PE-86-14
P2

STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES

TIEKEL PROSPECT

VALDEZ QUADRANGLE

by

Cleland N. Conwell
Mining Engineer

PROSPECT EXAMINATION 86–14

OPEN FILED BY
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS
COLLEGE, ALASKA
DECEMBER, 1972

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INTRODUCTION

On September 30, 1972, I examined a group of claims owned by William H. Buck, P. O. Box 286, Glenallen, Alaska. The examination consisted of mapping the outcrop at a scale of 1" = 10 feet and taking 16 samples. The first three samples were used to identify rock types and the rest analyzed for metal content.

LOCATION

The claims are located on the east side of the Tiekel River near Milepost 52 on the Richardson Highway. The Richardson Highway starts at Valdez, Alaska and goes to Fairbanks. The claims are approximately 52 miles northeast of Valdez, 65 miles south of Glenallen, and about 1/4 mile east of the highway. Figure 1 shows approximate location of the prospect on a portion of the Valdez B-4 quadrangle sheet.

TOPOGRAPHY

The prospect is located in the very rugged mountains that are part of the Chugach coastal range bordering the Gulf of Alaska. Part of the waters here flow south into Prince William Sound and other streams flow east into the Copper River. The Tiekel River is a tributary of the Copper River.

GEOLOGY

The oldest rocks in the district include argillite, graywacke, quartzite, banded argillite and quartzite with limestone. The sediments are interbedded with flows and tuffs and have been intruded by granitic rocks, chiefly granite or quartz diorite. All sedimentary rocks have been metamorphosed to some degree. The older rocks are believed to be of early Carboniferous (Mississippian) age. In the southern part of the Valdez quadrangle there is a great thickness of slate and graywacke beds which are folded, contain quartz veins, and have been intruded by sills and dikes of granite-to-quartz diorite composition. These sedimentary rocks are believed to be of Mesozoic age, possibly Triassic or Late Cretaceous.

The oldest and predominant rock in the immediate area of the prospect is a chlorite-quartz schist. However, it is believed to be the same rock described by Moffit (1935) as the slate-graywacke series of Mesozoic age. The schist has been intruded by the sulphide-bearing quartz vein. The quartz vein has been offset by faulting and subsequent intrusion of a younger granitic type rock (fig. 2). The predominant minerals are quartz and plagioclase feldspar. The rock is classified as a quartz diorite.

In the area west of the highway there were several small high grade gold mines. Moffit (1935, p. 26) noted: "Furthermore, past experience would indicate that the Mesozoic slate-graywacke rocks give greater promise of yielding gold than older Carboniferous(?) rocks, though why this should be so is not evident.", and "In all the localities where gold is known the slate and graywacke of that vicinity are cut by dikes and sills of quartz diorite porphyry or granite."

Figure 2 shows the location of the quartz vein, schist and quartz diorite. The pattern therefore would fit the general pattern of gold bearing quartz veins in the district. The approximate location of other known prospects within a six mile radius of the property is shown on Figure 1.

