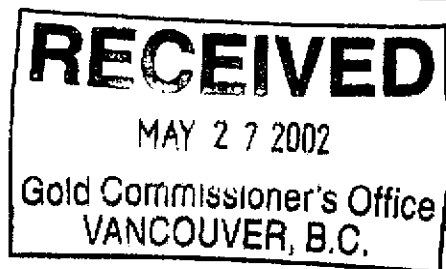


Geological Assessment
Report
on the

ZUMAR PROPERTY



Lambly Creek area
Vernon Mining Division
British Columbia, Canada

NTS 082L/04
Latitude 50°00'37'' N
Longitude 119°38'23'' W

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GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

Date:
22 May 2002

26,858

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1.0 Summary

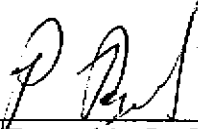
The Zumar property comprises four mineral claims with a total area of 1 square km (100 ha), located in the Vernon Mining Division, some 16 km northwest of Kelowna, British Columbia. There is good gravel road access to the claims, which cover a rounded ridge top between Lambly and Terrace Creeks, at an elevation of approximately 1100 m above sea level. The claims are underlain by Palaeozoic Harper Ranch Group meta-volcanics, near the contact with overlying Tertiary volcanics and sediments. Both rock types are cut by felsic and mafic Tertiary(?) dykes.

The main showing on the property is the Zumar vein, which is a mesothermal Au – Ag vein hosted in altered meta-volcanics. The Zumar vein was discovered in 1979, and bulk sampling in 1980 from an open cut yielded 55.16 tonnes (60.8 tons) of ore containing 8.12 kg Au (261 oz), 72.28 kg Ag (2324 oz), 25 kg Pb (55 lb) and 25 kg Zn (55 lb). Subsequent work from 1982 to 1990 included soil geochemical (Cu and Ag) surveys, geophysical surveys (magnetometer, VLF-EM, and minor self-potential), geological mapping, trench sampling, and diamond drilling (five holes, 247.4 m in total). The Zumar vein has been traced in trenches for 230 m along strike. Diamond drilling at the open cut has tested the vein along a 45 m strike length, and a maximum depth of 60 m. The vein averages about 30 cm wide, and comprises quartz with pyrite and lesser chalcopyrite. Results from chip sampling discussed herein confirm previous results from trench and drill core samples, as well as grades deduced from the yield of bulk sample shipments. Significant results from the current sampling include 12.30 g/t Au, 180 g/t Ag over 35 cm (3816) and 11.40 g/t Au, 109 g/t Ag over 42 cm (3815).

The Zumar vein structure represents a viable target for bonanza type Au – Ag mineralization in a mesothermal setting. Exploration should be directed toward identifying possible bonanza targets at dilational jogs along the vein structure or at intersecting cross – structures. An exploration program consisting of VLF-EM surveying, stereoscopic airphoto analysis, geological mapping, prospecting and rock sampling is warranted. The estimated cost of this exploration program is \$22,000.

Respectfully submitted,

REYNOLDS GEOLOGICAL LTD.



Paul Reynolds, P. Geo.

22 May 2002

2.0 Introduction

2.1 Terms of Reference

This Report was prepared to satisfy assessment requirements. The report reviews previous exploration work on the Zumar property from 1979 to 1990, results of limited geological mapping and sampling of the main showing by the authors, and makes recommendations for further exploration. An exploration program with an estimated cost of \$22,000 is recommended.

The information contained in this report is derived from published maps, reports and government open file sources, as well as a property visit by the authors. The authors visited the property on 24 February, 2001 examined the main showing and collected some of the samples discussed in Section 6.0. This visit was while staking the property and only the sample analysis from this period is included for assessment purposes. The senior author visited the property again during the period 19 October 2002 to 21 October 2002 inclusive. During this period the author and Mr. Michael H. Sanguinetti, P. Eng., conducted preliminary geological mapping and sampling in the area of the main vein.

Pertinent information regarding the extent and character of ownership as set out in Section 2.2 was supplied by Merritt Ventures Corp. and its representatives and is regarded as factual. Such information was not independently verified as it is beyond the scope of this report. This report has been prepared for the exclusive use of Merritt Ventures Corp., and shall not be reproduced, distributed or made available to any other persons or companies without the knowledge and written consent of the author.

2.2 Location, Access and Property Description

The Zumar property comprises four contiguous 2-post mineral claims (Zumar 1-4) with a total area of 100 ha (1 km²). The property is located 16 km northwest of Kelowna, British Columbia. The Zumar property is within the Vernon Mining Division, covered by NTS map sheet 82L/04, and is centred at latitude 50° 00' 37'' north and longitude 119° 38' 23'' west (Figure 1).

Road access to the property is via the Bear Creek Forest Service Road, which branches west off of Westside Road at a distance of 8.6 km from the intersection of Westside Road and Highway 97. The Bear Creek Forest Service Road is followed west for 15.5 km, from where a series of minor roads lead up the west side of Terrace Creek and to the main mineral showing (Zumar vein) (Figures 2, 3).

The Zumar 1-4 mineral claims are owned by Mr. Michael Sanguinetti of West Vancouver, B.C. The claims have not been subject to a legal survey. The claim areas partially overlap surveyed lots (L 4080, L 4094, L 4079) in the Yale Land District. The ownership of these lots is not known, however, these lots do not affect the mineral title attached to the Zumar 1-4 claims. A table of claim names, tag numbers, tenure numbers and anniversary dates is presented below.

Table 1: Claim Data Summary

CLAIM NAME	TAG NUMBER	TENURE NUMBER	EXPIRY DATE *
Zumar 1	624326	384330	Feb. 24, 2004
Zumar 2	624327	384331	Feb. 24, 2004
Zumar 3	624328	384332	Feb. 24, 2004
Zumar 4	624329	384333	Feb. 24, 2004

* Includes assessment being applied.

Merritt Ventures Corp. is the operator of the Zumar property, subject to an option agreement dated April 6, 2001. This agreement gives Merritt Ventures a 100% interest in the Zumar property, contingent upon the expenditure of U.S. \$115 000 over three years, and a U.S. \$1 000 cash payment. A net smelter royalty of 2% is held by the vendor.

This agreement confers the mineral rights to the ground underlying the Zumar property. The surface rights belong to the Crown (government) and private landowners. To the extent known by the authors, there are no encumbrances, liens, or back-in clauses to which the Zumar Property is subject. Any other aspects of this option agreement are beyond the scope of this report.

To the extent known by the authors, there are no environmental liabilities associated with the Zumar Property. The area around the open cut trench on the Zumar vein appears to have been reclaimed satisfactorily. Apart from the main open cut, some smaller trenches and access road, there are no further improvements on the property. A small waste rock dump at the open cut is judged to pose no environmental hazard.

Permits (e.g. the Notice of Work) are required by the government of British Columbia for mineral exploration activities that involve surface disturbance. As the initial recommended exploration activities for the Zumar property involve no (or very minimal) surface disturbance, permits are not required at this initial stage. Private landowners (surface rights) should be notified prior to undertaking any exploration programs.

