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Geological, Geochemical

REPORT ON EXPLORATION DURING 1983 AND 1984

ON THE COPPER KING-NAMERA IV PROPERTY

Liard Mining Division
Latitude 57°36'N, Longitude 127°16'W
NTS 94E/11W

Prepared for

WESTERN HORIZONS AND REDFERN-SUTTON

JOINT VENTURE

by

K.E.NORTHCOTE AND ASSOCIATES LTD.
AGASSIZ B.C.

November 5, 1984

K.E. Northcote Ph.D.,P.Eng.

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INTRODUCTION

TERMS OF REFERENCE

Agreement was reached by Western Horizons Resources Ltd., Sutton Resources Ltd and Redfern Resources Ltd. whereby Sutton-Redfern would provide funding for a joint venture exploration program during the 1983 and 1984 field season on the COPPER KING AND NAMERA IV claims owned by Western Horizons Resources Ltd. The exploration program was operated by K.E. Northcote and Associates Ltd.

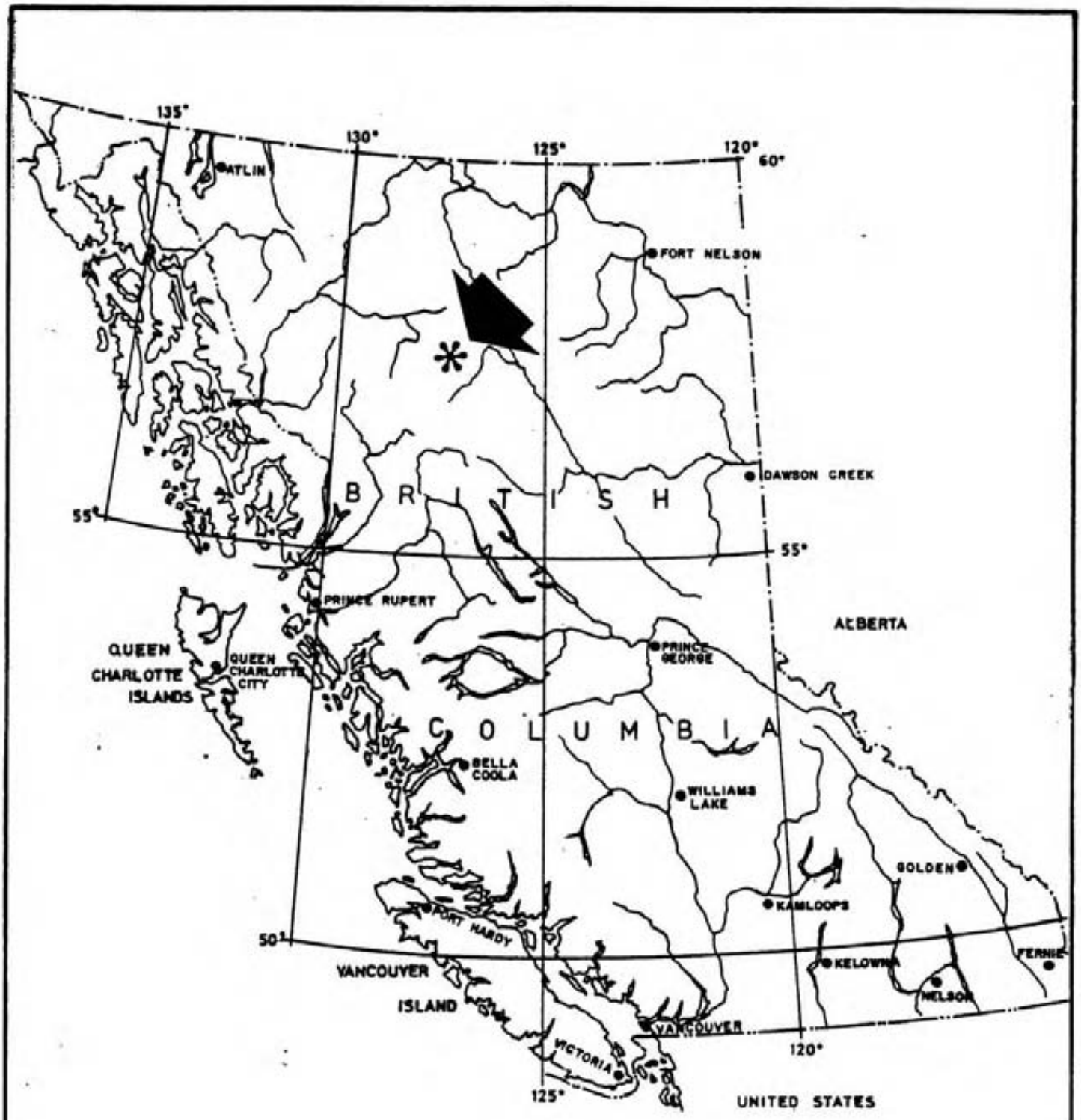
FIELD PROGRAM

K.E. Northcote geologist, and B.K. Northcote, assistant, spent the periods August 24 to 26th, 1983, after completion of staking the COPPER KING and NAMERA IV claims and subsequently the period August 11 to August 26, 1984 carrying out geological reconnaissance and sampling of quartz-carbonate vein-shear systems and zones of alteration on these claims.

This report outlines the results of the 1983 and 1984 field programs, conclusions and recommendations for continuing exploration.

LOCATION OF TOODOGGONE GOLD-SILVER DISTRICT

The centre of the Toodoggone gold-silver district is located 300 kilometres north of Smithers, at latitude 57°22.5'N and Longitude 127°15'W; NTS 94E. See Figure 1. The area extends 90 kilometres northwesterly from Thutade Lake



TOODOGGONE JOINT VENTURE	
LOCATION OF TOODOGGONE GOLD-SILVER DISTRICT	
FIGURE: 1.	SCALE: 1:10,000,000
DRAWN BY: P.STOECKLY	DATE: Oct. 1984
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to north of Stikine River. The central portion of this belt is shown on Figure 2.

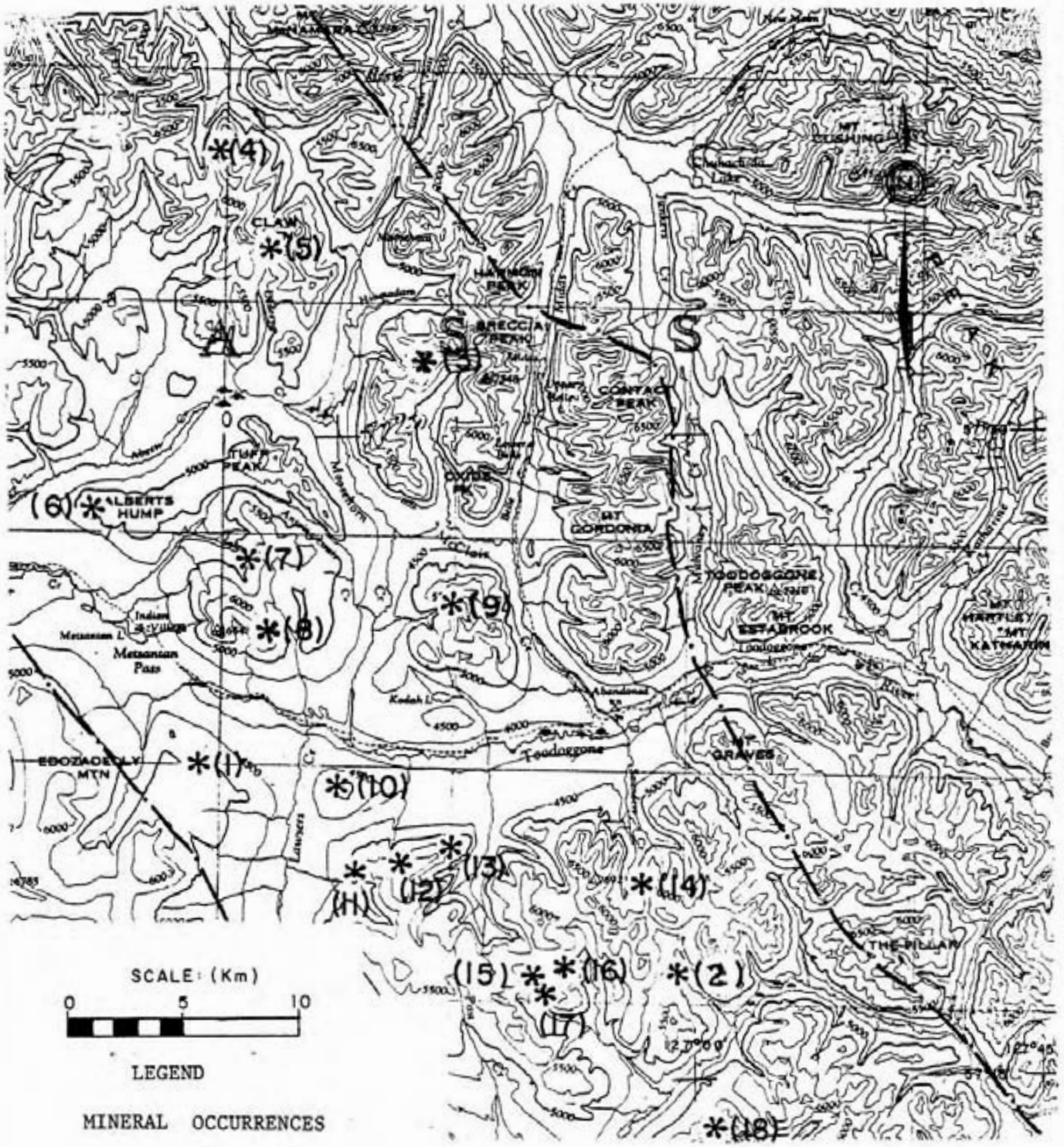
Access to the area is by fixed wing from Smithers to the Sturdee River airstrip thence by road to the Baker and Lawyers properties or by helicopter to other properties in the Toodoggone gold-silver district.

