ARIS SUMMARY SHEET

District Geologist, Prince George | Off Confidential: 89.09.02

ASSESSMENT REPORT 18073 | MINING DIVISION: Omineca

PROPERTY: Skook
LOCATION: LAT 55 12 00 LONG 124 30 00
UTM 10 6117858 404525
NTS 093N01W 093N02E
CLAIM(S): Skook 3-4,Skook 6
OPERATOR(S): Nation River Res.
AUTHOR(S): Campbell, C.J.
REPORT YEAR: 1988, 52 Pages
COMMODITIES
SEARCHED FOR: Copper,Gold,Silver
GEOLOGICAL
SUMMARY: The property covers the southern margin of the Hogem batholith which has intruded Takla volcanics and sediments north of Chuchi Lake. Gold, copper and silver values are found in silicified zones associated with alkalic hypabyssal rocks near the centre of the property. Chip samples across 1 metre returned up to 4.3 ppm gold and 53 ppm silver.

WORK
DONE: Geological,Geochemical
GEOL 1625.0 ha
Map(s) - 1; Scale(s) - 1:5000
LINE 7.5 km
PETR 9 sample(s)
ROCK 99 sample(s) ;ME
Map(s) - 3; Scale(s) - 1:2500
SOIL 173 sample(s) ;ME
Map(s) - 3; Scale(s) - 1:2500

MINFILE: 093N 140

PRELIMINARY GEOCHEMICAL & GEOLOGICAL REPORT on the SKOOK 3-6 MINERAL CLAIMS

OMINECA MINING DIVISION

NTS 93N/1E /2W

Lat 55 12 ' N, Long 124 30' W

Owner & Operator: Nation River Resources Ltd.

Author: Colin Campbell

NOVEMBER 18, 1988

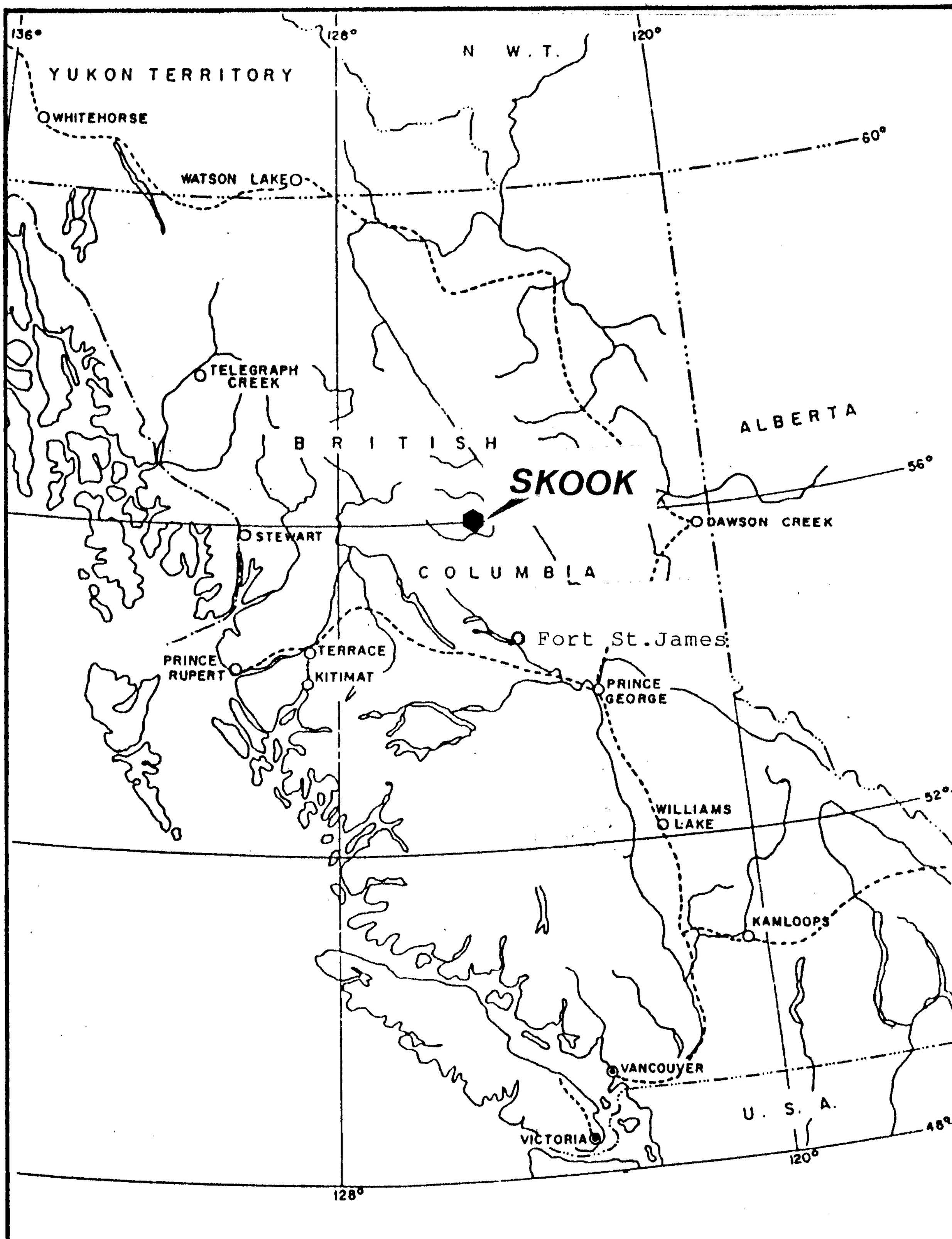
TABLE OF CONTENTS

1.0 SUMMARY

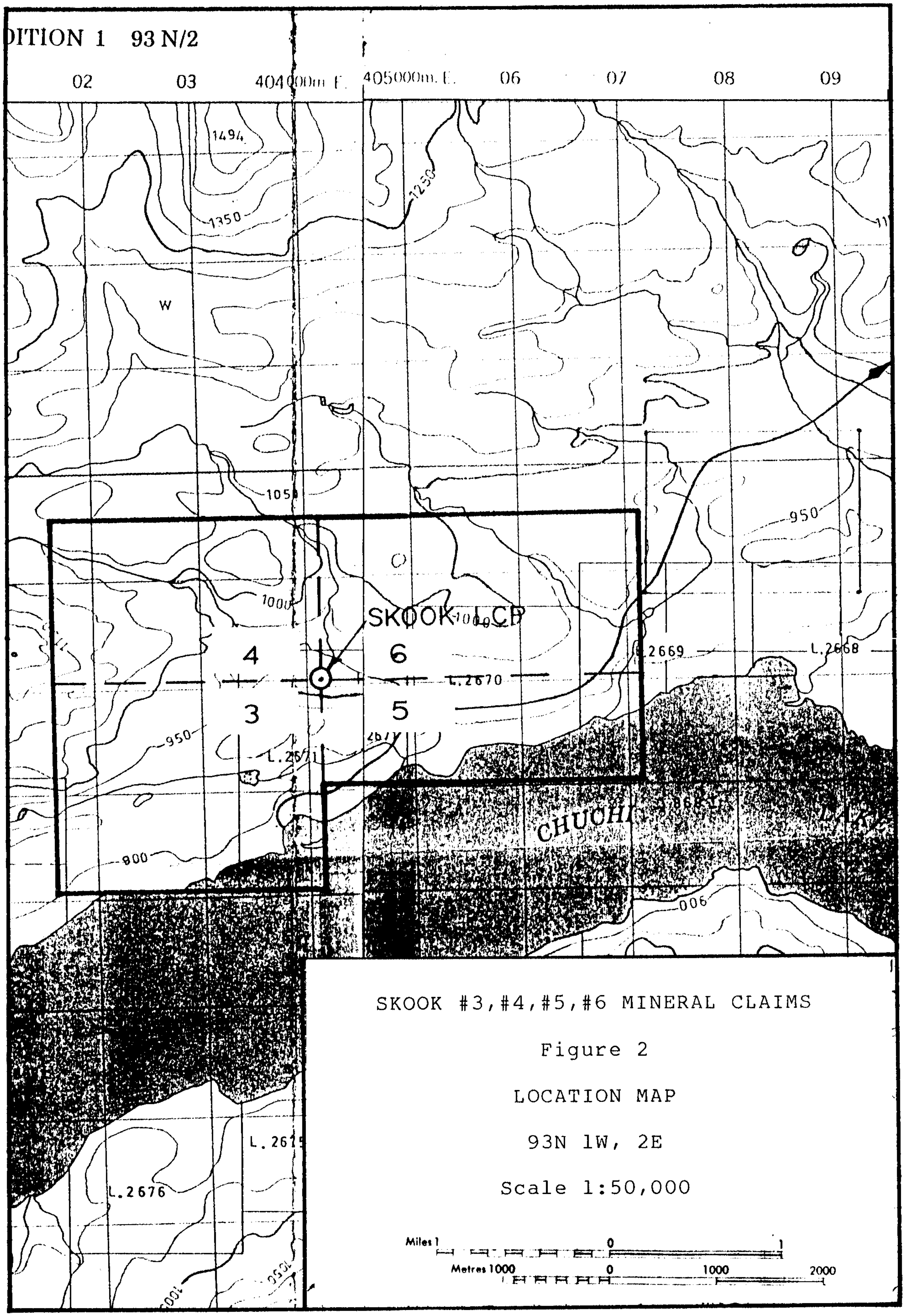
Geological mapping, rock sampling and soil sampling were conducted on the SKOOK copper-gold-silver property during the fall of 1987 and spring of 1988.

Mineralization occurs in three zones and is associated with hypabyssal alkalic rocks including gabbro and trachyandesite which have intruded Takla volcanics and sediments near the southern margin of the Hogem batholith. Grab samples returned up to 13.4 ppm gold, 16.6 ppm silver and 2.3% zinc. Chip samples across one metre returned values of up to 4.3 ppm gold and 53 ppm silver.

Further work including soil sampling and a ground magnetometer survey followed by an I.P. survey over any areas anomalous in gold and/or copper is recommended.



INDEX MAP	NATION RIVER RESOURCES LTD.
50 0 100 200 miles SCALE 1" = 125 miles	SKOOK COPPER-GOLD PROPERTY
0 200 400 KM	Nov. 18, 1988 Figure 1



SKOOK #3,#4,#5,#6 MINERAL CLAIMS

Figure 2

LOCATION MAP

93N 1W, 2E

Scale 1:50,000

2.0 INTRODUCTION

This report covers work conducted on the SKOOK #3, #4, #5 & #6 mineral claims (65 units) located on the north shore of Chuchi Lake some 87 kilometres north of Fort St. James B.C. in the Omineca Mining Division.

Access to the property is by all weather gravel road from Fort St. James. Since much of the property has been logged over the past ten years four wheel drive vehicles give extremely good access to most of the central area.

During the summer and fall of 1987 and the spring of 1988 seven and one half kilometres of line were run. One hundred and seventy-three soil and ninety-nine rock samples were collected. All were analyzed for Au and multi-elements by ICAP. Twenty-eight rock samples were analyzed for mercury.

Hand trenching exposed several quartz-chalcopyrite veins or silicified areas. Chip samples returned up to 4.3 ppm gold and 53 ppm silver across one metre.

2.1 CLAIM STATUS

Claim Name	Record #	# Units	Expiry Date
SKOOK #3	8844	20	September 2, 1991
SKOOK #4	8845	15	September 2, 1991
SKOOK #5	8846	12	September 2, 1991
SKOOK #6	8847	18	September 2, 1991

The four claims were grouped September 2, 1988 under the group name SKOOK and all are beneficially owned by Nation River Resources Ltd.

2.2 TOPOGRAPHY and VEGETATION

The SKOOK property covers a portion of the north shore of Chuchi Lake between the elevations of 868 metres and 1150 metres (Figure 2). The central working area which consists of low hills has been partially logged. Timbered areas mainly support open Jackpine and spruce; however, poorly drained areas can have a dense growth of spruce, balsam and alder.

2.3 REGIONAL GEOLOGY

The SKOOK property is situated in the Omineca Tectonic Belt of the Canadian Cordillera and lies along the southern edge of the Hogem batholith. The Hogem batholith is a composite intrusion ranging in composition from syenite to granite.

The intrusive rocks are in contact with Takla volcanics and/or sediments along the northeast part of the property.

2.4 GEOCHEMICAL SURVEY

This survey was conducted during the fall of 1987 and the spring of 1988. A total of one hundred and seventy-three soil and ninety-nine rock samples were collected and analyzed for gold and multi-elements by ICAP. Twenty-eight of the rock samples were analyzed for mercury and nineteen of the soil samples were re-run for fire assay gold.

2.5 PREVIOUS WORK

The SKOOK property, besides covering newly discovered gold-quartz-chalcopyrite veins, overlies a prospect found in the 1950's by Bill Rigler of Prince George (Rig Zone) and is on strike from silver-lead-zinc mineralization originally found by Ted Taylor and George Snell in the 1930's and rediscovered by Ted Taylor in the early 1960's (from personal communications with T.H. Taylor). Ted Taylor staked this property which is known as the WIT.

During the late 1960's Noranda owned or operated claims over the western portion of the SKOOK (Dirom, 1968) and drilled five AX diamond drill holes on the WIT. Botel (1965) estimated the drilled zone to contain 20,000 tons probable ore grading 7.5% combined lead-zinc plus silver. Later Royal Canadian Ventures Limited optioned the WIT property from Taylor and conducted an I.P. survey (Woodward, 1968), mapped and soil sampled and conducted a ground magnetometer survey over the eastern portion of the SKOOK (Vollo, 1967).

During the late 1960's the author conducted a silt survey along the north shore of Chuchi Lake and found the area near the center of the SKOOK property highly anomalous in copper. Claims were staked; however, the source of the copper silt anomaly was not found and the claims were allowed to lapse.

3.0 GEOLOGY

The central grid was mapped by the author on a scale of 1:5000; the results are plotted on Figure 3. Hip-chain and compass were used to control the survey away from the grid lines. Other areas prospected and mapped outside the grid area are also plotted on Figure 3 using air photos as control.

The SKOOK property covers the southerly portion of the Hogem batholith where it is in contact with Takla volcanics and sediments, this contact runs east-west along the northern portion of SKOOK #4 & #6.

The known mineralization on the SKOOK is related to alkalic volcanic and hypabyssal rocks ranging from gabbro to trachyandesite and latite which have intruded coeval(?) andesite and limey to siliceous sedimentary Takla rocks.

Ten rock samples were sent for petrographic examination to Vancouver Petrographics; their report is attached as Appendix D. Sample locations are plotted on Figures 3 and 4c.

3.1 MINERALIZATION

Three areas have economically interesting mineralization, the CL11 Zone, the Rig Breccia Zone and the South Zone.

The Rig Breccia Zone (Figure 6) at 5+00N-0+50E is at least six metres wide and is exposed in two old trenches, twenty-five metres apart, on both sides of a small stream; it consists of a central 1.2 metre wide shear or gouge zone; striking at 290 degrees that dips steeply, and has intensely brecciated wall rocks on both sides. The main sulphide mineralization in the breccia is sphalerite; minor galena and chalcopyrite occur in vuggy quartz veinlets (Appendix D-CL84 & CL86). Besides Zn, Pb & Cu the zone is anomalous in Silver - up to 21.8 ppm, mercury - up to 2.1 ppm and gold - up to 300 ppb. It is the best example of epithermal mineralization on the SKOOK.

The CL11 Zone (2+00S-5+25W) returned grab samples of up to 13.4 ppm gold, 16.6 ppm silver and 2.3% zinc and contains sphalerite, galena, chalcopyrite and quartz. The zone is about one metre wide, strikes at 90 degrees and dips steeply. The wall rock near the vein is light green and consists mainly of chlorite and carbonate. A one metre chip sample returned 6.4 ppm silver and 2.75 ppm gold.

3.1 MINERALIZATION - cont.

The South Zone (Figure 7) consists of a one metre wide silicified zone in andesite (Vancouver Petrographics CL59R) containing quartz, calcite, pyrite and chalcopyrite and returned 4.3 ppm gold and 53 ppm silver across one metre. A small gossan caused by clay alteration of the andesite contains quartz veinlets and chalcopyrite occurs fourty metres west of the silicified zone.

3.2 STRUCTURE

Wares (1971) postulated that Chuchi and Tchentlo Lakes represent large regional sigmoidal gash zones developed by wrench faulting and that the resultant dilatant zones were loci of magnetic and hydrothermal activity, I concur in this analysis and suggest the mineralization on SKOOK (and the WIT) supports Wares' contention. East-west linears are obvious on air photographs, mineralization strikes east-west and the Takla volcanics - Hogem batholith contact strikes east-west. Faulting is evident in brecciation of the volcanics and in veins which have healed and refractured.

3.3 ALTERATION

Most outcrops in the central grid zone show evidence of hydrothermal alteration, including bleaching and the development of chlorite, carbonate and pyrite. This alteration becomes more extensive near silicified zones which contain more pyrite and sericite. Tourmaline as acicular crystals with quartz can be found over much of the central grid area associated with vuggy quartz veinlets.

4.0 GEOCHEMICAL SURVEY

This survey was conducted during the fall of 1987 and the spring of 1988 to check for copper, gold and silver mineralization on the SKOOK property. A total of one hundred and seventy-three soil and ninety-nine rock samples were collected and analyzed for gold and multi-elements by ICAP; in addition twenty-eight of the rock samples were analyzed for mercury.

The control grid consists of 7.5 kilometres of hip-chain and Silva compass line all tied to the SKOOK claims common legal corner post.

Most of the geochemical results are plotted at 1:2500 on Figures 4a, 4b & 4c. Those areas off the control grid are plotted on Figure 1 at a scale of 1:5000. Detailed rock sampling was under taken in the South Zone (Figure 7) and the Rig Breccia Zone (Figure 6); results are plotted at a scale of 1:250. Results from pan concentrate samples and two silt samples are plotted on Figure 1 but are not charged to the cost of this survey.

4.1 FIELD METHODS

A. Soil Survey
A mattock was used to sample the first available mineral soil horizon usually at a depth of less than six inches. These samples, typically a mixture of B and C horizons, were stored in 4"x 6" Kraft paper bags. Notes were kept on standard soil sheets to aid in interpretation of the results. Sample location was controlled by hip-chain and compass grid lines. Location of each soil sample is noted on the geochemical certificates for gold appearing in Appendix C of this report.

B. Rock Survey
Generally a rock hammer was used to obtain approximately five pounds of rock chips over a one metre area; samples were stored in plastic bags. Other widths and rock sample descriptions are included in Appendix E. Rock sample locations are included on Figure 4c and on the areas sampled in detail on Figures 6 & 7.

4.2 ANALYTICAL METHODS

All samples were analyzed by Vangeochem Lab Limited of 1988 Triumph Street, Vancouver, B.C.

Analytical methods are included in Appendix C.

