Report

On

Geological Reconnaissance, Mapping and Prospecting

Of the

Cedar Creek Property, B.C.

Cariboo Mining Division
NTS 93 A 11&12

Latitude 52° 35' 00" N
Longitude 121° 30' 00" W

By: H.P. Salat, P.Eng
JORANEX RESOUCES INC.
5904 Dalhousie Dr. N.W.
Calgary, Alberta T5A 1T1

With the collaboration of:
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Date: September 30, 2003

On behalf of AN-Kobra Resources Inc.
Calgary, Alberta

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PROPERTY STATUS AND TENURE

The Cedar Creek Property consists of three MGS (modified grid system); four-cornered post claims comprising forty-five units and two two-post claims for a total of forty-seven units.

The list of claim names and their record numbers and their record numbers are presented in table form below and their layout shown in Figure 1.

Claim Name	Number of Units	Record Number	Expiry Date*
Drake	18	395709	July 31, 2006
Pintail	18	395708	July 30, 2006
Mallard	9	395707	July 28, 2006
Duck 1	1	395706	August 1, 2006
Duck 2	1	395705	August 1, 2006

* Assumes that the assessment work herein reported is accepted.

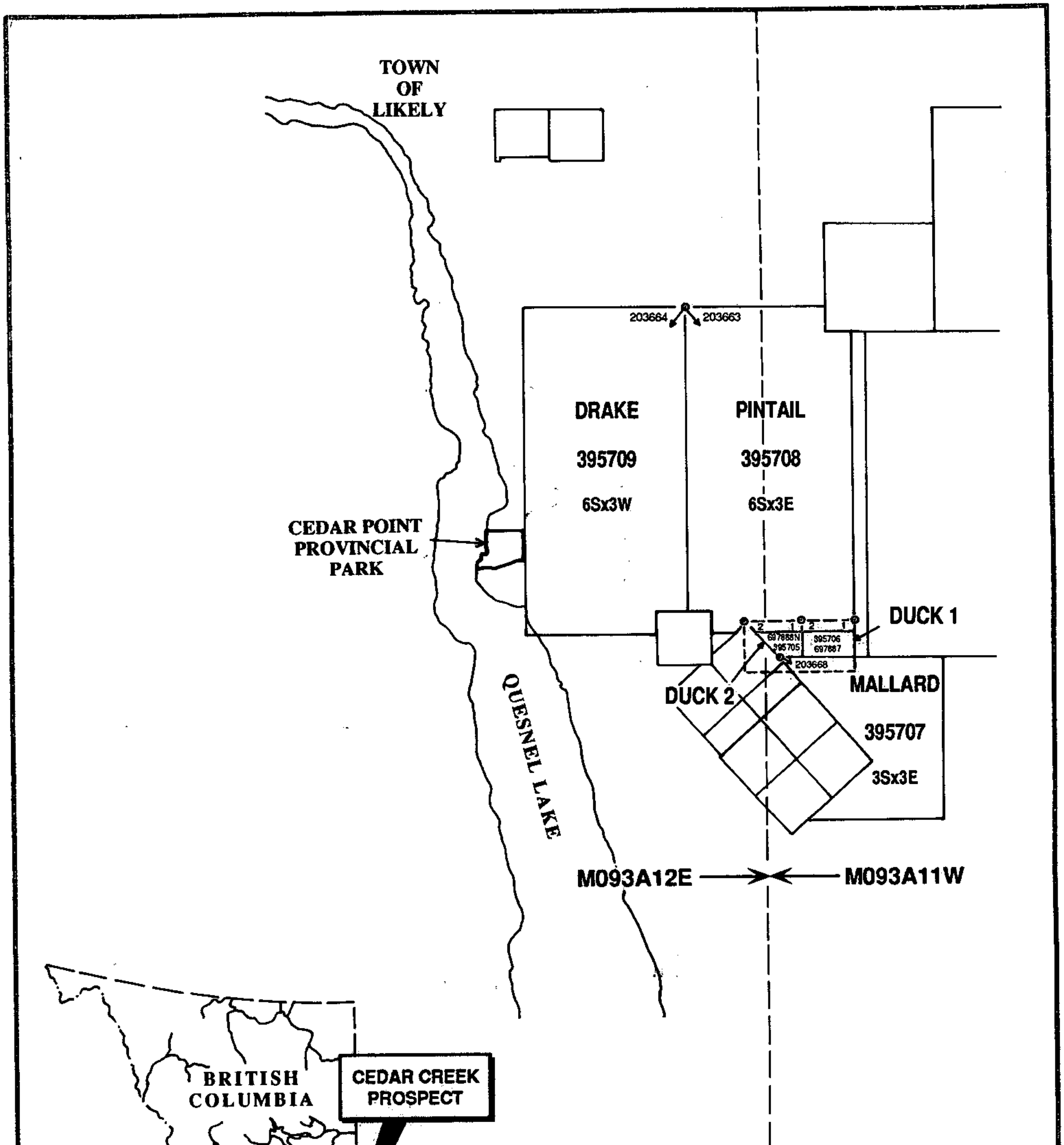
LOCATION AND ACCESS

The claims are located approximately 5 kilometres Southeast of the town of Likely (85 km east of Williams Lake), in the Cariboo region of central British Columbia (Figure 1). Approximate coordinates in the center of the claims are 52°35' N of latitude and 121°30' W of longitude.

Situated along the eastern shores of Quesnel Lake, the property covers an area of high plateau consisting of wide glacial valleys and elevated mountains with rounded tops. The area is transitory between the Fraser Plateau to the west and the rugged mountains of the Cariboo Range to the east. This plateau is dissected by deep canyons cut by creeks and rivers flowing westward into Quesnel Lake.

The area is the site of past and present placer mining operations and is criss-crossed by a fairly dense network of gravel roads, cuts and old trails. Otherwise, the ground is heavily forested with spruce, pine trees, alders and rare poplar; the low grounds are occupied by extensive muskeg, swamps and some shallow lakes. Elevation varies from 1585 metres at the top of Spanish Mountain to 727 metres at the level of Quesnel Lake.

Access to any part of the claims is fairly easy. However the claim area itself is separated in two by the Cedar Creek canyon with vertical walls of more than 120 metres in many places. Access to the southern portion is gained thanks to a logging road connecting the little settlement of Winkley Creek with the paved road leading from Likely to the Provincial Park of Cedar Point. The northern area can be accessed by gravel roads leading from Likely to several placer operations located toward Spanish Lake. Many old tote roads or trails start off from these roads and can be followed over short distances.



ANKOBRA RESOURCES INC.

CEDAR CREEK PROPERTY
LIKELY AREA, B.C.

93A11W & 93A12E
LOCATION MAP

SCALE = 1:50 000

FIGURE: 1

Drawn By: R. Neuman

HISTORY

The mining history of the area began with placer mining in Cedar Creek; 5,000 ounces of gold were mined from 1862 to 1891. The placers on the Cedar Creek plateau were discovered in 1921, and have been worked on and off to this day. Over 35,000 ounces have been mined, and the gold was described as being of local origin in reports to the B.C. Minister of Mines over the period from 1921 to 1945.

In 1923 John Creagh staked claims, and drove an adit on a bedrock gold-sulfide deposit in a shear zone 2.4 km upstream from Cedar Creek delta. Assays reported at the time ran as high as 3.2 oz/ton gold from selected samples.

From 1969 to 1973 Leemac Mines held mineral claims in the area, and conducted geophysical and geochemical surveys for gold and copper. Longbar Minerals did similar work in 1977.

Rhamco Resources conducted exploration from 1979 to 1983, which included prospecting, geologic mapping, soil sampling, and a magnetometer survey.

Cedarmine Resources conducted extensive soil geochem, magnetomter, and I.P. work from 1986 to 1990. A number of reverse-circulation drill holes were drilled as well.

Mt. Calvary Resources has conducted geochemical and geophysical work on a portion of the present claim group. This work was done in the 1980's.