The Toodoggone gold-silver district lies at the east edge of the Intermontane Belt adjacent to the Omineca Belt. An upland area, E1.2000 to 2300 metres (6500 to 7500 ft), is abundantly dissected by rivers and creeks heading in steep-walled cirques. The highest peak in the district in Mt. McNamera at 2523 metres (8278 ft). The lower valley bottoms range between 1150 to 1200 metres (3800 to 4000 ft.)

Exploration in the district is largely seasonal with activity beginning in mid May and ending mid October.

MINING HISTORY

Prospecting began in the Toodoggone district early in the 1930's and resulted in discovery of placer gold at Belle Creek but little gold was produced. Although lead-zinc mineralization in skarn near the head of Thutade Lake was discovered and staked at this time by Cominco, the search for the lode gold source resulted in no significant discoveries. Chappelle (Baker Mine) was discovered by Kennco Explorations (Western) Ltd. in 1968 while searching for porphyry copper-molybdenum deposits in the general area. Other companies engaged in searching for porphyry deposits in the Toodoggone area during the period 1970 to 1982 include Conwest Exploration Ltd., Cordilleran Engineering Ltd., Cominco and Texas Gulf. This activity by companies and individuals resulted in discovery of significant gold and silver mineralization at Lawyers, Claw Mtn, Metsantan, J.D. (McClair), Sha and Remess properties. These and other properties of note are shown on Figure 2.



LEGEND

MINERAL OCCURRENCES

#1	GOLDEN STRANGER	#10	KODAH
2	DAVE PRICE	11	SILVER POND
3	GORD DAVIES	12	LAWYERS
4	COPPER KING	13	LAWYERS
5	CLAW MTN.	14	GOLDEN NEIGHBOUR
6	ALBERTS	15	BAKER
7	NORTH METSANTAN	16	BAKER
8	METSANTAN	17	BAKER
9	J.D.	18	SHA

TOODOGGONE JOINT VENTURE

LOCATION OF
TOODOGGONE GOLD-SILVER DISTRICT
MINERAL OCCURRENCES

FIGURE: 2.	SCALE: 1:250,000
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The Baker Mine (Chappelle) went into production with initial reserves of 120.000 tons 0.8 oz/ton Au, 15.0 oz/ton Ag and by the end of 1983 produced 37,558 oz Au and 742,198 oz Ag. The Baker Mine is presently closed. At the present time S.E.R.E.M. is arranging for financing and preparing the Lawyers property for production with reserves of approximately 400,000 tons 0.3 oz/ton Au and 4.0 oz/ton Ag.

Exploration during the 1984 field season was carried out by S.E.R.E.M., Newmont, Kidd Creek (Texasgulf), St.Joseph and Western Horizons.

REGIONAL GEOLOGY

The Toodoggone mineral district is underlain by a northwesterly trending belt 90 by 15 kilometres of sediments, volcanics and intrusives ranging in age from Paleozoic to Tertiary. Figure 3 shows that the Sustut Group (Upper Tertiary to Cretaceous) sediments, which form the west margin of the Toodoggone belt, unconformably overlie the Toodoggone volcanics (Hazelton Group, Lower Jurassic). To the east, and as fault blocks within Toodoggone volcanics, Takla Group (Upper Triassic) volcanics form a disrupted belt of faulted segments containing lesser fault blocks of Asitka (Permian) limestone. The Omineca Intrusions form the east margin of the Toodoggone belt.

STRUCTURAL SETTING

The geological framework of the Toodoggone gold-silver camp is a result of comagmatic intrusive-volcanic-hydrothermal processess occurring along deep-seated northerly trending structural breaks during a 20-million-year period in upper Triassic to lower Jurrassic time. Volcanism resulted in deposition of a thick succession of Toodoggone volcanic rocks in a subaerial, perhaps partly shallow marine environment, on a "basement" of older Takla volcanics and Asitka sediments. Intrusive and hydrothermal systems associated with volcanism invaded these volcanic rocks along the same deep-seated and periodically

reactivated structural breaks controlling volcanism. Stocks, dykes and sills of Omineca related intrusions were thereby emplaced in Toodoggone volcanics and "basement" Takla-Asitka rocks. Linear zones of varied kinds and intensity of hydrothermal alteration, veining and mineralization, associated with emplacement of plutons, were also impressed at different structural levels in the Toodoggone and older rocks.

Subsequently the Toodoggone and earlier rocks were subjected to repeated and extensive normal block faulting from Jurassic to Tertiary time. Within these fault blocks Toodoggone rocks display broad open folds commonly with dips less than 25 degrees.

Sustut Group sedimentary rocks unconformably overlie these earlier rocks and have relatively flat dips with few major structural disruptions.

STRATIGRAPHY

Asitka Group (Permian)

Asitka Group carbonates to greater than 150 metres thick are the oldest known rocks in the Toodoggone area. These rocks occur as fault blocks in association with Takla volcanics. In some areas these limestones are associated with Brecciated serpentinite. Skarn development near contacts with Omineca Intrusions may contain garnet, magnetite, tremolite, galena and sphalerite and are host for some silver-lead-zinc deposits.

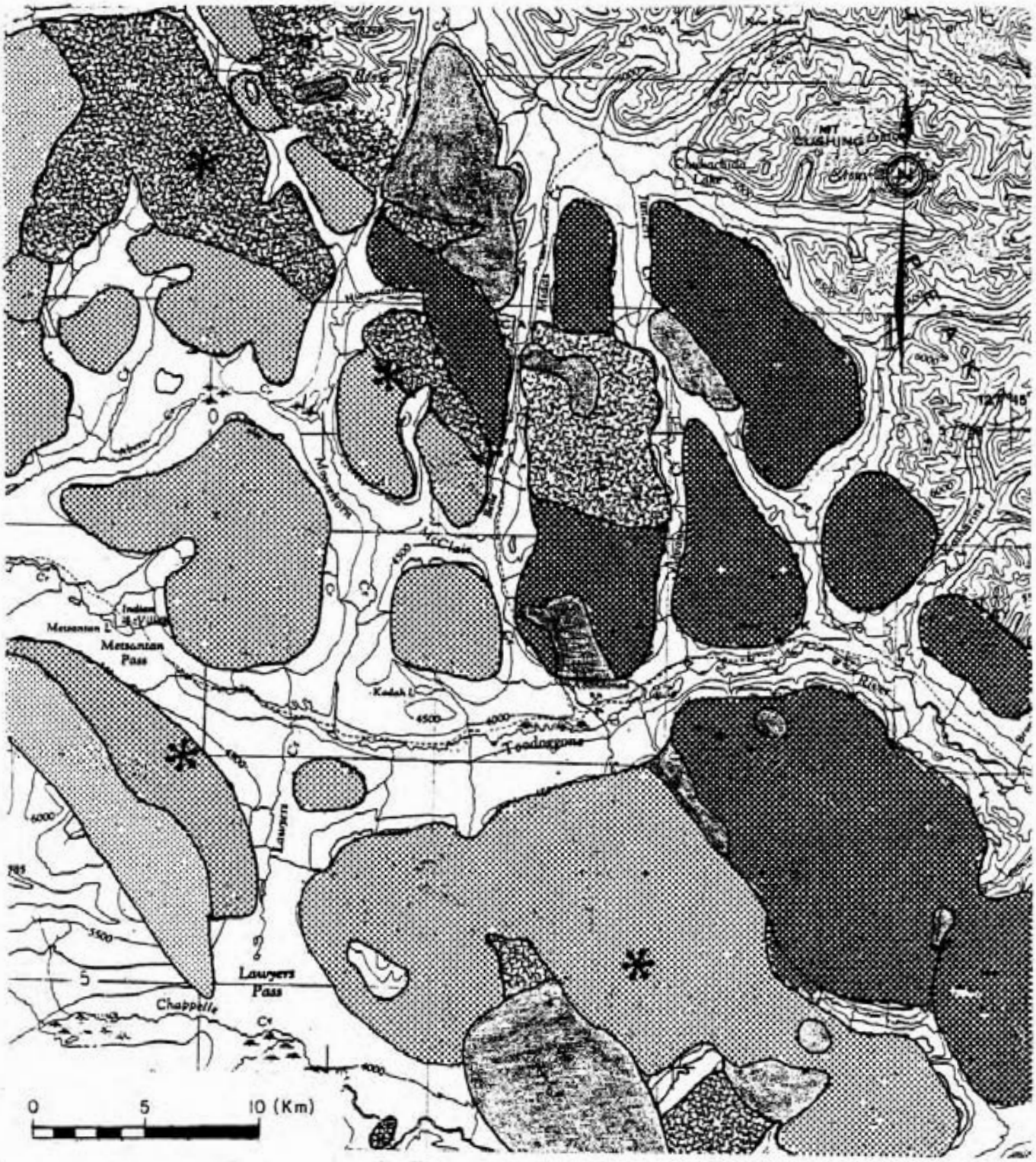
Takls Group (Triassic)

Barr (1978) subdivides the Takla Group volcanics into four units at Chappelle property (Baker Mine) as follows:

(1) Pyroclastic breccia

(2) Dark grey porphyritic andesite

ERA	PERIOD OR EPOCH	FORMATIONS	LITHOLOGIC UNITS	LITHOLOGY		
CENOZOIC	UPPER TERTIARY TO CRETACEOUS	SUSTUT	LOWER TANGLE CREEK	Pebble conglomerates and sandstones		
MESOZOIC	Unconformity					
	LOWER TO MIDDLE JURASSIC	TOODOGGONE VOLCANICS	Unit 6	Grey dacite	OMINECA INTRUSIONS	Quartz monzonite, granodiorite syenomonzonite
			Unit 5	Andesite and trachyandesite flows		
			(5ai)	Pyroxene basalt intrusion		
			(5a,b,c)	Basaltic sequence		
			Unit 4	Pyroclastic rocks		
			Unit 3	Andesite flows and tuffs		
			Unit 2	Andesite flows		
			Unit 1 (1a)	Tuff and tuffaceous sandstone "redbeds" Volcanic flow		
	Unconformity					
	TRIASSIC	TAKLA		Pyroclastic breccia		
				Porphyritic feldspar andesite		
				Fine grained andesite		
				Tremolite andesite porphyry		
Unconformity						
PALEOZOIC	PERMIAN	ASITKA FORMATION (150+)	CACHE CREEK GROUP	Calcite marble, chert, argillite, sandstone, skarn, garniferous calcite, marble, limestone		



