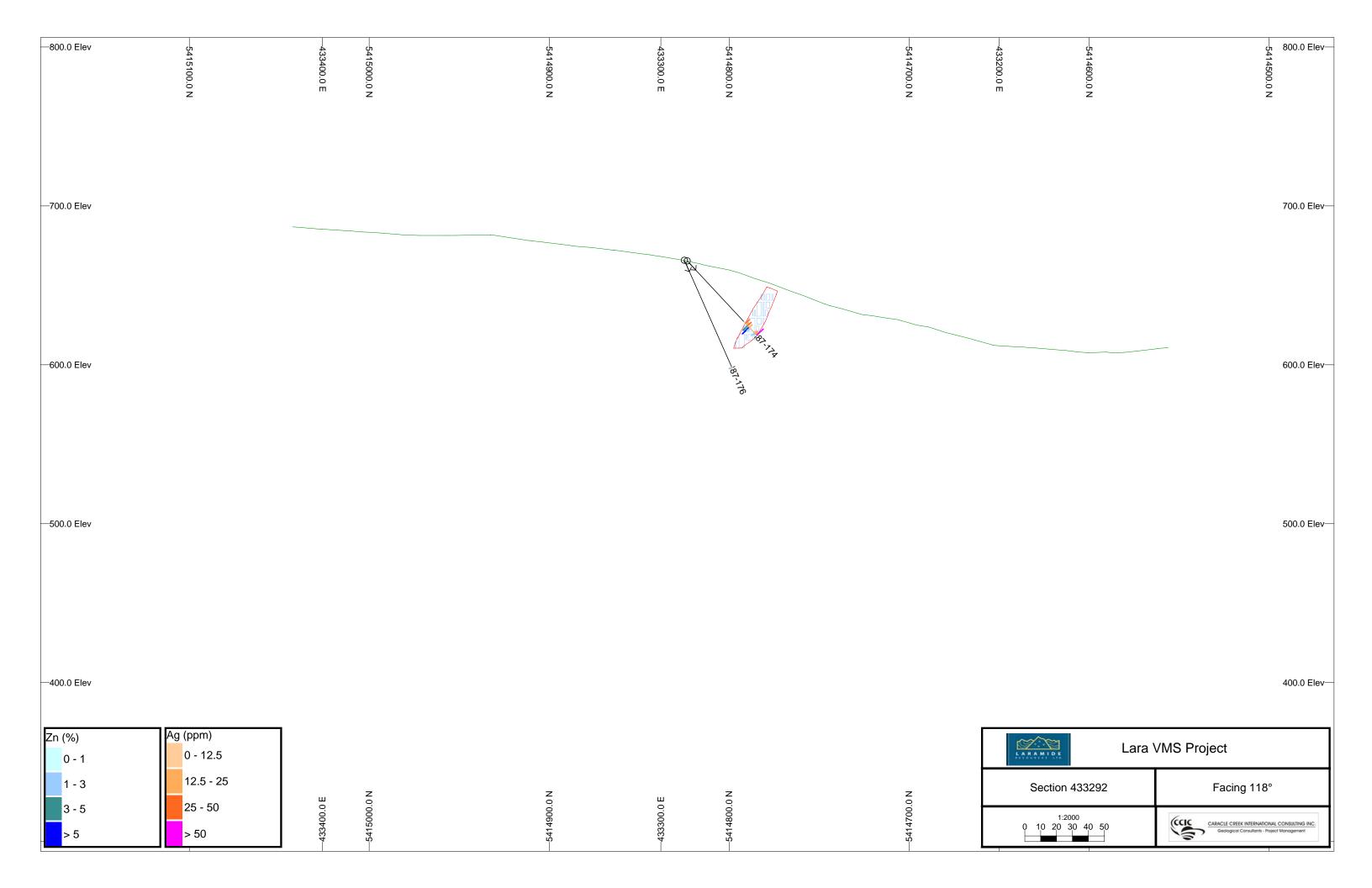


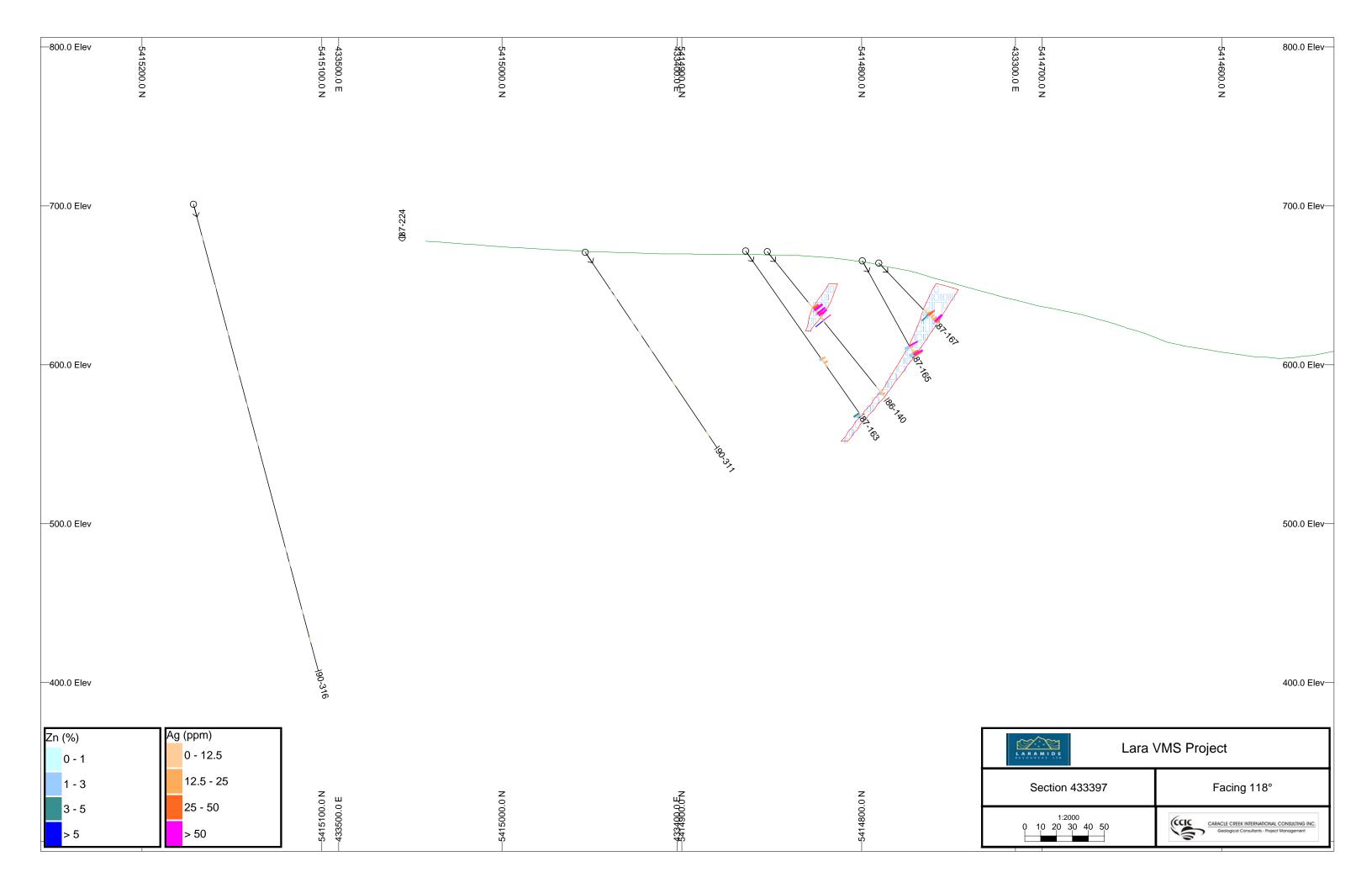


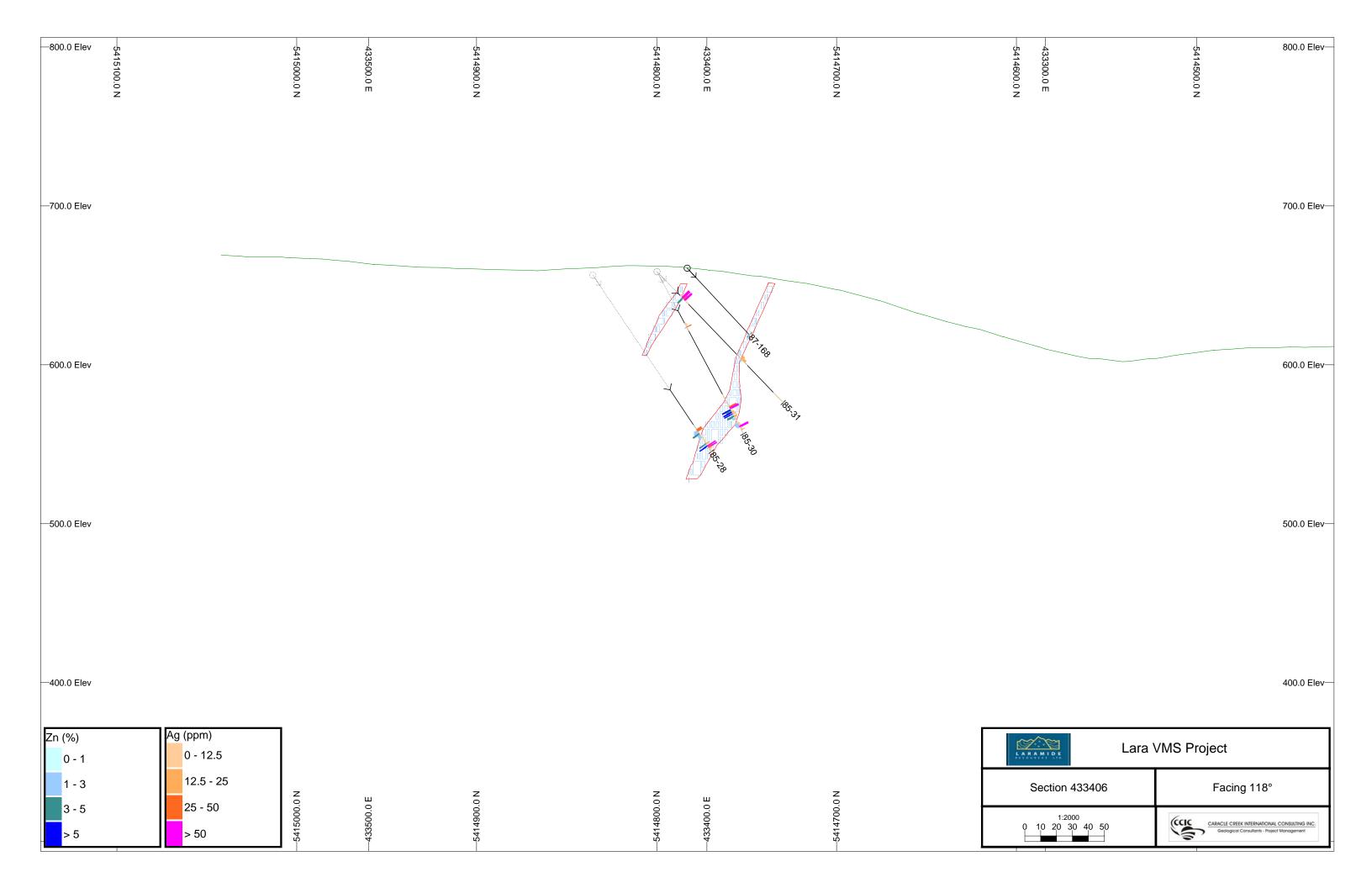


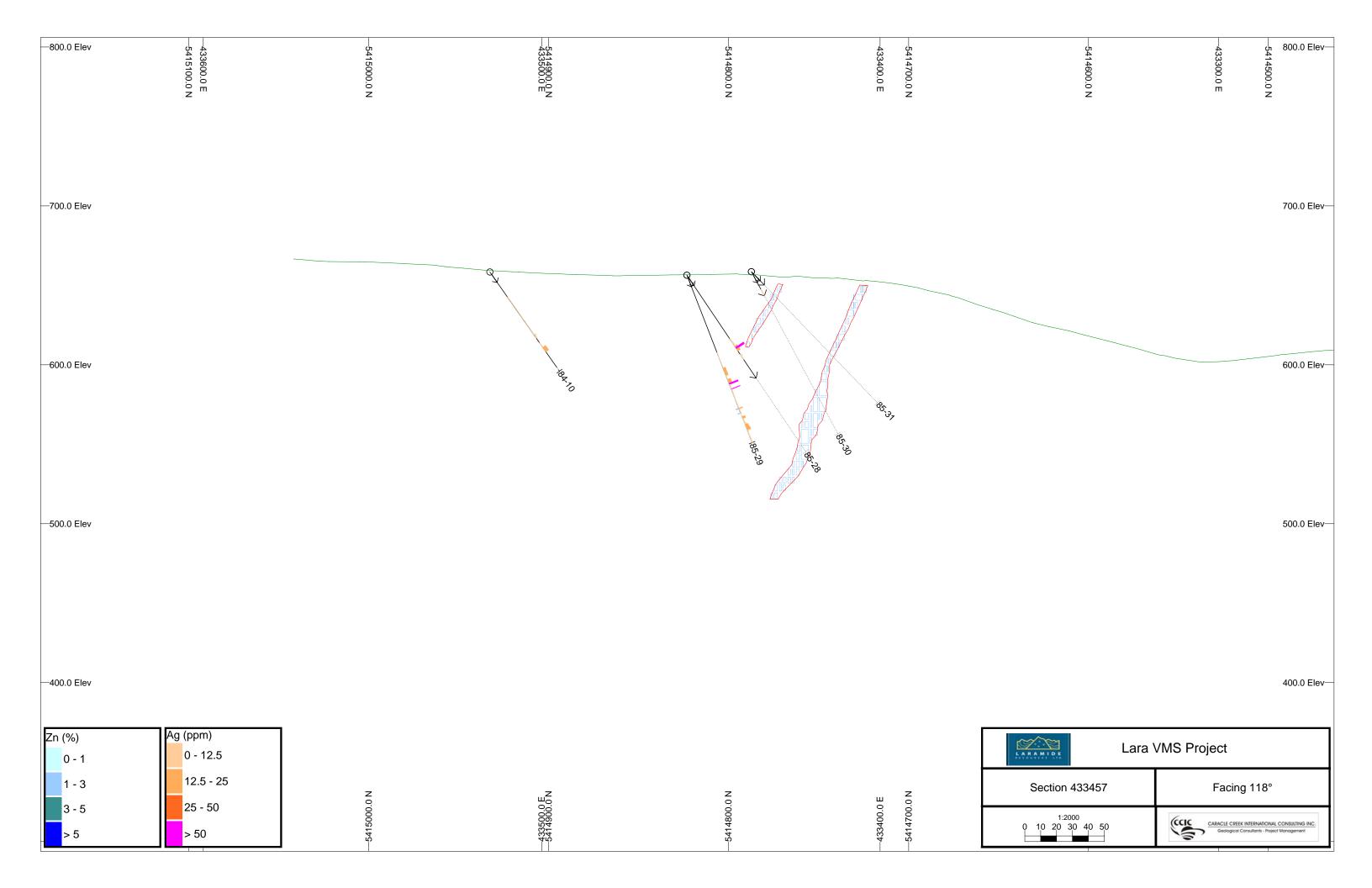


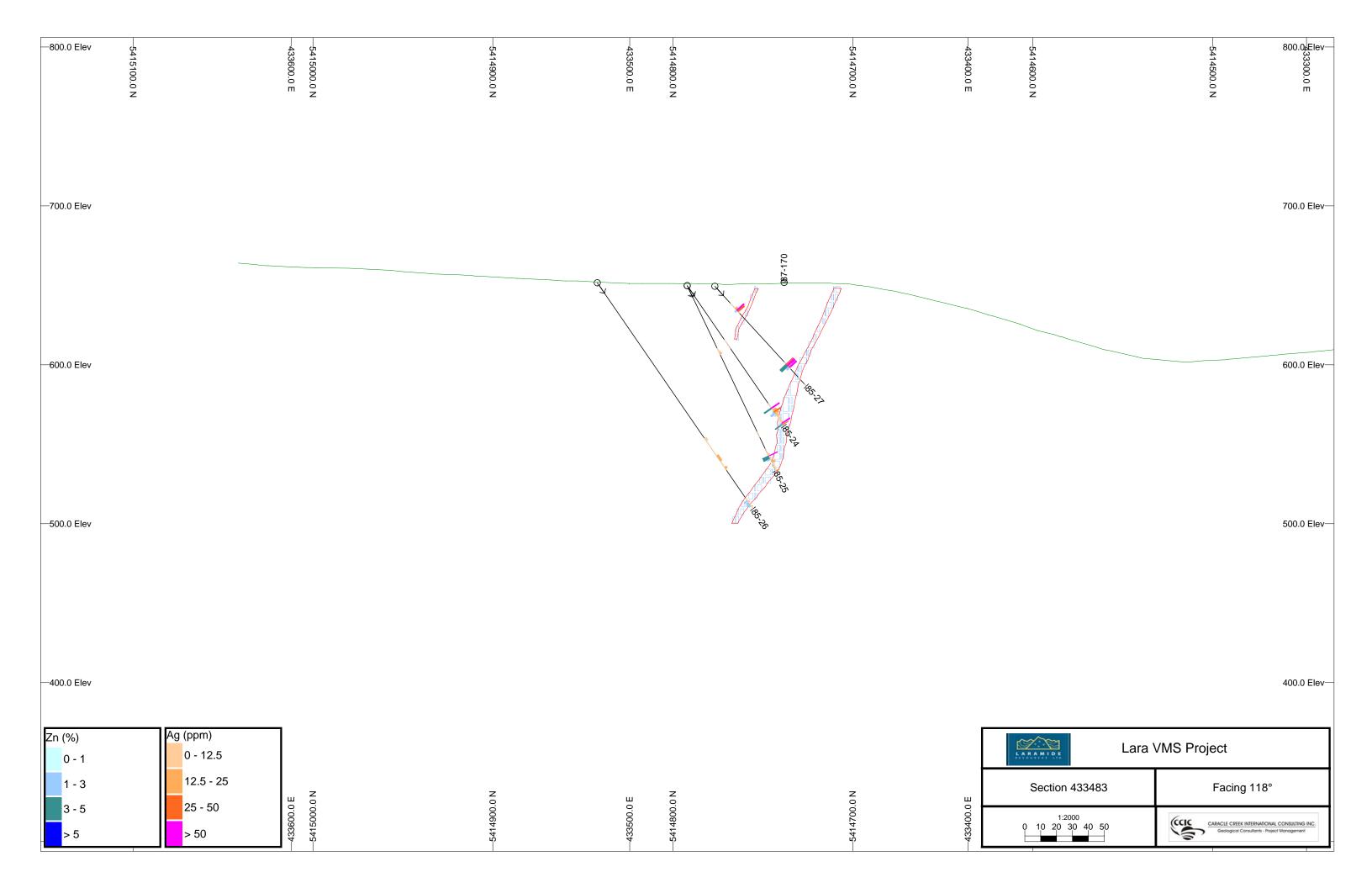


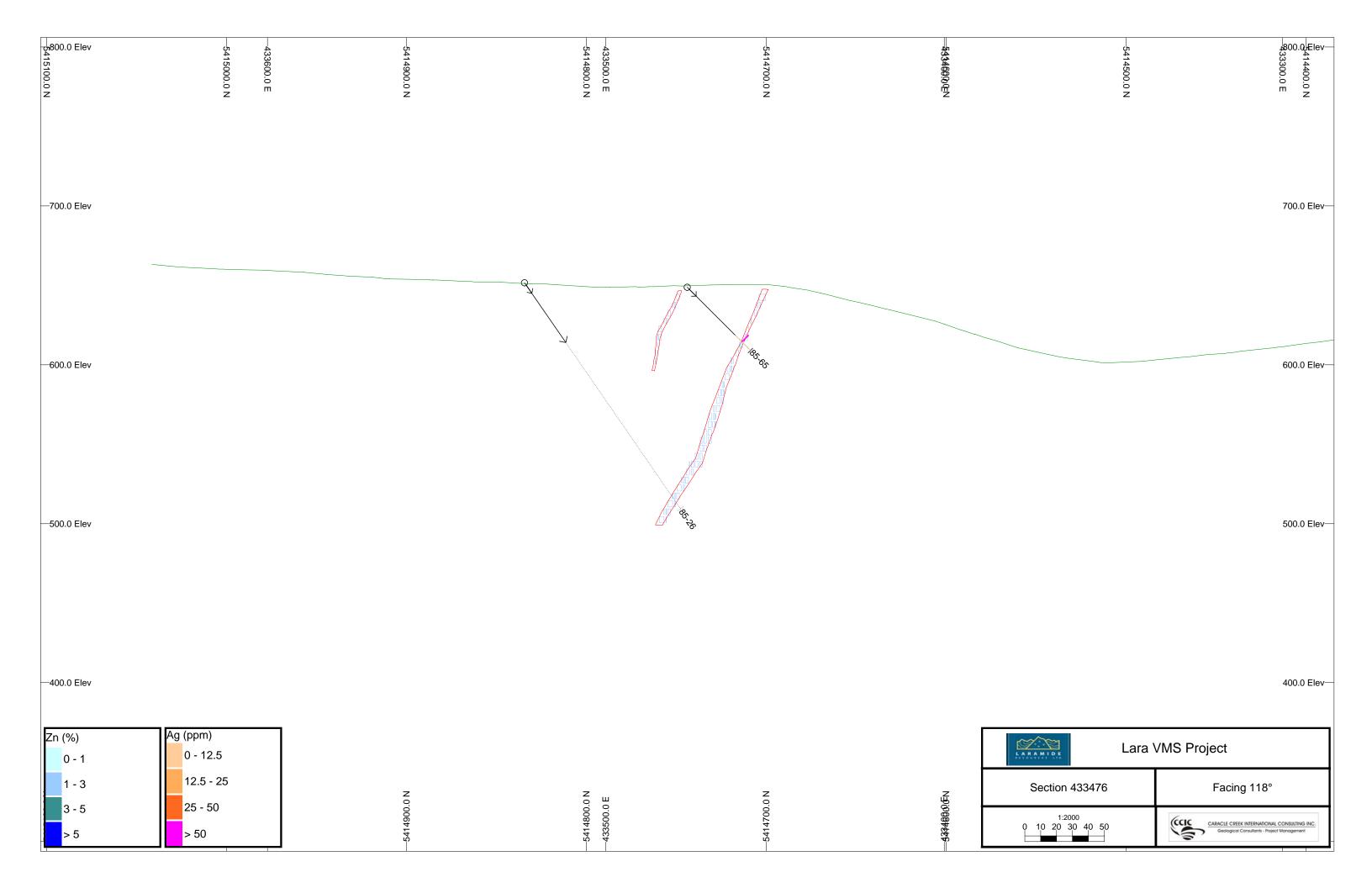


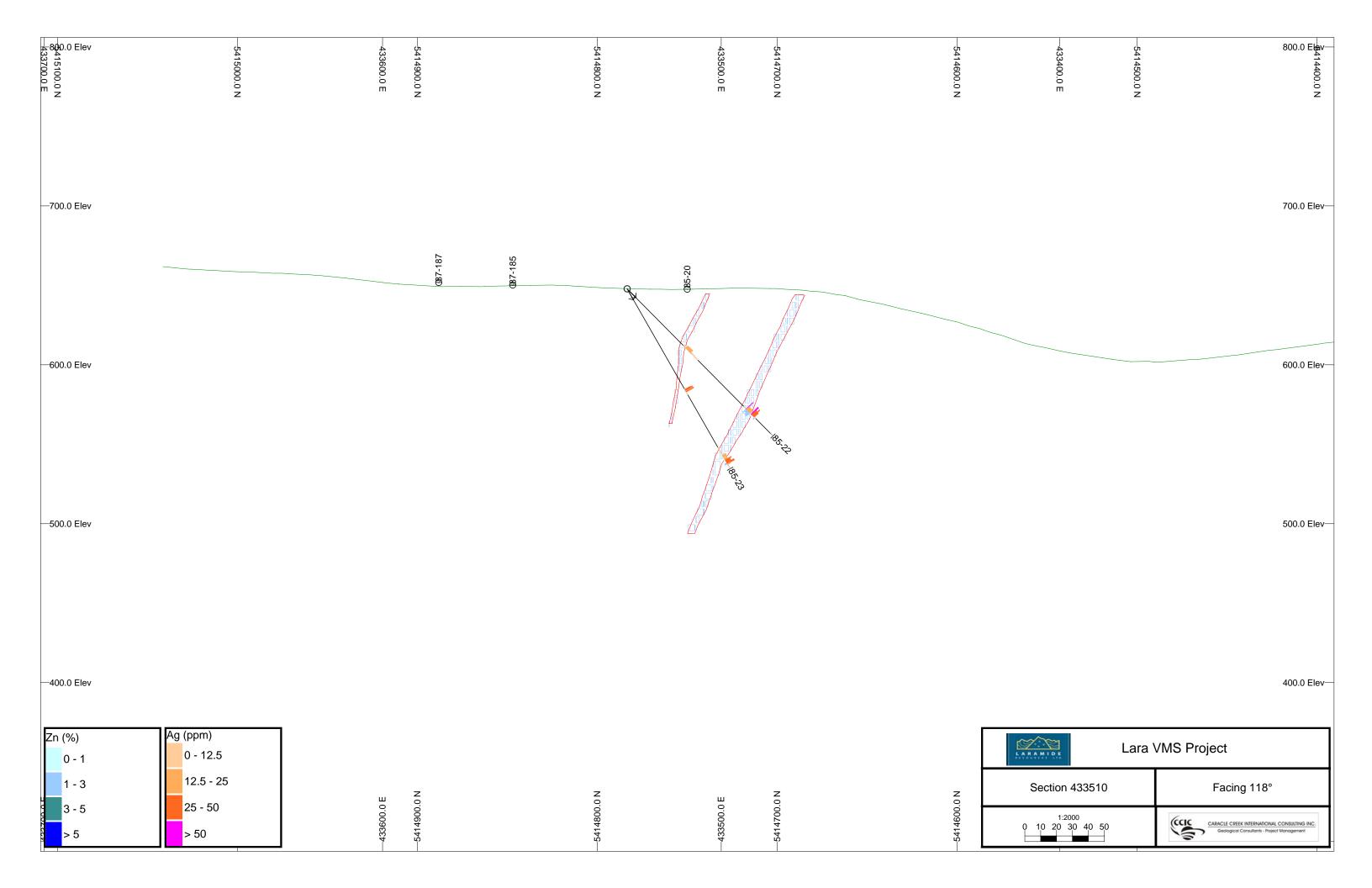


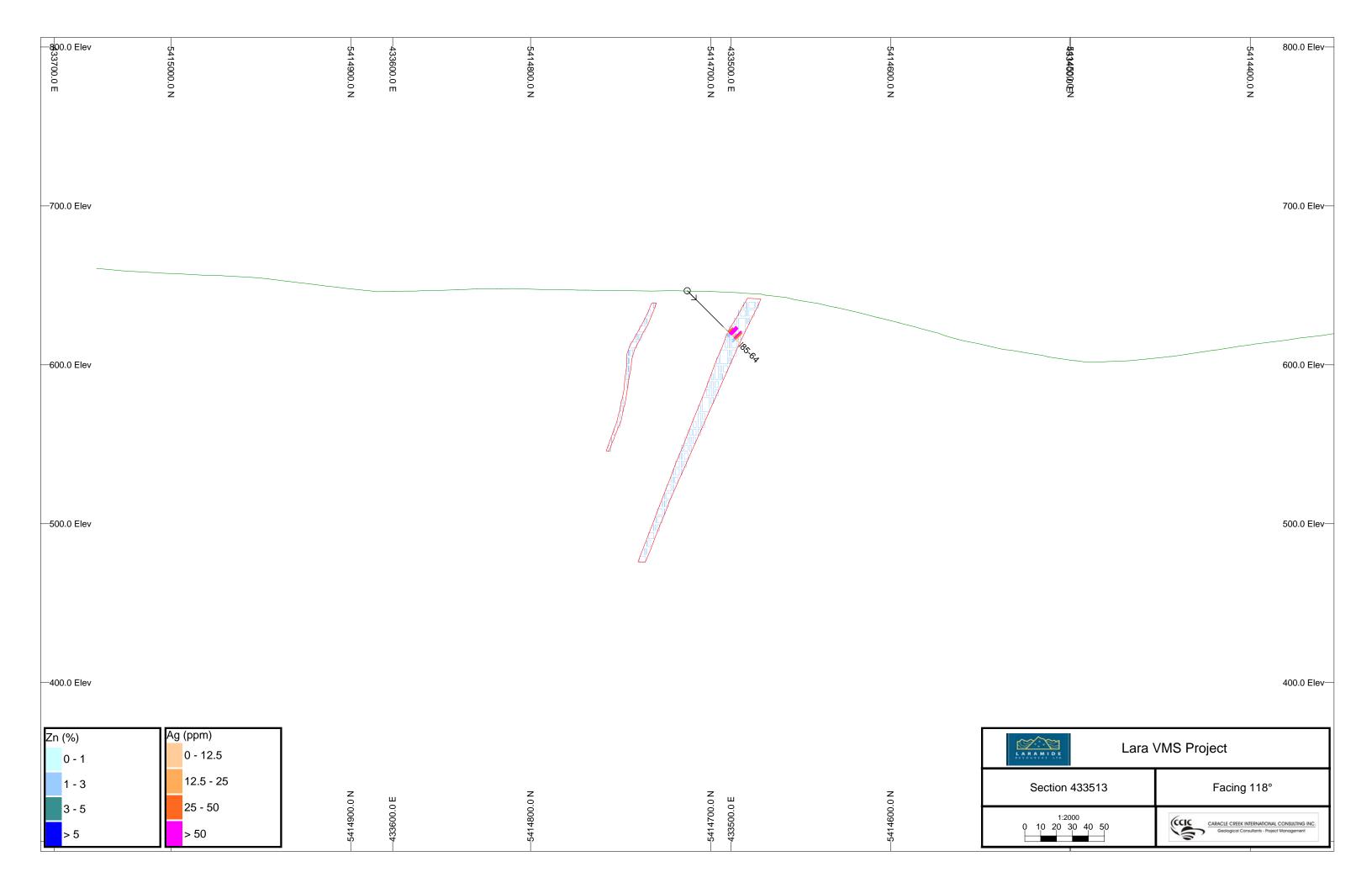


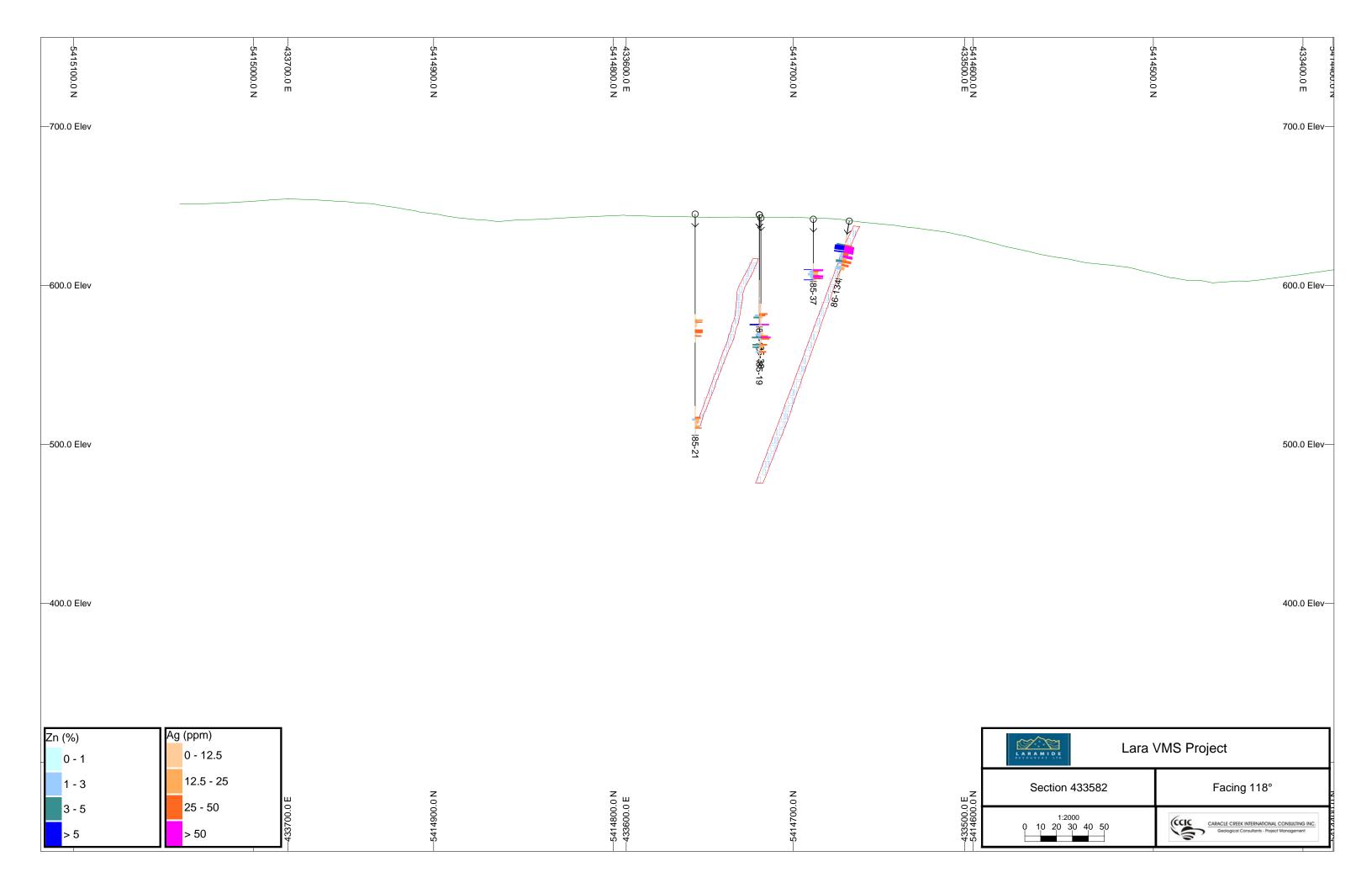


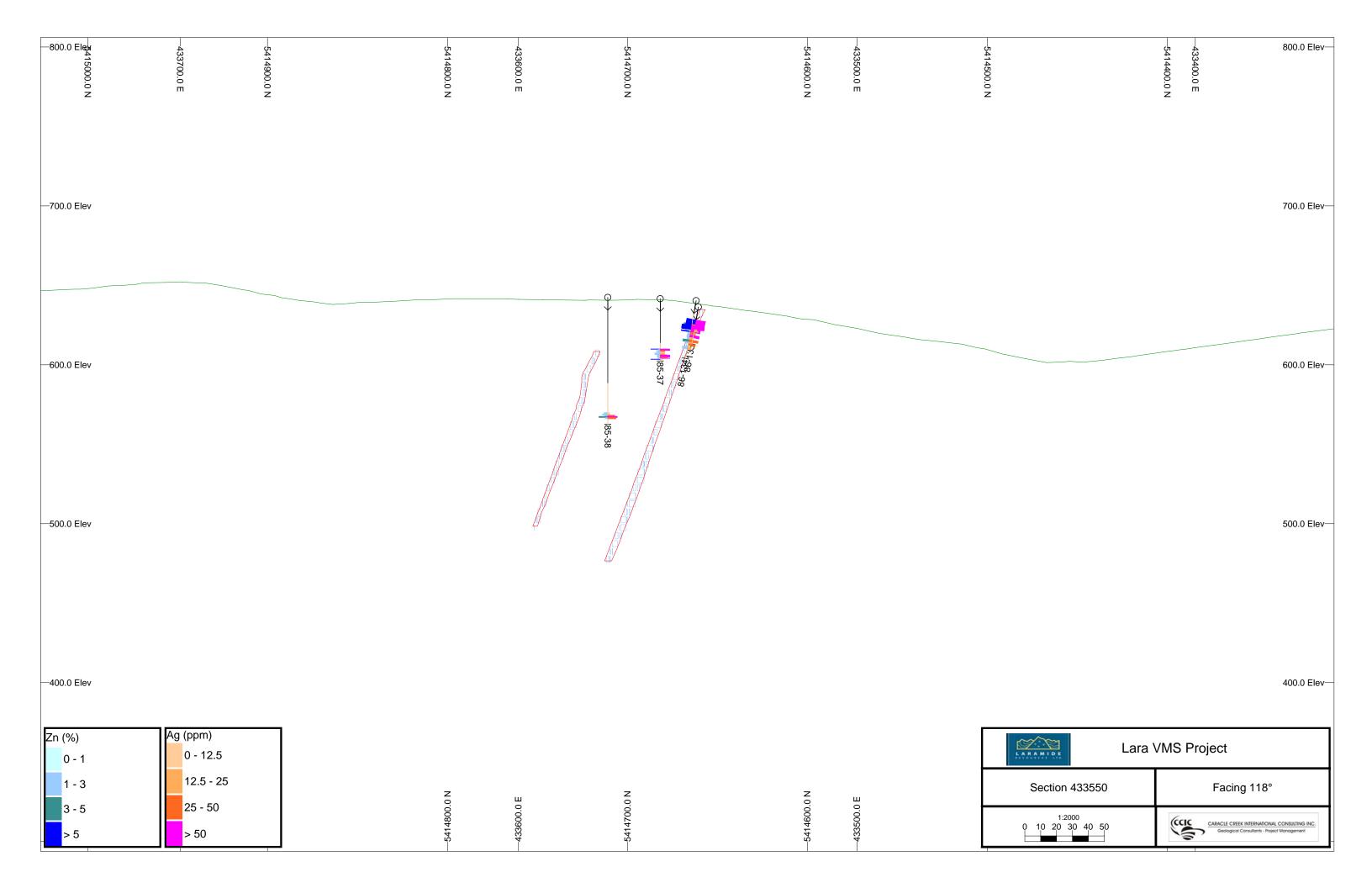


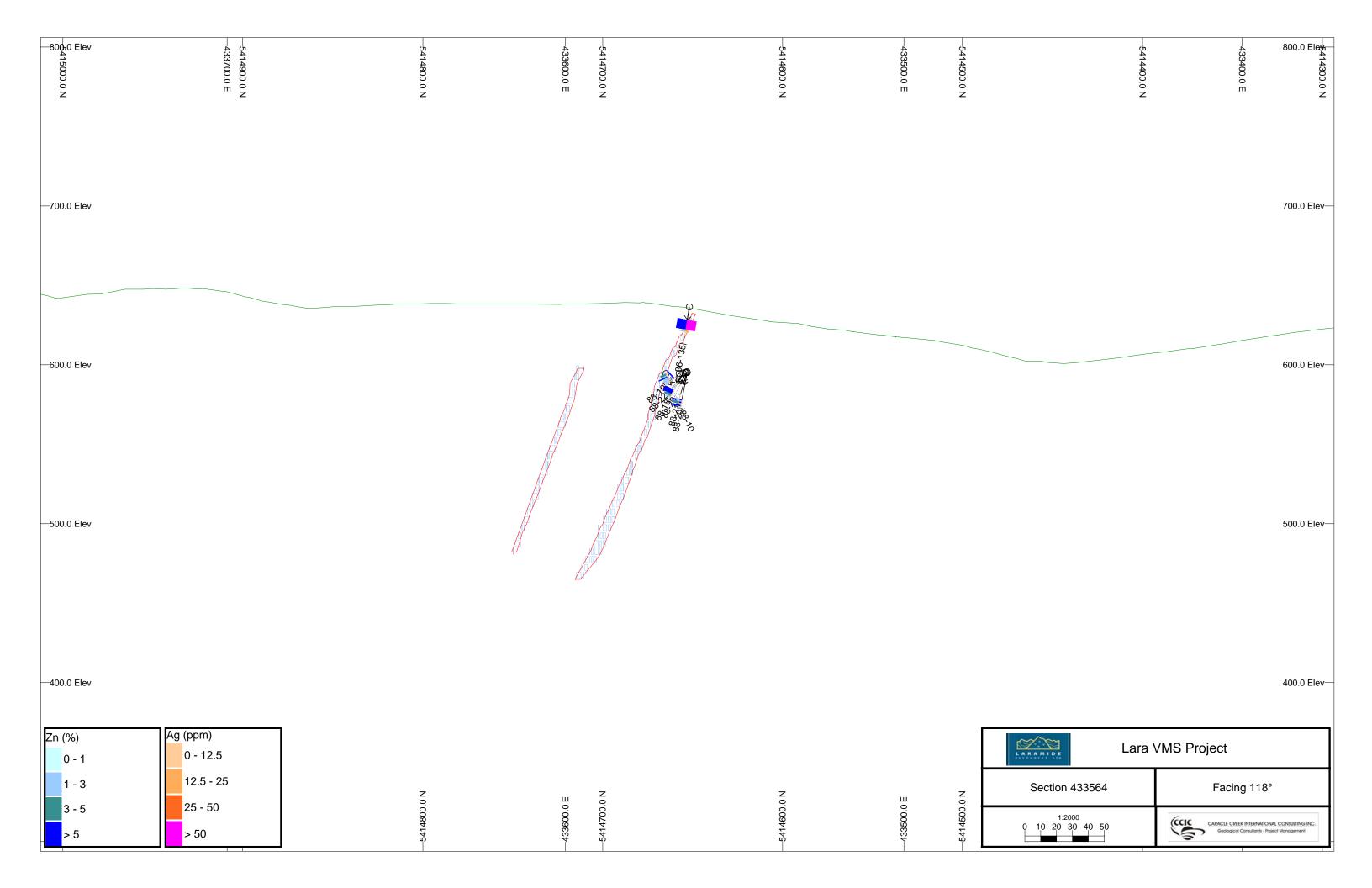


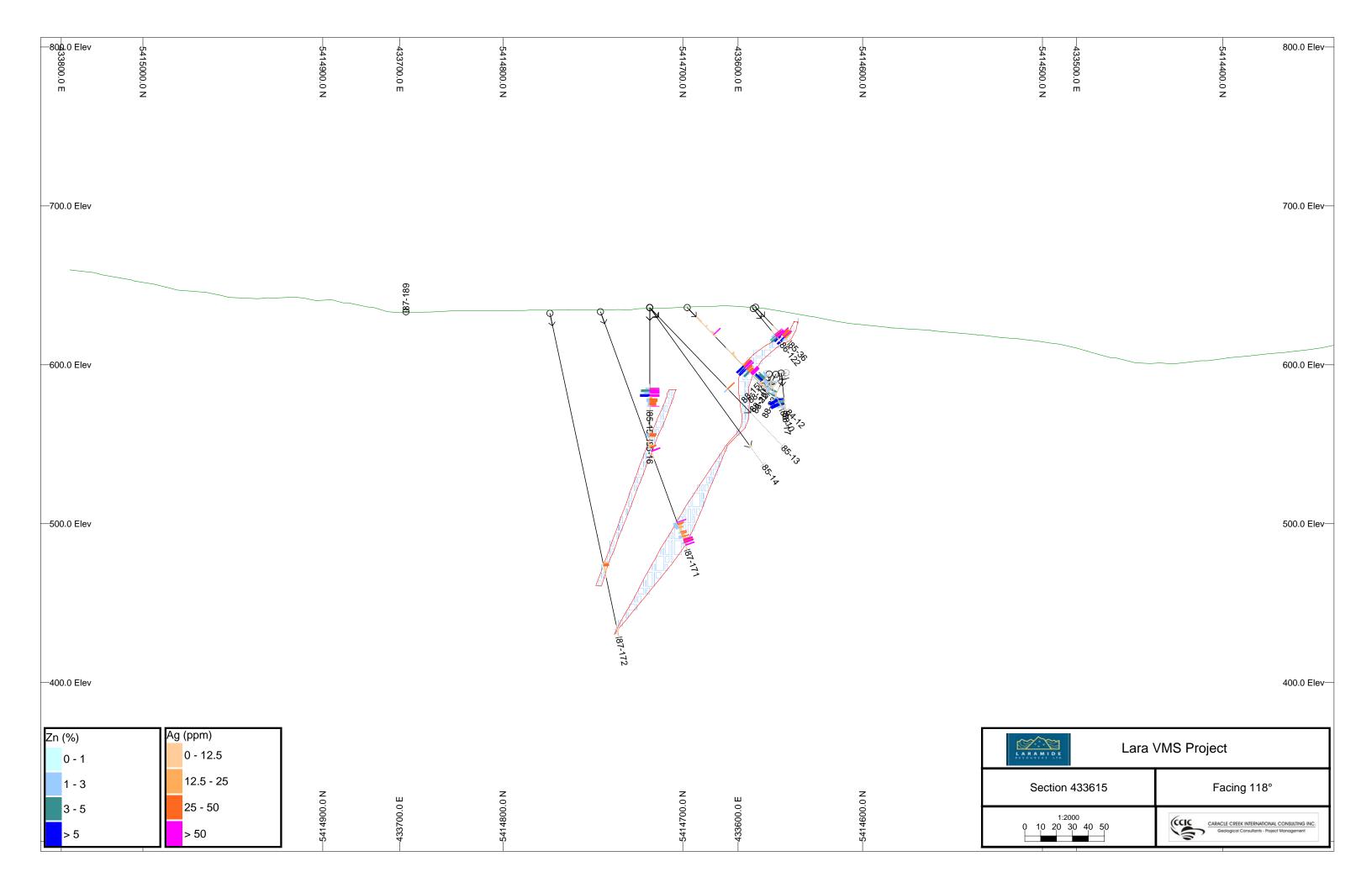


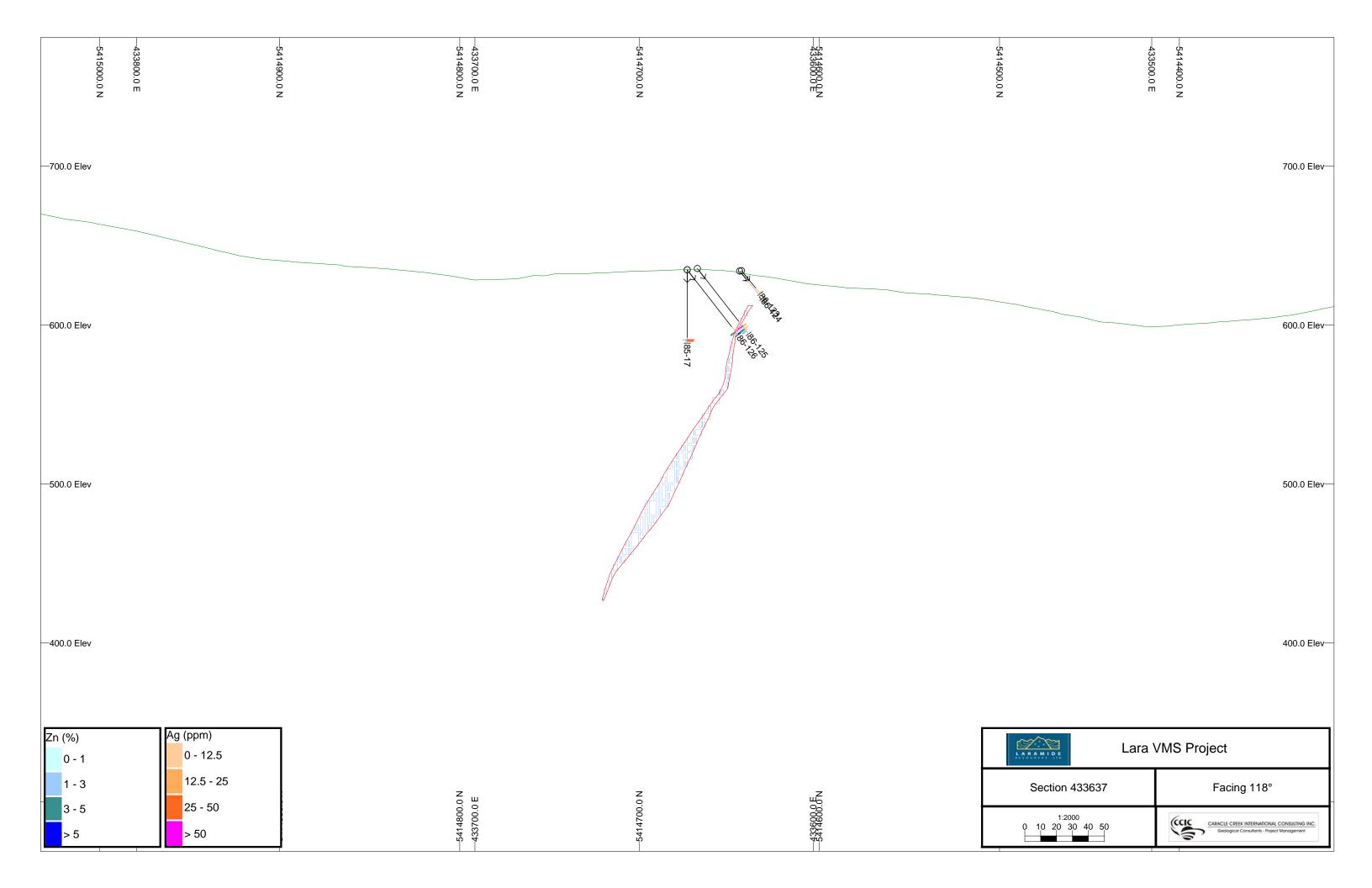


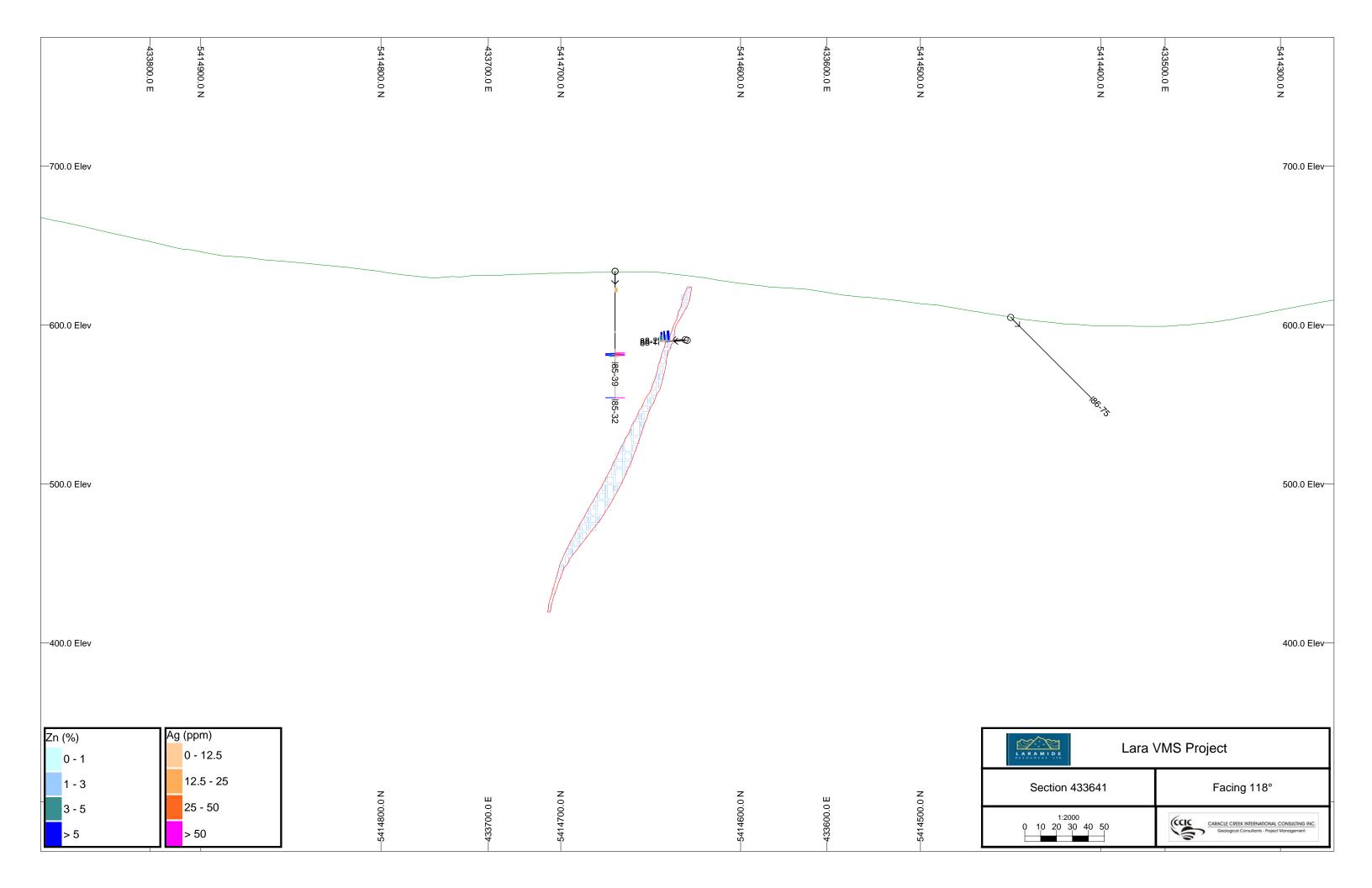


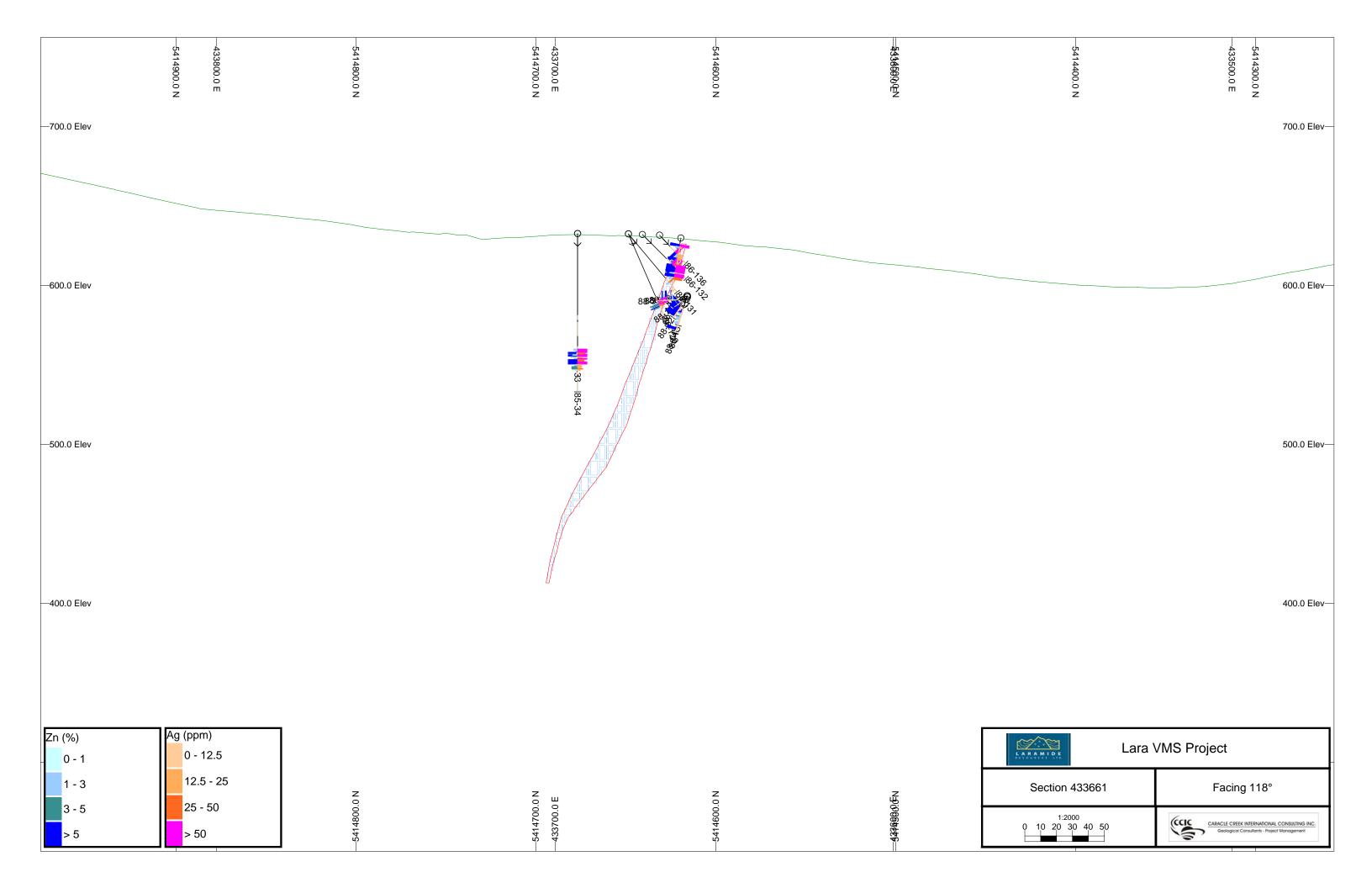


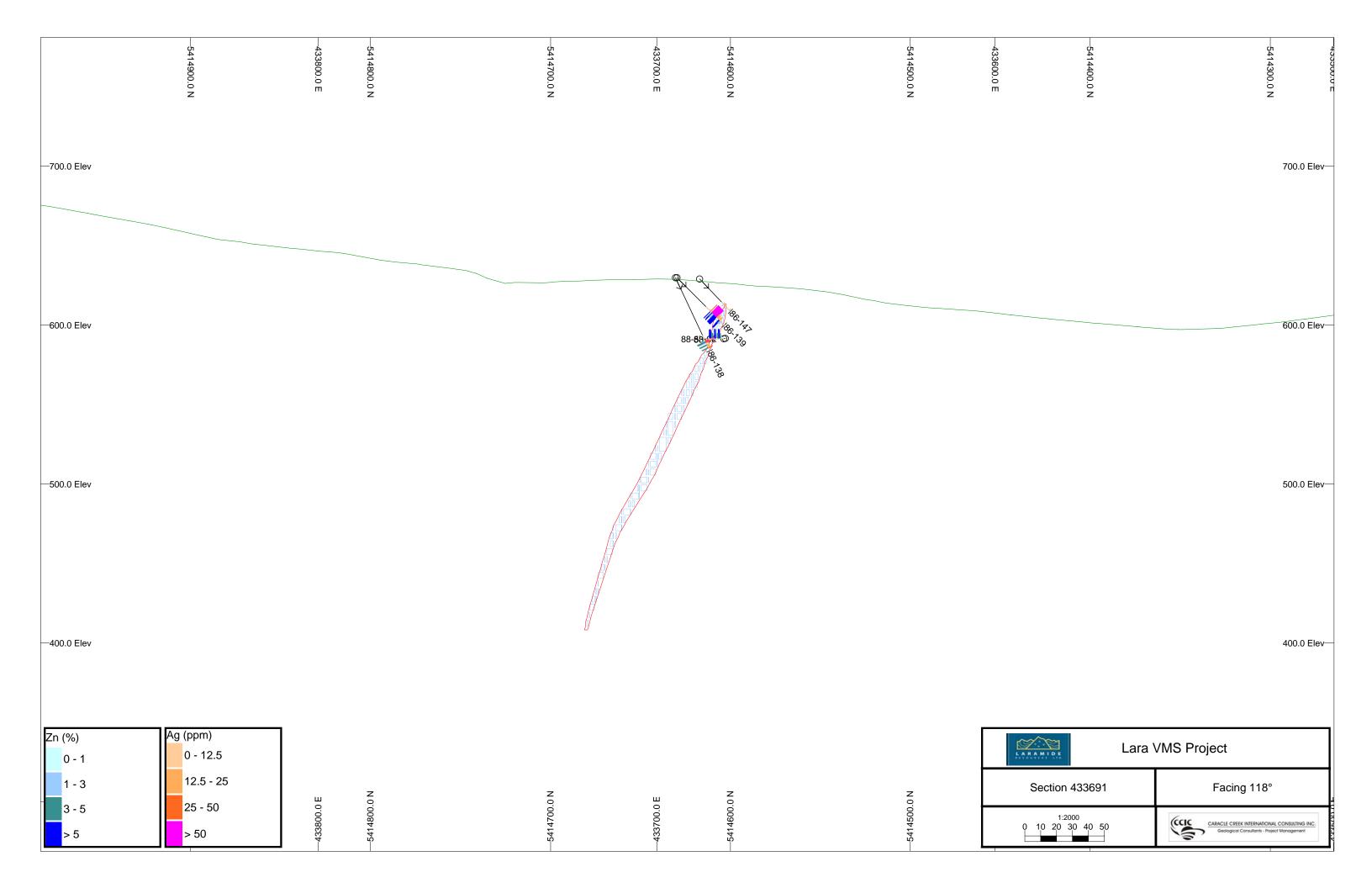


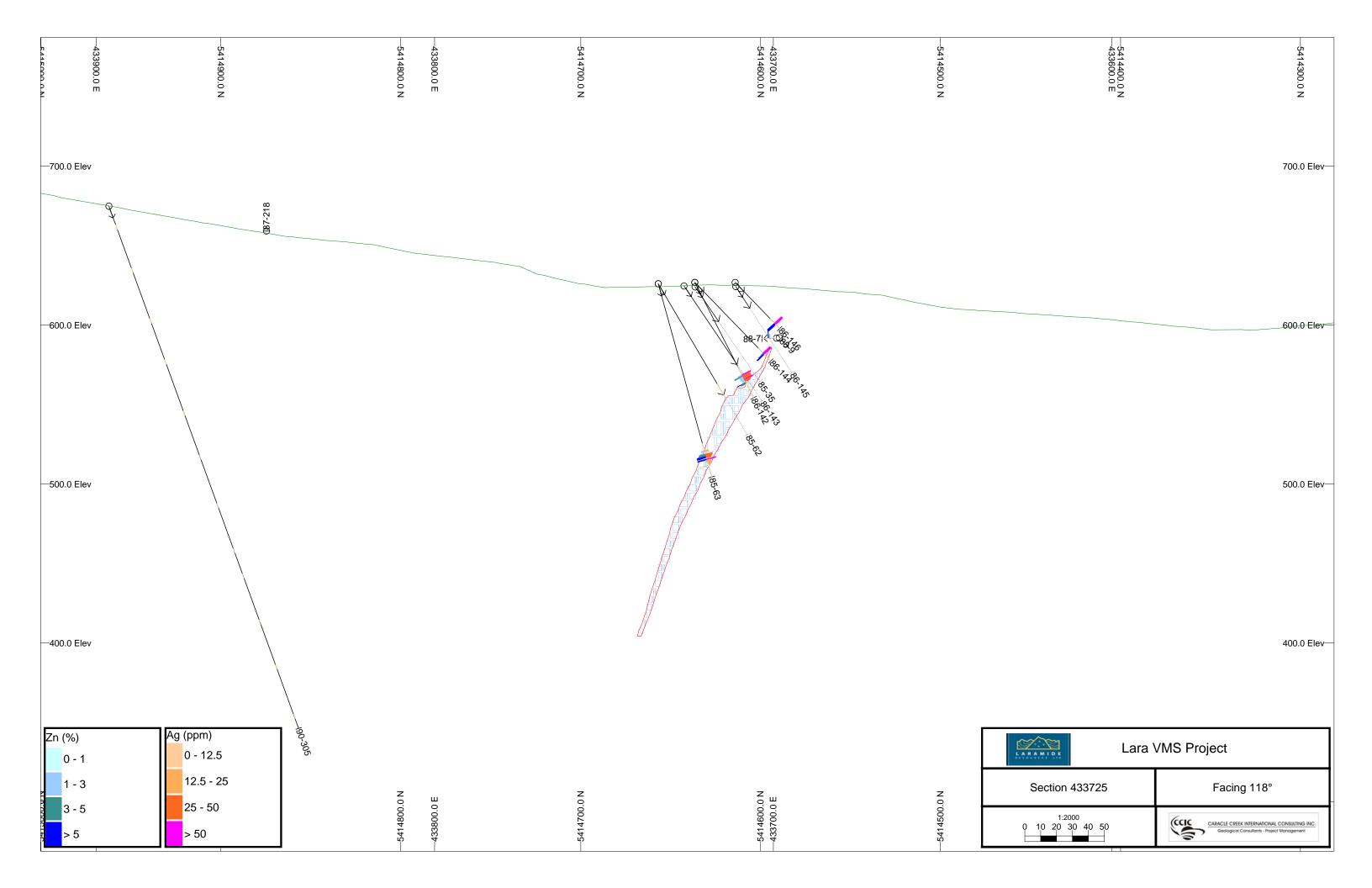


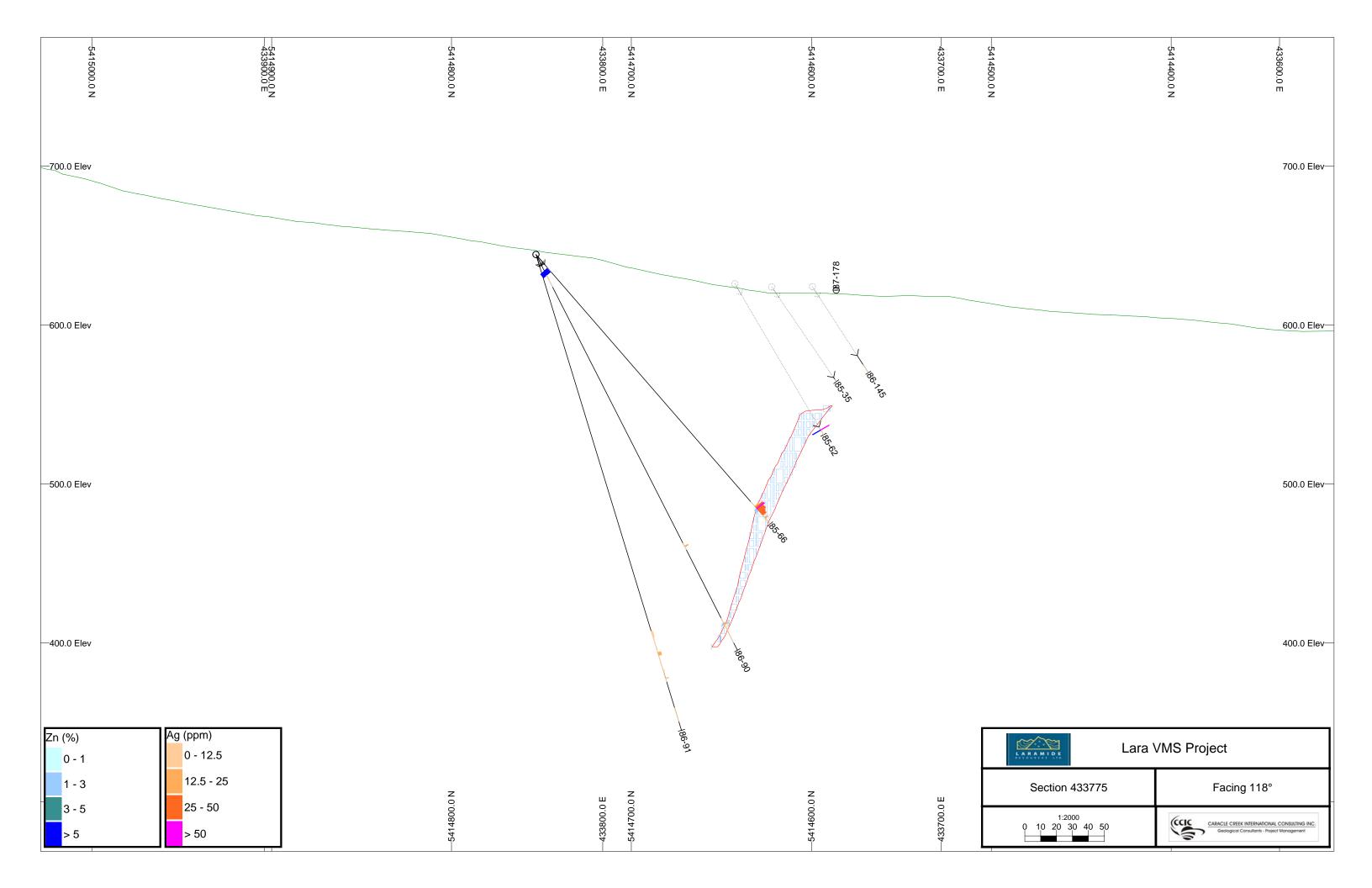


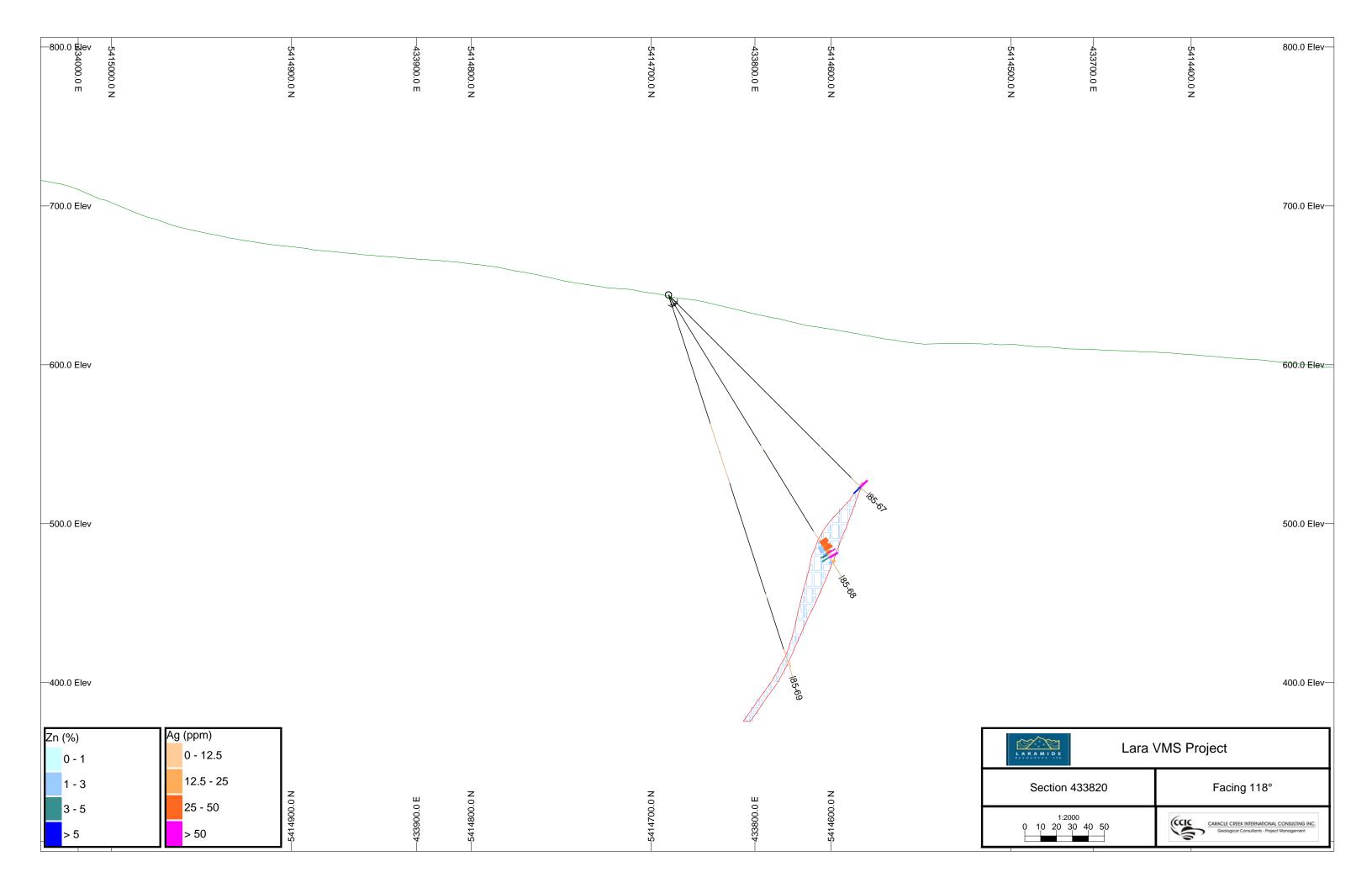


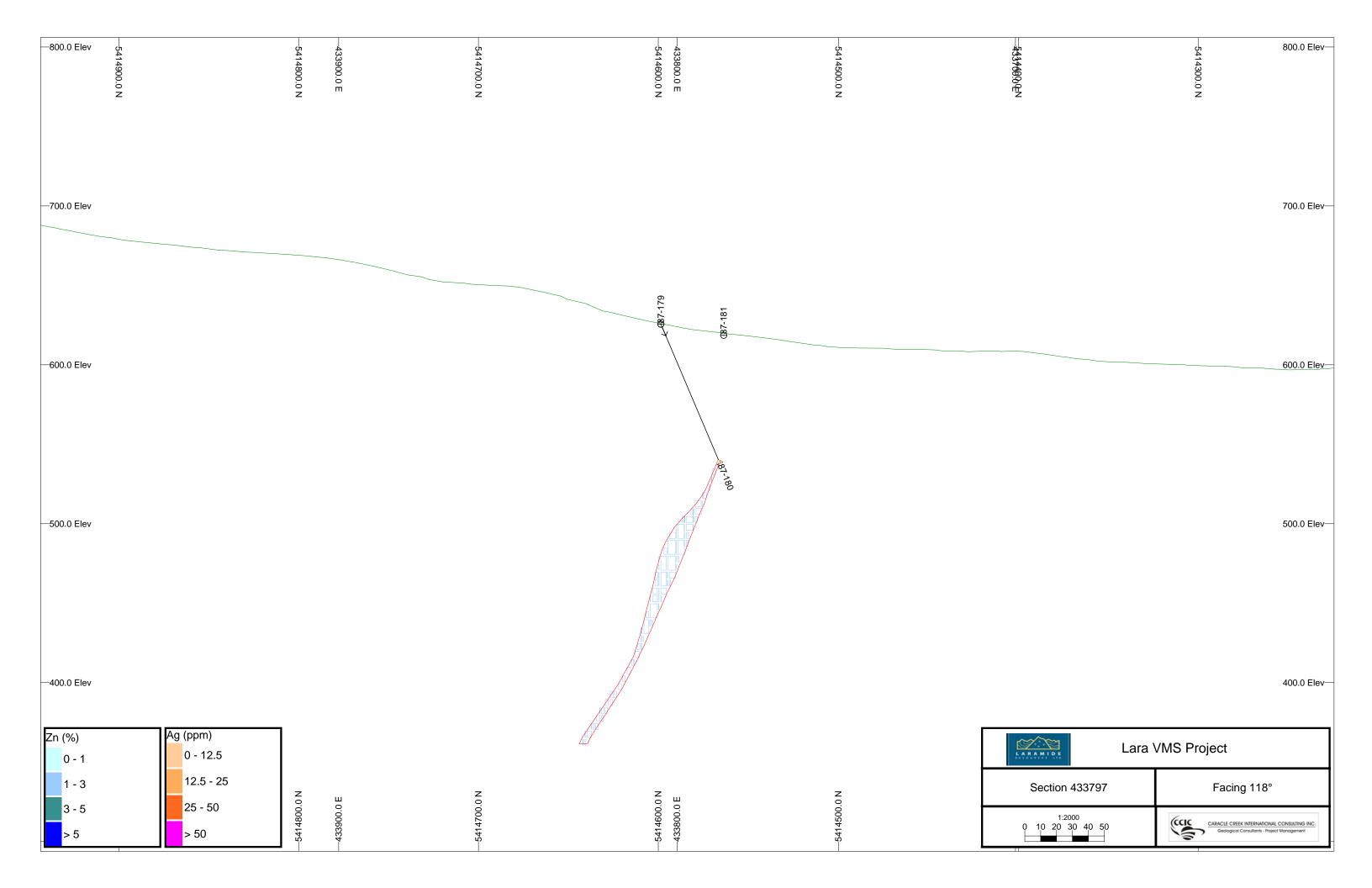


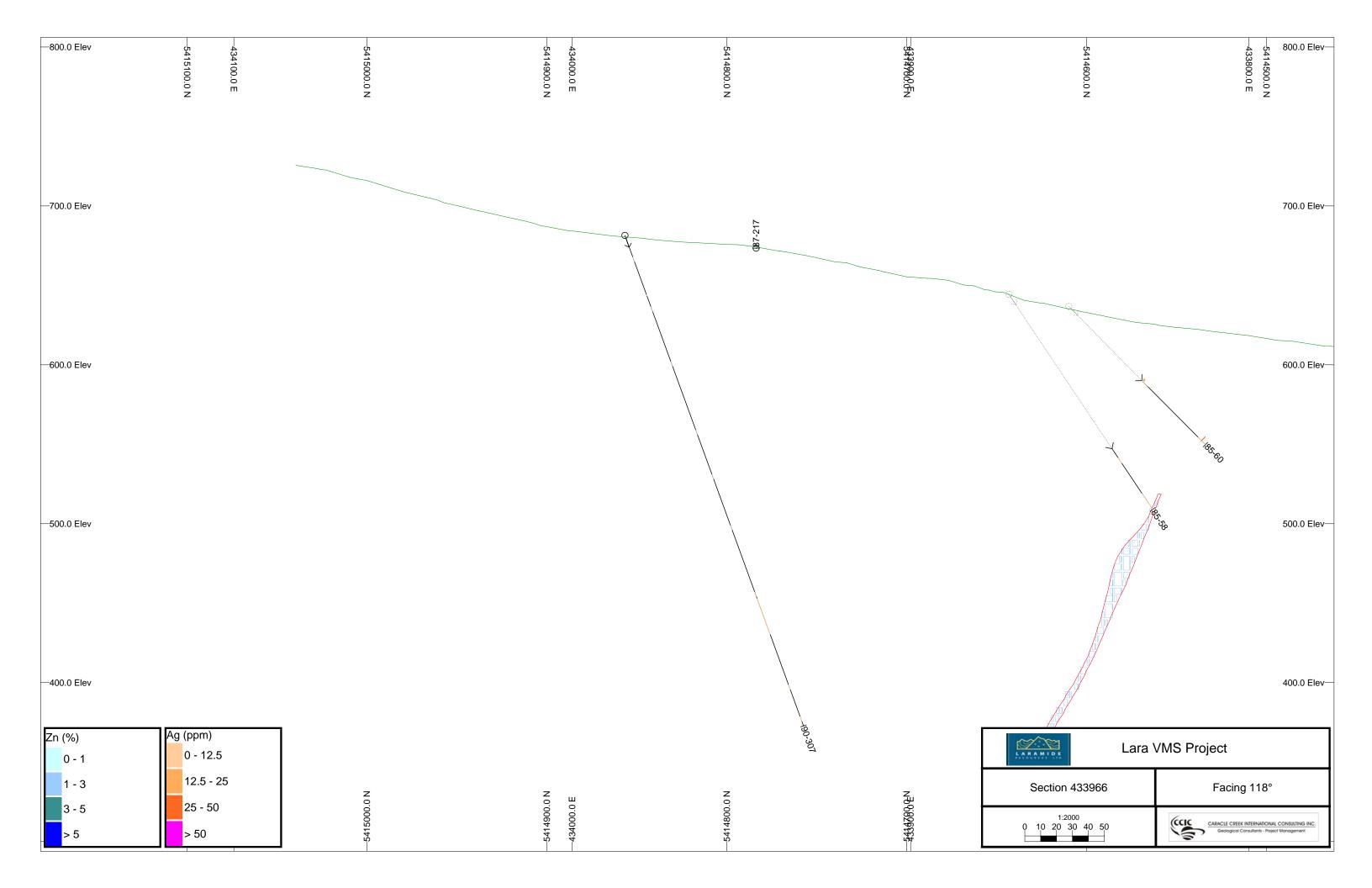


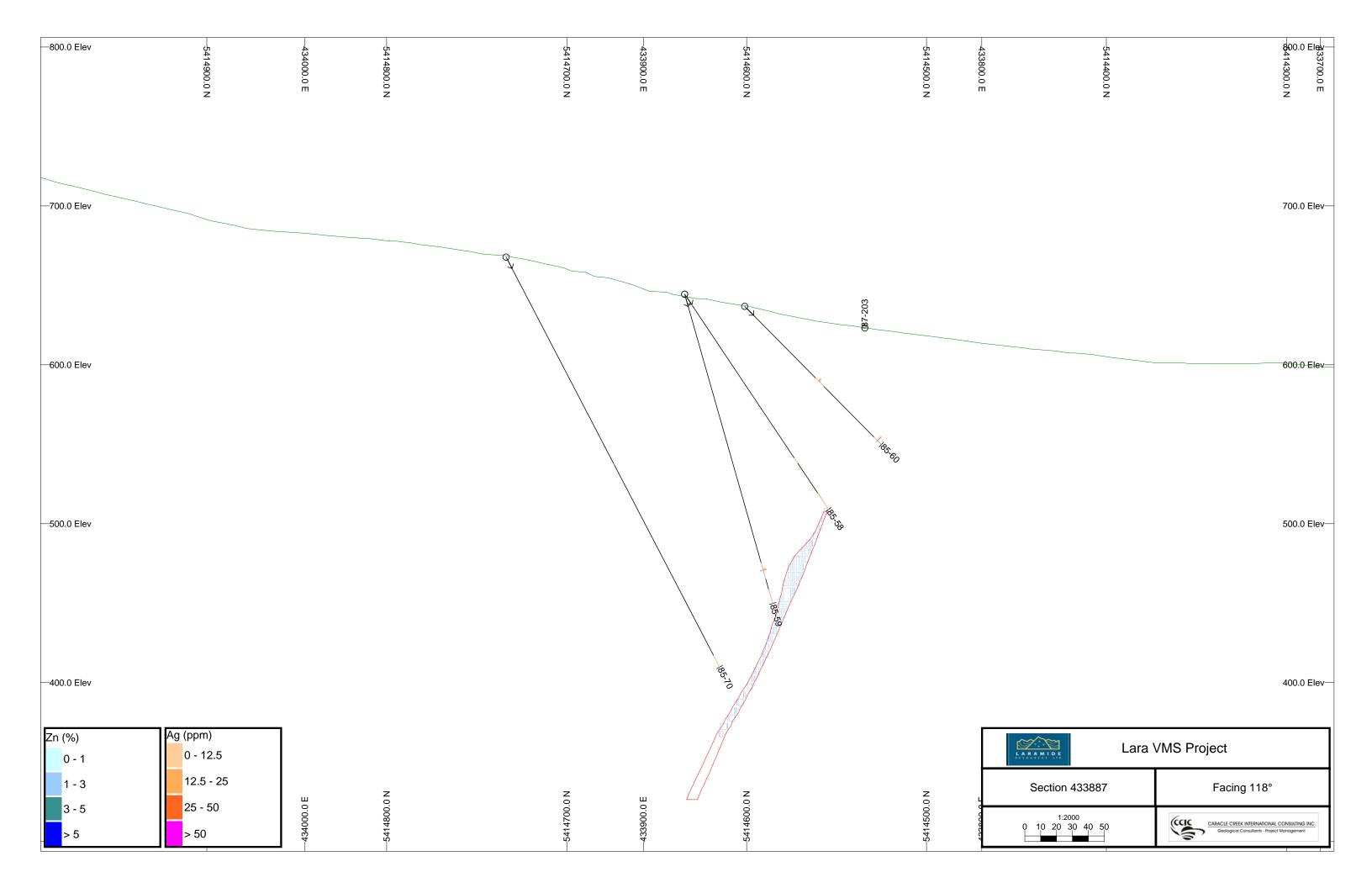


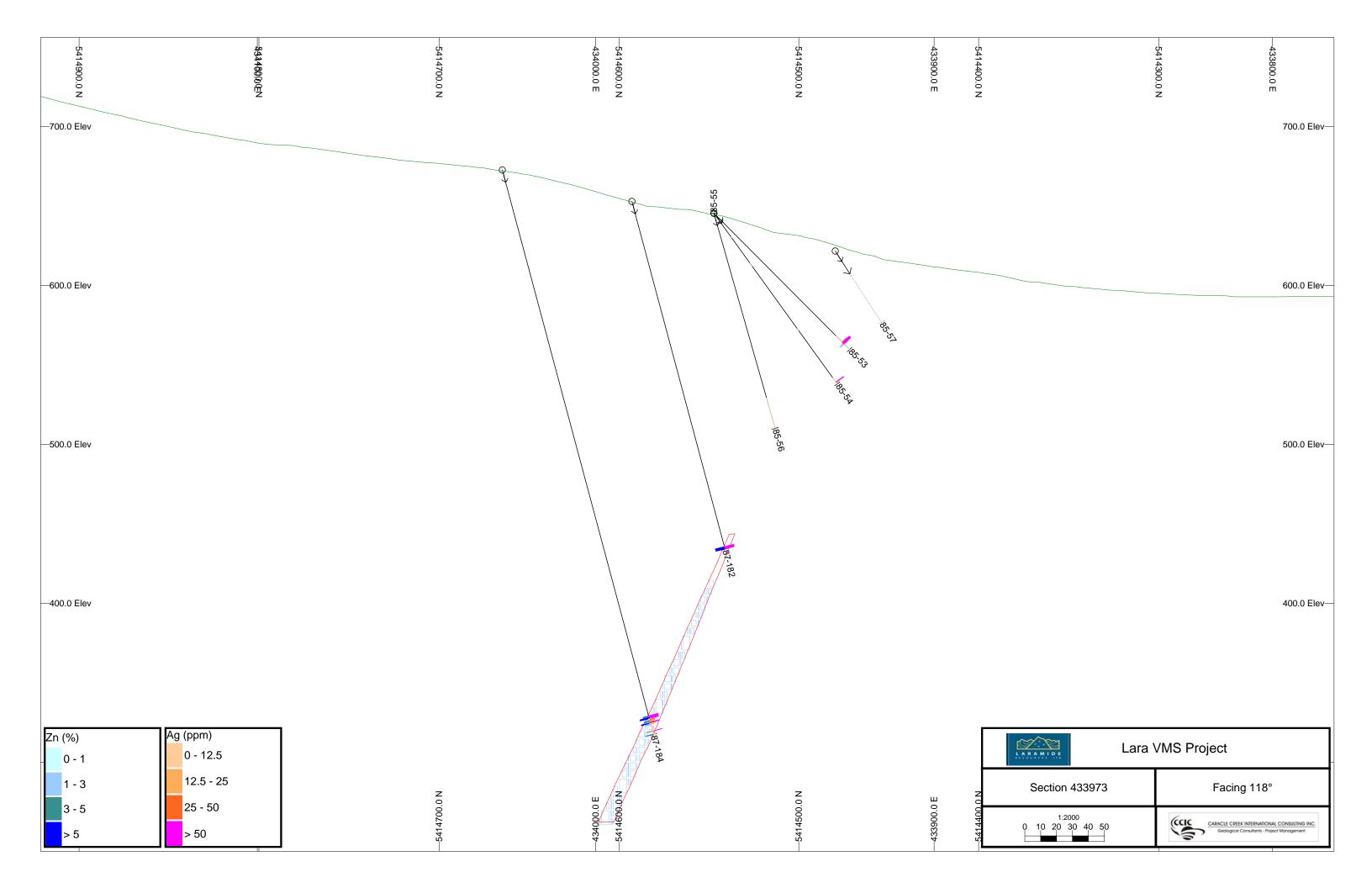


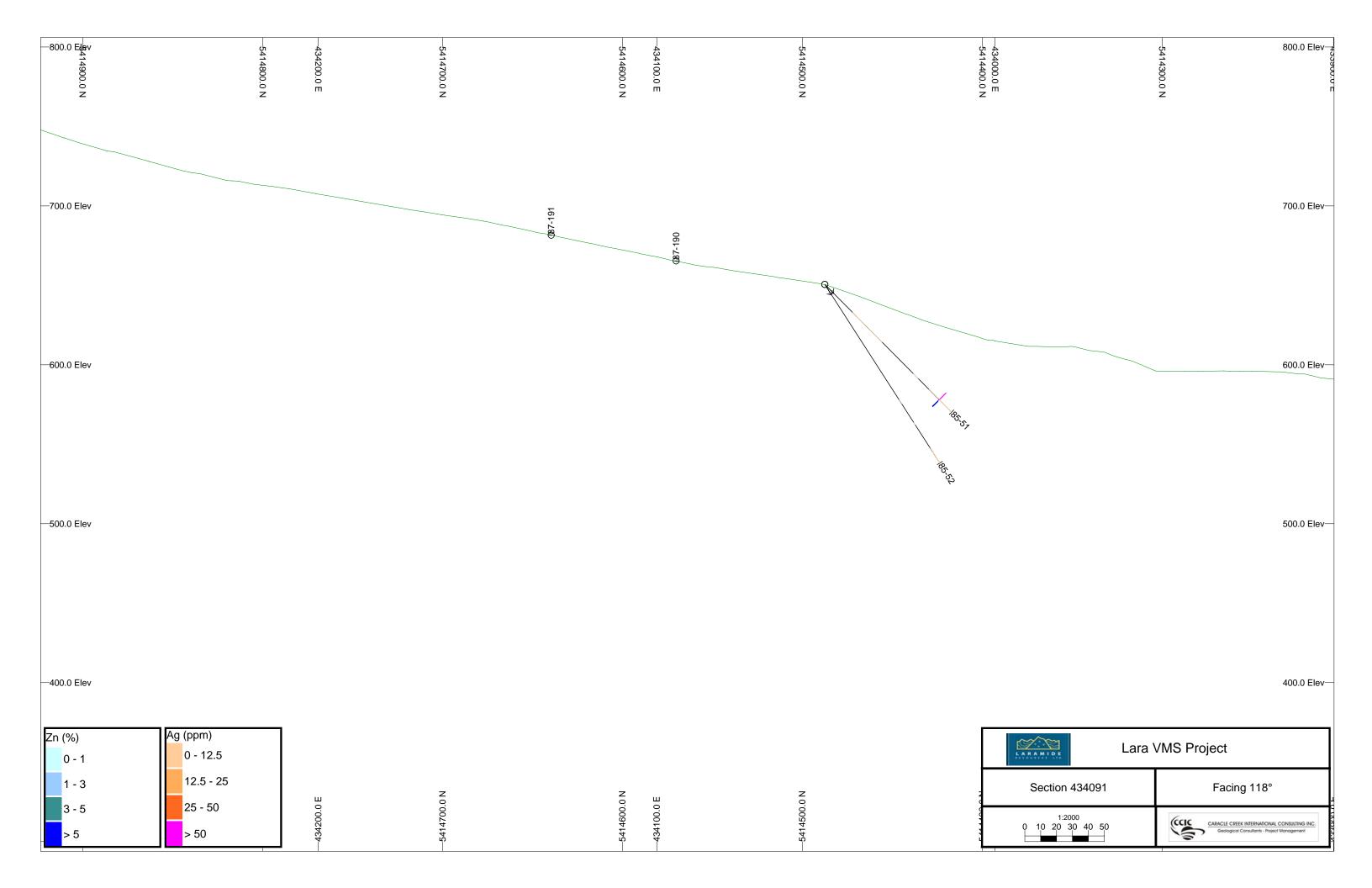


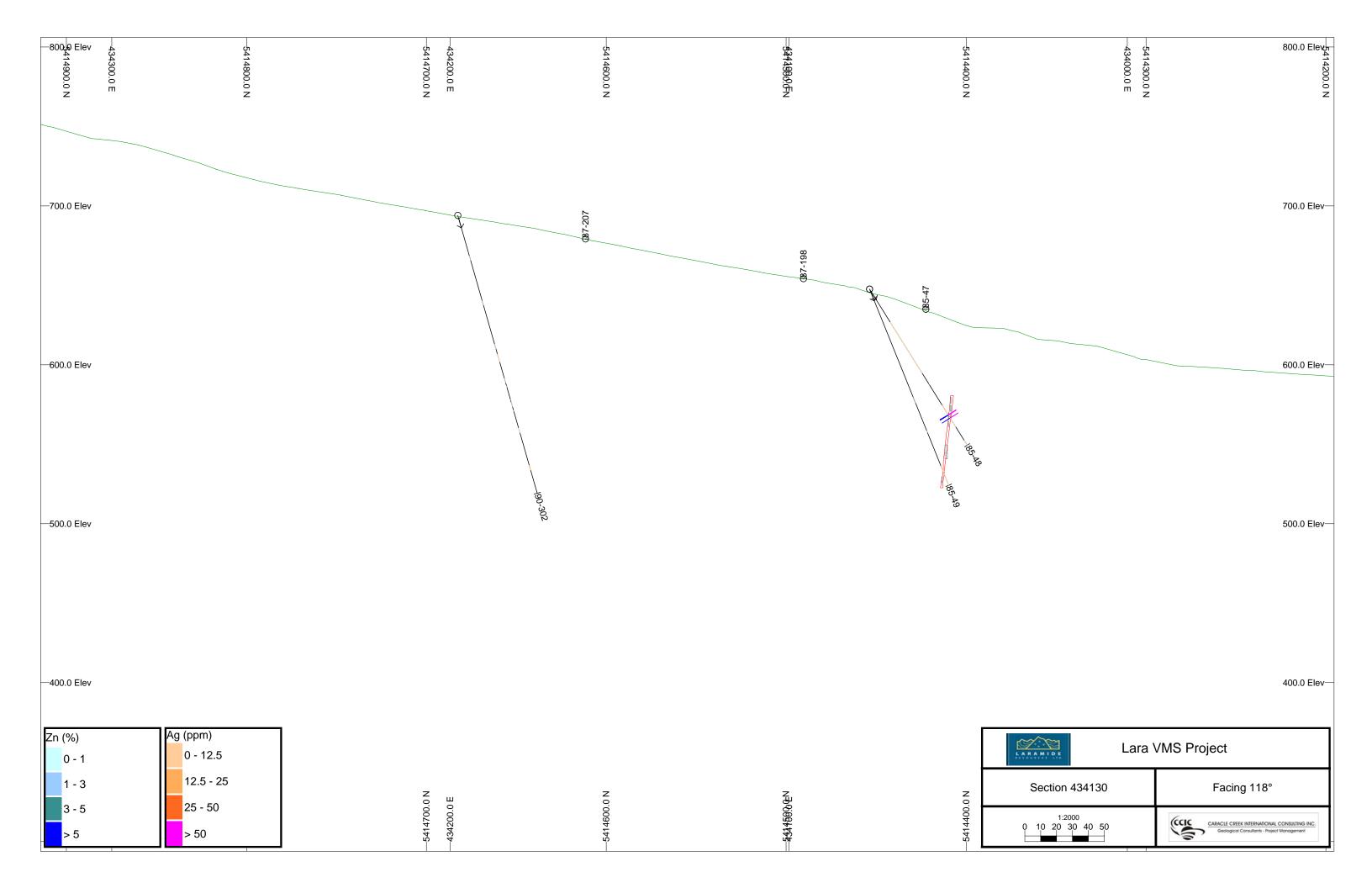


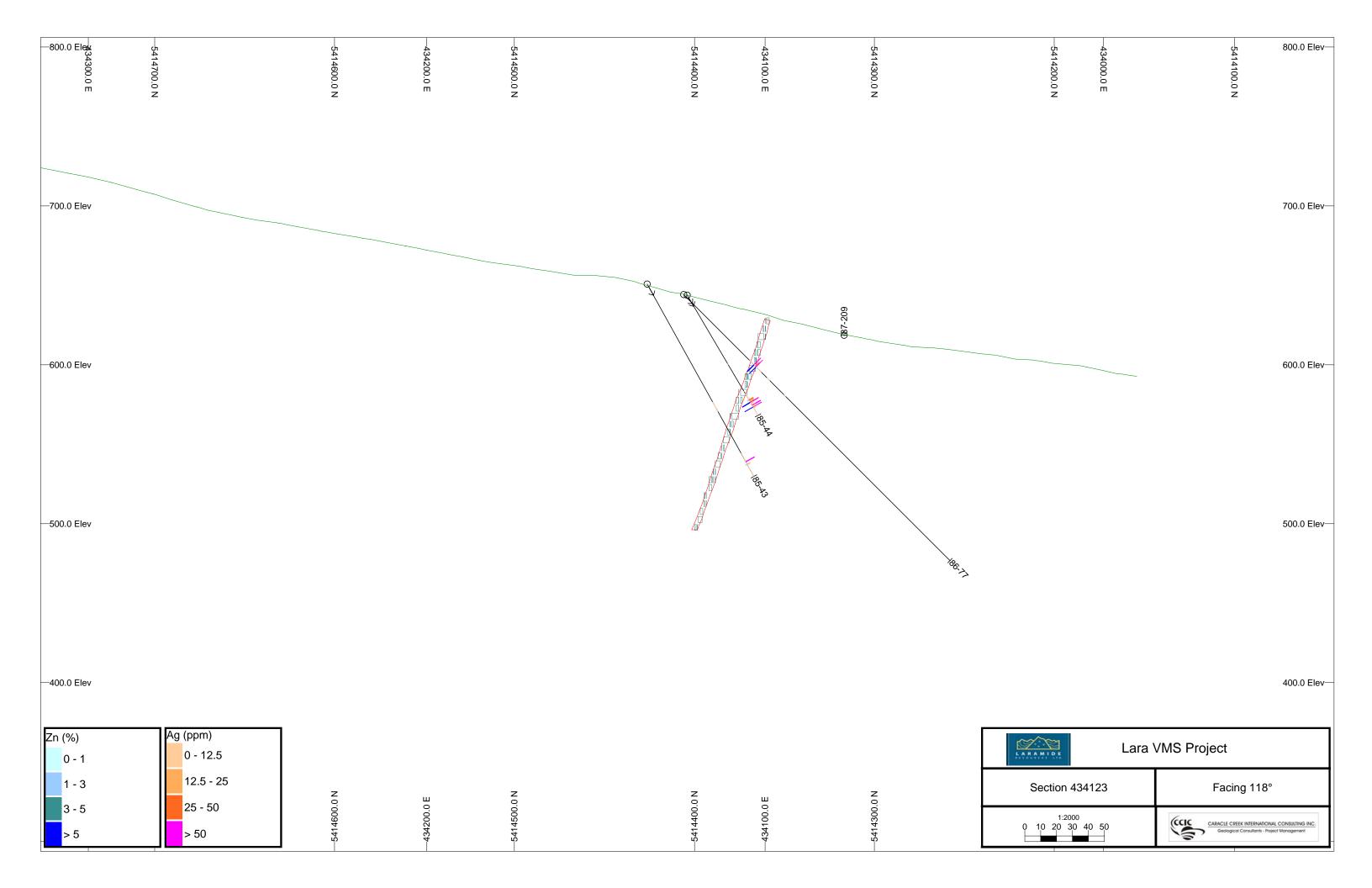


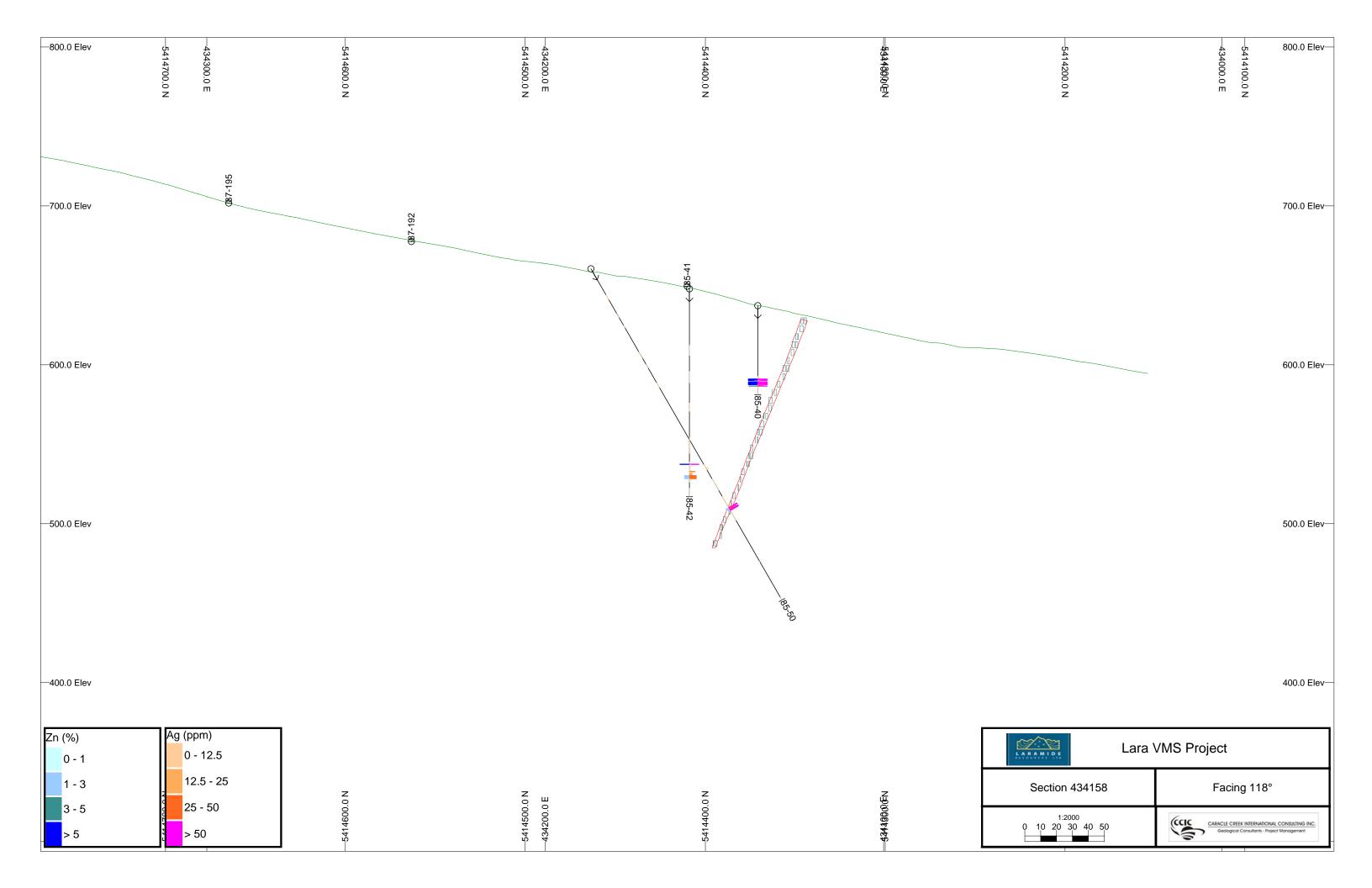


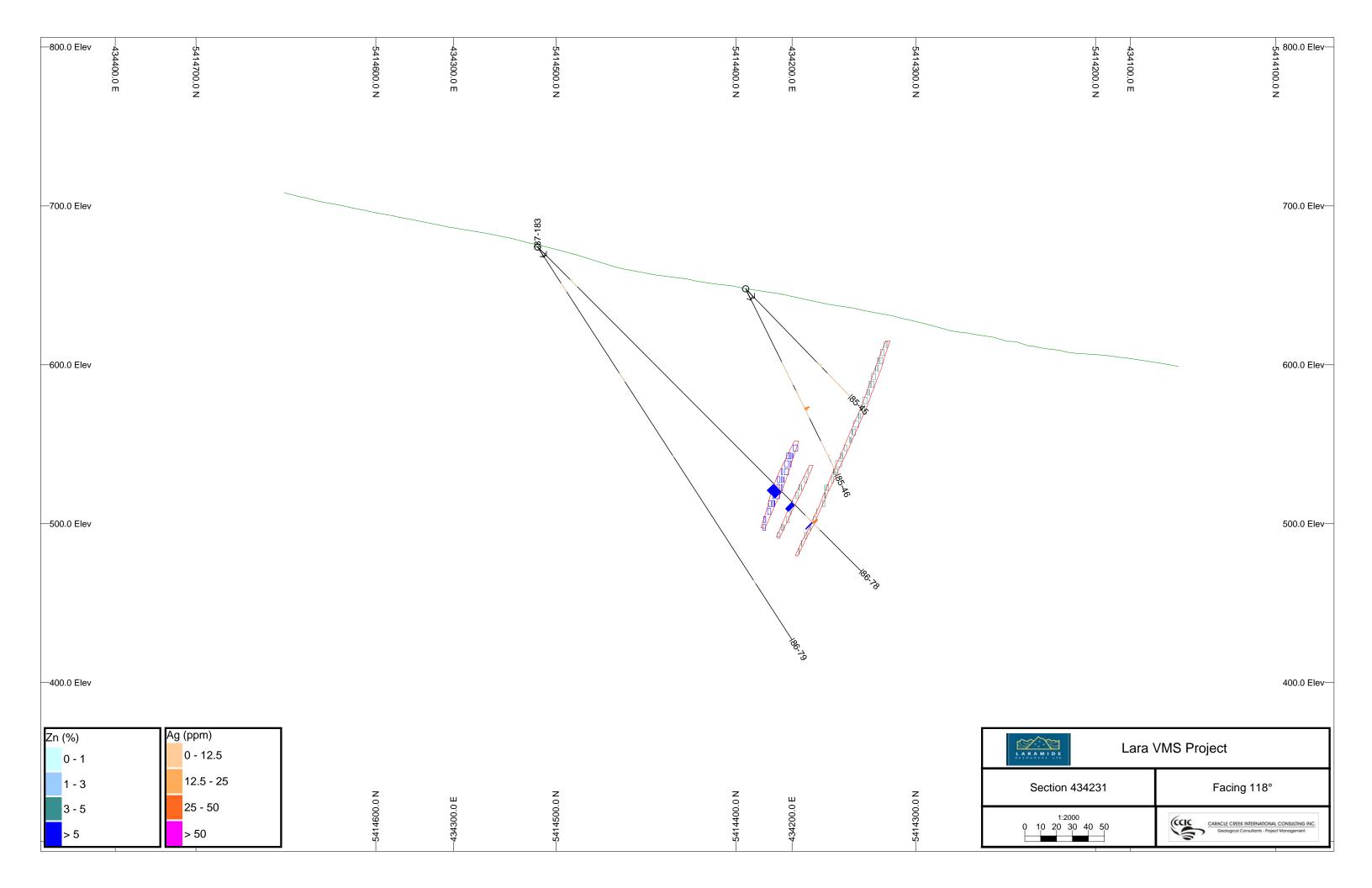


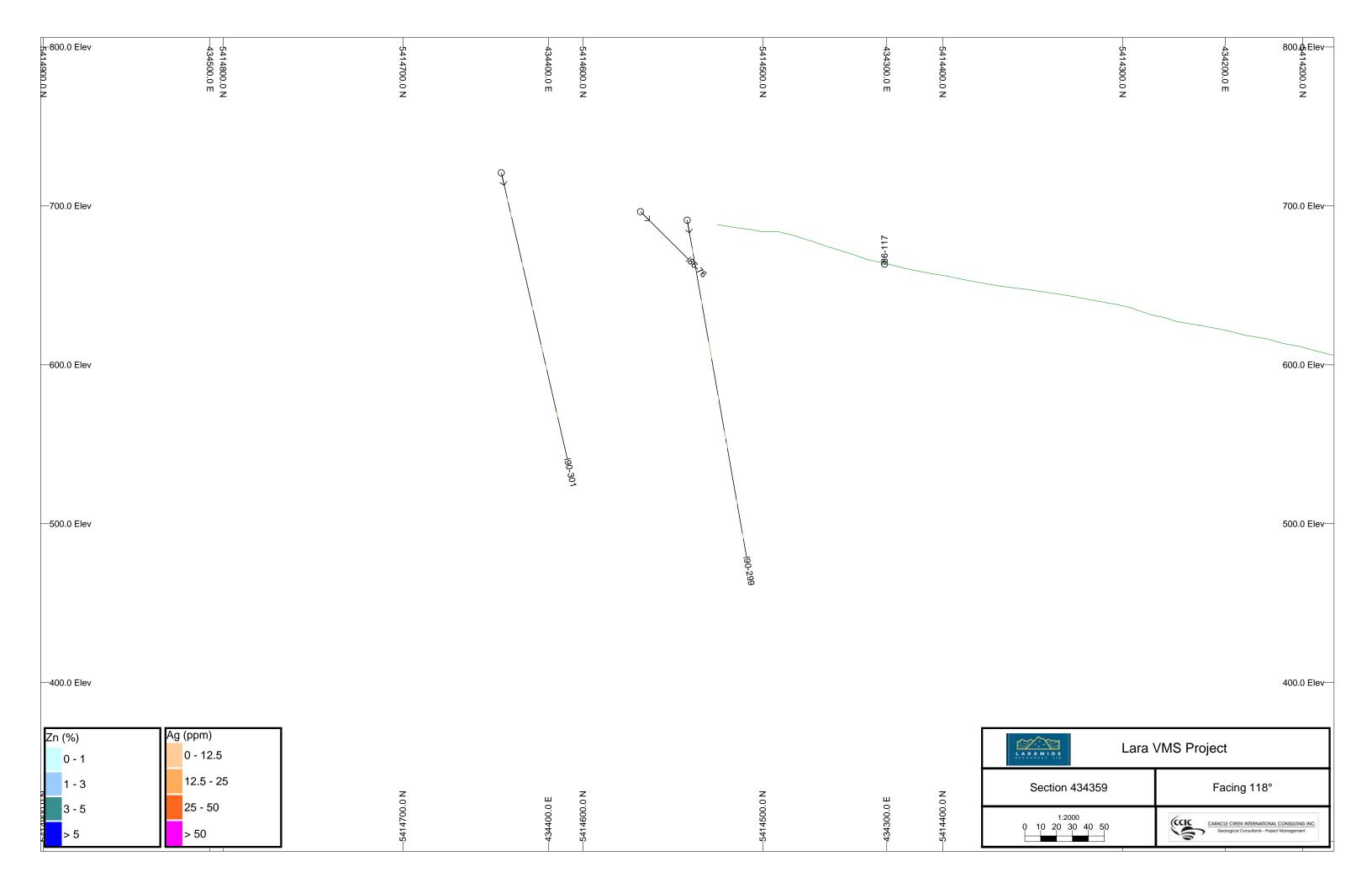


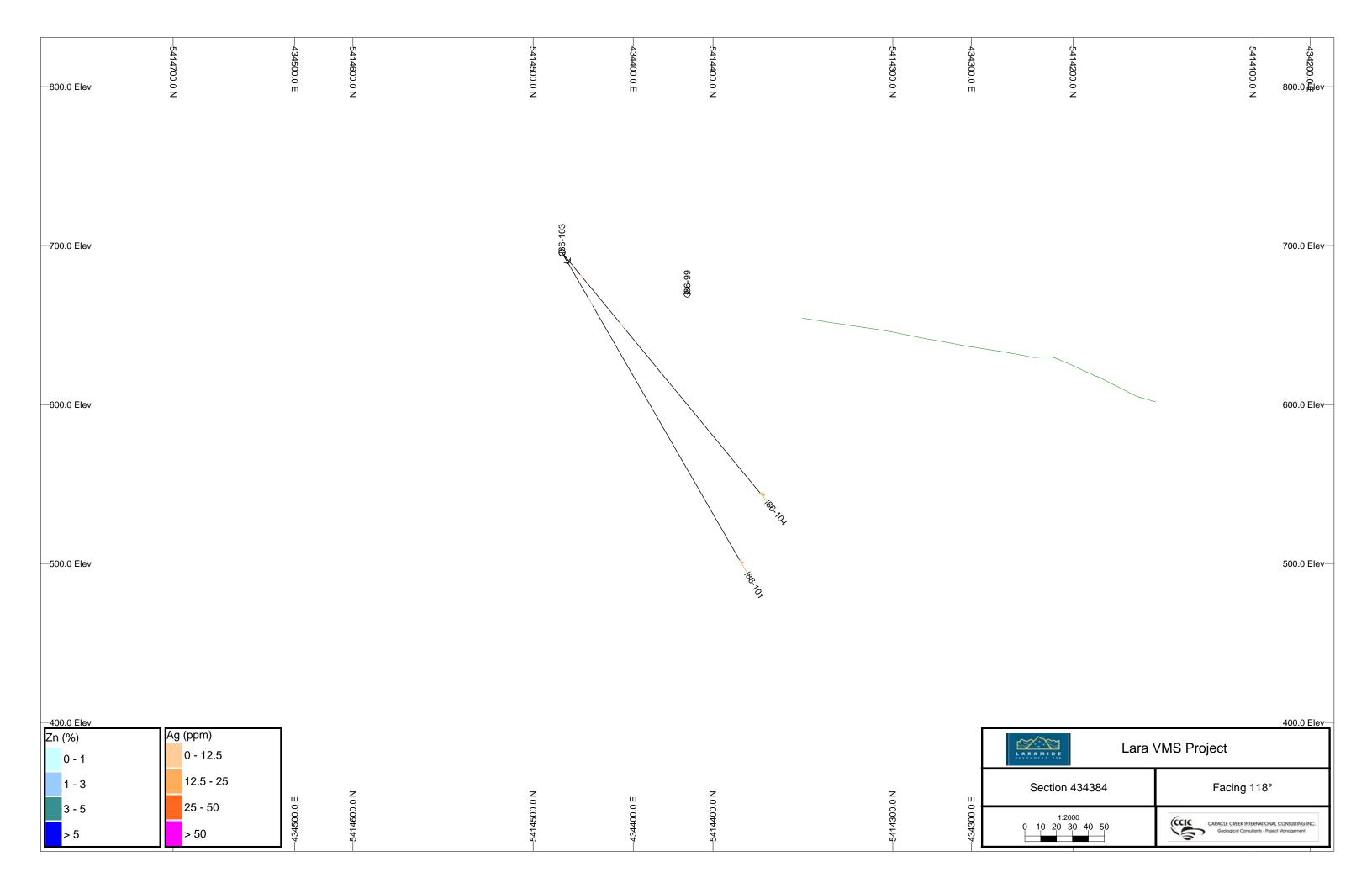


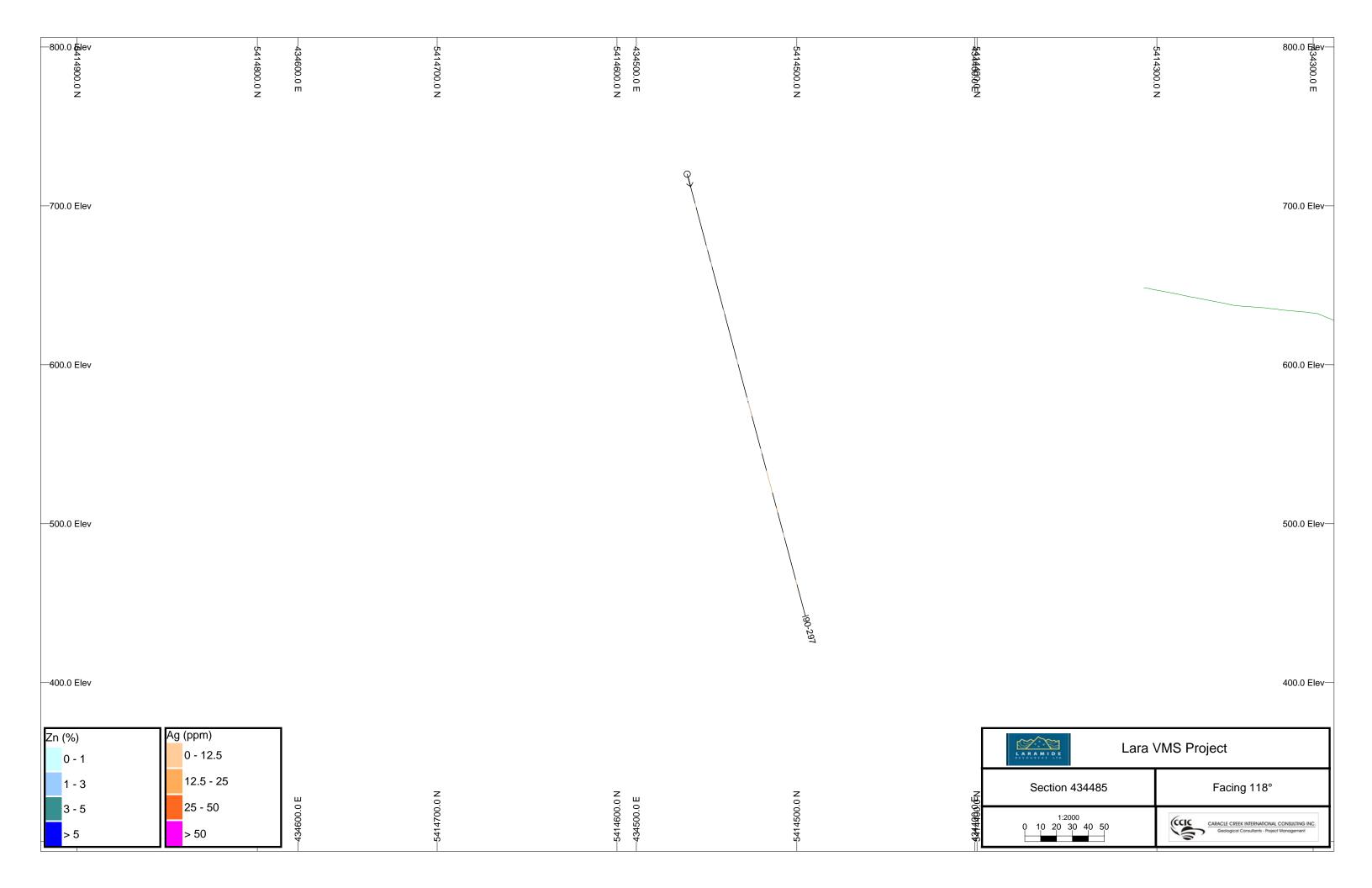


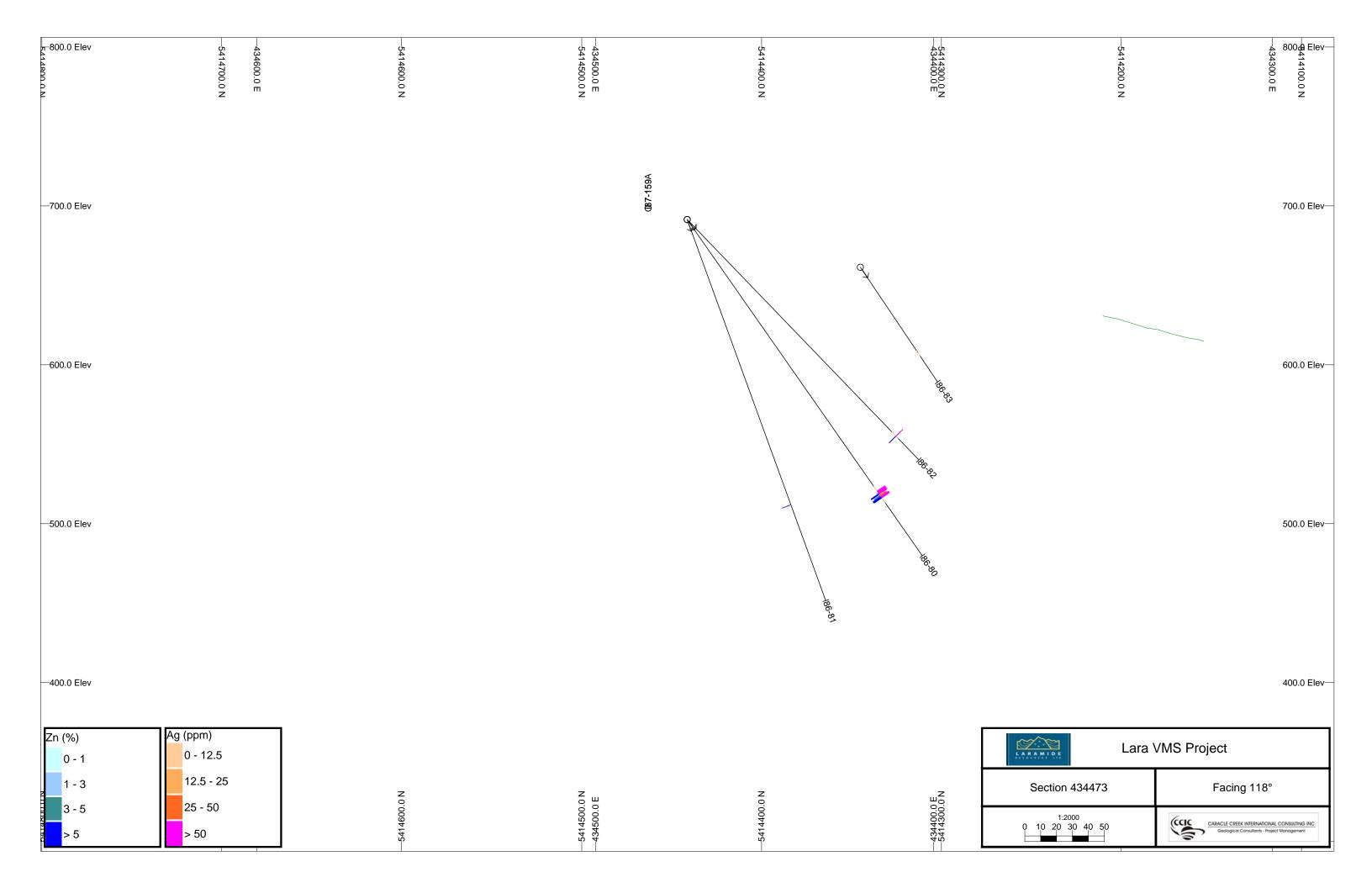














APPENDIX 3

QA/QC Sampling Summary with Assay and

Specific Gravity Certificates



Summary of QA/QC Drill Core Re-Sampling

| Summary | of QA/QC | Jriii Core i | | | | | | | |
|---------|----------|--------------|----------|--------------|--------|-------------------|----------|------------|--------|
| | | , | | orical Resul | | | | IC Results | |
| BHID | From (m) | To (m) | Ag (gpt) | Cu (%) | Zn (%) | Sample # | Ag (gpt) | Cu (%) | Zn (%) |
| 84-12 | 85.89 | 88.66 | 3.4 | 0.00 | 0.00 | 2164 | <.5 | 0.002 | 0.004 |
| 85-18 | 52.09 | 52.52 | 2.1 | 0.01 | 0.06 | 2162 | 0.6 | 0.006 | 0.044 |
| 85-18 | 61.92 | 62.84 | 46.6 | 0.07 | 0.80 | 2167 | 10.1 | 0.008 | 0.207 |
| 85-18 | 69.44 | 69.65 | 12.0 | 0.05 | 0.59 | 2166 | 174.0 | 0.541 | 8.196 |
| 85-18 | 69.65 | 70.65 | 2.1 | 0.01 | 0.01 | 2165 | 2.7 | 0.018 | 0.137 |
| 85-19 | 80.64 | 80.76 | 4.5 | 0.01 | 0.03 | 2154 | 1.7 | 0.009 | 0.042 |
| 85-19 | 83.68 | 84.18 | 4.1 | 0.05 | 0.18 | 2155 | 8.7 | 0.208 | 2.711 |
| 85-22 | 113.51 | 113.76 | 52.8 | 0.08 | 0.33 | 2160 | 17.2 | 0.063 | 0.405 |
| 85-22 | 113.76 | 114.34 | 33.3 | 0.15 | 0.32 | 2159 | 28.8 | 0.083 | 0.286 |
| 85-23 | 72.98 | 73.41 | 35.0 | 0.03 | 0.34 | 2158 | 95.6 | 0.082 | 0.502 |
