GEOLOGY OF THE MCKINLEY LAKE GOLD PROSPECT AREA

CHUGACH NATIONAL FOREST

SOUTH CENTRAL ALASKA

by

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Preface

This report presents and discusses findings of mineral assessments of a section of the Chugach National Forest. This forms part of a larger evaluation of the mineral potential of the forest conducted in compliance with RARE II stipulations.

In the area dealt with in this report, the primary mineral of concern is gold. Silver and other metals are also present but in quantities too insignificant in relative comparison for more than passing mention in the text.

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Abstract

Gold prospecting and limited lode mine development work occurred for three decades prior to World War II in the McKinley Lake area of southcentral Alaska. This took place primarily within 1.25 miles north of the north end of the lake. Over 15 square miles were mapped, workings located, and showings sampled for two months in 1980.

The area is underlain by the eary Tertiary upper Orca Group metapelites which have been intruded by a biotite granite pluton. The intrusive-metapelite contact is two miles NNW of the lake.

No economic gold concentrations occur in any of the samples collected but gold is detected in 52% of the 168 rock samples and 76% of the 66 soil samples analyzed. Highest frequency of occurrence(66%) and highest gold concentration (0.11oz/T) are found in samples of graywacke with quartz veins although over 40% of the samples of each major rock type (slate, graywacke, granite, and hornfels) contain detectable (0.03ppm) gold. Petrologic analyses indicate gold is often related to the degree of cataclasis and recrystallization present in the quartz veinlets or "stringers". Analytical data suggest that high gold is present in samples with high arsenic. Megascopic structural lineations and fluid inclusion data suggest post-intrusion mineralization.

More thorough sampling and mapping of the area is necessary before it can be established whether an economic ore body, placer or lode, does exist.

Geology of the McKinley Lake Gold Prospects
Chugach National Forest
South Central Alaska

INTRODUCTION

Location

McKinley Lake, 1.3 sq.km.(1/2 sq.mi.), is located 34km. (21 mi.) east southeast of Cordova, 4.8km(3mi) west of the mouth of the Copper River, and 12.9km(8mi) from the Gulf of Alaska[Fig. 1]. Geologic prospecting for gold and limited development work occurred for three decades previous to World War II within 3.2km(2 mi) of the north end of the lake.

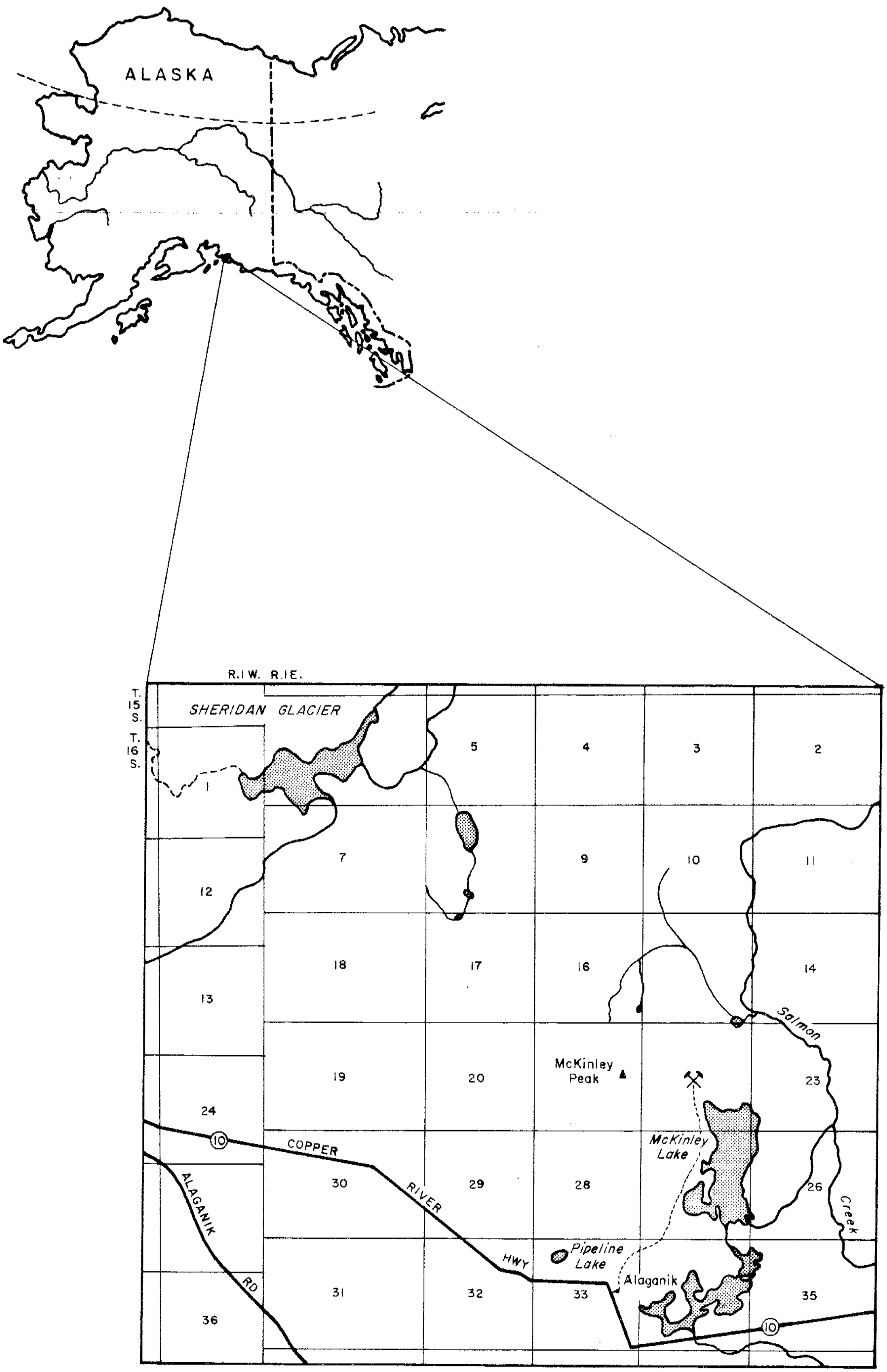
Access

The most accessible workings can be reached by a 4km (2 1/2mi)U.S.Forest Service (foot-)Trail from the Copper River Highway and are 0.4km(1/4mi) north of McKinley Lake.

The Copper River Highway from Cordova, built on the old railway bed, is paved 14.5km(9 mi) to the airport and is gravel from there 32km(20mi) to the Copper River at Child's Glacier where it no longer spans the river. Cordova has a deep water harbor from which copper ore was shipped before the mining operations at Kennecott ceased in 1937.

Figure I

Location of McKinley Lake Area in Alaska



Objectives

The investigation described in this report was initiated by the Alaska Field Operations Center, Anchorage, U.S. Bureau of Mines(USBM). The objectives were to determine the extent of the gold mineralization, identify its source, and evaluate its potential. Two months of field work in the summer of 1980, including mapping and sampling, were done by J.M. Haney, graduate student at the New Mexico Institute of Mining and Technology, Socorro, New Mexico. Supervision was provided by the Geoscience Department of NMIMT.

Methods

The field activities consisted of geologic mapping, locating old workings, and sampling showings. The following summary discussions are drawn from the results of petrologic, geochemical, fluid inclusion, and structural analyses which are included herein as appendices. The samples were analyzed by TSL Laboratories, Ltd., in Spokane, Washington(which also cut the thin sections), and the U.S. Bureau of Mines laboratory in Juneau, Alaska. The petrograhic analyses, fluid inclusion studies, and additional investigations were undertaken at NMIMT.

Previous Work

Nine pre-World War II geologic, mineral-prospect reports of the mining claims northwest of McKinley Lake are still available in USBM files. They were written after visits to the properties for as long as two weeks although several writers were only on the prospects one day. Consequently there is considerable variation in the reported observations.

The reports generally agree on three points:

1) A nearby granite pluton intrudes into the Orca Group slates and graywackes.

2) The mineralization occurs in quartz veins and in addition to free gold includes: pyrite and arsenopyrite (both often mentioned); silver (in some assay results); pyrrhotite, galena, and stibnite (these mentioned only once or twice).

3) Quartz fissure-filling occurs mostly parallel to bedding between slate beds or slates and graywackes but tranverse to bedding most often in graywackes. Different observers called one or the other dominant probably depending on workings examined.

4) The "tunnels" were driven without attention to geologic principles and are of little use for development of any ore bodies.

Points of disagreement:

1) Indicative of differences in reported geology are the variation in the observations of dominant strike and dip of the metasediments:

Date	General strike	Dip	Dip near granite
1912	E-W	0-45N	
1915	N20E	40-80NW	80SE
1916	N60-65W	35-45NE	
1926 (H)	N75W	55NE	
1934 (R)	NW-SE	36-70NE	30-40SW
1935	E-W	35-70N	

2) The "quartz diorite dikes" and "diorite porphyries" of earlier observers are later described more accurately as "graywacke bands".

3) At least one author refers to the "generally NW-SE striking syncline" between the prospects and the intrusion, mistakenly assuming the reversal of dip direction signified a syncline.

4) Conclusions reached varied from, "several localized deposits of low tonnage and grade. . . property recommended to be dropped" (Bateman, 1916), to, "with a proper plan of development will. . .make a major operation of 1000 tons/day of $5.00 ore costing $2.00 per ton" (Smith, 1934).

After resolving name changes and variations in elevation (given here as originally reported) and length of adits (usually referred to as tunnels), the old development workings may be divided into four groups of mining claims containing specific adits and numerous open cuts:

A. The Lucky Strike group, referring to those workings on the easterly slopes of Tip Top Mt., as early as 1912 included three "tunnels" totaling 400´ (122m):

1) The upper Lucky Strike adit, at 1505´ (459m) elevation, eventually drove 135´ (41m), paralleling the vein [NW-SE] for 110´ (34m) before cutting [NE] to the hanging wall. It had caved in by 1934.

2) The "Bohunk tunnel" reached 215´ (66m) along strike [NW-SE] in slate, then cut 30´ (9.2m) NE. It was also caved in by 1934.

3) The "Stringer Incline tunnel" at 1425´ (435m) elevation and to the north of the upper Lucky Strike drove [NW] 78´ (23.8m) with an 8 degree slope on the intersection of two 4" (102mm) quartz veins and had a 16´ (4.9m) shaft 6´ (1.8m) from the face. [Not located in 1980.]

The "lower Lucky Strike tunnel #1" was begun in the early 1920´s at 720´ (220m) elevation almost directly below the Incline tunnel and was intended to cut the "Stringer and Tip Top lodes at 1000´ (305m) below the surface". However while its on-strike (N53W) direction in slate had reached 150´ (46m) in 1926, by 1934 the 480´ (146m) length had turned such that the last 230´ (70m) drove to the NE. [This is the adit located and called Lucky Strike in 1980; its present length is 516´(157m), with two short (3m) drifts; Fig. 4.]

The "Porcupine and Finlander tunnels" at 1075´(328m) and 1300´(397m) respectively followed a 4"(102mm) brecciated zone on a bed fault [NW-SE] between slate and graywacke, above lower tunnel #1.

B. The McKinley Mining group(Falcon, Storey, Blacksmith, Mill Creek, and Pioneer) refers to those workings on the easterly slopes of McKinley peak and east of the saddle north of that peak. By 1912 there were two adits totaling more than 600´(183m).

1) The upper (Storey) tunnel at 585´(178m) elevation eventually drove 305´(93m) on the left limit of Story Creek including two crosscuts and two drifts totaling 157´(48m) [not located in 1980].

2) The lower tunnel at 315´(96m) elevation had 564´(172m) of workings including a 55´(16.8m) drift but had caved in by 1934. [Fig. 17]

The Mill Creek adit was driven 33´(10m) on a quartz vein at 437´(133m) elevation. Near the old ball mill a 14´(4.3m) vertical shaft was sunk and two open cuts 63´(19.2m) and 23´(7m) followed an 8"(203mm) quartz vein. [All were water-filled and sloughed by 1980; Fig. 3c.]

On Blacksmith Creek about 850´(259m) west of the old cabin on the Forestry Trail two adits were driven, 93´(28.4m) at 342´(104m) elevation and 18´(5.5m) at 382´(117m) elevation, to intercept a quartz stringer zone trending N5E in graywacke. [Elevations are likely 150´(46m) too low. Not located in 1980.]

C. The Rilley claim group was located along the Forestry Trail between the Lucky Strike and McKinley Mining groups and included six adits at 300´(92m) average elevation. All followed quartz veins in slate and had no good showings. [Not located in 1980.]

D. The Bear Creek group, located on southeast striking beds near the intrusion, was said to have similar geology as the other claim groups but no investigator actually visited to report on it.

Only the Lucky Strike and McKinley Mining group workings reported any favorable gold assays over the years of development and these contained no consistent values. Although average gold assays from veins and dumps are reported as high as 1.0 oz/T, the general average for high grade zones was near 0.25 oz/T. Single samples gave reported results as high as 9.0 oz/T but one report noted, "It is not quite understood how such encouraging assay returns are obtained unless the samples are ´picked´ for they certainly do not indicate the general run of the ground." (Richelson, 1934)

The above summary was taken from the geologic reports and letters on the area by the following men: T. Chapin, 1912; J.H.Henley, 1916; A.M. Bateman, 1916; J.G. Shepard, 1926; W.E. Hubbard, 1926; W.A. Richelson, 1934; W.G. Smith, 1934; L.D. Gassaway, 1935; and J.C. Boehm, 1939.

District Geology

The rocks forming this part of the Chugach Mountains are graywackes, slates, and argillites of the early Tertiary Orca Group. Because no greenstones and very few conglomerates are present in the study area, these metasediments likely represent the upper part of the Orca Group. The volcanic and conglomeratic lithologies of the lower Orca Group are of probable middle Eocene age. The upper age limit of the Orca Group is not known because no diagnostic fossils have been found nor is it overlain by younger dated Tertiary rocks(Plafker & MacNeil, 1966).

The tectonic episode during which the Chugach terrane was accreted to the continental margin terminated no later than 52 MY ago(Silberman et al, 1980; MacKevett & Plafker, 1974).

A biotite granite pluton intruded the metasediments near McKinley Lake following intense deformation during their accretion. A belt of lithologically and temporally related plutons are spread for 3,218km(2,000 mi) around the Gulf of Alaska from Baranof Island in the southeast to Savak Island, less than 80km(50mi) southwest of westernmost Alaska Peninsula. The magmas of the Savak-Baranof belt are thought to have originated by "anatexis at crustal levels in response to heating of the deeper parts of an accretionary prism after it was tectonically thickened and deformed against the continent." (Hudson et al, 1979) The eastern segment of plutons with which the McKinley Lake granite is associated ranges in age from 47 to 52 MY(Hudson et al, 1979).

LOCAL GEOLOGY

Field results

Geology mapped[Fig. 2, pocket]

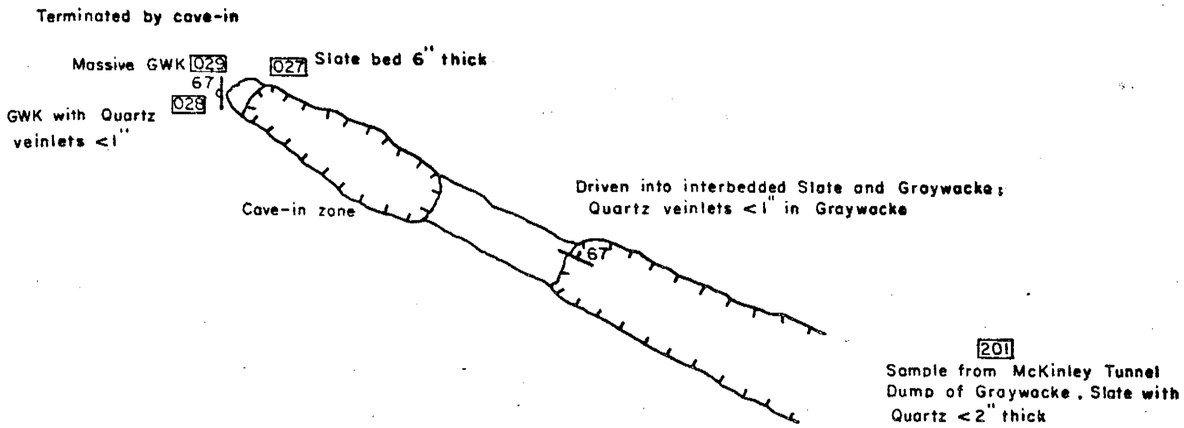
Two miles(3.2km) NNW of McKinley Lake is an elongate homogeneous medium grained, hypidiomorphic, and equigranular pluton of biotite granite 3.2km wide and extending at least 8km along a N50-55E trend. The pre World War II prospect and development workings are found in the interbedded slates and graywackes between McKinley Lake and the pluton, predominately on the east and east southeast slopes of McKinley Peak and Tip Top Mountain. The closest workings to the pluton which received mention in any of the old prospect reports and which carry gold values are about 1.5km southeast of the granite-metasediment contact.

Rock samples were collected throughout the area mapped though most were taken in the major prospect area and in the adits located and mapped in 1980 [Fig. 2].

Adits located

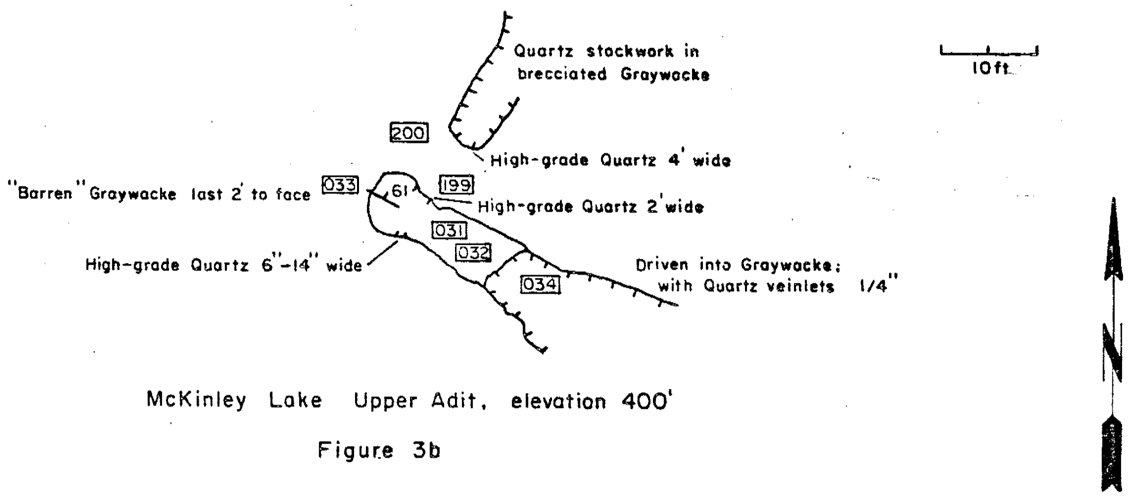
McKinley Mining Co. "lower tunnel"[Fig. 3a]:

The portal of the lower McKinley Mining Co. adit is found at 42.7m(140´) elevation 30.5m west of the remains of the ball mill on the west bank of "Mill Creek". This is the end of the Forest Service Trail at 0.4km north of the north end of McKinley Lake[Figs. 1,2]. There is a cave-in 4.9m inside the square-set portal. The adit drives at 305 degrees, parallel to the slate and interbedded graywacke con-



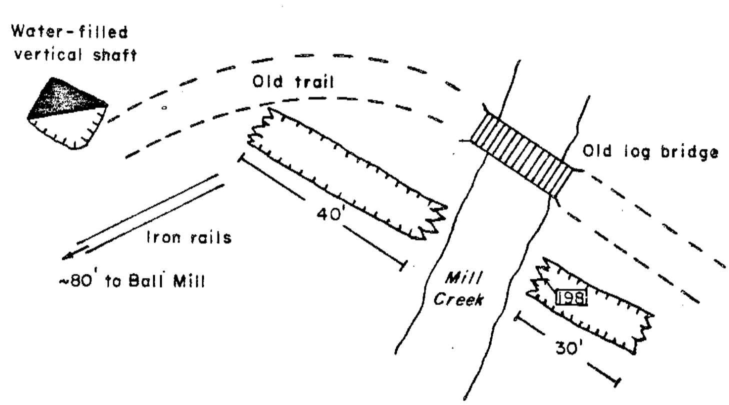
McKinley Lake Lower Adit #1, elevation 140'

Figure 3a



McKinley Lake Upper Adit, elevation 400'

Figure 3b



Old Workings Sloughed-in (near Old Ball Mill), elevation 120'

Figure 3c

taining transverse quartz veins up to 25mm thick. Float with 100mm thick quartz veins lies on the floor. The gradually inclined slope outside and above the portal allows the cave-in to be seen from above until at 11.3m from the portal the slumping ends. A futile attempt to dig into the adit here resulted only in the collection of three samples of the metapelites and quartz veinlets; a sample was also taken of dump material. All 4 samples had >0.10ppm gold(Tables 1 & 8).

McKinley Mining Co. upper adit[Fig. 3b]:

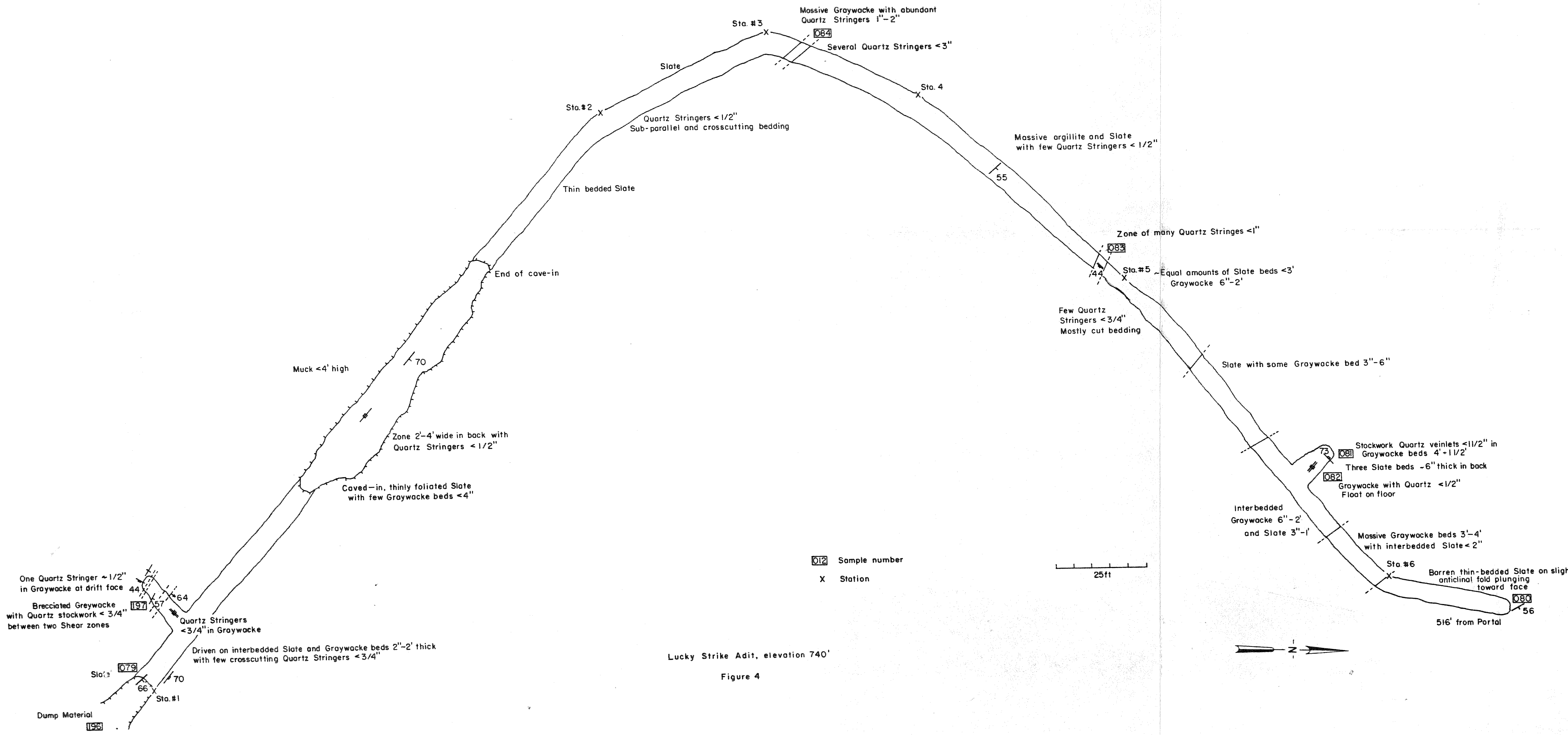
Up the slope 0.2km west of the lower adit a short 4.6m adit lies at 122m(400') elevation driven at 302 degrees on quartz stringers <13mm thick in graywacke. Three and a third meters in from the 1.2m high by 1.5m wide portal is heavy quartz stockwork in graywacke with variable quartz veins up to 0.6m thick. But this stockwork zone is only 0.9m wide and the face of the adit is in graywacke alone. Outside the adit on the north side an open cut on the same level is driven at 213 degrees on the quartz zone which is cut at 3 1/3m inside the portal. The zone is 1.2m wide at the face of the open cut. Samples were collected of the quartz and graywacke with quartz veins, the graywacke without quartz veins at the face, and graywacke without quartz veins 1m outside the portal. Only the graywacke samples without quartz veins contained no gold(Tables 1 & 8).

Lucky Strike ("lower tunnel #1")adit[Fig. 4]:

The portal(Station #1) of the 157m long Lucky Strike adit is found at 226m(740´) elevation 305 horizontal meters west of baseline 144N + 65´. [Baseline location is 4,465´ north of the large(one meter diameter) tree stump near the Forest Service cabin on McKinley Lake, baseline 100N] This is in the SE quarter of the SW quarter of Section 15, R1E, T16S, Cordova Quadrangle. The adit was driven at 310 degrees, approximately 1.5m wide by 2.1m high(5´x7´).

Following the strike of interbedded slate and graywacke, this is the "tunnel" intended to cut the two fault zones At 1000´(305m) below the surface(Sheppard, 1926). At 5.3m from the portal a crosscut 1.7m wide extends 4.9m at 235 degrees. Initially following quartz veinlets <25mm thick in graywacke, it continues across two shear zones in graywacke(sample 197) to terminate in graywacke with a single 13mm quartz veinlet.

Between 21.7m and 45.8m from the portal, the slate with a few thin graywacke beds is caved and nearly 1.2m of muck blocks the adit. Through the caved area the width and height of the drift vary as much as 3m from normal. More competent meta-pelites beyond the caved-in section do not require timber support. Sta.#2 is located on the left rib (as are all remaining stations before the face) 61m from the portal. Widely spaced quartz veinlets <13mm thick occur throughout the slate of this section, parallel and transverse without pattern.



Lucky Strike Adit, elevation 740'

Figure 4

Beyond Sta.#3, 76.9m from the portal, the adit cuts ´massive´ argillite which predominates until 2.1m before Sta. #5., although widely spaced(>3m), irregular quartz veinlets <13mm thick are found throughout. Four meters beyond Sta. #3 a 0.75m graywacke bed occurs with abundant quartz(<5% of rock mass) stringers 25 to 50mm thick and a 150mm by 375mm quartz lense(sample 84). Irregular quartz veins up to 75mm thick occur in a 0.5m zone at 5.5m from Sta #3.

A 0.9m zone of many irregular quartz veinlets <25mm thick occurs 20.1m beyond Sta.#4. Two meters before Sta.#5, interbedded graywacke 0.15m to 0.6m thick and slate up to 0.9m thick appear in roughly equal amounts. Irregular quartz veinlets <20mm thick mostly transverse to bedding continue to be widely spaced.

Equal amounts slate and graywacke continue for 9.3m after the station when slate again becomes predominant, although graywacke beds 75mm to 150mm thick occur over the next 8.8m. The rock type then grades to mostly graywacke beds generally 0.15m to 0.6m thick interbedded with slate 0.075m to 0.3 thick. At 18m from Sta.#5, a 2.1m wide stub is driven 3.7m into the left rib at 320 degrees following shattered graywacke beds 0.5m to 1.2m thick separated by 0.15m thick slate strata. Stockwork quartz up to 35mm thick occurs in the graywacke(samples 81, 82). Graywacke strata 0.9m to 1.2m thick predominate over interbedded slate <50mm thick for the 6.3m before Sta.#6.

Beyond Sta.#6, for 10.8m to the face(sample 80), the adit is in thinly foliated slate with little shearing and no quartz veins.

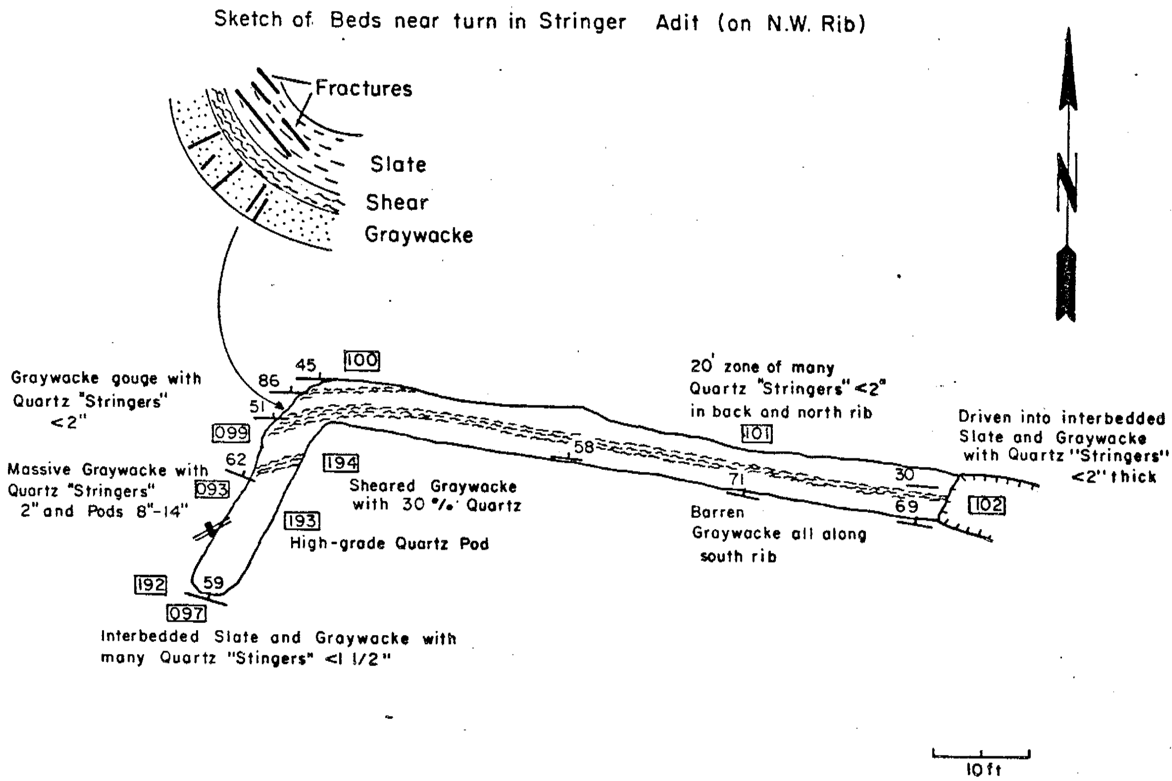
Five of eight samples collected contain detectable gold (Tables 1 & 8).

Stringer adit(Fig. 5):

The Stringer adit is 28.4m long and is so called because it is driven in a shear zone filled with many quartz ´stringers´. It is not the same adit referred to in old reports as the "Stringer Incline tunnel"(Shepard, 1926) which was driven at 435m(1425´) elevation and about 0.8km further south. The Stringer adit portal is at 328m(1075´) elevation and due west 451m(1480´) from baseline 160N + 50´; it is on the northeast slope of Tip Top Mt. in the NE quarter of the NW quarter of the SW quarter of Section 15, R1E, T16S.

The Stringer adit was driven approximately 1.5m wide by 2.1m high on a 280 degree bearing subparallel to strike of graywacke beds on the south rib. From Sta.#1 at the portal (sample 102), the back contains a 0.6m wide sheared graywacke zone with quartz stringers <50mm thick which continues to the turn at Sta.#2, 20.7m from Sta.#1. The south rib contains no quartz veinlets.

The adit bears 210 degrees from Sta.#2 to the face, 7.6m away. Along the northwest rib for 1.2m from Sta.#2, a portion of a synclinal fold is observed(Fig. 5). Slate layers <1m thick(sample 100) in the inner part of the fold are separated from an outer graywacke bed 0.5m thick by a 0.15m shear



Stringer "Tunnel", elevation 1,075'

Figure 5

zone. Fractures in the slate indicate a drag fold while quartz filled(20mm by 0.3m) transverse tension fractures occur in the outer graywacke bed.

The shear zone in the back bends slightly toward 260 degrees as it is crosscut by the adit between 2.1m to 2.7m from Sta.#2(sample 99). 'Massive' graywacke without quartz veins is found from 2.7m to 3.7m from Sta.#2 before a 0.15m wide shear zone(sample 194) is cut. From 3.8m to 4.6m from Sta.#2 a brecciated graywacke(sample 98) with many quartz veinlets <50mm thick and some quartz pods up to 0.2m by 0.35m(sample 193) is found. The final 3m to the face contains many irregular quartz veinlets <35mm thick(samples 97, 192) in much fractured, interbedded slate and graywacke metamorphosed to hornfels of the albite-epidote hornfels facies (Winkler,1979).

Of 10 samples collected, 80% contain detectable gold (tables 1 & 8).

Petrology

Many past references to Orca Group rocks in the geologic literature refer to the finer grained metasediments as "slates and graywackes"(Moffat, 1951). The primary characteristics of a fine grained metamorphic rock which enables it to be called a slate is a "cleavage, foliation, or direction of splitting which is independent of bedding"(Spry, 1969). When the grain content of an argillaceous (>50% clay) rock reaches beyond 15% it becomes referred to as a graywacke if they are "angular and poorly sorted grains which show poor definition from the matrix due to decomposition [or recrystallination] and marginal corrosion"(Nockolds et al, 1978).

At McKinley Lake the metasediments are predominantly argillaceous and rarely have more than 50% grains of larger than silt size(>1/16mm) and so are referred to as metapelites. Most of the rocks with <15% grains do possess the required cleavage or foliation and so as a whole are called slates. When a specific argillaceous rock with <15% grains does not have the necessary cleavage or foliation the term argillite is used. Those with >15% grains are called graywackes; although the grains are seldom angular they are almost always poorly sorted.

