1982 EXPLORATION ACTIVITIES AT
ROUNDTOP MOUNTAIN
JUNE-SEPTEMBER, 1982

By Paul A. Hawkins, P.Eng.
February 28, 1983

Suncor Report #9176

83-#81-11193

GEOLOGICAL, GEOCHEMICAL

1982 EXPLORATION ACTIVITIES AT

ROUNDTOP MOUNTAIN

CARIBOO LAKE AREA
JUNE - SEPTEMBER 1982

This report covers the following minerals claims held by Suncor Inc. at the Roundtop Group.

311	Fourth of July
312	International 3
313	International 4
314	International 1
315	International 6
316	Dawn No. 2 Fraction
317	Dawn Fraction
318	Federal Fraction
318	Federal No. 1
319	International 2
514	Peerless No. 3
514	Hub Fraction
514	Hub No. 2 Fraction
514	Peerless No. 4 Fraction
570	Sedan 2
571	Peerless No. 2
572	Sedan No. 1
573	Peerless No. 1
575	International No. 7
575	International No. 1 Fraction
576	Surprise No. 6
576	Surprise No. 7
576	Sedan No. 4 Fraction
577	Surprise No. 4
577	Surprise No. 1
578	Surprise No. 3
578	Surprise No. 2
579	Sedan No. 3
579	Sedan No. 5
1479	International No. 8
1480	International No. 5
3660	RT 1
3661	RT 2
3662	RT 3
3663	RT 4

On N.T.S. Sheet 93A/14
Centered on 52°53'30" 121°19'00"
In The Cariboo Mining Division

By Paul A. Hawkins, P.Eng.
Calgary, Alberta
February 28, 1983

SUNCOR REPORT 9176

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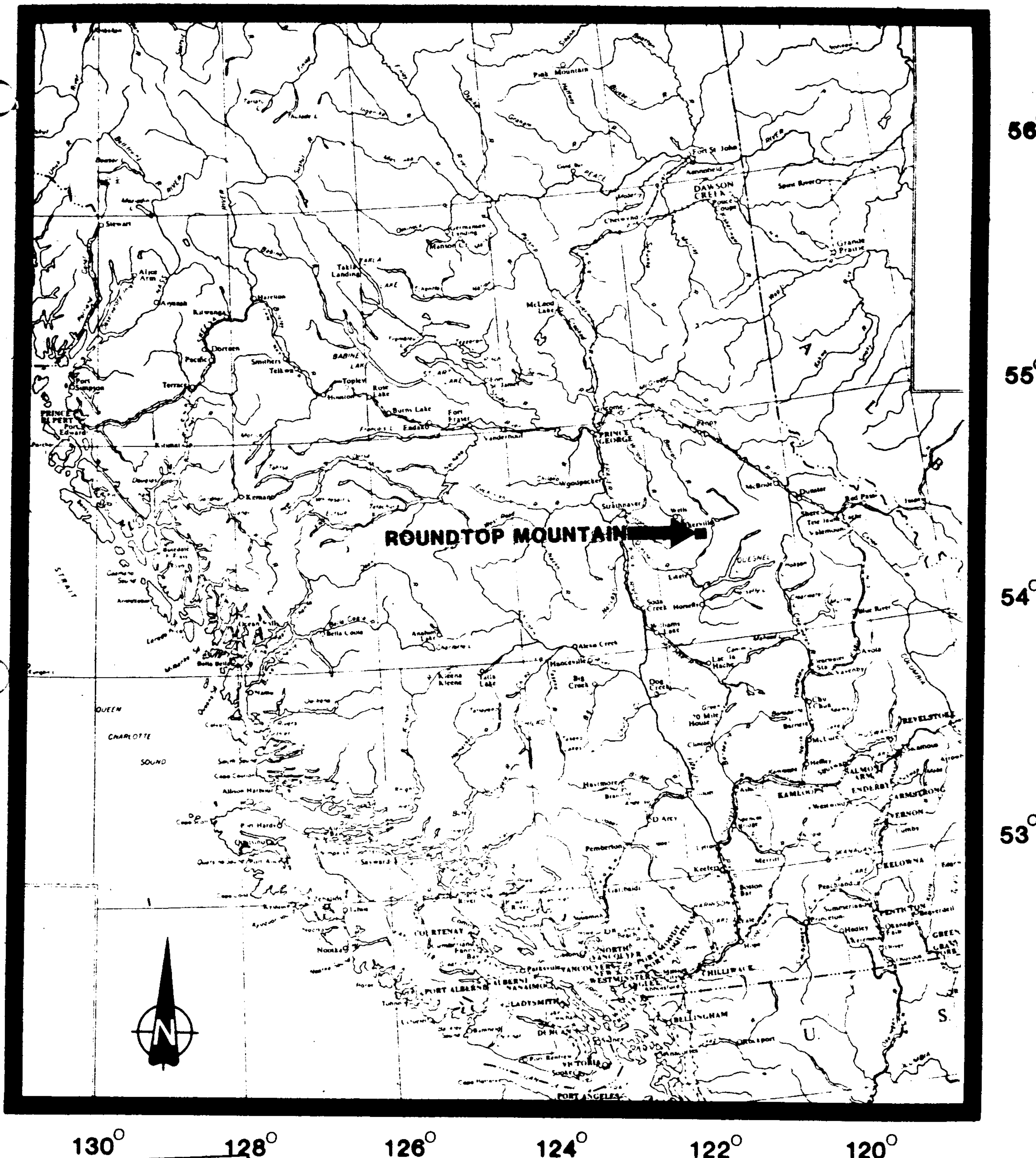

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KILOMETERS

100 50 0 50 100 150 200 250

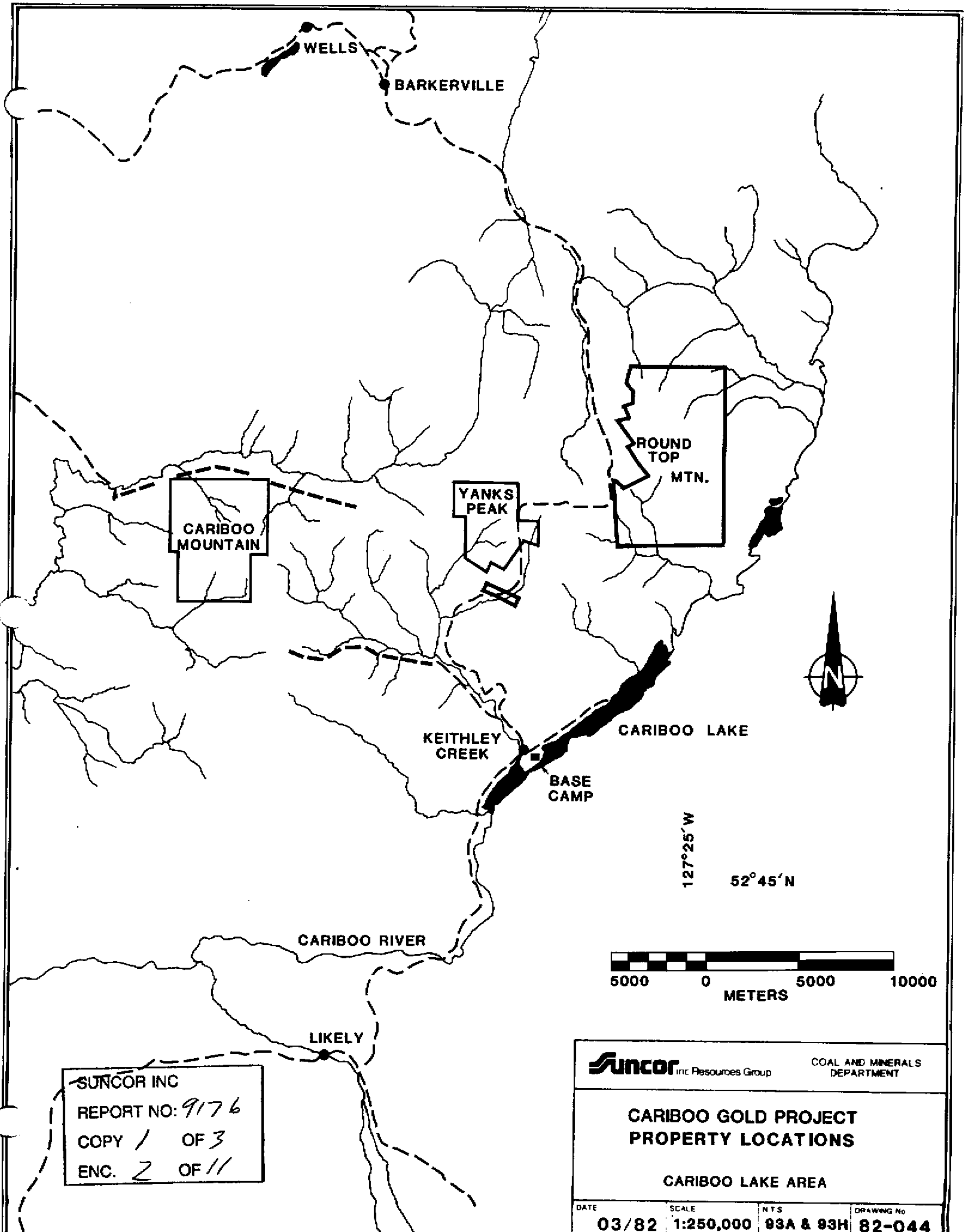
50 0 50 100 150 200

MILES

Suncor Inc. Resources Group — COAL AND MINERALS DEPARTMENT

ROUNDTOP MOUNTAIN PROSPECT
INDEX MAP

DATE	SCALE	N.T.S.	DRAWING No.
SEP. 1981	1: 5,000,000	92	81-067 F



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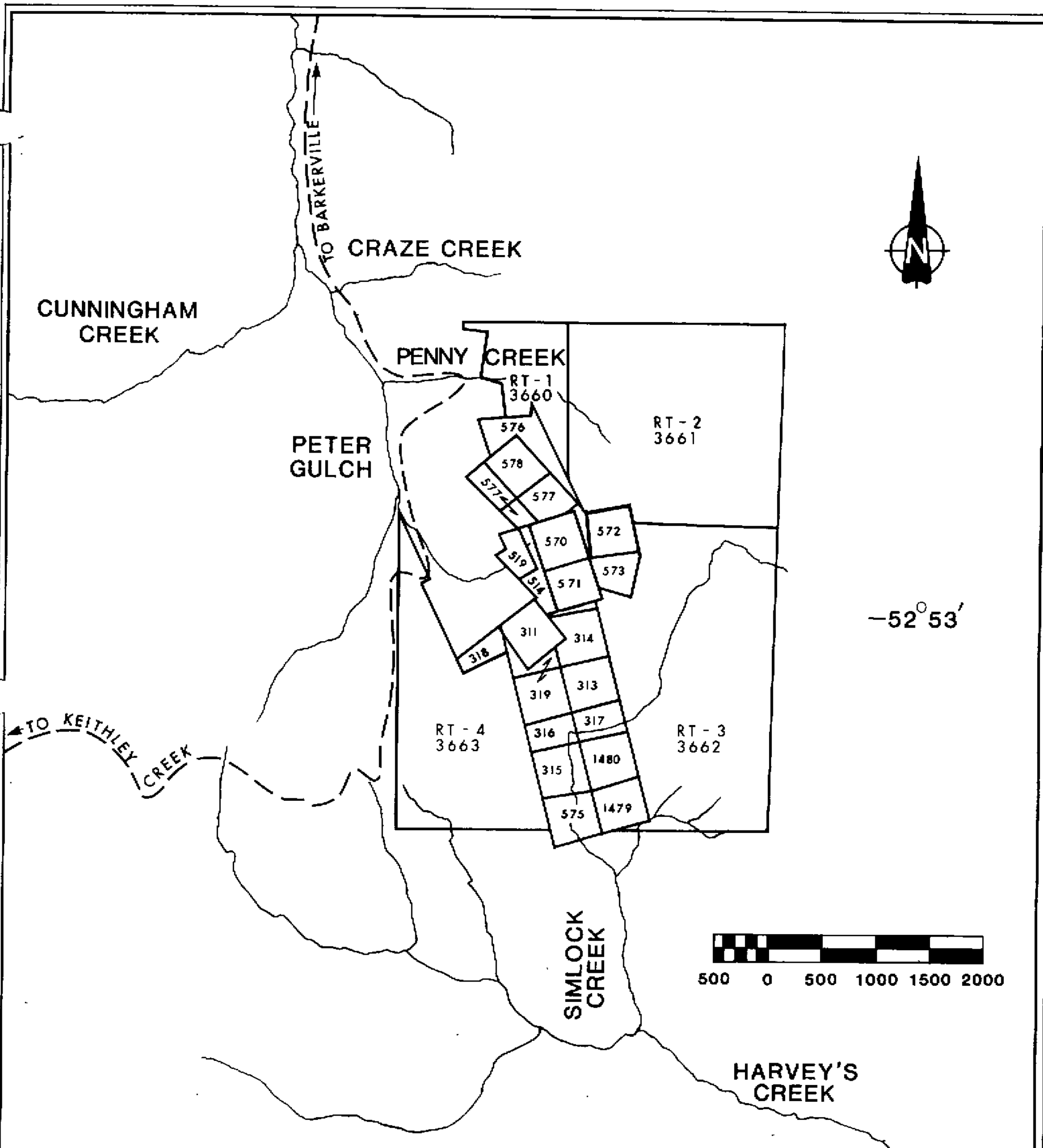
Suncor Inc. Resources Group
COAL AND MINERALS DEPARTMENT

CARIBOO GOLD PROJECT
PROPERTY LOCATIONS

CARIBOO LAKE AREA

DATE	SCALE	N.T.S.	DRAWING No
03/82	1:250,000	93A & 93H	82-044



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Suncor Inc. Resources Group

COAL AND MINERALS DEPARTMENT

ROUND TOP MOUNTAIN
CLAIM MAP
CARIBOU LAKE AREA

DATE	SCALE	N.T.S.	DRAWING No.
09/81	1:50,000	93A14	81-057 E

1.0 INTRODUCTION

The Roundtop Mountain area is located in South Central B.C. about 85 km from Quesnel. The claim block making up Suncor Inc. Roundtop Mountain property is located some 22 km southeast of the historic mining town of Barkerville. Work on this claim block was however carried out of a base camp located at Keithley Creek some 15 km to the southeast of Roundtop Mountain. Access to the property can be gained either by going north from Keithley Creek or south from Barkerville by forestry access roads. Poor road conditions require the use of four wheel drive trucks. Supplies and limited helicopter support was obtained out of Williams Lake, British Columbia.

The Roundtop Mountain property is one of three properties operated by Suncor in the Cariboo Lake area. The other properties are shown on Cariboo Gold Project, Property Locations Map 82-044. The other two projects are covered under separate work submissions. Work was carried out on all three properties by the same crew and exploration costs were therefore grouped and then broken down between properties on a prorated per manday basis allocation system. Details of these calculations are provided in the Appendix.

The claims making up the Roundtop Mountain property are shown on Map 81-057E. All claims making up the property are together to form the Roundtop Group.

1.1 PHYSIOGRAPHY

The property is located just south of Roundtop Mountain. The road from Keithley Creek to Barkerville crosses the western edge of the property. Several streams have their head waters located within the claim group. Topography in the area is moderately rugged.

The climate is humid continental with cool, short summers. Snow does not leave most peaks until late June. The area receives between 75-150 centimetres of precipitation of which the greater amounts occurs as snow. Snowfalls in the past have varied greatly. Most of the area is covered with dense coniferous forest. Most areas also have dense undergrowth. Old pre 1950's mine workings are largely overgrown.

Several adjacent areas are currently being logged, and the development of new access roads is a direct result of this activity. The tree line is usually about the 2000 metre elevation. The upper meadows between Yanks Peak and Roundtop are above tree line and quite sensitive to terrain disturbance.

The most recent glaciation in the pleistocene saw the ice sheet cover the area to about the highest peak. Ice movement was in several diverse directions and represents a complex glacial history. This complexity has prevented the location of the bedrock source for a few of the more important gold placer deposits in some creeks of the area.

