

ARIS SUMMARY SHEET

District Geologist, Smithers

Off Confidential: 92.08.13

ASSESSMENT REPORT 21797

MINING DIVISION: Omineca

PROPERTY: Porphyry Pearl  
LOCATION: LAT 57 29 00 LONG 127 13 00  
UTM 09 6372382 606922  
NTS 094E06E  
CAMP: 051 Toodoggone Camp  
CLAIM(S): Antoine Louis, Tour, Was 1-2, Bullmoose, Moose 2-3, Scree 1-3, Gas 1-2  
JB, JD, JM, JR, JS  
OPERATOR(S): Golden Rule Res.  
AUTHOR(S): Evans, B.T.  
REPORT YEAR: 1991, 16 Pages  
KEYWORDS: Andesites, Dacites, Tuffs, Tuff breccias  
WORK  
ZONE: Geological, Physical  
FOTO 4950.0 ha  
Map(s) - 2; Scale(s) - 1:10 000  
TOPO 4950.0 ha  
Map(s) - 2; Scale(s) - 1:5000, 1:10 000  
MINFILE: 094E 084, 094E 065

LOG NO: 91114

RD.

ACTION:

FILE NO:

**DIGITAL TOPOGRAPHIC MAPPING  
(DTM) PROGRAM, ON THE PORPHYRY PEARL PROJECT**

NTS 94 E/6

<sup>57</sup>  
LAT ~~55~~ Degrees 29' N  
LONG 127 Degrees 13' W

Omineca Mining Division, British Columbia

for

GOLDEN RULE RESOURCES LTD.  
#1450, 125-9TH AVENUE S.E.  
CALGARY, AB T2G 0P6

by

Bruce T. Evans, P. Geol  
Calgary, Alberta

September, 1991

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**21,797**

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SUMMARY

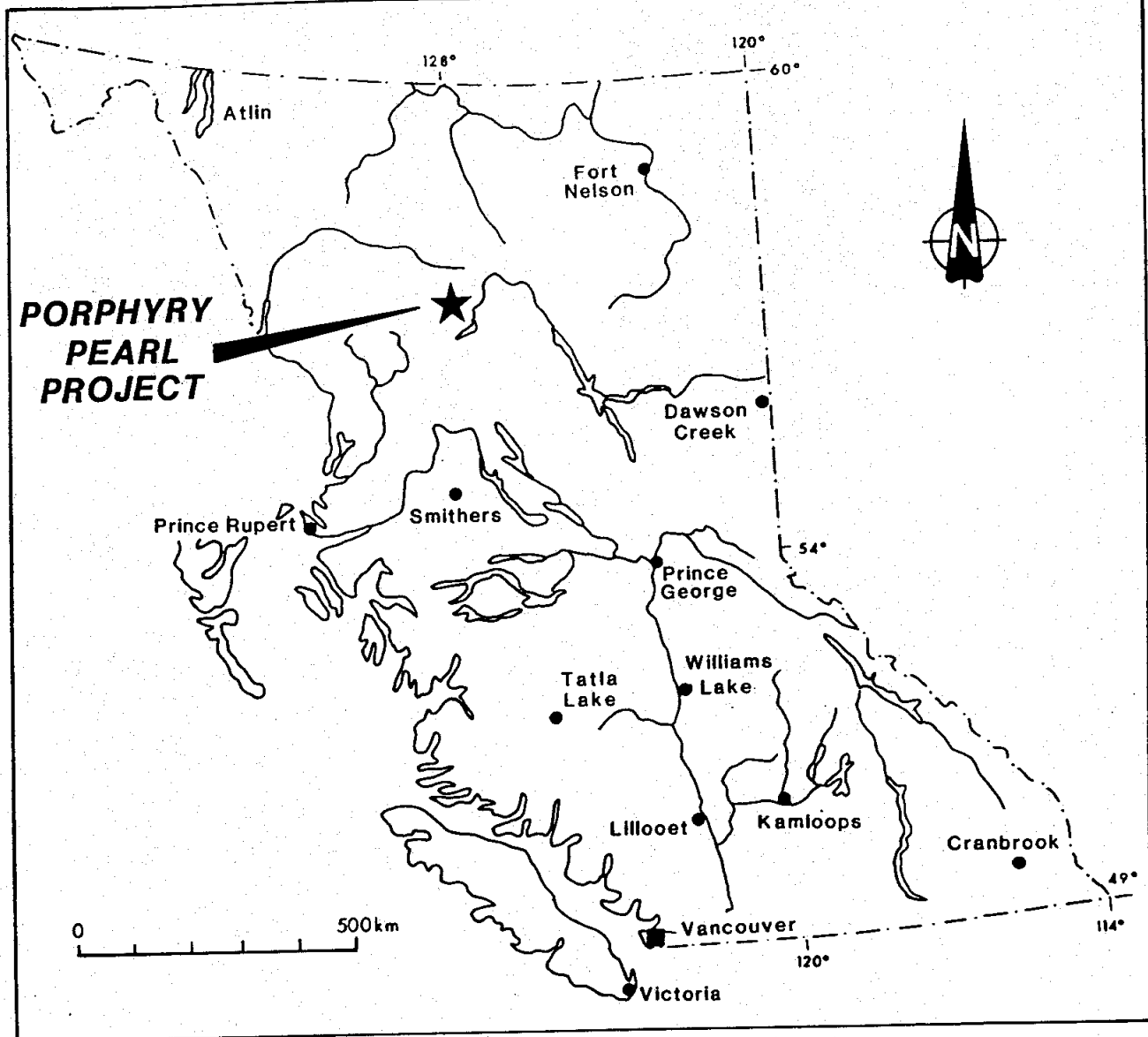
The Porphyry Pearl project area is located in north-central British Columbia on NTS map sheet 94 E/6. During 1990 Digital Topographic Mapping (DTM) at scales of 1:10,000 and 1:5,000 was completed for the project area. The DTM provides accurate survey control for the compilation of historical exploration data and survey control for ongoing exploration work.