4.3 RESULTS AND INTERPRETATION

A. Soil Geochemical Survey

The results of the soil survey are plotted on Figures 4a, 4b & 4c. In the authors experience in this area copper values of greater than 100 ppm in soil are significant. Anomaly A is nearly one kilometre long averaging 200 metres in width with all values greater than 100 ppm copper (copper-gold results are plotted on Figure 4A). Two other single sample anomalies were found one at Line 4+00E-2+50N (Cu - 213 ppm & As - 129 ppm) the other at Line 8+00W-2+50N (Cu - 398 ppm & As 131 ppm) in a area where float of quartz stockwork in andesitic breccia was found.

Gold values of 40 ppb and greater are considered by the author to be anomalous and in areas of deeper overburden values of 10 ppb or greater could be significant.

Arsenic in soil results are plotted in Figure 4c. Lead and Zinc in soil results are plotted on Figure 4b.

B. Rock Geochemical Survey

Copper and gold results are plotted on Figure 4a, 6a & 6b. As well, some samples outside the grid area are plotted on Figure 1. Lead and zinc results in rock are plotted on Figure 4b, 6b & 7b. Arsenic and mercury values in rock are plotted on Figure 4c.

Many of the rock samples are highly anomalous in gold - up to 13.4 ppm, copper - up to .67%, silver - up to 64.4 ppm, arsenic - up to .76% and mercury - up to 2.1 ppm.

5.0 DISCUSSION & RECOMMENDATIONS

The stream sediment and pan concentrate sampling, conducted since the work reported on as assessment work in this report, along with the bifurcation of the aeromagnetic anomaly on the northwest part of the SKOOK #5 claim suggests a hydrothermally altered copper-gold bearing alkalic stock. Further I submit that the Rig Breccia, the South and the CL11 Zones, all anomalous in Cu, Ag, Pb, Zn & Hg, and the WIT Ag-Pb-Zn mineralization are all areas peripheral to a main mineralized alkalic stock which could contain a bulk tonnage copper-gold deposit.

Further work on the SKOOK should be focused on this area even though overburden could be relatively deep. Work should include the extension of grid lines over SKOOK #5 & SKOOK #6, a ground magnetometer survey of both the existing grid and the proposed new grid and soil sampling of the new grid with analyses for gold and multi- elements by ICAP. An I.P. survey should be conducted over any areas anomalous in gold and/or copper.

BIBLIOGRAPHY

Botel, W.G., (1965): Chuchi Option - Chuchi Lake, B.C.. Private report commissioned by Noranda Exploration Company Limited.

Dirom, G.A., (1968): Jay Group Geochemical Soil Survey. B.C.D.M. Assessment Report #1215.

Garnett, J.A., (1978): Geology and Mineral Occurrences of the Southern Hogem Batholith. B.C. M.M.P.R. - Bulletin #70. p.64.

Vollo, N.B., (1967): Geological, Geophysical & Geochemical Report on the 93N1 Chuchi 1&2 Groups. B.C.D.M Assessment Report #1119

Wares, R., (1971): Report on the Campbell Option - Chuchi Lake, Omineca Mining District. Private report for Falconbridge Nickel Mines Ltd.

Woodward, J.A. (1968): Induced Polarization Survey for Royal Canadian Ventures Ltd. on the 93N1 Chuchi Group. B.C.D.M. Assessment Report #1660.

APPENDIX A

STATEMENT OF QUALIFICATION

I, Colin Campbell, of the Town of Courtenay, in the Province of British Columbia, do hereby state that:

1. I am a Geologist.
2. I graduated from the University of British Columbia in 1966 with a B.Sc. Degree in Honours Geology.
3. I have worked steadily in mining exploration in British Columbia and Yukon Territory from 1966 to 1973; intermittently from 1974 to 1983 and steadily from January 1984 to the present.
4. I personally carried out, or supervised, the Geochemical and Geological Survey on the SKOOK 3-6 Mineral Claims.
5. I own a large share interest in Nation River Resources.

Colin J. Campbell

APPENDIX B

AS OF SEPTEMBER 2, 1988

STATEMENT OF EXPENDITURES - SKOOK 3-6

WAGES	(break down page following)			
Field			10,487.50	
Office			2,250.00	
			12,737.50	$12,737.50
TRANSPORTATION				
Aircraft	C-180	7 hrs.@ $125 / hr.	875.00	
Truck	Field	22 days @ $60 / day	1320.00	
	Trip	Ctny / Vanc & return	742.00	
			2937.00	$2937.00
GEOCHEMICAL ANALYSIS				
SOILS SAMPLES				
99 samples - Au/sol & ICAP		@ 13.85 / ea	1371.15	
19 samples - Au/fire-rerun		@ 7.50 / ea	142.50	
74 samples - Au/fire & ICAP		@ 14.85 / ea	1098.90	
			2612.55	$2612.55
ROCK SAMPLES				
99 samples - Au/sol & ICAP		@ 17.50 / ea	1683.15	
28 samples - Hg		@ 3.50 / ea	98.00	
			1781.15	$1781.15
FOOD AND LODGING		50 days @ $50.00 / day	2500.00	$2500.00
PETROGRAPHIC REPORT				$667.50
DRAFTING AND REPORT PREPARATION				$800.00
AIR PHOTOS				$188.32
FIELD SUPPLIES				$250.00
			TOTAL	$24,473.87

[signature]

COLIN CAMPBELL

APPENDIX B - cont.
AS OF SEPTEMBER 2, 1988

STATEMENT OF EXPENDITURES - SKOOK 3-6

WAGES

Colin Campbell
FIELD
1987 August 11,12,13,18,19,20,21.
September 14,15,17,19,
(20,22,23 - 1/2 days).
October 21,25,26,27,28.

1988 May 25,26,28,29,30,31.
June 1,2,3.
August 22,23,24,26.

OFFICE
1987 September (28,29 - 1/2 days).
October 6.
November 12,18,24,25,27.

1988 June 6,13,14.

41.5 days @ $225 / day	9337.50	$9337.50

Dan Morrison
FIELD
1987 August 18,19,20,21.

4 days @ $100 / day	400.00	$400.00

Tim Tacker
FIELD
1987 September 14,15,17,19,
(20,22,23 - 1/2 days).
October 21,25,26,27,28.

10.5 days @ $100 / day	1150.00	

1988 May 25,26,27,28,29,30,31.
June 1,2.

9 days @ $150 / day	1350.00	
	2500.00	$2500.00

Grant Gordon
FIELD
1988 August 22,23,24,26.

4 days @ $125 / day	500.00	$500.00
	TOTAL	$12,737.50

COLIN CAMPBELL

APPENDIX C

ANALYTICAL PROCEDURE FOR GOLD IN SOIL AND SILT

Analytical procedure used to determine Aqua Regia soluble gold in geochemical samples

Method of Sample Preparation

(a) Geochemical soil, silt or rock samples were received in the laboratory in wet-strength 4" x 6" Kraft paper bags or rock samples sometimes in 8" x 12" plastic bags.

(b) The dried soil and silt samples were sifted by hand using a 8" diameter 80-mesh stainless steel sieve. The plus 80-mesh fraction was rejected and the minus 80-mesh fraction was transferred into a new bag for analysis later.

(c) The dried rock samples were crushed by using a jaw crusher and pulverized to 100-mesh or finer by using a disc mill. The pulverized samples were then put in a new bag for later analysis.

Method of Digestion

(a) 5.00 - 10.00 grams of the minus 80-mesh samples were used. Samples were weighed out by using an electronic micro-balance into beakers.

(b) 20 ml of Aqua Regia (3:1 HCl : HNO3) were used to digest the samples over a hot plate vigorously.

(c) The digested samples were filtered and the washed pulps were discarded and the filtrate was reduced to about 5 ml.

(d) The Au complex ions were extracted into diisobutyl ketone and thiourea medium. (Anion exchange liquids "Aliquot 336").

(e) Separate Funnels were used to separate the organic layer.

Method of Detection

The gold analyses were detected by using a Techtron model AA5 Atomic Absorption Spectrophotometer with a gold hollow cathode lamp. The results were read out on a strip chart recorder. A hydrogen lamp was used to correct any background interferences. The gold values in parts per billion were calculated by comparing them with a set of gold standards.

The analyses were supervised or determined by Mr. Conway Chun or Mr. Eddie Tang and his laboratory staff.

FROM: Vangeochem Lab Ltd.
1521 Pemberton Ave.
North Vancouver, B.C. V7P 2S3

SUBJECT: Analytical procedure used to determine gold by fire-assay method and detected by atomic absorption spec. in goelogical samples.

1. Method of Sample Preparation

(a) Geochemical soil, silt or rock samples were received in the laboratory in wet-strength 4" x 6" Kraft paper bags or rock samples sometimes in 8" x 12" plastic bags.

(b) The dried soil and silt samples were sifted by hand using a 8" diameter 80-mesh stainles steel sieve. The plus 80-mesh fraction was rejected and the minus 80-mesh fraciton was transferred into a new bag for analysis later.

(c) The dried rock samples were crushed by using a jaw crusher and pulverized to 100-mesh for finer by using a disc mill. The pulverized samples were then put in a new bag for later analysis.

2. Method of Extraction

(a) 20.0 - 30.0 grams of the pulp samples were used. Samples were weighed out by using a top-loading balance into fusion pot.

(b) A Flux of litharge, soda ash, silica, borax, flour, or potassium nitrite is added, then fused at 1900 degrees F and a lead button is formed.

(c) The gold is extract by cupellation and part with diluted nitric acid.

(d) The gold bead is saved for measurement later.

3. Method of Detection

(a) The gold bead is disolved by boiling with sodium cyanide, hydrogen peroxide and ammonium hydroxide.

(b) The gold analyses were detected by using a Techtron model AA5 Atomic Absorption Spectrophotometer with a gold hollow cathode lamp. The results were read out on a strip chart recorder. The gold values in parts per billion were calculated by comparing them with a set of gold standards.

4. The analyses were supervised or determined by Mr. Conway Chun or Mr. David Chiu and his laboratory staff.

VANGEOCHEM LAB LIMITED

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1521 PEMBERTON AVE.
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(604) 986-5211 TELEX: 04-352578

BRANCH OFFICE
1630 PANDORA ST.
VANCOUVER, B.C. V5L 1L6
(604) 251-5656

REPORT NUMBER: 871130 GA JOB NUMBER: 871130 Nation River Resources

SAMPLE #	Au ppb
CL22	nd
CL23	nd
CL24	nd
CL25	nd
CL26	nd
CL27	nd
CL28	nd
CL29	nd
CL30	5
CL31	nd
CL32	nd
CL33	75
CL34	nd
CL35	nd
CL36	nd
CL37	nd
CL38	nd
CL39	nd
CL40	nd
CL45	250
CL46	40
CL47	15
CL48	20
CL49	nd
CL50	nd
CL51	1400
CL52	8160
CL53	75
CL54	20
CL55	25
CL56	10
CL235	10

DETECTION LIMIT 5

nd = none detected -- = not analysed is = insufficient sample

VANGEOCHEM LAB LIMITED

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REPORT NUMBER: 871413 GA JOB NUMBER: 871413 NATION RIVER RESOURCES

SAMPLE #	Au ppb
CL 58	4250
CL 59	3360
CL 60	650
CL 61	680
CL 62	175
CL 63	70
CL 64	25
CL 65	505
CL 66	15
CL 67	15
CL 68	5
CL 69	50
CL 70	235
CL 71	3260
CL 72	500
CL 419 (Soil)	nd

DETECTION LIMIT 5
nd = none detected -- = not analysed is = insufficient sample

VGC

VANGEOCHEM LAB LIMITED

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REPORT NUMBER: 871131 GA JOB NUMBER: 871131 NATION RIVER RESOURCES

SAMPLE #			Au ppb
CL201S	B.L.	10+00W	10
CL202S	L10W	0+50N	10
CL203S	L10W	1+00N	5
CL204S	L10W	1+50N	nd
CL205S	L10W	2+00N	15
CL206S	L10W	2+50N	nd
CL207S	L10W	3+00N	nd
CL208S	L8W	3+00N	10
CL209S	L8W	2+50N	30
CL210S	L8W	2+00N	10
CL211S	L8W	1+50N	10
CL212S	L8W	1+00N	10
CL213S	L8W	0+50N	10
CL214S	L8W	B.L.	5
CL215S	B.L.	9+50W	10
CL216S	B.L.	9+00W	10
CL217S	B.L.	8+50W	15
CL218S	B.L.	7+50W	20
CL219S	B.L.	7+00W	15
CL220S	B.L.	6+50W	nd
CL221S	B.L.	6+00W	10
CL222S	B.L.	5+50W	10
CL223S	B.L.	5+00W	nd
CL224S	B.L.	4+50W	10
CL225S	B.L.	4+00W	10
CL226S	B.L.	3+50W	20
CL227S	B.L.	3+00W	nd
CL228S	B.L.	2+50W	15
CL229S	B.L.	1+50W	10
CL230S	B.L.	1+00W	30
CL231S	B.L.	0+50W	30
CL232S	B.L.	L.C.P.	nd
CL233S	L8W	0+50S	5
CL234S	L8W	1+00S	35
CL236S	L8W	2+00S	nd
CL237S	L8W	2+70S	10
CL238S	L8W	3+00S	20
CL239S	L10W	5+00S	nd
CL240S	L10W	4+50S	10
DETECTION LIMIT			5

nd = none detected -- = not analysed is = insufficient sample

VANGEOCHEM LAB LIMITED

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(604) 251-5656

REPORT NUMBER: 871131 GA JOB NUMBER: 871131 NATION RIVER RESOURCES

SAMPLE #			Au ppb
CL241S	L10W	4+00S	5
CL242S	L10W	3+50S	5
CL243S	L10W	3+30S	15
CL244S	L10W	2+50S	10
CL245S	L10W	2+00S	5
CL246S	L10W	1+50S	10
CL247S	L10W	1+00S	10
CL248S	L2W	0+50S	nd
CL249S	L2W	0+50N	nd
CL250S	L2W	1+00N	10
CL251S	L2W	1+50N	5
CL252S	L2W	2+00N	10
CL253S	L2W	0+50S	5
CL254S	L2W	1+00S	10
CL255S	L2W	1+50S	nd
CL256S	L2W	2+00S	5
CL257S	L2W	2+50S	nd
CL258S	L4W	2+88S	nd
CL259S	L4W	2+50S	10
CL296S	L4W	2+00S	10
CL297S	L4W	1+50S	10
CL298S	L4W	1+00S	20
CL299S	L4W	0+50S	10
CL300S	L4W	0+50N	5
CL301S	L4W	1+00N	nd
CL302S	L4W	1+50N	10
CL303S	L4W	2+00N	nd
CL304S	L4W	2+50N	5
CL305S	L6W	2+50N	nd
CL306S	L6W	2+00N	10
CL307S	L6W	1+50N	10
CL308S	L6W	1+00N	5
CL309S	L6W	0+50N	5
CL310S	L6W	B.L.	15
CL311S	L6W	0+50S	10
CL312S	L6W	1+00S	nd
CL313S	L6W	1+50S	5
CL314S	L6W	2+00S	10
CL315S	L6W	2+50S	5
DETECTION LIMIT			5

nd = none detected -- = not analysed is = insufficient sample

VANGEOCHEM LAB LIMITED

MAIN OFFICE
1521 PEMBERTON AVE.
NORTH VANCOUVER, B.C. V7P 2S3
(604) 986-5211 TELEX: 04-352578

BRANCH OFFICE
1630 PANDORA ST.
VANCOUVER, B.C. V5L 1L6
(604) 251-5656

REPORT NUMBER: 871131 GA JOB NUMBER: 871131 NATION RIVER RESOURCES

SAMPLE #		Au ppb
CL316S L6W	3+00S	25
CL317S L6W	3+50W	15

DETECTION LIMIT 5

nd = none detected -- = not analysed is = insufficient sample

VANGEOCHEM LAB LIMITED

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NORTH VANCOUVER, B.C. V7P 2S3
(604) 986-5211 TELEX: 04-352578

BRANCH OFFICE
1630 PANDORA ST.
VANCOUVER, B.C. V5L 1L6
(604) 251-5656

REPORT NUMBER: 871384 GA JOB NUMBER: 871384 NATION RIVER RESOURCES

SAMPLE #	Au ppb
CL 400S	50
CL 401S	30
CL 402S	20
CL 403S	5
CL 404S	45
CL 405S	10
CL 406S	10
CL 407S	35
CL 408S	10
CL 409S	nd
CL 410S	nd
CL 411S	10
CL 412S	10
CL 413S	10
CL 414S	nd
CL 415S	nd
CL 416S	10
CL 417S	5
CL 418S	20

DETECTION LIMIT 5

nd = none detected -- = not analysed is = insufficient sample

VANGEOCHEM LAB LIMITED
MAIN OFFICE AND LABORATORY
1988 Triumph Street
Vancouver, B.C. V5L 1K5
(604)251-5656 FAX:254-5717

BRANCH OFFICE
1630 PANDORA ST.
VANCOUVER, B.C. V5L 1L6
(604) 251-5656

REPORT NUMBER: 880522 GA JOB NUMBER: 880522 NATION RIVER RESOURCES

SAMPLE #			Au ppb
CL 420	B.L.	12+00W	20
CL 421	L12W	0+50S	10
CL 422	L12W	1+00S	15
CL 423	L12W	1+50S	nd
CL 424	L12W	2+00S	10
CL 425	L12W	2+50S	10
CL 426	L12W	3+00S	15
CL 427	L12W	3+50S	5
CL 428	L12W	4+00S	5
CL 429	L12W	4+50S	10
CL 430	L12W	5+00S	15
CL 431	L12W	0+50N	nd
CL 432	L12W	1+00N	10
CL 433	L12W	1+50N	5
CL 434	L12W	2+00N	5
CL 435	L12W	2+50N	5
CL 436	L12W	3+00N	10
CL 437	L12W	3+50N	20
CL 438	L12W	4+00N	5
CL 439	L12W	4+50N	10
CL 440	L12W	5+00N	25
CL 441	B.L.	16+00W	15
CL 442	L16W	0+50N	15
CL 443	L16W	1+00N	20
CL 444	L16W	1+50N	10
CL 445	L16W	2+00N	10
CL 446	L16W	2+50N	10
CL 447	L16W	3+00N	15
CL 448	L16W	3+50N	5
CL 449	L16W	4+00N	20
CL 450	L16W	4+50N	20
CL 451	L16W	5+00N	15
CL 452	L16W	0+50S	nd
CL 453	L16W	1+00S	20
CL 454	L16W	1+50S	15
CL 455	L16W	2+00S	15
CL 456	L16W	2+50S	10
CL 457	L16W	3+00S	5
CL 458	L16W	3+50S	10
DETECTION LIMIT			5

nd = none detected -- = not analysed is = insufficient sample

VGC

VANGEOCHEM LAB LIMITED

MAIN OFFICE AND LABORATORY
1530 Triumph Street
Vancouver, B.C. V5L 1L5
(604) 251-5656 FAX: 254-5717