Metapelites (Appendix: Tables 1 & 2):

The graywackes are medium gray with 30 to 85% clay and veryfine silt(<0.008mm) matrix supporting sub-angular to sub-rounded grains of mean sizes from coarse silt to medium sand (0.05-0.5mm). These poorly sorted grains often have bimodal grain size distributions of typically 0.1 and 0.3mm average diameters. Opaque minerals make up 1 to 10% of the graywackes with the more common range between 3 and 8%. Grains are quartz and feldspar while the matrix is generally composed of, in order of abundance, chlorite, sericite, quartz, and opaque minerals.

Most of the slates are medium to dark gray or black and contain 2-12% grains of medium to coarse silt(0.015-0.05mm) supported by clay matrix. The opaque minerals are <2% of the slates, less than 0.05mm across, and often bunched in finely tapered lenses sub-parallel to foliation. Occasionally larger(<1.0mm), euhedral, opaque crystals, sometimes with pressure shadows, occur along narrower(<0.05mm), transverse fractures[Fig. 6a]. Slaty cleavage varies between parallel and 60 degrees to bedding planes[Fig. 6b]. Chlorite, sericite, quartz, +/-epidote are the dominant minerals of these slates, placing them in the chlorite zone of the greenschist facies(Myashiro, 1973).

0.5mm

Figure 6a: Subhedral arsenopyrite(0.8mm) in fracture(0.2mm) in slate, crossed polars; sample 3027; scale: 25mm=0.5mm.

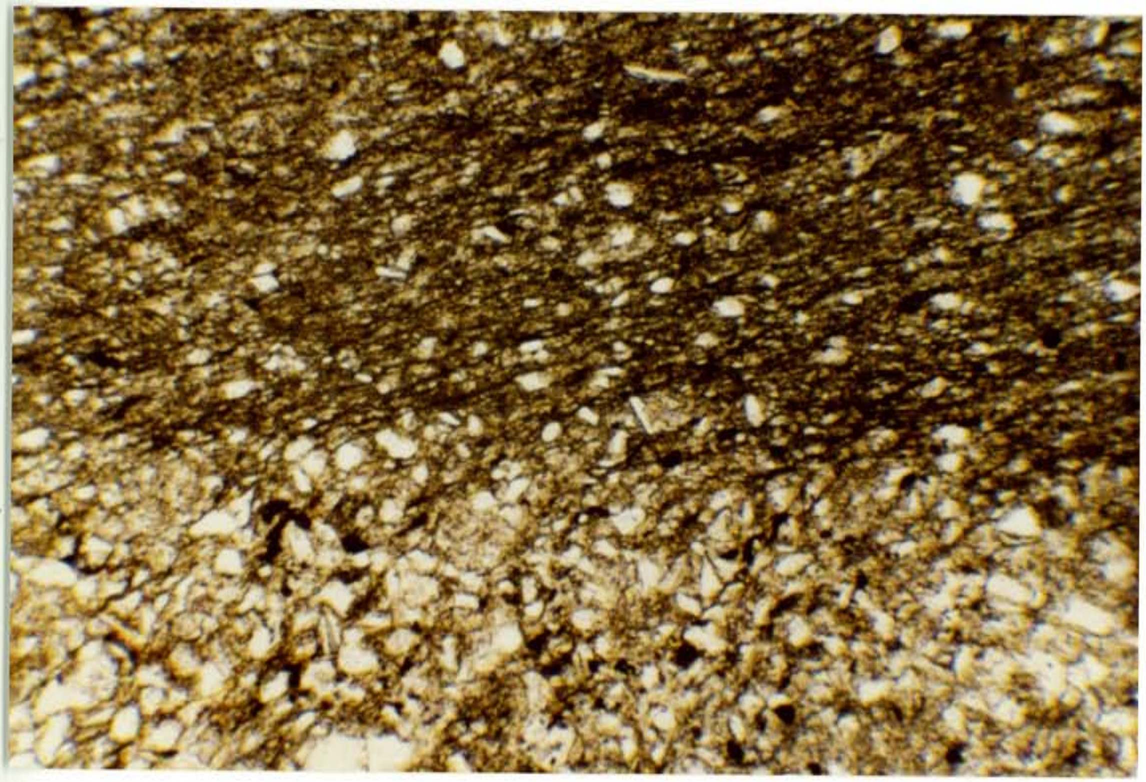


Figure 6b: Graywacke-slate bedding contact showing a 20 degree cleavage angle in slate; sample 3001; scale: 25mm=0.5mm.

Quartz veins (Appendix: Tables 1 & 2):

Quartz veining occurs in both metapelite types but is more abundant in the graywackes. Individual veins are not continuous for more than several meters and rarely reach thicknesses of 10cm, with 1 to 4cm being the most common range of field observations. Data analysis of 18 quartz veins in graywacke and 8 quartz veins in slate provides these mean values:

	Au ppm	Ag oz/T	% OPQS	% K-fld	% CO3	% chlr	% As
8 qtz vns in slt	0.31	0.06	2.14	19.6	0.44(1)*	4.55(4)	0.0
18 qtz vns in gwk	.46	.15	1.71	22.1	2.82(6)	2.58(11)	0.37(8)

The process of cataclasis, "minute fracturing and almost contemporaneous recrystallization of quartz in gold veins" (W.H. White, 1943) has been involved in the mineralization of McKinley Lake quartz. During the microscopic study of quartz vein textures in the area, the percent of "new quartz" grains was used to signify the degree to which cataclasis and recrystallization had progressed[Figs. 6c,6d]. Also noted were the percentages of opaque minerals and carbonates. Quartz veins were classified as (A) barren, (B) possessing detectable gold (< 0.10 ppm), and those with (C) significant gold (>/= 0.10 ppm) ie., >/= 25 Clarks.

* Number of samples containing mineral(element) in question.

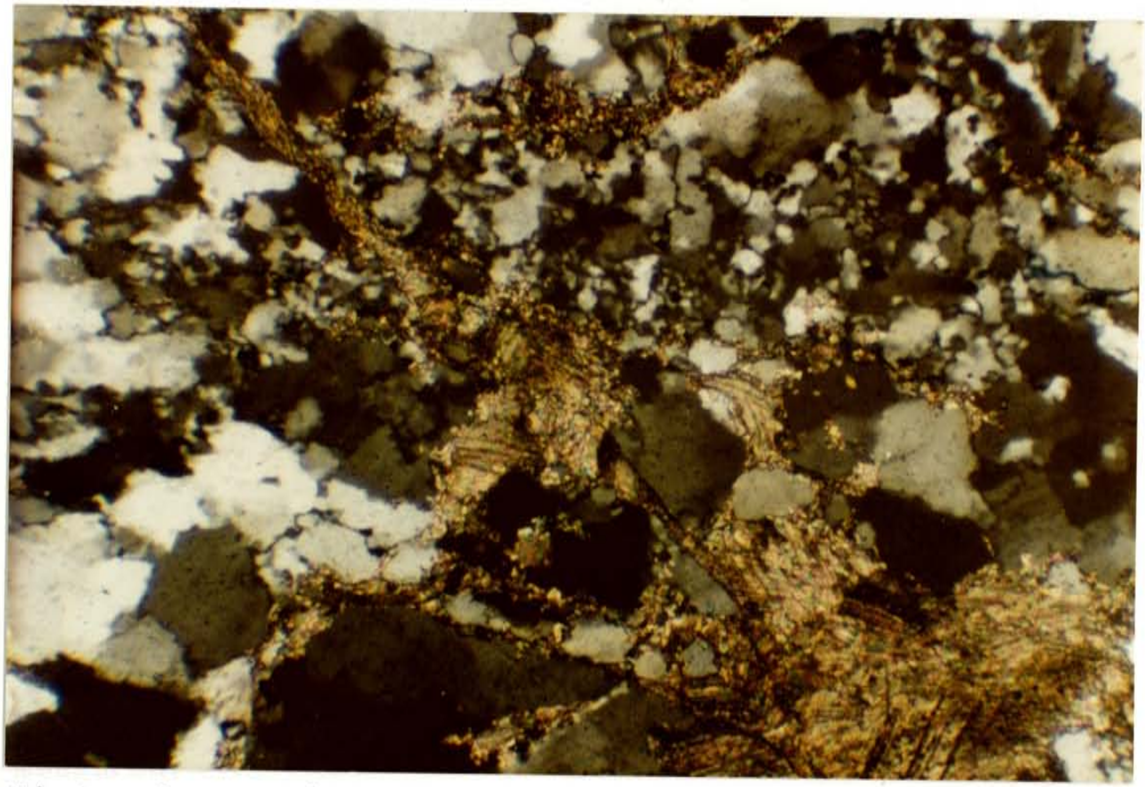


Figure 6c: Partially recrystallized quartz(gray to white), with calcite(high birefringence) and opaque minerals, crossed polars; sample 3081; scale: 25mm=0.5mm.

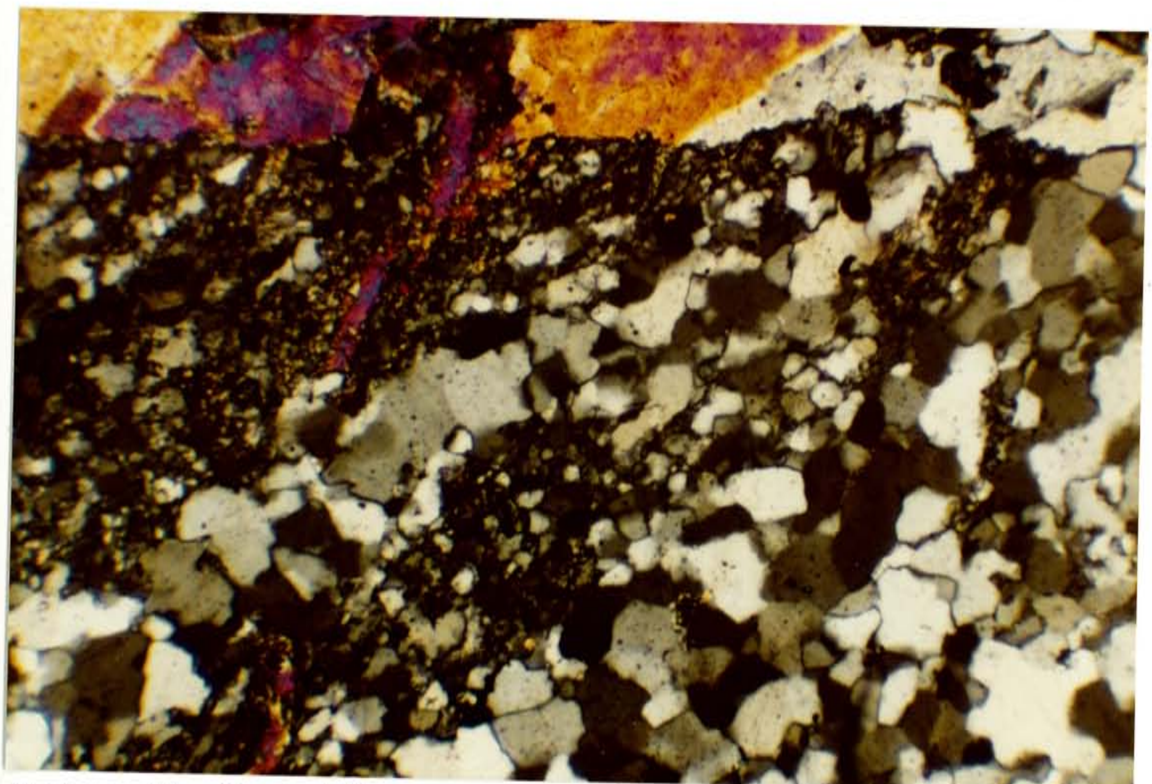


Figure 6d: Partailly recrystallized quartz(gray to white) with epidote(colored) filling late fractures, and opaque minerals, crossed polars; sample 3174; scale: 25mm=0.5mm.

The thirty-seven samples with predominant quartz fissure-filling presented these mean results(Tables 1 & 2):

Class	Number of samples	Mean % new quartz	Mean% CO3	Mean % opaques
A	12	4.8	1.3	0.9
B	14	6.6	4.1	1.3
C	11	12.5	3.5	1.6

Although the data base is not large, gold content is more or less directly related to each of the categories measured.

Granitic intrusive and contacts(Appendix, Table 3):

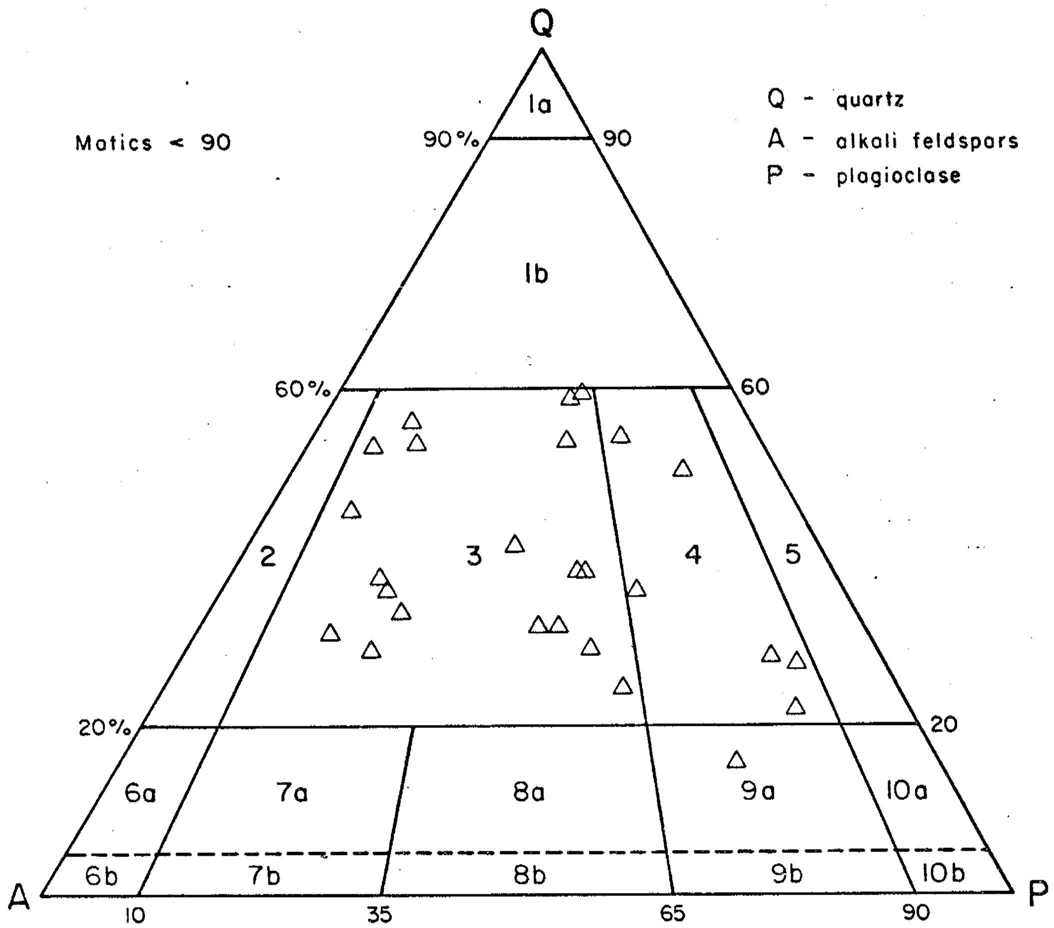
The igneous intrusion into the metapelites has resulted in the crystallization of predominantly granite with minor granodiorite and quartz monzodiorite rock types [Fig. 7, Table 4]. All are without foliation or mineral grain orientation. Mineral content alone separates the three types without any textural distinctions. Phenocrysts rarely attain 4.0mm as greatest dimension and the most common mean size is 1.5mm although generally </=1.0mm near contacts. The alkali feldspar is orthoclase. The plagioclase composition varies between albite and oligoclase(An=0-30%) although the latter is more prevalent. Ubiquitous hydrothermal alteration has resulted in sericitization of the feldspars(10-60%) and chloritization of biotite(<100%). Biotite granite is the most appropriate term referring to the pluton as a whole, even though slightly less than half the intrusive samples possess primary but minor muscovite.

Where the granite has come in contact with slate or graywacke, a hornfels has most often resulted. Quartz and biotite are the most common mineral components: 30-75% quartz(with feldspar) and 25-70% biotite(with chlorite and/or sericite) is the most common mineral assemblage for the hornfels, placing them in the albite-epidote hornfels facies (Winkler, 1979,). The equigranular silicates generally have mean diameters between 0.1 & 0.2mm while the decussate micas have average dimensions near 0.1 x 0.3mm[Fig. 7b].

Figure 7

Classification of Plutonic Rocks of McKinley Lake

(System recommended by IUGS Subcommission on the Systematics of Igneous Rocks, 1973)



Ia	Quartzolite (silexite)	8a	Quartz monzonite
Ib	Quartz-rich granitoids	9a	Quartz monzodiorite/quartz monzogabbro
2	Alkali-feldspar granite	10a	Quartz diorite/quartz gabbro/quartz anorthosite
3	Granite	6b	Alkali-feldspar syenite
4	Granodiorite	7b	Syenite
5	Tonalite	8b	Monzonite
6a	Alkali-feldspar quartz syenite	9b	Monzodiorite/monzogabbro
7a	Quartz syenite	10b	Diorite/gabbro/anorthosite

(GEOTIMES, October 1973)

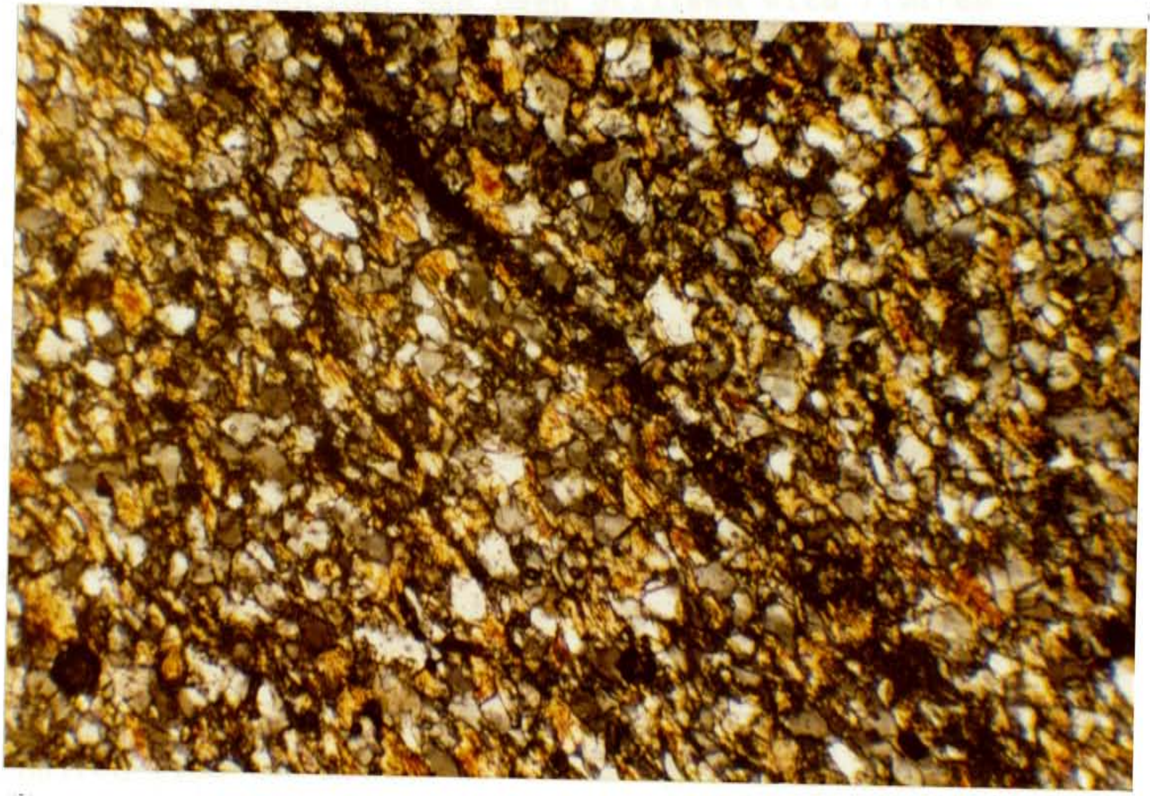


Figure 7b: Hornfels from graywacke; quartz and feldspar(gray to white), biotite(browns), and opaque minerals; crossed polars,sample 3186; scale: 25mm=0.5mm.

0.5mm

Structure

Stereographic projection onto a Schmidt Net(Lambert Equal Area Projection) has been utilized with limited success to detect possible fold relationships. Sea level is the horizontal plane to which all bedding attitudes were projected before being incorporated into stereographic pi diagrams. These lead to the synoptic betaS1(Bs1s2s3) diagram[Fig. 8]. The resultant map of 16 fold domains[Fig. 9, pocket] between McKinley Lake and the intrusion, with axial trend and plunge of each, divides the structure into separate but probably related occurrences of folding while emphasizing its complexity.

The area under study(<40sq.km) is too large to accomplish a complete structural analysis from the data acquired from two months of field work in terrane with about 1,000m of relief and limited outcrop which is largely inaccessible.

The style of folding and faulting is most apparent along Tip Top Mt. ridge when the near vertical east face is viewed from the west[Fig. 10]. These tight to isoclinal folds separated by thrust faults dipping north are all overturned to the south. Similar structures occur along the next ridge to the west where the folds and faults are not as closely spaced. Traversing northwest from McKinley Lake toward the pluton all beds crossed dip northerly until, within 0.4km from the intrusion, a reversal occurs and bedding dips steeply southeast.

Figure 8

SYNOPTIC β_{s_1} ($B_{s_1}^{s_2 s_3}$)

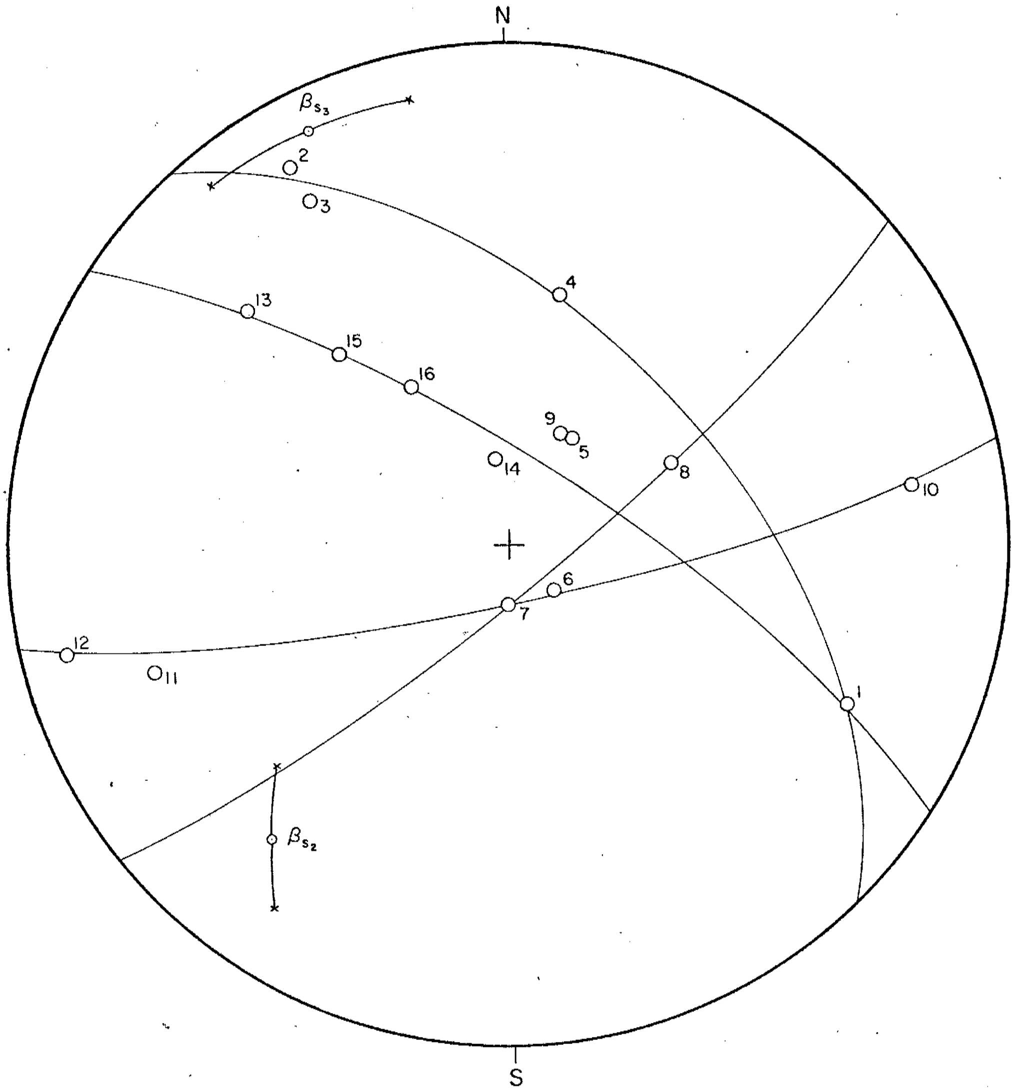
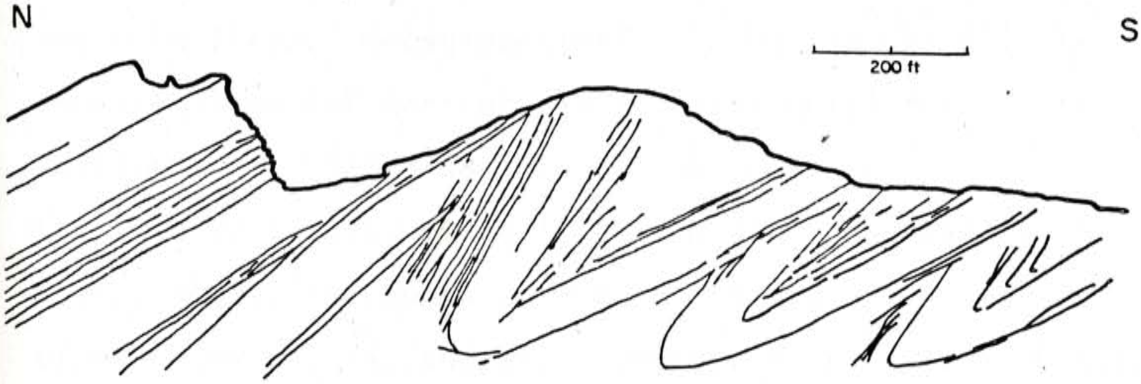


Figure 10



Style of folding on Tip Top Mountain Ridge as viewed from west side (field sketch)

Photograph of same ridge view

Imbricate faulting and mutiple fold domains together with the similarity of these metapelites which prevents directly relating stratigraphy between limited outcrop, do not allow the structure to be interpretated as well as would be liked. Cross-sections are constructed[Fig. 11, pocket] to depict most probable trends of folding while lacking verifiable stratigraphic correlation.

The continuity of faulting was only observed, in the field, across the horse-shoe shaped ridge around the cirque of sections 15, 16, and 21. However, by the study of areal photos three sub-parallel sets of lineations in the metapelites become apparent[Fig. 12,pocket]. These have general bearings of N40-50E, N45-55W, and N85W. Lineations are also observed in areal photos of the granitic terrane. They lie at N45-60W and N70-75E, bearings similar to some found in the metapelites. This suggests that at least some fracturing post-dated the intrusion and cooling of the pluton.

Laboratory Results

Gold Assays

One hundred sixty-four rock samples were assayed by both a commercial and a USBM lab for gold and silver by fire-assay and atomic absorption. Eighty-eight (54%) of these carried detectable gold while twenty-five (15%) possessed gold of at least 0.1 ppm which is 25 times the earth's mean crustal abundance of gold(Taylor, 1964) ie., 25 Clarks [Table 5].

The "gwk w/ qtz vns" rock type category in which most high gold values occur includes samples of graywacke with quartz veinlets as well as quartz samples which were within graywacke. While more samples were collected of this rock type than any other, 66% of the category had detectable (>/= .03 ppm) gold and 30% had >/= 0.10 ppm gold [Table 6].

Soil samples were collected every 61m(200') along the north-south baseline [Fig. 2] and three E-W cross-lines from adits. These totaled 66 samples excluding those with insufficient material. Thirty-eight percent (38%) of the soil samples had >/=0.10 ppm Au [Table 7] and 73% had >/= 0.03 ppm Au.

Of the four adits located and sampled, Lucky Strike adit had the lowest relative frequency of samples with detectable (0.03ppm) gold[Table 8].

Emission Spectrography

Emission spectrographic analyses were performed on 168 rock samples by TSL Laboratories, Ltd. The 42 elements analyzed for and their detection limits are herein included as an appendix. When the mean percentages for 15 elements of the rock types are plotted on semi-log paper several points become apparent [Fig. 13, Table 8].

a. Positive association trends:

As:

"High-gold rocks" have highest mean amount. "Graywacke w/ quartz veins" and "graywacke" are the only other rock type categories with higher than Total Rock Mean (TRM) %.

V, Cr, Ni, and Cu:

"High-gold rocks" along with "grn", "gwk w/ qtz vns", and "hornfels/contact" rocks are the only types with lower than TRM % for all.

Mg, Fe:

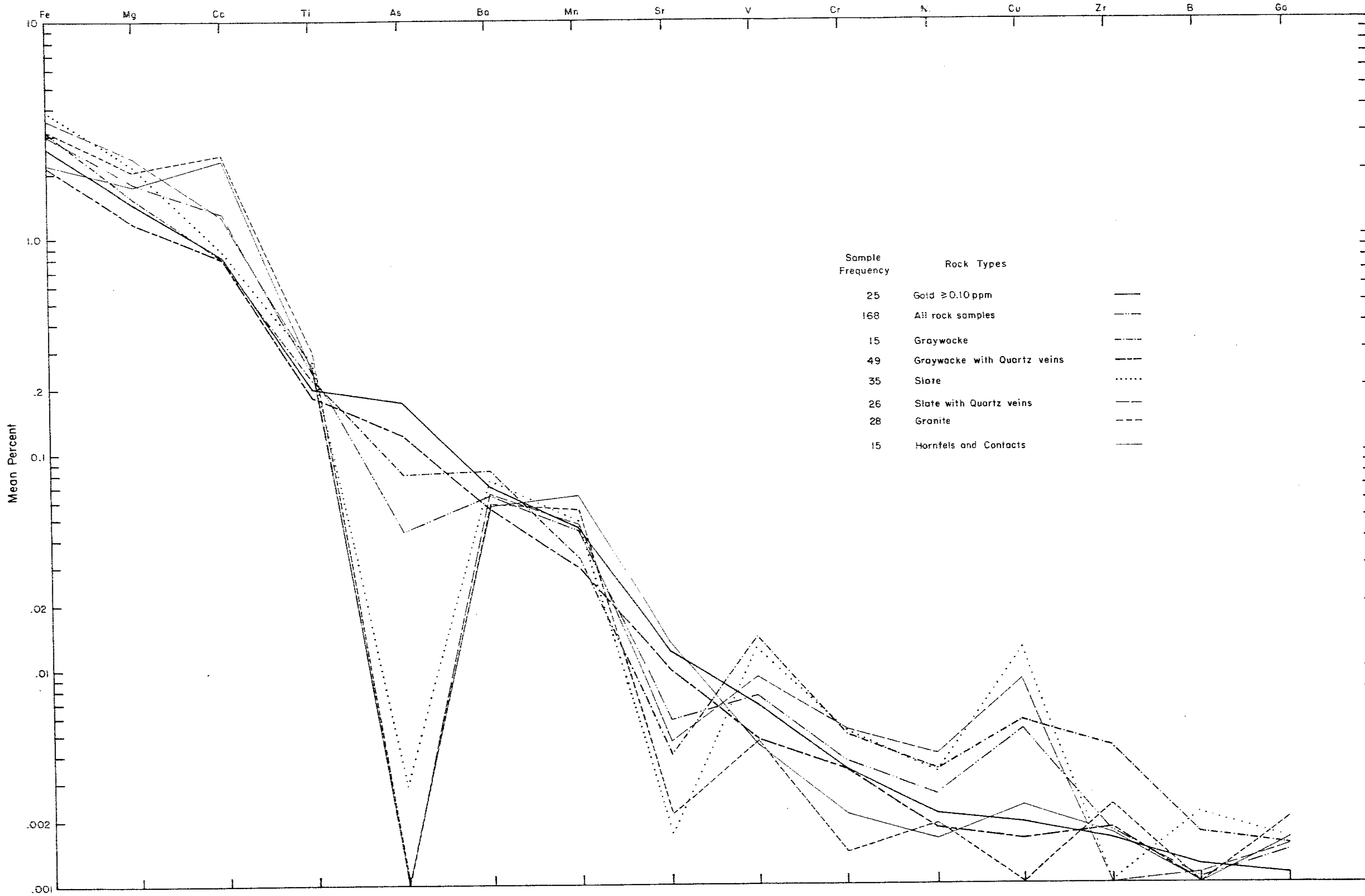
"High-gold rocks", "gwk w/ qtz", "gwk", and "hornfels/contact" rocks are only types with less than TRM % for either element.

Sr:

"High-gold rocks", "gwk w/ qtz" and "hornfels/contact" rocks are only types with greater than TRM %.

Zn:

Only "gwk w/ qtz veins" and "hornfels/contacts" are within .0002% of Au rocks



Elemental Mean Percentage of Rock Types

Figure 13

Ga:

All rock types but "high gold rocks" and "gwk w/ qtz vns" have greater than TRM %.

b. Negative association trends:

Fe, Mg:

Only "slate", "slate with qtz veins", and "grn" have greater than TRM % for both.

Ca:

Only "grn" and "hornfels/contact" rocks have greater than TRM %.

V, Cr, Ni, and Cu:

Only "slt", "gwk", and "slt w/ qtz vns" have greater than TRM % for all.

Indications:

1) "High gold rocks" have elemental percentages most closely related to "graywacke with quartz" and "hornfels or contact" rocks.

2) "High gold rocks" have elemental percentages least related to "slate".

Fluid Inclusion Studies

Quartz occurrences are divided into three categories for fluid inclusion study: mineralized quartz masses or veinlets(>/=0.03 ppm Au) in metasediments, barren quartz veinlets or masses in metasediments, and quartz phenocrysts or masses in granite. Three of the four granite samples used had measureable gold values (>0.03 ppm).