## 1.0 Location and Access

The Porphyry Pearl Project area is situated 300 km north of Smithers in the Toodoggone River area of north central British Columbia. The geographic centre of the project area is at latitude 57 degrees 29' north and 127 degrees 13' west.

Access to the Toodoggone area is by air to a 1,600 m gravel airstrip on the Sturdee River and then a 35 km Helicopter flight to the property. Alternative access is by the Omineca Mining Access Road which runs from Fort St. James to the Cheni Gold Mine, and then helicopter to the property.

The project area claims lie within the Omineca Mining Division.



**GOLDEN RULE RESOURCES LTD.**

**PORPHYRY PEARL PROJECT  
BRITISH COLUMBIA  
LOCATION MAP**

Date: OCT/91

N.T.S.: 94E/6,11

Revised:

FIGURE 1.

Scale:

## 2.0 Physiography, Vegetation and Climate

The property covers part of Moosehorn Creek Valley and the southern end of the ridge between Moosehorn and McLair creeks. Local relief is approximately 500 meters. The valley bottom is nearly flat and supports only scrub birch and willow vegetation (buckbrush). The lower mountain flanks are well forested with spruce and fir; the steep upper slopes support alpine grasses and small shrubs. The northeastern facing slopes on the eastern section of the property are craggy; talus is abundant.

The property is snowbound from October to June and snowfalls of short duration may occur any time during the summer months.