BRANCH OFFICE
1630 PANDORA ST.
VANCOUVER, B.C. V5L 1L6
(604) 251-5656

REPORT NUMBER: 880522 GA JOB NUMBER: 880522 NATION RIVER RESOURCES

SAMPLE #			Au ppb
CL 459	L16W	4+00S	20
CL 460	L16W	4+50S	10
CL 461	L16W	5+00S	15
CL 462	Line 0	B.L.	15
CL 463	B.L.	0+50N	15
CL 464	B.L.	1+00N	5
CL 465	B.L.	1+60N	nd
CL 466	B.L.	2+00N	5
CL 467	B.L.	2+50N	nd
CL 468	B.L.	3+00N	10
CL 469	B.L.	3+50N	30
CL 470	B.L.	4+00N	15
CL 471	B.L.	4+50N	15
CL 472	B.L.	5+00N	nd
CL 473	L4E	B.L.	10
CL 474	L4E	0+50N	5
CL 475	L4E	1+00N	5
CL 476	L4E	1+50N	20
CL 477	L4E	2+00N	10
CL 478	L4E	2+50N	20
CL 479	L4E	3+00N	20
CL 480	L4E	3+50N	nd
CL 481	L4E	4+00N	25
CL 482	L4E	4+50N	10
CL 483	L4E	5+00N	20
CL 484	L6E	5+00N	5
CL 485	L6E	4+50N	10
CL 486	L6E	4+00N	10
CL 487	L6E	3+50N	15
CL 488	L6E	3+00N	nd
CL 489	L6E	2+50N	nd
CL 490	L6E	2+00N	5
CL 491	L6E	1+50N	10
CL 492	L6E	1+00N	20
CL 493	L6E	0+50N	10

DETECTION LIMIT 5

nd = none detected -- = not analysed is = insufficient sample

VGC

VANGEOCHEM LAB LIMITED

MAIN OFFICE AND LABORATORY
1998 Triumph Street
Vancouver, B.C. V5L 1K5
(604)251-5656 FAX:254-5717

BRANCH OFFICE
1630 PANDORA ST.
VANCOUVER, B.C. V5L 1L6
(604) 251-5656

REPORT NUMBER: 880522 GA JOB NUMBER: 880522 NATION RIVER RESOURCES

SAMPLE #	Au ppb
C 1001	100
C 1002	35
C 1003	30
C 1004	20
CL 1005	15
CL 1006	nd
CL 1007	10
CL 1008	10
CL 1009	nd
CL 1010	10
CL 1011	45
CL 1012	10
CL 1013	nd
CL 1014	10
CL 1015	5
CL 1016	5
CL 1017	10
CL 1018	10
CL 1019	25

VANGEOCHEM LAB LIMITED

MAIN OFFICE: 1521 PEMBERTON AVE. N.V(UVER B.C. V7P 2S3 PH:(604)986-5211 TELEX:04-352578
BRANCH OFFICE: 1630 PANDORA ST. VANCC ER B.C. V5L 1L6 PH:(604)251-5656

ICAP GEOCHEMICAL ANALYSIS

A .5 GRAM SAMPLE IS DIGESTED WITH 5 ML OF 3:1:2 HCL TO HNO3 TO H2O AT 95 DEG. C FOR 90 MINUTES AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR SN,MN,FE,CA,P,CR,MG,BA,PD,AL,NA,K,W,PT AND SR. AU AND PD DETECTION IS 3 PPM.
IS= INSUFFICIENT SAMPLE, ND= NOT DETECTED, -= NOT ANALYZED

COMPANY: NATION RIVER RESOURCES LTD.
ATTENTION: COLIN CAMPELL
PROJECT: CL

REPORT#: 871130PA
JOB#: 871130
INVOICE#: 871130NA

DATE RECEIVED: 87/08/24
DATE COMPLETED: 87/09/23
COPY SENT TO:

ANALYST D. Pure

N.B. Code is CL

SAMPLE NAME	AG PPM	AL %	AS PPM	AU PPM	BA PPM	BI PPM	CA %	CD PPM	CO PPM	CR PPM	CU PPM	FE %	K %	MG %	MN PPM	MO PPM	NA %	NI PPM	P %	PB PPM	PD PPM	PT PPM	SB PPM	SN PPM	SR PPM	U PPM	W PPM	ZN PPM
CC 22	.1	2.62	97	ND	25	6	1.06	.1	24	34	113	5.12	.04	2.54	1423	1	.19	20	.13	49	ND	ND	ND	ND	24	ND	ND	106
CC 23	.6	1.14	14	ND	28	4	.96	.1	15	9	139	2.67	.06	.24	199	2	.03	11	.15	4	ND	ND	5	1	49	ND	4	14
CC 24	.1	3.84	25	ND	21	ND	3.13	.1	13	255	80	5.33	.06	4.05	3470	1	.26	79	.10	23	ND	ND	ND	ND	90	ND	ND	170
CC 25	.2	2.83	26	ND	323	6	1.12	.1	10	30	99	4.62	.08	.86	322	2	.11	10	.14	8	ND	ND	11	ND	411	ND	ND	60
CC 26	.1	2.43	19	ND	30	4	1.97	.1	14	22	123	3.72	.07	.44	243	1	.07	14	.14	38	ND	ND	ND	ND	31	ND	ND	27
CC 27	.1	2.18	4	ND	66	5	2.12	.1	19	22	120	4.22	.07	1.43	436	3	.07	20	.14	28	ND	ND	ND	ND	60	ND	ND	17
CC 28	.1	1.72	8	ND	22	ND	3.25	.1	17	42	16	4.09	.07	1.31	1977	5	.11	64	.15	4	ND	ND	ND	ND	50	ND	ND	30
CC 29	.1	2.04	3	ND	26	ND	2.81	.1	11	30	3	3.99	.07	1.56	1801	1	.12	17	.10	23	ND	ND	ND	ND	43	ND	ND	40
CC 30	.1	2.38	25	ND	31	5	1.36	.1	22	71	134	5.32	.06	2.74	764	2	.17	25	.14	6	ND	ND	ND	ND	27	ND	ND	45
CC 31	2.7	.88	26	ND	21	6	.75	26.1	8	25	580	1.79	.06	.46	904	3	.12	7	.06	405	ND	ND	6	ND	10	ND	ND	5406
CC 32	.1	1.93	13	ND	95	ND	1.75	.4	22	38	145	5.00	.08	1.54	1252	2	.19	27	.14	14	ND	ND	ND	ND	50	ND	ND	175
CC 33	4.6	1.27	84	ND	118	6	.17	3.1	11	16	674	4.16	.06	.71	336	1	.40	6	.08	24	ND	ND	11	ND	8	ND	ND	781
CC 34	5.5	2.06	17	ND	18	ND	2.77	21.2	11	32	1532	3.20	.06	1.32	1931	1	..47	17	.08	4927	ND	ND	3	ND	27	ND	ND	5132
CC 35	.1	2.52	11	ND	69	3	1.93	38.9	19	10	221	5.12	.07	1.48	1907	1	.75	9	.14	137	ND	ND	ND	ND	30	ND	ND	9394
CC 36	.8	2.87	ND	ND	23	ND	4.82	17.6	19	44	835	5.59	.08	1.33	2703	ND	.70	22	.11	20	ND	ND	ND	ND	81	ND	ND	3992
CC 37	.1	4.57	ND	ND	24	ND	5.00	3.5	23	192	44	7.38	.07	3.57	3409	ND	.72	75	.08	13	ND	ND	ND	ND	85	ND	ND	1258
CC 38	.1	2.33	3	ND	47	ND	3.25	1.3	13	42	192	4.08	.07	1.47	1786	ND	.34	11	.14	8	ND	ND	ND	ND	46	ND	ND	603
CC 39	.8	.53	ND	ND	111	3	.73	.1	2	105	252	1.06	.05	.20	593	6	.03	7	.02	2	ND	ND	5	ND	12	ND	7	62
CC 40	.4	.44	ND	ND	158	4	.44	.8	2	18	113	.97	.05	.14	522	ND	.13	5	.03	9	ND	ND	4	ND	10	ND	4	327
CC 45	1.7	1.45	963	ND	27	3	.48	.1	8	10	118	3.49	.06	.71	592	1	.14	8	.10	23	ND	ND	33	ND	18	ND	ND	192
CC 46	.1	2.86	138	ND	35	4	2.50	.1	24	56	139	6.04	.07	2.36	1705	1	.25	32	.12	24	ND	ND	5	ND	40	ND	ND	213
CC 47	.1	2.96	28	ND	79	5	2.41	2.2	21	47	324	5.41	.08	1.92	1935	ND	.39	20	.17	6	ND	ND	ND	ND	43	ND	ND	633
CC 48	.1	3.12	16	ND	71	3	2.99	.1	22	34	288	5.54	.08	2.16	2047	ND	.22	22	.17	9	ND	ND	ND	ND	45	ND	ND	200
CC 49	19.3	1.18	91	ND	52	3	.29	.1	12	88	4227	5.51	.05	.56	452	6	.26	10	.08	11	ND	ND	8	ND	14	ND	ND	328
CC 50	.6	2.43	10	ND	31	ND	4.34	.3	18	54	1025	4.90	.08	1.46	2033	3	.26	21	.16	3	ND	ND	ND	ND	47	ND	ND	327
CC 51	5.4	3.57	7621	5	16	6	.22	.1	81	89	1971	24.89	.08	1.63	980	3	..47	19	.07	135	ND	ND	38	ND	6	ND	ND	2287
CC 52	67.3	.28	840	3	52	ND	.03	.1	3	19	251	3.08	.05	.06	100	1	.11	3	.02	155	ND	ND	49	ND	8	ND	ND	149
CC 53	1.6	1.54	66	ND	48	ND	1.91	.1	47	38	224	5.98	.07	.86	2024	3	.22	31	.10	21	ND	ND	5	ND	22	ND	ND	226
CC 54	.1	.48	24	ND	117	ND	3.52	.1	11	4	78	3.09	.08	.53	1891	4	.08	20	.10	15	ND	ND	4	ND	33	ND	3	52
CC 55	.5	1.43	11	ND	39	ND	1.31	.8	6	24	162	2.77	.04	1.02	1066	ND	.25	10	.06	8	ND	ND	3	ND	20	ND	ND	477
CC 56	.1	1.45	4	ND	27	6	.28	.1	13	54	49	5.33	.05	.96	238	4	.12	15	.11	7	ND	ND	4	ND	5	ND	ND	29
CC 235	5.6	2.32	123	ND	7	4	.28	.1	48	77	5053	9.82	.03	1.29	1325	8	.34	7	.04	19	ND	ND	4	ND	4	ND	ND	238
DETECTION LIMIT	.1	.01	3	3	1	3	.01	.1	1	1	1	.01	.01	.01	1	1	.01	1	.01	2	3	5	2	2	1	5	3	1

VANGEOCHEM LAB LIMITED

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BRANCH OFFICE: 1630 PANDORA ST. VANCOUVER B.C. V5L 1L6 PH:(604)251-5656

ICAP GEOCHEMICAL ANALYSIS

A .5 GRAM SAMPLE IS DIGESTED WITH 5 ML OF 3:1:2 HCL TO HNO3 TO H2O AT 95 DEG. C FOR 90 MINUTES AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR SN,MN,FE,CA,P,CR,MG,BA,PD,AL,NA,K,W,PT AND SR. AU AND PD DETECTION IS 3 PPM.
IS= INSUFFICIENT SAMPLE, ND= NOT DETECTED, -= NOT ANALYZED

COMPANY: NATION RIVER RES. LTD.
ATTENTION: COLIN CAMPBELL
PROJECT: CL

REPORT#: 871413PA
JOB#: 871413
INVOICE#: 871413NA

DATE RECEIVED: 87/09/25
DATE COMPLETED: 87/10/02
COPY SENT TO:

ANALYST W. Reeves

SAMPLE NAME	AG PPM	AL %	AS PPM	AU PPM	BA PPM	BI PPM	CA %	CD PPM	CO PPM	CR PPM	CU PPM	FE %	K %	MG %
CL 58	53.0	.56	667	3	41	ND	.12	.1	8	120	183	2.49	.04	.17
CL 59	66.1	.19	869	ND	23	ND	.08	2.7	15	31	5803	4.47	.05	.02
CL 60	2.8	.91	228	ND	65	ND	.16	.1	10	12	204	3.39	.07	.36
CL 61	1.0	.70	118	ND	59	ND	.12	.1	8	123	104	2.96	.05	.29
CL 62	1.6	.63	388	ND	54	ND	.14	.1	5	26	71	2.50	.06	.20
CL 63	64.4	.46	79	ND	11	15	1.64	6.0	35	117	31797	7.30	.09	.22
CL 64	12.3	1.85	27	ND	72	5	.54	1.5	12	26	5086	4.41	.06	1.35
CL 65	2.7	.51	1738	ND	18	ND	.13	.1	4	43	203	2.54	.06	.15
CL 66	.1	4.33	61	ND	41	4	.49	.1	19	88	265	14.51	.14	2.81
CL 67	.1	1.27	82	ND	5	4	1.52	.1	40	176	129	9.77	.12	.87
CL 68	.1	2.64	45	ND	41	ND	1.97	.1	25	14	48	7.28	.11	1.65
CL 69	30.5	1.46	69	ND	43	12	1.35	.1	14	68	16260	5.73	.10	.88
CL 70	3.2	.67	37	4	76	3	2.91	181.5	11	90	466	2.01	.06	.32
CL 71	14.3	.36	144	7	47	7	1.30	99.9	11	21	1506	1.94	.04	.13
CL 72	4.3	1.48	936	ND	50	3	.27	.1	14	30	366	9.15	.11	.78
CL 419(SOIL)	.2	1.77	25	ND	138	ND	.34	.1	9	45	55	3.89	.06	.43
DETECTION LIMIT	.1	.01	3	3	1	3	.01	.1	1	1	1	.01	.01	.01

SAMPLE NAME	MN PPM	MO PPM	NA %	NI PPM	P %	PB PPM	PD PPM	PT PPM	SB PPM	SN PPM	SR PPM	U PPM	W PPM	ZN PPM
CL 58	358	7	.09	7	.04	125	ND	ND	29	ND	10	3	4	146
CL 59	134	2	1.28	13	.03	71	ND	ND	37	2	5	ND	ND	3298
CL 60	481	1	.15	5	.07	40	ND	ND	16	1	21	ND	ND	277
CL 61	445	8	.11	7	.05	22	ND	ND	15	3	7	ND	3	181
CL 62	370	2	.06	7	.06	21	ND	ND	15	2	17	ND	ND	69
CL 63	896	10	.85	15	.05	78	ND	ND	14	2	26	ND	ND	1750
CL 64	1135	3	.28	24	.11	33	ND	ND	10	2	25	ND	ND	505
CL 65	128	2	.05	3	.09	24	ND	ND	47	ND	8	4	ND	52
CL 66	1048	1	.27	22	.10	16	ND	ND	15	1	28	ND	ND	55
CL 67	497	4	.18	59	.05	14	ND	ND	13	8	13	ND	ND	64
CL 68	2080	ND	.15	23	.14	12	ND	ND	8	ND	38	ND	ND	48
CL 69	1258	4	.14	10	.10	16	ND	ND	11	2	35	ND	ND	69
CL 70	2123	4	12.82	9	.06	129	ND	ND	6	5	35	ND	ND	28003
CL 71	865	1	7.44	6	.05	150	ND	ND	13	4	13	ND	ND	15772
CL 72	546	4	.63	10	.12	2547	ND	ND	20	ND	38	ND	ND	1059
CL 419(SOIL)	533	ND	.10	15	.09	36	ND	ND	8	2	30	ND	ND	124
DETECTION LIMIT	1	1	.01	1	.01	2	3	5	2	2	1	5	3	1

VANGEOCHEM LAB LIMITED

MAIN OFFICE: 1521 PEMBERTON AVE. N.VANCOUVER B.C. V7P 2S3 PH:(604)986-5211 TELEX:04-352578
BRANCH OFFICE: 1630 PANDORA ST. VANCOUVER B.C. V5L 1L6 PH:(604)251-5656

ICAP GEOCHEMICAL ANALYSIS

A .5 GRAM SAMPLE IS DIGESTED WITH 5 ML OF 3:1:2 HCL TO HNO3 TO H2O AT 95 DEG. C FOR 90 MINUTES AND IS DILUTED TO 10 ML WITH WATER.
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IS= INSUFFICIENT SAMPLE, ND= NOT DETECTED, -= NOT ANALYZED

COMPANY: NATION RIVER RESOURCES LTD.
ATTENTION: COLIN J. CAMPBELL
PROJECT: CL

REPORT#: 871131PA
JOB#: 871131
INVOICE#: 871131NA

DATE RECEIVED: 87/08/24
DATE COMPLETED: 87/09/18
COPY SENT TO:

