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UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

GEOCHEMICAL DATA FROM THE NABESNA C-5 QUADRANGLE, ALASKA

By

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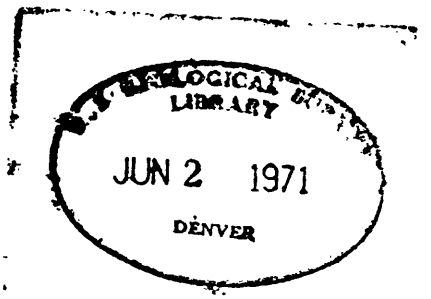

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This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards or nomenclature.

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MAP EXPLANATION

Nabesna C-5 quadrangle, Alaska

Stream sediment sample locality with map number on upstream side. Darkened quadrants indicate anomalous concentrations of Ag and/or Au, Cu, Mo, Pb and/or Zn, in clockwise order from top. Example 61 is anomalous in Cu and Pb. See Table 1 for analytical values.

Rock sample locality and map number. See Table 2 for analytical values and description of samples.

Altered zone characterized by limonite staining from the weathering of disseminated sulfides and iron carbonate-rich sedimentary rocks.

Syenite gneiss within dioritic gneiss.

Localities described in "Economic Geology Notes" section this report.

TABLE 1

Analyses of stream sediments
Nabesna C-5 quadrangle, Alaska

Limits of determination shown in parentheses under element.

Map No.	Field No.	Concentration (ppm) Ag (.5)	Au (.02)	B (10)	Cr (5)	Cu (5)	Mo (5)	Ni (5)	Pb (10)	V (10)	Zn (200)
1	69-PL-34	N	L*	30	100	50	N	70	L	200	N
2	69-PL-36	N	L	20	300	150	10	150	10	300	L
3	69-PL-37	N	L*	L	150	30	L	100	L	300	L
4	69-AMn-44	N	L	30	150	100	N	70	15	300	L
5	69-PL-32	N	L	L	100	70	7	70	L	300	N
6	69-AMn-41	N	L	10	70	70	N	70	L	200	L
7	69-AMn-42	N	L*	15	150	70	N	70	L	300	L
8	69-AMn-40	N	L	L	150	50	N	50	N	150	N
9	69-ARh-35	N	L*	30	150	50	N	50	15	300	L
10	69-ARh-36	N	L*	30	150	50	N	70	L	300	N
11	69-ARh-34	N	L*	50	100	70	N	50	10	300	L
12	69-AMn-37	N	L	10	70	70	N	50	10	200	L
13	69-PL-31	N	L*	L	300	150	7	200	L	200	L
14	68-Jn3-2	N	L	30	150	300	N	150	L	300	200
15	68-Jn3-1	N	L	15	500	500	N	150	L	500	L
16	68-Jn4-1	N	L	15	200	70	N	70	10	150	L
17	68-Jn5-1	N	L	20	500	70	N	100	15	300	L
18	68-ARh-383	N	L	10	150	150	L	70	15	200	N
19	69-PL-1	N	L	30	150	50	L	100	15	200	N
20	69-PL-2	N	L	10	300	200	5	150	15	200	L
21	69-PL-3	N	L	15	150	100	L	50	10	300	L
22	69-PL-4	N	L	15	150	200	L	50	30	200	L
23	69-PL-5	N	L	10	200	30	N	70	15	150	N
24	68-ARh-382	L	L	15	200	100	7	150	70	200	L
25	69-PL-9	N	L	10	200	70	L	150	70	200	L
26	69-PL-8	.5	L	10	200	50	L	150	30	200	N
27	69-PL-7	N	L	10	200	70	L	150	15	200	N
28	69-PL-6	N	L*	15	150	150	L	100	20	200	N
29	68-Jn3-6	N	L	30	300	100	N	100	10	300	L
30	68-Jn3-8	N	I.S.	70	500	70	N	100	L	300	L
31	68-Jn3-4	N	L*	30	200	70	N	100	10	300	L
32	69-ARh-30	N	L*	50	100	50	N	50	10	300	L
33	69-ARh-22	N	L*	10	200	70	L	150	10	200	L
34	69-ARh-20	N	L*	10	150	70	L	150	10	300	L
35	69-ARh-19	N	L*	30	150	70	N	70	10	200	N

TABLE 1, cont.