LEGEND

- SUSTUT SEDIMENTS
- TOOGOGGONE VOLCANICS
- TAKLA VOLCANICS
- ASITKA SEDIMENTS (carbonate)
- OMINECA-RELATED INTRUSIVES

TOODOGGONE JOINT VENTURE

GEOLOGY OF TOODOGGONE GOLD-SILVER AREA

FIGURE: 3.	SCALE: 1:250,000
DRAWN BY: P. STOECKLY	DATE: Oct. 84

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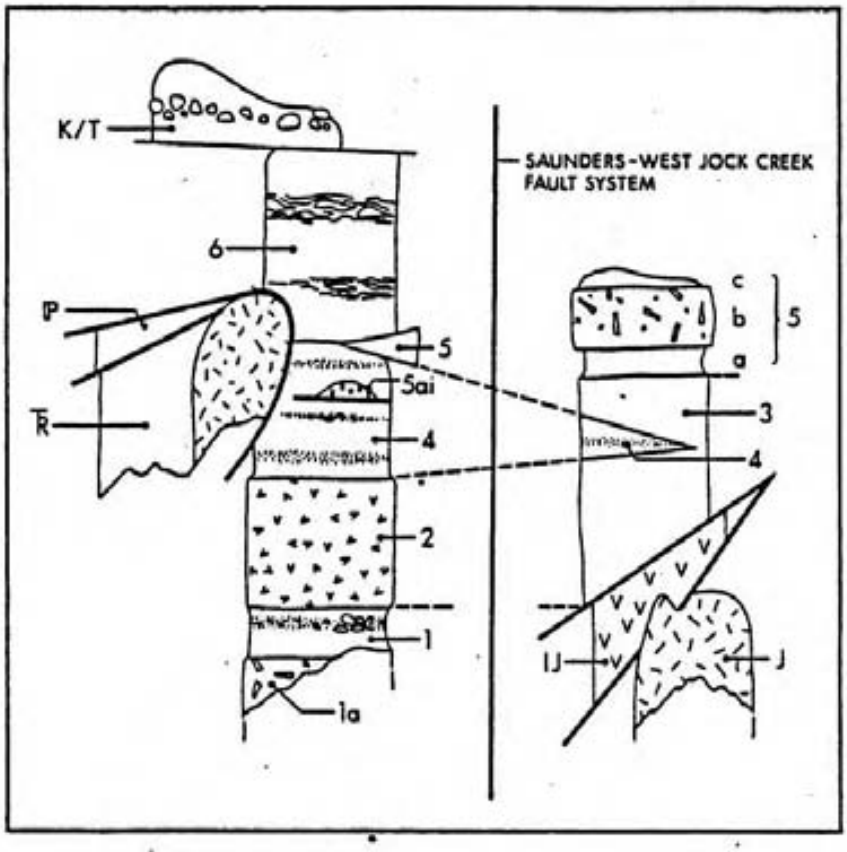

LEGEND

CRETACEOUS/EARLY TERTIARY

K/T RUSTUY GROUP: SANDSTONE, CONGLOMERATE

LOWER JURASSIC

"TOODOGGONE VOLCANICS"

"GREY DACITE" ASH FLOW UNIT

5 ANDESITE FLOWS, IN PART TRACHYANDESITE AND MINOR TUFF

PYROXENE BASALT (INTRUSIVE)

QUARTZ-EYE ANDESITE PYROCLASTIC UNIT, PREDOMINANTLY CRYSTAL AND LITHIC-LAPILLI ASH FLOW TUFFS, WELL-LAYERED ASHFALL UNIT WITH MUCH FINER GRAIN SIZE RANGE, LESSER FLOWS, BRECCIAS, AGGLOMERATE; MINOR EPICLASTIC UNITS WITH LOCAL COARSE LANDSLIDE DEBRIS

ANDESITE FLOWS, SOME BRECCIAS, MINOR TUFFS

TUFFS, TUFFACEOUS SANDSTONE, CONGLOMERATE, "RED BEDS"

FELDSPAR PORPHYRY FLOWS (TRACHYANDESITE)

JURASSIC

HAZELTON GROUP: ANDESITIC FLOWS, PYROCLASTIC ROCKS

TRIASSIC

TAKLA GROUP: PYROXENE BASALT FLOWS, TUFFS, BRECCIAS

PALEOZOIC

ASITKA ? GROUP: LIMESTONE, IN PART MARBLE, SKARN; MINOR CHERT, ARGILLITE

3c ANDESITIC BASALT, DUST TO COARSE LAPILLI LITHIC TUFFS

BASALT/BASALTIC ANDESITE FLOWS

3a BASALTIC TUFFS

3 ANDESITE FLOWS, MEDIUM TO FINE GRAINED TUFFS; INCLUDES SOME QUARTZ-EYE TUFF UNITS EQUIVALENT (?) TO UNIT 4

OMINECA INTRUSIONS: GRANODIORITE

Figure 4 Diagrammatic stratigraphic column, Toodoggone-Sturdee River area.

From Panteleyev, 1983.

(3) Fine grained andesite

(4) Tremolite andesite porphyry

The Takla Group volcanics may include some local development of limestone.

Hazelton Group (Jurassic) Toodoggone volcanics.

Toodoggone volcanics unconformably overlie Takla Group and consist of thick ashflow units succeeded by thin discontinuous and locally reworked ashflow material, volcanic breccias, and thin airfall tuffs.

Panteleyev (1983) divides the Toodoggone volcanics in the Toodoggone - Sturdee River area into six major units as follows:

Unit 6 Grey dacite

Unit 5 Andesite and trachyandesite flows

Unit 5 ai Pyroxene basalt intrusion

Unit 5 a, b, c Basaltic sequence east of Saunders Creek-West Jock Creek fault system

Unit 4 Quartzose andesite pyroclastic rocks

Unit 3 Andesite flows and tuffs

Unit 2 Andesite flows

Unit 1 Tuff and tuffaceous sandstone "redbeds"

Unit 1a Volcanic flow unit Moosehorn Creek - overlain by Unit 1

Panteleyev states that collective radiometric dates from Toodoggone volcanics from this gold-silver belt indicate that these rocks were deposited over 20 million-year period from approximately 180 to 200 Ma.

Omineca Intrusions

The Omineca Intrusions of Jurassic (and Cretaceous?) age, with potassium-argon age determinations 186 to 200 + Ma, range in composition from granodiorite

to quartz monzonite. Some syenomonzonite bodies and quartz-feldspar porphyry dykes may be feeders to the Toodoggone rocks. There is increasing evidence in support of Schroeter's contention that Omineca Intrusions and Toodoggone volcanics may be comagmatic and coeval.

MINERAL POTENTIAL

The following account is reproduced from Schroeter, 1981:

MINERALIZATION

The Toodoggone area is host to many polymetallic mineral prospects and four main types are recognized:

(1) *'Porphyry'* copper±molybdenum±silver±gold — mainly associated with Omineca Intrusions. Chalcopyrite and pyrite, with or without molybdenite, occur in fractures, as disseminations, or in quartz veins within both intrusive and the host volcanic rocks (mainly Takla Group andesitic rocks). Secondary chalcocite and covellite may form layers up to 30 metres thick. In these 'porphyries,' silver may exceed 3.1 grams per tonne (0.1 ounce per ton) and gold 0.47 gram per ton (0.015 ounce per ton) and therefore be economically significant [for example, Riga (MI 94E-3, 4, 5), Fin (MI 94E-16), Pillar (MI 94E-8), Rat (MI 94E-25), Mex (MI 94E-57), Kemess (94E-21)].

(2) *Skarn* — contact of limestone and host rock resulting in formation of small bodies of magnetite, galena, and sphalerite [for example, Castle Mountain (MI 94E-27) and several other minor showings west of Duncan Lake].

(3) *Precious and base metal epithermal* — gold-silver±copper±lead±zinc

(a) Fissure-vein type — the most important economic type. It is associated with predominantly silicified zones (quartz veins and/or older volcanic 'centres') related to repeated, extensive block faulting and possible tensional fractures formed during late doming. Large and small-scale faulting were integral processes in the sequential development of calderas formed by progressive emplacement and subsequent collapse of different phases of composite magmas (batholiths). So far, no distinct superimposed complex zones have been identified as isolated calderas in the Toodoggone area. Many calderas have a moat structure around their periphery, which is infilled by lacustrine sedimentary and pyroclastic rocks, mainly volcanic ash, deposited penecontemporaneously in the moat. Local fanglomerate deposits form adjacent to the steeper walls away from tributary streams. In the Toodoggone area, recurrent faulting during crater building would guide intrusions and the soft lacustrine sedimentary rocks may have acted as an impermeable barrier to mineralizing solutions.

Principal ore minerals include fine-grained argentite, electrum, native gold, and native silver with minor amounts of chalcopyrite, galena, and sphalerite. Rare constituents include bornite, polybasite, stromeyerite, and secondary chalcocite and covellite. Gangue minerals include, in order of decreasing abundance: amethystine to white quartz, chalcedony, calcite, hematite, manganese oxide, and rare barite and fluorite. Deposits occur in the form of vein fillings, stockworks, irregular branching fissures, and large, recurrently brecciated fault zones. Common textures include comb structures, symmetrical banding, crustifications, and drusy cavities — all typical features of epithermal deposits formed at shallow depths and at low temperatures. Alteration is commonly restricted to vein systems [Chappelle (MI 94E-26), Lawyers (MI 94E-17), Metsantan Lake (MI 94E-35), McClair, Cliff Creek, Shas (MI 94E-50), Saunders (MI 94E-37)].