1.2 PROPERTY HISTORY

Suncor Inc. acquired the property from Zelon Enterprises Ltd. under an option agreement in early 1981. The original block was made up of 924.59 acres of reverted crown grants. later in 1981 four new claims were acquired from Zelon under the option agreement. These new claims bring the total area to 5249.19 acres. On February 4, 1982, all claims making up the property were regrouped as a whole to make the Roundtop Group. During the 1981 field season, Suncor personnel carried out a geochemical and geological program on the property.

The Cariboo District has hosted numerous placer and lode gold mining operations. The placer operations have varied greatly in size and type of operation. The Cariboo area has produced the most gold of any placer area in B.C. Several small scale operations are currently under way by individuals or small companies in the area.

In the area several small high grade underground mines have operated in the past. The closest to the property is the Cariboo Hudson Mine which is just north west of the property on Pearce Gulch. During 1937-1939 a total of 11,737 tons were mined at a grade of 0.44 oz/ton gold. Additional exploration was carried out between 1946 and 1978, however no new production has taken place.

In the area exploration has proceeded intermittently as the price of gold varied. Coast Interior Ventures Ltd., carried out base metal exploration in the Roundtop area during 1972 and 1974 (Timmins, W. G., 1972). Rio Tinto Canadian Exploration Ltd., conducted exploration in the area between 1977 and 1979 (Hodgson, G. B., 1978, Longe, R. V., 1979). Very early work in the area is not well documented. Some underground work on the north side of Penny Creek was undertaken in 1980, however work shortly thereafter ceased. The area as a whole has received a lot of exploration and will in the future continue to be explored for lode gold.

1.3 GENERAL 1982 PROGRAM

The 1982 program carried out on the Roundtop Mountain property consisted of limited geological mapping and geochemical samping. A total of 418 samples were collected, made up of 60 rock samples, 264 soil samples and 94 stream sediment samples. An additional 18 rock samples were assayed.

Geological mapping was restricted to several ridges in the NE corner of the property and the upper portion of Penny Creek tributary valley. A total of 30.5 mandays were spent on the property with a total expenditure of $25,333.38. A summary of the breakdown between projects and a detailed costing is provided in the Appendix.

2.0 GENERAL GEOLOGY

The Cariboo Gold Properties of Suncor occur within the Lightning Creek Anticilinorium in the Cariboo Mountains of south central British Columbia. The Lightning Creek Anticilinorium is made up of a belt of Proterozoic to Cambrian Kaza and Cariboo group rocks which are overlain by a sequence of unmetamorphosed volcanic and sedimentary rocks of the Slide Mountain group. The belt tends NE-SW and is 25 km wide and 150 km long.

Lithologically the Kaza group rocks are schistose clastic sediments to a gritty feldspathic micaceous quartzite which have been regional metamorphosed into the green schist facies (Brown A. S., 1963). To the northeast, the Kaza group rocks are overlain by the Cariboo group rocks which consists of metasediments, principally phyllites, micaceous quartzites, marble and some limestones. The formations are intensively folded and locally on occasion highly altered due to hydrothermal activity.

To the north, the Cariboo group is overlain by the Slide Mountain group which consists of unmetamorphosed rocks of Carboniferous age. No rocks of this group occur within the property area.

Intrusive rocks within the area appear to be rare. A medium grained diabase dike is reported near the heads of Simlock and Lostway Creeks (Holland, S. S., 1954). Diorite outcrops are also reported along with fine grained rhyolite porphyry and lamprophyre dikes in the area.

A Table of Formations (modified after Campbell et al, 1973; Brown, A. S., 1963) is provided.

TABLE 2.1

TABLE OF FORMATIONS

CARIBOO LAKE AREA

ERA	GROUP	FORMATION	LITHOLOGY	THICKNESS
Mesozoic	?	Little River Stock	Porphyritic granoldiorite to quartz monzonite	--
	Slide Mountain Group	Antler Formation	Pillow basalt, breccia, chert argillite, diabase and gabbro sills	3600+
		Greenberry Formation	Limestone	
		Guyet Formation	Grey to brown conglomerate, limestone, basic volcanic rocks	1125-1500
PALEOZOIC		PROSERDINE DIKES	FELSITE DIKES	
		Dome Creek Form-	Shale, siltstone argillite?	
		Mural Formation	Limestone dolomite	
		Snowshoe Formation	Grey to brown micaceous quartzite phyllite, impure limestone	1000+
		Midas Formation	Grey to black quartzite siltstone argillaceous schist and slate black fine grained quartzite, gritty to pebble conglomerate, rare limestone	1000+
	Cariboo Group	Yanks Peak Formation	Grey to white, dense, fine grained silicified quartzite, gritty to pebble conglomerate, rare lime stone	0-1200
		Yankee Belle Formation	Light grey to brown phyllite with interbedded quartzite chlorite schist, metasiltstone	1000-2500
		Cunningham Formation	Fine grained grey to black limestone	1500-3000
		Issac Formation	Grey phyllite and calcareous phyllite and limestone	1000-2000
PROTEROZOIC	Kaza Group		Gritty feldspathic micaceous quartzites and green schists	+12,000
	?		Augen gneiss, gneissic granodiorite diorite	

2.1 PROPERTY GEOLOGY

The greater portion of the Suncor Roundtop Property has been mapped at a scale of near 1" = 1200' (Holland, S. S., 1954). The regional strike of the rocks in the area is about 330°. The area has a complex structural history and small areas are very intricately folded to the degree that several overturned folds are evident. The northern half of the property forms part of an anticline while further to the south the rocks form a syncline. Significant cross faulting has apparently taken place at trends of between 010° and 050°.

In the Peters Gulch and Pearce Gulch area, the quartzite and conglomerates of the Snowshoe Formation form the Snowshoe Syncline. Further to the northeast the black silty quartzites, arigillaceous schists, and limestones of the Midas Formation outcrop. Near Roundtop Mountain, beds of quartzite belonging to the Yanks Peak Formation occur with minor amounts of the Yankee Belle Formation. To the north of Roundtop Mountain, the Cunningham limestone occurs.

2.2 ECONOMIC GEOLOGY

The Yanks Peak-Roundtop Mountain area has cyclically attracted attention as a gold camp, with renewed interest every time the price of gold increased. The area has recorded production of 5204 fine ounces of gold from lode producers, most of this was from the Cariboo Hudson Mine (Holland, S. S., 1954). In comparison between 1874 and 1950, 69,237 ounces of crude gold was recovered from the district's placer operations (Holland, S. S., 1954). Recent work has likely increased these totals.

It is therefore apparent that the placer productions has been much greater importance than the lode. The only major producer has been the Cariboo Hudson Mine and therefore there is a good likelihood of there being other gold deposits in the area which remain undetected.

Early lode work in the area was the result of the discovery of placer gold near the mouth of Keithley Creek in 1860. This work centered around the Yanks Peak area. In 1922 the original claims which would make up the Cariboo Hudson Mine were located. The mine produced for a short while in the 1930's. Exploration has continued but no recent production has taken place.

Most gold mineralization is closely associated with the folded sericitite quartzite of the Snowshoe Formation and to a minor extent with black phyllites and argillites of the conformably underlying Midas Formation.

The Roundtop area hosts several quartz vein systems and pyritic deposits which occur in faults, fracture systems and shears in Cariboo Group rocks. The Cariboo Group rocks consist of mainly quartzites, black argillites, phyllites and schists. A good example of typical mineralization occurs at the Cariboo Gold Quartz Mine near Wells B.C., which is to the northwest of the Roundtop Mountain area. The mineralized quartz veins which occur there carry some calcite and ankerite and varying amounts of native gold, pyrite, galena, sphalèrite, pyrrohotite and scheelite. The pyritic bodies are small and follow the strike and dip of the sediments (Boyle, R. W., 1979).

Pyritic bodies like the above, occur in several locations in the Roundtop area; such as at the Peter Gulch Scheelite showing and the Bralco Cabin area. These showings contain small bodies of what could be termed massive sulfides. Drilling by Rio Tinto at the Bralco Cabin showing appears to indicate that there are no lithologic continuity to the mineralization (Longe, R. V., 1979). Core recovery in the two holes was poor which could account for the lack of mineralization in the core.

Mineralization found at the surface of Bralco near an old shaft consists of two metres of sphalerite bearing limestone (Longe, R. V., 1979). Grab samples obtained this year returned up to 12.40% Pb, 10.91% Zn, and 4.24 oz per ton Ag. Other good values were obtained from the Peter Gulch Scheelite showing area.

Some small scale underground exploration was undertaken recently in the Penny Creek area on the adjacent property, however, all work has apparently ceased. Placer operations continue to survive from time to time but are usually small and some of them could be classed as family type operations. Further north towards Barkerville, several larger operations have been active recently. Most creeks are still covered with placer leases.

2.3 GEOLOGICAL MAPPING AND PROSPECTING

Several mandays were spent geological mapping. This work did not however improve upon prexisting government mapping except in the obtaining of additional structural data. Most old trenches have been filled in and could not be remapped. A number of outcrops on Penny Creek were mapped and sampled.

The three areas in the Roundtop Mountain Project area which as a result of mapping, prospecting and data review, remain interesting are the Bralco Cabin area, the Penny Creek area, and Peter Gulch Scheelite showings which occur on Suncor's Roundtop Mountain Placer leases. All three areas were previously known precious metal occurances and have received some amount of underground development. However their occurance is not fully explained.

An updated geological map of the property is shown on Drawing 82-074A. Structural measurements are also included. Geologic site locations are shown on Drawing 83-053C.

3.0 GEOCHEMISTRY

The geochemistry program carried out on the Roundtop Mountain property consisted of stream sediment sampling, soil sampling and rock sampling for both rock geochemistry and assay purposes.

Stream sediment samples were collected along Penny Creek every 25 metres and several soil traverses were carried out by pace and compass methods in 1981 soil anomaly areas. Soil samples were collected every 25 metres. The "B" horizon was selected where present at a depth of 4-10 cm. The preferred stream sediment sample media was fine sediment low in organics.

The total number of each sample type is listed in Table 3.1.

TABLE 3.1

Roundtop Mountain Geochemical Samples Types

Rock Samples	Assay	19
	Geochem	60
Soil Samples		264
Stream Sediment		94

3.1 SAMPLE AND DATA HANDLING

Soil samples were collected in 4" X 10" kraft water-proof paper sample bags and air dried before shipment.

All samples from the Cariboo Mountain project were sent to Vangeochem Labs Ltd., 1521 Pemberton Avenue, North Vancouver, B.C.

All rock samples for assay were sent to Loring Laboratories Ltd., 629 Beaverdam Road, Calgary, Alberta. Standard assay procedures were used.

Field data was recorded on Suncor's "Geochemical Sample Record" forms, while Vangeochem reported their results on Suncor's "Geochemical Labratory Report" forms.

3.2 ANALYTICAL METHODS

Geochemical analysis was carried out by Vangeochem Labs Ltd., while assaying was carried out by Loring Laboratories using standard assay procedures. The following is a discussion of the Vangeochem analytical procedures.

Cu Pb Zn Ag Mo Geochemical Analysis

The analytical procedure used to determine hot acid soluble Cu, Pb, Zn, Ag and Mo in soil stream sediments and rock samples is outlined below:

Sample Preparation

(a) Geochemical soil, stream sediment or rock samples were received in the laboratory in wet-strength 3 1/2" x 6 1/2 Kraft paper bags and rock samples in 4" x 6" Kraft paper bags.

(b) The wet samples were dried in a ventilated oven.

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

(d) 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.

Methods of Digestion

(a) 0.50 gram of the minus 80-mesh fraction was used. Samples were weighed out by using a top-loading balance.

(b) Samples were heated in a sand bath with nitric and perchloric acids (15% to 85% by volume of the concentrated acids respectively).

(c) The digested samples were diluted with de-mineralized water to a fixed volume and shaken.

Method of Analysis

Cu, Pb, Zn, Ag and Mo analyses were determined by using a Techtron Atomic Absorption Spectrophotometer Model AA4 or Model AA5 with their respective hollow cathode lamps. The digested samples were aspirated directly into an air and acetylene flame, but Mo digestion were aspirated into an acetylene and nitrous flame. The results, in parts per million, were calculated by comparing a set of standards to calibrate the atomic absorption unit and displayed in a strip chart recorder.

The analyses were supervised or determined by Mr. Conway Chun or Mr. Eddie Tang and the laboratory staff of Vangeochem Lab Ltd.

Tungsten

The analytical procedure used to determine trace tungsten in geochemical samples by fusion is outlined below:

Sample Preparation

(a) Geochemical soil, stream sediments and rock samples were received in the laboratory in high wet-strength 4" X 6" kraft paper bags or rock samples in 8" X 10" plastic bags.

(b) The wet samples were dried in a ventilated oven.

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

(d) 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 Dissolution by Fusion

(a) 0.50 gram of the minus 80-mesh samples were used. Samples were weighed out by using a top-loading balance.

(b) Two grams of flux ($NaCO_3$ and NaCl) were mixed with each sample and the samples were fused over a muffled furnace in high temperature.

Method of Analysis

(a) The fused samples were then dissolved in demineralized water by heating in a hot water bath.

(b) A fixed volume was subsequently adjusted.

(c) An aliquot from each sample for tungsten analysis is developed in a strongly acid (HCl) solution of stannous chloride using a thiocyanate as the complexing agent.

(d) The tungsten-thiocyanate complex was extracted into 1/2 ml of a carbon tetrachloride and tri-n-butyl phosphate solvent mixture.

(e) The concentration of tungsten was calculated colorimetrically by comparing the intensity of its color organic layer with a set of known standards prepared in a similar fusion as the samples.

The analyses were supervised or determined by Mr. Conway Chun or Mr. Eddie Tang and the laboratory staff of Vangeochem Lab Ltd.

Gold

The analytical procedure used to determine Aqua Regia soluble gold in samples is outlined below:

Method of Sample Preparation

(a) Geochemical soil, stream sediments 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 a top-loading balance into beakers.

(b) 20 ml of Aqua Regia (3:1 $HCl:HNO_3$) 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 diiso-butyl ketone and thiourea medium. (Anion ex-change 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 was supervised or determined by Mr. Conway Chun or Mr. Eddie Tang and his laboratory staff.

3.3 STREAM SEDIMENT GEOCHEMISTRY

Stream sediment samples were collected along Penny Creek above the Barkerville Cariboo Hudson Mine Road. Sampling showed consistent highs in copper, lead, zinc and molybdenum for the first 400 metres above the road. Several other samples are anomalous above 700 metres. Gold and silver values are irregular and not consistent. Zinc shows several anomalous groups but these may be related to the level of organics present. Tungsten shows no anomalous levels. Results for Cu Pb Zn and Mo are present on Drawing 82-278C and for W Au Ag on 82-278D. The anomalous values may be related to mineralized quartz veins in outcrops in the Penny Creek Valley.

TABLE 3.2

BACKGROUND VALUES FOR STREAM SEDIMENTS

ELEMENT	UNITS	ARITH. MEAN	GEOM. MEAN	BACKGROUND RANGE	PERCENTILE 75th	90th	95th
Cu	ppm	38.6	30.9	4-69	55	63	67
Pb	ppm	63.1	56.1	20-91	91	101	114
Zn	ppm	272.0	195.0	18-430	430	460	480
Mo	ppm	3.0	2.7	0-5	4	4	5
W	ppm	5.8	5.6	0-10	5	10	10
Au	ppm	9.3	8.0	0-20	10	20	20
Ag	ppm	.36	.29	0-0.9	.5	.6	.9

3.4 SOIL GEOCHEMISTRY

Two pace and compass grid areas were sampled to follow up on 1981 surveys. A total of 264 soil samples were collected from the Penny Creek area (R-82-39) and the Bralco Cabin area (R-82-38). Both grids are located on Drawing 83-053B. Both grids cover areas where the Midas Formation is in contact with the Snowshoe Formation.

