ARIS SUMMARY SHEET

District Geologist, Nelson   Off Confidential: 92.08.01

ASSESSMENT REPORT 21564   MINING DIVISION: Greenwood

PROPERTY: Shickshock
LOCATION: LAT 49 09 00   LONG 118 29 00
UTM 11 5444971 391829
NTS 082E01W

CAMP: 008 Greenwood Camp

CLAIM(S): Shickshock,Sailor Boy,Rad 1-3,Rad 5,Rad 7
OPERATOR(S): Pan Orvana Res.
AUTHOR(S): Ettlinger, A.
REPORT YEAR: 1991, 18 Pages
COMMODITIES
SEARCHED FOR: Gold,Silver
KEYWORDS: Triassic,Brooklyn Formation,Argillites,Limestones,Sharpstones
Conglomerates,Cretaceous,Nelson Intrusions,Garnet skarn
WORK
DONE: Geological
GEOL 1000.0 ha
Map(s) - 1; Scale(s) - 1:10000
RELATED
REPORTS: 13052,20368
MINFILE: 082ESE077

Report on

Alteration and Mineralization

Schickshock Claim Group

Greenwood Mining Division, British Columbia

NTS 82E/1W

49° 07' - 49° 09' N. Latitude, 118° 27'30" - 118° 30'30" W. Longitude

For:

Pan Orvana Resources Inc.
Vancouver, BC

and

Orvana Resources Corp.
Coeur d'Alene, ID

Art Ettlinger, July 1991

CONTENTS

Introduction

The Schickshock claim group, comprised of the Schickshock, Sailor Boy and Seattle reverted crown grants, and the Rad 1-8 and Rathful 1 and 2 claims, contain several occurrences of retrograde altered skarn which are similar in alteration mineralogy and host rocks to the large copper-gold skarn deposits in the Phoenix and Deadwood mining camps near Greenwood. Skarn deposits in the Greenwood area have produced over 270 00 metric tons of Cu and 35 000 kg of Au from approximately 31 800 000 metric tons of ore (Church, 1986). Therefore, the skarn occurrences in the Schickshock area represent a potentially significant source of gold and copper.

The skarns were originally garnet-rich, but are now intensely retrograde altered to epidote, chlorite, amphibole and hematite. Remnant garnet is usually observable, however pyroxene is rare. Limestone, siltstone, and chert breccia belonging to the Upper Triassic Brooklyn Formation are the primary hosts to skarn alteration and mineralization in this region (Church1986; Ettlinger and Ray, 1989). Many intrusive suites, spanning Late Paleozoic through Tertiary time are recorded in the region (Peatfield, 1978; Church, 1986; Fyles, 1990) . These rocks are generally calcalkaline granodiorites, quartz diorite and diorite, or alkaline syenites and monzonites. Mineral occurrences are reported associated with all of these rock types (BCGSB-MINFILE).

This report summarizes reconnaissance alteration mapping on the Schickshock and surrounding contiguous claims. Outcrop samples were collected for lithogeochemistry as well as further petrographic analysis. The purpose of this work is to identify areas of skarn and related alteration that are likely to host economic gold-copper deposits. Recommendations for further surface mapping, soil geochemistry, and geophysical surveys are made.

Location and Access

The Schickshock claim group is centered on the ridge between the summit of Thimble Mt. and Brown Creek (NTS 82E/1W), along the western slopes of Granby River, approximately 13 km north of Grand Forks, B.C. (Fig. 1). The property is currently accessible by an abandoned Canadian Pacific railroad grade which can be accessed from Highway 3 at the old Eholt townsite. Limited logging and ranching roads cross the property at elevations below 3100 feet.

Work Completed

Five days during the period June17-June 24, 1991 were spent by the author reconnaissance mapping a portion of the claim group. An enlargement of a 1:50 000 topographic map to 1:10 000 was used as a base map. Skarn mineralogy, protolith alteration and mineralization were noted. Forty two rock outcrop samples and one stream silt sample were collected for geochemical analysis (analyses pending). The following elements, in accordance with a geologic model for skarn-hosted gold mineralization, are being analyzed: Au, Ag, Cu, As, Bi, Co, Pb, Mg, Ni, P, K, Te, W, and Zn. This work was performed for the following reasons:

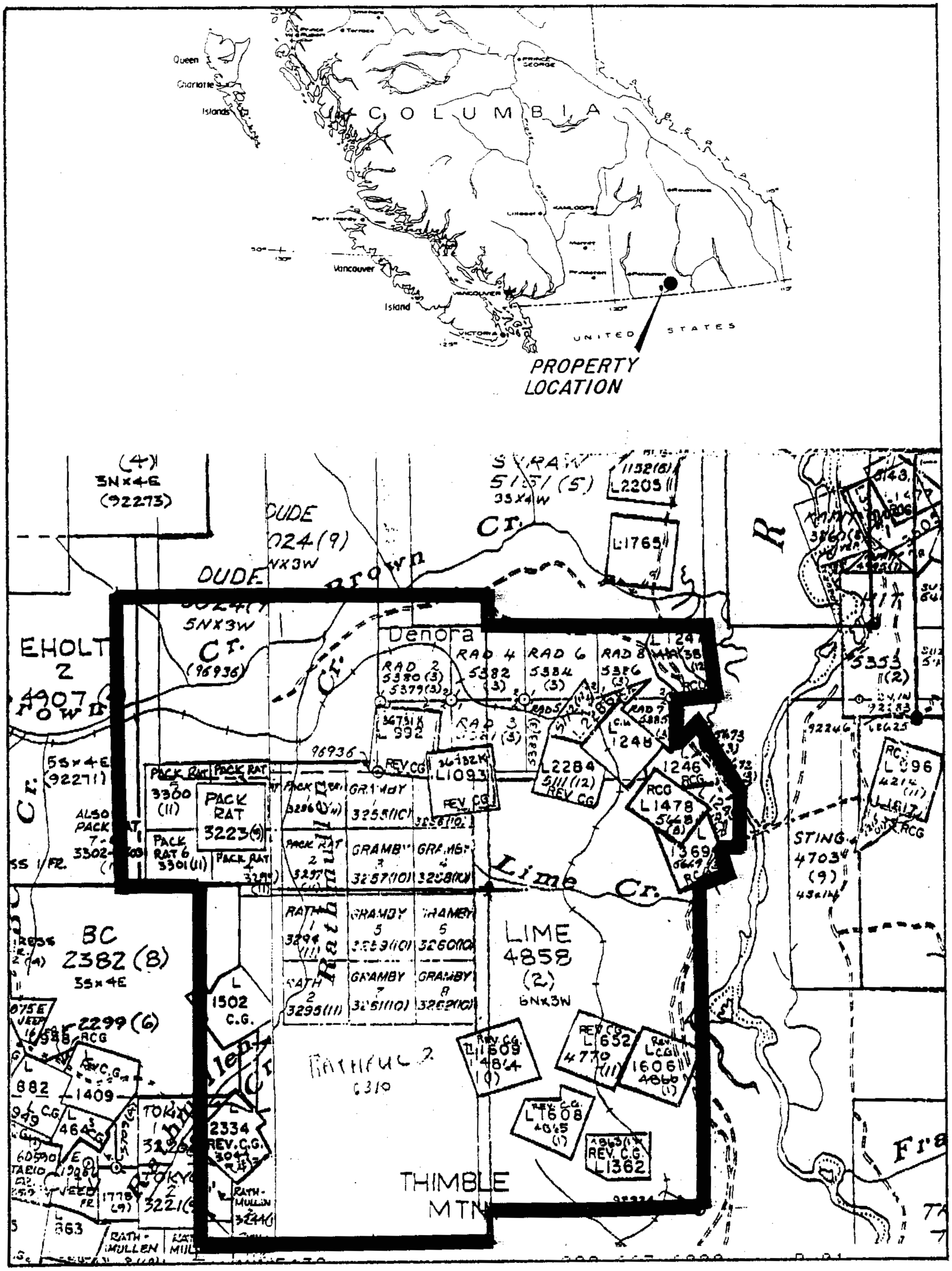


Figure 1. Location map and claim boundary of Schickshock claim group.

1. To determine the extent and nature of skarn alteration,

2. Document the distribution and relative abundances of skarn garnet and pyroxene for possible further geochemical analyses and property evaluation.

3. Identify intrusive rocks related to skarn, to enable further exploration for blind deposits.

4. Determine whether skarn alteration and mineralization on the Schickshock claim group fits a model for gold-bearing skarns in the Canadian Cordillera (see next section).

A summary of field stations, outcrop descriptions and sample sites are listed in Appendix A of this report.

Gold Skarn Model

Recent research on skarn deposits, specifically those skarns containing mineable quantities of gold, has resulted in a geologic model for the formation of this deposit type. Earlier workers (Einaudi et al., 1981; Einaudi and Burt 1982, Meinert ,1983) concentrated on ferrous and base metal skarn deposits. Iron, copper, molybdenum, tungsten, tin and zinc-lead skarns form in characteristic tectonic environments and are found associated with specific plutonic rocks. Meinert (1989) describes gold skarns as geochemically enriched in As-Bi-Te-Co when compared to the other skarn types. Ettlinger and Ray (1988, 1989) point out the importance of nonhomogeneous, volcanic-rich clastic sequences as a host to gold skarns and stress the importance of subalkalic, calkalkaline intrusive rocks as causative plutons to the skarn. Inequigranular to porphyritic, diorite intrusions, occurring as multiple sills or dikes, are associated with gold skarn in the Nickel Plate, Crown Jewel, McCoy and Fortitude deposits.

If gold is present in a skarn deposit, the location of gold-rich portions can usually be predicted with some confidence. Gold mineralization in skarn deposits tends to concentrate away from the primary intrusive body near the marble line, or outer skarn margin. This is observed in the Nickel Plate deposit at Hedley, B.C., and at the Fortitude and McCoy deposits near Battle Mt. Nevada. Other parameters, such as a decreasing garnet/pyroxene ratio, increased retrograde alteration, a geochemical signature enriched in one or more of the following: Au-Cu-Zn-Pb-As-Bi-Te-Ni-Co-W. and Fe-enrichment in pyroxene are characteristic of these deposits and can be used to direct an exploration program to the gold-rich portions of a skarn.