(b) Hydrothermally altered and mineralized type — associated with major fault zones and possibly after subsidence of volcanic centres followed by a doming of caldera cores. Pyrite is the most common sulphide present with minor amounts of galena and sphalerite and rare molybdenite and scheelite. This type is probably somewhat older or contemporaneous with fissure-type mineralization. Cauldron zones are strongly leached and sulfotaricaily altered to varying degrees to clay minerals and silica; some areas contain alunite (for example, Alberts Hump). Epidote is a common alteration mineral in both hydrothermal and fracture zones [for example, Kodah, Alberts Hump, Saunders (MI 94E-17), Chappelle (MI 94E-26), Oxide].

(c) Alteration generally associated with the precious and base metal epithermal is as follows:

(i) Epidotization and silicification in the vicinity of quartz veins,
(ii) Laumontite in fractures,
(iii) Extensive pyritization,
(iv) Anhydrite as veinlets and fractures up to 70 metres or more long,
(v) Hematization near surface, and
(vi) Carbonatization at depth.

(4) *Stratabound* (?) — galena±sphalerite±chalcopyrite occur in or adjacent to limestone with interbedded chert in Takla Group (?) volcanic agglomerates and tuffs. This type of deposit, which may have been deposited on the flank of a volcano adjacent to a limestone reef, usually has associated low-grade silver values [for example, Firesteel (MI 94E-2), Attycelley (MI 94E-22)].

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REPORT ON COPPER KING AND NAMERA IV PROPERTY

LOCATION

The COPPER KING and NAMERA IV claims are located approximately 50 kilometres north-northwest of the Sturdee River airstrip, Latitude 57°36'N, Longitude 127°16'W, NTS 94E/11W in the Liard Mining Division. The property lies between 1450 to 2000 metres elevation, 4 kilometres northwest of Claw Mtn. and 8 kilometres southwest of Mt. McNamera on the southwest side of a tributary of the Chukachida River. See Figure 2.

CLAIM STATUS

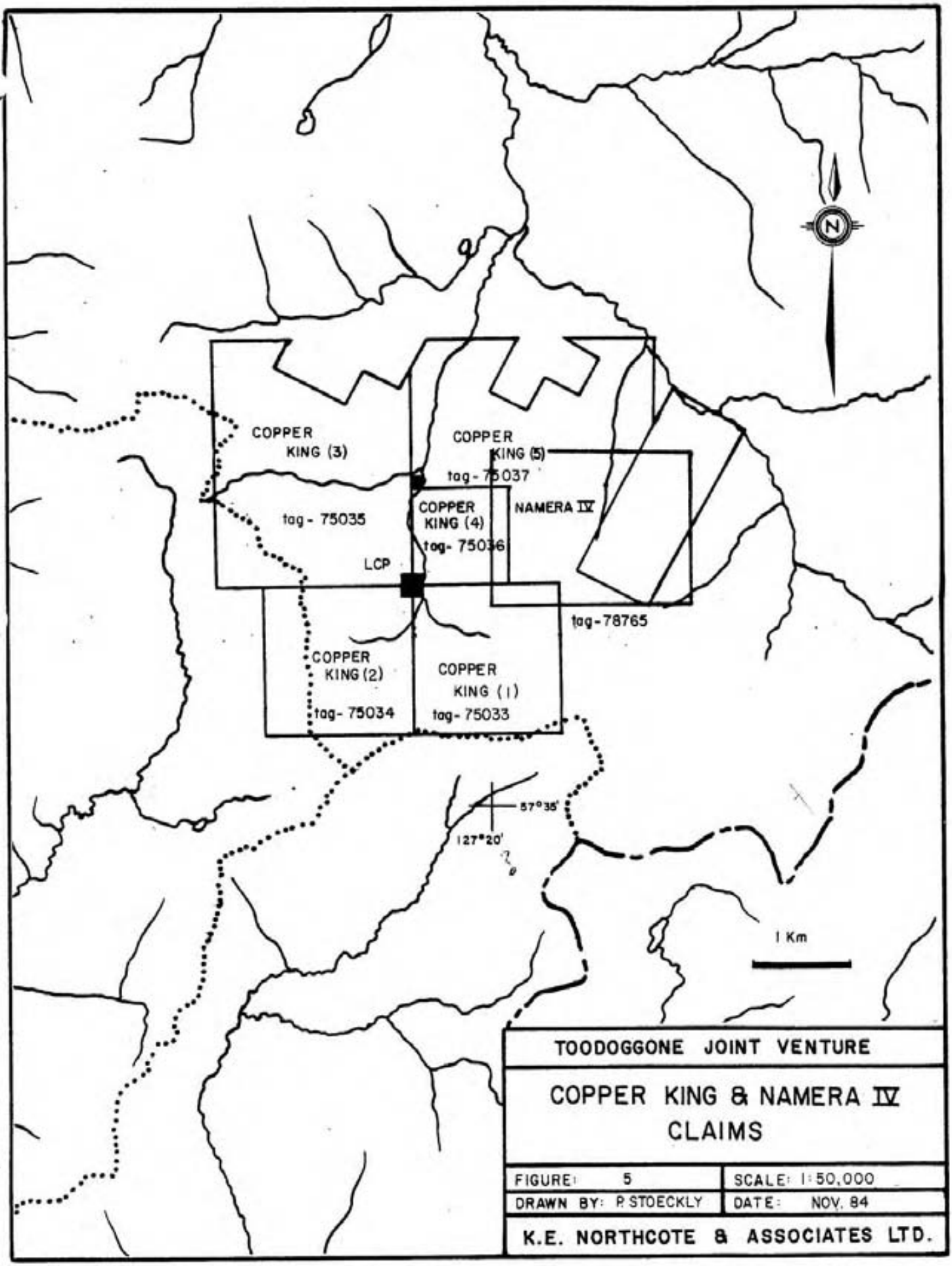
The COPPER KING and NAMERA IV claims are comprised of a total of 69 units. See Figure 5.

TABLE II

COPPER KING AND NAMERA IV CLAIMS

CLAIM	UNITS	TAG NO	RECORD NO	ANNIVERSARY DATE
COPPER KING 1	9	75033	2906	August 31, 1984
COPPER KING 2	9	75034	2907	August 31, 1984
COPPER KING 3	20	75035	2908	August 31, 1984
COPPER KING 4	4	75036	2909	August 31, 1984
COPPER KING 5	15	75037	2910	August 31, 1984
NAMERA IV	12	78765	2911	August 31, 1984

NAMERA IV partly overstakes CLAW 1,2,3,4,5 and 6. COPPER KING 5 may partly overstake CLAW 29 and 30 and COPPER KING 3 may partly overstake CLAW 26, 28. 30, 50 and 52. NAMERA IV claim is partly overlapped by COPPER KING 4 and 5.



TOODOGGONE JOINT VENTURE

COPPER KING & NAMERA IV CLAIMS

FIGURE: 5	SCALE: 1:50,000
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Legal Corner Post for COPPER KING 1, 2, 3 and 4 is located in a small tributary valley leading northerly to Chuckachida River at 1525 metres elevation 5.0 kilometres northwest of Claw Mtn. Legal Corner Post for COPPER KING 5 is located at 2N COPPER KING 3 and northwest corner post, 2N, of COPPER KING 4 claims. Legal Corner Post for NAMERA IV claim is located on nose of ridge 1675 metres elevation 3.75 kilometres north-northwest of Claw Mtn.

GEOLOGY

GEOLOGY OF THE COPPER KING AND NAMERA IV CLAIMS

The COPPER KING and NAMERA IV claims are underlain by Takla volcanics. See Figure 3, The main rock types are porphyritic andesite flows (and fragmentals) with conspicuous medium to coarse grained plagioclase phenocrysts in a fine-grained to aphanitic matrix. Flows containing coarse hornblende or augite with or without accompanying plagioclase phenocrysts also occur in the succession. In addition, hematitic flows and tuffs and lesser agglomerates were noted.

The volcanic sequence is intruded locally by fine to medium grained seriate to porphyritic syenite dykes and small plugs. In addition dark green to black fine-grained andesitic (?) dykes in varied attitudes are also common. No specific central intrusive area has been delineated.

Structure

The volcanic rocks are block faulted and exhibit northerly to easterly strikes with gentle to moderate westerly to northwesterly dips. Shearing is abundant generally trending easterly or southeasterly with steep dips.

Alteration

Most of the volcanic rocks exhibit pervasive weak to moderate (epidote-chlorite-pyrite) propylitic alteration. Shear zones commonly contain silica-carbonate-zeolite partial infilling and some shear zones appear to be partly filled by diffuse albite and K-spar which may show diffuse contacts impregnating the wall rock.

MINERALIZATION

Chalcocite-bornite-chalcopyrite-pyrite mineralization occurs within many early shear zones associated with hydrothermal alteration minerals. In addition strong disseminated chalcocite, bornite, chalcopyrite, lesser pyrite was noted in altered volcanics at a number of localities. Copper mineralization is evident by abundant secondary malachite and lesser azurite. Tetrahedrite requires confirmation by polished section.

Mineralization may ultimately be shown to be associated with syenite-diorite plutons which invade the Takla volcanic succession at a number of locations within the claims area. Mineralization commonly but not consistently occurs in close proximity to intrusives.

PREVIOUS WORK

In 1964, Canadian Superior Exploration Limited staked chalcocite-bornite mineralization in fractures in Takla andesite south of the Chukachida River. The mineralization was investigated by trenching in 1965 under a joint venture by Canadian Exploration, Canadian Superior and Asbestos Corporation. Kennco Explorations (Western) Ltd. staked the Nama and McNamera claims in this area in 1968 and carried out a program of prospecting and silt sampling. During this work a claim post was found with a carved date 1931.