The claim area covers MINFILE occurrence 093A 072, reported as the JOY showing. Based on past work reports, MINFILE sums up the showing, located on Cedar Creek as follows:

"The basaltic rocks of the Joy showing are cut by a zone of fracturing and shearing marked by quartz-carbonate alteration. Away from the shear zone the basalts have been propylitically altered to a chlorite-epidote-calcite assemblage. Within the shear zone, sulphide mineralization consisting of pyrite, pyrrhotite, arsenopyrite, galena and chalcopyrite occurs. Anomalous amounts of gold and silver reportedly occur with the sulphides. A 1972 grab sample from the creek bed on the Manx claims assayed 0.2 per cent copper and 1.7826 grams per tonne gold (Property file – Cedar City Mines Ltd. Prospectus May 1972)."

Details of past assessment work can be found in the following ARIS system reports: 2606, 3278, 3279, 5198, 8124, 10864, 15133, and 17647.

REGIONAL GEOLOGY

The Cedar Creek property sits on the eastern margin of the Quesnel Terrane, a major tectonic unit which runs through the Intermontane Belt of the Canadian Cordillera. The Quesnel Terrane consists of Upper Triassic and Lower Jurassic mainly black shale and volcaniclastic greenstone. The volcanic and sedimentary formations are characteristic of back-arc deposition near a continental margin. Thereafter, the Quesnel Terrane has been accreted against the continental margin of North America, represented by the Lower Paleozoic- Proterozoic Barkerville Terrane lying to the east during the Columbian Orogeny in Upper Jurassic time.

The contact between the two terranes is structural and is materialized by two parallel thrust planes, the Spanish thrust and the Eureka thrust, and between the thrust planes, a slice of Upper Triassic black shale and siltstone, the Spanish Mountain slice (Levson and Giles, 1993), is exposed.

In connection with plate accretion, many plutonic stocks have intruded into the Quesnel Terrane. A few large plutons host past or existing mines such as the Gibraltar Mine (a Cu-Mo porphyry of calc-alkaline affinity) and Mount Polley, a Cu-Au alkaline intrusion. On the east side of Quesnel Lake, smaller intrusions are exposed, especially at the QR deposit, a Au-epidote skarn deposit, and at Grogan Creek, just North and adjacent to the Cedar Creek claims. In the region and in the Quesnel Terrane in general, the alkaline intrusive suites tend to be more gold enriched than their calc-alkaline counterparts.

PROPERTY GEOLOGY

1. Outcropping and Morphology

The Cedar Creek property overlies the steep slopes and the western margin of a high plateau overlooking the elongated and deep waters of Quesnel Lake as it narrows down into a north-south channel flowing into the Quesnel River. The plateau extends in large flats and glacial valley before breaking into high rounded hills and mountains such as Spanish Mountain and Warren mountain. There is the location of several large placer operations, such as Hampton's and McKeown Mines, or Rasmussen's on the south border of the claims. This is an indication that the property ground is covered by heavy overburden, consisting at times of old Tertiary gravel deposits or recent Pleistocene glaciogenic tills.

For these reasons, bedrock outcropping is very poor and gets slightly better toward the higher hills. There, a certain amount of small old pits or trenches can be observed as remnants of testing by previous prospectors testing the ground for placer deposits.

However, Cedar Creek which originates from draining a wide glacial valley occupied by Boswell Lake and then Cedar Dam Lake, has cut a very impressive canyon into the bedrock. As the creek flows toward Quesnel Lake, the walls of the canyon becomes more abrupt and bordered by steep to vertical cliffs, up to 150 meters in height which expose bedrock and ancient gravel channels. The creek itself has been the site of a sporadic gold placer operation with mining equipment still visible. It is thanks to the Cedar Creek erosional features that gold-rich alluvium was discovered, first along the creek itself, then along "Discovery Draw" to the famous "Nugget Patch", Platt's cabin and later reworked along the Avensleben channel to the present days. This is also the reason of the present staking of the Cedar Creek property based on the discovery of mineralization firstly near Cedar Dam Lake (see Figure 2), and then in the canyon itself at Paddy Creagh's showing.

2. Stratigraphy

The vast majority of bedrock found throughout consists of volcanic greenstones which vary from crystal tuff, porphyritic flows and pyroclastics. Only the Cedar Dam showing (figure 2) has fine-grained sediments, chert and ribboned tuff exposed.

Although the types of rock formations exposed in the area relate to different strata, mapping of the property could not discover indications of good contacts and direction of stratigraphic tops.

Cedar Creek representing a linear cut through the formations, offers somewhat of a cross-section. From west to east, the formation evolves from basaltic tuff, augite-phyric andesite including some ultrabasic rocks to andesite and dacite tuff and crystal tuff locally interbedded with fine-grained sediments as described previously. In between and forming the centre of the volcanic pile, a huge mass of pyroclastics making the high cliffs, is observed. Fragments vary in size and can reach 15 to 20 cm in diameter; they appear to be of fairly similar composition and are fairly packed (clast-supported). Petrographic work shows that their composition varies and are related to different types of volcanic flows, however, they are fairly closely related in composition. Therefore, it is not auto-brecciated flows as mapped elsewhere in the area.

Compositionaly, the pyroclastic flows as well as the tuff are within a narrow range of alkalic rocks, from trachytic to trachy-basalt. A whole rock analysis done on a sample collected over an ultramafic looking sill or dyke (samples SM-03-19) gave a SiO_2 content of 43.39% and alkali content of 4.17% ($Na_2O + K_2O$) (Appendix I) which put the rock into the basanite class, with a K ratio of 0.4. It would be interesting in such circumstances to analyze the chemical composition of augite in the different volcanic units as it is the only primary ferromagnesian mineral encountered throughout the property.

Fragmental volcanics dominate in the claim area and are found in outcrops along the northern gravel road cutting across the northwest corner of the property (refer to sample SM-03-16 Figure 3). The extent of pyroclastics could indicate the property is sitting over a large volcanic center of andesitic to basaltic composition. Indeed, maximum size of fragments are found near and around Discovery Draw. From these and on both sides, the fragments are getting smaller in size. Moreover, on the east side of the claims finer and dacitic layers with intercalated sediments and exhalative are encountered. However, these volcanics are very different from the spectacular pillowed basaltic units well exposed at the top of Warren Mountain, site of the fire-tower. At this location, the volcanics are more vesicle-rich, brown to red, indicating aerated influences while in the Cedar Creek claims, the green volcanics, with rare vasuoles (except in reworked units such as SM-03-18 observed in thin section work) are typically subaqueous.

On the eastern border of the property, a large pit (Doug Harris pit, see location on Figure 3) displays a large amount of black phyllite, shales and rusty cavernous quartzite. Although no outcrop is found, the great amount of rubble indicates that the rock debris were mechanically removed when digging the pit down to bedrock. The rock types are the same as that found over on Spanish Mountain, indicating the area belongs to the Upper Triassic Spanish Mountain thrust sheet.

3. Intrusive Rock Units

In several locations scattered throughout the property and especially at the Cedar Dam lake showing, holocrystalline rock facies have been observed or confirmed by petrological work (thin section SM-03-31 Appendix II). This facies corresponds to a dioritic composition and is assumed to be intrusive.

The instrusive facies does not appear to form a coherent or continuous body such as a stock or pluton. It rather represents an intrusive facies caught and coeval with its associated volcanic extrusives, and it is therefore cogenetic; this is typical of a volcanic center. It can be expected, however, that more uniform and continuous plutonic mass could exist at greater depths.

4. Structural Geology

Preservation of original features in volcanic rocks indicates that very little deformation has occurred in the area. In very few places, attitude of beds have been measured and shows strikes oriented around a North-South trend and steeply dipping to the East. Outside the tilting of rock–units, the indication of folding is lacking.

The rocks are strongly jointed but the main features are shearing and quartz veining in complicated conjugate setting. On the east end of Cedar Creek, shearing is more or less aligned with the creek bed direction, probably favourable or explaining deep erosion into a canyon farther to the west. In the west part of the canyon, the shearing is typically north-south. In both cases, sulphides are present with shearing (see chapter on mineralization).