Geology

The Schickshock claim group is predominantly underlain by carbonate and clastic rocks of the Upper Triassic Brooklyn Formation (Fyles, 1990). In the eastern half of the claim block (Fig. 2), fine grained limestone or micrite is most common. Bedding in the limestone, as defined by ankeritic laminae, indicate these rocks are generally striking southeast and are northeast facing. Tight symmetrical folds and locally overturned beds can, however, be observed at several locations along the railroad grade. The limestones are overlain by chert breccia and pebble conglomerate, also belonging to the Brooklyn Formation. In the western portions of the claim block, mafic crystal tuff of uncertain age and Brooklyn limestone crop out sparsely on the north slope of Thimble Mt. and in the saddle between this mountain and the Schickshock claim (Fig. 2).

Intrusive rocks displaying at least three different textures and compositions underlie the property. The oldest intrusions were probably granodiorite to quartz diorite in composition but are now variably altered to epidote, chlorite, quartz, clay and possibly amphibole. The rocks are fine/medium grained equigranular and are spatially related to skarn alteration in the Schickshock area Altered diorite also occurs in outcrop near the northern boundary of the property, where it is spatially associated with hornfelsed sediments, and on the railroad grade southeast of the Seattle claim, where it can be observed eventually grading into greenstone to the south. The other two identified intrusive rock types post date skarn alteration/mineralization and are not generally hydrothermally altered. The most common type consists of small plugs and dikes of coarse grained, pink syenite with abundant biotite and lesser amphibole crystals. These often contain, or are crosscut by, narrow dikes of K-feldspar-phyric pulaskite. The syenite and pulaskite are most abundant in the northern and western parts of the claim block. One large sill-like body of syenite which crops out along the railroad grade northwest and northeast of the Schickshock claim may underlie skarn mineralization at the claim summit.

Alteration and Mineralization

Two locations of calcsilicate skarn are identified on the property. At the center of the Schickshock claim, at approximately 3150' elevation (Fig. 2), massive garnet-magnetite skarn is exposed in an exploration pit and in several small outcrops immediately below the summit. Skarn replaces marble near a contact with quartz diorite. The garnet is medium green to brown in color and is cut by later veinlets of dark brown garnet. Sulfide content of garnet skarn is low. The marble surrounding this showing is bleached white, medium to coarse grained, and locally contains light green clots of possibly tremolite or scapolite. Pyrite is sporadically disseminated within the marble.

The second occurrence of skarn is located at approximately 3450' elevation, due north of Thimble Mt. summit (Fig. 2). A 200 ft. long trench and shaft waste dump expose intensely retrograde altered skarn. Epidote and chlorite are most common. Locally massive magnetite occurs with epidote and granular clots of chalcopyrite and lesser pyrite. Late, earthy red hematite overprints the skarn. Brown garnet is present only in limited amounts due to the nearly complete retrograde destruction of early skarn. The large amount of chlorite with the epidote suggests the original skarn may have contained abundant pyroxene. The protolith to skarn, as exposed in the trench, may be the tuffaceous rocks found higher on Thimble Mt., or some other fine grained clastic rock. No intrusive rocks related to the skarn were identified.

Rocks surrounding these two areas of skarn exhibit differing alteration styles. In the area around the Schickshock showing, limestone to the south and east is partially bleached and recrystallized to marble and may contain some secondary tremolite or scapolite. Coarser clastic rocks to the northeast (Brooklyn chert breccias and conglomerates) contain abundant chlorite in their matrix, with the entire rock being very hard, possibly due to later silicification. Finer grained clastic rocks along the northern portion of the railroad grade are recrystallized to dark green or brown hornfels, the brown variety may contain secondary biotite.

Conclusions and Recommendations

The skarn showing on the summit of the Schickshock claim probably has limited tonnage potential due to the underlying syenite sill. However, the large area of silicification and hornfelsing leading away from this claim towards the northeast, is a favorable target for gold mineralization distal to the Schickshock skarn. This could initially be tested by a soil contour survey as outlined in Figure 3.

The large amount of retrograde epidote, chlorite and late hematite, and the association of copper sulfides with this retrograde event on Thimble Mt., is similar to copper-gold skarn found at the Phoenix mine near Greenwood. At Phoenix, an intense retrograde skarn zone, consisting of epidote, amphibole, chlorite, copper sulfides and gold, occurs along the margin of a garnet rich skarn (D. Still, unpublished map). Gold grades correlate with copper grade (chalcopyrite content) and will therefore be highest within the zone of retrograde alteration. In a similar manner, rocks found at the Thimble Mt. showing may be located in the transition zone between garnet and epidote-rich portions of the skarn. A soil geochemical survey to cover this area as outlined in Figure 3 is recommended. A soil grid survey is outlined; however, a contour soil survey would also prove useful. Soil anomalies should be followed-up by an induced polarization (IP) and ground magnetic survey for identification of blind sulfide and magnetite bodies. Additional surface mapping is recommended southeast of the trench/shaft (Fig. 2). This area is favorable for further skarn alteration because a possible contact between tuff, limestone and diorite is indicated by recent mapping.