Seventeen doubly-polished thick-sections (60-80 microns) allowed 168 fluid inclusions to provide microthermometry data. Three-quarters of the microscope time was spent searching for inclusions of sufficient size from which reasonably accurate data could be derived. Both primary and secondary inclusion types were observed in quartz occurrences. Few of the primary inclusions were as large as 20 microns; they averaged 8 - 14 microns. The secondary types were seldom as large as 10 microns, more generally less than 4 microns[Fig. 14a]. Only 67% of the inclusions large enough to yield homogenization-temperatures were of adequate size to be used in freezing--melt runs. Although there were many more secondary inclusions than primary, their generally insufficient size resulted in the overall number of useful inclusions being almost equally divided between primary and secondary occurrences.

The large majority of inclusions studied were the simple two phase type, liquid and vapor, with 2-20% of the volume occupied by the vapor bubble. No daughter minerals were observed, indicating moderate salinity at most[Fig. 14].

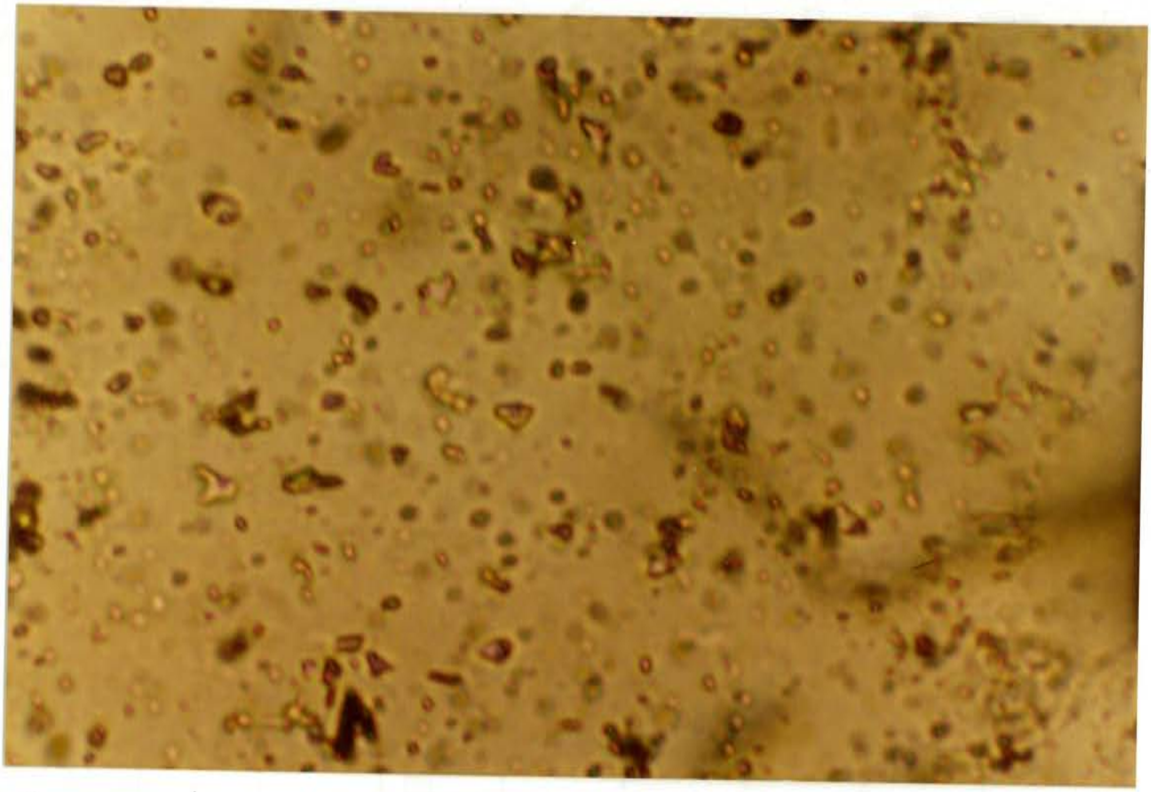
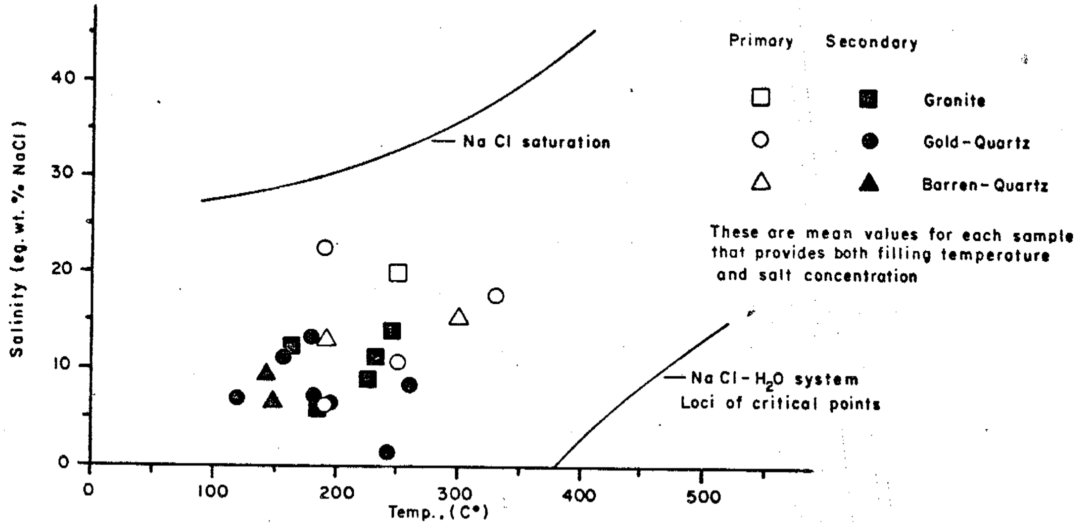


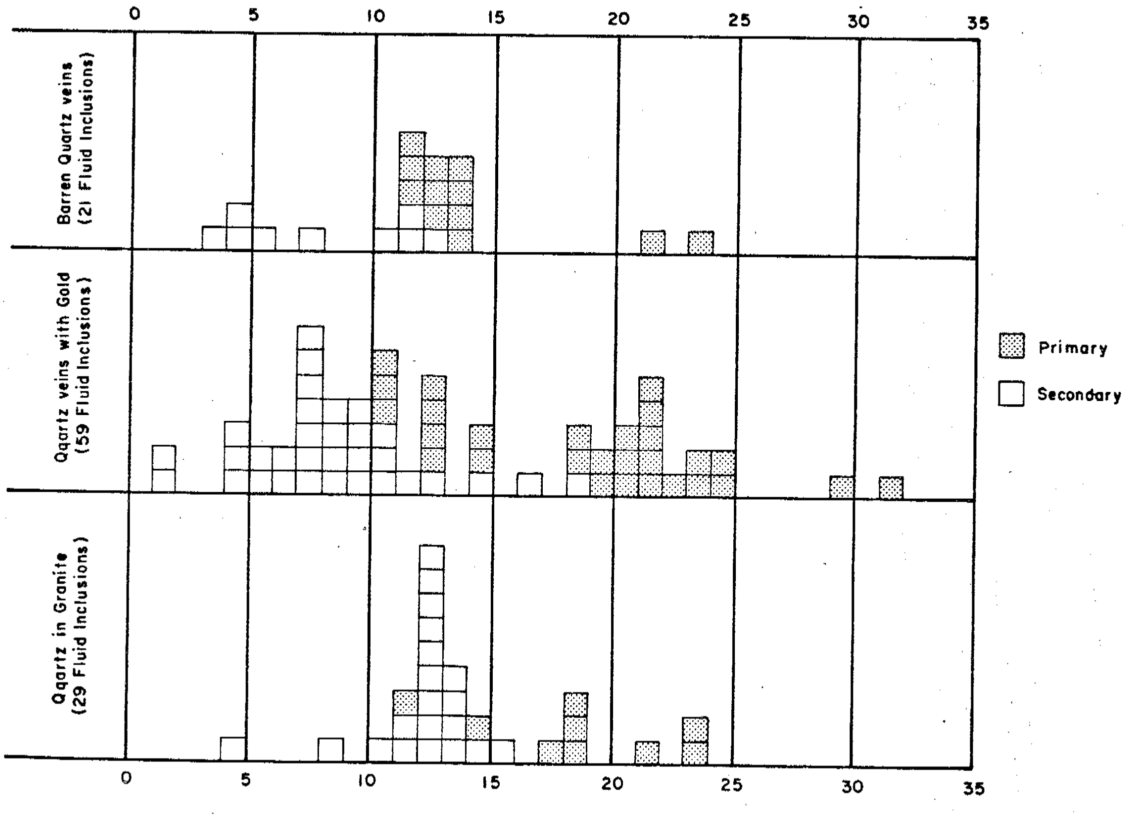
Figure 14a: Secondary fluid inclusions in quartz; sample 3032; scale: 10mm = 20 microns.

20 microns



Fluid Inclusion Salinity vs. Filling Temperatures

Figure 14



Frequency Distribution Equivalent Weight Percent NaCl

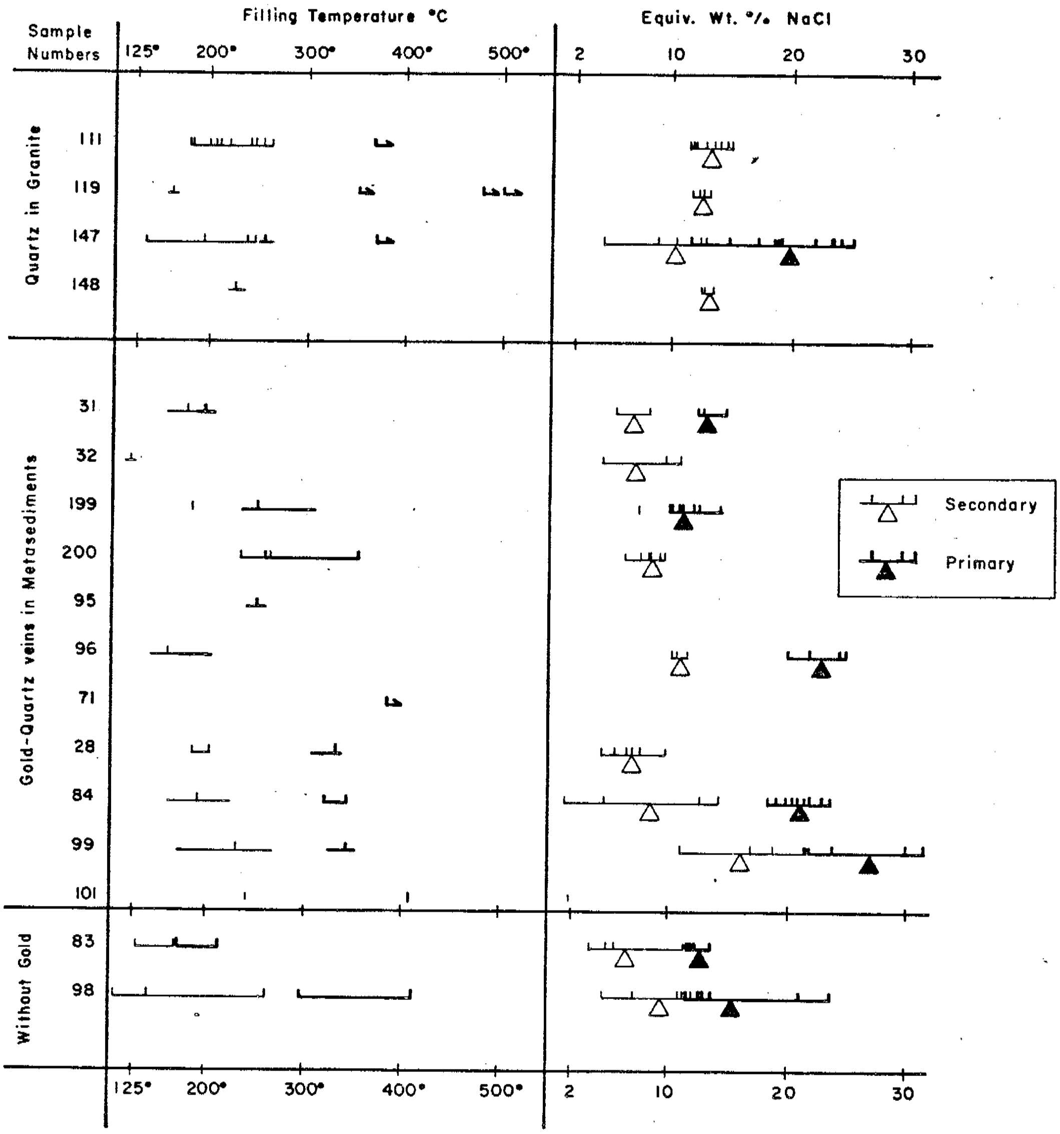
Figure 16

Primary inclusion filling-temperatures [Fig. 15] were greater than 250 degrees C in the granite samples but the upper homogenization limit was not observed due to the tendency of this granite to grow darker with increasing temperature. Primary filling temperatures of the mineralized and barren quartz masses and veinlets are distributed over a 180 to 410 degree C range with a mean near 300 degrees C.

Secondary filling temperatures of all three quartz categories ranged between 107 and 267 degrees C.

The salinity (equivalent weight percent NaCl) values of primary inclusions in all three quartz occurrence types generally range between 10% and 25% although in one gold-quartz vein some inclusions are around 30% salts. The possibility of at least two primary fluid generations could be indicated as is perhaps more apparent in the frequency distribution[Fig. 16].

The secondary fluid inclusions' salt concentration frequency distributions are most revealing of distinctions between the three quartz types even though they also have similar overall ranges of values. In the granite quartz, the relatively tight unimodal distribution of salinities indicates the least diverse secondary fluids occurred there. The salinities of secondary inclusions in mineralized quartz veinlets also form a unimodal distribution. The distribution has a lower mean value, and is skewed somewhat toward the peak frequency of granitic secondary fluid salinities; however the spread remains wide enough to encompass the



Ranges of Fluid Inclusion Data

Figure 15

salinity ranges of both other quartz types. The salt concentration frequencies of secondary inclusions in barren quartz veinlets form an evenly balanced bimodal distribution.

Boiling circumstances, vapor-rich and liquid-rich inclusions occurring together without evidence of necking down, are found in primary inclusions of granite sample 3147. Assuming a hydrologically open system, they infer an emplacement depth of 375=/-15m for the granite pluton(Haas, 1971). The resultant pressure of 36+/-1 bar is low enough that the pressure correction, less than 6 degrees C for even the most affected combination of salinity and temperature encountered in the samples studied (Potter, 1977), is not significant compared to the range of temperatures measured, and so has not been applied.

The paucity of utilizable fluid inclusion data makes comparison of the quartz occurrences less definitive but a few indications appear relevant:

1) At least two primary fluids contributed to quartz masses or veinlets in the metasediments and possibly the intrusive body as well. The possibility of one fluid which has evolved over distance traveled is less probable.

2) Several secondary fluid populations were involved in the filling of quartz systems outside the granite, suggesting several of these fluids were involved.

3) Possibly only one secondary fluid occurred in the granite pluton.

4) The similarity of fluid inclusions in all rock types suggests post-intrusion mineralization of the area.

DISCUSSION

Gold Occurrences

By separating gold occurrences into rock-type categories [Tbl. 6], certain points are clarified: Graywacke with quartz veins shows the highest relative frequency of gold occurrences as well as the largest mean amount of gold in those samples containing it. The slate with quartz veins samples have substantially less gold abundance by both relative frequency and mean amounts of gold detected. The four rock types without quartz veins all contain gold in >40% of their samples. The average gold content of those samples is >/= 15 Clarks.

One of the principal differences between quartz veinlets in slate and graywacke is their orientation relative to bedding: generally transverse in graywacke but more commonly parallel to bedding in slate or between slate and graywacke beds.

Quartz veinlets in graywacke are more prevalent in fold hinges where fracturing is commonly more intense due to the folding of a homogenous, competent, and non-foliated rock layer. After its initial induration, sufficient stress fractures the brittle graywacke as it is folded. Fracturing in the apexes and troughs of folds creates fissure systems transverse to bedding and generally parallelling fold hinges. Although the quartz stringers are generally not continuous beyond the thickness of the graywacke beds in which they transversely occur, the clustering of these veins in the

Table 6

Gold Values by Rock-type of Sample

Rock Type	Total no. smpls	Freq. /w Au	Mean ppm Au	% rock type /w Au	% rock type /w >=.1ppm Au
gwk w/ qtz vns	50	33	.39	66%	30%
slt w/ qtz vns	31	14	.14	45	6
gwk	17	8	.10	47	18
slt(arg)	23	14	.07	61	9
grn	30	12	.07	40	7
hrf/ contact	17	7	.06	41	6
TOTALS	168	88			

fold hinges could provide fluid channel systems continuous within a graywacke stratum over distances comparable to the area of folding.

The quartz veinlets in slate are not as numerous as in graywacke and they tend to occur singly rather than in clusters. In slate the quartz veinlets are usually thinner: mean quartz veinlet width in slate = 14mm; in graywacke = 55mm. The continuity of fluid channels represented by quartz veinlets in slate is much less extensive than in graywacke. The more widely dispersed occurrences of quartz lenses and veinlets in slate are due to processes of burial metamorphism without introduction of quartz from sources outside the slate. The few occurrences of quartz veins in slate transverse to bedding are the channels which could provide access to fluid sources other than the slate itself.

Sources of gold

Gold is present in the four major rock divisions[Tbl. 6] of the area (slate, graywacke, granite, and hornfels) in amounts substantially greater than the Earth's mean crustal abundance of 0.004ppm(Taylor, 1964). This would allow all of them to be gold sources under the right conditions. The favorability of access and transport of fluid volumes through possible sources of gold may be viewed as factors limiting the utilizability of any rock as an actually contributing source.

All of these rock types are impermeable; thus any large volume of fluid could be transported through them only after fracturing had taken place. Much greater permeability would have existed if the fluid had passed through before induration had progressed to its current state. Gold could have been transported as sulfide complexes under a wide range of reducing conditions(Garrels and Christ, 1965). The minor amounts of pyrite, pyrrhotite, magnetite, and hematite may also occur under similar conditions.

The quartz stringers and lenses parallel to bedding-foliation in slate formed during the later phases of dehydration and metamorphism of the original pelitic sediments. The two-fold increase in the mean gold concentration in slate with quartz veinlets over slate alone may be the result of metamorphic mobilization of the metals and silica. After foliation is developed, the cross-fracturing occurs mainly in the region of fold axes. Void space may also be formed parallel to foliation or bedding.

The lack of foliation in graywacke reduces the initial transport and collection of sulfides, quartz, and gold during regional metamorphism.

"The Orca Group was highly deformed before it was intruded by granitic rocks"(Lanphere, 1966). The tectonic forces that produced the isoclinal folding and thrust faulting observed on the steep faces of the aretes which are the legs of the horseshoe ridge[Fig. 2] around the cirque covering most of the southeast quarter of section 16[Tip Top Mt. is the eastern leg.], had been largely dissipated by the time the pluton approached its present location from greater depth. During its emplacement at a calculated depth of slightly more than 335m, the temperature of this granitic body along the contact is estimated at 490 degrees C. Derivation of this temperature is from Winkler's (1979) figures for a 700 degree C granitic magma emplaced at 1 km. and it correlates well with the petrology of the contact rocks: The chlorite-zone(greenschist facies) metapelites were thermally metamorphosed to hornfels of the albite-epidote hornfels facies.

The local structure is concordant with the pluton, indicating a forceful emplacement(Hyndman, 1972). There is a tendency for bedding strike to become more parallel with the borders of the pluton as it is approached.[Figs. 2,9]

No contact or metapelite outcrop is found just beyond the southeastern-most exposure of the granite as it drops to the Copper River delta gravels and glacial outwash plain. The small(<1.3 sq.km) knob of similar granite exposed in the deltaic gravels 0.8km southwest of the larger pluton infers continuity at depth. Beyond the exposed northeast end of the pluton is a talus slope with irregular blocks whose average dimensions of a few meters on a side. Quaternary alluvium fills a northwest-southeast trending valley a kilometer wide within which no outcrops occur until the "same" granite appears again rising out of talus on the northeast side of the valley with exposures continuous to the northeast[Fig. 2].

Although concordant with most local structures, the pluton does cut at least two sets of megascopic lineations which could have allowed hydrothermal fluids to escape[Fig. 12]. Also, because thrust faults and axial planes of folding dip toward the pluton, additional avenues of pressure release from granitic melt could have been possible. Upon encountering the faults and fold fractures, heated siliceous solutions could have extended throughout them until the systems became quartz-filled and no longer permeable.

The megascopic lineations which could represent fluid avenues are also seen to occur within the granitic body itself[Fig. 12]. These infer a response to stress applied after the pluton had crystallized. Gold detected(<0.34ppm) in samples along two of these lineations suggests additional fluid sources, perhaps from another pluton at depth.

The persistence of dynamic stress on a more reduced scale following tectonism while temperatures remain between 100 and 300 degrees C(White, 1943), causes quartz to undergo a unique change called the "process of cataclasis"(Goodspeed, 1939). This progressive morphological change, results in microbrecciation and simultaneous recrystallization of quartz, leaving myriads of tiny, new grains of ´cataclastic quartz´; such microbrecciation produces restricted permeability within the previously impermeable quartz veins(White, 1943).

Within the reducing and neutral pH region suggested by the presence of pyrite and pyrrhotite, gold could have remained in solution as aurous sulfide, AuS- (Garrels and

Christ, 1965), or the thio complex $Au(HS)_2^-$ (Seward, 1973), until temperatures dropped to 160 to 175 degrees C, respectively.

The presence of hematite and magnetite infer a high fO_2 environment. While cooling solutions could become more acidic as pyrite is precipitated, in the oxidizing and acid region gold would be transported as aurous chloride. (Helgeson and Garrels, 1968)

Gold forms very stable complexes as either sulfide or chloride ligands and "either transport model implies gold deposition after most other metals"(Nash, 1972).

Initial siliceous fluid sources impregnated metamorphosed rocks and sealed the system. Cataclasis opened ubiquitous small fractures allowing later gold and sulfide bearing siliceous solutions to impregnate the entire mass, providing a diffuse, disseminated gold content.

Analogous deposits

1. The low-grade disseminated deposits of Nevada and Utah also seem to be associated with Tertiary igneous activity. Mineralization in several of these is controlled by areas of local uplift that may indicate intrusions at depth, e.g., Tonapah, Goldfield, Comstock, Bodie, Aurora(Lewis, 1982).

In a fluid inclusion study of gold deposits in Nevada, J.T. Nash(1972) found filling temperatures in gold-adularia [A variety of orthoclase(A.G.I., 1976)] veins to range from 200 to 330 degrees C suggesting "temperature is not a prime factor in the formation of these deposits". Nash also reported that several of these disseminated fine-Au deposits "appear to have formed at about 200 degrees C from solutions of about 6% salinity". These parameters are similar to those found near McKinley Lake. However, the Nevada deposits almost universally occur in limestone host rocks.

2. In a study of gold-quartz veins in the Northwest Territories, Canada, R.W.Boyle(1954) observed that gold was deposited late and was "related mainly to secondary liquid inclusions developed in shear or fracture planes in the quartz". Boyle found this gold to be "unrelated to the initial and major deposition of quartz, pyrite, and arsenopyrite". F.Ebbutt(1948) had access to a great many of

Canada's gold mines and found "one factor to be virtually always present": Gold is "generally deposited in late minor and highly localized fractures, shears, etc. in the quartz". In Canadian gold-quartz vein occurrences "arsenic or antimony complexes appear to be the principal agents of transport" (Boyle, 1969). The presence of arsenopyrite in the McKinley Lake area suggests a similar transport mechanism may have been in operation.

Conclusions

Potential

No high grade ore body was located during field work nor did an economic concentration occur in any of the samples collected. However, 52% of the 168 rock samples collected and 76% of the soil samples analyzed contain "detectable" gold, >/=0.03ppm(7.5 Clarks). The average gold concentration of all rock samples containing gold is 0.18ppm(45 Clarks); 37% of the 66 soil samples contain >0.10ppm gold (25 Clarks).

Gold is found to be widely disseminated in all major rock types as well as the unconsolidated material of the area.

The very favorable access makes the possible discovery of even a low grade deposit worth close evaluation. Additional field work is needed to establish the extent, grade, and presence of local concentrations of gold mineralization.

Recommendations

Placer:

The much lower cost of bringing a placer or nonconsolidated deposit into production requires that these possibilities first be more thoroughly investigated:

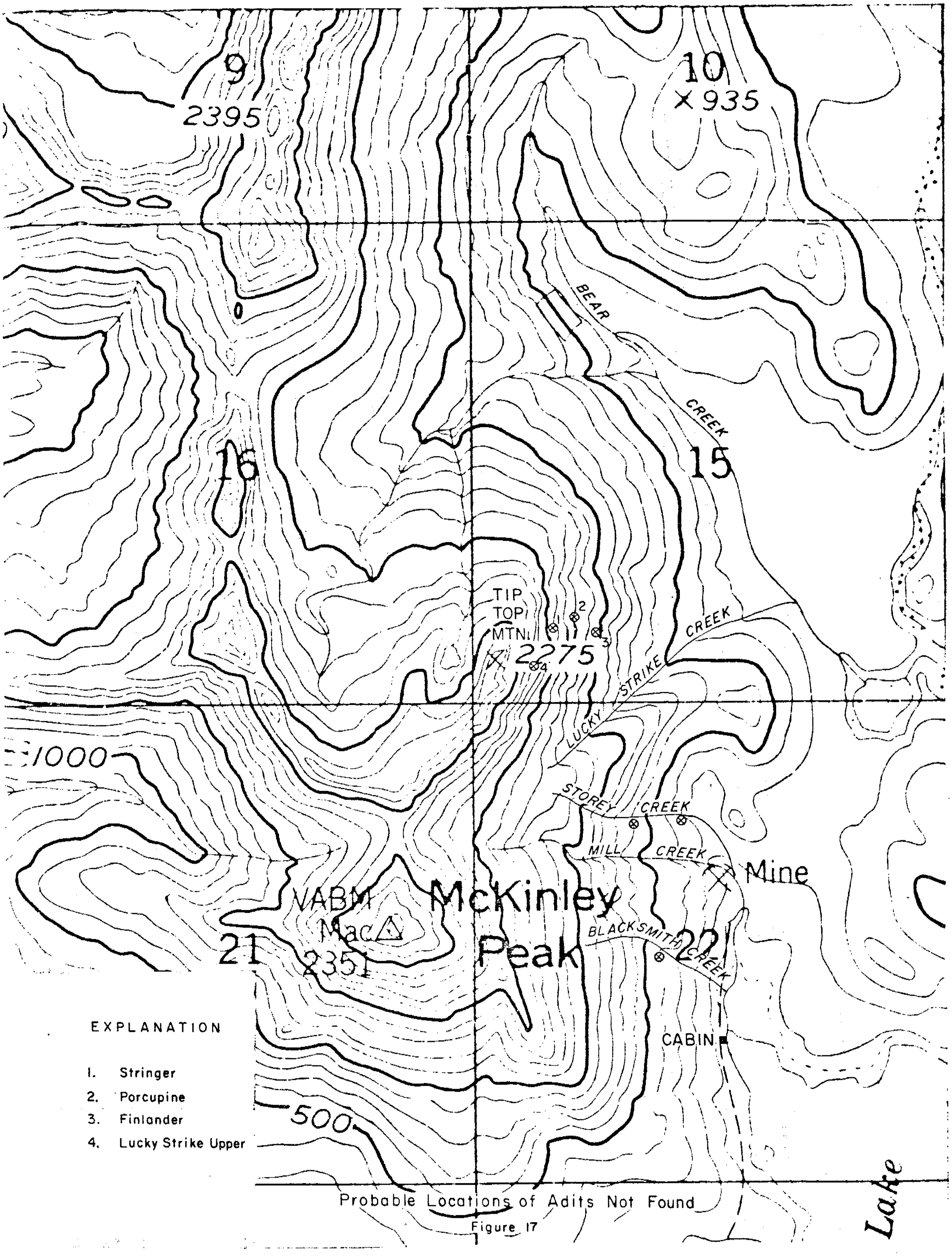
Geochemical soil sampling along 200′ intervals of a grid covering all nonconsolidated areas , especially at lower elevations, should locate any greater surficial concentrations present and establish overall grade. Geochemical stream-sediment or pan-concentrate sampling every 100m. along all currently flowing streams could detect recently formed or forming placer deposits.

Lode:

The adits located should be more thoroughly sampled. The probable location of other adits [Fig. 17] should be checked out and, if found, mapped and sampled. A more extensive sampling of faults and lineations (probable fractures) may locate better ore fluid channels and could lead to an ore deposit.

Drilling:

After a surficial geochemical sampling program has been carried out, drill targets may result. In any areas of higher concentration of gold, lode or placer, depth of higher grade material must be known before further development planning can proceed.



EXPLANATION

1. Stringer
2. Porcupine
3. Finlander
4. Lucky Strike Upper

Probable Locations of Adits Not Found

Figure 17

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APPENDIX I: Rock Descriptions and Tables

Abreviations used:

alt´d	altered	mag	magnetite
ap	apatite	m-sed	metasediment
arg	argillite	musc	muscovite
apy	arsenopyrite	opq	opaque mineral
bdg	bedding	prll	parallel
brec´d	brecciated	pent	pentlandite
biot	biotite	plag	plagioclase
chlr	chlorite	po	pyrrhotite
clvg	cleavage	py	pyrite
cpy	chalcopyrite	qtz	quartz
epd	epidote	rut	rutile
fld	feldspar	ser	sericite
fract	fracture	ser´d	sericitized
frag	fragment	slt	slate
gar	garnet	spl	spinel
gdr	granodiorite	tour	tourmaline
grn	granite	tr	trace
gwk	graywacke	t.s.	thin section
hm	hematite	vn	vein
hrf	hornfels	vnlt	veinlet
ilm	ilmenite	x´tls	crystals
intrbbd	interbedded	zrn	zircon
k-fld	alkalic feldspar	qmzd	quartz monzodiorite

Table 1

Sample Data and Rock Descriptions for Lucky Strike and McKinley Mining Claim Group Areas:
Sections 15, 16, 21, 22; R1E, T16S, Cordova Quadrangle

Smpl no.	T.S. exm'd	Rock Description	Au ppm	Ag oz/T	Opaque minerals	OPQ %	OPQ <=mm	CO3 %	QTZ vns <=mm	new QTZ %	Strk-Dip	Adit
Sect. 22, NE qtr:												
3024	x	SLT; QTZ veins <15 to bedding	1.36	-	mag	1.0	0.01		0.5		108-34N	
27	x	SLT; 10mm interbedded GWK(40%)	.30	-	mag,apy,ilm	4.	.8				--	McK.low.
30		SLT & GWK interbedded	.13	0.2							117-67N	McK.up.
29	x	GWK, fine(<.25mm); irreg. QTZ veinlets	.20	-	apy,mag,py,po	5.7	.4	1.9	1		--	McK.low.
201	x	GWK; irreg. QTZ veins	.10	-	hm,apy,ilm	4.0	.3	2.0	50	8	--	McK.low.
26	x	QTZ stockwork in GWK(40%)	-	-		3.5		-	25	-	--	
28	x	QTZ stockwork in GWK(10%); vugs <15mm	.25	-	mag,apy,py	2.1	.4	-	25	4	4-67W	McK.low.
SW qtr:												
35	x	ARG; few irreg. QTZ veins	-	-	mag	2.	.01		0.1		145-45N	
NW qtr:												
01	x	SLT; 4mm interbdd GWK(18%); 20 clvg.	TR	-	hm,apy	1.	.1	TR			130-34N	
02	x	SLT; OPQ-filled fracts. <.05mm; 6 clvg.	-	-	hm,py,apy	2.	.05				115-60N	
06	x	SLT; 6 clvg. angle	-	-	mag, hm	1.	.03				135-57N	
07	x	SLT; QTZ & EPD filled fracts	.03	.2	hm,mag,py,apy	5.	.05		.05		126-51N	
37	x	ARG	TR	-	hm,mag	2.	.2				156-90	
44	x	SLT; 95% matrix; cleav. 60 to beds	.03	-	py,mag,apy,hm	2	.05				132-44N	
62	x	SLT; 15% interbdd GWK; clvg. 50 to bds	-	-							91-47N	
08		GWK; irreg. QTZ veins	.05	-	hm,mag	3.	.4		50		126-51N	
10	x	GWK; SLT lenses(6x3mm); QTZ veins	-	-	mag,hm,py, apy	8.1	.3	-	18	1	140-60N	
33	x	GWK; irreg. QTZ veinlets	-	-	mag,ilm,py,cpy,apy	3	.5		2		--	McK.up.
34	x	GWK; OPQs along fracts(45 to bdg)	-	-	mag,py,apy	8.3	.4				--	McK.up.
39	x	GWK; 60.5% matrix	-	-	mag,hm	7.1	.2	.6			63-60N	
41	x	GWK	TR	-	mag	3.	.4				78-51N	
42	x	GWK; subparallel SLT lenses <3mm(40%)	-	-							--	
31	x	QTZ veins in GWK; 25% K-FLD	3.64	.4	apy,hm,mag	<1	.3	-	600	2	176-70E	McK.up.
32	x	QTZ veins in GWK; GWK clasts <10mm	2.04	.2	apy,hm,mag,ilm	2.6	.4	-	600	5	176-70E	McK.up.
56		QTZ stockwork between SLT and GWK	TR	.2					125		90-90	
199	x	QTZ, veins; 17% K-FLD; 2% GWK clasts	.44	-	apy,hm,mag	1	.4	TR	12		7-90	McK.up.
200	x	QTZ in GWK breccia; 15% K-FLD	.99	-	apy,mag,hm,ilm	1.7	.15	-	25	20	7-90	McK.up.