2.3 Physiography, Climate and Infrastructure

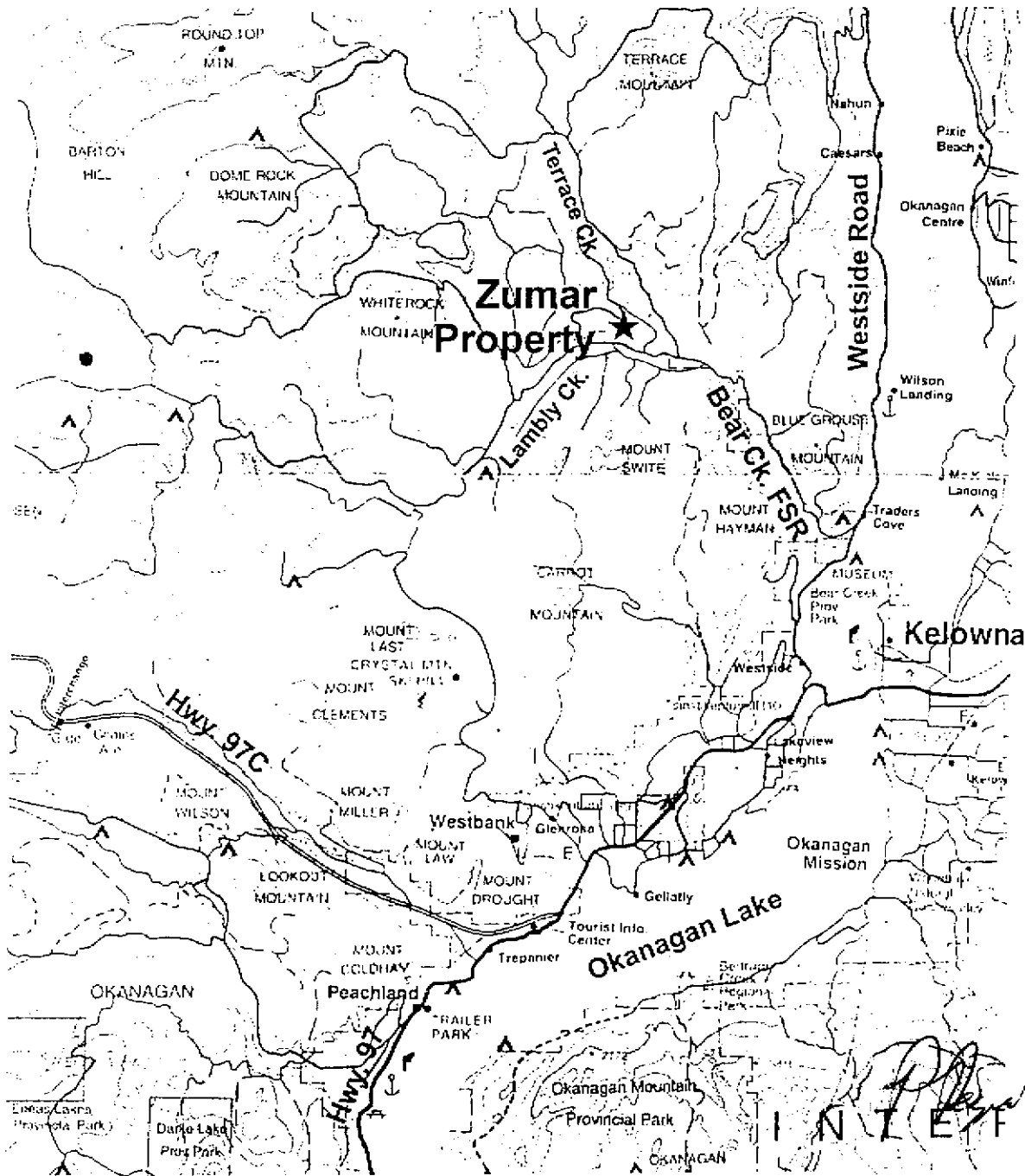
The Zumar property is situated on the Okanagan Plateau of south central British Columbia. The typical topography here is gently rolling, with rounded ridge tops and deeply incised dendritic stream valleys. The claims lie on an east-southeast trending ridge between Lambly and Terrace Creeks, at elevations ranging from 1173 metres above sea level (a.s.l.) in the west, to 1097 metres in the east. The forest vegetation on the property consists of mainly fir, pine, spruce and aspen, some of which has been harvested by logging. The crest and south-facing slope of the ridge is covered by sparse spruce and pine, with open grassy areas. The north facing slopes and stream gullies are covered by thicker underbrush. Some outcrops are exposed along the ridge crest.

The climate is characterised by relatively low precipitation with temperatures ranging from -20° Celsius in the winter to over 30° Celsius in the summer. The summer months are generally dry,

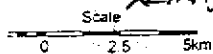
while a snow pack of up to two metres may accumulate during the winter. The property is easily accessible from late May to late November, although some work such as geophysical surveys and drilling could take place year round.

The Zumar Property is accessed by good gravel roads, with 4WD or high-clearance vehicle roads leading to the Zumar vein. The city of Kelowna lies 16 km to the southeast, approximately 30 km distant by road. It is the major service centre for the Okanagan Valley region. The city is served by provincial highways, rail freight lines, and an airport. Sufficient equipment, service suppliers and exploration personnel can be obtained in Kelowna.

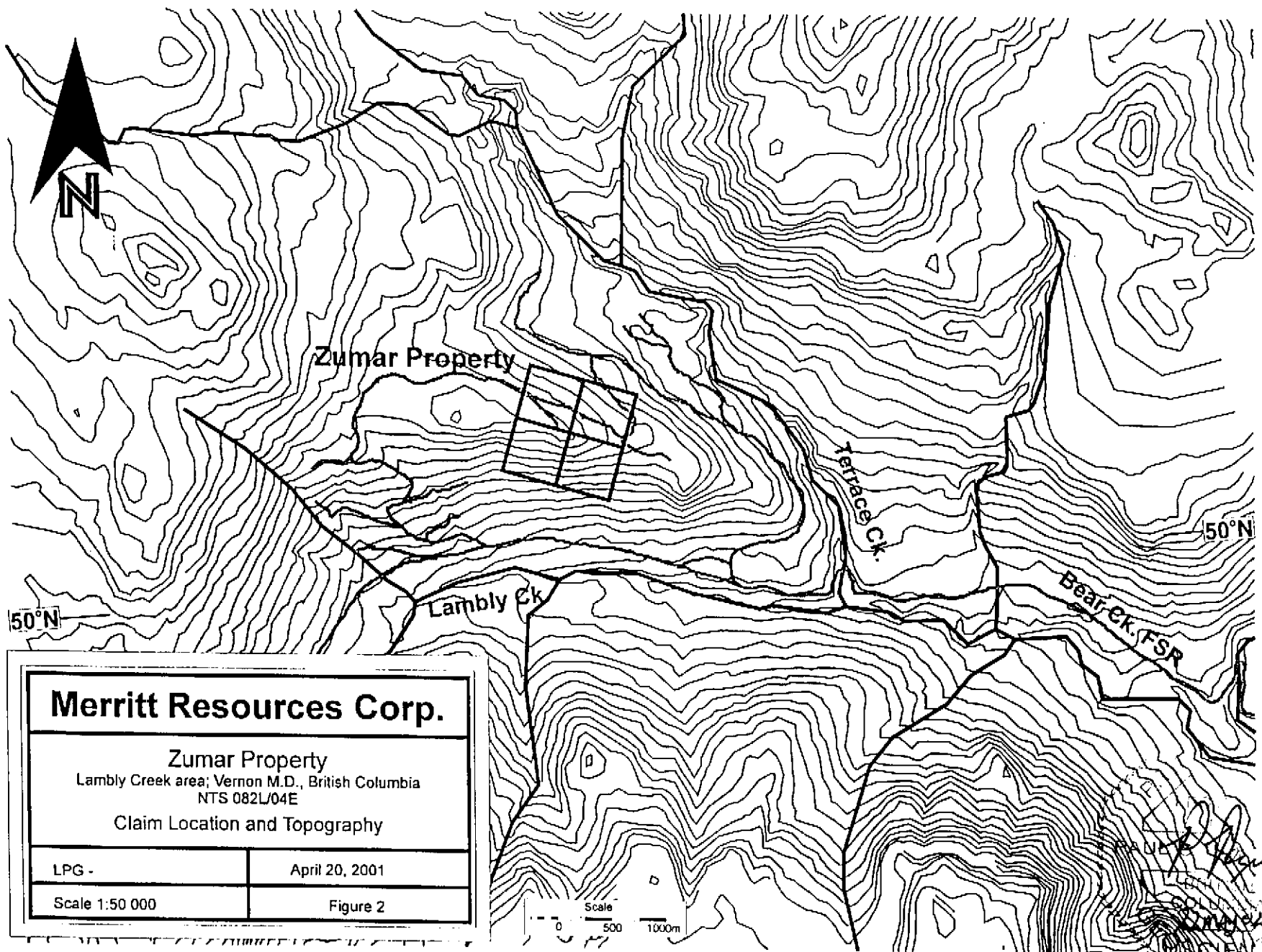
The Zumar 1-4 claims, with an area of 1 square km, are sufficient in area to support potential mining operations, tailings storage and processing sites. Power is readily available from transmission lines running up Lambly Creek valley. Water is scarce on the property, and would have to be supplied from Terrace or Lambly Creek for processing activities or drilling. The closest practical source for water for diamond drilling (easily loaded by a tanker) would be from a bridge crossing Lambly Creek, about 6 km east of the property.