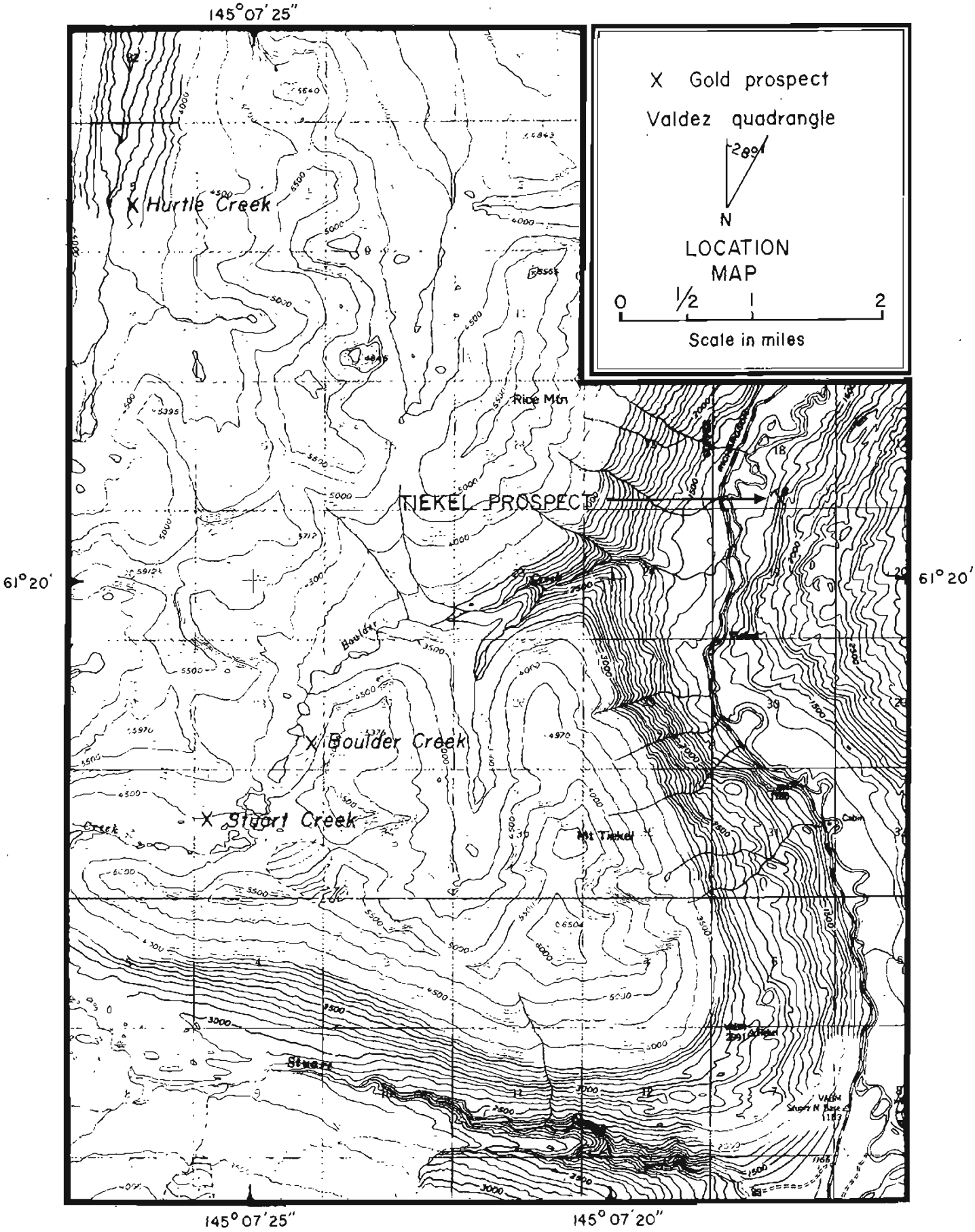
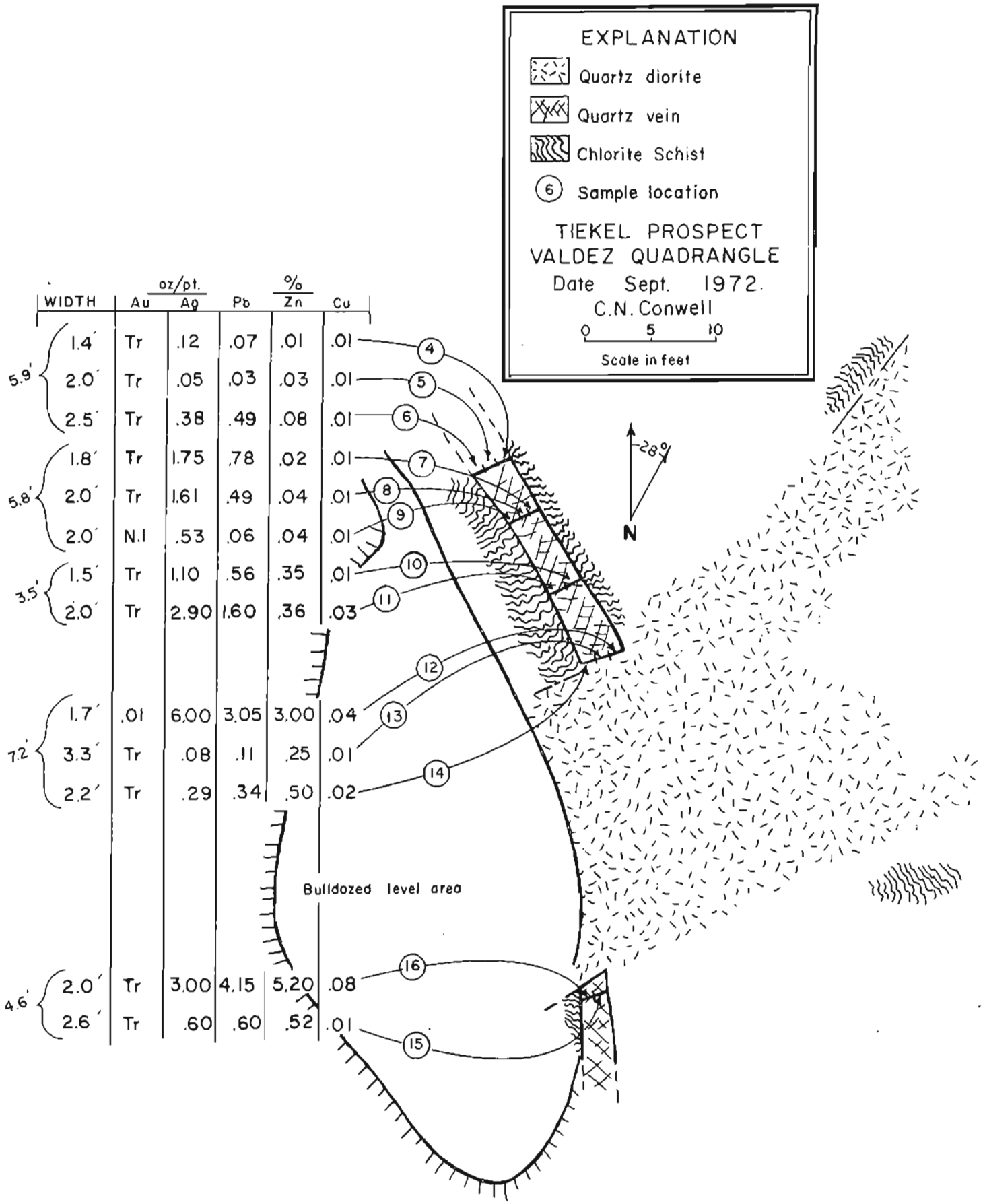

