

# **ASIABASEMETALS, INC.**

*NI 43-101 Technical Report*  
**GNOME ZINC-LEAD-SILVER PROPERTY**  
**NORTHEAST BRITISH COLUMBIA**

**LOCATED IN THE**  
**OMINECA MINING DIVISION**  
**NTS 94F/2E, 7E**  
**LATITUDE 57°14' N**  
**LONGITUDE 124°33' W**

**ASIABASEMETALS, INC.**  
**2560-200 GRANVILLE STREET**  
**PO Box 36**  
**VANCOUVER, BC V6C 1S4**

**QUALIFIED PERSON:**  
**JOHN F. CHILDS PH.D**  
**CHILDS GEOSCIENCE, INC.**  
**1700 W. KOCH STREET, UNIT 6**  
**BOZEMAN, MT, USA 59715**

**December 4, 2012**

## Table of Contents

List of Figures .....	IV
List of Tables .....	V
1.0 Summary .....	1
2.0 Introduction .....	2
3.0 Reliance on Other Experts .....	3
4.0 Property Description and Location .....	5
5.0 Accessibility, climate, local resources, infrastructure and physiography .....	10
5.1 Access .....	10
5.2 Infrastructure .....	10
5.3 Climate .....	11
5.4 Physiography .....	11
6.0 History .....	14
6.1 Regional .....	14
6.2 Property .....	16
7.0 Geologic Setting .....	22
7.1 Regional Geology .....	23
7.2 Regional Structure .....	28
7.3 Property Geology .....	29
7.4 Property Structure .....	32
8.0 Mineralization .....	34
9.0 Deposit Types .....	38
10.0 Exploration .....	42
10.1 Geophysical .....	42
10.2 Geochemical .....	44
10.3 Samples .....	45
10.3.1 Rock Sampling .....	45

10.3.2 Soil Sampling .....	45
11.0 Drilling .....	51
12.0 Sampling Method and Approach.....	52
13.0 Sample Preparation, Analyses and security .....	53
13.1 Sample Preparation .....	53
13.2 Analytical Procedure.....	53
13.3 Sample Security .....	56
14.0 Data Verification.....	57
15.0 Adjacent Properties .....	58
15.1 Prospects Near the Gnome Property .....	58
New Gun Pesika.....	58
CT.....	59
Elf.....	59
15.2 Akie Property .....	60
16.0 Mineral Processing and Metallurgical testing .....	61
17.0 Mineral Resource and Mineral Reserve Estimates .....	62
18.0 Other Relevant data and information .....	63
19.0 Interpretations and Conclusions .....	64
20.0 Recommendations .....	65
References .....	66
Date and Signature Page .....	68

## LIST OF FIGURES

Figure 1. Location of Gnome Property, north central British Columbia, after Green, 2008 .....	8
Figure 2. Location of Gnome Property and local resources.....	9
Figure 3. Gnome Property, view looking north from southern area .....	12
Figure 4. Gnome Property, view looking south from Area C .....	13
Figure 5. Gnome and neighboring properties with Minfile occurrences .....	15
Figure 6. Gnome Property mineral tenures with gossans and geology, after Kuran, 1981 .....	19
Figure 7. Sample locations, 1980-2008 programs.....	20
Figure 8. GIN claims with Gnome Property boundary, after Roberts 1980.....	21
Figure 9. Deposits within the Selwyn Basin and Kechika Trough, from Sim, 2012 .....	22
Figure 10. Akie River Area generalized stratigraphic section, After MacIntyre, 1998 .....	26
Figure 11. Gnome Property tenures, gossans and regional geology after MacIntyre, 1998. ....	27
Figure 12. Cross Section E-F, view looking northwest, after Kuran, 1981 .....	33
Figure 13. Db3 barite-pyrite mineralization, cross-section view .....	36
Figure 14. Area C Ferricrete deposit, near Db3 .....	37
Figure 15. Sedimentary Exhalative genetic model after Goodfellow and Lydon, 2007 .....	39
Figure 16. Vent-proximal (A) and vent-distal (B) SEDEX models after Goodfellow and Lydon, 2007 .....	41
Figure 17. Fugro DIGHEM survey, 7200 Hz resistivity .....	43
Figure 18. 2012 field work locations, areas of interest and mineral tenures.....	46
Figure 19. 1980 to 2012 Barium soil and rock geochemistry .....	47
Figure 20. 1980 to 2012 Lead soil and rock geochemistry .....	48
Figure 21. 1980 to 2012 Zinc soil and rock geochemistry .....	49
Figure 22. 2012 Exploration program geologic mapping results and locations of gossans .....	50



## LIST OF TABLES

Table 1. Gnome Property Mineral Tenures.....	6
Table 2. Minfile mineral occurrences .....	6
Table 3. Threshold values for geochemical anomalies .....	44
Table 4. QAQC statistical results for 2012 exploration program.....	55

## 1.0 SUMMARY

The Gnome Property is located in northeastern British Columbia, approximately 230 kilometers (km) north-northwest of Mackenzie. The Property is situated northeast of Williston Lake, south of the Akie River and approximately 35 km southeast from the Cirque deposit and 15 km southeast of the Akie (Cardiac Creek) deposit. The Gnome Property comprises 12 mineral tenures, encompassing 5,429 hectares, and is in mountainous terrain ranging from 1,000 to 2,200 meters in elevation. Access to the property is currently restricted to helicopter transportation.

The Gnome Property is underlain by a northwest trending belt of Paleozoic sedimentary rocks of the Kechika Trough. These Paleozoic strata, specifically the Devonian Gunsteel Formation, are known to host significant SEDEX-type deposits including the Cirque, Cardiac Creek and Driftpile Creek deposits. The Cirque and Cardiac Creek deposits both have drill-indicated mineral resources. Also included in this belt of Paleozoic rocks are the similar, but less extensively-explored Gnome, GIN, Family, Fluke, CT and Elf mineral occurrences.

The Gnome Property was intermittently explored between 1979 and 2010. Mineral claims on the property were originally staked by Cominco, Ltd. in 1979. Cominco conducted geologic mapping and soil, silt and rock geochemical sampling programs. These programs commenced in 1980 with follow-up sampling and mapping in 1981 and 1985. This work identified associated Pb-Zn mineralization but the relatively low grades and depressed metals prices at the time led Cominco to allow the Gnome claims to expire. In 1995, Inmet Mining Corporation re-staked the property (renaming it the Muskwa Property) and conducted a grid-based infill soil sampling program, which defined two extensive multi-element soil geochemical anomalies. Inmet Mining did not follow up with recommended work and allowed the claims to expire. In 2006, C.J. Greig and Associates staked the GNOME and GNOME NW claims, which they optioned to Mantra Mining, Inc. (now AsiaBaseMetals, Inc.). The remaining claims that comprise the Gnome Property were staked by C.J. Greig and associates in 2008 and subsequently transferred to TintinaGold Resources, Inc. and then to AsiaBaseMetals, Inc. in 2009. In 2010, AsiaBaseMetals, Inc. conducted a Fugro airborne DIGHEM geophysical survey over the entire property to better define the extent of mineralization. Follow-up soil geochemical sampling and geologic mapping completed in 2012, by Childs Geoscience, Inc. on behalf of AsiaBaseMetals, Inc., have supplemented previous soil sampling results and aided in selecting exploration drilling targets.

## 2.0 INTRODUCTION

This Technical Report was prepared at the request of Mr. Raj Chowdhry, President of AsiaBaseMetals, Inc. (AsiaBaseMetals), a publicly-traded company listed on the TSX Venture Exchange as ABZ. This report is an update from a previous National Instrument (NI) 43-101 report by Green (2008) which was filed on SEDAR. Dr. John F. Childs of Childs Geoscience, Inc. (CGI) is the Qualified Person for the present report. Dr. Childs has reviewed all reports and data pertaining to the Gnome Property and has summarized the results of geochemical and geophysical exploration programs. AsiaBaseMetals commissioned CGI to provide an independent review of the exploration status of the property. CGI was also asked to provide recommendations for future exploration to evaluate the potential of the property for discovery of an economic base-metal deposit. This report does not include a mineral resource estimate, or sections covering mine planning, environmental studies, economic analysis or other operational planning that would be included in a report for an advanced exploration property. The Gnome Property has not had any exploration drilling. The Technical Report is intended to update the evaluation of the Gnome Property and to meet the filing requirement of the British Columbia Securities Commission and TSX Venture Exchange.

Dr. Childs is an independent consultant and is the Qualified Person, as defined in the NI 43-101 Standards of Disclosure for Mineral Projects, responsible for the preparation of this Technical Report. Dr. Childs has forty years of exploration and property evaluation experience in Canada, the United States, South and Central America and Europe. This experience includes work on SEDEX deposits in the Belt Basin of British Columbia and Idaho. Dr. Childs has had no previous association with AsiaBaseMetals.

Dr. Childs conducted a site visit on the property in July, 2012. During this site visit, Childs conducted soil sampling, preliminary geologic mapping, verification of historical exploration programs, and a review of the mineralization, stratigraphy and geologic setting. Childs reviewed property logistics, local infrastructure, access and the relationship between stratigraphy, mineral occurrences and the ferruginous gossans. Fees paid for this Technical Report are not dependent in whole or in part on any prior or future engagement or understanding resulting from the conclusions of this report.

Mr. Jeremy Harwood, B.Sc., worked under Dr. Childs' supervision in preparing this report. Mr. Harwood, a geologist with a Bachelor of Science degree from Montana State University (2010), has been continuously employed in the geoscience industry since June of 2010 and has been working in the exploration industry for base and precious metals and industrial minerals as an employee of CGI since November of 2010. Mr. Harwood conducted field work on the Gnome Property from July 13<sup>th</sup> to July 23<sup>rd</sup>, 2012 and was joined by Dr. Childs from July 20<sup>th</sup> to July 23<sup>rd</sup>, 2012.

Units of measure are metric and monetary amounts are expressed in Canadian currency. The effective date of this Technical Report is, December 4, 2012.

### 3.0 RELIANCE ON OTHER EXPERTS

The contents of this report are based upon a personal review of the publicly available Assessment Reports and the 2008 NI 43-101 qualified Technical Report, *Geology and Geochemistry, Gnome Zinc-Lead-Silver Property, Mantra Mining Inc.*, by Darwin Green. The Assessment Reports and Technical Report are available through the B.C. Ministry of Energy, Mines and Petroleum Resources' internet-based Assessment Report Indexing System (ARIS).

Information and data used for this report, excluding the 2012 field work, were provided by Ethos Geological, who had served as geological consultants for AsiaBaseMetals. Scott Close, owner and employee of Ethos Geological, provided most of the digital data from the 2010 assessment of the property. Close also provided an earlier data set from Jeffrey Rowe of C.J. Greig and Associates, Ltd. Additional data were obtained from field work and from the British Columbia Ministry of Energy, Mines and Petroleum Resources. Historical data, interpretation and analysis were adapted from previous assessment reports by Cominco, Inmet Mining, Mantle Resources, Mantra Mining, AsiaBaseMetals and from an independent NI 43-101 technical report on the Gnome Property that was prepared in 2008 by Darwin Green. Citations for these data sources are presented in the References section of the present report.

The tenures that comprise the Gnome Property are included in Table 1 of this Technical Report. The details of the tenure group were obtained from the internet-based Mineral Titles Online database operated by the B.C. Ministry of Energy, Mine and Petroleum Resources. The author has no reason to believe that this information is inaccurate or misleading. The author is relying solely on the information that is available and produced by the B.C. Ministry of Energy, Mines and Petroleum Resources and publicly available reports.

The author is satisfied that the data provided by C.J. Greig and Associates have been compiled in a professional manner, appears to be complete and accurate, and shows that data integrity has been sustained through the transformation into a digital database and through the transfers to independent consultants acting on behalf of Mantra Mining and AsiaBaseMetals. The author is satisfied that historical data were collected and processed in accordance with industry-best standards at the time of collection and that the data provide accurate indication of the nature, style and possible economic value of the known mineral occurrences on the Gnome and nearby properties. The author of this Technical Report considers the authors of the previous reports to be competent professionals and has no reason to doubt the integrity of their work. The author believes that the information presented in the historical reports are displayed in an honest and accurate manner. A comparison between the historical exploration programs and the 2012 exploration program indicates that a strong correlation exists between the structural and geochemical data, lithologic units, mineralization, interpretation of the geologic setting and geophysical results from the

various generations of work on the property. This continuity of results from one exploration program to the next reinforces our confidence that the data derived from the previous work on the property is reproducible.

## **4.0 PROPERTY DESCRIPTION AND LOCATION**

The Gnome Property is located in the Muskwa Ranges of the Northern Rocky Mountains in northeastern British Columbia. It lies approximately 230 kilometers north-northwest of Mackenzie and 40 km east-northeast of the First Nations community, Tsay Keh (Figure 2). The property is situated northeast of Williston Lake, south of the Akie River, north of the Pesika River and approximately 35 km southeast from the Cirque and 15 km southeast of the Akie (Cardiac Creek) deposits. The Gnome Property is located approximately 400 km north of Prince George (Figure 1). The property lies within the Fort Ware/ National Topographic System (NTS) sheets 094F/2E and 7E and within Terrain Resource Information Management (TRIM) map sheets 094F; 018, 027 and 028.

The Gnome Property comprises 12 mineral tenures, encompassing 5,429 hectares centered on North American Datum of 1983 (NAD 83), Universal Transverse Mercator (UTM) Zone 10N coordinates, 406000E 634500N (Figure 6, Table 1). The property contains the GNOME, GIN and AKI mineral occurrences. The base-metal and related mineral occurrences in the areas proximal to the property are displayed in Table 2 and Figure 5.

Table 1. Gnome Property Mineral Tenures

Tenure No.	Name	Owner	Tenure Type	Issue Date	Good To Date	Status	Area (ha)
569525	GNOME*	225041 (100%)	Mineral	2007/nov/06	2016/dec/31	GOOD	1750.4188
569529	GNOME NW*	225041 (100%)	Mineral	2007/nov/06	2016/dec/31	GOOD	1434.5904
593379	ZORRO	225041 (100%)	Mineral	2008/oct/25	2016/dec/31	GOOD	350.6045
593384	ZOROO	225041 (100%)	Mineral	2008/oct/25	2016/dec/31	GOOD	280.6199
593391	6IOU	225041 (100%)	Mineral	2008/oct/25	2016/dec/31	GOOD	35.0514
593394	BORIS	225041 (100%)	Mineral	2008/oct/25	2016/dec/31	GOOD	315.7157
593430	ZERO	225041 (100%)	Mineral	2008/oct/26	2016/dec/31	GOOD	420.5292
594982	GOT-IT!*	225041 (100%)	Mineral	2008/nov/27	2016/dec/31	GOOD	157.7408
594986	ZIT	225041 (100%)	Mineral	2008/nov/27	2016/dec/31	GOOD	140.2926
594987	MONDO	225041 (100%)	Mineral	2008/nov/27	2016/dec/31	GOOD	70.1309
594989	MISTA GNOMER	225041 (100%)	Mineral	2008/nov/27	2016/dec/31	GOOD	105.1338
596382	BOCHA	225041 (100%)	Mineral	2008/dec/20	2016/dec/31	GOOD	368.1559

\* Pending acceptance of government assessment report

Table 2. Minfile mineral occurrences

IDENT	MINFILE #	Y_PROJ	X_PROJ	Lithology
AKI	094F027	6340424	409652	Py, Limonite, Gunsteel
AKIE	094F031	6360874	388246	Py, Sph, Ga in Gunsteel
CIRQUE	094F008	6376168	370597	Py, Sph, Ba, Ga in Gunsteel
CT	094F010	6329480	421449	Road River Group
DEL	094F018	6356656	378811	Ba in Gunsteel Form
DEL EAST	094F026	6357274	379900	Ba, Ga in Road River
DRIFTPILE CREEK	094K066	6439801	328360	Sph, Ga, Ba in Gunsteel
ELF	094F011	6352569	397027	Ga, Sph, Ba, Py in Gunsteel Form
FLUKE	094F009	6364184	384896	Py, Ga, Sph, Ba in Gunsteel Form
FAMILY	094F030	6334629	415998	Chalcocite, Sph, Py in Road River Group
GIN	094F017	6340378	408929	Ba in Gunsteel
GNOME	094F016	6345238	406001	Ba, Py mineralization hosted in Gunsteel
PESIKA	094F025	6229841	412310	Ba in Road River
PIE	094F023	6369159	381884	Ba, Ga, Sph, Chalcocite, Py in Gunsteel
SIKA	094F022	6368578	398881	Ba, Py in Road River Group

The author has checked the status of the mineral tenures that comprise the Gnome Property by using the B.C. Ministry of Energy, Mines and Petroleum Resources', internet-based, Mineral Titles Online database. The property is currently owned 100% by AsiaBaseMetals, owner number 225041 (Table 1). The Gnome Property is provincial Crown land and is open to mineral exploration and development. The Mineral Tenure Act requires that work be performed to a value of \$4 per hectare for the first three anniversary years of a tenure, and \$8 per hectare in the subsequent anniversary years. Previous exploration expenditures have been filed for assessment credit with the B.C. Ministry of Energy, Mines and Petroleum Resources. The 2012 assessment work, completed on behalf of AsiaBaseMetals, has been filed with the B.C. Ministry of Energy, Mines and Petroleum Resources for assessment credit under confirmed event number 5416695 and 5419906 for the amount of \$109,165.50. Portable assessment

credits of \$2,523.85 in the account of AsiaBaseMetals were used to move the expiry date of mineral tenure 594982 one year forward to December 31, 2016. This was completed on December 3, 2012 under confirmed event number 5419909. Acceptance of the assessment credit is pending. The Gnome Property is located on land claimed as First Nations traditional territory. It will be necessary to initiate proactive professional relationships with First Nations prior to advancing the property from the early stages of exploration to advanced exploration.

The following is a summary from the 2009 Consolidated Financial Statements (CFS) report on the Gnome Property. The CFS was prepared by Manning Elliot accounting firm for TintinaResources, formerly TintinaGold Resources.

On September 30, 2009, TintinaResources transferred its interest in the Gnome Property and \$500,000 in cash to AsiaBaseMetals as part of a spin-off transaction. Upon this transfer, all of the AsiaBaseMetals stock that Tintina received pursuant to the transfer, were distributed to the Tintina shareholders. AsiaBaseMetals has the right to purchase the %1 NSR royalty from C.J. Greig and Associates for \$2,000,000 up to the 10<sup>th</sup> anniversary of the closing date. The acquisition of the property was completed by TintinaGold Resources on May 4, 2009 (Manning Elliot, 2009).





