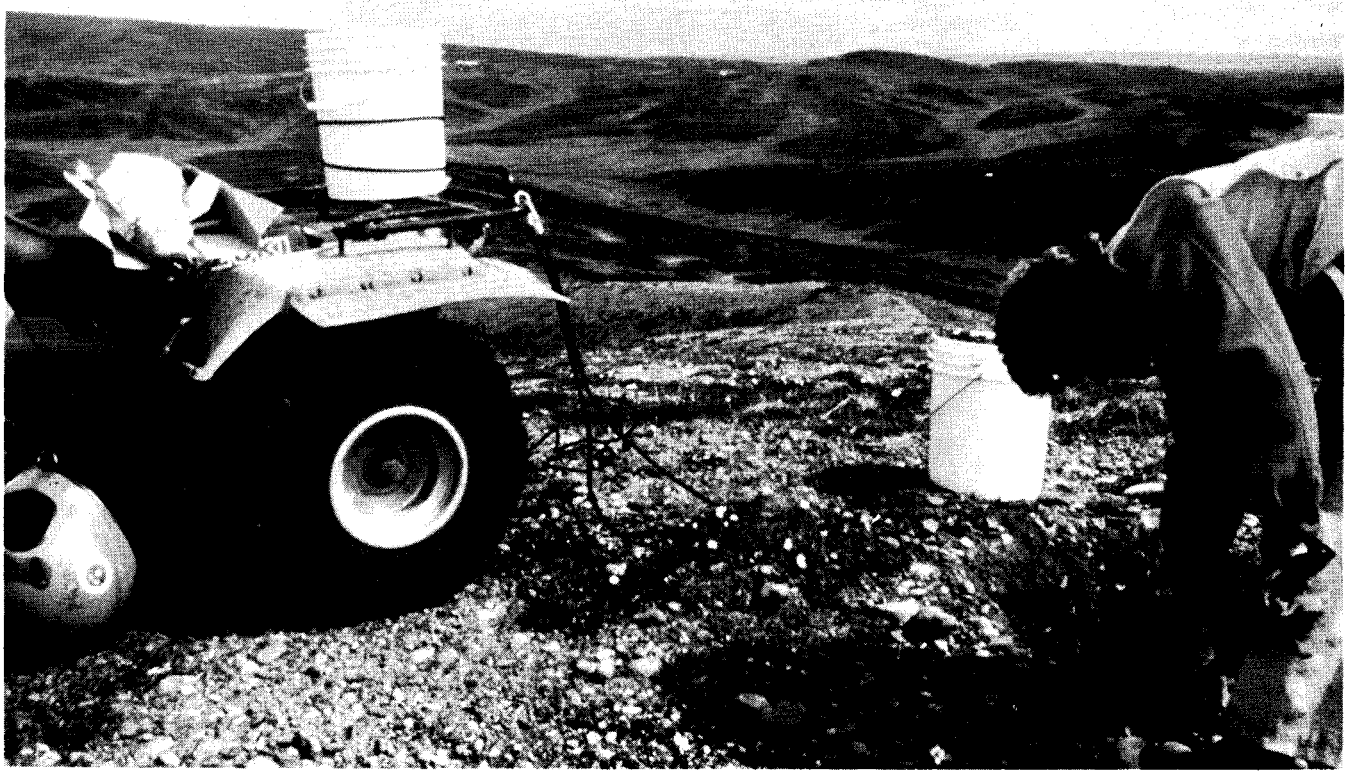
GOLD- AND PGM-BEARING CONGLOMERATE OF THE VALDEZ CREEK MINING DISTRICT, ALASKA

by Steven A. Fechner and Denise A. Herzog



U.S. DEPARTMENT OF THE INTERIOR
Manuel Lujan, Jr., Secretary

BUREAU OF MINES
T S Ary, Director

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CONTENTS

ILLUSTRATIONS

UNIT OF MEASURE ABBREVIATIONS USED IN THIS REPORT

°	degrees
%	percent
F	Fahrenheit
oz	troy ounce
oz/cy	troy ounces per cubic yard (used in appendix A and B)
oz/yd^3	troy ounces per cubic yard
ppb	parts per billion
ppm	parts per million
yd^3	cubic yard

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by Steven A. Fechner[1] and Denise A. Herzog[2]

ABSTRACT

The U.S. Bureau of Mines is conducting a four-year (1987-1990) study to assess the mineral resources and mineral development potential of the Valdez Creek Mining District in southcentral Alaska. This study is part of the Bureau's ongoing statewide mining district evaluation program. This report summarizes the Bureau's site specific evaluations of two areas (Tyone and Peters Creek) of the district that were investigated to determine the bedrock sources of gold and PGM in the alluvial gravel of both areas.

In the Tyone Creek area, grains of gold (up to 0.0212 oz/yd^3) and platinum group minerals (PGM) were recovered from alluvium and weathered conglomerate of the Jurassic Naknek Formation and Tertiary age using placer sampling techniques. Platinum and palladium were detected in the heavy mineral concentrates recovered from placer sampling the alluvium, and Naknek Formation and Tertiary conglomerates. In the Peters Creek area, grains of gold (up to 0.014 oz/yd^3) were recovered from the alluvium and Tertiary Sterling Formation conglomerate.

The Bureau's evaluations indicated that drainage basins containing conglomerate are the most favorable targets for placer gold and PGM exploration; and Tertiary conglomerate represents a high volume, low grade gold resource.

INTRODUCTION

In 1987, the U.S. Bureau of Mines (Bureau) began a mineral resource evaluation of the Valdez Creek Mining District (fig. 1). The evaluation will: identify the mineral development potential of mineral properties, develop theoretical mining feasibility studies of generic deposits, study the application of modern beneficiation technologies on known deposits, and conduct a probabilistic mineral resource and economic assessment of the mining district. This district evaluation is a cooperative effort between the Bureau and the Alaska Division of Geological and Geophysical Surveys (ADGGS). Reports on the results of the Bureau's and DGGS's work in 1987-88 have been published (1[3], 6-8, 26, 46, 50-51, 57-59). Final reports on the results of the evaluation are scheduled for publication in late 1990.

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[3]Underlined numbers in parentheses refer to references found in the Reference section preceding the appendices.

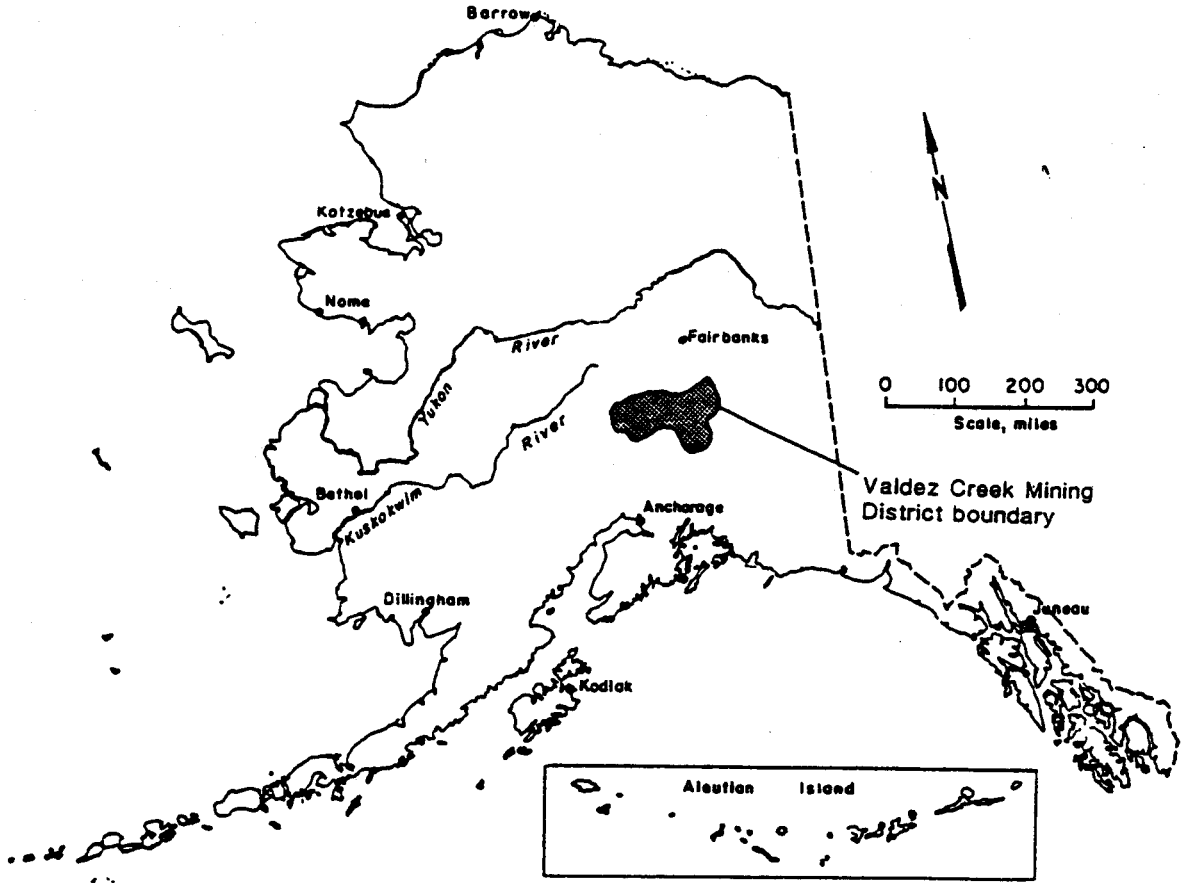


Figure 1.--Index map of Alaska showing the Valdez Creek Mining District

In 1988 and 1989, the Bureau conducted site specific evaluations of two areas in the district: the Tyone and Peters Creek areas (fig. 2). These two areas were chosen for more detailed work because: (1) they are accessible by motor vehicle; (2) they contain most of the known exposures of conglomerate in the district; (3) gold and platinum-group minerals (PGM) have been recovered from alluvial gravel; and (4) conglomerate in both of the areas has been hypothesized as the bedrock source of the gold recovered from the alluvial gravel. The objectives of the evaluations were to determine the drainages that contained gold or PGM, the bedrock source of the gold or PGM, and the tenor of the placer and bedrock sources. This report summarizes the Bureau's work in these two areas of the district.

PHYSIOGRAPHY

The Valdez Creek Mining District is in the southcentral portion of the state (fig. 1). The district encompasses that portion of the Susitna drainage basin upstream of the confluence of the Talkeetna River with the Susitna River. The district's boundaries are the crest of the Alaska range on the north and west, the crest of the Talkeetna Mountains on the south, and the divide that separates the Copper River drainage basin from the Susitna drainage basin on the east (fig. 2). The Tyone Creek area is located in the southeastern portion of the district and encompasses a part of the northern foothills of the Talkeetna Mountains (fig. 2). The Peters Creek area is located in the southwestern portion of the district and encompasses a part of the eastern foothills of the Alaska Range (fig. 2).

Vegetation in the lower elevations includes extensive stands of spruce, cottonwood, and birch, with an undergrowth of willow, alder, and moss. Tundra covers the slopes above treeline, which is at 2,500 to 3,000 ft elevation.

The climate of the district is cool, with cloudy, rainy summers, and cold winters. The average January temperature over much of the district is 4°F, and the average July temperature is 55°F.

ACCESS

The Tyone and Peters Creek areas are accessible by motor vehicle or all-terrain vehicle (ATV). Tyone Creek is accessible via an ATV trail from Eureka Summit on the Glenn Highway. The Peters Creek area is accessible by motor vehicle via the Petersville Road, which is a dirt road off the Parks Highway, then by ATV or foot via a washed out road. Both areas are roughly 20 miles from the main highways. More remote portions of the areas are only accessible via helicopter or cross country foot travel.

LAND STATUS

The Valdez Creek Mining District has federal, state, and private land holdings. Figure 2 is a generalized land status map as of 1988. Although Tyone and Peters Creek areas are predominantly State land, current land status for specific areas can only be determined by reviewing the maps maintained by the Bureau of Land Management. The district is in the Matanuska-Susitna Borough.

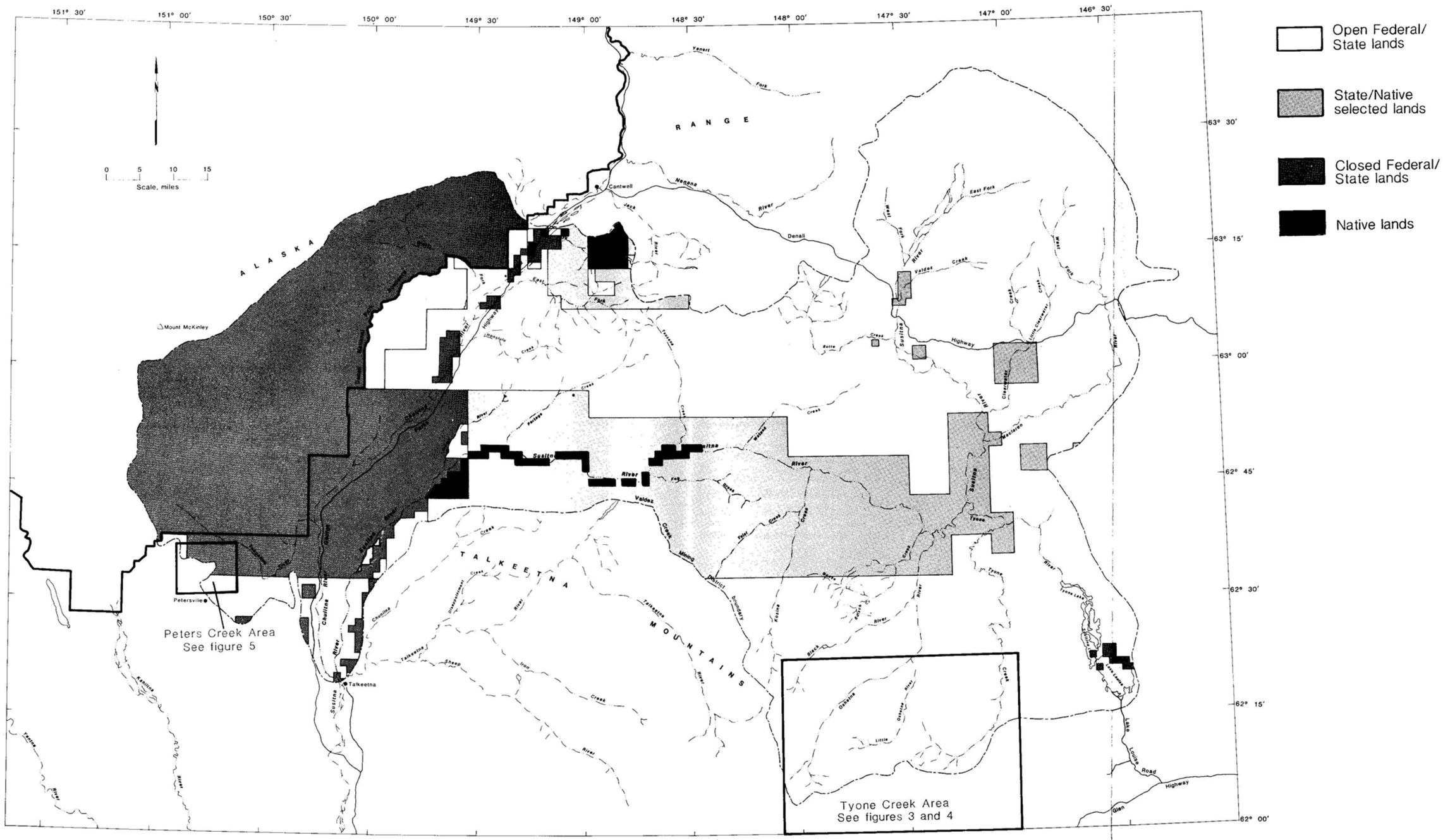


Figure 2. -- Land status and area locations for the Valdez Creek Mining District, Alaska ((open refers to open to exploration and development under the U.S. Mining Law of 1872 (as amended) and Alaska Statute, sections 38.05.185-280)).

ACKNOWLEDGMENTS

The authors wish to thank A.L. Renshaw, Jr., miner and mining engineer, who provided the authors with logistical support and allowed the Bureau to review his extensive records on the geological characteristics of the Tyone Creek area. John Dewan, miner on Tyone Creek, is also thanked for his logistical support. The authors also thank Yacko Creek miner Andy Anderson, Mark Meyer, Bureau Physical Scientist, Bill Rice, Bureau sampler, and Nathan Rathbun, Bureau warehouseman for their sampling expertise. The authors are grateful to Cheryl Mardock, Geologist, Albany Research Center for analyzing samples using a scanning electron microscope.

PREVIOUS STUDIES

Numerous geological and mineral studies have been conducted in the Valdez Creek Mining District by the U.S. Geological Survey (USGS), Alaska Territorial Department of Mines, ADGGS, Bureau, private companies, and by graduate students. For a comprehensive bibliography of publications related to the district see Balen (1).

Comprehensive geological mapping was conducted in the mid-1950's in the Tyone Creek area by Grantz (19-21). The USGS conducted an Alaska Mineral Resource Assessment Program (AMRAP) study of the Talkeetna Mountains quadrangle in the mid-1970's (9-11, 28-39, 49, 53). Tertiary conglomerate has been recognized as a source of gold in the recent alluvial gravel of the area since 1956 (22). A lode gold occurrence was staked at the head of Granite Creek in 1971 (55). Prior to the Bureau's district study, PGM had been noted in Yacko Creek by A.L. Renshaw (47).

The Peters Creek area was examined by the USGS as part of their AMRAP study of the Talkeetna Quadrangle in the mid-1970's (12-18, 40-45, 52, 54). Hawley (24) conducted a mineral appraisal of lands adjacent to Mt. McKinley National Park in 1978. Quartz veins in the slates and graywackes, and Tertiary conglomerate were inferred as the sources of the gold in the alluvium of the area (24-25, 27). PGM was reported from Poorman and Canyon Creeks by A.H. Brooks (3) and Mertie (27).

MINING HISTORY

Mining in the Valdez Creek Mining District began shortly after Peter Monahan discovered gold on Valdez Creek in 1903 (1). Since that time, placer mining has been most active in the Valdez Creek drainage, the Tyone Creek area, and the Peters Creek area. Over 300,000 oz of placer gold has been produced from the district, with the majority of the production occurring from Valdez Creek from 1984 to 1990 (1).

The earliest mining in the Peters Creek area was from Canyon Creek in 1908 (4). Early prospecting for placer gold was reported in the Tyone Creek area in 1914 (5). The only recorded production from these two areas was 244 oz of gold from Canyon Creek in the Peters Creek area (56). This investigation, however, found that portions of Gold, Yacko, Tyone, Red Fox, and Daisy Creeks in the Tyone Creek area, and Canyon, Divide, and Wonder Gulch in the Peters Creek area have been mined.

BUREAU INVESTIGATION

Bureau personnel spent a total of four weeks during the summers of 1988 and 1989 evaluating the Tyone and Peters Creek areas. The Bureau collected 215 samples from the Tyone Creek area and 54 samples from the Peters Creek area.

SAMPLING

Placer samples were collected from alluvial and colluvial material in river bars, flood plains, and fans, alluvial and glacial material in benches, and weathered conglomerate. Samples were collected by sluicing approximately 0.1 yd^3 of material through a 10 x 48 in. sluice box. The material collected in the sluice box was then panned down to produce a heavy mineral concentrate. The weight of the concentrates are listed in the appendices. Visible gold and PGM grains were separated from the concentrate by panning, weighed, then the gold was sent to a lab for fineness determinations and the PGM was sent to the Bureau's Albany Research Center for analyses using the scanning electron microscope. The remaining heavy mineral concentrates were analyzed for the elements listed in the appendices. Pan samples were also taken.

The Bureau took many rock samples from the two areas (1, 26), but because this investigation was only concerned with the placer deposits and their relationship with the conglomerates, the rock samples listed in this report refer only to those taken from conglomerate units. Bureau reports, which will include a complete listing of analyses and mineral properties of the Valdez Creek Mining District, are scheduled for publication in late 1990.

TYONE CREEK AREA

The Tyone Creek area is that area from the Tyone Creek drainage on the east and south, to the headwaters of the Black River on the west, and to the confluence of the Little Oshetna and Oshetna Rivers on the north (fig. 3).

Geology

A. Grantz (19-21) mapped most of the geology of the Tyone Creek area at 1:63,360 scale. B. Csejtey (11) mapped the geology of the area at a 1:250,000 scale. The DGGS is now mapping the northern portion of the area at a 1:63,360 scale and has collected numerous rock samples from the Gold and Granite Creek drainages (6). Figure 3 is a compilation of geology from maps produced by A. Grantz and B. Csejtey.