ble 1 cont'd

Smpl no.	T.S. exm'd	Rock Description	Au ppm	Ag oz/T	Opaque Minerals	OPQ %	OPQ <=mm	CO3 %	QTZ vns <=mm	new QTZ %	Strk-Dip	Adit
Sect. 15 SW qtr:												
3077		SLT; QTZ vns	.08	-					18		123-43N	
78		SLT; crenulated; GWK lenses;	.03	-							109-50N	
79	x	SLT; 5mm GWK bed; QTZ vnlts; 30 shears	-	.2	hm	1	.2				136-62N	L.S.
80	x	SLT; 91% matrix; cleavage 20 to bedding	-	-		2					131-56N	L.S.
92	x	SLT; transverse QTZ veinlets	.09	-	mag,py	2	.2		5		111-43N	
100	x	SLT; 92% matrix; cleav. 50 to bedding	-	-	mag,py	3	.05				95-86N	Stgr.
64		GWK; irreg. QTZ veins; ARG clasts	-	-		1		-	18	-	98-44N	
65		GWK; fine; ARG clasts; irreg. QTZ vnlts	.03	-					1		--	
76	x	GWK; 55% matrix; QTZ veins	.10	-	hm,mag,py	3	.4		12		--	
81	x	GWK; irreg. QTZ veins	.09	-	mag, apy,py	2	.4	7	35	30	135-73N	L.S.
85		GWK; irreg. QTZ veins	TR	-					25		96-77N	
93	x	GWK; transverse QTZ veinlets w/ OPQS	.04	-	py,ilm,mag	1	.4		12		101-46N	
94	x	GWK; irregular QTZ veinlets	.04	-	apy,py,hm	2	.5		12		93-40N	
95	x	GWK; irregular QTZ veins	.68	3.4	apy,py,hm	6	.2	.9	25	3	103-64N	
102	x	GWK; irreg. QTZ vns; OPQ, 10% euhed. apy	TR	-	apy,py,mag	6	1.2	-	75	<1	101-69N	Stgr.
194	x	GWK, sheared; QTZ veins; 23% chlr/ser	.08	-	apy,mag,py,ilm	5	.4		25		--	Stgr.
195	x	GWK with QTZ(75%)-CO3(25%) veins	.10	-	apy,po,mag,py	6	.3	25	18		95-45N	Stgr.
197	x	GWK, breccia; QTZ cement	.04	-	hm,mag,ilm,apy	4	.6		18		124-90	L.S.
63		QTZ; of veins in GWK; vugs <2x5mm	-	.2		<1		-	100	<1	--	
82	x	QTZ; 12% GWK clasts	.06	-	py,hm,apy	<1	.4	8	50	1	--	L.S.
83	x	QTZ; in GWK (30%)	-	-	py,hm,apy,mag	1	.8	15	25	1	121-44N	L.S.
84	x	QTZ; in GWK (5%)	TR	.2	hm,apy,mag	<1	.2	5.8	35	2	--	L.S.
96	x	QTZ, vein in GWK; 5% GWK clasts	.54	.32	mag,ilm,py,apy	2.7	.8	-		1	--	
98	x	QTZ, vein in GWK; 10% GWK clast	-	.2	ilm,mag,py,apy	<1	.5	TR	50	3	--	Stgr.
99	x	QTZ from 2' "gouge" zone in GWK	.05	-	hm,apy,mag,py	1.4	.2	5	50	25	--	Stgr.
101	x	QTZ veins in GWK; 5% GWK clasts	TR	-	hm,apy,py	1.2	1.5	-	50	3	--	Stgr.
193	x	QTZ, "hi-grade"; 50% alt'd GWK clasts	.05	-	hm,mag,apy,py	7	.5	15	25	10	--	Stgr.
196	x	QTZ veins in GWK (45%)	.03	-	mag,ilm,cpy,apy	2	.3		10		--	L.S.
97	x	HRF; many irreg. QTZ veins	.10	.2	mag,hm,py,apy,cpy	2	.4	-	37	60	108-53N	Stgr.
192	x	HRF(<60% ser, chlr) breccia; QTZ veins	.05	-	mag,ilm	7	1.0	6	37	2	--	Stgr.
NW qtr:												
48	x	SLT, crenulated; QTZ vnlts prll beddg	.10	-	mag,hm	2	.4		6		99-46N	
50	x	SLT; clvge prlls bdg,OPQs line QTZ vnlts	-	-	hm,mag	2	.03		.1		123-42N	
49	x	QTZ in SLT	.04	-	hm,apy,py	<1	.1	-	50	20	85-45N	

Table 1 cont'd

Smpl no	T.S. exm'd	Rock Description	Au ppm	Ag oz/T	Opaque Minerals	OPQ %	OPQ <=mm	CO3 %	QTZ VNS <=mm	new QTZ %	Strk-Dip	Adit
sect. 16, NE qtr:												
3106	x	SLT & GWK interbdd; "QTZ" vn 60% EPD	-	.1	py,hm,mag	<1	0.1	-	18	-	46-55S	
107	x	ARG; QTZ/EPD fill in brecciated part	-	.1	hm,py,mag,apy	2	.5		3		49-55S	
109	x	SLT, crenulated & brecciated; QTZ veins	TR	.2	po,hm,apy,py	3	1.0	-	12	1	78-75S	
105	x	QTZ, irreg. veins in intrbdd SLT & GWK	-	-	hm,apy,mag,py	2.4	.3	-	18	2	48-52S	
108	x	QTZ, veins in interbedded SLT & GWK	-	-	mag,py,apy,ilm	2.6	.3		50		57-59S	
110	x	HRF, spotted; 65% BIOT; QTZ veinlets	.03	-	hm,apy,mag,po	2	.3		1		62-90	
SE qtr:												
72		SLT	TR	-							60-71N	
86		SLT; transverse QTZ veinlets	-	-					.1		84-61N	
88		SLT; few QTZ veinlets	-	-					12		68-84N	
87		GWK; QTZ veinlets	.04	-					3		84-61N	
89	x	GWK; irreg. QTZ veinlets	.06	-	hm,py,mag	1	.2		25		--	
90	x	QTZ lense(6"x3') in GWK	.20	-	hm,mag,py	1.2	.3	1.9	150	20	117-36N	
NW qtr:												
166	x	SLT; brec'd; QTZ & OPQ fill; 88% matrix	TR	.4	py,hm,mag,apy	2	.4		3		102-79S	
sect. 21, NE qtr:												
3003	x	SLT; cleavage 12 to bedding planes	0.05	-		3	0.03				73-57N	
12	x	SLT; interbdd GWK(40%);QTZ vnlts	TR	.2	mag	2	.02		0.1		--	
40	x	SLT, 92% matrix	-	-		5	.15				61-59N	
51	x	SLT, 88% matrix	.08	-	mag,py,hm	2	0.1		0.1		124-32N	
52	x	SLT, 94% matrix; QTZ vns; 2mm shear	-	-	hm,py,mag	1	.4		12		130-38N	
53	x	SLT; QTZ vnlts <40 to bdg	.05	-	hm,mag	1	.04	3	.2		133-40N	
55	x	SLT; QTZ vnlts; shears(<1mm) at 25	TR	0.6	py,mag	5.9	.4		25		120-80N	
58	x	SLT, crenulated; irreg. QTZ vnlts	.03	.4	mag	3	.01		.4		99-69N	
69	x	SLT; QTZ vnlts	-	-					.1		95-62N	
04	x	GWK; irreg. QTZ vnlts	.68	-	mag,apy	4	.4		12		80-74N	
13	x	GWK; 2.5mm interbdd SLT; OPQs in fracts	.34	-	hm,py,mag,apy	8	.4		-		--	
38	x	GWK; 57.5% matrix	-	-	mag,py	6.6	.4		-		50-45N	
59	x	GWK; QTZ vns and lenses	-	-	hm,mag	2	.05	5	25		--	
60	x	GWK; irreg. QTZ vnlts	.03	-	hm,mag	3	.12		1		60-22N	
61	x	GWK; interbdd SLT 5mm(40%)	.05	-	mag,hm,py	8	.1	12			99-67N	
68	x	GWK; 50% matrix; irreg. QTZ vns	.05	.2	hm,py,ilm,mag	1	.2	9	100	1	70-69N	
70		GWK; QTZ lenses and vns	-	-					10		56-35N	
71	x	QTZ vns/GWK; 30% GWK clasts(most OPQs)	2.04	.2	mag,py,hm,apy	3.3	.3	3.5	4	5	43-44N	
05	x	QTZ vein; 2% ARG frags(<0.5mm)	-	-	ilm,py,hm,mag,apy,cpy	1.5	.1		80	2	42-73N	
54	x	QTZ stockwork in SLT	-	-		<1		5	50	20	96-57N	
67		QTZ stockwork in GWK; vugs <2x4mm	TR	-		<1			25	3	--	
NW qtr:												
14	x	SLT, broken and sheared; QTZ vnlts	.17	-	hm,mag	1	.4		.5		109-46N	

Table 2

Sample Data and Rock Descriptions for Sections Surrounding the Mining Claim Areas:
Sections 10, 17, 20; R1E, T16S, Cordova Quadrangle

Smpl no.	T.S. exm'd	Rock Description	Au ppm	Ag oz/T	Opaque Minerals	OPQ %	OPQ <=mm	CO3 %	QTZ vns <=mm	new QTZ %	Strk-Dip	Adit
Sect. 10 SW qtr:												
3046		SLT, crenulated; irreg. QTZ vns	0.05	0.2		5	0.05		18		83-73N	
47	x	SLT, crenulated; irreg. QTZ vnlts	.10	-	mag,hm	5	.1		3		100-65N	
167	x	SLT; trnsvrs shear .5mm wide; QTZ vnlts	.03	-		3	.3		1.5		47-65N	
169	x	GWK, 53% matrix; QTZ vnlts	-	.2	mag	2	.4		3		109-50N	
170	x	QTZ vn; ARG clasts <2x3mm; EPD cement	.03	-	ilm,py,mag,hm	4.5	.8	25			--	
NW qtr:												
177	x	GWK, 78% matrix; EPD & QTZ cement	-	.2	py,mag	1	.2		12		41-81S	
180	x	GWK, brec'd; EPD cement	-	-	py	2	.15		1		28-67S	
Sect. 17, SW qtr:												
162	x	GWK, 53% matrix; EPD & QTZ cement	missing		mag,py	2	.6		6		102-65N	
Sect. 20, NE qtr:												
19	x	SLT; shears 60 to bdg w/ QTZ,CO3,OPQs	-	-		1	.1	2	.5		127-73N	

Table 3

Sample Data and Rock Descriptions for the Granitic Intrusion and Its Contacts:

Sections 3, 5, 6, 7, 8, 9, & 18; R1E, T16S, Cordova Quadrangle

Smpl no.	T.S. exm'd	Rock Descriprion	Au ppm	Ag oz/T	Opaque Minerals	OPQ %	OPQ <=mm	CO3 %	QTZ vns <=mm	new QTZ %	Strk-Dip	Adit
sect. 3, NE qtr:												
3202		GRN, dike; HRF contact	.05	-	mag,ilm	1	.3				--	
203	x	HRF; QTZ vns; 12% EPD cement	.05	-	mag,hm,ilm,py,apy	5	.4	-	75	1	38-49S	
sect. 5, NE qtr:												
133	x	GRN, x'tls <2mm; FLD alt'd <40%; chlr'ztn	-	-	ilm,mag,py	.5	.2					
137	x	GRN 66%; HRF 33%;Plag alt'd <30%;chlr'ztn	-	.6	hm,py,mag,cpy	TR	.2					
135	x	GDR, x'tls <3mm; FLD alt'd <40%	-	-	ilm,hm,mag	TR	.1					
130	x	HRF; QTZ & EPD(drusy) fract. fill	-	.2	hm,py,mag,apy	1.	.2		10		5-33N	
131	x	HRF; irreg. QTZ vns(40%) with 20% BIOT	-	-	ilm,hm,py	<1	.15		175		5-33N	
132	x	HRF; chert lenses; irreg. QTZ/EPD vns	-	.2	mag,hm,py,ilm	<1	.2		6		5-51N	
136	x	HRF; ARG lenses <3mm	-	.2	apy,pent,hm	<1	.15				130-85N	
137	x	GRN 66%; HRF 33%;PLAG<30% alt'd;chlr'ztn	-	.6	hm,py,mag,cpy	TR	.2					
138	x	GRN 50%; GWK 35%; HRF 15%(from ARG)	-	.2	mag,py	TR	.05				127-75N	
SE qtr:												
111	x	GRN; x'tls <3mm; FLD <30% ser. alt'd	.05	.2	mag,hm,ilm,apy	0.7	.3					
112	x	GRN, x'tls <3mm; chlr'ztn	.10	-	mag,hm,ilm,apy	TR	.2					
113	x	GRN, x'tls <3mm; FLD <50% ser. alt'd	.34	.1	hm.mag,ilm	1.3	.15					
114	x	GRN, x'tls <2mm; EPD fill;FLD <40% alt'd	-	.2	ilm,hm,mag,po,py	.5	.15					
SW qtr:												
140	x	GRN, x'tls <2.5mm;alt'd FLD&BIOT; EPD vns	-	.2	mag,py,pent	1.	.5		.2			
141	x	GRN, x'tls <3.5mm; alt'd FLD&BIOT <100%	missing		mag,hm,apy,py	2.4	.2					
144	x	GRN dike, x'tls <2mm;FLD clasts<60% alt'd	.06	-	ilm,py,mag	TR	.1					
142	x	GRN-HRF(from GWK) contact; EPD cement	.05	-	mag,ilm,apy,pent	3.	.9					
188	x	GDR dike-HRF(50% biot) contact	.07	.2	apy,ilm,hm	1.	.3				75-90	
189	x	GRN dike-HRF(60% ser&chlr) contact	.03	.1	mag,hm,py,ilm	1.	.2				105-90	
Sect. 6, SE qtr:												
151	x	GRN, x'tls <3mm; FLD <50% alt'd	-	.2	mag,py,hm	1.	.5					
153	x	GRN, x'tls <4mm; FLD <30% alt'd	.03	-	mag,hm,ilm	<1	.2					
155	x	GDR, x'tls <3mm; FLD alt'd <40%	.04	-	ilm,py,mag,apy	3.	.5					

Table 3 continued

Smpl no.	T.S. exm'd	Rock Description	Au ppm	Ag oz/T	Opaque Minerals	OPQ %	OPQ <=mm	CO3 %	QTZ vns <=mm	new QTZ %	Strk-Dip	Adit
sect. 7, NE qtr:												
116	x	GRN, x'tls <3mm; chlr'ztn; ser'ztn	-	-	mag,ilm,hm	.7	.15					
118	x	GRN, x'tls <3mm; FLD <30% alt'd;chlr'ztn	-	-	mag,hm	1.	.2					
SE qtr:												
117	x	GRN, x'tls <4mm; chlr'ztn; ser'ztn	.03	-	ilm,mag,po	.8	.1					
NW qtr:												
119	x	GDR, x'tls <4mm; FLD <10% alt'd	-	.2	ilm,mag,py	TR	.15					
120	x	HRF; QTZ lenses 12x25mm; 2% gar	-	-	mag,apy,cpy,py	1.4	.5		12		33-48S	
121	x	GRN, chlr'ztn; HRF 10%; FLD <30% alt'd	.04	-	ilm,mag,apy	TR	.05					
sect. 8, NE qtr:												
134	x	GDR, x'tls <4mm; FLD <50% alt'd; chlr'ztn	-	-	hm,apy,mag,py	1.	.4					
NW qtr:												
115	x	GRN, x'tls <3mm; much chlr'ztn	.03	.4	hm,ilm,mag	.5	.2					
sect. 9, NE qtr:												
126	x	GDR, x'tls <3mm; FLD <40% alt'd;chlr'ztn	-	.2	mag,py,apy	TR	.2					
SE qtr:												
148	x	GRN, x'tls <5mm; highly alt'd;EPD cement	.03	.2	mag,ilm,hm	3.	.4					
186	x	HRF(from GWK)-GRN contact; 5% mafics	.05	.4	mag,hm,py	1.	.2					
171	x	QTZ vn in SLT; pre-cleavage	-	-	py,hm,mag	2.	.2		5	30	42-88S	
172	x	QTZ vn in ARG; alt'd FLD; EPD cement	.03	.1	mag,ilm,apy	2.8	.3		75		20-88S	
174	x	QTZ vn in ARG	TR	.2	ilm,py,hm	2.	.4		75	45	28-75S	
sect. 18, NW qtr:												
157	x	GRN, x'tls <3mm; FLD <60% alt'd	TR	.6	mag,hm	2.	.8					

Table 4

Modal Analysis of Intrusive Samples

Smpl no.	QTZ %	K-FLD %	PLAG %	BIOT %	CHLR %	MUSC %	EPID %	OPAQ %	Trace Amts.
3111	24.7	26.2	28.3	15.1	5.1	-	-	0.7	ap,rut
112	29.9	40.6	11.4	9.0	8.6	0.6	-	TR	
113	38.3	25.0	9.0	3.3	18.5	1.5	4.3	1.3	zrn,ap,rut
114	39.4	22.3	8.5	2.1	8.9	-	18.2	.5	ap,zrn,rut
115	26.3	46.2	11.8	4.5	8.6	.7	1.5	.5	ap,mona
116	20.0	36.0	13.3	14.0	14.4	-	1.1	.7	zrn,rut
117	25.8	36.8	16.0	12.9	4.7	-	3.0	.8	zrn,spl,ap
118	26.	18.	24.	4.	12.	-	14.	1.	ap,zrn
119	21.	8.	45.	21.	4.	-	-	TR	ap
121	21.0	25.3	41.7	TR	5.2	6.8	-	TR	ap
126	13.	17.	50.	-	20.	-	-	TR	ap,mona
133	28.7	21.9	20.0	11.2	17.0	0.6	-	.5	ap
134	18.	10.	54.	13.	4.	-	-	1.	ap
135	22.	7	53	17	-	-	-	TR	ap,zrn,tour
137	32.	22.	30.	2.	11.	TR	3.		
140	25.	25.	35.	2.	8.	-	<1	1.	mona
141	23.2	21.9	26.3	2.1	25.8	-	TR	2.4	zrn
142	32.	24.	4.	8.	12.	-	20	.5	
144	48.	14.	20.	-	7.	9.	2.	TR	
148	34.	9.	14.	3.	12.	2.	26.	.03	rut
151	30.4	30.6	6.3	12.2	4.4	5.7	7.9	1.	ap
153	40.	15.	19.	11.	8.	6.	-	<1	ap
155	29.	17.	34.	3.	5.	9.	-	3.	
157	42.	11.	25.	15.	4.	-	2.	2.	ap
188	44.	9.	35.	8.	3.	-	-	1.	
189	24.	31.	11.	-	2.	30.	-	1.	
mean% =	29.1	21.9	24.9	7.4	9.0	2.8	4.1	0.9	

Table 5

Positive Gold Assays

I. Detected by USBM or TSL to have >/= 0.10 ppm gold:

Sample Number	TSL oz/T	TSL ppm	USBM oz/T	Rock-type	Section--Quarter	If from adit
3004			0.02	gwk/qtz vns	S21--NE	
8	TR	0.05	.005	gwk/qtz vns	S22--NW	
14			.005	arg	S21--NW	
24			.04	slt/qtz	S22--N	
27	TR	.30		slt	S22--NE	Mck.low.
28	.007	.25		gwk/qtz vns	S22--NE	Mck.low.
29	.006	.20		gwk	S22--NE	Mck.low
31	.107	.42	.055	qtz in gwk	S22--NW	Mck.up.
32	.06	.25	.005	qtz in gwk	S22--NW	Mck.up.
47		.10		slt	S10--SW	
48		.10		slt/qtz vns	S15--N	
71	.007	.21	.06	gwk/qtz vns	S21--N	
76	TR	.10		gwk/qtz vns	S15--S	
85	TR	.10		gwk/qtz vns	S15--W	
90	.006	.13		qtz in gwk	S16--SE	
95		.21	.02	gwk/qtz vns	S15--SW	
96	.016	.32		gwk/qtz vns	S15--SW	
97		.10		hrf/qtz vns	S15--W	Stringer
112		.10		grn	S5--SE	
113		.07	.01	grn	S5--SE	
195	TR	.10	TR	gwk/qtz vns	S15--SW	Stringer
199	.013	.25	TR	gwk/qtz vns	S22--NW	Mck.up.
200	.029	.75	missing	gwk/qtz vns	S22--NW	Mck.up.
201	TR	.10		gwk/qtz vns	S22--NE	Mck.low.

II. USBM-detected gold by Fire Assay, or TSL-detected gold by both Fire Assay and Atomic Absorption:

Sample Number	TSL oz/T	TSL ppm	USBM oz/T	Rock-type	Section--Quarter	If from adit
3007	TR	0.03		slt	S22--NW	
37			TR	arg	S22--NW	
49		.04	TR	qtz in slt	S15--N	
51	TR	.08		slt	S21--E	
58		.03	TR	arg	S21--NE	
65	TR	.03		gwk w/slt	S15--SW	
81	TR	.09		gwk/qtz vns	S15--SW	Luck.Stk
82	TR	.06		gwk/qtz vns	S15--SW	Luck.Stk
92	TR	.09		slt/qtz vns	S15--SW	
99	TR	.05		gwk/qtz vns	S15--W	Stringer
121	TR	.04		arg/qtz vns	S7--NW	
170	TR	.03		slt/qtz vns	S10--SW	
192	TR	.05		hrf/qtz vns	S15--W	Stringer
193	TR	.05		qtz in gwk	S15--W	Stringer

III. TSL-detected by either Fire Assay or Atomic Absorption:

Sample Number	TSL oz/T	TSL ppm	Rock-type	Section--Quarter	If from adit
3001	TR		slt	S22--NW	
3		0.05	slt	S21--NE	
12	TR		arg	S21--NE	
41	TR		gwk	S22--NW	
44		.03	arg	S22--NW	
46		.05	slt/qtz vns	S10--SW	
50		.08	slt	S15--NW	
53		.05	slt	S21--W	
55	TR		slt/qtz vns	S21--NE	
56	TR		gwk/qtz vns	S22--NW	
60		.03	gwk	S21--NE	
61		.05	slt/qtz vns	S21--NE	
67	TR		qtz in gwk	S21--NE	
68		.05	qtz in gwk	S21--NE	
72	TR		slt	S16--SE	
77		.08	slt	S15--SW	
78		.03	slt	S15--SW	
84	TR		gwk/qtz vns	S15--SW	Luck.Stk.
87		.04	gwk/qtz vns	S16--SE	
89		.06	gwk/qtz vns	S16--SE	
91		.03	gwk/qtz vns	S15--SW	
93		.04	gwk/qtz vns	S15--SW	
94		.04	gwk/qtz vns	S15--SW	
101	TR		gwk/qtz vns	S15--W	Stringer
102	TR		gwk/qtz vns	S15--W	Stringer
109	TR		slt/qtz vns	S16--N	
110		.03	slt/qtz vns	S16--N	
111		.05	grn	S 5--SE	
115		.03	grn	S 8--SW	
117		.03	grn	S 7--E	
142		.05	hrf/gwk	S 5--SW	
144		.06	grn dike	S 5--SW	
147		.05	grn	S 9--SW	
148		.03	grn	S 9--S	
153		.03	grn	S 6--SE	
155		.04	gdr	S 6--SE	
157	TR		grn	S18--NW	
166	TR		arg/qtz vns	S16--NW	
167		.03	slt	S10--SW	
172		.03	slt/qtz vns	S 9--SE	
174	TR		slt/qtz vns	S 9--SE	
186		.05	grn/hrf	S 9--S	
188		.07	grn/hrf	S 5--SW	
189		.03	grn/hrf	S 5--SW	
194		.08	gwk/qtz vns	S15--W	Stringer
196		.03	gwk/qtz vns	S15--SW	Luck.Stk.
197		.04	gwk/qtz vns	S15--SW	Luck.Stk.
202		.05	grn/hr	S 3--NW	
203		.05	hrf/qtz vns	S 3--NW	

Table 7

Gold Values (>/= 0.10 ppm) of Soil Samples

Smpl #	Au ppm	Location		
3020	0.26	Baseline	200N,	ie., 10,000´ north of BL 100N
21	.21	"	198N	at cabin.
23	.10	"	194N	
28	.18	"	184	
30	.10	"	180	
31	.10	"	178	
32	.30	"	176	[16 of 52 soil samples (31%)
33	.15	"	174	along baseline
44	.10	"	152	have >/= 0.10ppm Au]
49	.15	"	142	
50	.10	"	140	
53	.10	"	134	
59	.15	"	122	
64	.15	"	114	
65	.35	"	112	
70	.25	"	102	
72	.10	2E	from Stringer Adit, ie., 200´ east of ...	
73	.10	4E	" " "	
74	.10	6E	" " "	
76	.10	10E	" " "	
79	.10	2E	from Lucky Strike Adit	
80	.30	4E	" " " "	[9 of 15 soils(60%)
81	.20	6E	" " " "	east of adits
82	.10	8E	" " " "	have >/= 0.10ppm Au]
83	.10	10E	" " " "	

Table 8

Gold in Adits' Samples

Rock samples taken from the four adits located [Fig. 2] produced the following gold assay results:

McKinley lower adit (central section 22), 4 samples

100% with >/= 0.1 ppm Au [highest = 0.30 ppm]

mean of samples with Au = 0.21ppm

McKinley upper adit (central section 22), 7 samples

71% with >/= 0.1 ppm Au [highest = 3.64ppm]

mean of samples with Au = 1.45ppm

Lucky Strike adit (south-central section 15), 8 samples

none with >/= 0.1 ppm Au

62.5% with >/= 0.03 ppm Au [highest = 0.09 ppm]

mean of samples with Au = 0.05ppm

Stringer adit (west-central section 15), 10 samples

20% with 0.1 ppm Au (25 Clarks)

60% with <0.1, >/= 0.03 ppm Au (7.5 Clarks)

mean of samples with Au = 0.06ppm

Table 9.

ELEMENTAL MEAN PERCENTAGES OF ROCK TYPES

	GWK/ QTZ vns	GWK	SLT/ QTZ vns	SLT	GRN	HRF	All Rock smpls	Gold >=0.1 ppm
	(49)	(15)	(26)	(35)	(28)	(15)	(168)	(25)
Fe	2.1570	3.100	3.577	3.857	3.107	2.200	2.977	2.620
Mg	1.1837	1.530	2.3690	2.1710	2.050	1.747	1.7984	1.460
Ca	.8280	.7930	1.2730	.8710	2.4290	2.280	1.2992	.8388
Ti	.1826	.220	.2580	.2657	.3054	.2421	.2407	.1999
As	.1224	.080**	--	.0029*	--	--	.0435	.1720
Ba	.0559	.0830	.0646	.0743	.0579	.0567	.0639	.0704
Mn	.0296	.0330	.0469	.0486	.055	.0640	.0438	.0456
Sr	.0098	.004*	.0046**	.0017*	.0021*	.0133	.00582	.0120
V	.0047	.0104	.0091	.0124	.0046	.0044	.00745	.0068
Cr	.0034	.0049	.0052	.0051	.0014	.0021	.00372	.0034
Ni	.0018	.0034	.004	.0033	.0019	.0016	.0026	.0021
Cu	.0016	.0057	.0088	.0122	.0007	.0023	.0052	.0019
Zn	.0018	.0043	.0006	.00097	.0023	.00170	.00174	.0016
B	.0007	.0017	.0011	.0021	.0005	--	.00105	.0012
Ga	.0008	.0015	.0015	.0016	.0020	.0016	.0014	.0011

* one value
** two values

Table 10

Quartz Veins in Slate and Graywacke

smpl no.	Au ppm	Ag oz/T	OPQ %	As %	CHLR %	CO3 %	K-FLD %
Qtz vns in gwk:							
3026	-	-	3.5	0.1	3.2	-	17.5
28	0.25	-	2.1	.5	5.7	-	23.2
31	.6	.4	.8	.2	-	-	25.2
32	2.04	.2	2.6	-	3.7	-	22.0
63	-	.2	.5	-	-	-	nn*
67	-	-	.5	-	-	-	nn
82	.06	-	.5	-	-	8.	nn
83	-	-	1.	-	-	15.	nn
84	-	.2	.5	-	6.5	5.8	12.8
90	.2	-	1.2	-	5.8	1.9	19.9
96	.54	-	2.7	-	8.1	-	19.8
98	-	.2	.5	.1	-	-	37.0
99	.05	-	1.4	.5	.8	5.	26.1
101	-	-	1.2	1.0	2.9	-	29.9
193	.05	-	7.	-	-	15.	nn
196	.03	-	2.	-	4.	-	nn
199	.44	-	1.	1.0	1.6	-	16.9
200	.99	-	1.7	1.0	4.2	-	15.2
mean =	0.46	0.15	1.71	0.37	2.58	2.82	22.1
Qtz vns in slt:							
5	-	-	1.5	-	9.5	-	20.2
49	0.04	-	.5	-	-	-	nn
54	-	-	.5	-	-	-	nn
71	2.04	0.2	3.3	-	9.9	3.5	23.3
170	.03	-	4.5	-	5.6	-	14.7
171	-	-	2.	-	-	-	nn
172	.03	.1	2.8	-	11.2	-	20.
174	-	.2	2.	-	-	-	nn
mean =	0.31	0.06	2.14	0.0	4.55	0.44	19.6

* nn = not noted and not figured in mean result.

Table 11.

Semiquantitative Optical Emission Spectrographic Analysis

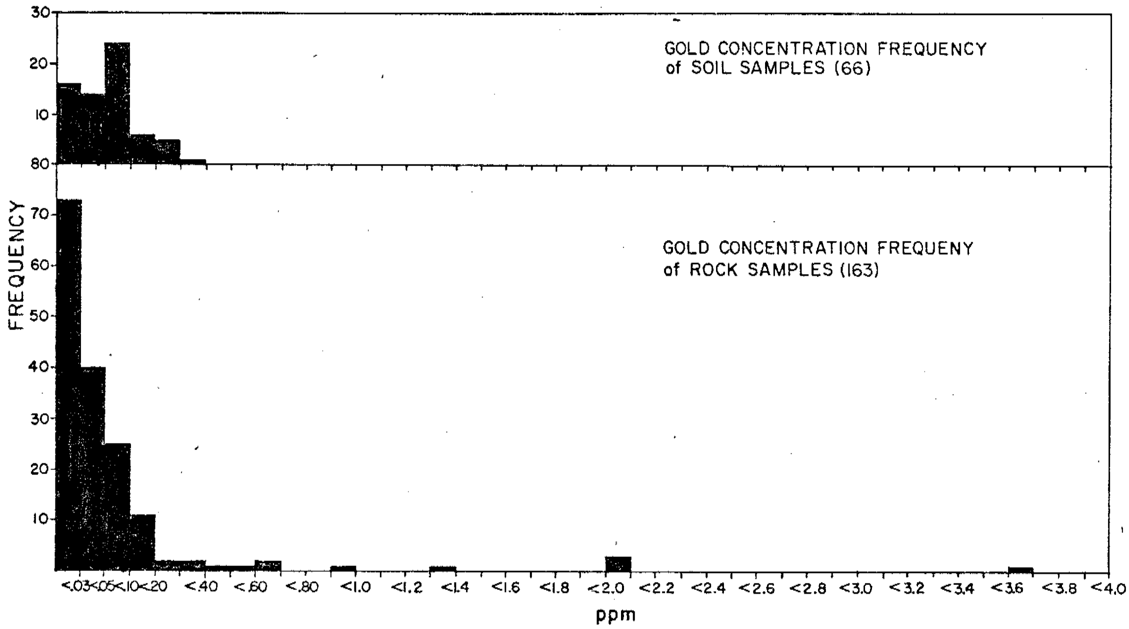
Element	Detection Limit (percent)	Element	Detection Limit (percent)
Al	0.001	Mo	0.001
Ag	.001	Na	.4
As	.1	Nb	.007
Au	.002	Ni	.002
B	.002	P	.2
Ba	.007	Pb	.1
Be	.001	Pt	.005
Bi	.004	Re	.005
Ca	.02	Sb	.04
Cd	.04	Sc	.005
Co	.002	Si	.0003
Cr	.001	Sn	.002
Cu	.001	Sr	.06
Fe	.002	Ta	.008
Ga	.002	Te	.8
Hf	.008	Ti	.001
In	.01	Tl	.2
La	.01	V	.003
Li	.1	Zn	.1
Mg	.0004	Zr	.004
Mn	.001	Y	.001

APPENDIX II: Laboratory Analyses Data

Emmission Spectrographic..................TSL

Fire Assay...........................TSL,USBM

Atomic Absorption.........................TSL


GOLD CONCENTRATION FREQUENCY
of SOIL SAMPLES (66)
GOLD CONCENTRATION FREQUENY
of ROCK SAMPLES (163)
FREQUENCY
ppm
<.03 <.05 <.10 <.20 <.40 <.60 <.80 <1.0 <1.2 <1.4 <1.6 <1.8 <2.0 <2.2 <2.4 <2.6 <2.8 <3.0 <3.2 <3.4 <3.6 <3.8 <4.0

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TSL LABORATORIES LTD.

Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

total 168 rocks

REPORT NO.
2169

Code: < Less Than, > Greater Than, – Below Limit of Detection

No.	JR80-1027 3001	1028 2	1029 3	1030 4	1031 5	1032 6	1033 7	1034 8	1035
Aluminum (Al_2O_3)	20%	20%	20%	15%	6%	20%	20%	10%	17%
Antimony	–	–	–	–	–	–	–	–	–
Arsenic	–	–	–	–	–	–	–	–	–
Barium	0.1	0.1	0.1	0.1	–	0.1	0.1	–	0.1
Beryllium (BeO)	–	–	–	–	–	–	–	–	–
Bismuth	–	–	–	–	–	–	–	–	–
Boron	0.005	0.003	0.003	–	–	0.003	0.003	–	0.002
Calcium (CaO)	0.5	0.2	0.5	0.3	0.2	0.5	0.7	0:3	0.2
Cadmium	–	–	–	–	–	–	–	–	–
Chromium	0.01	0.005	0.01	0.005	0.002	0.005	0.005	–	–
Cobalt	–	–	–	–	–	–	–	–	–
Columbium (Cb_2O_5)	–	–	–	–	–	–	–	–	–
Copper	0.005	0.003	0.003	–	0.002	0.002	0.003	0.003	0.001
Gallium	0.002	0.002	0.002	–	–	0.002	0.002	–	0.002
Iron (Fe)	5	5	4	2	2	5	4	1	2
Lanthanum (La_2O_3)	–	–	–	–	–	–	–	–	–
Lead	–	0.01	–	–	–	–	–	–	–
Lithium (Li_2O)	–	–	–	–	–	–	–	–	–
Manganese	0.03	0.04	0.04	0.03	0.03	0.1	0.06	0.06	0.06
Magnesium (MgO)	2	2	2	1	0.6	3	3	1	2
Molybdenum	–	–	–	–	–	–	–	–	–
Nickel	0.003	0.003	0.003	0.002	0.002	0.003	0.003	0.002	–
Phosphorus	–	–	–	–	–	–	–	–	–
Silver	–	–	–	–	–	–	–	–	–
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20	>20	>20	>20
Sodium (Na_2O)	4	>4	3	3	0.5	>4	4	4	>4
Strontium	–	–	–	–	–	–	–	–	–
Tantalum (Ta_2O_5)	–	–	–	–	–	–	–	–	–
Tin	–	–	–	–	–	–	–	–	–
Titanium	0.4	0.5	0.5	0.3	0.1	0.5	0.6	0.1	0.2
Vanadium	0.02	0.02	0.02	0.005	0.003	0.02	0.02	0.003	0.007
Yttrium (Y_2O_3)	–	–	–	–	–	–	–	–	–
Zinc	–	–	–	–	–	–	–	–	–
Zirconium	0.005	–	0.005	0.005	–	–	0.005	–	–
Gold	–	–	–	–	–	–	–	–	–
Hafnium	–	–	–	–	–	–	–	–	–
Indium	–	–	–	–	–	–	–	–	–
Platinum	–	–	–	–	–	–	–	–	–
Rhenium	–	–	–	–	–	–	–	–	–
Tellurium	–	–	–	–	–	–	–	–	–
Thallium	–	–	–	–	–	–	–	–	–
Scandium	–	–	–	–	–	–	–	–	–

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TSL LABORATORIES LTD.

Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

REPORT NO.
2169

Code: < Less Than, > Greater Than, – Below Limit of Detection

No.	JR80-1036	1038	1039	1040	1045	1050
Aluminum (Al_2O_3)	10%	15%	12%	15%	17%	17%
Antimony	–	–	–	–	–	–
Arsenic	–	–	–	–	–	–
Barium	0.07	0.1	0.07	0.2	0.1	0.2
Beryllium (BeO)	–	–	–	–	–	–
Bismuth	–	–	–	–	–	–
Boron	–	0.002	–	–	0.002	–
Calcium (CaO)	0.3	1	1	1	1	1
Cadmium	–	–	–	–	–	–
Chromium	–	0.002	0.005	0.005	0.005	0.005
Cobalt	–	–	–	–	–	–
Columbium (Cb_2O_5)	–	–	–	–	–	–
Copper	–	0.002	–	0.003	0.005	0.002
Gallium	–	–	0.002	0.002	0.003	0.002
Iron (Fe)	2	4	2	4	3	4
Lanthanum (La_2O_3)	–	–	–	–	–	–
Lead	–	–	–	–	–	–
Lithium (Li_2O)	–	–	–	–	–	–
Manganese	0.03	0.06	0.04	0.08	0.06	0.08
Magnesium (MgO)	1	2	1	2	2	3
Molybdenum	–	–	–	–	–	–
Nickel	0.002	0.003	0.002	0.003	0.003	0.005
Phosphorus	–	–	–	–	–	–
Silver	–	–	–	–	–	–
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20
Sodium (Na_2O)	2	3	4	4	>4	4
Strontium	–	–	–	–	–	–
Tantalum (Ta_2O_5)	–	–	–	–	–	–
Tin	–	–	–	–	–	–
Titanium	0.2	0.3	0.2	0.3	0.3	0.3
Vanadium	0.003	0.02	0.005	0.01	0.01	0.02
Yttrium (Y_2O_3)	–	–	–	–	–	–
Zinc	–	–	–	–	–	–
Zirconium	–	–	–	–	–	–
Gold	–	–	–	–	–	–
Hafnium	–	–	–	–	–	–
Indium	–	–	–	–	–	–
Platinum	–	–	–	–	–	–
Rhenium	–	–	–	–	–	–
Tellurium	–	–	–	–	–	–
Thallium	–	–	–	–	–	–
Scandium	–	–	–	–	–	–

TSL LABORATORIES LTD.

Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

REPORT NO. 2169

Code < Less Than, > Greater Than, – Below Limit of Detection

Sample No.	R80-1052	1053	1054	1055	1056	1057	1058		
Aluminum (Al_2O_3)	15%	15%	4%	20%	20%	0.5%	20%		
Antimony	–	–	–	–	–	–	–		
Arsenic	0.1	0.1	0.5	1	0.2	0.2	–		
Barium	0.1	0.1	–	0.1	0.2	–	0.1		
Beryllium (BeO)	–	–	–	–	–	–	–		
Bismuth	–	–	–	–	–	–	–		
Boron	0.002	0.005	–	0.002	0.005	–	0.002		
Calcium (CaO)	0.2	0.1	0.07	2	0.2	–	1.5		
Cadmium	–	–	–	–	–	–	–		
Chromium	0.005	0.005	0.005	0.005	0.01	–	0.005		
Cobalt	–	–	–	–	–	–	–		
Columbium (Cb_2O_5)	–	–	–	–	–	–	–		
Copper	0.001	0.003	0.002	0.001	0.01	–	0.002		
Gallium	0.002	0.002	–	0.002	0.003	–	0.002		
Iron (Fe)	3	3	2	3	5	0.5	4		
Lanthanum (La_2O_3)	–	–	–	–	–	–	–		
Lead	–	–	–	–	–	–	–		
Lithium (Li_2O)	–	–	–	–	–	–	–		
Manganese	0.03	0.04	0.03	0.06	0.04	0.005	0.1		
Magnesium (MgO)	1	2	0.4	2	3	0.1	2		
Molybdenum	–	–	–	–	–	–	–		
Nickel	0.002	0.003	0.002	0.002	0.003	–	0.002		
Phosphorus	–	–	–	–	–	–	–		
Silver	–	–	–	–	–	–	–		
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20	>20		
Sodium (Na_2O)	4	3	0.8	>4	>4	–	4		
Strontium	0.06	–	–	0.06	–	–	0.06		
Tantalum (Ta_2O_5)	–	–	–	–	–	–	–		
Tin	–	–	–	–	–	–	–		
Titanium	0.3	0.3	0.05	0.2	0.4	0.005	0.3		
Vanadium	0.007	0.01	–	0.005	0.02	–	0.02		
Yttrium (Y_2O_3)	–	–	–	–	–	–	–		
Zinc	–	–	–	–	–	–	–		
Zirconium	0.005	0.004	–	–	0.005	–	–		
Gold	–	–	–	–	–	–	–		
Hafnium	–	–	–	–	–	–	–		
Indium	–	–	–	–	–	–	–		
Platinum	–	–	–	–	–	–	–		
Rhenium	–	–	–	–	–	–	–		
Tellurium	–	–	–	–	–	–	–		
Thallium	–	–	–	–	–	–	–		
Scandium	–	–	–	–	–	–	–		

TSL LABORATORIES LTD.

Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

REPORT 2169

Code < Less Than, > Greater Than, – Below Limit of Detection

Sample No.	R80-1059 3033	1060	1061	1062	1063	1064	1065	1066
Aluminum (Al_2O_3)	12%	12%	8%	12%	10%	10%	10%	10%
Antimony	–	–	–	–	–	–	–	–
Arsenic	–	–	–	–	–	–	–	–
Barium	0.1	0.1	0.07	0.1	0.07	0.1	0.1	0.1
Beryllium (BeO)	–	–	–	–	–	–	–	–
Bismuth	–	–	–	–	–	–	–	–
Boron	0.002	0.002	0.002	0.002	0.002	0.002	–	0.003
Calcium (CaO)	0.3	0.4	0.5	1	0.2	0.4	0.5	0.8
Cadmium	–	–	–	–	–	–	–	–
Chromium	0.006	0.004	0.004	0.008	0.004	0.008	0.008	0.008
Cobalt	–	–	–	–	–	–	–	–
Columbium (Cb_2O_5)	–	–	–	–	–	–	–	–
Copper	0.006	0.006	0.002	0.008	0.006	0.006	0.008	0.005
Gallium	0.002	0.002	–	0.003	–	0.002	0.002	0.004
Iron (Fe)	4	3	3	8	4	4	5	5
Lanthanum (La_2O_3)	–	–	–	–	–	–	–	–
Lead	–	–	–	–	–	–	–	–
Lithium (Li_2O)	–	–	–	–	–	–	–	–
Manganese	0.02	0.02	0.03	0.04	0.04	0.03	0.03	0.04
Magnesium (MgO)	1	2	2	3	2	1	1	2
Molybdenum	–	–	–	–	–	–	–	–
Nickel	0.004	0.004	0.004	0.006	0.004	0.004	0.006	0.004
Phosphorus	–	–	–	–	–	–	–	–
Silver	–	–	–	–	–	–	0.001	–
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20	>20	>20
Sodium (Na_2O)	>4	>4	3	>4	4	4	>4	3
Strontium	–	–	–	–	–	–	–	–
Tantalum (Ta_2O_5)	–	–	–	–	–	–	–	–
Tin	–	–	–	–	–	–	–	–
Titanium	0.3	0.2	0.2	0.5	0.2	0.3	0.2	0.3
Vanadium	0.01	0.01	0.01	0.02	0.01	0.008	0.008	0.01
Yttrium (Y_2O_3)	–	–	–	–	–	–	–	–
Zinc	–	–	–	–	–	–	–	–
Zirconium	0.005	–	–	0.005	–	0.005	0.005	0.005
Gold	–	–	–	–	–	–	–	–
Hafnium	–	–	–	–	–	–	–	–
Indium	–	–	–	–	–	–	–	–
Platinum	–	–	–	–	–	–	–	–
Rhenium	–	–	–	–	–	–	–	–
Tellurium	–	–	–	–	–	–	–	–
Thallium	–	–	–	–	–	–	–	–
Scandium	–	–	–	–	–	–	–	–

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Code < Less Than, > Greater Than, — Below Limit of Detection

Sa No.	JR80-1068	1069	1070	1071	1072	1073	1074
Aluminum (Al_2O_3)	12%	12%	10%	15%	15%	15%	10%
Antimony	—	—	—	—	—	—	—
Arsenic	—	—	—	—	—	—	—
Barium	0.07	0.07	—	0.07	0.07	0.1	0.07
Beryllium (BeO)	—	—	—	—	—	—	—
Bismuth	—	—	—	—	—	—	—
Boron	—	0.002	0.002	0.002	0.002	0.002	0.002
Calcium (CaO)	1	0.5	0.4	0.8	1	1	0.8
Cadmium	—	—	—	—	—	—	—
Chromium	—	0.002	0.002	0.002	0.002	0.004	0.004
Cobalt	—	—	—	—	—	—	—
Columbium (Cb_2O_5)	—	—	—	—	—	—	—
Copper	0.004	0.006	0.001	0.004	0.004	0.004	0.004
Gallium	—	—	—	0.002	—	0.002	0.002
Iron (Fe)	2	3	2	3	4	4	4
Lanthanum (La_2O_3)	—	—	—	—	—	—	—
Lead	—	0.01	—	—	—	—	—
Lithium (Li_2O)	—	—	—	—	—	—	—
Manganese	0.03	0.04	0.06	0.08	0.1	0.1	0.04
Magnesium (MgO)	1	2	2	3	2	3	2
Molybdenum	—	—	—	—	—	—	—
Nickel	0.002	0.004	0.002	0.004	0.004	0.004	0.004
Phosphorus	—	—	—	—	—	—	—
Silver	—	—	—	—	—	—	—
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20	>20
Sodium (Na_2O)	4	4	3	4	3	4	4
Strontium	—	—	—	—	—	—	—
Tantalum (Ta_2O_5)	—	—	—	—	—	—	—
Tin	—	—	—	—	—	—	—
Titanium	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Vanadium	0.01	0.008	0.008	0.01	0.01	0.008	0.008
Yttrium (Y_2O_3)	—	—	—	—	—	—	—
Zinc	—	—	—	—	—	—	—
Zirconium	0.02	0.005	—	—	—	—	—
Gold	—	—	—	—	—	—	—
Hafnium	—	—	—	—	—	—	—
Indium	—	—	—	—	—	—	—
Platinum	—	—	—	—	—	—	—
Rhenium	—	—	—	—	—	—	—
Tellurium	—	—	—	—	—	—	—
Thallium	—	—	—	—	—	—	—
Scandium	—	—	—	—	—	—	—

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U.S. BUREAU OF MINES

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Code < Less Than, > Greater Than, — Below Limit of Detection

Sa No.	JR80-1075	1076	1077	1078	1079	1080	1081	1082
Aluminum (Al_2O_3)	15%	15%	15%	15%	15%	6%	12%	8%
Antimony	—	—	—	—	—	—	—	—
Arsenic	—	—	—	—	—	—	—	—
Barium	0.1	0.07	0.1	0.1	0.1	0.07	0.1	0.07
Beryllium (BeO)	—	—	—	—	—	—	—	—
Bismuth	—	—	—	—	—	—	—	—
Boron	—	0.002	0.002	0.002	0.002	—	0.004	0.002
Calcium (CaO)	1	0.6	0.4	1	0.5	0.4	0.5	0.08
Cadmium	—	—	—	—	—	—	—	—
Chromium	0.006	0.006	0.008	0.008	0.006	0.002	0.004	0.002
Cobalt	—	—	—	—	—	—	—	—
Columbium (Cb_2O_5)	—	—	—	—	—	—	—	—
Copper	0.006	0.1	0.1	0.1	0.1	0.001	0.006	—
Gallium	0.002	0.002	0.002	0.002	0.002	—	0.002	—
Iron (Fe)	4	3	5	5	4	2	4	1.5
Lanthanum (La_2O_3)	—	—	—	—	—	—	—	—
Lead	—	—	—	—	—	—	—	—
Lithium (Li_2O)	—	—	—	—	—	—	—	—
Manganese	0.04	0.04	0.04	0.04	0.03	0.02	0.03	0.02
Magnesium (MgO)	3	3	3	3	2	1	3	1
Molybdenum	—	—	—	—	—	—	—	—
Nickel	0.004	0.002	0.006	0.006	0.006	0.002	0.004	—
Phosphorus	—	—	—	—	—	—	—	—
Silver	—	—	—	—	0.002	—	—	—
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20	>20	>20
Sodium (Na_2O)	3	4	4	4	4	—	>4	2
Strontium	—	—	—	—	—	—	—	—
Tantalum (Ta_2O_5)	—	—	—	—	—	—	—	—
Tin	—	—	—	—	—	—	—	—
Titanium	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.1
Vanadium	0.01	0.008	0.01	0.01	0.01	0.005	0.002	0.005
Yttrium (Y_2O_3)	—	—	—	—	—	—	—	—
Zinc	—	—	—	—	—	—	—	—
Zirconium	—	—	—	—	—	—	—	—
Gold	—	—	—	—	—	—	—	—
Hafnium	—	—	—	—	—	—	—	—
Indium	—	—	—	—	—	—	—	—
Platinum	—	—	—	—	—	—	—	—
Rhenium	—	—	—	—	—	—	—	—
Tellurium	—	—	—	—	—	—	—	—
Thallium	—	—	—	—	—	—	—	—
Scandium	—	—	—	—	—	—	—	—

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U.S. BUREAU OF MINES

REPORT NO. 2169

Code. < Less Than, > Greater Than, – Below Limit of Detection

Sample No.	JR80-1084	1085	1086	1087	1088	1089	1090
Aluminum (Al_2O_3)	10%	10%	10%	10%	10%	8%	8%
Antimony	–	–	–	–	–	–	–
Arsenic	–	–	–	–	–	–	–
Barium	0.1	0.07	0.07	–	–	–	0.07
Beryllium (BeO)	–	–	–	–	–	–	–
Bismuth	–	–	–	–	–	–	–
Boron	0.002	–	–	0.002	0.002	–	0.002
Calcium (CaO)	0.5	0.4	0.4	0.5	0.1	0.2	0.3
Cadmium	–	–	–	–	–	–	–
Chromium	0.004	0.004	0.004	0.006	0.004	0.002	0.004
Cobalt	–	–	–	–	–	–	–
Columbium (Cb_2O_5)	–	–	–	–	–	–	–
Copper	0.006	–	–	0.006	0.004	0.008	0.002
Gallium	–	–	–	0.002	–	–	–
Iron (Fe)	4	1.5	1.5	5	3	1.5	2
Lanthanum (La_2O_3)	–	–	–	–	–	–	–
Lead	–	–	–	–	–	–	–
Lithium (Li_2O)	–	–	–	–	–	–	–
Manganese	0.03	0.02	0.02	0.03	0.03	0.01	0.02
Magnesium (MgO)	2	1	1	2	2	0.6	0.8
Molybdenum	–	–	–	–	–	–	–
Nickel	0.004	0.002	0.002	0.004	0.003	–	0.002
Phosphorus	–	–	–	–	–	–	–
Silver	–	–	–	–	–	–	–
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20	>20
Sodium (Na_2O)	3	3	4	2	2	3	2
Strontium	–	–	–	–	–	–	–
Tantalum (Ta_2O_5)	–	–	–	–	–	–	–
Tin	–	–	–	–	–	–	–
Titanium	0.1	0.1	0.1	0.2	0.1	0.1	0.1
Vanadium	0.02	0.008	0.008	0.01	0.01	0.005	0.008
Yttrium (Y_2O_3)	–	–	–	–	–	–	–
Zinc	–	–	–	–	–	–	–
Zirconium	–	0.005	0.005	–	–	–	0.005
Gold	–	–	–	–	–	–	–
Hafnium	–	–	–	–	–	–	–
Indium	–	–	–	–	–	–	–
Platinum	–	–	–	–	–	–	–
Rhenium	–	–	–	–	–	–	–
Tellurium	–	–	–	–	–	–	–
Thallium	–	–	–	–	–	–	–
Scandium	–	–	–	–	–	–	–

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U.S. BUREAU OF MINES

REPORT NO. 2169

Code. < Less Than, > Greater Than, – Below Limit of Detection

Sample No.	JR80-1091	1092	1093	1094	1095	1096	1097	1098	10
Aluminum (Al_2O_3)	10%	10%	8%	8%	10%	8%	8%	8%	10
Antimony	–	–	–	–	–	–	–	–	–
Arsenic	–	–	–	–	–	–	–	–	–
Barium	0.1	–	0.1	–	–	0.07	–	0.07	0.
Beryllium (BeO)	–	–	–	–	–	–	–	–	–
Bismuth	–	–	–	–	–	–	–	–	–
Boron	0.004	0.002	–	–	0.002	–	–	0.004	0.
Calcium (CaO)	0.2	0.6	0.3	0.4	0.4	0.1	0.3	0.1	0.
Cadmium	–	–	–	–	–	–	–	–	–
Chromium	0.006	0.006	0.006	0.006	0.008	0.008	0.002	0.004	0.
Cobalt	–	–	–	–	–	–	–	–	–
Columbium (Cb_2O_5)	–	–	–	–	–	–	–	–	–
Copper	0.003	0.002	0.006	0.002	0.006	0.008	0.001	0.003	0.
Gallium	0.002	0.002	–	0.002	0.003	0.002	–	–	0.
Iron (Fe)	3	2	2	1.5	4	4	3	4	2
Lanthanum (La_2O_3)	–	–	–	–	–	–	–	–	–
Lead	–	–	–	–	–	–	–	–	–
Lithium (Li_2O)	–	–	–	–	–	–	–	–	–
Manganese	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.0
Magnesium (MgO)	1	1	0.8	1	2	0.8	1	1	1
Molybdenum	–	–	–	–	–	–	–	–	–
Nickel	0.002	0.002	0.002	0.002	0.004	0.004	0.002	0.002	0.
Phosphorus	–	–	–	–	–	–	–	–	–
Silver	–	–	–	–	–	–	–	–	–
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20	>20	>20	>2
Sodium (Na_2O)	3	3	3	3	2	3	2	2	>4
Strontium	–	–	–	–	–	–	–	–	–
Tantalum (Ta_2O_5)	–	–	–	–	–	–	–	–	–
Tin	–	–	–	–	–	–	–	–	–
Titanium	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.
Vanadium	0.008	0.008	0.005	0.008	0.02	0.005	0.008	0.01	0.
Yttrium (Y_2O_3)	–	–	–	–	–	–	–	–	–
Zinc	–	–	–	–	–	–	–	–	–
Zirconium	0.005	0.005	–	–	0.005	–	–	–	–
Gold	–	–	–	–	–	–	–	–	–
Hafnium	–	–	–	–	–	–	–	–	–
Indium	–	–	–	–	–	–	–	–	–
Platinum	–	–	–	–	–	–	–	–	–
Rhenium	–	–	–	–	–	–	–	–	–
Tellurium	–	–	–	–	–	–	–	–	–
Thallium	–	–	–	–	–	–	–	–	–
Scandium	–	–	–	–	–	–	–	–	–

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Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

REPORT NO.
2169

Code: < Less Than, > Greater Than, — Below Limit of Detection

Sample No.	JR80-1100	1101	1102	1103	1104	1105	1106
Aluminum (Al_2O_3)	INSUFFICIENT	SAMPLE MISSING	12%	12%	12%	10%	12%
Antimony			—	—	—	—	—
Arsenic			—	—	—	—	—
Barium			0.1	0.07	0.07	—	—
Beryllium (BeO)			—	—	—	—	—
Bismuth			—	—	—	—	—
Boron			0.002	0.002	0.002	0.002	0.002
Calcium (CaO)			1.5	1	1.5	1	3
Cadmium			—	—	—	—	—
Chromium			0.005	0.005	0.005	0.005	0.005
Cobalt			—	—	—	—	—
Columbium (Cb_2O_5)			—	—	—	—	—
Copper			—	0.001	—	0.002	0.001
Gallium			0.002	0.002	0.002	0.002	0.002
Iron (Fe)			3	4	4	3	3
Lanthanum (La_2O_3)			—	—	—	—	—
Lead			0.02	—	—	—	—
Lithium (Li_2O)			—	—	—	—	—
Manganese			0.06	0.06	0.06	0.04	0.06
Magnesium (MgO)			2	2	2	2	2
Molybdenum			—	—	—	—	—
Nickel			0.002	0.003	0.003	0.003	0.002
Phosphorus			—	—	—	—	—
Silver			—	—	—	—	—
Silicon (SiO_2)			>20	>20	>20	>20	>20
Sodium (Na_2O)			>4	3	4	4	3
Strontium	INSUFFICIENT	SAMPLE MISSING	0.06	—	—	—	—
Tantalum (Ta_2O_5)			—	—	—	—	—
Tin			—	—	—	—	—
Titanium			0.3	0.2	0.3	0.3	0.3
Vanadium			0.01	0.01	0.01	0.01	0.005
Yttrium (Y_2O_3)			—	—	—	—	—
Zinc			—	—	—	—	—
Zirconium			0.005	—	—	—	—
Gold			—	—	—	—	—
Hafnium			—	—	—	—	—
Indium			—	—	—	—	—
Platinum			—	—	—	—	—
Rhenium			—	—	—	—	—
Tellurium			—	—	—	—	—
Thallium			—	—	—	—	—
Scandium			—	—	—	—	—

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U.S. BUREAU OF MINES

REPORT NO.
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Code: < Less Than, > Greater Than, — Below Limit of Detection

Sample No.	JR80-1107	JR-1108	JR-1109	JR-1110	JR-1111	JR-1112	JR-1113	JR-1114
Aluminum (Al_2O_3)	12%	8%	12%	10%	12%	10%	12%	10%
Antimony	—	—	—	—	—	—	—	—
Arsenic	0.2	—	—	—	—	—	—	—
Barium	0.1	0.07	0.07	0.07	0.07	—	0.1	0.07
Beryllium (BeO)	—	—	—	—	—	—	—	—
Bismuth	—	—	—	—	—	—	—	—
Boron	0.002	0.002	0.002	—	—	0.002	—	0.005
Calcium (CaO)	1.5	2	2	1.5	0.5	1	1.5	1
Cadmium	—	—	—	—	—	—	—	—
Chromium	0.002	0.002	0.002	0.002	0.001	0.005	0.005	0.002
Cobalt	—	—	—	—	—	—	—	—
Columbium (Cb_2O_5)	—	—	—	—	—	—	—	—
Copper	—	—	0.002	—	—	0.002	0.005	0.002
Gallium	0.002	—	0.002	0.002	—	0.002	0.002	0.002
Iron (Fe)	2	2	4	2	2	3	3	3
Lanthanum (La_2O_3)	—	—	—	—	—	—	—	—
Lead	—	—	—	—	—	—	—	—
Lithium (Li_2O)	—	—	—	—	—	—	—	—
Manganese	0.03	0.04	0.04	0.03	0.03	0.03	0.03	0.03
Magnesium (MgO)	2	2	2	1	1	2	1	2
Molybdenum	—	—	—	—	—	—	—	—
Nickel	0.002	0.002	0.002	0.002	0.002	0.003	0.003	0.003
Phosphorus	—	—	—	—	—	—	—	—
Silver	—	—	—	—	—	—	—	—
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20	>20	>20
Sodium (Na_2O)	4	2	3	3	4	3	4	3
Strontium	0.06	—	—	—	—	—	—	—
Tantalum (Ta_2O_5)	—	—	—	—	—	—	—	—
Tin	—	—	—	—	—	—	—	—
Titanium	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.3
Vanadium	0.005	0.003	0.005	0.005	0.005	0.007	0.003	0.007
Yttrium (Y_2O_3)	—	—	—	—	—	—	—	—
Zinc	—	—	—	—	—	—	—	—
Zirconium	—	—	—	0.005	0.005	—	—	—
Gold	—	—	—	—	—	—	—	—
Hafnium	—	—	—	—	—	—	—	—
Indium	—	—	—	—	—	—	—	—
Platinum	—	—	—	—	—	—	—	—
Rhenium	—	—	—	—	—	—	—	—
Tellurium	—	—	—	—	—	—	—	—
Thallium	—	—	—	—	—	—	—	—
Scandium	—	—	—	—	—	—	—	—

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U.S. BUREAU OF MINES

REPORT NO. 2169

Code: < Less Than, > Greater Than, – Below Limit of Detection

Sample No.	JR80-1116	1117	1118	1119	1120	1121	1122
Aluminum (Al_2O_3)	3%	15%	15%	15%	17%	15%	6%
Antimony	–	–	–	–	–	–	–
Arsenic	–	–	–	–	–	–	–
Barium	–	0.07	0.07	0.1	0.07	0.07	–
Beryllium (BeO)	–	–	–	–	–	–	–
Bismuth	P. –	–	–	–	–	–	–
Boron	–	0.002	0.003	0.002	0.002	0.005	–
Calcium (CaO)	1.5	1	0.5	0.8	0.8	0.5	0.3
Cadmium	–	–	–	–	–	–	–
Chromium	0.002	0.002	0.005	0.002	0.002	0.002	0.001
Cobalt	–	–	–	–	–	–	–
Columbium (Cb_2O_5)	–	–	–	–	–	–	–
Copper	–	0.001	0.005	0.001	–	0.002	–
Gallium	–	0.002	0.002	0.002	0.002	0.002	–
Iron (Fe)	1	3	4	3	3	3	1
Lanthanum (La_2O_3)	–	–	–	–	–	–	–
Lead	–	–	–	–	–	–	–
Lithium (Li_2O)	–	–	–	–	–	–	–
Manganese	0.01	0.04	0.03	0.04	0.02	0.03	0.02
Magnesium (MgO)	0.4	2	2	2	2	2	0.6
Molybdenum	–	–	–	–	–	–	–
Nickel	0.002	0.003	0.003	0.002	–	0.002	–
Phosphorus	–	–	–	–	–	–	–
Silver	–	–	–	–	–	–	–
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20	>20
Sodium (Na_2O)	–	4	2	>4	4	4	1
Strontium	–	0.06	–	0.06	0.06	–	–
Tantalum (Ta_2O_5)	–	–	–	–	–	–	–
Tin	–	–	–	–	–	–	–
Titanium	0.02	0.3	0.2	0.2	0.2	0.3	0.1
Vanadium	–	0.005	0.01	0.005	0.005	0.007	–
Yttrium (Y_2O_3)	–	–	–	–	–	–	–
Zinc	–	–	–	–	–	–	–
Zirconium	–	0.005	–	–	–	–	–
Gold	–	–	–	–	–	–	–
Hafnium	–	–	–	–	–	–	–
Indium	–	–	–	–	–	–	–
Platinum	–	–	–	–	–	–	–
Rhenium	–	–	–	–	–	–	–
Tellurium	–	–	–	–	–	–	–
Thallium	–	–	–	–	–	–	–
Scandium	–	–	–	–	–	–	–

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Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

REPORT NO. 2169

Code: < Less Than, > Greater Than, – Below Limit of Detection

Sample	JR80-1123	1124	1125	1126	1127	1128	1129	1130
Aluminum (Al_2O_3)	12%	10%	12%	12%	6%	10%	SAMPLE MISSING	SAMPLE MISSING
Antimony	–	–	–	–	–	–		
Arsenic	–	0.1	0.5	–	1	0.8		
Barium	0.07	–	0.1	0.07	–	0.07		
Beryllium (BeO)	–	–	–	–	–	–		
Bismuth	–	–	–	–	–	–		
Boron	0.002	–	–	0.002	–	–		
Calcium (CaO)	0.7	1	0.3	0.7	0.1	0.3		
Cadmium	–	–	–	–	–	–		
Chromium	0.005	0.005	0.002	0.002	0.002	0.001		
Cobalt	–	–	–	–	–	–		
Columbium (Cb_2O_5)	–	–	–	–	–	–		
Copper	0.001	0.003	–	0.003	–	–		
Gallium	–	–	–	–	–	–		
Iron (Fe)	3	2	2	4	0.5	1		
Lanthanum (La_2O_3)	–	–	–	–	–	–		
Lead	–	–	–	–	–	–		
Lithium (Li_2O)	–	–	–	–	–	–		
Manganese	0.04	0.03	0.03	0.04	0.01	0.01		
Magnesium (MgO)	2	1	1	2	0.4	0.6		
Molybdenum	–	–	–	–	–	–		
Nickel	0.002	0.002	0.002	0.003	0.002	0.002		
Phosphorus	–	–	–	–	–	–		
Silver	–	–	–	–	–	–		
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20		
Sodium (Na_2O)	4	4	3	3	0.8	2		
Strontium	0.06	–	–	–	–	–		
Tantalum (Ta_2O_5)	–	–	–	–	–	–		
Tin	–	–	–	–	–	–		
Titanium	0.3	0.2	0.2	0.3	0.05	0.2		
Vanadium	0.007	0.003	0.003	0.01	–	–		
Yttrium (Y_2O_3)	–	–	–	–	–	–		
Zinc	–	–	–	–	–	–		
Zirconium	0.005	0.005	0.005	–	–	0.005		
Gold	–	–	–	–	–	–		
Hafnium	–	–	–	–	–	–		
Indium	–	–	–	–	–	–		
Platinum	–	–	–	–	–	–		
Rhenium	–	–	–	–	–	–		
Tellurium	–	–	–	–	–	–		
Thallium	–	–	–	–	–	–		
Scandium	–	–	–	–	–	–		
	97	98	99	100	101	3102	103	104

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U.S. BUREAU OF MINES

REPORT NO. 2169

Code: < Less Than, > Greater Than, – Below Limit of Detection

S No.	JR80-1132	1133	1134	1135 S	1136	1137 S	1138
Aluminum (Al_2O_3)	15%	17%	17%	17%	17%	15%	15%
Antimony	–	–	–	–	–	–	–
Arsenic	–	–	–	–	–	–	–
Barium	0.1	0.07	0.07	0.07	0.07	0.07	0.07
Beryllium (BeO)	–	–	–	–	–	–	–
Bismuth	–	–	–	–	–	–	–
Boron	–	–	–	–	–	–	–
Calcium (CaO)	2	3	2	2	1.5	1.5	1.5
Cadmium	–	–	–	–	–	–	–
Chromium	0.01	0.007	0.007	0.005	0.002	–	–
Cobalt	–	–	–	–	–	–	–
Columbium (Cb_2O_5)	–	–	–	–	–	–	–
Copper	0.007	0.005	0.01	0.007	0.003	–	0.002
Gallium	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Iron (Fe)	5	5	4	5	4	2	3
Lanthanum (La_2O_3)	–	–	–	–	–	–	–
Lead	–	–	–	–	–	–	–
Lithium (Li_2O)	–	–	–	–	–	–	–
Manganese	0.04	0.04	0.06	0.08	0.08	0.06	0.04
Magnesium (MgO)	3	3	3	3	4	2	2
Molybdenum	–	–	–	–	–	–	–
Nickel	–	–	–	–	–	–	–
Phosphorus	0.003	0.03	0.003	0.002	0.003	0.002	0.002
Silver	–	–	–	–	–	–	–
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20	>20
Sodium (Na_2O)	4	>4	4	4	>4	4	>4
Strontium	–	–	–	–	0.06	–	–
Tantalum (Ta_2O_5)	–	–	–	–	–	–	–
Tin	–	–	–	–	–	–	–
Titanium	0.3	0.4	0.4	0.4	0.3	0.3	0.3
Vanadium	0.01	0.02	0.01	0.01	0.02	0.003	0.005
Yttrium (Y_2O_3)	–	–	–	–	–	–	–
Zinc	–	–	–	–	–	–	–
Zirconium	–	–	–	–	–	–	–
Gold	–	–	–	–	–	0.005	–
Hafnium	–	–	–	–	–	–	–
Indium	–	–	–	–	–	–	–
Platinum	–	–	–	–	–	–	–
Rhenium	–	–	–	–	–	–	–
Tellurium	–	–	–	–	–	–	–
Thallium	–	–	–	–	–	–	–
Scandium	–	–	–	–	–	–	–
	106	107	108	109	110	111	112

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Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

REPORT NO. 2169

Code: < Less Than, > Greater Than, – Below Limit of Detection

S No.	JR80-1139 S	1140 S	1141 S	1142 S	1143	1144	1145 S	1146
Aluminum (Al_2O_3)	15%	15%	15%	15%	15%	15%	17%	17%
Antimony	–	–	–	–	–	–	–	–
Arsenic	–	–	–	–	–	–	–	–
Barium	0.07	–	0.07	–	0.07	0.07	0.06	0.1
Beryllium (BeO)	–	–	–	–	–	–	–	–
Bismuth	–	–	–	–	–	–	–	–
Boron	–	–	–	0.002	–	–	–	–
Calcium (CaO)	3	5	5	3	3	3	2	3
Cadmium	–	–	–	–	–	–	–	–
Chromium	0.005	0.002	0.002	0.002	0.002	0.003	0.002	0.005
Cobalt	–	–	–	–	–	–	–	–
Columbium (Cb_2O_5)	–	–	–	–	–	–	–	–
Copper	0.001	–	0.001	0.001	0.001	–	–	0.01
Gallium	0.003	0.002	0.003	0.002	0.003	0.002	0.002	0.002
Iron (Fe)	4	3	7	5	5	4	4	6
Lanthanum (La_2O_3)	–	–	–	–	–	–	–	–
Lead	–	–	–	–	–	–	–	–
Lithium (Li_2O)	–	–	–	–	–	–	–	–
Manganese	0.06	0.04	0.08	0.04	0.04	0.04	0.06	0.08
Magnesium (MgO)	2	2	3	3	3	3	3	4
Molybdenum	–	–	–	–	–	–	–	–
Nickel	–	–	–	–	–	–	–	–
Phosphorus	0.002	0.002	0.002	0.003	0.002	0.003	0.002	0.004
Silver	–	–	–	–	–	–	–	–
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20	>20	>20
Sodium (Na_2O)	>4	4	>4	>4	>4	>4	>4	4
Strontium	0.06	–	–	–	–	–	–	0.06
Tantalum (Ta_2O_5)	–	–	–	–	–	–	–	–
Tin	–	–	–	–	–	–	–	–
Titanium	0.3	0.3	0.4	0.4	0.3	0.4	0.3	0.4
Vanadium	0.01	0.005	0.007	0.005	0.003	0.005	0.005	0.02
Yttrium (Y_2O_3)	–	–	–	–	–	–	–	–
Zinc	–	–	–	–	–	–	–	–
Zirconium	0.005	–	–	0.005	–	–	–	–
Gold	–	–	–	–	–	–	–	–
Hafnium	–	–	–	–	–	–	–	–
Indium	–	–	–	–	–	–	–	–
Platinum	–	–	–	–	–	–	–	–
Rhenium	–	–	–	–	–	–	–	–
Tellurium	–	–	–	–	–	–	–	–
Thallium	–	–	–	–	–	–	–	–
Scandium	–	–	–	–	–	–	–	–
	113	114						