| 85-23 | 118.61 | 119.36 | 4.1 | 0.01 | 0.01 | 2150 | 0.7 | 0.001 | 0.007 |
| 85-23 | 124.81 | 126.38 | 30.2 | 0.19 | 0.33 | 2156 | 24.2 | 0.451 | 0.425 |
| 85-23 | 127.21 | 127.77 | 21.3 | 0.04 | 0.29 | 2163 | 26.6 | 0.045 | 0.862 |
| 85-25 | 117.05 | 117.65 | 2.7 | 0.01 | 0.01 | 2161 | 2.3 | 0.003 | 0.017 |
| 85-25 | 123.10 | 123.90 | 23.0 | 2.42 | 0.88 | 2157 | 20.9 | 2.178 | 0.880 |
| 85-28 | 119.12 | 119.99 | 32.9 | 0.12 | 2.00 | 2146 | 17.5 | 0.016 | 0.260 |
| 85-29 | 70.61 | 73.20 | 19.9 | 0.01 | 0.06 | 2149 | 9.7 | 0.012 | 0.045 |
| 85-29 | 77.09 | 77.30 | 55.5 | 0.10 | 0.55 | 2142 | 1.7 | 0.004 | 0.019 |
| 85-29 | 108.95 | 113.52 | 3.8 | 0.01 | 0.08 | 2137 | 3.7 | 0.016 | 0.137 |
| 85-30 | 108.78 | 109.68 | 11.7 | 0.14 | 1.86 | 2144 | 8.8 | 0.178 | 1.387 |
| 85-33 | 74.64 | 74.87 | 127.2 | 0.74 | 18.00 | 2153 | 113.3 | 0.306 | 5.765 |
| 85-34 | 77.02 | 77.21 | 1001.1 | 1.04 | 18.00 | 2143 | 90.0 | 0.146 | 3.963 |
| 85-36 | 24.76 | 26.30 | 49.4 | 0.09 | 0.92 | 2145 | 69.1 | 0.159 | 2.264 |
| 85-37 | 31.77 | 32.60 | 74.7 | 0.30 | 1.02 | 2151 | 76.7 | 0.256 | 0.608 |
| 85-37 | 35.10 | 35.40 | 37.4 | 3.60 | 1.00 | 2152 | 10.0 | 0.155 | 1.847 |
| 85-39 | 54.43 | 55.31 | 2.1 | 0.02 | 0.04 | 2138 | 1.4 | 0.014 | 0.032 |
| 85-42 | 117.38 | 119.50 | 40.8 | 0.29 | 2.75 | 2147 | 22.8 | 0.201 | 1.417 |
| 85-44 | 78.40 | 78.88 | 493.7 | 0.36 | 33.00 | 2124 | 61.5 | 1.174 | 20.508 |
| 85-46 | 113.50 | 114.83 | 2.1 | 0.01 | 0.03 | 2126 | 2.1 | 0.005 | 0.087 |
| 85-48 | 92.80 | 93.14 | 2.7 | 0.03 | 0.01 | 2127 | 0.5 | 0.013 | 0.012 |
| 85-48 | 93.14 | 93.63 | 174.5 | 0.86 | 19.93 | 2128 | 138.8 | 0.675 | 2.592 |
| 85-51 | 102.46 | 102.83 | 560.6 | 2.86 | 16.02 | 2133 | 525.5 | 1.881 | 14.726 |
| 85-52 | 125.66 | 125.92 | 5.8 | 0.02 | 0.09 | 2134 | 2.0 | 0.012 | 0.049 |
| 85-61 | 102.68 | 104.18 | 2.4 | 0.01 | 0.01 | 2122 | 0.5 | 0.002 | 0.005 |
| 85-63 | 119.73 | 120.21 | 3.4 | 0.03 | 0.84 | 2121 | 1.0 | 0.015 | 0.514 |
| 85-64 | 42.68 | 43.55 | 53.1 | 0.48 | 2.23 | 2123 | 52.0 | 0.587 | 2.722 |
| 85-68 | 180.11 | 180.70 | 2.4 | 0.02 | 0.12 | 2130 | 0.7 | 0.007 | 0.019 |
| 85-68 | 182.05 | 183.50 | 44.6 | 0.09 | 1.00 | 2136 | 54.7 | 0.095 | 1.209 |
| 85-68 | 186.40 | 188.00 | 47.3 | 0.43 | 2.50 | 2135 | 57.3 | 0.383 | 2.663 |
| 85-69 | 245.74 | 246.64 | 10.3 | 0.02 | 0.18 | 2129 | 11.1 | 0.019 | 0.190 |
| 86-125 | 46.00 | 46.50 | 27.4 | 0.21 | 1.10 | 2117 | 3.3 | 0.008 | 0.145 |
| 86-125 | 46.5 | 46.95 | 12.7 | 0.25 | 1.25 | 2118 | 18.4 | 0.144 | 1.645 |
| 86-129 | 46.20 | 46.63 | 85.0 | 0.04 | 0.52 | 2181 | 35.0 | 0.038 | 0.318 |