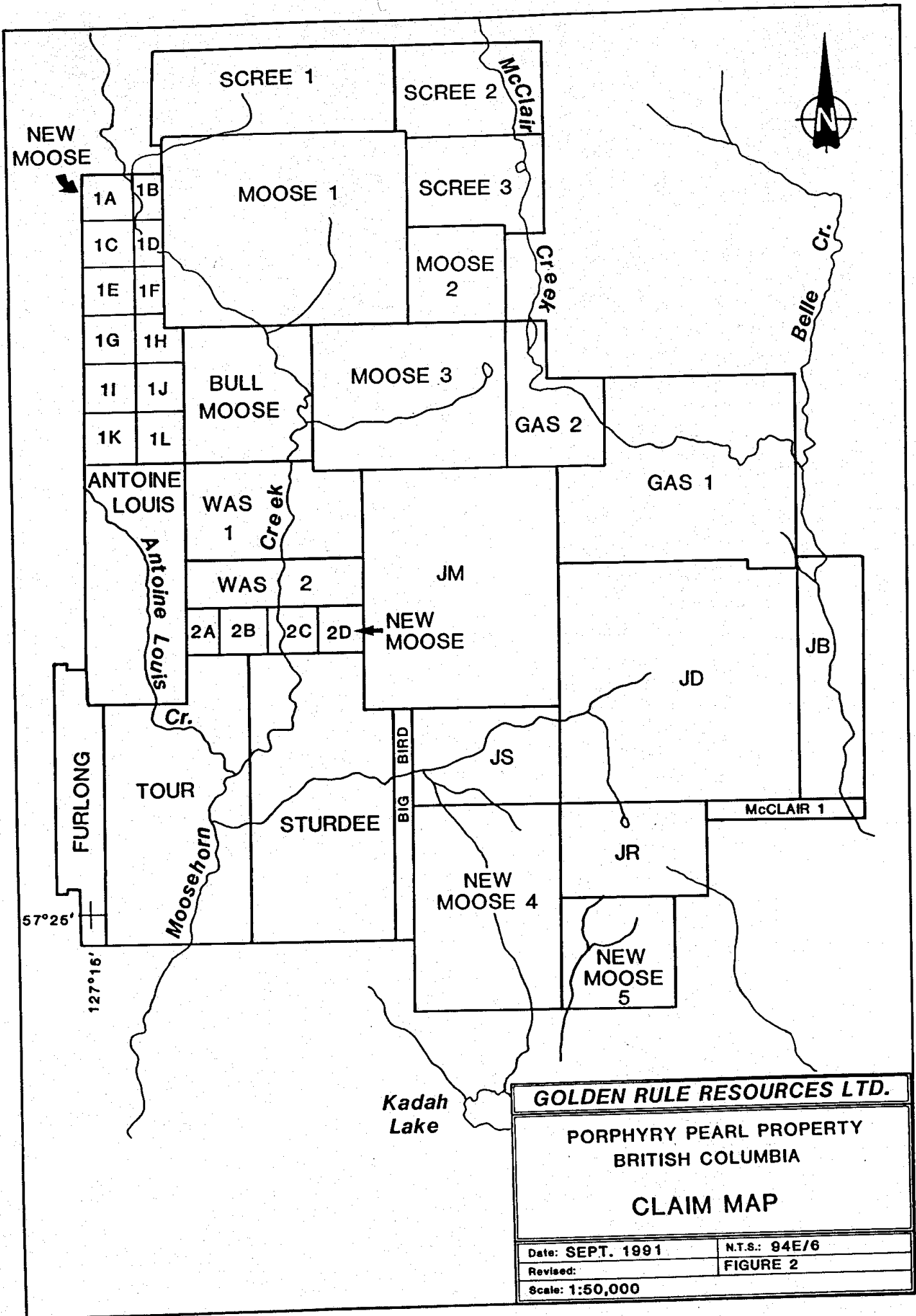
## 3.0 Property Description

The project area consists of sixteen (16) modified four post mineral claims. The property lies within the Omineca Mining Division of British Columbia and an NTS map sheet 94 E/6. The property covers a surface area of 198 units or 4,950 hectares.

<u>Claim Name</u>	<u>No. of Units</u>	<u>Record #</u>	<u>Date Staked</u>
Antoine Louis	4096	10	August 13, 1991 *
Tour	4295	18	September 8, 1993
Sturdee	4276	18	September 8, 1992
Was 1	4248	8	August 29, 1998
Was 2	4249	8	August 29, 1998
Bullmoose	3707	6	August 15, 1996
Moose 3	1795	12	June 12, 1996
Moose 2	1974	4	June 12, 1996
Scree 1	3165	10	September 6, 1996
Scree 3	3167	6	September 6, 1996
JB	3169	20	September 3, 1991 **
JD	1797	20	June 12, 1998
JM	1796	20	June 12, 1998
GAS 1	5751	20	September 8, 1998
GAS 2	5753	6	September 8, 1998
JR	2947	6	July 18, 1994
JS	3168	6	September 3, 1992

\* Submission of 1991 assessment will protect Antoine Louis claim to anniversary 1993.

\*\* Submission of 1991 assessment will protect JB claim to anniversary 1992.





#### 4.0 Regional Geology

The Toodoggone River area lies near the eastern margin of the tectonic division known as the Intermontane Belt of the Canadian Cordillera. It is flanked to the east by the Omineca-Cassiar Mountains of the Columbian Orogen which typify the Omineca Crystalline Belt. The Toodoggone area is characterized by steeply faulted Palaeozoic and Mesozoic volcanic arc assemblages and Mesozoic inter-arc basins formed as a result of subduction zone activity during this era (Monger, et al, 1972). The oldest rocks recognized in the area are wedges of Permian Crystalline, sediments, schists and greenstones of the Asitka group. These are unconformably overlain by Takla and Hazelton volcanics and sediments of Triassic to Middle Jurassic age. The Toodoggone Group, which contains gold-silver bearing quartz and carbonate veins, unconformably overlays the Takla and may be, in part, a Hazelton equivalent. A summation of the geology of the area by Carter (1972) is as follows:

"The Toodoggone rocks, which may be several hundred feet thick, include red to green or grey dacite and latite porphyry flows and pyroclastics. Remnants of these volcanic rocks and small intrusions related to them are known to occur to the southeast. A hornblende separate from a sample collected from the volcanic sequence 9 miles southeast of Drybrough Peak, yielded a K-Ar age of  $186 \pm 6$  million years".

The Toodoggone volcanics associated with the Chappelle gold property (Barr, 1978) occur as three subdivisions:

1. A lower, dominantly pyroclastic assemblage which includes purple agglomerates, tuffs and dacites.
2. An overlying acid assemblage which includes rhyolites, dacites and quartz-feldspar porphyries. At the Lawyers property, several kilometres to the northwest of the Chappelle property a coeval period of volcanic activity is recognized during which explosive brecciation resulted in the formation of lahars. This activity included the intrusion of syenitemonzonite dykes, silicification and precious metal deposition (Ryback-Hardy, 1975).

3. An upper assemblage, which includes dacites and quartz-eye feldspar porphyries."

Barr (1978) reports small syenomonzonite intrusions on the Chappelle property which are typically "pink to white, coarse porphyritic, medium grained and commonly porphyritic with subhedral to anhedral augite" and the occurrences of late phase, highly altered quartz-feldspar porphyries. The coeval nature of these late alkalic intrusions with the Toodoggone Group was confirmed by Carter, and he also suggests that the geology as a whole is "remarkably similar" to that of Creede and Summitville in the San Juan Volcanic Complex of Colorado (Steven et al, 1969, 1975).

The youngest rocks in the area are the Sustut Group of sedimentary rocks, of Upper Cretaceous to Tertiary Age, which, to the west, unconformably overlay the Toodoggone Group.

## 5.0 Property Geology

The property was mapped at 1:5,000 scale by geologists working for Sumac Mines Ltd. (1972) and Kidd Creek Mines Ltd. (1980-81). Regional mapping at 1:50,000 by B.C.M.E.M.P.R. geologists (1981-84) placed the property into the regional context. Limited detailed work was conducted by Energex Minerals Ltd. in 1985.