TABLE 3.3

BACKGROUND VALUES FOR SOIL SAMPLES

ELEMENT	UNITS	ARITH. MEAN	GEOM. MEAN	BACKGROUND RANGE	PERCENTILE 75th	90th	95th
Cu	ppm	26.9	23.0	5-74	34	49	57
Pb	ppm	89.1	43.1	9-130	65	121	232
Zn	ppm	131.0	86.5	12-600	163	301	470
Mo	ppm	3.5	2.4	0-14	3	7	11
W	ppm	6.7	6.2	0-10	10	10	10
Au	ppb	13.3	10.9	0-35	20	25	30
Ag	ppm	.42	.32	0-1.0	.5	.7	.9

Bralco Area (Grid R-82-38)

Four soil sampling traverse lines were run to expand on coverage in the area of anomalous lead-zinc values obtained in 1981 (Hawkins, P. A., 1982) southeast of the Bralco Cabin. A chain of anomalous lead, zinc, molybdenum, silver values with occassional highs in copper, tungsten and gold is clearly evident and appears to follow the contact between the Midas and Snowshoe Formations. The anomalous zone or chain appears to extend from the Bralco Cabin area to the southeast. Rio Canex had detected a soil geochem anomaly in this area in 1977 and had drilled it in 1978 but failed to intersect any mineralization (Hodgson, G. D., 1978, Longe, R. V., 1979). The Bralco Cabin area was about the southern extent of the survey area. New sampling has extended the anomalous area to the southeast.

Penny Creek Area (Grid R-82-39)

Four soil traverse lines were run to follow-up on anomalous stream sediment values obtained in 1981 (Hawkins, P. A., 1982). Soil samples collected by Rio Canex in 1978 (Hodgson, G. D., 1978) showed several anomalous areas in the Penny Creek area. Results from 1982 showed three anomalous areas. Although the 1982 survey did not have a high sample density like the Rio Canex survey, its analysis did include several elements not included by Rio Canex. Sample locations for the 1982 survey are shown on Drawing 82-278B.

Just up from the Cariboo Hudson Mine access road along Penny Creek, several anomalous levels of copper, lead, gold and zinc occur on the baseline. On L5+00E several samples show anomalous levels of copper, zinc, molybdenum, silver and tungsten. On L1+00E several high values of copper, zinc, molybdenum, silver and tungsten occur on the north side of Penny Creek.

The anomaly on L5+00E contains high lead values up to 540 ppm. Gold values reach up to 40 ppb. Several possible anomalous values for silver are scattered along the line. On L1+00E zinc reaches up to 610 ppm and molybdenum up to 18 ppm. Silver reaches up to 1.2 ppm.

The Penny Creek area appears to show a complex pattern of geochemical anomalies which could be due to complex geology and structure in the area.

3.5 ROCK GEOCHEMISTRY

Rock samples were collected during limited geological mapping. A number of still open old trenches were resampled. If rock samples showed obvious mineralization they were sent for assay as opposed to geochemical analysis. Several high zinc values were returned from rock geochems but otherwise no surprising results were obtained.

Gold values in the 60 rocks sent for geochemical analysis reached a high of 30 ppb gold and up to 0.5 ppm silver. This was disappointing in that no new mineralization was detected.

Mineralized samples from known showings which were sent for assay confirmed the presence of economic mineral occurrences. It must be noted however that most samples were taken over narrow widths and the mineralization is of limited extent. The grab samples collected are not exactly located on the site location map but are typical of the type of mineralization present in the given area. No credit was requested for assessment purposes for the assay cost.

A table of assay values is provided. The mineralization is of a Pb-Zn type with occassional good values of gold, silver and tungsten.

4.0 CONCLUSIONS

Two areas on Suncor's Roundtop Mountain property warrant additional follow-up to explore for minerlized quartz veins and massive pyritic bodies which can contain precious metal values. The Penny Creek area with its good geochemistry from this year's program and past years' is definitely of high potential and follow-up should be conducted. The Bralco Cabin area with its good geochemistry and limited high grade mineralization requires further work to assess the potential, especially to the southeast past the limit of the Rio Canex surveys.

These two areas are along the same contact between the Snowshoe Formation and the Midas Formation. The numerous geochemical anomalies along its strike may be related to the contact itself or some structure which parallel. Further work should be conducted along this contact. In order to define drill targets, the following geophysical surveys should be undertaken: Induced Polarization, VLF-EM and Magnetometer. If the VLF-EM survey indicates the presence of conductors then a Max-Min-EM survey should also be undertaken.

4.1 RECOMMENDED 1983 PROGRAM

In order to follow-up on the geochemical anomalies 35 km of geophysical line should be cut with the origin of the grid at the bridge on Penny Creek (near the old Rio Canex camp) and running southeast at 155° for 3000 metres. Lines should be cut every 200 metres for 1000 metres either side of the baseline.

Induced polarization surveys should be carried out with magnetometer and VLF-EM surveys to test the underlying bedrock and to detect any massive sulfide bodies. If any VLF-EM conductors are located, Max-Min surveys should be added to enable a better assessment of the conductors.

Intermediate flagged lines should be added every 100 metres to enable detailed soil sampling to be carried out. The Rio Canex mapping and other work should be compiled and in areas with insufficient geological data remapping should be undertaken.

This program should enable a better assessment of the geochemical anomalies along the Midas-Snowshoe contact. The expected cost of this program is $175,000.00.

P. A. Hawkins

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APPENDIX

1. Claim Listing
2. Author's Qualifications
3. Field Staff List
4. 1982 Cariboo and Tchaikazan Mean Salary Calculation
5. Cariboo Gold Project 1982 Analysis Costs
6. Cariboo Project Expenditures
7. Roundtop property Expenses
8. Summary of Statements of Exploration and Development - Roundtop Mountain
9. Geochemical Data Listing
10. Report Maps

Author's Qualifications

Paul Alan Hawkins, P.Eng., B.Sc. (Eng)
2105, 920 - 9th Avenue S.W.
CALGARY, Alberta
T2P 2T9

Registered Professional Engineer, Province of Alberta

B.Sc. (Eng) Queen's University 1977
Geological Engineering (Mineral Resources)

Work History

May 1981 - Present	Suncor Inc.	Project Geologist
May 1978 - March 1981	Pan Ocean Oil Ltd.	Project Geologist
Feb. 1978 - April 1978	Gulf Minerals	Drill Geologist
May 1977 - Jan. 1978	Asamera Oil	Junior Geologist
July 1976 - Dec. 1976	Urangessellschaft	Senior Assistant
May 1976 - July 1976	Hollinger Mines	Drill Geologist
May 1975 - Sept. 1975	HBOG Mining	Field Assistant
May 1974 - Sept. 1974	Duval Corp.	Field Assistant

FIELD STAFF LIST

1. David Dillon
   M.Sc. (Geology) Brock University 1982
   B.Sc. (Geology) University of Toronto 1979

2. Catherine Lawerence
   B.Sc. (Geology) University of Western Ontario 1982

3. Karla Lange
   B.Sc. (Geology) University of British Columbia 1982

4. Jacqui Rublee
   2nd Year Geology Student, University of British Columbia

5. Kimberly Russell
   2nd Year Geology Student, Sir Sanford Fleming College

6. Richard Laing
   B.Sc. (Biology) University of Calgary
   1st Year Geology Student, University of Calgary

7. Steve Barnhart
   2nd Year Geology Student, University of Waterloo

8. Jim Boyd
   2nd Year Geology Student, McMaster University

9. Reno Pressacco
   Graduate Geological Technician, Cambrian College 1982

10. Gerald Lalonde
    Cook

11. Derek Armstrong
    B.Sc. (Geology) University of Waterloo 1982

12. Derek Newman
    3rd Year Geology Student, Memorial University

13. John Mirynech
    1st Year Geology Student, University of Western Ontario

14. Mark Ho
    2nd Year Geology Student, University of Waterloo

15. Don Sabo
    1st Year Geology Student, University of Saskatchewan

16. Roy Lush
    Cook

17. Ernst Maas
    Helicopter Pilot

18. Cynthia Bonthoux
    Replacement Cook

1982 CARIBOO AND TCHAIKAZAN MEAN SALARY CALCULATION

	Daily Rate	
P. Hawkins	$ 234.09	Projects Geologist Cordilleran
D. Dillon	102.26	Tchaikazan Party Chief
C. Lawrence	99.64	Senior Field Assistant
K. Lange	98.34	Senior Field Assistant
V. Rublee	70.49	Junior Field Assistant
K. Russell	70.49	Junior Field Assistant
R. Laing	95.73	Camp Manager
S. Barnhart	70.49	Junior Field Assistant
J. Boyd	78.33	Junior Field Assistant
R. Pressacco	80.36	Junior Field Assistant
G. Lalonde	117.49	Cook
D. Armstrong	99.64	Cariboo Party Chief
D. Newman	80.93	Senior Field Assistant
J. Mirynech	58.75	Junior Field Assistant
M. Ho	70.49	Junior Field Assistant
D. Sabo	70.49	Junior Field Assistant
R. Lush	117.49	
	$ 1,615.20	
AVERAGE	$ 95.01	

Paul A. Hawkins
September 6, 1982

CARIBOO GOLD PROJECT

1982 ANALYSIS COSTS

Lab: Vangeochem Lab Ltd.
1521 Pemberton Avenue
North Vancouver, B.C.

Rock Samples

Plastic Samples Bag 8" X 13" c/w 7" tie	0.19
Rock Samples Preparation	2.50
Cu Pb Zn Ag Mo	4.85
Trace Analysis Au	4.30
Trace Analysis W	3.75
Save Rejects	0.25
Rock Sample Analysis Cost	15.84

Soil and Stream Sediment Samples

Gusset hi-wet strength geochem bags 4" X 6"	0.07
Soil Sample Preparation	0.60
Cu Pb Zn Ag Mo	4.85
Trace Analysis Au	4.30
Trace Analysis W	3.75
Save Rejects	0.25
Soil and Stream Analysis Cost	13.82

CARIBOO GOLD PROJECTS

TOTAL PROPERTY EXPENDITURES (ALL PROPERTIES)

Field Related Expenses

Salaries	$ 58,086.00	
Helicopter	39,880.64	
Fuel	10,185.26	
Truck Rental	11,149.04	
Communication Expenses	1,240.23	
Travel and Freight	11,124.44	
Geochemical Analysis and Assays	43,752.20	
Food	14,604.75	
Camp Costs and Equipment	15,922.48	
Lumber	1,495.25	
Warehouse Rental	1,335.00	
Cabin Rental	2,400.00	
Office Supplies, Maps and Reproduction	1,843.29	
Equipment Rental	1,450.00	
Subtotal	$214,468.58	
+10% Operating Overhead	21,446.85	
	$235,915.43	$235,915.43

Office Expenditures

Salaries:		
Project Geologist (10 X 234.09)	$ 2,340.90	
Senior Assistant (44 X 99.64)	4,384.16	
Draftsman (22 X 99.64)	2,192.08	
Typing (2 X 99.64)	199.28	
	$ 9,116.42	9,116.42

Other Expenses

Data Processing	$ 300.00	
Reproduction	900.00	
	$ 1,200.00	1,200.00
	TOTAL PROJECT EXPENSES	$241,231.85

CARIBOO GOLD PROJECTS

1982 INTER PROJECT

FIELD MANDAY SUMMARY

	Mandays		%
Yanks Peak			
French Snowshoe Group	78		
Little Snowshoe Group	76		
Mineral Total	154	154	49.94
Placer	11	11	3.56
Roundtop Mountain			
Roundtop Group	30.5	30.5	9.89
Placer	10	10	3.24
Cariboo Mountain			
Cariboo Group	27		
Andy #1	5		
#2	5		
Dian #1	21		
#2	13		
#3	0		
#4	0		
Mineral Total	71	71	23.01
Open Ground	32	32	10.38
TOTAL		308.5	100.00%

CARIBOO GOLD PROJECT

PRORATED FIELD EXPENSES

	TOTALS
Salaries	$ 58,086.00
Helicopter	39,880.64
Fuel	10,185.26
Truck Rental	11,149.04
Communications Expenses	1,240.23
Travel and Freight	11,124.44
Food	14,604.75
Camp Costs and Equipment	15,922.48
Lumber	1,495.25
Warehouse Rental	1,335.00
Cabin Rental	2,400.00
Office Supplies, Maps and Reproduction	1,843.29
Subtotal	$169,266.38
+10%	16,926.63
	$186,193.01

Total Field Mandays - 308.5

Per Manday Field Costs - $603.54

CARIBOO GOLD PROJECT

1982 MANDAYS BREAKDOWN

<u>Yanks Peak Property</u>		
Mineral	154	
Placer	11	
	165	165.0
<u>Roundtop Property</u>		
Mineral	30.5	
Placer	10	
	40.5	40.5
<u>Cariboo Mountain</u>		
Mineral	71	71.0
Open Ground	32	32.0
TOTAL FIELD DAY		308.5
Camp Support	327	327.0
TOTAL PROJECT MANDAYS		635.5

1982 ROUNDTOP MOUNTAIN ACTUAL PROPERTY EXPENDITURES

Per Manday Field Costs ~~Salaries~~ (603.5 X 30.5)	$18,407.97
Report Preparation (10316.42 X 9.89%)	1,020.29
Geochemical Analysis	
Rock Samples (15.84 X 60)	950.40
Soil Samples (13.84 X 264)	3,653.76
Stream Sediments (13.84 X 94)	1,300.96
TOTAL	$25,333.38

SUMMARY OF STATEMENTS OF EXPLORATION AND DEVELOPMENT

1982 ROUNDTOP MOUNTAIN GROUP

Claim Group	Statement Done	Record Numbers of Claims	Total Work	Work Applied	Surplus Amount To PAC Account
Roundtop Mountain Group	February 2, 1983	311 - 319, 570 - 572	5230.77	6800.00	0
Rondtop Mountain Group	Pending	1479, 1480	308.00	400.00	0
Roundtop Mountain Group	Pending	3660 - 3663	19794.61	25700.00	0
		TOTAL	25333.38	32900.00	
		Documented Work Suncor Report #9176	25333.38		
		Unused Portion	ø		