ANALYST W. Reeves

SAMPLE NAME	AG PPM	AL %	AS PPM	AU PPM	BA PPM	BI PPM	CA %	CD PPM	CO PPM	CR PPM	CU PPM	FE %	K %	MG %	MN PPM	MO PPM	NA %	NI PPM	P %	PB PPM	PD PPM	PT PPM	SB PPM	SN PPM	SR PPM	U PPM	W PPM	ZN PPM
CL 201 - S	.1	2.22	14	ND	107	3	.87	.1	13	32	324	3.18	.03	.71	598	2	.07	30	.11	7	ND	ND	3	ND	62	ND	ND	73
CL 202	.1	3.02	24	ND	135	ND	.72	.1	22	42	402	4.64	.02	.90	1486	3	.13	34	.14	20	ND	ND	3	ND	47	ND	ND	158
CL 203	.1	2.19	22	ND	73	ND	.35	.1	14	43	65	5.47	.01	.80	369	3	.14	20	.13	15	ND	ND	4	ND	38	ND	ND	129
CL 204	.1	2.34	14	ND	65	ND	.39	.1	10	22	54	2.89	.02	.45	288	2	.07	25	.05	12	ND	ND	3	ND	24	ND	ND	69
CL 205	.1	1.55	36	ND	53	ND	.35	.1	9	28	34	3.69	.01	.39	300	3	.13	11	.09	23	ND	ND	3	ND	25	ND	ND	214
CL 206	.1	2.03	4	ND	379	ND	.83	.1	7	14	27	2.92	.01	.20	274	2	.08	8	.04	9	ND	ND	3	ND	307	ND	ND	113
CL 207	.1	1.30	6	ND	47	ND	.42	.1	8	21	47	2.10	.01	.38	585	1	.04	17	.02	6	ND	ND	ND	ND	32	ND	ND	44
CL 208	.1	1.99	23	ND	49	ND	.26	.1	11	26	60	4.50	.01	.55	294	2	.13	17	.08	17	ND	ND	3	ND	23	ND	ND	168
CL 209	.1	2.17	131	ND	151	3	.73	.1	11	30	398	3.34	.01	.88	967	3	.22	31	.04	28	ND	ND	10	ND	60	ND	ND	801
CL 210	.1	1.41	8	ND	54	ND	.26	.1	7	22	27	2.80	.01	.34	164	1	.07	14	.03	10	ND	ND	3	ND	26	ND	ND	82
CL 211	.1	1.16	8	ND	44	3	.20	.1	5	15	14	1.89	.02	.21	166	ND	.06	7	.08	17	ND	ND	4	ND	18	ND	ND	101
CL 212	.1	1.72	8	ND	68	ND	.29	.1	9	25	29	2.58	.01	.47	211	1	.05	26	.11	5	ND	ND	ND	ND	31	ND	ND	42
CL 213	.1	1.48	7	ND	42	ND	.21	.1	7	26	25	3.13	.01	.41	191	2	.07	22	.10	8	ND	ND	ND	ND	24	ND	ND	88
CL 214	.1	2.05	10	ND	75	ND	.28	.1	10	24	39	3.24	.01	.53	279	2	.07	22	.03	7	ND	ND	3	ND	27	ND	ND	46
CL 215	.1	1.35	16	ND	50	ND	.24	.1	9	42	47	3.76	.01	.41	314	2	.11	12	.11	16	ND	ND	ND	ND	28	ND	ND	145
CL 216	.1	3.41	15	ND	134	ND	.25	.1	12	41	170	5.19	.01	.76	483	2	.17	19	.25	14	ND	ND	3	ND	69	ND	ND	229
CL 217	.1	2.78	28	ND	487	3	.39	.1	24	24	66	5.51	.01	.63	2112	7	.14	24	.08	12	ND	ND	3	ND	138	ND	ND	126
CL 218	.1	1.91	13	ND	91	ND	.22	.1	15	26	69	4.25	.01	.49	908	3	.11	19	.06	9	ND	ND	3	ND	30	ND	ND	138
CL 219	.1	1.77	7	ND	67	ND	.33	.1	8	22	30	3.04	.01	.41	226	2	.07	19	.06	8	ND	ND	3	ND	28	ND	ND	70
CL 220	.1	2.08	123	ND	137	ND	.37	.1	16	24	104	4.08	.01	.68	841	3	.21	29	.11	39	ND	ND	8	ND	51	ND	ND	453
CL 221	.1	2.07	21	ND	83	ND	.38	.3	14	26	57	3.11	.01	.63	550	2	.20	34	.08	7	ND	ND	4	ND	40	ND	ND	454
CL 222	.1	1.60	12	ND	94	ND	.71	.1	10	26	68	2.58	.02	.59	654	2	.06	26	.04	5	ND	ND	3	ND	43	ND	ND	64
CL 223	.1	1.95	10	ND	78	ND	.27	.1	8	24	28	3.08	.02	.52	267	1	.09	24	.18	7	ND	ND	4	ND	25	ND	ND	148
CL 224	.1	1.48	8	ND	49	ND	.19	.1	8	21	26	3.26	.02	.38	209	2	.08	16	.05	13	ND	ND	4	ND	36	ND	ND	94
CL 225	.1	1.57	4	ND	57	ND	.33	.1	15	23	18	3.50	.01	.38	714	1	.11	14	.07	13	ND	ND	3	ND	25	ND	ND	184
CL 226	.1	1.09	4	ND	56	ND	.26	.1	6	16	17	1.66	.02	.32	267	1	.03	15	.04	10	ND	ND	3	ND	27	3	ND	46
CL 227	.1	1.54	4	ND	63	ND	.27	.1	9	23	21	2.26	.01	.46	375	1	.06	17	.11	9	ND	ND	3	ND	24	ND	ND	86
CL 228	.1	1.27	10	ND	52	ND	.27	.1	7	22	15	2.24	.01	.41	210	1	.05	16	.06	11	ND	ND	3	ND	25	ND	ND	69
CL 229	.1	1.28	5	ND	67	ND	.25	.1	8	23	14	2.27	.02	.44	660	1	.05	18	.06	9	ND	ND	3	ND	24	5	3	64
CL 230	.1	1.46	10	ND	67	ND	.29	.1	7	22	29	2.56	.02	.37	264	1	.07	17	.09	8	ND	ND	ND	ND	27	ND	ND	104
CL 231	.1	1.99	14	ND	72	ND	.25	.1	11	27	52	3.53	.02	.52	287	3	.12	23	.08	16	ND	ND	4	ND	23	ND	ND	213
CL 232	.1	2.73	21	ND	109	ND	.32	.1	12	31	85	4.77	.01	.56	488	2	.17	20	.26	14	ND	ND	3	ND	32	ND	ND	270
CL 233	.1	1.99	28	ND	88	ND	.27	.1	11	30	46	4.77	.02	.51	420	5	.14	14	.09	27	ND	ND	4	ND	33	ND	ND	205
CL 234	.1	1.59	21	ND	78	ND	1.51	.1	13	25	342	3.19	.01	.64	737	2	.11	20	.10	10	ND	ND	ND	ND	83	ND	ND	182
CL 235	.1	2.45	21	ND	142	ND	1.02	.1	14	28	173	3.36	.01	.75	1855	3	.10	30	.09	6	ND	ND	ND	ND	71	ND	ND	125
CL 237	.1	1.29	11	ND	148	ND	.34	.7	6	17	34	3.51	.01	.27	377	3	.12	10	.08	13	ND	ND	ND	ND	35	ND	ND	216
CL 238	.1	1.53	10	ND	75	ND	.23	.1	8	23	28	3.35	.01	.43	312	1	.08	15	.10	10	ND	ND	ND	ND	22	ND	ND	91
CL 239	.1	.62	ND	ND	42	ND	.23	.1	4	15	7	1.76	.02	.13	188	ND	.03	7	.05	7	ND	ND	ND	ND	22	4	ND	39
CL 240 - S	.1	1.63	7	ND	67	ND	.24	.1	8	20	29	2.87	.01	.45	231	1	.06	16	.09	9	ND	ND	3	ND	22	ND	ND	51

SAMPLE NAME	AG PPM	AL %	AS PPM	AU PPM	BA PPM	BI PPM	CA %	CD PPM	CO PPM	CR PPM	CU PPM	FE %	K %	MG %	MN PPM	MO PPM	NA %	NI PPM	P %	PB PPM	PD PPM	PT PPM	SB PPM	SN PPM	SR PPM	U PPM	W PPM	ZN PPM
CL 241 - S	ND	1.38	7	ND	81	ND	.55	.1	9	29	47	2.52	.03	.60	304	1	.05	24	.07	7	ND	ND	ND	ND	41	ND	3	45
CL 242	ND	3.36	8	ND	176	ND	.62	.2	20	38	131	4.58	.04	.86	1869	2	.12	48	.08	14	ND	ND	ND	ND	50	ND	ND	148
CL 243	ND	1.67	3	ND	63	3	.34	.1	10	28	38	2.92	.03	.55	263	1	.06	29	.10	5	ND	ND	ND	ND	32	ND	6	59
CL 244	ND	1.60	7	ND	54	ND	.22	.1	10	23	60	2.94	.03	.58	379	1	.06	28	.06	7	ND	ND	ND	ND	35	ND	ND	43
CL 245	ND	1.28	3	ND	101	ND	.25	.3	12	21	37	2.91	.05	.22	1171	2	.06	10	.06	10	ND	ND	ND	1	31	ND	ND	54
CL 246	ND	2.49	11	ND	133	ND	.55	.1	15	30	85	3.66	.02	.91	518	3	.10	29	.10	10	ND	ND	ND	ND	60	ND	ND	98
CL 247	ND	3.05	15	ND	157	ND	1.17	.2	18	39	269	4.14	.04	.86	2879	3	.14	36	.14	5	ND	ND	ND	ND	74	ND	ND	209
CL 248	ND	2.51	14	ND	123	ND	1.68	.1	13	34	393	3.35	.02	.75	802	1	.08	33	.13	1	ND	ND	ND	ND	82	ND	ND	94
CL 249	ND	1.43	6	ND	46	ND	.27	.1	7	23	19	3.01	.01	.35	324	1	.07	14	.20	63	ND	ND	3	ND	25	ND	ND	83
CL 250	ND	1.69	3	ND	84	3	.38	.3	9	25	36	2.90	.02	.51	460	2	.06	18	.13	10	ND	ND	ND	ND	35	ND	ND	63
CL 251	ND	1.38	5	ND	74	ND	.32	.1	7	18	26	1.84	.03	.39	207	1	.03	14	.05	6	ND	ND	ND	ND	32	ND	4	37
CL 252	ND	2.14	9	ND	78	ND	.26	.1	10	30	27	3.30	.02	.48	211	2	.06	22	.22	9	ND	ND	3	ND	28	ND	ND	47
CL 252	ND	1.64	12	ND	94	ND	.38	.1	12	31	46	3.07	.04	.58	324	2	.07	33	.10	11	ND	ND	4	1	39	ND	ND	73
CL 254	ND	2.79	15	ND	114	ND	.22	.1	20	7	37	7.52	.01	1.04	556	2	.20	7	.08	16	ND	ND	5	ND	21	ND	ND	193
CL 255	ND	2.70	10	ND	140	ND	.23	.1	9	28	33	3.32	.04	.55	211	2	.12	19	.13	11	ND	ND	4	ND	34	ND	ND	224
CL 256	ND	2.15	20	ND	57	ND	.28	.2	10	42	41	4.17	.09	.75	250	3	.09	20	.12	19	ND	ND	5	1	28	6	3	73
CL 258	ND	1.70	14	ND	97	ND	.52	.1	14	42	49	4.98	.05	.53	417	2	.14	19	.18	19	ND	ND	3	ND	39	ND	ND	188
CL 259	ND	1.84	11	ND	111	ND	.31	.1	8	32	28	4.41	.06	.42	241	3	.09	13	.05	14	ND	ND	5	ND	36	ND	ND	80
CL 296	ND	5.12	25	ND	409	ND	.38	.1	30	19	171	7.81	.01	1.65	2323	4	.68	15	.12	1358	ND	ND	5	ND	13	ND	ND	1655
CL 297	ND	3.31	44	ND	463	4	.42	1.3	36	14	78	9.13	.01	1.10	1305	3	.36	18	.13	28	ND	ND	6	ND	213	ND	ND	600
CL 298	ND	1.87	6	ND	75	ND	.26	.1	10	31	25	3.16	.07	.55	336	2	.14	27	.13	12	ND	ND	5	ND	27	ND	ND	313
CL 299	ND	1.95	8	ND	59	ND	.24	.1	11	29	31	2.67	.06	.55	223	1	.06	31	.09	9	ND	ND	4	ND	26	4	4	73
CL 300	ND	2.16	5	ND	85	ND	.30	.1	10	25	30	3.19	.05	.52	235	2	.08	24	.08	15	ND	ND	5	ND	27	ND	ND	113
CL 301	ND	1.92	ND	ND	114	ND	.45	.1	9	19	45	1.98	.05	.53	230	1	.05	15	.06	8	ND	ND	3	ND	42	4	ND	73
CL 302	ND	1.57	12	ND	62	ND	.31	.1	9	23	25	2.39	.04	.45	300	1	.05	17	.10	10	ND	ND	4	2	33	3	ND	71
CL 303	ND	1.73	5	ND	81	ND	.29	.1	9	26	28	2.85	.04	.43	293	1	.06	19	.13	5	ND	ND	3	ND	31	3	ND	50
CL 304	ND	1.51	4	ND	61	ND	.21	.1	7	21	19	2.33	.05	.31	125	1	.04	15	.04	8	ND	ND	3	ND	20	3	4	40
CL 305	ND	1.60	4	ND	63	ND	.33	.1	9	29	18	2.97	.06	.44	269	1	.06	19	.17	8	ND	ND	3	ND	28	5	ND	59
CL 306	ND	1.62	4	ND	73	ND	.49	.1	9	23	50	2.24	.05	.61	259	1	.04	22	.07	3	ND	ND	3	ND	41	ND	4	44
CL 307	ND	1.76	3	ND	60	ND	.27	.1	8	23	23	2.40	.06	.37	183	1	.04	21	.05	7	ND	ND	ND	ND	25	4	ND	57
CL 308	ND	1.89	5	ND	84	ND	.36	.1	11	25	36	2.94	.05	.46	339	1	.07	18	.15	11	ND	ND	3	ND	31	ND	ND	112
CL 309	ND	1.70	8	ND	73	ND	.62	.1	11	30	67	2.83	.05	.69	569	2	.06	24	.06	5	ND	ND	ND	ND	49	ND	ND	68
CL 310	ND	2.19	19	ND	83	ND	.39	.8	14	27	57	3.08	.06	.65	547	3	.20	32	.08	11	ND	ND	3	ND	40	5	ND	505
CL 311	ND	2.97	3	ND	118	ND	.33	.6	13	33	45	3.75	.03	.79	425	3	.19	35	.09	12	ND	ND	6	ND	31	ND	ND	425
CL 312	ND	2.36	36	ND	74	ND	.23	.1	15	29	200	4.11	.06	.59	360	4	.18	24	.05	15	ND	ND	5	ND	26	ND	ND	379
CL 313	ND	1.75	14	ND	87	ND	.57	.8	10	41	65	3.45	.03	.51	305	4	.14	17	.05	14	ND	ND	4	1	45	ND	ND	274
CL 314	ND	1.79	5	ND	67	ND	.26	.3	11	24	37	2.70	.03	.48	305	1	.06	17	.11	7	ND	ND	3	ND	25	ND	ND	76
CL 315	ND	1.99	5	ND	166	ND	1.60	.1	12	28	67	3.04	.10	.73	1458	ND	.06	24	.20	1	ND	ND	ND	ND	91	ND	ND	87
CL 316	ND	1.77	12	ND	88	ND	.20	1.2	13	26	35	4.32	.03	.47	485	2	.11	17	.10	10	ND	ND	5	ND	18	4	ND	142
CL 317 - S	ND	1.20	9	ND	55	ND	.15	.2	6	22	13	2.98	.04	.28	176	1	.06	12	.05	10	ND	ND	4	ND	15	6	ND	76
CL 257 - S	ND	1.64	15	ND	40	ND	.22	.1	9	23	20	4.41	.05	.46	261	2	.09	16	.13	12	ND	ND	5	ND	19	5	ND	98
DETECTION LIMIT	.1	.01	3	3	1	3	.01	.1	1	1	1	.01	.01	.01	1	1	.01	1	.01	2	3	5	2	2	1	5	3	1

VANGEOCHEM LAB LIMITED

MAIN OFFICE: 1521 PEMBERTON AVE. N.VANCOUVER B.C. V7P 2S3 PH:(604)986-5211 TELEX:04-352578
BRANCH OFFICE: 1630 PANDORA ST. VANCOUVER B.C. V5L 1L6 PH:(604)251-5656

ICAP GEOCHEMICAL ANALYSIS

A .5 GRAM SAMPLE IS DIGESTED WITH 5 ML OF 3:1:2 HCL TO HNO3 TO H20 AT 95 DEG. C FOR 90 MINUTES AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR SN,MN,FE,CA,P,CR,MG,BA,PD,AL,NA,K,W,PT AND SR. AU AND PD DETECTION IS 3 PPM.
IS= INSUFFICIENT SAMPLE, ND= NOT DETECTED, -= NOT ANALYZED

COMPANY: NATION RIVER RESOURCES LTD.
ATTENTION: COLIN CAMPBELL
PROJECT: CL

REPORT#: 871384PA
JOB#: 871384
INVOICE#: 871384NA

DATE RECEIVED: 87/09/21
DATE COMPLETED: 87/10/05
COPY SENT TO:

ANALYST W. Rees

SAMPLE NAME	AG PPM	AL %	AS PPM	AU PPM	BA PPM	BI PPM	CA %	CD PPM	CO PPM	CR PPM	CU PPM	FE %	K %	MG %	MN PPM	MO PPM	NA %	NI PPM	P %	PB PPM	PD PPM	PT PPM	SB PPM	SN PPM	SR PPM	U PPM	W PPM	ZN PPM
CL 400S	4.6	.46	607	ND	79	ND	.22	.1	3	3	40	3.45	.07	.05	98	7	.09	3	.08	54	ND	ND	32	ND	42	ND	5	99
CL 401S	.1	3.00	75	3	172	ND	.33	.1	21	41	98	7.55	.03	1.03	1021	1	.44	20	.18	14	ND	ND	ND	ND	28	ND	ND	703
CL 402S	.1	2.53	7	ND	132	ND	.60	.1	20	24	66	4.70	.05	.59	2607	ND	.19	19	.19	11	ND	ND	ND	ND	41	ND	ND	251
CL 403S	.1	1.62	10	ND	90	4	.38	.1	14	22	25	3.37	.04	.39	1248	1	.11	14	.10	13	ND	ND	5	ND	29	ND	ND	149
CL 404S	.1	2.05	23	3	115	3	.34	.1	16	25	158	5.43	.04	.55	838	3	.16	24	.15	17	ND	ND	5	ND	28	ND	ND	147
CL 405S	.1	1.67	8	ND	112	ND	.71	.1	10	25	27	2.65	.03	.54	649	ND	.07	26	.08	7	ND	ND	3	ND	49	ND	ND	71
CL 406S	.1	1.87	6	ND	61	ND	.35	.1	9	31	19	3.38	.04	.55	250	ND	.08	23	.07	11	ND	ND	4	ND	34	ND	ND	61
CL 407S	.2	1.52	9	ND	63	ND	.32	.1	8	26	14	2.66	.04	.42	208	1	.05	20	.09	12	ND	ND	6	ND	27	ND	ND	48
CL 408S	.1	1.71	9	ND	76	ND	.29	.1	10	24	19	3.18	.03	.42	283	1	.08	17	.09	13	ND	ND	5	ND	28	ND	ND	82
CL 409S	.1	2.07	8	ND	115	3	.37	.1	12	29	46	3.50	.01	.62	449	ND	.08	23	.10	ND	ND	ND	11	ND	32	ND	ND	83
CL 410S	.1	.65	29	ND	110	ND	.31	3.3	6	5	38	3.45	.01	.06	338	6	.12	20	.07	20	ND	ND	16	ND	12	ND	ND	230
CL 411S	.1	1.77	35	ND	323	ND	.52	1.7	13	5	99	7.30	.03	.14	1599	4	.22	18	.19	4	ND	ND	14	ND	16	ND	ND	329
CL 412S	.1	2.96	ND	4	246	ND	.96	6.5	43	12	86	7.73	.01	1.14	4106	ND	.25	16	.47	8	ND	ND	11	ND	31	ND	ND	373
CL 413S	.1	3.23	21	ND	117	ND	.60	.6	19	14	56	5.81	.01	.76	863	4	.14	12	.10	2	ND	ND	11	ND	28	ND	ND	122
CL 414S	.1	1.97	8	ND	164	3	.78	1.7	15	19	50	4.00	.01	.52	1751	2	.13	15	.12	7	ND	ND	12	ND	43	ND	ND	194
CL 415S	.1	1.59	15	ND	71	3	.33	.3	10	24	32	3.19	.01	.49	360	2	.09	17	.05	6	ND	ND	12	ND	32	ND	ND	116
CL 416S	.1	1.05	12	ND	65	ND	.31	3.6	6	21	24	3.06	.01	.28	373	2	.11	11	.04	11	ND	ND	14	ND	29	6	3	190
CL 417S	.1	2.10	25	ND	131	3	1.10	4.7	13	22	213	3.50	.01	.63	983	1	.14	23	.16	10	ND	ND	11	ND	50	ND	ND	256
CL 418S	.1	1.75	14	ND	77	ND	.33	1.5	11	27	27	3.62	.01	.56	342	1	.15	22	.09	5	ND	ND	13	ND	23	ND	ND	295
DETECTION LIMIT	.1	.01	3	3	1	3	.01	.1	1	1	1	.01	.01	.01	1	1	.01	1	.01	2	3	5	2	2	1	5	3	1