5. Alteration

In outcrops, neither metamorphism nor alteration beside normal weathering are observed, not even in association with mineralization. Petrological work reveals that epidote minerals are ubiquitous and replace many original phases. On one occasion, it was discovered that the rock was completely transformed into an epidote mass (see SM-03-14). This epidotization of rock-units goes beyond normal greenschist metamorphism and remind of skarnification so well observed and described at the QR gold deposit, only 20 kilometres to the N.W. and structurally on trend. Also, two thin sections from outcrops SM-03-7 and SM-03-8, 300 metres apart on the South part of the claim area, show that epidote alteration stops abruptly somewhere between the two locations. Indeed, one sample (SM-03-8), the farthest to the south, is not affected. Thence, the epidote replacement seen in thin sections is not an artefact, or even regional metamorphism, and certainly relates to mineralization.

MINERALIZATION

Two main reasons led to the staking of the Cedar Creek claims in search for mineral deposits versus alluvial (placer) deposits. The first one is the knowledge of the Paddy Creagh tunnel just above Cedar Creek and a little distance of what appears to be the original discovery of placer gold along the creek and in the general area. The Paddy Creagh tunnel certainly matches the reported Joy showing location. Gold, zinc and lead values in economic quantities are documented.

Also essential to the acquisition of the mineral rights is the morphology of the extensive gold amounts dug out in the surrounding placer operations over or near the Cedar Creek property. After the first stage of placer production on Cedar Creek, the large Nugget Patch followed by the Avensleben channel exploitation on a large scale were found by prospecting the Creek and sampling Discovery Draw (see Figure 3). In every reporting by mining inspectors or geologists, the gold particles are declared being of local derivation. Recent work in the area has shown that in fact quite often the placer gold originated for alteration of the bedrock. Supergene enrichment is known in the region and is well documented at the Polley Mountain Cu-Au deposit.

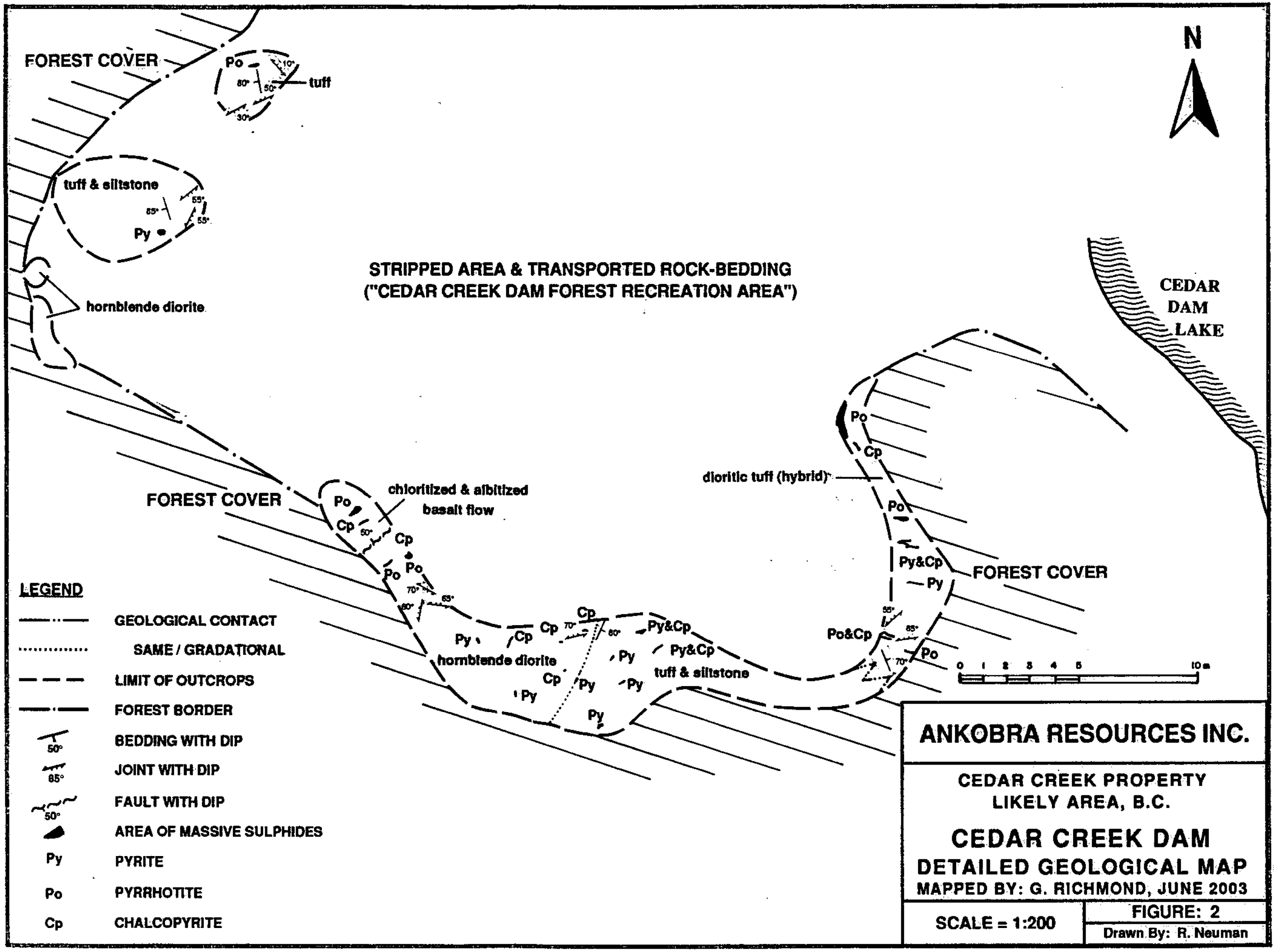
1. Paddy Creagh Tunnel (see location SM-03-17 and 20)

Revisiting of the old workings, which have been obliterated by sloughing and weathering, it was found that two small crumbly knobs were sticking out among talus scree. In a setting of widely outcropping basalt, the area is affected by wide north-south shearing with quartz and calcite veining and deep iron weathering.

Near and above what appears to be remnants of old workings, samples were collected over outcrop showing some galena and chalcopyrite. Assays on the samples (SM-03-17 and 20) returned some gold values (13.7 g/t and 3.0 g/t), strong Zn (1.91%) and Pb (1.28%) with elevated Cu (1560 and 649 ppm). Rechecks of the high gold sample did not confirm the first assay, indicating a strong nugget effect. It could be that gold is coarse in the area which would corroborate the idea that it could provide the source of the local gold in placer operations where recovered gold particles are well established to be fairly coarse.

2. The Cedar Dam Showing (Figure 2)

A wide area 40 m by 20 m, has been excavated to supply aggregate to build the Cedar Dam and therefore exposed a good amount of outcrops. The entire area consists of very rusty pieces of rocks strewn over the dam and the stripped area and reflects the rock units



ANKOBRA RESOURCES INC.

CEDAR CREEK PROPERTY
LIKELY AREA, B.C.

CEDAR CREEK DAM
DETAILED GEOLOGICAL MAP
MAPPED BY: G. RICHMOND, JUNE 2003

SCALE = 1:200

FIGURE: 2

Drawn By: R. Neuman

cropping out. The exposures consist of a mixture of diorite, tuff, siltstone and ribboned chert, interlaced with discontinuous veining or pockets of massive sulphides. The sulphides are mainly pyrite and pyrrhotite, however chalcopyrite is recognized. A detailed geological mapping has been carried out over the zone (see Figure 2) as well as a continuous chip sampling (see sample SM-03-36 to 38).

Despite long exposure to weather (the dam was built to provide water to the different placer operations and hydrolicking in the 1940's), the samples show a uniformaly anomalous Cu content (264 to 641 ppm) and one sample (SM-03-36) is somewhat anomalous in gold at 15 ppb.

3. New Discoveries

As mentioned previously, there is hardly any rock exposure outside the linear set of outcrops, cliffs and talus scree created by the dissecting Cedar Creek. Some road cuts or near pits excavated deeply down to bedrock can occasionally offer some rock outcrop.