Paul A. Hawkins
March 1, 1983

GEOCHEMICAL DATA LISTING

```
.DATE 21 FEB 83  10:36:33  RID      1    07 JAN 82  PHAWK
*                                                             LAB :        (TYPE F)
*RS.PRJYR .ROCK.SAMPLE.ELT-1  .ELT-2  .ELT-3  .ELT-4  .ELT-5  .ELT-6  .ELT-7  .
*  .       .    .NUMBER.TECH   .TECH   .TECH   .TECH   .TECH   .TECH   .TECH
*==.======.====.======.=======.=======.=======.=======.=======.=======.=======.
 XX 2-CHARACTER REPLICATE STATUS        (SAMPLE TYPE)
    XXXXXX 6-CHARACTER PROJECT INDENTIFICATION
           XXXX 4-CHARACTER ROCK TYPE
                XXXXXX 6-CHARACTER SAMPLE NUMBER
                       XXXXXXX XXXXXXX XXXXXXX XXXXXXX XXXXXXXX XXXXXXX XXXXXXX
                       I                                                      I
                       I ASSAY VALUE WITH 5-DIGIT PRECISION - DECIMAL POINTS  I
                       I SHOULD LINE UP.                                      I
                       I                                                      I
                     ..... END REPORT .....
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SOIL SAMPLE LISTING

Cu, Pb, Zn, Mo, W, and Ag in ppm
Au in ppb

ROUNDTOP MOUNTAIN SOIL GEOCHEMISTRY — FEBRUARY 23, 1983 — BY PAUL A. HAWKINS

SUMMARY STATISTICS

SUBSET	VARIABLE	UNITS	N	ARITH MEAN	STD DEV	CV %	SKEW	EXCESS KURT	95% LIMITS ON MEAN		GEOM MEAN	LOG 10 MEAN	STD DEV	95% LIMITS ON MEAN	
TOTAL	CU AA	PPM	264	26.9	15.8	58.8	1.69	4.49	25.0	28.8	23.0	1.3621	.2445	21.5	24.6
TOTAL	PB AA	PPM	264	89.1	305.	342.0	10.68	130.44	52.2	126.	43.1	1.6342	.3888	38.6	48.0
TOTAL	ZN AA	PPM	264	131.	140.	106.9	2.53	7.64	114.	148.	86.5	1.9368	.3889	77.6	96.4
TOTAL	MO AA	PPM	241	3.49	4.34	124.3	4.06	19.79	2.94	4.04	2.43	.3853	.3320	2.20	2.68
TOTAL	W AA	PPM	152	6.73	3.12	46.4	2.22	6.09	6.23	7.23	6.23	.7946	.1592	5.88	6.61
TOTAL	AU AA	PPB	151	13.3	9.39	70.5	2.41	9.81	11.8	14.8	10.9	1.0390	.2703	9.90	12.1
TOTAL	AG AA	PPM	244	.416	.378	90.9	4.70	35.09	.368	.464	.324	-.4891	.3002	.297	.354

SUBSET	VARIABLE	UNITS	N	MIN VALUE	PERCENTILE 25TH	50TH	75TH	80TH	90TH	95TH	98TH	99TH	MAX VALUE
TOTAL	CU AA	PPM	264	5.000	16.000	24.000	34.000	37.000	49.000	57.000	68.000	96.000	107.000
TOTAL	PB AA	PPM	264	9.000	23.000	40.000	65.000	71.000	121.000	232.000	630.000	1710.000	4200.000
TOTAL	ZN AA	PPM	264	12.000	45.000	83.000	163.000	186.000	301.000	470.000	610.000	650.000	890.000
TOTAL	MO AA	PPM	241	1.000	1.000	2.000	3.000	4.000	7.000	11.000	19.000	31.000	33.000
TOTAL	W AA	PPM	152	3.000	5.000	5.000	10.000	10.000	10.000	10.000	20.000	20.000	20.000
TOTAL	AU AA	PPB	151	5.000	5.000	10.000	20.000	20.000	25.000	30.000	40.000	55.000	70.000
TOTAL	AG AA	PPM	244	.100	.200	.300	.500	.500	.700	.900	1.700	2.100	4.000

.DATE 08:56:25 RID 12 23 FEB 83 PHAWK

*PRJYR	.SAMPLE .NUMBER	.ROCK .TYPE	.RS	.CU .AA(PPM)	.PB .AA(PPM)	.ZN .AA(PPM)	.MO .AA(PPM)	.W .AA(PPM)	.AU .AA(PPB)	.AG .AA(PPM)
05182	201810		50	28	54	121	3	0	5	0.7
05182	201811		50	9	20	50	0	10	10	0.2
05182	201812		50	21	24	56	1	10	0	0.2
05182	201813		50	21	61	68	2	0	0	0.4
05182	201814		50	14	27	40	0	5	0	0.2
05182	201815		50	10	14	19	2	0	10	0.1
05182	201816		50	7	16	18	2	5	5	0.2
05182	201817		50	16	43	46	2	0	0	0.7
05182	201818		50	23	37	67	1	0	25	0.6
05182	201819		50	24	42	74	1	0	0	0.7
05182	201820		50	17	33	81	1	0	30	0.2
05182	201821		50	6	12	15	1	5	0	0.3
05182	201822		50	68	42	45	1	5	20	0.8
05182	201823		50	36	34	158	2	5	0	0.6
05182	201824		50	9	12	14	1	5	10	0.4
05182	201825		50	14	21	42	2	5	30	0.4
05182	201826		50	10	19	20	1	5	20	0.3
05182	201827		50	26	38	81	3	5	0	0.3
05182	201828		50	8	13	16	0	5	15	0.3
05182	201829		50	9	20	24	1	5	15	0.5
05182	201830		50	13	34	71	1	5	15	0.7
05182	201889		50	32	37	118	1	5	0	0.3
05182	201890		50	32	36	116	2	0	0	0.0
05182	201891		50	26	36	96	3	5	15	0.0
05182	201892		50	61	92	221	3	0	0	0.1
05182	201893		50	29	51	172	2	5	0	0.0
05182	201894		50	38	540	239	19	0	10	0.3
05182	201895		50	35	57	135	3	0	5	0.2
05182	201896		50	39	64	275	3	0	0	0.4
05182	201897		50	21	39	124	2	0	10	0.6
05182	201898		50	20	102	70	8	0	0	0.1
05182	201899		50	46	61	254	3	5	0	0.5
05182	201900		50	49	73	301	3	5	5	0.3
05182	201901		50	57	64	249	3	5	25	0.4
05182	201902		50	34	63	235	2	10	25	0.3
05182	201903		50	52	86	430	3	5	0	0.4
05182	201904		50	58	117	610	2	5	15	0.5
05182	201905		50	64	61	323	2	0	15	0.4
05182	201906		50	63	87	470	3	0	0	0.4
05182	201907		50	36	59	204	1	0	15	0.2
05182	201908		50	35	39	139	3	0	5	0.1
05182	201909		50	23	37	121	3	0	10	0.5
05182	201910		50	24	122	120	6	5	0	0.6
05182	201911		50	51	86	165	5	5	0	0.5
05182	201912		50	26	67	93	4	0	0	0.3
05182	201913		50	34	73	151	6	0	0	0.1
05182	201914		50	53	49	147	5	0	0	0.5
05182	201915		50	47	63	186	2	0	5	0.3
05182	201916		50	21	49	125	3	0	15	0.1
05182	201917		50	28	26	72	2	5	10	0.5
05182	201918		50	34	45	185	4	5	0	0.5
05182	201919		50	33	118	229	3	5	0	0.5
05182	201920		50	54	63	146	3	0	15	0.2
05182	201921		50	26	39	97	4	5	5	0.1
05182	201922		50	29	41	125	3	10	10	0.3

*** MAPPER SYSTEM ***   SUNCOR INC

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05182	201923	50	35	46	123	3	20	0	0.5
05182	201924	50	39	37	101	1	0	5	0.2
05182	201925	50	43	51	194	2	10	0	0.1
05182	201926	50	55	57	221	2	10	10	0.2
05182	201927	50	36	49	157	2	10	5	0.2
05182	201928	50	24	44	151	1	5	0	0.3
05182	201929	50	32	45	126	1	10	0	0.2
05182	201930	50	33	82	195	3	0	5	0.4
05182	201931	50	28	45	106	1	5	0	0.5
05182	201932	50	57	38	117	1	5	0	0.2
05182	201933	50	53	29	96	2	5	0	0.1
05182	201943	50	18	28	45	1	0	5	0.2
05192	201944	50	27	33	80	2	0	20	0.2
05182	201945	50	9	34	29	0	0	0	0.5
05182	201946	50	26	48	323	1	5	0	0.4
05182	201947	50	21	237	325	3	0	0	0.2
05182	201948	50	33	63	207	5	0	5	0.4
05182	201949	50	24	69	143	6	0	10	0.6
05182	201950	50	26	82	171	7	0	0	0.3
05182	201951	50	39	68	185	8	0	5	0.5
05182	201952	50	37	44	132	6	0	5	0.5
05192	201953	50	28	37	163	7	5	0	0.1
05182	201954	50	41	263	322	10	5	0	0.6
05182	201955	50	30	760	520	6	0	0	1.5
05182	201956	50	28	74	500	1	5	5	0.4
05182	201957	50	24	630	201	0	5	5	0.5
05182	201958	50	16	21	58	0	0	0	0.3
05182	201959	50	39	66	167	1	0	5	0.3
05182	201960	50	28	72	173	3	0	0	0.6
05182	201961	50	22	17	46	2	0	25	0.3
05182	201962	50	21	16	26	2	5	5	0.3
05182	201963	50	19	17	40	1	10	10	0.6
05182	201964	50	22	19	38	1	10	10	0.3
05182	201965	50	18	21	33	1	10	0	0.3
05182	201966	50	30	26	48	0	10	10	0.5
05182	201967	50	21	17	33	1	0	20	0.5
05192	201968	50	28	15	47	1	10	10	0.5
05182	201969	50	24	23	54	0	5	20	0.4
05182	201970	50	16	39	40	1	10	20	0.8
05182	201971	50	13	16	21	0	10	15	0.5