Figure 1. Location of Gnome Property, north central British Columbia, after Green, 2008

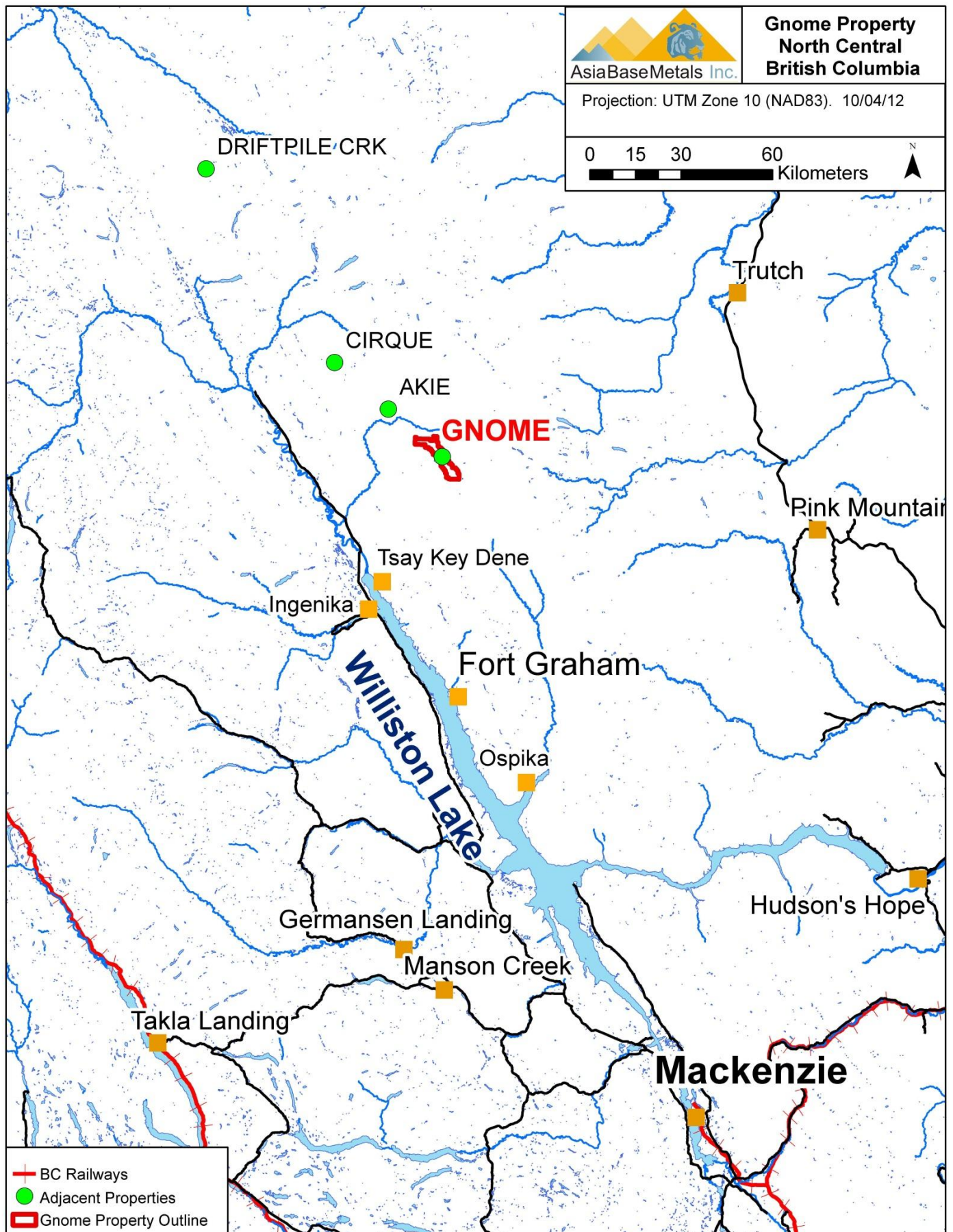


Figure 2. Location of Gnome Property and local resources

## **5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY**

### **5.1 ACCESS**

The towns of Prince George and Mackenzie, BC serve as the primary centers for transportation, communication and logistical support for the Williston Lake area. A network of forestry service roads exist along the shores of Williston Lake and extend north of Williston Lake into the Finlay River drainage. Several gravel airstrips are located along the Finlay River basin and shores of Williston Lake for fixed-wing transportation. First Nations communities, mining, outfitting and historical logging camps can be accessed by the roads, water and air. The system of logging roads, camps and airstrips provide excellent road-accessible staging areas and/or exploration camps for future exploration programs at the Gnome Property. Transportation from these communities and camps to the property is currently restricted to helicopter travel. The property was most recently accessed from the Finlay River Outfitters' Fort Graham Lodge using a Bell 206 L3 JetRanger, which was chartered through Yellowhead Helicopters, Ltd. Historically, exploration programs have based exploration camps at the Finbow logging camp and Tsay Keh, a local First Nations community. In 2007, the Gnome Property was accessed via Mantle Resources' field camp (now Canada Zinc Metals Corp. Akie camp) in the Akie River valley. The upgraded road to the nearby Akie Property, which was extended in 2008, lies within 15km of the Gnome Property (Figure 2).

### **5.2 INFRASTRUCTURE**

#### ***Roads***

The region proximal to Williston Lake is moderately well-connected by a network of forestry service roads originating from the town of Mackenzie. The Akie Mainline FSR has recently been extended to the 41.5 km mark in the vicinity of the Cardiac Creek deposit on the Akie Property. This road is currently the most sensible and practical road access to the property. Previous exploration programs for the Gnome Property have been stationed at the Akie exploration camp and there exists potential to base future exploration efforts out of the Akie camp. The provincial paved highway system can be accessed from the town of Mackenzie.

#### ***Aircraft***

Gravel airstrips along the shores of Williston Lake and the Finlay River basin are located at Tsay Keh and Ingenika communities and the Ospika and Fort Graham camps. These airstrips are located 45, 55, 115 and 80 kilometers from the Gnome Property, respectively. Northern Thunderbird Air service provides regularly scheduled flights to these communities and will, upon request, provide service to Finlay River Outfitters' Ospika and Fort Graham camps.



### ***Electricity***

The hydroelectric W.A.C. Bennett Dam, located on the Peace Reach of the Williston Lake Reservoir, provides power to the nearby Kemess copper-gold mine via the Kennedy substation located near Mackenzie. Currently, the Akie, Ospika and Fort Graham camps as well as the local communities produce electricity using on-site, diesel-fueled generators.

### ***Water***

Williston Lake reservoir hosts barge services that operate out of Mackenzie providing service to local communities, camps, and the forestry industry. These barge services can be used for many purposes including transportation of supplies and fuel for both helicopters and fixed-wing aircraft.

### ***Rail***

The closest rail service is located in Mackenzie, BC.

## **5.3 CLIMATE**

The region has a variable climate with temperatures ranging from 5°C to 30°C in the summer months and -10°C to -30°C with extremes to -45°C in the winter. Precipitation is variable with moderate amounts of rainfall and temporary high-elevation snowfall in the summer and moderate accumulations of snow in the winter. Snow begins to accumulate in late September and continues falling through the middle of June.

## **5.4 PHYSIOGRAPHY**

The Akie River area is mountainous, with a series of northwest-southeast trending ridges, transected by steep northeast trending drainage corridors. Topography of the Gnome Property is moderate to steep, with elevations ranging from 1,000 meters to 2,200 meters above sea level. Bedrock is generally well exposed above tree line, at approximately 1,700 meters. Slopes above tree line are sparsely covered by talus, moss and alpine grasses and flowers, whereas slopes below tree line are heavily timbered with spruce, pine and balsam (Figure 3). Animal species may include grizzly bear, black bear, caribou, mountain goat, porcupine, wolf and marmot.



Figure 3. Gnome Property, view looking north from southern area





Figure 4. Gnome Property, view looking south from Area C

## 6.0 HISTORY

### 6.1 REGIONAL

The Selwyn Basin has seen extensive exploration and production of base and precious metals and is host to the Howard's Pass and Jason deposits. In the mid to late 1970's, exploration for clastic-hosted, stratiform sulfide and barite deposits shifted southward into the Kechika Trough. Geophoto Consultants were the first to explore the northern portion of the Kechika trough in 1970. MacIntyre (1998) published a regional geologic map for the Akie River area. The map compilation from numerous sources and published with the British Columbia Geological Survey Branch Bulletin 103, titled *Geology, Geochemistry and Mineral Deposits of the Akie River Area, Northeast British Columbia* by Don G. MacIntyre (Figure 11).

In 1972, Canex Exploration (Placer Development Ltd.) discovered bedded barite-sulfide occurrences in Devonian black clastic rocks near Driftpile Creek. The most significant discovery was made in 1977 when a joint venture between Cyprus Anvil Mining Corp. and Hudson's Bay Oil and Gas Company Ltd. discovered the Cirque deposit (Figure 9). In 1978, RioCanex staked what is now the central portion of the Akie Property. The Cirque and Akie (Cardiac Creek) deposits both have drill-indicated mineral resources. The Cirque deposit contains a mineral resource estimate of 32.2 Mt at 7.9% Zn, 2.1% Pb and 48 g/t Ag (MacIntyre, 1991). The Cardiac Creek deposit has a recently-updated indicated resource of 12.7 Mt at 8.38% Zn, 1.68% Pb and 13.7 g/t Ag and an inferred resource of 16.3 Mt at 7.38% Zn, 1.34% Pb and 11.6 g/t Ag (Sim 2012). Extensive drilling at the Cirque and South Cirque deposits provides valuable information on the stratigraphic and structural settings of the stratiform barite-sulfide deposits in the region. The Akie Property has experienced two periods of extensive drilling. Between 1994 and 1996, Inmet Mining completed 29 drill holes and between 2005 and 2011, Canada Zinc Metals Corporation completed an additional 79 drill holes.

A comprehensive database of mineral occurrences (MINFILE) has been developed for the Kechika Trough as a result of the extensive exploration in this area. The MINFILE database covers the Kechika Trough and the entire province of British Columbia. The mineral occurrences proximal to the Gnome Property are shown in Figure 5 and Table 2.



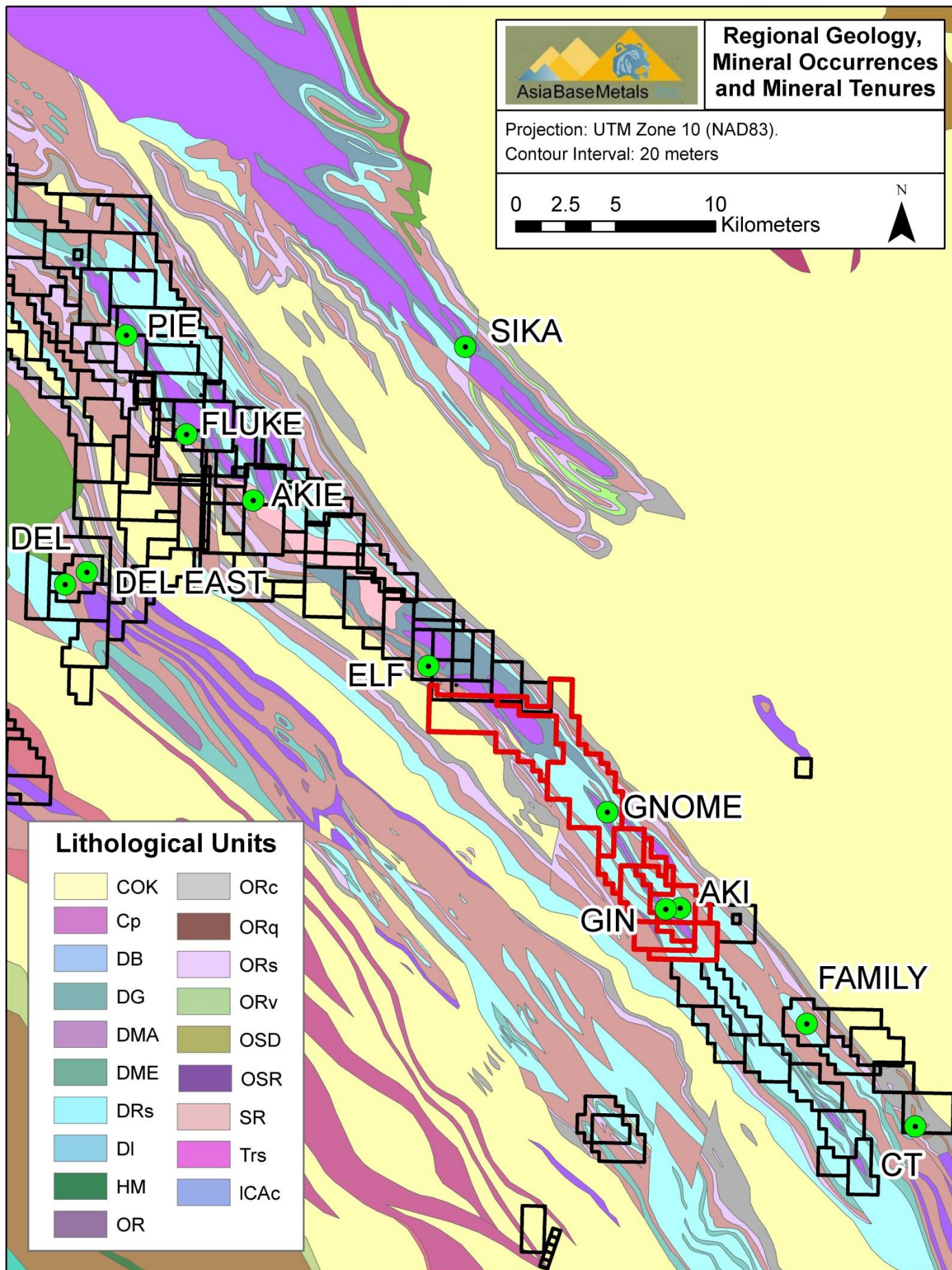


Figure 5. Gnome and neighboring properties with Minfile occurrences



## 6.2 PROPERTY

### *Cominco Programs*

Cominco Ltd. originally staked the Gnome 1-12 claims in 1979 and conducted exploration activities between 1980 and 1985. Exploration efforts consisted of preliminary geologic mapping and collection of 30 stream sediment, 2,900 soil and 28 lithogeochemical samples. Soil samples were collected using a grid-based sampling method at 25 to 50-meter intervals along lines spaced 400 meters (1980) and 100 meters (1981) apart and oriented perpendicular to strike. The samples were analyzed for Pb, Zn and Ba. Three anomalous areas (Areas A, B and C) were outlined on the Gnome Property as a result of Cominco's soil programs. Cominco also conducted minimal prospecting and trenching to expose barite horizons on the property. In Area C, two trenches were excavated to expose a 2 to 9 meter section of blebby to laminated barite and minor pyrite. This barite horizon (Db3) constitutes the Gnome mineral occurrence. The trenches at Area C were mapped and sampled by Cominco however sample results were not reported. The barite-zinc anomaly at Area C doesn't have associated anomalous lead values and Db3 doesn't have associated zinc mineralization. Additionally, Cominco mapped the property at 1:5,000 scale and constructed cross-sections for Area A (G-H), Area B (C-D) and Area C (A-B & E-F). The geologic maps and cross-sections were appended to the Cominco report (ARIS 09722B) along with trenching maps, and a measured section. Cross section E-F is included as Figure 12 in the present report. In Area A, there are four extensive trenches that were excavated perpendicular to the structural grain of thinly-bedded siliceous black shale. These trenches test the extent of a thin barite horizon (Db1) within siliceous shale and siltstone of the lower Earn Group. It is unknown which program and operator excavated these trenches.

### *Cyprus Anvil Program*

In 1979, Cyprus Anvil Corp. staked the GIN 1-5 claims south of Cominco's Gnome Property. These claims were located in the southern portion of the present-day Gnome Property and were tested with a grid-based soil geochemical sampling program. A total of 2,850 samples were collected at 50 meter intervals on grid lines spaced 100 meters apart (Figure 7). Cyprus Anvil evaluated the economic potential of the land covered by the GIN claims and outlined one primary area of interest. A northwest trending barite horizon and associated sulfide mineralization southeast along strike were identified in the northern portion of the GIN Property. At the GIN occurrence, nodular and laminar barite occur in finely laminated dark grey to black siliceous shale within the upper part of the Gunsteel formation. A second barite occurrence on the property is located northwest of the GIN mineral occurrence. Here, the barite is massive and up to 3m thick. No sulfides are associated with the barite, although minor galena, sphalerite,

and tetrahedrite were observed in quartz-carbonate veins in Silurian siltstone boulders a short distance to the southeast of the barite showings.

### ***Aquitaine Company of Canada***

The AKI mineral occurrence lies near the GIN occurrence and within the historic Aki Group claims in the southern end of the present Gnome property. Aquitaine Company of Canada (ACC) staked the Aki and Guy claims and conducted exploration activities in 1980 and 1981. Several limonite gossans are associated with Gunsteel formation shale and the shale locally contains bands of disseminated and nodular pyrite. The largest exposed gossan is 300 meters long and 50 meters wide, although its thickness is unknown. A composite of 13 samples of limonite from the gossans assayed 0.98% Zn and 2.08g/t Ag but contain negligible lead (Green, 2008). Rare traces of barite were present in gossanous material, although a barite horizon was not located. Grid soil sampling on the Aki Property returned anomalous values in zinc (from 1,000ppm to 2%) mainly in association with the gossan zones. Maps for the Aki Property are appended to the 1980 assessment report entitled, *Geological and Geochemical Report on the Aki Claim Group, Akie River Area, Omineca Mining Division* by G.R. Coutellier.

### ***Inmet Mining Programs***

Inmet Mining Corporation re-staked the Gnome Property in 1995 as the Muskwa Property, comprising Muskwa Groups 1 & 2. Inmet conducted soil geochemical sampling programs intended to verify the soil geochemical anomalies previously identified by Cominco. A 7.20 km baseline was established with approximately the same location and orientation as the Cominco baseline. Grid lines were cut on 200 meter spacing at approximately the same orientation as the original Cominco soil lines. Sample collection was focused at Areas A, B and C (defined by Cominco). A total of 816 samples were collected at 25 meter intervals and analyzed for Pb, Zn, Ag, Ba, Cd, Mn, As and Fe (Figure 7).

### ***Mantra Mining Programs***

In 2006, C.J. Greig and Associates staked the current Gnome Property including the land previously covered by the GIN 1-5 claims (Figure 8). C.J.Greig and Associates entered into a joint venture with Mantra Mining Inc. in 2008 to conduct exploration that was designed to lead to an earn-in by or sale of the property to Mantra. The Mantra exploration program consisted of infill soil geochemical sampling to verify location, existence and accuracy of the previous Cominco and Inmet programs. Additionally, Mantra Mining evaluated the extent of favorable stratigraphy within the property in order to assess the potential for an economic base metal deposit. The 2008 sampling program was concentrated on the GNOME and GNOME NW tenures. A total of 1,194 samples were collected on 25 meter sample intervals from 14 lines spaced 200 to 400 meters apart (Figure 7). In addition to grid-sampling, the 2008 field crew

completed reconnaissance sampling along a 9 km long line along the northernmost ridgeline within and proximal to the GNOME NW tenure (569529). Additionally, property-scale geological maps were compiled from Cominco programs, digitized and included in the 2008 Technical report by Darwin Green. This geologic compilation map is currently the most comprehensive property-scale geologic map for the property (Figure 6). In addition to the 2008 soil sampling, the analytical values of the Mantra Mining, Inmet Mining and Cominco programs were compared. The comparison of the results provided confidence that the sample results from each independent program could be combined into one data set. Green (2008) calculated thresholds for the anomalous values of Zn, Pb and Ba and are included in Table 3. These values have been adapted for this report. A conventional statistical procedure to determine anomalous thresholds is to compute the cumulative histograms for each element of interest, determine whether the population distribution is normal or log normal, normalize the distribution and calculate the mean and standard deviation. Anomalous thresholds are the mean plus two standard deviations.

### ***AsiaBaseMetals Programs***

AsiaBaseMetals conducted a FUGRO airborne geophysical survey over the Gnome Property in 2010, in order to define mineralized areas on the property. In 2012, AsiaBaseMetals completed follow-up soil geochemical sampling and preliminary geological mapping over areas that show indication for exploration drilling targets. These programs are summarized in chapter 12 of this report.