22 MAY 02

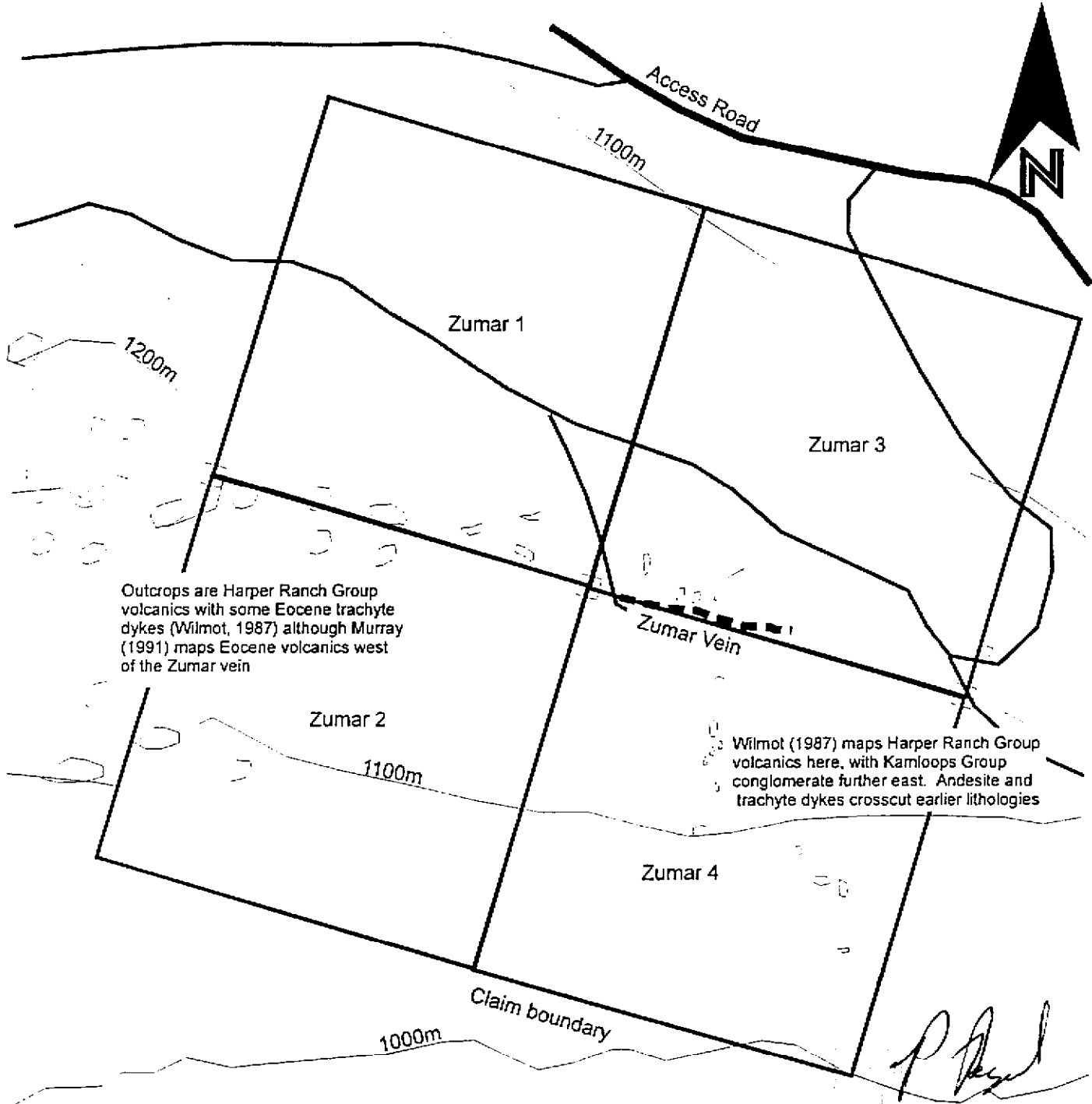


Merritt Resources Corp.	
Zumar Property Lambly Creek area; Vernon M.D., British Columbia NTS 082L04E	
Property Location Map	
LPG -	April 20, 2001
Scale 1: 250 000	Figure 1



Merritt Resources Corp.	
Zumar Property Lambly Creek area; Vernon M.D., British Columbia NTS 082L/04E Claim Location and Topography	
LPG -	April 20, 2001
Scale 1:50 000	Figure 2

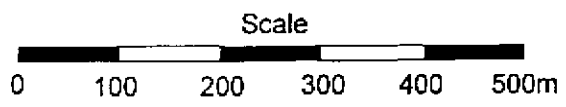
Contour interval: 20 metres. For clarity, only the Bear Ck. FSR and secondary roads in the immediate vicinity of the Zumar Claims are shown



Outcrops are Harper Ranch Group volcanics with some Eocene trachyte dykes (Wilmot, 1987) although Murray (1991) maps Eocene volcanics west of the Zumar vein

Wilmot (1987) maps Harper Ranch Group volcanics here, with Kamloops Group conglomerate further east. Andesite and trachyte dykes crosscut earlier lithologies

P. [unclear]
22 MAY 02



- LEGEND
- Claim post
 - Outcrop
 - Minor road
 - Topographic contour (100m interval)

Merritt Resources Corp.	
Zumar Property Lambly Creek area; Vernon M.D., British Columbia NTS 082L/04E	
Claim Map, Topography, Outcrop Geology	
LPG - after Wilmot, 1987	April 20, 2001
Scale 1:5 000	Figure 3

2.4 Exploration History

Gold exploration has occurred in the area since the late 1800's. Minor placer production took place on Whiteman, Naswhito, and Equesis Creeks, north of the property. The Bluehawk (9 km east-southeast) and White Elephant (16 km north-northeast) prospects are minor past producers of gold from veins and sulphide lenses.

From the 1960s, regional exploration programs for Cu and Mo porphyry deposits covered the area. The Brenda Cu-Mo mine (30 km southwest) was the only major producer. In 1983, high-grade gold mineralization on the Brett property (24 km north) was discovered, and touched off renewed interest in gold exploration along the west side of Okanagan Lake.

Modern exploration on the Zumar property dates to 1979 when the Zumar 2 claim was staked to cover a quartz vein showing. Zumar Resources Ltd. staked further ground, and carried out exploration work on the vein from 1979-1984. Stripping and trenching on the vein in 1979 exposed it for 230 along strike (Murray, 1991). In 1980, two shipments of hand-cobbed quartz ore were shipped to the Cominco smelter in Trail, B.C. The shipments totalled 55.16 tonnes (60.8 tons) and yielded 8.12 kg Au (261 oz), 72.28 kg Ag (2324 oz), 25 kg Pb (55 lb) and 25 kg Zn (55 lb) worth Cdn \$5 417 (1980 Canadian dollars). This corresponds to an average grade of 4.77 g/t Au (0.139 oz/ton) and 42.17 g/t Ag (1.23 oz/ton), as well as 0.09% Cu, 0.1% Zn and 0.1% Pb (Murray, 1991, BCMEMPR MINFILE).

In 1982, four NQ diamond drill holes were collared to test the vein over a 45 m strike length (Wilmot, 1987) at a vertical depth of approximately 30 m. The width of the vein was interpreted to increase slightly, while the grade decreased slightly. Drill hole 1982-2 yielded a 170 cm core length (not true width) of 3.50 g/t Au (0.102 oz/ton) and 31.54 g/t Ag (0.92 oz/ton).

In 1986, Skyworld Resources and Development Ltd. acquired the property, and performed magnetometer and soil geochemical (Cu and Ag) surveys over the area on a grid with north-south survey lines spaced 100 m apart and 50 m station intervals (75 line km of grid in total, and 1476 soil samples) (Wilmot, 1986). Subsequently, infill lines and sample stations were established at 25 m intervals (487 additional soil samples) (Wilmot, 1987). The area west of the Zumar vein was sampled on survey lines spaced 50 m apart. These surveys outlined a northwest trending magnetic high east of the Zumar vein, possibly representing a fault zone; as well as a west-northwest trending magnetic high partly coincident with the vein. Copper and silver geochemical anomalies partly outlined the Zumar vein and extended to the west, through and beyond the current claims. A second area of soil geochemical anomalies (Cu and Ag) was outlined to the southeast of the Zumar vein (southeast of and off the current property boundary).

Also in 1986, a single BQ diamond drill hole to 95 m depth intersected the Zumar vein at 60 m vertical depth (Wilmot, 1987). The vein was intersected in core from 70.9 m, with a true width of 40cm. The interval assayed 4.97 g/t Au (0.145 oz/ton), 32.23 g/t Ag (0.94 oz/ton). A lower, 10cm interval of quartz yielded 0.96 g/t Au (0.028 oz/ton) and 5.14 g/t Ag (0.15 oz/ton) (Wilmot, 1987).

Exploration by Skyworld Resources and Development Ltd. in 1988 comprised further soil geochemical, magnetometer and electro-magnetic (EM) surveys (Wood, 1989). Survey grid lines were oriented east-west at 200 m spacing, with survey stations every 25 m. The grid lines were designed to test for possible north-striking structures similar to those considered to control mineralization at the Brett deposit, 24 km to the north. An area southeast of the Zumar vein was covered by lines at 100 m spacing. Soil geochemistry and geophysical features were concluded to be consistent with a north to north-easterly striking zone of copper mineralization. Gold and silver soil geochemistry was found to be of limited value in outlining the Zumar vein, although copper anomalies correlated well with the vein. The Zumar vein was also outlined by a VLF-EM conductor anomaly and a local magnetic high, as in previous surveys.

In 1990, further prospecting and geochemical soil sampling was carried out in the area east and northwest of the current property for Amarado Resources Ltd. (Murray, 1991). Copper and zinc anomalies were found adjacent to Terrace Creek, west of the property. A limited self-potential (SP) geophysical survey was carried out over the Zumar vein and adjacent area. The SP survey revealed anomalies (particularly northeast of the Zumar vein) that were recommended for follow-up by trenching. Murray (1991) also questioned whether previous drilling had been deep enough to fully test the zone hosting the Zumar vein (which dips almost vertically), and speculated that the vein might be better mineralised within granitic host rock which was interpreted to lie below the altered volcanic host rock.

