

Division of Geological & Geophysical Surveys

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**MAJOR OXIDE, MINOR OXIDE, TRACE ELEMENT, RARE-EARTH ELEMENT,
TRACE GEOCHEMICAL, AND COAL QUALITY DATA FROM ROCKS
COLLECTED IN EAGLE AND TANACROSS QUADRANGLES, ALASKA
IN 1999, 2000, and 2001**

by

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CONTENTS

	PAGE
INTRODUCTION	1
ANALYTICAL METHODS	1

TABLES

TABLE 1. LOCATION AND DESCRIPTION OF ROCK SAMPLES COLLECTED IN THE EAGLE AND TANACROSS QUADRANGLES FOR TRACE ELEMENT GEOCHEMICAL ANALYSES.	2
TABLE 2. CONCENTRATION OF TRACE ELEMENTS IN ROCK SAMPLES COLLECTED IN THE EAGLE AND TANACROSS QUADRANGLES	5
TABLE 3. LOCATION AND DESCRIPTION OF ROCK SAMPLES COLLECTED IN THE EAGLE AND TANACROSS QUADRANGLES FOR MAJOR OXIDE, MINOR OXIDE, TRACE, AND RARE-EARTH ELEMENT ANALYSES	11
TABLE 4. CONCENTRATION OF MAJOR OXIDES, MINOR OXIDES, AND TRACE ELEMENTS IN ROCK SAMPLES COLLECTED IN THE EAGLE AND TANACROSS QUADRANGLES.	17
TABLE 5. CONCENTRATION OF RARE-EARTH ELEMENTS IN ROCK SAMPLES COLLECTED IN THE EAGLE AND TANACROSS QUADRANGLES	29
TABLE 6. PROXIMATE AND ULTIMATE COAL ANALYSES FROM ROCK SAMPLE COLLECTED IN THE EAGLE A-2 QUADRANGLE	30
TABLE 7. DETECTION LIMITS FOR TRACE-ELEMENT GEOCHEMICAL ANALYSES	31
TABLE 8. DETECTION LIMITS FOR MAJOR-OXIDE, MINOR-OXIDE, TRACE, AND RARE-EARTH ELEMENT ANALYSES	32
TABLE 9. DETECTION LIMITS FOR RARE-EARTH ELEMENT ANALYSES	33

SHEETS

SHEET 1. LOCATION MAP OF ROCK SAMPLES ANALYZED FOR TRACE ELEMENT GEOCHEMISTRY, AND MAJOR-OXIDES, MINOR OXIDES, TRACE ELEMENTS, AND (OR) RARE EARTH ELEMENTS, AND COAL QUALITY, EAGLE A-1, A-2, A-3, B-1, AND B-2 QUADRANGLES AND TANACROSS D-1 QUADRANGLE, ALASKA IN 1999, 2000, AND 2001, 1:63,360 SCALE, 1 SHEET (IN POCKET)
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Note: This report (including all analytical data, tables, and map sheets) is available in digital format from the DGGs web site (<http://www.dggs.dnr.state.ak.us>) at no charge. The digital data are available as PDF files and Excel spreadsheets.

MAJOR OXIDE, MINOR OXIDE, TRACE ELEMENT, RARE-EARTH ELEMENT, TRACE GEOCHEMICAL AND COAL QUALITY DATA FROM ROCKS COLLECTED IN THE EAGLE AND TANACROSS QUADRANGLES, ALASKA IN 1999, 2000, and 2001

by

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INTRODUCTION

Mineral resource personnel from the Alaska Division of Geological & Geophysical Surveys carried out a geological field survey, including mapping and sampling of Eagle and Tanacross quadrangles, Alaska from June 1999 to July 2001. The fieldwork provides basic information critical to building an understanding of Alaska's geology and is part of an integrated program of airborne geophysical surveys followed by geological mapping programs. During 2001, 65 rock samples were collected for geochemical trace-element analysis, and 145 samples were collected for whole rock (major and minor oxides, and petrogenetically important trace and (or) rare earth element data) analysis. This report also includes 18 rock samples collected for geochemical trace-element analysis, 59 rock samples collected for whole rock analysis, and 1 coal analysis collected during 1999 and 2000 that were not previously released in DGGS reports (Raw-Data-File 2000-1 and Raw-Data-File 2000-4). The locations of all samples listed in the tables of the current report are shown on Sheet 1. Location data (in UTM coordinates with a Clark 1866, NAD27, UTM zone 7 projection), descriptions, and analytical results for each sample are tabulated in tables 1-6.

ANALYTICAL METHODS

Chemex Labs, Inc performed all trace-element geochemical analyses in this report. Rock samples were crushed so that at least 70 percent of the material passed through a -10 (2 mm) mesh screen. A 200-gram, representative split of the sample was then taken using a riffle splitter. The 200-gram sample was then pulverized in a chrome steel ring mill so that 95 percent of the sample passed through a -150 (106 micron) mesh screen. DGGS also submitted geochemical standards at an approximate rate of one pulp per fifteen unknowns, and crushed granite and basalt standards were submitted at an approximate rate of one whole rock standard per fifteen unknowns.

Gold was analyzed on a 30-gram representative sample split using Fire Assay (FA) and Atomic Absorption Spectroscopy (AAS) methods. Most trace elements were analyzed by the Inductively Coupled Plasma - Atomic Emission Spectroscopy (ICP-AES) methods after nitric aqua regia digestion. Platinum and palladium were analyzed by the Fire Assay - Inductively Coupled Plasma (FA-ICP) method. Analytical detection limits are tabulated for the geochemical analyses in table 7.

Chemex Labs, Inc performed all whole rock analyses in this report. Major and minor element oxides were determined by XRF methods following a metaborate fusion. Trace elements (Ba, Nb, Rb, Sr, Y, and Zr) were also analyzed using XRF methods on a pressed pellet. Rare Earth elements were analyzed using Inductively Coupled Plasma - Mass spectroscopy after fusing with lithium metaborate. Analytical detection limits for the major-oxide, minor-oxide, trace, and rare-earth element analyses (XRF method) are tabulated in table 8.

The coal sample was analyzed by Geochemical Testing, a division of Energy Center, Inc. The sample submitted to the lab weighed approximately five pounds and represented a composite of several coal layers within Tertiary sedimentary rocks. For practical purposes, the chemical composition of coal is given in terms of its "proximate" analysis and by its "ultimate" or elemental composition. Proximate analysis determines moisture content, volatile matter content (V.M.), ash and, indirectly, the fixed carbon content (F.C.) which is expressed as a percentage of the dry coal mass and defined by: $\%F.C. = 100 - (\%V.M. + \%ash)$. Ultimate or elemental analysis involves a quantitative determination of the percentage of carbon, hydrogen, nitrogen and organic sulfur with oxygen usually determined by difference. Specific energy determination determines the heat energy produced from the combustion of each gram of coal. Neither proximate nor ultimate analysis gives much information about coal structure but both give information that, in light of experience can be directly correlated with the behavior of coal in most industrial processes. Results are given in table 6. Analytical detection limits for the rare-earth element analyses determined by ICP-MS are shown in table 9.