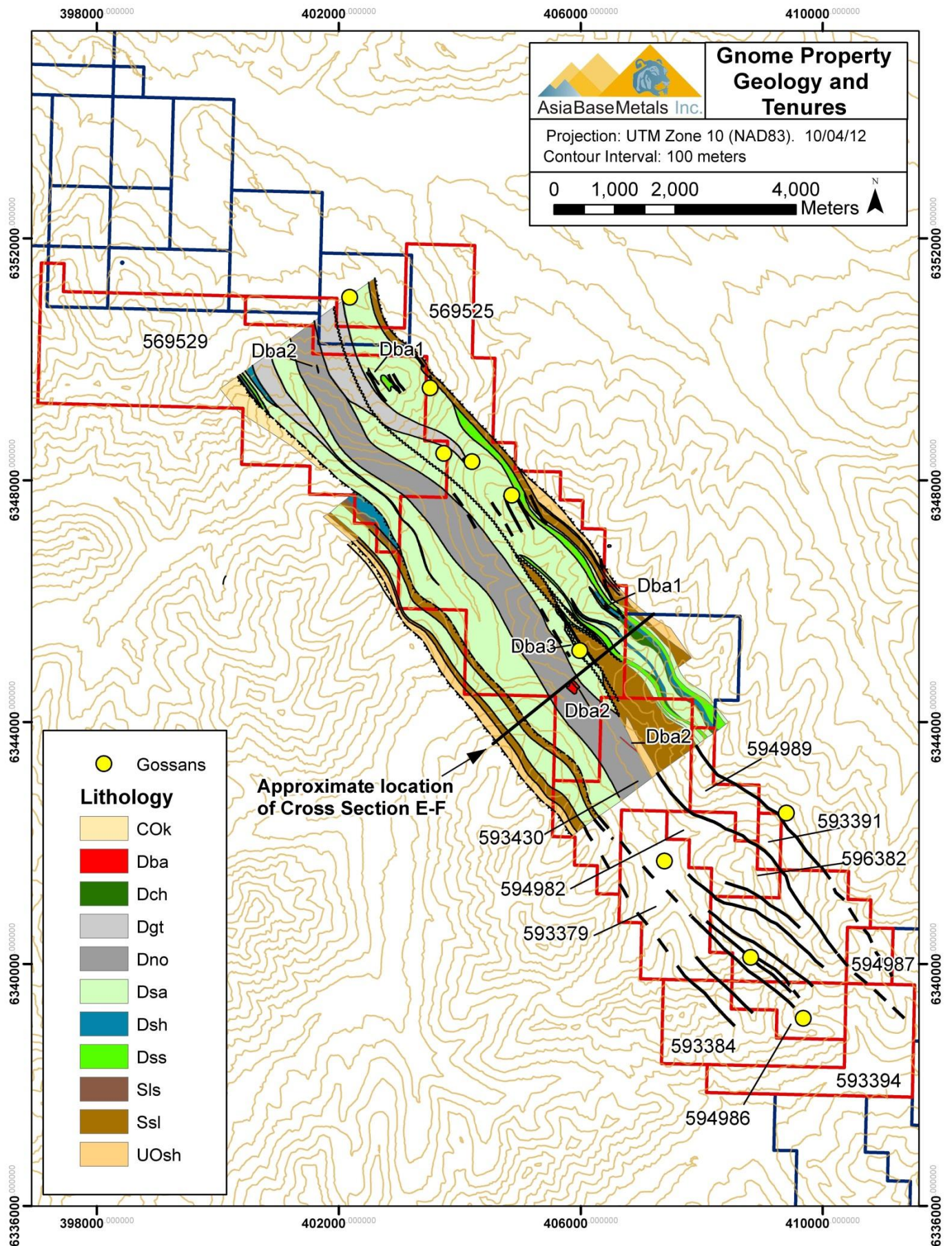


Figure 6. Gnome Property mineral tenures with gossans and geology, after Kuran, 1981



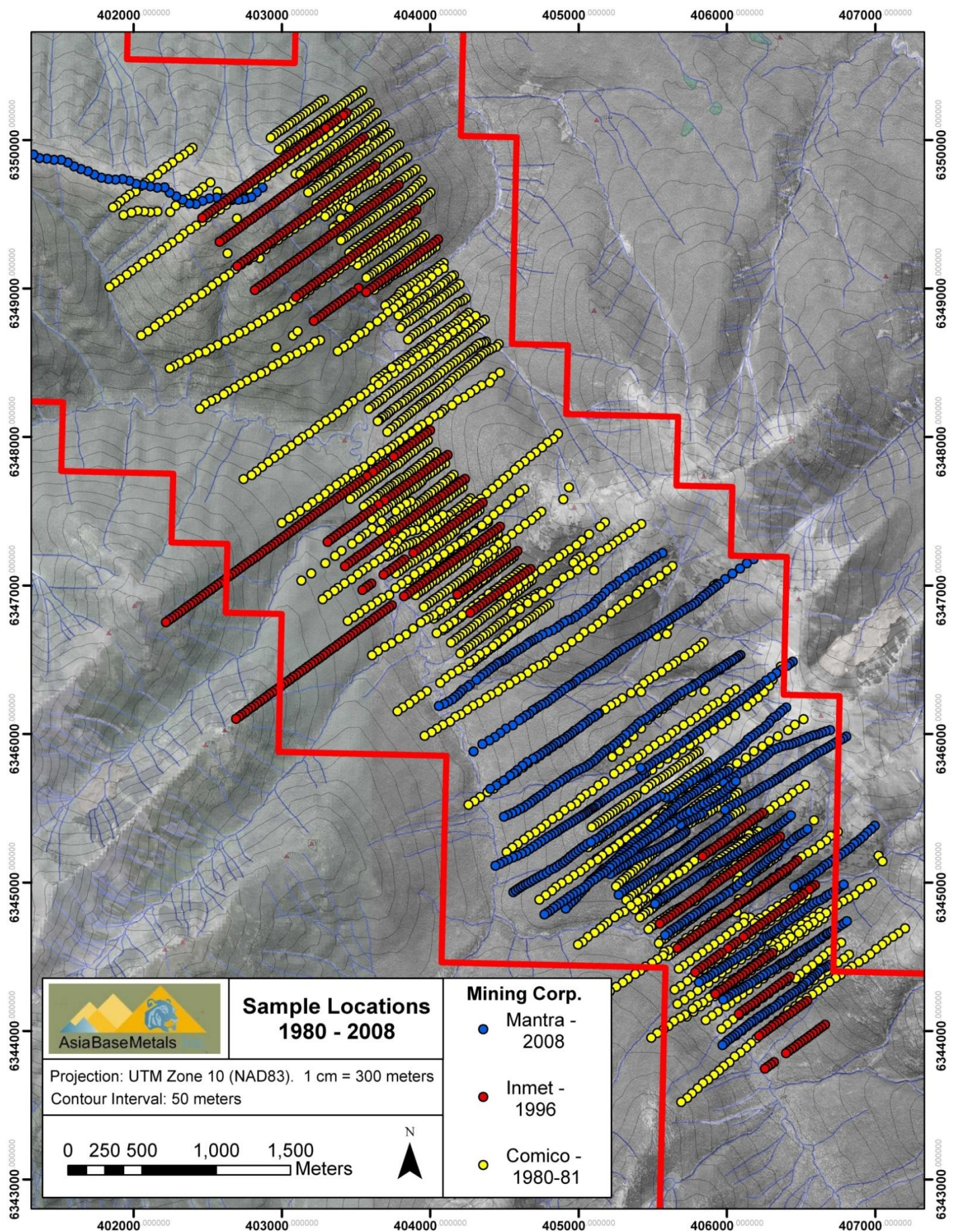


Figure 7. Sample locations, 1980-2008 programs



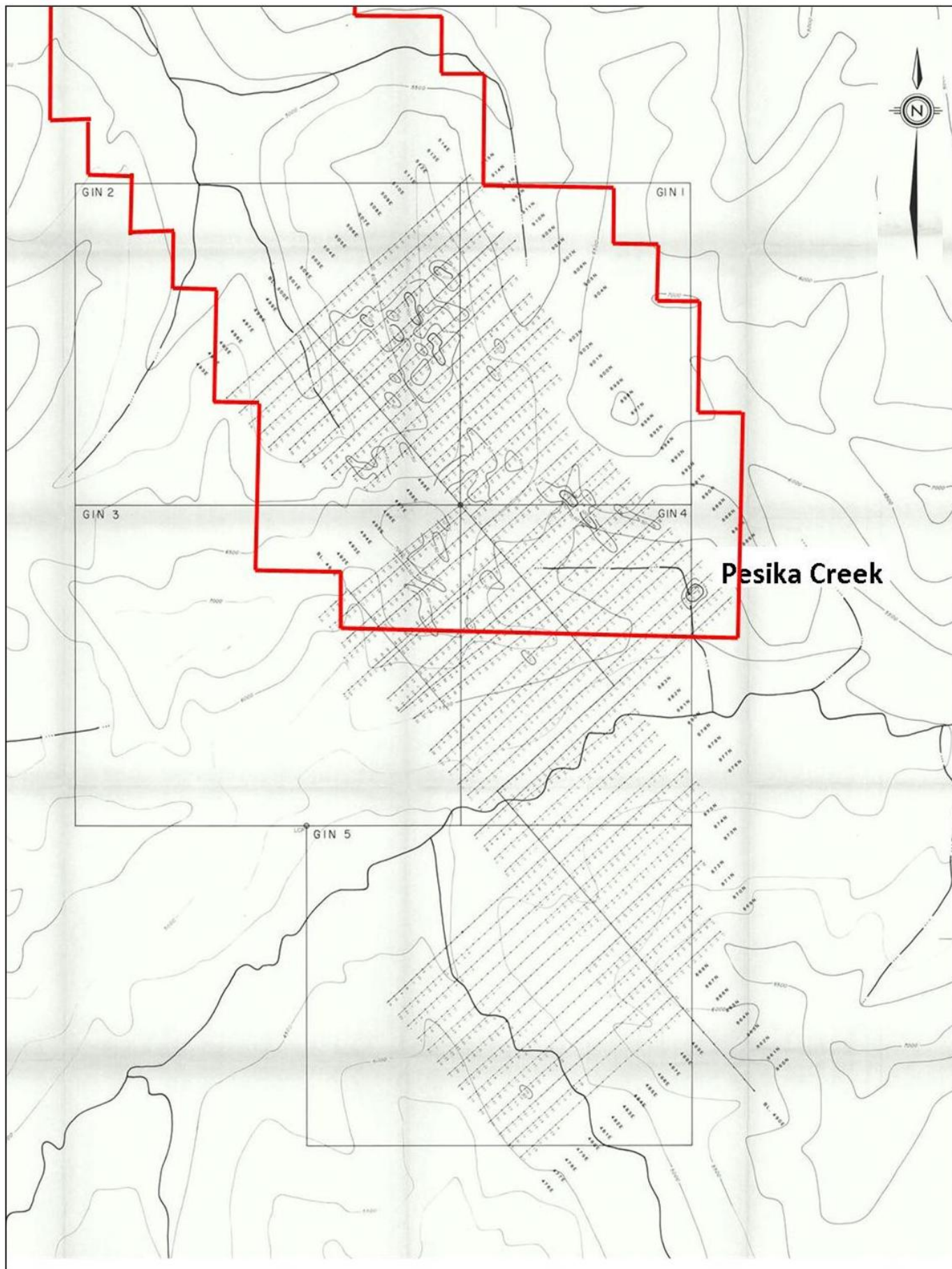


Figure 8. GIN claims with Gnome Property boundary, after Roberts 1980

## 7.0 GEOLOGIC SETTING

The Kechika trough, located in northeastern British Columbia, is the southernmost extent of the Selwyn Basin and hosts a similar stratigraphic sequence to that of the Selwyn Basin (Figure 9). The Selwyn basin, located in the Yukon Territory of Canada, is a late Precambrian to Devonian sedimentary basin characterized by deep water shales and platform carbonates. Exploration programs for base-metals in the Selwyn Basin and Kechika Trough have targeted SEDEX and Mississippi Valley Type (MVT) deposits. SEDEX deposits are interpreted to have been formed from metal-rich hydrothermal fluids being exhaled by sub-seafloor vent complexes into a reducing environment, which allows the precipitation of mounded, tabular or sheet-like bodies and lenses of stratiform sulfide minerals (Goodfellow and Lydon, 2007). MVT deposits are carbonate-hosted, epigenetic and stratabound ore deposits composed of lead, Zinc and iron sulfides (Paradis, 2007). The Kechika Trough is situated along a rifted continental margin of ancestral North America and hosted third-order starved basins during the Late Devonian and Mississippian (MacIntyre, 1998). The sedimentary environment and tectonic regime of the Kechika Trough allow for a depositional setting that fits the genetic model of sedimentary exhalative-type (SEDEX) Zn-Pb-Ag deposits.

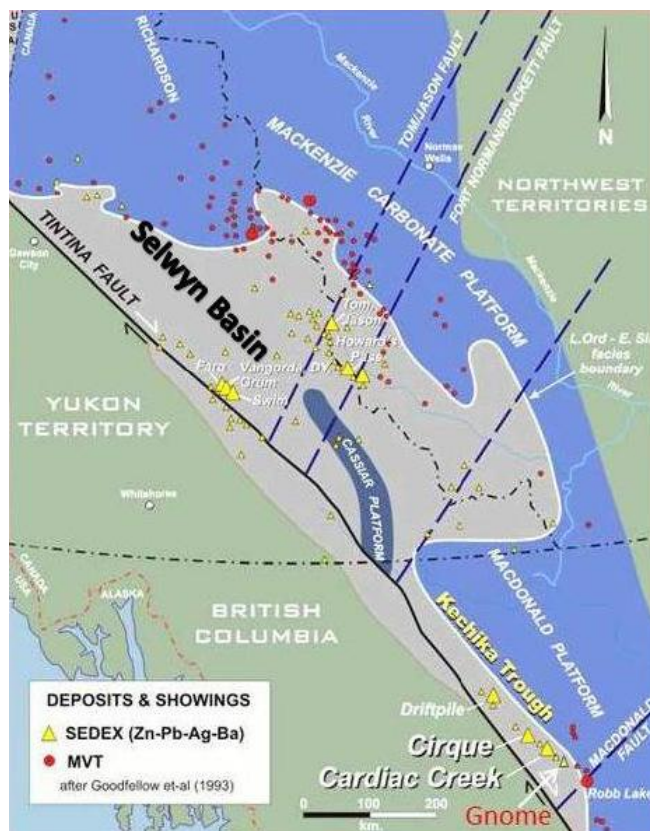


Figure 9. Deposits within the Selwyn Basin and Kechika Trough, from Sim, 2012

The regional geology in the vicinity of the Gnome Property has been described in detail by Don MacIntyre (1998) in a work titled *Geology, Geochemistry and Mineral Deposits of the Akie River Area, Northeast British Columbia*. Additional regional and property-scale geology, structure and mineralization were described by Darwin Green in the 2008 NI 43-101 technical report, *Geology and Geochemistry, Gnome Zinc-Lead-Silver Property, Northeast British Columbia, Canada*, prepared for Mantra Mining. The geological summary presented herein is adapted from both the MacIntyre (1998) and Green (2008) reports.

## **7.1 REGIONAL GEOLOGY**

The Gnome Property is situated within the southern portion of the Kechika Trough, located in the Rocky Mountain fold-and-thrust belt of northeastern British Columbia. The Kechika trough is comprised of a thick succession of fine-grained clastic and lesser carbonate sedimentary rocks of Late Cambrian to Late Triassic age. The Kechika Trough is bounded by sedimentary rocks of the Cassiar and MacDonald Platforms (MacIntyre, 1998). The northwest trending transcurrent Tintina Fault truncates the Kechika trough and is coincident with the extensive Rocky Mountain trench (Gabrielse, 1984, MacIntyre, 1998). Northeast-directed tectonic compression during Mesozoic time detached Paleozoic and older strata from the cratonic basement rocks creating a series of southwest-dipping imbricate thrust sheets. These large thrust sheets contain internally-deformed tight, asymmetric, upright and overturned folds (Price, 1986; McClay et al., 1989; MacIntyre, 1998).

The Late Cambrian to Early Mississippian rocks in this region represent multiple marine transgressive cycles with associated clastic sedimentation and intermittent carbonate buildup. The Late Cambrian to Early Ordovician, Mid to Late Ordovician, Early Silurian, and Early Devonian to Early Mississippian transgressive cycles are represented by the Kechika Group, Skoki Limestone, Road River Group and the Earn Group respectively (MacIntyre, 1998). The Earn group is subdivided into the Akie, Gunsteel, and Warneford Formations. A generalized stratigraphic column by MacIntyre (1998) is included in Figure 10 as well as a property scale geologic map in Figure 11. The following description of regional geology and structure is adapted from the 2012 Canada Zinc Metals Corporation NI 43-101 Technical Report, prepared by Robert C. Sim.

### ***Kechika Group (Cambrian to Ordovician)***

The Kechika Group strata are comprised of a thick, approximately 1,500 meter succession of cream colored to light-grey, weathered, talcose, phyllitic mudstones and wavy, banded, nodular (boudinaged) limestones (MacIntyre, 2005; Demerse and Hopkins, 2008). The Kechika Group rocks are prominent in the southern Kechika Trough and thin to the north. Thin beds of green weathered tuffs and thin felsic



dykes have been noted within the Kechika Group rocks, which are indicative of volcanic activity during the time of deposition (MacIntyre, 2005).

### ***Skoki Limestone (Ordovician)***

The Skoki limestone is an approximately 500 meter-thick, thinly-bedded Ordovician limestone that overlies the Kechika Group. The limestone is present in the Pesika Creek and Kwadacha River areas and is absent in the Northern Kechika Trough (MacIntyre, 2005).

### ***Road River (Ordovician to Early Devonian)***

The Road River Group is thought to represent the transition between platform and basin rocks (MacIntyre, 2008) which unconformably overlie the Kechika Group and represent a collection of fine-grained sedimentary rocks, carbonates and volcanic rocks (MacIntyre, 1998). The Road River Group is common throughout the Kechika Trough and can be subdivided into the Lower Road River Group, Ospika Volcanics and the Paul River Formation (MacIntyre, 2008).

The Middle to Late Ordovician Lower Road River Group is comprised of beige to reddish-brown weathering, thinly-bedded calcareous siltstone and shale, with minor limestone turbidites and debris flows. The siltstone grades up section into a distinct black graptolitic shale (MacIntyre, 1998). The graptolite fossil assemblage provides a useful tool to differentiate from the lithologically identical Devonian strata (MacIntyre, 2008). Locally, the shale is interbedded with black chert, quartz wackes, arenites and pebble conglomerates.

The Ospika Volcanics are present throughout the central Kechika Trough area (Akie River, Paul River and Ospika River) and are represented by a series of discontinuous lenses and beds of green mafic flows microdioritic sills and orange weathered ankeritic crystal and lapilli tuffs.

The last unit of the Road River Group is informally recognized as the Paul River Formation (Pigage, 1986) and consists of deep water marine turbidites comprised of black chert, interbedded black shale with limestone debris flows, dark-grey to brown, rusty-weathering silty shale and siltstone (MacIntyre, 2008). In the Akie River area, the rusty-weathering silty shale partially onlaps the Early to Middle Devonian Akie and Kwadacha Reefs. The Akie and Kwadacha reefs are up to 200 meters in thickness and are composed of medium to thick-bedded micritic and bioclastic limestones with minor shale interbeds.

The Upper Road River Group is an Early to Middle Silurian siltstone that unconformably overlies the Ordovician graptolitic black shale (MacIntyre, 2008). The basal unit of the Upper Road River Group is commonly referred to as the Silurian limestone which is comprised of a 0 to 20 meter-thick unit consisting of thinly-bedded, cross-laminated limestone and dolostone beds with interbedded grey calcarenites, dark-grey dolomitic shales and minor debris flows. The Silurian Limestone is overlain by a 100 to 500 meter-thick, tan to orange-brown, dolomitic, thinly-bedded siltstone with minor orange

weathering limestone and dolostone interbeds. The dolomitic siltstone is commonly bioturbated and minor graptolites and sponge impressions are locally present (MacIntyre, 2008).

### ***Earn Group (Middle Devonian to Mississippian)***

Rocks of the Earn group conformably overlie the Road River Group and are characterized by carbonaceous, siliceous shales, cherty argillites, phyllitic shales and coarse quartzose turbidites of Middle Devonian to Mississippian age (MacIntyre, 1998). The Earn Group has been subdivided into the Warneford, the Akie and the Gunsteel Formations (Pigage, 1986; MacIntyre, 1998). These rocks are representative of a major marine transgression that resulted in the termination of reef growth, and deposition of fine clastic sediment (MacIntyre, 1998). Strata of the Gunsteel Formation were deposited during Middle to Late Devonian. The formation weathers to a distinctive “gunsteel” blue and comprises a collection of carbonaceous and siliceous shales, argillites and cherty argillites (MacIntyre, 1998). Strata of the Gunsteel Formation are the primary prospective rocks for SEDEX-type mineralization within the Kechika Trough. The Gunsteel Formation is host to the Cirque, Cardiac Creek and Driftpile Creek deposits as well as the Gnome, Fluke, Elf, Pie and Mount Alcock prospects. Occurrences of laminar pyrite and nodular barite are common in the Gunsteel Formation. The Gunsteel Formation is overlain by the Akie Formation, which is comprised of soft, medium to dark grey, phyllitic shale to silty shale and siltstone which typically weather to a rusty brown, tan or silvery color (MacIntyre, 1998). The Warneford Formation overlies the Akie formation and is interpreted to be proximal to medial turbidite deposits (MacIntyre, 1998).