Although the northern part of the property is laced with quite a few old cat-trail, there has been no rock exposed. However, near the large "Hampton's pit", a small rusted up outcrop (locations SM-03-13 and 14) was located and is close to an ancient wood platform, remains from an ancient drill site, apparently drilled by Cedarmine in the late 1980's. The very rusty diorite (in fact an "epidotite" according to the petrographic study) and andesite have been shown to contain elevated gold (600 ppb Au) and copper (542 ppm Cu). The same situation occurs at the location of sample SM-03-15 at the junction of the main Likely-Spanish Mountain gravel road and the access road to Hampton's Pit (195 ppm Cu and 50 ppb Au), location SM-03-15.

Faced with such a dearth of rock expense, it was necessary to walk Cedar Creek through the canyon and the cliffs above which is a somewhat difficult exercise. Nevertheless, many mineralized zones have turned up and amongst them three showings stand out:

3.1 **Massive Sulphide Showing** (Locations SM-03-21 & 22)

Within massive layers of aphanitic tuff and felsitic tuff, two layers of massive sulphide, pyrite and pyrrhotite, 20 to 30 centimetres thick , are well exposed over 1 to 1.5 metre distances. The layers strike N05°E direction and are vertical.

On the other (north) side of the creek, 30 metres of aphanitic andeitic tuff are highly fractured by a boxwork network of semi-massive pyrite and pyrrhotite.

The massive sulphide (SM-03-21) assayed 160 ppb of Au, 1600 ppm Cu and 1400 ppm Zn while the semi-massive sulphide sample gave 260 ppb Au only (SM-03-22).

100 m farther down stream, a cherty dacite interlayered with a quartz-felspar porphyry (QFP) sill overlies a green andesite. The dacite and QFP are loaded

with veinlets of pyrite and pyrrhotite in which the sample (SM-03-23) turned out also anomalies in gold (90 ppb), copper (650 ppm), and zinc (230 ppm). It is probably part of the same mineralized system.

3.2 The "Gap" Showing. (Location SM-03-1/2/3/24)

Approximately 75 to 100 metres above Cedar Creek to the north, known test pits had been dug in the flat overlooking Cedar Creek.

The pits known in the past by local prospectors as the "Gap claims" have dug through light grey dacite loaded with sulphides and criss-crossed by quartz-carbonate veining. The quartz material returned some Arsenic (187 ppm) and gold (20 ppb).

However, down in a small tributary to Cedar Creek, 50 metres away, large blocks of quartz and sulphides yielded higher values of 100 ppb Au, 618 ppm As and 2130 ppm Zn. The quartz sulphide blocks correlate with a new zone discovered at SM-03-24 where a 2 metre thick rusty fault breccia adjoins the east side with cherty tuff loaded with pyrite, pyrrhotite and minor chalcopyrite. A sample returned 245 ppb Au and 1030 ppm Cu.

3.3 Other Showings

Other discrete locations have been found to provide samples with elevated metal values. They are related to shear zones or intensely faulted areas within pyroclastics, but are restricted in extent (a few centimeters). This is the case at location SM-03-27 (1775 ppb Au, 129 ppm As, 2470 ppm Cu, 3420 ppm PG, 6360 ppm Zn) and at location SM-03-25 which is a rusty highly sheared zone above the cliffs (1250 ppb Au, 308 ppm As, 588 ppm Cu).

A very interesting zone was rediscovered along Cedar Creek. A local miner which worked the area of "old placer operations" near sample location SM-03-32 mentioned much gold taken out from an extensive (20 metres) fault gouge breccia. The breccia contains rounded fragments of tuff and pyroclastic cemented in a matrix of quartz and green clay. The matrix also includes 5 to 10% cubes of pyrite. The sample collected did not confirm the gold presence. However the area just upstream from the placer operation should warrant further exploration.

CONCLUSIONS AND RECOMMENDATIONS

The Cedar Creek claims are underlain by Triassic volcanoclastics with minor interlayered clastic sediments and exhalites, mixed with and intruded by possible cogenetic dioritic material which could represent an underliying dioritic stock or pluton.

The site of many gold placer operations in the past and recent times, the area offers very little outcropping for prospecting except along the Cedar Creek canyons, at the base of which is situated the historical mineral showing at Paddy Creagh's adit (probably referred to as the JOY showing in MINFILE, no 093-072). This showing is a wide shear zone with extensive quartz –carbonate iron boxwork containing gold, with Cu-Pb-Zn.

Prospecting along the canyon has revealed many more mineral occurrences including pyritic-rich gouge zone, quartz boxwork and massive sulphide layers. Variable but very anomalous amounts of gold, arsenic, copper or zinc are associated with these showings. Some older pits dug in the past by exploring placer miners have come up with some gold values as well as rare samples from the northern part of the property. Generally speaking, anomalous values, especially in gold mineralization are widespread throughout the claims area where outcropping is exposed .

It is worth noting that according to placer mining reports, the source of the gold particles found in the area is thought to be very local; it as been suggested that gold particles originated from in-situ weathering of the bed-rock in a few placers. The little sampling done on the property confirms that anomalous gold values (that is above 20 ppb) are ubiquitous.

The most common type of mineralization encountered is related to shearing and little fracturing. However, large mineralized areas like the Cedar Dam showing, suggest extensive mineralization more likely related to high sulphidation epithermal gold deposit or large scale skarnification as indicated by the alteration study discovered in the thin section work.

The discovery of massive sulphide layers adds a new dimension to the potential for economical mineralization on the claim area. The volcano-sedimentary context is considered favourable for such types of deposits.

It is recommended that indirect methods of exploring should be undertaken over the property and consisting of a first pass of soil sampling with multi-elements analysis, in conjunction with light geophysics such as Mag-VLF along a grid of 50 x 100 metres.

Over the most favourable area, a second phase of geophyics such as IP/HEM should be tested to find out the method best adapted to detect the local mineralization with an initial program of core-drilling.

The cost of such programs are summarized hereunder:

1st Phase:	Grid-cutting, 75 linear kilometers at $300/km	$ 25,000
	Soil sampling, 2000 samples	$ 10,000
	Geochemical analysis	$ 30,000
	Mag - VLF	$ 7,500
	10% contingencies, sundries	$ 11,000
	TOTAL	**$ 83,500**
2nd Phase:	IP / HEM	$ 25,000
	Diamond core drilling, 2000 meters @ $120/m	$240,000
	Geological, analysis	$ 20,000
	15% contingencies & administration	$ 55,000
	TOTAL	**$340,000**

Respectfully submitted,

H.P. Salat

STATEMENT OF EXPENDITURES

Field Work	
Consulting Geologist, 8 days at $500 day	$ 4,000.00
Senior Geologist, 8 days at $450 day	$ 3,200.00
Food & Lodging, 2 men, 8 days at $70 day	$ 1,120.00
Transportation, truck rental 2,800 km at $0.50 km	$ 1,400.00
Transportation, fuel 450 l at $0.70/l	$ 315.00
Laboratory Work	
Chemical Analysis (Loring Lab)	$ 505.04
Thin-section preparation (Vancouver Petrographics)	$ 110.97
Petrographical work (two days at $500/day)	$ 1,000.00
Report Preparation	
Review, research & report, 3 days at $500/day	$ 1,500.00
1 day at $450/day	$ 450.00
Map preparation, drafting and reproduction	$ 799.06
Sub Total	$14,400.07
Sundries, secretarial & overhead (10%)	$ 1,440.01
TOTAL	**$15,840.08**

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CERTIFICATE

I, HUGHES SALAT, of the City of Calgary, certify that:

1) My present address is 5904 Dalhousie Drive N.W., Calgary, Alberta, T3A IT1 and my occupation is that of a consulting geologist.
2) I am a holder of the French Baccalaureat in Mathematics, Physics, Latin and Greek.
3) After three years of general sciences and successfully being admitted to the Ecole national Superieure de Geologie Applquee de Nancy, I graduated from the school with a degree in Geological Engineering and with the diploma of License-es-Sciences from the Faculty of Earth Sciences, University of Nancy (France). I have also obtained a M.Sc. equivalence and completed all credits and research requirements for a degree of Ph.D. at the University of Southern California in Los Angeles (unwritten thesis due to military recall).
4) I have been practicing continuously my profession of geologist since 1968 in Canada and Europe in mineral exploration, first with Aquitaine Company of Canada then with SNEAP (Elf-Aquitaine). Concomitantly from 1983 to 1987, I have also worked fro the latter, as petroleum geologist on international projects dealing with Central Africa, Indonesia ad South America. Since 1988 I have operated an independent consultant in mineral exploration from the above mentioned address.
5) I am a fellow member of Society of Economic Geology, of the Geological Association of Canada, of the Canadian Institute of Mining and Metallurgy, of the Canadian Society of Petroleum Geologist, of the Association of Professional Engineers, Geologists and Geophysicists of the Province of Alberta and the Association of Profession Engineers and Scientists of the Province of British Columbia.
6) This report is based on my personal knowledge of the area, compilation of available technical data and field work on the concerned property from May 21, 2003 to July 10, 2003.