| 86-131 | 38.43 | 39.43 | 2.4 | 0.00 | 0.03 | 2174 | <.5 | 0.003 | <.0005 |
| 86-136 | 15.39 | 15.88 | 265.7 | 1.28 | 24.00 | 2180 | 65.8 | 0.222 | 7.960 |
| 86-136 | 16.22 | 16.47 | 27.8 | 0.13 | 1.28 | 2113 | 1.2 | 0.021 | 0.020 |
| 86-136 | 17.46 | 17.97 | 14.7 | 0.11 | 5.3 | 2114 | 10.1 | 0.083 | 9.371 |
| 86-136 | 18.28 | 18.89 | 12.0 | 0.21 | 7.12 | 2115 | 7.6 | 0.104 | 4.069 |
| 86-136 | 19.41 | 20.11 | 11.0 | 0.01 | 0.26 | 2111+2112 comp | 9.5 | 0.013 | 0.258 |
| 86-138 | 44.70 | 45.21 | 36.3 | 1.03 | 4.40 | 2175 | 126.2 | 0.451 | 7.150 |
| 86-138 | 45.21 | 45.44 | 28.5 | 1.24 | 1.80 | 2176 | 74.5 | 0.343 | 2.694 |
| 86-138 | 48.35 | 48.83 | 28.1 | 0.32 | 3.8 | 2116 | 30.5 | 0.639 | 5.505 |
| 86-139 | 36.72 | 37.11 | 2.1 | 0.02 | 0.04 | 2119 | 0.9 | 0.012 | 0.043 |
| 86-140 | 48.64 | 49.63 | 12.7 | 0.00 | 0.27 | 2171 | 7.5 | 0.005 | 0.334 |

Laramide Resources Ltd. Assessment Report: Lara Polymetallic Property, Canada

| | | | | | | | 2012 5 | • | ******* |
|--------|----------|--------|----------|--------------|--------|----------|----------|--------|---------|
| | | _ | Histo | orical Resul | lts | | CCIC Res | ults | |
| BHID | From (m) | To (m) | Ag (gpt) | Cu (%) | Zn (%) | Sample # | Ag (gpt) | Cu (%) | Zn (%) |
| 86-140 | 55.98 | 56.98 | 3.8 | 0.01 | 0.06 | 2173 | 19.7 | 0.110 | 0.434 |
| 86-140 | 112.95 | 113.46 | 6.2 | 0.40 | 2.60 | 2168 | <.5 | 0.003 | 0.003 |
| 86-141 | 10.43 | 11.65 | 24.3 | 0.35 | 1 | 2105 | 26.8 | 0.903 | 0.786 |
| 86-141 | 11.65 | 12.8 | 18.9 | 0.06 | 2.05 | 2106 | 15.3 | 0.060 | 1.206 |
| 86-141 | 21.94 | 22.62 | 16.8 | 0.12 | 0.63 | 2110 | 21.6 | 0.113 | 5.905 |
| 86-141 | 22.62 | 23.16 | 60.7 | 0.36 | 2.98 | 2109 | 109.0 | 1.695 | 6.751 |
| 86-141 | 23.16 | 24.99 | 121.0 | 0.76 | 6.53 | 2107 | 69.0 | 0.358 | 3.138 |
| 86-144 | 62.32 | 63.04 | 120.7 | 1.96 | 8.40 | 2177 | 88.6 | 0.838 | 2.525 |
| 86-146 | 35.39 | 36.81 | 564.7 | 4.75 | 22.70 | 2172 | 314.0 | 5.182 | 23.076 |
| 86-80 | 209.58 | 210.34 | 2.4 | 0.00 | 0.02 | 2120 | 141.2 | 0.096 | 0.422 |
| 86-94 | 63.49 | 64.75 | 119.0 | 0.24 | 1.15 | 2131 | 121.8 | 0.244 | 1.367 |
| 86-94 | 65.40 | 66.14 | 100.5 | 0.26 | 0.93 | 2132 | 89.3 | 0.226 | 1.085 |
| 87-163 | 87.98 | 89.00 | 7.5 | 0.02 | 0.12 | 2140 | 1.9 | 0.011 | 0.051 |
| 87-163 | 125.03 | 125.98 | 2.4 | 0.14 | 2.07 | 2139 | 7.4 | 0.270 | 3.011 |
| 87-165 | 67.10 | 67.96 | 80.6 | 0.08 | 2.30 | 2141 | 78.7 | 0.107 | 3.259 |
| 87-167 | 52.48 | 53.16 | 12.7 | 0.04 | 0.73 | 2125 | 15.2 | 0.084 | 0.741 |
| 87-172 | 202.87 | 203.81 | 11.0 | 0.04 | 1.06 | 2148 | 10.8 | 0.040 | 0.940 |