Subsequently the area was restaked by Union Miniere Exploration Ltd. and geological, soil geochemical, magnetometer and diamond drilling programs were carried out from 1973 to 1975 with this work recorded in Assessment Reports #4745, 5230, 5242, 5635 and 5657.

PRESENT WORK

S.C. Gower, K,E, Northcote, geologists, and E.M. Thompson and B.K.Northcote assistants spent four days August 20 to 23, 1983 staking the COPPER KING and NAMERA IV claims. Upon completion of staking K.E. Northcote and B.K. Northcote carried out a reconnaissance geological, prospecting and rock sampling program on the Namera IV claim August 24 to 26th, 1983. Subsequently K.E. Northcote and B.K. Northcote returned to conduct a similar program covering all claims in the period August 11 to 27, 1984.

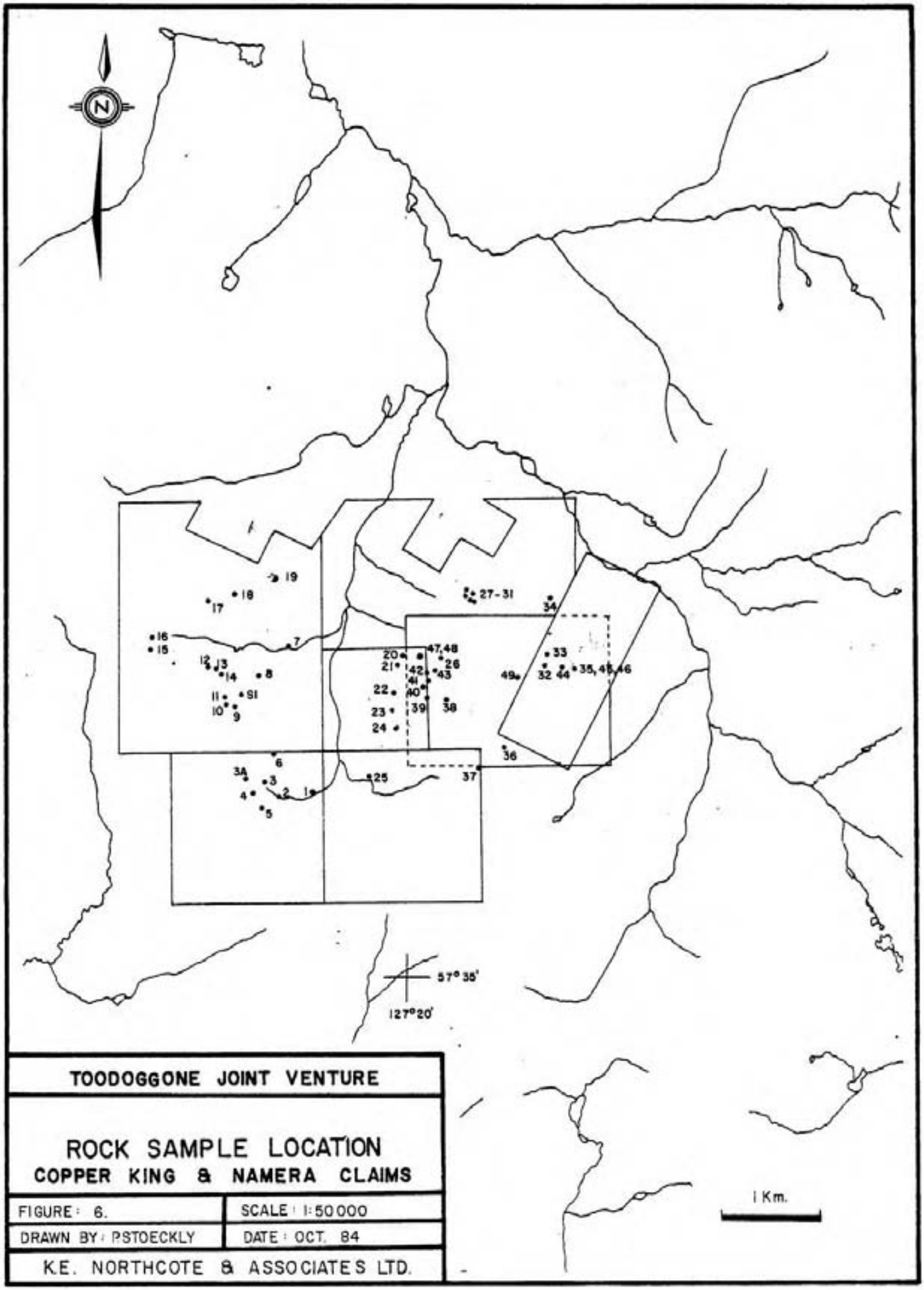
RESULTS

Twenty-two samples were sent for copper, gold and silver assays or geochemical analyses. The results of these analyses are listed in Table III Sample locations are shown on Figure 6, Sample descriptions form Appendix A and laboratory assay sheets are in Appendix B.

TABLE III

COPPER KING AND NAMERA IV ASSAYS, 1983

SAMPLE NO	CU%	AG PPM	AU PPB	DESCRIPTION
44 [20368]	1.487	34.0	15	Porphyritic andesite/crystal tuff, veined outcrop
45 [20369]	1.593	36.5	45	Tuff breccia, veined outcrop
46 [20370]	2.395	66.0	25	Tuff breccia, veined outcrop
47 [20371]	1.687	34.0	5	Epidotized breccia, float
48 [20372]	3.641	27.0	5	Epidotized breccia, float
49 [20373]	2.326	33.0	-5	Porphyritic andesite, veined outcrop



TOODOGGONE JOINT VENTURE

ROCK SAMPLE LOCATION
COPPER KING & NAMERA CLAIMS

FIGURE: 6.	SCALE: 1:50000
DRAWN BY: PSTOECKLY	DATE: OCT. 84

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COPPER KING AND NAMERA IV ASSAYS, 1984

SAMPLE NO	CU PPM	AG PPM	AU PPB	DESCRIPTION
			GEOCHEMISTRY	
84-CK-S-1	495	1.1	10	Silt
84-CK-4	17750	20.0	100	Porphyritic flow, copper mineralization outcrop
84-CK-8	28250	24.0	130	Volcanic breccia, copper mineralization Talus
84-CK-9	12250	11.4	10	Porphyritic flow, copper mineralization Talus
84-CK-20	54000	157.0	55	Volcanic breccia, cut by veinlets Talus
84-CK-25	440	1.6	45	Volcanic tuff breccia, and diorite, disseminated pyrite, magnetite Outcrop chip samples.
84-CK-37	13250	13.1	160	Volcanic tuff breccia, disseminated copper mineralization Talus

			ASSAY	
SAMPLE NO	CU %	AG oz/ton	AU oz/ton	
84-CK-19	3.520	1.99	0.001	Volcanic flow, copper and iron mineralization Chip
84-CK-21	23.500	6.27	0.001	Volcanic breccia hematitic, diffuse vein systems, copper mineralization Outcrop
84-CK-27	5.140	2.04	0.001	Brecciated tuff-breccia, hematitic Outcrop. Epidotized. Blebs of copper mineralization outcrop
84-CK-28	3.520	1.99	0.001	Volcanic tuff breccia, disseminated copper mineralization Outcrop
84-CK-30	1.350	0.41	0.001	Volcanic tuff breccia, disseminated copper mineralization. Outcrop
84-CK-31	3.960	1.41	0.008	Volcanic lithic (tuff) breccia, copper mineralization Outcrop
84-CK-32	4.250	11.67	0.001	Volcanic lithic breccia, disseminated pyrite, copper mineralization Outcrop
84-CK-35	8.200	7.58	0.006	Volcanic tuff breccia, disseminated copper mineralization. Trenches on shoulder of ridge chip samples
84-CK-43	6.780	2.92	0.001	Porphyritic flow/crystal tuff, disseminated copper mineralization Float.

REPORT ON EXPLORATION DURING

1983 AND 1984 ON THE

COPPER KING - NAMERA IV CLAIMS

SUMMARY FOR GEOLOGY EXPLORATION AND MINING 1984

by K.E. Northcote

CLAIMS Copper King 1 to 5 and Namera IV totalling 69 units

LOCATION Approximately 50 kilometres north-northwest of the Sturdee River airstrip, latitude 57°36'N, longitude 127°16'W, NTS 94E/11W in Liard M.D. The property lies between 1450 and 2000 metres elevation, 4 kilometres southwest of Mt. McNamera on the southwest side of a tributary of the Chukachida River.

GEOLOGY The claims are underlain by Takla volcanics which are composed of porphyritic andesite flows and pyroclastics. In addition hematitic flows and tuffs and lesser agglomerates were noted.

The volcanic sequence is intruded locally by fine to medium-grained seriate to porphritic syenite dykes and small plugs. In addition dark green to black fine-grained andesitic (?) dykes in varied attitudes are also common. No specific central intrusive area has been delineated on the claims.

The volcanic rocks are block faulted and exhibit northerly to easterly strikes with gentle to moderate westerly to northwesterly dips. Shearing is abundant generally trending easterly or southeasterly with steep dips.

Most of the volcanic rocks exhibit pervasive weak to moderate propylitic alteration. Shear zones commonly contain silica-carbonate-zeolite partial infilling and some shear zones appear to be partly filled by diffuse albite and K-spar which may impregnate the wall rock.

Chalcocite-bornite-chalcopyrite-pyrite-tetrahedrite(?) occurs in shear zones associated with quartz, carbonate, (zeolite) gangue. In addition strong disseminated chalcocite, bornite, chalcopyrite and lesser pyrite was noted in altered volcanics at a number of localities.

WORK DONE 1983,1984 Reconnaissance geological, prospecting and rock sampling programs were carried out on all claims. The results of this work are reported in Assessment Report #_____.

COMMODITIES Cu, Ag.

The assays listed in Table III are from chip samples taken from outcrops or trenches where possible. Mineralized material in talus was sampled below zones of mineralization in cliffs. Sampling and prospecting of outcrops in these hazardous areas will require the services of professsional climbers.