3.0 Regional Geology

3.1 General Setting

The Zumar property lies near the eastern edge of the Intermontane Belt of the Canadian Cordillera. In the central Okanagan region, the Intermontane Belt is separated from the Omineca Belt to the east by the Okanagan Fault Zone (OFZ) (Figure 4). The OFZ is considered to be a shallowly west dipping, normal fault system, formed largely during Tertiary extension that exhumed the high-grade metamorphic gneiss that characterises the Omineca Belt. West of the OFZ, the Intermontane Belt comprises low to medium grade (to greenschist facies), Palaeozoic and Mesozoic (Carboniferous to Triassic) meta-volcanics and meta-sediments. The bedding in these metamorphic rocks seems to strike mainly northwest in the area, and northwest-trending overturned folds have been mapped west of the property (Okulitch, 1989). A penetrative deformation fabric due to Mesozoic compression has been preserved. Rocks on both sides of the OFZ are intruded by middle Jurassic granodiorite and Tertiary granite – syenite plutons, and overlain by Tertiary volcanics (largely Eocene) and sediments that are basically unmetamorphosed and little deformed. Some block faulting and local folding affects the Tertiary rocks. Quaternary glacial till, lacustrine sediments and limited flood basalts cap the sequence.

3.2 Table of Units (Map Symbols refer to Figure 4)

Period	Epoch, Age	Group, Plutonic or Volcanic Suite	Map Symbol (Figure 4)	Lithology
Quaternary	Pleistocene & Recent			Alluvium, colluvium, till
Quaternary	Pleistocene & Recent	Lambly Creek basalt	Q _b	Valley flood basalts
Tertiary - Neogene	Miocene and Younger	Chilcotin Group	NTc	Back-arc volcanics, basalt flows
Tertiary - Paleogene	Eocene	Kamloops Group	PT _K	Trans-tensional arc volcanics, calc-alkaline and alkaline
	Eocene	Kamloops Group	PT _S	Non-marine fault-trough clastic sediments
Early Tertiary	40-64 Ma	Coryell plutonic suite	E _{Tg} , E _{Ty} , E _{TyC} , E _{TqL}	Undivided granodiorite and quartz diorite (E _{Tg}), undivided syenite, syeno-diorite, nepheline syenite (E _{Ty}), Coryell syenite, quartz monzonite, trachyte dykes (E _{TyC}), Ladybird granite (E _{TqL})
Late Cretaceous	64-87 Ma		L _{Kg}	Granodiorite, monzonite, quartz diorite, tonalite
Late Jurassic - Early Cretaceous	130-155 Ma	Whiterocks Mountain Complex	J _{Ky}	Undivided syenite, syeno-diorite, nepheline syenite
Middle Jurassic	155-187 Ma	Nelson plutonic suite equivalent	MJgr	Foliated diorite, tonalite
Early Jurassic	187-214 Ma	Guichon plutonic suite	EJ _{Gg}	calc-alkaline granodiorite, diorite
Late Triassic - Early Jurassic	--	--	TrJd	Diorite
Upper Triassic - Lower Jurassic	--	Nicola Group	TJ _N	Arc volcanics and sediments, grading eastward from dominantly andesite and dacite flows with minor limestone, to flows with volcanic clastics, porphyritic flows, and thence dominantly sediments
Devonian - Triassic	--	Old Dave "intrusions"	D _{Truo}	Ultramafics, oceanic crust (?)
Devonian - Triassic	--	Harper Ranch Group	D_{TrH}	Arc clastics: Volcanic sandstone derived from andesite and dacite, chert, minor basalt, andesite and dacite flows and pyroclastics
Carboniferous - Permian	--	Anarchist Group	CP _A	Oceanic volcanics and sediments, occur west and south of area mainly. Chert, argillite, basalt, minor limestone, greenstones.
Upper Proterozoic - Palaeozoic	--	Chapperon Group, (Eagle Bay Assemblage)	PP _{EK}	Outcrops mainly north of area. Clastics and volcanics
Proterozoic - Palaeozoic?	--	Undivided metamorphics, Okanagan Gneiss Complex	M	Part of Omineca Belt. Dominantly amphibolite-facies gneisses, age uncertain

Units in **bold type** are present in the immediate area of the Zumar property.

3.3 Description of Rock Units

The oldest rocks in the region are the Devonian to Triassic Harper Ranch Group. This group comprises arc clastics including volcanic sandstones derived from andesite and dacite, chert, minor basalt, andesite and dacite flows and pyroclastics.

The Harper Ranch Group is overlain unconformably by the Paleogene Kamloops Group of trans-tensional arc volcanics: alkali-rich, calc-alkaline andesite, dacite, rhyolite and basalt flows, pyroclastic and epiclastic deposits. Clastic sedimentary rocks are also part of the Kamloops group sequence. Neogene (Miocene) Chilcotin Group flood basalts outcrop south of the property. Intrusive rocks include middle Jurassic granodiorite (Nelson intrusions) and early Tertiary syenites (Coryell intrusions). Late Jurassic – early Cretaceous syenites and related alkaline rocks of the Whiterocks Mountain complex outcrop 10 km west of the property. The youngest deposits are Quaternary alluvium and basalt flows (Lambly Creek basalt).

4.0 Property Geology

Much of the property is covered by glacial drift, which is 2-5 m thick in the vicinity of the Zumar vein cut, and probably thicker off the ridge crest. Outcrops are essentially restricted to the Zumar open cut, the ridge crest, old trenches and roadcuts.

The main rock type outcropping on the property is andesitic volcanics of the Harper Ranch Group. Perhaps the dominance of volcanic rocks led earlier workers to assign these rocks to Palaeozoic Cache Creek Group (Jones, 1959) or Upper Triassic Nicola Group (Meyers and Taylor, 1989), rather than the sediment dominated Harper Ranch Group. Previous mapping (Wilmot, 1987) showed altered andesitic tuffs southeast and west of the Zumar vein.

The contact with Eocene Kamloops Group apparently lies a short distance west and north of the Zumar property. This contact may be a fault or unconformity. Clastic sedimentary rocks are prevalent in the Eocene succession here.

Black andesite and pink trachyte dykes, presumably of Tertiary age, were mapped east of the Zumar vein. A dark coloured, recessive weathering lamprophyre dyke crosscuts the Zumar vein towards the east end of the open cut (TR-01, Figure 5). The lamprophyre dyke is four metres wide and trends northerly (Figure 5).

Jurassic granodiorite of the Nelson intrusions occur at least six km to the north and west, although a fault bounded slice of granodiorite occurs to the east of the property in the Terrace Creek valley. This north trending, east side down normal fault also separates Kamloops Group volcanics from Harper Ranch Group.

Regional metamorphism to greenschist facies has affected the andesitic volcanics. At the Zumar vein area, the volcanics appear to be hornfelsed, stained by Fe oxides and hematite altered. The entire back wall of the Zumar open cut (TR-01, Figure 5) appears to expose altered andesitic volcanics. The andesite is dark green in colour and contains phlogopite and biotite. Pyrite is

prevalent throughout. The altered andesitic volcanics are fractured by prominent joint sets at $012^{\circ}/52^{\circ}$ E and $340^{\circ}/44^{\circ}$ W. Northeast striking quartz stringers were also observed. The main vein is offset by faults with attitudes of $310^{\circ}/72^{\circ}$ - 90° SW, $048^{\circ}/65^{\circ}$ SE and $078^{\circ}/67^{\circ}$ SE. The vein and surrounding rock is offset and rotated due to the different fault orientations.

The vein is truncated by a quartz-biotite dyke at the eastern end of Trench-01 (Figure 5). This dyke is 1.3 m wide, weathers rusty, is fractured at 10 cm intervals, is hematite stained on the east side and trends 330° . The andesite on either side of the dyke is sheared. It appears possible that the vein is offset to the southeast or northwest by the dyke and/or faulting. Trench-03 effectively tests for a northwest offset with no results but a southeast offset has not been tested for. This could be tested by digging trenches oriented 030° across Trench-04 extending 20 m to the southwest. This area is currently covered by dump material from the excavation of the Zumar vein along Trench-01.

4.1 Mineralization

The Zumar vein is the only significant mineral showing on the property (Figures 3 & 5). The vein has seen limited past production. It is a quartz vein averaging about 30 cm in width, and exposed for at least 230 m by stripping and trenching. The vein dips about 80 - 85° to the south, and strikes 100 - 110° . The Zumar open cut exposes the vein for approximately 70 m. In the open cut area, the vein varies from about 15 cm to 50 cm in width. Drill testing in this area has intersected the vein to a maximum vertical depth of 60 m.