This 30 day of September, 2003.

Hughes P. Salat, P.Eng.

PROFESSIONAL
PROVINCE OF
H. P. SALAT
BRITISH COLUMBIA
ENGINEER

CERTIFICATE

This is to certify that I, Gordon S. Richmond, of Trochu, Alberta, have earned a Bachelor of Science degree in Geology at the University of British Columbia (1979), and that I am currently working in that capacity, and have done so since 1979.

Gordon S. Richmond September 30, 2003

APPENDIX I

CHEMICAL ASSAY RESULTS

AND

LABORATORY PROCEDURES

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

TO: **JORANEX RESOURCES INC.**
5904 Dahousie Drive N.W.
Calgary, Alberta

FILE: 45713

DATE: July 9, 2003

Attn: Hughes Salat

30 ELEMENT ICP ANALYSIS

Sample No.	Ag ppm	Al %	As ppm	Au ppb	B ppm	Ba ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %	Pb ppm	Sb ppm	Sr ppm	Th ppm	Ti %	U ppm	V ppm	W ppm	Zn ppm
SM-03-1	<0.5	2.13	17	**<5**	33	80	11	2.78	2	59	147	138	4.98	0.24	14	2.78	1074	1	0.03	98	0.08	8	10	128	<1	0.06	<1	126	<1	47
SM-03-2	<0.5	0.02	187	**20**	25	5	<1	0.30	<1	<1	614	5	0.48	0.01	3	0.01	91	35	0.01	28	<0.01	3	9	28	3	<0.01	<1	13	<1	7
SM-03-3	20.7	0.04	618	**100**	31	8	<1	1.85	21	<1	382	54	0.53	0.02	7	0.05	175	2	0.01	19	<0.01	701	38	173	<1	<0.01	<1	10	<1	2130
SM-03-4	3.8	0.96	130	**120**	33	79	3	4.00	1	56	64	202	4.08	0.34	14	1.88	906	3	0.02	94	0.09	11	15	189	3	<0.01	<1	33	<1	55
SM-03-5	1.5	0.92	1210	**100**	32	75	2	4.57	1	53	25	72	4.46	0.41	16	1.74	879	5	0.02	85	0.11	8	10	281	2	<0.01	<1	26	<1	29
SM-03-6	0.7	0.10	296	**25**	28	13	<1	1.15	<1	8	387	11	1.24	0.05	8	0.07	359	21	0.01	33	0.01	27	8	28	<1	<0.01	<1	14	<1	27
SM-03-9	0.5	1.50	23	**15**	30	96	<1	1.22	8	31	84	88	2.77	0.39	14	0.78	196	18	0.04	59	0.06	11	5	13	5	0.18	<1	164	<1	423
SM-03-10	0.6	3.68	<1	**25**	40	29	24	4.89	1	57	93	503	3.74	0.16	19	0.65	288	7	0.06	57	0.14	24	4	34	2	0.14	<1	86	<1	21
SM-03-11	<0.5	1.94	<1	**20**	35	32	3	2.50	1	49	104	294	3.89	0.08	21	0.43	152	8	0.10	70	0.13	10	5	24	3	0.19	<1	135	<1	20
SM-03-12	<0.5	4.11	58	**<5**	31	9	2	3.59	2	80	602	2	6.26	0.02	12	6.60	1152	2	0.01	301	0.06	14	31	112	<1	0.03	<1	174	<1	67
SM-03-13	1.9	2.59	66	**600**	37	93	3	1.20	38	91	304	542	7.98	0.22	11	2.48	736	5	0.03	136	0.10	19	17	19	8	0.31	<1	208	<1	2490
SM-03-15	<0.5	2.05	21	**50**	37	15	<1	1.91	2	74	113	195	5.20	0.18	15	1.35	273	3	0.07	99	0.10	11	8	19	6	0.25	<1	118	<1	117
SM-03-17	16.9	1.40	61	**3075**	67	2	3	6.19	268	133	61	1560	9.56	0.01	15	0.87	1045	4	0.01	118	0.03	*12800	22	53	<1	0.06	<1	52	<1	*19100
SM-03-20	2.8	1.59	<1	**13100**	37	70	6	0.98	4	141	48	649	10.93	0.15	13	1.25	344	11	0.02	107	0.09	87	12	15	<1	0.13	<1	116	<1	201
SM-03-21	1.7	1.45	<1	**160**	37	6	<1	2.27	15	264	12	1600	16.30	0.04	20	0.81	190	5	0.02	210	0.04	735	12	16	<1	0.06	<1	33	<1	1400
SM-03-22	<0.5	2.16	13	**260**	30	73	5	2.66	2	53	104	111	3.99	0.13	14	1.10	263	8	0.06	77	0.08	23	8	18	6	0.11	<1	154	<1	41
SM-03-23	6.1	1.93	1470	**90**	30	55	2	5.84	4	100	61	650	8.72	0.16	19	3.05	1518	5	0.01	111	0.08	131	11	487	<1	0.02	<1	93	<1	230
SM-03-24	0.7	2.13	24	**245**	38	9	<1	0.37	4	191	83	1030	17.23	0.04	12	1.23	498	9	0.02	155	0.14	9	15	4	<1	0.10	<1	134	<1	34
SM-03-25	2.1	0.87	308	**1250**	39	66	6	1.45	5	188	63	568	18.55	0.31	15	0.89	308	7	0.06	160	0.08	51	42	111	<1	0.16	<1	140	<1	79
SM-03-26	<0.5	2.44	7	**20**	36	11	7	2.26	1	69	79	286	4.86	0.11	15	1.76	412	3	0.06	71	0.11	14	6	21	11	0.34	<1	158	<1	35

Loring Laboratories Ltd.
629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