05182	201972	50	17	17	20	1	10	0	0.5
05182	201973	50	26	36	44	1	10	5	0.4
05182	201974	50	45	34	70	0	5	10	0.8
05182	201975	50	19	34	55	0	0	15	0.5
05182	201976	50	20	24	24	0	0	0	0.2
05182	201977	50	13	11	14	1	0	0	0.2
05182	201978	50	15	15	30	1	0	20	0.3
05182	201979	50	15	9	24	0	0	15	0.2
05182	201980	50	18	17	33	3	0	0	0.1
05132	201981	50	16	18	41	1	0	70	0.2
05182	201982	50	27	18	45	3	0	0	0.3
05182	201983	50	26	13	22	2	5	0	0.2
05182	201984	50	22	12	20	0	5	0	0.2
05182	201985	50	24	15	22	0	5	10	0.3
05182	201987	50	18	24	45	1	0	20	0.5
05182	201988	50	23	31	69	1	5	30	0.5
05182	201989	50	15	16	40	1	5	0	0.2
05182	201990	50	11	23	32	1	5	0	0.2
05182	201991	50	13	36	39	2	5	0	0.6

05182	201988	50	23	31	69	1	5	30	0.5
05182	201989	50	15	16	40	1	5	0	0.2
05182	201990	50	11	23	32	1	5	0	0.2
05182	201991	50	13	36	39	2	5	0	0.6

05182	201992	50	16	34	63	2	5	0	0.8
05182	201993	50	14	27	26	4	5	0	0.4
05182	201994	50	17	31	38	2	5	0	0.5
05182	201995	50	29	35	46	2	5	0	0.8
05182	201996	50	45	132	46	6	10	20	0.5
05182	201997	50	21	28	65	1	5	5	0.3
05182	201998	50	26	89	73	2	5	5	0.2
05182	201999	50	8	15	18	1	5	5	0.4
05182	202000	50	14	24	40	1	0	0	0.4
05182	202001	50	13	23	43	1	0	20	0.2
05182	202002	50	11	36	45	1	5	5	0.4
05182	202003	50	9	67	24	1	0	15	0.3
05182	202004	50	8	24	20	0	5	20	0.4
05182	202005	50	16	30	43	0	5	0	0.2
05182	202006	50	15	28	24	0	0	0	0.1
05182	202007	50	13	24	33	0	0	0	0.1
05182	202008	50	11	46	40	2	0	0	0.5
05182	202009	50	16	116	40	1	0	0	0.5
05182	202010	50	12	52	26	1	0	0	0.0
05182	202011	50	11	41	33	0	0	10	0.1
05182	202012	50	15	70	46	2	0	0	0.3
05182	202013	50	16	64	50	1	0	15	0.4
05182	202014	50	16	59	66	2	5	0	0.3
05182	202015	50	37	162	120	24	5	0	0.7
05182	202016	50	23	124	114	4	5	10	0.5
05182	202017	50	38	228	230	16	5	0	0.4
05182	202018	50	27	232	550	11	0	0	0.4
05182	202019	50	31	239	600	11	5	5	0.4
05182	202020	50	29	198	385	11	10	10	0.4
05182	202021	50	30	182	249	12	5	0	0.2
05182	202022	50	54	231	302	26	5	0	0.6
05182	202023	50	59	293	376	33	5	15	0.9
05182	202024	50	46	229	650	31	5	15	0.4
05182	202025	50	48	284	540	14	5	0	0.9
05182	202026	50	35	199	620	13	5	10	0.3
05182	202028	50	34	82	358	11	0	55	0.9
05182	202029	50	100	101	231	4	0	0	0.5
05182	202030	50	107	127	103	5	5	10	0.3
05182	202031	50	28	83	248	4	5	25	0.2
05182	202032	50	54	78	345	2	5	40	0.3
05182	202033	50	54	99	405	3	5	10	0.3
05182	202034	50	39	45	119	2	5	10	0.2
05182	202035	50	25	49	97	3	5	15	0.3
05182	202036	50	29	58	116	3	0	0	0.2
05182	202037	50	23	83	215	3	0	10	0.2
05182	202038	50	17	56	124	2	5	10	0.1
05182	202039	50	39	59	190	3	5	10	0.2
05182	202040	50	38	56	155	2	0	0	0.2
05182	202041	50	43	53	189	3	0	0	0.4
05182	202042	50	72	46	132	3	0	5	0.7
05182	202043	50	49	67	196	2	0	0	0.9
05182	202044	50	35	71	167	3	0	10	0.5
05182	202045	50	34	48	120	4	0	0	0.5
05182	202046	50	25	34	74	3	5	5	0.3
05182	202047	50	36	73	166	3	0	0	0.3
05182	202048	50	24	45	145	2	0	5	0.1
05182	202049	50	29	43	266	4	0	0	0.7
05182	202050	50	23	28	94	2	5	20	0.1
05182	202051	50	48	42	171	4	10	0	0.9

05182	202052	50	29	37	23	4	10	5	1.2
05182	202053	50	46	54	282	18	10	20	0.7
05182	202054	50	96	66	440	8	10	20	0.0
05182	202055	50	41	43	269	4	5	10	0.7
05182	202056	50	25	47	178	3	10	5	0.3
05182	202057	50	28	44	113	1	10	5	0.5
05182	202058	50	24	36	219	2	10	0	0.3
05182	202059	50	16	29	78	1	5	0	0.2
05182	202060	50	24	36	93	2	5	5	0.6
05182	202061	50	17	38	69	3	0	0	0.3
05182	202062	50	23	40	84	3	0	10	0.3
05182	202063	50	18	25	97	2	0	0	0.1
05182	202075	50	33	52	148	3	0	0	0.5
05182	202076	50	24	23	99	2	0	0	1.4
05182	202077	50	18	25	112	2	0	0	0.0
05182	202078	50	14	21	59	2	5	0	00.2
05182	202079	50	16	32	90	2	0	30	0.0
05182	202080	50	19	43	84	3	0	10	0.1
05182	202081	50	21	76	106	4	0	15	0.0
05182	202082	50	20	69	99	4	0	20	0.1
05182	202083	50	9	40	31	3	0	0	0.0
05182	202084	50	10	85	49	9	10	0	0.3
05182	202085	50	27	46	138	6	10	5	0.9
05182	202086	50	23	67	510	6	5	5	0.2
05182	202087	50	16	21	87	2	5	0	0.1
05182	202088	50	8	24	36	2	10	20	0.2
05182	202089	50	25	48	92	4	10	25	1.0
05182	202090	50	11	30	56	2	10	15	0.2
05182	202091	50	19	46	99	1	10	0	0.5
05182	202092	50	15	12	32	1	20	10	0.3
05182	202093	50	8	12	12	1	10	20	0.4
05182	202094	50	13	19	32	1	0	05	0.4
05182	202095	50	9	18	23	1	5	10	0.1
05182	202096	50	16	16	34	2	5	0	0.3
05182	202097	50	12	12	25	0	5	0	0.2
05182	202098	50	21	14	54	1	0	0	0.0
05182	202099	50	19	18	53	3	0	5	0.2
05182	202100	50	17	10	44	3	0	13	0.3
05182	202101	50	16	16	61	2	5	0	0.0
05182	202102	50	20	13	59	2	5	0	0.4
05182	202103	50	24	24	89	2	3	10	0.0
05182	202104	50	24	21	78	1	5	0	0.1
05182	202105	50	15	19	58	0	5	0	0.2
05182	202106	50	26	20	82	2	0	5	0.1
05182	202107	50	42	20	74	2	5	0	0.2
05182	202108	50	27	25	92	2	5	0	0.3
05182	202109	50	53	41	88	2	5	0	0.7
05182	202110	50	36	30	79	1	0	15	0.1
05182	202111	50	55	26	82	3	0	25	0.5
05182	202112	50	44	44	99	2	0	15	0.2
05182	202113	50	43	77	103	4	0	20	0.2
05182	202114	50	37	46	108	2	0	0	0.0
05182	202115	50	36	69	109	1	5	0	0.1
05182	202336	50	11	23	51	2	0	15	0.0
05182	202337	50	19	25	67	1	0	10	0.4
05182	202338	50	6	21	26	2	20	20	0.6
05182	202339	50	15	92	64	3	20	5	1.9
05182	202340	50	16	35	69	2	5	20	0.5
05182	202341	50	15	44	59	3	5	0	0.3

05182	202341	50	15	44	59	3	5	0	0.3

05182	202342	50	19	43	81	5	10	10	0.1
05182	202343	50	17	64	87	5	10	5	0.1
05182	202344	50	24	65	74	6	10	20	0.5
05182	202345	50	14	43	79	3	5	20	0.6
05182	202346	50	28	1800	890	6	5	30	4.0
05182	202347	50	5	67	44	1	0	0	0.0
05182	202348	50	26	4200	530	1	5	5	2.1
05182	202349	50	12	40	54	1	0	5	0.1
05182	202350	50	23	23	77	0	5	5	0.3
05182	202351	50	62	1710	860	2	10	5	0.8
05182	202352	50	16	22	56	2	0	5	0.0
05182	202353	50	19	15	49	2	5	25	0.4
05182	202354	50	10	12	35	1	0	10	0.1
05182	202355	50	24	19	53	2	0	5	0.4
05182	202356	50	18	22	45	2	10	15	0.0
05182	202357	50	14	16	37	1	10	15	0.0
05182	202358	50	18	15	36	1	0	0	0.2
05182	202359	50	24	12	46	3	0	10	0.6
05182	202360	50	27	23	130	3	10	10	0.1
05182	202361	50	13	15	57	3	0	5	0.1
05182	202364	50	15	16	43	1	0	0	0.0
05182	202365	50	14	10	28	1	0	0	0.2
05182	202366	50	10	36	74	5	5	0	0.0
05182	202367	50	19	37	83	3	0	35	0.3
05182	202368	50	38	121	176	8	0	10	0.5
05182	202369	50	29	218	219	8	5	15	0.1
05182	202370	50	6	62	55	7	5	10	0.8
05182	202371	50	5	305	16	1	5	0	1.8
05182	202372	50	17	40	124	3	5	10	1.7
05182	202373	50	9	33	71	2	0	0	0.2
05182	202374	50	18	35	96	3	5	0	0.3
05182	202375	50	12	18	38	2	10	0	0.1

..... END REPORT .....

ROCK SAMPLE LISTING

Cu, Pb, Zn, Mo, W, and Ag in ppm
Au in ppb

ROUNDTOP MOUNTAIN STREAM SEDIMENT GEOCHEMISTRY MARCH 9, 1983. BY PAUL A. HAWKINS

SUMMARY STATISTICS