Map No.	Field No.	Concentration (ppm) Ag (.5)	Au (.02)	B (10)	Cr (5)	Cu (5)	Mo (5)	Ni (5)	Pb (10)	V (10)	Zn (200)
36	69-PL-30	N	L	70	150	50	N	70	10	300	L
37	69-PL-28	N	L*	70	150	70	N	70	L	300	L
38	69-PL-29	N	L	70	150	70	N	70	15	300	N
39	69-PL-23	N	L	30	500	70	N	150	L	300	L
40	69-PL-24	N	L	30	150	70	N	70	10	300	N
41	69-PL-21	N	L	50	70	70	L	70	15	200	N
42	69-PL-18	N	L	30	150	70	L	100	10	300	L
43	69-PL-16	N	L	30	150	70	L	100	15	150	L
44	69-PL-14	N	L	15	200	150	L	100	L	300	L
45	69-PL-13	N	L	15	100	100	L	70	15	150	N
46	69-PL-12	N	L	20	300	150	L	150	15	300	L
47	69-PL-11	N	L	15	150	100	L	100	15	150	N
48	69-ARh-27	N	L	70	150	70	L	100	50	200	N
49	69-PL-27	N	L	30	150	70	N	70	10	300	L
50	69-PL-25	N	L*	30	150	70	N	70	L	200	L
51	69-PL-26	N	L	50	150	70	N	50	10	200	L
52	69-ARh-28	N	L	70	150	70	N	70	L	300	L
53	70-RL-43	N	L	30	150	150	L	70	15	300	N
54	70-RL-42	N	L	50	150	100	L	70	15	300	N
55	70-RL-45	N	.04	50	150	100	L	70	15	300	N
56	70-RL-44	N	.04	300	150	100	L	100	15	300	N
57	70-RL-46	N	L	30	150	70	L	70	20	300	N
58	70-RL-47	N	L	150	700	100	L	100	15	300	N
59	70-RL-60	N	L	100	1500	150	L	150	15	500	N
60	70-RL-61	N	L	70	150	150	L	100	15	500	N
61	70-RL-62	N	L	30	150	200	L	70	50	500	N
62	70-PCL-34	L	L	70	150	200	L	100	50	300	N
63	70-AMn-47	N	L	30	150	100	L	70	20	300	N
64	70-RL-58	N	L	300	300	150	L	150	15	300	N
65	70-RL-59	N	L	70	150	150	L	70	20	300	N
66	70-RL-57	N	L	100	150	150	L	150	20	300	N
67	70-RL-56	N	L	70	150	150	L	100	50	300	L
68	70-RL-55	N	L	200	150	150	5	100	50	300	L
69	70-RL-54	N	L	200	150	150	7	70	50	500	L
70	70-RL-53	N	L	150	150	70	5	100	30	300	N
71	70-RL-52	N	L	100	150	150	5	100	30	500	L
72	70-RL-51	N	L	70	300	150	L	100	50	300	L
73	70-RL-50	N	L	150	150	150	L	100	30	300	L
74	70-RL-49	N	L	70	150	150	L	70	20	300	N
75	70-RL-48	N	L	300	150	150	L	100	30	300	L

TABLE 1, cont.