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Table 1. Location and description of rock samples collected in the Eagle and Tanacross quadrangles for metal and trace element geochemical analyses.

SAMPLE	UTM E	UTM N	Quadrangle	Description
00RF023C	494403	7107903	Eagle	A-1 Vuggy, fine-grained quartz breccia with abundant iron-oxide stain
00RF86.1B	492519	7096775	Tanacross	D-1 Dark gray, coarse-grained biotite-hornblende gneiss with disseminated pyrite
00RF187C	496803	7099341	Eagle	A-1 Bluish purple to purplish black magnetite-serpentine rock with magnetite layers up to 4 mm wide.
00RF217B	495334	7101637	Eagle	A-1 Bright green, fine-grained serpentinized ultramafic with iron oxide stain.
00RF222A	494624	7101973	Eagle	A-1 Plagioclase hornblende with equant hornblende up to 1cm, iron oxide and sparse calcite veinlets
00RF246B	494913	7100453	Eagle	A-1 Select sample of dark gray chromitite with submetallic luster \pm iron oxide, >95% chromite up to >1cm.
00RF333	497580	7103347	Eagle	A-1 Carbonaceous-white mica-quartz schist and quartzite with abundant disseminated pyrite and iron oxide.
00RF405B	496583	7108461	Eagle	A-1 Select sample of gray, fine grained quartz-calcite vein with green specks, sparse pyrite and abundant iron oxide.
00RF422	494759	7094963	Tanacross	D-1 Select sample of light gray, quartz-calcite vein with iron-oxides and minor disseminated molybdenum flakes.
00RF463A	496200	7094453	Tanacross	D-1 Very coarse grained, unfoliated biotite hornblende with iron oxide staining.
00RF463C	496200	7094453	Tanacross	D-1 Dark gray, very coarse-grained, unfoliated hornblende with abundant disseminated pyrite and iron oxide.
00RF484B	497177	7097183	Eagle	A-1 Dark gray, carbonaceous-biotite-quartz schist with disseminated pyrite up to 5 mm diameter.
00RF490A	498781	7097583	Eagle	A-1 Carbonaceous white mica-quartz schist, and quartz breccia with very abundant iron oxide.
00RF507B	498980	7098640	Eagle	A-1 Select sample of quartz breccia with very abundant iron oxide.
00RF510	492405	7097039	Eagle	A-1 Medium to coarse grained marble \pm fuchsite with sparse disseminated pyrite and iron oxide after pyrite
00RF520B	499583	7094051	Tanacross	D-1 Very coarse-grained, tourmaline granite orthogneiss; some muscovite and abundant tourmaline up to 2cm long.
00RF552	499764	7107719	Eagle	A-1 Medium-grained, chlorite-white mica-quartz schist with iron oxide after pyrite up to 1 cm diameter along foliation.
00RF607	497665	7105470	Eagle	A-1 Dark gray, carbonaceous-white mica-quartz-fuchsite schist with abundant iron oxide after pyrite along foliation
01JEA56A	484866	7109533	Eagle	A1 Grab sample of biotite-quartz-feldspar gneiss with pyrite-bearing pegmatite or quartz vein.
01JEA207A	490960	7112584	Eagle	A1 Select sample of highly iron-oxide stained breccia?, fault gouge or gossanous material with black hematite?
01JEA219A	493707	7122483	Eagle	A1 Select sample of highly iron-oxide stained, quartz-(carbonate) vein with occasional fine-grained gray metal specks.
01JEA219E	493707	7122483	Eagle	A1 Grab sample of fractured quartz veins in gneiss or silicified gneiss with 5 percent fine-grained pyrite.
01JEA373A	496068	7111925	Eagle	A1 Grab sample of biotite-quartz-feldspar gneiss with trace pyrite on fracture.
01KC01B	479905	7098854	Eagle	A1 Select sample of a 8 inch thick pod of leucocratic gneiss with minor disseminated pyrite, possibly other ?sulfides?
01KC6B	477939	7101406	Eagle	A1 Select sample of most iron-oxide stained quartz boudined, calcareous chlorite-muscovite-feldspar-quartz gneiss.
01KC30B	488250	7100300	Eagle	A1 Select sample of iron-oxide stained garnet-chlorite-quartz-(feldspar?) gneiss with pyrite near 1 foot-wide quartz vein.
01KC43A	485839	7110309	Eagle	A1 Grab sample of aplitic pegmatite with occasional orthogneiss.
01KC54B	488978	7118861	Eagle	A1 Select sample of light orange-colored portion of 4 foot diameter white quartz boulder
01KC55C	489527	7118869	Eagle	A1 Select sample of quartz + chlorite vein. Fair amount of quartz veining in the area. Follow this one for 20 ft.
01KC59B	494088	7113359	Eagle	A1 Select sample of one-inch thick pegmatite dike.
01KC60B	494073	7113541	Eagle	A1 Anastomosing pegmatite dikes in biotite granodiorite ranging from 1 to 8 inches thick.
01KC61B	494085	7113993	Eagle	A1 Select sample of pyritic quartz veins that crosscut foliation of biotite granodiorite.
01KC62A	493982	7113977	Eagle	A1 Grab sample of anastomosing pegmatitic veins that range up to several feet in thickness.
01KC66A	494842	7110688	Eagle	A1 Select sample of finely laminated quartzite with some quartz veins and finely disseminated pyrite along joints.
01KC66B	494842	7110688	Eagle	A1 Medium- to coarse-grained amphibolite in contact with thinly laminated quartzite.
01KC68A	494581	7111072	Eagle	A1 Gray quartzite with minor brecciation and some quartz veining, also slickensides and very jointed.
01KC69B	494095	7112905	Eagle	A1 Pyritic, foliated hornblende-biotite granodiorite dike crosscutting foliation of marble.
01KC70B	494137	7113663	Eagle	A1 Aplitic pegmatite with trace pyrite.
01KC76B	491610	7112774	Eagle	A1 Select sample of quartz-carbonate veins from 1 to 5 cm wide in quartz-rich gneiss.
01KC77B	491738	7113074	Eagle	A1 Select sample of quartz-carbonate veins from 1 to 5 cm wide in amphibolite.
01KC89A	492777	7124485	Eagle	A1 Select sample of 10-inch layer of pink marble within white marble. Possible small specks around silvery bleb.

Table 1. Location and description of rock samples collected in the Eagle and Tanacross quadrangles for metal and trace element geochemical analyses.