The Zumar vein is composed of quartz gangue, variably rusty and oxidised with approximately 2-3 % pyrite, lesser chalcopyrite, pyrrhotite and associated malachite and azurite. The sulphide mineralogy appears to be crudely zoned with the east end of the vein containing pyrite with lesser pyrrhotite and chalcopyrite. The central part of the vein is mineralised with pyrite and chalcopyrite and the western end of the vein has rare pyrite only. Native gold has reportedly been observed (Wilmot, 1986). The vein is slightly vuggy in places, with open space filling textures. Multiple episodes of quartz deposition and brecciated quartz were observed.

The vein is hosted within altered andesitic volcanics. Drill core logs mention variably altered andesite and basalt, with disseminated pyrite throughout (Wilmot, 1987). Smaller quartz veinlets occur parallel to and oblique to the Zumar vein. The mineralization may be associated with trachyte (or felsite) dykes that outcrop nearby and were observed in drill core, and also host quartz stringers with pyrite.

Some trenches west of the Zumar open cut yielded anomalous rock samples including 41.83 g/t Ag (1.22 oz/ton), 0.04 % Cu (sample GS 723) and 22.97 g/t Ag (0.67 oz/ton), 0.05 % Cu (sample GS 723) (Wilmot, 1987). These samples do not appear to be on the western strike extension of the Zumar vein.

The Zumar vein is a mesothermal Au-Ag prospect. Meyers and Taylor (1989) included it in a group of "greenschist hosted deposits" that also occur in the Vernon area to the north and at the Fairview Au - Ag Camp near Oliver to the south. These greenschist hosted deposits are characterised by simple quartz veins lying parallel to bedding and/or cleavage, breccia veins and

multiple veins, stringers in shear zones, or brittle crosscutting fracture zones. The host rocks are deformed and foliated rocks originating as accretionary arcs or oceanic assemblages.

In the area of the Zumar property, other significant gold-silver prospects are also hosted in Tertiary rocks (e.g., Brett,) and Jurassic intrusions (White Elephant).

5.0 Exploration Program

The authors made an initial examination of the Zumar vein on 24 February 2001. The object of the examination and subsequent sampling was to confirm the grades of mineralization, which have been previously published. Due to snow cover and slumping, only outcrop at the back wall of the Zumar open cut was partly exposed. The vein was examined in outcrop at the base of the back wall in several places in the eastern part of the open cut, along an approximately 70 m strike length. Four chip samples were collected across the vein, and two grab samples of typical quartz vein material were collected (samples ZUM 1 – ZUM 6).

During the period 19 October to 21 October 2002, the senior author and Mr. Michael H. Sanguinetti, P. Eng., conducted a preliminary exploration program on the Zumar property. Work included creating a flagged baseline, chain and compass surveying of the existing trenches and roads and geological mapping and sampling of the trenches and immediately surrounding area (Figure 5).

A one kilometre long flagged baseline was constructed along the claim line trending 105°. The baseline has stations marked at 50 m intervals. The claim post (FP Zumar 1 & 2, IP Zumar 3 & 4) was arbitrarily labelled 10000N, 10000E for grid reference. All trenches were tied to this baseline for survey control.

During October, seven chip samples and one grab sample were collected from the Zumar vein (3814 – 3821) and one selected grab sample (3822) of high-grade dump material was collected (Figure 5).

5.1 Rock Sampling Methods

Rock samples were collected from outcrop exposures of the main vein along the base of the open cut wall. Chip samples were collected across the width of the vein, from 15 cm to 40 cm. Sample locations are shown in Figure 5. Rock chip and grab samples were collected with a rock hammer. Approximately 100 g – 700 g of material was collected for chip samples. Grab samples were larger, up to 1.5 kg approximately. The samples were placed in labelled plastic bags and secured with twist ties. A correspondingly labelled piece of flagging tape was secured and left at the sample site. Sample descriptions are presented in Appendix I.

5.2 Sample Preparation, Analysis and Security

Rock samples were collected, labelled, bagged, and sealed by or in the presence of the authors. The samples remained in the authors' custody until they were delivered by the authors to ALS-Chemex Labs in North Vancouver, B.C.

A standard multi -element ICP package was requested for sample analysis. Gold was analysed by fire assay methods, with an AAS (atomic absorption spectroscopy) finish. Ore grade samples were re-analysed utilising fire assay methods with an AAS finish.

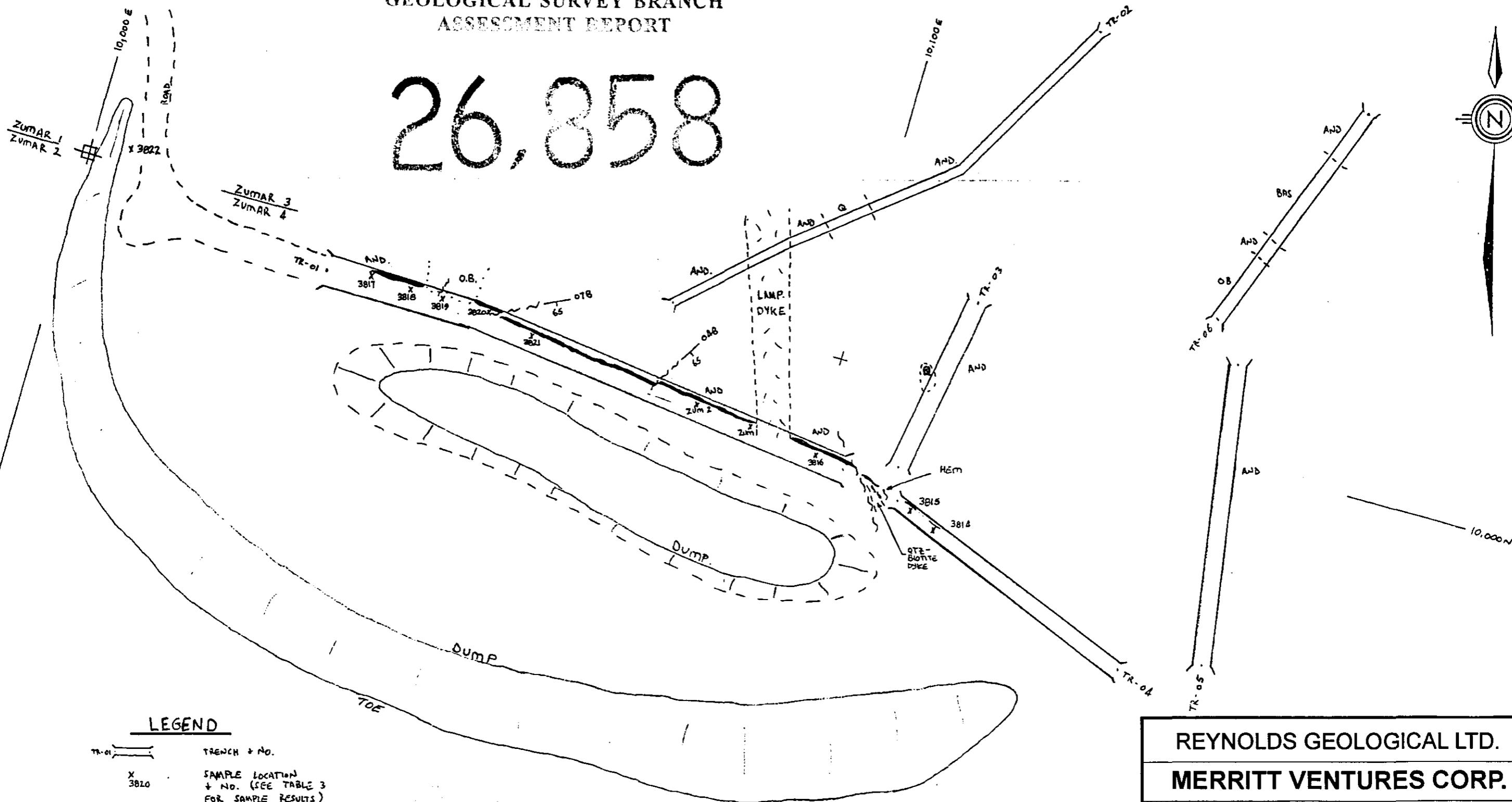
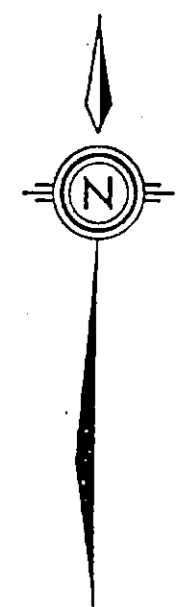
Two of the original six samples were re-analysed (ZUM 4 and 5). Repeat sample ZUM 4 was a re-split of the original pulp, while repeat sample ZUM 5 was a new sample ground from the reject material. In both cases, the repeat analyses of these samples showed good agreement with the original assays, for both ICP and AA-FA (gold) methods.