### ***Triassic Siltstone (Mississippian to Triassic)***

The Triassic Siltstone group is the youngest group of rocks in the Kechika Trough and they occur in the core of a large, northwest trending synclinalorium, northeast of the Kwadacha River. The group is comprised of dolomitic siltstones and limestones with similar character to the Silurian Siltstone. Triassic brachiopods are present in the Triassic Siltstone unit and serve to be the distinguishing factor between the Silurian and Triassic siltstone units. The base of the Triassic Siltstone group is a 10 to 20 meter thick layer of light colored chert that may be correlative to the Mississippian Prophet Formation or the Permian Fantasque Formation, which occur in the MacDonald Platform, east of the Kechika Trough (MacIntyre, 1998).

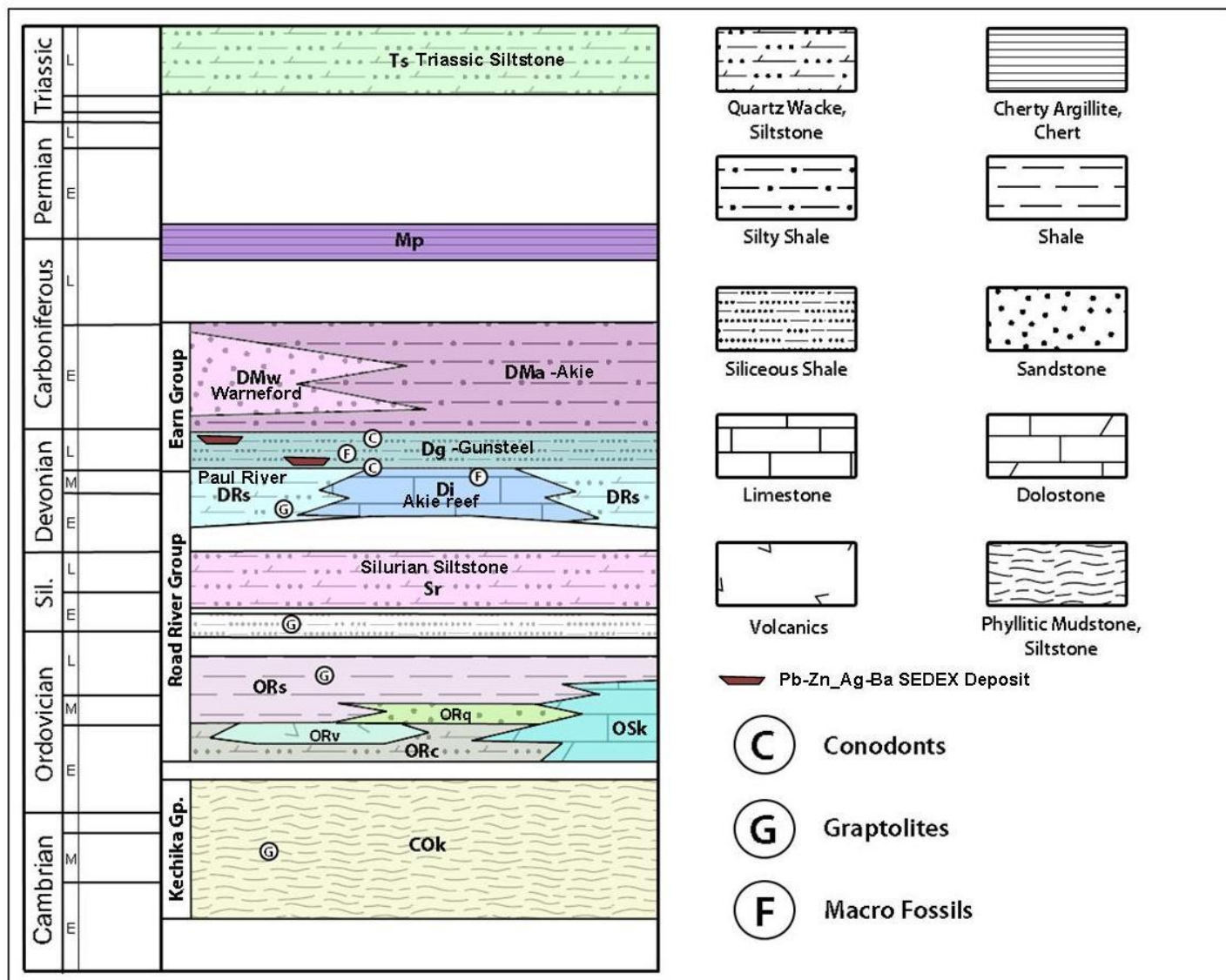


Figure 10. Akie River Area generalized stratigraphic section, After MacIntyre, 1998



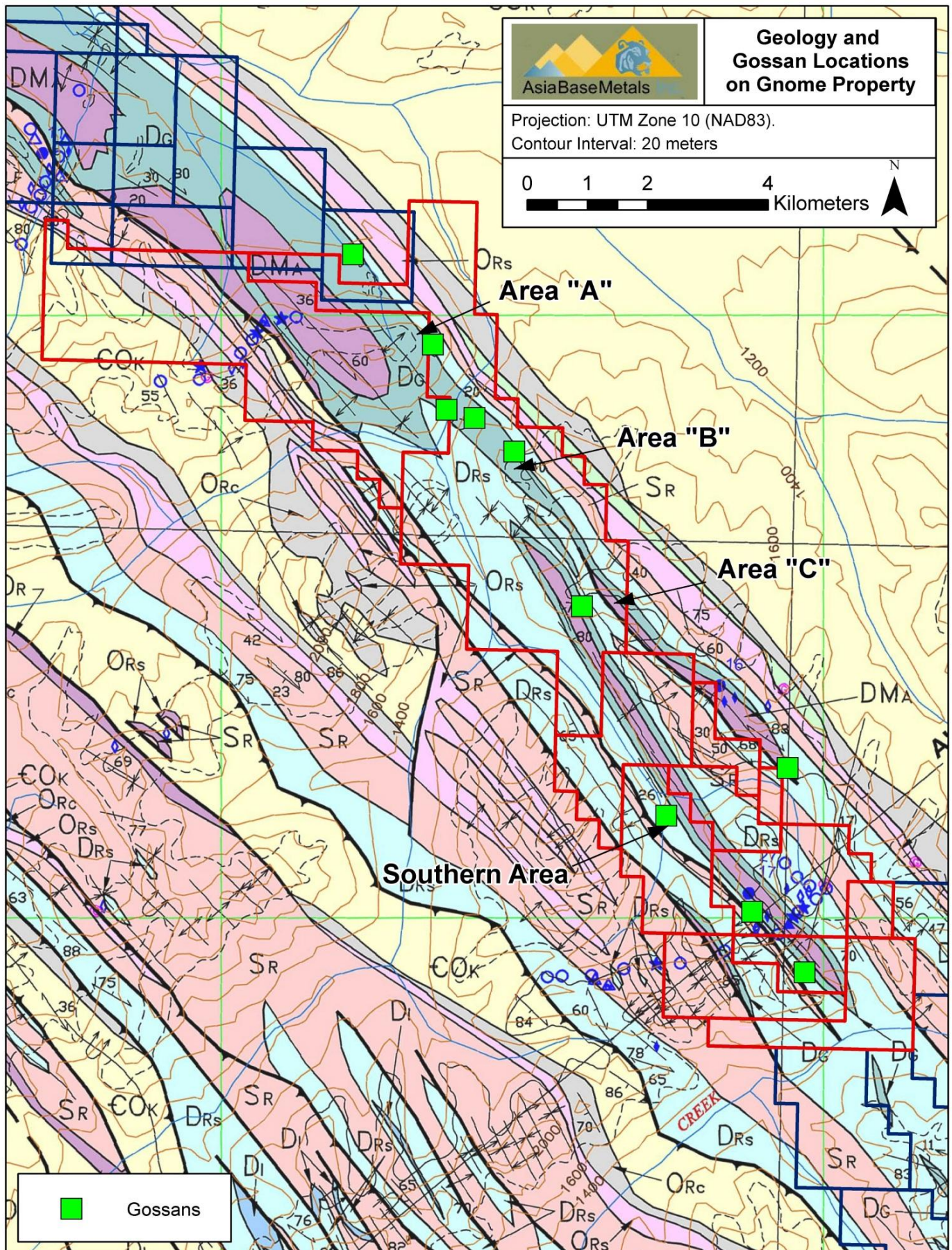


Figure 11. Gnome Property tenures, gossans and regional geology after MacIntyre, 1998.



## 7.2 REGIONAL STRUCTURE

The linear alignment of faults and parallel exposure of lithologies in the Akie River area reflects the thin-skinned tectonic style of the Rocky Mountain Fold-and-Thrust Belt. Northeast-directed compression resulted in detachment of the Paleozoic strata from a rigid crystalline basement and partial stacking of the detached plates along a series of imbricate thrust faults (MacIntyre, 1998). The thrust plates are composed of thick stacks of Paleozoic strata. Incompetent strata within thrust plates have been internally folded and deformed. Incompetent strata that lie below overriding thrust plates have tight to isoclinal folds with southwest-dipping axial planes, whereas rocks in the overriding plate are asymmetrically folded and often have northeast-dipping axial planes. The structural style changes from west to east across the map area. In the west, imbricate, southwest-dipping reverse faults bound asymmetric overturned folds with southwest-dipping to vertical axial planes. MacIntyre indicates that in the eastern part of the Akie River area, large-scale upright folds occur within major synclinoriums that are bounded by outward-dipping reverse faults. Devonian strata are preserved within the synclinoriums. MacIntyre suggests that the high-angle growth faults bounding depositional troughs in Devonian-Mississippian time were reactivated during Tertiary compression and became the locus of major thrust faults in the district. The close spatial association of Paleozoic mineralization, reef building, coarse clastic fans and volcanism along faults provide support for the hypothesis that major high-angle thrust faults reactivate much older crustal breaks.

Pigage (1986) conducted detailed studies of the structure of the Cirque deposit. This work led to the recognition of two phases of coaxial deformation. The earliest deformation stage, which is recognizable throughout the Akie River area, resulted in the development of northwest-trending, tight asymmetric folds that verge northeast with gently-dipping southwest limbs and steep to overturned northeast limbs. The steep limbs are often offset by high angle reverse faults, resulting in the juxtaposition of Ordovician and Silurian strata against shales of the Devonian Gunsteel Formation. The high-angle reverse faults may coalesce at depth into a major detachment surface possibly rooted in the highly attenuated Kechika formation. Shale typically has a pervasive slaty cleavage that parallels the axial planar surfaces of macroscopic folds. Closely-spaced fracture cleavage is found within the more competent strata.

The second phase of deformation resulted in folding of the early-formed slaty cleavage and development of a penetrative crenulation cleavage. This crenulation cleavage has axial surfaces that are parallel to axial planar surfaces of the late folds, which may have amplitudes of up to 30 meters (Pigage, 1986). The folds are open to upright, trend northwest and have northeast vergence. High-angle listric, normal and reverse faults are also common in the Akie River area and generally trend parallel or at slight angles to the major high-angle thrust faults. These subsidiary faults are probably related to brittle failure

of thrust plates during detachment and thrusting. Displacements of up to several hundred meters have been documented at the Cirque deposit (Pigage, 1986).

According to MacIntyre (1998), north to northeast-trending, high-angle faults offset earlier thrust and listric normal faults. Some of these faults have a strike-slip movement and may be synthetic shears related to a Tertiary oblique compressional stress regime.

### **7.3 PROPERTY GEOLOGY**

The geology of the Gnome Property presented in this report is largely interpreted from previous geological mapping, both on the property itself (Kuran, 1981) and from regional mapping by the B.C. Ministry of Energy and Mines and Petroleum Resources in 1979, 1980 and 1981 (MacIntyre 1998). Detailed geological mapping and measurement of stratigraphic sections were undertaken by Cominco in 1981. The most comprehensive study of the structural geology of the Gnome Property was reported by Kuran (1981) and is included in the property structure section of this report. Previous mapping programs have outlined a series of northwest-trending antiforms and synforms containing belts of Devonian Earn Group rocks. Detailed mapping identified six lithologic units within the Earn Group, and three barite-rich horizons. The barite horizons are the primary tools for vectoring towards economic Pb, Zn, Ag mineralization. Older Paleozoic strata recognized on the claim group are identified as the Kechika and Road River Groups. The dolomitic siltstone exposed on the property is thought to have been deposited during the Silurian transgression. Descriptions of the geologic units are given below as summarized from Kuran (1981).

#### ***Kechika Group (Cok)***

The Kechika Group, of Upper Cambrian to Lower Ordovician age, outcrops along the western boundary of the Gnome claims. These strata were translated over Middle to Upper Ordovician, Silurian, and Devonian rocks in the hanging wall of a west-dipping thrust sheet. The Kechika Group consists of resistant, grey-brown weathering, thin- to medium-bedded, grey, calcareous nodular shale.

#### ***Road River Group***

The Road River Group is comprised of four stratigraphic units (Ov, Osh, UOsh, Sls) that are found in and around the Gnome Property. The eastern margin of the Gnome claim group is discontinuously bordered by an Ordovician volcanic tuff (Ov). The tuff is described to be orange- to pale green-weathering, grey to pale green and variably calcareous. It is suggested that these tuffaceous rocks have been thrust westward over younger strata of the UOsh unit. This unit is a moderately resistant, blue-grey, platy weathering, thinly-bedded, Upper Ordovician black shale containing graptolites (*Dicranograptus* and *Orthograptus*). Unit UOsh is overlain by the Sls unit, a moderately resistant, grey- to tan-weathering,

medium- to massively-bedded, fine-grained Silurian black limestone. The Ov and UOsh units are not present in the western margin of the claim group. At the western margin, the Osh unit which is a recessive, thin-bedded, rusty weathering, graphitic black shale, is unconformably overlain by the Sls unit.

### ***Silurian Siltstone (Ssl)***

Outcrops of the resistant, cliff-forming Silurian siltstone (Ssl) are found throughout the claim group. The siltstone is unconformable with the underlying black limestone unit (Sls). The siltstone is a distinctive, buff brown- to-tan weathering, grey dolomitic siltstone. It is medium to thick-bedded, bioturbated and locally contains pyrite nodules up to two centimeters in diameter.

### ***Devonian Limestone (Dls)***

The Devonian Limestone is comprised of moderately resistant, blocky-weathering, medium-bedded, grey to-black limestone which contains crinoid-rich debris flows. Unit Dls is unconformable with the underlying Ssl unit. Unit Dls is informally referred to as the Dunedin Formation and is thought to be coeval with the Akie Formation shale. Unit Dls is one to two meters thick on the Gnome Property. However, elsewhere in the region it is commonly thicker and noted to be a resistant, cliff-forming unit.

### ***Earn Group***

The six, previously discussed units of the Earn Group are all found on the Gnome Property. Three of these units contain barite-bearing horizons.

#### ***Unit Dsa***

Undivided rocks of the Earn Group, unit Dsa, are characterized by resistant blue-grey to pale green, blocky-weathering, thin to medium-bedded and thinly-laminated, ammonite-bearing, siliceous black mudstone. The mudstone is interbedded with thin, siliceous black shale beds and locally contains the Dba3 horizon at Area C. Rocks of unit Dsa unconformably overlie rocks of unit Dls.

#### ***Unit Dss***

Unit Dss is present toward the base of the Earn Group as a 30-meter thick, brown- to orange-weathering, thin- to medium-bedded, siliceous black shale. This unit is locally talcose and contains distinctive grey to buff-brown, wispy siltstone laminations, as well as minor orange-weathering siltstone beds that are one meter thick.

#### ***Unit Dch***

Unit Dch directly overlies unit Dss and is present as a 20-meter thick section of resistant, blue-grey- to pale green-weathering, thin to medium-bedded, cherty black mudstone. Locally, unit Dch contains a 2 to 10 cm thick blebby barite horizon (Dba1). This unit may represent a part of the Gunsteel Formation,

which would suggest that unit Dch is correlative with unit Dno (described below). Green (2008) suggests that if units Dch and Dno are equivalent, then unit Dno has been repeated by faulting or folding.

### ***Unit Dsh***

Unit Dsh overlies unit Dch, and is present as a 35-meter thick recessive, rusty brown to blue- black, platy-weathering, siliceous black shale.

### ***Unit Dgt***

Unit Dgt is exposed in the north-central part of the Gnome Property as a 100-meter thick section of grey-weathering, thin- to medium-bedded siltstone that is interbedded with a grey to orange-weathering, medium-bedded grit. Unit Dgt is not laterally continuous in the southern part of the property and is noted to have a larger relative grain size. Kuran (1981) suggests that the sediment for unit Dgt may have been sourced from a relatively shallow water environment. According to Green (2008), regional geological maps have assigned these rocks to the younger Akie Formation.

### ***Unit Dno***

Green (2008) suggests that unit Dno strongly correlates to the Gunsteel Formation, which hosts most of the known mineral deposits in the area. Unit Dno is present through the length of the Gnome Property and consists of a 50-meter thickness of blue-grey to buff-brown-weathering, thin to medium-bedded, coarsely-laminated, siliceous black mudstones and shales. Unit Dno is previously noted to be cliff-forming, however exposures of Dno and/or Gunsteel Formation shale are mostly located in valley bottoms. In the central portion of the property, unit Dno contains a 3.5 meter-thick barite horizon (Dba2) and a 10 meter-thick pyritic horizon (Dpy). The Dpy horizon consists of a grey to rusty-brown weathering, medium to thick-bedded, siliceous black mudstone containing disseminated to blebby pyrite and minor blebby barite.

### ***Barite Horizons (Dba1, 2, 3)***

Barite occurs in three discontinuous horizons on the Gnome Property (Figure 6), the most prominent of which occurs near the middle of the property at the Gnome mineral occurrence (Figure 5). Two trenches were excavated in this prominent barite horizon exposing a 2 to 9 meter-thick section of unit Dba3. The Dba3 horizon has been described by Kuran as blebby to laminated barite with minor pyrite. Kuran (1981) suggests that the Dba3 horizon occurs stratigraphically above unit Dno. Horizon Dba2 is previously characterized as a resistant, grey-weathering, medium to thick-bedded, cherty black mudstone containing laminated to blebby barite and minor disseminated pyrite. Disseminated pyrite horizons are commonly spatially associated with the barite horizons.



## 7.4 PROPERTY STRUCTURE

The Gnome Claim Group and surrounding area have been extensively folded, faulted and deformed as a result of northeast-southwest-directed compressional tectonic forces. Major synclinal and anticlinal folds in this area are separated by west-dipping thrust faults and normal faults. Generally, the style of folding is isoclinal with fold axes plunging gently to the northwest and axial planes striking to the northwest. Folds along the northeast margin of the Gnome Claim Group are overturned with axial planes dipping to the southwest, while folds along the southwest margin of the property are overturned with axial planes dipping to the northeast (Kuran, 1981).

Cominco mapped part of the Gnome Property (Kuran 1981) and identified a dominant sequence of black clastic units of the Devonian Earn Group. Earn Group strata have been tectonically thickened by a series of faults and folds. On the eastern side of the property, the sequence of Earn Group rocks has been folded into a large synform that trends northwesterly and is overturned to the northeast. A series of inferred faults separate this structure from an adjacent antiform to the southwest. The antiform is interpreted to be an upright fold, and it is paralleled by a synform to the southwest (Figure 12). The limbs of these folds display smaller amplitude, tight folds. The stack of Devonian stratigraphy within the Gnome Property lies adjacent to Ordovician siltstones, shales and limestones of the Road River Group.