SAMPLE	UTM E	UTM N	Quadrangle	Description
01KC92A	493212	7124832	Eagle	B1 Select sample of gossanous, sheared, schistose gneiss with quartz veins containing arsenopyrite or stibnite.
01MBW19A	483460	7099121	Eagle	A1 Marble with nearby vuggy quartz-carbonate breccia and quartz veins up to 1 cm wide cutting quartz in breccia.
01MBW39C	491333	7100713	Eagle	A1 Orange-colored, limonite stained white and tan layered quartzite and weathered feldspar.
01MBW41A	491446	7100801	Eagle	A1 Select sample of quartz-pyrite veins up to 2 inches wide cutting argillically altered and brecciated gneiss.
01MBW45A	491587	7101353	Eagle	A1 Select sample of brecciated and vuggy quartz vein with fine-grained pyrite.
01MBW79A	484774	7103678	Eagle	A1 Highly weathered and slightly porous/leached green and red skarnoid? with clear gray quartz stringers.
01MBW80B	484655	7103682	Eagle	A1 Gray, foliated quartzite with 3 mm thick marble layers and mm-thick layers of actinolite-chlorite-pyrite-limonite.
01MBW143A	488002	7113253	Eagle	A1 Gossaneous, limonite stained, brecciated rock with open fractures and quartz veining.
01MBW146A	488100	7112877	Eagle	A1 Limonite-stained, partially gossaneous, leached high-grade metamorphic rock cut by thin quartz vein.
01MBW156A	489419	7114779	Eagle	A1 Probable fault zone consisting of milky quartz vein and altered rock breccia, with limonite-filled vugs.
01MBW158A	489474	7114735	Eagle	A1 Limonite-stained, leached, sericite-altered micaceous quartzite or schist with 1-2 mm diameter limonite spots.
01MBW230B	492633	7123981	Eagle	A1 Select sample of 1-foot wide milky quartz vein crosscutting foliation in biotite schist and gneiss.
01MBW232A	493063	7123705	Eagle	A1 Fine- to medium-grained quartzite with limonite staining.
01MBW237C	493486	7122722	Eagle	A1 Select sample of most limonite-stained and sericite-rich biotite schist and biotite-quartz-feldspar gneiss.
01MBW248A	495875	7113318	Eagle	A1 Fractured white mica bearing quartzite with limonite stain along fractures.
01MBW251A	495725	7113372	Eagle	A1 Limonite-stained rock, possibly dike or metadike with quartz in rock looking like foliation-parallel veins.
01MBW280A	493500	7105582	Eagle	A1 Limonite-stained, siliceous, gossaneous rock cut by numerous quartz microfractures.
01MBW284B	492400	7105836	Eagle	A1 Green, fine-grained, epidote-hornblende massive hornfels with quartz-epidote-iron sulfide veins up to 1 cm wide.
01MBW284C	492400	7105836	Eagle	A1 Coarse-grained clinopyroxenite with minor calcite and iron sulfides.
01MBW351A	494455	7122255	Eagle	A1 Tan, hematite-stained and quartz-veined quartz-feldspar gneiss
01MBW362B	486679	7097442	Eagle	A1 6 inch thick layer/band of orthogneiss containing 3 percent pyrite altered to limonite within paragneiss.
01MBW385A	482951	7120767	Eagle	A1 Coarse-grained amphibole-feldspar gneiss containing up to 3 percent pyrrhotite in patches and microveinlets.
01MBW387A	482973	7120839	Eagle	A1 Coarse-grained amphibole-feldspar gneiss containing up to 2 percent disseminated pyrite and maybe pyrrhotite.
01MBW388A	483034	7121100	Eagle	A1 Black quartzite containing trace to 2 percent disseminated pyrite and pyrite along foliation.
01MBW426A	494403	7107429	Eagle	A1 Unknown original rock, now orange gossaneous material with no relict textures.
01MBW427A	494502	7107752	Eagle	A1 Select sample of tan to gray, aphanitic, chalcedonic silica veins cutting clay-iron-bearing carbonate.
01MBW429A	493985	7107188	Eagle	A1 Fault breccia composed of gray colored aphanitic silica and 1 inch diameter angular clasts of unknown rock type.
01MBW430A	493127	7105735	Eagle	A1 Gossaneous rock, possibly altered gneiss, with iron carbonate replacing rock and cut by vuggy quartz veins.
01MBW438A	494004	7107397	Eagle	A1 Aphanitic to banded gray silica breccia matrix with "clasts" of white crystalline calcite cut by silica-iron sulfide veins.
01RN38A	488994	7103743	Eagle	A1 (Vein?) quartz boulders with approximately 1 percent disseminated sulfide (pyrite?). No other rock nearby.
01RN237B	497451	7096886	Eagle	A1 Grab sample of grassy green, coarse-grained clinopyroxenite boulders up to 0.2 m wide.
01Z20A	485113	7102458	Eagle	A1 Very fine-grained to sucratic, olive-brown ultramafic rock, looks microgabbroic with weathered olivine.
01Z20B	485113	7102458	Eagle	A1 Dark green to black ultramafic rock with olivine and pyroxene, porphyritic phlogopite, and sprays of ?actinolite?
01Z33C	487977	7107537	Eagle	A1 Select sample of pegmatite cut by vugs with drusy quartz and brown iron oxides, occasional quartz vein.
01Z82A	490707	7116101	Eagle	A1 Coarse-grained amphibolite with randomly oriented crystals and minor epidote alteration.
01Z104C	491234	7107683	Eagle	A1 Highly limonite stained quartz veins with extremely vuggy areas and subhedral quartz shapes.
01Z118A	495710	7116102	Eagle	A1 Bluish-gray biotite quartzite with distinct banding, weak limonite stain, and common orangish quartz microveinlets.
01Z143A	495208	7103809	Eagle	A1 Orange to black iron stained fault breccia with white quartz veins. Sucratic white silica matrix with pale green clasts.
01Z152B	495863	7113286	Eagle	A1 Breccia with sucratic quartz matrix and quartzite clasts, trace amount of disseminated pyrite and abundant limonite.
01Z158B	495098	7119507	Eagle	A1 White quartz vein rubble and minor quartz vein breccia (clear angular quartz clasts in quartz matrix) with limonite.
01Z158F	495098	7119507	Eagle	A1 Select sample of granite cut by vuggy, open-space quartz veins with iron-oxide stained vugs.

Table 1. Location and description of rock samples collected in the Eagle and Tanacross quadrangles for metal and trace element geochemical analyses.

SAMPLE	UTM E	UTM N	Quadrangle	Description
01Z164B	494227	7120286	Eagle	Chlorite-altered biotite-quartz-feldspar gneiss with 1-2 mm wide, discontinuous pyrite veins and disseminated pyrite.
01Z229A	494230	7107724	Eagle	Silica-carbonate altered ultramafic with serpentine preserved in some places.
01Z247A	483837	7113088	Eagle	Limonite stained fault breccia, quartzite and quartz-mica schist clasts up to 7 cm diameter in carbonate matrix.
01Z257A	481398	7120679	Eagle	Quartz-feldspar-biotite gneiss with trace amounts of fine-grained disseminated pyrrhotite.
01Z288A	493444	7118469	Eagle	Silicified fault breccia with white, porcelain-like quartz veins forming web throughout unknown rock type.

Table 2. Concentration of metals and trace elements in rock samples from the Eagle and Tanacross quadrangles, Alaska. Note: --- = not analyzed.