Two samples (3815 & 3816) were re-analysed for gold and silver because they exceeded the upper limit of the trace level analysis. One sample (3822) was re-analysed for gold because it exceeded the upper limit of the trace level analysis.

The authors are satisfied that the sampling and assay results from the Zumar vein reflect the mineralization contained by the vein, and that the samples were collected, secured and transported, prepared and analysed in a satisfactory manner, in keeping with standards of best practices commonly employed in mineral exploration.

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

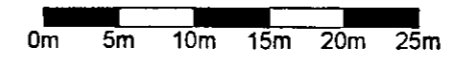
26,858



LEGEND

- TR-01 TRENCH + No.
- X 3820 SAMPLE LOCATION + No. (SEE TABLE 3 FOR SAMPLE RESULTS)
- AND ANDESITE
- BAS BASALT
- Q QUARTZITE
- QUARTZ VEIN
- OB OVERBURDEN

[Handwritten Signature]
GEOLOGICAL
22 MAY 02
GEOLOGICAL



REYNOLDS GEOLOGICAL LTD.		
MERRITT VENTURES CORP.		
ZUMAR PROPERTY a		
TRENCH LOCATION, GEOLOGY & SAMPLE LOCATIONS		
NTS: 082L/04		VERNON M.D.
DATE: JANUARY 2002	SCALE: 1:500	FIGURE: 5

6.0 Exploration Results

6.1 Discussion and Conclusions

A table summarising the assay data from 15 samples collected is presented below. The assay certificates are included in Appendix III.

Table 3: Sample Summary

Sample Number	Sample Width (cm)	Au (g/t)	Ag (g/t)	Cu (ppm)
ZUM 1	Grab	4.36	22.0	925
ZUM 2	20	6.41	63.8	2300
ZUM 3	15	1.03	8.4	351
ZUM 4	20	9.18	48.0	685
ZUM 4*	20	8.29	62.6	775
ZUM 5	40	0.18	1.4	75
ZUM 5**	40	0.14	1.2	82
ZUM 6	Grab	2.22	31.4	297
3814	41	1.175	12.0	315
3815	42	11.40	109	1105
3816	35	12.30	180	460
3817	25	0.145	1.6	11
3818	30	0.137	1.7	31
3819	Grab	0.369	2.8	84
3820	25	1.060	7.7	1020
3821	23	1.615	12.8	1170
3822	Selected Grab	10.95	79.7	4290

* indicates new sample split and ground from rejects

** indicates re-split: repeat analysis of pulp

The results are clearly comparable to previously reported assays from trench samples and drill core intersections of the Zumar vein. Also the grades are comparable to the average grade obtained from bulk samples collected in 1982.

The gold and silver values show a general correlation. The Ag: Au ratios range from 5.0 to 14.6, with an average of 8.4. The correlation between Au and Cu (representing chalcopyrite, malachite and azurite) and Au and Fe (representing sulphide minerals pyrite, pyrrhotite and chalcopyrite) is quite poor, indicating that gold grades are not dependent on amount of sulphides. Nor is it likely that most of the gold is contained in the sulphide minerals.

Copper values reached a maximum of 4290 ppm (0.43%) Cu in sample 3822, and were generally anomalous. Base metals Pb and Zn are low, the exception being 3500 ppm Pb in sample 3816. Trace elements such as As (maximum 27 ppm in sample 3816), Sb (4 ppm in sample 3815) and Bi (176 ppm, ZUM 5) are also generally low.

The Zumar vein is mineralised with gold and silver, with grades that are comparable to historical reports. Gold and silver show a moderate correlation, but gold grades do not seem to be dependent on sulphide mineral abundance.

6.2 Mineral Potential

Mineralization in the Zumar vein has been confirmed by sampling in the current work. While the vein exposed at surface (and as tested to 30-60 m depth by drilling) is of rather limited thickness and fairly low grade, the grade of mineralization and host structure possess reasonable continuity. The Zumar vein represents a viable exploration target on the property. While there is the possibility of increased thickness and/or grades at depth and along strike (e.g. Murray, 1991), the potential lies also in veins and/or vein systems that are parallel, intersecting, or in related stockworks. Dilational jogs along the vein structure, or intersecting cross structures, are likely to be the most favourable sites for high grade "bonanza" mineralization. The exploration target would be to identify bonanza grade ore shoots within the Zumar vein or similar structures.

7.0 Recommendations

7.1 Exploration Program Recommendations

It is recommended that further exploration work be undertaken on the Zumar Property to assess its potential to host high grade (bonanza) Au – Ag mineralization within mesothermal quartz (+ sulphide) veins. A phased program of exploration activities should be undertaken, with a goal of generating and prioritising targets to test by trenching or drilling. Initial exploration activities (grid establishment, geological mapping, soil sampling, geophysical surveys) do not involve ground disturbance and will not require a work permit. Any follow-up trenching and/or drilling will require permits, applications for which should be submitted well in advance of the planned work.

Phase I: Mapping, prospecting, rock sampling, geophysics and air photo analysis

This phase of exploration would build upon the work completed to date. The results of this phase should identify significant anomalies (geological, geochemical, geophysical) that would be the targets of follow-up work.

A VLF-EM survey over the Zumar vein area may be performed on the grid with tighter spaced infill lines, to help delineate the extent of the vein structure. The area to the south and east of the Zumar vein should be surveyed in detail.

Stereoscopic air photo analysis of the property should be undertaken, with a goal of identifying lineaments, structures and geological controls that could affect mineralization.

Geological outcrop mapping should be completed on the property. Careful attention must be paid to lithologies, alteration, structure and mineralization. Ground checks of geophysical anomalies outlined by VLF-EM should be undertaken. General property scale prospecting and sampling should be conducted in conjunction with the above work. It is estimated that this work will cost \$22000.

8.0 References

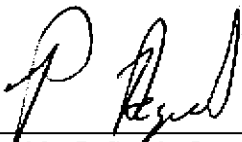
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- Wood, D.H. (1989) Geochemical and Geophysical Report on the Zumar property. BCMEMPR Assessment Report #18713

9.0 Certificate

I, Paul Reynolds, of the city of Vancouver in the province of British Columbia do hereby certify that:

- 1) I am a Professional Geoscientist registered with the Association of Professional Engineers and Geoscientists of British Columbia (19603).
- 2) I am a graduate of the University of British Columbia with a B.Sc. degree in geology.
- 3) I have practiced my profession as exploration geologist since graduation in 1987.
- 4) This report is based on a review of previous reports and the Author's examination of the property on 24 February 2001 and 19 October to 21 October 2002.
- 5) I have no interest, directly or indirectly, in the Zumar property or in the securities of Merritt Ventures Corp., nor do I expect to receive any interest in the future.
- 6) Permission is hereby granted to Mr. Michael H. Sanguinetti and Merritt Ventures Corp. to use this report in support of any filing to be submitted to the Ministry of Energy, Mines and Petroleum Resources of the Province of British Columbia for the purpose of filing assessment on the Zumar mineral claims.

Dated this 22nd day of May, 2002.



P. Reynolds, B.Sc., P. Geo.

APPENDIX I

ROCK SAMPLE DESCRIPTIONS

ZUM 1: grab sample. Approximately 1.5 kg vein material. White quartz with some pink (hematite?) and black (Fe-Mn oxides?) staining, slightly to moderately rusty, some fractures, somewhat vuggy with occasional small terminated quartz crystals in open spaces. Some Fe oxide fractures, oxidised pyrite, minor chalcopyrite on fractures with a trace of malachite. 4.36 g/t Au, 22.0 g/t Ag

ZUM 2: Chip sample, approximately 200 g. White (some clear) quartz, slightly to moderately rusty and fractured. Pyrite 3-5 % (volume), both fine grained and relatively coarse. Lesser chalcopyrite, fine grained, and in clots up to 3mm across. 6.41 g/t Au, 63.8 g/t Ag

ZUM 3: Chip sample, approximately 150 g. Clear and white quartz, slightly rusty with some fractures. A speck of pyrite noted. 1.03 g/t Au, 8.4 g/t Ag

ZUM 4: Chip sample, approximately 300 – 400 g. White quartz, slightly rusty and fractured, with clots of oxidised pyrite and trace malachite stain. 9.18 g/t Au, 48.0 g/t Ag. Repeat assay 8.29 g/t Au, 62.6 g/t Ag.

ZUM 5: Chip sample, approximately 100 g. White quartz, slightly rusty, a few fractures and very slightly vuggy. 0.18 g/t Au, 1.4 g/t Ag. Repeat assay 0.14 g/t Au, 1.2 g/t Ag

ZUM6: Grab sample, single chunk approximately 400 g. White quartz, slightly rusty with small vugs. Fractured. Fracture filling and irregular masses of fine grained pyrite, approximately 2% by volume. 2.22 g/t Au, 31.4 g/t Ag

3814: Chip sample across 41 cm. Sheared and fractured, limonite stained andesite and quartz vein material. Minor pyrite. Quartz is both white and glassy. 1.175 g/t Au, 12 g/t Ag.