Map No.	Field No.	Concentration (ppm) Ag (.5)	Au (.02)	B (10)	Cr (5)	Cu (5)	Mo (5)	Ni (5)	Pb (10)	V (10)	Zn (200)
76	70-ARh-17	N	L	50	200	100	L	100	15	500	N
77	70-ARh-18	N	L*	50	150	100	L	100	15	500	N
78	70-ARh-19	N	.3	30	150	70	N	100	10	300	N
79	70-ARh-20	N	L	100	150	150	L	100	20	300	N
80	70-PCL-16	N	L*	70	700	150	5	150	20	500	N
81	70-RL-15	N	L	70	700	100	L	150	L	500	N
82	70-RL-14	N	L	30	700	150	5	150	15	500	L
83	70-RL-16	N	L	50	700	150	5	150	20	500	L
84	70-PCL-10	N	L	10	1500	200	L	700	10	500	N
85	70-RL-13	N	L*	70	300	150	5	150	30	300	L
86	70-RL-12	N	L	50	150	150	L	100	50	300	L
87	70-RL-17	N	L	70	300	150	5	150	10	500	N
88	70-RL-11	N	L	50	200	150	5	150	20	300	N
89	70-RL-8	N	L	50	200	100	L	150	10	300	N
90	70-RL-9	N	L*	50	150	150	L	100	20	300	N
91	70-RL-10	N	IS	50	150	150	L	70	20	300	L
92	70-PCL-5	N	L	30	700	100	L	200	L	500	N
93	70-PCL-4	N	L	70	150	150	L	100	10	300	N
94	70-PCL-3	N	L*	50	150	100	7	100	10	300	N
95	70-PCL-1	N	L	50	300	150	L	150	20	300	N
96	70-ARh-21	N	L	70	150	100	L	100	15	300	L
97	70-RL-18	N	L	50	300	150	5	150	20	300	N
98	70-RL-19	N	L*	30	700	150	5	150	15	500	N
99	70-RL-30	N	L	100	200	100	L	100	15	300	N
100	70-RL-20	N	L*	70	150	100	L	70	10	300	N
101	70-RL-21	N	L	70	150	150	L	100	15	300	N
102	70-RL-22	N	L*	70	150	150	L	100	15	300	N
103	70-RL-23	N	IS	30	150	100	L	70	15	300	N
104	70-RL-19	N	L*	30	700	150	5	150	15	500	N
105	70-RL-28	N	L	50	300	150	L	100	15	1000	N
106	70-RL-24	N	L*	70	150	100	7	100	15	300	N
107	70-RL-25	N	L	30	150	70	L	70	10	300	N
108	70-RL-63	N	L	30	70	70	N	30	15	300	N
109	70-RL-36	N	L	70	150	70	L	70	20	300	N
110	70-RL-27	N	L*	70	150	150	L	100	30	300	L
111	70-PCL-41	N	L	100	150	150	L	100	20	300	N
112	70-PCL-40	N	L	100	150	150	L	150	20	300	N
113	70-PCL-39	N	L	150	150	150	5	100	30	300	L
114	70-PCL-42	N	L	100	150	150	L	70	30	300	N
115	70-PCL-38	N	L	100	150	150	5	100	30	300	L

TABLE 1, cont.

Map No.	Field No.	Concentration (ppm) Ag (.5)	Au (.02)	B (10)	Cr (5)	Cu (5)	Mo (5)	Ni (5)	Pb (10)	V (10)	Zn (200)
116	70-PCL-36	N	L	100	150	150	5	100	20	300	N
117	70-PCL-37	N	L	70	300	100	L	100	20	300	L
118	69-DW-122	N	L	70	150	50	N	50	10	200	N
119	69-DW-123	N	L	30	70	30	L	70	L	200	N
120	67-ACH-200	N	L	50	200	150	N	100	20	300	N
121	67-ACH-199	N	L	50	150	100	N	70	10	200	N
122	67-ACH-198	N	L	30	200	150	N	50	L	150	N
123	67-ACH-197	N	L	30	200	100	N	50	L	200	N
124	67-ACH-196	N	L	500	150	150	N	70	30	200	L
125	69-DW-121	L	L	70	70	70	N	50	20	150	N
126	67-ACH-195	N	L	100	150	150	N	70	30	150	L
127	67-ACH-194	N	L	70	150	100	N	70	10	200	N
128	69-DW-127	N	L	100	150	70	L	100	10	200	L
129	69-DW-126	N	L	70	100	70	L	70	10	200	L
130	69-ARh-252	N	L	10	100	100	L	50	10	200	L
131	69-ARh-250	L	L	15	100	70	L	50	L	300	L
132	69-DW-128	L	L	10	150	70	L	100	L	200	N
133	69-ARh-253	N	L	15	150	70	L	100	N	200	N
134	67-ACH-229	N	0.1	70	100	70	N	70	20	300	N
135	67-ACH-228	N	L	70	100	70	N	70	20	300	N
136	67-ACH-227	N	L	100	150	70	N	70	20	300	N
137	67-ACH-220	N	L	70	150	100	5	70	20	300	L
138	67-ACH-223	N	L	50	150	70	7	50	10	300	L
139	67-ACH-226	N	L	100	150	70	N	100	15	300	N
140	67-ACH-225	N	L	50	100	70	N	70	15	200	N
141	67-ACH-224	.7	L	50	100	100	10	100	10	300	200
142	67-ACH-222	N	.03	20	70	50	N	30	15	200	N
143	67-ACH-221	N	L*	30	200	150	N	100	10	300	N
144	67-ACH-230	N	L	100	150	70	N	70	15	200	N
145	67-ACH-231	N	.04	20	200	200	N	150	15	500	N
146	67-ACH-237	N	L	20	200	100	N	150	L	500	N
147	67-ACH-247	N	.03	30	300	150	N	100	20	500	L
148	67-ACH-238	N	.02	30	500	200	N	150	L	700	N
149	67-ACH-240	N	.06	20	150	100	N	100	15	300	N
150	67-ACH-241	.7	L	50	150	150	10	70	50	300	L
151	67-ACH-242	.5	.04	50	150	150	10	100	20	300	L
152	67-ACH-243	N	L	50	150	150	N	100	20	300	L
153	67-ACH-244	N	L	50	200	100	N	100	10	500	N
154	67-ACH-245	N	L	70	200	100	N	100	10	300	L
155	67-ACH-246	.5	.04	100	100	100	7	70	15	500	L

TABLE 1, cont.