145°07'25"
X Gold prospect
Valdez quadrangle
N
LOCATION MAP
0 1/2 1 2
Scale in miles
X Hurtle Creek
Ridge Mtn
TIEKEL PROSPECT
61°20'
61°20'
Boulder
X Boulder Creek
X Stuart Creek
Creek
Mt Tiekel
Cabin
Stuart
145°07'25"
145°07'20"

Figure 1



	WIDTH	Au (oz/pt.)	Ag (oz/pt.)	Pb (%)	Zn (%)	Cu (%)
5.9'	1.4'	Tr	.12	.07	.01	.01
	2.0'	Tr	.05	.03	.03	.01
	2.5'	Tr	.38	.49	.08	.01
5.8'	1.8'	Tr	1.75	.78	.02	.01
	2.0'	Tr	1.61	.49	.04	.01
	2.0'	N.I	.53	.06	.04	.01
3.5'	1.5'	Tr	1.10	.56	.35	.01
	2.0'	Tr	2.90	1.60	.36	.03
7.2'	1.7'	.01	6.00	3.05	3.00	.04
	3.3'	Tr	.08	.11	.25	.01
	2.2'	Tr	.29	.34	.50	.02
4.6'	2.0'	Tr	3.00	4.15	5.20	.08
	2.6'	Tr	.60	.60	.52	.01

Figure 2

SAMPLES

Sample No. 1 was taken of the principal rock type. The mineral assemblage of this rock, determined from a thin section analysis and X-ray diffraction, are chlorite and quartz. Samples 2 and 3 were taken of the quartz-diorite. The principal minerals were determined from thin section analysis to be quartz and plagioclase feldspar. An X-ray diffraction pattern also confirmed the presence of quartz and the plagioclase feldspars. The X-ray mineral identifications were made by Carol Zdanovec, of the Alaska Division of Geological and Geophysical Surveys, Fairbanks, Alaska.

The vein was sampled in 4 places with channels cut to extract about 5 pounds of rock per lineal foot. All samples were assayed by Donald Stein, assayer, Alaska Division of Geological and Geophysical Surveys, Fairbanks, Alaska. The location of the samples, width and assay values to 2 decimal places are shown on Figure 2. Table 1 is the assay report.