References

Church, B.N, 1986, Geological setting and mineralization in the Mount Attwood - Phoenix area of the Greenwood mining camp: B.C, Ministry of Energy, Mines and Petroleum Resources, Paper 1986-2, 65 p.

Einaudi, M. T., Meinert, L.D., and Newberry, R.J., 1981, Skarn deposits: Economic Geology 75th Anniv. Vol., p.317-391.

Einaudi, M.T. and Burt, D., 1982, Terminology, classification and composition of skarn deposits: Economic Geology, v. 77, p. 745-754.

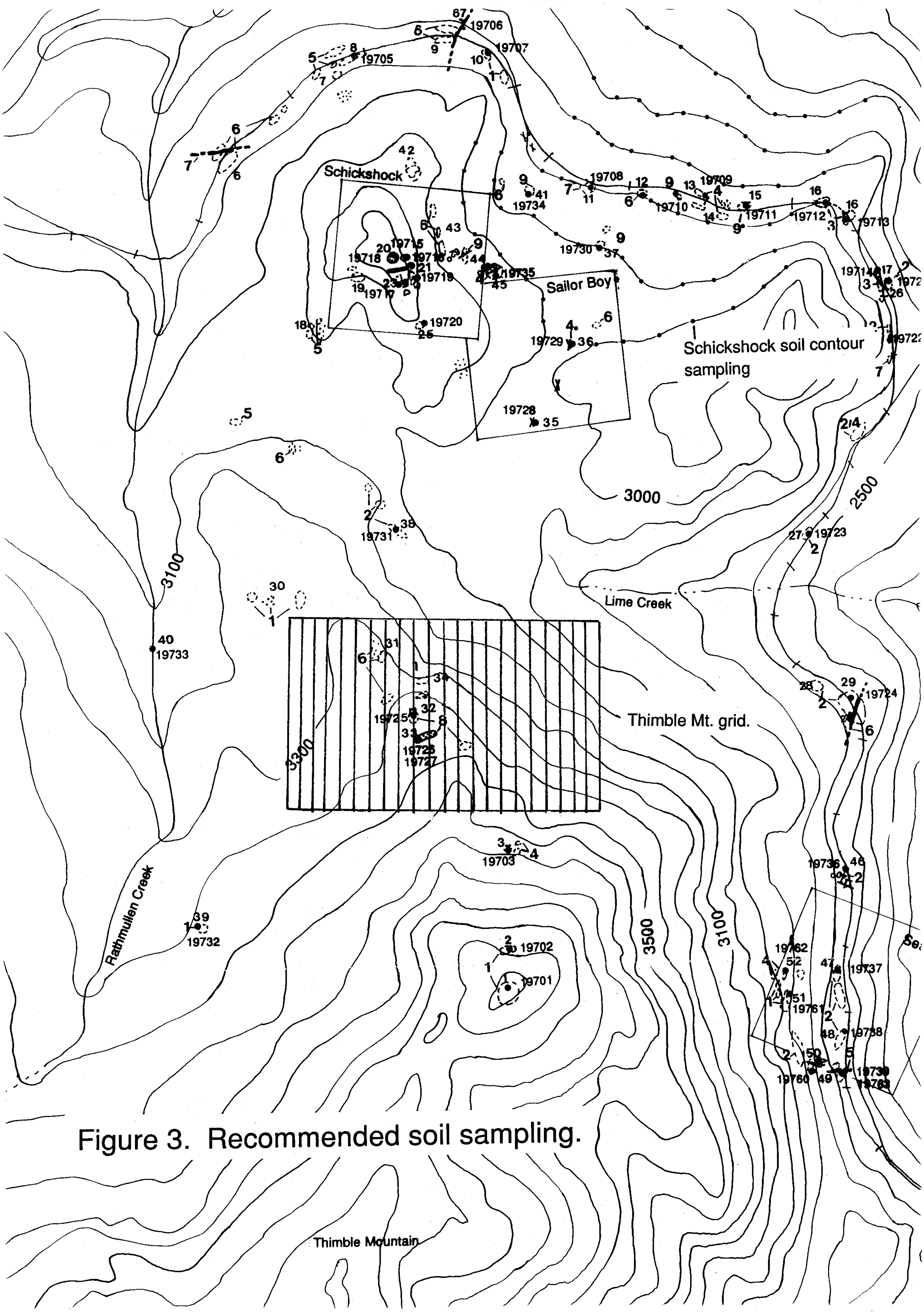


Figure 3. Recommended soil sampling.

Ettlinger, A.D., and Ray, G.E., 1988, Gold-enriched skarn deposits of British Columbia: B.C. Ministry of Energy, Mines and Petrol. Resources, Geological Fieldwork, 1987, Paper 1988-1, p. 2

Ettlinger, A.D., and Ray, G.E., 1989, Precious metal enriched skarns in British Columbia-An overview and geological study: B.C. Ministry of Energy, Mines, and Petrol. Resources, Paper 1989-3, 128
p. 263-279.