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Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

REPORT NO. 2169

Code: < Less Than, > Greater Than, – Below Limit of Detection

Sam. No.	JR80-1152	1156	1157	1158	1159	1160	1161	1162	1163
Aluminum (Al_2O_3)	17%	17%	0.5%	20%	15%	17%	17%	17%	17%
Antimony	–	–	–	–	–	–	–	–	–
Arsenic	–	–	–	–	–	–	–	–	–
Barium	0.07	0.1	–	0.1	0.07	0.07	0.07	0.07	0.07
Beryllium (BeO)	–	–	–	–	–	–	–	–	–
Bismuth	–	–	–	–	–	–	–	–	–
Boron	0.002	–	–	–	–	–	0.002	–	–
Calcium (CaO)	3	2	0.05	5	2	5	2	2	2
Cadmium	–	–	–	–	–	–	–	–	–
Chromium	0.002	0.002	–	0.002	–	0.002	–	0.005	0.002
Cobalt	–	–	–	–	–	–	–	–	–
Columbium (Cb_2O_5)	–	–	–	–	–	–	–	–	–
Copper	0.001	–	–	–	–	–	0.007	0.003	0.001
Gallium	0.003	0.002	–	0.002	–	0.002	0.002	0.002	0.002
Iron (Fe)	5	3	0.2	3	1	3	2	2	3
Lanthanum (La_2O_3)	–	–	–	–	–	–	–	–	–
Lead	–	–	–	–	–	–	–	–	–
Lithium (Li_2O)	–	–	–	–	–	–	–	–	–
Manganese	0.08	0.06	0.01	0.1	0.04	0.06	0.04	0.06	0.06
Magnesium (MgO)	3	3	0.1	3	1	2	2	2	2
Molybdenum	–	–	–	–	–	–	–	–	–
Ni	0.002	0.002	–	0.002	–	0.002	0.002	0.002	0.002
Phosphorus	–	–	–	–	–	–	–	–	–
Silver	–	–	–	–	–	–	–	–	–
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20	>20	>20	>20
Sodium (Na_2O)	>4	4	–	3	3	3	3	3	3
Strontium	–	0.06	–	0.08	–	–	–	–	–
Tantalum (Ta_2O_5)	–	–	–	–	–	–	–	–	–
Tin	–	–	–	–	–	–	–	–	–
Titanium	0.4	0.4	0.002	0.4	0.3	0.4	0.3	0.4	0.6
Vanadium	0.005	0.005	–	0.007	–	0.005	0.003	0.007	0.005
Yttrium (Y_2O_3)	–	–	–	–	–	–	–	–	–
Zinc	–	–	–	–	–	–	–	–	–
Zirconium	0.005	–	–	0.005	–	–	0.005	–	0.005
Gold	–	–	–	–	–	–	–	–	–
Hafnium	–	–	–	–	–	–	–	–	–
Indium	–	–	–	–	–	–	–	–	–
Platinum	–	–	–	–	–	–	–	–	–
Rhenium	–	–	–	–	–	–	–	–	–
Tellurium	–	–	–	–	–	–	–	–	–
Thallium	–	–	–	–	–	–	–	–	–
Scandium	–	–	–	–	–	–	–	–	–

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Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

REPORT NO. 2196

Code: < Less Than, > Greater Than, – Below Limit of Detection

Sam. No.	JR80-1164	1165	1166	1167	1168	1169	1170
Aluminum (Al_2O_3)	15%	8%	12%	12%	17%	17%	15%
Antimony	–	–	–	–	–	–	–
Arsenic	–	–	–	–	–	–	–
Barium	0.07	–	0.07	0.07	–	–	–
Beryllium (BeO)	–	–	–	–	–	–	–
Bismuth	–	–	–	–	–	–	–
Boron	–	–	–	–	–	–	–
Calcium (CaO)	2	0.7	2	2	5	1.5	1.5
Cadmium	–	–	–	–	–	–	–
Chromium	–	–	–	–	0.002	–	–
Cobalt	–	–	–	–	–	–	–
Columbium (Cb_2O_5)	–	–	–	–	–	–	–
Copper	0.002	–	0.001	–	0.005	–	–
Gallium	0.002	–	0.002	0.002	0.003	0.002	0.002
Iron (Fe)	2	0.5	2	1	3	2	1
Lanthanum (La_2O_3)	–	–	–	–	–	–	–
Lead	–	–	–	–	–	–	–
Lithium (Li_2O)	–	–	–	–	–	–	–
Manganese	0.1	0.03	0.1	0.1	0.06	0.06	0.06
Magnesium (MgO)	2	0.2	1	0.8	2	2	1
Molybdenum	–	–	–	–	–	–	–
Ni	0.002	–	0.002	–	0.002	0.002	0.002
Phosphorus	–	–	–	–	–	–	–
Silver	–	–	–	–	–	–	–
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20	>20
Sodium (Na_2O)	4	4	4	>4	4	4	3
Strontium	–	–	–	–	–	–	–
Tantalum (Ta_2O_5)	–	–	–	–	–	–	–
Tin	–	–	–	–	–	–	–
Titanium	0.3	0.002	0.2	0.2	0.3	0.3	0.2
Vanadium	0.003	–	–	–	0.003	0.003	–
Yttrium (Y_2O_3)	–	–	–	–	–	–	–
Zinc	–	–	–	–	–	–	–
Zirconium	–	–	0.01	–	0.01	0.005	–
Gold	–	–	–	–	–	–	–
Hafnium	–	–	–	–	–	–	–
Indium	–	–	–	–	–	–	–
Platinum	–	–	–	–	–	–	–
Rhenium	–	–	–	–	–	–	–
Tellurium	–	–	–	–	–	–	–
Thallium	–	–	–	–	–	–	–
Scandium	–	–	–	–	–	–	–

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Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

REPORT NO.
2169

Code: < Less Than, > Greater Than, — Below Limit of Detection

Sample No	JR80-1171	JR-1172	JR-1173	JR-1174	JR-1175	1176	1177	1178	1179
Aluminum (Al_2O_3)	12%	15%	10%	12%	15%	17%	17%	17%	12%
Antimony	—	—	—	—	—	—	—	—	—
Arsenic	—	—	—	—	—	—	—	—	—
Barium	0.1	0.07	0.07	0.07	0.1	0.1	—	0.1	0.1
Beryllium (BeO)	—	—	—	—	—	—	—	—	—
Bismuth	—	—	—	—	—	—	—	—	—
Boron	—	—	0.002	—	0.002	0.002	—	0.002	—
Calcium (CaO)	2	3	2	2	2	2	2	2	1
Cadmium	—	—	—	—	—	—	—	—	—
Chromium	—	—	—	—	0.002	0.002	0.002	0.005	—
Cobalt	—	—	—	—	—	—	—	—	—
Columbium (Cb_2O_5)	—	—	—	—	—	—	—	—	—
Copper	—	0.001	—	—	0.002	0.005	—	0.003	—
Gallium	0.002	0.002	0.002	0.002	0.002	0.002	0.003	0.002	0.002
Iron (Fe)	2	3	2	2	4	4	2	4	1
Lanthanum (La_2O_3)	—	—	—	—	—	—	—	—	—
Lead	—	—	—	—	—	—	—	—	—
Lithium (Li_2O)	—	—	—	—	—	—	—	—	—
Manganese	0.04	0.06	0.04	0.06	0.04	0.04	0.04	0.06	0.04
Magnesium (MgO)	1	2	2	2	3	3	2	2	0.4
Molybdenum	—	—	—	—	—	—	—	—	—
Nickel	0.002	0.002	0.002	0.002	0.003	0.003	0.002	0.003	—
Phosphorus	—	—	—	—	—	—	—	—	—
Silver	—	—	—	—	—	—	—	—	—
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20	>20	>20	>20
Sodium (Na_2O)	4	4	3	4	3	3	4	4	>4
Strontium	—	—	—	—	—	—	—	—	—
Tantalum (Ta_2O_5)	—	—	—	—	—	—	—	—	—
Tin	—	—	—	—	—	—	—	—	—
Titanium	0.2	0.3	0.2	0.2	0.3	0.3	0.3	0.4	0.05
Vanadium	0.003	0.007	0.005	0.005	0.02	0.02	0.01	0.02	—
Yttrium (Y_2O_3)	—	0.005	—	—	—	—	—	—	0.01
Zinc	—	—	—	—	—	—	—	—	—
Zirconium	—	—	—	—	—	—	0.005	—	—
Gold	—	—	—	—	—	—	—	—	—
Hafnium	—	—	—	—	—	—	—	—	—
Indium	—	—	—	—	—	—	—	—	—
Platinum	—	—	—	—	—	—	—	—	—
Rhenium	—	—	—	—	—	—	—	—	—
Tellurium	—	—	—	—	—	—	—	—	—
Thallium	—	—	—	—	—	—	—	—	—
Scandium	—	—	—	—	—	—	—	—	—

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Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

REPORT
2169

Code: < Less Than, > Greater Than, — Below Limit of Detection

Sample	JR80-1180	1181	1182	1183	1184	1185	1186
Aluminum (Al_2O_3)	17%	10%	15%	12%	15%	SAMPLE MISSING	SAMPLE MISSING
Antimony	—	—	—	—	—		
Arsenic	—	—	—	—	—		
Barium	0.1	0.1	0.07	—	0.07		
Beryllium (BeO)	—	—	—	—	—		
Bismuth	—	—	—	—	—		
Boron	—	—	—	—	—		
Calcium (CaO)	2	1	6	2	2		
Cadmium	—	—	—	—	—		
Chromium	0.01	—	0.01	0.002	0.002		
Cobalt	—	—	—	—	—		
Columbium (Cb_2O_5)	—	—	—	—	—		
Copper	0.005	—	0.02	—	—		
Gallium	0.002	0.002	0.002	—	0.002		
Iron (Fe)	7	1	5	3	3		
Lanthanum (La_2O_3)	—	—	—	—	—		
Lead	—	—	—	—	—		
Lithium (Li_2O)	—	—	—	—	—		
Manganese	0.08	0.08	0.1	0.06	0.08		
Magnesium (MgO)	3	2	4	2	2		
Molybdenum	—	—	—	—	—		
Nickel	0.003	—	0.003	0.002	0.002		
Phosphorus	—	—	—	—	—		
Silver	—	—	—	—	—		
Silicon (SiO_2)	>20	>20	>20	>20	>20		
Sodium (Na_2O)	4	>4	4	4	4		
Strontium	0.06	—	—	—	—		
Tantalum (Ta_2O_5)	—	—	—	—	—		
Tin	—	—	—	—	—		
Titanium	0.4	0.1	0.5	0.3	0.3	SAMPLE MISSING	SAMPLE MISSING
Vanadium	0.02	0.003	0.02	0.005	0.005		
Yttrium (Y_2O_3)	—	—	—	—	—		
Zinc	—	—	—	—	—		
Zirconium	—	0.005	—	0.01	0.005		
Gold	—	—	—	—	—		
Hafnium	—	—	—	—	—		
Indium	—	—	—	—	—		
Platinum	—	—	—	—	—		
Rhenium	—	—	—	—	—		
Tellurium	—	—	—	—	—		
Thallium	—	—	—	—	—		
Scandium	—	—	—	—	—		

TSL LABORATORIES LTD.

Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

REPORT NO. 2169

Code: < Less Than, > Greater Than, — Below Limit of Detection

S No.	JR80-1187	1189	1191	1192 S	1193	1195 S	1196	1197	1198
Aluminum (Al_2O_3)	15%	10%	15%	15%	15%	10%	10%	15%	8%
Antimony	–	–	–	–	–	–	–	–	–
Arsenic	–	–	–	–	–	–	–	–	–
Barium	0.1	0.07	0.07	0.07	0.07	–	–	0.07	–
Beryllium (BeO)	–	–	–	–	–	–	–	–	–
Bismuth	–	–	–	–	–	–	–	–	–
Boron	0.005	–	0.002	0.002	0.002	–	–	0.002	–
Calcium (CaO)	0.7	1	1.5	1.5	1	1	1	1	1
Cadmium	–	–	–	–	–	–	–	–	–
Chromium	0.01	0.002	0.01	0.01	0.01	0.01	0.01	0.01	0.005
Cobalt	–	–	–	–	–	–	–	–	–
Columbium (Cb_2O_5)	–	–	–	–	–	–	–	–	–
Copper	0.005	0.001	0.003	0.003	0.003	0.003	0.02	0.01	0.01
Gallium	0.002	–	0.002	0.002	0.002	0.002	0.002	0.002	–
Iron (Fe)	5	2	5	5	5	3	3	4	3
Lanthanum (La_2O_3)	–	–	–	–	–	–	–	–	–
Lead	–	–	–	–	–	–	–	–	–
Lithium (Li_2O)	–	–	–	–	–	–	–	–	–
Manganese	0.04	0.04	0.06	0.04	0.04	0.04	0.06	0.06	0.06
Magnesium (MgO)	2	1	3	3	2	1	2	3	2
Molybdenum	–	–	–	–	–	–	–	–	–
Nickel	0.002	0.002	0.004	0.003	0.003	0.003	0.003	0.003	0.003
Phosphorus	–	–	–	–	–	–	–	–	–
Silver	–	–	–	–	–	–	–	–	–
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20	>20	>20	>20
Sodium (Na_2O)	3	4	4	3	3	3	1	2	1
Strontium	–	–	–	–	–	–	–	–	–
Tantalum (Ta_2O_5)	–	–	–	–	–	–	–	–	–
Tin	–	–	–	–	–	–	–	–	–
Titanium	0.3	0.2	0.4	0.4	0.3	0.3	0.2	0.3	0.2
Vanadium	0.01	0.005	0.02	0.02	0.01	0.005	0.003	0.02	–
Yttrium (Y_2O_3)	–	–	–	–	–	–	–	–	–
Zinc	–	–	–	–	–	–	–	–	–
Zirconium	0.005	0.005	0.005	–	0.005	0.005	–	–	–
Gold	–	–	–	–	–	–	–	–	–
Hafnium	–	–	–	–	–	–	–	–	–
Indium	–	–	–	–	–	–	–	–	–
Platinum	–	–	–	–	–	–	–	–	–
Rhenium	–	–	–	–	–	–	–	–	–
Tellurium	–	–	–	–	–	–	–	–	–
Thallium	–	–	–	–	–	–	–	–	–
Scandium	–	–	–	–	–	–	–	–	–

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Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

REPORT 2169

Code: < Less Than, > Greater Than, — Below Limit of Detection

S No.	JR80-1199	1200 S	1201 S
Aluminum (Al_2O_3)	12%	6%	10%
Antimony	–	–	–
Arsenic	–	–	–
Barium	0.1	0.07	0.1
Beryllium (BeO)	–	–	–
Bismuth	–	–	–
Boron	0.002	–	0.002
Calcium (CaO)	2	1.5	1.5
Cadmium	–	–	–
Chromium	0.002	0.002	0.002
Cobalt	–	–	–
Columbium (Cb_2O_5)	–	–	–
Copper	0.007	0.005	0.001
Gallium	–	–	–
Iron (Fe)	3	1	2
Lanthanum (La_2O_3)	–	–	–
Lead	–	–	–
Lithium (Li_2O)	–	–	–
Manganese	0.1	0.04	0.04
Magnesium (MgO)	3	1	1
Molybdenum	–	–	–
Nickel	0.003	0.002	0.002
Phosphorus	–	–	–
Silver	–	–	–
Silicon (SiO_2)	>20	>20	>20
Sodium (Na_2O)	3	1	3
Strontium	–	–	–
Tantalum (Ta_2O_5)	–	–	–
Tin	–	–	–
Titanium	0.3	0.1	0.3
Vanadium	0.01	0.003	0.005
Yttrium (Y_2O_3)	–	–	–
Zinc	–	–	–
Zirconium	–	–	–
Gold	–	–	–
Hafnium	–	–	–
Indium	–	–	–
Platinum	–	–	–
Rhenium	–	–	–
Tellurium	–	–	–
Thallium	–	–	–
Scandium	–	–	–

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U.S. BUREAU OF MINES

REPORT NO.
2169

Code: < Less Than, > Greater Than, — Below Limit of Detection

Sa No.	JR80-1202 S	(1203) S	1204 S	(1205) S	1206	1207 (S)	1208 S
Aluminum (Al₂O₃)	17%	17%	15%	15%	12%	15%	12%
Antimony	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-
Barium	0.07	0.07	-	0.07	0.07	0.07	0.07
Beryllium (BeO)	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-
Boron	0.002	-	-	-	-	0.002	-
Calcium (CaO)	1.5	1.5	1.5	2	1.5	2	1
Cadmium	-	-	-	-	-	-	-
Chromium	0.002	0.005	0.005	0.01	0.002	0.005	0.005
Cobalt	-	-	-	-	-	-	-
Columbium (Cb₂O₅)	-	-	-	-	-	-	-
Copper	-	0.001	0.001	0.001	0.001	0.01	0.001
Gallium	0.002	0.002	0.002	-	-	0.002	-
Iron (Fe)	4	3	3	3	3	5	2
Lanthanum (La₂O₃)	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Lithium (Li₂O)	-	-	-	-	-	-	-
Manganese	0.06	0.04	0.06	0.06	0.06	0.06	0.04
Magnesium (MgO)	2	2	3	2	2	3	1
Molybdenum	-	-	-	-	-	-	-
Nickel	0.002	0.002	0.002	0.003	0.003	0.004	0.003
Phosphorus	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-
Silicon (SiO₂)	>20	>20	>20	>20	>20	>20	>20
Sodium (Na₂O)	3	3	3	3	3	3	4
Strontium	-	-	-	-	-	-	-
Tantalum (Ta₂O₅)	-	-	-	-	-	-	-
Tin	-	-	-	-	-	-	-
Titanium	0.3	0.2	0.3	0.3	0.3	0.4	0.2
Vanadium	0.005	0.005	0.005	0.005	0.007	0.01	0.003
Yttrium (Y₂O₃)	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
Zirconium	-	0.005	-	0.005	0.005	-	-
Gold	-	-	-	-	-	-	-
Hafnium	-	-	-	-	-	-	-
Indium	-	-	-	-	-	-	-
Platinum	-	-	-	-	-	-	-
Rhenium	-	-	-	-	-	-	-
Tellurium	-	-	-	-	-	-	-
Thallium	-	-	-	-	-	-	-
Scandium	-	-	-	-	-	-	-

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Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

REPORT NO.
2169

Code: < Less Than, > Greater Than, — Below Limit of Detection

Far No.	JR80-1209 S	1210 S	1211	1213	(1214) X	(1215) X	(1216) X	(1217) ✓
Aluminum (Al₂O₃)	15%	10%	10%	15%	10%	10%	12%	12%
Antimony	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	0.3	0.1	-
Barium	-	0.1	-	-	-	-	0.07	0.07
Beryllium (BeO)	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	0.002	0.002
Calcium (CaO)	6	1	0.5	1	1	1	1	1.5
Cadmium	-	-	-	-	-	-	-	-
Chromium	0.005	0.002	0.002	0.005	0.005	0.005	0.005	0.005
Cobalt	-	-	-	-	-	-	-	-
Columbium (Cb₂O₅)	-	-	-	-	-	-	-	-
Copper	0.01	-	0.002	0.001	0.001	-	0.001	0.003
Gallium	0.003	-	0.002	0.002	-	-	0.002	0.002
Iron (Fe)	4	0.5	1	3	1	1	2	2
Lanthanum (La₂O₃)	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-
Lithium (Li₂O)	-	-	-	-	-	-	-	-
Manganese	0.08	0.02	0.03	0.03	0.02	0.02	0.03	0.03
Magnesium (MgO)	2	0.4	0.8	2	1	1	1	1
Molybdenum	-	-	-	-	-	-	-	-
Nickel	0.002	-	-	0.002	0.002	0.002	0.003	0.002
Phosphorus	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-
Silicon (SiO₂)	>20	>20	>20	>20	>20	>20	>20	>20
Sodium (Na₂O)	3	4	3	3	3	2	3	3
Strontium	-	-	-	-	-	-	-	-
Tantalum (Ta₂O₅)	-	-	-	-	-	-	-	-
Tin	-	-	-	-	-	-	-	-
Titanium	0.3	0.03	0.1	0.3	0.2	0.2	0.2	0.2
Vanadium	0.005	-	0.003	0.007	0.003	0.003	0.005	0.003
Yttrium (Y₂O₃)	0.005	0.01	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-
Zirconium	-	-	-	0.005	-	0.005	-	0.005
Gold	-	-	-	-	-	-	-	-
Hafnium	-	-	-	-	-	-	-	-
Indium	-	-	-	-	-	-	-	-
Platinum	-	-	-	-	-	-	-	-
Rhenium	-	-	-	-	-	-	-	-
Tellurium	-	-	-	-	-	-	-	-
Thallium	-	-	-	-	-	-	-	-
Scandium	-	-	-	-	-	-	-	-

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Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

REPORT NO. 2169

Code: < Less Than, > Greater Than, – Below Limit of Detection

Sample No.	JRSO-1219	1220	1221	1222	1223	1224	1225	1226
Aluminum (Al_2O_3)	15%	1%	3%	15%	17%	12%	12%	8%
Antimony	–		–	–	–	–	–	–
Arsenic	–	1	1	0.2	–	–	–	–
Barium	0.1	–	–	0.07	0.07	0.07	0.07	0.07
Beryllium (BeO)	–	–	–	–	–	–	–	–
Bismuth	–	–	–	–	–	–	–	–
Boron	0.002	–	–	–	0.002	–	0.002	0.002
Calcium (CaO)	1	0.02	0.05	1.5	3	2	1.5	0.3
Cadmium	–	–	–	–	–	–	–	–
Chromium	0.005	0.002	–	0.002	–	0.002	0.002	0.002
Cobalt	–	–	–	–	–	–	–	–
Columbium (Cb_2O_5)	–	–	–	–	–	–	–	–
Copper	0.003	0.001	0.001	0.003	0.001	0.001	0.002	–
Gallium	0.002	–	–	–	0.002	–	0.002	0.002
Iron (Fe)	4	0.5	0.5	3	4	2	2	2
Lanthanum (La_2O_3)	–	–	–	–	–	–	–	–
Lead	–	–	–	–	–	–	–	–
Lithium (Li_2O)	–	–	–	–	–	–	–	–
Manganese	0.04	0.01	0.01	0.06	0.06	0.04	0.06	0.04
Magnesium (MgO)	2	0.1	0.3	1	2	1	2	1
Molybdenum	–	–	–	–	–	–	–	–
Nickel	0.002	–	–	0.002	–	–	0.002	0.002
Phosphorus	–	–	–	–	–	–	–	–
Silver	–	–	–	–	–	–	–	–
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20	>20	>20
Sodium (Na_2O)	2	–	0.5	4	4	3	2	1
Strontium	–	–	–	–	–	–	–	–
Tantalum (Ta_2O_5)	–	–	–	–	–	–	–	–
Tin	–	–	–	–	–	–	–	–
Titanium	0.3	0.002	0.02	0.3	0.3	0.2	0.3	0.2
Vanadium	0.007	–	–	0.005	0.005	–	0.005	0.003
Yttrium (Y_2O_3)	–	–	–	–	–	–	–	–
Zinc	–	–	–	–	–	–	–	–
Zirconium	–	–	–	0.005	–	–	–	–
Gold	–	–	–	–	–	–	–	–
Hafnium	–	–	–	–	–	–	–	–
Indium	–	–	–	–	–	–	–	–
Platinum	–	–	–	–	–	–	–	–
Rhenium	–	–	–	–	–	–	–	–
Tellurium	–	–	–	–	–	–	–	–
Thallium	–	–	–	–	–	–	–	–
Scandium	–	–	–	–	–	–	–	–

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U.S. BUREAU OF MINES

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Code: < Less Than, > Greater Than, – Below Limit of Detection

Sample No.	JR80-1227	1228	1229	1230	1231	1232	1233	1234
Aluminum (Al_2O_3)	8%	5%	5%	8%	10%	5%	4%	8%
Antimony	–	–	–	–	–	–	–	–
Arsenic	–	–	–	–	–	–	–	–
Barium	0.07	–	–	0.1	0.3	0.2	–	0.1
Beryllium (BeO)	–	–	–	–	0.07	–	–	–
Bismuth	–	–	–	–	–	–	–	–
Boron	0.002	0.002	0.002	0.002	–	0.002	0.002	0.002
Calcium (CaO)	0.5	0.5	0.3	1	2	0.7	0.5	0.5
Cadmium	–	–	–	–	–	–	–	–
Chromium	0.002	–	–	–	–	–	–	–
Cobalt	–	–	–	–	–	–	–	–
Columbium (Cb_2O_5)	–	–	–	–	–	–	–	–
Copper	–	–	–	–	0.003	–	–	–
Gallium	0.002	–	–	–	0.002	–	–	–
Iron (Fe)	2	1	1	1	2	1	1	1
Lanthanum (La_2O_3)	–	–	–	–	–	–	–	–
Lead	–	–	–	–	–	–	–	–
Lithium (Li_2O)	–	–	–	–	–	–	–	–
Manganese	0.04	0.03	0.02	0.02	0.03	0.01	0.01	0.03
Magnesium (MgO)	2	0.6	0.4	1	2	0.5	0.4	0.8
Molybdenum	–	–	–	–	–	–	–	–
Nickel	0.002	–	–	–	0.002	0.002	–	–
Phosphorus	–	–	–	–	–	–	–	–
Silver	–	–	–	–	–	–	–	–
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20	>20	>20
Sodium (Na_2O)	1	2	1	2	3	0.8	1	2
Strontium	–	–	–	–	–	–	–	–
Tantalum (Ta_2O_5)	–	–	–	–	–	–	–	–
Tin	–	–	–	–	–	–	–	–
Titanium	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.3
Vanadium	0.005	–	–	–	–	–	–	0.003
Yttrium (Y_2O_3)	–	–	–	–	–	–	–	–
Zinc	–	–	–	–	–	–	–	–
Zirconium	–	–	–	–	–	–	–	–
Gold	–	–	–	–	–	–	–	–
Hafnium	–	–	–	–	–	–	–	–
Indium	–	–	–	–	–	–	–	–
Platinum	–	–	–	–	–	–	–	–
Rhenium	–	–	–	–	–	–	–	–
Tellurium	–	–	–	–	–	–	–	–
Thallium	–	–	–	–	–	–	–	–
Scandium	–	–	–	–	–	–	–	–

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Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

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Code: < Less Than, > Greater Than, — Below Limit of Detection

Sample No.	JR80-1236	1237	1238	1239	1240	1241	1242		
Aluminum (Al_2O_3)	10%			10%	10%	8%	6%		
Antimony	—			—	—	—	—		
Arsenic	—			—	—	—	—		
Barium	0.002			—	—	—	—		
Beryllium (BeO)	—			—	—	—	—		
Bismuth	—			—	—	—	—		
Boron	0.002			—	—	—	—		
Calcium (CaO)	1			1.5	1.5	1	0.8		
Cadmium	—			—	—	—	—		
Chromium	0.005			0.002	0.002	0.002	—		
Cobalt	—		INSUFFICIENT	—	—	—	—		
Columbium (Cb_2O_5)	—			—	—	—	—		
Copper	0.001	INSUFFICIENT		—	—	—	—		
Gallium	0.002			—	0.002	0.002	—		
Iron (Fe)	2			0.5	1	2	1		
Lanthanum (La_2O_3)	—			—	—	—	—		
Lead	0.002			—	—	—	—		
Lithium (Li_2O)	—			—	—	—	—		
Manganese	0.06			0.03	0.04	0.04	0.03		
Magnesium (MgO)	2			1	1	1	0.6		
Molybdenum	—			—	—	—	—		
N	0.003			—	—	0.002	0.002		
Phosphorus	—			—	—	—	—		
Silver	—			—	—	—	—		
Silicon (SiO_2)	>20			>20	>20	>20	>20		
Sodium (Na_2O)	2			3	2	1	1		
Strontium	—			—	—	—	—		
Tantalum (Ta_2O_5)	—			—	—	—	—		
Tin	—			—	—	—	—		
Titanium	0.2		INSUFFICIENT	0.2	0.3	0.2	0.3		
Vanadium	0.003	INSUFFICIENT		0.003	0.003	0.003	—		
Yttrium (Y_2O_3)	—			—	—	—	—		
Zinc	—			—	—	—	—		
Zirconium	—			0.005	0.005	—	—		
Gold	—			—	—	—	—		
Hafnium	—			—	—	—	—		
Indium	—			—	—	—	—		
Platinum	—			—	—	—	—		
Rhenium	—			—	—	—	—		
Tellurium	—			—	—	—	—		
Thallium	—			—	—	—	—		
Scandium	—			—	—	—	—		

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Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

REPORT NO. 2169

Code: < Less Than, > Greater Than, — Below Limit of Detection

Sample No.	JR80-1243	1244	1245	1246	1247	1248	1249	1250
Aluminum (Al_2O_3)	8%			3%		6%		3%
Antimony	—			—		—		—
Arsenic	—			—		—		—
Barium	0.07			—		0.07		—
Beryllium (BeO)	—		INSUFFICNET	—	INSUFFICIENT	—	INSUFFICIENT	—
Bismuth	—	INSUFFICNET		—		—		—
Boron	0.002			—		0.002		—
Calcium (CaO)	1			0.3		0.5		0.5
Cadmium	—			—		—		—
Chromium	—			—		—		—
Cobalt	—			—		—		—
Columbium (Cb_2O_5)	—			—		—		—
Copper	—			—		—		—
Gallium	0.002			—		0.002		—
Iron (Fe)	2			0.5		1		0.5
Lanthanum (La_2O_3)	—			—		—		—
Lead	—			—		—		—
Lithium (Li_2O)	—			—		—		—
Manganese	0.03			0.02		0.02		0.02
Magnesium (MgO)	2			1		0.6		0.6
Molybdenum	—			—		—		—
N	0.002			—		0.002		0.002
Phosphorus	—			—		—		—
Silver	—			—		—		—
Silicon (SiO_2)	>20			>20		>20		>20
Sodium (Na_2O)	3			0.5		0.8		0.4
Strontium	—	INSUFFICIENT	INSUFFICIENT	—	INSUFFICNET	—	INSUFFICIENT	—
Tantalum (Ta_2O_5)	—			—		—		—
Tin	—			—		—		—
Titanium	0.3			0.1		0.2		0.1
Vanadium	0.005			—		0.003		—
Yttrium (Y_2O_3)	—			—		—		—
Zinc	—			—		—		—
Zirconium	0.005			—		0.005		—
Gold	—			—		—		—
Hafnium	—			—		—		—
Indium	—			—		—		—
Platinum	—			—		—		—
Rhenium	—			—		—		—
Tellurium	—			—		—		—
Thallium	—			—		—		—
Scandium	—			—		—		—

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Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

REPORT NO. 2169

Code: < Less Than, > Greater Than, – Below Limit of Detection

San. No.	JR80-1252	1253	1254	1255	1256	1257	1260
Aluminum (Al_2O_3)				8%	6%	6%	8%
Antimony				–	–	–	–
Arsenic				–	–	–	0.1
Barium				0.07	0.07	0.07	0.07
Beryllium (BeO)				–	–	–	–
Bismuth				–	–	–	–
Boron	INSUFFICIENT	INSUFFICIENT	INSUFFICIENT	0.002	0.002	0.002	0.002
Calcium (CaO)				1	1	1	1
Cadmium				–	–	–	–
Chromium				0.002	–	–	–
Cobalt				–	–	–	–
Columbium (Cb_2O_5)				–	–	–	–
Copper				–	–	–	–
Gallium				0.002	–	–	–
Iron (Fe)				1	0.5	0.5	1
Lanthanum (La_2O_3)				–	–	–	–
Lead				–	–	0.01	–
Lithium (Li_2O)				–	–	–	–
Manganese				0.02	0.02	0.02	0.03
Magnesium (MgO)				1	0.4	0.5	0.8
Molybdenum				–	–	–	–
Ni				–	–	–	–
Phosphorus				–	–	–	–
Silver	INSUFFICIENT	INSUFFICIENT	INSUFFICIENT	–	–	–	–
Silicon (SiO_2)				>20	>20	>20	>20
Sodium (Na_2O)				2	1.5	2	3
Strontium				–	–	–	–
Tantalum (Ta_2O_5)				–	–	–	–
Tin				–	–	–	–
Titanium				0.2	0.2	0.1	0.2
Vanadium				0.003	–	–	–
Yttrium (Y_2O_3)				–	–	–	–
Zinc				–	–	–	–
Zirconium				0.005	0.007	0.005	–
Gold				–	–	–	–
Hafnium				–	–	–	–
Indium				–	–	–	–
Platinum				–	–	–	–
Rhenium				–	–	–	–
Tellurium				–	–	–	–
Thallium				–	–	–	–
Scandium				–	–	–	–