The sulphide minerals occur as massive pods within the quartz vein. The predominant color of the sulphides is black. The galena (lead sulphide) is easily recognized by color and cleavage. Sphalerite (zinc sulphide) is recognizable in the hand specimen. However, the assays indicate low lead and silver values. Therefore a 100 gram split of the best sample was taken for a heavy media separation. The heavy fraction was analyzed by Carol Zdanovec. The major heavy mineral is arsenopyrite. The minerals as determined by X-ray diffraction are, in order of abundance, quartz, arsenopyrite, galena and sphalerite. No silver or copper minerals were determined by the X-ray patterns. The fractions with chemical assays are listed below.

ASSAY

Fraction	Weight in Gram	Ounces Per Ton		Weight Per Cent		
		Gold	Silver	Copper	Lead	Zinc
Heavy	14.0	0.042	20.0	0.045	2.0	5.0
Intermediate	37.6	0.028	8.0	0.045	2.3	4.9
Light	48.4	0.006	1.91	0.015	0.915	0.950

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Rev. 10/67

Report No. 2983

STATE OF ALASKA
Department of Natural Resources
DIVISION OF MINES AND GEOLOGY
Box C, College, Alaska 99701

Date of Report 11/17/72

LABORATORY ANALYSIS REPORT

For Cle Conwell Address Div. of Geological Survey - College

Number of Samples 13 Date Sample Received 10/4/72

Work Done: (for Analyst see below)
A. X-ray flourescence quant. ☐ semi-quant. ☐
B. X-ray diffraction ☐
C. Spectrographic quant. ☐ semi-quant. ☐
D. Spectroscopic ☐
E. Atomic absorption quant. ☐ semi-quant. ☒
F. Fire assay ☐ G. Microscopic examination ☐
H. Other (Specify) ☐
I. Ultraviolet light ☐

LABORATORY NUMBER	SAMPLE MARKED	ANALYSIS OR IDENTIFICATION				
		E. Ounces Per Ton		E. Weight Per Cent		
		Gold	Silver	Copper	Load	Zinc
40904	129	Trace	0.115	0.006	0.071	0.008
40905	130	0.002	0.045	0.011	0.028	0.025
40906	131	0.006	0.38	0.007	0.485	0.075
40907	132	0.005	1.75	0.014	0.780	0.018
40908	133	0.003	1.61	0.009	0.490	0.035
40909	134	Nil	0.053	0.008	0.055	0.035
40910	135	0.002	1.10	0.013	0.560	0.350
40911	136	0.006	2.9	0.025	1.60	0.360
40912	137	0.012	6.0	0.037	3.05	3.00
40913	138	0.001	0.080	0.014	0.110	0.250
40914	139	Nil	0.29	0.020	0.340	0.500
40915	140	0.002	3.0	0.075	4.15	5.20
40916	141	0.005	0.60	0.009	0.600	0.520

E. Trace of gold means less than 0.01 troy ounces per ton.
Nil gold means less than 0.001 troy ounces per ton.

Accuracy of the atomic absorption analysis for gold, silver, copper, lead, and zinc is ±10% of the reported value.

Your sample(s) was tested for radioactivity; no significant radioactivity was detected.

E. Donald R. Stein Donald R. Stein
ANALYST & WORK DONE

ANALYST & WORK DONE

ANALYST & WORK DONE

APPROVED: T. C. Mowatt
LABORATORY SUPERVISOR
Thomas C. Mowatt

NOTE: Samples discarded after 60 days and pulps after 6 months unless instructed otherwise.

CONCLUSIONS

1. The assay values are too low to consider that the prospect has any immediate economic value.

2. The geologic setting is similar to that of the high grade gold veins farther west.

RECOMMENDATION

1. The only additional work that seems to be warranted at this time is the possibility of tracing the vein laterally in each direction from the present exposure. The cuts should be hand dug trenches at approximately 100 feet intervals along the strike. If the vein persists for several hundred feet additional samples should be taken along the strike to determine if there is an increase in the values.

REFERENCES CITED

Moffit, F. H., Geology of the Tonsina District, Alaska: U. S. Geol. Survey Bull. 866, 1935, 38 p.