| 87-174 | 55.58 | 56.16 | 31.9 | 0.34 | 3.61 | 2103 | 21.6 | 0.253 | 2.789 |
| 87-174 | 57.07 | 57.59 | 26.4 | 0.25 | 5.70 | 2104 | 8.2 | 0.162 | 2.629 |
| 87-174 | 61.76 | 62.23 | 16.1 | 0.18 | 2.34 | 2101 | 2.8 | 0.046 | 1.152 |
| 87-174 | 62.23 | 63.09 | 23.7 | 0.08 | 1.14 | 2102 | 32.7 | 0.177 | 1.901 |
| 87-184 | 359.99 | 360.56 | 29.8 | 1.00 | 6.20 | 2179 | 79.0 | 4.567 | 5.341 |
| 87-184 | 362.39 | 363.12 | 7.5 | 0.36 | 0.61 | 2178 | 13.1 | 0.156 | 0.804 |
| 87-184 | 364.42 | 365.38 | 3.4 | 0.08 | 0.01 | 2169 | 5.9 | 0.146 | 0.112 |
| 87-184 | 365.38 | 365.57 | 1006.6 | 9.25 | 3.40 | 2170 | 1.8 | 0.051 | 0.073 |

ACME ANALYTICAL LABORATORIES LTD. (ISO 9001 Accredited Co.)

852 E. HASTINGS ST. VANCOUVER BC V6A 1R6

PHONE (604) 253-3158 FAX (604) 253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Caracle Creek International Consulting 34176 Cedar Ave, Abbotsford BC V2S-2W1 Submitted by: Stephen Wetherup

File # A605638

Raymond Chan

| SAMPLER | | Cu | Pb 25 | Aç | N- | Co | M | Fe | As | L | Au Th | Sr Cc | St | Bi v | Ca | ⊃ La Cr | ™g Ba | Ti B | 41 | Мa | K. W | Hg | Sc TI | S Ga | Se |
|---------|-----|-----|---------|-----|-----|-----|-----|----|-----|-----|---------|---------|-----|---------|----|-----------|---------|---------|----|------|-------|------|---------|--------|-----|
| | pom | ppm | mcq mag | ppa | ppm | ppm | pom | * | ppm | ppm | ppb ppm | ngq mac | ррп | ррт трт | 3 | å ррт орт | £ ppm | £ ppm | ž | į | # ppm | ppn | ppn ppm | \$ 0pm | ppm |
| 5-1 | .1 | 2.1 | 2.9 44 | < 1 | 3.5 | 3.B | 529 | 85 | <.5 | 2.5 | 6 3.7 | 59 < | <.1 | .1 35 | 53 | 074 8 6 | .55 186 | .125 <1 | 9/ | .084 | .50 1 | < 0] | 15 3 | 05 5 | < 5 |

16.0 913.8 1454.1 295.25.3 6 5 26 5.43 21.8 < 1 401.4 ./ 15 1.0 3.4 1.4 13 .03 .025 3 6 .06 143 .003 <1 .29 .012 16 .1 15.78 .6 < 1 .45 3 3.6 00926 9.9 438.4 522.8 559 2.4 1.5 2.3 1.03 4.74 17.0 2 69.9 1.5 6 1.5 .4 .2 31 .01 .027 2 5 .72 41 .011 2.1 04 .013 08 < 1 .67 2.0 < 1.1.55 6 1.4 00927 20.8 108.3 72 4 408 .9 54.4 9 5 624 2 38 47.9 5.0 83 3 4.5 7] 6.3 5 7 4.6 64 .92 078 13 166 1.04 376 .124 41 ...96 .077

19-25-7 14:25 17

Standard is STANDARD DS7.

GROUP 1DX - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HN03-42C AT 95 DEG. C FOR ONE HOUR, DILLUTED TO 10 ML, ANALYSED BY 102-MS. (>) CONCENTRATION EXCEEDS UPPER LIMITS. SOME MINERALS MAY BE PARTIALLY ATTACKED. REFRACTORY AND GRAPHITIC SAMPLES CAN LIMIT AU SOLUBIL Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns. - SAMPLE TYPE: Rock R150

DATE RECEIVED: SEP 1 2006 DATE REPORT MAILED:.... Data To FA

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.