Geochemical and assay values range from 0.04% to 23% Cu, 1.6 ppm to 11.67 oz Ag/ton, and 10 ppb to 0.008 oz Au/ton. The samples in most cases, are not representative of true values across measured widths. Many of the assays are from mineralized material in talus or poorly exposed outcrops which require trenching. The samples were collected primarily to ascertain presence or absence of significant gold and silver values accompanying copper mineralization.

NAMERA IV CLAIM

Chip samples 35, 44, 45, 46 are from mineralized material from a series of quartz, carbonate, copper, silver-bearing veins on Namera IV. The veins are generally wide-spaced, one to several metres apart and are generally less than 1 to 5 cms in width, The veins have varied attitudes generally with gentle north and east dips and showing thin cross veining at steeper angles, 125°/80°NE. Values obtained from these samples range from 1.5% to 8.2% Cu, 1 to 7 oz Ag/ton and negligible Au.

Samples 43, 47, 48 represent strongly altered (epidotized) mineralized float abundantly mineralized by disseminations and veinlets of chalcocite bornite and tetrahedrite (?). This material gave values ranging from 1.7 to 6.8% Cu, 1.0 to 7.58 oz Ag/ton and 5 ppb to 0.006 oz Au/ton. The source of this material was not located

Sample 49 represents mineralized chips from a veined outcrop on the valley floor. The veining is diffuse in chloritic, epidotized, porphyritic volcanic rock. Secondary malachite coats fracture surfaces and masks vein structures. This sample produced values of 2.3% Cu, approximately 1 oz Ag/ton and

negligible Au.

Sample 32 represents chip samples from a small blasted pit area low on the east side of the valley. Chips show copper staining on fracture surfaces but gave very high values of 4.3% Cu, 11.67 oz Ag/ton and 0.006 oz Au/ton.

COPPER KING 4 CLAIM

Sample 21 represents a sample from a lens of chalcocite 2cm wide and approximately 0.5 m long from a discontinuous vein, attititude 140°/V. This sample ran 23.5% Cu, 6.27 oz Ag/ton and negligible Au.

Sample 20 is from mineralized epidotized and hematized flows and breccia blocks in talus in a cirque on the east side of KING 4 claim. This sample gave greater than 5% Cu, 4.50 oz Ag/ton and negligible gold. The source of this material was not found.

COPPER KING 5 CLAIM

Samples 27, 28, 30, 31 are chip samples across 0.25 to 0.30 metres from localized close spaced veins within a 8 to 10 metre wide zone extending for an estimated 100 to 150 metres containing copper staining. The zone trends 125° and veins within it have approximate attitude 120-125/65NE. Values range from 1.35 to 5.14% Cu, o.41 to 2.04 oz Ag/ton and 0.001 to 0.008 oz Au/ton.

COPPER KING 3 CLAIM

Sample 19 is from a trenched area in a criss-crossing network of very narrow chalcocite-malachite veinlets. It is not known how far up and down slope the mineralization persists but copper staining occurs throughout the length

of about 30 metres of trench along the contour. Sample 19 is a chip sample from across approximately 1.0 metres from the trench and gave values 3.5% Cu 1.99 oz Ag/ton, and negligible Au.

CONCLUSIONS

Reconnaissance of the COPPER KING-NAMERA IV claims resulted in delineation of a number of wedespread areas containing copper and silver mineralization in vein-fracture systems and disseminations in altered country rock. The presence of other zones in cliffs is indicated by mineralized blocks of talus. Investigation of these probable new zones requires prospecting and sampling by experienced climbers.

The copper-silver values reported here are not representative of mining widths. Significant gold values were not obtained from any of the samples taken from widespread locations on the claims.

No accurate measurement can be made of tonnage and grade of material as a result of this preliminary sampling program and no prediction can be given with any certainty of tonnage and grade that would be found by continuing exploration. There is good probability for locating a number of close-spaced mineralized vein-fracture systems or alteration zones of several thousand (10,000 to 50,000) tonnes each. A reasonable grade that might be anticipated would be in the order of 0.5 to 1% Cu and 0.5 to 2 oz Ag/ton. The remoteness of the area makes the economics of such an operation unattractive in view of the presently low metal prices. Further potential of this property is therefore dependant upon improved metal prices and accessibility.

RECOMMENDATIONS

It is recommended that key claims be kept in good standing pending significant improvement in metal prices. Assessment work should consist of continuing

geologic mapping, trenching by hand and blasting and sampling true widths of the larger and better mineralized structures.

CERTIFICATE

I, Kenneth E. Northcote of 2346 Ashton Road, R.R. #1, Agassiz, B.C. do hereby certify that:

1] I have been practising as a professional geologist for a period of approximately 25 years for petroleum exploration companies, mining exploration and consulting companies, federal and provincial agencies.

2] I obtained a Ph.D. in geology from U.B.C. in 1968 and qualified for registration with the Association of Professional Engineers of B.C. in 1967.

3] This report is based on geological reconnaissance and sampling by K.E. Northcote geologist and B.K. Northcote assistant in the period August 24 to 26, 1983 and August 11 to 26, 1984 and on analyses of samples assayed at MIN-EN Laboratories. In addition available reports and data from earlier programs were utilized and listed in References.

4] I am an officer of Western Horizons Resources Ltd. which company owns an interest in COPPER KING 1-5 and NAMERA IV claims.

Nov 5/84

K.E. Northcote Ph.D.,P.Eng.

APPENDIX A

SAMPLE DESCRIPTIONS COPPER KING NAMERA IV CLAIMS 1983, 1984

1. Samples for Assay
2. Samples for Petrography

COPPER KING-NAMERA IV

SAMPLE DESCRIPTIONS

83 K 501

501-I Porphyritic andesite flow breccia, plagioclase fragments/ phenocrysts in an aphanitic matrix. Epidote chlorite alteration. Small quartz-carbonate veinlets (matrix contains carbonate as well) Mineralization; disseminated pyrite, chalcocite (hematite) chalcopyrite.

501-II Tuff breccia; altered, mineralized. Irregular drusy zones and quartz veinlets. Malachite crystals in vugs. Fracture fillings and irregular dissemination of chalcopyrite, chalcocite, bornite and pyrite.
Scattered jarosite-filled pits.

501-III Tuff/tuff breccia, light creamy pink color, scattered coarse crystals or fragments. Late crackle breccia. Irregular quartz veinlets and segregations.

501-IV Tuff/tuff breccia
Similar to 501-III with more abundant feldspar crystals and crystal fragments. Irregular quartz grains and fragments. Fractures filled by black chlorite, quartz and copper mineralization.

501-V Tuff/tuff breccia similar to 501-III containing an irregular quartz-carbonate vein (to 3cm) with some copper mineralization and copper staining.

83 K 502 Tuff breccia, altered [chlorite-(epidote)] disseminated crystal fragments. Layered appearance as a result of shearing. Some quartz-carbonate infilling, disrupted quartz veins, with chalcocite bornite mineralization. Disseminated chalcocite-bornite-chalcopyrite. Malachite staining on fractures. Jarositic pits.

83 K 503 Tuff breccia mineralized as for 502. Siliceous impregnation. Jarositic pits

83 K 504 A Altered volcanic; strongly altered epidotized sericitic groundmass mottled by aggregates of chalcocite, hematite (reddish streak) mineralization. Some copper and iron staining. Some of the black aggregate appears micaceous.

83 K 504 B (4 samples)

504-I Breccia, altered volcanic fragments, very fine granular epidotized and hematized (?) fragments with breccia matrix infilling and irregular veining by black chloritic material, carbonate and sericite, (minor silica).

504-II Altered volcanic breccia, chloritic, (sericitic) epidotized, disseminated pyrite. Later brecciation partly filled by carbonate.

504-III Altered volcanic breccia; sericitic, epidotized, chloritic, mottled appearance. Flecked by clay (?) filled pits Disseminated bornite and chalcopyrite and as minute discontinuous fracture fillings

504-IV Altered volcanic; fine granular, epidotized sericitic (chloritic) mottled by aggregates of bornite and chalcocite mineralization.

83 K 504 C

504-I Volcanic flow, amygdaloidal, weak porphyritic basalt. Bright green epidote amygdules. Disseminated plagioclase phenocrysts to 1 cm in a dark grey-brown aphanitic matrix. Some carbonate in matrix

504-II Volcanic flow; porphyritic, disseminated and aggregates of coarse plagioclase phenocrysts to 2 cm in a medium grey aphanitic matrix.

504-III Porphyritic basalt lamprophyre, coarse hornblende phenocrysts to greater than 2 cm in a dark grey to black aphanitic matrix. Less conspicuous smaller plagioclase phenocrysts. Carbonate in matrix.

83 K 505 Syenite porphyry, plagioclase-hornblende (biotite aggregates) phenocrysts 2 to 4 mm (hornblende, generally coarser than plagioclase) in a fine grained pinkish K-spar-rich matrix. Quartz not conspicuous. Disseminated pyrite. Unaltered.

83 K 506 (3 samples)

506-I Porphyritic syenite, plagioclase phenocrysts to 3 mm pinkish coloration partly result of staining. Fine grained K-spar and mafic matrix. Quartz not conspicuous.

506-II Hematitic volcanic flow breccia. Cut surface clearly shows fragmental nature. Lithic fragments of hematitic slightly porphyritic and slightly amygdaloidal fragments in a fine tuffaceous groundmass of similar hematitic material.