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Report No. 3004

STATE OF ALASKA
Department of Natural Resources
DIVISION OF MINES AND GEOLOGY
Box C, College, Alaska 99701

Date of Report November 27, 1972

LABORATORY ANALYSIS REPORT

For Cle Conwell

Address Div. of Geological Survey - College

Number of Samples 3

Date Sample Received 11/20/72

Work Done: (for Analyst see below)
A. X-ray flourescence quant. ☐ semi-quant. ☐
B. X-ray diffraction ■
C. Spectrographic quant. ☐ semi-quant. ☐
D. Spectroscopic ☐
E. Atomic absorption quant. ☐ semi-quant. ☐
F. Fire assay ☐ G. Microscopic examination ☐
H. Other (Specify) ☐
I. Ultraviolet light ☐

LABORATORY NUMBER	SAMPLE MARKED	ANALYSIS OR IDENTIFICATION
		B. Identification
40972	147	Minor
		Sphalerite
		Galena
		Major
		Quartz
		Trace
		Arsenopyrite
40973	148	Major
		Quartz
		Minor
		Galena
		Sphalerite
40974	146	Major
		Arsenopyrite
		Galena
		Sphalerite
		Quartz

B. Carol Zdanovec Carol Zdanovec
ANALYST & WORK DONE

ANALYST & WORK DONE

ANALYST & WORK DONE

APPROVED: T C Mowatt
LABORATORY SUPERVISOR

Thomas C. Mowatt

NOTE: Samples discarded after 60 days and pulps after 6 months unless instructed otherwise.

DM-11
Rev. 10/67

Report No. 3003

STATE OF ALASKA
Department of Natural Resources
DIVISION OF MINES AND GEOLOGY
Box C, College, Alaska 99701

Date of Report November 24, 1972

LABORATORY ANALYSIS REPORT

For Cle Conwell

Address Div. of Geological Survey - College

Number of Samples 3

Date Sample Received 11/20/72

Work Done: (for Analyst see below)
A. X-ray flourescence quant. ☐ semi-quant. ☐
B. X-ray diffraction ☐
C. Spectrographic quant. ☐ semi-quant. ☐
D. Spectroscopic ☐
E. Atomic absorption quant. ☐ semi-quant. ☒
F. Fire assay ☐ G. Microscopic examination ☐
H. Other (Specify) ☐
I. Ultraviolet light ☐

LABORATORY NUMBER	SAMPLE MARKED	ANALYSIS OR IDENTIFICATION				
		E. Ounces Per Ton		E. Weight Per Cent		
		Gold	Silver	Copper	Lead	Zinc
40969	143	0.042	20.0	0.045	2.0	5.0
40970	144	0.028	8.0	0.045	2.3	4.9
40971	145	0.006	1.91	0.015	0.915	0.950

Accuracy of the atomic absorption analysis for gold, silver, copper, lead, and zinc is ±10% of the reported value.

Your sample(s) was tested for radioactivity; no significant radioactivity was detected.