The geology of the area comprises Jurassic to Tertiary intrusive, volcanic, and sedimentary rocks, and Quaternary deposits that include glacial, alluvial, and landslide material. The ages of the rocks generally decrease from north to south. The oldest rocks in the area are those of the Talkeetna Formation (Jtk), which is Lower Jurassic in age. The formation consists of lavas and pyroclastic rocks, with sandstones and argillites dominating the upper portion of the formation. The formation is exposed in the northern portion of the area. In the headwaters of Granite Creek, gold-bearing veins have been found at the contact of the formation with a Jurassic intrusive.

The Talkeetna Formation is overlain by interbedded sandstone, siltstone, shale, and cobble and boulder conglomerate of the Middle to Upper Jurassic Chinitna and Naknek Formations. The Naknek Formation unconformably overlies the Chinitna Formation.

In the southern portion of the area, Lower Cretaceous calcareous sandstones, claystones, and massive clastic limestone unconformably overlie the Jurassic rocks.

The Lower Cretaceous rocks are overlain by Tertiary fluviatile conglomerate and coaly sandstone. The Tertiary conglomerate is prominent in the western portion of the area and becomes thinner and is overlain by Tertiary volcanic rocks in the eastern portion of the area. The Tertiary volcanic rocks consist of basalt flows and associated pyroclastic rocks.

The Quaternary deposits consist of moraines, outwash, loess, and proglacial lake deposits; alluvial deposits, which are generally 6 feet thick in the headwaters and greater than 50 feet thick near the mouths of their drainages; and landslide deposits that are prominent in the western portion of the area.

Results

The following creeks have been staked for their placer potential: Tyone, Pumicite, Daisy, White Sand, Nicolie, Sally's Big Nugget, an unnamed tributary of Tyone, Buchia, Red Fox, Fourth of July, Walker, Yacko, Red, Sanona, Joe, Gold, Landslide, Nowhere, Roaring, and Granite Creeks, and the Little Oshetna and Oshetna Rivers (55, fig. 3). Mining has occurred on Tyone, Daisy, Red Fox, Yacko, Red, and Gold Creeks, but there is no recorded production. Production can be approximated using the amount of workings and an assumed grade[4]. It is therefore approximated that total production from each of the creeks has been less than 1,000 oz of gold, with total production from the Tyone area of less than 10,000 oz.

The Bureau collected 212 samples from the alluvial gravel, glacial deposits, and conglomerate rocks of the Tyone area. The sample results are in Appendix A.

Quaternary Surficial Deposits

The Bureau took 177 samples from alluvial gravel in most of the drainages in the area and 3 samples from glacial deposits (fig. 4, appendix A). ATV-accessible drainages (Tyone, Yacko, Red, and Red Fox Creeks) were sampled in more detail than other less accessible drainages.

All of the drainages east of the Oshetna River have similar characteristics. The thicknesses of the alluvial gravel range from 6 feet near the headwaters to greater than 50 feet at the mouths. The large drainages (Oshetna and Little Oshetna Rivers, and Sanona and Tyone Creeks) contain the most material, but also have the greatest thicknesses. The widths of alluvial gravel deposits range from 50 to 600 feet in the smaller creeks, and up to 2000 feet in the larger drainages. The gradients range from 50 to 500 feet/mile. The alluvial material is comprised of cobbles and boulders of volcanic, sedimentary, and intrusive rocks. Placer concentrates contain a large proportion of black sand (mostly magnetite) and garnet. The Bureau recovered up to 1 pound of heavy mineral concentrate per 0.1 yd^3 of material.

[4]The assumed grade used is the typical average mining grade of 0.015 oz Au/yd^3 for placer mines in Alaska, which has been calculated by the Alaska Field Operations Center, Bureau of Mines, Anchorage Branch using past production records.

The drainages west of the Oshetna River are steeper, narrower, and contain larger material than those east of the Oshetna River.

Bureau sampling recovered from a trace to 0.0212 oz/yd^3 Au (appendix A). The best samples were taken from the mining cuts along upper Red Fox Creek (fig. 4, appendix A). Fineness values for the gold particles ranged from 643 to 893 Au (appendix A).

Grains of PGM were also recovered from alluvial gravel. A.L. Renshaw (47) stated that for every 96.5 oz of gold that he recovered, he also recovered 3.5 oz of PGM in lower Yacko Creek. The Bureau recovered PGM grains from White Sand, Yacko, Red Fox, Nicolie, and Buchia Creeks. Most of the samples did not contain enough PGM to weigh (less 0.0001 grams). Analyses of heavy mineral concentrates from Tyone, Pumicite, Daisy, White Sand, Nicolie, Buchia, Red Fox, Fourth of July, Yacko, Red, and Gold Creeks, and the Oshetna River were less than 5 to 9600 ppb Pt (appendix A).

There is a high correlation between drainages that contain gold and PGM and those that have exposures of Jurassic and Tertiary conglomerate.

Glacial deposits consist of moraine, outwash, and proglacial lake deposits, and rock glaciers. Moraine, outwash, and proglacial lake deposits are prominent along the valley floors in the area. Rock glaciers are prominent in the higher elevations west of the Oshetna River.

Three placer samples were taken from glacial deposits of the area (108-109, 196, fig. 4, appendix A). The samples contained from trace to 0.0083 oz/yd^3 Au (appendix A). Analyses of the heavy mineral concentrates were up to 4 ppb Pt and up to 10 ppb Pt (appendix A).

Conglomerate

Conglomerate is widespread throughout the area. The oldest conglomerate in the area is the cobble and boulder conglomerate of the Middle to Upper Jurassic age Chinitna and Naknek Formations (fig. 3). The Bureau examined conglomerate of the Naknek Formation. The conglomerate beds are of unknown thickness, but where exposed are greater than 20 feet thick. The beds contain predominantly weathered intrusive and volcanic cobbles and boulders, with a clay matrix. The best exposures are found in Red Fox, Buchia, and Conglomerate Creeks. The concentrates recovered from washing weathered conglomerate material contain minor amounts of black sand (mostly magnetite), minor garnet and gold.

The Bureau took thirteen 0.1 yd^3 placer, one pan, and 6 rock samples from these conglomerate units (67, 82, 95, 96, 99, 121, 129, 132, 134, 166, 175, 177, 186, 191-193, fig. 4, appendix A). One placer sample (191, fig. 4, appendix A) contained 0.0001 oz/yd^3 Au, but the other placer samples did not contain enough gold to weigh (less than 0.0001 grams). Analyses of heavy mineral concentrates contained from less than 2 to 8 ppb Pd and less than 5 to 10 ppb Pt (appendix A).

The youngest conglomerate unit is Tertiary. Tertiary conglomerate is prominent on the ridges in the eastern portion of the area (fig 3). In the west portion of the area, Tertiary conglomerate is found underlying Tertiary volcanic rocks. The conglomerate is fluviatile in origin and contains a high proportion of quartz cobbles as compared to the Jurassic conglomerate. The concentrates derived from washing this material contain moderate concentrations of black sands (magnetite and minor cassiterite) and garnet.

The Bureau collected ten 0.1 yd^3 placer and two rock samples from the Tertiary conglomerate (9, 64, 68, 69, 75, 145-147, 149-151, fig. 4, appendix A). The placer samples contained from trace to 0.0027 oz/yd^3 Au (appendix A). Fineness values for the recovered gold ranged from 503 to 687 Au (appendix A). A grain of ferro-platinum was recovered from sample 150. Analyses of heavy mineral concentrates contained from less than 2 to 6 ppb Pd and less than 5 to 280 ppb Pt (appendix A).

It is inferred that there are 353 million yd^3 of conglomeratic material of Tertiary age, which may contain gold or PGM, in the Tyone Creek area.

PETERS CREEK AREA

The Peters Creek area extends from the Tokositna River on the northeast to Peters Creek on the southwest, and Peters Hills on the southeast to Ramsdyke Creek on the northwest (fig. 5). The district boundary is the divide that separates the Peters Creek and Tokositna drainage basins (fig. 5).

Geology

The most comprehensive geologic mapping of the Peters Creek area has been done by Reed and Nelson (40, 43-44). The oldest rocks in the area are Cretaceous to Jurassic age marine sedimentary rocks (slates and graywackes). These rocks have been folded into various attitudes, but in general have steep dips. South of the area, gold-bearing veins have been found in the slates and graywackes (22). These rocks are exposed in the higher elevations in the area and have been unconformably overlain by Tertiary age conglomerate and sandstone of the Tyonek and Sterling Formations and Quaternary glacial deposits (fig. 5).

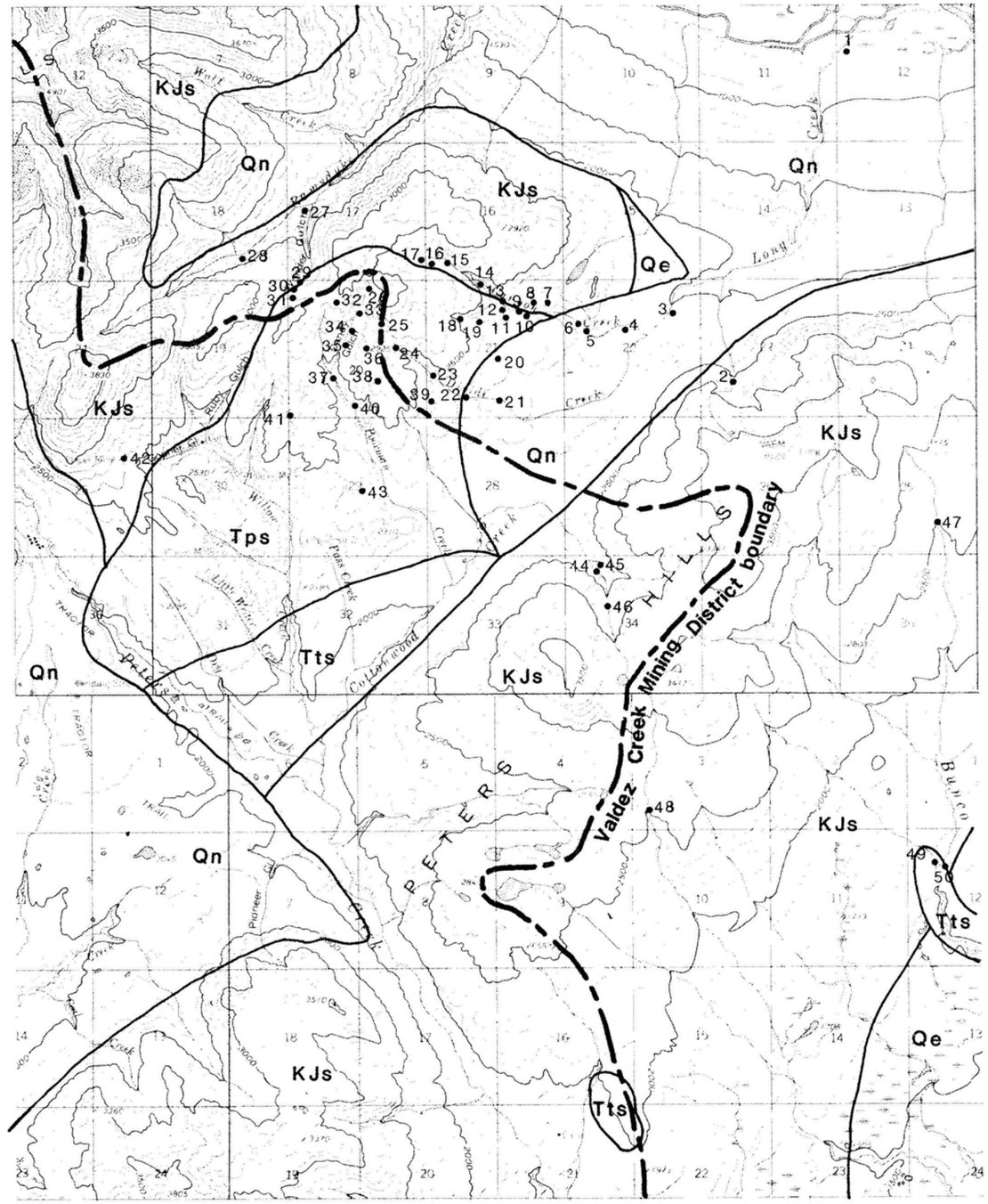
The Tyonek Formation is exposed in Cottonwood and Bunco Creeks (fig. 5). The formation is comprised of 80% sandstone, 20% siltstone and claystone, and less than 1% conglomerate, coal, and volcanic ash (44). The unit occurs in repetitive cycles 20 to 70 feet thick that grade upward from conglomerate or coarse sandstone to finer grained sandstone, to interbedded silt and clay with coal or bony coal (44).

The Sterling Formation is an orange, light-tan, or light-gray, massive bedded conglomerate, distinguished from the conglomerate in the Tyonek Formation by its color, relative coarseness, and clast lithology (44). Clasts are well rounded and equant and average 2 to 5 inches in diameter. The conglomerate is poorly to moderately well indurated with a clayey matrix (44). In the Poorman drainage, the thickness of the conglomerate exposed in the headwaters is approximately 20 feet and unconformably overlies slates and graywackes. Maximum thickness measured for the Formation is 2300 feet (44).

Glacial deposits of drift from Eklutna and Naptowne Glaciation are present in the Long, Canyon, and Cottonwood Creek valleys. The deposits include lateral and ground moraines, and alluvial, swamp, marsh, and bog deposits.

Results

Most of the Peters Creek area has been claimed at least once. Mining has occurred in the Valdez Creek Mining District on Long, Canyon, and Divide Creeks, and Wonder Gulch (fig. 5). Mining has also occurred on Poorman, Willow, Cottonwood, and Peters Creeks, which are located outside of the district (fig. 5). Sampling was mainly restricted to those drainages in the mining district.



LEGEND

- Qn / Qe — Glacial deposits
- Tps — Sterling Formation
- Tts — Tyonek Formation
- KJs — Undivided marine sedimentary rocks
- Contact
- 52 — Sample site

N

0 1 2

Scale, miles
Contour interval 100 feet

Figure 5. -- Geology and sample site locations for the Peters Creek area (geology adapted from 44).

The Bureau collected 51 placer and 2 rock samples during 1988 and 1989. The samples are plotted on figure 5 and the geochemical results are listed in Appendix B.

Alluvial Gravel

Thirty-three 0.1 yd^3 placer samples of alluvial gravel were collected in the Peters Creek area during this evaluation (fig. 5, appendix B). Conglomerate occurs at the heads and along much of the upper sections of the creeks in the area. The creeks in the upper sections of the drainages have incised more than 10 feet into the underlying slates and graywackes, forming canyons. The canyons are approximately 75 feet wide, with alluvial material about 6 feet thick. The canyons open up into wider (500 feet wide) sections with the alluvial material being greater than 15 feet thick. In the district, Long, Canyon, and Divide Creeks and Wonder Gulch have been mined in the past using hand mining techniques mainly in the canyon sections and mechanized mining in the wider sections. Although recorded production from the district has only been 244 oz of gold, the amount of disturbed ground would suggest that the figure should be closer to 5,000 ounces. Placer concentrates consist of gold, magnetite, ilmenite, garnet, zircon, cassiterite, specularite, and quartz. A few small grains of PGM were recorded from Canyon and Poorman Creeks (27). Uranium values have been reported from Canyon Creek (48).

Bureau placer samples contained from 0 to 0.014 oz/yd^3 Au (appendix B). The best samples were from small areas of the creeks where no mining has occurred. These areas are very rare. The finenesses for the gold particles were from 580 to 854 Au (appendix B). The proportion of heavy minerals in the placer concentrates is very low compared to the Tyone Creek area (less than 10 pounds per cubic yard). No PGM grains were noted in any of the samples. One sample (6, fig. 5, appendix B) contained 800 ppb Pt; however, the heavy mineral concentrate from the sample (6, fig. 5, appendix B) that was taken from the same spot the following year contained 5 ppb Pt.

Conglomerate

The Bureau took eighteen 0.1 yd^3 placer and two rock samples from conglomeratic material of the Sterling Formation (7, 9, 16-17, 20-21, 23, 26-28, 32-37, 39, 41-43, fig. 5, appendix B). The formation is approximately 50 feet thick in upper Wonder Gulch. The samples contained from trace to 0.007 oz/yd^3 Au, with an average value of 0.001 oz/yd^3 Au (appendix B). No PGM was found in any of these samples. It is inferred that there are 21,000,000 yd^3 of conglomeratic material in this portion of the Valdez Creek Mining District that are gold-bearing, but subeconomic at this time. The conglomerate of the Sterling Formation is clearly the source for most of the placer gold that is found in the alluvial gravels of the Peters Creek area.

SUMMARY AND RECOMMENDATIONS

The Bureau's detailed examination of the Tyone and Peters Creeks areas found the following:

1. Conglomerate of the Jurassic Naknek Formation and that which is Tertiary in age in the Tyone Creek area; and conglomerate of the Tertiary Sterling Formation of the Peters Creek area are gold-bearing.

2. Grains of PGM were recovered from placer samples collected from alluvial gravel and Tertiary conglomerate in the Tyone Creek area. Analyses of heavy mineral concentrates from samples taken from the alluvium, glacial deposits, and Naknek Formation and Tertiary conglomerate in the Tyone Creek area showed trace amounts of Pt and Pd.

3. Drainage basins in both areas that contain Tertiary conglomerate are the most favorable targets for placer gold exploration.

4. Tertiary conglomerate in both areas represents a high volume, low grade gold resource; and in the Tyone Creek area, the conglomerate represents a very low-grade PGM resource.

5. There may be portions of the Tertiary conglomerate of both areas that are presently economic to mine, but more detailed sampling is needed to identify these places.

6. Analysis of the results indicates the following source rocks for the gold and PGM found in the Tyone Creek area:

    a. Mineralized zones in the Talkeetna Formation that are similar to those found in Granite Creek for the gold in the Jurassic Naknek Formation and Tertiary conglomerate.

    b. The Naknek Formation for some of the gold and possibly PGM in the Tertiary conglomerate, alluvial gravel, and glacial deposits.

    c. The Tertiary conglomerate for some of the gold and PGM in the alluvial gravel and glacial deposits.

    d. Fineness values of gold particles are usually low near a primary bedrock source and increase with distance from the source (2). Therefore the low fineness values of the gold particles recovered from the Tertiary conglomerate suggest the gold has not traveled far.

7. The sources for the gold in the Peters Creek area are the Tertiary Sterling Formation and gold-bearing quartz veins similar to those described by Hawley (21).

Drilling or bulk sampling is needed to define the grade and tenor of the conglomerate in both of the areas. Additional gold and possibly PGM exploration targets may be other conglomerate in the Valdez Creek Mining District. Conglomerate in the district has been mapped in the Watana and Butte Creek

drainages (central portion of the district) and along the Chulitna trend (north of Peters Creek). The drainages south of the Tyone and Peters Creek areas also contain conglomerate and are therefore good exploration targets.

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APPENDIX A. - Results of Geochemical Analyses of Samples taken from the Tyone Creek Area during 1988 and 1989.

Explanation

Map no.	-	Refers to map number as shown on figure 4.
Sample no.	-	Refers to field sample number.
Sample type	-	CC Continuous chip
	-	CR Representative chip
	-	G Grab
	-	PL Placer sample
	-	RC Random chip
	-	S Select
Sample Location ID	-	Refers to the geographic location of the sample site.
%	-	percent
ppm	-	parts per million
ppb	-	parts per billion
oz/t	-	ounces per short ton
oz/cy	-	Ounces per cubic yard. Refers to amount of gold recovered from a placer sample by sluicing or panning.
AFS	-	Atomic fluorescence spectroscopy
99999	-	Above detection limit.
-99	-	Not detected.
NA	-	Not analyzed.
trace	-	Weight of gold particles recovered was less than 0.0001 grams.
Concen. weight	-	Weight of the heavy mineral concentrate in grams.