83 K-506-III	Porphyritic andesite, coarse plagioclase phenocrysts to 2 cm and hornblende-augite to 3 mm in an aphanitic medium grey-brown matrix.
83 K 507	(3 specimens)
507-I	Brecciated massive and porphyritic andesite volcanic; crushed with irregular fracture system filled by carbonate. Some disseminated chalcopyrite and bornite associated with veining
507-II	Fine fragmental volcanic, medium green grey vesicular texture chloritic.
507-III	Fine fragmental tuff breccia, dark to medium green-grey mottling because of brecciation. Lithic fragments to 2 cm.
83 K 508	Camp showing. Mineralized porphyritic andesite; coarse prismatic chloritized hornblende phenocrysts to 1 cm, lesser plagioclase. Carbonate in veinlets and partly replacing mafics. Epidotized matrix. Diffuse chalcocite mineralization along irregular fractures

COPPER KING NAMERA IV CLAIMS

SAMPLE DESCRIPTIONS 1984

84CK-3	Porphyritic volcanic, epidotized matrix, pinkish and cream feldspar phenocrysts, some altered to epidote. Secondary biotite. Widely scattered flecks malachite, and on fracture surfaces, some chalcocite in fractures,hairline to 2 to 3 mm. Talus
84CK-3A	Volcanic flow, medium/dark grey, epidotized slightly porphyritic, malachite staining on some fracture surfaces, iron staining on others traces chalcocite. Sericite and carbonate fracture fillings Talus
84CK-3B	Volcanic flow, light/medium grey, weak porphyritic secondary biotite. Epidote alteration. Manganese, hematite and malachite stain on fracture surfaces, traces chalcocite. Talus
	Volcanic flow, purplish grey, aphanitic matrix, porphyritic plagioclase and chloritic mafic. Malachite, carbonate and zeolites. Talus
84CK-4	Volcanic flow, porphyritic, epidotized, brecciated plagioclase and mafic phenocrysts, secondary biotite. Malachite and carbonate, minor chalcocite in fractures. Diffuse chalcocite in veinlets and as blebs in breccia matrix. Outcrop.
84CK-5	Volcanic flow/breccia, porphyritic, epidotized chloritic, disseminated pyrite and in fractures Iron-stained Talus
84CK-8	Volcanic breccia, porphyritic, epidotized plagioclase and mafic phenocrysts, brecciated, hematitic fragments. Malachite, chalcocite, carbonate and zeolite (?) in fractures and on fracture surfaces. Talus
84CK-9	Volcanic flow, porphyritic, epidotized/chloritic plagioclase and mafic phenocrysts, Malachite stain on fracture surfaces flecked by chalcocite. Cut by carbonate veinlets, flecks of chalcocite. Diffuse veinlets hematite and disseminated flecks in matrix. Talus
84CK-10	Volcanic flow, porphyritic, epidotized/chloritic, plagioclase and mafic in a fine groundmass. Hematite in fractures, some carbonate and malachite coating fracture surfaces. Sericite blebs. Talus
84CK-11	Porphyritic flow, coarse plagioclase phenocrysts in a purplish grey hematitic aphanitic matrix, epidote blebs. Widely scattered chalcocite blebs. Fractures filled or coated with malachite, chalcocite. Talus

84CK-12 Flow breccia (?), porphyritc, maedium-grained phenocrysts in a fine biotitic matrix, epidote/chlorite alteration. Late fracture filled with carbonate. Blebs and diffuse veinlets of chalcocite Veins carbonate containing chalcocite and malachite. Talus

84CK-13 Volcanic flow, porphyritic, fine medium grey matrix. Carbonate, zeolite (?) malachite on fracture surfaces, traces hematite. Scattered chalcocite fracture fillings. Outcrop

84CK-16 Syenite, porphyritic, fine/medium plagioclase phenocrysts in a fine grained pinkish red matrix, disseminated chloritic/epidotized/sericitic mafic clots aggregates of very fine grains. Quartz not conspicuous Outcrop

84CK-18 Sheared volcanic, medium grey, very fine-grained, scattered hematitic fragments, fracture surfaces coated with carbonate and waxy green talcose (?) material. Talus

84CK-19 Volcanic flow, weak porphyritic, medium-grained, plagioclase phenocrysts in a very fine purplish grey matrix, chloritic, hematitic. Fractures filled with hematite and minor chalcocite malachite stain. Chip samples from trench

84CK-20 (a) Volcanic breccia, red and purplish red, breccia fragments to several cms made up of granules, dense. Cut by siliceous and carbonate veins. Local K-spar impregnations. Talus

(b) Volcanic breccia, epidotized breccia fragments in a calcareous, hematitic matrix. Carbonate veins and carbonate in matrix and fragments. Talus

84CK-21 Volcanic breccia, hematitic, purplish red, porphyritic, plagioclase and mafics, carbonate in matrix and in veins. Hematitic coloration of matrix and disseminated metallic hematite blebs. Mineralization, diffuse vein systems, chalcocite and malachite. Volcanic breccia, epidotized and hematitic,sericitic. Outcrop

84CK-24 (a) Volcanic, porphyritic, medium grey weakly chloritic, epidotized. Chalcocite hematite and malachite in fractures Talus

(b) Volcanic,lapilli tuff, chloritic, epidotized Malachite, carbonate, green earthy mineral (?) in fractures and on fracture surfaces. Traces azurite. Possible tetrahedrite ?, pyrrhotite. Talus

84CK-25 (a) Volcanic tuff breccia, chloritic, epidotized abundant/scattered pyrite blebs. Disseminated magnetite. Iron staining Outcrop

(b) Diorite, light cream, slightly salt and pepper, medium grained porphyritic, fine matrix, leucocratic, -10% mafic altered to chlorite and sericite. Quartz not conspicuous. Disseminated pyrite, diffuse aggregates. Iron-stained Outcrop

84CK-26 Volcanic tuff breccia, chloritic, epidotized Appears to contain plutonic fragments. Minute hematite veinlets with some chalcocite. Malachite associated with chalcocite blebs. Outcrop

84CK-27 Brecciated tuff breccia, polymictic volcanic breccia chloritic, epidotized, hematitic, sericite (talc?). Matrix pale yellow-cream, fine granular. Scattered blebs chalcocite in epidotized, chloritized, volcanic breccia fragments Outcrop

84CK-28 Volcanic tuff breccia, graphic texture of angular platy shards now chlorite/serpentine dark green color with pale cream-grey mottled fragments some hematitic fragments most less than 5 to 15 mm in a pale cream "dusty" matrix very low matrix to fragment ratio. Some hematite. Siliceous veining associated hematite. Disseminated blebs chalcocite (with hematite) malachite. Note-chlorite/serpentine fragments outlined by pale cream and as discontinuous irregular partings Outcrop

84CK-29 As for CK-28 Outcrop

84CK-30 As for CK-28 Hematitic zones in matrix both showing sharp boundaries and gradational with chlorite-epidote-rich. Diffuse siliceous systems containing disseminated blebs of chalcocite. Outcrop

Note: Malachite staining suggests exaggerated primary mineralization not confirmed by cut surfaces.

84CK-31 Volcanic lithic (tuff) breccia, polymictic chlorite and (epidote) alteration, scattered hematitic. Few diffuse irregular discontinuous chalcocite partings associated with malachite, chalcocite blebs Hematite grains Late brecciation matrix filled with carbonate Outcrop

84CK-32 Volcanic lithic breccia, chlorite, sericite, (epidote) alteration. Disseminated pyrite chalcopyrite (chalcocite) in matrix and lesser amounts in lithic fragments. Malachite stain. Iron stain Outcrop Bedding 145°/25°NE

84CK-33 (a) Volcanic tuff/tuff breccia. Ghost-like crystal and fragment outlines. Epidotized, chloritic sericite mottled shades of green and flesh color. White clay-like crystal outlines. Irregular discontinuous fractures containing chalcopyrite, pyrite, chalcocite, malachite, hematite. Fine disseminated pyrite, chalcopyrite, chalcocite. Outcrop

(b) Volcanic tuff/tuff breccia; epidote, chlorite, sericite. Traces of chalcocite and chalcopyrite blebs disseminated in matrix. Small siliceous veinlets. Strong malachite staining on fracture surfaces. Outcrop

84CK-35 Volcanic tuff breccia; silicified diffuse chloritic, epidotized, disseminated chalcocite bornite, chalcopyrite, (pyrite) and in

-35 (cont) irregular discontinuous veinlets and partings. Quartz fragments ? or late breccia infilling Trenches on shoulder of ridge.

84CK-36 Volcanic tuff breccia/flow breccia epidotized, chloritic; granular siliceous veinlets and partings. Disseminated chalcopyrite, chalcocite and in veinlets and associated with siliceous veinlets. Talus

84CK-37 Volcanic tuff breccia, chloritic, epidotized, siliceous, calcareous impregnation, disseminated chalcopyrite, bornite, and as irregular disrupted partings. Talus

84CK-38 Volcanic tuff breccia, hematitic, epidotized, epidotized, chloritic, siliceous, carbonatized, rebrecciated with epidotized, carbonatized, siliceous matrix. Carbonate, epidote veinlets. Float

84CK-39 (a) Volcanic crystal tuff breccia/flow chloritic epidotized, scattered hematitic lithic fragments. Sericitic Disseminated chalcopyrite pyrite. Talus

(b) Ankeritic replacement in altered volcanic tuff breccia. Widely disseminated, pyrite, chalcopyrite. Talus

(c) Porphyritic volcanic, hematitic, lithic fragmental texture. Carbonate, epidote and hematitic material in matrix. Talus

84CK-40 Volcanic crystal tuff/flow, crystals preferred orientation altered very fine granular, brecciated, sericitic breccia infilling, blebs of chloritic aggregates. Sparsely disseminated chalcocite-bornite along fractures. Talus plus outcrop

84CK-42 (a) Volcanic crystal tuff/flow; brecciated, altered, epidotized, chloritic. Carbonate and chlorite matrix infilling of late fractures. Locally hematitic. Quartz, carbonate gash veinlet infilling. Talus and outcrop

(b) Volcanic porphyritic flow, chloritic pseudomorphs after mafics, altered plagioclase phenocrysts, preferred orientation. Some disseminated chalcocite (?) Talus and outcrop.

84CK-43 Volcanic porphyritic andesite flow/crystal tuff? very fine granular matrix with chloritic and epidotized pseudomorphs after mafics and plagioclase. Matrix epidotized. Some disseminated chalcocite, native copper and in veinlets. Possible tetrahedrite. Float.