Caracle Creek International Consulting PROJECT FILE # A605638

Page 2



| SAMPLE# | | | | | | | | | | | | | | | | | | Ga Se ppm ppm |
|---------|--|-------|-------|--|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|-------|---------|--------------------|
| G-1 | | | | | | | | | | | | | | | | | | 5 < 5 |
| 00928 | | (7.5) | - | | | The second secon | | | | | | | | | | | 200 | 4 .9 66 3 5 |
| 00930 | | | - | | 3000000 | 35.512.51 | | | | | | | | | | V | | |

STANDARD 21 0 109 3 79 4 420 955.8 9.6 624 2.39 48 1 5 2 52.6 4 7 73 6.5 5.7 4 7 84 .94 .082 14 168 1.05 379 .127 40 97 080 44 3.8 20 2.5 4.4 .21 5 3.6

Standard is STANDARD DS7.

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

Data TS FA

ACME ANALYTICAL LABORATORIES LTD. (ISO 9001 Accredited Co.)

852 E. HASTINGS ST. VANCOUVER BC V6A 1R6

PHONE (604) 253-3158 FAX (604) 253-1716

ASSAY CERTIFICATE

Caracle Creek International Consulting PROJECT 34176 Cedar Ave, Abbotsford BC VZS ZW1 Submitted by: Stephen Wetherup

File # A605638

Page 1



SAMPLE# Au** qm/mt G-1 < .01

> 00926 .47 00927

STANDARD SL20

6.02

C-25-06 Alg: 55 ...

GROUP 6 - PRECIOUS METALS BY FIRE ASSAY FROM 1 A.T. SAMPLE, ANALYSIS BY ICP-ES.

- SAMPLE TYPE: Rock R150

Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data | FA DATE RECEIVED: SEP 1 2006 DATE REPORT MAILED:.....



Caracle Creek International Consulting PROJECT FILE # A605638 Page 2



| ACK ABLITICAL | | | ADE MALYTICAL |
|---------------|--------------------------------|----------------------------|---------------|
| | SAMPLE# | Au** gm/mt | |
| | G-1 00928 00929 00930 | .01 .17 4.40 4.26 | |
| | STANDARD SL20 | 5.93 | |

Sample type: Rock R150.

ACME ANALYTICAL LABORATORIES LTD. (ISO 9001 Accredited Co.)

SAMPLE#

852 E. HASTINGS ST. VANCOUVER BC V6A 1R6

PHONE (604) 253-3158 FAX (604) 253-1716

ASSAY CERTIFICATE

44

Caracle Creek International Consulting PROJECT NXA File # A605638R
34176 Cedar Ave, Abbotsford BC V2s 2W1 Submitted by: Stephen Wetherup

ı Pb Zn Ag Ni Co Mn Fe As Sr Cd Sb Bi Ca P Cr Mg Al Na K W Hg

| | % | % | % | % | gm/mt | % | % | % % | % | % | % | _ % | % | % | % | <u> </u> | % | % | % | % | % | % |
|---------------|------|-------|------|-------|-------|---------|--------|---------|-----|------|------|------|------|------|------|----------|------|------|------|--------|--------------|-----|
| 00896 | 1 | 1.132 | | | | | | 5 4.27 | | | | | | | | | | | | | | |
| 00929 | | 3.402 | | 57.13 | | | | 1 3.87 | | | | | | | | | | | | | | |
| , | 1 | | | | | | | 1.12 | | | | | | | | | | | | | | |
| STANDARD R-2a | .049 | .564 | 1.41 | 4.20 | 157 | .354 .0 | 145 .2 | 0 23.16 | .22 | .174 | ,029 | .127 | <.01 | 2.25 | .084 | .068 | 1.59 | 1.42 | - 19 | .51 .0 | J72 <u> </u> | 177 |

GROUP 7AR - 1.000 SM SAMPLE, AQUA - REGIA (HCL-HN03-H20) DIGESTION TO 100 ML, ANALYSED BY ICP-ES. - SAMPLE TYPE: ROCK PULP

10-06-06 P05:27 OUT

DATE RECEIVED: SEP 29 2006 DATE REPORT MAILED:.....



ACME ANALYTICAL LABORATORIES LTD. (ISO 9001 Accredited Co.)

34176 Cedar Ave. Appotsford BC V2S 2W1 Submitted by: Stephen Wetherup

852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE (604) 253 1158 FAX (604) 253-1716

ASSAY CERTIFICATE

Caracle Creek Int'l Consulting (BC) PROJECT LAM-LAR File # A607580

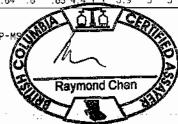
| | | | | | | | 341(0 | ceda | r ave | , Appot | STOFU: | oc v | 23 ZW | 100 | UD(II) L | eu by | site | onen i | veuner | up | | | | | | | Se 🐠 S | | |
|---------------------------------------------|------------------------------------|----------------------------------------|-----------------------------------------------|-------------------------------------------------|----------------------|---------------------------------|--------------------|-------------------|-------------------------------------|------------------------------------------------------|---------------------------------------------|----------------------------|-------------------------|----------------------|-----------------------------------------------------|----------------------------|------------------------|--------------------|-------------------|-------------------|----------------------|----------------------|----------------------------|----------------------|----------------------------------------------------------|----------------------------|---------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SAMPLE# | Mo ppm | Си р р т | Pb pp m | Zn ppm | Ag pp m | Ni ppm | | Mn ppm | _ | Аз L ррт ррп | | | Cd ppm | | Bi \ ppm ppm | | | La ppm | Çr ppm | Mg ¾ | | Ti % | | | K W ≵ppm | - | Sc T1 opm ppm | | Ga Se ppm ppm |
| G-1 2101 2102 2103 2104 | 16.5 | 1770.4 | 596.5 71 83 .2 | 48 11523 19013 27 88 7 26290 | 21.6 | 5.9 2.8 | 12.4 5.4 | 33 45 41 | 2.50 1.54 4.84 | <5 3.0 158 <.5 757 <.5 1034 <.5 540 <.5 | 5 1.3 5 1.6 5 1.1 | 11 12 15 1 | 55.0 84.6 32.4 | 10.3 70.8 70.9 | | .30 .45 .48 | .028 .031 | 4.4 4.5 3.3 | 2.6 1.6 1.8 | .03 .02 .01 | 430 297 334 | .003 .002 .002 | .29 . .24 . .20 . | 01 . 01 . 01 . | 19 <.5 17 <.5 14 <.5 | 2.89 5.67 < 6.30 < | .5 .8 7. 5.> 9. 5.> | 3.2 2.6 6.9 | 6 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 |
| 2105 2106 2107 2108 2109 | 3.2 67.2 24.8 | 3582.3 1216.6 | 38.0 2157.4 1702.0 4226.8 12401.7 | 31376 64997 | 15.3 69.0 16.1 | 3.9 3.9 9.7 7.1 7.8 | 3.6 3.5 2.5 | 103 68 56 | 16.64 4.16 | | 9 1.0 | 48 30 1 13 3 | 53.7 75.9 1 56.7 | 48.6 29.4 23.4 | <.5 <10 | 97 1.24 95 | .017 <.001 <.001 | 7.8 1.6 1.1 | 7.0 3.4 3.5 | .06 .02 .01 | 1622 231 322 | .006 .001 .002 | .62 . .17 . .20 . | 01 . 01 . 01 . | 41 < .5 11 < .5 13 < .5 | 5.33 1 3.32 4 3.76 4 | 1.0 2.2 4.5 1.0 4.5 .9 | 3.0 20.0 7.1 | <5 4 |
| 2110 2111 2112 2113 2114 | 32.3 15.2 2.8 1.0 16.9 | 144.5 | 2353.9 64.5 | 2194 | 9.7 8.6 1.2 | 5.7 1.8 | . 8 | 164 94 186 | | 25 < .5 | 5 1.8 5 1.6 5 2.8 | 46 48 47 | 8.2 15.9 1.0 | 11.5 11.9 1.4 | <.5 <16 .7 <16 <.5 <16 <.5 <16 1.2 <16 | 1.54 1.00 1.23 | .017 .020 | 3.1 5.2 10.7 | | .07 .02 .05 | 281 1120 1999 | .002 .003 .002 | . 26 . . 28 . . 25 . | 01 . 02 . 03 . | 21 <.5 21 .6 23 <.5 | .99 2.10 .15 | .7 1.0 6 1.2 5.> 5.> | 16.8 1.9 <.5 | <5 4 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 |
| 2115 2116 2117 2118 2119 | 31.4 12.7 | 84.8 1436.9 | 11141.3 355.8 3692.0 | 55048 1454 | 3.3 | 1.4 | 5.8 6.0 3.9 | 48 108 | 2.17 6.79 2.85 | 41 .6 214 .9 2211 < .9 1605 < .9 42 < .9 | 5 1.1 5 .9 | 81 3 3 9 58 1 | 305.4 5.4 .07.4 7 | 26.9 40.1 57.7 | <.5 <10 <.5 <10 <.5 <10 | 2.28 59 1.36 | .024 .011 .006 | 9.8 3.1 3.4 | 2.3 4.1 3.5 | .61 .02 .02 | 407 73 268 | .002 .001 .001 | .55 . .28 . .24<. | 02 . 01 . 01 . | 21 < .5 | 12.93 : .99 10.19 | 1. 0 < .5 7 1.2 5 1.1 | 3.4 7.7 4.1 | <pre><5 <2 5 6 <5 <2 <5 4 <5 <2</pre> |
| 2120 2121 2122 2123 2124 | | 147.1 16.5 5867.7 | 2445.8 41.7 14.1 7462.5 11313.1 | 5135 50 27221 | .5 52.0 | 1.0 .8 1.0 2.1 5.1 | 3.6 5.6 5.5 | 116 68 116 | 1.17 .77 7.09 | 287 < .5 11 < .5 11 < .5 518 < .5 195 .6 | 5 1.6 5 1.8 5 1.1 | 29 14 78 1 | 22.4 <.5 .63.3 2 | 1.3 3.5 200.4 | <.5 <10 <.5 <10 <.7 <10 |) 1.11) .63) 1.96 | .030 .035 .009 | 7.7 7.8 3.4 | 3.7 2.7 2.4 | .03 .02 .08 | 129 50 544 | .002 .003 .002 | .24 . .28 . .27 . | 01 . 01 . 01 . | | .87 05.> 10.18 | .6 < .5 .7 < .5 .7 1.5 | 1.5 .8 9.5 | <5 <2 <5 <2 <5 <2 <5 2 13 5 |
| 2125 2126 RE 2126 RRE 2126 2127 | 6.2 5.6 7.0 6.1 2.8 | 842.3 52.8 52.3 30.3 127.4 | 251.1 | 7412 865 875 571 122 | 2.0 | 5.3 5.4 | 5.7 5.9 5.0 | 90 | 3.71 2.78 2.94 2.90 .98 | 52 .6 54 .5 52 .5 | 5 1.1 1 5 1.5 5 1.5 5 1.5 1 3.5 | 37 40 36 | 3.9 4.5 2.4 | 10.9 12.4 10.6 | <.5 <10 <.5 <10 <.5 <10 <.5 <10 <.5 <10 |) .99) 1.00) .96 | .028 .031 .027 | 5.9 6.7 5.9 | 3.1 | .02 .02 .02 | 1293 1378 1328 | .002 .001 .002 | .29 . .31 . .30 . | 02 02 02 | .19 < .5 .24 < .5 .24 < .5 .24 < .5 .36 < .5 | . 84 . 82 . 72 | .7 1.7 .7 1.7 | 3.4 3.4 3.4 | <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 |
| 2128 2129 2130 2131 2132 | 2.6 1.5 19.7 | 69.8 2437.8 | 859.9 1297.7 40.0 6647.9 1425.3 | 185 13 6 70 | 11.1 .7 121.8 | 1.0 11.8 4.3 | 5.2 16.4 5.7 | 138 538 110 | 2.57 7.73 | | 5 1.4 5 1.3 1 5 1.7 | 43 74 26 | 8.4 .6 65.4] | 19.1 1.1 131.5 | <.5 <16 <.5 <1 <.5 1 <.5 <1 <.5 <1 | 0 1.23 0 4.13 0 1.97 | .032 .051 .001 | 7.1 5.7 2.9 | 9.2 2.2 | .03 .70 .03 | 255 707 357 | .003 .003 .003 | .30 . .53 . .26 . | 01 01 01 | .40 <.5 .19 <.5 | 2.18 .23 5.63 | .8 <.5 3.9 .9 .5 2.6 | 1.8 1.8 9.8 | <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <2 <5 <5 <2 <5 <2 <5 <2 <5 <2 <5 <5 <2 <5 <2 <5 <5 <2 <5 <5 <2 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 |
| STANDARD SF-2a | 288.0 | 7078.9 | 8565.4 | 12481 | 63.5 | 3402.5 | 109.3 | 4152 | 7.47 | 24 1. | 5 2.3 | 42 | 55.1 | 48.4 | 5.3 3 | 9 1.69 | .054 | 7.3 | 234.9 | 4.09 | 132 | .101 | .98 . | .49 | .84 .8 | . 85 | 4.4 1 1 | 3.9 | 5 5 |

GROUP 7AX - 1.000 GM SAMPLE LEACHED WITH 30 ML 2-2-2 HCL-HN03-H20 AT 95 DEG. C FOR ONE HOUR, DILUTED TO 100 ML, ANALYSED BY ICP-ES AND ICP-M Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns. - SAMPLE TYPE: DRILL CORE R150

11-16-05 A10:37 OUT

DATE RECEIVED: OCI 10 2006 DATE REPORT MAILED:..... Data FA

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.





Caracle Creek Int'l Consulting (BC) PROJECT LAM-LAR FILE # A607580 Page 2



| | | | | | | | | | | | **** | | | | | | | | | | | | | | | | | | | | |
|-------------|-------|---------|---------|--------|-------------|--------|-------|------|------|---------|--------|-------|-------|-------|------------|--------|---------------|------|-----------|-----------|------|-----------|---------|---------|------|--------------|-------|-----------|-------|-----|--------|
| SAMPLE# | Мо | Cu | Pb | Zn | Ag | Ni | | Mn | | | U Th | | Cd | | Bi | | Ca % | | La ppm | Çr ppm | Мg | Ba ppm | Ti % | Al % | | K k % ppm | | Sc ppm | | | Ga : |
| | ppm | ppm | ррп | ppm | ppm | ppm | ppm | ppin | - 6 | phir bi | mqq m | ppili | ppm | ppili | ррп | JPIN . | | - 4 | ppu | ppiii | - 4 | ppiii | - 6 | - 4 | | * bhi | рріі | рри | Phil | 4 P | ppii p |
| 5-1 | <.5 | 2.3 | 4.9 | 51 | <.5 | 3.6 | 5.1 | 606 | 2.04 | <5 3 | 3 5.4 | 114 | <.5 | <.5 | <.5 | 39 | .75 | .079 | 13.2 | | | | | | | 56 < .5 | | | <.5 | <.5 | 7 |
| 2133 | 195.7 | 18811.8 | 44443.9 | 147264 | 525.5 | 42.2 | 1.8 | 862 | 3.81 | 918 1 | 1 < .5 | 120 (| 888.9 | 986.7 | <.5 | <10 1 | .6. 84 | .005 | 5.0 | | | | | | | .12 < .5 | | .5 | <.5 1 | 0.7 | 18 |
| 134 | 1.5 | 119.6 | 166.3 | 492 | 2.0 | . 9 | | 419 | | | 5 3.1 | | | | | | 2.57 | | | | | | | | | 41 < .5 | | | . 9 | | - |
| 135 | | | 5007.1 | | 57.3 | 1.2 | | | | | 5 1.0 | | | | | | | | | | | | | | | 36 < .5 | | | | | |
| 136 | 37.9 | 951.9 | 6126.8 | 12091 | 54.7 | 2.2 | 4.6 | 338 | 3.81 | 253 | 6 1.3 | 62 | 50.4 | 93.4 | <.5 | <10 | 3.89 | .013 | 6.5 | 3.9 | .04 | 770 | .004 | . 39 | . 02 | .28 < .5 | 12.84 | 1.0 | 1.5 | 5.0 | <5 |
| 2137 | 3.7 | 158.1 | 579.9 | 1372 | 3.7 | 2.2 | 3.4 | 33 | 1.29 | 33 < | 5 2.2 | 13 | 7.4 | 55.1 | <.5 | <10 | .29 | .021 | 9.7 | 5.5 | .05 | 693 | .006 | .79 | .01 | .50 < .5 | 1.65 | 1.1 | <.5 | 1.4 | <5 |
| 138 | .9 | 143.1 | 11.2 | 316 | 1.4 | 62.6 | 29.1 | 1451 | 5.93 | 14 < | 5 < .5 | 228 | .6 | 2.2 | <.5 | 96 | 9.40 | .060 | 5.0 | 56.8 2 | 2.63 | 585 | .050 | 3.20 | .01 | 29 < .5 | .11 | 10.8 | 1.8 | .9 | 8 |
| 139 | 14.4 | 2696.2 | 1210.5 | 30113 | 7.4 | 1.1 | 6.0 | 144 | 4.62 | 88 < | 5 1.3 | 65 | | | | | | | | | | | | | | | | .8 | .5 | 6.5 | <5 |
| 140 | 4.3 | 109.5 | 506.5 | 514 | 1.9 | 1.3 | 4.3 | | | | 5 2.1 | | | | | | | | | | | | | | | .36 < .5 | | 1.0 | <.5 | 1.7 | <5 |
| 141 | 10.6 | 1067.8 | 17936.3 | 32588 | 78.7 | 2.6 | 8.7 | 98 | 4.23 | 252 < | 5 1.6 | 94 | 153.0 | 151.3 | <.5 | <10 | 1.33 | .013 | 4,4 | 1.7 | . 04 | 574 | .002 | .51 | .01 | .33 < .5 | 32.29 | .8 | 1.4 | 6.5 | <5 |
| 142 | 22 | 41.5 | 8.8 | 185 | 1.7 | 2.3 | 3.9 | 18 | 1.14 | 15 | 5 2.4 | 6 | .6 | 11.7 | < 5 | <10 | .08 | .023 | 9.1 | 2.1 | .07 | 458 | .007 | . 96 | .02 | .57 < .5 | .31 | 1.2 | <.5 | 1.1 | <5 |
| 143 | | | 23541.2 | | 90.0 | 4.1 | | | | | 7 1.7 | _ | | | | | | .006 | | 4.0 | | | | | | .45 .6 | | | | 5.2 | <5 |
| .44 | | 1783.8 | | | 8.8 | 1.4 | | _ | | _ | 5 1.5 | | | | | | .66 | .019 | 6.2 | 2.1 | .03 | 334 | .006 | .58 | .02 | .37 < .5 | 5.50 | 1.1 | 1.6 | 5.5 | <5 |
| .45 | 36.9 | 1587.6 | 1734.5 | 22643 | 69.1 | 1.2 | | | | | 5 1.2 | | | | | | | | | | | | | | | | | | | | |
| .46 | 28.8 | 161.2 | 1622.2 | 2604 | 17.5 | 2.3 | 8.3 | 132 | 5.16 | 43 < | 5 1.9 | 58 | 12.8 | 33.6 | .5 | <10 | 1.18 | .026 | 7.3 | 1.3 | . 04 | 254 | .004 | . 54 | .01 | .41 <.5 | 1.74 | 1.1 | 1.0 | 5.9 | <5 |
| 47 - | 16.2 | 2005.9 | 2059.6 | 14169 | 22.8 | 4.1 | 7.4 | 90 | 9.64 | 943 < | 5 .9 | 23 | 65.7 | 63.9 | <.5 | <10 | . 90 | .009 | 5.0 | 2.8 | .04 | 111 | .004 | . 45 | . 01 | .31 <.5 | 8.43 | .9 | 1.4 1 | 1.3 | <5 |
| 48 | _ | | 4704.1 | 9403 | | 1.8 | | | | | 5 2.0 | | | | | | 1.13 | .019 | 9.1 | 2.2 | .06 | 227 | .005 | .62 | .01 | .44 < .5 | 10.28 | .9 | 3.3 | 7.8 | <5 |
| .49 | 2.8 | 123.0 | 99.0 | 452 | 9.7 | 4.0 | | | | | 5 2.4 | | 2.7 | | | <10 | 1.45 | .020 | 9.5 | 3.1 | .16 | 794 | .004 | | | .34 < .5 | | 1.3 | .5 | 2.1 | <5 |
| .50 | 2.2 | 14.5 | 17.9 | 74 | .7 | 1.2 | 4.2 | | | | 5 1.9 | | <.5 | | | | | | | | | | | | | .45 < .5 | | 1.0 | | | <5 |
| 51 | 78.6 | 2556.7 | 1236.2 | 6084 | 76.7 | 4.4 | 4.6 | 80 | 6.08 | 446 < | 5 1.0 | 20 | 41.3 | 245.5 | .8 | <10 | 1.12 | .004 | 4.4 | 3.3 | . 05 | 522 | .004 | .58 | . 01 | . 35 5 | 2.95 | 1.0 | 5.3 | 7.0 | <5 |
| 2151 | 122.1 | 2586.6 | 1240.1 | 6199 | 77.3 | 3.2 | 4.4 | 79 | 6.12 | 428 < | 5 1.0 | 20 | 40.6 | 243.4 | .7 | <10 | 1.16 | .003 | 4.7 | 3.2 | . 05 | 507 | .004 | .58 | .01 | .35 < .5 | 3.21 | .9 | 5.6 | 7.2 | <5 |
| RE 2151 | 84.9 | 2659.0 | 1253.7 | 6274 | 76.8 | 4.6 | 4.5 | | | | .5 1.0 | | | | | | | | | | . 05 | | | | | .33 1.1 | | | 5.3 | 7.0 | <5 |
| 52 | | | 1616.0 | | | .9 | | | | | 5 1.3 | | | | | | | | | | | | | | | | | | 3.3 | | - |
| 53 | 133.1 | | 15948.4 | | | 4.0 | | | | | .5 .7 | | | | | | | | | | . 05 | | | | | .31 .6 | | | 3.1 1 | | |
| 54 | 2.5 | 88.0 | 8.8 | 417 | 1.7 | 8.5 | 11.8 | 671 | 2.00 | 42 < | .5 1.5 | 439 | 2.8 | 3.7 | <.5 | 14 | 6.74 | .032 | 9.7 | 4.9 | .36 | 1080 | .007 | . 87 | .03 | .57 < .5 | . 27 | 3.6 | 2.0 | 1.5 | <5 |
| .55 | 45.5 | 2081.8 | 2709.0 | 27114 | 8.7 | 1.1 | 2.9 | 177 | 5.11 | 100 < | .5 .9 | 51 | 182.6 | 18.7 | .7 | <10 | 2.54 | .004 | 4.6 | 1.8 | .02 | 356 | .004 | .45 | .01 | .29 < .5 | 6.28 | .7 | 1.9 | 7.4 | <5 |
| .56 | 18.3 | 4506.9 | 1169.8 | 4254 | 24.2 | 2.1 | 6.2 | 113 | 7.23 | 690 < | 5 1.3 | 22 | 27.9 | 95.6 | .8 | <10 | 1.20 | .009 | 4.3 | 2.6 | .04 | 317 | .005. | . 52 | .01 | .32 < .5 | 5.95 | .7 | 3.2 | 8.6 | <5 |
| 57 | 52.4 | 21775.2 | 2259.4 | 8803 | | .7 | | | | | .5 1.1 | | | | | | | | | | | | | | | | 3.20 | | 2.1 1 | 2.0 | <5 |
| .58 | 8.4 | 824.2 | 2017.0 | 5022 | | 1.8 | | | | | .8 2.7 | | | | | | | | | | | | | | | | | | <.5 | | |
| .59 | 4.9 | 833.6 | 748.4 | 2859 | 28.8 | 1.0 | 3.7 | 78 | 2.73 | 166 < | .5 1.8 | 21 | 16.4 | 42.5 | <.5 | <10 | . 59 | .009 | 6.7 | 1.9 | . 04 | 517 | .005 | . 57 | . 02 | .37 < .5 | 2.03 | 1.0 | 2.0 | 3.2 | <5 |
| 160 | 6.1 | 632.6 | 1304.2 | 4047 | 17.2 | 1.3 | 3.4 | 95 | 2.98 | 157 < | .5 1.7 | 14 | 23.1 | 40.9 | <.5 | <10 | | | | 2.5 | | | | .74 | .03 | .42 < .5 | 1.73 | .9 | 2.3 | 3.5 | <5 |
| 161 | 4.3 | 30.6 | 65.8 | 170 | 2.3 | 1.1 | 5.8 | 47 | 3.10 | 14 | 5 2.2 | 24 | 1.1 | 5.9 | <.5 | <10 | | | | 1.0 | | | | | | .41 <.5 | | . 6 | 1.1 | 3.5 | <5 |
| .62 | 4.6 | 55.8 | 22.6 | 440 | .6 | 4.1 | 7.4 | 82 | 2.61 | 47 | 8.8 | 23 | 1.6 | 7.3 | <.5 | <10 | .79 | .037 | 5.3 | | . 04 | | | | | .42 <.5 | | 1.0 | | | <5 |
| 163 | 32.2 | | 4952.8 | 8617 | 26.6 | | | | | | .9 1.3 | | | | | | | | | | | | | | | .30 | | | | | |
| 64 | .7 | 23.6 | 12.1 | 44 | <.5 | .7 | 2.4 | 356 | 1.15 | <5 | .9 3.6 | 43 | <.5 | .7 | <.5 | <10 | 1.00 | .020 | 11.5 | 3.6 | . 36 | 67 | .020 | . 82 | .04 | .41 < .5 | <.05 | 1.4 | <.5 | <.5 | <5 |
| | *** | 2062 2 | 8555.6 | 10017 | CF 2 | 2414.2 | 110.0 | 1106 | 7.60 | 00 1 | 000 | 42 | 56.0 | 47.0 | c 1 | 20 | 1 (5 | 0.53 | 0.2 | 222 | 4 07 | 100 | 104 | ne | 40 | 90 5 | GA. | 4.0 | 0 | 2 7 | -c |

Sample type: DRILL CORE R150. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.



Caracle Creek Int'l Consulting (BC) PROJECT LAM-LAR FILE # A607580 Page 3



| | | | | | | | | | | | | | _ | | | | | | | | | | | | | | | | | |
|----------------|-------|---------------|----------------|--------|-------|--------|-------|-----------------|-------|-------|----------|------|-------|-----------------|-------------|------|-------|--------------|---------|------|------|------|------|------|-------------|--------|-------|-------|---------|----------|
| SAMPLE# | Mo | | Plb | Zn | | | Со | Mn | Fe | As | U Th | | Cd | | Bi V | Ca | P | La | Cr | Mg | Ва | Τi | Αl | Na | K W | | g Sc | | | Ga Se |
| | ppm | pρm | ррm | þþm | ppm | ppm | ppm | ppm | * | ррш р | pm ppm j | nkqq | bbu | ppm | opm ppm | | - A | ppm | ppm | -6 | ppm | | | * | % ppn | pp | m bba | bbm | s pi | bw bbw |
| G-1 | <.5 | 2.5 | 22.6 | 73 | <.5 | 4.1 | 4.3 | 595 | 2.10 | <5.3 | .6 5.4 | 109 | <.5 | <.5 | · <.5 38 | .73 | .077 | 12.3 | 8.2 | . 61 | 241 | .169 | 1.34 | .19 | .54 <.5 | <.09 | 5 3.0 | <.5 | <.5 | 6 <2 |
| 2165 | 8.6 | 181.2 | 582.7 | 1366 | | 14.2 | 8.0 | 239 | 3.30 | | .8 3.0 | - | 9.3 | | <.5 <10 | | | | 2.6 | . 85 | | | | | .33 < .5 | _ | | <.5 | | <5 2 |
| 2166 | 85.1 | | 37118.9 | 81955 | | | 2.5 | 632 | 0.00 | 1789 | .8 .6 | | | 580.0 | | | | | <u></u> | .15 | | .005 | | | .20 < .5 | | | | | 14 16 |
| | 0012 | | | | | | | | | | | | | | | | | | 1.0 | | | | | | | | | | • • • • | |
| 2167 | 4.4 | 81.8 | 856.2 | | 10.1 | | 4.8 | 146 | 2.87 | | | 82 | 7.3 | | | | | | 1.9 | . 10 | | .003 | | | .39 < .5 | | | | | <5 <2 |
| 2168 | 1.2 | 2 7 .6 | <.5 | 29 | <.5 | 1.4 | 3.3 | 392 | . 79 | 6 < | .5 2.2 | 80 | <.5 | 2.1 | <.5 <10 | 2.07 | . 029 | 10 .7 | 1.6 | .59 | 120 | -004 | . 64 | . 01 | .49 <.5 | < . 0. | 5 1.2 | <.5 | <.5 | <5 <2 |
| i | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2169 | 8.9 | 1458.0 | 238.1 | 1116 | 5.9 | 1.1 | 2.6 | 223 | 3.16 | 29 | .5 1.7 | 39 | 6.4 | 6.7 | < 5 < 10 | 1.14 | .023 | 6.1 | 1.3 | 1 14 | 689 | .014 | 0.04 | .01 | .67 < .5 | 4: | 2 1.1 | 6.8 | 3.6 | <5 <2 |
| 2170 | 6.4 | 508.1 | 95.5 | 730 | 1.8 | | 3.6 | 95 | 2.57 | | | 20 | 4.0 | | <.5 <10 | | | | 1.0 | .16 | 837 | .005 | | | 46 < 5 | | 2 .9 | | | <5 <2 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | - |
| 2171 | 8.9 | | 1209.7 | 3342 | | | 4.5 | 112 | 5.83 | | .9 2.2 | | 7.1 | | <.5 <10 | | | | 3.3 | .04 | | .004 | | | .31 <.5 | | | | – | <5 <2 |
| 2172 | 164.3 | 51819.0 | 30685.9 | 230755 | 314.0 | | 1.0 | 460 | 9.77 | | | | | 463.8 | | | | | <.5 | .03 | 96 | .001 | . 21 | | .12 1.0 | | | | | 35 11 |
| 2173 | 9.7 | 1103.9 | 2637.3 | 4340 | 19.7 | 1.2 | 7.5 | 35 | . 85 | 413 | .6 3.6 | 13 | 25.9 | 75.4 | .5 <10 | . 48 | .031 | 12.1 | 1.4 | .08 | 476 | .007 | .71 | :02 | .55 .5 | 3.3 | 8 1.1 | 1.1 | 1.2 | <5⊢<2 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2174 | .6 | 28.5 | <.5 | <5 | <.5 | <.5 | 2.3 | 352 | .62 | 38 < | .5 3.1 | 67 | .6 | g. | <.5 <10 | 1.91 | .023 | 13.0 | 1.4 | .25 | 781 | .007 | .73 | .04 | .52 < .5 | .2 | 8 .9 | 2.0 | <.5 | <5 <2 |
| 2175 | 66.1 | 4506.5 | 5381.2 | _ | | | 2.8 | | 15.40 | 614 < | | | | 286.0 | | | | | 3.6 | .03 | 71 | .002 | | | .22 < .5 | | 7 7 | 1 4 2 | 2.2 | <u> </u> |
| | | 3426.5 | 8880.3 | 26944 | 74.5 | | 17.2 | | 13.64 | 226 < | | | | 174.7 | | | | | 6.7 | .53 | 126 | | | | .31 < .5 | | | | | <5 4 |
| 2176 | 69.5 | | 0000.5 | | | | 1, | | | | | | | | | | | | | | | | | | | | | | | _ : |
| RE 2176 | 68.4 | 3410.5 | 3200 | | | | 16.8 | | 14.07 | 231 < | | | | 186.0 | | | | | 6.3 | . 54 | | -006 | | | .32 < .5 | | | | | <5 4 |
| RRE 2176 | 63.3 | 3511.6 | 8 939.3 | 27052 | 74.6 | 23.4 | 18.9 | 64 5 | 13.86 | 228 < | 5 .5 | 144 | 146.0 | 167.6 | <.5 12 | 9.50 | .031 | 3.9 | 8.1 | .56 | 112 | .006 | .47 | . 01 | .31 .6 | 5.3 | 5 3.2 | 3.1 1 | 3.3 | <5 4 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2177 | 72.5 | 8377.8 | 7230.6 | 25250 | 88.6 | .6 | 1.9 | 191 | 8.41 | 240 < | .5 .5 | 104 | 162.8 | 424.9 | <.5 <10 | 3.96 | .001 | 3.9 | 2.8 | . 04 | 245 | .002 | . 36 | .01 | .23 < .5 | 18.2 | 5.8 | 1.5 1 | 1.2 | < 5 8 |
| 2178 | 23.6 | | 2829.8 | 8044 | | 12.8 | 11 4 | 405 | 7.87 | | | 67 | 50.5 | | | | | | 8.9 | .43 | 251 | .017 | | .02 | | | 6 2 3 | 4 9 | 9.8 | < 5 3 |
| | | 100,10 | | • | | | 3.7 | 150 | 7.73 | 22 < | | 34 | 349.3 | | 1.7 <10 | | | | 1.2 | .04 | | .003 | | | . 29 < . 5 | | | 2.3 1 | | < 5 14 |
| 2179 | | 45674.9 | | 53407 | | | | | | | | _ | | | | | | | | • | | | | | | | | | | |
| 2180 | 21.8 | | | 79600 | | | 1.0 | . 596 | 1.81 | | .5 1.2 | | | 182.8 | | | .015 | | 4.2 | .02 | 403 | | | .04 | | | | <.5 | | 6 <2 |
| 2181 | 8.2 | 384.9 | 1614.2 | 3180 | 35.0 | <.5 | 2.9 | 172 | 2.48 | 67 < | .5 1.5 | 68 | 12.0 | 4 5 .2 · | <.5 <10 | 2.67 | .010 | 7.6 | 2.9 | .03 | 1359 | .003 | . 38 | .03 | .25 <.5 | 4.9 | 7 .9 | 1.8 | 3.3 | <5 <2 |
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| STANDARD SF-2a | 312.7 | 6960.5 | 8828.0 | 13133 | 62.2 | 3507.3 | 109.9 | 4307 | 7.58 | 25 1 | .8.2.5 | 44 | 56.2 | 52.7 | 5.3 39 | 1.70 | .053 | 8.8 | 251.4 | 4.03 | 144 | .111 | .97 | . 49 | .89 .7 | .9 | 4 5.1 | 1.0 | 3.8 | 5 5 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Sample type: DRILL CORE_R150. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

ASSAY CERTIFICATE

Caracle Creek Int'l Consulting (BC) PROJECT LAM-LAR File # A607580 34176 Cedar Ave, Abbotsford BC V2S 2W1 Submitted by: Stephen Wetherup



| 34 FO CEDAT: AVE, ADDOCSTORD SU: VZS ZWI | Submitted obj.: Stephen wether up |
|------------------------------------------|-----------------------------------|
| SAMPLE# | Au** gm/mt |
| G-1 | <.01 |
| 2101 | .11 |
| 2102 | .24 |
| 2103 | .46 |
| 2104 | .19 |
| 2105 | 5.87 |
| 2106 | .51 |
| 2107 | .54 |
| 2108 | .29 |
| 2109 | 1.65 |
| 2110 | .31 |
| 2111 | .62 |
| 2112 | 4.03 |
| 2113 | .15 |
| 2114 | .25 |
| 2115 | .41 |
| 2116 | .27 |
| 2117 | .56 |
| 2118 | .53 |
| 2119 | .12 |
| 2120 | 2.04 |
| 2121 | .04 |
| 2122 | .04 |
| 2123 | 1.52 |
| 2124 | 2.14 |
| 2125 | .19 |
| 2126 | .23 |
| RE 2126 | .23 |
| RRE 2126 | .26 |
| 2127 | .02 |
| 2128 | .67 |
| 2129 | .21 |
| 2130 | .10 |
| 2131 | 3.44 |
| 2132 | 3.03 |
| STANDARD SL20 | 5.87 |
| | 15.87 |

GROUP 6 - PRECIOUS METALS BY FIRE ASSAY FROM 1 A.T. SAMPLE, ANALYSIS BY ICP-ES. - SAMPLE TYPE: DRILL CORE R150

Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

11-13-05 A09:33 OUT

DATE RECEIVED: OCT 10 2006 DATE REPORT MAILED:.....