APPENDIX A. - Results of Geochemical Analyses of Samples taken from the Tyone Creek area during 1988 and 1989--Continued

Analytical Detection Limits

Inductively coupled plasma (ICP) spectroscopy		
Element	Minimum	Maximum
Al.....	0.01%	25.00 %
Ag.....	0.2 ppm	200 ppm
As.....	1.0	10,000 ppm
Ba.....	10.0 ppm	10,000 ppm
Be.....	0.5 ppm	10,000 ppm
Bi.....	2.0 ppm	10,000 ppm
Ca.....	0.01%	25.00 %
Cd.....	0.5 ppm	10,000 ppm
Co.....	1.0 ppm	10,000 ppm
Cr.....	1.0 ppm	10,000 ppm
Cu.....	1.0 ppm	10,000 ppm
Fe.....	0.01%	25.00 %
Ga.....	10.0 ppm	10,000 ppm
Hg.....	1.0 ppm	10,000 ppm
K.....	0.01%	20.00 %
La.....	10.0 ppm	10,000 ppm
Mg.....	0.01%	25.00 %
Mn.....	1.0 ppm	10,000 ppm
Mo.....	1.0 ppm	10,000 ppm
Na.....	0.01%	10.00 %
Ni.....	1.0 ppm	10,000 ppm
P.....	10.0 ppm	10,000 ppm
Pb.....	2.0 ppm	10,000 ppm
Sb.....	5.0 ppm	10,000 ppm
Sr.....	1.0 ppm	10,000 ppm
Ti.....	0.01%	10.00 %
Tl.....	10.0 ppm	10,000 ppm
U.....	10.0 ppm	10,000 ppm
V.....	1.0 ppm	10,000 ppm
W.....	10.0 ppm	10,000 ppm
Zn.....	2.0 ppm	10,000 ppm

Atomic fluorescence spectroscopy		
Au.....	2.0 ppb	10,000 ppb
Pd.....	2.0 ppb	10,000 ppb
Pt.....	5.0 ppb	10,000 ppb

Fire assay plus atomic absorption		
Au[1]....	0.002 oz/st	20.00 oz/st
Au.....	5.0 ppb	10,000 ppb

[1](½ assay ton)

APPENDIX A. - Results of Geochemical Analyses of Samples taken from the Tyone Creek area during 1988 and 1989--Continued

Analytical Detection Limits--Continued

Atomic absorption		
Ag[1]	0.01 oz/st	20.00 oz/st
Ag	0.5 ppm	500.0 ppm
Cu	0.01 %	100.00 %
Pb	0.01 %	100.00 %
Mo	0.001 %	100.000 %
Zn	0.01 %	100.00 %

[1](½ assay ton)

Neutron activation - gamma spectroscopy		
Sb	0.001 %	100.000 %

NOTE: Oz/yd^3 values can be calculated for the concentrates taken from a 0.1 yd^3 placer sample using the following equation:

(0.000011)(weight of concentrate in grams)(troy oz/st precious metal value from analysis) = Oz/yd^3.

$Pound/yd^3$ can be calculated for the concentrates taken from a 0.1 yd^3 placer sample using the following equation:

(0.022)(weight of concentrate in grams)(% concentration from analysis) = $Pound/yd^3$.

:APPENDIX A--Results of geochemical analyses of samples taken from the Tyone Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Ag ppm	Al %	As ppm	Au ppb	Au oz/t	Au oz/cy	Au AFS ppb	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm
1	1549	P	Qal	Oshetna River	-99	5.94	-99	NA	NA	trace	2200	350	0.5	-99	2.99	-99	7
2	1522	P	Qal	Gold Creek	-99	1.29	-99	NA	NA	0.0001	99999	70	-99	-99	16.05	1	14
3	1521	P	Qal	Gold Creek	2.0	4.95	-99	NA	NA	0.0043	99999	210	-99	-99	3.31	0.5	-99
4	2718	P	Qal	Oshetna River Trib.	-99	7.75	-99	NA	NA	trace	2	420	-99	-99	3.32	1.5	21
5	1637	P	Qal	Black River Trib.	-99	6.36	-99	NA	NA	0.0001	1200	410	0.5	-99	2.94	-99	9
6	2724	P	Qal	Black River	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	NA
7	1635	P	Qal	Black River Trib.	-99	5.40	-99	NA	NA	trace	26	360	0.5	-99	3.32	0.5	8
8	1546	P	Qal	Black River	-99	2.87	-99	NA	NA	trace	140	410	-99	-99	1.53	1	-99
9	2735	RC	Tsu	Roaring Creek	-99	6.88	25	-99	NA	NA	NA	580	-99	-99	1.66	1.0	25
10	2736	P	Qal	Roaring Creek	NA	NA	NA	NA	NA	trace	NA	NA	NA	NA	NA	NA	NA
11	1508	P	Qal	Granite Creek	-99	1.10	-99	NA	NA	0.0002	5800	240	-99	-99	1.04	1	-99
12	1510	P	Qal	Granite Creek	0.5	3.70	-99	NA	NA	trace	7800	310	-99	-99	2.35	-99	-99
13	2721	P	Qal	Oshetna River Trib.	-99	8.04	15	NA	NA	trace	-99	390	-99	16	4.23	1.5	21
14	2717	P	Qal	Gold Creek	-99	7.88	25	NA	NA	trace	30	310	-99	-99	3.81	1.0	20
15	1815	P	Qal	Gold Creek	-99	6.45	15	NA	NA	0.0002	99999	450	0.5	-99	2.61	-99	15
16	1814	P	Qal	Gold Creek	4.5	6.19	-99	NA	NA	0.0001	99999	280	0.5	-99	3.40	0.5	11
17	2716	P	Qal	Gold Creek	-99	7.88	30	NA	NA	trace	4	200	-99	-99	5.03	1.0	34
18	1519	P	Qal	Gold Creek	2.0	1.68	-99	NA	NA	0.0025	99999	90	-99	-99	12.54	1	6
19	1518	P	Qal	Gold Creek	0.5	1.40	-99	NA	NA	0.0020	210	90	-99	-99	13.69	2	2
20	2990	P	Qal	Landslide Creek	-99	8.01	70	NA	NA	0	-99	1920	-99	6	3.45	1.5	24
21	1511	P	Qal	Roaring Creek	0.5	6.90	10	NA	NA	0.0010	4500	780	1.0	-99	2.97	-99	12
22	1808	P	Qal	Nowhere Creek	-99	6.16	-99	NA	NA	trace	650	4420	1.0	-99	2.33	-99	4
23	1807	P	Qal	Nowhere Creek	-99	6.58	5	NA	NA	0.0010	3500	1000	0.5	-99	2.75	-99	-99
23	1807	P	Qal	Nowhere Creek	-99	0.76	-99	NA	NA	0.0010	6	490	-99	-99	0.70	1	-99
24	1727	P	Qal	Nowhere Creek	-99	2.46	-99	NA	NA	0.0003	8600	1710	-99	-99	1.26	1.5	-99
25	1726	S	Qal	Nowhere Creek	-99	6.92	5	5	NA	trace	NA	1240	1.5	-99	3.84	-99	7
26	1725	S	Qal	Nowhere Creek	0.5	6.23	85	10	NA	trace	NA	490	2.0	-99	1.65	-99	5
27	2621	P	Qal	Oshetna River Trib.	-99	4.42	120	NA	NA	0	8	880	-99	-99	2.93	1.5	42
28	2725	P	Qal	Oshetna River	-99	8.66	35	NA	NA	0	-99	4510	-99	-99	3.54	1.0	10
29	2632	P	Qal	Oshetna River Trib.	-99	7.31	-99	NA	NA	0	16	310	-99	-99	2.97	1.0	12
30	2631	P	Qal	Oshetna River Trib.	-99	6.74	5	NA	NA	0	10	370	-99	-99	3.41	1.0	12

:APPENDIX A--Results of geochemical analyses of samples taken from the Tyone Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm
1	1549	P	Qal	Oshetna River	125	22	14.46	-99	1	0.60	10	1.34	2932	-99	1.70	22	890
2	1522	P	Qal	Gold Creek	319	47	16.92	-99	1	0.08	-99	0.79	4753	-99	0.15	24	170
3	1521	P	Qal	Gold Creek	415	65	19.91	-99	-99	0.24	10	1.96	4265	-99	0.98	34	520
4	2718	P	Qal	Oshetna River Trib.	142	11	8.86	10	-99	1.02	20	1.98	1905	-99	2.16	28	830
5	1637	P	Qal	Black River Trib.	190	24	13.13	-99	-99	0.81	10	1.27	1582	-99	1.87	16	480
6	2724	P	Qal	Black River	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	1635	P	Qal	Black River Trib.	186	52	22.35	-99	-99	0.60	10	1.30	1276	-99	1.36	13	620
8	1546	P	Qal	Black River	144	31	99999	-99	3	0.60	30	0.54	3829	3	0.89	7	1050
9	2735	RC	Tsu	Roaring Creek	117	31	9.08	10	-99	1.30	20	0.56	1815	-99	2.47	49	660
10	2736	P	Qal	Roaring Creek	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	1508	P	Qal	Granite Creek	333	11	99999	-99	3	0.13	30	0.48	6532	1	0.30	17	300
12	1510	P	Qal	Granite Creek	228	21	99999	-99	-99	0.58	20	1.04	4651	-99	0.94	15	380
13	2721	P	Qal	Oshetna River Trib.	85	17	8.22	10	-99	0.57	20	1.40	2040	-99	2.09	25	900
14	2717	P	Qal	Gold Creek	127	30	8.10	10	-99	0.82	20	1.76	1720	1	2.11	28	870
15	1815	P	Qal	Gold Creek	593	40	11.97	-99	6	0.67	10	1.50	1546	-99	1.89	22	750
16	1814	P	Qal	Gold Creek	225	94	14.83	-99	-99	0.31	10	2.13	3871	-99	1.22	29	630
17	2716	P	Qal	Gold Creek	275	74	10.78	10	-99	0.35	20	3.49	1680	-99	1.36	55	460
18	1519	P	Qal	Gold Creek	310	58	19.92	-99	2	0.06	-99	0.96	4986	-99	0.20	31	150
19	1518	P	Qal	Gold Creek	245	36	19.82	-99	1	0.09	-99	0.84	4063	-99	0.20	25	540
20	2990	P	Qal	Landslide Creek	83	43	7.33	10	-99	0.96	20	1.68	1765	9	2.04	20	840
21	1511	P	Qal	Roaring Creek	170	29	7.95	-99	-99	1.20	20	1.17	2492	-99	1.81	17	670
22	1808	P	Qal	Nowhere Creek	117	31	12.84	-99	-99	0.88	20	0.96	2807	-99	1.80	13	850
23	1807	P	Qal	Nowhere Creek	121	16	10.31	-99	5	0.79	20	1.17	4155	-99	1.76	9	820
23	1807	P	Qal	Nowhere Creek	305	11	99999	-99	-99	0.05	-99	0.41	4398	-99	0.35	23	760
24	1727	P	Qal	Nowhere Creek	272	16	99999	-99	35	0.18	20	0.71	7171	-99	0.54	20	710
25	1726	S	Qal	Nowhere Creek	52	7	1.72	-99	-99	4.46	10	0.18	1918	6	1.95	6	520
26	1725	S	Qal	Nowhere Creek	24	4	2.17	10	-99	0.68	30	0.79	95	17	1.03	-99	1010
27	2621	P	Qal	Oshetna River Trib.	179	-99	99999	80	-99	0.08	20	1.57	4750	-99	1.13	52	800
28	2725	P	Qal	Oshetna River	51	4	8.39	10	-99	0.36	20	0.56	1755	-99	2.85	7	1310
29	2632	P	Qal	Oshetna River Trib.	62	7	12.57	30	-99	0.55	20	0.97	2670	-99	2.44	12	1600
30	2631	P	Qal	Oshetna River Trib.	105	6	4.80	10	-99	0.56	10	1.16	1855	-99	1.31	26	170

:APPENDIX A--Results of geochemical analyses of samples taken from the Tyone Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Pb ppm	Pd AFS ppb	Pt AFS ppb	Sb ppm	Sn ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Au fineness	Concen. weight (gms)
1	1549	P	Qal	Oshetna River	2	-99	-99	5	NA	3.09	-99	-99	608	70	256	NA	173
2	1522	P	Qal	Gold Creek	130	-99	15	10	NA	1.83	-99	-99	644	90	351	NA	18
3	1521	P	Qal	Gold Creek	8	-99	200	10	NA	4.80	-99	-99	1076	90	318	820	39
4	2718	P	Qal	Oshetna River Trib.	8	-99	-99	-99	-99	1.34	-99	-99	297	-99	144	663	197
5	1637	P	Qal	Black River Trib.	2	-99	-99	5	NA	1.01	10	-99	514	60	108	NA	223
6	2724	P	Qal	Black River	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	463
7	1635	P	Qal	Black River Trib.	2	-99	-99	5	NA	0.82	-99	-99	958	110	118	NA	257
8	1546	P	Qal	Black River	152	-99	-99	15	NA	1.85	-99	-99	1351	NA	283	NA	81
9	2735	RC	Tsu	Roarjng Creek	4	NA	NA	-99	NA	0.72	-99	-99	179	20	256	NA	NA
10	2736	P	Qal	Roaring Creek	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	242
11	1508	P	Qal	Granite Creek	8	-99	-99	15	NA	7.57	-99	-99	2343	NA	329	NA	233
12	1510	P	Qal	Granite Creek	2	-99	-99	10	NA	4.15	-99	-99	1264	NA	227	NA	286
13	2721	P	Qal	Oshetna River Trib.	24	-99	-99	-99	2	1.37	-99	-99	257	-99	154	NA	301
14	2717	P	Qal	Gold Creek	8	-99	-99	-99	2	1.14	-99	-99	276	-99	158	NA	249
15	1815	P	Qal	Gold Creek	2870	-99	10	25	NA	1.32	-99	-99	526	70	187	NA	520
16	1814	P	Qal	Gold Creek	2	8	10	10	NA	3.33	-99	-99	794	90	250	NA	391
17	2716	P	Qal	Gold Creek	8	-99	-99	5	-99	0.94	-99	-99	509	-99	152	NA	247
18	1519	P	Qal	Gold Creek	12	26	3100	5	NA	4.34	-99	-99	935	110	387	770	20
19	1518	P	Qal	Gold Creek	54	-99	-99	5	NA	4.41	-99	-99	1056	120	430	850	18
20	2990	P	Qal	Landslide Creek	16	-99	-99	-99	-99	0.89	-99	-99	226	-99	128	NA	349
21	1511	P	Qal	Roaring Creek	12	-99	-99	-99	NA	1.10	-99	-99	245	40	115	NA	321
22	1808	P	Qal	Nowhere Creek	2	-99	-99	5	NA	1.95	-99	-99	471	70	203	NA	226
23	1807	P	Qal	Nowhere Creek	18	-99	-99	5	NA	3.22	-99	-99	300	60	143	NA	75
23	1807	P	Qal	Nowhere Creek	2	-99	-99	20	NA	5.70	-99	-99	2432	NA	655	NA	177
24	1727	P	Qal	Nowhere Creek	10	-99	-99	5	NA	7.73	-99	-99	1524	NA	469	NA	97
25	1726	S	Qal	Nowhere Creek	10	NA	NA	-99	NA	0.26	-99	-99	33	10	62	NA	na
26	1725	S	Qal	Nowhere Creek	16	NA	NA	-99	NA	0.19	-99	-99	17	10	79	NA	na
27	2621	P	Qal	Oshetna River Trib.	-99	-99	-99	-99	-99	6.97	-99	-99	1198	20	590	NA	122
28	2725	P	Qal	Oshetna River	-99	-99	-99	-99	3	1.82	-99	-99	141	-99	296	NA	245
29	2632	P	Qal	Oshetna River Trib.	8	-99	-99	-99	-99	2.19	-99	-99	219	-99	280	NA	219
30	2631	P	Qal	Oshetna River Trib.	16	4	10	-99	-99	0.84	-99	-99	166	-99	62	NA	191

:APPENDIX A--Results of geochemical analyses of samples taken from the Tyone Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Ag ppm	Al %	As ppm	Au ppb	Au oz/t	Au oz/cy	Au AFS ppb	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm
31	2625	P	Qal	Oshetna River Trib.	-99	6.79	70	NA	NA	trace	130	960	-99	-99	3.34	2.0	17
32	2726	P	Qal	Oshetna River	-99	7.22	35	NA	NA	0	390	400	-99	10	4.04	-99	20
33	2622	P	Qal	Oshetna River Trib.	-99	3.70	110	NA	NA	0	-99	60	-99	-99	2.53	1.0	57
34	2623	P	Qal	Oshetna River	-99	6.21	20	NA	NA	0	18	480	-99	-99	3.29	1.5	18
35	1819	P	Qal	Oshetna River	-99	3.45	-99	NA	NA	trace	99999	720	1.0	-99	2.06	1	20
36	2624	P	Qal	Oshetna River	-99	7.70	55	NA	NA	0	4	390	-99	-99	2.02	2.5	13
37	2727	P	Qal	Oshetna River	-99	5.97	85	NA	NA	0	2	210	-99	-99	2.94	-99	53
38	1817	P	Qal	Oshetna River	-99	4.74	-99	NA	NA	trace	260	240	0.5	-99	2.65	0.5	-99
39	1816	P	Qal	Oshetna River	-99	1.71	-99	NA	NA	trace	900	250	0.5	-99	1.32	1	63
40	2991	P	Qal	Little Oshetna River	-99	5.55	75	NA	NA	trace	360	350	-99	-99	2.88	1.0	32
41	1709	P	Qal	Little Oshetna River	-99	1.04	-99	NA	NA	trace	60	240	0.5	-99	0.62	1.5	33
41	1709	P	Qal	Little Oshetna River	-99	4.17	-99	NA	NA	0.0002	3000	270	0.5	-99	2.51	-99	-99
42	1708	P	Qal	Little Oshetna River	1.0	2.35	-99	NA	NA	0.0003	99999	220	0.5	-99	1.37	0.5	-99
43	1710	P	Qal	Little Oshetna River	-99	4.59	-99	NA	NA	0.0010	1400	310	0.5	-99	2.60	-99	10
44	2604	P	Qal	Conglomerate Creek	-99	3.79	20	NA	NA	trace	1800	140	-99	-99	2.88	3.5	57
45	2606	P	Qal	Little Oshetna River	-99	6.25	-99	NA	NA	0	4	240	-99	-99	4.22	2.5	41
46	2605	P	Qal	Little Oshetna River	-99	6.62	50	NA	NA	trace	2500	310	-99	-99	4.35	0.5	31
47	2707	P	Qal	Little Oshetna River	-99	5.50	55	NA	NA	trace	280	240	-99	-99	2.74	2.0	29
48	2708	P	Qal	Little Oshetna River	-99	7.67	45	NA	NA	0	-99	150	-99	-99	4.79	0.5	30
49	2709	P	Qal	Little Oshetna River	-99	6.16	60	NA	NA	trace	6	240	-99	-99	3.23	1.5	23
50	2714	P	Qal	Little Oshetna River	-99	5.26	45	NA	NA	trace	80	210	-99	-99	3.60	0.5	34
51	1719	P	Qal	Joe Creek	-99	5.24	-99	NA	NA	trace	820	350	0.5	-99	2.94	-99	13
52	1720	P	Qal	Yacko Creek	-99	4.86	-99	NA	NA	0.0001	5200	290	-99	-99	3.23	1	-99
53	1712	P	Qal	Walker Creek	-99	2.02	-99	NA	NA	trace	820	200	0.5	-99	1.78	1.5	-99
54	1526	P	Qal	Fourth of July Creek	-99	1.45	-99	NA	NA	0	240	160	-99	-99	1.31	0.5	2
55	1802	P	Qal	Fourth of July Creek	-99	1.65	-99	NA	NA	0	1200	560	0.5	-99	0.76	1.5	-99
55	1802	P	Qal	Fourth of July Creek	-99	4.63	-99	NA	NA	0	6	3140	1.0	-99	3.37	-99	10
56	1801	P	Qal	Fourth of July Creek	-99	7.01	-99	NA	NA	0.0001	16	330	1.0	-99	3.90	-99	-99
57	1734	P	Qal	Tyone Creek	-99	6.32	15	NA	NA	trace	12	520	0.5	-99	1.44	-99	9
58	1733	P	Qal	Pumicite Creek	-99	3.44	-99	NA	NA	0.0001	2600	210	0.5	-99	2.23	1	5
59	1602	P	Qal	Daisy Creek	-99	4.39	-99	NA	NA	trace	99999	200	0.5	-99	3.08	-99	-99