SAMPLE NUMBER	Au ppb	Au* ppb	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm
00RF023C	<5	---	<2	0.2	<2	<10	30	<5	2	0.21	<5	1	120	9	0.93	<10	<1	0.07	<10	0.05	75	1
00RF86.1B	<5	---	<2	1.73	<2	<10	140	<5	<2	0.81	<5	20	35	35	3.23	<10	<1	0.61	<10	0.95	420	4
00RF187C	<10	<6	0.2	0.97	<2	<10	<10	<5	4	0.29	<5	10	2170	17	0.35	<10	<1	<0.01	<10	2.59	65	1
00RF217B	<5	---	<2	0.21	8	<10	40	<5	<2	3.35	<5	28	220	16	2.31	<10	<1	0.09	<10	9.65	340	<1
00RF222A	<5	<2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00RF246B	<10	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00RF333	<5	---	<2	0.25	20	<10	60	<5	<2	0.78	<5	11	72	61	2.34	<10	1	0.16	<10	0.90	840	6
00RF405B	25	---	0.2	0.77	12	<10	20	<5	2	0.85	<5	4	79	76	1.95	<10	<1	0.09	<10	0.25	180	<1
00RF422	<5	---	<2	0.01	<2	<10	70	<5	<2	>15.00	<5	3	<1	<1	0.11	<10	5	<0.01	<10	10.45	105	9
00RF463A	<5	<2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
00RF463C	<5	---	<2	1.80	<2	<10	150	<5	<2	1.88	<5	32	52	83	4.71	<10	1	0.80	<10	1.46	820	3
00RF484B	5	---	0.4	2.45	<2	<10	240	<5	<2	1.54	1.5	17	271	73	3.52	10	<1	1.33	10	2.73	625	1
00RF490A	5	---	1	0.39	44	<10	970	<5	<2	0.01	<5	<1	95	201	5.56	<10	<1	0.07	<10	0.01	20	2
00RF507B	<5	---	<2	0.49	34	<10	3150	1.5	<2	0.01	<5	4	139	141	8.00	<10	<1	0.01	<10	<0.01	50	10
00RF510	<5	---	<2	0.03	<2	<10	200	<5	<2	>15.00	0.5	<1	12	3	0.11	<10	1	0.01	<10	0.54	135	<1
00RF520B	<5	---	0.6	0.3	<2	<10	10	<5	14	0.14	<5	<1	80	3	0.23	<10	<1	0.2	<10	0.01	35	2
00RF552	<5	---	<2	2.19	<2	<10	120	<5	2	0.1	<5	4	101	10	1.93	10	<1	0.13	<10	2.09	545	4
00RF607	<5	---	0.2	0.96	<2	<10	190	<5	2	0.35	<5	10	80	41	3.24	<10	<1	0.22	10	0.63	345	1
01JEA56A	<5	---	<2	0.52	4	<10	100	<5	<2	0.11	<5	3	88	23	0.7	<10	<1	0.16	<10	0.2	140	<1
01JEA207A	10	---	<2	0.32	22	<10	20	<5	<2	0.44	<5	5	55	4	2.48	<10	<1	0.11	10	0.18	560	<1
01JEA219A	30	---	1.4	0.18	14	<10	10	<5	<2	2.09	<5	36	116	121	2.69	<10	<1	0.06	<10	0.12	110	2
01JEA219E	10	---	<2	0.19	18	<10	50	<5	<2	4.18	<5	3	80	9	1.42	<10	<1	0.04	<10	0.05	695	<1
01JEA373A	15	---	<2	2.1	<2	<10	90	<5	<2	0.34	<5	5	43	82	4.7	<10	<1	1.14	<10	1.32	685	<1
01KC01B	<5	---	<2	0.25	2	<10	120	<5	<2	0.13	<5	<1	81	3	0.58	<10	<1	0.05	<10	0.04	25	<1
01KC30B	25	---	0.2	1.35	<2	<10	150	<5	<2	0.03	<5	2	68	107	6.1	<10	<1	0.11	<10	0.99	290	1
01KC43A	10	---	<2	0.2	<2	<10	190	<5	<2	0.02	<5	<1	55	5	0.32	<10	<1	0.11	<10	0.03	25	<1
01KC54B	<5	---	<2	0.01	<2	<10	<10	<5	<2	<0.01	<5	<1	127	2	0.23	<10	<1	<0.01	<10	<0.01	10	<1
01KC55C	10	---	<2	0.17	<2	<10	20	<5	<2	0.1	<5	1	124	5	0.45	<10	<1	0.01	<10	0.13	305	<1
01KC59B	<5	---	<2	0.35	<2	<10	80	<5	<2	0.21	<5	1	57	8	0.51	<10	<1	0.14	<10	0.11	120	<1
01KC60B	<5	---	<2	0.25	<2	<10	70	<5	<2	0.18	<5	<1	59	4	0.37	<10	<1	0.12	<10	0.06	115	<1
01KC61B	5	---	<2	0.19	<2	<10	110	<5	<2	0.22	<5	<1	57	9	0.19	<10	<1	0.1	<10	0.01	50	<1
01KC62A	<5	---	<2	0.18	<2	<10	80	<5	<2	0.39	<5	<1	48	2	0.18	<10	<1	0.08	<10	0.01	65	<1
01KC66A	<5	---	<2	0.71	2	<10	100	<5	<2	0.23	<5	3	60	23	1.19	<10	<1	0.12	10	0.32	200	<1
01KC66B	<5	---	<2	2.39	2	<10	380	<5	<2	2.01	<5	23	23	60	4.23	<10	<1	0.4	<10	1.83	550	<1
01KC68A	<5	---	<2	0.7	24	<10	120	<5	<2	0.04	<5	2	50	77	2.43	<10	<1	0.08	<10	0.28	70	1
01KC69B	5	---	<2	1.24	<2	<10	90	<5	<2	1.07	<5	7	32	51	2.65	<10	<1	0.11	<10	0.59	265	3
01KC6B	<5	---	<2	2.23	8	<10	10	<5	<2	0.47	<5	10	39	6	5.4	10	<1	0.06	<10	1.54	1045	<1
01KC70B	<5	---	<2	0.18	<2	<10	100	<5	<2	0.05	<5	<1	54	4	0.34	<10	<1	0.12	<10	<0.01	50	<1
01KC76B	<5	---	0.4	0.3	<2	<10	1560	<5	<2	8.6	<5	9	63	7	2.63	<10	<1	0.1	<10	2.88	1555	<1

Table 2. Concentration of metals and trace elements in rock samples from the Eagle and Tanacross quadrangles, Alaska. Note: --- = not analyzed.