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.



Caracle Creek Int'l Consulting (BC) PROJECT LAM-LAR FILE # A607580 Page 2



| SAMPLE# | Au** gm/mt |
|---------------------------------------------|------------------------------------|
| G-1 2133 2134 2135 2136 | .01 7.95 .06 2.31 .90 |
| 2137 2138 2139 2140 2141 | .07 .10 .41 .03 1.18 |
| 2142 2143 2144 2145 2146 | .06 1.58 .92 2.13 .82 |
| 2147 2148 2149 2150 2151 | .83 .21 .45 .11 1.38 |
| RE 2151 RRE 2151 2152 2153 2154 | 1.36 1.30 .33 1.37 .09 |
| 2155 2156 2157 2158 2159 | .31 1.91 .94 .96 1.16 |
| 2160 2161 2162 2163 2164 | 1.19 .34 .03 1.10 .01 |
| STANDARD SL20 | 5.93 |

Sample type: DRILL CORE R150. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.



Caracle Creek Int'l Consulting (BC) PROJECT LAM-LAR FILE # A607580 Page 3



| SAMPLE# | Au** gm/mt |
|---------------|---------------|
| G-1 | <.01 |
| 2165 | .10 |
| 2166 | 2.92 |
| 2167 | 1.10 |
| 2168 | <.01 |
| 2169 | .47 |
| 2170 | .31 |
| 2171 | .41 |
| 2172 | 2.58 |
| 2173 | .46 |
| 2174 | .21 |
| 2175 | .81 |
| 2176 | 3.89 |
| RE 2176 | 3.75 |
| RRE 2176 | 3.74 |
| 2177 | 3.64 |
| 2178 | 2.51 |
| 2179 | 2.73 |
| 2180 | 1.26 |
| 2181 | 1.83 |
| STANDARD SL20 | 6.05 |

Sample type: DRILL CORE R150. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

PHONE (604) 253-3158 FAX (604) 253-1716

ASSAY CERTIFICATE

Caracle Creek Int 1 Consulting (BC) PROJECT LAM-LAR File # A607580R Page 1 34176 Cedar Ave, Abbotsford BC V2S 2W1 Submitted by: Stephen Wetherup

| A | A | ١ |
|---|---|---|
| T | 1 | |

| SAMPLE# | S.G. |
|---------------------------------------------|--------------------------------------|
| 2101 2102 2103 2104 2105 | 2.72 2.71 2.86 2.80 2.88 |
| 2106 2107 2108 2109 2110 | 2.72 3.26 2.91 3.11 2.94 |
| 2111 2112 2113 2114 2115 | 3.08 2.66 2.61 3.18 2.82 |
| 2116 2117 2118 2119 2120 | 2.79 2.79 2.76 2.74 2.76 |
| 2121 2122 2123 2124 2125 | 2.66 2.69 2.96 3.14 2.77 |
| 2126 RE 2126 RRE 2126 2127 2128 | 2.78 2.74 2.75 2.73 2.78 |
| 2129 2130 2131 2132 | 2.66 2.76 2.91 2.80 |

S.G. GROUP 8 BY SPECIFIC GRAVITY. .

ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000

- SAMPLE TYPE: CORE PULP

Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: JAN 10 2007 DATE REPORT MAILED:.

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.



Caracle Creek Int'l Consulting (BC) PROJECT LAM-LAR FILE # A607580R Page 2



| Sa Sa | MPLE# S.G. | The Market |
|----------------------------|------------------------------------------------------------|----------------|
| 2 2 2 2 2 2 | 3.12 2.66 35 36 2.81 2.73 2.64 | |
| 2 2 2 2 2 | 38 39 40 2.79 2.69 41 2.86 42 2.65 | |
| 2 2 2 2 2 | 2.79 2.76 2.76 2.76 2.79 2.94 | |
| 2 2 2 2 2 R | 18 19 2.65 2.65 2.63 2.80 2151 2.82 | |
| R 2 2 2 2 | 2.82 52 2.75 53 54 55 2.62 2.81 | |
| | 2.85 57 2.95 58 2.70 2.70 2.70 | |
| | 61 2.75 62 2.78 63 2.94 64 2.66 | |

Sample type: CORE PULP. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.



Caracle Creek Int'l Consulting (BC) PROJECT LAM-LAR FILE # A607580R Page 3



| | | | | אנהכ אושבווונאב |
|-------------|---------------------------------------|---------------------------------------------|--------------------------------------|---------------------------------------|
| | | SAMPLE# | S.G. | |
| | | 2165 2166 2167 2168 2169 | 2.73 2.98 2.73 2.68 2.72 | |
| | | 2170 2171 2172 2173 2174 | 2.73 2.77 3.46 2.69 2.65 | |
| ; ; ; | | 2175 2176 RE 2176 RRE 2176 2177 | 3.28 3.19 3.20 3.18 2.93 | |
| | · · · · · · · · · · · · · · · · · · · | 2178 2179 2180 2181 | 2.80 2.96 2.78 2.67 | · · · · · · · · · · · · · · · · · · · |

Sample type: CORE PULP. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.



APPENDIX 4

Aeroquest AeroTEM Report and Maps

Report on a Helicopter-Borne AeroTEM System Electromagnetic, Radiometric & Magnetic Survey



Aeroquest Job # 08022

Lara Project

Vancouver Island, British Columbia NTS 092B13, 092C16

For



by



7687 Bath Road, Mississauga, ON, L4T 3T1 Tel: (905) 672-9129 Fax: (905) 672-7083 www.aeroquest.ca

Report date: October 2007

Report on a Helicopter-Borne AeroTEM System Electromagnetic, Radiometric & Magnetic Survey

Aeroquest Job # 08022

Lara Project

Vancouver Island, British Columbia NTS 092B13, 092C16

For

Laramide Resources Ltd.

3680-130 King Street W., Toronto, ON Tel: 416 599 7363

Ву



7687 Bath Road, Mississauga, ON, L4T 3T1 Tel: (905) 672-9129 Fax: (905) 672-7083 www.aeroquest.ca

Report date: October 2007



TABLE OF CONTENTS

| TABLE OF CONTENTS | i |
|----------------------------------------------------------|----|
| LIST OF FIGURES | 2 |
| LIST OF MAPS | 2 |
| 1. INTRODUCTION | 1 |
| 2. SURVEY AREA | 1 |
| 3. SURVEY SPECIFICATIONS AND PROCEDURES | 3 |
| 3.1. Navigation | 3 |
| 3.2. System Drift | 3 |
| 3.3. Field QA/QC Procedures | |
| 4. AIRCRAFT AND EQUIPMENT | 4 |
| 4.1. Aircraft | |
| 4.2. Magnetometer | |
| 4.4. Electromagnetic System | |
| 4.5. AeroDAS Acquisition System | 6 |
| 4.6. RMS DGR-33 Acquisition System | |
| 4.7. Airborne Gamma Ray Spectrometer (AGRS) System | |
| 4.9. Radar Altimeter | |
| 4.10. Video Tracking and Recording System | |
| 4.11. GPS Navigation System | |
| 4.12. Digital Acquisition System | |
| 5. PERSONNEL | 10 |
| 6. DELIVERABLES | 11 |
| 6.1. Hardcopy Deliverables | |
| 6.2. Digital Deliverables | |
| 6.2.1. Final Database of Survey Data (.GDB, .XYZ) | |
| 6.2.2. Geosoft Grid files (.GRD) | |
| 6.2.4. Free Viewing Software | |
| 6.2.5. Digital Copy of this Document (.PDF) | 12 |
| 7. DATA PROCESSING AND PRESENTATION | 12 |
| 7.1. Base Map | 12 |
| 7.2. Flight Path & Terrain Clearance | |
| 7.3. Electromagnetic Data | |
| 7.4. Magnetic Data | |
| 7.5.1. Equipment and General Adherence to IAEA Standards | |
| 7.5.2. Spectral Calibration | |
| 7.5.3. Data Quality Assurance and Control | 14 |
| 7.5.4. Dead-time Correction | |
| 7.5.5. Filtering to Prepare for Background Corrections | 15 |



| 7.5.6. Cosmic and Aircraft Background | 15 |
|----------------------------------------------------------------------------------------------|----|
| 7.5.7. Radon Background | 15 |
| 7.5.8. Computation of Effective Height Above Ground Level | 15 |
| 7.5.9. Compton Stripping Correction | |
| 7.5.10. Altitude Attenuation Correction | |
| 7.5.11. Apparent Radioelement Concentrations | |
| 7.5.12. Computation of Radioelement Ratios | 16 |
| 8. General Comments | 16 |
| 8.1. Magnetic Response | 16 |
| 8.2. EM Anomalies | 16 |
| 8.3. Radiometric response | 19 |
| APPENDIX 1: Survey Boundaries | 20 |
| APPENDIX 2: Mining Claims | 21 |
| APPENDIX 3: Description of Database Fields | 23 |
| APPENDIX 4: AEROTEM ANOMALY LISTING | |
| APPENDIX 5: AeroTEM Design Considerations | 28 |
| APPENDIX 6: AeroTEM Instrumentation Specification Sheet | 34 |
| | |
| LIST OF FIGURES | |
| Figure 1. Project Area | |
| Figure 2. Project Flight Path and Mining Claims | |
| Figure 3. Helicopter registration number C-FPTG | |
| Figure 4. AeroTEM II EM bird. Arrow indicates the location of the second cesium magnetometer | |
| sensor | |
| Figure 6. Schematic of Transmitter and Receiver waveforms | |
| Figure 7. AeroTEM II Instrument Rack., including AeroDAS and RMS DGR-33 systems, AeroTE | |
| power supply, data acquisition computer and AG-NAV2 navigation system | |
| Figure 8. Aeroquest AGRS system. A. AGRS Sensor (Crystal Pack), B. Data acquisition computer | |
| Figure 9. Digital video camera typical mounting location. | |
| Figure 10. AeroTEM response to a 'thin' vertical conductor | |
| Figure 11. AeroTEM response for a 'thick' vertical conductor | |
| Figure 12. AeroTEM response over a 'thin' dipping conductor. | 18 |
| | |

LIST OF MAPS

- TMI Coloured Total Magnetic Intensity (TMI) with line contours and EM anomaly symbols.
- ZOFF1 AeroTEM Z1 Off-time with line contours and EM anomaly symbols.
- EM AeroTEM off-time profiles Z3 Z15 and EM anomaly symbols.
- TDR Tilt Derivative of TMI with EM anomaly symbols.
- ThKRAD Gamma Ray Spectrometer, Equivalent Thorium/Potassium Ratio (eTh/K%)
- TCRAD Gamma Ray Spectrometer, Natural Air Absorbed Dose Rate



1. INTRODUCTION

This report describes a helicopter-borne geophysical survey carried out on behalf of Laramide Resources Ltd. for their Lara Project, Vancouver Island, British Columbia.

The principal geophysical sensor is Aeroquest's exclusive AeroTEM II (Bravo) time domain helicopter electromagnetic system which is employed in conjunction with a high-sensitivity caesium vapour magnetometer. The secondary sensor was Aeroquest's Airborne Gamma Ray Spectrometer (AGRS) system. The AGRS system utilizes four (4) downward looking NaI crystals used as the main gamma-ray sensors and one upward looking crystal for monitoring non-geologic sources. Ancillary equipment includes a real-time differential GPS navigation system, radar altimeter, video recorder, and a base station magnetometer. Full-waveform streaming EM data is recorded at 36,000 samples per second. The streaming data comprise the transmitted waveform, and the X component and Z component of the resultant field at the receivers. A secondary acquisition system (RMS) records the ancillary data.

The total survey coverage is 500.1 line-km, of which 477.8 line-km fell within the defined project area (Appendix 1). Survey flight direction was NNE-SSW (15°) and flight spacing was 100 and 200m. The survey flying described in this report took place from September 22-26, 2007. This report describes the survey logistics, the data processing, presentation, and provides the specifications of the survey.

2. SURVEY AREA

The Project area (Figure 1) is located in the southeast section of Vancouver Island approximately 35 km south of Nanaimo and 20 km northwest of Duncan. The survey comprised a single area (53 km²) made up of 4 adjoining blocks (Blocks A,B,C,D). Project terrain is mountainous ranging from 400-1200m. Accessibility is good, the project area is surrounded by road and rail.

There are 70 mining claims in the project area (Figure 2) with Laramide Resources Ltd. holding most of the ground in the survey area (see Appendix 2 for full details)

The base of survey operations was at Nanaimo.



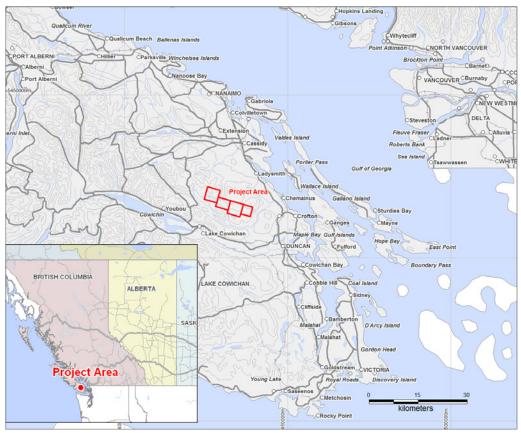


Figure 1. Project Area

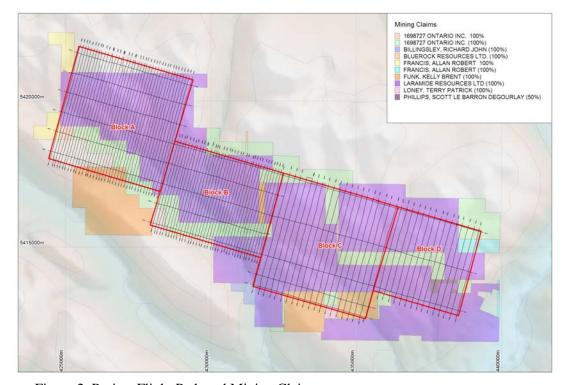


Figure 2. Project Flight Path and Mining Claims



3. SURVEY SPECIFICATIONS AND PROCEDURES

The survey specifications are summarised in the following table:

| Project Name | Line Spacing (metres) | Line Direction | Survey Coverage (line-km) | Date flown |
|-----------------|-----------------------------|-------------------|---------------------------------|-------------------------|
| Lara | 100 & 200 | NNE-SSW (15°) | 477.8 | September 22 – 26, 2007 |

Table 1. Survey specifications summary

The survey coverage was calculated by adding up the along-line distance of the survey lines and control (tie) lines as presented in the final Geosoft database. The survey was flown with a line spacing of 100 metres for Block A and B and 200 metres for Block C and D. The control (tie) lines were flown perpendicular to the survey lines with a spacing of 1000 and 2000 metres.

The nominal EM bird terrain clearance is 30 metres, but can be higher in more rugged terrain due to safety considerations and the capabilities of the aircraft. The magnetometer sensor is mounted in a smaller bird connected to the tow rope 17 metres above the EM bird and 21 metres below the helicopter (Figure 4). A second magnetometer is installed on the tail of the EM bird. Nominal survey speed over relatively flat terrain is 75 km/hr and is generally lower in rougher terrain. Scan rates for ancillary data acquisition is 0.1 second for the magnetometer and altimeter, and 0.2 second for the GPS determined position. The EM data is acquired as a data stream at a sampling rate of 36,000 samples per second and is processed to generate final data at 10 samples per second. The 10 samples per second translate to a geophysical reading about every 1.5 to 2.5 metres along the flight path.

3.1. NAVIGATION

Navigation is carried out using a GPS receiver, an AGNAV2 system for navigation control, and an RMS DGR-33 data acquisition system which records the GPS coordinates. The x-y-z position of the aircraft, as reported by the GPS, is recorded at 0.2 second intervals. The system has a published accuracy of under 3 metres. A recent static ground test of the MidTech WAAS GPS yielded a standard deviation in x and y of under 0.6 metres and for z under 1.5 metres over a two-hour period.

3.2. SYSTEM DRIFT

Unlike frequency domain electromagnetic systems, the AeroTEM II system has negligible drift due to thermal expansion. The operator is responsible for ensuring the instrument is properly warmed up prior to departure and that the instruments are operated properly throughout the flight. The operator maintains a detailed flight log during the survey noting the times of the flight and any unusual geophysical or topographic features. Each flight included at least two high elevation 'background' checks. During the high elevation checks, an internal 5 second wide calibration pulse in all EM channels was generated in order to ensure that the gain of the system remained constant and within specifications.

3.3. FIELD QA/QC PROCEDURES

On return of the pilot and operator to the base, usually after each flight, the AeroDAS streaming EM data and the RMS data are carried on removable hard drives and FlashCards, respectively and transferred to the data processing work station. At the end of each day, the base station magnetometer data on FlashCard is retrieved from the base station unit.



Data verification and quality control includes a comparison of the acquired GPS data with the flight plan; verification and conversion of the RMS data to an ASCII format XYZ data file; verification of the base station magnetometer data and conversion to ASCII format XYZ data; and loading, processing and conversion of the steaming EM data from the removable hard drive. All data is then merged to an ASCII XYZ format file which is then imported to an Oasis database for further QA/QC and for the production of preliminary EM, magnetic contour, and flight path maps.

Survey lines which show excessive deviation from the intended flight path are re-flown. Any line or portion of a line on which the data quality did not meet the contract specification was noted and reflown.

4. AIRCRAFT AND EQUIPMENT

4.1. AIRCRAFT

A Eurocopter (Aerospatiale) AS350B2 "A-Star" helicopter - registration C-FPTG was used as survey platform. The helicopter was owned and operated by Hi-Wood Helicopters, Calgary, Alberta. Installation of the geophysical and ancillary equipment was carried out by Aeroquest Limited personnel in conjunction with a licensed aircraft. The survey aircraft was flown at a nominal terrain clearance of 220 ft (65 metres).



Figure 3. Helicopter registration number C-FPTG

4.2. MAGNETOMETER

The AeroTEM II airborne survey system employs the Geometrics G-823A caesium vapour magnetometer sensor installed in a two metre towed bird airfoil attached to the main tow line, 17 metres below the helicopter (Figure 4). The sensitivity of the magnetometer is 0.001 nanoTesla at a 0.1 second sampling rate. The nominal ground clearance of the magnetometer bird is 51 metres (170 ft.). The magnetic data is recorded at 10 Hz by the RMS DGR-33.



4.3. MAGNETOMETER II

In addition to the main magnetometer bird on the main tow line, the AeroTEM II system includes an additional G-828A magnetometer installed on the tail of the EM bird (Figure 4). The sensor is located 37 metres below the helicopter and has a superior nominal terrain clearance of 31 m. Data is recorded at 300 samples a second and down sampled to 10 Hz by the AeroDAS acquisition system.



Figure 4. AeroTEM II EM bird. Arrow indicates the location of the second cesium magnetometer sensor.

4.4. ELECTROMAGNETIC SYSTEM

The electromagnetic system is an Aeroquest AeroTEM II time domain towed-bird system (Figure 4, Figure 5). The current AeroTEM II transmitter dipole moment is 38.8 kNIA. The AeroTEM bird is towed 38 metres (125 ft) below the helicopter. More technical details of the system may be found in Appendix 4.

The wave-form is triangular with a symmetric transmitter on-time pulse of 1.10 ms and a base frequency of 150 Hz (Figure 5). The current alternates polarity every on-time pulse. During every Tx on-off cycle (300 per second), 120 contiguous channels of raw X and Z component (and a transmitter current monitor, itx) of the received waveform are measured. Each channel width is 27.778 microseconds starting at the beginning of the transmitter pulse. This 120 channel data is referred to as the raw streaming data. The AeroTEM system has two separate EM data recording streams, the conventional RMS DGR-33 and the AeroDAS system which records the full waveform (Figure 6).



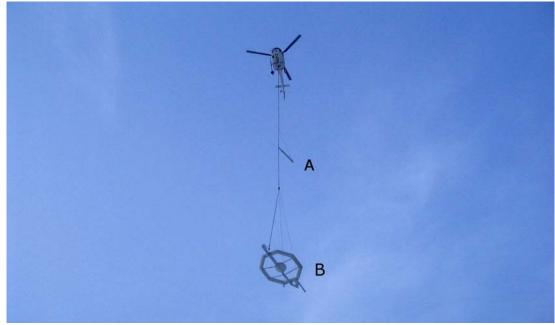


Figure 5. The magnetometer bird (A) and AeroTEM II EM bird (B)

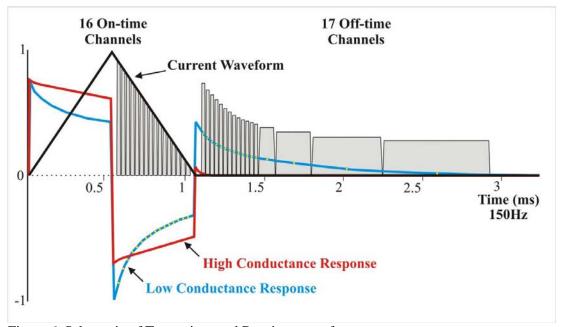


Figure 6. Schematic of Transmitter and Receiver waveforms

4.5. AERODAS ACQUISITION SYSTEM

The 120 channels of raw streaming data are recorded by the AeroDAS acquisition system (Figure 7) onto a removable hard drive. The streaming data are processed post-survey to yield 33 stacked and binned on-time and off-time channels at a 10 Hz sample rate. The timing of the final processed EM channels is described in the following table:



Average TxOn -3.0044 us Average TxSwitch 583.5513 us Average TxOff 1127.0493 us

| Channel | Sample Range | Time Width (us) | Time Center (us) | Time After TxOn (us) |
|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| On1 | 3 - 3 | 27.778 | 69.444 | 72.449 |
| On2 | 4 - 4 | 27.778 | 97.222 | 100.227 |
| On3 | 5 - 5 | 27.778 | 125.000 | 128.004 |
| On4 | 6 - 6 | 27.778 | 152.778 | 155.782 |
| On5 | 7 - 7 | 27.778 | 180.556 | 183.560 |
| On6 | 8 - 8 | 27.778 | 208.333 | 211.338 |
| On7 | 9 – 9 | 27.778 | 236.111 | 239.115 |
| On8 | 10 - 10 | 27.778 | 263.889 | 266.893 |
| On9 | 11 - 11 | 27.778 | 291.667 | 294.671 |
| On10 | 12 - 12 | 27.778 | 319.444 | 322.449 |
| On11 | 13 - 13 | 27.778 | 347.222 | 350.227 |
| On12 | 14 - 14 | 27.778 | 375.000 | 378.004 |
| On13 | 15 - 15 | 27.778 | 402.778 | 405.782 |
| On14 | 16 - 16 | 27.778 | 430.556 | 433.560 |
| On15 | 17 - 17 | 27.778 | 458.333 | 461.338 |
| On16 | 18 - 18 | 27.778 | 486.111 | 489.116 |
| | | | | |
| | | | | |
| Channel | Sample Range | Time Width (us) | Time Center (us) | Time After TxOff (us) |
| Off0 | 44 - 44 | 27.778 | 1208.333 | 81.284 |
| Off0 Off1 | 44 - 44 45 - 45 | 27.778 27.778 | 1208.333 1236.111 | 81.284 109.062 |
| Off0 Off1 Off2 | 44 - 44 45 - 45 46 - 46 | 27.778 27.778 27.778 | 1208.333 1236.111 1263.889 | 81.284 109.062 136.840 |
| Off0 Off1 Off2 Off3 | $\begin{array}{rrrr} 44 & - & 44 \\ 45 & - & 45 \\ 46 & - & 46 \\ 47 & - & 47 \end{array}$ | 27.778 27.778 27.778 27.778 | 1208.333 1236.111 1263.889 1291.667 | 81.284 109.062 136.840 164.617 |
| Off0 Off1 Off2 Off3 Off4 | $\begin{array}{rrrr} 44 & - & 44 \\ 45 & - & 45 \\ 46 & - & 46 \\ 47 & - & 47 \\ 48 & - & 48 \end{array}$ | 27.778 27.778 27.778 27.778 27.778 | 1208.333 1236.111 1263.889 1291.667 1319.444 | 81.284 109.062 136.840 164.617 192.395 |
| Off0 Off1 Off2 Off3 Off4 Off5 | $\begin{array}{rrrr} 44 & - & 44 \\ 45 & - & 45 \\ 46 & - & 46 \\ 47 & - & 47 \\ 48 & - & 48 \\ 49 & - & 49 \end{array}$ | 27.778 27.778 27.778 27.778 27.778 27.778 | 1208.333 1236.111 1263.889 1291.667 1319.444 1347.222 | 81.284 109.062 136.840 164.617 192.395 220.173 |
| Off0 Off1 Off2 Off3 Off4 Off5 Off6 | $\begin{array}{rrrr} 44 & - & 44 \\ 45 & - & 45 \\ 46 & - & 46 \\ 47 & - & 47 \\ 48 & - & 48 \\ 49 & - & 49 \\ 50 & - & 51 \end{array}$ | 27.778 27.778 27.778 27.778 27.778 27.778 27.778 55.556 | 1208.333 1236.111 1263.889 1291.667 1319.444 1347.222 1388.889 | 81.284 109.062 136.840 164.617 192.395 220.173 261.840 |
| Off0 Off1 Off2 Off3 Off4 Off5 Off6 Off7 | $\begin{array}{rrrrr} 44 & - & 44 \\ 45 & - & 45 \\ 46 & - & 46 \\ 47 & - & 47 \\ 48 & - & 48 \\ 49 & - & 49 \\ 50 & - & 51 \\ 52 & - & 53 \end{array}$ | 27.778 27.778 27.778 27.778 27.778 27.778 27.778 55.556 55.556 | 1208.333 1236.111 1263.889 1291.667 1319.444 1347.222 1388.889 1444.444 | 81.284 109.062 136.840 164.617 192.395 220.173 261.840 317.395 |
| Off0 Off1 Off2 Off3 Off4 Off5 Off6 Off7 Off8 | $\begin{array}{rrrrr} 44 & - & 44 \\ 45 & - & 45 \\ 46 & - & 46 \\ 47 & - & 47 \\ 48 & - & 48 \\ 49 & - & 49 \\ 50 & - & 51 \\ 52 & - & 53 \\ 54 & - & 55 \end{array}$ | 27.778 27.778 27.778 27.778 27.778 27.778 27.778 55.556 55.556 | 1208.333 1236.111 1263.889 1291.667 1319.444 1347.222 1388.889 1444.444 1500.000 | 81.284 109.062 136.840 164.617 192.395 220.173 261.840 317.395 372.951 |
| Off0 Off1 Off2 Off3 Off4 Off5 Off6 Off7 Off8 Off9 | 44 - 44 45 - 45 46 - 46 47 - 47 48 - 48 49 - 49 50 - 51 52 - 53 54 - 55 56 - 57 | 27.778 27.778 27.778 27.778 27.778 27.778 27.778 55.556 55.556 55.556 | 1208.333 1236.111 1263.889 1291.667 1319.444 1347.222 1388.889 1444.444 1500.000 | 81.284 109.062 136.840 164.617 192.395 220.173 261.840 317.395 372.951 428.506 |
| Off0 Off1 Off2 Off3 Off4 Off5 Off6 Off7 Off8 Off9 | 44 - 44 45 - 45 46 - 46 47 - 47 48 - 48 49 - 49 50 - 51 52 - 53 54 - 55 56 - 57 58 - 60 | 27.778 27.778 27.778 27.778 27.778 27.778 27.778 55.556 55.556 55.556 55.556 83.333 | 1208.333 1236.111 1263.889 1291.667 1319.444 1347.222 1388.889 1444.444 1500.000 1555.556 1625.000 | 81.284 109.062 136.840 164.617 192.395 220.173 261.840 317.395 372.951 428.506 497.951 |
| Off0 Off1 Off2 Off3 Off4 Off5 Off6 Off7 Off8 Off9 Off10 | 44 - 44 45 - 45 46 - 46 47 - 47 48 - 48 49 - 49 50 - 51 52 - 53 54 - 55 56 - 57 58 - 60 61 - 63 | 27.778 27.778 27.778 27.778 27.778 27.778 27.778 55.556 55.556 55.556 83.333 83.333 | 1208.333 1236.111 1263.889 1291.667 1319.444 1347.222 1388.889 1444.444 1500.000 1555.556 1625.000 1708.333 | 81.284 109.062 136.840 164.617 192.395 220.173 261.840 317.395 372.951 428.506 497.951 581.284 |
| Off0 Off1 Off2 Off3 Off4 Off5 Off6 Off7 Off8 Off9 Off10 Off11 | 44 - 44 45 - 45 46 - 46 47 - 47 48 - 48 49 - 49 50 - 51 52 - 53 54 - 55 56 - 57 58 - 60 61 - 63 64 - 67 | 27.778 27.778 27.778 27.778 27.778 27.778 25.556 55.556 55.556 55.556 83.333 83.333 | 1208.333 1236.111 1263.889 1291.667 1319.444 1347.222 1388.889 1444.444 1500.000 1555.556 1625.000 1708.333 1805.556 | 81.284 109.062 136.840 164.617 192.395 220.173 261.840 317.395 372.951 428.506 497.951 581.284 678.506 |
| Off0 Off1 Off2 Off3 Off4 Off5 Off6 Off7 Off8 Off9 Off10 Off11 Off12 Off13 | 44 - 44 45 - 45 46 - 46 47 - 47 48 - 48 49 - 49 50 - 51 52 - 53 54 - 55 56 - 57 58 - 60 61 - 63 64 - 67 68 - 73 | 27.778 27.778 27.778 27.778 27.778 27.778 27.778 55.556 55.556 55.556 83.333 83.333 111.111 166.667 | 1208.333 1236.111 1263.889 1291.667 1319.444 1347.222 1388.889 1444.444 1500.000 1555.556 1625.000 1708.333 1805.556 | 81.284 109.062 136.840 164.617 192.395 220.173 261.840 317.395 372.951 428.506 497.951 581.284 678.506 817.395 |
| Off0 Off1 Off2 Off3 Off4 Off5 Off6 Off7 Off8 Off9 Off10 Off11 Off12 Off13 | 44 - 44 45 - 45 46 - 46 47 - 47 48 - 48 49 - 49 50 - 51 52 - 53 54 - 55 56 - 57 58 - 60 61 - 63 64 - 67 68 - 73 74 - 81 | 27.778 27.778 27.778 27.778 27.778 27.778 27.778 55.556 55.556 55.556 83.333 83.333 111.111 166.667 222.222 | 1208.333 1236.111 1263.889 1291.667 1319.444 1347.222 1388.889 1444.444 1500.000 1555.556 1625.000 1708.333 1805.556 1944.444 2138.889 | 81.284 109.062 136.840 164.617 192.395 220.173 261.840 317.395 372.951 428.506 497.951 581.284 678.506 817.395 1011.840 |
| Off0 Off1 Off2 Off3 Off4 Off5 Off6 Off7 Off8 Off9 Off10 Off11 Off12 Off13 | 44 - 44 45 - 45 46 - 46 47 - 47 48 - 48 49 - 49 50 - 51 52 - 53 54 - 55 56 - 57 58 - 60 61 - 63 64 - 67 68 - 73 | 27.778 27.778 27.778 27.778 27.778 27.778 27.778 55.556 55.556 55.556 83.333 83.333 111.111 166.667 | 1208.333 1236.111 1263.889 1291.667 1319.444 1347.222 1388.889 1444.444 1500.000 1555.556 1625.000 1708.333 1805.556 | 81.284 109.062 136.840 164.617 192.395 220.173 261.840 317.395 372.951 428.506 497.951 581.284 678.506 817.395 |

4.6. RMS DGR-33 ACQUISITION SYSTEM

In addition to the magnetics, altimeter and position data, six channels of real time processed off-time EM decay in the Z direction and one in the X direction are recorded by the RMS DGR-33 acquisition system at 10 samples per second and plotted real-time on the analogue chart recorder. These channels are derived by a binning, stacking and filtering procedure on the raw streaming data. The primary use of the RMS EM data (Z1 to Z6, X1) is to provide for real-time QA/QC on board the aircraft.