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Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm
31	2625	P	Qal	Oshetna River Trib.	125	42	12.44	30	-99	0.64	20	1.54	2565	-99	2.05	26	1160
32	2726	P	Qal	Oshetna River	148	21	8.45	10	-99	0.69	20	2.00	1970	-99	2.05	27	920
33	2622	P	Qal	Oshetna River Trib.	212	-99	99999	120	-99	0.05	20	1.87	5925	-99	0.81	84	870
34	2623	P	Qal	Oshetna River	130	7	14.19	20	-99	0.39	20	1.79	4095	-99	1.80	27	1200
35	1819	P	Qal	Oshetna River	226	16	99999	-99	-99	0.18	20	1.57	6847	7	0.82	48	470
36	2624	P	Qal	Oshetna River	86	18	5.27	10	-99	1.12	10	1.72	1065	-99	2.61	22	850
37	2727	P	Qal	Oshetna River	177	9	23.51	40	-99	0.21	20	1.51	4690	-99	1.40	54	780
38	1817	P	Qal	Oshetna River	117	45	21.84	-99	12	0.17	10	1.33	6038	-99	1.45	28	1080
39	1816	P	Qal	Oshetna River	233	64	99999	-99	-99	0.03	10	1.18	8429	-99	0.44	45	1090
40	2991	P	Qal	Little Oshetna River	236	2	18.19	30	-99	0.48	30	1.56	3755	-99	1.36	44	830
41	1709	P	Qal	Little Oshetna River	289	49	99999	-99	-99	0.02	10	0.82	5775	-99	0.20	64	830
41	1709	P	Qal	Little Oshetna River	217	10	15.95	-99	-99	0.29	20	1.35	4289	-99	0.94	17	360
42	1708	P	Qal	Little Oshetna River	195	27	99999	-99	-99	0.18	10	1.00	5579	-99	0.55	40	660
43	1710	P	Qal	Little Oshetna River	136	38	19.66	-99	-99	0.66	10	1.45	2779	-99	1.20	27	690
44	2604	P	Qal	Conglomerate Creek	264	19	99999	30	-99	0.28	20	1.85	3440	-99	0.90	53	540
45	2606	P	Qal	Little Oshetna River	291	49	18.93	10	-99	0.27	20	3.04	99999	-99	1.10	49	350
46	2605	P	Qal	Little Oshetna River	253	31	14.40	10	-99	0.37	20	2.68	99999	-99	1.44	43	500
47	2707	P	Qal	Little Oshetna River	199	-99	19.90	40	-99	0.56	20	1.55	6685	-99	1.58	32	600
48	2708	P	Qal	Little Oshetna River	139	44	9.29	20	-99	0.43	20	3.10	2770	-99	1.68	35	560
49	2709	P	Qal	Little Oshetna River	220	3	14.60	30	-99	0.63	20	1.99	3660	-99	1.77	26	670
50	2714	P	Qal	Little Oshetna River	168	1	21.10	30	-99	0.47	20	2.04	3375	-99	1.41	38	530
51	1719	P	Qal	Joe Creek	149	18	13.91	-99	-99	0.58	10	1.69	2431	-99	1.48	25	620
52	1720	P	Qal	Yacko Creek	175	14	19.07	-99	-99	0.31	10	1.47	4538	-99	0.86	28	510
53	1712	P	Qal	Walker Creek	294	37	99999	-99	2	0.10	10	1.37	4746	-99	0.39	39	930
54	1526	P	Qal	Fourth of July Creek	254	8	99999	-99	1	0.09	10	1.18	3897	-99	0.31	35	700
55	1802	P	Qal	Fourth of July Creek	489	15	99999	-99	3	0.06	10	0.87	6720	-99	0.24	46	1010
55	1802	P	Qal	Fourth of July Creek	197	18	12.27	-99	-99	0.83	10	2.21	1655	-99	1.02	21	550
56	1801	P	Qal	Fourth of July Creek	131	2	8.42	-99	1	0.54	-99	1.55	1678	-99	2.01	12	650
57	1734	P	Qal	Tyone Creek	51	7	4.88	-99	-99	1.84	-99	1.05	793	-99	1.71	12	580
58	1733	P	Qal	Pumicite Creek	209	10	24.92	-99	2	0.28	-99	1.40	2398	-99	0.66	40	510
59	1602	P	Qal	Daisy Creek	159	4	13.26	-99	-99	0.39	10	1.54	2420	-99	0.93	22	570

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Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Pb ppm	Pd AFS ppb	Pt AFS ppb	Sb ppm	Sn ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Au fineness	Concen. weight (gms)
31	2625	P	Qal	Oshetna River Trib.	24	-99	-99	-99	-99	2.16	-99	-99	299	-99	264	NA	95
32	2726	P	Qal	Oshetna River	-99	-99	10	-99	-99	1.27	-99	-99	250	-99	164	NA	301
33	2622	P	Qal	Oshetna River Trib.	-99	-99	-99	-99	-99	9.30	-99	-99	1522	20	738	NA	133
34	2623	P	Qal	Oshetna River	8	-99	-99	-99	-99	2.39	-99	-99	358	-99	324	NA	127
35	1819	P	Qal	Oshetna River	8	-99	-99	10	NA	8.06	-99	-99	1278	NA	742	NA	102
36	2624	P	Qal	Oshetna River	-99	-99	10	-99	-99	0.66	-99	-99	137	-99	94	NA	139
37	2727	P	Qal	Oshetna River	-99	-99	5	-99	2	4.98	-99	-99	1286	-99	542	NA	374
38	1817	P	Qal	Oshetna River	2	-99	-99	10	NA	7.58	-99	-99	991	130	601	NA	196
39	1816	P	Qal	Oshetna River	2	-99	-99	15	NA	8.16	-99	-99	1923	NA	851	NA	102
40	2991	P	Qal	Little Oshetna River	-99	-99	-99	-99	-99	4.51	-99	-99	800	-99	322	NA	293
41	1709	P	Qal	Little Oshetna River	2	-99	-99	20	NA	8.52	-99	-99	2644	NA	816	NA	84
41	1709	P	Qal	Little Oshetna River	2	-99	-99	-99	NA	6.54	-99	-99	403	80	183	NA	75
42	1708	P	Qal	Little Oshetna River	2	-99	800	10	NA	7.23	-99	-99	1581	NA	470	NA	276
43	1710	P	Qal	Little Oshetna River	2	-99	-99	5	NA	3.78	-99	-99	1070	110	312	NA	235
44	2604	P	Qal	Conglomerate Creek	-99	-99	-99	-99	-99	3.19	-99	-99	1510	30	456	NA	244
45	2606	P	Qal	Little Oshetna River	8	-99	-99	5	-99	1.89	-99	-99	816	10	198	NA	131
46	2605	P	Qal	Little Oshetna River	8	-99	-99	-99	-99	1.88	-99	-99	613	10	182	NA	122
47	2707	P	Qal	Little Oshetna River	16	-99	-99	-99	-99	3.49	-99	-99	1017	-99	314	764	212
48	2708	P	Qal	Little Oshetna River	16	-99	-99	-99	-99	1.19	-99	-99	421	-99	134	NA	191
49	2709	P	Qal	Little Oshetna River	-99	-99	-99	-99	-99	2.79	-99	-99	680	-99	224	NA	211
50	2714	P	Qal	Little Oshetna River	-99	-99	-99	-99	-99	3.53	-99	-99	1054	-99	280	NA	221
51	1719	P	Qal	Joe Creek	2	-99	-99	-99	NA	3.27	-99	-99	690	90	227	NA	171
52	1720	P	Qal	Yacko Creek	2	-99	-99	5	NA	5.12	-99	-99	961	110	247	NA	250
53	1712	P	Qal	Walker Creek	2	-99	-99	15	NA	8.01	-99	-99	1978	NA	514	NA	80
54	1526	P	Qal	Fourth of July Creek	2	-99	-99	15	NA	7.75	-99	-99	1821	NA	451	NA	109
55	1802	P	Qal	Fourth of July Creek	2	-99	-99	15	NA	8.08	-99	-99	2762	NA	1280	NA	31
55	1802	P	Qal	Fourth of July Creek	2	-99	-99	10	NA	2.48	-99	-99	507	70	187	NA	104
56	1801	P	Qal	Fourth of July Creek	2	-99	-99	-99	NA	4.08	-99	-99	249	50	116	NA	114
57	1734	P	Qal	Tyone Creek	4	-99	-99	-99	NA	0.81	-99	-99	179	20	100	NA	151
58	1733	P	Qal	Pumicite Creek	2	-99	10	5	NA	5.93	-99	-99	1374	140	321	NA	153
59	1602	P	Qal	Daisy Creek	2	-99	-99	5	NA	6.87	-99	-99	626	70	141	NA	150

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Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Ag ppm	Al %	As ppm	Au ppb	Au oz/t	Au oz/cy	Au AFS ppb	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm
59	1604	P	Qal	Daisy Creek	-99	3.29	-99	NA	NA	0.0009	1800	210	0.5	-99	2.37	0.5	-99
59	1604	P	Qal	Daisy Creek	-99	0.72	-99	NA	NA	0.0009	170	250	-99	-99	0.43	1.5	18
60	1383	P	Qal	Daisy Creek	0.5	2.63	-99	20	-99	trace	-99	300	-99	-99	1.32	1	51
61	1551	P	Qal	Daisy Creek	-99	2.09	-99	NA	NA	trace	5400	170	-99	-99	1.39	1	-99
62	1552	P	Qal	Daisy Creek	-99	4.11	-99	NA	NA	trace	450	260	-99	-99	2.33	-99	6
63	1737	P	Qal	Tyone Creek	-99	4.23	-99	NA	NA	0.0002	7000	240	-99	-99	3.15	-99	-99
64	1735	P	Tsu	Daisy Creek	NA	NA	NA	NA	NA	0.0002	NA	NA	NA	NA	NA	NA	NA
65	1736	P	Qal	Grizzley Creek	-99	6.83	5	NA	NA	0.0002	2400	640	0.5	-99	3.26	-99	12
66	1602	P	Qal	Daisy Creek	-99	0.73	-99	NA	NA	trace	4	190	-99	-99	0.48	1.5	21
67	1601	CC	Jnc	Daisy Creek	0.5	8.42	-99	NA	NA	NA	NA	510	1.5	2	3.00	0.5	24
68	2637	P	Tsu	Tyone Creek	-99	6.51	-99	NA	NA	trace	820	420	-99	-99	3.23	1.5	15
69	1555	P	Qal	Tyone Creek	-99	1.84	-99	NA	NA	0.0006	99999	140	-99	-99	1.30	1	-99
69	1556	CC	Tsu	Tyone Creek	0.5	6.29	5	10	NA	NA	4	700	0.5	2	1.68	0.5	26
70	1384	P	Qal	Tyone Creek	0.5	2.41	-99	10	-99	trace	-99	100	-99	-99	1.84	1.5	21
71	332	P	Qal	White Sand Creek	-99	4.05	105	NA	NA	0.0008	370	150	2.5	-99	2.55	2.0	36
72	1554	P	Qal	Tyone Creek	-99	4.49	-99	NA	NA	0.0003	2100	260	0.5	-99	2.87	0.9	6
73	388	P	Qal	Nicolie Creek	-99	6.40	50	NA	NA	0.0003	1400	380	-99	2	4.13	-99	20
74	1553	P	Qal	Nicolie Creek	-99	5.93	-99	NA	NA	0.0003	7400	340	0.5	-99	4.65	-99	8
75	1738	P	Tsu	Tyone Creek	-99	6.28	10	NA	NA	trace	340	650	0.5	-99	2.21	-99	9
76	1722	P	Qal	Tyone Creek	-99	2.10	-99	NA	NA	0.0010	99999	210	-99	-99	1.37	0.5	-99
77	389	P	Qal	Tyone Creek	-99	4.60	-99	NA	NA	trace	3500	240	-99	-99	2.69	3.5	22
78	1561	P	Qal	Tyone Creek	-99	0.88	-99	NA	NA	0.0002	99999	150	-99	-99	0.88	0.5	-99
79	340	P	Qal	Tyone Creek Trib.	-99	6.35	-99	NA	NA	0.0001	18	480	1.0	-99	3.68	0.5	16
80	341	P	Qal	Tyone Creek	-99	6.05	-99	NA	NA	0.0011	10	390	2.0	-99	4.53	-99	22
81	1721	P	Qal	Tyone Creek	-99	3.48	-99	NA	NA	0.0016	99999	460	-99	-99	1.95	1	1
82	385	P	Jnc	Tyone Creek	-99	5.54	-99	NA	NA	trace	4	320	-99	-99	2.68	1.5	23
83	386	P	Qal	Tyone Creek Trib.	-99	5.02	60	NA	NA	0.0005	16	360	-99	-99	2.28	1.5	15
84	387	P	Qal	Tyone Creek Trib.	-99	5.81	30	NA	NA	0.0003	2700	440	-99	6	3.24	1.0	13
85	384	2 Pans	Qal	Tyone Creek Trib.	-99	7.98	45	NA	NA	NA	4	620	-99	2	2.45	-99	17
86	369	P	Qal	Buchia Creek	-99	5.96	70	NA	NA	0.0015	800	310	1.5	8	2.55	1.0	31
87	343	P	Qal	Buchia Creek	-99	6.54	85	NA	NA	0.0001	3500	340	1.5	-99	3.82	2.0	23

:APPENDIX A--Results of geochemical analyses of samples taken from the Tyone Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm
59	1604	P	Qal	Daisy Creek	158	7	20.21	-99	-99	0.22	10	1.28	3405	1	0.64	22	640
59	1604	P	Qal	Daisy Creek	261	14	99999	-99	2	0.03	-99	0.80	3284	-99	0.13	47	750
60	1383	P	Qal	Daisy Creek	248	46	25	-99	-99	0.38	10	0.96	2710	-99	0.45	68	940
61	1551	P	Qal	Daisy Creek	156	4	99999	-99	4	0.16	-99	1.01	2915	-99	0.44	32	660
62	1552	P	Qal	Daisy Creek	118	4	17.22	-99	-99	0.44	-99	1.16	2258	-99	0.98	28	560
63	1737	P	Qal	Tyone Creek	400	2	21.53	-99	2	0.25	20	1.36	3778	-99	0.73	29	630
64	1735	P	Tsu	Daisy Creek	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
65	1736	P	Qal	Grizzley Creek	182	11	5.54	-99	-99	0.73	10	1.41	1022	-99	1.58	28	350
66	1602	P	Qal	Daisy Creek	331	20	99999	-99	3	0.01	-99	0.84	2823	-99	0.12	66	870
67	1601	CC	Jnc	Daisy Creek	32	30	4.90	10	1	1.59	20	2.10	694	-99	2.28	8	660
68	2637	P	Tsu	Tyone Creek	597	-99	9.06	20	-99	0.67	30	1.39	1685	-99	1.42	38	420
69	1555	P	Qal	Tyone Creek	232	-99	99999	-99	-99	0.10	10	0.78	4738	-99	0.30	28	930
69	1556	CC	Tsu	Tyone Creek	154	33	2.94	10	-99	1.14	20	1.13	523	2	1.95	37	510
70	1384	P	Qal	Tyone Creek	371	5	25	-99	6	0.2	20	1.06	4260	-99	0.42	28	970
71	332	P	Qal	White Sand Creek	191	19	99999	50	-99	0.26	20	1.15	4515	-99	0.78	49	1300
72	1554	P	Qal	Tyone Creek	144	11	18.53	-99	-99	0.40	10	1.24	2907	-99	1.01	27	810
73	388	P	Qal	Nicolie Creek	428	-99	9.04	20	-99	0.74	20	2.12	1560	2	1.59	50	610
74	1553	P	Qal	Nicolie Creek	416	6	12.22	-99	-99	0.47	-99	1.31	2399	-99	1.09	31	530
75	1738	P	Tsu	Tyone Creek	182	9	4.18	-99	-99	0.97	10	0.98	853	-99	1.59	21	370
76	1722	P	Qal	Tyone Creek	174	4	99999	-99	-99	0.15	10	0.77	3935	-99	0.44	23	1020
77	389	P	Qal	Tyone Creek	273	-99	99999	60	-99	0.47	20	1.31	3200	-99	1.12	34	730
78	1561	P	Qal	Tyone Creek	175	2	99999	-99	-99	0.04	10	0.61	3804	-99	0.17	27	1150
79	340	P	Qal	Tyone Creek Trib.	336	15	8.41	20	-99	0.90	20	1.36	1540	-99	1.37	53	650
80	341	P	Qal	Tyone Creek	155	29	11.78	20	-99	1.08	20	1.59	1430	-99	1.22	43	710
81	1721	P	Qal	Tyone Creek	144	12	24.96	-99	-99	0.33	10	1.02	3175	-99	0.85	23	930
82	385	P	Jnc	Tyone Creek	130	3	22.10	40	-99	0.63	10	1.36	3550	-99	1.26	32	910
83	386	P	Qal	Tyone Creek Trib.	175	-99	99999	50	-99	0.62	20	1.15	3745	-99	1.17	27	890
84	387	P	Qal	Tyone Creek Trib.	434	-99	10.29	30	-99	0.83	20	1.52	1855	-99	1.28	41	600
85	384	2 Pans	Qal	Tyone Creek Trib.	391	46	5.89	20	-99	1.26	20	1.63	1000	7	1.67	31	900
86	369	P	Qal	Buchia Creek	151	34	18.88	40	-99	0.64	10	1.53	2580	-99	1.38	38	770
87	343	P	Qal	Buchia Creek	195	34	12.71	30	-99	0.64	20	1.38	3960	2	1.27	34	640

:APPENDIX A--Results of geochemical analyses of samples taken from the Tyone Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Pb ppm	Pd AFS ppb	Pt AFS ppb	Sb ppm	Sn ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Au fineness	Concen. weight (gms)
59	1604	P	Qal	Daisy Creek	2	6	480	10	NA	7.47	-99	-99	903	100	209	750	126
59	1604	P	Qal	Daisy Creek	2	-99	-99	20	NA	8.27	-99	-99	2594	NA	569	NA	113
60	1383	P	Qal	Daisy Creek	10	-99	-99	10	-99	6.05	-99	-99	1685	-99	453	NA	NA
61	1551	P	Qal	Daisy Creek	2	-99	-99	15	NA	7.08	-99	-99	1378	NA	368	NA	335
62	1552	P	Qal	Daisy Creek	2	-99	-99	5	NA	4.19	-99	-99	796	80	224	NA	294
63	1737	P	Qal	Tyone Creek	2	-99	-99	5	NA	4.48	-99	-99	743	110	242	NA	150
64	1735	P	Tsu	Daisy Creek	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	146
65	1736	P	Qal	Grizzley Creek	4	-99	10	-99	NA	0.91	-99	-99	229	30	81	NA	148
66	1602	P	Qal	Daisy Creek	2	-99	-99	20	NA	7.99	-99	-99	2833	NA	561	NA	134
67	1601	CC	Jnc	Daisy Creek	8	NA	NA	-99	NA	0.51	-99	-99	163	-99	81	NA	NA
68	2637	P	Tsu	Tyone Creek	16	-99	-99	-99	-99	2.53	-99	-99	397	-99	92	576	79
69	1555	P	Qal	Tyone Creek	2	4	250	10	NA	5.86	-99	-99	1267	NA	390	NA	298
69	1556	CC	Tsu	Tyone Creek	2	2	-99	-99	NA	0.33	-99	-99	112	-99	50	NA	NA
70	1384	P	Qal	Tyone Creek	-99	-99	-99	5	-99	6.16	-99	-99	1190	-99	384	NA	NA
71	332	P	Qal	White Sand Creek	16	-99	60	-99	-99	4.40	-99	-99	1126	-99	410	839	239
72	1554	P	Qal	Tyone Creek	2	-99	-99	10	NA	2.95	-99	-99	714	90	251	NA	250
73	388	P	Qal	Nicolie Creek	8	-99	130	5	-99	1.74	-99	-99	314	-99	108	643	272
74	1553	P	Qal	Nicolie Creek	2	-99	-99	5	NA	2.31	-99	-99	666	50	140	NA	80
75	1738	P	Tsu	Tyone Creek	6	-99	-99	-99	NA	0.94	-99	-99	152	10	71	NA	162
76	1722	P	Qal	Tyone Creek	2	-99	15	5	NA	5.35	-99	-99	1254	NA	406	NA	300
77	389	P	Qal	Tyone Creek	-99	-99	5	-99	2	4.25	-99	-99	966	-99	306	NA	153
78	1561	P	Qal	Tyone Creek	2	-99	-99	10	NA	7.05	-99	-99	1542	NA	497	NA	195
79	340	P	Qal	Tyone Creek Trib.	16	-99	40	5	-99	1.55	-99	-99	278	-99	120	828	108
80	341	P	Qal	Tyone Creek	8	-99	10	5	-99	1.37	-99	-99	436	-99	200	NA	228
81	1721	P	Qal	Tyone Creek	2	280	4100	10	NA	4.19	-99	-99	1012	NA	339	NA	269
82	385	P	Jnc	Tyone Creek	8	-99	-99	-99	-99	2.91	10	-99	806	-99	282	NA	176
83	386	P	Qal	Tyone Creek Trib.	-99	-99	10	-99	2	2.97	-99	-99	744	-99	282	847	68
84	387	P	Qal	Tyone Creek Trib.	16	-99	10	-99	-99	2.22	-99	-99	347	-99	112	NA	188
85	384	2 Pans	Qal	Tyone Creek Trib.	8	4	15	-99	-99	0.67	-99	-99	191	-99	136	829	74
86	369	P	Qal	Buchia Creek	-99	-99	10	5	-99	3.11	-99	-99	820	-99	250	826	85
87	343	P	Qal	Buchia Creek	8	2	15	5	-99	1.65	-99	-99	530	-99	164	NA	137