TO: **JORANEX RESOURCES INC.**
5904 Dahousie Drive N.W.
Calgary, Alberta

FILE: 45713

DATE: July 9, 2003

Attn: Hughes Salat

30 ELEMENT ICP ANALYSIS

Sample No.	Ag ppm	Al %	As ppm	Au ppb	B ppm	Ba ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %	Pb ppm	Sb ppm	Sr ppm	Th ppm	Ti %	U ppm	V ppm	W ppm	Zn ppm
SM-03-27	12.4	1.73	129	**1775**	32	30	4	2.95	40	127	189	2470	10.27	0.07	15	1.26	638	5	0.02	161	0.07	3420	28	30	2	0.23	<1	159	<1	6360
SM-03-28	<0.5	2.95	<1	**10**	33	17	9	2.08	2	77	39	158	5.41	0.08	11	2.61	1050	4	0.05	84	0.08	35	6	27	6	0.29	<1	205	<1	104
SM-03-29	<0.5	2.28	10	**20**	28	45	4	2.36	1	44	143	164	3.13	0.21	15	1.33	303	1	0.07	87	0.11	66	7	26	5	0.23	<1	110	<1	86
SM-03-30	<0.5	2.78	6	**<5**	36	42	2	2.79	1	60	98	392	4.25	0.19	15	1.68	408	12	0.06	93	0.10	15	6	23	4	0.20	<1	140	<1	29
SM-03-32	<0.5	2.12	12	**5**	32	25	11	6.83	1	43	171	53	3.32	0.27	19	2.48	860	2	0.03	113	0.09	17	6	186	5	0.19	<1	133	<1	50
SM-03-33	<0.5	2.10	46	**<5**	25	54	9	10.58	1	34	103	74	3.21	0.28	20	1.99	1302	<1	0.01	63	0.07	14	6	371	<1	<0.01	<1	77	<1	29
SM-03-34	<0.5	3.24	7	**<5**	34	66	6	4.10	1	59	166	82	4.17	0.27	15	2.58	626	2	0.19	95	0.11	16	7	79	4	0.21	<1	167	<1	32
SM-03-35	<0.5	2.64	23	**<5**	34	29	<1	3.96	2	107	86	527	4.88	0.13	14	0.74	186	3	0.05	119	0.12	17	7	18	6	0.25	<1	91	<1	22
SM-03-36	<0.5	2.17	<1	**15**	30	30	7	2.40	2	88	41	641	7.50	0.17	16	1.04	420	7	0.02	82	0.08	12	6	8	<1	0.11	<1	58	<1	19
SM-03-37	<0.5	2.34	<1	**<5**	33	62	12	3.13	1	46	64	264	3.12	0.25	16	0.88	270	2	0.08	63	0.14	15	5	32	6	0.17	<1	95	<1	27
SM-03-38	<0.5	1.61	<1	**<5**	33	63	5	1.59	2	56	73	295	3.83	0.18	13	1.16	234	20	0.04	75	0.07	9	6	16	<1	0.12	<1	209	<1	35
SM-03-20R	3.0	1.66	<1	**<1**	38	81	9	1.19	4	155	50	653	11.03	0.16	14	1.31	354	12	0.02	118	0.10	86	12	16	<1	0.15	<1	121	<1	197
STD	2.0	3.96	125	**<1**	28	54	16	2.38	3	52	103	86	3.91	0.16	28	1.77	670	6	0.35	240	0.05	134	44	86	9	0.15	<1	137	<1	236
BLK	<0.5	<0.01	<1	**<1**	31	<1	<1	<0.01	<1	<1	<1	<1	<0.01	<0.01	<1	0.00	<1	<1	<0.01	<1	<0.01	<1	<1	<1	<1	<0.01	<1	<1	<1	4

0.500 Gram sample is digested with Aqua Regia for one hour and bulked to 10 ml with distilled water.
Partial dissolution for Al, B, Ba, Ca, Cr, Fe, K, La, Mg, Mn, Na, P, Sr, Ti, and W.
"R" Denotes duplicate sample analyzed.
* Assay recommended.

Certified by:

Loring Laboratories Ltd.

629 Beaverdam Road N.E.,
Calgary Alberta T2K 4W7
Tel: 274-2777 Fax: 275-0541

TO: **JORANEX RESOURCES INC.**
5904 Dahousie Drive N.W.
Calgary, Alberta

FILE: 45713

DATE: July14, 2003

Attn: Hughes Salat

WHOLE ROCK ANALYSIS BY ICP

Sample No.	Al_2O_3 %	Ba ppm	CaO %	Cr ppm	Fe_2O_3 %	K_2O %	MgO %	MnO %	Na_2O %	Ni ppm	P_2O_5 %	SO_3 %	SiO_2 %	Sr ppm	TiO_2 %	V ppm	LOI %	SUM %
SM-03-19	14.34	277	10.39	338	10.92	1.19	8.33	0.20	2.98	98	0.211	0.41	43.39	393	0.55	173	5.36	98.27

0.2g Sample fused with LiBO2 @ 1000C, and dissolved in 5%HNO3.

Certified by: [signature]

629 Beaverdam Rd. N.E.
Calgary, Alberta T2K 4W7

LORING LABORATORIES LTD.

E-mail: loringll@cadvision.com

Tel: (403) 274-2777
Fax: (403) 275-0541

SAMPLE PREPARATION

Regular Preparation:

1) Dry if necessary.

2) Primary and secondary crush to >70% passing 10 mesh sieve size.

3) Homogenize and riffle approximately 250 to 300 gram portion and pulverize to 95% passing 140 mesh.

Coarse and/or Particulate Gold Sample Preparation:

1) Jaw crush and rolls crush material to >90% passing 10 mesh.

2) Homogenize thoroughly and obtain a 300 to 350 gram sample.

3) Pre-set pulverizer to obtain approximately 10% +150 mesh in pulp form

4 Sieve pulverized material @ 150 mesh and take the +150 mesh portion and weigh and place in a separate container.

5) Roll and mix –150 mesh portion 100 times and place in container.

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30 ELEMENT ICP ANALYSIS

1.) 0.5 GRAM SAMPLE IS WEGHED INTO A TEST TUBE

2.) 5ml. Of 1-3-2 HNO3-HCI-WATER MIXTURE IS ADDED TO TEST TUBE

3.) SAMPLES ARE HEATED AT 90C FOR 3 HOURS IN A WATER BATH

4.) SAMPLES ARE COOLED AND 5ml. OF DISTILLED WATER IS ADDED TO ADJUST . VOLUMES TO 10ml

5.) SAMPLES ARE MIXED ON VORTEX MIXER AND ALLOWED TO SETTLE

6.) ICP IS TURNED ON AND ALLOWED TO WARM UP FOR 15 MINUTES

7.) SAMPLES ARE TRANSFERED TO AUTO SAMPLER TUBES AND PLACED IN RACKS

8.) SAMPLES, CHECKS, AND STANDARD REFERENCE SAMPLES ARE ANALYZED BY ICP FOR 30 ELEMENT PACKAGE

9.) FINAL ANAYSIS IS CHECKED TO ENSURE ALL QA/QC CONTROLS ARE MET, AND REPORT IS GENERATED FOR CLIENT

LORING LABORATORIES LTD.

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GEOCHEMICAL ANALYSIS OF GOLD BY FIRE ASSAY/AA

A) Weigh 10, 20 or 30 grams of sample into a fire assay crucible with appropriate amount of fluxes and flour and mix.

B) Add palladium inquart.

C) Place crucible in assay furnace and fuse for 40 minutes.

D) Pour samples, remove slag and cupel buttons.

E) Place bead in test tubes and dissolve with aqua-regia.

F) After dissolution is completed, make to appropriate volume and run against similarly prepared gold standards on Atomic Absorption unit.

APPENDIX II

PETROGRAPHIC DESCRIPTION

OF

THIN SECTIONS

(For location, refer to Figure 3)

SM.03.7

HAND SPECIMEN

Color:	Greyish yellow green (5GY 7/2), veined with dark grey anastomosing streaks, 1 to 2mm thick.
Structure:	Massive.
Texture:	Crystalline, with greenish and deep green crystals.
Mineralization:	none, weathered surface has a 5 to 10 mm rusty rind.

UNDER THE MICROSCOPE

Texture: (Glomero) porphyritic. Phenocryst size from 0.5 to 2.5 mm. The section is very altered and presents only ghosts of large crystals. In addition, the groundmass appears to be replaced by secondary minerals, however, it's texture can be assumed to be originally intergranular. Locally, the phenocrysts are clustered into glomerules suggesting original poekiliic to sub-ophitic textures.

Modal Composition

- Epidote: 55%
- Quartz: 40%
- Iron-rich opaque minerals: 5%

The alteration is so intense that the description will follow the subdivision introduced in the paragraph on texture.

Phenocrysts make up 30 to 35% of the rock. Some rare laths and one large phenocryst (more than 3 mm long) seem to show multiple twinning. A questionable measurement made over the large crystal indicate a content of 60% (+) Anorthite.

The phenocrysts represent **Plagioclase** altered and replaced by 90% epidote and zoisite and a probable undefined micaceous minerals. The phenocrysts have borders corroded by groundmass or show rounded (erosional) borders. Rarely, they show euhedral shapes.