Map No.	Field No.	Concentration (ppm) Ag (.5)	Au (.02)	B (10)	Cr (5)	Cu (5)	Mo (5)	Ni (5)	Pb (10)	V (10)	Zn (200)
156	67-ACH-239	N	L	10	500	150	N	150	L	700	N
157	67-ACH-248	N	0.1	10	100	30	N	70	10	200	N
158	67-ACH-249	N	.06	20	200	50	N	150	10	300	N
159	67-ACH-250	N	.02	30	150	100	N	100	10	300	N
160	67-ACH-253	N	L	50	300	100	N	100	10	500	N
161	67-ACH-252	N	L	30	300	50	N	100	L	500	N
162	67-ACH-251	N	L	20	300	150	N	150	L	500	N
163	69-AMn-5	N	L	20	150	70	5	70	10	150	L
164	69-ARh-9	N	L	20	150	70	5	100	15	150	L
165	69-ARh-8	N	L	15	150	70	L	70	15	70	N
166	69-ARh-10	N	L*	20	200	100	L	70	15	200	N
167	68-ARh-327	N	L	L	500	100	N	100	L	300	N
168	68-ARh-326	N	L	10	300	100	L	70	10	300	L
169	68-CWK-104	N	L	10	200	50	L	100	15	200	N

L = detected but below limit of determination; * = usual limits of determination do not apply due to use of different sample weight; N = not detected; IS = insufficient sample.

Gold by atomic absorption. Analysts: King, H.D.; Meier, A.L.; Miller, R.L.; Murrey, D.G.; Roemer, T.A.; Tripp, R.B.

Other elements by semiquantitative spectrographic analysis. Analysts: Curry, K.J.; Hopkins, R.T. Jr.; Motooka, J.

TABLE 2

Analyses of rocks, alteration zones and veins
Nabesna C-5 quadrangle, Alaska

Limits of determination shown in parentheses under element.

Map No.	Field No.	Concentration (ppm) Ag (.5)	Au (.02)	B (10)	Cr (5)	Cu (5)	Mo (5)	Ni (5)	Pb (10)	V (10)	Zn (200)
170	69-AMn-38	N	L	L	30	50	L	15	N	200	L
171	69-ARh-33	N	L	30	70	30	N	30	10	150	N
172	70-AMn-48	N	L	300	150	500	7	30	10	700	N
173	70-PCL-35	N	L	30	70	70	L	20	20	300	N
174	67-N-34	N	L	30	15	30	N	50	15	200	N
175	67-N-19	N	L	20	50	70	20	30	L	300	N
176	67-N-17	.5	.05	20	70	2000	100	200	10	700	N
177	67-N-20	N	.06	L	70	50	N	50	10	1000	N
178	67-N-23	N	L	50	5	150	N	15	20	150	N
179	67-N-24	N	L	20	150	150	N	100	10	300	L
180	67-S-98	3	2.2	15	30	700	50	150	20	300	300
181	67-S-97	3	L	30	10	50	L	7	50	100	N
182	67-S-94	1000	.06	L	5	10,000	5	10	20,000	20	10,000
183	67-S-93	1	.03	10	15	100	7	10	20	200	N
184	67-S-88	20	.4	N	10	>20,000	N	15	20	20	700
185	67-S-89	.5	L	10	100	500	50	150	10	1000	N
186	69-AMn-33	N	L	L	50	100	L	30	L	200	L
187	69-ARh-15	L	L	10	15	300	7	15	L	300	L
188	68-AMn-295	N	.04	L	70	100	N	50	20	700	N
189	68-AMn-298	L	L	L	7	50	L	5	30	150	N
190	68-CWK-103	N	L	N	5	15	N	5	L	100	N

L = detected, but below limit of determination; N = not detected.

Gold by atomic absorption. Analysts: Friskin, R.; Meier, A.L.; Miller, R.L.; Murrey, D.G.; Roemer, T.A.; Tripp, R.B.