:APPENDIX A--Results of geochemical analyses of samples taken from the Tyone Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Ag ppm	Al %	As ppm	Au ppb	Au oz/t	Au oz/cy	Au AFS ppb	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm
88	2602	P	Qal	Buchia Creek	-99	4.77	20	NA	NA	trace	1800	220	-99	-99	3.28	2.0	22
89	342	P	Qal	Buchia Creek	-99	6.01	40	NA	NA	0	470	350	2.0	-99	2.35	0.5	35
90	368	P	Qal	Buchia Creek	-99	4.65	35	NA	NA	trace	4	180	2.0	-99	2.44	3.0	34
91	1557	P	Qal	Buchia Creek	-99	3.77	-99	NA	NA	trace	9400	200	0.5	-99	2.77	0.5	-99
92	381	P	Qal	Buchia Creek	-99	7.54	30	NA	NA	0.0014	4	520	-99	12	2.88	1.5	20
93	382	P	Qal	Buchia Creek	-99	7.46	50	NA	NA	trace	-99	510	-99	10	2.74	0.5	21
94	383	P	Qal	Tyone Creek	-99	4.76	100	NA	NA	0.0032	14	260	-99	2	2.33	2.5	25
95	2636	P	Jnc	Tyone Creek	-99	6.05	40	NA	NA	0	6	370	-99	-99	2.75	2.5	14
96	367	P	Jnc	Tyone Creek	-99	6.63	45	NA	NA	0	4	360	1.0	-99	3.00	2.0	18
97	365	P	Qal	White Sand Creek	-99	7.63	60	NA	NA	trace	16	470	1.0	2	2.94	0.5	21
98	366	P	Qal	White Sand Creek	-99	4.58	25	NA	NA	trace	6	240	2.5	-99	2.43	3.0	31
99	1523	CR	Jnc	Fourth of July Creek	0.5	7.06	5	5	NA	0	8	480	-99	-99	3.52	-99	27
100	1524	P	Qal	Fourth of July Creek	-99	1.50	-99	NA	NA	0.0001	3500	200	-99	-99	1.54	0.5	-99
101	1525	P	Qal	Fourth of July Creek	-99	1.90	-99	NA	NA	0	370	180	-99	-99	1.67	0.5	-99
102	1711	P	Qal	Walker Creek	1.0	1.66	-99	NA	NA	0.0001	5000	100	0.5	-99	11.42	22.5	-99
103	1715	P	Qal	Yacko Creek	-99	2.07	-99	NA	NA	0.0005	99999	180	0.5	-99	1.28	0.5	-99
104	1713	S	Qal	Red Creek	1.0	6.08	-99	NA	2.312	trace	NA	260	-99	-99	2.99	-99	27
105	1714	P	Qal	Red Creek	-99	6.29	5	NA	NA	0.0006	99999	350	0.5	-99	3.81	-99	12
106	425	P	Qal	Red Creek	-99	6.23	-99	NA	NA	0.0004	99999	320	0.5	-99	3.97	-99	9
107	424	P	Qal	Red Creek	0.5	6.81	-99	NA	NA	0.0001	99999	270	0.5	-99	4.34	0.5	25
108	410	P	Glacial	Yacko Creek	-99	6.95	-99	NA	NA	0.0010	200	380	0.5	-99	4.07	-99	21
109	411	P	Glacial	Yacko Creek	-99	7.34	-99	NA	NA	trace	-99	370	0.5	-99	4.86	-99	15
110	451	P	Qal	Yacko Creek	-99	1.18	-99	NA	NA	0.0002	400	250	-99	-99	0.44	1	24
110	451	P	Qal	Yacko Creek	1.0	5.32	-99	NA	NA	trace	99999	280	-99	-99	3.21	-99	-99
111	402	P	Qal	Yacko Creek Trib.	-99	2.76	-99	NA	NA	0.0020	600	160	-99	-99	1.57	0.5	7
112	401	P	Qal	Yacko Creek	0.5	1.76	15	NA	NA	trace	-99	40	-99	-99	14.09	-99	38
113	404	P	Qal	Yacko Creek	-99	2.90	-99	NA	NA	trace	42	280	-99	-99	1.30	-99	-99
113	404	P	Qal	Yacko Creek	-99	1.07	-99	NA	NA	trace	-99	210	-99	-99	0.28	1	27
114	403	P	Qal	Yacko Creek Trib.	-99	0.95	-99	NA	NA	0.0002	54	200	-99	-99	0.30	0.5	11
114	403	P	Qal	Yacko Creek Trib.	-99	2.40	-99	NA	NA	0.0020	32	140	-99	-99	1.18	-99	28
115	423	P	Qal	Red Creek	0.5	4.70	-99	NA	NA	0.0004	2400	260	-99	-99	2.80	-99	5

:APPENDIX A--Results of geochemical analyses of samples taken from the Tyone Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample Location ID: PROPERTY NAME or Location Description	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm
88	2602	P	Qal	Buchia Creek	439	-99	23.73	20	-99	0.38	20	1.12	4185	-99	0.70	39	260
89	342	P	Qal	Buchia Creek	151	42	16.83	50	-99	0.80	20	1.54	3845	1	1.41	40	710
90	368	P	Qal	Buchia Creek	232	22	99999	60	-99	0.34	10	1.39	3240	-99	1.20	44	950
91	1557	P	Qal	Buchia Creek	249	9	23.26	-99	-99	0.26	10	1.29	3406	-99	0.72	31	700
92	381	P	Qal	Buchia Creek	399	49	8.86	30	-99	1.08	20	1.84	1315	-99	1.84	27	720
93	382	P	Qal	Buchia Creek	399	42	10.85	30	-99	0.98	20	1.74	1660	-99	1.90	26	800
94	383	P	Qal	Tyone Creek	433	-99	99999	60	-99	0.45	10	1.36	4175	-99	1.13	26	730
95	2636	P	Jnc	Tyone Creek	132	16	14.18	10	-99	0.66	10	1.36	1595	-99	2.07	24	430
96	367	P	Jnc	Tyone Creek	101	28	12.46	20	-99	0.72	10	1.38	1495	-99	2.03	19	580
97	365	P	Qal	White Sand Creek	116	28	8.30	20	-99	0.95	10	1.63	1150	-99	2.19	14	1060
98	366	P	Qal	White Sand Creek	117	12	99999	50	-99	0.42	10	1.24	3570	-99	1.11	41	910
99	1523	CR	Jnc	Fourth of July Creek	143	93	6.45	10	1	0.81	30	2.30	1137	-99	2.08	46	920
100	1524	P	Qal	Fourth of July Creek	142	3	99999	-99	1	0.14	10	1.03	4236	-99	0.38	14	1350
101	1525	P	Qal	Fourth of July Creek	120	10	99999	-99	2	0.15	10	0.98	3406	-99	0.49	24	1350
102	1711	P	Qal	Walker Creek	178	62	20.77	-99	1	0.14	-99	1.02	3275	-99	0.34	25	500
103	1715	P	Qal	Yacko Creek	164	11	99999	-99	-99	0.13	-99	1.03	3925	-99	0.38	33	590
104	1713	S	Qal	Red Creek	174	30	13.14	-99	-99	0.55	10	1.25	3185	1	1.31	22	570
105	1714	P	Qal	Red Creek	154	25	12.91	-99	-99	0.48	-99	1.48	2987	-99	1.15	32	420
106	425	P	Qal	Red Creek	195	21	11.62	-99	-99	0.52	10	1.26	2740	-99	1.05	28	350
107	424	P	Qal	Red Creek	273	23	14.78	-99	-99	0.55	10	1.60	3650	5	1.25	30	430
108	410	P	Glacial	Yacko Creek	117	38	7.32	-99	-99	0.51	-99	1.63	1842	-99	1.30	39	320
109	411	P	Glacial	Yacko Creek	116	35	6.66	-99	-99	0.49	-99	1.33	1412	-99	1.23	29	220
110	451	P	Qal	Yacko Creek	215	29	99999	-99	3	0.04	-99	0.95	3420	-99	0.18	52	190
110	451	P	Qal	Yacko Creek	173	17	12.85	-99	-99	0.45	10	1.34	2795	-99	0.94	26	280
111	402	P	Qal	Yacko Creek Trib.	154	21	99999	-99	1	0.20	-99	1.10	3063	-99	0.38	36	310
112	401	P	Qal	Yacko Creek	114	13	17.64	-99	3	0.07	-99	2.04	99999	6	0.12	36	300
113	404	P	Qal	Yacko Creek	265	28	99999	-99	-99	0.02	-99	1.05	3009	-99	0.12	62	-99
113	404	P	Qal	Yacko Creek	113	21	19.08	-99	1	0.35	-99	1.48	2635	-99	0.38	28	180
114	403	P	Qal	Yacko Creek Trib.	139	30	23.95	-99	-99	0.15	-99	1.36	3174	-99	0.26	38	200
114	403	P	Qal	Yacko Creek Trib.	241	24	99999	-99	-99	0.02	-99	0.91	3201	-99	0.11	49	-99
115	423	P	Qal	Red Creek	304	19	19.88	-99	-99	0.39	10	1.28	3000	-99	0.95	34	370

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Map no.	Sample no.	Sample type	Material type	Sample Location ID: PROPERTY NAME or Location Description	Pb ppm	Pd AFS ppb	Pt AFS ppb	Sb ppm	Sn ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Au fineness
88	2602	P	Qal	Buchia Creek	16	-99	-99	-99	3	4.36	-99	-99	768	20	230	NA
89	342	P	Qal	Buchia Creek	8	-99	50	-99	-99	2.57	20	-99	865	-99	304	NA
90	368	P	Qal	Buchia Creek	-99	-99	-99	10	-99	3.79	-99	10	1057	-99	316	NA
91	1557	P	Qal	Buchia Creek	2	-99	-99	5	NA	5.86	-99	-99	1050	NA	292	NA
92	381	P	Qal	Buchia Creek	16	-99	-99	-99	-99	1.21	-99	-99	328	-99	156	858
93	382	P	Qal	Buchia Creek	80	-99	-99	-99	-99	1.56	-99	-99	381	-99	188	
94	383	P	Qal	Tyone Creek	8	-99	10	-99	-99	3.62	10	-99	988	-99	344	868
95	2636	P	Jnc	Tyone Creek	8	4	5	-99	-99	0.97	-99	-99	473	-99	126	NA
96	367	P	Jnc	Tyone Creek	8	-99	-99	-99	-99	0.86	-99	-99	403	-99	136	NA
97	365	P	Qal	White Sand Creek	-99	-99	25	10	-99	1.19	-99	-99	238	-99	158	NA
98	366	P	Qal	White Sand Creek	16	-99	-99	-99	-99	3.54	20	10	811	-99	376	NA
99	1523	CR	Jnc	Fourth of July Creek	2	8	-99	-99	NA	0.94	-99	-99	273	-99	81	NA
100	1524	P	Qal	Fourth of July Creek	2	22	2500	10	NA	7.85	-99	-99	1401	NA	524	NA
101	1525	P	Qal	Fourth of July Creek	2	-99	-99	15	NA	6.86	-99	-99	1488	NA	478	NA
102	1711	P	Qal	Walker Creek	284	-99	-99	10	NA	5.18	-99	-99	1243	140	2724	NA
103	1715	P	Qal	Yacko Creek	2	-99	-99	10	NA	7.53	-99	-99	1597	NA	399	NA
104	1713	S	Qal	Red Creek	-99	NA	NA	-99	NA	2.19	-99	-99	615	20	145	NA
105	1714	P	Qal	Red Creek	2	-99	-99	5	NA	2.28	-99	-99	612	80	160	NA
106	425	P	Qal	Red Creek	2	-99	-99	-99	NA	2.16	-99	-99	554	50	139	NA
107	424	P	Qal	Red Creek	2	-99	-99	5	NA	2.30	-99	-99	695	-99	158	NA
108	410	P	Glacial	Yacko Creek	2	4	-99	-99	NA	0.98	-99	-99	263	30	86	NA
109	411	P	Glacial	Yacko Creek	4	-99	-99	5	NA	1.07	-99	-99	283	30	84	NA
110	451	P	Qal	Yacko Creek	2	-99	-99	20	NA	7.76	-99	-99	2756	NA	544	NA
110	451	P	Qal	Yacko Creek	2	-99	20	-99	NA	4.90	-99	-99	562	60	149	NA
111	402	P	Qal	Yacko Creek Trib.	2	-99	-99	10	NA	5.72	-99	-99	1548	NA	324	770
112	401	P	Qal	Yacko Creek	2	-99	5	5	NA	1.77	-99	30	844	80	271	NA
113	404	P	Qal	Yacko Creek	2	-99	-99	20	NA	7.83	-99	-99	3048	NA	506	NA
113	404	P	Qal	Yacko Creek	2	-99	-99	10	NA	6.71	-99	-99	1012	90	221	NA
114	403	P	Qal	Yacko Creek Trib.	2	-99	-99	10	NA	3.99	-99	-99	1100	100	281	NA
114	403	P	Qal	Yacko Creek Trib.	2	-99	-99	20	NA	7.66	-99	-99	2707	NA	532	NA
115	423	P	Qal	Red Creek	2	-99	-99	10	NA	4.70	-99	-99	1005	-99	238	NA

:APPENDIX A--Results of geochemical analyses of samples taken from the Tyone Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Ag ppm	Al %	As ppm	Au ppb	Au oz/t	Au oz/cy	Au AFS ppb	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm
116	418	P	Qal	Red Creek	-99	0.91	-99	NA	NA	0.0019	3200	210	-99	-99	0.51	0.5	18
116	418	P	Qal	Red Creek	-99	5.87	-99	NA	NA	0.0019	99999	260	0.5	-99	3.52	-99	5
117	1631	P	Qal	Joe Creek	-99	4.38	-99	NA	NA	0.0002	2000	210	-99	-99	3.12	0.5	-99
118	419	P	Qal	Red Creek	-99	6.28	5	NA	NA	0.0003	16	320	0.5	-99	4.13	-99	13
118	421	P	Qal	Red Creek	-99	6.47	-99	NA	NA	0.0020	200	400	0.5	-99	3.64	-99	13
119	422	P	Qal	Red Creek	-99	5.12	-99	NA	NA	0.0005	6400	260	0.5	-99	3.21	-99	7
120	409	P	Qal	Yacko Creek Trib.	-99	6.30	-99	NA	NA	0.0015	99999	280	0.5	-99	4.15	-99	4
121	440	P	Jnc	Red Creek	0.5	6.38	15	NA	NA	trace	3900	360	0.5	-99	3.80	-99	18
122	408	P	Qal	Yacko Creek Trib.	-99	5.60	-99	NA	NA	0.0002	6400	280	-99	-99	3.71	-99	-99
123	448	P	Qal	Yacko Creek	0.5	1.03	-99	NA	NA	0.0032	2000	200	-99	-99	0.46	1.5	20
123	448	P	Qal	Yacko Creek	1.0	4.82	-99	NA	NA	0.0032	99999	220	0.5	-99	3.20	-99	-99
124	1539	P	Qal	Yacko Creek	-99	1.30	-99	NA	NA	trace	370	170	-99	-99	1.52	1	-99
125	449	P	Qal	Yacko Creek	0.5	1.84	-99	NA	NA	0.0011	640	40	-99	-99	0.66	0.5	47
125	449	P	Qal	Yacko Creek	2.5	5.57	-99	NA	NA	0.0011	99999	260	0.5	-99	3.45	-99	-99
126	450	P	Qal	Yacko Creek	6.5	4.61	-99	NA	NA	0.0026	99999	210	0.5	-99	3.09	0.5	-99
126	450	P	Qal	Yacko Creek	0.5	0.80	-99	NA	NA	0.0030	900	250	-99	-99	0.59	1	4
127	1540	P	Qal	Yacko Creek	-99	1.70	-99	NA	NA	0.0001	4500	180	-99	-99	1.31	1	2
128	1529	P	Qal	Walker Creek	-99	1.85	-99	NA	NA	trace	80	170	0.5	-99	2.52	0.5	-99
129	1527	CC	Jnc	Walker Creek	0.5	6.43	-99	-99	NA	0	10	370	-99	-99	3.35	0.5	27
129	1528	P	Qal	Walker Creek	-99	2.03	-99	NA	NA	0	600	210	-99	-99	1.93	0.5	-99
130	333	P	Qal	Yacko Creek Trib.	-99	4.51	45	NA	NA	trace	64	190	2.5	8	2.84	1.5	57
131	1538	P	Qal	Yacko Creek	-99	1.70	-99	NA	NA	0.0002	2000	200	-99	-99	1.57	1	-99
132	334	P	Jnc	Yacko Creek	-99	6.06	55	NA	NA	trace	22	260	2.0	-99	4.01	2.0	29
133	1537	P	Qal	Yacko Creek	-99	2.35	-99	NA	NA	trace	2500	170	-99	-99	4.71	0.5	-99
134	1536	S	Jnc	Yacko Creek	NA	NA	NA	NA	NA	trace	NA	NA	NA	NA	NA	NA	NA
135	1535	P	Qal	Yacko Creek	-99	1.38	-99	NA	NA	trace	1800	240	-99	-99	1.19	0.5	-99
136	1534	P	Qal	Yacko Creek	-99	2.17	-99	NA	NA	0.0005	360	110	-99	-99	15.52	0.5	7
137	335	S	Concent.	Yacko Creek	4.8	2.07	60	NA	1.376	NA	99999	80	4.5	-99	1.46	3.0	38
138	1533	P	Qal	Yacko Creek	-99	1.71	-99	NA	NA	trace	410	290	-99	-99	1.18	0.5	-99
139	345	P	Qal	Yacko Creek Trib.	-99	2.19	35	NA	NA	trace	250	120	4.0	-99	1.26	4.0	45
140	1531	P	Qal	Yacko Creek	-99	1.56	-99	NA	NA	0.0003	8800	280	-99	-99	1.29	0.5	-99

:APPENDIX A--Results of geochemical analyses of samples taken from the Tyone Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm
116	418	P	Qal	Red Creek	268	23	99999	-99	1	0.06	-99	0.85	3290	-99	0.15	55	480
116	418	P	Qal	Red Creek	91	17	10.75	-99	-99	0.47	-99	1.29	3184	-99	1.07	24	370
117	1631	P	Qal	Joe Creek	233	12	22.34	-99	-99	0.25	10	1.33	4456	-99	0.68	29	460
118	419	P	Qal	Red Creek	132	19	9.67	-99	-99	0.50	10	1.44	2070	-99	1.25	25	440
118	421	P	Qal	Red Creek	110	36	5.92	-99	-99	0.55	-99	1.20	1429	-99	1.34	29	280
119	422	P	Qal	Red Creek	125	20	15.93	-99	-99	0.38	-99	1.24	2801	-99	0.97	33	420
120	409	P	Qal	Yacko Creek Trib.	187	28	12.50	-99	-99	0.39	10	1.20	3904	-99	0.97	32	330
121	440	P	Jnc	Red Creek	283	33	6.79	-99	-99	0.48	10	1.04	2132	-99	1.07	33	180
122	408	P	Qal	Yacko Creek Trib.	107	11	12.38	-99	1	0.38	-99	1.23	2822	-99	1.04	24	290
123	448	P	Qal	Yacko Creek	178	8	99999	-99	2	0.06	-99	0.95	3806	-99	0.17	38	380
123	448	P	Qal	Yacko Creek	125	2	13.54	-99	-99	0.42	10	1.41	2790	-99	0.88	19	170
124	1539	P	Qal	Yacko Creek	184	15	99999	-99	2	0.08	10	0.96	3479	-99	0.26	33	1810
125	449	P	Qal	Yacko Creek	214	-99	99999	-99	1	0.06	10	1.00	3520	14	0.29	35	1150
125	449	P	Qal	Yacko Creek	204	16	11.07	-99	-99	0.55	10	1.70	2436	-99	1.38	27	580
126	450	P	Qal	Yacko Creek	179	12	19.63	-99	-99	0.33	10	1.51	3230	-99	1.06	28	810
126	450	P	Qal	Yacko Creek	184	12	99999	-99	1	0.03	-99	0.79	3582	-99	0.19	40	1050
127	1540	P	Qal	Yacko Creek	167	9	99999	-99	1	0.11	10	1.09	3535	-99	0.35	31	1200
128	1529	P	Qal	Walker Creek	224	10	99999	-99	1	0.12	10	1.59	3555	-99	0.41	37	1100
129	1527	CC	Jnc	Walker Creek	104	98	6.33	10	1	0.68	30	2.14	1072	3	2.03	40	840
129	1528	P	Qal	Walker Creek	195	36	99999	-99	-99	0.18	10	1.16	2860	-99	0.53	37	1880
130	333	P	Qal	Yacko Creek Trib.	192	42	99999	60	-99	0.37	20	1.90	2380	-99	1.10	34	1780
131	1538	P	Qal	Yacko Creek	179	16	99999	-99	1	0.14	10	1.03	3400	-99	0.41	33	2060
132	334	P	Jnc	Yacko Creek	234	54	13.80	30	-99	0.55	20	2.53	1795	1	1.75	42	1050
133	1537	P	Qal	Yacko Creek	168	19	99999	-99	-99	0.22	-99	1.05	3879	-99	0.53	21	1130
134	1536	S	Jnc	Yacko Creek	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
135	1535	P	Qal	Yacko Creek	135	3	99999	-99	2	0.11	10	0.67	4707	-99	0.32	18	1380
136	1534	P	Qal	Yacko Creek	199	30	15.91	-99	-99	0.15	-99	0.69	4137	-99	0.29	12	680
137	335	S	Concent.	Yacko Creek	238	226	99999	90	-99	0.14	20	0.62	4950	3	0.32	85	1450
138	1533	P	Qal	Yacko Creek	136	7	99999	-99	1	0.18	10	0.63	4314	-99	0.47	17	1300
139	345	P	Qal	Yacko Creek Trib.	122	23	99999	60	-99	0.20	20	0.71	4420	-99	0.38	15	2230
140	1531	P	Qal	Yacko Creek	101	8	99999	-99	-99	0.13	10	0.64	3945	-99	0.42	17	1170