Fyles, J., 1990, Geology of the Greenwood-Grand Forks area, British Columbia, NTS 82E-1/2:
B.C. Ministry of Energy, Mines and Petroleum Resources, Open File 1990-25

Meinert, L.D., 1983, Variability of skarn deposits: Guides to exploration, *in* Revolution in the earth sciences - Advances in the past half-century: S.J. Boardman, ed., Kendall/Hunt Publishing Co.,
p. 301-316.

_____, 1989, Gold skarn deposits-geology and exploration criteria: *in* The geology of gold deposits: the perspective in 1988, Econ. Geol. Mono. 6, p. 537-552.

Peatfield, G.R., 1978, Geologic history and metallogeny of the Boundary district, Southern British Columbia and northern Washington: Unpub. Ph.D. thesis, Queen's University, 250 p.

Statement of Costs

Geological Consulting

.	5 days mapping and sampling + 1 day transportation to property (6 x 286.25/day)	$ 1,717.50
.	2 days reporting and drafting at 286.25/day	572.50

Lodging, meals and transportation

.	Lodging - 6 nights	235.54
.	Meals - 6 days	136.38
.	4X4 truck at $0.40/mi (600 miles) + fuel (164.98)	404.98
	Total	$ 3,067.06

Costs apportioned amongst claim groups on basis of area covered by study and number of samples collected as follows:

1.	SCHICKSHOCK GROUP (Schickshock, Sailor Boy, RAD 1-8)	$ 1,533.00
2.	BALANCE OF CLAIMS	1,534.06
	Total	$ 3,067.06

Statement of Qualifications

I, Art D. Ettlinger, currently residing at 302-1755 Vine Street, Vancouver, B.C. V6K 3J6, certify that:

1. I have been a practicing geologist in Canada, the United States and the Soviet Union since 1979.

2. I received a B.S. in Geological Engineering (1979) and an M.S. in Mining Engineering (1981) from Michigan Technological University, and a Ph.D. (Geology, 1991) from Washington State University.

3. I am a Fellow of the Geological Association of Canada, and a member of the Geological Society of America, Society of Economic Geologists, and the Society for Mining Metallurgy and Exploration.

4. I have no financial interest, nor do I expect to receive such interest, in the mineral properties described in this report.

5. This report is based on information I obtained while visiting the property for the stated period and from analytical data obtained from external laboratories.

Art Ettlinger, Ph.D.

Statement of Qualifications

I, Ian Thomson, currently residing at 1628 West 66 Avenue, Vancouver, B.C., V6P 2S2 certify that:

1. I have been a practicing Geologist - Geochemist in Canada since 1971.

2. I received a B.Sc. in Geology (1967) and a PhD in Applied Geochemistry (1971) from the University of London, England.

3. I am a registered Professional Geoscientist in the province of British Columbia.

4. I am employed by Pan Orvana Resources Inc., of Vancouver, B.C. as a Chief Geologist.

5. The work described by Art Ettlinger, PhD, in the report titled "*Alteration and Mineralization, Schickshock Claim Group*" and dated July 1991 was carried out under my supervision.

Ian Thomson, B.Sc., PhD, P. Geo.(BC)

APPENDIX A: FIELD DESCRIPTIONS

Field Notes - Schickshock/Sailor Boy Claims

Field Notes

Station	Sample #	Description
1	19701	Dark gray, fine grained mafic crystal tuff or microdiorite. Relatively unaltered, nil sulfides.
2	19702	Fine grained ash/crystal tuff. Limited recrystallized (?) brown biotite.
3	19703	Dark green siltstone/hornfels(?). Weakly calcareous. Nil sulfides.
4	19704	Massive conglomerate. Predominantly rounded chert pebbles, rare angular, red hematitic and intrusive(?) fragments in gray-green fine grained matrix. Nil sulfides. Possible Brooklyn Formation sharpstone conglomerate.
5	no sample	Syenite/granite(?) dike (strike: 276^{o}, dip: 54^{o}/006^{o} intruding conglomerate.. Abundant pink K-feldspar, biotite, limited quartz, nil sulfides. Coryell suite(?).
6	no sample	Massive biotite syenite intruded by pulaskitic dikes. Syenite contains abundant biotite flakes in a fine grained groundmass of pink K-feldspar . The pulaskite dikes contain white-buff K-feldspar phenocrysts in a dark brown aphanitic groundmass, trace amounts of euhedral pyrite and are weakly magnetic. Coryell intrusive suite.
7	no sample	Hornblende diorite, or quartz-bearing phase of Coryell suite. Relatively fresh, light gray, with acicular black amphibole needles, lesser biotite, plagioclase, K-feldspar, and approximately 10% quartz. Contains less K-feldspar, more quartz and is more magnetic than the biotite syenite at Station 6. Possible Jurassic suite.
8	19705	Equigranular relatively fresh quartz diorite. Contains biotite + amphibole + plagioclase(?) phenocrysts in a matrix consisting of 10-15% quartz and K-feldspar(?). Moderately magnetic. Same suite as diorite at Station 7?
9	no sample	Syenite. Amphibole and lesser biotite phenocrysts in a white groundmass of K-feldspar and/or plagioclase. Weakly magnetic, nil sulfides. Coryell intrusive suite.
10	19707	Subcrop of altered mafic tuff or dike. Pervasive dark green chlorite, 1-2% disseminated pyrite. Possible ghosts of plagioclase or K-feldspar phenocrysts. Locally weakly magnetic.
11	19708	Altered K-feldspar-phyric dike. Pale green silicified(?) matrix, rare remnant pink K-feldspar phenocrysts, trace pyrite, weakly magnetic. Possibly a Coryell pulaskite dike, however, it is highly altered relative to other Coryell intrusions.
12	no sample	Hybrid between pulaskite dike rock and syenite observed at Station 6. K-feldspar and mafic phenocrysts in a medium green aphanitic groundmass. <0.5% disseminated pyrite.