Along the western edge of the property, northeast verging thrust faults have juxtaposed the Ssl unit over unit Dsa and unit COk over UOsh. Toward the southern end of the property, a sequence of Silurian calcareous siltstones and Devonian shales occupy the core of a westward-dipping overturned syncline that has been thrust over the Earn Group strata. Further north along the west side of the property, a sequence of Cambrian to Devonian strata has been thrust over the Devonian Earn Group rocks, forming a large, west-dipping thrust sheet.

Cleavage-bedding relationships are identifiable locally. This relationship may have been historically underutilized. During the 2012 field work, the author found that the cleavage-bedding relationships are commonly obscure and the two S-surfaces typically intersect at low angles. The historical data suggest that the cleavage is parallel or sub-parallel to bedding throughout most of the mineralized areas. Cleavage-bedding relationships should be recorded as a tool for determining the structural setting for exploration drilling targets in future work.

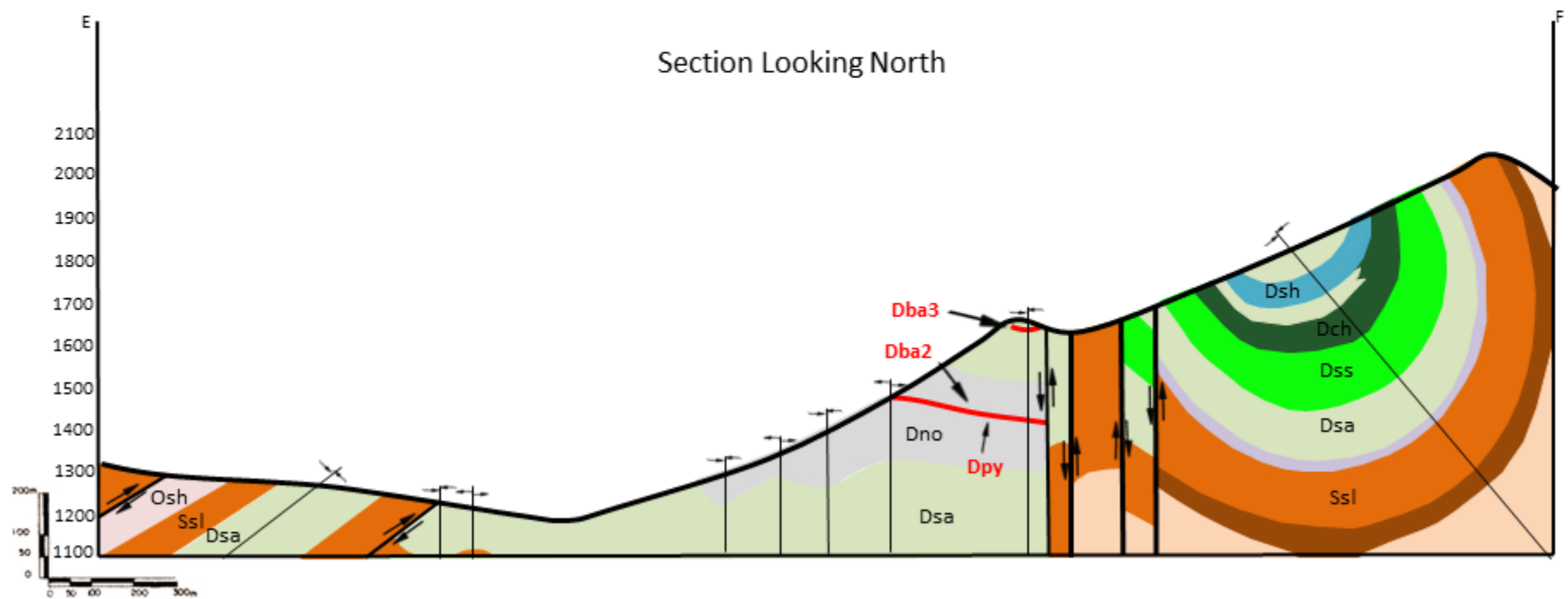


Figure 12. Cross Section E-F, view looking northwest, after Kuran, 1981

## 8.0 MINERALIZATION

Mineralization types identified on the Gnome Property include laminated pyrite, bedded and nodular barite, and iron-rich gossan with elevated zinc values. All these styles of mineralization occur within siliceous mudstones and shales that are correlative with the Middle to Upper Devonian Gunsteel formation. During the 1981 field season, Cominco geologists recognized three horizons of nodular or bedded barite on the property (Figure 6). The following descriptions of the barite horizons are adapted from Close (2010) after Green (2008).

### ***Db a 1***

The upper barite horizon (Db a1) is exposed on a ridge top near Area A. This barite horizon is a 2-10 centimeter thick blebby unit that lies within Unit Dsa. A second barite horizon lies immediately beneath unit Dgt. This second barite horizon is interpreted to be a repeated showing of Db a1, possibly as a result of small-scale folding or intra-formational faulting. Pride (1980) reported a sampling program consisting of widely-spaced soil sampling in the vicinity of the northern Db a1 horizon. The geochemical results returned weak and isolated anomalies of Pb, Ba and Zn. Approximately 500 meters to the southeast, an extensive, but relatively weak zinc anomaly extends into the valley bottom between Areas A and B. The weak anomaly trends northwest-southeast and continues toward Area B.

### ***Db a 2***

Near the southern part of the property, a 3.5 meter-thick, laminated to blebby barite horizon occurs with associated disseminated pyrite (Db a2). The horizon is found within a 10 to 15 meter thick section of pyrite-rich mudstone containing minor blebby barite (Dpy). These mineralized strata (Db a2 and Dpy) are together hosted by a resistant siliceous mudstone of unit Dno. In the vicinity of this barite showing, soil samples have highly-anomalous Zn and Ba values extending 1,000 meters to the southeast. Other surface expressions of Db a2 are located in the northern part of the property at approximately 1,700 meters elevation. There is little soil geochemical coverage around the northern occurrence of Db a2. Both the northern and north-central Db a2 occurrences have limited outcrop exposure. The lack of recorded rock sampling and the limited geochemical data for the north and north-central Db a2 occurrences suggest that future exploration will be necessary to further understand the geometry and extent of Db a2 mineralization.

### ***Db a 3***

The Gnome Minfile occurrence is located at the third barite horizon (Db a3), which is stratigraphically between the two previously discussed horizons and is located in the center of the Gnome property. This mineralized zone consists of blebby to laminated barite and minor pyrite that lies within a

2 to 9 meter thick section of thinly-bedded siliceous black mudstone overlying unit Dno. Two trenches that were excavated in 1981 expose this barite horizon. Maps of the trenches are appended to the Cominco assessment report (ARIS 09722B).

According to Green (2008), results from soil sampling in the vicinity of Db3 have outlined a coincident zinc-barium anomaly that is over 600 meters in length and encompasses the barite showing as well as an adjacent ferruginous gossan. Zinc values are highly anomalous near the gossan, with seven samples greater than 10,000 ppm Zinc. Lead values are weak, reaching only 38 ppm. Barium values define a larger anomaly that spans a distance greater than 1,700 meters, and has not been adequately tested to the northwest and southeast.

A hand sample from a trench at Area C was collected as part of the 2012 program. Upon further microscopic investigation of the mineralization and texture, it is concluded that barite laminations are hosted by a very finely laminated, siliceous black slate (Figure 13). The “blebby” nature of barite is likely a result of tectonic compression resulting in a spaced cleavage that has disrupted the barite laminations and is probably cogenetic with asymmetric folds. This cleavage is oriented at approximately 30° to bedding and is coincident with limbs of the micro-folds and sigmoidal barite “blebs”. The barite laminations are crenulated and have commonly been dismembered and rotated, resulting in sigmoidal pods when viewed parallel to the axes of the microfolds. The barite pods form rods in the third dimension, and are interpreted to be a result of boudinage.

The mineral assemblage includes very fine grained barite, euhedral pyrite and quartz. Cominco programs did not recognize associated Zn mineralization with this barite-pyrite horizon, however there are no sample results that support their conclusion. A polished section is being prepared to further evaluate the Db3 mineralization. It is anticipated that petrographic analysis will help to decipher the phases of mineralization, the mineral assemblage and the host rock geochemistry. Preparation of the thin section has not been completed at the effective date of this report.

### ***Ferricrete Deposits***

The Zn-rich ferricrete deposits on the property are commonly referred to and mapped as ferruginous gossans in previous reports. For the purpose of continuity, these deposits continue to be referred to as gossans elsewhere in this present report. These ferricrete deposits are created by iron and Zn-rich springs draining out of the hill slope and precipitating iron oxide on organic material, soils, and talus as well as precipitating a ferruginous crust (Figure 14). The iron oxides have cemented heterolithic slate clasts into ferricrete conglomerates. The ferricrete has been identified in reports to contain elevated to highly anomalous Zn values, however occasionally weakly anomalous Ba and are typically absent of Pb. A possible factor that controls the distribution of metals and sulfates in these surficial deposits is the high

solubility of zinc relative to lead and barium in groundwater. The ferricrete deposits are spatially associated to the Gunsteel formation rocks and locally contain up to 4.69% Zn.



Figure 13. Dba3 barite-pyrite mineralization, cross-section view





Figure 14. Area C Ferricrete deposit, near Db3



## 9.0 DEPOSIT TYPES

Base metal mineralization in the Gunsteel Formation is thought to have a SEDEX affinity. The Pb-Zn-Ag-Ba occurrences found within the Gunsteel Formation share common characteristics with the SEDEX deposits in the Kechika Trough, and in turn share a genetic and mineralogical relationship to deposits with the Selwyn Basin of the Yukon, the Belt-Purcell Basin of the United States and B.C., the Brooks Range of Alaska and in Australia. SEDEX deposits share many characteristics with volcanogenic massive sulfide (VMS) deposits and MVT deposits. These classes of deposits are distinguished by their genetic model, and their different physical, chemical and geological attributes. For a detailed review of SEDEX deposits the reader is referred to the thorough overview paper on sedimentary exhalative deposits by Wayne D. Goodfellow and John W. Lydon, *Sedimentary Exhalative (SEDEX) deposits in Mineral Deposits of Canada: A Synthesis of Major Deposit Types, District metallogeny, the Evolution of Geological Provinces, and Exploration Methods* by the Geological Association of Canada, Mineral Deposits Division, Special Publication No.5. The following is a summary of SEDEX deposit characteristics adapted from Goodfellow and Lydon, 2007.

The economic, geological, geochemical and genetic attributes of SEDEX deposits in Canada, the Northwest Territories, Australia and Alaska have been extensively researched. It is generally accepted that SEDEX deposits are formed from the precipitation of sulfide and sulfate minerals from hydrothermal metalliferous brines exhaled along submarine faults (Figure 15). The basin architecture most suitable for SEDEX formation is a continental rift basin with spatially and temporally related volcanic and intrusive rocks. The faults along the rift generate graben or half-graben structures and are likely the conduits for the exhalation of metal-bearing hydrothermal fluids. The hydrothermal fluids are likely derived from dewatering during subsidence or compaction of coarse-grained clastic sediments, or through hydrothermal leaching by convective seawater.

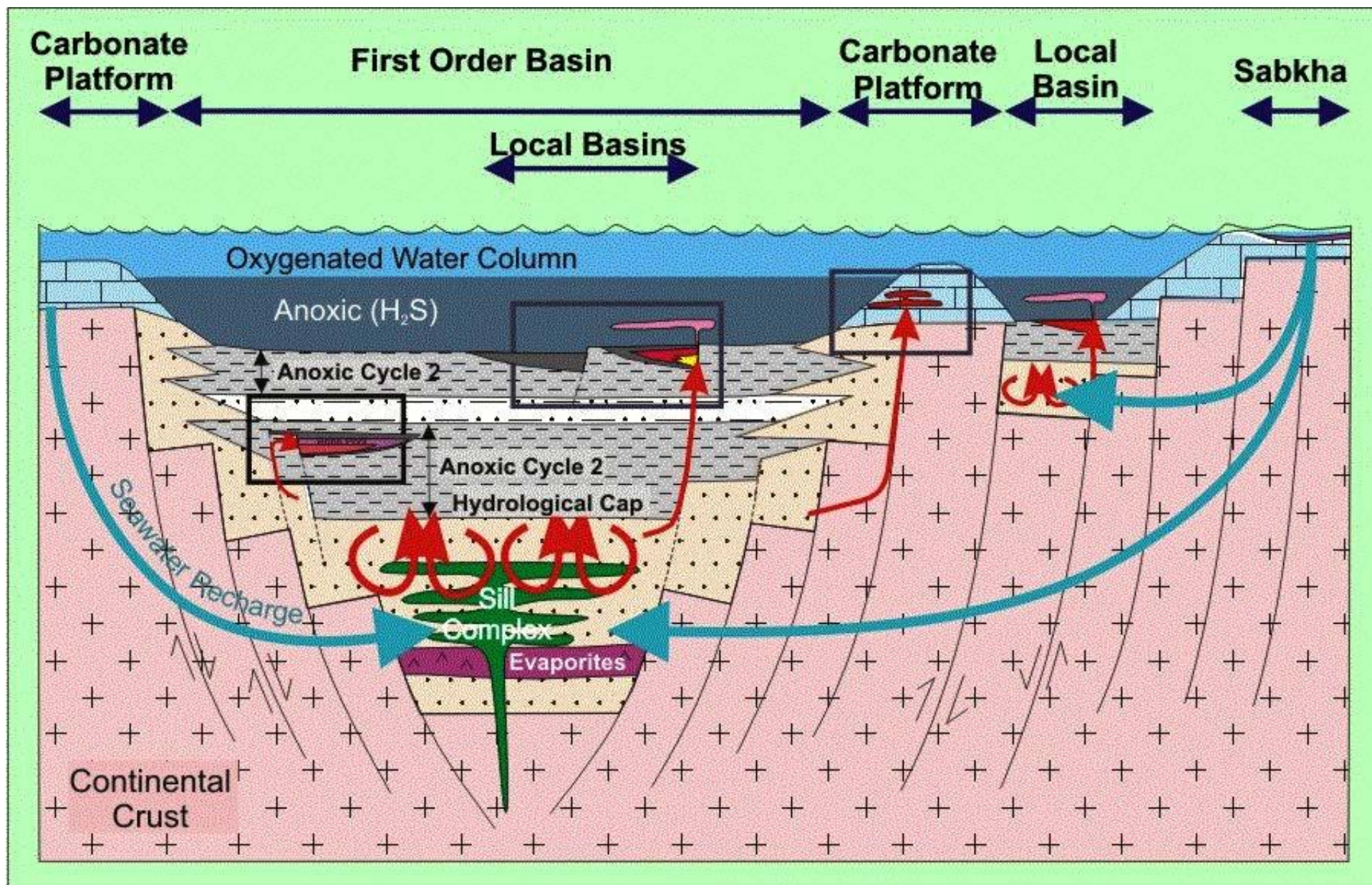


Figure 15. Sedimentary Exhalative genetic model after Goodfellow and Lydon, 2007



Goodfellow and Lydon (2007) have identified genetic characteristics that produce SEDEX deposits and have categorized them based on shape, proximity to source fluids and mineralogic characteristics. Two main deposit types are recognized, vent-proximal and vent-distal. These are sourced by metalliferous brines that are buoyant and precipitate sulfides proximal to the hydrothermal vent, or conform to basin morphology, respectively (Figure 16).

Vent-proximal deposits are characterized by four distinct zones or facies changes caused in part by buoyant metalliferous brines. The zones are characterized from near vent facies to distal facies as follows: 1. the stringer zone is a result of the upward flow of fluids resulting in veining and infilling, 2. the vent complex is a result of the replacement of bedded sulfides with higher temperature mineral assemblages, 3. the bedded sulfides are produced by the precipitation of sulfide minerals from oxidized,  $H_2S$  poor fluids, and 4. the distal hydrothermal sediments probably represent “plume fallout” that has been transported by submarine currents or localized sulfide debris flows. Vent-proximal deposits are generally wedge shaped and have a moderate aspect ratio (length versus thickness). The Sullivan deposit in B.C. and Tom and Jason deposits in the Yukon are examples of Vent-proximal deposits.

In contrast, Vent-distal deposits are weakly zoned, well bedded and conform to the basin morphology. These deposits don’t show the characteristic properties of the vent complex and are suspected to be lower temperature deposits. Vent-distal deposits are typically tabular or sheet-like with high aspect ratio and are probably not spatially associated with hydrothermal seafloor vents. The Howards Pass deposits in the Yukon are examples of Vent-distal deposits.

Exploration for SEDEX deposits is generally focused on second and third order rifted basins which have experienced reactivated normal faults and have spatially and temporally associated volcanic and intrusive rocks. Key indicators for SEDEX-type mineralization are distal facies hydrothermal sediments containing barite, pyrite, and Mn-Fe-Ca-Mg Carbonates, and hydrothermal alteration. Exploration for SEDEX deposits typically involves identification of geochemically anomalous host rock, soil anomalies and anomalous surface and groundwater. Exploration methods on the Gnome Property have followed these guidelines and have resulted in the discovery of barite-pyrite mineralization, numerous highly anomalous and extensive soil geochemical anomalies, and identification of several gossans and springs that are highly anomalous in Zn.

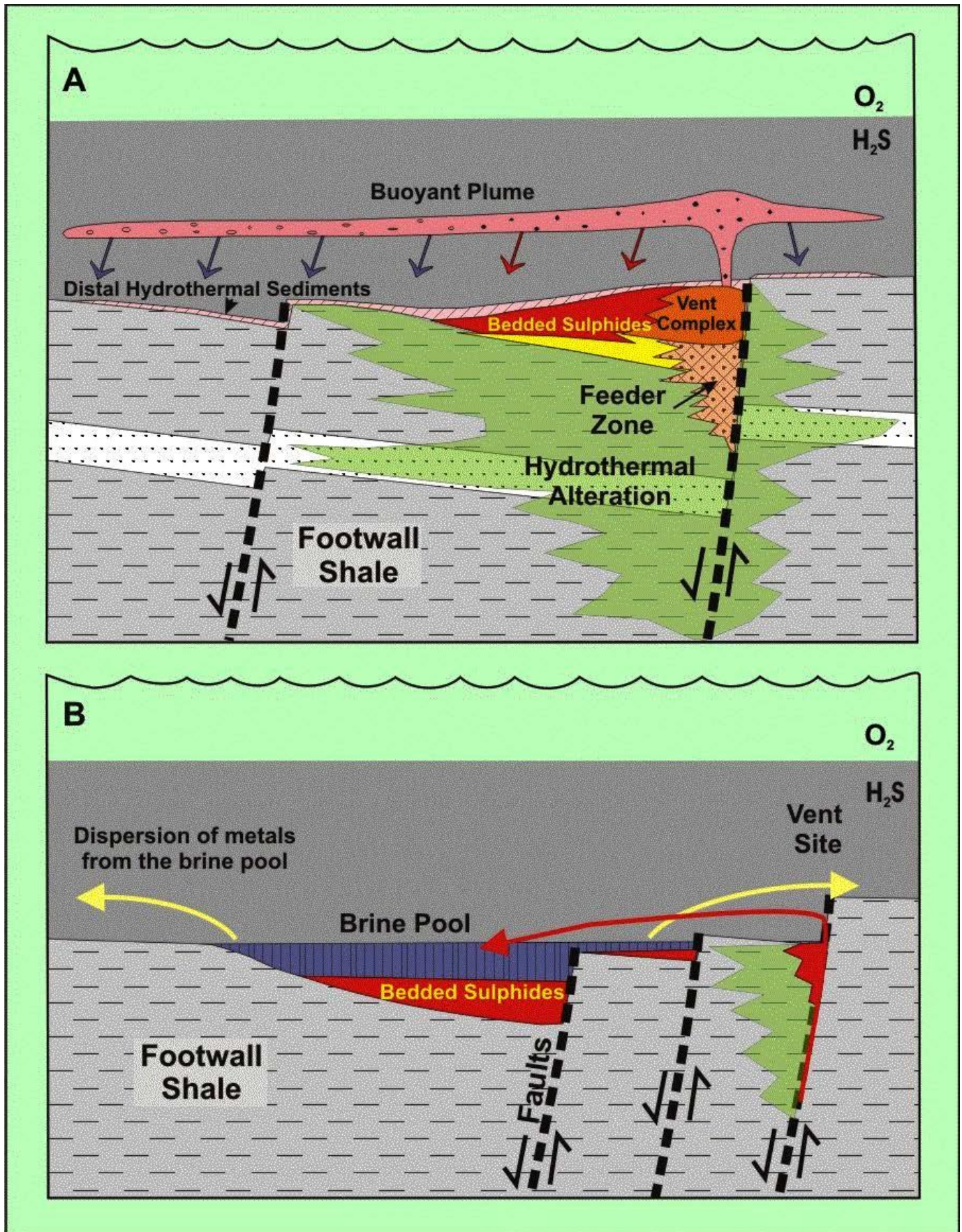


Figure 16. Vent-proximal (A) and vent-distal (B) SEDEX models after Goodfellow and Lydon, 2007



## **10.0 EXPLORATION**

### **10.1 GEOPHYSICAL**

AsiaBaseMetals conducted a Fugro DIGHEM airborne geophysical survey over the Gnome Property in 2010. The survey consisted of 233.8 line-kilometers with the flight traverses flown across apparent stratigraphy, along azimuths 045° and 225° with 300 meter line spacing with the tie line flown at azimuth 135°/315°. The geophysical survey provides detailed characteristics of the magnetic and conductive properties of the various lithologic units present on the Gnome Property. Results of the geophysical survey are included in the 2010 Assessment Report (Close, 2010) and the 7200 Hz resistivity is shown in Figure 17 of the present report. The geophysical survey was useful in delineating the lithologic contacts and provides evidence supporting the location of major thrust faults on the property. A preliminary review of the geophysical survey and comparison with the soil geochemical anomalies, indicate a weak correlation between geophysical response and geochemical anomalies in the two surveys. It is possible that the conductive properties of the host lithologic units, such as the graphitic shales, mask the geophysical response of the mineralization in the airborne survey.