Mapping has been limited to the central section of the property, where numerous outcrops are available for study. The high ridge between Moosehorn and McLair Creeks, known locally as Scree Ridge, provides good rock exposure, particularly on the northeast and southeast facing slopes.

The B.C. Government mapping indicates that the dominant formation is the McLair Creek Formation, a sequence of purple to grey plagioclase porphyry flows with lapilli tuff, tuff breccia and minor epiblastic beds. This overlies the Lawyers-Metsantan Quartzose Andesite unit, which is composed predominantly of green to grey biotite-hornblende plagioclase porphyry flows with local flow breccia, lapilli tuff and rare welded tuff.

Large-scale mapping has shown that the central part of the property is underlain by thick sequences of andesitic to dacitic flow rocks, tuff and tuff breccia. These are intruded by coeval subvolcanic stocks and plugs of microdiorite and granodiorite, and andesite and basalt dykes which are common on the east-central section of Scree Ridge.

Efforts to subdivide the sequences into distinctly mappable lithologies have been frustrated by the complex, interfingering contact relationships and rapid lithological changes exhibited by these rocks. Early workers considered the volcanic sequence to be dominated by flow rocks, with a widespread, basal green-grey andesite porphyry overlain by a maroon dacite porphyry. Recent mapping, aided by thin-section examination, has led to a reinterpretation of the sequence; the most significant change involves the recognition of crystal and crystal-lapilli tuff as the dominant lithologies, rather than flow rocks (Sutherland, 1981).

The most widespread rock type on the property, underlying most of the Moosehorn Valley and southern Scree Ridge, is feldspar-hornblende andesite. This unit is grey-brown to green in color, massive in appearance, and porphyritic in texture. It consists of plagioclase laths (2-8 mm in length) and euhedral hornblende phenocrysts (1-8 mm in length) in a fine grained matrix. Biotite phenocrysts occur sparsely while magnetite is an ubiquitous accessory mineral.

Sutherland (1981) describes this unit as including "andesitic crystal and crystal-lapilli tuffs and tuff-breccias with minor interbeds of ash-fall tuff". The dominant crystal and crystal-lapilli tuffs consist of 5-40% white- to orange-colored plagioclase crystal fragments accompanied at times by up to 30% broken prismatic hornblende fragments in a fine grained tuff matrix. The tuff matrix varies in colour from green and greyish-green to maroon. Angular, dark grey, fine-grained lapilli fragments occur sporadically within the tuff unit, comprising up to 20% of the rock volume (Sutherland, 1981).

Rodgers (1972) and Schmitt (1981) describe a porphyritic, maroon to grey coloured flow rock interlayered with and overlying the massive green andesite porphyry unit. Sutherland (1981) includes this within the andesitic tuff unit and does not consider it a separately mappable lithology, but it corresponds to the McLair Creek Formation mapped by B.C.M.E.M.P.R. geologists.

Lenses and pods of coarse tuff, tuff-breccia and agglomerate, maroon to grey in colour, occur within the grey-green andesitic tuff unit. These have been recognized by all workers; they were originally interpreted to occur within andesite and dacite flows, and some were suggested to be diatremes or volcanic vents (Scott and Price, 1978). The most recent interpretation describes them as flow breccia, occurring at intervals within the subaerial volcanic sequence (Sutherland, 1981).

A feldspar-biotite-quartz dacite porphyry flow, overlain by crystal tuff, lies on the east side of Scree Ridge, on the Scree

2 and 3 claims. The base of this flow is not exposed; the flow appears to thin to the north (Sutherland, 1981). A small exposure of similar porphyry is found on the west side of Scree Ridge, within grey-green tuffs.

Stock-like subvolcanic intrusive bodies, probably coeval with their host rocks, are exposed on the southeast end of Scree Ridge. These range from approximately 30 m to over 300 m in diameter, and lie along a northwesterly trend parallel to the ridge axis. They are composed of pink to grey, medium grained diorite and grey hornblende diorite porphyry. Their contacts with adjacent volcanics are marked by strong quartz-chlorite-pyrite alteration.

Another coeval intrusive body, the Porphyry Pearl, lies near Moosehorn Creek, 2 km southwest of the end of Scree Ridge. This is known from diamond drilling; it is composed of strongly altered (potassic and propylitic), brecciated granodiorite or quartz monzonite.

On Scree Ridge, all rocks are cut by narrow (to 10 m) andesite and basalt dykes. These commonly trend southeast and northeast and are steeply dipping.

The subaerial volcanic sequence strikes north to northwest and dips vary from southwest to northeast. Locally, dips vary from 5 degrees to 65 degrees.

The dominant fault structure is the regional Moosehorn-McLair Fault system, which trends northwest from McLair Creek to the Moosehorn Creek valley, southwest of Scree Ridge. An extensive zone of faulting, shearing and brecciation lies along the lower southwest flank of Scree Ridge, on the Moose 1 claim. This zone trends northwest and is probably directly related to the Moosehorn-McClair Fault.

The Scree Ridge area is cut by several northwest trending faults, which again are probably related to the regional-scale faulting. Northeast trending faults, which truncate and offset the volcanic units, have also been mapped; they may be more common than present knowledge suggests. Many of the stream gullies on the west side of Scree Ridge are fault-controlled.