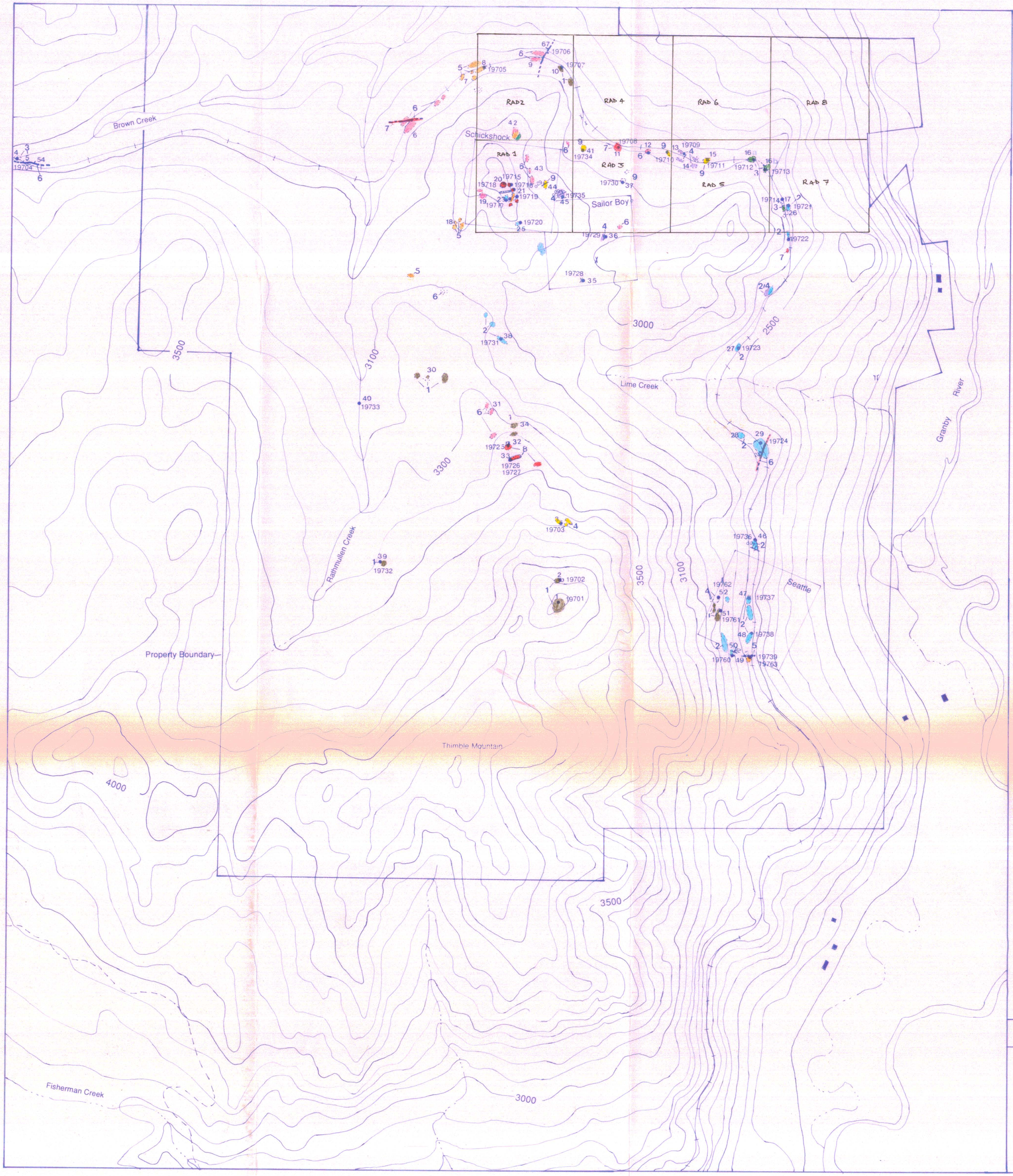
13	19709 19710	Diopside + biotite(?) hornfels. Probable sedimentary protolith. Mottled dark green to brown colored, local veinlets of altered pyroxene are associated with XX.0 cm clots of oxidized pyrite. 19709 - pyroxene + pyrite clot; 19710-intensely silicified rock. Protolith uncertain (diorite or sediments?).
14	no sample	Pink weathered syenite, mafic phenocrysts are altered to chlorite.
15	19711	Intense quartz-pyrite alteration of diorite(?). Vague remnant igneous texture may be present. Similar to sample 19710 except that here, pyrite is more abundant (2-4%).
16a	19712	West portal of tunnel. Altered chert breccia. Angular to subrounded, light colored quartz and chert fragments in a dark green chlorite(?) matrix. Some fragments cut by chlorite veinlets(?) while others are replaced by light green pyroxene? Entire rock is very hard.
16b	19713	East portal of tunnel. Chert breccia (Brooklyn sharpstone conglomerate?). White angular chert fragments in a green epidote + chlorite altered matrix. Rare red jasper pebbles and veinlets, <1% disseminated pyrite.
17	19714	Altered chert pebble conglomerate. Strongly calcareous, possible pyroxene stockwork as thin veinlets and wispy stringers cutting the conglomerate matrix. Trace pyrite. Brooklyn Formation(?).
18	no sample	Numerous small subcrops of intensely weathered diorite(?). Local silicification with acicular hornblende needles as in Station 7. Nil sulfides.
19	no sample	Coryell syenite? Abundant X mm hornblende needles with lesser euhedral brown biotite (phlogopite) flakes in a fine grained white feldspar matrix. Little or no quartz, nil sulfides.
20	19715	4 m deep exploration shaft in skarn on summit of Schickshock claim. The following rock types are found in the dump material: 1) massive magnetite with minor calcite and up to 2% pyrite, 2) semi-massive magnetite with pale green pyroxene, 3)porphyritic pulaskite dike with biotite + K-feldspar phenocrysts and secondary calcite + chlorite, 4) massive epidote, 5) massive garnet with lesser magnetite, and 6) weakly magnetic garnet + pyrite skarn with trace amounts of epidote (sample #19715). Additionally, an intensely weathered subcrop of chert is located within 20 m of the shaft.
21	19716	Silicified diorite or other siliceous, cherty rock. Generally, the rock looks like a weathered chert; however, scattered laths of amphibole(?) suggest an igneous protolith. A scraped, trench-like area trending 076o from the diorite outcrop, exposes rubble containing massive dark brown garnet, magnetite and calcite.
22	19718	Massive greenish brown garnet skarn cut by dark brown garnet veinlets. Massive skarn may also contain chlorite +/- pyroxene. Trace pyrite.
23	19717	Generally bleached white, fine grained marble, nil sulfides except for area sampled which is pale apple green, coarser grained, weakly silicified, and contains trace amounts of euhedral pyrite. Possible epidote or scapolite in green marble.