SUBSET	VARIABLE	UNITS	N	ARITH MEAN	STD DEV	CV %	SKEW	EXCESS KURT	95% LIMITS ON MEAN		GEOM MEAN	LOG 10 MEAN	STD DEV	95% LIMITS ON MEAN	
TOTAL	CU AA	PPM	94	38.5	20.5	53.1	-.27	-1.33	34.3	42.7	30.9	1.4900	.3276	26.5	36.1
TOTAL	PB AA	PPM	94	63.5	29.3	46.2	.25	-1.16	57.5	69.5	56.4	1.7510	.2209	50.8	62.6
TOTAL	ZN AA	PPM	94	276.	172.	62.4	-.23	-1.62	240.	311.	198.	2.2962	.4096	163.	240.
TOTAL	MO AA	PPM	87	3.01	1.23	41.0	-.25	-.99	2.75	3.27	2.70	.4306	.2235	2.42	3.01
TOTAL	W AA	PPM	33	5.91	1.96	33.1	1.65	.72	5.22	6.60	5.67	.7537	.1179	5.15	6.24
TOTAL	AU AA	PPB	44	9.32	5.77	61.9	1.56	2.31	7.57	11.1	8.01	.9037	.2313	6.81	9.42
TOTAL	AG AA	PPM	79	.356	.262	73.7	2.18	5.97	.297	.414	.289	-.5389	.2753	.251	.333

SUBSET	VARIABLE	UNITS	N	MIN VALUE	PERCENTILE 25TH	50TH	75TH	80TH	90TH	95TH	98TH	99TH	MAX VALUE
TOTAL	CU AA	PPM	94	4.000	17.000	45.000	55.000	57.000	63.000	65.000	74.000	74.000	74.000
TOTAL	PB AA	PPM	94	20.000	35.000	69.000	91.000	93.000	101.000	114.000	123.000	125.000	125.000
TOTAL	ZN AA	PPM	94	18.000	79.000	354.000	430.000	440.000	460.000	480.000	530.000	570.000	570.000
TOTAL	MO AA	PPM	87	1.000	2.000	3.000	4.000	4.000	4.000	5.000	5.000	5.000	5.000
TOTAL	W AA	PPM	33	5.000	5.000	5.000	5.000	5.000	10.000	10.000	10.000	10.000	10.000
TOTAL	AU AA	PPB	44	5.000	5.000	10.000	10.000	15.000	20.000	20.000	30.000	30.000	30.000
TOTAL	AG AA	PPM	79	.100	.200	.300	.500	.500	.600	.900	1.400	1.500	1.500

.DATE   08:46:15   PID   14   09 MAR 83   PHAWK

*PROJYR	.SAMPLE .NUMBER	.ROCK .TYPE	.RS.	.CU .AA(PPM)	.PB .AA(PPM)	.ZN .AA(PPM)	.MO .AA(PPM)	.W .AA(PPM)	.AU .AA(PPB)	.AG .AA(PPM)
05182	202116	10		47	45	253	2	5	5	0.4
05182	202117	10		38	39	221	3	5	0	0.2
05182	202118	10		45	44	214	3	0	0	0.6
05182	202119	10		53	45	237	2	0	0	0.6
05182	202120	10		51	44	237	1	0	0	0.1
05182	202121	10		38	49	367	3	0	10	0.0
05182	202122	10		41	47	369	4	0	10	0.2
05182	202123	10		39	45	344	4	0	5	0.2
05182	202124	10		34	70	395	3	0	0	0.1
05182	202125	10		38	66	268	4	5	0	0.3
05182	202126	10		49	73	363	4	5	5	0.2
05182	202127	10		41	71	410	3	5	5	0.6
05182	202128	10		47	50	394	3	0	5	0.2
05182	202129	10		42	70	339	4	0	0	0.2
05182	202130	10		48	55	460	4	5	0	0.0
05182	202131	10		46	68	440	3	0	5	0.0
05182	202132	10		51	70	570	4	5	10	0.5
05182	202133	10		54	70	480	4	5	0	0.2
05182	202134	10		49	69	490	4	0	0	0.2
05182	202135	10		42	48	410	3	5	0	0.3
05182	202136	10		49	70	376	3	0	0	0.1
05182	202137	10		48	71	308	4	0	15	0.3
05182	202138	10		45	74	400	4	0	15	0.0
05182	202139	10		51	93	342	3	0	0	0.0
05182	202140	10		52	74	450	3	0	5	0.0
05182	202141	10		71	91	379	3	5	10	0.0
05182	202142	10		59	123	430	3	5	5	0.1
05182	202143	10		55	125	440	4	5	0	0.5
05182	202144	10		53	121	530	4	5	0	0.3
05182	202145	10		44	100	354	2	5	5	0.2
05182	202146	10		65	114	399	5	0	15	0.2
05182	202147	10		57	70	381	4	0	10	0.2
05182	202148	10		46	59	373	5	5	0	0.0
05182	202149	10		46	74	480	3	0	0	0.0
05182	202150	10		55	93	430	5	0	0	0.2
05182	202151	10		67	99	450	5	0	0	0.3
05182	202152	10		59	104	420	4	0	20	0.3
05182	202153	10		63	90	400	4	0	5	0.3
05182	202154	10		54	90	490	4	0	0	0.5
05182	202155	10		52	112	440	3	5	0	0.6
05182	202156	10		57	96	450	3	0	0	0.0
05182	202157	10		63	95	460	4	0	0	0.0
05182	202158	10		56	82	440	3	0	10	0.2
05182	202159	10		55	100	470	5	0	0	0.3
05182	202160	10		57	91	420	4	0	10	0.2
05182	202161	10		54	73	400	4	0	30	0.2
05182	202162	10		56	86	450	5	0	0	0.3
05182	202163	10		62	90	430	4	0	20	0.3
05182	202164	10		54	91	420	4	0	5	0.1
05182	202165	10		57	93	440	4	0	0	0.3
05182	202166	10		56	115	440	4	0	0	0.9
05182	202167	10		64	92	392	5	0	5	0.5
05182	202168	10		59	96	430	4	0	5	0.5
05182	202169	10		61	93	430	4	0	5	0.8
05182	202170	10		74	98	460	5	0	10	0.2

05182	202171	10	63	102	410	3	0	0	0.1
05192	202172	10	64	101	460	4	0	0	0.3
05192	202173	10	74	69	353	4	0	0	0.1
05192	202376	10	13	20	45	1	5	0	0.0
05182	202377	10	23	26	66	1	0	5	0.0
05182	202378	10	21	29	104	2	0	0	0.2
05192	202379	10	12	28	86	2	10	5	1.5
05182	202380	10	9	28	75	1	10	0	0.7
05182	202381	10	12	27	73	2	0	15	0.9
05182	202382	10	10	24	78	0	0	5	0.8
05192	202383	10	8	29	89	1	5	0	0.3
05192	202384	10	29	101	142	3	5	5	1.4
05182	202385	10	8	29	62	0	0	0	0.6
05192	202386	10	17	34	71	3	5	0	0.3
05182	202387	10	6	26	34	2	0	5	0.4
05192	202388	10	8	22	33	0	0	10	0.3
05192	202389	10	10	25	64	2	0	20	0.6
05182	202390	10	17	26	54	2	0	0	0.4
05182	202391	10	10	34	58	0	0	0	0.6
05182	202392	10	12	34	52	1	0	0	0.2
05192	202393	10	16	35	64	3	0	10	0.4
05192	202394	10	12	37	55	2	0	0	0.2
05182	202395	10	9	28	35	3	0	0	0.3
05192	202396	10	11	41	48	1	5	10	0.5
05192	202397	10	9	34	55	0	5	0	0.3
05182	202398	10	10	22	45	0	10	20	0.0
05182	202399	10	6	27	22	1	5	0	0.3
05192	202400	10	4	69	18	1	10	10	0.2
05132	202401	10	18	33	54	2	10	0	0.2
05192	202402	10	9	75	51	0	10	10	0.1
05182	202403	10	19	46	82	1	0	0	0.4
05192	202404	10	38	44	136	1	0	0	0.2
05182	202405	10	20	49	119	1	0	0	0.2
05182	202406	10	18	49	138	2	0	0	0.1
05132	202407	10	14	32	89	2	5	5	0.4
05132	202408	10	30	42	116	2	5	5	0.3
05182	202409	10	44	48	138	1	5	0	0.0
05192	202410	10	16	33	75	1	0	5	0.2
05182	202411	10	23	35	90	2	5	0	0.1

..... END REPORT .....

ROUNDTOP MOUNTAIN ROCK GEOCHEMISTRY MARCH 1, 1983. BY PAUL A. HAWKINS

SUMMARY STATISTICS

SUBSET	VARIABLE		UNITS	N	ARITH MEAN	STD DEV	CV %	SKEW	EXCESS KURT	95% LIMITS ON MEAN		GEOM MEAN	LOG 10 MEAN	STD DEV	95% LIMITS ON MEAN	
TOTAL	CU	AA	PPM	52	20.8	33.0	158.3	1.79	1.91	11.7	30.0	6.13	.7877	.6994	3.92	9.60
TOTAL	PB	AA	PPM	59	26.5	20.5	77.6	.71	.05	21.1	31.8	16.8	1.2247	.4868	12.5	22.5
TOTAL	ZN	AA	PPM	57	56.3	128.	227.8	4.80	24.72	22.3	90.3	16.2	1.2090	.7236	10.4	25.2
TOTAL	MO	AA	PPM	57	3.54	3.16	89.2	2.72	7.96	2.71	4.38	2.79	.4451	.2804	2.35	3.31
TOTAL	W	AA	PPM	16	8.44	6.25	74.1	2.73	7.13	5.13	11.7	7.25	.8605	.2209	5.54	9.50
TOTAL	AU	AA	PPB	32	13.1	6.44	49.1	1.19	1.01	10.8	15.4	11.8	1.0714	.2049	9.94	14.0
TOTAL	AG	AA	PPM	39	.233	.138	59.3	1.50	2.57	.189	.278	.201	-.6978	.2407	.168	.240

SUBSET	VARIABLE		UNITS	N	MIN VALUE	PERCENTILE 25TH	50TH	75TH	80TH	90TH	95TH	98TH	99TH	MAX VALUE
TOTAL	CU	AA	PPM	52	1.000	1.000	5.000	18.000	51.000	79.000	98.000	127.000	127.000	127.000
TOTAL	PB	AA	PPM	59	2.000	7.000	24.000	41.000	42.000	53.000	62.000	86.000	86.000	86.000
TOTAL	ZN	AA	PPM	57	1.000	4.000	21.000	51.000	90.000	121.000	172.000	840.000	840.000	840.000
TOTAL	MO	AA	PPM	57	1.000	2.000	2.000	4.000	5.000	8.000	9.000	17.000	17.000	17.000
TOTAL	W	AA	PPM	16	5.000	5.000	5.000	10.000	10.000	10.000	30.000	30.000	30.000	30.000
TOTAL	AU	AA	PPB	32	5.000	10.000	10.000	15.000	20.000	25.000	30.000	30.000	30.000	30.000
TOTAL	AG	AA	PPM	39	.100	.100	.200	.300	.300	.400	.600	.700	.700	.700