VANGEOCHEM L⁄ ʒ LIMITED

MAIN OFFICE: 1988 TRIUMPH STREET, VANCOUVER B.C. V5L 1K5 PH:(604)251-5656 TELEX:04-352578
BRANCH OFFICE: 1630 PANDORA STREET. VANCOUVER B.C. V5L 1L6 PH:(604)251-7282 FAX:(604)254-5717

ICAP GEOCHEMICAL ANALYSIS

A .5 GRAM SAMPLE IS DIGESTED WITH 5 ML OF 3:1:3 HCL TO HNO3 TO H2O AT 95 DEG. C FOR 90 MINUTES AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR SN,MN,FE,CA,P,CR,MG,BA,PD,AL,NA,K,W,PT AND SR. AU AND PD DETECTION IS 3 PPM.
IS= INSUFFICIENT SAMPLE, ND= NOT DETECTED, -= NOT ANALYZED

COMPANY: NATION RIVER
ATTENTION: C CAMPBELL
PROJECT:

REPORT#: 880522 PA
JOB#: 880522
INVOICE#: 880522 NA

DATE RECEIVED: 88/06/01
DATE COMPLETED: 88/06/09
COPY SENT TO:

ANALYST__________

SAMPLE NAME	AG PPM	AL %	AS PPM	AU PPM	BA PPM	BI PPM	CA %	CD PPM	CO PPM	CR PPM	CU PPM	FE %	K %	MG %	MN PPM	MO PPM	NA %	NI PPM	P %	PB PPM	PD PPM	PT PPM	SB PPM	SN PPM	SR PPM	U PPM	W PPM	ZN PPM
CL 420	.2	3.50	21	ND	292	ND	.83	.8	20	37	103	3.97	.07	1.03	927	4	.01	34	.06	7	ND	ND	ND	6	88	ND	ND	121
CL 421	.1	1.98	12	ND	155	ND	.56	.4	12	22	39	2.25	.05	.77	314	1	.01	22	.06	3	ND	ND	ND	4	53	ND	ND	70
CL 422	.1	1.77	14	ND	122	ND	.45	.6	14	29	61	4.00	.04	.60	359	1	.01	17	.10	3	ND	ND	ND	5	50	ND	ND	60
CL 423	.1	1.23	13	ND	111	ND	.39	.6	9	29	28	3.30	.05	.41	283	1	.01	11	.10	7	ND	ND	ND	4	41	ND	ND	54
CL 424	.1	1.89	13	ND	123	ND	.44	.6	11	27	40	2.62	.06	.60	291	1	.01	24	.10	5	ND	ND	ND	4	44	ND	ND	56
CL 425	.1	1.63	15	ND	102	ND	.39	.5	11	24	24	2.45	.05	.44	298	1	.01	22	.11	6	ND	ND	ND	4	38	ND	ND	72
CL 426	.1	1.97	10	ND	113	ND	.44	.6	12	30	35	2.75	.05	.60	334	1	.01	33	.13	4	ND	ND	ND	5	40	ND	ND	55
CL 427	.1	1.28	6	ND	98	ND	.38	.5	10	24	12	1.82	.05	.40	357	1	.01	16	.06	7	ND	ND	ND	4	34	ND	ND	69
CL 428	.3	4.08	11	ND	200	ND	.56	3.1	28	28	54	6.69	.06	.97	896	2	.01	19	.12	4	ND	ND	ND	8	72	ND	ND	424
CL 429	.1	3.59	15	ND	124	ND	.48	1.2	11	11	56	6.56	.04	.32	449	6	.01	8	.30	7	ND	ND	ND	8	66	ND	ND	209
CL 430	.1	1.91	11	ND	103	ND	.35	.3	12	25	20	2.74	.05	.41	389	1	.01	20	.14	6	ND	ND	ND	4	31	ND	ND	73
CL 431	.1	3.12	16	ND	181	ND	.45	.8	17	45	70	4.91	.05	.83	416	2	.01	21	.22	5	ND	ND	ND	6	47	ND	ND	207
CL 432	.1	2.45	7	ND	191	ND	.40	.8	21	45	42	5.52	.05	.64	430	2	.01	18	.08	6	ND	ND	ND	4	50	ND	ND	247
CL 433	.1	1.28	8	ND	66	ND	.35	.5	11	28	30	3.24	.05	.32	269	1	.01	11	.03	7	ND	ND	ND	4	33	ND	ND	62
CL 434	.1	2.36	9	ND	121	ND	.34	.6	11	35	32	4.26	.05	.48	324	1	.01	14	.34	7	ND	ND	ND	4	31	ND	ND	84
CL 435	.1	2.86	11	ND	218	ND	.53	.8	14	41	40	3.69	.05	.81	980	1	.01	21	.10	9	ND	ND	ND	4	72	ND	ND	172
CL 436	.1	2.00	8	ND	98	ND	.48	.6	15	27	28	3.39	.05	.44	267	1	.01	15	.10	6	ND	ND	ND	5	37	ND	ND	185
CL 437	.1	2.97	286	ND	187	ND	.68	.8	22	36	59	3.97	.06	.68	746	1	.01	38	.04	31	ND	ND	ND	6	45	ND	ND	136
CL 438	.1	2.68	17	ND	119	ND	.38	.6	17	28	45	4.02	.05	.61	365	1	.01	24	.08	6	ND	ND	ND	6	36	ND	ND	78
CL 439	.1	2.02	8	ND	109	ND	.38	.6	13	26	28	3.52	.05	.44	279	1	.01	12	.25	7	ND	ND	ND	5	42	ND	ND	61
CL 440	.1	1.12	7	ND	59	ND	.34	.5	5	21	18	2.59	.04	.24	180	1	.01	15	.06	8	ND	ND	ND	4	30	ND	ND	27
CL 441	.2	2.02	8	ND	103	ND	.41	.8	15	31	63	3.95	.05	.50	651	2	.01	18	.20	8	ND	ND	ND	5	37	ND	ND	73
CL 442	.2	2.52	13	ND	102	ND	1.02	.8	14	31	64	4.76	.07	.52	296	3	.01	13	.08	11	ND	ND	ND	6	45	ND	ND	74
CL 443	.2	1.53	6	ND	118	ND	.40	.4	10	26	31	3.25	.05	.28	279	3	.01	9	.05	11	ND	ND	ND	5	34	ND	ND	52
CL 444	.1	1.64	6	ND	144	ND	.41	.8	13	26	37	2.87	.06	.46	773	2	.01	20	.20	11	ND	ND	ND	6	37	ND	ND	78
CL 445	.2	1.41	8	ND	86	ND	.41	.6	12	25	16	2.47	.05	.39	331	2	.01	17	.11	11	ND	ND	ND	5	36	ND	ND	69
CL 446	.2	1.29	10	ND	92	ND	.72	.6	10	23	37	2.77	.06	.34	294	2	.01	9	.03	11	ND	ND	ND	6	45	ND	ND	47
CL 447	.2	2.24	19	ND	130	ND	.56	.6	17	33	69	3.44	.06	.70	482	2	.01	22	.13	10	ND	ND	ND	6	57	ND	ND	53
CL 448	.2	2.16	8	ND	168	ND	.52	.6	14	25	22	3.82	.06	.56	333	2	.01	14	.32	13	ND	ND	ND	6	44	ND	ND	126
CL 449	.2	1.20	6	ND	87	ND	.45	.6	10	21	19	2.58	.05	.29	223	2	.01	9	.04	14	ND	ND	ND	6	36	ND	ND	54
CL 450	.1	2.58	21	ND	155	ND	.48	.8	18	27	59	4.24	.05	.70	380	2	.01	19	.30	10	ND	ND	ND	7	41	ND	ND	80
CL 451	.1	2.49	16	ND	99	ND	.58	.6	19	26	55	3.50	.05	.64	405	2	.01	22	.15	11	ND	ND	ND	7	44	ND	ND	71
CL 452	.2	1.41	10	ND	90	4	.30	.5	9	22	25	1.67	.05	.39	200	3	.01	16	.04	13	ND	ND	ND	6	32	ND	ND	40
CL 453	.2	1.67	14	ND	121	ND	.40	.8	14	30	38	2.79	.05	.56	415	2	.01	26	.13	13	ND	ND	ND	6	40	ND	ND	63
CL 454	.1	1.46	12	ND	130	ND	.40	.6	12	29	28	2.84	.05	.48	583	2	.01	24	.22	12	ND	ND	ND	5	36	ND	ND	61
CL 455	.1	1.54	7	ND	115	ND	.34	.4	10	25	18	2.62	.05	.41	323	2	.01	17	.08	13	ND	ND	ND	5	38	ND	ND	63
CL 456	.1	2.45	10	ND	158	ND	.44	.6	16	26	68	2.86	.06	.48	1075	3	.01	27	.19	12	ND	ND	ND	6	40	ND	ND	119
CL 457	.2	1.54	10	ND	112	ND	.50	.6	11	27	47	2.50	.06	.54	391	3	.01	22	.07	14	ND	ND	ND	5	45	ND	ND	44
CL 458	.2	2.17	11	ND	195	ND	.86	1.1	13	27	95	2.65	.07	.48	1997	3	.01	31	.08	11	ND	ND	ND	4	62	ND	ND	97
DETECTION LIMIT	.1	.01	3	3	1	3	.01	.1	1	1	1	.01	.01	.01	1	1	.01	1	.01	2	3	5	2	2	1	5	3	1

CLIENT: NATION RIVER JOB#: 880522 PROJECT: REPORT: 880522 PA

SAMPLE NAME	AG PPM	AL %	AS PPM	AU PPM	BA PPM	BI PPM	CA %	CD PPM	CO PPM	CR PPM	CU PPM	FE %	K %	MG %	MN PPM	MO PPM	NA %	NI PPM	P %	PB PPM	PD PPM	PT PPM	SB PPM	SN PPM	SR PPM	U PPM	W PPM	ZN PPM
CL 459	.1	1.46	7	ND	95	3	.66	.3	9	24	36	2.24	.05	.40	283	1	.01	20	.04	8	ND	ND	ND	3	44	ND	ND	53
CL 460	.1	1.38	6	ND	99	ND	.44	.2	8	23	25	1.95	.04	.50	222	ND	.01	24	.08	3	ND	ND	ND	3	41	ND	ND	37
CL 461	.1	1.62	5	ND	96	ND	.36	.3	8	24	20	2.92	.03	.36	220	ND	.01	13	.12	2	ND	ND	ND	4	34	ND	ND	42
CL 462	.1	2.54	41	ND	165	ND	.34	1.1	15	36	103	5.45	.20	.64	455	2	.01	15	.42	18	ND	ND	ND	6	36	ND	ND	251
CL 463	.2	2.09	17	ND	140	ND	.35	.4	12	31	29	2.72	.21	.61	257	2	.01	27	.11	9	ND	ND	ND	5	36	ND	ND	65
CL 464	.2	1.36	8	ND	80	3	.31	.4	7	12	17	1.35	.21	.31	153	1	.01	9	.02	11	ND	ND	ND	4	33	ND	ND	40
CL 465	.1	2.85	22	ND	125	ND	.32	.4	13	27	34	2.95	.21	.49	267	2	.01	23	.09	9	ND	ND	ND	6	33	ND	ND	49
CL 466	.2	1.16	10	ND	93	ND	.46	.4	7	18	26	1.80	.22	.38	179	1	.01	12	.10	9	ND	ND	ND	4	41	ND	ND	40
CL 467	.2	1.12	8	ND	39	ND	.31	.2	6	27	16	2.49	.20	.19	168	1	.01	4	.03	12	ND	ND	ND	5	22	ND	ND	42
CL 468	.1	2.35	14	ND	61	ND	.28	.6	8	35	31	4.13	.20	.35	472	2	.01	5	.27	12	ND	ND	ND	5	19	ND	ND	110
CL 469	.2	1.52	13	ND	85	ND	.61	.8	20	61	51	6.00	.21	.55	589	2	.01	12	.09	14	ND	ND	ND	5	51	ND	ND	51
CL 470	.1	1.42	19	ND	79	ND	.53	.4	10	27	56	2.60	.22	.49	308	3	.01	11	.10	15	ND	ND	ND	4	35	ND	ND	48
CL 471	.1	2.46	17	ND	101	ND	.31	.8	12	29	47	3.68	.20	.58	306	4	.01	16	.15	10	ND	ND	ND	5	24	ND	ND	79
CL 472	.1	1.19	7	ND	55	ND	.30	.4	8	20	14	1.93	.20	.24	219	1	.01	10	.07	10	ND	ND	ND	4	29	ND	ND	79
CL 473	.1	1.63	20	ND	70	ND	.47	.8	11	32	75	3.17	.22	.51	411	3	.01	12	.12	14	ND	ND	ND	4	39	ND	ND	54
CL 474	.2	1.40	11	ND	53	ND	.18	.2	5	19	29	2.73	.20	.20	153	1	.01	6	.12	11	ND	ND	ND	5	19	ND	ND	68
CL 475	.1	1.73	26	ND	108	ND	.42	.8	19	51	66	4.17	.21	.78	644	2	.01	17	.08	41	ND	ND	ND	5	38	ND	ND	261
CL 476	.2	2.35	16	ND	152	ND	.38	.8	14	37	84	5.14	.20	.63	431	1	.01	15	.22	16	ND	ND	ND	7	44	ND	ND	217
CL 477	.1	1.87	15	ND	80	ND	.27	.6	10	29	28	4.19	.20	.37	351	1	.01	5	.25	13	ND	ND	ND	5	17	ND	ND	191
CL 478	.1	3.62	129	ND	334	ND	.31	3.1	115	29	213	11.26	.18	.68	1425	3	.01	28	.10	10	ND	ND	ND	5	26	ND	ND	409
CL 479	.1	2.26	35	ND	155	ND	.36	2.8	43	24	52	6.59	.20	.51	1161	1	.01	11	.27	16	ND	ND	ND	4	29	ND	ND	567
CL 480	.2	1.27	45	ND	101	ND	.42	1.1	13	24	22	2.61	.21	.35	569	1	.01	11	.11	12	ND	ND	ND	4	31	ND	ND	176
CL 481	.2	1.64	19	ND	120	ND	.72	.7	16	29	90	3.14	.23	.67	535	2	.01	23	.12	11	ND	ND	ND	5	57	ND	ND	49
CL 482	.2	1.66	20	ND	132	ND	.85	.6	17	27	103	3.16	.24	.72	565	1	.01	23	.13	10	ND	ND	ND	5	63	ND	ND	57
CL 483	.1	1.59	17	ND	46	ND	.34	.6	9	28	56	3.04	.20	.37	194	1	.01	17	.18	8	ND	ND	ND	4	29	ND	ND	30
CL 484	.2	1.54	14	ND	80	ND	.44	.7	12	26	35	3.11	.22	.42	324	1	.01	16	.14	8	ND	ND	ND	5	37	ND	ND	69
CL 465	.2	2.31	25	ND	125	ND	.56	.8	20	45	126	4.38	.22	.63	848	2	.01	29	.04	11	ND	ND	ND	5	46	ND	ND	71
CL 486	.2	1.28	13	ND	66	ND	.46	.4	11	33	38	3.05	.21	.48	386	1	.01	17	.03	8	ND	ND	ND	4	38	ND	ND	43
CL 487	.1	1.68	18	ND	108	ND	.47	.7	13	29	68	2.90	.22	.55	557	2	.01	26	.06	9	ND	ND	ND	4	36	ND	ND	65
CL 488	.2	1.62	20	ND	94	ND	.51	1.1	14	39	85	3.57	.22	.71	561	2	.01	27	.04	12	ND	ND	ND	4	40	ND	ND	79
CL 489	.1	.88	8	ND	106	ND	1.97	.6	7	9	74	1.25	.24	.32	521	2	.01	13	.13	7	ND	ND	ND	5	79	ND	ND	61
CL 490	.1	1.33	20	ND	78	ND	.51	.8	12	28	43	3.01	.22	.47	480	1	.01	17	.09	10	ND	ND	ND	3	33	ND	ND	76
CL 491	.1	2.50	21	ND	120	ND	.29	.7	15	28	38	3.91	.20	.35	766	1	.01	6	.42	7	ND	ND	ND	5	22	ND	ND	195
CL 492	.1	2.69	17	ND	153	ND	.32	.8	14	29	90	4.45	.20	.54	437	2	.01	16	.28	9	ND	ND	ND	6	36	ND	ND	311
CL 493	.2	1.90	11	ND	146	ND	.26	1.1	16	28	63	3.34	.21	.55	381	1	.01	8	.09	12	ND	ND	ND	5	41	ND	ND	255
DETECTION LIMIT	.1	.01	3	3	1	3	.01	.1	1	1	1	.01	.01	.01	1	1	.01	1	.01	2	3	5	[illegible]	[illegible]		5	3	1

VANGEOCHEM LAB LIMITED

MAIN OFFICE: 1988 TRIUMPH STREET, VANCOUVER B.C. V5L 1K5 PH:(604)251-5656 TELEX:04-352578
BRANCH OFFICE: 1630 PANDORA STREET. VANCOUVER B.C. V5L 1L6 PH:(604)251-7282 FAX:(604)254-5717

ICAP GEOCHEMICAL ANALYSIS

A .5 GRAM SAMPLE IS DIGESTED WITH 5 ML OF 3:1:3 HCL TO HNO3 TO H2O AT 95 DEG. C FOR 90 MINUTES AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR SN,MN,FE,CA,P,CR,MG,BA,PD,AL,NA,K,W,PT AND SR. AU AND PD DETECTION IS 3 PPM.
IS= INSUFFICIENT SAMPLE, ND= NOT DETECTED, -= NOT ANALYZED

COMPANY: NATION RIVER RES
ATTENTION: C CAMPBELL
PROJECT:

REPORT#: 880530 PA
JOB#: 880530
INVOICE#: 880530 NA

DATE RECEIVED: 88/06/03
DATE COMPLETED: 88/06/10
COPY SENT TO:

ANALYST

SAMPLE NAME	AG PPM	AL %	AS PPM	AU PPM	BA PPM	BI PPM	CA %	CD PPM	CO PPM	CR PPM	CU PPM	FE %	K %	MG %	MN PPM	MO PPM	NA %	NI PPM	P %	PB PPM	PD PPM	PT PPM	SB PPM	SN PPM	SR PPM	U PPM	W PPM	ZN PPM
C 1001	.6	1.02	22	ND	36	ND	.44	1.1	28	44	694	4.95	.08	1.39	87	1	.01	6	.11	7	ND	ND	ND	8	23	ND	ND	8
C 1002	.2	1.68	20	ND	53	ND	1.23	.8	19	41	94	4.41	.06	.81	268	3	.01	6	.15	8	ND	ND	ND	7	19	ND	ND	72
C 1003	.1	2.62	108	ND	53	ND	.61	2.1	13	33	21	9.91	.03	1.86	1461	1	.01	1	.13	44	ND	ND	ND	7	18	ND	ND	255
C 1004	.1	2.75	32	ND	43	ND	3.27	1.1	34	44	84	4.94	.07	2.72	2284	2	.01	15	.13	9	ND	ND	ND	6	62	ND	ND	91
CL 1005	.1	1.27	10	ND	88	ND	1.23	.8	14	31	177	4.39	.07	.56	512	6	.01	5	.08	15	ND	ND	ND	2	24	ND	ND	54
CL 1006	.1	1.61	20	ND	69	ND	3.67	3.2	14	55	129	2.31	.08	.89	1659	2	.01	9	.10	24	ND	ND	ND	2	46	ND	ND	793
CL 1007	.1	1.98	25	ND	79	ND	1.67	4.1	17	43	149	3.59	.08	1.29	1643	2	.01	6	.10	279	ND	ND	ND	3	20	ND	ND	945
CL 1008	.1	2.33	77	ND	73	ND	1.50	.3	21	39	52	5.05	.08	1.56	1279	3	.01	1	.25	13	ND	ND	ND	3	22	ND	ND	74
CL 1009	.1	3.29	86	ND	68	ND	5.44	1.2	32	115	72	4.87	.07	3.12	2399	2	.01	69	.08	20	ND	ND	ND	7	76	ND	ND	98
CL 1010	.1	2.43	38	ND	64	7	1.38	1.2	33	141	79	2.29	.06	4.39	642	2	.01	183	.07	10	ND	ND	ND	6	19	ND	ND	213
CL 1011	.3	2.93	21	ND	92	ND	2.59	1.1	23	30	189	4.40	.08	.81	339	4	.01	13	.20	12	ND	ND	ND	9	27	ND	ND	60
CL 1012	.1	5.27	30	ND	17	ND	5.30	.5	25	81	138	2.86	.06	.48	328	5	.01	47	.15	10	ND	ND	ND	7	19	ND	ND	26
CL 1013	.8	2.83	28	ND	31	ND	2.12	21.2	16	65	1136	4.45	.07	1.93	2268	1	.01	26	.12	13	ND	ND	ND	6	20	ND	ND	7619
CL 1014	.1	3.17	22	ND	22	3	3.35	.8	16	40	88	2.70	.07	.80	416	3	.01	45	.17	9	ND	ND	ND	6	21	ND	ND	163
CL 1015	.1	.75	32	ND	65	ND	.51	.6	9	18	28	3.67	.06	.25	665	2	.01	5	.13	20	ND	ND	ND	1	13	ND	ND	104
CL 1016	.1	.79	18	ND	110	ND	.30	.6	5	20	21	3.37	.06	.24	463	2	.01	3	.12	17	ND	ND	ND	1	12	ND	ND	81
CL 1017	.1	.56	23	ND	57	ND	3.45	.5	5	33	19	3.20	.08	.17	924	3	.01	1	.11	19	ND	ND	ND	1	49	ND	ND	71
CL 1018	.1	.76	33	ND	46	ND	1.12	.5	5	24	26	4.80	.07	.25	916	3	.01	3	.11	23	ND	ND	ND	1	18	ND	ND	67
CL 1019	.1	2.25	38	ND	77	ND	.48	1.5	25	183	497	11.14	.04	2.00	312	ND	.01	64	.08	14	ND	ND	ND	7	48	ND	ND	21
DETECTION LIMIT	.1	.01	3	3	1	3	.01	.1	1	1	1	.01	.01	.01	1	1	.01	1	.01	2	3	5	2	2	1	5	3	1

Vancouver Petrographics Ltd.

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Report for: **Colin Campbell,**
Nation River Resources Ltd.,
Suite 480, R.R. #4,
COURTENAY, B.C., V9N 7J3

Invoice 7107
January 1988

Samples: CL-52 H.S., -59-R, -69-R, -84-R, -86, -101, -501, -502, -503, -504

Summary:

The samples are from an alkalic volcanic and hypabyssal suite, ranging from alkali gabbro to trachyandesite and latite.

CL-52 H.S. — porphyritic trachyandesite: phenocrysts of plagioclase and clinopyroxene with minor ones of hornblende, biotite, and magnetite in a groundmass of plagioclase and lesser K-feldspar with minor chlorite.

CL-59 R — quartz-calcite-chalcopyrite-pyrite vein with minor tetrahedrite(?) replacing an altered host rock dominated by quartz with lesser sericite and minor pyrite.

CL-69 R — altered porphyritic andesite with phenocrysts of plagioclase and minor ones of biotite and hornblende in a groundmass of plagioclase-calcite-chlorite with minor pyrite; veins are of quartz-(calcite) with minor pyrite.

CL84 R — breccia: fragments of altered andesite(?) dominated by sericite and chlorite, and of silica and quartz in a groundmass of calcite with lesser quartz and minor pyrite.

CL-86 — breccia: fragments of quartz-calcite in a groundmass of cryptocrystalline silica-dolomite and patches of calcite

CL-101 — altered alkalic gabbro dominated by clinopyroxene and plagioclase with lesser K-feldspar and patches of tremolite/actinolite; cut by a replacement vein dominated by K-feldspar with patches of pyrrhotite, actinolite, and tourmaline.

CL-501-R — porphyritic latite with phenocrysts of plagioclase and hornblende in a groundmass dominated by plagioclase and lesser K-feldspar, with patches of tremolite/actinolite and of epidote, and minor pyrrhotite.

CL-502 — alkali gabbro porphyry, with phenocrysts of plagioclase and clinopyroxene, and minor sphene in a groundmass dominated by plagioclase with lesser K-feldspar and minor epidote and marcasite/pyrite.

(continued)

CL-5Ø3. hypabyssal leucocratic diorite dominated by plagioclase with patches of amphibole and lesser chlorite, and replacement patches of calcite; replaced by tourmaline vein and late calcite veinlet.

CL-5Ø4. breccia; fragments of chlorite-rich rock and andesite in groundmass of porphyritic latite/trachyte containing abundant replacement dolomite/calcite patches

Rock names in the alkalic volcanic and hypabyssal suite are not as well defined as in the calcalkalic suite because of the stronger degree of fractionation between phenocrysts and groundmass. For example, sample CL 52 H.S. (trachyandesite) is similar to Samples Cl-1Ø1 and CL-52Ø (alkali gabbro), in that they all contain clinopyroxene phenocrysts and moderately abundant groundmass K-feldspar.

Carbonates were distinguished mainly on the basis of relief, with dolomite having moderately high relief and calcite moderately low relief.

For iron sulfides, marcasite/pyrite was identified by moderate anisotropism, whereas pyrite is isotropic to weakly anisotropic.

Amphiboles were distinguished mainly by color, with tremolite/actinolite very pale green, actinolite pale to light green, and hornblende light to medium green to brown.

John G. Payne

CL 52 H.S. **Porphyritic Trachyandesite**

The rock contains phenocrysts of clinopyroxene and plagioclase, and minor ones of biotite in a groundmass dominated by lathy to feathery plagioclase and lesser K-feldspar.

phenocrysts	
plagioclase	20-25%
clinopyroxene	15-17
hornblende	1
biotite	0.5
magnetite/hematite	2- 3
apatite	minor
groundmass	
plagioclase	35-40
K-feldspar	10-15
chlorite	3- 4
quartz	minor
epidote	minor
calcite	minor
chalcopyrite	minor
pyrite	trace

Plagioclase forms phenocrysts from 0.7-1.5 mm in size. It is altered moderately to strongly to extremely fine to very fine grained patches of epidote.

Clinopyroxene forms anhedral to subhedral phenocrysts from 0.2-0.8 mm in size, with a few up to 1.3 mm long.

Hornblende forms ragged to euhedral phenocrysts up to 1.5 mm in length. It is light to medium greenish brown in color. Some phenocrysts are altered moderately to very fine grained, in part pseudomorphic epidote.

Biotite forms a few equant phenocrysts averaging 0.2-0.3 mm in size. It is altered completely to pseudomorphic chlorite, with or without moderately abundant epidote patches.

Magnetite forms equant, anhedral grains and clusters of grains averaging 0.1-0.3 mm in size. It is altered strongly to hematite.

Apatite forms a few equant, anhedral phenocrysts averaging 0.1-0.15 mm in size.

The groundmass is dominated by irregular lathy to feathery plagioclase and lesser interstitial K-feldspar grains averaging 0.03-0.08 mm in size. Chlorite and much less epidote occurs in interstitial, extremely fine grains and aggregates. Locally, these grade upwards in size to patches up to 0.3 mm across of chlorite, with or without epidote. In a very few patches, calcite forms anhedral grains up to 0.2 mm in size intergrown with chlorite and epidote.

Quartz forms a patch 0.4 mm long at the end of one plagioclase phenocryst; it consists of a few grains from 0.08-0.2 mm in size.

Chalcopyrite forms a few anhedral grains up to 0.03 mm in size in the groundmass, and a few patches up to 0.13 mm in size in phenocrysts of clinopyroxene.

Pyrite forms a very few subhedral grains up to 0.03 mm in size; some grains are replaced partly by hematite.

CL-59 R **Quartz-Calcite-Chalcopyrite-Pyrite Vein replacing Quartz-Sericite Altered Host Rock**

The rock contains relic patches of very fine to extremely fine grained quartz, quartz-sericite, and sericite-(limonite) enclosed in fine to medium grained quartz, with patches of coarse grained calcite, and disseminated patches of sulfides, dominated by chalcopyrite and lesser pyrite.

host rock		vein	
quartz	15-20%	quartz	45-50%
sericite	4- 5	calcite	15-20
pyrite	0.3	chalcopyrite	1- 2
biotite	minor	pyrite	0.5
apatite	trace	tetrahedrite(?)	minor
Ti-oxide	trace	sphalerite	trace

The patches of host rock show a variety of textures. Some consists entirely of very fine grained quartz in random to slightly oriented textures. Others consist of irregular aggregates dominated by quartz with minor to locally moderately abundant interstitial patches of sericite. In some, sericite is concentrated in discrete patches, a few of which show subhedral outlines, suggesting that they represent original plagioclase phenocrysts. Some patches are dominated by sericite with minor limonite; in some of these sericite has a foliated texture, suggesting that it represents a metasedimentary rock. The largest of these contains disseminated pyrite and is cut by a vein up to 0.6 mm wide in which pyrite forms a dense aggregate 0.4 mm wide bordered by a band of quartz 0.2 mm wide. Quartz grains are oriented perpendicular to the vein walls.

Pyrite occurs in some patches as clusters of subhedral to euhedral cubic grains from 0.05-0.2 mm in size. Associated with some pyrite patches are feathery to slightly radiating clusters of pale to light greenish brown biotite averaging 0.02-0.03 mm in grain size.

Apatite and Ti-oxide form a very few anhedral grains up to 0.03 mm in size.

Vein quartz commonly is subhedral in outline, with grains averaging 0.2-1 mm in size. In places subhedral to euhedral grains of quartz are intergrown with the altered host rock.

Calcite is concentrated in one main zone as anhedral grains up to a few mm across. It also occurs adjacent to this zone as smaller grains (0.1-0.7 mm) intergrown with quartz.

Chalcopyrite and pyrite occur in clusters up to 1.7 mm in size. Some are dominated by chalcopyrite with scattered anhedral pyrite grains; others contain euhedral pyrite cubes surrounded by chalcopyrite. Pyrite is slightly anisotropic. Near calcite, patches of each sulfide commonly are rimmed by thin halos of secondary hematite, and locally pyrite is replaced along veinlets by hematite.

One sulfide patch contains a few interstitial grains up to 0.03 mm across of tetrahedrite(?) intergrown with chalcopyrite and locally with secondary covellite.

Sphalerite forms a few patches up to 0.1 mm in size interstitial to subhedral quartz grains. Sphalerite contains abundant exsolution blebs of chalcopyrite averaging 0.005 mm in size.

In the second section (examined only under reflected light), two sulfide patches contain several subhedral to euhedral grains of arsenopyrite up to 0.2 mm in length. In one of these patches, arsenopyrite is altered to secondary minerals, including abundant covellite. Associated with chalcopyrite in one of these patches is a grain up to 0.35 mm across of tetrahedrite(?)

CL-69 R **Altered Porphyritic Andesite cut by Quartz-Calcite Veins**

The rock contains phenocrysts of plagioclase and much less biotite and hornblende in a groundmass dominated by plagioclase, calcite, and chlorite.

phenocrysts		veins	
plagioclase	25-30%	quartz	5- 7%
biotite	2- 3	calcite	1- 2
hornblende	1- 2	pyrite	0.3
apatite	trace	chlorite	minor
groundmass			
plagioclase	25-30		
calcite	15-20		
chlorite	10-12		
pyrite	1- 2		

Plagioclase forms subhedral to euhedral prismatic phenocrysts averaging 0.7-1.5 mm in length. It is altered completely to extremely fine grained sericite and locally minor chlorite.

Biotite forms mainly equant phenocrysts averaging 0.2-0.3 mm in size. It is altered completely to pseudomorphic chlorite and abundant Ti-oxide needles.

Hornblende forms a few anhedral to subhedral phenocrysts up to 1 mm across, and numerous ones averaging 0.1-0.2 mm across. The larger ones are replaced completely by intimate intergrowths of very fine grained calcite and chlorite. The smaller ones are replaced by chlorite with Ti-oxide concentrated in an irregular rim around the border of the grain.

Apatite forms a few stubby, subhedral prismatic grains up to 0.1 mm long.

The groundmass consists of extremely fine grained plagioclase and much less chlorite, with irregular patches of calcite averaging 0.1-0.3 mm in size. Groundmass plagioclase is altered moderately to sericite. Pyrite forms disseminated grains and clusters of grains averaging 0.02-0.1 mm in size.

Most veins are in a subparallel set, and are up to 1 mm wide. They are dominated by very fine to locally fine grained quartz, with scattered grains of calcite and of pyrite, and with minor irregular patches of chlorite. In the centerlines of several veins are concentrations of extremely fine grained quartz and sericite. Calcite and pyrite grains are up to 0.6 mm in size. Pyrite commonly is subhedral to euhedral in outline. A few veinlets are dominated by very fine to fine grained calcite, with or without scattered fine grains of pyrite.

CL-84 R **Breccia: Altered Andesite(?) with replacement by Calcite-Quartz-(Pyrite); veins of Calcite-Pyrite**

The rock contains angular fragments averaging as few mm across and locally up to 2 cm long (in hand sample). Much of the rock is strongly altered, such that the original rock type is uncertain. Several patches are dominated by extremely fine grained silica. A few are dominated by very fine grained replacement quartz. Elsewhere, the fragments are dominated by extremely fine grained sericite-chlorite with coarser grained flakes and aggregates of muscovite/Ti-oxide and of chlorite, possibly after biotite. The fragments are enclosed in and partly replaced by calcite, lesser quartz, minor pyrite and much less chalcopyrite and sphalerite.

fragments(?)	
silica-rich	4- 5%
quartz-rich	1- 2
andesite(?)	
sericite	12-15
chlorite	7- 8
muscovite-(Ti-oxide)	2- 3
rutile	minor
breccia groundmass and replacement	
calcite	50-55
quartz	12-15
pyrite	2- 3
Ti-oxide	minor
chalcopyrite	trace
sphalerite	trace

The rock contains angular to irregular patches up to 1.5 mm in size dominated by extremely fine grained (0.002-0.003 mm) silica with scattered coarser grains (0.02-0.1 mm) of quartz and disseminated replacement patches of subhedral/euhedral calcite/dolomite and of anhedral pyrite averaging 0.05-0.07 mm in size.

One patch up to 2 mm across is dominated by prismatic quartz grains up to 0.1 mm in size, with interstitial, finer grained quartz and minor disseminated calcite and pyrite.

The altered andesite(?) consists of intergrowths of extremely fine grained sericite and chlorite, with coarser patches (averaging 0.1-0.2 mm in size of ragged muscovite-(Ti-oxide) flakes (possibly secondary after biotite), and patches of chlorite flakes, generally without Ti-oxide, up to 0.2 mm across. Rutile forms scattered grains and clusters of grains from 0.05-0.15 mm in size.

Much of the breccia matrix is dominated by anhedral aggregates of calcite grains averaging 0.1-0.3 mm in grain size.

Quartz forms anhedral grains from 0.1-0.3 mm in size intergrown with calcite and to a lesser extent as a partial replacement of the altered andesite fragments.

Pyrite forms disseminated anhedral grains averaging 0.03-0.1 mm in size, with a few medium and coarse grains up to 1.5 mm across. They commonly are intergrown slightly to moderately along their borders with calcite and silicates. One grain contains a subrounded inclusion of pyrrhotite 0.015 mm across.

Sphalerite forms a very few patches up to 0.4 mm across, intergrown very intimately with calcite. Sphalerite contains moderately abundant exsolution blebs of chalcopyrite averaging 0.002-0.003 mm in size.

Chalcopyrite forms disseminated patches up to 0.05 mm in size.

CL-86 Breccia: Fragments of Replacement Quartz-Calcite in a Groundmass of Cryptocrystalline Silica-Dolomite and Patches of Calcite.

The rock contains angular fragments up to a few cm in size of strongly replaced rock dominated by quartz with lesser chlorite, and patches of calcite and pyrite. These are enclosed in a groundmass, partly dominated by cryptocrystalline silica with disseminated dolomite, and partly by fine to coarse grained calcite.

fragments	
quartz	17-20
chlorite	4- 5
dolomite/calcite	3- 4
pyrite	0.3
groundmass	
a) silica	35-40
dolomite	15-17
pyrite	minor
chalcopyrite	trace
b) calcite	12-15
chlorite	0.7
pyrite	0.2
veinlets	
dolomite/calcite	0.2

(percentages for thin section; fragments more abundant in hand sample)

The texture of the fragments is variable. Quartz forms aggregates of two main types. The first is dominated by prismatic grains up to 0.1 mm long intergrown with extremely fine grained anhedral quartz and chlorite. This grades into the second, which is dominated by equant, anhedral quartz grains averaging 0.05-0.15 mm in size. Chlorite forms extremely fine grained patches up to 1 mm in length; some of these contain dusty concentrations of Ti-oxide. Some fragments consist of intergrowths of extremely fine grained patches of chlorite and very fine to fine grained quartz. One fragment contains a patch of extremely fine grained sericite intergrown coarsely with very fine to fine grained quartz.