SAMPLE NUMBER	Au ppb	Au* ppb	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm
01KC77B	10	---	<2	0.16	<2	<10	20	<5	<2	4.25	<5	<1	106	4	0.36	<10	<1	0.01	<10	0.11	205	<1
01KC89A	<5	---	1.4	0.05	<2	<10	90	<5	<2	>15.00	0.5	1	9	5	0.3	<10	<1	0.01	<10	0.34	380	<1
01KC92A	10	---	0.8	0.1	106	<10	10	<5	<2	0.13	<5	5	101	43	3.65	<10	<1	0.06	<10	0.01	20	<1
01MBW19A	<5	---	<2	0.07	<2	<10	10	<5	<2	0.03	<5	1	162	5	0.51	<10	<1	0.02	<10	<0.1	55	<1
01MBW39C	5	---	<2	0.44	22	<10	1640	<5	<2	0.02	<5	1	66	34	0.88	<10	<1	0.04	<10	<0.1	5	1
01MBW41A	10	---	<2	0.34	22	<10	450	<5	<2	0.01	<5	<1	68	8	0.55	<10	<1	0.06	<10	<0.1	15	1
01MBW45A	10	---	<2	0.36	40	<10	770	<5	<2	0.01	<5	1	62	7	0.9	<10	<1	0.07	<10	<0.1	30	<1
01MBW79A	<5	---	<2	1.22	<2	<10	650	<5	<2	2.96	<5	9	74	3	1.66	<10	<1	0.01	<10	0.6	860	<1
01MBW80B	<5	---	<2	0.12	<2	<10	60	<5	<2	3.45	<5	1	111	10	0.29	<10	<1	0.04	<10	0.11	80	<1
01MBW143A	30	---	<2	0.23	1250	<10	70	<5	<2	0.06	1	1	106	6	2.96	<10	13	0.05	<10	0.01	65	1
01MBW146A	<5	---	<2	0.45	8	<10	110	0.5	<2	0.07	<5	8	60	23	4.45	<10	<1	0.02	10	0.01	300	<1
01MBW156A	30	---	<2	0.09	30	<10	20	<5	<2	0.01	<5	1	147	3	0.81	<10	<1	0.08	<10	<0.1	30	<1
01MBW158A	<5	---	<2	1.41	10	<10	100	<5	<2	0.63	<5	7	97	27	3.19	<10	<1	0.15	<10	0.56	960	1
01MBW230B	<5	---	<2	0.1	<2	<10	40	<5	<2	1.07	<5	1	136	7	0.37	<10	<1	0.03	<10	0.06	110	<1
01MBW232A	<5	---	<2	0.89	2	<10	130	<5	<2	0.08	<5	7	92	7	1.93	<10	<1	0.12	<10	0.53	95	<1
01MBW237C	20	---	0.2	1.27	166	<10	90	<5	<2	0.15	<5	18	119	38	2.38	<10	<1	0.23	10	0.87	215	<1
01MBW248A	<5	---	<2	1.12	8	<10	30	<5	<2	0.03	<5	1	77	74	2.2	<10	<1	0.02	<10	0.84	330	5
01MBW251A	10	---	<2	0.11	12	<10	100	<5	<2	<0.1	<5	<1	99	2	1.05	<10	<1	0.19	<10	<0.1	5	2
01MBW280A	10	---	<2	0.54	14	<10	1250	0.5	<2	0.07	<5	25	43	20	4.52	<10	<1	0.03	<10	0.03	230	<1
01MBW284B	<5	---	<2	0.44	<2	<10	100	<5	<2	1.95	<5	1	26	3	0.92	<10	<1	0.01	<10	0.31	210	<1
01MBW284C	---	<1	<2	0.81	<2	<10	140	<5	<2	1.49	<5	7	101	5	1.21	<10	<1	0.15	<10	0.82	200	<1
01MBW351A	5	---	<2	0.31	<2	<10	30	<5	<2	0.13	<5	3	120	<1	0.71	<10	<1	0.07	<10	0.09	110	<1
01MBW362B	<5	---	<2	0.2	<2	<10	70	<5	<2	0.04	<5	<1	36	5	0.26	<10	<1	0.03	<10	0.05	20	<1
01MBW385A	---	1	<2	1.67	<2	<10	70	<5	<2	0.77	<5	12	31	65	2.71	<10	<1	0.12	<10	0.47	250	<1
01MBW387A	<5	---	<2	3.88	<2	<10	330	<5	<2	2.11	<5	11	52	12	2.01	<10	<1	0.45	<10	0.81	240	3
01MBW388A	<5	---	1	0.69	18	<10	80	<5	<2	2.76	13.5	4	131	116	1.31	<10	<1	0.13	10	0.1	65	11
01MBW426A	<5	---	<2	0.46	6	<10	440	0.5	<2	2.05	<5	19	35	22	4.57	<10	<1	0.08	<10	0.1	1215	<1
01MBW427A	<5	---	<2	0.17	14	<10	130	<5	<2	0.78	<5	2	50	22	1.11	<10	<1	0.02	<10	0.26	270	<1
01MBW429A	<5	---	<2	0.28	2	<10	310	<5	<2	3.62	<5	13	21	6	3	<10	<1	0.08	<10	1.6	965	<1
01MBW430A	<5	---	<2	0.11	<2	<10	90	<5	2	5.47	<5	1	75	4	1.19	<10	<1	0.02	<10	2.47	865	<1
01MBW438A	70	---	6.8	0.18	22	<10	430	<5	<2	0.47	<5	10	42	14	1.7	<10	<1	0.05	<10	0.38	335	<1
01RN38A	<5	---	<2	0.03	4	<10	210	<5	<2	0.02	<5	2	122	10	0.47	<10	<1	<0.1	<10	0.01	50	<1
01RN237B	---	1	<2	0.28	8	<10	90	<5	<2	0.12	<5	51	957	5	2.56	<10	<1	<0.1	<10	7.66	520	<1
01Z20A	5	---	<2	0.15	<2	<10	40	<5	<2	0.01	<5	81	210	5	4.13	<10	<1	<0.1	<10	13.3	690	<1
01Z20B	<5	---	<2	0.09	<2	<10	20	<5	<2	0.02	<5	77	274	9	3.64	<10	<1	<0.1	<10	12.85	515	<1
01Z33C	<5	---	<2	0.27	<2	<10	60	<5	<2	0.36	<5	2	55	5	0.54	<10	<1	0.07	<10	0.15	225	<1
01Z288A	<5	---	<2	0.18	10	<10	20	<5	<2	0.19	<5	2	103	5	0.72	<10	<1	0.08	<10	0.04	80	2
01Z82A	<5	---	<2	1.2	<2	<10	90	<5	<2	1.24	<5	12	27	67	1.91	<10	<1	0.17	<10	1.13	310	<1
01Z104C	<5	---	<2	0.32	2	<10	160	<5	<2	0.77	<5	8	130	13	0.81	<10	<1	0.02	<10	0.16	610	<1

Table 2. Concentration of metals and trace elements in rock samples from the Eagle and Tanacross quadrangles, Alaska. Note: — = not analyzed.