24	19719	Pale pyroxene-garnet skarn hosted by (arkosic?) sandstone. Mottled light brown to green, weakly calcareous, clastic texture.
25	19720	Pale green marble with tremolite or scapolite? Relatively hard (silicified?), nil sulfides. Sample #19720 is surrounded by abundant float of soft white marble.
26	19721	Pale green, medium/coarse grained marble. Local Fe-stain associated with dark green chlorite alteration (Sample #19721).
27	19723	Tan to buff sandy limestone or calcareous sandstone. Stockwork of X mm wide quartz + hematite veinlets, nil sulfides.
28	no sample	Dark grey micrite and limestone breccia. Trace euhedral pyrite.
29	19724	Coryell syenite(?) intruding dark grey micrite. On a fresh surface the intrusion is pale grey with dark green hornblende phenocrysts and less abundant pale green (sausseritized?) plagioclase laths in a light grey aphanitic feldspar matrix. Limestone exhibits only local shearing at contact. Sill striking 39^{o}, dipping 24^{o} at 309^{o}, true thickness approximately 6-8 m. Low amplitude, tight symmetrical folding observed in hanging wall micrite. Fold axes are approximately parallel to dike contact.
30	no sample	Crowded porphyry or crystal tuff. Abundant plagioclase phenocrysts in a dark, very fine grained groundmass. Weakly/moderately magnetic.
31	no sample	Abundant syenite float with biotite and hornblende phenocrysts in a pink K-feldspar groundmass. Coryell syenite.
32	19725	Exploration shaft with slusher bucket. Massive epidote + magnetite + chlorite skarn with late red hematite + trace pyrite in dump. Epidote skarn in outcrop immediately above shaft contains rare brown garnet and granular chalcopyrite (sample #19725).
33	19726 19727	60 m long trench at 80^{o}. Trench exposes intense retrograde skarn. Garnet is replaced by chlorite + magnetite which is cut by epidote + hematite veinlets. Minor late chalcopyrite. Tuff or siltstone protolith. Very similar to ore found in Phoenix mine. Sample #19726 - high graded for visible chalcopyrite or malachite. Also contains chlorite + magnetite + hematite. Sample # 19727 - chlorite + magnetite skarn cut by epidote + hematite veinlets. Rare garnet, nil sulfides.
34	no sample	Porphyritic andesite or basalt. 15% yellow-white plagioclase phenocrysts in a black, chloritic aphanitic groundmass.
35	19728	Small exploration pit in bog. Dark green, soft chloritic rock.
36	19729	Piled mound of rubble. Hornfelsed sediments? Chloritic, minor biotite, 0.5% pyrite, non-magnetic. Rare quartz + chlorite veining.
37	19730	Intensely silicified rock. Protolith? Possibly a recrystallized chert. 0.5% disseminated pyrite, salmon pink Fe-oxide staining throughout.