Fracturing and quartz veining are widespread on the Moose prospect; concentrations occur within the broad shear zone crossing the Moose 1 claim, in the fault-controlled gullies on western Scree Ridge, and in the Porphyry Pearl area.

6.0 Previous Exploration

- 1920's Charles McLair reportedly recovered \$17,500 in gold from Placer operations in the Toodoggone area.
- 1932 An Edmonton syndicate conducted further work near the junction McLair Creek and Toodoggone River.
- 1934 Two Brothers Valley Gold Mines Ltd., thoroughly worked McLair Creek and the Toodoggone River, and performed some drilling in the area.
- 1930's Consolidated Mining and Smelting, explored for lead-zinc mineralization near the north end of Thutade Lake.
- 1960's Several companies explored the region with an emphasis on copper-molybdenum porphyry deposits.
- 1970-80 Gold-silver mineralization was recognized in quartz veins by Kennco Exploration in 1969. This discovery resulted in the Baker Mine, later owned and operated by Dupont of Canada Exploration Ltd.
- The Lawyers deposit was also discovered and developed into a mine during this time period; initially by Kennco in 1973, and later optioned by Serem Ltd. in 1979. The mine is presently operated by Cheni Gold Mines Ltd.
- 1971-74 Sumac Mines Ltd. (Sumac), staked the Moose property, to cover base and precious metal geochem anomalies; and followed the geochemical survey with additional geochemical surveying, geophysics and 600 m of diamond drilling.
- 1977-78 The claims lapsed in 1977, and were restaked by T.C. Scott and Petra-Gem Exploration Ltd. in 1978.
- 1979 Energex Minerals Ltd. ("Energex"), acquired an option on the property and performed some hand trenching and analysis of Sumac drill core.
- 1980-82 Texas Gulf Canada Ltd. (Kidd Creek), negotiated an option on the property, and by the end of the 1982 field season had completed soil and rock geochemical surveys, and 494 metres of diamond drilling in two (2) holes.
- 1985 New Ridge Resources Ltd. (New Ridge), entered into a joint venture agreement with Energex and performed

detailed mapping, sampling and geochemical surveys. The Porphyry Pearl zone was tested by two (2) drill holes totalling 108 m.

#### 7.0 1991 Digital Topographic Mapping (DTM) Program

As a result of resurgent interest in Porphyry Cu-Au deposits and the recent successes of groups making the Kemess Cu-Au Porphyries to the south exploration of the Porphyry Pearl project area is being initiated.

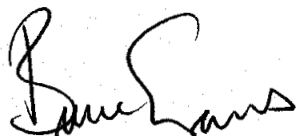
To facilitate compilation of all historical exploration data and to provide survey control for the ongoing exploration programmes, a Digital Topographic Mapping (DTM) program was initiated. Digital Topographic points are created from Stereo-Pairs of 1:20,000 black and white air photographs. A Wild AC-1 Digital Mapping System was utilized to complete digitization of topographic data and then the subsequent contour mapping of the project area. To provide control for northing, easting and elevation several points were surveyed in the field and location permanently marked. Mapping of the project area utilized three co-ordinate systems: 1) Global UTM, 2) Local UTM, and 3) Latitude and Longitude.

The entire project area was mapped at 1:10,000 scale with 5 m contour intervals. The area of interest about the Porphyry Pearl Zone was mapped at 1:5,000 scale with 2 m contour intervals. Mapping accuracy is to +/- 0.25 m in all three dimensions.

Map formats created for the project area are:

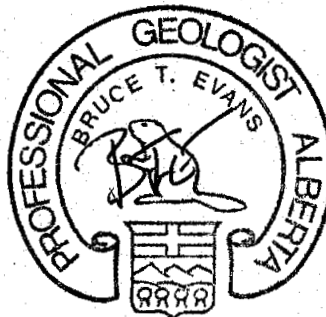
- 1) 1:10,000 Topographic Contour Map.
- 2) 1:10,000 Orthophoto Map with Contours.
- 3) 1:10,000 Orthophoto Map
- 4) 1: 5,000 Topographic Contour Map.