SAMPLE NUMBER	Au ppb	Au* ppb	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm
01Z118A	<5	—	<2	0.07	6	<10	30	<5	<2	0.03	<5	<1	78	9	0.36	<10	<1	0.05	<10	0.01	10	4
01Z143A	<5	—	0.4	0.46	<2	<10	1400	0.5	<2	8.29	<5	22	148	32	2.27	<10	<1	0.03	<10	3.81	690	<1
01Z152B	<5	—	<2	0.45	16	<10	340	<5	<2	0.12	<5	1	86	29	1.1	<10	<1	0.07	<10	0.32	120	9
01Z158B	<5	—	<2	0.12	2	<10	20	<5	<2	0.05	<5	<1	121	1	0.35	<10	<1	0.01	<10	0.05	80	<1
01Z158F	<5	—	<2	1.23	16	<10	60	<5	<2	0.19	<5	8	95	22	1.95	<10	<1	0.19	<10	0.81	330	<1
01Z164B	<5	—	<2	1.18	2	<10	70	<5	<2	0.04	<5	11	92	25	2.37	<10	<1	0.2	<10	0.72	300	<1
01Z229A	—	<1	<2	1.11	6	<10	100	0.5	<2	3.4	<5	21	46	28	4.88	<10	<1	0.12	<10	2.07	950	<1
01Z247A	<5	—	<2	0.1	80	<10	120	<5	<2	5.68	<5	3	91	23	1.62	<10	<1	0.02	<10	0.06	560	<1
01Z257A	<5	—	<2	1.11	<2	<10	30	<5	<2	0.66	<5	5	33	14	2.29	<10	<1	0.21	10	0.64	515	<1

Table 2. Concentration of metals and trace elements in rock samples from the Eagle and Tanacross quadrangles, Alaska. Note: --- = not analyzed.

SAMPLE NUMBER	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	TI ppm	U ppm	V ppm	W ppm	Zn ppm	Pt ppb	Pd ppb
00RF023C	<.01	6	260	6	<.01	<2	2	4	<.01	<10	<10	5	<10	40	---	---
00RF86.1B	0.04	17	1500	8	0.37	<2	5	39	0.11	10	<10	56	<10	60	---	---
00RF187C	0.01	578	<10	<2	<.01	8	<1	16	<.01	<10	<10	11	<10	6	<6	<6
00RF217B	<.01	379	20	<2	<.01	<2	4	100	<.01	<10	<10	8	<10	16	---	---
00RF222A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<5	<2
00RF246B	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<6	<6
00RF333	0.01	64	200	6	1.04	<2	2	17	<.01	20	<10	10	<10	40	---	---
00RF405B	0.07	5	120	<2	0.35	<2	2	15	<.01	<10	<10	12	<10	18	---	---
00RF422	0.01	1	50	4	<.01	<2	<1	117	<.01	<10	<10	4	<10	12	---	---
00RF463A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<5	<2
00RF463C	0.13	30	4470	2	1.23	<2	6	48	0.18	10	<10	92	<10	30	---	---
00RF484B	0.06	42	560	8	0.93	<2	15	33	0.16	<10	<10	104	<10	76	---	---
00RF490A	0.01	5	160	14	0.04	38	<1	11	<.01	<10	<10	29	<10	12	---	---
00RF507B	0.01	19	3490	<2	0.06	6	1	42	<.01	<10	<10	145	<10	172	---	---
00RF510	0.01	1	110	<2	0.04	<2	<1	374	<.01	<10	<10	2	<10	8	---	---
00RF520B	0.05	2	570	16	<.01	<2	<1	1	<.01	<10	<10	<1	<10	6	---	---
00RF552	0.02	22	550	32	0.02	<2	1	8	<.01	<10	<10	17	<10	96	---	---
00RF607	0.01	55	710	2	0.01	2	2	11	<.01	<10	<10	20	<10	98	---	---
01JEA56A	0.08	5	70	10	<.01	<2	1	19	0.01	<10	<10	7	<10	12	---	---
01JEA207A	0.05	9	180	<2	<.01	2	7	10	0.02	<10	<10	18	<10	42	---	---
01JEA219A	<.01	14	100	<2	2.92	18	<1	26	0.01	<10	<10	6	<10	6	---	---
01JEA219E	<.01	6	180	<2	1.43	10	1	70	<.01	<10	<10	4	<10	14	---	---
01JEA373A	0.04	1	1090	2	0.96	4	10	8	0.16	<10	<10	10	<10	386	---	---
01KC01B	0.13	4	60	6	0.11	<2	<1	21	<.01	<10	<10	<1	<10	10	---	---
01KC30B	0.07	9	380	2	0.3	6	8	24	0.03	<10	<10	78	<10	60	---	---
01KC43A	0.06	1	30	2	<.01	<2	<1	18	<.01	<10	<10	4	<10	<2	---	---
01KC54B	<.01	3	<10	<2	<.01	<2	<1	<1	<.01	<10	<10	<1	<10	<2	---	---
01KC55C	<.01	4	30	<2	<.01	<2	<1	5	<.01	<10	<10	4	<10	<2	---	---
01KC59B	0.09	1	70	2	<.01	<2	<1	26	0.01	<10	<10	8	<10	16	---	---
01KC60B	0.07	1	30	<2	<.01	<2	<1	23	<.01	<10	<10	5	<10	6	---	---
01KC61B	0.08	1	10	<2	0.01	<2	<1	28	<.01	<10	<10	1	<10	<2	---	---
01KC62A	0.08	1	<10	2	0.02	<2	<1	38	<.01	<10	<10	<1	<10	<2	---	---
01KC66A	0.06	5	360	6	0.08	2	2	20	0.04	<10	<10	15	<10	28	---	---
01KC66B	0.17	8	3120	<2	0.14	4	11	71	0.21	<10	<10	132	<10	64	---	---
01KC68A	0.07	8	120	28	0.06	2	3	7	<.01	<10	<10	18	<10	58	---	---
01KC69B	0.08	4	1190	<2	0.14	2	4	61	0.1	<10	<10	47	<10	46	---	---
01KC6B	0.07	1	2150	<2	0.56	6	13	7	0.04	<10	<10	72	<10	106	---	---
01KC70B	0.07	1	30	2	0.04	<2	<1	20	<.01	<10	<10	1	<10	2	---	---
01KC76B	0.01	3	10	<2	0.04	2	6	256	<.01	<10	<10	18	<10	30	---	---

Table 2. Concentration of metals and trace elements in rock samples from the Eagle and Tanacross quadrangles, Alaska. Note: --- = not analyzed.