3815: Chip sample across 42 cm. White quartz vein with limonite and minor malachite. 11.40 g/t Au, 109 g/t Ag.

3816: Chip sample across 35 cm. White quartz vein with limonite and minor malachite. 12.30 g/t Au, 180 g/t Ag.

3817: Chip sample across 25 cm. White quartz vein with trace pyrite. 0.145 g/t Au, 1.6 g/t Ag.

3818: Chip sample across 30 cm. White quartz vein with rare pyrite. 0.137 g/t Au, 1.7 g/t Ag.

3819: Grab sample of fault gouge with quartz veinlets. Rusty. 0.369 g/t Au, 2.8 g/t Ag.

3820: Chip sample across 25 cm. White quartz vein with minor pyrite and trace malachite.
1.060 g/t Au, 7.7 g/t Ag.

3821: Chip sample across 23 cm. White quartz vein with minor pyrite and trace malachite.
1.615 g/t Au, 12.8 g/t Ag.

3822: Selected grab sample of high-grade dump material. Mostly white quartz vein material.
Rusty. 10.95 g/t Au, 79.7 g/t Ag.

APPENDIX II

STATEMENT OF COSTS

Paul Reynolds, P. Geo.	5 days @ \$450/day	\$2250
Michael H. Sanguinetti, P. Eng.	3 days @ \$450/day	\$1350
Truck Rental	3 days @ \$50/day	\$150
Mileage	1110km @ \$0.20/km	\$222
Field Equipment	8 mandays @ \$15/day	\$120
Field Supplies		\$100
Assays		\$279
Food, Gas, Lodging		\$608
Reporting		\$1100
Project Management Fee		\$913
GST		\$496
TOTAL		\$7588



22 MAY 02

APPENDIX III

ASSAY CERTIFICATES



ALS Chemex

Aurora Laboratory Services Ltd.
 Analytical Chemists * Geochemists * Registered Assayers
 212 Brooksbank Ave., North Vancouver
 British Columbia, Canada V7J 2C1
 PHONE: 604-984-0221 FAX: 604-984-0218

Client: CARDINAL EXPLORATION LTD.

317 - 360 E. 2ND ST.
 NORTH VANCOUVER, BC
 V7L 4N6

Project: ZUMAR
 Comments: ATTN: LEN GAL

Page Number: 1-A
 Total Pages: 1
 Certificate Date: 05-MAR-2001
 Invoice No.: I0112642
 P.O. Number:
 Account: SSZ

CERTIFICATE OF ANALYSIS

A0112642

SAMPLE	PREP CODE	Au g/t FA+AA	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
ZUM 1	205 226	4.36	22.0	0.06	2	< 10	< 10	< 0.5	2	0.83	0.5	9	116	925	2.53	< 10	< 1	0.01	< 10	0.02
ZUM 2	205 226	6.41	63.8	0.11	6	< 10	< 10	< 0.5	2	0.02	3.0	27	127	2300	5.83	< 10	< 1	0.04	< 10	0.04
ZUM 3	205 226	1.030	8.4	0.28	< 2	< 10	< 10	< 0.5	10	0.05	0.5	7	149	351	1.60	< 10	< 1	0.07	< 10	0.13
ZUM 4	205 226	9.18	48.0	0.18	10	< 10	< 10	< 0.5	46	0.05	0.5	12	138	685	1.49	< 10	< 1	0.01	< 10	0.08
ZUM 5	205 226	0.180	1.4	0.16	< 2	< 10	< 10	< 0.5	176	0.08	< 0.5	3	202	75	1.04	< 10	< 1	0.04	< 10	0.10
ZUM 6	205 226	2.22	31.4	0.01	8	< 10	< 10	< 0.5	2	< 0.01	0.5	25	113	297	4.09	< 10	< 1	0.04	< 10	< 0.01

CERTIFICATION: _____



ALS Chemex

Aurora Laboratory Services Ltd.
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 212 Brooksbank Ave., North Vancouver
 British Columbia, Canada V7J 2C1
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to: CARDINAL EXPLORATION LTD.

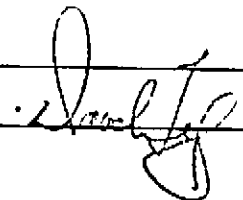
317 - 360 E. 2ND ST.
 NORTH VANCOUVER, BC
 V7L 4N6

Project: ZUMAR
 Comments: ATTN: LEN GAL

Page Number : 1-B
 Total Pages : 1
 Certificate Date: 05-MAR-2001
 Invoice No. : I0112642
 P.O. Number :
 Account : SSZ

CERTIFICATE OF ANALYSIS A0112642

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
ZUM 1	205 226	395	1	< 0.01	4	30	56	0.37	< 2	1	5	< 0.01	< 10	< 10	30	40	30
ZUM 2	205 226	150	3	< 0.01	12	80	90	1.68	< 2	1	4	< 0.01	< 10	< 10	38	10	78
ZUM 3	205 226	275	3	0.02	4	110	70	0.03	< 2	3	3	0.01	< 10	< 10	30	< 10	32
ZUM 4	205 226	345	5	< 0.01	3	60	744	0.05	2	1	3	< 0.01	< 10	< 10	17	< 10	14
ZUM 5	205 226	240	< 1	< 0.01	4	50	6	0.01	< 2	1	3	< 0.01	< 10	< 10	16	< 10	14
ZUM 6	205 226	25	4	< 0.01	3	30	54	2.57	2	< 1	3	< 0.01	< 10	< 10	9	10	24

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 Comments: ATTN: LEN GAL

Page Number: 1-A
 Total Pages: 1
 Certificate Date: 13-MAR-2001
 Invoice No.: 10113077
 P.O. Number:
 Account: SSZ

CERTIFICATE OF ANALYSIS

A0113077

SAMPLE	PREP CODE		Au g/t	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Hg
	FA+AA		ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	%
ZUM 4 RESPLIT	205	234	8.29	62.6	0.21	12	< 10	< 10	< 0.5	48	0.07	0.5	14	184	775	1.69	< 10	< 1	0.02	< 10	0.08
ZUM 5	244	229	0.140	1.2	0.18	< 2	< 10	< 10	< 0.5	200	0.09	< 0.5	3	243	82	1.09	< 10	< 1	0.05	< 10	0.11

CERTIFICATION: _____



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 Analytical Chemists * Geochemists * Registered Assayers
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CARDINAL EXPLORATION LTD.

317 - 360 E. 2ND ST.
 NORTH VANCOUVER, BC
 V7L 4N6

Project: ZUMAR
 Comments: ATTN: LEN GAL

Page Number: 1-B
 Total Pages: 1
 Certificate Date: 13-MAR-2001
 Invoice No.: 10113077
 P.O. Number:
 Account: SSZ

CERTIFICATE OF ANALYSIS

A0113077

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
ZUM 4 RESPLIT	205 234	405	7	0.02	5	60	736	0.05	< 2	1	4	< 0.01	< 10	< 10	18	< 10	18
ZUM 5	244 229	265	1	0.01	5	50	8	0.02	< 2	1	4	< 0.01	< 10	< 10	18	< 10	16

CERTIFICATION: _____



ALS Chemex

EXCELLENCE IN ANALYTICAL CHEMISTRY

Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: REYNOLDS GEOLOGICAL LTD.
4035 W. 31ST AVENUE
VANCOUVER BC V6S 1Y7

Page #: 1
Date: 6-Mar-2002
Account: TJE

CERTIFICATE VA02000581

Project : ZUMAR

P.O. No:

This report is for 9 ROCK samples submitted to our lab in North Vancouver, BC, Canada on 11-Feb-2002.