:APPENDIX A--Results of geochemical analyses of samples taken from the Tyone Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Pb ppm	Pd AFS ppb	Pt AFS ppb	Sb ppm	Sn ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Au fineness	Concen. weight (gms)
116	418	P	Qal	Red Creek	2	-99	10	20	NA	7.90	-99	-99	2871	NA	564	NA	321
116	418	P	Qal	Red Creek	2	-99	10	-99	NA	2.99	-99	-99	492	50	124	NA	89
117	1631	P	Qal	Joe Creek	2	-99	-99	10	NA	6.58	-99	-99	1153	120	298	NA	80
118	419	P	Qal	Red Creek	6	-99	-99	5	NA	2.03	-99	-99	448	50	131	NA	109
118	421	P	Qal	Red Creek	6	-99	-99	-99	NA	0.93	-99	-99	240	20	84	NA	141
119	422	P	Qal	Red Creek	2	-99	-99	5	NA	3.60	-99	-99	887	70	207	NA	288
120	409	P	Qal	Yacko Creek Trib.	4	4	-99	5	NA	3.20	-99	-99	558	60	144	NA	100
121	440	P	Jnc	Red Creek	6	-99	-99	5	NA	1.11	-99	-99	270	20	85	NA	186
122	408	P	Qal	Yacko Creek Trib.	2	-99	-99	-99	NA	4.24	-99	-99	574	70	156	NA	137
123	448	P	Qal	Yacko Creek	2	-99	-99	25	NA	7.61	-99	-99	2633	NA	613	NA	202
123	448	P	Qal	Yacko Creek	2	-99	-99	5	NA	6.46	-99	-99	415	70	136	NA	385
124	1539	P	Qal	Yacko Creek	2	-99	-99	25	NA	7.76	-99	-99	1870	NA	527	NA	69
125	449	P	Qal	Yacko Creek	2	-99	-99	20	NA	6.72	-99	-99	2580	-99	644	NA	141
125	449	P	Qal	Yacko Creek	2	4	45	5	NA	5.46	10	-99	457	50	126	NA	162
126	450	P	Qal	Yacko Creek	2	4	220	10	NA	5.35	-99	-99	829	100	246	NA	211
126	450	P	Qal	Yacko Creek	2	-99	10	20	NA	7.95	-99	-99	2455	NA	620	NA	170
127	1540	P	Qal	Yacko Creek	2	-99	-99	10	NA	7.80	-99	-99	1823	NA	484	860	157
128	1529	P	Qal	Walker Creek	12	-99	-99	15	NA	7.50	-99	-99	1679	NA	385	NA	58
129	1527	CC	Jnc	Walker Creek	2	8	-99	-99	NA	0.94	-99	-99	268	-99	77	NA	NA
129	1528	P	Qal	Walker Creek	2	-99	-99	15	NA	5.68	-99	-99	1720	NA	436	NA	48
130	333	P	Qal	Yacko Creek Trib.	8	2	-99	-99	-99	3.52	-99	-99	1223	-99	398	NA	188
131	1538	P	Qal	Yacko Creek	2	-99	-99	20	NA	7.64	-99	-99	1730	NA	520	NA	66
132	334	P	Jnc	Yacko Creek	-99	8	5	-99	-99	1.87	<10	-99	575	-99	188	NA	100
133	1537	P	Qal	Yacko Creek	16	-99	-99	15	NA	4.17	-99	-99	838	NA	400	NA	29
134	1536	S	Jnc	Yacko Creek	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
135	1535	P	Qal	Yacko Creek	2	-99	-99	20	NA	6.93	-99	-99	1324	NA	507	NA	198
136	1534	P	Qal	Yacko Creek	98	-99	-99	15	NA	2.17	-99	-99	481	90	248	890	17
137	335	S	Concent.	Yacko Creek	-99	4	100	-99	30	3.13	10	-99	1055	-99	476	822	173
138	1533	P	Qal	Yacko Creek	2	-99	25	20	NA	6.09	-99	-99	1412	NA	526	NA	139
139	345	P	Qal	Yacko Creek Trib.	-99	-99	-99	-99	-99	4.65	50	30	1577	-99	628	NA	470
140	1531	P	Qal	Yacko Creek	2	-99	-99	15	NA	4.33	-99	-99	1335	NA	555	770	296

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Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Ag ppm	Al %	As ppm	Au ppb	Au oz/t	Au oz/cy	Au AFS ppb	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm
140	1532	G	Qal	Yacko Creek	0.5	2.22	-99	960	NA	trace	8000	120	-99	-99	1.37	-99	79
141	347	P	Qal	Yacko Creek	-99	2.06	130	NA	NA	trace	14	220	3.5	-99	1.21	5.0	47
142	348	P	Qal	Yacko Creek	-99	3.29	20	NA	NA	trace	4	150	3.0	8	2.17	3.0	38
143	1530	P	Qal	Yacko Creek	-99	2.85	-99	NA	NA	trace	20	230	-99	-99	2.07	0.5	-99
144	344	P	Qal	Yacko Creek Trib.	-99	6.53	140	NA	NA	trace	6600	330	2.0	-99	3.59	2.5	30
145	346	P	Tsu	Yacko Creek	-99	6.41	20	NA	NA	trace	430	350	0.5	-99	3.51	0.5	16
146	2633	P	Tsu	Tyone Creek	-99	7.13	-99	NA	NA	trace	8	370	-99	-99	3.57	0.5	14
147	2634	P	Tsu	Tyone Creek	-99	4.29	110	NA	NA	trace	4	560	-99	-99	1.68	1.0	7
148	396	P	Qal	Tyone Creek Trib.	-99	6.55	15	NA	NA	0.0014	2500	340	-99	-99	3.37	-99	22
149	2635	P	Tsu	Tyone Creek	-99	7.64	30	NA	NA	trace	4	420	-99	-99	3.35	1.0	15
150	456	P	Tsu	Tyone Creek	-99	8.04	15	NA	NA	0.0008	1600	240	-99	-99	6.05	1.5	19
151	455	P	Tsu	Tyone Creek	-99	7.30	35	NA	NA	0.0011	770	300	-99	-99	4.45	-99	20
152	1632	P	Qal	Joe Creek	0.5	6.65	-99	NA	NA	0.0014	99999	270	0.5	-99	3.98	0.5	4
153	454	P	Tsu	Tyone Creek	-99	6.77	-99	NA	NA	0.0027	3500	320	-99	-99	3.43	-99	24
154	371	P	Qal	Tyone Creek	NA	NA	NA	NA	NA	0.0004	NA	NA	NA	NA	NA	NA	NA
155	372	P	Qal	Tyone Creek	-99	7.57	30	NA	NA	0.0001	9900	440	1.0	-99	2.82	1.5	26
156	373	P	Qal	Tyone Creek Trib.	-99	6.47	35	NA	NA	trace	12	340	1.5	-99	2.63	1.5	36
157	370	P	Qal	Tyone Creek Trib.	-99	6.67	75	NA	NA	trace	82	350	1.0	-99	3.12	0.5	27
158	374	P	Qal	Tyone Creek	-99	7.01	45	NA	NA	0.0001	6	380	1.0	-99	3.16	2.0	28
159	375	P	Qal	Tyone Creek	-99	6.47	20	NA	NA	0	1500	380	-99	32	2.60	1.5	28
160	376	P	Qal	Tyone Creek	-99	4.50	40	NA	NA	trace	99999	240	-99	16	2.11	3.0	41
161	400	P	Qal	Tyone Creek Trib.	-99	6.40	80	NA	NA	trace	14	320	-99	-99	2.80	3.0	31
162	1803	P	Qal	Tyone Creek	-99	6.47	-99	NA	NA	0	1000	500	-99	-99	2.63	-99	16
163	1804	P	Qal	Tyone Creek	-99	5.40	-99	NA	NA	0	100	370	-99	-99	2.56	0.5	9
164	458	P	Qal	Tyone Creek	-99	5.01	110	NA	NA	0.0005	1800	210	-99	-99	3.16	1.5	32
165	363	P	Qal	Tyone Creek Trib.	-99	3.81	80	NA	0.032	0.0003	99999	160	2.5	6	2.10	5.5	57
166	364	CC	Jnc	Tyone Creek	0.4	8.25	25	4	NA	NA	NA	520	0.5	-99	3.47	0.5	13
167	1616	P	Qal	Tyone Creek	-99	5.35	-99	NA	NA	0.0010	9800	360	0.5	-99	2.55	0.5	9
168	457	P	Qal	Tyone Creek Trib.	-99	7.52	-99	NA	NA	0.0008	180	500	-99	2	2.71	1.0	24
169	397	P	Qal	Tyone Creek Trib.	-99	6.91	-99	NA	NA	0.0001	1000	380	-99	-99	3.36	1.0	24
170	1617	P	Qal	Tyone Creek	2.0	5.00	5	NA	NA	0.0007	99999	250	-99	-99	2.30	-99	1

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Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm
140	1532	G	Qal	Yacko Creek	143	32	99999	30	-99	0.17	10	0.72	4147	28	0.45	10	1240
141	347	P	Qal	Yacko Creek	119	11	99999	80	-99	0.18	20	0.81	3920	-99	0.34	23	2850
142	348	P	Qal	Yacko Creek	104	22	99999	40	-99	0.28	20	1.23	4075	-99	0.75	26	1910
143	1530	P	Qal	Yacko Creek	141	12	99999	-99	-99	0.23	10	1.14	3475	-99	0.78	23	1310
144	344	P	Qal	Yacko Creek Trib.	107	48	18.36	30	-99	0.56	20	1.55	4055	-99	1.07	40	1290
145	346	P	Tsu	Yacko Creek	111	32	5.35	20	-99	0.57	10	1.20	1205	5	1.37	34	240
146	2633	P	Tsu	Tyone Creek	311	14	6.77	10	-99	0.51	10	1.38	3345	1	1.36	32	90
147	2634	P	Tsu	Tyone Creek	93	-99	99999	30	-99	0.22	30	0.90	5720	-99	0.92	28	1360
148	396	P	Qal	Tyone Creek Trib.	254	2	14.21	40	-99	0.59	20	1.47	3080	-99	1.43	30	940
149	2635	P	Tsu	Tyone Creek	189	21	5.29	10	-99	0.70	10	1.31	1200	-99	1.82	37	110
150	456	P	Tsu	Tyone Creek	345	15	7.37	20	-99	0.41	20	1.63	2750	23	1.10	37	270
151	455	P	Tsu	Tyone Creek	224	17	7.27	30	-99	0.49	20	1.59	2155	-99	1.32	45	340
152	1632	P	Qal	Joe Creek	346	15	13.06	-99	-99	0.30	10	1.28	7852	-99	0.83	22	360
153	454	P	Tsu	Tyone Creek	219	22	10.68	30	-99	0.55	20	1.43	2730	-99	1.32	44	340
154	371	P	Qal	Tyone Creek	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
155	372	P	Qal	Tyone Creek	87	50	8.61	20	-99	0.96	10	1.71	2090	-99	1.46	34	610
156	373	P	Qal	Tyone Creek Trib.	111	42	15.50	30	-99	0.72	10	1.51	2600	1	1.44	33	670
157	370	P	Qal	Tyone Creek Trib.	106	29	9.94	20	-99	0.66	10	1.58	2250	-99	1.36	41	600
158	374	P	Qal	Tyone Creek	108	54	11.36	30	-99	0.81	20	1.72	2425	-99	1.46	44	640
159	375	P	Qal	Tyone Creek	417	26	14.40	50	-99	0.81	20	1.91	2495	1	1.50	33	560
160	376	P	Qal	Tyone Creek	434	-99	99999	80	-99	0.48	20	1.70	5720	-99	0.91	40	700
161	400	P	Qal	Tyone Creek Trib.	162	21	15.03	50	-99	0.81	20	1.70	4075	-99	1.60	32	740
162	1803	P	Qal	Tyone Creek	102	36	10.29	-99	1	0.79	10	1.51	1835	-99	1.51	25	740
163	1804	P	Qal	Tyone Creek	159	31	15.96	-99	-99	0.61	10	1.49	2909	-99	1.23	30	600
164	458	P	Qal	Tyone Creek	394	-99	24.84	70	-99	0.42	30	1.65	3950	-99	0.91	39	1210
165	363	P	Qal	Tyone Creek Trib.	239	30	99999	80	-99	0.32	20	1.44	4575	-99	0.71	48	1500
166	364	CC	Jnc	Tyone Creek	71	39	5.81	-99	-99	0.59	-99	1.66	810	1	2.61	18	1060
167	1616	P	Qal	Tyone Creek	104	33	17.37	-99	-99	0.61	10	1.38	2967	-99	1.20	26	1200
168	457	P	Qal	Tyone Creek Trib.	187	36	9.76	40	-99	0.97	20	1.79	1965	-99	1.84	34	870
169	397	P	Qal	Tyone Creek Trib.	230	15	15.06	50	-99	0.76	20	1.75	2990	4	1.30	39	790
170	1617	P	Qal	Tyone Creek	120	31	21.11	-99	-99	0.49	10	1.23	5582	-99	1.00	22	1340

:APPENDIX A--Results of geochemical analyses of samples taken from the Tyone Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Pb ppm	Pd AFS ppb	Pt AFS ppb	Sb ppm	Sn ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Au fineness	Concen. weight (gms)
140	1532	G	Qal	Yacko Creek	-99	56	9600	10	NA	3.11	30	10	1153	-99	502	NA	NA
141	347	P	Qal	Yacko Creek	-99	-99	15	-99	-99	7.74	20	10	1394	-99	696	NA	202
142	348	P	Qal	Yacko Creek	-99	-99	5	-99	-99	4.36	10	-99	1107	-99	498	NA	122
143	1530	P	Qal	Yacko Creek	2	-99	-99	10	NA	5.19	-99	-99	1092	NA	390	NA	147
144	344	P	Qal	Yacko Creek Trib.	16	4	10	15	-99	2.70	20	10	566	-99	286	NA	67
145	346	P	Tsu	Yacko Creek	8	4	-99	15	-99	0.66	-99	10	184	-99	90	NA	286
146	2633	P	Tsu	Tyone Creek	8	4	5	-99	-99	1.08	-99	-99	218	-99	78	NA	99
147	2634	P	Tsu	Tyone Creek	8	-99	5	-99	2	4.57	-99	-99	704	-99	718	NA	323
148	396	P	Qal	Tyone Creek Trib.	8	4	820	-99	-99	2.54	-99	-99	503	-99	220	866	87
149	2635	P	Tsu	Tyone Creek	24	6	-99	-99	-99	0.80	10	-99	193	-99	72	NA	83
150	456	P	Tsu	Tyone Creek	8	4	10	15	-99	1.11	-99	-99	270	-99	76	503	141
151	455	P	Tsu	Tyone Creek	8	4	20	-99	-99	1.12	-99	-99	305	-99	90	687	193
152	1632	P	Qal	Joe Creek	2	-99	-99	-99	NA	2.90	-99	-99	509	60	144	NA	58
153	454	P	Tsu	Tyone Creek	-99	4	280	25	54	1.83	-99	-99	495	-99	164	613	194
154	371	P	Qal	Tyone Creek	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	105
155	372	P	Qal	Tyone Creek	-99	-99	10	10	-99	1.39	-99	-99	320	-99	194	NA	108
156	373	P	Qal	Tyone Creek Trib.	8	-99	-99	-99	-99	2.76	-99	-99	771	-99	246	NA	82
157	370	P	Qal	Tyone Creek Trib.	-99	-99	-99	10	-99	2.10	-99	-99	383	-99	168	NA	87
158	374	P	Qal	Tyone Creek	8	4	15	-99	-99	1.97	-99	-99	471	-99	194	NA	110
159	375	P	Qal	Tyone Creek	8	-99	-99	-99	-99	2.75	-99	-99	715	-99	250	NA	42
160	376	P	Qal	Tyone Creek	8	-99	10	-99	-99	5.22	20	10	1403	-99	450	NA	82
161	400	P	Qal	Tyone Creek Trib.	-99	4	90	5	-99	2.37	-99	-99	725	-99	254	NA	89
162	1803	P	Qal	Tyone Creek	2	-99	-99	5	NA	2.00	-99	-99	456	60	183	NA	153
163	1804	P	Qal	Tyone Creek	2	-99	-99	5	NA	3.47	-99	-99	847	90	259	NA	108
164	458	P	Qal	Tyone Creek	-99	10	1900	-99	-99	5.63	-99	-99	1029	-99	350	683	66
165	363	P	Qal	Tyone Creek Trib.	-99	4	-99	5	-99	5.60	-99	-99	1464	-99	482	NA	177
166	364	CC	Jnc	Tyone Creek	-99	-99	-99	-99	1	0.51	-99	-99	145	-99	106	NA	NA
167	1616	P	Qal	Tyone Creek	2	-99	-99	5	NA	2.97	-99	-99	735	90	282	770	223
168	457	P	Qal	Tyone Creek Trib.	16	2	-99	-99	-99	1.50	-99	-99	315	-99	174	799	100
169	397	P	Qal	Tyone Creek Trib.	8	-99	-99	-99	-99	2.50	-99	-99	588	-99	228	NA	91
170	1617	P	Qal	Tyone Creek	664	-99	-99	15	NA	3.64	-99	-99	835	30	299	NA	196

:APPENDIX A--Results of geochemical analyses of samples taken from the Tyone Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Ag ppm	Al %	As ppm	Au ppb	Au oz/t	Au oz/cy	Au AFS ppb	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm
171	1618	P	Qal	Tyone Creek	0.5	2.23	-99	NA	NA	0.0001	99999	150	-99	-99	1.43	0.5	-99
172	398	P	Qal	Tyone Creek	-99	4.89	55	NA	NA	0.0006	42	210	-99	-99	2.87	0.5	28
173	1619	S	Concent.	Tyone Creek	186.5	7.26	50	NA	NA	trace	99999	120	-99	2	7.51	-99	36
174	1624	S	Concent.	Tyone Creek	107.8	7.43	50	NA	NA	trace	99999	130	-99	-99	7.66	-99	37
174	1625	P	Qal	Tyone Creek	-99	4.84	10	NA	NA	0.0002	99999	300	0.5	-99	2.41	0.5	2
175	1626	RC	Jnc	Tyone Creek	0.5	6.96	-99	5	NA	NA	NA	420	-99	4	2.71	-99	22
175	1627	RC	Jnc	Tyone Creek	0.5	7.73	-99	-99	NA	NA	NA	400	-99	2	3.24	0.5	22
176	1628	P	Qal	Red Fox Creek	-99	2.28	-99	NA	NA	0.0003	300	230	-99	-99	1.43	1	-99
177	380	P	Jnc	Red Fox Creek	-99	7.95	60	NA	NA	trace	4	400	-99	12	3.21	0.5	15
178	1629	P	Qal	Red Fox Creek	-99	5.05	-99	NA	NA	0.0001	10	360	-99	-99	2.59	-99	11
179	362	P	Qal	Tyone Creek Trib.	-99	6.25	45	NA	NA	0	490	340	1.5	6	2.48	0.5	34
180	360	P	Qal	Tyone Creek Trib.	-99	2.81	115	NA	NA	trace	790	90	2.5	-99	2.04	3.5	61
181	395	P	Qal	Tyone Creek Trib.	-99	5.03	-99	NA	NA	trace	10	240	-99	6	2.44	0.5	40
182	392	P	Qal	Tyone Creek Trib.	-99	6.04	-99	NA	NA	trace	4	300	-99	-99	2.68	-99	30
183	393	P	Qal	Tyone Creek Trib.	-99	6.56	-99	NA	NA	trace	730	330	-99	6	3.18	1.0	22
184	391	P	Qal	Tyone Creek Trib.	-99	6.03	-99	NA	NA	0.0001	8	300	-99	8	2.59	1.5	30
185	390	P	Qal	Tyone Creek Trib.	-99	5.46	-99	NA	NA	trace	4400	270	-99	-99	2.73	1.0	24
186	349	P	Jnc	Red Fox Creek	-99	4.15	75	NA	NA	trace	14	170	2.5	-99	2.41	2.0	39
187	350	P	Qal	Red Fox Creek	-99	2.79	15	NA	NA	trace	4	90	3.5	-99	2.02	3.5	56
188	377	P	Qal	Red Fox Creek	-99	4.90	105	NA	NA	0	8	250	-99	20	2.54	1.5	39
189	2601	P	Qal	Red Fox Creek	-99	1.61	30	NA	NA	trace	680	50	-99	-99	1.22	-99	49
190	351	P	Qal	Red Fox Creek	-99	2.03	15	NA	NA	trace	640	70	4.0	-99	1.27	1.5	63
191	352	P	Jnc	Red Fox Creek	-99	4.55	110	NA	NA	trace	40	170	2.0	-99	2.56	1.5	49
191	353	P	Jnc	Red Fox Creek	-99	4.85	70	NA	NA	0.0001	-99	200	2.0	-99	2.73	5.5	48
192	357	P	Jnc	Red Fox Creek	-99	5.96	10	NA	NA	trace	4	270	1.5	-99	3.17	2.0	30
192	358	P	Jnc	Red Fox Creek	-99	3.82	35	NA	NA	trace	620	140	2.5	-99	2.35	3.5	35
192	359	P	Jnc	Red Fox Creek	-99	5.22	-99	NA	NA	0	14	210	2.0	-99	3.01	2.5	37
193	356	P	Jnc	Red Fox Creek	-99	5.57	50	NA	NA	trace	240	240	2.0	-99	2.43	3.5	47
194	355	P	Qal	Red Fox Creek	-99	3.47	30	NA	NA	trace	2400	130	2.5	-99	2.20	1.5	63
195	399	P	Qal	Red Fox Creek	-99	6.51	35	NA	NA	0	4	320	-99	-99	3.92	2.0	30
196	339	P	Glacial	Red Fox Creek	-99	3.87	90	NA	NA	0.0083	130	160	2.5	-99	2.48	2.5	75