APPENDIX B

COPPER KING NAMERA IV CLAIMS

ASSAYS AND GEOCHEMICAL ANALYSES

MIN-EN Laboratories Ltd.

705 WEST 15th STREET,
NORTH VANCOUVER, B.C., CANADA V7M 1T2
TELEPHONE (604) 980-5814

ANALYTICAL REPORT

Project Toodoggone (J.V.). Date of report Nov.22/83.

File No. 3-1411 Date samples received Nov.16/83.

Samples submitted by: K.Northcote

Company: Western Horizons

Report on: 7 rock (assay prep) Geochem samples

6 Assay samples

Copies sent to:

1. Western Horizons, Agassiz, B.C.
2.
3.

Samples: Sieved to mesh Ground to mesh -100

Prepared samples stored ☒ discarded ☐

rejects stored ☒ discarded ☐

Methods of analysis: Assay Cu-Acid digestion-chemical analysis.

Geochem Ag-nitric,perchloric digestion.A.A., Au-aqua regia. A.A.

Remarks:

MIN-EN LABORATORIES LTD.
705 WEST 15TH STREET, NORTH VANCOUVER, B.C. V7M 1T2
PHONE: (604) 980-5814 OR (604) 988-4524

Certificate of Assay

TO: Western Horizon Resources

2346 Ashton Road RR#1

Agassiz, B.C.

PROJECT No. Toodoggone (J.V.)

DATE: Nov. 22/83.

File No. 3-1411

SAMPLE No.	Cu %					
20368	1.487					
69	1.593					
70	2.395					
71	1.687					
72	3.641					
20373	2.326					

MINE-EN Laboratories Ltd.

CERTIFIED BY:

COMPANY: Western Horizon Res.

PROJECT #: Doodoggone (J.V.)

ATTENTION: K. Nathcote

GEOCHEMICAL ANALYSIS DATA SHEET

MIN-EN Laboratories Ltd.

[illegible] PHONE (604) 980-5814

No. 3-1411

DATE: Nov. 22, 1983.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
20367	[illegible]	[illegible]					2480					1150
68	83 K 501						340					15
69	83 K 502						365					45
70	83 K 503						660					25
71	83 K 504						340					5
72	83 K 505						270					5
20373	83 K 508						330					<5

*some of these samples should have been requested for assay.

MIN-EN Laboratories Ltd.

705 WEST 15th STREET,
NORTH VANCOUVER, B.C., CANADA V7M 1T2
TELEPHONE (604) 980-5814

ANALYTICAL REPORT

Project 84-11 Date of report Oct.18/84.

File No. 4-1246 Date samples received Oct.15/84.

Samples submitted by:

Company: K.E. Northcote & Assoc.

Report on: 1 silt, 6 rock assay prep Geochem samples

9 Assay samples

Copies sent to:

1. K.E. Northcote, Agassiz, B.C.
2.
3.

Samples: Sieved to mesh -80 silt Ground to mesh -100 rocks

Prepared samples stored ☒ discarded ☐

rejects stored ☒ discarded ☐

Methods of analysis: Geochem Cu,Ag-nitric,perchloric digestion.A.A., Au-aqua regia,A.A., Assays Cu,Ag-Acid digestion-chemical analysis. Au-fire.

Remarks:

MIN-EN Laboratories Ltd.
Specialists in Mineral Environments
705 WEST 15th STREET NORTH VANCOUVER, B.C. CANADA V7M 1T2

IE: (604) 980-5814 OR (604) 988-4524 TELEX: 04-352828

CERTIFICATE OF ASSAY

COMPANY: K.E. NORTHCOTE & ASSOC.
PROJECT: 84-11
ATTENTION: K.E. NORTHCOTE

FILE: 4-1246
DATE: OCT. 17/84
TYPE: ROCK ASSAY

We hereby certify that the following are assay results for samples submitted.

SAMPLE NUMBER	AG G/TONNE	AG OZ/TON	AU G/TONNE	AU OZ/TON	CU %
84-CK-19	68.2	1.99	.01	0.001	3.520
84-CK-21	215.0	6.27	.01	0.001	23.500
84-CK-27	70.0	2.04	.01	0.001	5.140
84-CK-28	68.4	1.99	.01	0.001	3.520
84-CK-30	14.2	0.41	.01	0.001	1.350
84-CK-31	48.4	1.41	.28	0.008	3.960
84-CK-32	400.0	11.67	.02	0.001	4.250
84-CK-35	260.0	7.58	.21	0.006	8.200
84-CK-43	100.0	2.92	.01	0.001	6.780

Certified by

MIN-EN LABORATORIES LTD.

MIN-EN Laboratories Ltd.
Specialists in Mineral Environments
705 WEST 15th STREET NORTH VANCOUVER, B.C. CANADA V7M 1T2

E: (604) 980-5814 OR (604) 988-4524 TELEX: 04-352828

GEOCHEMICAL ANALYSIS CERTIFICATE

COMPANY: K.E. NORTHCOTE & ASSOC.
PROJECT: 84-11
ATTENTION: K.E. NORTHCOTE

FILE: 4-1246
DATE: OCT. 18/84
TYPE: ROCK GEOCHEM

We hereby certify that the following are the results of the geochemical analysis made on 6 samples submitted.

SAMPLE NUMBER	CU PPM	AG PPM	AU PPB
84-CK-4	17750	20.0	100
8	28250	24.0	130
9	12250	11.4	10
20	54000	157.0	55
25	440	1.6	45
84-CK-37	13250	13.1	160

SOME OF THESE SAMPLES SHOULD HAVE BEEN REQUESTED FOR ASSAY.

Certified by _____

MIN-EN Laboratories Ltd.
Specialists in Mineral Environments
705 WEST 15th STREET NORTH VANCOUVER, B.C. CANADA V7M 1T2

PHONE: (604)980-5814 OR (604)988-4524 TELEX: 04-352828

GEOCHEMICAL ANALYSIS CERTIFICATE

COMPANY: K.E. NORTHCOTE & ASSOC.
PROJECT: 84-11
ATTENTION: K.E.NORTHCOTE

FILE: 4-1246
DATE: OCT. 18/84
TYPE: SILT GEOCHEM

We hereby certify that the following are the results of the geochemical analysis made on 1 samples submitted.

SAMPLE NUMBER	CU PPM	AG PPM	AU PPB
84-CK-S-1	495	1.1	10

Certified by Ian Ma...

APPENDIX C

BREAKDOWN OF COST PER CLAIM

1983 & 1984

1983 COSTS

(Work done upon completion of staking of claims) August 24 August 26 1983

NAMERA IV (12 units)

PROFESSIONAL FEES			
K.E. Northcote	$250.	2 days	$ 600.00
B.K. Northcote	50.	2 days	
ASSAYS @ 22.00		6 samples	132.00
PETROGRAPHIC DESCRIPTIONS AND CUTTING @ 10.00		25	250.00
REPORT			N/A
Preparation			
Typing			
Draughting			
Reproduction			
ACCOMMODATION			
Camp and food		2 days	
30.00 + 25.00 x 2/day		2 persons	160.00
TRANSPORTATION			
Vehicle		porportionate	160.00
Fixed Wing		"	215.00
Helicopter	1 hour (move out only)		550.00
TOTAL			$2 067.00

1983 & 1984 COSTS

COPPER KING 3		COPPER KING 4		COPPER KING 5		NAMERA IV	
[2908(8)]	20 units		4 units		15 units		12 units
4.5 days	$1 417.50	1 day	$ 315.00	3 days	$ 945.00	3.5 days	$1 102.50
4	88.00	2	44.00	4	88.00	3	66.00
9	90.00	3	30.00	5	50.00	14	140.00
4.5	360.00	1	80.00	3	240.00	3.5	280.00
	175.00		40.00		140.00		125.00
	250.00		63.00		185.00		138.00
1.5hr.	825.00	1/4 hr	137.00	.6hr	325.00	.5hr	259.00
	400.00		50.00		335.00		305.00
	$3 605.50		$ 759.00		$2 308.00	work done'84	$2 415.50
withdraw PAC	394.50	withdrawPAC	41.00	withdraw PAC	692.00	work done'83	2 067.00
						Total	4 482.50
						Place in PAC	2 082.50
	$4 000.00		$ 800.00		$3 000.00	Balance	$2 400.00
To Cover Copper King 3 until August 31, 1986		To cover Copper King 4 until August 31, 1986		To cover Copper King 5 until August 31, 1986		To cover Namera IV until August 31, 1986	

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
K.E. NORTHCOTE

1983 & 1984 COSTS

ITEM	TOTAL PROJECT		COPPER KING 1		COPPER KING 2	
	Quantity	Cost	[2906(8)] 9 units		[2907(8)] 9 units	
PROFESSIONAL FEES						
K.E. Northcote 250						
B.K. Northcote 65	17 days	$5 355.00	2 days	$ 630.00	3 days	$ 945.00
ASSAYS						
@ 22.00 each	16	352.00	2 samples	44.00	1 sample	22.00
PETROGRAPHIC DESCRIP. AND CUTTING @ 10	38	380.00	2 samples	20.00	5 samples	50.00
ACCOMMODATION						
Camp 30/day	17 days	1 360.00	2 days	160.00	3 days	240.00
Food 25/day/person	2 persons					
TRANSPORTATION						
Vehicle @ .40/mi	1600 miles	640.00		80.00		80.00
Fixed Wing		860.00		112.00		112.00
Helicopter	3.8 hrs	2 090.00	½ hr.	272.00	½ hr.	272.00
REPORT PREPARATION						
Preparation @ 250	5 days	1 250.00				
Typing						
Draughting		260.00		210.00		210.00
Reproduction						
	1984	12 547.00		1 528.00		1 931.00
	1983	2 067.00	Withdraw PAC	272.00	Place in PAC	131.00
	G. Total	14 614.00		1 800.00		1 800.00
			To cover Copper King 1 until August 31, 1986		To cover Copper King 2 until August 31, 1986