Dolomite/calcite forms patches up to 0.8 mm in size of anhedral grains averaging 0.1-0.2 mm in size. In some fragments it is almost as abundant as quartz.

Pyrite forms disseminated, subhedral to euhedral grains and aggregates ranging up to 0.5 mm in size. Borders of a few grains are altered to hematite.

The main groundmass consists of cryptocrystalline silica with minor very fine grained quartz, and moderately abundant to very abundant disseminated grains and patches of dolomite averaging 0.05-0.2 mm in size. Pyrite forms disseminated subhedral to euhedral grains averaging 0.02-0.07 mm in size. Chalcopyrite forms a few anhedral grains up to 0.02 mm in size.

The groundmass contains patches up to a few cm across (in hand sample) of anhedral calcite grains mainly averaging 0.2-0.5 mm in grain size, and locally averaging 0.03-0.05 mm in grain size. Chlorite forms a few irregular patches up to 0.5 mm across of extremely fine grain size. Pyrite forms disseminated subhedral to euhedral grains up to 0.2 mm across.

The rock is cut by a few veinlets up to 0.1 mm in width of dolomite/calcite.

Along a late fracture pyrite is altered to hematite, with hematite concentrated in narrow fractures parallel to the main fracture zone.

CL-101 Altered Alkalic Gabbro cut by Vein of K-feldspar-(Pyrrhotite-Actinolite-Tourmaline-Quartz)

The rock is a medium grained alkalic gabbro dominated by clinopyroxene and lesser plagioclase, with interstitial K-feldspar, and minor biotite, sphene, chlorite, and apatite. Secondary replacement patches are dominated by actinolite and pyrrhotite. The rock is cut by a vein dominated by K-feldspar with patches of pyrrhotite and disseminated grains and clusters of tourmaline and of actinolite.

clinopyroxene	35-40%	vein	
plagioclase	30-35	K-feldspar	5- 7%
K-feldspar	10-12	pyrrhotite	0.7
sphene	2	actinolite	0.7
biotite	0.5	tourmaline	0.1
apatite	0.3	chalcopyrite	trace
chlorite	1		
tremolite/actinolite	3- 4		
pyrrhotite	0.3		
pyrite	trace		

Clinopyroxene forms anhedral to euhedral, stubby prismatic grains from 0.5-1.5 mm in size. Many show concentric zones of finely oscillating composition. A few show simple twins. A few are altered to or overgrown by secondary patches of pale green actinolite.

Interstitial to clinopyroxene are intergrowths of subhedral prismatic plagioclase grains averaging 0.2-0.5 mm in size. They are altered moderately to strongly to extremely fine grained sericite.

Interstitial to plagioclase are anhedral K-feldspar grains averaging 0.3-1 mm in size.

Sphene forms anhedral patches from 0.1-0.5 mm in size. It is altered completely to Ti-oxide.

Biotite forms scattered ragged flakes up to 0.5 mm long. It is pleochroic from pale to medium reddish brown. Grains commonly are partly replaced by pseudomorphic chlorite and/or sericite/muscovite, locally with minor lenses of calcite parallel to cleavage.

Apatite forms acicular grains up to 0.7 mm in length.

Chlorite forms interstitial patches up to 0.5 mm in size.

Actinolite forms interstitial patches up to 1.5 mm in size of pale green to yellowish green prismatic to fibrous grains ranging from extremely fine to fine grained. Associated with some patches of actinolite are irregular interstitial patches of very fine grained pyrrhotite up to 0.3 mm across. Chalcopyrite forms a few anhedral grains up to 0.03 mm in size associated with pyrrhotite. Some actinolite patches contain minor to moderately abundant extremely fine grained chlorite.

Pyrite forms disseminated, subhedral to anhedral grains averaging 0.1-0.15 mm in size.

The rock is cut by a vein up to 2.5 mm wide of probable replacement origin. Borders with the rock are diffuse. The vein is dominated by fine to medium grained K-feldspar, with patches of pyrrhotite up to 1 mm across and grains and clusters of actinolite and of tourmaline up to 0.5 mm in size. Pyrrhotite is altered partly to secondary Fe-sulfides and oxides. Tourmaline is zoned slightly, and ranges from pale to medium green and blue. It commonly is euhedral. Quartz occurs in a few patches up to 1.7 mm across as very fine grains intergrown very irregularly with pyrrhotite, tourmaline, and along borders of patches with actinolite and K-feldspar. Chalcopyrite occurs mainly with pyrrhotite as anhedral grains up to 0.1 mm in size.

CL-501-R **Porphyritic Latite**

The rock contains phenocrysts of plagioclase and lesser ones of hornblende and apatite. These are set in an extremely fine grained groundmass dominated by plagioclase and lesser K-feldspar.

phenocrysts	
plagioclase	20-25%
hornblende	8-10
apatite	0.2
groundmass	
plagioclase	50-55
K-feldspar	15-17
tremolite/actinolite	4- 5
epidote	1- 2
quartz	0.2
ilmenite	minor
sphene	minor
chlorite	minor
pyrrhotite	0.2
pyrite	trace

Plagioclase forms subhedral to euhedral prismatic phenocrysts from 0.7-1.5 mm in length. It is altered slightly to disseminated, extremely fine grained sericite and epidote.

Hornblende forms subhedral to euhedral prismatic phenocrysts averaging 0.7-1.2 mm in length. It is altered completely to tremolite/actinolite.

Apatite forms euhedral, stubby prismatic phenocrysts from 0.1-0.2 mm in average size. Many contain tiny, elongate inclusions parallel to the c-axis.

The groundmass is dominated by anhedral to subhedral plagioclase grains averaging 0.03-0.05 mm in size, with interstitial plagioclase and K-feldspar from 0.01-0.03 mm in size.

Tremolite/actinolite forms clusters up to 1.5 mm in size of fibrous to prismatic aggregates.

Epidote forms scattered patches up to 1.2 mm in size of anhedral, fine grains, and also occurs as disseminated grains 0.005-0.01 mm in size throughout the groundmass.

Quartz forms discontinuous lenses up to 0.8 mm long, and one interstitial patch up to 0.7 mm across; the latter contains a cluster of acicular to prismatic tremolite crystals up to 0.15 mm long.

Chlorite forms scattered interstitial patches up to 0.2 mm in size of extremely fine, pale green grains.

Ilmenite forms anhedral grains averaging 0.05-0.07 mm in size; they are surrounded by halos up to 0.2 mm across of sphene.

Pyrrhotite forms anhedral patches up to 0.5 mm in size. A few patches are altered strongly to secondary Fe-sulfides, and many others are altered moderately to completely to deep red-brown hematite.

Pyrite forms a few clusters of anhedral to subhedral grains up to 0.3 mm in size. It is altered moderately along grain borders and fractures to hematite.

CL-5Ø2 **Alkali Gabbro Porphyry**

The rock contains phenocrysts and clusters of phenocrysts of clinopyroxene-(sphene[?]) and phenocrysts of plagioclase in an very fine grained groundmass dominated by plagioclase and K-feldspar. Marcasite/pyrite forms disseminated cubic grains.

phenocrysts	
plagioclase	25-3Ø%
clinopyroxene	12-15
sphene(?)	1- 2
apatite	Ø.1
groundmass	
plagioclase	4Ø-45
K-feldspar	8-1Ø
epidote	2- 3
marcasite/pyrite	1- 2
sphene	minor
calcite	minor
veinlets	
calcite	minor

Plagioclase forms subhedral phenocrysts averaging 1-2.5 mm in size. They are moderately to strongly altered to extremely fine grained sericite and epidote, with epidote somewhat concentrated towards the rims of grains and sericite towards the cores. Calcite forms irregular patches and veinlets in some phenocrysts.

Clinopyroxene forms phenocrysts and clusters of phenocrysts up to 2 mm in grain size. Some show simple twins. Alteration is variable, with some grains relatively fresh and others altered moderately to calcite, with or without minor tremolite. A few contain patches up to Ø.4 mm across of extremely fine grained chlorite.

Commonly associated with clusters of clinopyroxene phenocrysts are subrounded, interstitial patches up to Ø.3 mm in size consisting of extremely fine grained intergrowths of ilmenite-(Ti-oxide) and chlorite or calcite; these may be secondary after sphene.

Apatite forms subhedral grains and clusters of grains averaging Ø.1-Ø.2 mm in size; some are included in clinopyroxene phenocrysts, and some are associated with patches of clinopyroxene and/or calcite.

The groundmass is dominated by anhedral to prismatic grains of plagioclase from Ø.Ø5-Ø.13 mm in average size. Interstitial to these are anhedral K-feldspar grains averaging Ø.Ø3-Ø.1 mm in size, with some skeletal grains up to Ø.5 mm in size. Epidote forms disseminated patches averaging Ø.Ø5-Ø.1 mm in size. Groundmass feldspars are altered slightly to moderately to dusty to extremely fine grained sericite. Calcite forms disseminated irregular patches up to Ø.3 mm in size.

Marcasite/pyrite forms irregular to euhedral cubic grains and clusters of grains averaging Ø.5-Ø.7 mm in size. They commonly contain abundant inclusions of groundmass feldspars. Anisotropism is moderate. Borders of a few grains are altered slightly hematite.

Ilmenite forms disseminated,irregular patches up to Ø.35 mm in size; these are altered partly to extremely fine grained Ti-oxide.

The rock is cut by veinlets of calcite up to Ø.Ø2 mm in width.

CL-503 Hypabyssal Leucocratic Diorite cut by Tourmaline Vein

The rock is a fine to medium grained, hypabyssal diorite dominated by plagioclase, with scattered patches of amphibole/chlorite, and minor interstitial quartz. Calcite forms abundant replacement patches. The rock is cut and replaced by a vein up to 2.5 mm wide of tourmaline-(calcite), and cut by a late veinlet of calcite.

plagioclase	60-65%
calcite	12-15
amphibole	8-10
chlorite	3- 4
quartz	0.7
Ti-oxide	0.3
pyrite	0.2
vein	
tourmaline	7- 8
calcite	0.2
late veinlet	
calcite	0.2

Plagioclase forms slightly to moderately interlocking grains averaging 0.3-0.7 mm in size, with a few over 1 mm long. Alteration is commonly slight to moderate to extremely fine grained sericite. Locally, in patches up to 1 mm across, plagioclase is altered completely to sericite. Calcite forms irregular replacement patches; the largest are skeletal, porphyroblastic grains up to a few mm across.

Several patches up to a few mm across consist of slightly radiating aggregates dominated by sericite, with lesser lenses of chlorite and of epidote defining the radiating texture. A few patches also contain minor calcite. These patches may be secondary after amphibole.

Chlorite forms interstitial patches up to 1 mm in size of extremely fine, pale green flakes.

Quartz forms interstitial patches up to 0.7 mm in size of very fine to fine grains.

Ti-oxide forms scattered disseminated grains and clusters of grains averaging 0.02-0.05 mm in size, with a few up to 0.15 mm across.

Pyrite forms disseminated equant, subhedral grains averaging 0.1-0.2 mm in size, and clusters of similar grains up to 0.5 mm across. It is altered strongly to hematite.

The rock is replaced by a vein dominated by tourmaline with minor interstitial calcite. Tourmaline forms anhedral aggregates of equant grains and slightly radiating aggregates of prismatic grains up to 1 mm in length. In zoned, coarser grains, pleochroism is from neutral to light green to bluish green in cores of grains and from neutral to medium green in rims. Smaller grains commonly are unzoned and similar in composition to rims of larger ones. Calcite forms interstitial patches up to 0.15 mm in size and seams between tourmaline grains. The vein also contains relic patches of host-rock plagioclase.

The rock is cut by a late veinlet up to 0.1 mm wide of very fine grained calcite.

CL-5Ø4 **Breccia: Fragments of Chlorite-rich Rock and Andesite in Groundmass of Porphyritic Latite/Trachyte**

The rock contains abundant fragments up to 2 cm in size of chlorite-rich rock and andesite in a matrix of porphyritic latite/trachyte, containing plagioclase phenocrysts in a groundmass dominated by K-feldspar and plagioclase, with abundant secondary dolomite/calcite patches.

fragments

a) mafic-rich (2Ø-25% of section)

chlorite	6Ø-65%
plagioclase	3Ø-35
quartz	3- 4
calcite	1- 2
Ti-oxide	Ø.3
pyrite	Ø.5

b) andesite (12-15% of section)

plagioclase	75-8Ø%
chlorite	15-2Ø
Ti-oxide	1- 2
pyrite	minor

Chlorite-rich fragments are extremely fine grained, and dominated by equant flakes of chlorite intergrown with lesser plagioclase of similar grain size. Patches up to Ø.8 mm in size consist of unoriented aggregates of slightly coarser grained chlorite with no plagioclase. Quartz forms patches up to Ø.7 mm in size of very fine to locally fine grained aggregates, in part associated with very fine grained chlorite. Calcite forms scattered replacement patches averaging less than Ø.1 mm in size. Ti-oxide forms disseminated patches up to Ø.1 mm in size of extremely fine grains. Pyrite forms disseminated, equant grains up to Ø.2 mm in size; borders are altered to hematite.

Andesite fragments contain plagioclase phenocrysts up to 1 mm in size in a groundmass of slightly to moderately finer grained plagioclase and lesser chlorite. One fragment contains a euhedral, prismatic phenocryst of plagioclase 3 mm long, which is altered completely to sericite. Other plagioclase grains are altered slightly to moderately to sericite and/or chlorite. Ti-oxide forms clusters up to Ø.15 mm across of extremely fine grains intergrown with silicates. Pyrite occurs as in the mafic-rich fragments.

A few fragments of non-porphyritic andesite, are dominated by fine grained, slightly interlocking plagioclase, with minor interstitial patches of quartz and of chlorite.

(continued)

CL-504 (page 2)

matrix	(60-65% of section)
phenocrysts	
plagioclase	7- 8
groundmass	
K-feldspar	30-35
plagioclase	17-20
dolomite/calcite	25-30
quartz	4- 5
sericite	2- 3
chlorite	1- 2
Ti-oxide	0.3
pyrite	0.2
vein	
dolomite/calcite	1

In the matrix, plagioclase forms subhedral to anhedral phenocrysts averaging 0.3-0.7 mm in size. These are set in an extremely to very fine grained groundmass dominated by K-feldspar and plagioclase. Dolomite/calcite forms skeletal replacement porphyroblasts up to 2 mm across. Sericite forms extremely fine grained interstitial patches, in part intergrown with calcite, and possibly containing some chlorite. Quartz forms interstitial grains and patches averaging 0.03-0.1 mm in grain size. Ti-oxide forms disseminated, extremely fine grained patches up to 0.05 mm across. Pyrite occurs as in the fragments.

The rock is cut by a few wispy veinlets up to 0.03 mm wide of dolomite/calcite.

COLIN CAMPBELL EXPLORATION - ROCK SAMPLES

COLLECTOR C. Campbell PROJECT ____ AREA ____
DATE ____ NTS ____ AIR PHOTO ____

SAMPLE No.	LOCATION	TYPE	WIDTH	SAMPLE DESCRIPTION	Au	Cu	Ag	As
CL 11-R	5+25W - 2+10S	GRAB		Qtz, Sph, Py vein				
CL 12-R	3+70W - 1+40S	"		M.G. andesite?, oxidized + 20% Py				
CL 13	3+58W - "	"		Acid porphyry, " + 15% Py				
CL 14	3+46W - "	"		Feldspar porphyry + CB + 20% Py				
CL 15	3+35W - "	"		M.G. andesite + CB + 15% Py				
CL 16	3+26W - "	"		F.G. CB rich rock + Galena				
CL 17	3+17W - "	"		Altered Andesite, Chlorite + CB				
CL 18	3+17W - "	"		Gouge				
CL 19	3+07W - "	"		Altered andesite? + 20% Py				
CL 20	2+55W - "	"		" " up to 70% Sulphides				
CL 21	1+80W - "	"		" " CB + Py + Po 25% "				
CL 22	~~30~~ 15+00N - ~~50~~ 15+00W	"		Qtz. veinlets in monzonite.				
CL 23	12+16N - 25+00W	"		Silicified andesite + Py				
CL 24	2+00N - 9+15W	"	.3M	Oxidized volcanics?				
CL 25	2+00N - 9+35W	"	.3M	" "				
CL 26	1+35N - 8+90W	"		CB altered volc. tuff. + Py on fractures				
CL 27	0+30N - 8+00W	"		" " " + Ep, Po + Py				
CL 28	0+10S - 8+40W	"		Breccia, Qtz Stwk, CB + Py				
CL 29	0+25S - 8+22W	"	3 M	"				
CL 30	0+40N - 5+70W	"		Altered Volcanic				
CL 31	0+28N - 6+40W	"	.1M	vein material				
CL 32	3+10S - 8+15W	"		Andesite + Qtz veinlets				
CL 33	3+45S - 8+40W	"		Qtz veinlets in CB altered andesite				
CL 34	0+30N - 4+23W	"		Qtz, Cpy Gn highly oxidized.				
CL 35	1+05S - 6+12W	"	3M	Brecciated, Qtz, CB, Cpy				
CL 36	1+05S - 6+23W	"		Float? propyliticaly altered volcanics				
CL 37	" - 6+32W	"		As above, minor Py + CB.				
CL 38	" 6+00W	"	1.5M	Breccia				
CL 39	" 5+85W	"	1.5M	"				
CL 40	" 5+75W	"	1.5M	"				

COLIN CAMPBELL EXPLORATION - ROCK SAMPLES

COLLECTOR C. Campbell PROJECT Skook AREA Chuchi Lake
DATE August 1988 NTS AIR PHOTO

SAMPLE No.	LOCATION	TYPE	WIDTH	SAMPLE DESCRIPTION	Au	Cu	Ag	As
CL 45	4+30S - 6+85W	Chip	2M	CB altered Volcanics + gouge				
CL 46	4+28S - 6+85W	Chip	2M	CB altered Volcanics				
CL 47	4+26S - 6+85W	Chip	2m	CB altered Volcanics + Qtz veinlets + Cpy				
CL 48	4+24S - 6+85W	Chip	2m	CB altered Volcanics				
CL 49	4+26S - 6+85W	GRAB	1	Qtz vein + Cpy				
CL 50	4+23S - 6+85W	GRAB		Qtz stwk + Py + Cpy				
CL 51	4+35S - 7+15W	GRAB	.1M	Qtz, Py Cpy vein St-210° Dip 80° NE.				
CL 52R	4+30S - 6+60W	Float		Qtz + Cpy in road cut.				
CL 53R	1+40S - 5+77W	Grab		Qtz - CB Stwk + Py				
CL 54R	1+40S 5+57W	Grab		H.S.				
CL 55R	1+40S 5+23W	Grab		Porcellanite, brecciated + Py minor Cpy				
CL 56R	1+40S - 4+52W	Grab		Andesite + 30% Py				
CL 58		Chip	1M	Qtz v. and gouge. 8500 Trench.				
CL 59		"	.6	Qtz, minor CB, Py, Cpy & Sph.				
CL 60		"	1M	Clay alt. & gouge, oxidized				
CL 61		"	.6M	" " + vuggy quartz				
CL 62		"	.6m	" "				
CL 63		Grab	.2m	Qtz - Cpy - Py vein + malachite				
CL 64		Chip	1.5m	Cherty, black altered zone + veins				
CL 65		Grab		Py, Cpy in silicified veins.				
CL 66		"		Py in oxidized vein material				
CL 68		Chip	1m	CB, sheared + gouge + Py				
CL 69		Trench		could be float - propylitic alt.				
CL 70		Grab		High grade sample.				
CL 71		Chip	.5m	CB veins. + chlorite alteration.				
CL 72		Chip	1.5m	Py, minor Cpy + PbS				
CL 73		Grab	2m	CB altered basalt?, Cpy in Quartz v's.				
CL 74		Chip	.5	Highly oxidized - goethite ∓ 15% Pyrite				
CL 75		Grab		Altered andesite + Py (blebs & fractures)				
CL 76		"		Silicified vuggy andesite?				