SAMPLE NUMBER	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Ti ppm	U ppm	V ppm	W ppm	Zn ppm	Pt ppb	Pd ppb
01KC77B	0.03	2	10	<2	0.15	<2	<1	90	<0.1	<10	<10	4	<10	<2	---	---
01KC89A	<0.1	3	170	<2	0.04	<2	1	149	<0.1	<10	<10	4	<10	<2	---	---
01KC92A	<0.1	4	60	170	3.6	<2	<1	3	<0.1	<10	<10	1	<10	46	---	---
01MBW19A	<0.1	6	100	2	0.01	<2	<1	<1	<0.1	<10	<10	8	<10	10	---	---
01MBW39C	<0.1	3	100	2	0.05	<2	2	24	<0.1	<10	<10	4	<10	14	---	---
01MBW41A	<0.1	2	50	6	0.01	<2	1	12	<0.1	<10	<10	1	<10	2	---	---
01MBW45A	<0.1	3	50	8	0.04	2	1	16	<0.1	<10	<10	4	<10	10	---	---
01MBW79A	<0.1	15	710	<2	0.02	<2	4	101	0.06	<10	<10	43	<10	54	---	---
01MBW80B	<0.1	5	110	<2	0.01	<2	<1	40	<0.1	<10	<10	4	<10	6	---	---
01MBW143A	<0.1	4	380	30	0.03	134	3	17	<0.1	<10	<10	20	<10	72	---	---
01MBW146A	<0.1	17	470	6	<0.1	6	20	1	<0.1	<10	<10	60	<10	80	---	---
01MBW156A	<0.1	5	60	2	<0.1	2	<1	1	<0.1	<10	<10	3	<10	2	---	---
01MBW158A	<0.1	32	260	12	<0.1	4	6	23	0.05	<10	<10	50	<10	60	---	---
01MBW230B	<0.1	5	100	<2	0.01	<2	<1	17	<0.1	<10	<10	3	<10	<2	---	---
01MBW232A	0.01	10	210	<2	0.11	<2	2	6	<0.1	<10	<10	22	<10	28	---	---
01MBW237C	0.02	31	290	20	0.48	2	4	4	0.02	<10	<10	48	<10	118	---	---
01MBW248A	<0.1	8	360	2	<0.1	2	2	4	0.01	<10	<10	27	<10	64	---	---
01MBW251A	0.04	1	30	22	0.4	<2	<1	2	<0.1	<10	<10	<1	<10	4	---	---
01MBW280A	<0.1	10	370	6	0.03	2	13	9	<0.1	<10	<10	116	<10	34	---	---
01MBW284B	0.05	2	1160	8	0.01	<2	1	59	0.06	<10	<10	57	<10	6	---	---
01MBW284C	0.13	9	1010	<2	<0.1	<2	6	40	0.09	<10	<10	56	<10	22	0.5	<1
01MBW351A	0.04	6	140	4	<0.1	<2	1	10	0.01	<10	<10	19	<10	8	---	---
01MBW362B	0.07	1	30	<2	0.01	<2	<1	20	<0.1	<10	<10	3	<10	2	---	---
01MBW385A	0.19	5	680	2	1.16	<2	7	29	0.05	<10	<10	30	<10	36	<5	<1
01MBW387A	0.2	4	540	<2	0.09	4	6	78	0.11	<10	<10	81	<10	26	---	---
01MBW388A	<0.1	51	>10000	<2	0.92	<2	2	28	<0.1	<10	<10	186	<10	94	---	---
01MBW426A	<0.1	18	110	2	0.01	4	25	16	<0.1	<10	<10	58	<10	66	---	---
01MBW427A	0.03	2	200	2	0.3	<2	2	31	<0.1	<10	<10	7	<10	6	---	---
01MBW429A	<0.1	12	310	6	0.06	2	10	167	<0.1	<10	<10	37	<10	64	---	---
01MBW430A	<0.1	4	110	<2	<0.1	2	1	54	<0.1	<10	<10	10	<10	18	---	---
01MBW438A	<0.1	6	30	16	0.15	10	4	16	<0.1	<10	<10	33	<10	42	---	---
01RN38A	<0.1	4	10	<2	0.01	<2	<1	<1	<0.1	<10	<10	3	<10	4	---	---
01RN237B	<0.1	696	<10	<2	<0.1	4	4	14	<0.1	<10	<10	16	<10	12	2.5	1
01Z20A	<0.1	1565	30	<2	0.01	4	7	1	<0.1	<10	<10	8	<10	18	---	---
01Z20B	<0.1	1570	30	<2	0.03	4	4	1	<0.1	<10	<10	4	<10	26	---	---
01Z33C	0.07	10	70	2	<0.1	<2	1	9	<0.1	<10	<10	9	<10	2	---	---
01Z288A	<0.1	5	100	2	0.03	<2	1	7	<0.1	<10	<10	4	<10	10	---	---
01Z82A	0.14	12	580	<2	<0.1	<2	11	27	0.14	<10	<10	81	<10	18	---	---
01Z104C	0.01	9	360	<2	0.01	<2	1	28	0.03	<10	<10	8	<10	6	---	---

Table 2. Concentration of metals and trace elements in rock samples from the Eagle and Tanacross quadrangles, Alaska. Note: --- = not analyzed.

SAMPLE NUMBER	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Ti ppm	U ppm	V ppm	W ppm	Zn ppm	Pt ppb	Pd ppb
01Z118A	<01	3	190	2	0.03	<2	<1	1	<01	<10	<10	7	<10	6	---	---
01Z143A	<01	67	<10	<2	0.04	<2	18	151	<01	<10	<10	54	<10	16	---	---
01Z152B	<01	10	740	16	0.04	<2	1	9	0.01	<10	<10	58	<10	32	---	---
01Z158B	<01	3	10	<2	<01	2	<1	1	<01	<10	<10	3	<10	2	---	---
01Z158F	0.02	12	220	2	<01	<2	5	10	0.12	<10	<10	36	<10	32	---	---
01Z164B	0.01	21	80	<2	0.32	<2	1	4	0.03	<10	<10	16	<10	62	---	---
01Z229A	<01	15	390	<2	0.08	2	19	75	<01	<10	<10	69	<10	60	<5	<1
01Z247A	<01	17	120	2	0.01	22	2	1	<01	<10	<10	24	<10	44	---	---
01Z257A	0.03	3	610	<2	0.03	<2	5	21	0.03	<10	<10	26	<10	54	---	---

Table 3. Location and description of rock samples collected in the Eagle and Tanacross quadrangles for major-oxide, minor oxide, and trace element analyses.