*** MAPPER SYSTEM *** SUNCOR INC DATE 030383 PAGE 1

.DATE 03 MAR 83 10:20:33 RID 17 03 MAR 83 PHAWK

*PRJYR	.SAMPLE .NUMBER	.ROCK .TYPE	.RS	.CU % .(ASSAY)	.PB % .(ASSAY)	.ZN % .(ASSAY)	.AU OZ .(ASSAY)	AG OZ .(ASSAY)	.W % .(ASSAY)	.SITE .NUMBER	.ROCK .DESCRIPTION
05182A	ASO112	MRLZ	80	.01	3.10	8.80	0.020	0.06		BRALCO	MINERALIZED QUARTZ VEIN WITH GALENA & AZURI
05192A	ASO159	QZVN	80		.32	0.00	0.012	.18	0.000	CL-014A	QUARTZ VEIN WITH GALENA
05182A	ASO160	QZVN	80		.10	0.00	0.000	.20		CL-014B	QUARTZ VEIN WITH PYRITE AND GALENA
05182A	ASO175	QZVN	80				0.000	.10		CL-0005	QUARTZ VEIN IN ALTERED PHYLLITE WITH PYRITE
05182A	ASO176	QZVN	80				0.000	.12		CL-005A	QUARTZ VEIN IN MICA SCHIST WITH PYRITE
05182A	ASO177	QZVN	80				0.000	.04		CL-0006	QUARTZ VEIN WITH DISSEMINATED PYRITE
05182A	ASO178	QZVN	80				0.000	.02		CL-0008	QUARTZ VEIN WITH PYRITE
05182A	ASO185	QZVN	80	0.00	.02	0.00	0.000	.04	.021	BRALCO	GRAB SAMPLE OF MINERALIZED QUARTZ
05182A	ASO186	QZVN	80	0.00	3.30	3.70	0.000	.64	.016	BRALCO	GRAB SAMPLE OF MINERALIZED QUARTZ
05182A	ASO187	QZVN	80	.01	.16	0.00	0.014	.76	.000	PEARCE	GRAB SAMPLE
05192A	ASO188	QZVN	80	0.00	3.79	.09	0.000	1.88	4.290	PEARCE	GRAB SAMPLE OF DISSEMINATED PYRITE
05182A	ASO189	QZVN	80	.06	27.94	0.00	0.000	8.60	.000	PEARCE	GRAG SAMPLE OF MASSIVE SULFIDES
05182A	ASO403	MRLZ	80	0.02	12.46	10.91	0.000	4.24		BRALCO	GRAB SAMPLE
05182A	ASO404	MRLZ	80		18.02	0.00	0.000	5.24		BRALCO	GRAB SAMPLE
05182A	ASO405	MPLZ	80		2.90	5.26	0.000	0.92		BRALCO	GRAB SAMPLE OF MINERALIZED QUARTZ VEIN
05182A	ASO406	MRLZ	80	0.02	0.12	0.03	0.248	0.73		PEARCE	GRAB SAMPLE
05182A	ASO407	MRLZ	80		14.79	2.40	0.000	4.88		PEARCE	GRAB SAMPLE
05182A	ASO502	MINE	80				0.094	.63		HUDSON	GRAB SAMPLE OF QUARTZ VEIN FROM MINE DUMP
05182A	ASO503	MINE	80	1.22	0.31	0.03	0.074	1.05		HUDSON	GRAG SAMPLE OF QUARTZ VEIN FROM MINE DUMP

..... END REPORT .....

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1.   .DATE 10 MAR 83  09:42:28  RID     13    24 FEB 83  PHAWK
2.   *PRJYR .SAMPLE.ROCK.RS.CU      .PB      .ZN      .MO      .W       .AU      .AG      .SITE  .
3.   *      .NUMBER.TYPE.  .AA(PPM).AA(PPM).AA(PPM).AA(PPM).AA(PPM).AA(PPB).AA(PPM).NUMBER.
4.   *======.======.====.==.=======.=======.=======.====== .=======.=======.=======.====== ==================================.
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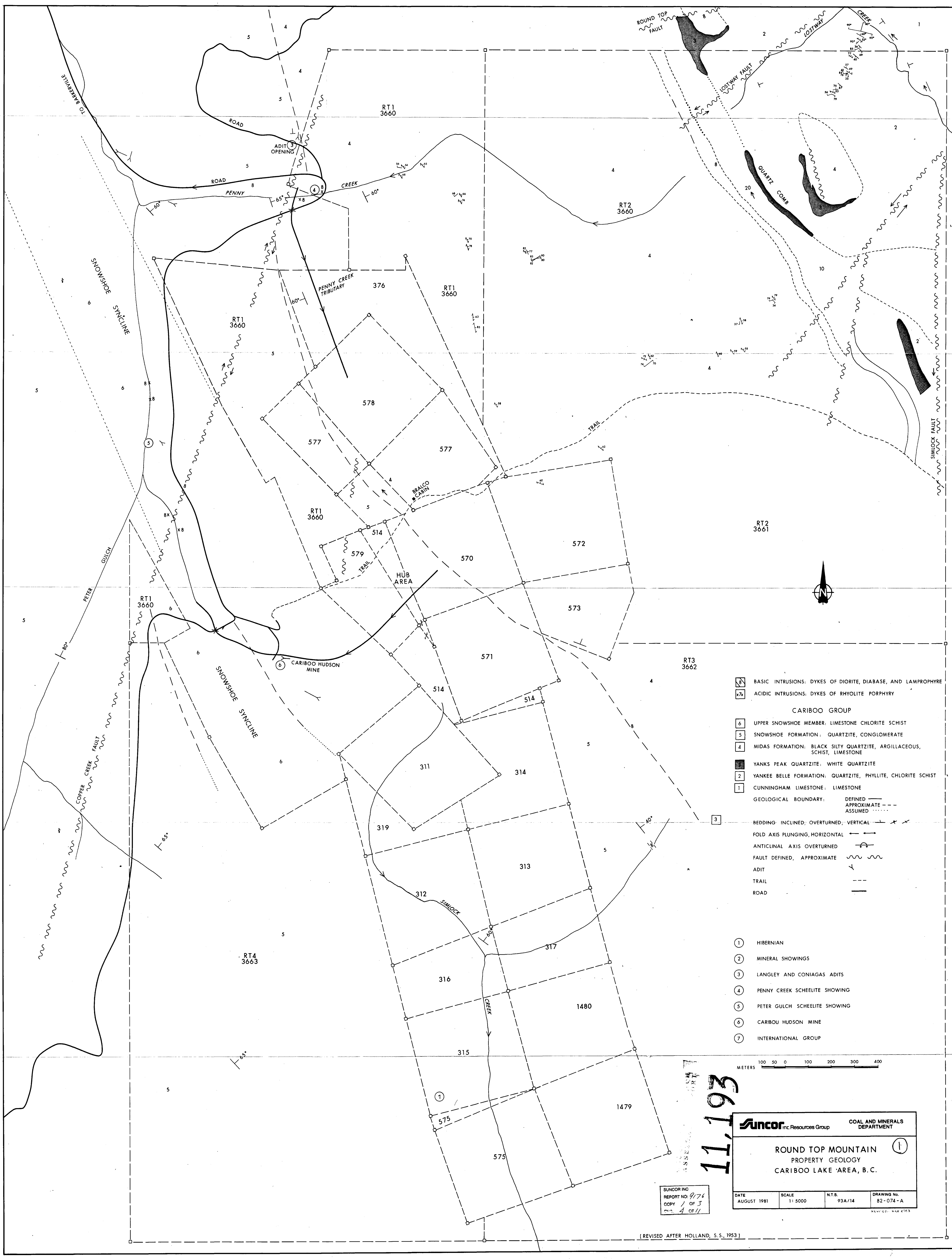
	PRJYR	SAMPLE NUMBER	ROCK TYPE	RS	CU AA(PPM)	PB AA(PPM)	ZN AA(PPM)	MO AA(PPM)	W AA(PPM)	AU AA(PPB)	AG AA(PPM)	SITE NUMBER	
5.	05182	CP0145	LMSN	80								CL-001	BANDED LIMESTONE
6.	05182	CP0146	QZVN	80	3	6	3	2	5	0	0.3	CL-003	QUARTZ
7.	05182	CP0147	PLLT	80	18	14	98	0	5	0	0.0	CL-008	SLATELY PHYLLITE
8.	05182	CP0148	PLLT	80	9	62	121	8	0	0	0.1	CL-011	SLATELY PHYLLITE
9.	05182	CP0149	QZVN	80	1	24	6	2	0	0	0.0	CL-014	QUARTZ VEIN
10.	05182	CP0150	LMSN	80	0	39	5	5	0	20	0.1	CL-018	LIMESTONE
11.	05182	CP0151	LMSN	80	0	31	8	5	0	10	0.0	CL-022	LIMESTONE
12.	05182	CP0152	QRTZ	80	51	33	41	3	0	20	0.3	CL-023	QUARTZITE
13.	05182	CP0153	LMSN	80	1	62	24	9	0	10	0.0	CL-028	SLATELY LIMESTONE
14.	05182	CP0154	QZVN	80	1	41	17	16	0	10	0.0	CL-033	QUARTZ VEIN
15.	05182	CP0155	LMSN	80	3	37	11	5	5	0	0.0	CL-037	LIMESTONE
16.	05182	CP0156	PLLT	80	78	42	490	9	0	0	0.6	CL-038	SLATELY PHYLLITE
17.	05182	CP0157	QZVN	81	4	7	19	2	0	0	0.0	CL-039	BOULDER OF QUARTZ
18.	05182	CP0158	QZVN	80	10	53	43	3	5	0	0.4	CL-041	QUARTZ VEIN
19.	05182	CP0159	QZVN	80	3	6	2	1	0	10	0.1	CL-043	QUARTZ VEIN
20.	05182	CP0160	SNDS	80	71	31	134	2	30	0	0.2	CL-043	SANDSTONE
21.	05182	CP0161	QZVN	80	2	2	4	1	10	15	0.2	CL-43A	QUARTZ VEIN
22.	05182	CP0162	QNVN	80	127	20	172	4	10	10	0.3	CL-43A	QUARTZ VEIN WITH PYRITE & PYRRHOTITE
23.	05182	CP0163	CLSC	80	79	29	84	4	0	10	0.0	CL-053	CHLORITE SCHIST
24.	05182	CP0164	QZVN	80	11	49	23	2	0	5	0.0	CL-058	QUARTZ VEIN
25.	05182	CP0165	QZVN	80	10	41	29	3	0	10	0.0	CL-058	QUARTZ VEIN IN A PHYLLITE
26.	05182	CP0189	VEIN	80	1	79	840	5	0	0	0.0	GRID38	QUARTZ-CARBONATE VEIN IN OLD TRENCH
27.	05182	CP0190	SLTE	80	1	40	22	5	0	30	0.2	GRID38	SLATE WITH QUARTZ-CARBONATE VEIN
28.	05182	CP0191	LMSN	80	0	39	19	3	0	10	0.0	DA-01A	LAMINATED LIMESTONE WITH CARB VEINS
29.	05182	CP0192	LMSN	80	1	51	21	4	0	0	0.3	DA-01B	FRACTURED LIMESTONE WITH CARB VEINS
30.	05182	CP0193	LMSN	80	0	46	20	3	0	30	0.2	DA-002	SIMILIAR TO CP0192 BUT WITH PYRITE
31.	05182	CP0194	LMSN	80	0	45	26	5	0	15	0.2	DA-003	SIMILIAR TO CP0192 BUT WITH PYRITE
32.	05182	CP0195	LMSN	80	2	44	21	5	0	0	0.3	DA-003	SIMILIAR TO CP0192 WITH MUCH PYRITE
33.	05182	CP0196	SLTE	80	85	42	92	2	0	0	0.0	DA-003	PHYLLITIC SLATE WITH THIN QRTZ LENS
34.	05182	CP0197	QZVN	80	2	2	4	1	0	15	0.0	DA-004	QUARTZ VEIN IN QUARTZITE WITH FEO
35.	05182	CP0198	QZVN	80	1	2	1	2	0	0	0.0	DA-004	QUARTZ VEIN IN QUARTZITE WITH FEO
36.	05182	CP0199	QZVN	80	1	26	16	3	0	0	0.2	DA-005	QUARTZ VEIN WITH HEMATITE
37.	05182	CP0200	QRTZ	80								DA-005	FRACTURED QUARTZITE WITH PY CUBES
38.	05182	CP0201	QRTZ	80	0	3	0	2	5	10	0.0	DA-005	WHITE QUARTZITE
39.	05182	CP0202	QZVN	80	2	3	0	2	0	0	0.1	DA-06B	QUARTZ VEIN IN QUARTZITE
40.	05182	CP0203	QZVN	80	2	2	1	3	0	10	0.1	DA-009	QUARTZ VEIN WITH FEO FILLED FRACTURE
41.	05182	CP0204	QZVN	81	4	4	1	2	0	15	0.1	DA-009	FLOAT - QUARTZ WITH FEO
42.	05182	CP0205	QZVN	80	2	4	3	2	0	0	0.3	DA-009	QUARTZ VEIN IN QUARTZITE LEACHED
43.	05182	CP0206	QZVN	81	3	2	1	2	0	5	0.3	DA-009	FLOAT - VUGGY QUARTZ VEIN
44.	05182	CP0207	PLLT	80	18	19	68	0	5	0	0.3	DA-010	PHYLLITIC SLATE WITH PYRITE
45.	05182	CP0208	QRTZ	80	16	18	23	2	10	10	0.2	DA-011	SHEARED QUARTZITE WITH FEO
46.	05182	CP0209	QZVN	80	1	15	4	2	0	5	0.3	DA-011	QUARTZ VEIN FROM CP0208 OUTCROP
47.	05182	CP0210	QZVN	80	7	7	9	3	0	10	0.1	DA-011	QUARTZ VEIN WITH FEO FILLED FRACTURE
48.	05182	CP0211	QRTZ	80	1	8	2	2	0	0	0.1	DA-011	FRACTURED BLACK QRTZ WITH QRTZ VEIN
49.	05182	CP0212	QRTZ	80	1	6	1	2	0	5	0.3	DA-011	PINKISH MICACEOUS QUARTZITE
50.	05182	CP0213	QZVN	80	1	16	1	3	5	10	0.5	DA-011	QUARTZ VEIN
51.	05182	CP0214	QZVN	80	15	5	3	2	0	0	0.2	DA-012	QUARTZ VEIN IN QUARTZITE WITH PYRITE
52.	05182	CP0215	SLTE	80	6	19	29	1	0	10	0.0	DA-014	LIGHT BROWN SLATE WITH FEO SPOTS
53.	05182	CP0216	QZVN	81	1	18	10	3	0	10	0.1	DA-014	FLOAT - QUARTZ WITH PYRITE AND FEO
54.	05182	CP0217	SLTE	80	18	23	51	1	0	20	0.0	DA-014	GREY GREEN SLATE
55.	05182	CP0218	IMIV	80	70	26	37	2	0	15	0.2	DA-015	FINE GRAINED INTRUSIVE
56.	05182	CP0219	DIBS	80	72	31	90	1	0	0	0.1	DA-015	DIABASIC INTRUSIVE
57.	05182	CP0220	DIBS	80	111	42	100	2	0	15	0.0	DA-015	DIABASIC INTRUSIVE WITH MAFIC