No mafic mineral is observed.

Groundmass represents 60% of the section, of which 60% is composed of sutured, interlocking, consertal tiny quartz crystals concentrated in large (less than 1mm in size) masses and including aggregates of **epidote** with undefined contours. The remaining 40% of groundmass is represented by aggregates of epidote as described previously, or epidote in tiny (less than 0.05 mm) clear grains and more rarely in well developed laths, sometimes combined in fibrous and contorted masses. Some rare clear blades of zoisite are present probably related to veinlets (see later).

Rare **apatite** (less than 0.05mm in size)

Iron minerals (opaque) represent 3 to 5% of the section: most often in symplectite with epidote or along cleavage of neo-morphosed epidote blades. Also, a little amount of opaque mineral is scattered throughout.

The thin section shows that one veinlet of 100% pistachite (epidote) cutting across thin section, 1.5 mm wide with 1% iron-opaque mineral and also 2 cross cutting, 0.2 mm wide veinlets of the same composition.

Rock type: Plagioclase crystal tuff completely propylitized.

SM.03.08

HAND SPECIMEN

Color: Medium bluish grey (5B 5/1) with one part more greenish grey (95G 6/1), with white spots and streaks.

Structure: Massive.

Texture: Black, bladed or stubby crystals set in an aphanitic background with some whitish squared crystals.

Mineralization: Scattered cubes of pyrite, 0.5 to 0.75 mm, scattered uniformly. These represent 5 to 7% of the rock. Locally they are in aggregate or rimming white, vapor-phase related streaks.

UNDER THE MICROSCOPE

Note: the section cut across two separate volcanic units, one more greenish and aphanitic than the other.

UNIT I.

Texture: Porphyritic with intersertal to pilotaxitic texture of micro-crystalline lath-shaped feldspars; locally trachytic or flow texture is present.

Modal Composition .

- Augite: 25%
- Feldspars: 50%
- Chlorite: 10%
- Quartz: 3 to 5%
- Calcite: 2 to 3%
- Epidote: 3%
- Opaque/pyrite: 5%

Augite: the pyrozene is present in large (0.75 to 3 mm) phenocrysts, euhedral, internally shattered, with few inclusions of epidote.

The pyroxene is also frequently twinned and zoned. Several crystals are often clumped together.

Feldspar: the great majority is microlithes in the groundmass and seems to be orthoclase. 25% of the feldspar appears in larger laths, 0.5 to 1.5 mm long and half of those are orthoclase, often slightly bent. The remaining show multiple twinning of albitic composition; moreover, the twinning is rarely regular and shows interfingering in comb-like manner between several individual crystals.

Chlorite scattered in a few clots.

Vapor Phase Vesicles represent 15 to 20% of the section. Round or elongated, the vesicles are crystallized mainly with 75 to 80% shattered or strained feldspar (orthoclase), 5-10% anhedral quartz and contain the majority of sulphides/pyrite in aggregates. The feldspar is often radially distributed growing from the border inwards.

The vesicles contain the majority of calcite crystals and epidote, more rarely chlorite. Tiny epidote grains locally rim some vesicles at contact with the groundmass.

UNIT 2

Texture: Seriated to porphyritic with intergranular texture; somehow trachytic.

Modal Composition

- Plagioclase: 70%
- Hornblende: 25%
- Augite: 10%
- Epidote: 2 to 3%
- Quartz: 2%
- Opaque Materials: 3 to 5%

Plagioclase crystals are seriated in size from 1.5 mm down to microliths forming the groundmass. In better laths, composition is given as 30% to 40% Anorthite. Often, plagiocase are zoned with clear borders around a darker, inclusion rich crystal or show dark inclusion bandings. The plagioclase laths are more or less aligned.

Hornblende, green in long blade, to 2mm long, or diamond-shaped crystal euhedral, unaltered, with rare inclusions. A third of hornblende crystals are smaller (0.5 mm), rounded, locally corroded.

Augite appears either in euhedral porphyritic (to 3mm) crystals or is broken in small rounded grains. In some larger crystals portions of the crystal are replaced completely by epidote and by minor chlorite along the edges of the crystal. Otherwise, they are clear, unaltered, with a few inclusions.

Quartz in tiny grains, less than 0.05 mm, scattered in groundmass.

Opaque minerals (pyrite in cubic shape) scattered throughout.

The contact between the two units (or flows) is either sharp or underlined by a 1 mm layer of tiny grains of epidote, rich in sulphides, and locally overlain by a clear layer of large (0.5 mm) epitaxial zoisite mixed with minor calcite.

Rock type: Unit 1 is an augite-phyric trachytic flow. Unit 2 is a trachy-andesite.

SM.03.14

HAND SPECIMEN

Color: Pale olive (10Y 6/2) groundmass mottled with medium bluish grey (5B 5/1) clots, 3 to 5 mm in diameter. Some have moderate yellow (5Y 7/6) rims.

Structure: Radiating cracks and fissures, some with rusty rims, grey clots and cavernous.

Texture: cryptocrystalline.

Mineralization: many (2-3%), 2 to 3 mm cubes of pyrite scattered; otherwise, 10 to 15% sulphides filling or coating cavities within the cavernous mottles. A few are completely rusted out especially when cut across by cracks. Some thin fissures are filled with sulphides.

UNDER THE MICROSCOPE

Texture: micro to cryptocrystalline – with ghosts of phenocrysts representing remnants of a prior volcanic unit.

Modal Composition

- Epidote: 80-85%
- Opaque minerals/pyrite: 10-15%
- Quartz: 3-5%

Epidote: two types of epidote crystals are found in the thin section. The first, most common, is a cryptocrystalline epidote which makes up the entire groundmass and transforms it into a uniform background. Within the groundmass, outlines of feldspar can yet be seen, with some neoformed quartz mesostasis locally encountered within the primary crystal borders. The bulk of the thin section is composed of this type of epidote that has completely replaced the original rock unit.

The other type is found within the many vesicles, interstitial aggregates or discontinuous veinlets and is composed of clear zoisite and clino-zoisite either in equant crystalline masses or sheaves. This type is definitely late and is commonly associated with sulphide (opaque minerals) mineralization in large aggregates or within vesicles. This type is also more common within clots of irresolvable matter also with abundant sulphides, and small grains of quartz.

Quartz in tiny 0.1 mm size crystals are found mainly in vesicles, near cavities (holes) associated with clino-zoisite or in even smaller grains within the groundmass. The quartz is undoubtedly late forming.

Sulphides are present throughout the section either in small 0.05 to 0.2 mm elongated shard-like crystal or in larger (0.1 to 0.5 mm) clusters of more equant crystals only found in vesicles or in clots of dark cryptocrystalline matter associated with a few clear zoisite and quartz.

Rock type: Sulphide rich epidotite.

SM.03.16

HAND SPECIMEN

Color: Dusky yellow green (5GY 5/2) with larger fragments lighter in value.

Structure: Massive with sub-rounded fragments ranging from 0.1 to 3 centimetres in size. Many small cavities.

Texture: The matrix is microcrystalline, however the fragments show a cryptocrystalline groundmass with darker phenocrysts.

Mineralization: sulphides, 10 to 15%, scattered throughout and in cavities; also replacing phenocrysts or along borders of fragments. Mainly pyrite, possibly some arsenopyrite. Magnetic.

UNDER THE MICROSCOPE

Texture: Porphyritic with intersertal texture, locally trachytic.

Modal Composition

- Augite: 15%
- Feldspar: 15-20%
- Epidote: 10%
- Quartz: 5%
- Sulphides: 15%

Augite: in euhedral phenocrysts, 0.5 to 3 mm in size, clear with many sulphides and a few epidote inclusions. They are often in aggregates of 3 to 4 crystals. A few phenocrysts of augite show some schillerization along thin cleavages.

Feldspars: in laths 0.05 to 0.5 mm in length, locally aligned, the feldspars are all completely altered into epidote, only their outlines (ghosts) can be observed. Their exact composition cannot be detected however some Carlsbad twinning is visible thereby creating the assumption of a high alkali content.