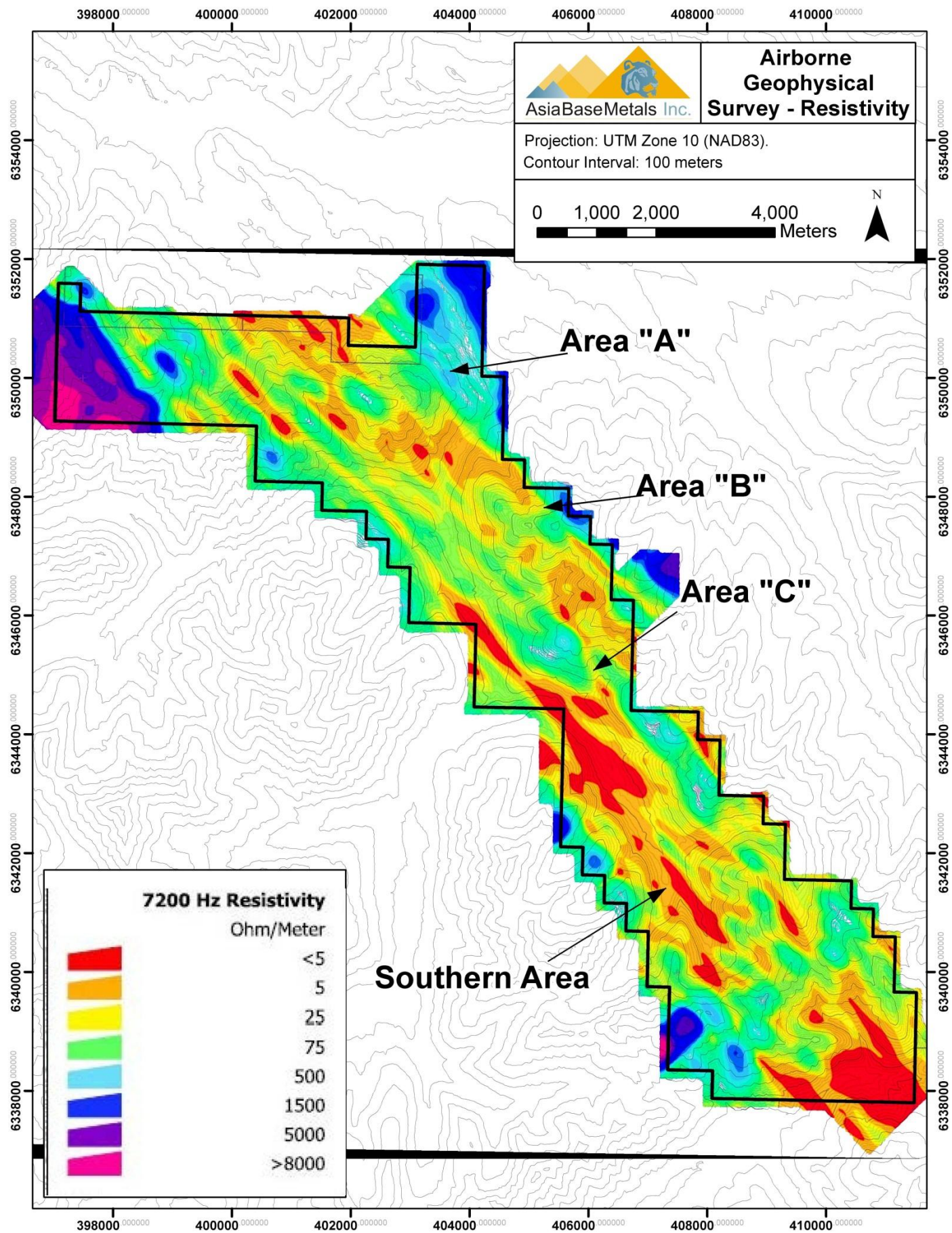


Figure 17. Fugro DIGHEM survey, 7200 Hz resistivity

## 10.2 GEOCHEMICAL

Exploration on the Gnome Property in 2012 consisted of soil and rock chip sampling as well as geologic mapping, minimal prospecting and structural interpretation. The objective of this exploration program was to assess the economic potential of the Gunsteel Formation shales within the property, and evaluate structural relationships and mineralization in order to define targets for exploration drilling. The program was completed by Childs Geoscience, Inc. on behalf of AsiaBaseMetals. The strategy for this project involved visiting each area of interest (AOI) to conduct infill sampling, mapping and minimal prospecting. Additionally, the mapped gossans were visited in order to characterize their source, type, mineralogy and geochemistry. The targeted areas of interest were previously defined by the historical work on the property as Areas A, B and C. Within these areas, soil sampling, rock sampling and geologic mapping were conducted and structural settings were identified and Area B was split into Area B north and Area B south (Figure 18). The results of the 2012 program provide knowledge of the stratigraphy and the enclosed mineralization. The results of the program contributed to a more thorough understanding of the mineralization, host rock lithology and property stratigraphy and allowed for correlation of the lithologic units to the Cominco geologic mapping, enabling the units to be projected southeast to portions of the property not mapped by Cominco (Figure 22). The geochemical results and geologic mapping indicated areas requiring follow-up exploration as well as areas representing exploration drilling targets. Locations for samples were chosen based upon the need for infill sampling and verification of historical assay values. The areas visited were assigned priority based upon historical assessment reports, existing soil geochemical anomalies and exposures of favorable stratigraphy. Anomalous threshold values for Pb, Zn and Ba are adapted from the 2008 NI 43-101 report by Darwin Green and are provided in Table 3 below. The geochemical data from Cominco, Inmet, Mantra Mining and AsiaBaseMetals have been compiled into a single data set and the threshold values were applied in order to define the geochemically anomalous areas within the property. The comprehensive soil geochemical plots are provided in Figure 19, Figure 20 and Figure 21.

Table 3. Threshold values for geochemical anomalies

Pb- (Cominco and Mantra)	Anomalous > 30 ppm	Highly Anomalous > 60 ppm
Pb- (Inmet)	Anomalous > 45 ppm	Highly Anomalous > 80 ppm
Zn- (All data sets)	Anomalous > 400 ppm	Highly Anomalous > 1000 ppm
Ba- (All data sets)	Anomalous > 3000 ppm	Highly Anomalous > 5000 ppm

All samples were placed in labeled Hubco cloth sample bags along with the respective sample ID tag. A hand-held Garmin GPS unit was used to record sample locations in UTM coordinates providing accuracy to +/- 5 to 10 meters. Samples were transported to Mackenzie, secured with zip ties, packaged in sealed boxes and shipped via greyhound to the ALS Laboratory in Vancouver, BC.

## **10.3 SAMPLES**

### **10.3.1 Rock Sampling**

Rock chip samples were collected from the tops of ridges and areas where soils were not well developed. The samples were collected on 3 meter intervals across stratigraphy with sample breaks at lithologic contacts, changes in weathering color and texture. The graphitic, grey-blue weathering slate, interpreted to be the Gunsteel Formation, was notably denser than adjacent lithologies and returned a weak to anomalous barium response. Geochemical results from chip sampling support the interpretation of lithologic units by hand sample identification.

### **10.3.2 Soil Sampling**

Soil samples were collected from the B soil horizon and where that horizon was poorly developed, samples were collected from the C horizon. Soil samples were typically collected from an average depth of 15-30 centimeters using a geo-pick to dig each hole and place the soil in a sample bag. Sample grids were created using a compass and GPS for grid line and sample interval control. Results from the soil geochemistry strongly define anomalies and support previous sampling programs. Field observations during sampling and comparison of lithology with geochemistry, suggest a strong correlation between soil geochemical anomalies and a medium to dark-orange clayey soil with abundant siliceous shale chips.