COLIN CAMPBELL EXPLORATION - ROCK SAMPLES

COLLECTOR C. Campbell PROJECT Stook AREA Chuchi Lake
DATE October /87 NTS AIR PHOTO

SAMPLE No.	LOCATION	TYPE	WIDTH	SAMPLE DESCRIPTION	Au	Cu	Ag	As
CL 77		Grab		Pyrite diss + v's in andesite ?				
CL 78		"		Andesite + Qtz + CB + PbS				
CL 79		"		Non-vein - sheared propylitic altered				
CL 80		"		Sulphide rich andesite breccia				
CL 81		"		Breccia pipe ≈ 30% Pyrite				
CL 82	Rig Zone	1 M chip	1 M	banded qtz. v's + 5% Py + Cpy				
CL 83	"	1 M "	"	propylitized andesite + Qtz + Sph + CB v's				
CL 84	"	1 M "	"	gouge & breccia zone, Qtz + CB + HgS ?				
CL 85	"	1 M "	"	propylitized + sil. andesite CB + Py + Cpy				
CL 86	"	1 M "	"	Cherty CB rich rock				
CL 87	"	1 M "	"	main gouge - west side				
CL 88	"	~~chip~~ Grab	~~1 M~~	Banded Qtz v's at CL 82 R				
CL 89	"	Chip	1 M	gouge + tight fractures in Diorite ?				
CL 90	"	Grab		High sulphide + Cpy + Qtz v's				
CL 91	"	Chip	1 M	Fractured diorite ? + Py + Limonite				
CL 92	"	"	1 M	gouge + Siliceous material + Py				
CL 93	"	"	1 M	gouge + minor Qtz v's + Cpy + Mol.				
CL 94	"	"	1 M	breccia - silicified 5% Py + Cpy				
CL 95	"	Grab		Qtz + Cpy + Sp + Py				
CL 96	Central	Grab	7 M	Tim's sulphide zone + Tourmaline				
CL 97	"	"		narrow vuggy qtz v's + Cpy				
CL 98	CL 11 Zone	Chip	.2 M	Qtz v's + PbS + Sp + Cpy + Py				
CL 99	CL 11 "	"	1 M	Propylitically alt. w.w + vein				
CL 100 R	"	"	1 M	" " wallrock.				
CL 1005	L4W - 2+00S	Chip	2 m	" " + Py + Cpy.				
CL 1006		Grab		Qtz - Cpy + Py v's				
CL 1007		"		Qtz - v's				
CL 1008		Chip	1 m	F.g. altered volcanics + Qtz + Py				
CL 1009		Grab		chloritic volc. + qtz + CB + Py				
CL 1010		"		Coarse propylite + epidote + Py				

GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,073

NATION RIVER RESOURCES LTD.
SKOOK GROUP

- - -	Claim Boundary Line		GOLD ANOMALIES:
====	Road	•	10-20 ppb
—·—	Stream	•	>20 - 40 ppb
□	Legal Corner Post	●	>40 - 80 ppb
┼	Grid Line	●	>80 - 160 ppb
	Outcrop		COPPER ANOMALIES:
▲ G.S.	Rock Sample (Grab Sample)	—200—	Contours in ppm (C.I.=100 ppm)
0.4 opt Au / 1.2 m	Chip Sample / width in metres	(10)	PPM Gold in pan concentrate

LEGEND

ROCK TYPES

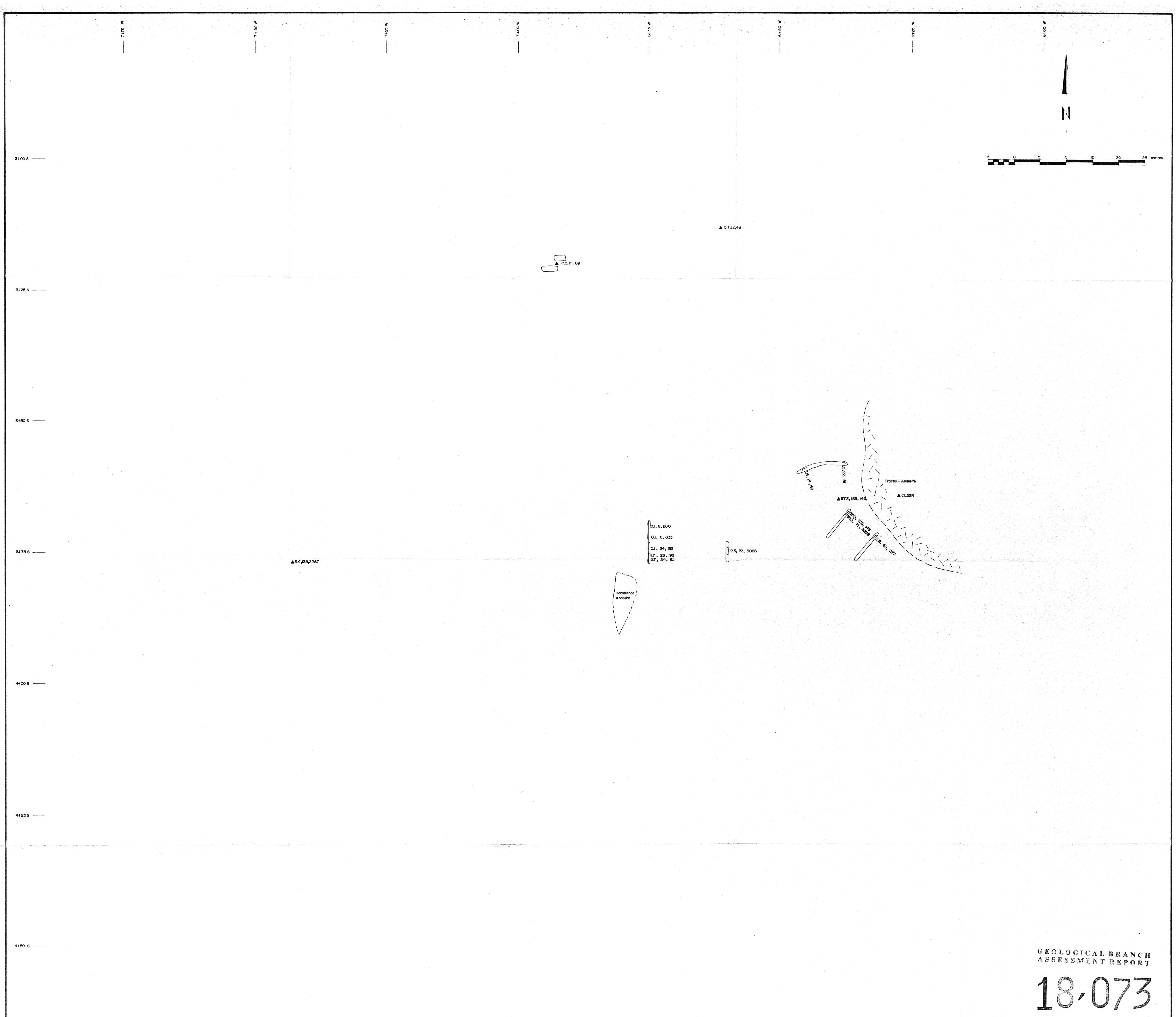
1. RHYOLITE: tuffaceous to massive: chert and calcite.
2. GABBRO: fresh, late dikes.
3. TRACHYANDESITE: fresh. 3b: carbonate, silicified.
4. FELDSPAR PORPHYRY
5. BASALT: dark pyroclastics epidote, cacite minor pyrite.
6. DIORITE
7. MONZONITE

Inferred geological contact

100 0 100 200 300 metres

COMPOSITE-INDEX-GEOLOGY

OMINECA M.D.	Drawn By: E.V.O.	Scale: 1:5000
NTS 93N 1&2	Date: Nov. 18, 1988	Figure: 3



GEOLOGICAL BRANCH
ASSESSMENT REPORT

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Geologic Contact	
Trench	
▲ CL52R Rock Sample and Number	
[Sample Location	
1.7, 23, 192 Ag (ppm), Pb (ppm), Zn (ppm)	

NATION RIVER RESOURCES LTD.

SKOOK GROUP
CHUCHI LAKE B.C.

SOUTH ZONE
Ag,Pb,Zn ROCK GEOCHEMISTRY

OMINECA M.D.	NTS 93N 1&2
Drawn By E.V.O.	Scale 1:250
Date April 20,1988	Figure 7b

GEOLOGICAL BRANCH
ASSESSMENT REPORT

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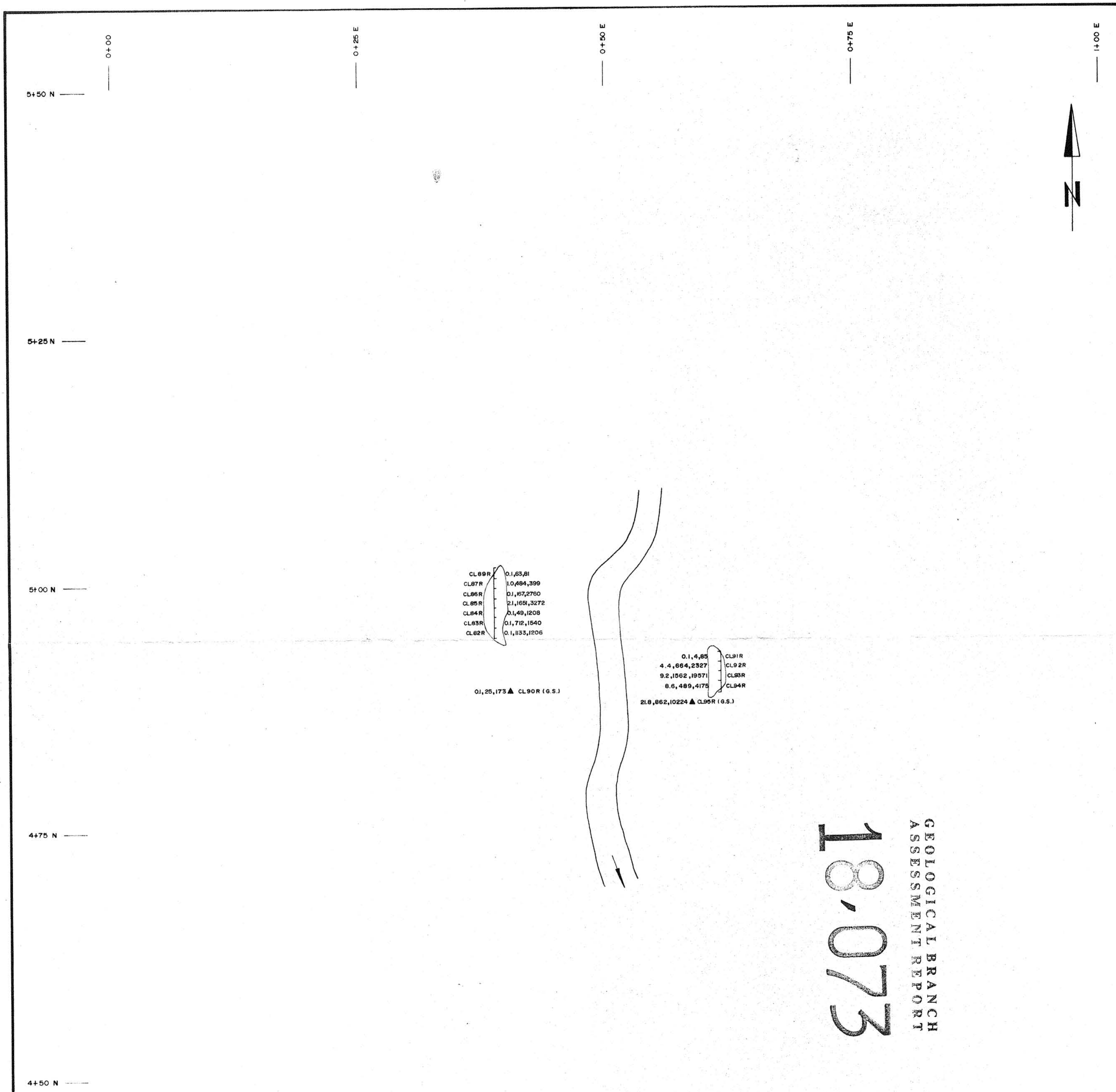
— — —	Geologic Contact
⊂⊃	Trench
▲ CL52 R	Rock Sample and Number
CL46 R[	Sample Location and Number
25,600,5086	Au(ppb), Hg (ppb), Cu (ppm)
H.S.	Hand Sample
G.S.	Grab Sample

NATION RIVER RESOURCES LTD.

SKOOK GROUP
CHUCHI LAKE B.C.

SOUTH ZONE
Au,Hg,Cu ROCK GEOCHEMISTRY

OMINECA M.D.	NTS 93N 1&2
Drawn By: E.V.O.	Scale: 1 : 250
Date: April 20,1988	Figure: 7a



Trench

CL84R[Sample Location and Number of Chip Sample across 1 metre

▲ CL95R Rock Sample and Number

G.S. Grab Sample

2.1,1651,3272 Ag(ppm), Pb (ppm), Zn (ppm)

5 0 5 10 15 20 25 metres

NATION RIVER RESOURCES LTD.

SKOOK GROUP
CHUCHI LAKE B.C.

RIG BRECCIA ZONE
Ag,Pb,Zn ROCK GEOCHEMISTRY

OMINECA M.D.	NTS 93N 1&2
Drawn By: E.V.O	Scale: 1:250
Date: April 18, 1988	Figure: 6 b

N
6+00 N
4+00 N
2+00 N
0+00
2+00 S
4+00 S
6+00 S
16+00 W
14+00 W
12+00 W
10+00 W
8+00 W
6+00 W
4+00 W
2+00 W
0+00
2+00 E
4+00 E
6+00 E
RIG BRECCIA ZONE
For Detail see Figure 6
SKOOK 4
SKOOK 6
SKOOK 3
SKOOK 5
L.C.P.
CL II SHOWING
G.S.
SOUTH ZONE
For Detail see Figure 7
50 0 50 100 150 200 metres
LEGEND
Claim Boundary
Legal Corner Post
Road
Stream
Pb Zn ppm ppm
Grid Line – Soil Sample Site
Soil Sample Site
Rock Sample Site
Trench
G.S.
Grab Sample
GEOLOGICAL BRANCH
ASSESSMENT REPORT
18,073
NATION RIVER RESOURCES LTD.
SKOOK GROUP
CHUCHI LAKE B.C.
Pb—Zn IN ROCK & SOIL (VALUES)
OMINECA M.D.
NTS 93N 1¢.2
Drawn By: E.V.O.
Scale: 1:2500
Date: February 19, 1988
Figure: 4b

Trench

CL84R[Sample Location and Number of Chip Sample across 1 metre

▲ CL95R Rock Sample and Number

G.S. Grab Sample

10,2100,1568 Au(ppb),Hg(ppb),Cu(ppm)

5 0 5 10 15 20 25 metres

NATION RIVER RESOURCES LTD.	
SKOOK GROUP CHUCHI LAKE B.C.	
RIG BRECCIA ZONE Au,Hg,Cu ROCK GEOCHEMISTRY	
OMINECA M.D.	NTS 93N 1&2
Drawn By: E.V.O	Scale: 1:250
Date: April 18, 1988	Figure: 6a

N
RIG BRECCIA ZONE
For Detail see Figure 6
SKOOK 4
SKOOK 6
SKOOK 3
SKOOK 5
L.C.P.
CL 11 SHOWING
SOUTH ZONE
For Detail see Figure 7
LEGEND
Claim Boundary
Legal Corner Post
Road
Stream
Grid Line - Soil Sample Site
Soil Sample Site
Rock Sample Site
Trench
n.d. Not Detected
H.S. Hand Sample
GEOLOGICAL BRANCH
ASSESSMENT REPORT
18,073
NATION RIVER RESOURCES LTD.
SKOOK GROUP
CHUCHI LAKE B.C.
As-Hg IN ROCK & SOIL (VALUES) w/ ROCK SAMPLE NUMBERS
OMINECA M.D.
NTS 93N 14 2
Drawn By: E.V.O.
Scale: 1:2500
Date: February 19, 1988
Figure: 4C

16+00 W
14+00 W
12+00 W
10+00 W
8+00 W
6+00 W
4+00 W
2+00 W
0+00
2+00 E
4+00 E
6+00 E
N
6+00 N
4+00 N
2+00 N
0+00
2+00 S
4+00 S
6+00 S
RIG BRECCA ZONE
For Detail see Figure 6
SKOOK 4
SKOOK 6
SKOOK 3
SKOOK 5
L.C.P.
CL II SHOWING
G.S.
SOUTH ZONE
For Detail see Figure 7
50 0 50 100 150 200 metres
LEGEND
Claim Boundary
Legal Corner Post
Road
Stream
Au Cu ppb ppm Grid Line – Soil Sample Site
Au Cu ppb ppm Soil Sample Site
Au Cu ppb ppm Rock Sample Site
Trench
G.S. Grab Sample
4250 / 1M Au (ppb) / Width
GEOLOGICAL BRANCH
ASSESSMENT REPORT
18,073
NATION RIVER RESOURCES LTD.
SKOOK GROUP
CHUCHI LAKE B.C.
Au–Cu IN ROCK & SOIL (VALUES)
OMINECA M.D.
NTS 93N 1 & 2
Drawn By: E.V.O.
Scale: 1:2500
Date: February 19, 1988
Figure: 4a