The channel window timing of the RMS DGR-33 6 channel system is described in the table below.



| RMS Channel | Start time (µs) | End time (μs) | Width (µs) | Streaming Channels |
|-------------|-----------------|---------------|------------|-----------------------|
| Z1, X1 | 1269.8 | 1322.8 | 52.9 | 48-50 |
| Z2 | 1322.8 | 1455.0 | 132.2 | 50-54 |
| Z3 | 1428.6 | 1587.3 | 158.7 | 54-59 |
| Z4 | 1587.3 | 1746.0 | 158.7 | 60-65 |
| Z5 | 1746.0 | 2063.5 | 317.5 | 66-77 |
| Z6 | 2063.5 | 2698.4 | 634.9 | 78-101 |



Figure 7. AeroTEM II Instrument Rack., including AeroDAS and RMS DGR-33 systems, AeroTEM power supply, data acquisition computer and AG-NAV2 navigation system.

4.7. AIRBORNE GAMMA RAY SPECTROMETER (AGRS) SYSTEM

The Aeroquest AGRS system consists of a GRS410 sensor pack (Figure 4) and a acquisition system designed and manufactured by Pico Envirotec. The sensor pack was installed on the port side basket of the Lama aircraft, and was installed in the cabin of the UH-1 aircraft. The system has 4 downward looking NaI crystals used as the main sensors and 1 upward looking crystal for monitoring non-geologic sources. The system features automatic peak detection and real-time calibration to ensure spectrum stability and a high quality final product. The full



spectrum is recorded (256 or 512 channels) to allow for subsequent noise reduction processing such as NASVD. The data are processed to produce the standard IAGA ROI channels – Total Count, Potassium, Uranium and Thorium. The potassium, and equivalent uranium and thorium concentrations are also derived and ratios of these concentrations are computed to enhance the interpretation of the survey results.



Figure 8. Aeroquest AGRS system. A. AGRS Sensor (Crystal Pack), B. Data acquisition computer.

4.8. MAGNETOMETER BASE STATION

The base magnetometer was a Geometrics G-859 cesium vapour magnetometer system with integrated GPS. Data logging and UTC time synchronisation was carried out within the magnetometer, with the GPS providing the timing signal. The data logging was configured to measure at 1.0 second intervals. Digital recording resolution was 0.001 nT. The sensor was placed on a tripod in an area of low magnetic gradient and free of cultural noise sources. A continuously updated display of the base station values was available for viewing and regularly monitored to ensure acceptable data quality and diurnal variation.

4.9. RADAR ALTIMETER

A Terra TRA 3500/TRI-30 radar altimeter is used to record terrain clearance. The antenna was mounted on the outside of the helicopter beneath the cockpit. Therefore, the recorded data reflect the height of the helicopter above the ground. The Terra altimeter has an altitude accuracy of +/- 1.5 metres.

4.10. VIDEO TRACKING AND RECORDING SYSTEM

A high resolution digital colour 8 mm video camera is used to record the helicopter ground flight path along the survey lines. The video is digitally annotated with GPS position and time and can be used to verify ground positioning information and cultural causes of anomalous geophysical responses.





Figure 9. Digital video camera typical mounting location.

4.11. GPS NAVIGATION SYSTEM

The navigation system consists of an Ag-Nav Incorporated AG-NAV2 GPS navigation system comprising a PC-based acquisition system, navigation software, a deviation indicator in front of the aircraft pilot to direct the flight, a full screen display with controls in front of the operator, a Mid-Tech RX400p WAAS-enabled GPS receiver mounted on the instrument rack and an antenna mounted on the magnetometer bird. WAAS (Wide Area Augmentation System) consists of approximately 25 ground reference stations positioned across the United States that monitor GPS satellite data. Two master stations located on the east and west coasts collect data from the reference stations and create a GPS correction message. This correction accounts for GPS satellite orbit and clock drift plus signal delays caused by the atmosphere and ionosphere. The corrected differential message is then broadcast through one of two geostationary satellites, or satellites with a fixed position over the equator. The corrected position has a published accuracy of less than 3 metres.

Survey co-ordinates are set up prior to the survey and the information is fed into the airborne navigation system. The co-ordinate system employed in the survey design was WGS84 [World] using the UTM zone 10N projection. The real-time differentially corrected GPS positional data was recorded by the RMS DGR-33 in geodetic coordinates (latitude and longitude using WGS84) at 0.2 s intervals.

4.12. DIGITAL ACQUISITION SYSTEM

The AeroTEM received waveform sampled during on and off-time at 120 channels per decay, 300 times per second, was logged by the proprietary AeroDAS data acquisition system. The channel sampling commences at the start of the Tx cycle and the width of each channel is 27.778 microseconds. The streaming data was recorded on a removable hard-drive and was later backed-up onto DVD-ROM from the field-processing computer.

The RMS Instruments DGR33A data acquisition system was used to collect and record the analogue data stream, i.e. the positional and secondary geophysical data, including processed 6 channel EM, magnetics, radar altimeter, GPS position, and time. The data was recorded on 128 Mb capacity FlashCard. The RMS output was also directed to a thermal chart recorder.

5. PERSONNEL

The following Aeroquest personnel were involved in the project:



Manager of Operations: Bert Simon

Manager of Data Processing: Jonathan Rudd

• Field Data Processor: Emilio Schein

• Field Operator: Gabriel Ganier

- Data processing, interpretation, mapping and reporting: Gord Smith, Eric Steffler, Marion Bishop
- The survey pilot, Ted Slavin, was employed directly by the helicopter operator Hi-Wood Helicopters.

6. DELIVERABLES

6.1. HARDCOPY DELIVERABLES

The report includes a set of ten 1:10,000 maps. The survey area is covered by a two map plates and five geophysical data products are delivered as listed below:

- TMI Coloured Total Magnetic Intensity (TMI) with line contours and EM anomaly symbols.
- ZOFF1 AeroTEM Z1 Off-time with line contours and EM anomaly symbols.
- EM AeroTEM off-time profiles Z3 Z15 and EM anomaly symbols.
- TDR Tilt Derivative of TMI with EM anomaly symbols.
- ThKRAD Gamma Ray Spectrometer, Equivalent Thorium/Potassium Ratio (eTh/K%)
- TCRAD Gamma Ray Spectrometer, Natural Air Absorbed Dose Rate

The coordinate/projection system for the maps is NAD83 – UTM Zone 10N. For reference, the latitude and longitude in WGS84 are also noted on the maps.

All the maps show flight path trace, skeletal topography, and conductor picks represented by an anomaly symbol classified according to calculated off-time conductance. The anomaly symbol is accompanied by postings denoting the calculated off-time conductance, a thick or thin classification and an anomaly identifier label. The anomaly symbol legend is given in the margin of the maps.

6.2. DIGITAL DELIVERABLES

6.2.1. Final Database of Survey Data (.GDB, .XYZ)

The geophysical profile data is archived digitally in a Geosoft GDB binary format database. A description of the contents of the individual channels in the database can be found in Appendix 2. A copy of this digital data is archived at the Aeroquest head office in Mississauga.

6.2.2. Geosoft Grid files (.GRD)

Levelled Grid products used to generate the geophysical map images.

- Total Magnetic Intensity lower sensor (MagL)
- Total Magnetic Intensity lower sensor (MagU)
- AeroTEM Z Offtime Channel 1 (Zoff1_s)
- Digital terrain Model (DTMF.grd)



- Tilt Derivative of TMI (TDRF)
- Gamma Ray Spectrometer Natural Air Absorbed Dose Rate (TCcoorF)
- Gamma Ray Spectrometer Equivalent Thorium/Potassium Ratio (eTHK_RATIOF)
- Gamma Ray Spectrometer Equivalent Uranium/Thorium Ratio (eUeK RATIOF)
- Gamma Ray Spectrometer eU/%K concentration (eUK RATIOF)
- Gamma Ray Spectrometer Potassium (Kcorrf)
- Gamma Ray Spectrometer Thorium (ThcorrF)
- Gamma Ray Spectrometer Uranium (UcorrfF)
- Gamma Ray Spectrometer Exposure rate (TCexpF)

6.2.3. Digital Versions of Final Maps (.MAP, .PDF)

Map files in Geosoft .map and Adobe PDF format.

6.2.4. Free Viewing Software

- Geosoft Oasis Montaj Viewing Software
- Adobe Acrobat Reader

6.2.5. Digital Copy of this Document (.PDF)

7. DATA PROCESSING AND PRESENTATION

All in-field and post-field data processing was carried out using Aeroquest proprietary data processing software and Geosoft Oasis Montaj software. Maps were generated using 42-inch wide Hewlett Packard ink-jet plotters.

7.1. BASE MAP

The geophysical maps accompanying this report are based on positioning in the WGS84 datum. The survey geodetic GPS positions have been projected using the Universal Transverse Mercator projection in Zone 10 North. A summary of the map datum and projection specifications is given following:

- Ellipse: GRS 1980
- Ellipse major axis: 6378137m eccentricity: 0.081819191
- Datum: North American 1983 Canada Mean
- Datum Shifts (x,y,z):0,0,0 metres
- Map Projection: Universal Transverse Mercator Zone 10 (Central Meridian 123°W)
- Central Scale Factor: 0.9996
- False Easting, Northing: 500,000m, 0m

For reference, the latitude and longitude in WGS84 are also noted on the maps.

The background vector topography supplied by the client and the background shading was derived from NASA Shuttle Radar Topography Mission (SRTM) 90 metres resolution DEM data.



7.2. FLIGHT PATH & TERRAIN CLEARANCE

The position of the survey helicopter was directed by use of the Global Positioning System (GPS). Positions were updated five times per second (5 Hz) and expressed as WGS84 latitude and longitude calculated from the raw pseudo range derived from the C/A code signal. The instantaneous GPS flight path, after conversion to UTM co-ordinates, is drawn using linear interpolation between the x/y positions. The terrain clearance was maintained with reference to the radar altimeter. The raw Digital Terrain Model (DTM) was derived by taking the GPS survey elevation and subtracting the radar altimeter terrain clearance values. The calculated topography elevation values are relative and are not tied in to surveyed geodetic heights.

Each flight included at least two high elevation 'background' checks. These high elevation checks are to ensure that the gain of the system remained constant and within specifications.

7.3. ELECTROMAGNETIC DATA

The raw streaming data, sampled at a rate of 36,000 Hz (120 channels, 300 times per second) was reprocessed using a proprietary software algorithm developed and owned by Aeroquest Limited. Processing involves the compensation of the X and Z component data for the primary field waveform. Coefficients for this compensation for the system transient are determined and applied to the stream data. The stream data are then pre-filtered, stacked, binned to the 33 on and off-time channels and checked for the effectiveness of the compensation and stacking processes. The stacked data is then filtered, levelled and split up into the individual line segments. Further base level adjustments may be carried out at this stage. The filtering of the stacked data is designed to remove or minimize high frequency noise that can not be sourced from the geology.

The final field processing step was to merge the processed EM data with the other data sets into a Geosoft GDB file. The EM fiducial is used to synchronize the two datasets. The processed channels are merged into 'array format; channels in the final Geosoft database as Zon, Zoff, Xon, and Xoff.

Apparent bedrock EM anomalies were interpreted with the aid of an auto-pick from positive peaks and troughs in the off-time Z channel responses correlated with X channel responses. The auto-picked anomalies were reviewed and edited by a geophysicist on a line by line basis to discriminate between thin and thick conductor types. Anomaly picks locations were migrated and removed as required. This process ensures the optimal representation of the conductor centres on the maps.

At each conductor pick, estimates of the off-time conductance have been generated based on a horizontal plate source model for those data points along the line where the response amplitude is sufficient to yield an acceptable estimate. Some of the EM anomaly picks do not display a Tau value; this is due to the inability to properly define the decay of the conductor usually because of low signal amplitudes. Each conductor pick was then classified according to a set of seven ranges of calculated off-time conductance values. For high conductance sources, the on-time conductance values may be used, since it provides a more accurate measure of high-conductance sources. Each symbol is also given an identification letter label, unique to each flight line. Conductor picks that did not yield an acceptable estimate of off-time conductance due to a low amplitude response were classified as a low conductance source. Please refer to the anomaly symbol legend located in the margin of the maps.



7.4. MAGNETIC DATA

Prior to any levelling the magnetic data was subjected to a lag correction of -0.1 seconds and a spike removal filter. The filtered aeromagnetic data were then corrected for diurnal variations using the magnetic base station and the intersections of the tie lines. No corrections for the regional reference field (IGRF) were applied. The corrected profile data were interpolated on to a grid using a random grid technique with a grid cell size of 30 metres. The final levelled grid provided the basis for threading the presented contours which have a minimum contour interval of 5 nT.

7.5. RADIOMETRIC DATA

7.5.1. Equipment and General Adherence to IAEA Standards

Aeroquest Limited generally adopts the standards for airborne gamma-ray spectrometry (the radiometric method) as laid out in the IAEA Technical Report 323 – Airborne Gamma-Ray Spectrometry Surveying.

7.5.2. Spectral Calibration

When calibrated (with thorium source about once a year) linearity of the each detector is measured and linearity correction coefficients are calculated. When operating in real time (collecting data), the linearity of each detector is mathematically corrected for each measurement. Individual detector tracking (tuning) and linearity correction provide better fit of the individual spectra that are being summed and therefore a sharper (better resolution) spectrum is obtained.

Calibration of the 5 detectors was carried out on September 22, 2007 as follows:

| Crystal | S/N | Cs resolution (%) |
|---------|--------|-------------------|
| 1 | SAM359 | 7.9 |
| 2 | SAM358 | 8.4 |
| 3 | SAM355 | 8.4 |
| 4 | SAM357 | 8.4 |
| 5 | SAM356 | 9.1 |

7.5.3. Data Quality Assurance and Control

The spectrometer data are referenced to the other ancillary data sets using the Pico Envirotec data acquisition system (Figure 4). After each flight, preliminary ROI channels are generated and profiles are then plotted from the digital data to check for any missing data, spikes or data corrupted by other noise sources. Where necessary, the data are corrected or flagged for reflight depending on the severity or duration of the noise.

7.5.4. Dead-time Correction

Generally, the first data reduction step for radiometric data is dead-time correction. Because the GRS-10 dead time is virtually nil, this correction is only applied where the total count rates are extremely high. Dead-time correction is made to each window using the expression N=n/(1-T) where N is the corrected count; n is the raw recorded count; and T is the dead-time.



7.5.5. Filtering to Prepare for Background Corrections

The radar altimeter data are filtered in order to ensure that no noise sources from the altimeter data are introduced to the radiometric data processing. The upward looking data are also filtered to improve the count statistics. A typical filter width ranges from 10 to 20s. In order to establish radon background levels from the upward-looking detector data, temporary heavily filtered upward and downward looking uranium and downward looking thorium data are utilized. The original unfiltered data are, of course, retained. All filtering will be carried out in consultation with the Client Representative if requested by the Client.

7.5.6. Cosmic and Aircraft Background

Cosmic and aircraft background expressions are determined for each spectral window as described in chapter 4 of the IAEA Technical Report 323. The general form of these expressions is N = a + bC, where N is the combined cosmic and aircraft background for each window; a is the aircraft background in the window; C is the cosmic channel count; and b is the cosmic stripping factor for the window.

The expressions are evaluated for each ROI window for each sample and used as a subtractive correction for the data.

7.5.7. Radon Background

Correction of the data for variations in background due to radon is a multi-step process. First, test flights at various elevations over water are carried out in the field to establish the contribution of atmospheric radon to the ROI windows. A least squares analysis of the data from these test flights yields the constants for equations 4.9 to 4.12 (IAEA Report 323). Second, the response of the upward looking detector to radiation from the ground is established. Here a departure from the IAEA Report has been recommended by Grasty and Hovgaard (1996). The expression for the radon component in the downward looking uranium window is given by Ur =(u - a1U - a2T + a2bT - bu)/(au - a1 - a2aT) (see Eq. 4.3 - IAEA 323) where, Ur is the radon background detected in the downward U window; u is the measured count in the upward uranium window; U is the measured count in the downward uranium window; T is the measured count in the downward thorium window; a1, a2, au and aT are proportionality factors; and bu and bT are constants determined experimentally. Using a1 or a2 (see above) in this equation will result in a good estimate of Ur permitting correction of the other ROI windows.

Survey altitude test data will be collected and used to establish atmospheric background and calibrate the upward and downward looking detector systems. Variations in count rates due to soil moisture content and altimeter variations can largely be overcome by a normalization procedure using the thorium count. The procedure correlates the thorium count to the uranium count assuming the contribution to each ROI from the ground is proportional.

7.5.8. Computation of Effective Height Above Ground Level

Radar altimeter data are used in adjusting the stripping ratios for altitude and to carry out the height attenuation corrections. They are then converted to effective height (he) at STP by the expression he = (h * 273.15)/(T + 273.15)* (P/1013), where h is the observed radar altitude; T is the temperature in degrees C; and P is the barometric pressure in mbar.

7.5.9. Compton Stripping Correction

The stripping ratios α , β , γ , a, b and g are determined during tests over calibration pads. The principal ratios a, β and g should be adjusted for temperature, pressure and altitude (above ground) before stripping is carried out. These stripping ratios are used to remove the



contribution in each of the three ROI windows from higher energy sources, leaving only the contribution from potassium, uranium and thorium.

7.5.10. Altitude Attenuation Correction

The altitude attenuation correction corrects the data in each of the ROI windows for the effects of altitude. The count rates decrease exponentially with altitude and therefore the counts are corrected to a constant altimeter datum at the nominal survey height of 30m.

7.5.11. Apparent Radioelement Concentrations

The corrected count rate data can be converted to estimate the ground concentrations of each of the three radioelements, potassium, uranium and thorium. The procedure assumes an infinite horizontal slab source geometry with a uniform radioelement concentration. The calculation assumes radioactive equilibrium in the U and Th decay series. Therefore the U and Th concentrations are assigned as equivalent concentrations using the nomenclature eU and eTh.

An estimate of the air absorbed dose rate can be made from the apparent concentrations, K%, eU ppm and eTh ppm.

7.5.12. Computation of Radioelement Ratios

Standard ratioing of the three radioelements (eU/eTh, eU/K and eTh/K) can be carried out and presented in profile or plan map form. In order to ensure statistical confidence in generating these ratios, we generally take the following precautions:

- Reject all data point where the apparent potassium concentration is less than 0.25% as these measurements are likely taken over water.
- Carry out cumulative summing along the survey line of each radioelement, rejecting areas where the summation does not exceed a certain threshold value (usually 10 counts for both numerator and denominator).
- Compute the ratios using the cumulative sums.

8. GENERAL COMMENTS

The survey was successful in mapping the magnetic and conductive properties of the geology throughout the survey area. Below is a brief interpretation of the results. For a detailed interpretation please contact Aeroquest Limited.

8.1. MAGNETIC RESPONSE

The magnetic data provide a high resolution map of the distribution of the magnetic mineral content of the survey area. This data can be used to interpret the location of geological contacts and other structural features such as faults and zones of magnetic alteration. The sources for anomalous magnetic responses are generally thought to be predominantly magnetite because of the relative abundance and strength of response (high magnetic susceptibility) of magnetite over other magnetic minerals such as pyrrhotite.

8.2. EM ANOMALIES

The EM anomalies on the maps are classified by conductance (as described earlier in the report) and also by the thickness of the source. A thin, vertically orientated source produces a double peak anomaly in the z-component response and a positive to negative crossover in the x-component response (Figure 8). For a vertically orientated thick source (say, greater than



10 metres), the response is a single peak in the z-component response and a negative to positive crossover in the x-component response (Figure 9). Because of these differing responses, the AeroTEM system provides discrimination of thin and thick sources and this distinction is indicated on the EM anomaly symbols (N = thin and K = thick). Where multiple, closely spaced conductive sources occur, or where the source has a shallow dip, it can be difficult to uniquely determine the type (thick vs. thin) of the source (Figure 10). In these cases both possible source types may be indicated by picking both thick and thin response styles. For shallow dipping conductors the 'thin' pick will be located over the edge of the source, whereas the 'thick' pick will fall over the downdip 'heart' of the anomaly.

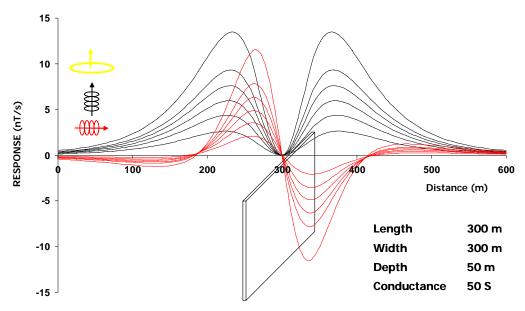


Figure 10. AeroTEM response to a 'thin' vertical conductor.



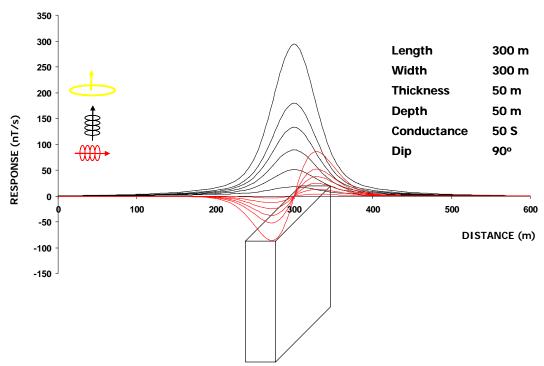


Figure 11. AeroTEM response for a 'thick' vertical conductor.

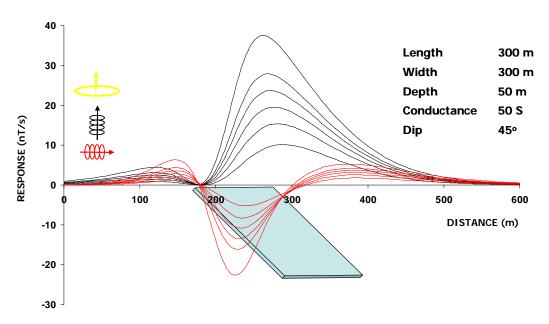


Figure 12. AeroTEM response over a 'thin' dipping conductor.



All cases should be considered when analyzing the interpreted picks and prioritizing for follow-up. Specific anomalous responses which remain as high priority should be subjected to numerical modeling prior to drill testing to determine the dip, depth and probable geometry of the source.

8.3. RADIOMETRIC RESPONSE

The radiometric data indicate the apparent concentrations of potassium, uranium, and thorium in the rocks and soils at the very near surface. The depth of measurement is on the order of 30 cm and the vast majority of information comes from a circular area with a diameter equal to twice the survey height.

Within different lithologies, concentrations of potassium, uranium and thorium tend to diagnostically vary. The radiometric data provide a remote measurement of these concentrations and can be used to characterise the lithology and distribution of the overlying geologic materials.

The dose rate and thorium-potassium (eTh/K) were selected fro presentation on the final maps. The Natural Air Absorbed Dose Rate can be though of as the total radioactivity from natural sources. It is a combined measure of K, U, and Th gamma ray energies. Measurement units are in nanoGrays per hour (nGy/h).

The eTh/K ratio was selected since it can be a sensitive indicator of potassium alteration associated with mineralization. Thorium enrichment generally does not accompany potassium enrichment during the hydrothermal alteration processes. Therefore a ratio of these signals provide excellent distinction between anomalies associated with alteration and anomalies related to normal lithological variations (i.e. felsic rocks). Note that potassic alteration zones would be expected to appear as lows in the eTh/K grid.

| Respectfully submitted | , | | |
|------------------------|---|--|--|
| | | | |
| Gord Smith | | | |
| Aeroquest Limited | | | |
| October, 2007 | | | |
| Reviewed By: | | | |
| | | | |
| Doug Garrie | | | |
| Aeroquest Limited | | | |
| October, 2007 | | | |



APPENDIX 1: SURVEY BOUNDARIES

The following table presents the Lara block boundaries. All geophysical data presented in this report have been windowed to 100m outside these outlines. X and Y positions are in NAD83 UTM Zone 10N.

100 m spacing (Blocks A and B)

| X | Y | |
|-----------|------------|--|
| 425449.59 | 5421875.67 | |
| 429380.79 | 5420728.76 | |
| 428757.82 | 5418614.97 | |
| 432493.50 | 5417526.07 | |
| 431708.16 | 5414637.97 | |
| 427902.04 | 5415756.40 | |
| 428250.00 | 5416891.92 | |
| 424415.24 | 5418027.79 | |

200 m spacing (Blocks C and D)

| X | Y |
|----------|-----------|
| 425449.6 | 5421875.7 |
| 429380.8 | 5420728.8 |
| 428757.8 | 5418615.0 |
| 432493.5 | 5417526.1 |
| 439296.1 | 5415538.3 |
| 438514.9 | 5412641.6 |
| 435579.6 | 5413506.3 |
| 435314.3 | 5412536.4 |
| 431439.4 | 5413651.5 |
| 431708.2 | 5414638.0 |
| 427902.0 | 5415756.4 |
| 428250.0 | 5416891.9 |
| 424415.2 | 5418027.8 |



APPENDIX 2: MINING CLAIMS

Taken from Government of British Columbia Mineral Titles Online, October, 2007

| Tenure | | | | al littles Online, October, 2007 | | |
|--------|-------------|----------------------------------------|-------------|----------------------------------|--|--|
| Number | Claim Name | Owner | Date Due | Mining Division | | |
| 260341 | FANG | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260342 | SILVER 1 | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260343 | SILVER 2 | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260344 | SOLLY | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260345 | TL | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260395 | | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260419 | UGLY | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260420 | WIMP | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260420 | WIMP | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260420 | WIMP | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260421 | NERO | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260521 | JENNIE | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260607 | COR 1 FR. | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260608 | COR 2 FR. | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260609 | COR 3 FR. | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260610 | COR 4 FR. | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260611 | COR 5 FR. | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260612 | COR 6 FR. | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260613 | COR 7 FR. | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260624 | TOUCHE | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260625 | CAVITY | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260626 | PLANT | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260627 | FACE | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260627 | FACE | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 260627 | FACE | Laramide Resources Ltd | 2010/jan/21 | VICTORIA | | |
| 397311 | LADY | Bluerock Resources Ltd. | 2009/dec/31 | NANAIMO | | |
| 512321 | | Laramide Resources Ltd | 2010/jan/21 | | | |
| 512325 | LADY 6 | Laramide Resources Ltd | 2010/jan/21 | | | |
| 512327 | LADY 7 | Laramide Resources Ltd | 2010/jan/21 | | | |
| 512331 | LADY 8 | Laramide Resources Ltd | 2010/jan/21 | | | |
| 512331 | LADY 8 | Laramide Resources Ltd | 2010/jan/21 | | | |
| 512331 | LADY 8 | Laramide Resources Ltd | 2010/jan/21 | | | |
| 512355 | LADY 9 | Laramide Resources Ltd | 2010/jan/21 | | | |
| 512358 | LADY 9 | Laramide Resources Ltd | 2010/jan/21 | | | |
| 512359 | | Laramide Resources Ltd | 2010/jan/21 | | | |
| 512362 | | Laramide Resources Ltd | 2010/jan/21 | | | |
| 513291 | | Francis, Allan Robert | 2007/nov/07 | | | |
| 516963 | | Francis, Allan Robert | 2007/oct/31 | | | |
| 533072 | HOLYOAK | Francis, Allan Robert | 2007/nov/20 | | | |
| 543043 | LE BARON | Phillips, Scott Le Barron Degourlay | 2009/oct/11 | | | |
| 549799 | TL LARA 07 | Loney, Terry Patrick | 2008/jan/18 | | | |
| 549807 | TL LARA 07A | Loney, Terry Patrick | 2008/jan/18 | | | |
| 555207 | COW 2 | Funk, Kelly Brent | 2008/mar/28 | | | |
| 566136 | LARA 2 | Funk, Kelly Brent | 2008/sep/18 | | | |
| 566137 | LARA 1 | Funk, Kelly Brent | 2008/sep/18 | | | |
| 566138 | LARA 4 | Funk, Kelly Brent | 2008/sep/18 | | | |
| 566169 | LARATL07A | 1698727 Ontario Inc. | 2008/sep/18 | | | |
| 566170 | LARATL04A | 1698727 Ontario Inc. | 2008/sep/18 | | | |



| 566171 | LARATL05A | 1698727 Ontario Inc. | 2008/sep/18 |
|--------|--------------|---------------------------|-------------|
| 566172 | LARATL05B | 1698727 Ontario Inc. | 2008/sep/18 |
| 566173 | LARATL05C | 1698727 Ontario Inc. | 2008/sep/18 |
| 566174 | LARATL06A | 1698727 Ontario Inc. | 2008/sep/18 |
| 566175 | LARATL06B | 1698727 Ontario Inc. | 2008/sep/18 |
| 566552 | LARATLB2 | 1698727 Ontario Inc. | 2008/sep/23 |
| 566553 | LARATLB3 | 1698727 Ontario Inc. | 2008/sep/23 |
| 566553 | LARATLB3 | 1698727 Ontario Inc. | 2008/sep/23 |
| 566553 | LARATLB3 | 1698727 Ontario Inc. | 2008/sep/23 |
| 566565 | LARATLB4 | 1698727 Ontario Inc. | 2008/sep/24 |
| 567270 | LARATLA08 | 1698727 Ontario Inc. | 2008/oct/02 |
| 567271 | LARATLA09 | 1698727 Ontario Inc. | 2008/oct/02 |
| 567274 | TLLARA11 | 1698727 Ontario Inc. | 2008/oct/02 |
| 567274 | TLLARA11 | 1698727 Ontario Inc. | 2008/oct/02 |
| 567274 | TLLARA11 | 1698727 Ontario Inc. | 2008/oct/02 |
| 567276 | TL LARA A 11 | 1698727 Ontario Inc. | 2008/oct/02 |
| 568158 | NEVER SWEAT | Billingsley, Richard John | 2008/oct/17 |
| 568158 | NEVER SWEAT | Billingsley, Richard John | 2008/oct/17 |
| 568158 | NEVER SWEAT | Billingsley, Richard John | 2008/oct/17 |
| 566167 | LARATL09A | 1698727 Ontario Inc. | 2008/sep/18 |
| 514351 | KIDS EAST | Francis, Allan Robert | 2007/nov/01 |
| 514360 | DEPOSIT S | Francis, Allan Robert | 2007/nov/01 |
| | | | |



APPENDIX 3: DESCRIPTION OF DATABASE FIELDS

The magnetic/EM GDB file is a Geosoft binary database. In the database, the Survey lines and Tie Lines are prefixed with an "L" for "Line" and "T" for "Tie".

| COLUMN | UNITS | DESCRIPTOR |
|-------------|-------------|----------------------------------------------------------------|
| X | m | UTM Easting (NAD83, Zone 10N) |
| у | m | UTM Northing (NAD83, Zone 10N) |
| Line | | Line number |
| emfid | | AERODAS Fiducial |
| utctime | hh:mm:ss.ss | UTC time |
| bheight | m | Terrain clearance of EM bird |
| dtm | m | Digital Terrain Model |
| galtf | m | GPS - Z |
| Basemagf | nT | Base station total magnetic intensity |
| Magu | nT | Total magnetic firld from upper senor |
| Magl | nT | Total magnetic field from sensor on EM bird |
| Zon | nT/s | Processed Streaming On-Time Z component Channels 1-16 |
| Zoff | nT/s | Processed Streaming Off-Time Z component Channels 0-16 |
| Xon | nT/s | Processed Streaming On-Time X component Channels 1-16 |
| Xoff | nT/s | Processed Streaming Off-Time X component Channels 0-16 |
| Anom_ID | | Anomaly Character (K= thicK, N = thiN) |
| Anom_labels | | Alphanumeric label of conductor pick |
| grade | | Classification from 1-7 based on conductance of conductor pick |
| Off_allcon | S | Off-time conductance |
| Off_AllTau | μs | Off-time decay constant |
| Off_Con | S | Off-time conductance at conductor pick |
| Off_Tau | μs | Off-time decay constant at conductor pick |
| pwrline | | powrline monitor data channel |



The spectometer GDB file is a Geosoft binary database. In the database, the Survey lines and Tie Lines are prefixed with an "L" for "Line" and "T" for "Tie".

| COLUMN | UNITS | DESCRIPTOR |
|-----------|-------------|----------------------------------------------|
| X | m | UTM Easting (NAD83, Zone 10N) |
| у | m | UTM Northing (NAD83, Zone 10N) |
| Line | | Line number |
| Fid | | Fiducial |
| utctime | hh:mm:ss.ss | UTC time |
| alth_m | m | Radar altitude of aircraft |
| altbf | m | Barometric altitude |
| Barotf | °C | Barometric temperature |
| Galt_m | m | Elevation of GPS antenna (AMSL) (WGS84) |
| Cos_raw | cps | Uncorrected Cosmic counts |
| Isp1d_cpt | | 256 channel spectral data (downward looking) |
| Isp1u_cpt | | 256 channel spectral data (upward looking) |
| K_raw | cps | Uncorrected Potassium counts |
| Kcorr | % | Radiometric – potassium (%K) |
| Tc_raw | cps | Uncorrected Total counts |
| Tccorr | nGy/hr | Radiometric – dose rate |
| Tcexp | uR/hr | Radiometric – exposure rate |
| Th_raw | cps | Uncorrected Thorium counts |
| Thcorr | ppm | Radiometirc – equivalent Thorium |
| Thkratio | | Thorium/Potassium Ratio |
| U_raw | cps | Uncorrected Uranium counts |
| Ucorr | ppm | Radiometirc – equivalent Uranium |
| Ukratio | | Uranium/potassium counts |
| Upu_raw | cps | Uncorrected Uranium upward looking counts |
| Uthratio | | Uranium/Thorium Ratio |
| | | |