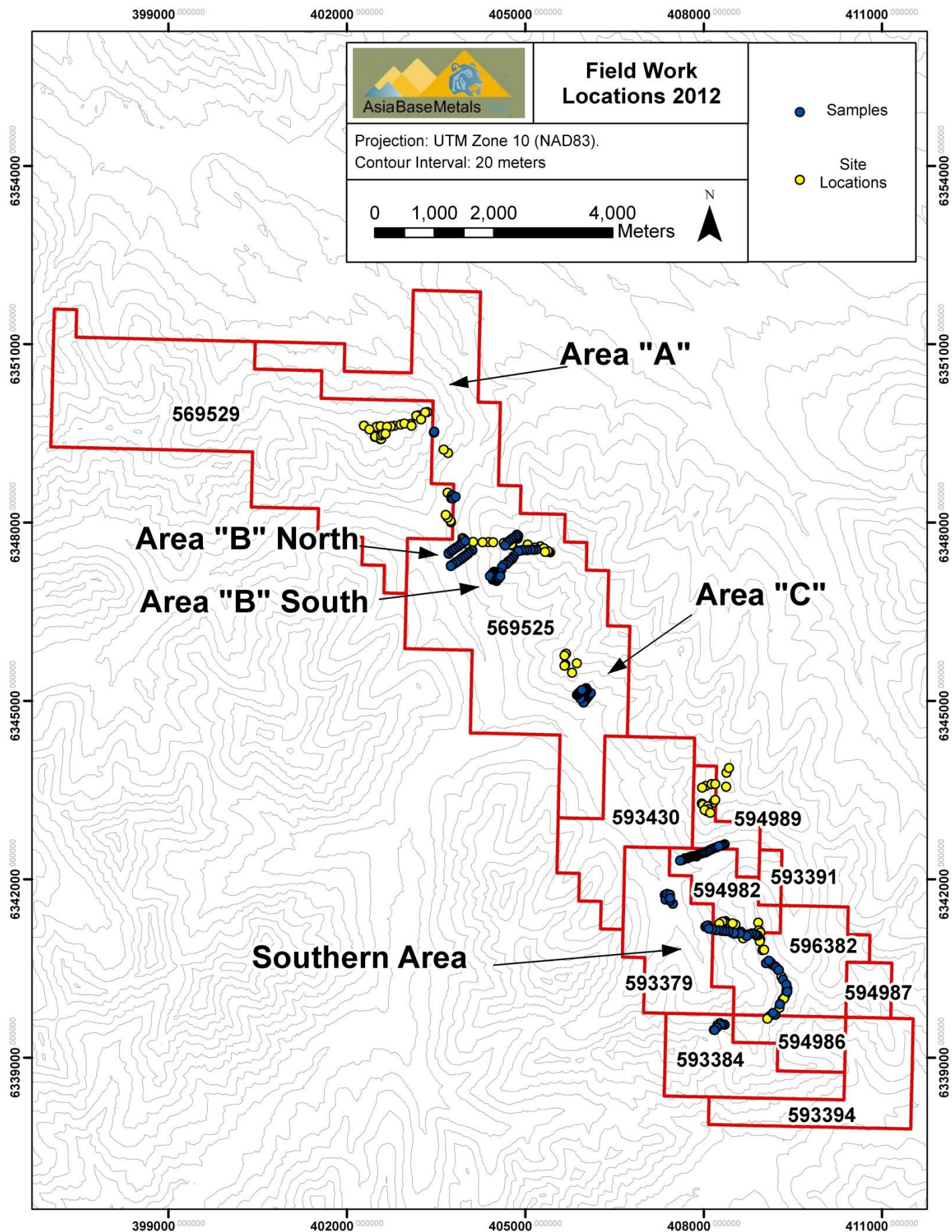


Figure 18. 2012 field work locations, areas of interest and mineral tenures



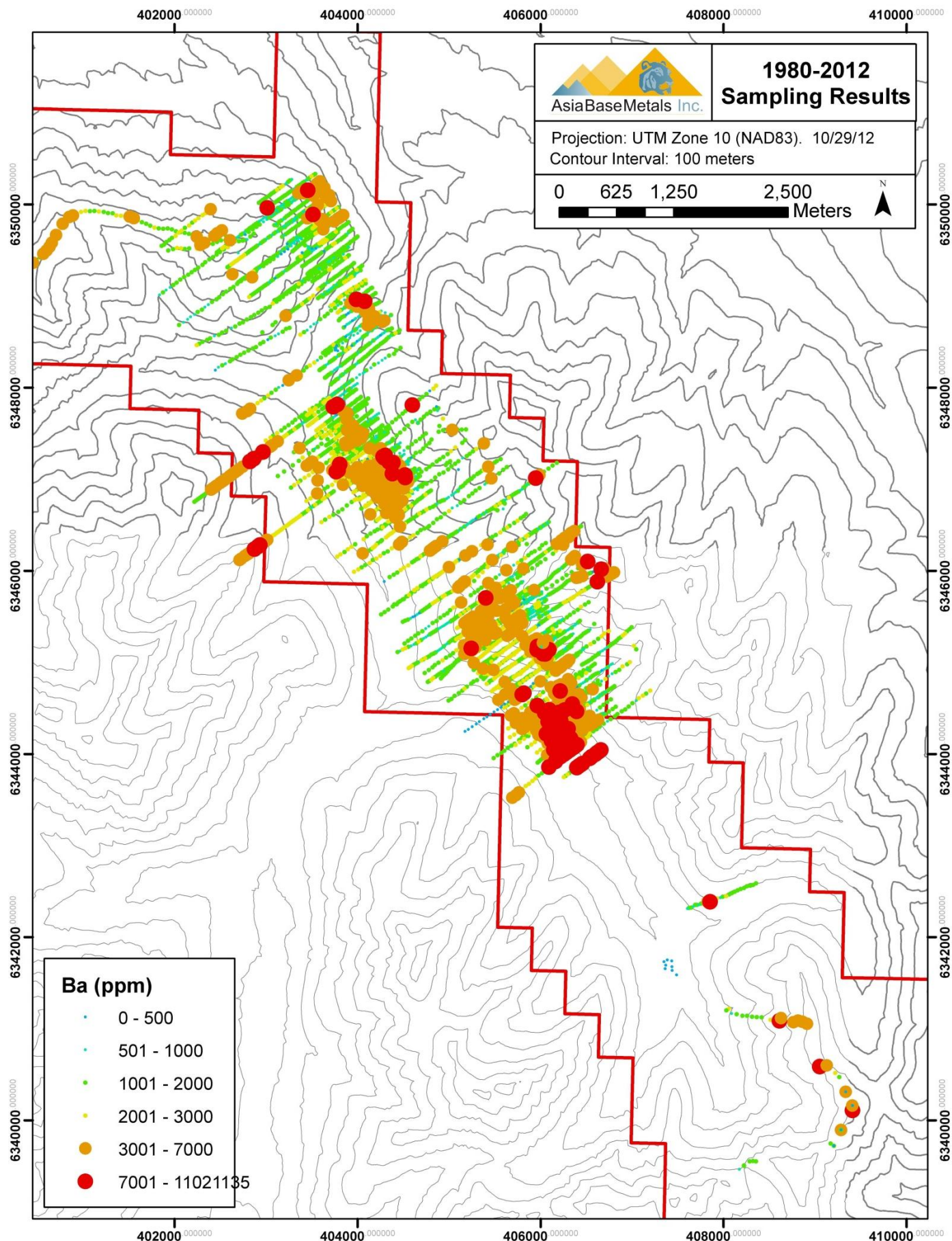


Figure 19. 1980 to 2012 Barium soil and rock geochemistry



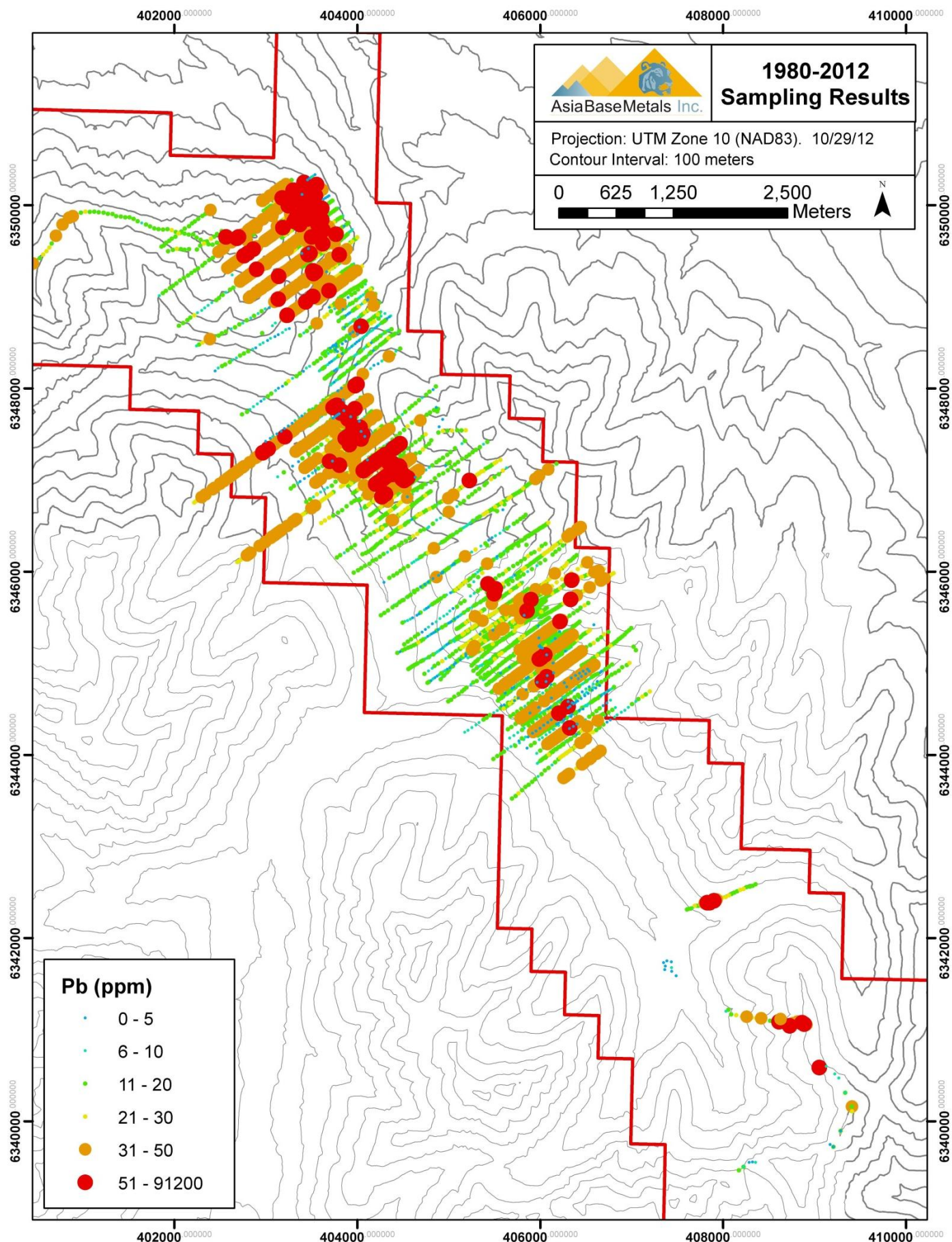


Figure 20. 1980 to 2012 Lead soil and rock geochemistry



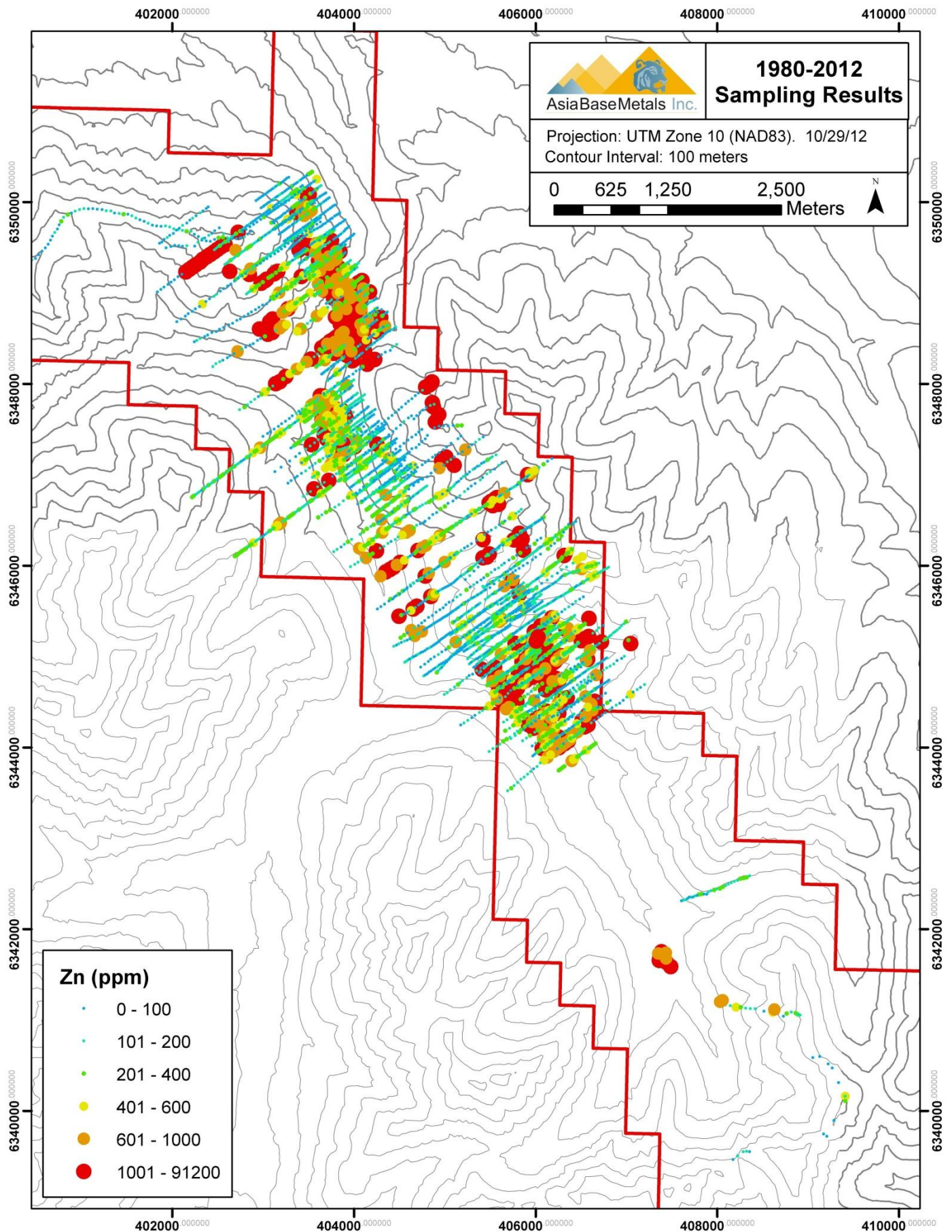


Figure 21. 1980 to 2012 Zinc soil and rock geochemistry



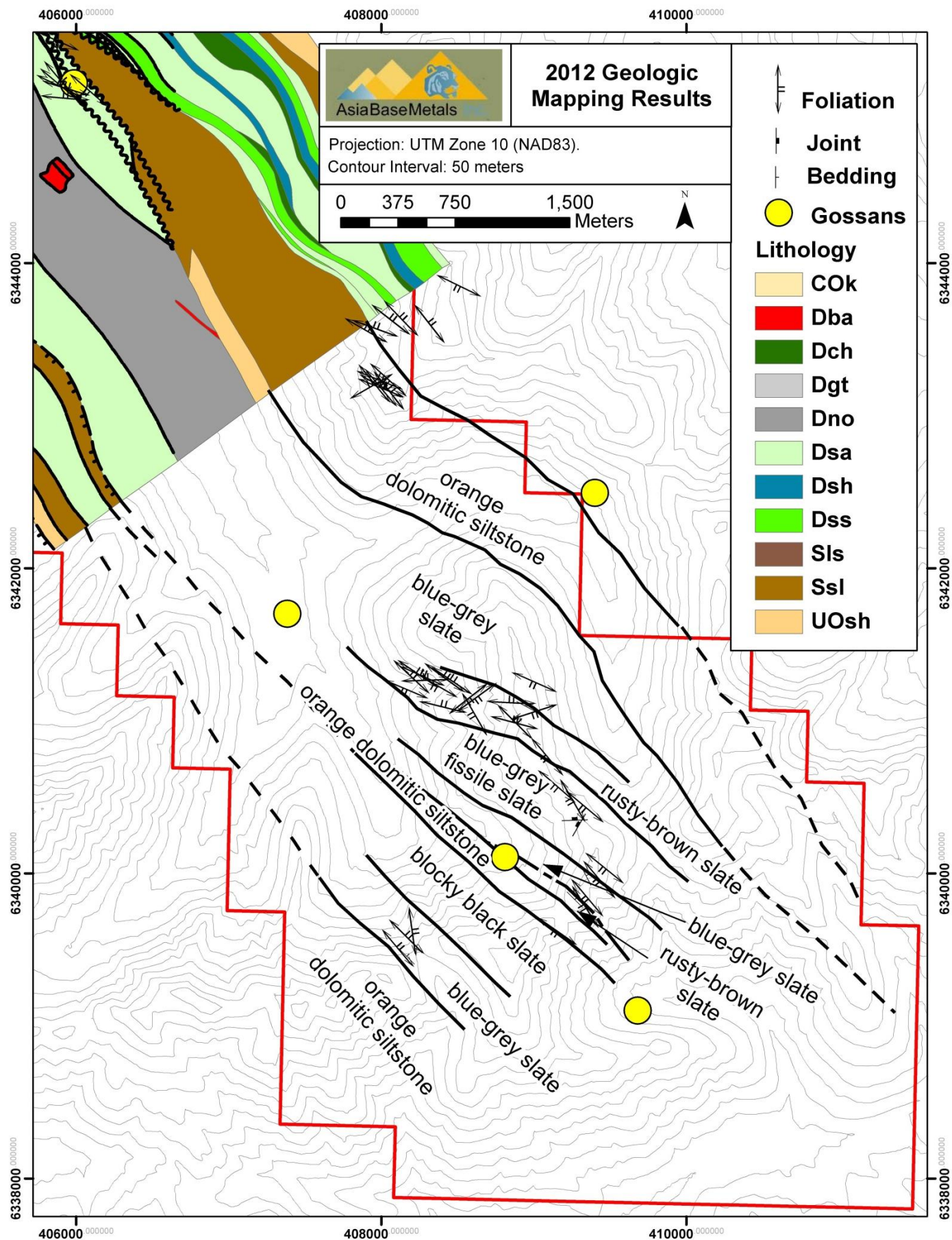


Figure 22. 2012 Exploration program geologic mapping results and locations of gossans



## **11.0 DRILLING**

There has been no drilling on the Gnome Property to date.

## 12.0 SAMPLING METHOD AND APPROACH

Exploration work on the Gnome Property is described in the various assessment reports and the 2008 NI 43-101 Technical Report. A review of these reports indicates that the sampling methods used in past exploration programs on the Gnome Property have focused on collecting soil, rock chip and whole-rock samples. The procedures for collecting these samples are described in the assessment reports and the 2008 NI 43-101 report for the Gnome Property. Soil samples were collected on flagged chain-and-compass lines or cut grid lines. Whole-rock samples were strategically collected to characterize lithology and included chip samples collected over a specific width of the rock exposure. Soil samples from the Cominco, Inmet, Cyprus Anvil, and Mantra programs were collected by using a pick or mattock to dig each soil sample hole to a depth of 10-15cm. Sample material was collected from the B soil horizon. The 2008 and 2012 programs used GPS control for sample locations, providing accuracy to +/- 5 to 10 meters. The soil grids were designed to be perpendicular to bedding and cover favorable stratigraphy. Grid-line spacing varies between 100 and 400 meters apart and sampling intervals vary between 25 and 50 meters. The sampling methods seem to have been designed to infill previous sampling programs and test the extent of anomalies discovered from the initial soil geochemical survey. The old cut grid lines are still visible and some flagging, control-line stakes and soil sampling pits can still be found. The stakes for the grid lines are mostly in poor condition and are often missing the metal tags, causing difficulty in re-establishing the original gridlines. Geochemical sampling locations from the Cominco and Inmet exploration programs have been digitized from the corresponding maps that are available in the historical assessment reports. The digital data allow a direct comparison between the soil surveys and anomalies from the Cominco, Inmet, and Mantra Mining programs. GPS points collected at flagged grid lines, control-line stakes and historic soil sample pits as part of the 2012 program verified the accuracy of the plotted sample locations for the various surveys.

For the 2012 exploration program, a hand-held Garmin GPS unit was used to record sample locations in UTM coordinates (accurate to +/- 5 to 10 meters). Locations for samples were chosen based upon the need for infill sampling and verification of historical assay values. Rock chip samples were collected outcrops on the tops of ridges and areas where soils are not well-developed. Rock chips were collected on 3 meter intervals across stratigraphy with sample breaks at lithologic contacts, changes in weathering color, and texture. The areas visited were assigned priority based upon historical assessment reports, mapped soil geochemical anomalies and exposures of favorable stratigraphy.

## **13.0 SAMPLE PREPARATION, ANALYSES AND SECURITY**

### **13.1 SAMPLE PREPARATION**

During the 2012 program, soil samples were collected from the B soil horizon and where that horizon was poorly developed, samples were collected from the C horizon. Soil samples were typically collected from an average depth of 15 to 30 centimeters using a geo-pick to dig each hole and place the soil in a sample bag. All samples were placed in labeled Hubco cloth sample bags along with the respective sample ID tag. Samples were transported to Mackenzie, secured with zip ties, packaged in sealed boxes and shipped via greyhound to the ALS Laboratory in Vancouver.

For the Cominco, Inmet, Cyprus Anvil and Mantra programs, the soil pits were dug using picks or mattocks and samples were collected from the B horizon. The soil samples were then placed in labeled Kraft paper sample bag and were either dried in the field or transported back to camp, dried and organized.

Assessment reports indicate that all the analytical work has been completed by Vancouver based laboratories. Cominco's analytical work was completed at the Cominco Laboratory, Cyprus Anvil's work was completed at Acme Analytical Laboratory, Inmet's work was completed at IPL Laboratories and the Mantra Mining and AsiaBaseMetals analytical work was completed at ALS Group Laboratory (formerly ALS Chemex).

### **13.2 ANALYTICAL PROCEDURE**

The assessment reports for previous work include copies of the original assay certificates and a description of analytical procedures used by the respective laboratories. The labs employed are all accredited, and the author believes that sample preparation, analysis and security were completed appropriately, and that industry best practices applicable at the time were followed. The laboratories typically maintained an internal quality control program, including the use of blank, duplicate, and standard reference ore samples inserted into the sample stream.

Typical sample preparation for soil samples involves logging the sample into the laboratory sample tracking system, drying the sample, and then collecting the material that passes through a -80 mesh sieve. The procedure at Cominco and Acme Analytical labs were to digest a 0.5 gram of sample in perchloric acid and analyzed for lead and zinc by atomic absorption. At Cominco's lab, samples analyzed for barium were quantitatively determined by x-ray fluorescence. At IPL and ALS Chemex Laboratories, the procedure was to leach 0.5 gram of sample in Aqua Regia, then analyze by inductively coupled plasma atomic emission spectrometry (ICP-AES) and mass spectrometry. At IPL the elements reported from the analysis were Pb, Zn, Ag, Ba, Cd, Mn, As, and Fe. The ALS Chemex analyses for the Mantra program comprised a suite of 39 elements, which includes all of the elements analyzed in the earlier programs.

For the 2012 program, samples were shipped to ALS laboratory in Vancouver, BC and prepared using Prep 31 and Prep 41 packages. All samples were accounted for and logged into the ALS laboratory tracking system, weighed and dried. Rock samples were crushed and 250 grams were split and pulverized to 85% of the material passing through a 75 micron sieve. Soil samples were processed through a 180 micron sieve. Both soil and rock samples were analyzed for 48 elements by four-acid digestion using ICP-AES procedure ME-MS 61. Overlimit analysis was completed for samples with lead and zinc contents greater than the upper analytical threshold in the first analysis. Ore grade analysis was applied to the overlimit samples using four-acid digestion and ICP-AES procedure Zn/Pb-OG 62. X-Ray Fluorescence (XRF) analysis was applied to samples returning greater than 10,000 ppm Barium, using Lithium Borate Fusion and XRF procedure Ba XRF 10. In total, 136 soil samples and 33 rock samples were collected and 10 standards, 9 blanks and 8 duplicates were periodically inserted for quality assurance and quality control (QA/QC). Reference ore standard Pb 129 was prepared by WCM minerals, Burnaby, BC. Blanks were collected, using the same material, from a single soil pit near the Mackenzie airport and distributed to the respective sample bags. Duplicate samples were collected in the field from the same material in the same soil pit where the primary samples were collected. Analytical results for the QA/QC samples are presented in Table 4 below.

Aqua Regia is an effective solvent for most base metal sulfides, oxides and carbonates, but only provides a partial digestion for some elements, including barium. This is important to note because the barium analyses done at the Cominco lab and ALS lab (2012) used x-ray fluorescence, which may have produced higher, more accurate values, relative to analyses done with Aqua Regia extraction at IPL and ALS (2008) labs. The barium analyses done at Acme Analytical Laboratory were completed by digesting half a gram of sample in E.D.T.A and analyzed by atomic absorption. The geochemical data from the Cyprus Anvil and Aquitaine Company of Canada programs currently remain on the geochemical plots appended to the respective assessment reports.



Table 4. QAQC statistical results for 2012 exploration program

2012 Soil Geochemistry QA/QC, Gnome Property, Asia Base Metals, Inc., by Childs Geoscience, Inc.							
IDENT	COMMENT	QA/QC	Ag_ppm	Ba_ppm	Cu_ppm	Pb %	Zn %
Reference Ore Pb 129			23		2800	1.24	2.00
93617	Soil	Standard	21.9	890	2890	1.245	2.04
93623	Soil	Standard	22.8	870	2850	1.25	2.06
93646	Soil	Standard	24.2	880	2900	1.185	1.98
93697	Soil	Standard	24.8	870	2790	1.23	2.06
93817	Soil	Standard	22.9	870	2910	1.235	1.99
93827	Soil	Standard	21.5	880	2810	1.235	2.01
93855	Soil	Standard	23	870	2820	1.21	1.995
93865	Soil	Standard	20.8	870	2840	1.21	2.01
93896	Soil	Standard	21.1	840	2710	1.22	2.05
93663	Rock	Standard	22.1	860	2740	1.385	2.26
		Standard deviation	1.293	13.333	66.533	0.054	0.081
IDENT			Ag_ppm	Ba_ppm	Cu_ppm	Pb_ppm	Zn_ppm
93609	Soil		0.14	1190	24.7	21.4	159
93610	Soil	Duplicate	0.13	1190	23.9	22.7	139
		Standard Deviation	0.007	0.000	0.566	0.919	14.142
93630	Soil		5.2	750	33.6	176.5	196
93631	Soil	Duplicate	4.52	1630	40.1	154.5	254
		Standard Deviation	0.481	622.254	4.596	15.556	41.012
93690	Soil		0.46	1860	30.8	23.2	868
93691	Soil	Duplicate	0.54	1940	34.9	25.5	1120
		Standard Deviation	0.057	56.569	2.899	1.626	178.191
93813	Soil		0.45	1700	23.5	19.9	94
93814	Soil	Duplicate	0.47	1710	23.1	19.9	90
		Standard Deviation	0.014	7.071	0.283	0.000	2.828
93838	Soil		1.01	730	12.3	18.7	35
93839	Soil	Duplicate	1.07	750	12.7	18.7	37
		Standard Deviation	0.042	14.142	0.283	0.000	1.414
93849	Soil		0.41	880	7.3	8.9	65
93850	Soil	Duplicate	0.39	920	8	9.7	97
		Standard Deviation	0.014	28.284	0.495	0.566	22.627
93874	Soil		0.92	3560	49.2	18.3	762
93875	Soil	Duplicate	0.96	3640	45.6	18.7	721
		Standard Deviation	0.028	56.569	2.546	0.283	28.991
93887	Soil		0.38	2240	4.5	8.9	180
93888	Soil	Duplicate	0.47	2210	4.1	8.5	162
		Standard Deviation	0.064	21.213	0.283	0.283	12.728
IDENT			Ag_ppm	Ba_ppm	Cu_ppm	Pb_ppm	Zn_ppm
93603	Soil	Blank	0.05	590	33.7	18.3	81
93677	Soil	Blank	0.09	560	37.5	21.1	86
93685	Soil	Blank	0.07	570	33.1	18.3	90
93807	Soil	Blank	0.12	540	29.7	18.7	93
93833	Soil	Blank	0.11	570	29	22.2	84
93845	Soil	Blank	0.06	530	34.3	20.4	78
93870	Soil	Blank	0.05	520	32	18	78
93884	Soil	Blank	0.16	510	24.8	16.2	77
93653	Rock	Blank	0.1	440	22	14.1	78
		Standard deviation	0.037	44.721	4.874	2.475	5.848

### **13.3 SAMPLE SECURITY**

The Cominco, Cyprus Anvil and Inmet Mining assessment reports did not include detailed information on precautionary security measures. The Mantra Mining and AsiaBaseMetals programs identified the use sample bags fastened with plastic locking ties in order to reduce the possibility of contamination. These procedures meet industry standards for collection, handling, transportation and analysis of soil samples. The similarities of geochemical values between the results of various sampling programs suggest that the reported values can utilized for future exploration methods with confidence.

## **14.0 DATA VERIFICATION**

The sources for the Gnome Property geochemical data are the assessment reports submitted by previous operators and the previous NI 43-101 report (Green, 2008), which include geologic, geochemical and geophysical surveys. Examination of the analytical results presented in publicly available reports suggests that quality assurance was performed to the best practice standards of the day. With the exception of the 1981 Cyprus Anvil program covering the GIN claims and the 1980 and 1981 Cominco programs, the laboratory and or operator quality assurance procedures are either provided with the reports or the results are included with the certificates of analysis for each program.

For the purpose of evaluating reproducibility in the geochemical samples of the 2008 Mantra Mining program and the 2012 AsiaBaseMetals program, blank soil samples were collected from a common location, inserted in the sample numbering sequence and sent, along with the samples collected from the property, to ALS Laboratories. Figure 16 of the 2008 NI 43-101 report shows the variability for analyses of Ba, Pb and Zn performed on all of the blank samples for the 2008 Mantra Mining program. The 2012 program included duplicate samples, collected from the same material as the soil sample, and reference ore standards as an additional quality assurance and quality check. The analyses of the duplicate samples, blank samples and reference ore standards yielded consistent analytical results therefore the results for the standards, blanks and duplicates, along with the use of internal lab standards suggests that the data from ALS are reproducible and of good quality.