:APPENDIX A--Results of geochemical analyses of samples taken from the Tyone Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm
171	1618	P	Qal	Tyone Creek	122	6	99999	-99	1	0.14	10	0.82	4732	-99	0.36	19	1500
172	398	P	Qal	Tyone Creek	194	-99	99999	70	-99	0.40	20	1.44	4355	-99	0.93	32	890
173	1619	S	Concent.	Tyone Creek	248	47	8.99	10	3	0.22	-99	2.45	3128	1	0.90	33	1820
174	1624	S	Concent.	Tyone Creek	211	47	9.15	10	1	0.23	-99	2.33	3514	-99	0.89	32	1800
174	1625	P	Qal	Tyone Creek	108	19	20.51	-99	-99	0.43	10	1.16	4038	-99	1.07	21	1170
175	1626	RC	Jnc	Tyone Creek	95	32	4.06	10	2	0.74	20	1.46	854	-99	2.52	16	560
175	1627	RC	Jnc	Tyone Creek	71	36	4.03	10	1	0.67	20	1.36	832	3	2.78	21	680
176	1628	P	Qal	Red Fox Creek	167	12	99999	-99	-99	0.19	-99	0.90	3511	-99	0.57	26	1120
177	380	P	Jnc	Red Fox Creek	389	39	7.91	20	-99	0.63	20	1.67	1180	-99	2.64	17	860
178	1629	P	Qal	Red Fox Creek	130	23	18.47	-99	-99	0.50	-99	1.38	2404	-99	1.35	28	850
179	362	P	Qal	Tyone Creek Trib.	107	41	16.36	40	-99	0.78	10	1.72	2815	-99	1.42	39	840
180	360	P	Qal	Tyone Creek Trib.	180	30	99999	70	-99	0.15	20	1.47	4510	-99	0.43	48	1430
181	395	P	Qal	Tyone Creek Trib.	206	10	23.92	70	-99	0.52	20	1.55	2865	-99	1.19	35	-99
182	392	P	Qal	Tyone Creek Trib.	173	5	18.62	40	-99	0.66	20	1.54	2220	-99	1.48	30	690
183	393	P	Qal	Tyone Creek Trib.	204	3	12.50	40	-99	0.65	20	1.53	2010	-99	1.58	35	590
184	391	P	Qal	Tyone Creek Trib.	161	-99	16.89	50	-99	0.71	10	1.56	2510	7	1.49	29	670
185	390	P	Qal	Tyone Creek Trib.	205	-99	19.80	60	-99	0.47	20	1.45	2790	-99	1.18	36	460
186	349	P	Jnc	Red Fox Creek	143	22	99999	40	-99	0.28	10	1.24	3905	-99	1.01	24	1480
187	350	P	Qal	Red Fox Creek	216	22	99999	80	-99	0.14	20	1.41	4540	-99	0.51	26	1450
188	377	P	Qal	Red Fox Creek	446	-99	23.30	60	-99	0.51	10	1.75	3190	-99	1.19	36	650
189	2601	P	Qal	Red Fox Creek	253	-99	99999	30	-99	0.07	20	0.96	5185	-99	0.21	34	-99
190	351	P	Qal	Red Fox Creek	151	24	99999	70	-99	0.10	20	0.99	5315	-99	0.30	30	2030
191	352	P	Jnc	Red Fox Creek	151	41	99999	60	-99	0.39	10	1.61	3245	-99	1.10	36	1090
191	353	P	Jnc	Red Fox Creek	203	42	99999	70	-99	0.45	20	1.67	3020	-99	1.24	42	1220
192	357	P	Jnc	Red Fox Creek	242	53	18.65	40	-99	0.54	20	2.05	1885	-99	1.84	36	1270
192	358	P	Jnc	Red Fox Creek	244	39	99999	60	-99	0.33	20	1.45	2505	-99	1.07	33	1610
192	359	P	Jnc	Red Fox Creek	215	39	23.80	60	-99	0.44	20	1.69	2480	-99	1.43	43	1410
193	356	P	Jnc	Red Fox Creek	164	39	22.46	50	-99	0.56	10	1.65	2690	-99	1.30	48	940
194	355	P	Qal	Red Fox Creek	189	46	99999	40	-99	0.25	10	1.62	3995	-99	0.71	47	1420
195	399	P	Qal	Red Fox Creek	121	28	12.12	40	-99	0.72	10	2.37	1695	-99	1.77	34	790
196	339	P	Glacial	Red Fox Creek	143	58	99999	60	-99	0.30	20	1.71	4125	-99	0.79	52	1500

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Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Pb ppm	Pd AFS ppb	Pt AFS ppb	Sb ppm	Sn ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Au fineness	Concen. weight (gms)
171	1618	P	Qal	Tyone Creek	2	60	-99	10	NA	5.65	-99	-99	1150	NA	465	NA	216
172	398	P	Qal	Tyone Creek	-99	-99	-99	-99	-99	4.15	-99	-99	917	-99	384	795	195
173	1619	S	Concent.	Tyone Creek	20	32	120	-99	NA	0.72	-99	-99	277	10	92	NA	NA
174	1624	S	Concent.	Tyone Creek	14	32	-99	-99	NA	0.74	-99	-99	281	10	86	NA	NA
174	1625	P	Qal	Tyone Creek	2	-99	-99	10	NA	3.63	-99	-99	718	110	319	NA	195
175	1626	RC	Jnc	Tyone Creek	2	NA	NA	-99	NA	0.40	-99	-99	146	-99	57	NA	na
175	1627	RC	Jnc	Tyone Creek	2	NA	NA	-99	NA	0.43	-99	-99	137	-99	64	NA	na
176	1628	P	Qal	Red Fox Creek	2	-99	-99	10	NA	5.61	-99	-99	1361	NA	419	NA	172
177	380	P	Jnc	Red Fox Creek	16	-99	10	-99	-99	0.95	-99	-99	247	-99	140	NA	NA
178	1629	P	Qal	Red Fox Creek	2	-99	-99	5	NA	2.79	-99	-99	794	100	262	NA	177
179	362	P	Qal	Tyone Creek Trib.	-99	-99	-99	-99	-99	2.91	-99	-99	713	-99	256	NA	55
180	360	P	Qal	Tyone Creek Trib.	-99	-99	45	10	-99	6.52	-99	-99	1833	-99	534	NA	100
181	395	P	Qal	Tyone Creek Trib.	8	-99	-99	10	-99	2.26	20	-99	803	-99	324	NA	134
182	392	P	Qal	Tyone Creek Trib.	16	-99	-99	-99	-99	3.36	-99	-99	923	-99	266	NA	130
183	393	P	Qal	Tyone Creek Trib.	8	-99	-99	5	-99	2.24	-99	-99	550	-99	184	NA	114
184	391	P	Qal	Tyone Creek Trib.	8	-99	20	-99	-99	3.24	-99	-99	838	-99	256	NA	195
185	390	P	Qal	Tyone Creek Trib.	-99	-99	10	-99	-99	3.66	-99	-99	859	-99	246	NA	120
186	349	P	Jnc	Red Fox Creek	-99	4	-99	5	-99	3.42	10	-99	1155	-99	402	NA	154
187	350	P	Qal	Red Fox Creek	-99	-99	30	-99	-99	6.28	40	30	1680	-99	558	NA	196
188	377	P	Qal	Red Fox Creek	8	-99	5	-99	-99	4.05	-99	-99	1187	-99	348	NA	40
189	2601	P	Qal	Red Fox Creek	-99	-99	-99	-99	4	2.81	-99	-99	1033	20	606	NA	202
190	351	P	Qal	Red Fox Creek	-99	-99	15	-99	-99	6.27	40	-99	1936	-99	584	NA	146
191	352	P	Jnc	Red Fox Creek	-99	-99	15	-99	-99	3.86	-99	-99	1424	-99	414	NA	146
191	353	P	Jnc	Red Fox Creek	-99	-99	5	-99	-99	3.72	-99	-99	1261	-99	388	NA	126
192	357	P	Jnc	Red Fox Creek	-99	-99	5	-99	-99	1.54	-99	-99	675	-99	184	NA	194
192	358	P	Jnc	Red Fox Creek	-99	-99	10	5	-99	2.60	-99	-99	1200	-99	278	NA	83
192	359	P	Jnc	Red Fox Creek	-99	-99	5	-99	-99	2.68	10	20	953	-99	308	NA	199
193	356	P	Jnc	Red Fox Creek	-99	-99	10	-99	-99	3.42	-99	-99	1130	-99	334	NA	174
194	355	P	Qal	Red Fox Creek	-99	-99	40	-99	-99	4.82	-99	-99	1792	-99	488	NA	226
195	399	P	Qal	Red Fox Creek	-99	4	25	-99	-99	1.52	-99	-99	539	-99	220	NA	169
196	339	P	Glacial	Red Fox Creek	-99	-99	10	5	-99	3.95	-99	-99	1897	-99	460	893	247

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Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Ag ppm	Al %	As ppm	Au ppb	Au oz/t	Au oz/cy	Au AFS ppb	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm
197	336	P	Qal	Red Fox Creek	-99	5.15	30	NA	NA	trace	230	220	2.5	4	3.19	1.0	52
197	337	P	Qal	Red Fox Creek	-99	3.03	-99	NA	NA	0.0082	5000	100	3.5	-99	2.05	6.5	79
197	338	2 Pans	Qal	Red Fox Creek	-99	7.10	-99	NA	NA	0.0018	1200	380	1.5	-99	2.57	-99	32
197	379	P	Qal	Red Fox Creek	-99	4.19	35	NA	NA	trace	1400	190	-99	-99	2.44	3.0	46
198	2603	P	Qal	Red Fox Creek	-99	2.00	55	NA	NA	0.0212	99999	70	-99	-99	1.61	2.0	61
199	354	P	Qal	Red Fox Creek	-99	2.09	150	NA	NA	0.0005	96	70	2.5	-99	1.68	5.5	85
200	378	P	Qal	Red Fox Creek	-99	4.39	155	NA	NA	trace	1900	190	-99	6	3.14	1.5	50

:APPENDIX A--Results of geochemical analyses of samples taken from the Tyone Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm
197	336	P	Qal	Red Fox Creek	201	45	23.01	50	-99	0.47	20	2.07	2250	-99	1.33	29	1140
197	337	P	Qal	Red Fox Creek	157	58	99999	80	-99	0.20	20	1.51	4045	-99	0.52	60	1540
197	338	2 Pans	Qal	Red Fox Creek	80	66	13.69	30	-99	0.92	20	1.62	1465	1	1.29	34	820
197	379	P	Qal	Red Fox Creek	474	-99	99999	90	-99	0.35	20	1.67	3055	-99	0.88	52	850
198	2603	P	Qal	Red Fox Creek	215	7	99999	30	-99	0.10	20	1.38	4365	-99	0.32	56	570
199	354	P	Qal	Red Fox Creek	184	60	99999	110	-99	0.10	20	1.46	4345	-99	0.29	67	1750
200	378	P	Qal	Red Fox Creek	454	10	99999	80	-99	0.37	10	2.16	2740	-99	1.04	44	870

:APPENDIX A--Results of geochemical analyses of samples taken from the Tyone Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Pb. ppm	Pd AFS ppb	Pt AFS ppb	Sb ppm	Sn ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Au fineness	Concen. weight (gms)
197	336	P	Qal	Red Fox Creek	-99	-99	-99	-99	-99	2.78	-99	-99	1154	-99	312	NA	85
197	337	P	Qal	Red Fox Creek	-99	-99	20	-99	2	4.73	-99	-99	2185	-99	516	865	195
197	338	2 Pans	Qal	Red Fox Creek	24	-99	-99	5	-99	1.67	-99	-99	650	-99	248	873	28
197	379	P	Qal	Red Fox Creek	-99	-99	-99	-99	2	4.40	-99	-99	1616	-99	392	NA	203
198	2603	P	Qal	Red Fox Creek	-99	28	7000	-99	2	4.03	-99	-99	1955	-99	546	884	248
199	354	P	Qal	Red Fox Creek	-99	4	810	-99	-99	4.83	-99	-99	2436	-99	626	799	291
200	378	P	Qal	Red Fox Creek	-99	-99	20	5	6	3.84	-99	-99	1535	-99	382	NA	205

APPENDIX B. - Results of Geochemical Analyses of Samples taken from the Peters Creek Area during 1988 and 1989.

Explanation

Map no.	-	Refers to map number as shown on figure 4.
Sample no.	-	Refers to field sample number.
Sample type	-	CC Continuous chip
	-	CR Representative chip
	-	G Grab
	-	PL Placer sample
	-	RC Random chip
	-	S Select
Sample Location ID	-	Refers to geographic location of sample site.
%	-	percent
ppm	-	parts per million
ppb	-	parts per billion
oz/t	-	ounces per short ton
oz/cy	-	Ounces per cubic yard. Refers to amount of gold recovered from a placer sample by sluicing or panning.
AFS	-	Atomic fluorescence spectroscopy
99999	-	Above detection limit.
-99	-	Not detected.
NA	-	Not analyzed.
trace	-	Weight of gold particles recovered was less than 0.0001 grams.
Concen. weight	-	Weight of the heavy mineral concentrate in grams.

APPENDIX B. - Results of Geochemical Analyses of Samples taken from the Peters Creek area during 1988 and 1989--Continued

Analytical Detection Limits

Inductively coupled plasma (ICP) spectroscopy		
Element	Minimum	Maximum
Al.....	0.01%	25.00 %
Ag.....	0.2 ppm	200 ppm
As.....	1.0	10,000 ppm
Ba.....	10.0 ppm	10,000 ppm
Be.....	0.5 ppm	10,000 ppm
Bi.....	2.0 ppm	10,000 ppm
Ca.....	0.01%	25.00 %
Cd.....	0.5 ppm	10,000 ppm
Co.....	1.0 ppm	10,000 ppm
Cr.....	1.0 ppm	10,000 ppm
Cu.....	1.0 ppm	10,000 ppm
Fe.....	0.01%	25.00 %
Ga.....	10.0 ppm	10,000 ppm
Hg.....	1.0 ppm	10,000 ppm
K.....	0.01%	20.00 %
La.....	10.0 ppm	10,000 ppm
Mg.....	0.01%	25.00 %
Mn.....	1.0 ppm	10,000 ppm
Mo.....	1.0 ppm	10,000 ppm
Na.....	0.01%	10.00 %
Ni.....	1.0 ppm	10,000 ppm
P.....	10.0 ppm	10,000 ppm
Pb.....	2.0 ppm	10,000 ppm
Sb.....	5.0 ppm	10,000 ppm
Sr.....	1.0 ppm	10,000 ppm
Ti.....	0.01%	10.00 %
Tl.....	10.0 ppm	10,000 ppm
U.....	10.0 ppm	10,000 ppm
V.....	1.0 ppm	10,000 ppm
W.....	10.0 ppm	10,000 ppm
Zn.....	2.0 ppm	10,000 ppm

Atomic fluorescence spectroscopy		
Au.....	2.0 ppb	10,000 ppb
Pd.....	2.0 ppb	10,000 ppb
Pt.....	5.0 ppb	10,000 ppb

Fire assay plus atomic absorption		
Au[1]....	0.002 oz/st	20.00 oz/st
Au.....	5.0 ppb	10,000 ppb

[1](½ assay ton)

APPENDIX B. - Results of Geochemical Analyses of Samples taken from the Peters Creek area during 1988 and 1989--Continued

Analytical detection limits--Continued

Atomic absorption		
Ag[1]	0.01 oz/st	20.00 oz/st
Ag	0.5 ppm	500.0 ppm
Cu	0.01 %	100.00 %
Pb	0.01 %	100.00 %
Mo	0.001 %	100.000 %
Zn	0.01 %	100.00 %

[1](½ assay ton)

Neutron activation - gamma spectroscopy		
Sb	0.001 %	100.000 %

NOTE: Oz/yd^3 values can be calculated for the concentrates taken from a 0.1 yd^3 placer sample using the following equation:

(0.000011)(weight of concentrate in grams)(troy oz/st precious metal value from analysis) = Oz/yd^3.

$Pound/yd^3$ can be calculated for the concentrates taken from a 0.1 yd^3 placer sample using the following equation:

(0.022)(weight of concentrate in grams)(% concentration from analysis) = $Pound/yd^3$.