Respectfully submitted,



Bruce T. Evans, P. Geol

September, 1991



8.0

SUMMARY OF EXPENDITURES

Program Supervision and Report Preparation

B. Evans            3.0 Days @ \$375/day            \$ 1,125.00

Digital Topographic Mapping            5,694.80

Drafting and Reproduction            375.00

Secretarial 2 Days @ \$125/day            250.00

TOTAL:            \$ 7,444.80

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9.0 LIST OF REFERENCES

- Burton, A. and Scott, T.C. (1980); Geochemical and Physical Work on the Moosehorn Property, Omineca M.C., B.C. Ministry of Energy Mines and Petroleum Resources (BCMEMP), Assessment Report 8058.
- Carter, N.C. (1985); Geological Report on the Moose Property. Private report for New Ridge Resources Limited.
- Peatfield, G.R. (1980); Moose Property, BCMEMP Assessment Report 9269.
- Rodgers, T. (1972); Report on Geology and Geochemistry of the Moosehorn Group, Omineca M.D., BCMEMP Assessment Report 4061.
- \_\_\_\_\_ (1973); Supplementary Report on the Geology and Geochemistry of the Moosehorn, Sum and Jug Claim Groups, Omineca M.D., BCMEMP Assessment Report 5072.
- \_\_\_\_\_ (1974); Moosehorn - McClair Project 1974 Diamond Drilling, BCMEMP Assessment Report 9832.
- Sutherland, I.G. (1981); Report on Geological and Geochemical Surveys on the Moose-81 and Scree-81 Groups, BCMEMP Assessment Report 10291.
- \_\_\_\_\_ (1982); Report on Examination of Drill core, Moose 1-3 Mineral Claims, BCMEMP Assessment Report 10291.
- \_\_\_\_\_ (1983); Report on Diamond Drilling and Examination of Drill Core, Moose 3 Mineral Claim, BCMEMP Assessment Report 11238.
- Yokoyama, T. and Morita, J. (1972); Geophysical Report on IP and Magnetic Surveys on the Moosehorn Property, BCMEMP Assessment Report 4062.
- Yoshida, H. and Kawasaki, K. (1973); Geophysical Report on Induced Polarization and Magnetic Surveys on the Moosehorn, Sum and Jug Groups BCMEMP Assessment Report 4592.

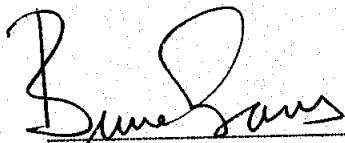


10.0 STATEMENT OF QUALIFICATIONS

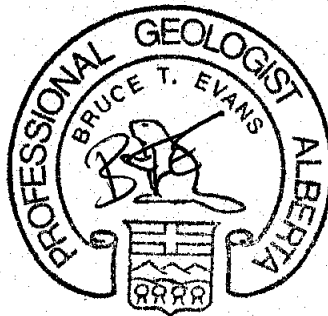
I Bruce Thomas Evans with residence at 120 Strathdale Close, S.W. in the city of Calgary, Province of Alberta, do hereby state:

1. I hold the position of Senior Exploration Geologist with the firm of Golden Rule Resources Ltd. with offices at #1450, 125-9th Avenue S.E., Calgary, Alberta, T2G 0P6
- 2) I am a graduate of Queen's University at Kingston with a B.Sc. (Hons.) degree in Geological Sciences (1982), and I have practised my profession continuously since graduation.
3. I am a member in good standing of the Association of Professional Engineers, Geologists, and Geophysicists of Alberta.
4. Work contained in this report was completed either by myself or under my supervision.
5. I do not own and do not expect to receive any interest, either direct, indirect or contingent in the property described herein.

Dated at Calgary, Alberta this 10th day of September, 1991.



Bruce T. Evans, P. Geol.





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GEOLOGICAL BRANCH  
ASSESSMENT REPORT

**21,797**

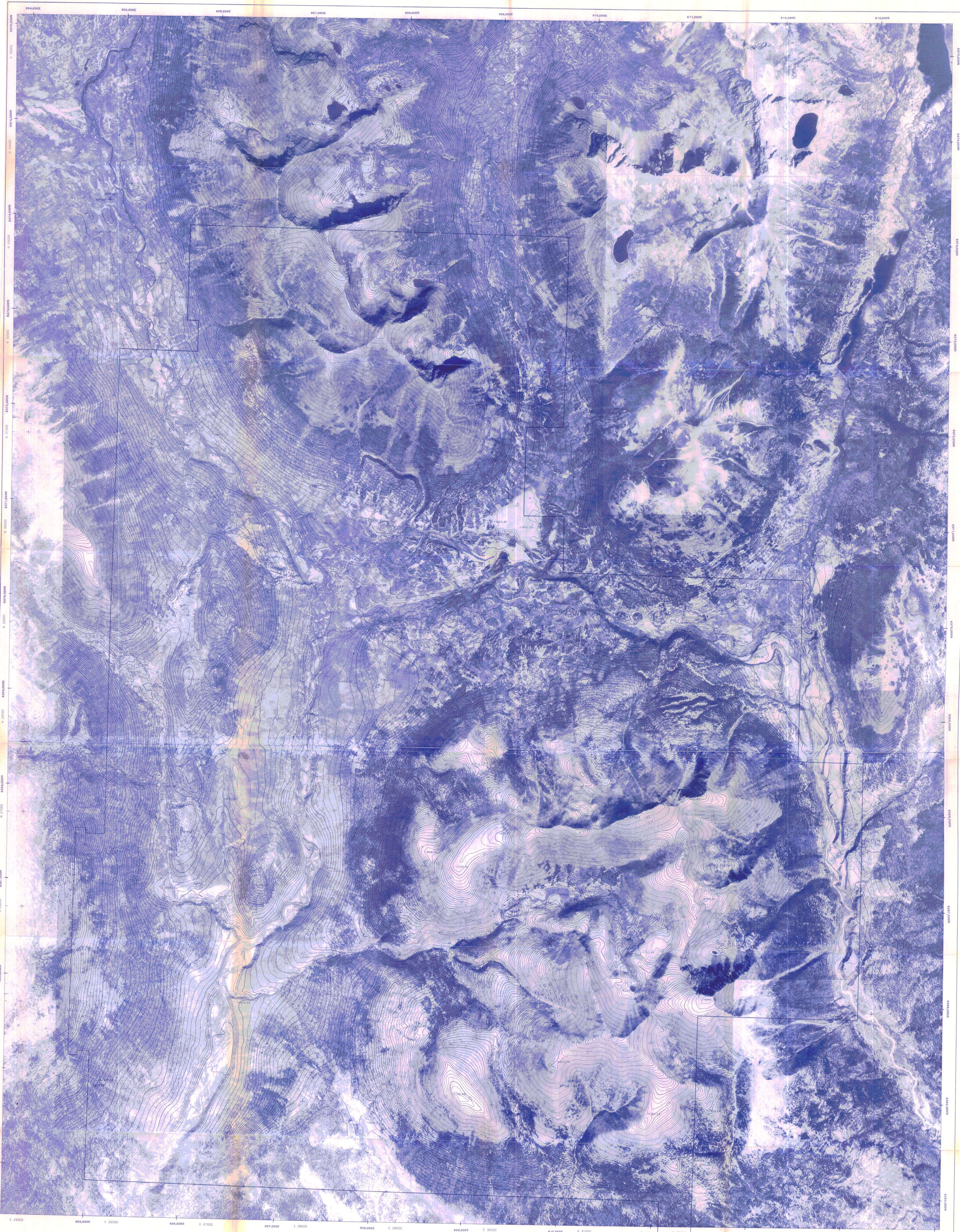
GOLDEN RULE RESOURCES LTD.