## 15.0 ADJACENT PROPERTIES

There are three adjacent properties to the Gnome Property, the New Gun Pesika (NGP), CT and Elf properties. The CT and Elf properties are considered advanced prospects hosting sulfide mineralization. The CT Property contains sulfide mineralization that is interpreted to be located in the Road River Formation at the CT mineral occurrence (Vanwermeskerken, 2008). The Elf Property contains sulfide mineralization that is hosted in the Gunsteel Formation (Minfile 094F011). Exploration drilling was conducted under various operators on the Elf Property between the years of 1979-1981 (LeClair, 2010). The Elf Property is currently controlled by Cirque Operation Corporation and the CT Property is controlled by Teck Mining Worldwide Holdings, Ltd. Historically, there have been claims adjacent to the southeastern end Gnome Property between the Gnome and CT properties, these claims were held by Megastar Development Corp. and have recently been allowed to expire. These claims contained the Family mineral occurrence which is described to be chalcocite, sphalerite and pyrite mineralization in the Road River Group (Minfile 094F030).

The Akie Property, located 15km north of the Gnome Property is considered an advanced exploration property and contains a recently updated inferred and indicated mineral resource for the Cardiac Creek deposit.

### 15.1 PROSPECTS NEAR THE GNOME PROPERTY

#### **New Gun Pesika**

The following description of the NGP Property is adapted from the assessment report entitled *2007 Assessment Report on the New Gun Pesika Property, Omineca Mining Division, Northeast British Columbia* by Marcus Vanwermeskerken and Kerri Heft.

The New Gun Pesika claims are underlain by folded and thrust clastic sedimentary rocks and limestones, mostly of Devonian age. A large proportion of these rocks are basinal clastic sedimentary rocks of the highly prospective Gunsteel and Akie formations. These rocks are thrust over older clastic sedimentary rocks and limestones of Cambrian (Kechika Group) to Devonian in age. Work on the New Gun Pesika Property during the 2007 field season has been limited to the southernmost portion, where the hinge of a syncline exposes black shales of the Akie and Gunsteel formations. The ground covered by these claims has been the focus of past mapping and geochemical sampling programs. The claims were staked to cover barite horizons in the Road River Formation and to cover iron oxide staining and zinc-barium anomalies in the tributaries of the Ospika River. Historical lead and silver values from soil geochemical samples have yielded low and relatively flat results. Samples collected during the 2007 exploration program yielded high zinc and barium values, up to 8,220 ppm and 4,597 ppm, respectively. High returns for zinc do not appear to correlate with lead values and in turn suggest that the soil



geochemical values for zinc may indicate that the mineralization is not related to the same stratiform lead-zinc mineralization found elsewhere within the Kechika Trough. Zinc values for over half of the samples collected are commonly greater than 400 ppm with a mean zinc value at 801ppm. There appears to be a weak but distinct northwesterly trend in soil samples with anomalous barium values. This trend is underlain by Devonian Gunsteel shales and Akie formation shales.

## **CT**

The following description of the CT Property is adapted from the 2008 technical report on the Gnome Property, entitled *Technical Report, Geology and Geochemistry, Gnome Zinc-Lead-Silver Property, Northeastern British Columbia, Canada* by Robert C. Sim.

The CT claims, located 20km southeast of Gnome were staked in 1980 by Cominco to cover a sphalerite-pyrite-barite horizon occurring in Upper Ordovician grey dolomite and black carbonaceous shale of the Road River Group. Hand trenching and blasting in 1981 exposed mineralization in what is known as the “Cut Zone.” This mineralized horizon is intermittently exposed and has a strike length of 2.5km and a vertical exposure of 150 meters. Geological mapping, soil sampling, and hand trenching during 1981 indicated four areas of significant mineralization along the strike length of the horizon. It was inferred that the mineralized horizon thickened down-dip to the west, based on detailed trench mapping at the Cut Zone. In 1996 Cominco attempted to test the Cut Zone with a single drill hole but were unsuccessful due to complications with a thrust fault.

## **Elf**

The following description of the Elf Property is adapted from the 2012 NI-43-101 report on the Akie Property, entitled *NI-43-101 Technical Report, Akie Zinc-Lead-Silver Project, British Columbia, Canada* by Robert C. Sim and was an excerpt from the previous technical report entitled *Geology, Diamond Drilling and Preliminary Resource Estimation, Akie Zinc-Lead-Silver Property, Northeast British Columbia, Canada* by Donald G. MacIntyre and Robert C. Sim, 2008.

The Elf Property was staked by Cyprus Anvil Mining Corporation in 1978 to cover an area of moderately anomalous stream sediment geochemistry and the occurrence of a boulder of white barite containing high grade galena and sphalerite in Elf creek. Subsequent soil sampling resulted in discovery of an outcrop of bedded barite with high grade bands of galena and sphalerite on the heavily timbered south facing slope north of Elf Creek. The mineralized zone has been exposed on surface by trenching and is up to 4 meters thick. A sulfide rich sample from this zone assayed 14.1% Zn, 25% Pb and 106g/t Ag (MacIntyre, 1998). Host rocks are carbonaceous cherty argillite and siliceous shale of the Gunsteel Formation. The property was drill tested in 1979-1981 (LeClair, 2010). Drill holes intersected laminar-banded pyrite at depth; barite-sulfide mineralization similar to the surface showings was not intersected.

The best drill intersection contains 13.8% Zn+Pb with 27 g/t Ag over 11 meters. Drilling and surface mapping suggests the Elf mineralization is contained within a steeply dipping, overturned fold limb that is overthrust to the west by Silurian dolomitic siltstone. Intense folding and structural imbrication of the Gunsteel host rocks has made defining the geometry of the mineralized interval difficult.

## **15.2 AKIE PROPERTY**

The Akie Property is the most proximal advanced exploration property to the Gnome Property, and is located 15 km northwest of Gnome. For a detailed review of the Akie Property, the reader is referred to the 2012 technical report entitled *NI 43-101 Technical Report, Akie Zinc-Lead-Silver Project, British Columbia, Canada* by Robert C. Sim. The following section is an unabridged excerpt from that technical report.

Exploration on the Akie Property has been intermittent since the late 1970's, marked by short periods of intensive activity. Exploration activities include prospecting, mapping, large scale soil sampling programs, lithogeochemical sampling, limited geophysical surveys and diamond drilling. As of 2011 a total of 108 drill holes have been drilled totaling 46,043.22 meters. The Akie Property is host to the Cardiac Creek deposit has a recently-updated indicated resource of 12.7 Mt at 8.38% Zn, 1.68% Pb and 13.7 g/t Ag and an inferred resource of 16.3 Mt at 7.38% Zn, 1.34% Pb and 11.6 g/t Ag (Sim 2012).

## **16.0 MINERAL PROCESSING AND METALLURGICAL TESTING**

There has not been any mineral processing or metallurgical testing on the Gnome Property to date.

## **17.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES**

The Gnome Property remains at an early stage of exploration, therefore sufficient data to calculate mineral resource or reserve estimates do not exist. For this reason, no resource or reserve estimates were done as part of the present report.



## **18.0 OTHER RELEVANT DATA AND INFORMATION**

The author is not aware of any relevant data that have not been reviewed and either included or referenced in this report.

## 19.0 INTERPRETATIONS AND CONCLUSIONS

The Gnome Property exhibits potential for economic base-metal mineralization. The property contains favorable stratigraphic units with bedded barite and pyrite horizons, and it displays significant soil geochemical anomalies. The results of sampling from the 2012 and previous exploration programs indicate that barite mineralization is stratigraphically-controlled, following individual horizons within well recognized stratigraphic and lithologic units. The barite horizons exposed at the surface of the Gnome Property likely extend down-dip, and along strike based upon comparisons with similar occurrences in the region and on the continuity of soil anomalies over hundreds of meters.

The Gnome Property displays stratigraphic, structural, and geochemical characteristics that are similar to the characteristics of the neighboring Akie Property. The Akie Property contains a 40 cm-thick surface exposure of sulfide mineralization and bedded barite which allowed for the discovery of the Cardiac Creek deposit. This mineralization was discovered in a creek bed in 1994 and subsequently underwent exploratory drilling. Prior to the discovery of the Cardiac Creek deposit and subsequent exploration drilling, the exploration status of the Akie Property was very similar to that of the Gnome Property. Both the Akie and Gnome properties contain stratiform barite-sulfide mineralization hosted by the Gunsteel Formation, and both share similarities in soil geochemistry and base-metal signatures. A stratigraphic section for the Akie Property suggests that the bedded barite and massive sulfide deposit of the Cardiac Creek zone lies stratigraphically below three distinct beds of laminated pyrite and nodular barite with interbedded shale (Johnson, 2008). The characteristics of the barite horizons on the Gnome Property suggest that they are probably correlative with the barite horizons on the Akie Property, indicating that there is potential for discovery of Cardiac Creek-style mineralization beneath the Db2 barite horizon on the Gnome Property.

Past exploration programs on the property have delineated three areas of anomalous soil geochemical values, but have failed to discover significant bedrock mineralization. The extent of base metal mineralization and barite-pyrite horizons, and significance of soil geochemical anomalies are not well understood. The limited exposure of stratigraphic units below tree line and absence of exploration drilling inhibit the ability to interpret the source of geochemical anomalies. Two well-defined soil geochemical anomalies associated with favorable stratigraphy and barite-pyrite mineralization in outcrop constitute the primary areas of interest for future exploration programs.

## **20.0 RECOMMENDATIONS**

A phased program consisting of drill-testing soil geochemical anomalies at Area B-north, Area B-south and Area C is recommended. Additional infill soil sampling and prospecting should be undertaken south of Area C where soil anomalies identified by Cominco, Inmet and Mantra are proximal to Db2. Ongoing structural and stratigraphic analysis of the antiform-synform relationship at Area C is also recommended. This work should provide a better understanding of the stratigraphy with respect to the barite horizons and their structural setting. The proposed work will provide valuable information on potential for SEDEX-type mineralization at depth. The 2012 exploration program did not include a detailed analysis of the 2010 DIGHEM airborne geophysical survey conducted by AsiaBaseMetals. The results of the DIGHEM survey should be compared in detail with the historical and 2012 soil geochemical results. Depending on the results of this work, additional ground or airborne geophysical surveys may be warranted. Where the geochemical surveys are supported by the geophysical results, ground-based gravity and magnetometer surveys might be helpful in targeting mineralization and establishing the geometry of nearby high-angle faults.

Additionally, it is recommended that the results from the Cyprus Anvil and Aquitaine Company of Canada programs, covering the GIN, Aki and Guy claims, be digitized. The southern area of the property has the best stratigraphic exposure. It is hoped that a comparison of the GIN soil geochemistry to the existing Gnome dataset will allow correlation of the Gnome and GIN anomalies with source stratigraphy. This will aid in projecting mineralized horizons to other parts of the Gnome Property and possibly to areas outside the present claim block.

## REFERENCES

- Close, S., (2010): 2010 Geophysical Assessment Report on the Gnome Zn-Pb-Ag Property, Omineca Mining Division; Northeastern British Columbia; Report for AsiaBaseMetals, Incorporated; B.C. Ministry of Energy Mines and Petroleum Resources, Assessment Report 31871, 166 pages.
- Coutellier, G.R., (1980): Geological and Geochemical Report on the Aki Claim Group, Akie River Area, Omineca Mining Division; Report for Aquitaine Company of Canada; B.C. Ministry of Energy, Mines and Petroleum Resources, Assessment Report 08478, 19 pages.
- Demerse, D., Hopkins, J., (2008): Lithology and Structural Geology of the Akie Property, Kechika Trough, Northeastern British Columbia; Mantles Resources Inc., internal company report, 248 pages.
- Gabrielse, H., (1984): Major dextral transcurrent displacements along the northern Rocky Mountain trench and related lineaments in north-central British Columbia; Geological Society of America Bulletin, volume 96, pages 1-24.
- Green, D., (2008): NI 43-101 Technical Report, Geology and Geochemistry, Gnome Zinc-Lead-Silver Property, Northeast British Columbia, Canada; Report for Mantra Mining, Incorporated; B.C. Ministry of Energy, Mines and Petroleum Resources, Assessment Report 30485, 166 pages.
- Goodfellow, W.D., and Lydon, J.W., (2007): Sedimentary Exhalative (SEDEX) Deposits; Mineral Deposits of Canada: A Synthesis of Major Deposit Types, Districts Metallogeny, the Evolution of Geological Provinces, and Exploration Methods: Geological Association of Canada, Mineral Deposits Division, Special Publication Number 5.
- Johnson, N., (2008): Summary Report on the 2008 Diamond Drilling Program, Akie Project, Omineca Mining Division, Northeastern British Columbia; Report for Ecstall Mining Corporation; B.C. Ministry of Energy, Mines and Petroleum Resources, Assessment Report 31103, 672 pages.
- Kapusta, J. D. and Baxter, P., (1996): Soil geochemical assessment report, Muskwa Property; unpublished report for Inmet Mining Corporation; B.C. Ministry of Energy, Mines and Petroleum Resources, Assessment Report 24461, 16 pages plus figures.
- Kuran, V.M., (1981): Geological and geochemical report on the Gnome Group; Omineca Mining Division; Northeastern British Columbia; report for Cominco Ltd.; B.C. Ministry of Energy, Mines and Petroleum Resources, Assessment Report 9722, 7 pages plus figures.
- LeClair, C.B., (2010): 2009 Assessment Report, Elf Property, Omineca Mining Division, British Columbia, Canada; Report for Teck Resources Limited; B.C. Ministry of Energy, Mines and Petroleum Resources, Assessment Report 31762, 23 pages.
- MacIntyre, D.G., (1991): Sedex - Sedimentary-exhalative Deposits, in Ore Deposits, Tectonics and Metallogeny in the Canadian Cordillera, McMillan, W.J., Coordinator, B. C. Ministry of Energy, Mines and Petroleum Resources, Paper 1991-4, pages 25- 69.
- MacIntyre, D.G., (1998): Geology, Geochemistry and Mineral Deposits of the Akie River Area, Northeast British Columbia; B.C. Ministry of Energy, Mines and Petroleum Resources, Bulletin 103, 99 pages, 1 map.
- MacIntyre, D.G. (2005): Geological report on the Akie Property, Mantle Resources Inc. Inc., internal company report, 54p.
- MacIntyre, D. G., and Sim, R.C. (2008): Technical Report: Geology, Diamond Drilling and Preliminary Resource Estimation, Akie Zinc-Lead-Silver Property, Northeast British Columbia, Canada. Internal Report, Mantle Resources Inc., 96p.



- Manning Elliot (2009): Consolidated Financial Statements for the Years Ended September 30, 2008 and 2009; an auditor's report for the shareholders of TintinaGold Resources, Inc.; Manning Elliot Chartered Accountants, Vancouver British Columbia.
- McClay, K.R., Insley, M.W. and Anderton, R., (1989): Inversion of the Kechika Trough, northeastern British Columbia, Canada; Inversion Tectonics, Cooper, M.A. and Williams, .D. (editors), Geological Society Special Publications No. 44, pages 235-257.
- Paradis, S., Hannigan, P., and Dewing, K., (2007): Mississippi Valley-Type Lead-Zinc Deposits; Mineral Deposits of Canada: A Synthesis of Major Deposit Types, Districts Metallogeny, the Evolution of Geological Provinces, and Exploration Methods: Geological Association of Canada, Mineral Deposits Division, Special Publication, Number 5.
- Pigage, L.C., (1986): Geology of the Cirque barite-zinc-lead-silver deposits, Northeastern British Columbia; in Mineral Deposits of Northern Cordillera, in Canadian Institute of Mining and Metallurgy, Special Volume 37, pages 71-86.
- Price, R.A., (1986): The southeastern Canadian Cordillera: thrust faulting, tectonic wedging and delamination of the lithosphere; Journal of Structural Geology, volume 9, pages 239-254.
- Pride, K.R., (1980): Geological and geochemical report on the Gnome Group; unpublished report for Cominco Ltd.; B.C. Ministry of Energy, Mines and Petroleum Resources, Assessment Report 7270, 7 pages plus figures.
- Roberts, W.J., Simpson, J.G., (1980): Geochemical Soil Sampling on the GIN claims, Pesika Creek Area, Omineca Mining Division; report for Cyprus Anvil Mining Corp.; B.C. Ministry of Energy, Mines and Petroleum Resources, Assessment Report 08369, 15 pages.
- Sim, R.C., (2012): NI 43-101 Technical Report, Akie Zinc-Lead-Silver Project, British Columbia, Canada; Independent report for Canada Zinc Metals Corporation, 130 pages.
- Simpson, J.G., Roberts, W.J., (1980): Geochemical Soil Sampling on the GIN claims, Pesika Creek Area, Omineca Mining Division; unpublished report for Cyprus Anvil Mining Corporation; Ministry of Energy, Mines and Petroleum Resources, Assessment Report 8369, 15 pages.
- Vanwermeskerken, M., Heft, K., (2008)a: 2007 Assessment Report on the New Gun Pesika Property, Omineca Mining District, Northeast British Columbia; Report for Mantle Resources, Inc.; B.C. Ministry of Energy, Mines and Petroleum Resources, Assessment Report 29829, 96 pages.
- Vanwermeskerken, M., Heft, K., (2008): 2007 Assessment Report on the CT Ext Property, Omineca Mining District, Northeast British Columbia; Report for Mantle Resources, Inc.; B.C. Ministry of Energy, Mines and Petroleum Resources, Assessment Report 29830, 58 pages.

## DATE AND SIGNATURE PAGE

I, John F. Childs, do hereby certify that:

1. I am the President of: Childs Geoscience, Inc., 1700 West Koch Street, Suite 6, Bozeman, Montana 59715
2. I graduated with a PhD in Geology from the University of California, Santa Cruz (1982). I have a MSc from the University of British Columbia (1969) and a BSc from Syracuse University (1966).
3. I am a member of the Geological Society of America, the Geological Association of Canada, the Society of Economic Geologists, and the Association of Applied Geochemists. I am a Registered Geologist in the State of Arizona, and I am a Founding Registered Member of the Society for Mining, Metallurgy and Exploration.
4. I have practiced my profession as a geologist for 40 years since leaving university.
5. I have read the definition of “qualified person” set out in the National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education and past relevant work experience, I fulfill the requirements to be a “qualified person” for the purposes of NI 43-101. This report is based on my personal review of information provided by the Issuer and on discussions with the Issuer’s representatives. My relevant experience for the purpose of this report is: work in the United States, Canada, Brazil, Mexico, Guyana, and other countries that included investigation of similar syngenetic SEDEX and shear zone hosted deposits.
6. I am responsible for the preparation of this Technical Report entitled “NI 43-101 Technical Report, Gnome Zinc-Lead-Silver Property”. I visited the property from July 20 to July 23, 2012 and during this visit I conducted soil and rock sampling, geologic mapping and project oversight.
7. I have not had prior involvement with the properties that are the subject of this Technical Report.
8. As of the date of this certificate, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make this Technical Report not misleading.
9. I am independent of the issuer applying all the tests in Section 1.4 of National Instrument 43-101.
10. I have read National Instrument 43-101 and Form 43-101F1, and this Technical Report has been prepared in compliance with that instrument and form.
11. I consent to the filing of this Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public.

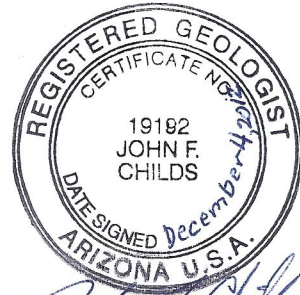
Dated in Bozeman, MT the 4<sup>th</sup> day of December, 2012

John F. Childs

Signature of John F. Childs

John F. Childs

Printed name of John F. Childs



John F. Childs  
Expires June 30, 2014