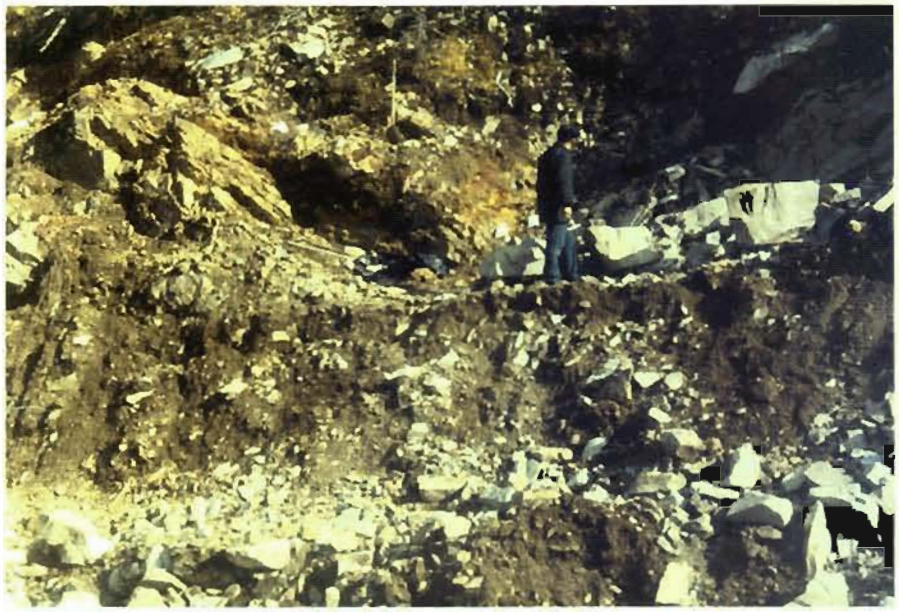
E. Donald R. Stein
ANALYST & WORK DONE

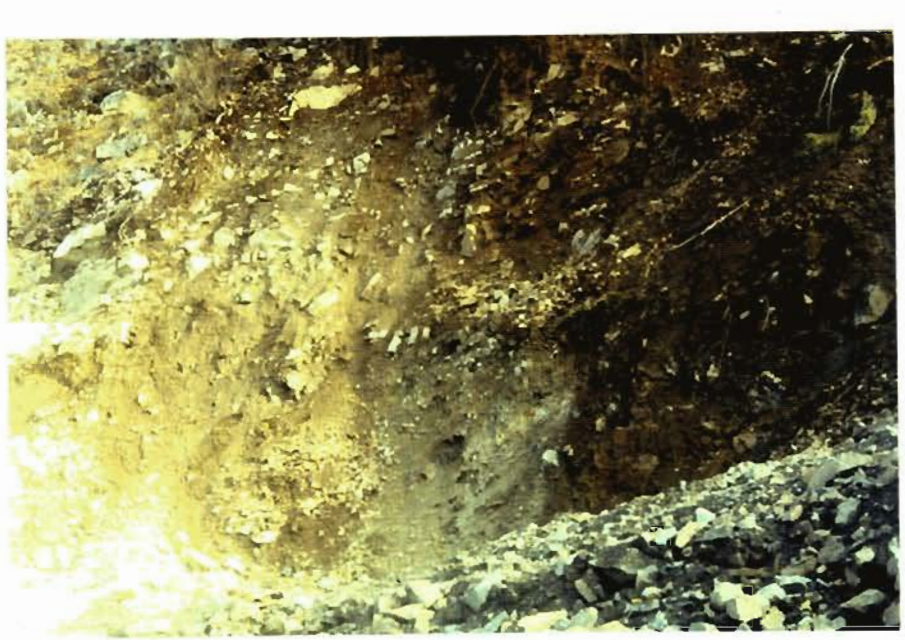
ANALYST & WORK DONE

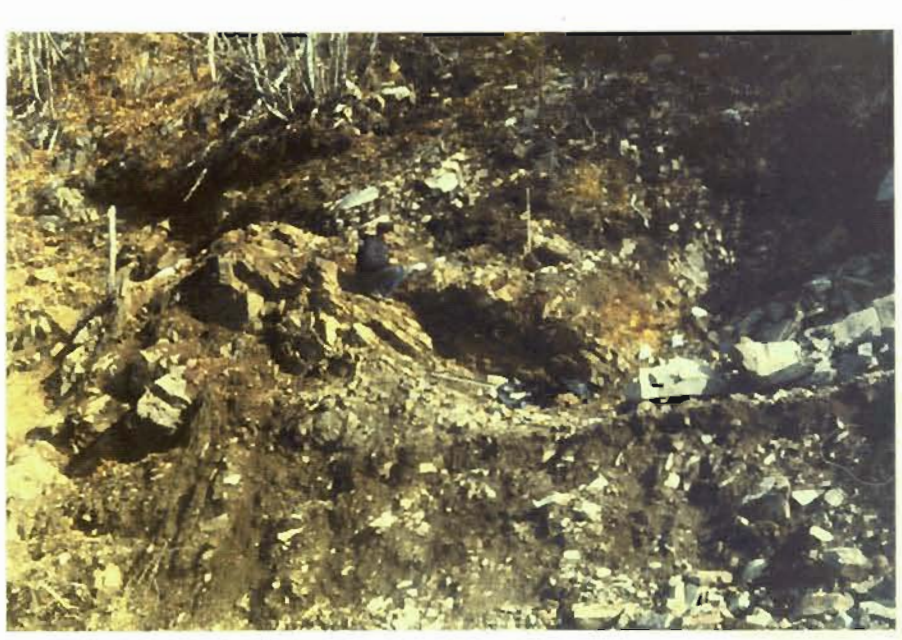
ANALYST & WORK DONE

APPROVED:
LABORATORY SUPERVISOR
Thomas C. Mowatt

NOTE: Samples discarded after 60 days and pulps after 6 months unless instructed otherwise.







BUCK PROSPECT

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