Other elements by semiquantitative spectrographic analysis. Analysts: Curry, K.J.; Motooka, J.; Siems, David.

Description of Samples

Map No.	Elevation	Description
170	4060'	Composite chip sample over 4 feet of stained quartz mica schist.
171	5000'	Grab sample of stained iron carbonate-rich siltstone.
172	4560'	Random chip sample of iron-stained hornblende diorite.
173	5200'	Grab sample of 3 foot thick sulfide-bearing diorite dike.
174	5450'	Grab sample of pyrite-bearing basalt at fault contact with gneissic diorite.
175	6200'	Grab sample of altered green siltstone.
176	6350'	Grab sample of sulfide-bearing diorite dike.
177	6550'	Grab sample of brecciated pyrite-bearing siltstone.
178	6750'	Grab sample of iron-stained siltstone.
179	6920'	Grab sample of fine-grained diorite.
180	5150'	Float of a cherty boulder with pyrite-rich sulfide masses.
181	5775'	Grab sample of pyrite-bearing leucodiorite.
182	6000'	Random chip sample of a 3 foot thick sulfide-bearing copper-stained quartz vein.
183	5900'	Random chip sample of a 2 foot thick pyrite-rich zone along intrusive contact with thin-bedded limestone.
184	4600'	Float of pyrite-bearing vein quartz.
185	4600'	Float of pyrite-bearing hornfelsed sedimentary rocks.
186	5580'	Random chip sample over a 10 foot thick altered zone in foliated biotite diorite.
187	5350'	Composite grab sample across 5 feet of iron-stained pyrite-bearing leucodiorite.
188	5600'	Random chip sample of ½ inch thick, sulfide-bearing veinlets in amphibolite.
189	4600'	Random grab sample of a 20 foot wide altered zone in epidotized gneissic volcanics.
190	4500'	Random grab sample across 600 feet of altered volcanics.

ANALYTICAL NOTES

Nabesna C-5 quadrangle, Alaska

1. All stream sediment analyses performed on -80 mesh fraction.

2. In all analyses, excepting gold, the results are reported to the nearest number in the series 0.1, 0.15, 0.2, 0.3, 0.5, 0.7, . . .

3. Copper, lead, molybdenum, and zinc are considered anomalous if they are reported in concentrations approximating, or greater than, 3 times their mean background. With the exception of amygdaloidal basalt terrane, mean background in the area closely approximates average crustal abundance: i.e. copper, 55 ppm; lead, 12.5 ppm; molybdenum, 1.5 ppm; zinc, 70 ppm. Background concentrations for copper and certain other elements in amygdaloidal basalt terrane are considerably higher than crustal average, hence samples 143, 145, 148, 150 and 156 from streams draining amygdaloidal basalts and with copper contents of 150 - 200 ppm probably should not be considered anomalous.

4. Gold and silver are considered anomalous for all values at or above their limits of determination since these limits are greater than 3 times the average crustal abundance for these metals.

5. As,Ba, Be, Bi, Ca, Cd, Fe, La, Mg, Mn, Nb, Sb, Sc, Sn, Sr, Ti, W, Y and Zr were also looked for and significant anomalies are as follows:

Sample No.	Anomalies (values in ppm)
105	Sc 100, Sr 1500
151	Ba 5000
173	Sr 1500
180	Ba 3000
181	W 100
182	As 2000, Cd 100, Sb 100
184	Bi 100

ECONOMIC GEOLOGY NOTES

Nabesna C-5 quadrangle,
Alaska

1. Caved adit driven to intersect a gold-bearing vein associated with an 8-foot thick trachyte dike in dioritized greenstone gneiss. Moffit (U.S. G.S. Bull.989-D, p.203) reports, "Stringers of quartz, calcite, pyrite, galena, and sphalerite from ¼ inch to 2 inches thick form a vein zone ranging from 6 to 12 inches in width."

2. Adit driven to intersect a molybdenite-bearing pegmatite dike in syenite gneiss. Occurring as plates and masses up to 2 inches across, the molybdenite is most abundant in fractured portions of the pegmatite.

3. Corundum occurrence. Sporadic corundum crystals, up to 8 cm long occur in pegmatiites within syenite gneiss. See Richter, U.S.G.S. P.P.700-C, pp C98-C102.

4. Placer gold reportedly (Moffit, U.S.G.S. Bull.917B, p.155) found in the gravels of Trail Creek.