The following have access to data associated with this certificate:

PAUL REYNOLDS

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize split to 85% 75micro

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
ME-ICP41	34 element aqua regia ICP-AES	ICP-AES
Ag-AA46	Ore grade Ag - aqua regia/AA	AAS
Au-AA25	Ore Grade Au 30g FA AA finish	AAS

To: REYNOLDS GEOLOGICAL LTD.
ATTN: PAUL REYNOLDS
4035 W. 31ST AVENUE
VANCOUVER BC V6S 1Y7

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

Signature:



ALS Chemex

EXCELLENCE IN ANALYTICAL CHEMISTRY

Aurora Laboratory Services Ltd.
 212 Brooksbank Avenue
 North Vancouver BC V7J 2C1 Canada
 Phone: 604 984 0221 Fax: 604 984 0218

To: REYNOLDS GEOLOGICAL LTD.
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 VANCOUVER BC V6S 1Y7

Page #: 2 - A
 Total # of pages : 2 (A-C)
 Date : 6-Mar-2002
 Account: TJE

Project : ZUMAR

CERTIFICATE OF ANALYSIS	VA02000581
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Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg	Au-AA23 Au ppm	ME-ICP41 Ag ppm	ME-ICP41 Al %	ME-ICP41 As ppm	ME-ICP41 B ppm	ME-ICP41 Ba ppm	ME-ICP41 Be ppm	ME-ICP41 Bi ppm	ME-ICP41 Ca %	ME-ICP41 Cd ppm	ME-ICP41 Co ppm	ME-ICP41 Cr ppm	ME-ICP41 Cu ppm	ME-ICP41 Fe %
3814		0.66	1.175	12.0	0.16	6	10	10	<0.5	2	0.04	1.5	7	105	315	2.45
3815		0.68	>10.0	>100	0.04	6	<10	<10	<0.5	38	0.17	4.4	5	137	1105	1.51
3816		0.78	>10.0	>100	0.08	27	<10	20	<0.5	89	0.01	3.5	1	119	480	4.07
3817		0.76	0.145	1.6	0.01	<2	10	<10	<0.5	5	0.02	<0.5	<1	151	11	0.39
3818		0.16	0.137	1.7	0.03	<2	<10	<10	<0.5	<2	0.02	<0.5	1	104	31	0.33
3819		0.48	0.369	2.8	0.70	3	<10	40	<0.5	6	1.45	0.9	17	90	84	2.79
3820		0.12	1.060	7.7	0.09	<2	10	10	<0.5	8	0.09	1.4	8	118	1020	1.04
3821		0.34	1.615	12.8	0.09	3	10	<10	<0.5	4	0.03	0.9	2	141	1170	0.92
3822		1.92	>10.0	79.7	0.20	<2	<10	10	<0.5	28	0.17	6.5	7	86	4290	1.71



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 VANCOUVER BC V6S 1Y7

Page #: 2 - B
 Total # of pages: 2 (A - C)
 Date: 6-Mar-2002
 Account: TJE

Project : ZUMAR

CERTIFICATE OF ANALYSIS VA02000581

Sample Description	Method Analyte Units LOR	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	
		Ge ppm 10	Hg ppm 1	K % 0.01	La ppm 10	Mg % 0.01	Mn ppm 5	Mo ppm 1	Na % 0.01	NI ppm 1	F ppm 10	Pb ppm 2	S % 0.01	Sb ppm 2	Sc ppm 1	Sr ppm 1
3814		<10	<1	0.10	<10	0.07	183	23	0.02	3	90	3	0.21	2	2	9
3815		<10	<1	0.02	<10	0.02	151	21	0.01	3	30	125	0.13	4	1	8
3816		<10	<1	0.12	<10	0.03	137	121	0.03	2	120	3500	0.43	<2	2	16
3817		<10	<1	0.01	<10	0.01	161	2	<0.01	3	30	17	0.01	<2	<1	3
3818		<10	<1	0.01	<10	0.02	104	2	<0.01	2	40	15	0.02	<2	1	2
3819		10	<1	0.31	<10	0.58	1015	14	0.04	6	300	2	0.37	4	9	33
3820		<10	<1	0.04	<10	0.07	192	2	0.01	3	40	15	0.21	2	1	2
3821		<10	<1	0.03	<10	0.05	53	2	0.01	2	30	21	0.04	<2	1	4
3822		<10	<1	0.12	<10	0.18	236	7	0.01	4	90	267	0.86	3	2	9



ALS Chemex

EXCELLENCE IN ANALYTICAL CHEMISTRY

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 Date : 6-Mar-2002
 Account: TJE

Project : ZUMAR

CERTIFICATE OF ANALYSIS	VA02000581
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Sample Description	Method Analyte Units LOR	ME-ICP41 TI % 0.01	ME-ICP41 TI ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Ag-AA46 Ag ppm 1	Au-AA25 Au ppm 0.01
3814		0.01	<10	<10	31	<10	30		
3815		<0.01	<10	<10	7	<10	71	109	11.40
3816		0.01	10	<10	42	20	112	180	12.30
3817		<0.01	<10	<10	1	<10	<2		
3818		<0.01	<10	<10	4	<10	<2		
3819		0.06	<10	<10	79	<10	29		
3820		0.01	<10	<10	12	<10	21		
3821		0.01	<10	<10	13	<10	10		
3822		0.02	<10	<10	30	<10	107		10.95

ALS Chemex

Geochemical Procedure - G32 Package

Sample Decomposition: Nitric Aqua Regia Digestion
Analytical Method: Inductively Coupled Plasma - Atomic Emission Spectroscopy (ICP - AES)

A prepared sample (0.50 grams) is digested with aqua regia for at least one hour in a hot water bath. After cooling, the resulting solution is diluted to 12.5 ml with demineralized water, mixed and analyzed by inductively coupled plasma-atomic emission spectrometry. The analytical results are corrected for inter-element spectral interferences.

<u>Chemex Code</u>	<u>Element</u>	<u>Symbol</u>	<u>Detection Limit</u>	<u>Upper Limit</u>
229	ICP-AQ Digestion	n/a	n/a	n/a
2119	* Aluminum	Al	0.01%	15 %
2141	Antimony	Sb	2 ppm	1 %
2120	Arsenic	As	2 ppm	1 %
2121	* Barium	Ba	10 ppm	1 %
2122	* Beryllium	Be	0.5 ppm	0.01 %
2123	Bismuth	Bi	2 ppm	1 %
557	Boron	B	10 ppm	10,000 ppm
2125	Cadmium	Cd	0.5 ppm	0.05 %
2124	* Calcium	Ca	0.01 %	15 %
2127	* Chromium	Cr	1 ppm	1 %
2126	Cobalt	Co	1 ppm	1 %
2128	Copper	Cu	1 ppm	1 %
2130	* Gallium	Ga	10 ppm	1 %
2150	Iron	Fe	0.01 %	15 %
2151	* Lanthanum	La	10 ppm	1 %
2140	Lead	Pb	2 ppm	1 %
2134	* Magnesium	Mg	0.01 %	15 %
2135	Manganese	Mn	5 ppm	1 %
2131	Mercury	Hg	1 ppm	1 %
2136	Molybdenum	Mo	1 ppm	1 %
2138	Nickel	Ni	1 ppm	1 %
2139	Phosphorus	P	10 ppm	1 %
2132	* Potassium	K	0.01 %	10 %

October 25, 2000

ALS Chemex**Geochemical Procedure - G32 Package (con't)**

<u>Chemex Code</u>		<u>Element</u>	<u>Symbol</u>	<u>Detection Limit</u>	<u>Upper Limit</u>
2142	*	Scandium	Sc	1 ppm	1 %
2118		Silver	Ag	0.2 ppm	0.01 %
2137	*	Sodium	Na	0.01%	10 %
2143	*	Strontium	Sr	1 ppm	1 %
551		Sulfur	S	0.01 %	5 %
2145	*	Thallium	Tl	10 ppm	1 %
2144	*	Titanium	Ti	0.01%	10 %
2148	*	Tungsten	W	10 ppm	1 %
2146		Uranium	U	10 ppm	1 %
2147		Vanadium	V	1 ppm	1 %
2149		Zinc	Zn	2 ppm	1 %

*Elements for which the digestion is possibly incomplete.

October 25, 2000



Fire Assay Procedure - Trace Gold

Sample Decomposition: Fire Assay Fusion
Analytical Method: Atomic Absorption Spectroscopy (AAS)

A prepared sample is fused with a mixture of lead oxide, sodium carbonate, borax, silica and other reagents as required inquarted with 6 mg of gold-free silver and then cupelled to yield a precious metal bead.

The bead is digested for ½ hour in dilute nitric acid. Hydrochloric acid is then added and the solution is digested for an additional hour. The digested solution is cooled, diluted to 7.5 ml with demineralized water, homogenized and then analyzed by atomic absorption spectrometry.

International Units:

<u>Routine Code</u>	<u>Rush Code</u>	<u>Element</u>	<u>Sample Weight (grams)</u>	<u>Symbol</u>	<u>Detection Limit</u>	<u>Upper Limit</u>
100	990	Gold	10	Au	5 ppb	10,000 ppb
96	1090	Gold	10	Au	0.005 ppm	10 ppm
983	991	Gold	30	Au	5 ppb	10,000 ppb
99	1091	Gold	30	Au	0.005 ppm	10 ppm
494	1209	Gold	30	Au	0.005 g/t	10 g/t
3583		Gold	50	Au	5 ppb	10,000 ppb
3584		Gold	50	Au	0.005 ppm	10 ppm
3594		Gold	50	Au	0.005 g/t	10 g/t

American/English Units:

<u>Routine Code</u>	<u>Rush Code</u>	<u>Element</u>	<u>Sample Weight (grams)</u>	<u>Symbol</u>	<u>Detection Limit</u>	<u>Upper Limit</u>
877	1977	Gold	30	Au	0.0002 oz/ton	0.3 oz/ton