38	19731	Medium/dark grey, fine grained limestone. Calcite + limonite stockwork, nil sulfides. Bedding observed in slumped blocks.
39	19732	Subcrop of Coryell granite? Medium/coarse grained, abundant pink K-feldspar, quartz, biotite and lesser amphibole. Sample #19732 - altered rock in subcrop adjacent to granite. Protolith? Siliceous, weakly calcareous, chlorite stockwork.
40	19733	Stream silt sediment from logging road crossing on Rathmullen Creek. Dark green-grey, organic-rich silt.
41	19734	Silicified quartz diorite. Abundant white quartz, fine grained, black chlorite stockwork, nil sulfides.
42	no sample	Knob exposing hornblende diorite, pink syenite and possible cherty rock. No observable alteration.
43	no sample	Variable light grey hornblende syenite (monzonite?) or pink K-feldspar-rich rock (syenite?).
44	no sample	Bedded chert striking at 60°, dipping 62° at 330°.
45	19735	Brown (biotite?) hornfels. Siltstone protolith. Bedding at $65^{\circ}/60^{\circ}$ at 335°.
46	19736	Brecciated micrite. Angular micrite fragments in a variable red hematitic to yellow limonitic matrix. Crosscut by veinlets of coarse calcite. Nil sulfides. Bedding varies from flat lying to vertical, generally ESE-WNW striking.
47	19737	Variable laminated limestone and ankeritic limestone with 1-2% disseminated euhedral (diagenetic?) pyrite. Irregular patches of bleached, recrystallized limestone overprints laminated limestone and contains coarse anhedral, (recrystallized?) pyrite.
48	19738	Silicified white fine grained marble. Nil sulfides. Remnant buff colored ankeritic laminae. Rock is relatively hard and reacts moderately to HCl.
49	19739 19763	Endoskarn. Epidote + hematite alteration of quartz diorite. This is the intrusion responsible for bleaching, recyrstallization and silicification in adjacent micrite. Epidote replaces plagioclase, hematite and tan clay(?) replace amphibole. Nil sulfides. The diorite becomes porphyritic and grades into a fine grained greenstone to the south along the railroad grade. Sample #19739 - endoskarn; 19763 - 25-35 cm thick quartz + hematite vein in diorite within several meters of limestone contact. Vein attitude: $270^{\circ}/44^{\circ}$ at 180°.
50	19760	Bleached white, fine grained limestone with ankeritic laminae, nil sulfides. 2750 ft. elevation. Bedding at 116o/28o at 26o. Limestone becomes finer grained and less bleached with higher elevation and distance from diorite.
51	19761	Crowded porphyry with bleached white marble halo. Trace pyrite. Sample # 19761 - epidote altered porphyry, 0.5% disseminated pyrite.

52	19762	Rusty weathered, dark brown hornfels. Sedimentary protolith, trace pyrite. Interbedded(?) with hard silicified marble. Sample # 19762 - hornfels.

Note: Refer to 1:10 000 map for station locations.



Legend

- 9 silicification
- 8 skarn

Tertiary Intrusions

- 7 pulaskite dikes - K-feldspar phenocrysts in a dark red-brown aphanitic groundmass.
- 6 syenite sills and dikes - biotite and lesser hornblende phenocrysts in a medium/coarse grained pink K-feldspar groundmass. Little or no quartz. Coryell suite.

Cretaceous(?) or older intrusions

- 5 quartz diorite/diorite. Common epidote-chlorite alteration. Local endoskarn and or disseminated pyrite. Fine/medium grained equigranular.

Upper Triassic Brooklyn Formation

- 4 siltstone (tuffaceous?). Biotite and diopside hornfels developed near dioritic intrusions.
- 3 chert breccia. White angular chert fragments and light grey quartz pebbles in a dark green chloritic matrix. Patchy silicification. Earthy red hematite occurs locally as breccia fragments and as disseminations within the matrix.
- 2 limestone. Dark grey micrite. Often bleached and recrystallized near intrusions. Common centimeter thick interbeds of tan weathered ankerite.

Age uncertain

- 1 mafic crystal tuff or altered flows. Local microdiorite texture. Black amphibole and plagioclase crystals in a fine grained dark matrix. Possible skarn host on Thimble Mt.

Outcrop label

Lithology 2 — Geochem. sample 19700 — 23 Field Station #

prospect pit — Abandoned railroad — trench — shaft — building

GEOLOGICAL BRANCH
ASSESSMENT REPORT

21,564

Contour Interval 100 feet

SCALE 1:10 000

0 — 500m

N

Pan Orvana Resources Corp.

Schickshock Claims

Osoyoos Mining Division, British Columbia

ALTERATION AND SAMPLE LOCATIONS

Art Ettlinger, July, 1991

Figure 2