TSL LABORATORIES LTD.
Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

REPORT 2169

Code: < Less Than, > Greater Than, – Below Limit of Detection

San. No.	JR80-1261	1263	1264	1265	1267	1268	1269	1270
Aluminum (Al_2O_3)	4%	6%	4%	6%	8%	6%	4%	3%
Antimony	–	–	–	–	–	–	–	–
Arsenic	–	–	–	–	–	–	–	–
Barium	–	–	–	–	0.07	–	–	–
Beryllium (BeO)	–	–	–	–	–	–	–	–
Bismuth	–	–	–	–	–	–	–	–
Boron	–	–	–	0.002	–	–	–	–
Calcium (CaO)	0.3	1	0.4	0.4	1.5	0.3	0.4	0.2
Cadmium	–	–	–	–	–	–	–	–
Chromium	–	–	–	0.002	–	–	–	–
Cobalt	–	–	–	–	–	–	–	–
Columbium (Cb_2O_5)	–	–	–	–	–	–	–	–
Copper	–	–	–	0.001	–	0.002	0.001	0.001
Gallium	–	–	–	–	–	–	0.002	–
Iron (Fe)	2	3	2	3	1.5	2	3	1.5
Lanthanum (La_2O_3)	–	–	–	–	–	–	–	–
Lead	–	–	–	–	–	–	–	–
Lithium (Li_2O)	–	–	–	–	–	–	–	–
Manganese	0.01	0.02	0.01	0.02	0.02	0.02	0.02	0.02
Magnesium (MgO)	0.6	0.8	0.6	0.8	0.7	0.7	0.8	0.6
Molybdenum	–	–	–	–	–	–	–	–
Ni	–	–	–	–	–	–	–	–
Phosphorus	–	–	–	–	–	–	–	–
Silver	–	–	–	–	–	–	–	–
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20	>20	>20
Sodium (Na_2O)	1	1.5	1.5	1	3	0.8	1	1
Strontium	–	–	–	–	–	–	–	–
Tantalum (Ta_2O_5)	–	–	–	–	–	–	–	–
Tin	–	–	–	–	–	–	–	–
Titanium	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1
Vanadium	0.003	0.003	0.005	0.005	0.005	0.003	0.005	0.003
Yttrium (Y_2O_3)	–	–	–	–	–	–	–	–
Zinc	–	–	–	–	–	–	–	–
Zirconium	–	–	–	–	–	–	–	–
Gold	–	–	–	–	–	–	–	–
Hafnium	–	–	–	–	–	–	–	–
Indium	–	–	–	–	–	–	–	–
Platinum	–	–	–	–	–	–	–	–
Rhenium	–	–	–	–	–	–	–	–
Tellurium	–	–	–	–	–	–	–	–
Thallium	–	–	–	–	–	–	–	–
Scandium	–	–	–	–	–	–	–	–

2

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Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

REPORT NO.
2169

Code: < Less Than, > Greater Than, — Below Limit of Detection

Sample No.	JR80-1272	1273	1274	1275	1276	1277	1278		
Aluminum (Al_2O_3)	6%	10%	4%	4%	3%	4%	4%		
Antimony	—	—	—	—	—	—	—		
Arsenic	—	—	—	—	—	—	—		
Barium	0.07	—	—	0.1	—	—	0.07		
Beryllium (BeO)	—	—	—	—	—	—	—		
Bismuth	—	—	—	—	—	—	—		
Boron	—	0.002	—	—	—	—	—		
Calcium (CaO)	0.6	0.3	0.4	0.8	0.3	0.4	0.6		
Cadmium	—	—	—	—	—	—	—		
Chromium	0.003	0.003	—	—	—	—	0.002		
Cobalt	—	—	—	—	—	—	—		
Columbium (Cb_2O_5)	—	—	—	—	—	—	—		
Copper	0.001	—	—	—	0.001	0.001	0.001		
Gallium	—	0.003	—	—	—	—	0.002		
Iron (Fe)	1.5	1	1.5	1.5	1	1.5	1.5		
Lanthanum (La_2O_3)	—	—	—	—	—	—	—		
Lead	—	—	—	—	—	—	—		
Lithium (Li_2O)	—	—	—	—	—	—	—		
Manganese	0.01	0.01	0.01	0.01	0.01	0.02	0.02		
Magnesium (MgO)	0.8	0.6	0.5	0.5	0.6	0.7	0.7		
Molybdenum	—	—	—	—	—	—	—		
Nickel	—	—	—	—	—	—	—		
Phosphorus	—	—	—	—	—	—	—		
Silver	—	—	—	—	—	—	—		
Silicon (SiO_2)	>20	>20	>20	>20	>20	>20	>20		
Sodium (Na_2O)	0.6	2	0.8	0.8	1.5	0.6	1		
Strontium	—	—	—	—	—	—	—		
Tantalum (Ta_2O_5)	—	—	—	—	—	—	—		
Tin	—	—	—	—	—	—	—		
Titanium	0.1	0.5	0.1	0.1	0.1	0.2	0.2		
Vanadium	0.005	0.02	0.005	0.005	0.003	0.008	0.008		
Yttrium (Y_2O_3)	—	—	—	—	—	—	—		
Zinc	—	—	—	—	—	—	—		
Zirconium	0.005	0.01	—	—	—	—	—		
Gold	—	—	—	—	—	—	—		
Hafnium	—	—	—	—	—	—	—		
Indium	—	—	—	—	—	—	—		
Platinum	—	—	—	—	—	—	—		
Rhenium	—	—	—	—	—	—	—		
Tellurium	—	—	—	—	—	—	—		
Thallium	—	—	—	—	—	—	—		
Scandium	—	—	—	—	—	—	—		

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Semiquantitative Spectrographic Analysis
U.S. BUREAU OF MINES

REPORT NO.
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Code: < Less Than, > Greater Than, — Below Limit of Detection

Sam. No.	JR80-1279	1280	1281	1282	1283	1284	1285	1286	1[illegible]
Aluminum (Al_2O_3)	4%	3%	3%	4%	3%	SAMPLE MISSING	4%	4%	4
Antimony	—	—	—	—	—		—	—	—
Arsenic	—	—	—	—	0.1		0.5	0.2	—
Barium	—	—	—	—	—		—	—	—
Beryllium (BeO)	—	—	—	—	—		—	—	—
Bismuth	—	—	—	—	—		—	—	—
Boron	—	—	—	—	—		—	0.002	—
Calcium (CaO)	0.4	0.2	0.3	0.2	0.3		0.3	0.3	0
Cadmium	—	—	—	—	—		—	—	—
Chromium	0.002	—	—	—	—		—	—	—
Cobalt	—	—	—	—	—		—	—	—
Columbium (Cb_2O_5)	—	—	—	—	—		—	—	—
Copper	0.002	0.001	—	0.002	0.001		0.002	—	0
Gallium	—	—	—	—	—		—	—	—
Iron (Fe)	3	2	1	2	1		1.5	1	1
Lanthanum (La_2O_3)	—	—	—	—	—		—	—	—
Lead	—	—	—	—	—		—	—	—
Lithium (Li_2O)	—	—	—	—	—		—	—	—
Manganese	0.01	0.02	0.01	0.03	0.01		0.01	0.01	0
Magnesium (MgO)	0.7	0.7	0.4	0.7	0.3		0.6	0.5	0
Molybdenum	—	—	—	—	—		—	—	—
Nickel	0.002	—	—	0.002	—		—	—	—
Phosphorus	—	—	—	—	—		—	—	—
Silver	—	—	—	—	—		—	—	—
Silicon (SiO_2)	>20	>20	>20	>20	>20	SAMPLE MISSING	>20	>20	>
Sodium (Na_2O)	1	1	1	1	1		1	1	1
Strontium	—	—	—	—	—		—	—	—
Tantalum (Ta_2O_5)	—	—	—	—	—		—	—	—
Tin	—	—	—	—	—		—	—	—
Titanium	0.1	0.1	0.1	0.2	0.08		0.1	0.1	0
Vanadium	0.008	0.005	0.008	0.008	0.005		0.005	0.005	0
Yttrium (Y_2O_3)	—	—	—	—	—		—	—	—
Zinc	—	—	—	—	—		—	—	—
Zirconium	0.005	—	—	0.005	—		—	—	—
Gold	—	—	—	—	—		—	—	—
Hafnium	—	—	—	—	—		—	—	—
Indium	—	—	—	—	—		—	—	—
Platinum	—	—	—	—	—		—	—	—
Rhenium	—	—	—	—	—		—	—	—
Tellurium	—	—	—	—	—		—	—	—
Thallium	—	—	—	—	—		—	—	—
Scandium	—	—	—	—	—		—	—	—

Project RARE II

Submitted by Haney

Date Received by ~~Contractor~~ Haney 7/3/80 (Juneau)

Dated Received (FOC)

USBM Analyst Merrill and Barr

Individual Determinations Required[2] — total = 104 rocks

Line No.	FOC Lab No.	FOC Field No.	Spec.	Au oz/t	Au ppm	Ag oz/t	Ag ppm	TSC Au %	TSC Au ppm	TSC Ag %	TSC Ag ppm	Rock type		Country rock type		%	ppm	%	ppm	Have H.S.
1	JR80-1027	3001	✓	Nil	X	Nil	X	TR	<.05	<.2	1.9	SL				SL		10		--
2	1028	3002		Nil	X	Nil	X	<.005	"	"	1.7	SL				SL				✓
3	1029	3003	✓	Nil	X	Nil	X	"	0.05	"	1.1	SL				SL				✓
4	⊕ 1030	3004	✓	0.02	X	Tr	X	"	<.03	"	2.0	qtz	in GWK	GWK	w/ qtz	GWK	qtz	"		✓
5	1031	3005		Nil	X	Nil	X	"	"	"	1.1	QTZ	in SL	SL	w/ [illegible]	SL	qtz			✓
6	1032	3006		Nil	X	Nil	X	"	"	"	1.2	SL				SL				✓
7	S 1033	3007	✓	Nil	X	Nil	X	TR	0.03	0.2	1.8	SL				SL				✓
8	G 1034	3008	✓	.005	X	Tr	X	TR	0.05	<.2	0.43	QTZ	in GWK	GWK	w/ qtz	GWK	qtz			✓
9	1036	3010		Nil	X	Nil	X	<.005	<.03	"	1.0	GWK	qtz			GWK	qtz			✓
10	S 1038	3012	✓	Nil	X	Nil	X	TR	"	0.2	1.1	argl				AR				✓
11	1039	3013		Nil	X	Tr	X	<.005	"	<.2	1.8	GWK				GWK		!		✓
12	G 1040	3014	✓	.005	X	Tr	X	"	"	"	1.2	argl				AR				✓
13	S 1045	3019		Nil	X	Nil	X	"	"	0.4	0.64	argl				AR				✓
14	G 1050	3024	✓	.04	X	Tr	X	"	"	<.2	0.48	SL				SL				✓
15	1053	~~3020~~ 3027	✓	Nil	X	Nil	X	TR	0.30	"	0.84	SL				SL				✓

[2] For normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8 circle %, for fluorometric U, circle ppm

REMARKS: SL = slate; GWK = graywacke; QTZ = quartz; INT = intrusive; CO_2 = carbonate; qtz = quartz veinlets; HRNF = "hornfels"; DK = dike; argil = argillite; PEG = pegmatite

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FOC Juneau

Date Submitted

Date Completed

Project RARE II

Date Received by Contractor

Dated Received (FOC)

Submitted by Haney

Analyst

Individual Determinations Required[2]

Line No.	FOC Lab No.	FOC Field No.	Spec.	Au oz/t	Au ppm	Ag oz/t	Ag ppm	TSC Au %	TSC Au ppm	TSC Ag %	TSC Ag ppm	Rock type		Corrected rock type		%	ppm	%	ppm	Have H.S.
1	JR80-1054	3028	✓	Nil	X	Nil	X	0.007	0.25	<.2	1.0	QTZ	in GWK	GWK	w/ qtz	3		GWK	Q	✓
2	1055	3029	✓	Nil	X	Nil	X	0.006	0.20	"	0.56	GWK				6		GWK		✓
3	1056	3030	✓	Nil	X	Nil	X	TR	0.13	0.2	0.66	SL GWK				2		SL GWK		
4	4GS 1057	3031	✓	0.055	X	Tr	X	0.107	0.42	0.4	1.3	QTZ	in GWK					GWK	Q	✓
5	1/GS 1058	3032	✓	.005	X	Tr	X	0.060	0.25	0.2	0.69	QTZ	w/ GWK					GWK	Q	✓
6	1059	3033		Nil	X	Nil	X	<.005	<.03	<.2	0.66	GWK						GW		✓
7	1060	3034		Nil	X	Nil	X	"	"	"	0.98	GWK						GW		✓
8	1061	3035		Nil	X	Nil	X	"		"	0.82	argl				"		AR		✓
9	S 1062	3036		Nil	X	Nil	X	"	"	0.4	1.0	argl						AR		✓
10	S 1063	3037	✓	Tr	X	Tr	X	"	"	<.2	1.0	argl						AR		✓
11	1064	3038		Nil	X	Nil	X	"	"	"	0.64	GWK	w/ qtz					GW		✓
12	S 1065	3039		Nil	X	Tr	X	"	"	"	1.4	GWK						GW		✓
13	1066	3040		Nil	X	Nil	X	"	"	"	1.2	SL						SL		✓
14	S 1067	3041	✓	Nil	X	Nil	X	TR	"	"	[illegible]	GWK	w/ qtz					GW		✓
15	1068	3042		Nil	X	Tr	X	[illegible]	"	"	[illegible]	GWK	[illegible]	[illegible]				[illegible]		✓

[2] For normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8 circle %, for fluorometric U, circle ppm

REMARKS:

Project RARE II

Submitted by Haney

Date Received by Contractor ______

Dated Received (FOC) ______

Analyst ______

Individual Determinations Required[2]

Line No.	FOC Lab No.	FOC Field No.	Spec.	Au oz/t;ppm		Ag oz/t;ppm		TSC Au %;ppm	Au ;ppm	TSC Ag %;ppm	Ag ;ppm	Rock Type %	ppm	%	ppm	%	ppm	%	ppm	h... %
1	JR80-1069	3043		Nil	X	Tr	X	<.005	<.03	<.2	.71	GWK w/ SL	w/ Cq			1		GW		✓
2	1070	3044	✓	Nil	X	Nil	X	"	0.03	"	1.2	SL		ARG		[illegible]		AR		✓
3	1071	3045		Nil	X	Nil	X	"	<.03	"	0.64	SL	w/ Cq					SL		
4	S 1072	3046	✓	Nil	X	Nil	X	"	0.05	0.2	0.47	SL	w/ btz			6		SL	Q	✓
5	1073	3047	✓	Nil	X	Nil	X	"	0.10	<.2	0.63	SL	w/ btz					SL		✓
6	1074	3048	✓	Nil	X	Tr	X	"	0.10	"	1.4	SL	w/ btz					SL	G	✓
7	G 1075	3049	✓	Tr	X	Tr	X	"	0.04	"	.58	QTZ	w/ btz	ARG	w/ btz			AR	G	✓
8	1076	3050	✓	Nil	X	Tr	X	"	0.08	"	2.3	SL						SL		✓
9	1077	3051	✓	Nil	X	Tr	X	TR	0.08	"	.86	SL						SL		✓
10	1078	3052		Nil	X	0.1	X	<.005	<.03	"	.95	SL	w/ btz					SL	Q	✓
11	1079	3053	✓	Nil	X	Nil	X	"	0.05	"	.80	SL						SL		✓
12	S 1080	3054		Nil	X	.2	X	"	<.03	"	.90	QTZ	w/ SL	SL	w/ btz			SL	G	✓
13	S 1081	3055	✓	Nil	X	Tr	X	TR	"	0.6	1.0	SL	w/ btz					SL	G	✓
14	S 1082	3056	✓	Nil	X	Nil	X	TR	"	0.2	1.5	GWK w/ SL	w/ btz			2		GW	G	✓
15	1083	3057		Nil	X	Nil	X	<.005	<.03	<.2	1.1	GWK	w/ btz			-		GW	G	✓

[2] For normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8 circle %, for fluorometric U, circle ppm

REMARKS:

FOC Juneau

Date Submitted ______

Date Completed ______

Project RARE II

Submitted by Haney

Date Received by Contractor ______

Dated Received (FOC) ______

Analyst ______

Individual Determinations Required[2]

Line No.	FOC Lab No.	FOC Field No.	Spec.	Au oz/t;ppm		Ag oz/t;ppm		TSC Au %;ppm	Au ;ppm	TSC Ag %;ppm	Ag ;ppm	Rock Type %	ppm	%	ppm	%	ppm	%	ppm	ho.c H.S %
1	G S JR80-1084	3058	✓	Tr	X	Tr	X	<.005	0.03	0.4	1.0	SL		ARG		[illegible]		AR		✓
2	1085	3059		Nil	X	Nil	X	"	<.03	<.2	2.7	GWK	w/ btz			7		GW	Q	✓
3	1086	3060	✓	Nil	X	Nil	X	"	0.03	"	1.1	GWK				2		GW		✓
4	1087	3061	✓	Nil	X	Nil	X	"	0.05	"	1.6	SL	w/ GWK			3		SL GW		✓
5	1088	3062		Nil	X	Nil	X	"	<.03	"	1.0	SL		SL	w/ GWK			SL GW		✓
6	S 1089	3063		Nil	X	Nil	X	"	"	0.2	1.2	GWK	w/ btz					GW	Q	✓
7	1090	3064		Nil	X	Nil	X	"	"	<.2	1.1	GWK w/ SL	w/ btz					GW	Q	✓
8	1091	3065	✓	Nil	X	Nil	X	TR	0.03	"	[illegible]	GWK w/ SL						GW SL		✓
9	S 1092	3066		Nil	X	0.2	X	<.005	<.03	0.2	.68	GWK						GW		
10	1093	3067	✓	Nil	X	Nil	X	TR	"	<.2	1.3	QTZ	w/ GWK	GWK	w/ btz			[illegible]		✓
11	S 1094	3068	✓	Nil	X	.2	X	<.005	0.05	0.2	1.0	QTZ	w/ SL	GWK	w/ btz			GW	Q	✓
12	1095	3069		Nil	X	Nil	X	"	<.03	<.2	1.1	SL						SL		✓
13	1096	3070		Nil	X	.1	X	"	"	"	2.4	GWK	btz					GW	Q	✓
14	G S 1097	3071		0.06	X	.1	X	[illegible]	[illegible]	0.2	1.0	GWK		GWK	w/ btz			GW	[illegible]	✓
15	S 1098	3072	✓	Nil	X	.2	X	TR	<.03	<.2	.60	SL						SL		✓

[2] For normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8 circle %, for fluorometric U, circle ppm

REMARKS:

Project RARE II

Submitted by Haney

Date Received by Contractor

Dated Received (FOC)

Analyst

Line No.	FOC Lab No.	FOC Field No.	Spec.	Au oz/t	Au ppm	Ag oz/t	Ag ppm	TSC Au %T	ppm	TSC Au %	ppm	TSC Ag %T	ppm	TSC Ag %	ppm	Rock type %	ppm	%	ppm	%	ppm	%	ppm	%	ppm
1	S JR80-1099	3073		Nil	X	Tr	X	<.005		<.03		0.2		1.4		GWK				/		GW		✓	
2	1102	3076	.	Nil	X	Nil	X	TR		0.10		<.2		1.6		SC		GWK	[illegible]			GW	Q	–	
3	1103	3077	✓	Nil	X	Nil	X	<.005		0.08		"		1.1		SC						SC		✓	
4	1104	3078	✓	Nil	X	Nil	X	"		0.03		"		.62		SC						SC		✓	
5	S 1105	3079		Nil	X	Nil	X	"		<.03		0.2		.50		SC	[illegible]			/		SC	Q	✓	
6	1106	3080		Nil	X	Nil	X	"		"		<.2		.96		SC						SC			
7																									
8																									
9																									
10																									
11																									
12																									
13																									
14																									
15																									

2 For normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8 circle %, for fluorometric U, circle ppm

REMARKS:

Project RARE II

Submitted by Haney

Date Received by Contractor

Dated Received (FOC)

Analyst

Line No.	FOC Lab No.	FOC Field No.	Spec.	Au oz/t	Au ppm	Ag oz/t	Ag ppm	TSC Au %T	ppm	TSC Au %	(ppm)	TSC Ag %T	ppm	TSC Ag %	(ppm)	Rock TYPE %	ppm	%	ppm	%	ppm	%	ppm	[illegible] H_2S %	ppm
1	JR80-1107	3081	✓	Nil	X	Tr	X	TR		0.09		<.2		1.3		GWK SC	w/qtz	GWK	w/qtz	[illegible]		GW	Q		
2	1108	3082	✓	Nil	X	Nil	X	TR		0.06		"		1.5		QTZ	w/GWK	GWK	w/qtz			GW	Q	✓	
3	1109	3083		Nil	X	Nil	X	<.005		<.03		"		1.1		QTZ	[illegible]	GWK	w/qtz			GW	Q	✓	
4	S 1110	3084	✓	Nil	X	Nil	X	TR		"		0.2		.70		QTZ	w/GWK	GWK	w/qtz			GW	Q	✓	[illegible]
5	S 1111	3085	✓	Nil	X	Nil	X	TR		0.10		0.2		1.2		SWK	w/qtz					GW	Q	✓	
6	1112	3086		Nil	X	Nil	X	<.005		<.03		<.2		1.0		SC	(w/qtz)			2		SC		✓	
7	1113	3087	✓	Nil	X	Nil	X	"		0.04		"		.69		SWK	w/qtz					GW	Q	✓	
8	1114	3088		Nil	X	Nil	X	"		<.03		"		[illegible]		SC	[illegible]					SC		✓	
9	1115	3089	✓	Nil	X	Tr	X	"		0.06		"		[illegible]		SWK	[illegible]					GW	Q	✓	
10	1116	3090		Nil	X	Nil	X	0.006		0.13		"		[illegible]		QTZ		QTZ	[illegible]			GW	Q	✓	[illegible]
11	1117	3091		Nil	X	Tr	X	<.005		0.07		"		.32		SWK	[illegible]					GW	Q	✓	
12	1118	3092		Nil	X	Nil	X	TR		0.09		"		1.4		SC	[illegible]			/		SC	Q	✓	
13	1119	3093		Nil	X	Tr	X	<.005		.04		"		1.5		SWK	[illegible]					GW	Q	✓	
14	1120	3094		Nil	X	Tr	X	"		.04		"		1.1		GWK	[illegible]			[illegible]		GW	Q	✓	
15	✓6 1121	3095		0.02	X	0.1	X	"		0.21		"		[illegible]		GWK	w/qtz					GW	Q	✓	

2 For normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8 circle %, for fluorometric U, circle ppm

REMARKS:

Project RARE II

Date Received by Contractor

Dated Received (FOC)

Submitted by Haney

Analyst

Line No.	FOC Lab No.	FOC Field No.	Spec.	Au oz/t;ppm		Ag oz/t;ppm		TSC Au %; ppm	TSC Au ppm	TSC Ag %	TSC Ag ppm	Rock type %; ppm		S/c corrected %; ppm		%; ppm		%; ppm		ha... H. %
1	G JR80-1122	3096	✓	Nil	X	0.1	X	0.016	0.32	<.2	1.0	QTZ	GWK	GWK	qtz	✓		GW	Q	✓
2	S 1123	3097	✓	Nil	X	Tr	X	<.005	0.10	0.2	.61	~~GWK~~	qtz					AR	Q	✓
3	S 1124	3098		Nil	X	Nil	X	"	<.03	0.2	.64	QTZ	GWK	GWK	qtz			GW	Q	✓
4	1125	3099	✓	Nil	X	Nil	X	TR	0.05	<.2	.55	QTZ	GWK	GWK	qtz			GW	Q	✓
5	1126	3100		Nil	X	Tr	X	<.005	<.03	"	1.4	SL						SL		✓
6	1127	3101	✓	Nil	X	Nil	X	TR	"	"	.54	QTZ	GWK	GWK	qtz			GW	Q	✓
7	1128	3102	✓	Nil	X	Tr	X	TR	"	"	.40	GWK	qtz			metallic		GW	Q	✓
8	1131	3105		Nil	X	Nil	X	<.005	"	"	.45	QTZ	SL	SL	qtz			SL	Q	✓
9	1132	3106		Nil	X	.1	X	"	"	"	.51	GWK	qtz					GW	Q	✓
10	1133	3107		Nil	X	.1	X	"	"	"	.53	ARG	qtz					AR	Q	✓
11	1134	3108		Nil	X	Nil	X	"	"	"	.54	QTZ	ARG	ARG	qtz			AR	Q	✓
12	S 1135	3109	✓	Nil	X	Tr	X	TR	"	0.2	1.2	SL	qtz					SL	Q	✓
13	1136	3110	✓	Nil	X	Nil	X	<.005	0.03	<.2	.51	~~QTZ~~ SL	qtz					SL	Q	✓
14																				
15																				

2 For normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U O circle %, for fluorometric U, circle pp

FOC Juneau

Date Submitted

Date Completed

Project RARE II

Date Received by Contractor

Dated Received (FOC)

Submitted by Haney

Analyst

Line No.	FOC Lab No.	FOC Field No.	Spec.	Au oz/t;ppm		Ag oz/t;ppm		TSC Au %; ppm	TSC Au ppm	TSC Ag %	TSC Ag ppm	Rock type %; ppm		%; ppm		%; ppm		%; ppm		ha... A- %
1	S JR80-1137	3111	✓	Nil	X	Tr	X	<.005	0.05	0.2	.47	INT		9		9		QT		✓
2	1138	3112	✓	Nil	X	Nil	X	"	0.10	<.2	.43	INT						QT		✓
3	G 1139	3113	✓	0.01	X	0.1	X	"	0.07	"	.44	"						QT		✓
4	S 1140	3114		Nil	X	Nil	X	"	<.03	0.2	.50	"						QT		✓
5	S 1141	3115	✓	Nil	X	.1	X	"	0.03	0.4	1.7	"						QT		✓
6	S 1142	3116		Nil	X	Tr	X	"	<.03	<.2	9.4 (?)	"						QT		✓
7	1143	3117	✓	Nil	X	Nil	X	"	0.03	"	1.9	"						QT		✓
8	1144	3118		Nil	X	Nil	X	"	"	"	.46	"						QT		✓
9	S 1145	3119		Nil	X	Nil	X	"	"	0.2	.48	"						QT		✓
10	1146	3120		Nil	X	Nil	X	"	"	<.2	.62	HRNF						HF		/
11	1147	3121	✓	Nil	X	Tr	X	TR	0.04	"	.46	QTZ		ARG	qtz			AR	Q	✓
12																				
13																				
14																				
15																				

2 For normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8 circle %, for fluorometric U, circle ppm

REMARKS:

Project RARE II | Date Received by Contractor | Dated Received (FOC)

Submitted by Haney | | Analyst

Line No.	FOC Lab No.	FOC Field No.	Spec.	Au oz/t;ppm		Ag oz/t;ppm		TSC Au oz/T	TSC Au ppm	TSC Ag oz/T	TSC Ag ppm	ROCK TYPE % ; ppm	Q° [illegible] % ; ppm	% ; ppm	[illegible] % ; ppm		[illegible] % ; ppm
1	JR80-1152	3126		Nil	X	Nil	X	<.005	<.03	0.2	.47	INT		7	St		✓
2	1156	3130		Nil	X	Nil	X	"	"	0.2	.48	HRNF w/ qtz			HF		✓
3	1157	3131		Nil	X	Nil	X	"	"	<.2	.46	QTZ in Gwk	Gwk w/ qtz		GW	Q	✓
4	S 1158	3132		Nil	X	Nil	X	"	"	0.2	1.3	HRNF w/ qtz			HF		✓
5	1159	3133		Nil	X	Nil	X	"	"	<.2	.56	INT			St		✓
6	1160	3134		Nil	X	Tr	X	"	"	"	.59	INT			ST		✓
7	1161	3135		Nil	X	Nil	X	"	"	"	.66	INT			ST		✓
8	S 1162	3136		Nil	X	0.1	X	"	"	0.2	.85	HRNF qtz	Gwk w/ sl		HF		✓
9	S 1163	3137		Nil	X	Nil	X	"	"	0.6	1.9	INT			St		✓
10	1164	3138		Nil	X	Tr	X	"	"	0.2	.59	Hrnf INT	INT w/ Hrnf		CNT		✓
11	1165	3139		Nil	X	Tr	X	"	"	<.2	.60	INT			HRF		✓
12	S 1166	3140		Nil	X	Nil	X	"	"	0.2	.87	INT			ST		✓
13																	
14																	
15																	

2 For normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8 circle %, for fluorometric U, circle ppm

REMARKS:

FOC : Juneau | Date Submitted | Date Completed

Project RARE II | Date Received by Contractor | Dated Received (FOC)

Submitted by Haney | | Analyst

Line No.	FOC Lab No.	FOC Field No.	Spec.	Au oz/t;ppm		Ag oz/t;ppm		TSC Au oz/T	TSC Au ppm	TSC As oz/T	TSC Ag ppm	ROCK TYPE % ; ppm	Q° [illegible] % ; ppm	% ; ppm	% ; ppm		H-S % ; ppm
1	JR80-1167	3141		MISSING													✓
2	1168	3142	✓	Nil	X	Tr	X	<.005	0.05	<.2	1.1	HRNF	HRNF w/ Gwk	1	HF		✓
3	1169	3143		Nil	X	Nil	X	"	<.03	"	.78	INT		9	St		✓
4	1170	3144	✓	Nil	X	Nil	X	"	0.06	"	.85	INT DK			ST (contact)		✓
5	1171	3145		Nil	X	Nil	X	"	<.03	"	.23	INT DK			ST dike		✓
6	S 1172	3146		Nil	X	Nil	X	"	"	0.2	1.4	INT			ST		✓
7	S 1173	3147	✓	Nil	X	Nil	X	"	0.05	0.2	1.1	INT	—		ST		✓
8	S 1174	3148	✓	Nil	X	0.1	X	"	0.03	0.2	2.1	INT			ST		
9	S 1175	3149		Nil	X	Nil	X	"	<.03	0.4	1.2	SL	ARG w/ qtz	1	AK	Q	
10	1176	3150		Nil	X	Nil	X	"	"	<.2	1.6	GWK		2	GW		✓
11	S 1177	3151		Nil	X	Nil	X	"	"	0.2	1.6	INT			ST		✓
12	S 1178	3152		Nil	X	Nil	X	"	"	0.2	2.1	GWK			GW		✓
13	S 1179	3153	✓	Nil	X	Nil	X	"	0.03	<.2	4.5	INT			ST		✓
14	S 1180	3154		Nil	X	Nil	X	TR	<.03	0.2	1.2	SL argil.		1	SL		✓
15	1181	3155		Nil	X	Tr	X	<.005	0.04	<.2	1.5	INT DK			ST dike		✓

2 For normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8 circle %, for fluorometric U, circle ppm

REMARKS:

<.005 = Nil

Project RARE II

Submitted by Haney

Date Received by Contractor

Dated Received (FOC)

Analyst

Line No.	FOC Lab No.	FOC Field No.	Spec.	Au oz/t;ppm		Ag oz/t;ppm		TSC Au oz/T	TSC Au %;ppm	TSC Ag oz/T	TSC Ag %;ppm	ROCK TYPE		% ; ppm		% ; ppm		% ; ppm		Lab N.S. % ; ppm	
1	JR80-1182	3156		Nil	X	Nil	X	<.005	<.03	<.2	1.6	SL				2		SC		✓	
2	S 1183	3157	-	Nil	X	Nil	X	TR	"	0.6	1.0	INT				"		QT		-	
3	S 1192	3166		Nil	X	Nil	X	TR	"	0.4	1.6	ARG	w/qtz			7		AR	Q	✓	
4	1193	3167	-	Nil	X	Nil	X	<.005	0.03	<.2	1.5	SC	w/qtz	SC				SC		✓	
5	S 1195	3169		Nil	X	Nil	X	"	<.03	.2	1.5	ARG	w/qtz					AR	Q	✓	
6	1196	3170	✓	Nil	X	Nil	X	TR	0.03	<.2	1.0	QTZ	in SC	SC	w/qtz			SC	Q	✓	
7	1197	3171		Nil	X	Nil	X	<.005	<.03	"	1.1	QTZ	SC GWK	SL	w/qtz			SL	Q	✓	
8	1198	3172	✓	Nil	X	0.1	X	"	0.03	"	1.8	QTZ	SC GWK	SL	w/qtz			SC	Q	✓	
9	1199	3173		Nil	X	Nil	X	"	<.03	"	1.7	QTZ	in SL	SL	w/qtz			SC	Q	✓	
10	S 1200	3174	✓	Nil	X	Nil	X	TR	"	0.2	1.6	SC	w/qtz					SC	Q	✓	
11	S 1201	3175		Nil	X	Nil	X	<.005	"	0.4	1.5	INT						QT			
12	S 1202	3176		Nil	X	Nil	X	"	"	0.2	1.5	INT						QT		✓	
13	S 1203	3177		Nil	X	Nil	X	"	"	0.2	2.6	GWK	w/qtz			2		GW	Q	✓	
14	S 1204	3178		Nil	X	Nil	X	"	"	0.2	1.4	INT						QT		✓	
15	S 1205	3179		Nil	X	Nil	X	"	"	0.4	.86	GWK	w/qtz					GW	Q	✓	

2 For normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8 circle %, for fluorometric U, circle ppm

REMARKS:

Project RARE II

Submitted by Haney

Date Received by Contractor

Dated Received (FOC)

Analyst

Line No.	FOC Lab No.	FOC Field No.	Spec.	Au oz/t;ppm		Ag oz/t;ppm		TSC Au oz/T	TSC Au %;ppm	TSC Ag oz/T	TSC Ag %;ppm	ROCK TYPE % ; ppm		% ; ppm		% ; ppm		% ; ppm		Lab N.S. % ; ppm	
1	JR80-1206	3180		Nil	X	Nil	X	<.005	<.03	<.2	.86	HRNFL		INT/GWK		5		CTT		✓	
2	S 1207	3181		Nil	X	Tr	X	"	"	0.4	1.2	SL	w/qtz			2		SL	Q	✓ ✓	
3	S 1208	3186	✓	Nil	X	Nil	X	"	0.05	0.4	.75	HRNFL		INT/GWK				CTT		✓	
4	S 1209	3187		Nil	X	Nil	X	"	<.03	<.2	2.0	HRNF		INT/GWK				CTT		✓	
5	S 1210	3188	✓	Nil	X	0.1	X	"	0.07	0.2	1.7	HRNF 4		INT/GWK				CTT		✓	
6	1211	3189	✓	Nil	X	.1	X	"	0.03	<.2	1.4	GRAN + HRN		INT/GWK				CTT		✓	
7	1213	3192 ~~3187~~	✓	Nil	X	Nil	X	TR	0.05	"	1.6	QTZ	[illegible]	ARG	w/qtz			AK	Q	✓	
8	1214	3193	✓	Nil	X	Nil	X	TR	0.05	"	.75	QTZ	[illegible]	GWK	w/qtz	7		GW	Q	✓	
9	1215	3194	✓	Nil	X	Nil	X	<.005	0.08	"	.76	QTZ	[illegible]	GWK	w/qtz			[illegible]	Q	✓	
10	G 1216	3195	✓	Tr	X	Tr	X	TR	0.10	"	.48	GWK	[illegible]	GWK	w/qtz			[illegible]	Q	✓	
11	1217	3196	✓	Nil	X	Nil	X	<.005	0.02		1.1	QTZ	in SL	GWK	w/qtz			[illegible]	Q	✓	
12	1218	3197		Nil	X	Nil	X	"	0.04		.63	GWK	w/qtz					GW	Q	✓	
13	G 1219	3198		Au-Ag MISSING				0.032	1.1	"	1.0	GWK									
14	G 1220	3199		Tr	X	Tr	X	[illegible]	.25		1.2	QTZ	[illegible]	GWK	w/qtz			[illegible]	Q	✓	
15	G 1221	3200		MISSING				[illegible]	.75	"	1.2	QTZ	[illegible]	GWK	w/qtz			[illegible]	Q	✓	[illegible]

2 For normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8 circle %, for fluorometric U, circle ppm

REMARKS:

Project RARE II

Submitted by Haney

Date Received by Contractor

Dated Received (FOC)

Analyst

Line No.	FOC Lab No.	FOC Field No.	Spec.	Au oz/t;ppm		Ag oz/t;ppm		TSC Au %;ppm		Au %;ppm		TSC Ag %;ppm		Ag %;ppm		Rock Type %;ppm		%;ppm		%;ppm		%;ppm		%;ppm
1	JR80-1222	3201	✓	Nil	X	Nil	X	TR		0.10		<.2		.82		[illegible]	[illegible]					[illegible]	[illegible]	✓
2	1223	3202	✓	Nil	X	Nil	X	<.005		0.05		"		.76		GRANITE						[illegible]		✓
3	1224	3203	✓	Nil	X	Nil	X	"		0.05		"		.73		[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	✓
4		[illegible]	[illegible]																					
5		[illegible]																						
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								

2 For normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8 circle %, for fluorometric U, circle ppm

REMARKS:

rec'd - 9 April 81

ASSAYERS
CHEMISTS
GEOCHEMISTS

TSL LABORATORIES LTD.
P.O. BOX 14642 - S. 16 UNION RD.
OPPORTUNITY, WA 99214
TELEPHONE: (509) 926-0000

CERTIFICATE OF ANALYSIS

SAMPLES FROM: U.S. Bureau of Mines
PO Box 550
Juneau, Alaska 99802

AFOC

REPORT NO
2169

SAMPLES OF: Pulps

ANALYSIS REQUESTED:

1 troy oz. / 1 metric ton = 34 ppm

Au,Ag Geochem
Au,Ag Assay

cc: enc.