58.	05182	CP0221	DIBS	80	98	26	32	2	0	25	0.0	DA-015	FINE GRAINED DIKE WITH PYRITE
59.	05182	CP0222	PLLT	80	16	15	46	2	0	0	0.1	DA-015	LIGHT COLORED PHYLLITE - CONTACT

*** MAPPER SYSTEM *** SUNCOR INC DATE 031083 PAGE 2

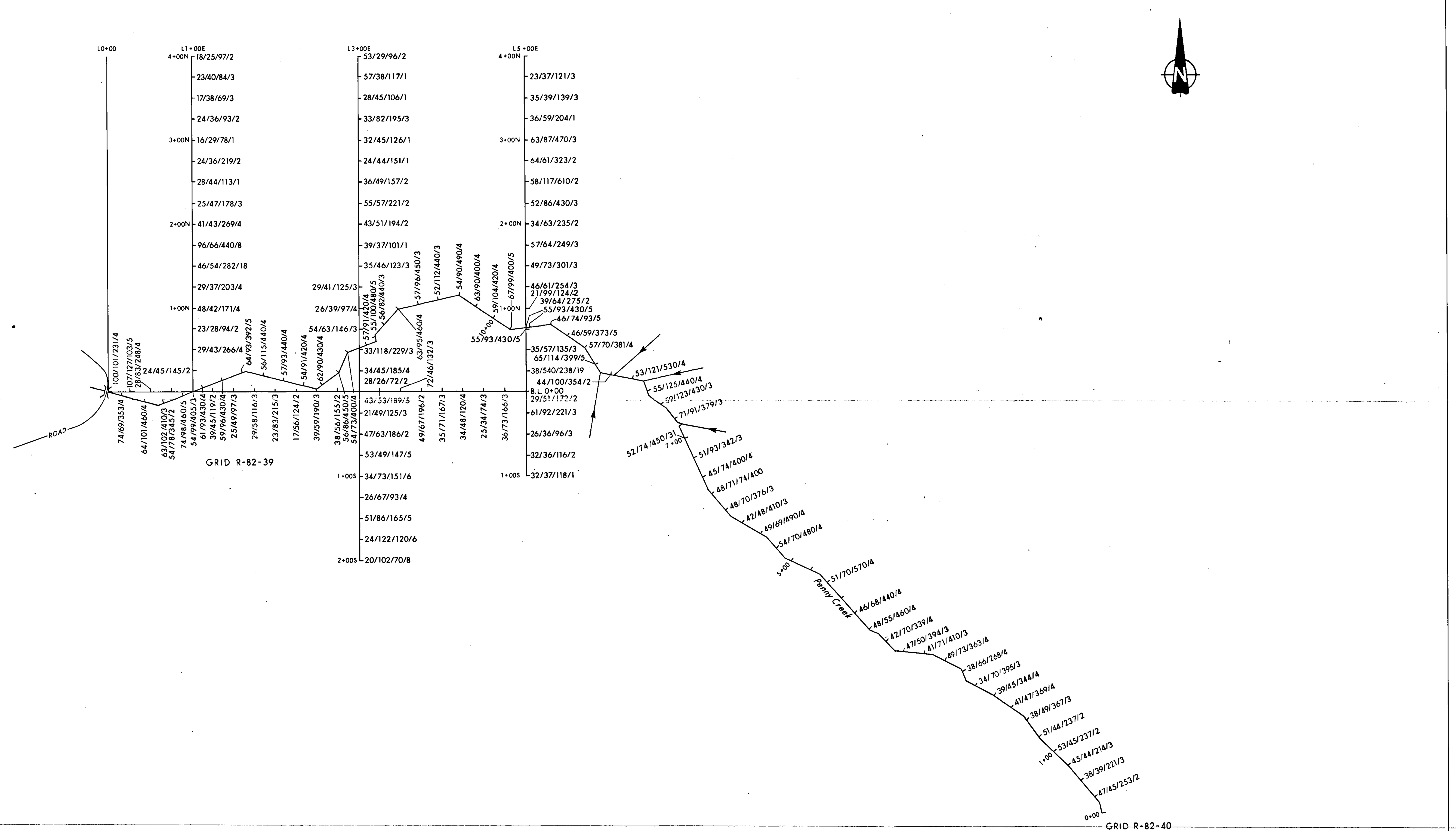
60.	05182	CP0223	SLTE 80	10	86	134	3	5	0	0.7	DA-015 DARK GREY SLATE
61.	05182	CP0224	ARGL 80	1	33	20	17	10	15	0.3	DA-017 SLATELY ARGL QUARTZ & LEACHED PY
62.	05182	CP0225	ARGL 80	12	34	118	3	5	0	0.3	DA-018 PHYLLITE ARGL - FRACTURED SILICIFIED
63.	05182	CP0226	QZVN 81	12	2	6	2	0	0	0.2	DA-020 FLOAT - QUARTZ WITH FEO FILLED VUGS
64.	05182	CP0227	ARGL 80	15	21	98	9	10	0	0.2	DA-022 BLACK SLATELY ARGILLITE
65.	05182	CP0228	QZVN 80	5	58	23	2	10	0	0.2	DA-022 QUARTZ VEIN IN PHYLLITE
66.	05182	CP0229	QZVN 81	0	4	1	2	5	0	0.1	DA-023 FLOAT - QUARTZ VEIN
67.			..... END REPORT								

82-074-A

IM 42


TO BARKERVILLE
ROAD
ADIT OPENING
PENNY CREEK
PENNY CREEK TRIBUTARY
SNOWSHOE SYNCLINE
PETER GULCH
COPPER CREEK FAULT
ROUND TOP FAULT
LOSTWAY FAULT
LOSTWAY CREEK
QUARTZ COMB
SIMLOCK FAULT
SIMLOCK CREEK
TRAIL
BRALCO CABIN
HUB AREA
CARIBOO HUDSON MINE
RT1 3660
RT2 3660
RT2 3661
RT3 3662
RT4 3663
376
578
577
514
579
570
572
573
571
311
314
319
313
312
317
316
1480
315
1479
575
BASIC INTRUSIONS: DYKES OF DIORITE, DIABASE, AND LAMPROPHYRE
ACIDIC INTRUSIONS: DYKES OF RHYOLITE PORPHYRY
CARIBOO GROUP
6 UPPER SNOWSHOE MEMBER: LIMESTONE CHLORITE SCHIST
5 SNOWSHOE FORMATION: QUARTZITE, CONGLOMERATE
4 MIDAS FORMATION: BLACK SILTY QUARTZITE, ARGILLACEOUS, SCHIST, LIMESTONE
3 YANKS PEAK QUARTZITE: WHITE QUARTZITE
2 YANKEE BELLE FORMATION: QUARTZITE, PHYLLITE, CHLORITE SCHIST
1 CUNNINGHAM LIMESTONE: LIMESTONE
GEOLOGICAL BOUNDARY: DEFINED, APPROXIMATE, ASSUMED
BEDDING INCLINED, OVERTURNED, VERTICAL
FOLD AXIS PLUNGING, HORIZONTAL
ANTICLINAL AXIS OVERTURNED
FAULT DEFINED, APPROXIMATE
ADIT
TRAIL
ROAD
1 HIBERNIAN
2 MINERAL SHOWINGS
3 LANGLEY AND CONIAGAS ADITS
4 PENNY CREEK SCHEELITE SHOWING
5 PETER GULCH SCHEELITE SHOWING
6 CARIBOU HUDSON MINE
7 INTERNATIONAL GROUP
METERS 100 50 0 100 200 300 400
11,193
Suncor Inc. Resources Group
COAL AND MINERALS DEPARTMENT
ROUND TOP MOUNTAIN
PROPERTY GEOLOGY
CARIBOO LAKE AREA, B.C.
DATE AUGUST 1981
SCALE 1:5000
N.T.S. 93A/14
DRAWING No. 82-074-A
SUNCOR INC
REPORT NO: 9176
COPY 1 OF 3
4 OF 11
(REVISED AFTER HOLLAND, S.S., 1953)

82-278-C



GEOLOGICAL BRANCH
ASSESSMENT REPORT
11,193

LEGEND

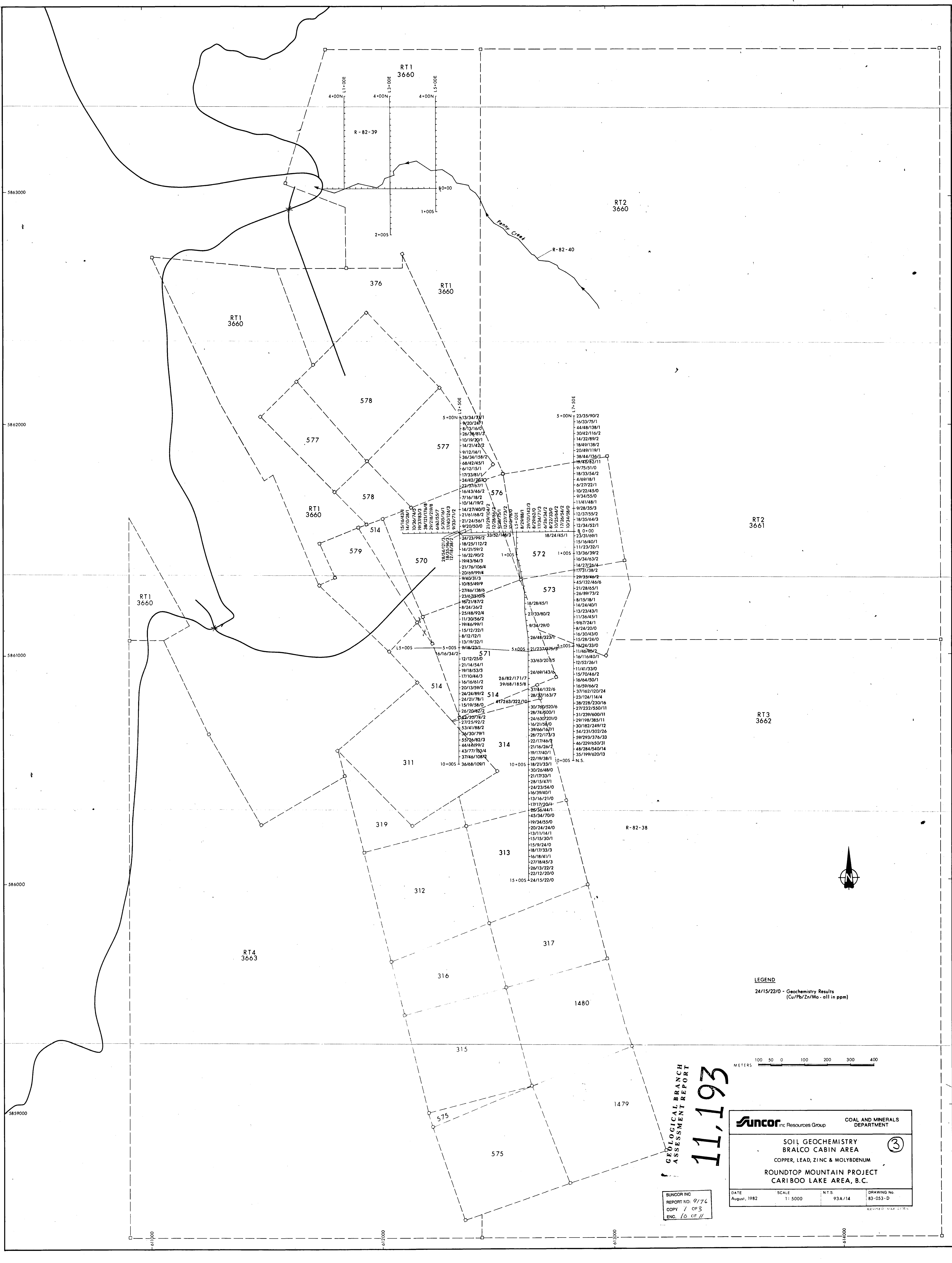
Cu/Pb/Zn/Mo - Soil Geochemistry Results (all in ppm)

SUNCOR INC
REPORT NO: 9176
COPY 1 OF 3
7 OF 11

Suncor inc Resources Group — COAL AND MINERALS DEPARTMENT

SOIL & STREAM GEOCHEMISTRY (2)
COPPER, LEAD, ZINC & MOLYBDENUM
PENNY CREEK AREA
GRIDS R-82-39 & R-82-40
ROUNDTOP MOUNTAIN PROJECT
CARIBOO LAKE AREA, B.C.

DATE	SCALE	N.T.S.	DRAWING No.
August, 1982	1: 2500	93A/14	82-278-C


RT1
3660
R-82-39
Penny Creek
R-82-40
RT2
3660
376
578
577
576
514
579
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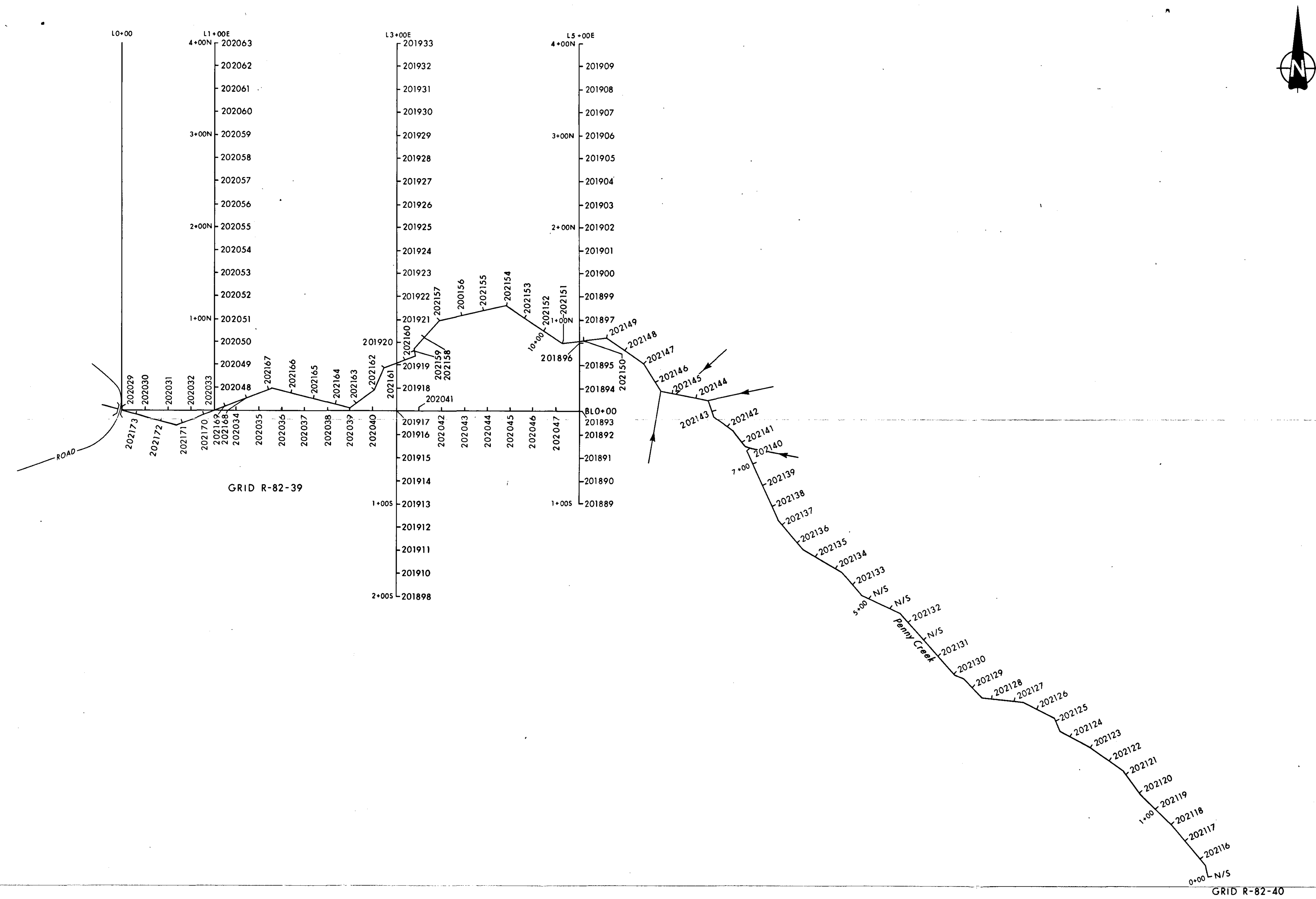
571
572
573
311
314
319
313
312
317
316
1480
315
1479
575
RT2
3661
RT3
3662
RT4
3663
R-82-38
LEGEND
24/15/22/0 - Geochemistry Results (Cu/Pb/Zn/Mo - all in ppm)
METERS 100 50 0 100 200 300 400
GEOLOGICAL BRANCH ASSESSMENT REPORT
11,193
Suncor inc Resources Group
COAL AND MINERALS DEPARTMENT
SOIL GEOCHEMISTRY
BRALCO CABIN AREA
COPPER, LEAD, ZINC & MOLYBDENUM
ROUNDTOP MOUNTAIN PROJECT
CARIBOO LAKE AREA, B.C.
3
DATE August, 1982
SCALE 1:5000
N.T.S. 93A/14
DRAWING No. 83-053-D
SUNCOR INC
REPORT NO: 9176
COPY 1 OF 3
ENC. 10 OF 11

82-278-B



150 100 50 0 50 100 150 Metres

Suncor inc Resources Group — COAL AND MINERALS DEPARTMENT

SOIL & STREAM GEOCHEMISTRY
SAMPLE LOCATIONS

PENNY CREEK AREA
GRIDS R-82-39 & R-82-40
ROUNDTOP MOUNTAIN PROJECT
CARIBOO LAKE AREA, B.C.

(4)

DATE	SCALE	N.T.S.	DRAWING No.
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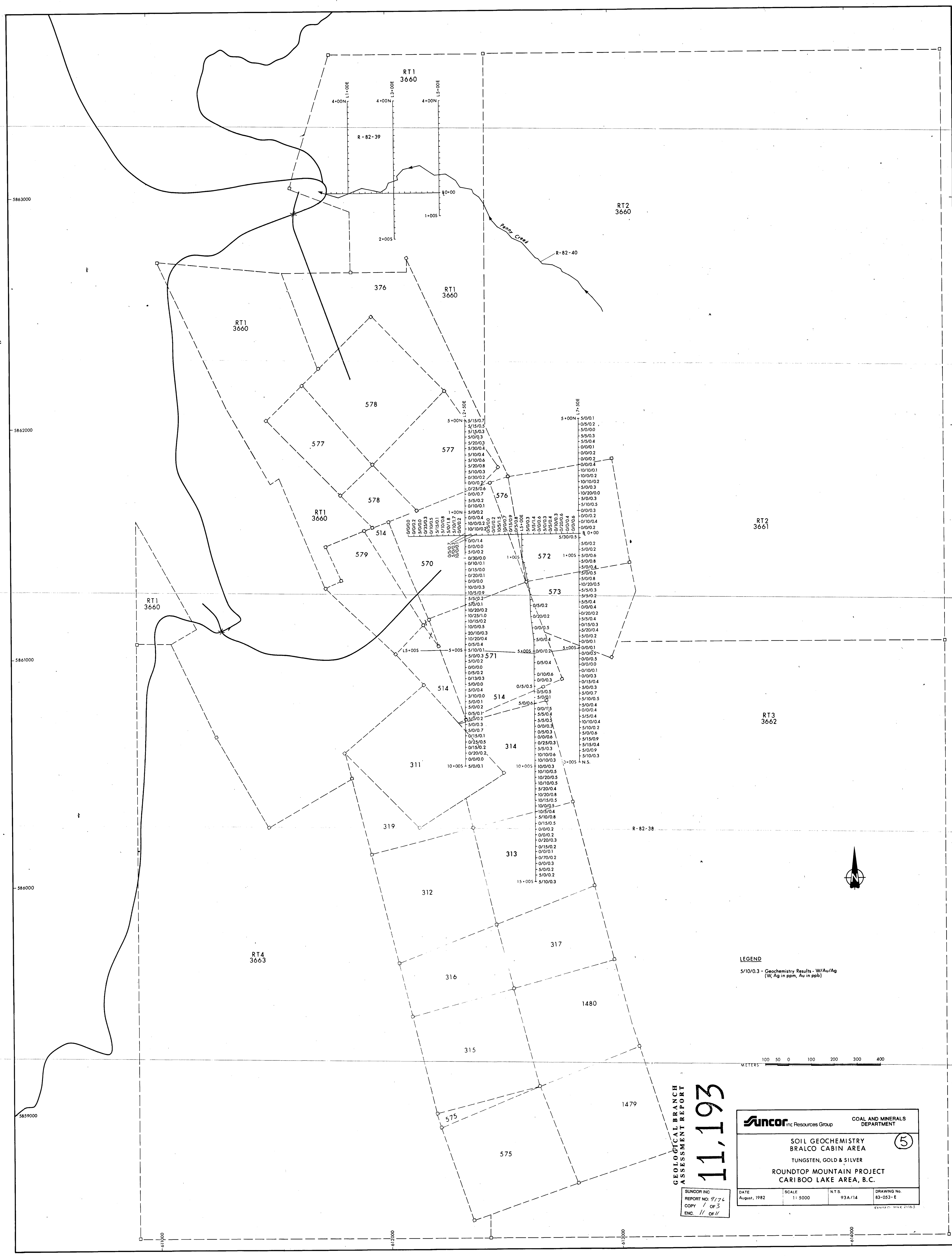

RT1 3660
RT2 3660
RT2 3661
RT3 3662
RT4 3663
R-82-39
R-82-40
R-82-38
Penny Creek
376
578
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576
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579
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571
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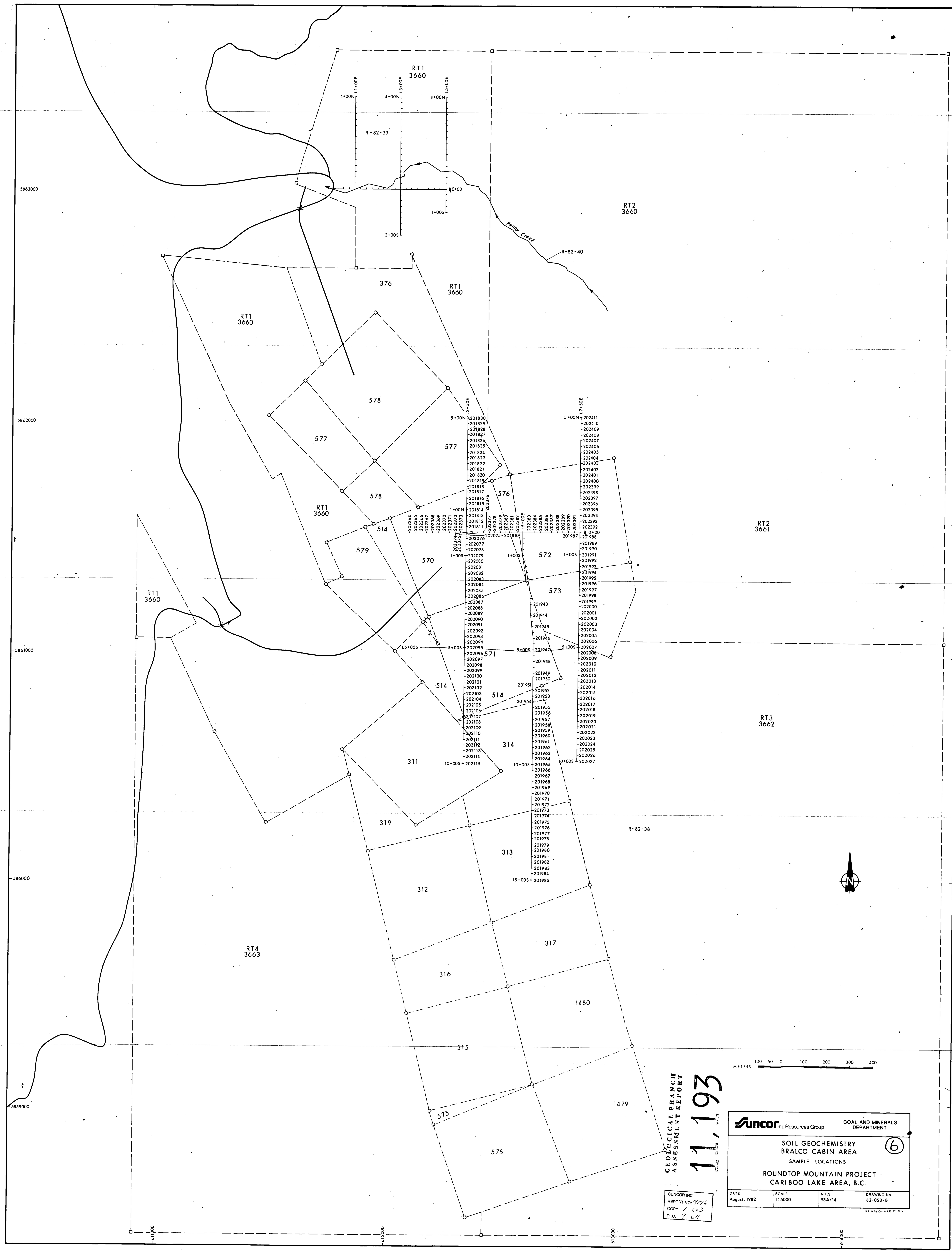
316
1480
315
1479
575
LEGEND
5/10/0.3 - Geochemistry Results - W/Au/Ag (W, Ag in ppm, Au in ppb)
METERS 100 50 0 100 200 300 400
GEOLOGICAL BRANCH ASSESSMENT REPORT
11,193
SUNCOR INC REPORT NO. 9176 COPY 1 OF 3 ENC. 11 OF 11
Suncor Inc. Resources Group
COAL AND MINERALS DEPARTMENT
SOIL GEOCHEMISTRY
BRALCO CABIN AREA
TUNGSTEN, GOLD & SILVER
ROUNDTOP MOUNTAIN PROJECT
CARIBOO LAKE AREA, B.C.
5
DATE August, 1982
SCALE 1: 5000
N.T.S. 93A/14
DRAWING No. 83-053-E



RT1 3660
RT2 3660
RT2 3661
RT3 3662
RT4 3663
R-82-39
R-82-40
R-82-38
Penny Creek
L1+00E
L3+00E
L5+00E
L2+50E
L5+00E
L7+50E
376
578
577
576
514
579
570
572
573
571
311
314
319
313
312
317
316
1480
315
1479
575
METERS 100 50 0 100 200 300 400
GEOLOGICAL BRANCH ASSESSMENT REPORT
11,193
Suncor inc Resources Group
COAL AND MINERALS DEPARTMENT
SOIL GEOCHEMISTRY
BRALCO CABIN AREA
SAMPLE LOCATIONS
ROUNDTOP MOUNTAIN PROJECT
CARIBOO LAKE AREA, B.C.
DATE August, 1982
SCALE 1: 5000
N.T.S. 93A/14
DRAWING No. 83-053-B
6
SUNCOR INC
REPORT NO: 9176
COPY 1 OF 3
ENCL. 9 OF 11
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5862000
5861000
5860000
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611000
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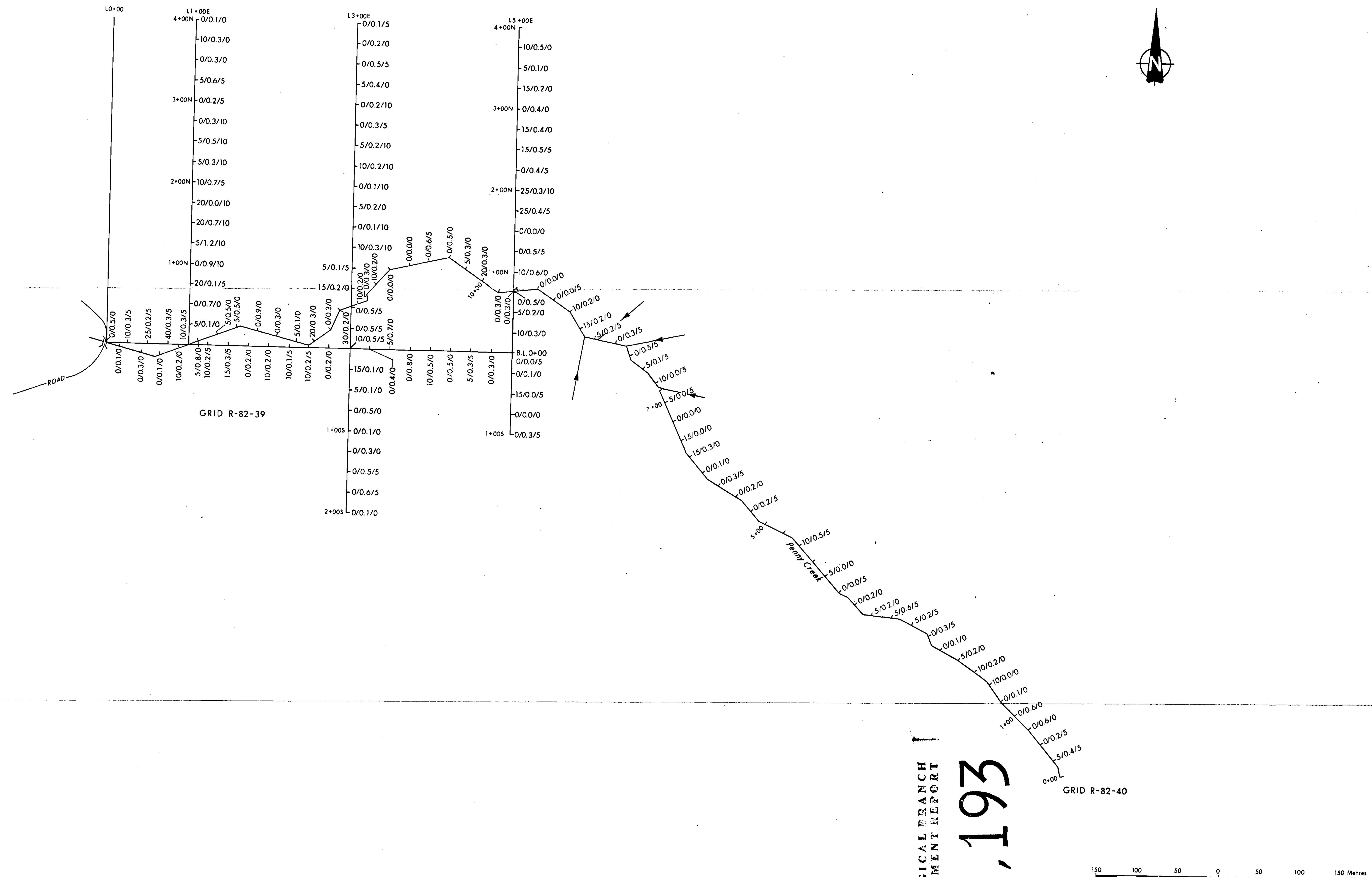
82-278-D



LEGEND

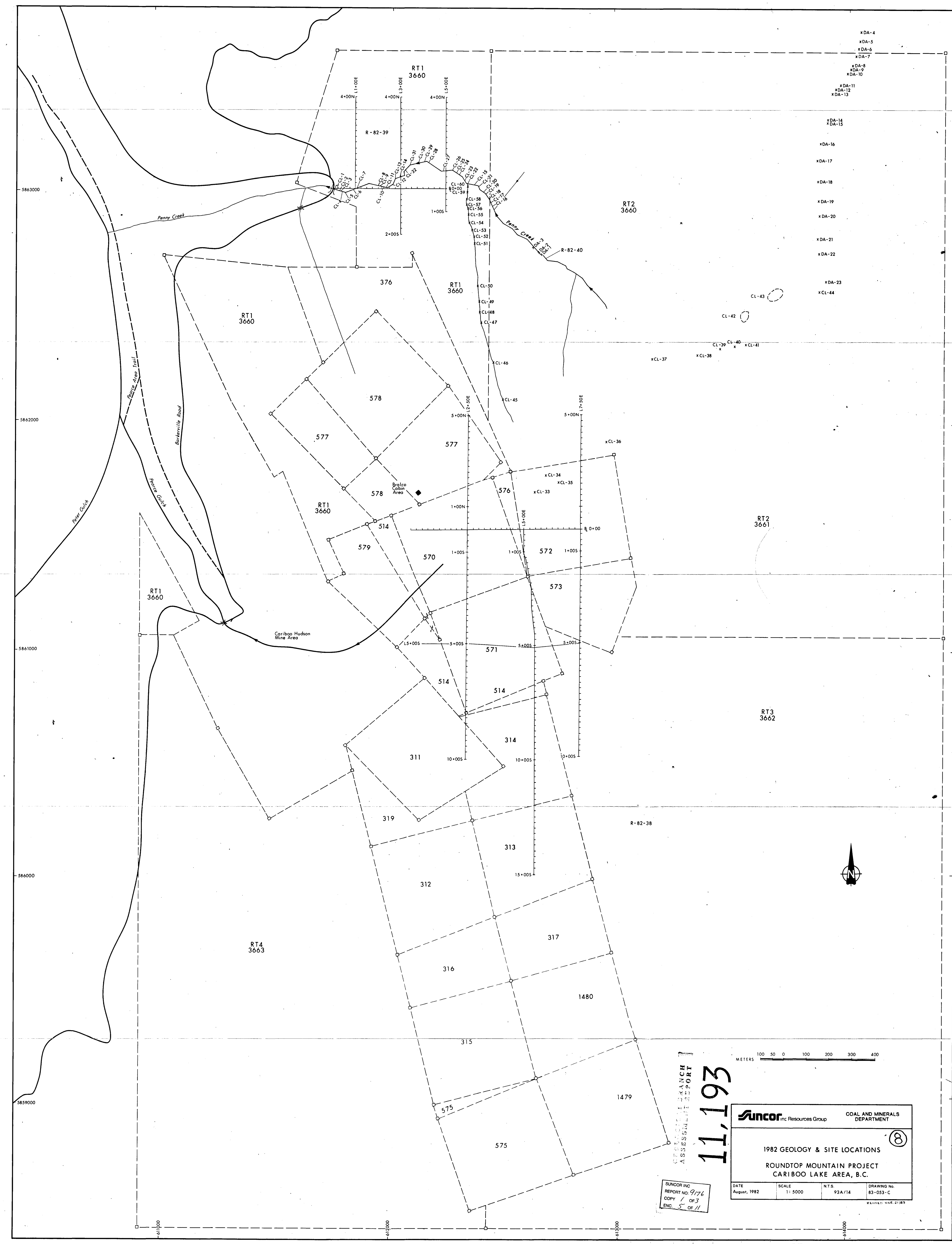
Au/Ag/W - Soil Geochemistry Results
Ag & Ag in ppb & W in ppm

Suncor inc. Resources Group — COAL AND MINERALS DEPARTMENT

SOIL & STREAM GEOCHEMISTRY
GOLD, SILVER & TUNGSTEN
PENNY CREEK AREA
GRIDS R-82-39 & R-82-40
ROUNDTOP MOUNTAIN PROJECT
CARIBOO LAKE AREA, B.C.

(7)

DATE	SCALE	N.T.S.	DRAWING No.
August, 1982	1:2500	93A/14	82-278-D


RT1
3660
RT2
3660
RT2
3661
RT3
3662
RT4
3663
Penny Creek
Peter Gulch
Pearce Gulch
Pearce Area Trail
Barkerville Road
Cariboo Hudson
Mine Area
Bralco
Cabin
Area
R-82-39
R-82-40
R-82-38
376
578
577
514
579
570
572
573
576
571
311
314
319
313
312
317
316
1480
315
1479
575
METERS 100 50 0 100 200 300 400
11,193
GEOLOGICAL BRANCH
ASSESSMENT REPORT
Suncor inc Resources Group
COAL AND MINERALS
DEPARTMENT
8
1982 GEOLOGY & SITE LOCATIONS
ROUNDTOP MOUNTAIN PROJECT
CARIBOO LAKE AREA, B.C.
DATE
August, 1982
SCALE
1: 5000
N.T.S.
93A/14
DRAWING No.
83-053-C
REVISED MAR. 21/83
SUNCOR INC
REPORT NO: 9176
COPY 1 OF 3
ENC. 5 OF 11