:APPENDIX B--Results of geochemical analyses of samples taken from the Peters Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Ag ppm	Al %	As ppm	Au ppb	Au oz/t	Au oz/cy	Au AFS ppb	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm
1	705	P	Qal	Long Creek	0.5	4.68	10	NA	NA	NA	NA	820	-99	4	0.42	-99	11
2	2361	P	Qal	Long Creek Trib.	0.5	6.43	25	NA	NA	trace	2000	780	1.0	-99	0.42	-99	14
3	320	P	Qal	Long Creek	-99	4.23	-99	NA	NA	0	1500	640	1.0	-99	0.53	-99	5
4	321	P	Qal	Canyon Creek	0.5	3.44	5	NA	NA	trace	480	600	1.0	-99	0.32	-99	4
5	314	P	Qal	Canyon Creek	-99	3.43	5	NA	NA	0.0020	2500	700	1.0	-99	0.23	-99	10
6	313	P	Qal	Canyon Creek	-99	3.00	10	NA	NA	trace	2000	490	0.5	-99	10.23	-99	5
6	463	P	Qal	Canyon Creek	-99	4.56	10	NA	NA	trace	66	850	-99.0	-99	0.21	-99	8
7	464	P	Tps	Canyon Creek	-99	4.05	-99	NA	NA	trace	140	760	0.5	-99	0.22	1.0	6
8	305	P	Qal	Canyon Creek	0.5	5.22	40	NA	NA	trace	8	1970	2.0	-99	0.25	-99	58
9	462	P	Tps	Canyon Creek	-99	3.59	30	NA	NA	0.0002	1700	790	0.5	-99	0.30	1.0	11
10	312	P	Qal	Canyon Creek	0.5	3.09	-99	NA	NA	0.0011	2000	780	1.0	-99	0.30	-99	16
11	460	P	Qal	Canyon Creek	-99	4.48	55	NA	NA	trace	630	740	1.0	-99	0.21	0.5	5
12	459	P	Qal	Canyon Creek	-99	3.11	50	NA	NA	0.0006	2500	680	1.0	-99	0.12	1.5	14
13	311	P	Qal	Canyon Creek	0.5	2.65	20	NA	NA	0.0012	14	920	0.5	-99	0.22	-99	35
14	306	P	Qal	Canyon Creek	-99	2.31	10	NA	NA	0.0012	99999	730	1.0	-99	0.13	-99	29
15	307	P	Qal	Canyon Creek	7.5	1.77	25	NA	NA	0.0008	99999	1090	0.5	-99	0.13	-99	30
16	309	P	Tps	Canyon Creek	0.5	2.20	5	NA	NA	0.0037	6600	470	0.5	-99	0.10	-99	-99
17	308	P	Tps	Canyon Creek	-99	1.86	5	NA	NA	0.0007	99999	460	0.5	-99	0.07	-99	1
18	310	P	Qal	Canyon Creek	0.5	3.59	5	NA	NA	0.0069	2200	620	1.0	-99	0.57	-99	2
19	461	P	Qal	Canyon Creek	-99	4.86	30	NA	NA	0.0006	84	710	-99.0	-99	0.41	1.5	14
20	323	P	Tps	Divide Creek Trib.	0.5	3.20	-99	NA	NA	0.0007	18	590	0.5	-99	0.70	-99	1
21	324	P	Tps	Divide Creek	-99	3.15	-99	NA	NA	trace	960	610	0.5	-99	0.50	-99	2
22	315	P	Qal	Divide Creek	-99	3.24	10	NA	NA	trace	2200	620	1.0	-99	0.49	-99	2
23	465	P	Tps	Divide Creek	-99	4.49	25	NA	NA	trace	-99	830	1.0	-99	0.43	-99	7
24	316	P	Qal	Divide Creek	-99	3.17	5	NA	NA	0.0006	30	800	1.0	-99	0.51	-99	1
25	317	P	Qal	Divide Creek	-99	3.63	10	NA	NA	0.0010	4	660	1.0	-99	0.47	-99	2
26	318	P	Tps	Divide Creek	-99	3.50	5	NA	NA	0.0024	8	730	1.0	-99	0.18	-99	2
27	328	P	Tps	Dandy Gulch	-99	1.83	-99	NA	NA	0.0010	4000	620	0.5	-99	0.05	-99	4
27	329	P	Qal	Dandy Gulch	-99	1.93	-99	NA	NA	0.0046	1500	480	0.5	-99	0.07	-99	6
28	330	P	Tps	Dandy Gulch	-99	2.19	-99	NA	NA	trace	1500	600	0.5	-99	0.03	-99	4
29	2166	P	Qal	Ramsdyke Creek	0.5	5.20	110	NA	NA	0.0005	5000	1130	1.0	-99	0.51	-99	20

:APPENDIX B--Results of geochemical analyses of samples taken from the Peters Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm
1	705	P	Qal	Long Creek	140	13	3.29	-99	-99	1.27	30	0.75	2760	-99	0.84	30	680
2	2361	P	Qal	Long Creek Trib.	212	26	4.24	10	-99	1.37	40	1.20	736	-99	1.15	48	740
3	320	P	Qal	Long Creek	206	6	3.74	10	-99	1.08	60	0.69	2387	-99	0.58	27	430
4	321	P	Qal	Canyon Creek	127	13	2.85	-99	-99	0.98	30	0.50	1847	-99	0.37	24	300
5	314	P	Qal	Canyon Creek	165	21	2.66	-99	-99	0.98	20	0.44	99999	2	0.34	28	310
6	313	P	Qal	Canyon Creek	143	23	1.87	-99	-99	1.05	-99	0.36	1529	1	0.40	15	200
6	463	P	Qal	Canyon Creek	372	19	2.57	10	-99	1.77	20	0.52	550	2	0.64	32	180
7	464	P	Tps	Canyon Creek	282	8	2.12	-99	-99	1.34	10	0.46	455	-99	0.58	30	140
8	305	P	Qal	Canyon Creek	99	93	3.99	-99	6	1.19	20	0.70	99999	3	0.29	86	740
9	462	P	Tps	Canyon Creek	352	8	2.54	-99	-99	1.18	20	0.48	6745	-99	0.50	28	290
10	312	P	Qal	Canyon Creek	745	30	4.17	10	1	0.74	70	0.49	99999	2	0.23	37	420
11	460	P	Qal	Canyon Creek	355	21	2.78	-99	-99	1.38	10	0.58	780	2	0.43	34	230
12	459	P	Qal	Canyon Creek	402	25	2.69	-99	-99	0.92	10	0.43	99999	-99	0.23	33	350
13	311	P	Qal	Canyon Creek	794	55	3.61	-99	5	0.65	40	0.38	99999	3	0.16	46	530
14	306	P	Qal	Canyon Creek	598	50	3.46	-99	5	0.62	40	0.28	99999	1	0.12	38	540
15	307	P	Qal	Canyon Creek	459	67	3.31	-99	11	0.54	40	0.19	99999	2	0.06	50	510
16	309	P	Tps	Canyon Creek	202	4	3.20	10	-99	0.75	100	0.22	2538	-99	0.09	12	330
17	308	P	Tps	Canyon Creek	174	11	1.87	10	-99	0.70	60	0.13	1429	-99	0.05	13	210
18	310	P	Qal	Canyon Creek	383	4	3.15	10	-99	1.11	60	0.45	1849	-99	0.57	15	210
19	461	P	Qal	Canyon Creek	338	16	3.54	10	-99	1.42	10	0.71	1495	-99	0.68	36	330
20	323	P	Tps	Divide Creek Trib.	202	1	3.52	10	-99	1.00	70	0.58	1786	-99	0.48	16	180
21	324	P	Tps	Divide Creek	152	1	3.43	-99	-99	1.06	50	0.44	1305	-99	0.54	15	230
22	315	P	Qal	Divide Creek	125	3	2.37	-99	-99	1.04	50	0.42	1218	-99	0.45	13	290
23	465	P	Tps	Divide Creek	239	-99	2.44	-99	-99	1.44	10	0.69	600	-99	0.77	29	210
24	316	P	Qal	Divide Creek	240	3	2.41	10	-99	1.00	70	0.42	1413	-99	0.45	15	320
25	317	P	Qal	Divide Creek	142	6	2.58	-99	-99	1.11	30	0.42	1311	-99	0.49	16	230
26	318	P	Tps	Divide Creek	127	8	1.68	-99	-99	1.19	20	0.32	668	1	0.47	14	160
27	328	P	Tps	Dandy Gulch	114	7	0.95	10	-99	0.83	30	0.09	620	-99	0.10	7	250
27	329	P	Qal	Dandy Gulch	91	6	1.85	-99	-99	0.79	40	0.14	1518	-99	0.10	12	240
28	330	P	Tps	Dandy Gulch	70	7	0.89	-99	-99	0.99	10	0.12	308	-99	0.10	10	150
29	2166	P	Qal	Ramsdyke Creek	170	38	6.73	10	-99	1.21	30	0.67	99999	1	0.82	55	850

:APPENDIX B--Results of geochemical analyses of samples taken from the Peters Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Pb ppm	Pd AFS ppb	Pt AFS ppb	Sb ppm	Sn ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Au fineness	Concen. weight (gms)
1	705	P	Qal	Long Creek	18	NA	NA	5	-99	0.65	-99	-99	104	-99	76	NA	NA
2	2361	P	Qal	Long Creek Trib.	12	-99	-99	-99	NA	0.56	-99	-99	148	-99	129	NA	51
3	320	P	Qal	Long Creek	10	-99	-99	-99	NA	1.61	-99	-99	117	-99	78	NA	81
4	321	P	Qal	Canyon Creek	12	-99	-99	-99	NA	0.79	-99	-99	83	-99	72	NA	104
5	314	P	Qal	Canyon Creek	14	-99	-99	-99	NA	0.73	-99	-99	77	-99	77	854	159
6	313	P	Qal	Canyon Creek	28	-99	800	-99	NA	0.42	10	-99	51	-99	34	NA	30
6	463	P	Qal	Canyon Creek	32	-99	5	-99	6	0.31	-99	-99	61	10	78	NA	98
7	464	P	Tps	Canyon Creek	24	-99	-99	-99	4	0.25	-99	-99	56	-99	64	NA	161
8	305	P	Qal	Canyon Creek	56	-99	-99	40	NA	0.38	-99	10	113	-99	162	NA	120
9	462	P	Tps	Canyon Creek	32	-99	-99	20	98	0.57	-99	-99	62	-99	64	NA	187
10	312	P	Qal	Canyon Creek	16	16	20	-99	NA	1.70	10	-99	104	-99	111	843	54
11	460	P	Qal	Canyon Creek	16	-99	-99	-99	10	0.31	-99	-99	84	-99	66	NA	142
12	459	P	Qal	Canyon Creek	24	-99	-99	20	170	0.51	-99	-99	78	-99	96	NA	218
13	311	P	Qal	Canyon Creek	20	-99	-99	-99	NA	1.34	-99	30	82	-99	131	820	77
14	306	P	Qal	Canyon Creek	18	-99	-99	-99	NA	1.63	-99	10	78	-99	118	730	131
15	307	P	Qal	Canyon Creek	16	-99	-99	-99	NA	2.16	-99	10	67	-99	133	580	205
16	309	P	Tps	Canyon Creek	10	-99	-99	-99	NA	2.10	20	-99	58	-99	51	NA	118
17	308	P	Tps	Canyon Creek	18	-99	-99	-99	NA	1.35	10	-99	60	-99	27	NA	121
18	310	P	Qal	Canyon Creek	12	-99	-99	-99	NA	1.31	10	-99	79	-99	44	798	64
19	461	P	Qal	Canyon Creek	16	-99	-99	-99	19	0.51	-99	-99	101	-99	96	NA	110
20	323	P	Tps	Divide Creek Trib.	10	-99	-99	-99	NA	1.50	-99	-99	77	-99	50	782	94
21	324	P	Tps	Divide Creek	12	-99	-99	-99	NA	1.68	-99	-99	88	-99	52	NA	106
22	315	P	Qal	Divide Creek	12	-99	-99	-99	NA	1.00	-99	-99	73	-99	47	NA	105
23	465	P	Tps	Divide Creek	24	-99	5	5	12	0.69	-99	-99	66	-99	54	NA	196
24	316	P	Qal	Divide Creek	12	-99	-99	-99	NA	1.02	-99	-99	74	-99	48	802	84
25	317	P	Qal	Divide Creek	12	-99	-99	-99	NA	0.88	-99	-99	73	-99	54	800	101
26	318	P	Tps	Divide Creek	12	-99	-99	-99	NA	0.49	-99	-99	60	-99	43	748	120
27	328	P	Tps	Dandy Gulch	12	-99	-99	-99	NA	0.50	-99	-99	42	-99	29	851	179
27	329	P	Qal	Dandy Gulch	10	-99	-99	-99	NA	1.12	-99	10	53	-99	47	876	260
28	330	P	Tps	Dandy Gulch	10	-99	-99	-99	NA	0.18	-99	-99	41	-99	33	NA	236
29	2166	P	Qal	Ramsdyke Creek	30	-99	-99	-99	NA	0.57	-99	-99	111	20	132	NA	195

:APPENDIX B--Results of geochemical analyses of samples taken from the Peters Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Ag ppm	Al %	As ppm	Au ppb	Au oz/t	Au oz/cy	Au AFS ppb	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm
30	2167	P	Qal	Ramsdyke Creek	1.0	5.21	185	NA	NA	trace	99999	660	1.0	-99	0.75	-99	29
31	319	P	Glacial	Wonder Gulch	0.5	3.39	15	NA	NA	trace	99999	580	1.0	-99	0.13	-99	5
31	2163	P	Qal	Wonder Gulch	10.5	4.26	35	NA	NA	0.0013	99999	1050	1.0	-99	0.37	-99	17
32	2164	P	Qal	Wonder Gulch	-99	2.26	20	NA	NA	0.0010	99999	420	0.5	-99	0.23	-99	-99
32	2165	P	Qal	Wonder Gulch	-99	3.06	55	NA	NA	0.0015	99999	1260	1.0	-99	0.19	-99	19
33	2162	G	Tps	Wonder Gulch	-99	4.34	15	NA	0.002	NA	NA	1290	0.5	-99	0.09	-99	5
34	331	P	Tps	Poorman Creek	-99	3.54	15	NA	NA	0.0074	720	600	0.5	-99	0.14	-99	8
35	326	P	Tps	Dandy Gulch	-99	1.89	-99	NA	NA	0.0008	860	440	1.0	-99	0.11	-99	-99
36	325	P	Tps	Dandy Gulch	-99	1.87	-99	NA	NA	trace	6000	420	1.0	-99	0.09	-99	6
37	468	P	Tps	Dandy Gulch	-99	3.77	10	NA	NA	0.0001	5300	750	0.5	-99	0.34	0.5	6
38	470	P	Qal	Poorman Creek	-99	2.16	-99	NA	NA	0.0142	2100	580	1.5	-99	0.10	-99	4
39	469	P	Tps	Poorman Creek	-99	3.69	-99	NA	NA	trace	130	730	2.0	-99	0.34	1.0	6
40	471	P	Qal	Poorman Creek	-99	2.04	10	NA	NA	0.0005	99999	660	1.0	-99	0.13	1.5	4
41	467	P	Tps	Poorman Creek	-99	3.98	15	NA	NA	trace	650	810	0.5	-99	0.25	1.0	6
42	304	P	Tps	Willow Creek	1.5	5.21	25	NA	NA	0.007	99999	630	1.0	-99	0.11	-99	13
43	466	P	Tps	Poorman Creek	-99	3.65	-99	NA	NA	0.0001	110	730	1.0	-99	0.48	-99	5
44	2360	P	Qal	Cottonwood Creek Trib	2.5	6.24	80	NA	NA	0.0009	99999	1040	1.0	-99	0.51	-99	13
45	2520	P	Qal	Cottonwood Creek Trib	-99	6.85	55	NA	NA	0.0006	300	900	1.0	-99	0.24	-99	15
46	2364	CR	Tts	Cottonwood Creek Trib	0.5	5.22	100	-99	NA	NA	NA	1300	1.0	4	0.21	-99	8
47	2365	P	Qal	Bunco Creek	0.5	6.07	5	NA	NA	trace	2800	770	1.0	-99	0.41	-99	8
48	2516	P	Qal	Peters Hills	-99	7.85	30	NA	NA	trace	1500	860	1.0	-99	0.78	-99	19
49	715	P	Qal	Bunco Creek	0.5	5.28	5	NA	NA	0.0003	NA	810	-99	-99	0.13	-99	9
50	714	P	Qal	Bunco Creek	0.5	4.40	15	NA	NA	NA	NA	660	-99	4	0.38	1.0	17

:APPENDIX B--Results of geochemical analyses of samples taken from the Peters Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm
30	2167	P	Qal	Ramsdyke Creek	199	67	10.43	10	-99	1.12	60	0.78	99999	2	0.92	71	1340
31	319	P	Glacial	Wonder Gulch	127	12	2.21	-99	-99	0.99	40	0.31	1471	1	0.36	18	240
31	2163	P	Qal	Wonder Gulch	668	26	4.18	10	1	0.93	80	0.47	99999	1	0.70	33	440
32	2164	P	Qal	Wonder Gulch	1402	1	4.82	10	-99	0.64	260	0.28	4027	-99	0.21	13	380
32	2165	P	Qal	Wonder Gulch	1019	32	4.56	10	9	0.93	110	0.32	99999	2	0.38	39	630
33	2162	G	Tps	Wonder Gulch	160	2	0.90	-99	-99	2.07	10	0.22	116	-99	0.57	11	210
34	331	P	Tps	Poorman Creek	149	19	3.38	-99	-99	1.07	30	0.36	1938	-99	0.31	24	310
35	326	P	Tps	Dandy Gulch	148	3	2.48	10	-99	0.76	60	0.13	2153	-99	0.12	6	200
36	325	P	Tps	Dandy Gulch	312	5	1.78	10	-99	0.66	60	0.12	1106	1	0.12	11	210
37	468	P	Tps	Dandy Gulch	376	-99	2.27	10	-99	1.34	50	0.47	875	2	0.65	20	260
38	470	P	Qal	Poorman Creek	335	-99	1.76	10	-99	0.96	20	0.13	1005	1	0.24	15	250
39	469	P	Tps	Poorman Creek	334	6	2.04	10	-99	1.24	20	0.52	505	-99	0.55	27	260
40	471	P	Qal	Poorman Creek	302	-99	1.42	10	-99	1.00	10	0.13	550	5	0.32	12	90
41	467	P	Tps	Poorman Creek	244	3	1.67	10	-99	1.42	10	0.38	610	1	0.56	25	110
42	304	P	Tps	Willow Creek	125	54	6.02	-99	-99	1.26	10	0.52	3208	1	0.17	49	250
43	466	P	Tps	Poorman Creek	534	-99	3.13	10	-99	1.18	40	0.40	1465	-99	0.63	23	190
44	2360	P	Qal	Cottonwood Creek Trib	271	41	5.03	20	1	1.48	70	1.00	874	1	1.00	54	1200
45	2520	P	Qal	Cottonwood Creek Trib	189	40	4.42	10	-99	1.60	100	0.90	817	-99	0.91	58	940
46	2364	CR	Tts	Cottonwood Creek Trib	107	26	2.78	-99	-99	1.16	-99	0.71	397	1	1.32	43	890
47	2365	P	Qal	Bunco Creek	210	20	3.46	10	-99	1.38	40	1.11	614	-99	0.92	46	840
48	2516	P	Qal	Peters Hills	190	41	5.56	-99	-99	1.68	40	1.30	2336	-99	1.08	54	890
49	715	P	Qal	Bunco Creek	252	20	4.83	10	14	1.44	90	0.93	650	6	0.82	48	340
50	714	P	Qal	Bunco Creek	171	17	7.09	-99	-99	1.21	40	0.61	1505	-99	0.43	44	730

:APPENDIX B--Results of geochemical analyses of samples taken from the Peters Creek Area during 1988 and 1989.

Map no.	Sample no.	Sample type	Material type	Sample location ID: Location Description	Pb ppm	Pd AFS ppb	Pt AFS ppb	Sb ppm	Sn ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Au fineness	Concen. weight (gms)
30	2167	P	Qal	Ramsdyke Creek	40	-99	-99	-99	NA	0.44	-99	-99	117	40	193	NA	117
31	319	P	Glacial	Wonder Gulch	12	-99	-99	-99	NA	0.77	-99	-99	77	-99	59	NA	85
31	2163	P	Qal	Wonder Gulch	20	-99	-99	-99	NA	1.04	-99	-99	101	-99	99	NA	84
32	2164	P	Qal	Wonder Gulch	8	-99	40	-99	NA	3.03	-99	-99	85	-99	94	NA	59
32	2165	P	Qal	Wonder Gulch	20	-99	-99	-99	NA	1.92	-99	-99	81	-99	111	NA	157
33	2162	G	Tps	Wonder Gulch	8	NA	NA	-99	NA	0.16	-99	-99	44	-99	22	NA	107
34	331	P	Tps	Poorman Creek	12	-99	-99	-99	NA	0.99	-99	-99	92	10	79	829	137
35	326	P	Tps	Dandy Gulch	14	-99	-99	-99	NA	1.84	-99	-99	58	-99	46	776	134
36	325	P	Tps	Dandy Gulch	10	-99	-99	-99	NA	0.59	10	-99	47	-99	53	NA	57
37	468	P	Tps	Dandy Gulch	16	-99	-99	-99	56	0.66	-99	-99	64	-99	48	NA	106
38	470	P	Qal	Poorman Creek	16	-99	-99	-99	99999	0.57	-99	-99	43	-99	36	NA	172
39	469	P	Tps	Poorman Creek	24	-99	-99	-99	15	0.42	-99	-99	66	-99	62	NA	122
40	471	P	Qal	Poorman Creek	-99	2	10	-99	190	0.23	-99	-99	27	-99	24	NA	182
41	467	P	Tps	Poorman Creek	24	-99	-99	15	19	0.31	-99	-99	56	-99	44	NA	199
42	304	P	Tps	Willow Creek	18	-99	10	-99	NA	0.33	-99	-99	113	-99	137	820	125
43	466	P	Tps	Poorman Creek	24	-99	-99	-99	58	1.20	-99	-99	77	-99	50	NA	74
44	2360	P	Qal	Cottonwood Creek Trib	16	-99	-99	-99	NA	0.53	-99	-99	159	-99	131	NA	42
45	2520	P	Qal	Cottonwood Creek Trib	16	-99	-99	-99	NA	0.41	-99	-99	151	-99	141	NA	75
46	2364	CR	Tts	Cottonwood Creek Trib	8	NA	NA	-99	NA	0.20	-99	-99	109	-99	84	NA	NA
47	2365	P	Qal	Bunco Creek	10	-99	-99	-99	NA	0.51	-99	-99	124	-99	114	NA	61
48	2516	P	Qal	Peters Hills	16	-99	-99	-99	NA	0.63	-99	-99	183	-99	158	NA	41
49	715	P	Qal	Bunco Creek	20	NA	NA	-99	-99	0.52	-99	-99	160	-99	95	705	NA
50	714	P	Qal	Bunco Creek	18	NA	NA	-99	-99	0.40	10	-99	106	-99	95	NA	NA