PARTIAL REPORT: E. Spec. to follow

Samples, Pulps and Rejects discarded after two months

DATE March 30, 1981
cs

SIGNED John Treckstone

TORONTO MONCTON and SPOKANE WASH

oject Rare II

Date Submitted

Date Completed

Date Received by Contractor

Date Received (FOC)

ubmitted by Haney

Analyst

Line No.	FOC Lab No.	FOC Field No.	Spec.	Au oz/t;(ppm)	Ag oz/t;(ppm)	%;ppm	Au oz/ton	Ag oz/ton	%;ppm	Au %;(ppm)	Ag %;(ppm)	Rock type %;ppm	%;ppm
1	JR 80 1027	x ABM3001	✓	assay ✓	assay ✓		trace	<0.2		<0.03	1.9	Sc	
2	1028	x 02		✓	✓		<0.005	<0.2		<0.03	1.7	Sc	
3	1029	x 03		✓	✓		<0.005	<0.2		0.05	1.1	Sc	
4	1030	x 04		✓	✓		<0.005	<0.2		<0.03	2.0	Gwk	
5	1031	x 05		✓	✓		<0.005	<0.2		<0.03	1.1	Q-z (Sc)	
6	1032	x 06		✓	✓		<0.005	<0.2		<0.03	1.2	Sc	
7	1033	x 07		✓	✓		trace	0.2		0.03	1.8	Sc	
8	1034	x 08		✓	✓		trace	<0.2		0.05	0.93	Qtz (Sc, Gwk)	
9	S 1035	x 09		✓	✓				SOIL	0.17	0.81		
10	1036	x 10		assay ✓	assay ✓		<0.005	<0.2		<0.03	1.0	Gwk w/ qtz	
11	M S 1037	x 11		✓	✓				SOIL				
12	1038	x 12		Assay ✓	Assay ✓		trace	0.2		<0.03	1.1	Sc	
13	1039	x 13		✓	✓		<0.005	<0.2		<0.03	1.8	Gwk	
14	1040	x 14		✓	✓		<0.005	<0.2		<0.03	1.2	Sc	
15	M S 1041	x 15		✓	✓				SOIL				

[a] For normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_4, circle %; for fluorometric U, cir

c Juneau

Date Submitted

Date Completed

oject Rare II

Date Received by Contractor

Date Received (FOC)

ubmitted by Haney

Analyst

Line No.	FOC Lab No.	FOC Field No.	Spec.	Au oz/t;(ppm)	Ag oz/t;(ppm)	%;ppm	Au oz/ton	Ag oz/ton	%;ppm	%;ppm	Au %;(ppm)	Ag %;(ppm)	Rock %;ppm
1	JR 80 MS 1042	x ABM3016	✓	assay ✓	assay ✓					SOIL			
2	MS 1043	x 17		✓	✓					SOIL			
3	MS 1044	x 18		✓	✓					SOIL			
4	1045	x 19		assay ✓	assay ✓		<0.005	0.4			<0.03	0.64	Sc, Gwk
5	MS 1046	x 20		✓	✓					SOIL			
6	MS 1047	x 21		✓	✓					SOIL			
7	pan MS 1048	x 22		✓	✓					SOIL			
8	pan MS 1049	x 23		✓	✓					SOIL			
9	1050	x 24		assay ✓	assay ✓		<0.005	<0.2			<0.03	0.48	
10	MS 1051	x 25		✓	✓					SOIL			
11	1052	x 26		✓	✓						<0.03	0.61	Gwk
12	1053	x 27		assay ✓	assay ✓		trace	<0.2			0.30	0.84	
13	1054	x 28			✓		0.007	<0.2			0.25	1.0	
14	1055	x 29		✓	✓		0.006	<0.2			0.20	0.56	Gwk
15	1056	x 30		✓	✓		trace	0.2			0.13	0.66	

[a] For normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_4, circle %; for fluorometric U, circ

Project: Rae 11 (?) | Date Received by Contractor ______ | Date Received (FOC) ______

Submitted by: Haney | Analyst ______

Line No.	FOC Lab No.	FOC Field No.	Spec.	Au oz/t;ppm	Ag oz/t;ppm	%;ppm	Au oz/ton	Ag oz/ton	%;ppm	Au %;ppm	Ag %;ppm	Rock type %;ppm	%;ppm
1	JR80 1057	× ABM 2031	✓	assay	✓ assay	✓	0.107	0.4		0.42	1.3	Qtz	[illegible]
2	1058	× 32	✓	✓	✓	✓	0.060	0.2		0.25	0.69	same 5	
3	1059	× 33	✓	✓	✓		<0.005	<0.2		<0.03	0.66	Gwk	
4	1060	× 34	✓	✓	✓		<0.005	<0.2		<0.03	0.98	Gwk	
5	1061	× 35	✓	✓	✓		<0.005	<0.2		<0.03	0.82	Sc	
6	1062	× 36	✓	✓	✓		<0.005	0.4		<0.03	1.0	Sc	
7	1063	× 37	✓	✓	✓		<0.005	<0.2		<0.03	1.0	Sc	
8	1064	× 38	✓	✓	✓		<0.005	<0.2		<0.03	0.64	Gwk	w/qtz
9	1065	× 39	✓	✓	✓		<0.005	<0.2		<0.03	1.4	Gwk	
10	1066	× 40	✓	✓	✓		<0.005	<0.2		<0.03	1.2	Sc	
11	1067	× 41	✓	✓	✓		trace	<0.2		<0.03	1.5	Gwk	w/qtz
12	1068	× 42	✓	✓	✓		<0.005	<0.2		<0.03	0.65	Gwk	w/[illegible]
13	1069	× 43	✓	✓	✓		<0.005	<0.2		<0.03	0.71	Gwk Sc	w/[illegible]
14	1070	× 44	✓	✓	✓		<0.005	<0.2		0.03	1.2	Sc	
15	1071	× 45	✓	✓	✓		<0.005	<0.2		<0.03	0.64	Sc	w/qtz

[1] For normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8, circle %; for fluorometric U, cir[cle ppm.]

Jun[illegible] | Date Submitted ______ | Date Completed ______

Rae 11 (?) | Date Received by Contractor ______ | Date Received (FOC) ______

[Submit]ted by: Haney | Analyst ______

FOC Lab No.	FOC Field No.	Spec.	Au oz/t;ppm	Ag oz/t;ppm	%;ppm	Au oz/ton	Ag oz/ton	%;ppm	%;ppm	Au %;ppm	Ag %;ppm	Rock type %;ppm	%;ppm
R80 1072	× ABM 2046	✓	assay	✓ assay	✓	<0.005	0.2			0.05	0.47	Sc	w/qtz
1073	× 47	✓	✓	✓		<0.005	<0.2			0.10	0.63	Sc Gwk	w/qtz
1074	× 48	✓	✓	✓		<0.005	<0.2			0.10	1.4	Sc	w/qtz
1075	× 49	✓	✓	✓		<0.005	<0.2			0.04	0.58	Sc	w/qtz
1076	× 50	✓	✓	✓		<0.005	<0.2			0.08	2.3	Sc	×
1077	× 51	✓	✓	✓		trace	<0.2			0.08	0.86	Sc	×
1078	× 52	✓	✓	✓		<0.005	<0.2			<0.03	0.95	Sc	w/qtz
1079	× 53	✓	✓	✓		<0.005	<0.2			0.05	0.80	Sc	×
1080	× 54	✓	✓	✓		<0.005	<0.2			<0.03	0.90	Sc	w/qtz
1081	× 55	✓	✓	✓	✓	trace	(0.6)			<0.03	1.0	Sc	w/qtz
1082	× 56	✓	✓	✓		trace	0.2			<0.03	1.5	Sc	w/qtz
1083	× 57	✓	✓	✓		<0.005	<0.2			<0.03	1.1	Gwk	w/[illegible]
1084	× 58	✓	✓	✓		<0.005	0.4			0.03	1.0	Sc	×
1085	× 59	✓	✓	✓		<0.005	<0.2			<0.03	2.7	[illegible]	×
1086	× 60	✓	✓	✓		<0.005	<0.2			0.03	1.1	Gwk	×

[For] normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8, circle %; for fluorometric U, circle ppm.

[Remar]ks:

t Baire II Date Received by Contractor ______ Date Received (FOC) ______

ted by Haney Analyst ______

FOC Lab No.	FOC Field No.	Spec.	Au oz/t;ppm	Ag oz/t;ppm	%;ppm	Au oz/ton	Ag oz/ton	%;ppm	%;ppm	Au %;ppm	Ag %;ppm	Rock %;ppm	Type %;ppm
			Individual Determinations Required 3/										
1R80-1057	x ABM 7061	v	assay ✓	assay ✓		<0.005	<0.2			0.05	1.6	SC	X
1058	x 62			✓		<0.005	<0.2			<0.03	1.0	SC	X
1059	x 63			✓		<0.005	0.2			<0.03	1.2	GWK w	Xtz
1090	x 64			✓		<0.005	<0.2			<0.03	1.1	GWK SC w	Xtz
1091	x 65			✓		trace	<0.2			0.03	1.0	SC GWK	X
1092	x 66			✓		<0.005	0.2			<0.03	0.68	GWK	X
1093	x 67			✓		trace	<0.2			<0.03	1.3	GWK w	Xtz
1094	x 68			✓		<0.005	0.2			0.05	1.0	GWK w	Xtz
1095	x 69			✓		<0.005	<0.2			<0.03	1.1	SC	X
1096	x 70			✓		<0.005	<0.2			<0.03	2.4	GWK w	Xtz
1097	x 71			✓	✓	0.007	0.2			(0.21)	1.0	SC w	Xtz
1098	x 72			✓		trace	<0.2			<0.03	0.60	SC	X
1099	x 73			✓		<0.005	0.2			<0.03	1.4	GWK	X
SM 1100	x 74			✓	✓				soil	<0.15	(4.0)	—	—
SM 1101	x 75			✓					soil			—	—

normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_4, circle %; for fluorometric U, circle

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Juneau Date Submitted ______ Date Completed ______

t Baire II Date Received by Contractor ______ Date Received (FOC) ______

ted by Haney Analyst ______

FOC Lab No.	FOC Field No.	Spec.	Au oz/t;ppm	Ag oz/t;ppm	%;ppm	Au oz/ton	Ag oz/ton	%;ppm	%;ppm	Au %;ppm	Ag %;ppm	Rock %;ppm	Type %;ppm
			Individual Determinations Required 3/										
1R80-1102	x ABM 7076	v	assay ✓	assay ✓		trace	<0.2			0.10	1.6	SC	X
1103	x 77			✓		<0.005	<0.2			0.08	1.1	SC	X
1104	x 78			✓		<0.005	<0.2			0.03	0.62	SC	X
1105	x 79			✓		<0.005	0.2			<0.03	0.56	SC	X
1106	x 80			✓		<0.005	<0.2			<0.03	0.96	SC	X
1107	x 81			✓		trace	<0.2			0.09	1.3	GWK SC w	Xtz
1108	x 82			✓		trace	<0.2			0.06	1.5	GWK w	Xtz
1109	x 83			✓		<0.005	<0.2			<0.03	1.1	QTZ w	X
1110	x 84			✓		trace	0.2			<0.03	0.70	Qtz	X
1111	x 85			✓		trace	0.2			0.10	1.2	GWK w	Xtz
1112	x 86			✓		<0.005	<0.2			<0.03	1.0	SC w	X
1113	x 87			✓		<0.005	<0.2			0.04	0.69	GWK	X
1114	x 88			✓		<0.005	<0.2			<0.03	0.66	SC w	X
1115	x 89			✓		<0.005	<0.2			0.06	0.81	GWK w	Xtz
1116	x 90			✓		0.006	<0.2			0.13	0.60	QTZ	X

normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_4, circle %; for fluorometric U, circle

rks:

t Boree II Date Received by Contractor ______ Date Received (FOC)______

ted by Haney Analyst______

FOC Lab No.	FOC Field No.	Spec.	Au oz/t; ppm	Ag oz/t; ppm	%; ppm	Au oz/ton	Ag oz/ton	%; ppm	%; ppm	Au %; (ppm)	Ag %; (ppm)	%; ppm	%; ppm
JA80 1117	ADM 3091	✓	assay	✓ assay	✓	<0.005	<0.2			0.03	1.12	GWK	w/ qtz
1118	x 92			✓	✓	trace	<0.2			0.09	1.4	SC	w/ qtz
1119	x 93			✓	✓	<0.005	<0.2			0.04	1.5	GWK	w/ qtz
1120	x 94			✓	✓	<0.005	<0.2			0.04	1.1	GWK	w/ qtz
1121	x 95			✓	✓ ✓	<0.005	<0.2			(0.21)	1.6	SC GWK	w/ qtz
1122	x 96			✓	✓ ✓	(0.016)	<0.2			0.32	1.0	GWK	w/ qtz
1123	x 97			✓	✓	<0.005	0.2			0.10	0.61	SC GWK	w/ qtz
1124	x 98			✓	✓	<0.005	0.2			<0.03	0.64	QTZ	w/ GWK
1125	x 99			✓	✓	trace	<0.2			0.05	0.55	GWK	w/ qtz
1126	x 3100			✓	✓	<0.005	<0.2			<0.03	1.4	SC	✓
1127	x 01			✓	✓	trace	<0.2			<0.03	0.54	GWK	w/ qtz
1128	x 02			✓	✓	trace	<0.2			<0.03	0.40	GWK	w/ qtz
1129	x 03			✓	✓				SOIL			—	
1130	x 04			✓	✓				SOIL			—	
1131	x 05		assay	assay		<0.005	<0.2			<0.03	0.45	SC GWK	w/ qtz

normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8, circle %; for fluorometric U, circle p

RKS:

Duncan Date Submitted______ Date Completed______

ct Boree II Date Received by Contractor ______ Date Received (FOC)______

tted by Haney Analyst______

FOC Lab No.	FOC Field No.	Spec.	Au oz/t; ppm	Ag oz/t; ppm	%; ppm	Au oz/ton	Ag oz/ton	%; (ppm)	Au %; ppm	Ag %; (ppm)	Rock %; ppm	type %; ppm	%; ppm
JA80 1132	ADM 3106	✓	assay	✓ assay	✓	<0.005	<0.2		<0.03	0.51	GWK	w/ qtz	✓
1133	x 07			✓	✓	<0.005	<0.2		<0.03	0.53	SC GWK	w/ qtz	✓
1134	x 08			✓	✓	<0.005	<0.2		<0.03	0.54	SC GWK	w/ qtz	✓
1135	x 09			✓	✓	trace	0.2		<0.03	1.2	SC	w/ qtz	✓
1136	x 10			✓	✓	<0.005	<0.2		0.03	0.51	GWK		✓
1137	x 11			✓	✓	<0.005	0.2		0.05	0.47	granite		✓
1138	x 12			✓	✓	<0.005	<0.2		0.10	0.43	✓		✓
1139	x 13			✓	✓	<0.005	<0.2		0.07	0.44	✓		✓
1140	x 14			✓	✓	<0.005	0.2		<0.03	0.50	✓		✓
1141	x 15			✓	✓	<0.005	0.4		0.03	1.7	✓		✓
1142	x 16			✓	✓	<0.005	<0.2		<0.03	(9.4 ?)	—		✓
1143	x 17			✓	✓	<0.005	<0.2		0.03	1.9	—		✓
1144	x 18			✓	✓	<0.005	<0.2		<0.03	0.46	✓		✓
1145	x 19			✓	✓	<0.005	0.2		<0.03	0.48	✓		✓
1146	x 20			✓	✓	<0.005	<0.2		<0.03	0.62	[illegible]		✓

normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8, circle %; for fluorometric U, circle p

RKS:

Bare II | Date Received by Contractor ______ | Date Received (FOC) ______

...ed by Haney | Analyst ______

FOC Lab No.	FOC Field No.	Spec.	Au oz/t;ppm	Ag oz/t;ppm	%;ppm	Au oz/ton	Ag oz/ton	%;ppm	%;ppm	Au %;ppm	Ag %;ppm	Rock %;ppm	type %;ppm
JR80-1147	ABM 3121	✓	assay ✓	assay ✓		trace	<0.2			0.04	0.26	hon f/s	✗
M 1148	✗ 3122		✓	✓					soil			—	
M 1149	✓ 23		✓	✓					soil			—	
M 1150	✗ 24		✓	✓					soil			—	
M 1151	✗ 25		✓	✓					soil			—	
1152	✗ 26		assay ✓	assay ✓		<0.005	0.2			<0.03	0.47	granite	✗
M 1153	✗ 27		✓	✓					soil			—	
M 1154	✗ 28		✓	✓					soil			—	
M 1155	✗ 29		✓	✓					soil			—	
1156	✗ 30		assay ✓	assay ✓		<0.005	0.2			<0.03	0.48	GWK	+ qtz
1157	✗ 31		✓	✓		<0.005	<0.2			<0.03	0.46	QTZ	+ GWK
1158	✗ 32		✓	✓		<0.005	0.2			<0.03	1.3	GWK	+ qtz
1159	✗ 33		✓	✓		<0.005	<0.2			<0.03	0.56	hon f/s	✗
1160	✗ 34		✓	✓		<0.005	<0.2			<0.03	0.59	granite	✗
1161	✗ 35		✓	✓		<0.005	<0.2			<0.02	0.66	granite	✗

...normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_4, circle %; for fluorometric U, circle ppm.

...RKS:

... Juneau | Date Submitted ______ | Date Completed ______

...ct Bare II | Date Received by Contractor ______ | Date Received (FOC) ______

...tted by Haney | Analyst ______

FOC Lab No.	FOC Field No.	Spec.	Au oz/t;ppm	Ag oz/t;ppm	%;ppm	Au oz/ton	Ag oz/ton	%;ppm	Au %;ppm	Ag %;ppm	Rock %;ppm	type %;ppm	%;ppm
JR80-1162	ABM 3136	✓	assay ✓	assay ✓		<0.005	0.2		<0.03	0.85	GWK	qtz	✗
1163	✗ 37		✓	✓		<0.005	(0.6)		<0.03	1.9	granite		✗
1164	✗ 38		✓	✓		<0.005	0.2		<0.03	0.59	GWK granite		✗
1165	✗ 39		✓	✓		<0.005	<0.2		<0.03	0.66	horn f/s (?)		✗
1166	✗ 40		✓	✓		<0.005	0.2		<0.03	0.87	granite		✗
1167	✗ 41		✓	✓		<0.005	0.4		<0.03	1.0	horn f/s		✗
1168	✗ 42		✓	✓		<0.005	<0.2		0.05	1.1	horn f/s		✗
1169	✗ 43		✓	✓		<0.005	<0.2		<0.03	0.98	granite		✗
1170	✗ 44		✓	✓		<0.005	<0.2		0.06	0.85	granite		✗
1171	✗ 45		✓	✓		<0.005	<0.2		<0.03	0.83	granite		✗
1172	✗ 46		✓	✓		<0.005	0.2		<0.03	1.4	granite		✗
1173	✗ 47		✓	✓		<0.005	0.2		0.05	1.1	"		✗
1174	✗ 48		✓	✓		<0.005	0.2		0.03	2.1	"		✗
1175	✗ 49		✓	✓		<0.005	0.4		<0.03	1.2	SL		✗
1176	✗ 50		✓	✓		<0.005	<0.2		<0.03	1.6	GWK		✗

...r normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_4, circle %; for fluorometric U, circle ppm.

...ARKS:

: Rare II | Date Received by Contractor | Date Received (FOC)

.ed by [redacted] Haney | Analyst

FOC Lab No.	FOC Field No.	Spec.	Au oz/t;ppm	Ag oz/t;ppm	%;ppm	Au oz/ton	Ag oz/ton	%;ppm	%;ppm	Au %;ppm	Ag %;ppm	Rocks %;ppm	%;ppm
JG80 1177	ABM 3151	✓	assay	✓ assay	✓	<0.005	0.2			<0.03	1.6	[illegible]	X
1178	X 3152			✓	✓	<0.005	0.2			<0.03	2.1	[illegible]	X
1179	X 53			✓	✓ ✓	<0.005	<0.2			0.03	4.5	gran't	X
1180	X 54			✓	✓	trace	0.2			<0.03	1.2	SC [illegible]	X
1181	X 55			✓	✓	<0.005	<0.2			0.04	1.5	gran't	X
1182	X 56			✓	✓	<0.005	<0.2			<0.03	1.6	SC [illegible]	X
1183	X 57			✓	✓ ✓	trace	0.6			<0.03	1.0	gran't	X
1184	X 58			✓	✓					<0.03	1.6	"	X
1185	X 59			✓	✓				soil			—	
1186	X 60			✓	✓				soil			—	
1187	X 61			✓	✓					<0.03	1.8	SC Gwk	X
1188	62			✓	✓							SC Gwk	qtz
1189	X 63			✓	✓				[illegible]	<0.03	1.2	—	X
1190	X 64			✓	✓				soil			—	
1191	X 65			✓	✓					<0.03	0.94	SC Gwk	qtz

normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8, circle %; for fluorometric U, circle

.KS:

Juneau | Date Submitted | Date Completed

t Rare II | Date Received by Contractor | Date Received (FOC)

.ted by [redacted] | Analyst

FOC Lab No.	FOC Field No.	Spec.	Au oz/t;ppm	Ag oz/t;ppm	%;ppm	Au oz/ton	Ag oz/ton	%;ppm	%;ppm	Au %;ppm	Ag %;ppm	Rocks %;ppm	%;ppm
JG80 1192	ABM 3166	✓	assay	✓ assay	✓	trace	0.4			<0.03	1.8	SC Gwk	qtz
1193	3167			✓	✓	<0.005	<0.2			0.03	1.5	SC Gwk	qtz
1194	X 68			✓	✓				soil			—	
1195	X 69		assay	✓ assay	✓	<0.005	0.2			<0.03	1.5	Gwk	X
1196	X 70			✓	✓	trace	<0.2			0.03	1.0	SC	X qtz
1197	X 71			✓	✓	<0.005	<0.2			<0.03	1.1	qtz	X
1198	X 72			✓	✓	<0.005	<0.2			0.03	1.8	qtz	X
1199	73			✓	✓	<0.005	<0.2			<0.03	1.7	qtz	X
1200	74			✓	✓	trace	0.2			<0.03	1.6	SC	X qtz
1201	75			✓	✓	<0.005	0.4			<0.03	1.5	gran't	X
1202	X 76			✓	✓	<0.005	0.2			<0.03	1.5	"	X
1203	X 77			✓	✓	<0.005	0.2			<0.03	2.6	Gwk	X
1204	X 78			✓	✓	<0.005	0.2			<0.03	1.4	[illegible]	X
1205	X 79			✓	✓	<0.005	0.4			<0.03	0.86	Gwk	X qtz
1206	X 80			✓	✓	<0.005	<0.2			<0.03	0.86	Gwk SC	X

normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8, circle %; for fluorometric U, circle

Rare II | Date Received by Contractor ______ | Date Received (FOC) ______

ted by [redacted] Haney | Analyst ______

FOC Lab No.	FOC Field No.	Spec.	Au oz/t;ppm	Ag oz/t;ppm	%;ppm	Au oz/ton	Ag oz/ton	%;ppm	%;ppm	Au %;ppm	Ag %;ppm	Rock %;ppm	%;ppm
JRSO-1207	ABM 3181	✓	assay ✓	assay ✓		<0.005	0.4			<0.03	1.2	SC SWK	✓
1208	x 86	✓	✓	✓		<0.005	0.4			0.05	0.75	[illegible]	✓
1209	x 87		✓	✓		<0.005	0.2			<0.03	2.0	[illegible]	✓
1210	x 88		✓	✓		<0.005	0.2			0.07	1.7	[illegible]	✓
1211	x 89		✓	✓		<0.005	<0.2			0.03	1.4	[illegible]	✓
M 1212	x 90		✓	✓					SOIL				
1213	x 92	✓	✓	✓		trace	<0.2			0.05	1.6	QTZ	SWK ✓
1214	x 93		✓	✓		trace	<0.2			0.05	0.75	QTZ	SWK ✓
1215	x 94		✓	✓		<0.005	<0.2			0.08	0.76	QTZ	SWK ✓
1216	x 95		✓	✓		trace	<0.2			0.10	0.88	SWK	QTZ ✓
1217	x 96		✓	✓		<0.005	<0.2			0.03	1.1	SC (SWK)	QTZ ✓
1218	x 97		✓	✓		<0.005	<0.2			0.04	0.63	SWK	QTZ ✓
1219	x 98		✓	✓ ✓		(0.032)	<0.2		SOIL	(1.1)	1.0		✓
1220	x 99		✓	✓ ✓		(0.013)	<0.2			(0.25)	1.2	QTZ	SWK ✓
1221	x 3200		✓	✓ ✓		(0.029)	<0.2			(0.75)	1.2	QTZ	SWK ✓

For normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_4, circle %; for fluorometric U, circle

REMARKS: ______

Juneau | Date Submitted ______ | Date Completed ______

Rare II | Date Received by Contractor ______ | Date Received (FOC) ______

d by [redacted] Haney | Analyst ______

FOC Lab No.	FOC Field No.	Spec.	Au oz/t;ppm	Ag oz/t;ppm	%;ppm	Au oz/ton	Ag oz/ton	%;ppm	%;ppm	Au %;ppm	Ag %;ppm	Rocks %;ppm	%;ppm
RSO-1222	ABM 3201	✓	assay ✓	assay ✓		trace	<0.2			0.10	0.82	SWK	QTZ ✓
1223	02	✓	✓	✓		<0.005	<0.2			0.05	0.76	[illegible]	✓
1224	03		✓	✓		<0.005	<0.2			0.05	0.73	SWK	QTZ ✓
1225	x 04		✓	✓					SOIL	<0.03	1.4	soil	✓
1226	x 05		✓	✓					SOIL	0.05	0.66		✓
1227	x 06		✓	✓					SOIL	<0.03	0.71		✓
1228	x 07		✓	✓					SOIL				✓
1229	x 08		✓	✓					SOIL				✓
1230	x 09		✓	✓					SOIL				✓
1231	x 10		✓	✓					SOIL				✓
1232	x 11		✓	✓					SOIL				✓
1233	x 12		✓	✓					SOIL				✓
1234	x 13		✓	✓					SOIL				✓
1235	x 14		✓	✓					SOIL				✓
1236	x 15		✓	✓		[illegible]	[illegible]		SOIL				✓

For normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_4, circle %; for fluorometric U, circle

[illegible] only

ted by [redacted] Hayes (?) Contractor Analyst

FOC Lab No.	FOC Field No.	Spec	Au oz/t;ppm	Ag oz/t;ppm	%;ppm	:ppm	Kimbell Line (?)	%;ppm	%;ppm	Au %;ppm	Ag %;ppm	%;ppm	%;p
1250-1237	ABM 7216	✓					208N		SOIL	<0.03	1.2		✓
1238	17						206		SOIL	<0.03	1.2		X
1239	18						204		SOIL	<0.03	0.90		X
1240	19						202		SOIL	<0.07	1.5		X
1241	20				✓		200N	✓	SOIL	<0.26	6.2		X
1242	21				✓		198	✓	SOIL	<0.27	5.3		X
1243	22						196		SOIL	<0.07	1.6		X
1244	23				✓		194	✓	SOIL	<0.10	3.6		X
1245	24						192		SOIL	<0.03	0.88		✓
1246	25						190		SOIL	<0.03	1.2		✓
1247	26						188		SOIL	<0.03	1.0		X
1248	27						186		SOIL	0.03	1.1		X
1249	28						184		SOIL	0.18	1.5		X
1250	29						182		SOIL	<0.06	1.6		X
1251	30						180		SOIL	<0.10	1.2		X

For normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8, circle %; for fluorometric U, circle

REMARKS:

Juneau Date Submitted Date Completed

Rare II Date Received by Contractor Date Received (FOC)

ted by [redacted] Hayes (?) Analyst

FOC Lab No.	FOC Field No.	Spec	Au oz/t;ppm	Ag oz/t;ppm	%;ppm		Base Line	%;ppm	%;ppm	Au %;ppm	Ag %;ppm	%;ppm
1250-1252	ABM 7231	✓					178N		SOIL	<0.10	1.5	X
1253	32				✓		176		SOIL	<0.30	4.9	X
1254	33				✓		174		SOIL	<0.15	3.2	✓
1255	34						172		SOIL	<0.03	0.85	✓
1256	35						170		SOIL	<0.03	0.53	X
1257	36						168		SOIL	<0.05	1.0	X
m 1258	37						166					
m 1259	38						164					
1260	39						162		SOIL	0.05	0.49	X
1261	40						160		SOIL	<0.06	1.2	X
m 1262	41						158					
1263	42						156		SOIL	<0.03	0.64	X
1264	43						154		SOIL	<0.03	0.72	X
1265	44				✓		152		SOIL	<0.10	3.0	X
m 1266	45						150					

For normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8, circle %; for fluorometric U, circle

REMARKS:

t Rare II — Date Received by Contractor ______ Date Received (FOC) ______

.ted by [redacted] — Analyst ______

FOC Lab No.	FOC Field No.	Spec.	Au oz/t; ppm	Ag oz/t; ppm	%; ppm		%; ppm	Base Line	%; ppm	%; ppm	Au %; ppm	Ag %; ppm	%;
1267	AFIN 3246	✓		✓				148N		SOIL	<0.05	0.85	X
1268	X 47	/						146		SOIL	<0.05	1.7	X
1269	X 48							144		SOIL	<0.06	1.0	X
1270	X 49							142		SOIL	<0.15	2.6	X
1271	X 50							140		SOIL	<0.10	1.4	X
1272	X 51							138		SOIL	<0.03	0.80	X
1273	X 52							136		SOIL	<0.03	0.88	X
1274	X 53							134		SOIL	<0.10	2.5	X
1275	X 54							132		SOIL	<0.06	1.2	X
1276	X 55							130		SOIL	<0.05	0.95	X
1277	X 56							128		SOIL	<0.03	0.55	X
1278	X 57							126		SOIL	<0.05	0.80	X
1279	X 58							124		SOIL	<0.05	0.90	X
1280	X 59							122		SOIL	<0.15	1.8	X
1281	X 60							120		SOIL	<0.06	2.0	X

normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8, circle %; for fluorometric U, circle

[illegible] — Date Submitted ______ Date Completed ______

Rare II — Date Received by Contractor ______ Date Received (FOC) ______

ed by [redacted] Haney — Analyst ______

FOC Lab No.	FOC Field No.	Spec.	Au oz/t; ppm	Ag oz/t; ppm	%; ppm			Base Line	%; ppm	%; ppm	Au %; ppm	Ag %; ppm	%;
1282	AFIN 3261	✓	✓	✓				118N		SOIL	<0.05	1.1	X
1283	7 62							116		SOIL	<0.06	1.7	X
1284	63												
1285	X 64							114		SOIL	0.15	1.6	X
1286	X 65				✓			112		SOIL	(0.35	0.97	X
1287	X 66							110		SOIL	<0.05	1.5	X
1288	X 67							108		SOIL	<0.05	1.0	X
1289	X 68							106		SOIL	<0.05	1.6	X
1290	X 69							104		SOIL	<0.03	0.92	X
1291	X 70				✓			102		SOIL	<0.25	(3.6)	X
1292	X 71							100		SOIL	<0.05	2.3	X
1293	X 72				Base Line Tie			2E		SOIL	<0.10	2.4	X
1294	X 73							4E		SOIL	<0.10	1.8	X
1295	X 74							6E		SOIL	<0.10	1.8	X
1296	X 75							8E		SOIL	0.05	1.1	X

normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8, circle %; for fluorometric U, circle

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Rare II. | Date Received by Contractor ________ | Date Received (FOC) ________

ed by [redacted] Rhney | Analyst ________

FOC Lab No.	FOC Field No.	Spec.	Au oz/t;(ppm)	Ag oz/t;(ppm)	%;ppm	(ppm)	%;ppm	%;ppm	%;ppm	%;ppm	Au %;(ppm)	Ag %(ppm)	%;ppm
							Individual Determinations Required						
1280-1297	RSM 2276		[illegible]		✓	from Striker Tel.		10E		SOIL	<0.10	3.3	X
1298	X 77							12E		SOIL	<0.05	1.0	X
1299	X 78							14E		SOIL	<0.05	2.0	X
1300	X 79				✓	from Lusky Shiel		2E		SOIL	<0.10	4.0	X
1301	X 80				✓			4E		SOIL	<0.30	14.0	X
1302	X 81				✓			6E		SOIL	<0.20	6.3	X
1303	X 82							8E		SOIL	<0.10	1.6	X
1304	X 83							10E		SOIL	<0.10	1.6	X
[illegible]	X												

normal fire assay, circle oz/t; for FA-AA, circle ppm. For radiometric U_3O_8, circle %; for fluorometric U, circle
ks:

This thesis is accepted on behalf of the faculty of the Institute by the following committee:

Adviser

Date