PORPHYRY PEARL PROPERTY

TOPOGRAPHIC CONTOUR MAP

Contour Interval: 5m

Date: OCTOBER 2, 1991	N.T.S.: 94E/6.11
Revised:	MAP NO. 1
Scale: 1:10,000	0 500 1000m

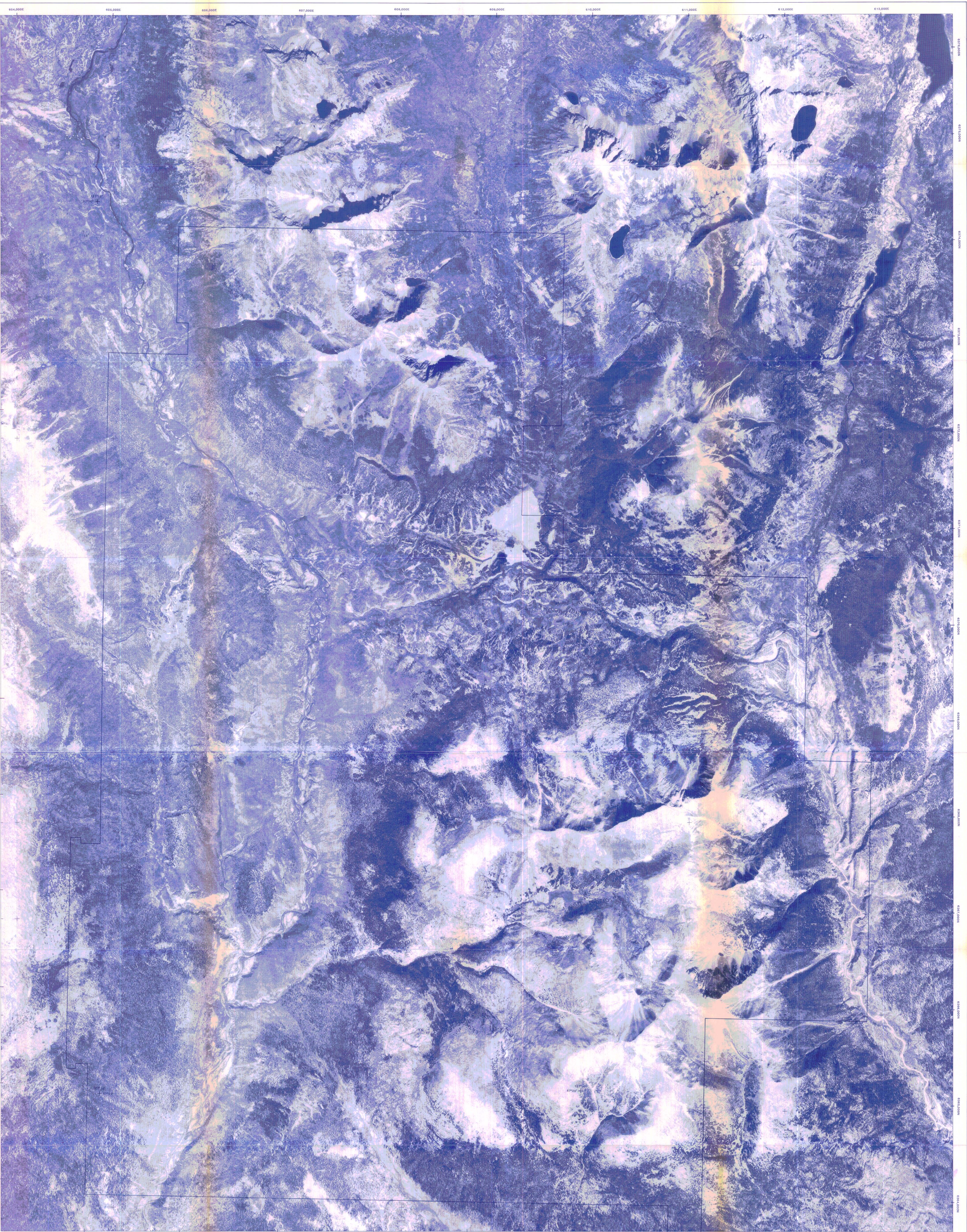


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PORPHYRY PEARL PROPERTY

**ORTHOPHOTO MAP  
WITH TOPOGRAPHIC CONTOURS**  
Contour Interval: 5m

Date: OCTOBER 1991	N.T.S.: 94E/6,11
Revised:	MAP NO. 2
Scale: 1:10,000	0 500 1000m