APPENDIX 4: AEROTEM ANOMALY LISTING

| | | | | | | | Bird height | | |
|-------|--------|----|---------|----------|---------|----------|----------------|-------------|--------------|
| Line | Anom | ID | Cond(S) | Tau (µs) | Flight# | UTC Time | (m) | Easting (m) | Northing (m) |
| 10010 | A | N | 1.0 | 72.7 | 739.14 | 2:38:24 | 33.4 | 424880.1 | 5419216.2 |
| 10010 | В | N | 1.0 | 46.9 | 1005.37 | 13:12:00 | 74.1 | 425480.1 | 5421422.7 |
| 10020 | A | N | 2.0 | 46.8 | 1047.81 | 9:07:12 | 117.2 | 425653.1 | 5421308.6 |
| 10020 | В | N | 3.0 | 53.9 | 747.1 | 23:31:12 | 244.6 | 425056.2 | 5419083.7 |
| 10020 | C | N | 1.0 | 32.5 | 848.73 | * | * | 424970.1 | 5418717.0 |
| 10030 | A | N | 1.0 | 52.5 | 1112.63 | 18:57:36 | 88.7 | 425843.3 | 5421271.3 |
| 10040 | A | N | 1.0 | 35.7 | 1162.92 | 5:45:36 | 49.1 | 426042.0 | 5421225.8 |
| 10040 | В | N | 1.0 | 39.0 | 1152.94 | 2:24:00 | 31.3 | 426021.3 | 5421143.3 |
| 10040 | С | N | 1.0 | 34.6 | 778.38 | * | * | 425418.7 | 5418884.6 |
| 10040 | D | N | 1.0 | 38.7 | 878.65 | 23:45:36 | 140.9 | 425291.6 | 5418387.1 |
| 10050 | A | N | 1.0 | 50.3 | 823.47 | * | * | 425583.1 | 5418709.3 |
| 10050 | В | N | 1.0 | 39.1 | 1173.06 | 1:55:12 | 28.8 | 426207.2 | 5421089.6 |
| 10060 | A | N | 1.0 | 41.2 | 1152.6 | 23:16:48 | 98.3 | 426423.7 | 5421107.6 |
| 10060 | В | K | 1.0 | 38.8 | 1144 | 3:07:12 | 35.7 | 426305.4 | 5420710.8 |
| 10060 | C | N | 1.0 | 46.7 | 820.73 | * | * | 425729.4 | 5418544.0 |
| 10070 | A | N | 1.0 | 49.7 | 812.37 | * | * | 425886.6 | 5418325.9 |
| 10070 | В | N | 1.0 | 40.8 | 1109.49 | 7:12:00 | 54.7 | 426580.1 | 5420975.1 |
| 10080 | A | K | 3.0 | 43.4 | 1046 | 15:07:12 | 237.3 | 426784.1 | 5420917.5 |
| 10080 | В | N | 1.0 | 61.3 | 730.91 | * | * | 426265.9 | 5418942.5 |
| 10080 | C | N | 1.0 | 46.3 | 797.04 | * | * | 426050.9 | 5418173.9 |
| 10090 | A | N | 2.0 | 49.0 | 776.68 | 12:14:24 | 122.9 | 426252.0 | 5418136.7 |
| 10090 | В | K | 3.0 | 72.8 | 692.4 | 12:00:00 | 255.0 | 426417.4 | 5418714.6 |
| 10090 | C | N | 2.0 | 65.3 | 1029.23 | 8:09:36 | 182.7 | 426950.1 | 5420733.7 |
| 10100 | A | K | 5.0 | 58.7 | 1048.6 | 4:19:12 | 521.3 | 427338.4 | 5421361.8 |
| 10100 | В | K | 4.0 | 54.1 | 967.39 | 23:31:12 | 387.1 | 427155.7 | 5420711.6 |
| 10100 | С | N | 2.0 | 41.6 | 992.17 | 18:28:48 | 194.1 | 427119.9 | 5420563.0 |
| 10100 | D | N | 2.0 | 56.4 | 710.91 | 9:21:36 | 154.5 | 426600.4 | 5418660.1 |
| 10100 | E | N | 1.0 | 44.5 | 770.83 | * | * | 426408.4 | 5417949.2 |
| 10110 | A | N | 2.0 | 61.7 | 678.06 | 12:28:48 | 123.5 | 426763.2 | 5418488.1 |
| 10110 | В | N | 3.0 | 62.8 | 986.94 | 4:48:00 | 228.1 | 427287.1 | 5420467.6 |
| 10120 | A | K | 3.0 | 50.8 | 1021.7 | 12:57:36 | 292.2 | 427686.7 | 5421140.6 |
| 10120 | В | K | 3.0 | 48.5 | 917.94 | 10:19:12 | 253.6 | 427487.8 | 5420428.8 |
| 10120 | | N | 2.0 | 44.1 | | 6:43:12 | 151.1 | 427454.9 | 5420302.5 |
| 10130 | | N | 3.0 | 58.1 | | 22:48:00 | 263.6 | 427634.1 | 5420226.6 |
| 10130 | | N | 4.0 | 65.2 | | 14:38:24 | 325.7 | 427688.9 | 5420407.4 |
| 10130 | | N | 4.0 | 37.0 | | 19:26:24 | 384.8 | 427779.6 | 5420758.0 |
| 10130 | | K | 4.0 | 47.0 | | 9:07:12 | 351.8 | 427854.2 | 5421042.2 |
| 10140 | | N | 4.0 | 40.5 | 1073.07 | | 372.4 | 428046.1 | 5420962.6 |
| 10140 | В | K | 3.0 | | 1040.2 | | 299.0 | 427991.3 | 5420795.1 |
| 10140 | C - | N | 4.0 | 52.5 | 988.64 | | 368.2 | 427932.6 | 5420567.8 |
| 10140 | D | K | 3.0 | 81.4 | 910.18 | | 256.1 | 427861.3 | 5420293.1 |
| 10150 | A | K | 3.0 | 45.7 | | 0:43:12 | 224.2 | 428038.1 | 5420148.6 |
| 10150 | В | N | 5.0 | 38.3 | 1060.03 | | 458.0 | 428185.6 | 5420731.7 |
| 10160 | A | K | 2.0 | 37.8 | 1075.4 | 7:55:12 | 182.5 | 428374.9 | 5420671.6 |
| 10160 | В | K | 2.0 | 53.1 | 1042.37 | 4:04:48 | 178.1 | 428289.4 | 5420365.6 |



| 000 | 11 000 <u>2</u> 2 | | | | | | Bird | | |
|-------|-------------------|----|---------|----------|---------|----------|--------|-------------|--------------|
| | | | | | | | height | | |
| Line | Anom | ID | Cond(S) | Tau (µs) | Flight# | UTC Time | (m) | Easting (m) | Northing (m) |
| 10160 | С | K | 3.0 | 68.3 | 909.55 | 5:31:12 | 268.8 | 428157.2 | 5419890.3 |
| 10170 | A | N | 2.0 | 47.1 | 966.28 | 4:04:48 | 147.2 | 428360.6 | 5419852.0 |
| 10170 | В | K | 2.0 | 43.7 | 1092.93 | 20:38:24 | 136.4 | 428574.4 | 5420632.9 |
| 10170 | C | N | 3.0 | 43.4 | 1097.93 | 4:48:00 | 286.3 | 428593.3 | 5420702.7 |
| 10180 | A | K | 5.0 | 43.7 | 1137.65 | 22:04:48 | 590.9 | 428825.7 | 5420824.9 |
| 10180 | В | K | 2.0 | 43.9 | 1127.4 | 21:21:36 | 197.3 | 428784.7 | 5420643.5 |
| 10180 | C | K | 3.0 | 45.2 | 1120.08 | 3:50:24 | 267.5 | 428755.8 | 5420551.4 |
| 10180 | D | K | 3.0 | 48.5 | 1082.65 | 2:09:36 | 284.4 | 428689.6 | 5420298.4 |
| 10180 | E | N | 2.0 | 54.4 | 958 | 0:14:24 | 100.4 | 428525.2 | 5419683.6 |
| 10190 | A | N | 2.0 | 57.2 | 984.59 | 18:28:48 | 133.1 | 428708.4 | 5419623.1 |
| 10190 | В | K | 3.0 | 38.1 | 1144.14 | 12:43:12 | 308.7 | 428938.1 | 5420444.3 |
| 10200 | A | N | 1.0 | 48.5 | 1024.39 | * | * | 428887.3 | 5419516.0 |
| 10210 | A | K | 1.0 | 72.6 | 724.58 | 14:09:36 | 76.7 | 428183.6 | 5416035.8 |
| 10260 | A | N | 1.0 | 42.4 | 579.09 | * | * | 429318.7 | 5417208.3 |
| 10270 | A | N | 1.0 | 48.9 | 564.42 | * | * | 429483.7 | 5417097.5 |
| 10540 | A | K | 2.0 | 54.0 | 678.88 | 0:28:48 | 100.9 | 434490.2 | 5414110.4 |
| 10540 | В | K | 4.0 | 49.4 | 1009.28 | 17:16:48 | 432.6 | 435131.0 | 5416516.4 |
| 10550 | A | N | 2.0 | 49.1 | 990.39 | 8:38:24 | 153.7 | 435317.8 | 5416475.1 |
| 10550 | В | K | 1.0 | 50.3 | 669.2 | 14:38:24 | 78.4 | 434667.6 | 5413988.5 |
| 10560 | A | K | 1.0 | 49.9 | 661.69 | 17:16:48 | 84.8 | 434859.6 | 5413933.2 |
| 10560 | В | N | 3.0 | 55.4 | 966.48 | 21:36:00 | 243.0 | 435540.2 | 5416472.1 |
| 10570 | A | K | 3.0 | 57.0 | 931.42 | 0:00:00 | 244.0 | 435671.9 | 5416244.3 |
| 10580 | A | K | 4.0 | 57.6 | 934.63 | 23:16:48 | 345.9 | 435871.8 | 5416170.4 |
| 10590 | A | K | 4.0 | 46.0 | 931.02 | 5:02:24 | 349.5 | 436054.6 | 5416062.5 |
| 10600 | A | K | 2.0 | 48.3 | 929.58 | 16:04:48 | 163.5 | 436248.6 | 5415953.6 |
| 10630 | A | N | 1.0 | 47.3 | 959.26 | 6:28:48 | 52.0 | 436863.8 | 5415993.8 |
| 10640 | A | N | 1.0 | 47.8 | 993.88 | 16:19:12 | 82.3 | 437061.6 | 5415930.3 |
| 10650 | A | K | 4.0 | 52.2 | 1015.66 | 19:40:48 | 445.2 | 437239.2 | 5415853.8 |
| 10660 | A | K | 4.0 | 43.9 | 1035.4 | 19:55:12 | 329.1 | 437452.9 | 5415807.0 |
| 10670 | A | K | 4.0 | 54.5 | 1055.05 | 0:00:00 | 346.4 | 437630.5 | 5415779.4 |
| 10680 | A | K | 2.0 | 45.6 | 1045.52 | 14:38:24 | 214.8 | 437826.6 | 5415736.6 |
| 10690 | A | N | 1.0 | 34.8 | 1045.5 | 8:52:48 | 61.2 | 438050.3 | 5415784.6 |
| 10700 | A | N | 1.0 | 30.9 | 1058.36 | 6:43:12 | 52.7 | 438248.0 | 5415746.6 |
| 20010 | A | N | 1.0 | 38.0 | 960.53 | 23:45:36 | 99.4 | 425376.2 | 5421455.2 |
| 20010 | В | N | 1.0 | 62.8 | 720.47 | 23:16:48 | 98.7 | 424794.1 | 5419284.3 |
| 20020 | A | N | 1.0 | 77.2 | 745.68 | * | * | 424981.3 | 5419179.9 |
| 20020 | В | N | 2.0 | 44.2 | 1024.43 | 15:21:36 | 128.1 | 425570.3 | 5421375.9 |
| 20030 | A | N | 1.0 | 42.2 | 1073.79 | 5:45:36 | 49.0 | 425754.0 | 5421282.4 |
| 20040 | A | N | 1.0 | 63.8 | 783.36 | * | * | 425330.8 | 5418943.8 |
| 20040 | В | N | 1.0 | 42.7 | 1138.09 | 3:36:00 | 38.3 | 425936.8 | 5421201.3 |
| 20040 | C | K | 1.0 | 43.0 | 1152.61 | 22:19:12 | 96.6 | 425979.7 | 5421360.6 |
| 20050 | A | K | 1.0 | 30.0 | 1169.12 | 19:26:24 | 90.2 | 426149.2 | 5421231.7 |
| 20050 | В | N | 1.0 | 40.9 | 1166.28 | 2:24:00 | 31.7 | 426116.1 | 5421081.4 |
| 20050 | С | N | 2.0 | 37.7 | 799 | 3:07:12 | 177.0 | 425495.1 | 5418802.5 |
| 20050 | A | N | 1.0 | 55.5 | 823.85 | * | | 425664.5 | 5418645.9 |
| 20060 | В | N | 1.0 | 47.7 | 1180.99 | 2:52:48 | 34.9 | 426321.8 | 5421088.3 |
| 20070 | A | N | 1.0 | 41.7 | 1129.41 | 3:21:36 | 37.0 | 426509.3 | 5420983.5 |
| 20070 | В | K | | 36.9 | 1151.01 | 0:43:12 | 15.7 | | 5420655.4 |
| ∠∪∪/∪ | Ь | V | 1.0 | 30.9 | TT3T.UT | U·43·12 | 15./ | 426415.3 | 3420055.4 |



| | | | | | | | Bird height | | |
|-------|------|----|---------|----------|---------|----------|----------------|-------------|--------------|
| Line | Anom | ID | Cond(S) | Tau (µs) | Flight# | UTC Time | (m) | Easting (m) | Northing (m) |
| 20070 | C | N | 1.0 | 44.8 | 825.74 | 4:48:00 | 44.8 | 425788.7 | 5418370.0 |
| 20080 | A | K | 2.0 | 49.3 | 1076.02 | 23:45:36 | 141.2 | 426702.7 | 5421019.0 |
| 20090 | A | N | 2.0 | 45.6 | 1034.89 | 0:57:36 | 101.8 | 426852.3 | 5420722.2 |
| 20090 | В | N | 1.0 | 60.4 | 729.46 | * | * | 426347.1 | 5418874.3 |
| 20100 | A | N | 1.0 | 47.6 | 775.18 | * | * | 426340.8 | 5418057.6 |
| 20100 | В | K | 2.0 | 60.3 | 694.67 | 19:40:48 | 134.9 | 426503.3 | 5418670.3 |
| 20100 | C | N | 1.0 | 59.4 | 1012.5 | 19:26:24 | 90.3 | 427026.4 | 5420673.3 |
| 20110 | A | N | 2.0 | 43.1 | 987.73 | 3:21:36 | 146.3 | 427205.7 | 5420488.6 |
| 20110 | В | N | 1.0 | 69.6 | 711.85 | 6:43:12 | 53.3 | 426678.3 | 5418580.6 |
| 20120 | A | N | 2.0 | 59.7 | 973.44 | 9:36:00 | 154.9 | 427364.0 | 5420386.6 |
| 20120 | В | K | 3.0 | 50.2 | 1029.52 | 12:00:00 | 308.2 | 427602.7 | 5421225.7 |
| 20130 | A | N | 4.0 | 51.1 | 1067.69 | 8:09:36 | 321.5 | 427784.5 | 5421215.3 |
| 20130 | В | K | 3.0 | 55.4 | 898.09 | 5:16:48 | 228.6 | 427576.6 | 5420357.2 |
| 20140 | A | K | 3.0 | 48.7 | 910.49 | 17:16:48 | 295.3 | 427790.5 | 5420400.4 |
| 20140 | В | K | 4.0 | 40.4 | 1033.11 | 7:55:12 | 336.7 | 427928.7 | 5420932.9 |
| 20150 | A | K | 3.0 | 53.3 | 1047.62 | 7:12:00 | 250.9 | 428081.1 | 5420715.7 |
| 20150 | В | K | 3.0 | 69.0 | 918.4 | 20:09:36 | 241.6 | 427940.6 | 5420209.3 |
| 20160 | A | K | 3.0 | 54.5 | 917.15 | 7:26:24 | 270.3 | 428106.7 | 5420033.0 |
| 20160 | В | K | 3.0 | 43.0 | 1093.96 | 20:09:36 | 297.3 | 428361.0 | 5420982.9 |
| 20170 | A | N | 3.0 | 40.8 | 1106.16 | 14:09:36 | 293.0 | 428551.8 | 5420971.6 |
| 20170 | В | N | 3.0 | 47.5 | 1064.63 | 4:48:00 | 286.4 | 428417.1 | 5420413.1 |
| 20170 | C | N | 2.0 | 57.6 | 953.56 | 12:14:24 | 158.4 | 428276.9 | 5419908.4 |
| 20180 | A | N | 2.0 | 41.9 | 957.82 | 10:19:12 | 156.0 | 428439.7 | 5419793.9 |
| 20180 | В | K | 4.0 | 38.3 | 1076.48 | 17:45:36 | 327.7 | 428607.9 | 5420403.3 |
| 20180 | C | K | 3.0 | 43.6 | 1113.25 | 9:07:12 | 306.3 | 428675.4 | 5420657.4 |
| 20190 | A | N | 2.0 | 68.7 | 980.34 | 8:24:00 | 116.3 | 428614.8 | 5419625.2 |
| 20200 | A | N | 1.0 | 44.2 | 998.4 | 11:31:12 | 69.0 | 428804.9 | 5419559.5 |
| 20210 | A | N | 1.0 | 39.1 | 1025.4 | * | * | 428996.7 | 5419498.2 |
| 20210 | В | K | 1.0 | 54.7 | 720.48 | 5:31:12 | 47.9 | 428074.6 | 5416047.2 |
| 20220 | A | K | 1.0 | 58.4 | 707.58 | 18:43:12 | 88.3 | 428292.5 | 5416057.4 |
| 20260 | A | N | 1.0 | 39.8 | 571.21 | * | * | 429411.7 | 5417184.8 |
| 19010 | A | K | 2.0 | 67.1 | 1139.84 | 20:52:48 | 136.9 | 428769.4 | 5420693.8 |
| 19010 | В | K | 3.0 | 58.8 | 1051.16 | 11:16:48 | 291.0 | 427903.0 | 5420941.0 |
| 19010 | C | K | 2.0 | 63.8 | 952.16 | 12:57:36 | 188.2 | 425355.8 | 5421678.2 |
| 19060 | A | N | 2.0 | 48.2 | 820.1 | 6:28:48 | 206.7 | 425623.3 | 5418694.6 |

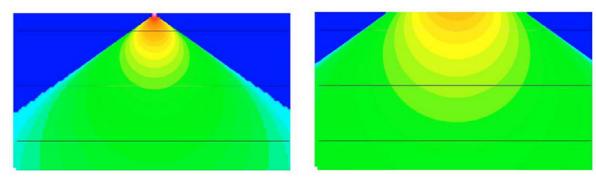


APPENDIX 5: AEROTEM DESIGN CONSIDERATIONS

Helicopter-borne EM systems offer an advantage that cannot be matched from a fixed-wing platform. The ability to fly at slower speed and collect data with high spatial resolution, and with great accuracy, means the helicopter EM systems provide more detail than any other EM configuration, airborne or ground-based. Spatial resolution is especially important in areas of complex geology and in the search for discrete conductors. With the advent of helicopter-borne high-moment time domain EM systems the fixed wing platforms are losing their *only* advantage – depth penetration.

Advantage 1 - Spatial Resolution

The AeroTEM system is specifically designed to have a small footprint. This is accomplished through the use of concentric transmitter-receiver coils and a relatively small diameter transmitter coil (5 m). The result is a highly focused exploration footprint, which allows for more accurate "mapping" of discrete conductors. Consider the transmitter primary field images shown in Figure 1, for AeroTEM versus a fixed-wing transmitter.



The footprint of AeroTEM at the earth's surface is roughly 50m on either side of transmitter

The footprint of a fixed-wing system is roughly 150 m on either side of the transmitter

Figure 1. A comparison of the footprint between AeroTEM and a fixed-wing system, highlights the greater resolution that is achievable with a transmitter located closer to the earth's surface. The AeroTEM footprint is one third that of a fixed-wing system and is symmetric, while the fixed-wing system has even lower spatial resolution along the flight line because of the separated transmitter and receiver configuration.

At first glance one may want to believe that a transmitter footprint that is distributed more evenly over a larger area is of benefit in mineral exploration. In fact, the opposite is true; by energizing a larger surface area, the ability to energize and detect discrete conductors is reduced. Consider, for example, a comparison between AeroTEM and a fixed-wing system over the Mesamax Deposit (1,450,000 tonnes of 2.1% Ni, 2.7% Cu, 5.2 g/t Pt/Pd). In a test survey over three flight lines spaced 100 m apart, AeroTEM detected the Deposit on all three flight lines. The fixed-wing system detected the Deposit only on two flight lines. In exploration programs that seek to expand the flight line spacing in an effort to reduce the cost of the airborne survey, discrete conductors such as the Mesamax Deposit can go undetected. The argument often put forward in favour of using fixed-wing systems is that because of their larger footprint, the flight line spacing can indeed be widened. Many fixed-wing surveys are flown at 200 m or 400 m. Much of the survey work performed by Aeroquest has been to survey in areas that were previously flown at these wider line spacings. One of the reasons for AeroTEM's impressive discovery record has been the strategy of flying closely spaced lines and finding all the discrete near-surface conductors. These higher resolution surveys are being flown within existing mining camps, areas that improve the chances of discovery.



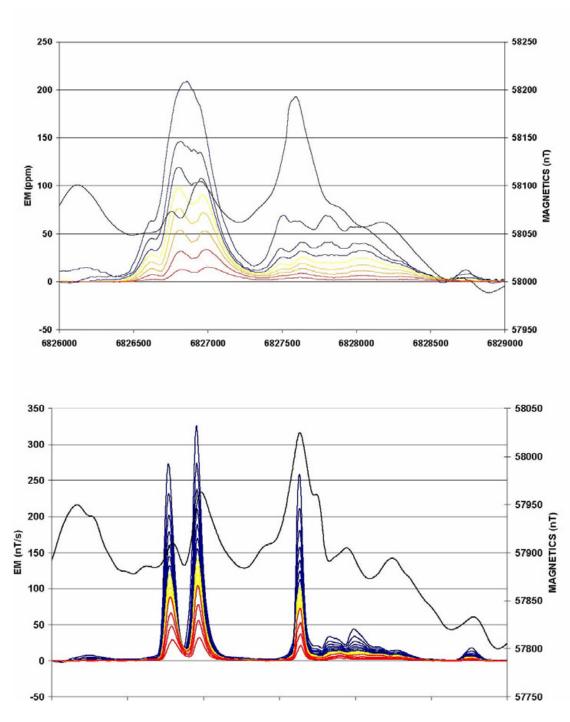


Figure 2. Fixed-wing (upper) and AeroTEM (lower) comparison over the eastern limit of the Mesamax Deposit, a Ni-Cu-PGE zone located in the Raglan nickel belt and owned by Canadian Royalties. Both systems detected the Deposit further to the west where it is closer to surface.

The small footprint of AeroTEM combined with the high signal to noise ratio (S/N) makes the system more



suitable to surveying in areas where local infrastructure produces electromagnetic noise, such as power lines and railways. In 2002 Aeroquest flew four exploration properties in the Sudbury Basin that were under option by FNX Mining Company Inc. from Inco Limited. One such property, the Victoria Property, contained three major power line corridors.

The resulting AeroTEM survey identified all the known zones of Ni-Cu-PGE mineralization, and detected a response between two of the major power line corridors but in an area of favorable geology. Three boreholes were drilled to test the anomaly, and all three intersected sulphide. The third borehole encountered 1.3% Ni, 6.7% Cu, and 13.3 g/t TPMs over 42.3 ft. The mineralization was subsequently named the Powerline Deposit.

The success of AeroTEM in Sudbury highlights the advantage of having a system with a small footprint, but also one with a high S/N. This latter advantage is achieved through a combination of a high-moment (high signal) transmitter and a rigid geometry (low noise). Figure 3 shows the Powerline Deposit response and the response from the power line corridor at full scale. The width of power line response is less than 75 m.

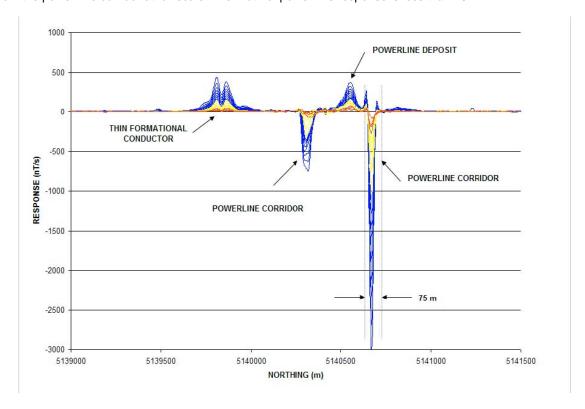


Figure 3. The Powerline Deposit is located between two major power line corridors, which make EM surveying problematic. Despite the strong response from the power line, the anomaly from the Deposit is clearly detected. Note the thin formational conductor located to the south. The only way to distinguish this response from that of two closely spaced conductors is by interpreting the X-axis coil response.

Advantage 2 - Conductance Discrimination

The AeroTEM system features full waveform recording and as such is able to measure the on-time response due to high conductance targets. Due to the processing method (primary field removal), there is attenuation of the response with increasing conductance, but the AeroTEM on-time measurement is still superior to systems that rely on lower base frequencies to detect high conductance targets, but do not measure in the on-time.

The peak response of a conductive target to an EM system is a function of the target conductance and the EM system base frequency. For time domain EM systems that measure only in the off-time, there is a drop in the peak response of a target as the base frequency is lowered for all conductance values below the peak system

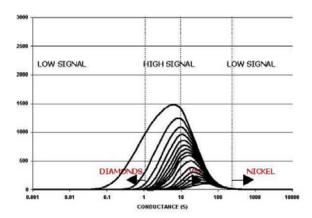


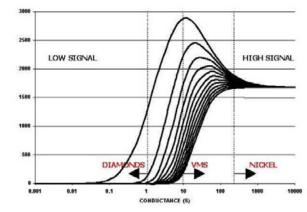
response. For example, the AeroTEM peak response occurs for a 10 S conductor in the early off-time and 100 S in the late off-time for a 150 Hz base frequency. Because base frequency and conductance form a linear relationship when considering the peak response of any EM system, a drop in base frequency of 50% will double the conductance at which an EM system shows its peak response. If the base frequency were lowered from 150 Hz to 30 Hz there would be a fivefold increase in conductance at which the peak response of an EM occurred.

However, in the search for highly conductive targets, such as pyrrhotite-related Ni-Cu-PGM deposits, a fivefold increase in conductance range is a high price to pay because the signal level to lower conductance targets is reduced by the same factor of five. For this reason, EM systems that operate with low base frequencies are not suitable for general exploration unless the target conductance is more than 100 S, or the target is covered by conductive overburden.

Despite the excellent progress that has been made in modeling software over the past two decades, there has been little work done on determining the optimum form of an EM system for mineral exploration. For example, the optimum configuration in terms of geometry, base frequency and so remain unknown. Many geophysicists would argue that there is no single ideal configuration, and that each system has its advantages and disadvantages. We disagree.

When it comes to detecting and discriminating high-conductance targets, it is necessary to measure the pure inphase response of the target conductor. This measurement requires that the measured primary field from the transmitter be subtracted from the total measured response such that the secondary field from the target conductor can be determined. Because this secondary field is in-phase with the transmitter primary field, it must be made while the transmitter is turned on and the transmitter current is changing. The transmitted primary field is several orders of magnitude larger than the secondary field. AeroTEM uses a bucking coil to reduce the primary field at the receiver coils. The only practical way of removing the primary field is to maintain a rigid geometry between the transmitter, bucking and receiver coils. This is the main design consideration of the AeroTEM airframe and it is the only time domain airborne system to have this configuration.





The off-time AeroTEM response for the 16 channel configuration.

The on-time response assuming 100% removal of the measured primary field.

Figure 4. The off-time and on-time response nomogram of AeroTEM for a base frequency of 150 Hz. The on-time response is much stronger for higher conductance targets and this is why on-time measurements are more important than lower frequencies when considering high conductance targets in a resistive environment.

Advantage 3 - Multiple Receiver Coils

AeroTEM employs two receiver coil orientations. The Z-axis coil is oriented parallel to the transmitter coil and both are horizontal to the ground. This is known as a maximum coupled configuration and is optimal for detection. The X-axis coil is oriented at right angles to the transmitter coil and is oriented along the line-of-flight.



This is known as a minimum coupled configuration, and provides information on conductor orientation and thickness. These two coil configurations combined provide important information on the position, orientation, depth, and thickness of a conductor that cannot be matched by the traditional geometries of the HEM or fixed-wing systems. The responses are free from a system geometric effect and can be easily compared to model type curves in most cases. In other words, AeroTEM data is very easy to interpret. Consider, for example, the following modeled profile:

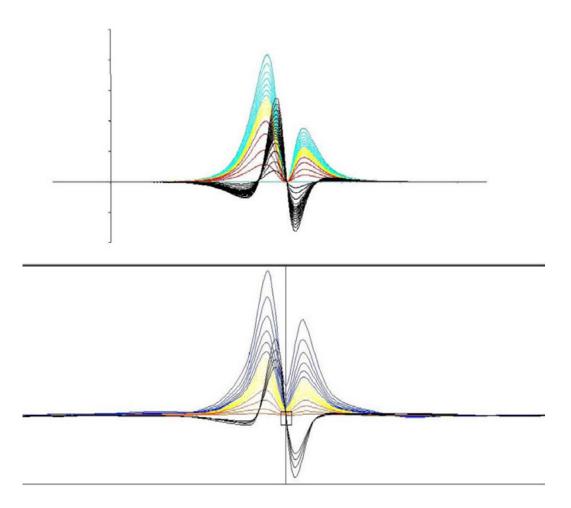


Figure 5. Measured (lower) and modeled (upper) AeroTEM responses are compared for a thin steeply dipping conductor. The response is characterized by two peaks in the Z-axis coil, and a cross-over in the X-axis coil that is centered between the two Z-axis peaks. The conductor dips toward the higher amplitude Z-axis peak. Using the X-axis cross-over is the only way of differentiating the Z-axis response from being two closely spaced conductors.

HEM versus AeroTEM

Traditional helicopter EM systems operate in the frequency domain and benefit from the fact that they use narrowband as opposed to wide-band transmitters. Thus all of the energy from the transmitter is concentrated in



a few discrete frequencies. This allows the systems to achieve excellent depth penetration (up to 100 m) from a transmitter of modest power. The Aeroquest Impulse system is one implementation of this technology.

The AeroTEM system uses a wide-band transmitter and delivers more power over a wide frequency range. This frequency range is then captured into 16 time channels, the early channels containing the high frequency information and the late time channels containing the low frequency information down to the system base frequency. Because frequency domain HEM systems employ two coil configurations (coplanar and coaxial) there are only a maximum of three comparable frequencies per configuration, compared to 16 AeroTEM off-time and 12 AeroTEM on-time channels.

Figure 6 shows a comparison between the Dighem HEM system (900 Hz and 7200 Hz coplanar) and AeroTEM (Zaxis) from surveys flown in Raglan, in search of highly conductive Ni-Cu-PGM sulphide. In general, the AeroTEM peaks are sharper and better defined, in part due to the greater S/N ratio of the AeroTEM system over HEM, and also due to the modestly filtered AeroTEM data compared to HEM. The base levels are also better defined in the AeroTEM data. AeroTEM filtering is limited to spike removal and a 5-point smoothing filter. Clients are also given copies of the raw, unfiltered data.

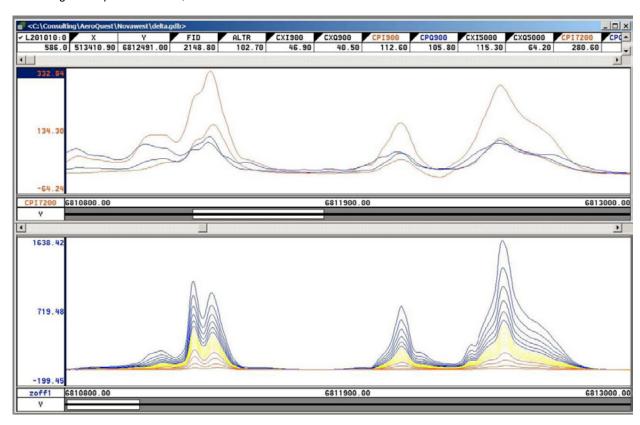


Figure 6. Comparison between Dighem HEM (upper) and AeroTEM (lower) surveys flown in the Raglan area. The AeroTEM responses appear to be more discrete, suggesting that the data is not as heavily filtered as the HEM data. The S/N advantage of AeroTEM over HEM is about 5:1.

Aeroquest Limited is grateful to the following companies for permission to publish some of the data from their respective surveys: Wolfden Resources, FNX Mining Company Inc, Canadian Royalties, Nova West Resources, Aurogin Resources, Spectrem Air. Permission does not imply an endorsement of the AeroTEM system by these companies.



APPENDIX 6: AEROTEM INSTRUMENTATION SPECIFICATION SHEET

AEROTEM Helicopter Electromagnetic System

System Characteristics

- Transmitter: Triangular Pulse Shape Base Frequency 150 Hz
- Tx On Time 1,150 (150 Hz) μ s
- Tx Off Time 2,183 (150 Hz) μs
- Loop Diameter 5 m
- Peak Current 250 A
- Peak Moment 38,800 NIA
- Typical Z Axis Noise at Survey Speed = 5 nT/s peak to peak
- Sling Weight: 270 Kg
- Length of Tow Cable: 40 m
- Bird Survey Height: 30 m nominal

Receiver

- Two Axis Receiver Coils (x, z) positioned at centre of transmitter loop
- Selectable Time Delay to start of first channel 21.3, 42.7, or 64.0 ms

Display & Acquisition

- AERODAS Digital recording at 120 samples per decay curve at a maximum of 300 curves per second (27.778µs channel width)
- RMS Channel Widths: 52.9,132.3, 158.7, 158.7, 317.5, 634.9 μs
- Recording & Display Rate = 10 readings per second.
- On-board display six channels Z-component and 1 X-component

System Considerations

Comparing a fixed-wing time domain transmitter with a typical moment of 500,000 NIA flying at an altitude of 120 m with a Helicopter TDEM at 30 m, notwithstanding the substantial moment loss in the airframe of the fixed wing, the same penetration by the lower flying helicopter system would only require a sixty-fourth of the moment. Clearly the AeroTEM system with nearly 40,000 NIA has more than sufficient moment. The airframe of the fixed wing presents a response to the towed bird, which requires dynamic compensation. This problem is non-existent for AeroTEM since transmitter and receiver positions are fixed. The AeroTEM system is completely portable, and can be assembled at the survey site within half a day.