Epidote: small crystallites, less than 0.05 mm, are scattered throughout the groundmass which itself is cryptocrystalline and probably contains an abundance of epidote. The more crystalline epidote crystals are essentially associated with quartz and sulphide within vacuoles, blebs or short veinlets, as part of a strong mineralizing event.

Quartz, in small anhedral grains, less than 0.1 mm, is mostly found in blebs or aggregates, associated with/or surrounding coalescing aggregates of sulphides.

Sulphides have invaded open space, holes in augite, vesicles and form large aggregates from less than 0.01 to 3 mm in diameter, evenly distributed through the rock. Sulphides are always associated with some quartz and often with epidote.

Rock Type: Sulphidized andesitic pyroclastic.

SM.03.18

HAND SPECIMEN

Color: Medium bluish grey (5B 5/1) speckled with whitish crystallites.

Structure: Massive, containing very large (more than 5 cm) fragments.

Texture: porphyritic within aphanitic matrix; same type of texture in the matrix and fragments except the matrix within the fragments, appears more dark-greenish grey (5G 4/1).

Mineralization: none

UNDER THE MICROSCOPE

Texture: Glomero porphyritic with intersertal texture in more basaltic fragments. Other fragments have a trachytic (hyalotaxitic) texture. Most fragments are vesicular.

Modal Composition

- Augite: 25-30%
- Feldspar: 15%
- Epidote: 25%
- Calcite: 5%
- Actinolite: 3 – 5%
- Zircon: less than 1%
- Chalcedony: 10%

Augite is exclusively present as phenocrysts from 0.25 to 2mm, often in glomerules containing three to five crystals. Augite is rarely clear, mostly destabilized by epidote and calcite and borders can be corroded; a few contain some zircon inclusions. The majority of augite still retain their prismatic shape, however many are rounded, globular or broken into rounded grains.

Feldspars are in rectangular laths, 0.25 to 0.5 mm in length, evenly scattered except in one fragment where they show some alignment. The feldspars are mainly Carlsbad twinned, some displaying multiple twinnings. However, rarely fresh, feldspar appears somewhat sodic in composition.

Epidote and **calcite** develops within augite phenocrysts into large (0.5 mm) clear crystals. They also fill up many amygdules.

Actinolite develops radiating sheaves of long crystals in some amygdules where augite phenocrysts comes in contact and is destabilized. In such circumstances, spaces between the actinolite needles are filled with epidote and calcite.

Irregular shaped amygdules occupy 5% of sections and are generally filled with epidote and locally **chalcedony**. A few rare amygdules are filled with a metastasis of feldspar, quartz and fine hair like needles of actinolite. However, many regular and circular vesicles (0.25 to 0.5 mm in diameter) are found in the fragment with typical basaltic matrix; the vesicles are exclusively filled with chalcedony.

Rock Type: Alkali-basaltic pyroclastic.

SM.03.31

HAND SPECIMEN

Color: Light bluish grey (5B 7/1), uniform.

Structure: Massive with some hair like rusty cracks.

Texture: Crystalline

Mineralization: Many sulphides (pyrite) in blobs or cubes scattered within the rock or more commonly semi-massive along cracks.

UNDER THE MICROSCOPE

Texture: generally equigranular except for a few phenocrysts of ferro-magnesian crystals.

Modal Composition

- Feldspars: 75%
- Hornblende: 15 to 20%
- Biotite: 5 to 10%
- Quartz: 3 to 5%
- Sulphides (opaque minerals): 2 to 3%
- Apatite: rare

Feldspars are uniformly rectangular, 0.5 to 0.75 mm in length. All of them are altered by saussuritization (epidote mainly). A few display inclusion zoning, while some stubby crystals show compositional zoning. Their state of alteration prevents a definition of their composition.

In one portion of the thin section, which is clearer, with more abundant biotite and quartz, some crystals show multiple twinnings indicating a 40 to 45% anorthite content. This portion, which does not contain any amphibole, could represent a different phase of the intrusive.

Hornblende is mostly disturbed, altered or broken into small grains. Some large phenocrysts, 1 to 1.5 mm across, can yet be observed, but their structure is badly destroyed by epidote, biotite and quartz material, with only a strong cleavaged portion remaining within the outline of the primary crystal.

Smaller hornblende, 0.25 to 0.5 mm long, interlocking with feldspar are better preserved from alteration but rarely display euhedral shapes.

Biotite is mostly after hornblende or in long sheaves interstitial between feldspar and hornblende. However, in one part (1/4 of the thin section), the biotite appears neoformed, and consertal with clear feldspar and more abundant quartz; this represents a more potassic phase.

Quartz is in tiny grains, less than 0.2mm, scattered or in clusters between feldspar but with biotite and sulphide. It makes also the main part of a narrow, 0.15 mm, veinlet extruding from the more potassic zone. Quartz grains show considerable straining.

Sulphides: except for quite a few tiny, 0.01 to 0.05 mm, grains or cubes always associated with hornblende, either in inclusion or with the more intense broken up part of the hornblende crystal, sulphides are in elongated aggregates with quartz and following rusty cracks or fissures.

Rock Type: mineralized diorite.

0 599 000
0 600 000
0 601 000
121 30'
0 602
Grogan
Creek
3000'
2500'
LCP - PINTAIL 6S3E
LCP - DRAKE 6S3W
GPS = 0600843
5828136
5 828 000
andesitic pyroclastics / SM-03-16
fractures + pyrite / SM-03-15
QUESNEL
diorite / SM-03-14
quartz vng + carbonate + pyrite / SM-03-13
5 827 000
LAKE
52 35'
crystal tuff + Fe
andesitic tuff + Fe / SM-03-25
tuff + Py, Po / SM-03-26
Fe + aspyrite + Cu / SM-03-20
"Paddy Creigh" tunnel
andesite, sheared + Fe, Pb, Cu, calcite / SM-03-17
basaltic tuff / SM-03-18
sheared basaltic tuff
augite basalt
ultrabasic dyke / SM-03-19
basalt
Cedar
Cedar Point Park
5 826 000
fragmental andesite + pyrite
pyroclastics
pyroclastic andesite + Py, Po
Discovery Draw Creek
tuff + pyroclastics + Fe / SM-03-27
crystal tuff + Py, Po, quartz / SM-03-28
old placer operation
dacite + quartz vng + Fe
shear zone + Py / SM-03-34
dacite + massive Py ± Cu
quartz breccia + Py / SM-03-32
diorite + Py, Po / SM-03-30/31
quartz + S, Pb / SM-03-3
dacite
cherty tuff + Py, Po, Cu / SM-03-24
NORTH LIMIT OF DUCK 1&2
GPS = 0601933
5825375
QFP + dacite + Py, Po / SM-03-23
andesitic tuff + Py, Po, quartz / SM-03-29
SOUTH LIMIT OF PINTAIL
GPS = 0601895
5825122
tuff + andesite + pyrite / SM-0
porphyritic ande
5 825 000
QUESNEL
andesitic crystal tuff + pyrite
LAKE
5 824 000
3500'
3000'
2500'
0 599 000
0 600 000
0 601 000
121 30'
0 602 000
LEGEND
70°
BEDDING (WITH DIP
JOINT, FRACTURE
SHEAR ZONE (WITH
GLACIAL STRIAE
LIMITS OF OUTCRO
ADIT, TUNNEL
TRENCH, PIT
SM-03-10
SAMPLE NUMBER &
OLD DRILL SITE
CLAIM CORNER PO
MAIN ROAD
TOTE ROAD, TRAIL
LIMITS OF PROPER

ANKOBRA RESOURCES INC.

CEDAR CREEK PROPERTY, B.C.

RECONNAISSANCE GEOLOGICAL MAP

SCALE: 1 : 5000	FIGURE 3
DATE: AUGUST 2003	
DRAWN BY: R. NEUMAN	

To accompany "Report on geological reconnaissance mapping and prospecting of the Cedar Creek Property, B.C." prepared by H.P. Salat, August 2003.