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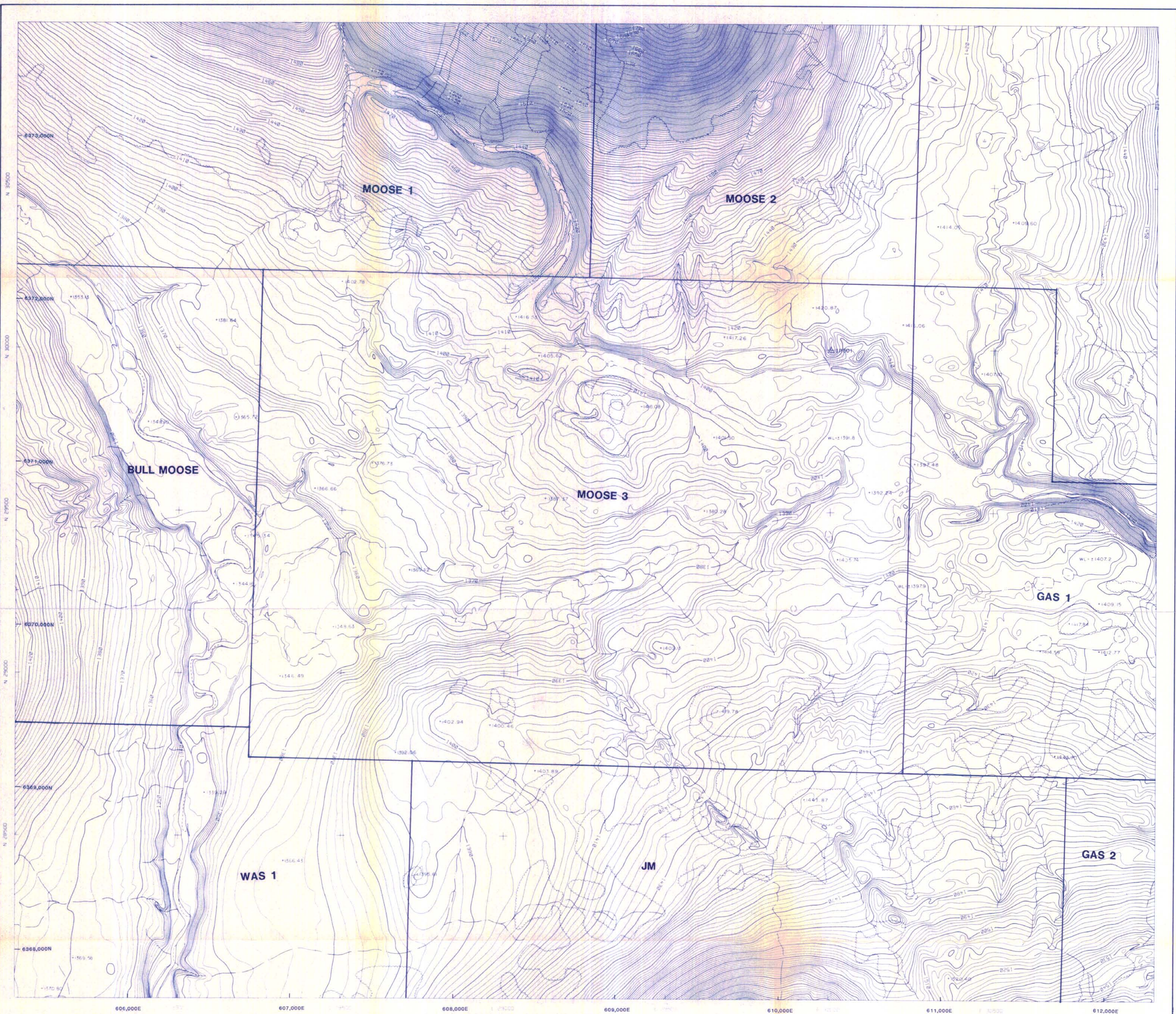
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PORPHYRY PEARL PROPERTY

21,797

ORTHOPHOTO MAP

Date: OCTOBER 1991	N.T.S.: 04E/6,11
Revised:	MAP NO. 3
Scale: 1:10,000	0 500 1000m



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**GOLDEN RULE RESOURCES LTD.**

PORPHYRY PEARL PROPERTY

**TOPOGRAPHIC CONTOUR MAP**

Contour Interval: 2m

Date: OCTOBER 5, 1991	N.T.S.: 94E/6
Revised:	MAP NO. 4
Scale: 1:5000	0 100 200 300 400 500m