SAMPLE	UTM E	UTM N	Quadrangle	Rock Type
99MBW079	451832	7105237	Eagle	A-2 Finely crystalline, siliceous tuff
99MBW095B	449900	7106867	Eagle	A-3 Tuff, possibly airfall or waterlain
00DS121	471660	7111369	Eagle	A-2 Amphibolite
00JG014-6/28	482139	7107044	Eagle	A-1 Amphibolite
00JG032-6/29	479359	7107661	Eagle	A-1 Biotite amphibolite
00JG092-6/20	479862	7108898	Eagle	A-1 Fine-grained garnet amphibolite
00JG095-6/20	479177	7108615	Eagle	A-1 Amphibolite
00MBW194	464886	7112185	Eagle	A-2 White, fine-grained felsic plutonic rock
00MBW213C	455857	7116727	Eagle	A-2 Granitic dike
00MBW535	463440	7120077	Eagle	A-2 Granite or granodiorite
00MBW549	462333	7120257	Eagle	A-2 Aplite dike
00RF001A	498192	7105642	Eagle	A-1 Biotite-chlorite-quartz-white mica schist
00RF054	497233	7101488	Eagle	A-1 Biotite-quartz-feldspar schist
00RF061	495973	7102236	Eagle	A-1 Albite-chlorite-actinolite-clinzoisite metagabbro
00RF061	495973	7102236	Eagle	A-1 Albite-chlorite-actinolite-clinzoisite metagabbro
00RF092A	497122	7096261	Tanacross	D-1 White mica-albite-actinolite-chlorite-clinzoisite metagabbro
00RF092A	497122	7096261	Tanacross	D-1 White mica-albite-actinolite-chlorite-clinzoisite metagabbro
00RF112A	497342	7094053	Tanacross	D-1 Amphibolite
00RF113B	497427	7093765	Tanacross	D-1 Lithic rhyolite
00RF118	497378	7093262	Tanacross	D-1 Muscovite-K feldspar-biotite-plagioclase-quartz± garnet schist
00RF126A	496475	7092511	Tanacross	D-1 Garnet-biotite-clinzoisite-plagioclase-muscovite-quartz schist
00RF126A	496475	7092511	Tanacross	D-1 Garnet-biotite-clinzoisite-plagioclase-muscovite-quartz schist
00RF126B	496435	7092511	Tanacross	D-1 Garnet-bearing amphibolite
00RF134	496337	7102823	Eagle	A-1 Albite-chlorite-actinolite-clinzoisite metagabbro
00RF134	496337	7102823	Eagle	A-1 Albite-chlorite-actinolite-clinzoisite metagabbro
00RF160	491220	7097725	Eagle	A-1 Biotite-K feldspar-muscovite-quartz schist
00RF174A	497282	7099914	Eagle	A-1 Clinzoisite-biotite-hornblende-plagioclase-quartz gneiss
00RF201A	496792	7101221	Eagle	A-1 Clinzoisite-chlorite-K feldspar-white mica-albite-quartz metafelsite
00RF236A	497486	7098634	Eagle	A-1 Biotite-epidote amphibolite
00RF322A	496271	7102840	Eagle	A-1 Albite-actinolite-clinzoisite metagabbro
00RF340B	496947	7103915	Eagle	A-1 Kyanite quartzite
00RF345A	497584	7103551	Eagle	A-1 Biotite-chlorite-albite-clinzoisite-actinolite metagabbro
00RF349A	498795	7104505	Eagle	A-1 Biotite-chlorite-actinolite schist
00RF349B	498795	7104505	Eagle	A-1 Fuchsite-quartz-actinolite schist
00RF357C	498905	7103822	Eagle	A-1 Biotite-chlorite-actinolite schist
00RF376	493871	7104480	Eagle	A-1 Garnet-bearing amphibolite
00RF454	498817	7092589	Tanacross	D-1 Biotite-muscovite-feldspar-quartz schist and quartzite
00RF467	495900	7094660	Tanacross	D-1 Amphibolite
00RF487B	497157	7097544	Eagle	A-1 Rhyolite dike or sill

Table 3. Location and description of rock samples collected in the Eagle and Tanacross quadrangles for major-oxide, minor oxide, and trace element analyses.

SAMPLE	UTM E	UTM N	Quadrangle		Rock Type
00RF488	498328	7098017	Eagle	A-1	Carbonaceous white mica-quartz schist
00RF517	499170	7094570	Tanacross	D-1	Oxyhornblende-plagioclase-phyric andesite
00RF547B	499904	7106917	Eagle	A-1	Vesicular alkali olivine basalt
00RF549A	499893	7107187	Eagle	A-1	Quartz augen white mica-quartz schist
00RF552	499764	7107719	Eagle	A-1	Chlorite-white mica-quartz schist
00RF563	496804	7096924	Eagle	A-1	Quartz-hornblende-clinzoisite± biotite gneiss
00RF617	496878	7110975	Eagle	A-1	Amphibolite
00RF681	493648	7106910	Eagle	A-1	Amphibolite with garnet
00RN204B	465330	7115277	Eagle	A-2	Biotite amphibolite
00RN256A	454300	7118826	Eagle	A-2	Amphibolite
00RN268A	458057	7121631	Eagle	A-2	Amphibolite
00RN277B	456698	7119991	Eagle	A-2	Biotite amphibolite
00RN370A	476829	7104999	Eagle	A-1	Amphibolite
00RN413	473624	7100917	Eagle	A-2	Amphibolite and coarse-grained amphibole gneiss
00RN454A	468965	7125133	Eagle	B-2	Amphibolite
00WM117	458850	7122731	Eagle	A-2	Amphibolite
00WM225	475714	7097046	Eagle	A-2	Amphibolite
00WM250C	478308	7105976	Eagle	A-1	Amphibolite
00WM252B	479109	7105357	Eagle	A-2	Amphibolite
00WM321A	477972	7115789	Eagle	A-2	Amphibolite
01JEA2A	485065	7096088	Tanacross	D1	Amphibolite
01JEA35A	488864	7097373	Eagle	A1	Amphibolite
01JEA39B	486087	7101905	Eagle	A1	Amphibolite
01JEA47A	486766	7102919	Eagle	A1	Amphibolite
01JEA51B	487060	7103587	Eagle	A1	Amphibolite gneiss
01JEA55B	484896	7109552	Eagle	A1	Orthogneiss
01JEA60A	484656	7109428	Eagle	A1	Amphibolite
01JEA90A	481397	7110019	Eagle	A1	Garnet-bearing amphibolite
01JEA138A	487424	7116888	Eagle	A1	Orthogneiss
01JEA238A	490287	7119097	Eagle	A1	Amphibolite
01JEA243A	493300	7119075	Eagle	A1	Orthogneiss? (biotite-quartz-feldspar gneiss)
01JEA257B	489980	7107004	Eagle	A1	Amphibolite
01JEA259B	489841	7107135	Eagle	A1	Biotite granite
01JEA311B	484742	7099917	Eagle	A1	Amphibolite
01KC8D	488248	7101269	Eagle	A1	(Muscovite)-(biotite)-quartz-feldspar gneiss
01KC16B	490938	7103033	Eagle	A1	Weakly foliated granodiorite
01KC23B	490700	7098150	Eagle	A1	Fine-grained orthogneiss
01KC39A	484335	7111921	Eagle	A1	Fine-grained orthogneiss
01KC39B	484335	7111921	Eagle	A1	Amphibolite

Table 3. Location and description of rock samples collected in the Eagle and Tanacross quadrangles for major-oxide, minor oxide, and trace element analyses.

SAMPLE	UTM E	UTM N	Quadrangle	Rock Type
01KC41A	485485	7109782	Eagle	A1 Slightly foliated granodiorite dike
01KC42A	485715	7109963	Eagle	A1 Biotite granodiorite
01KC47B	485451	7115741	Eagle	A1 Biotite-quartz-feldspar gneiss
01KC51B	488029	7119717	Eagle	A1 Biotite orthogneiss
01KC57A	494579	7109437	Eagle	A1 Amphibolite
01KC58A	494826	7110870	Eagle	A1 Biotite-hornblende gabbro
01KC59A	494088	7113359	Eagle	A1 Slightly foliated biotite granodiorite
01KC61A	494085	7113993	Eagle	A1 Slightly foliated biotite granodiorite
01KC66B	494842	7110688	Eagle	A1 Amphibolite
01KC69B	494095	7112905	Eagle	A1 Highly foliated hornblende-biotite granodiorite
01KC95C	493248	7125954	Eagle	B1 Fine-grained felsic dikes
01KC95D	493248	7125954	Eagle	B1 Fine-grained ultramafic (biotite clinopyroxenite?)
01MBW10A	484758	7097374	Eagle	A1 White mica-bearing orthogneiss
01MBW14A	484559	7098202	Eagle	A1 Orthogneiss
01MBW50A	492040	7102124	Eagle	A1 Thinly foliated, biotite orthogneiss
01MBW52A	492415	7102658	Eagle	A1 Garnet+ biotite amphibolite
01MBW57B	485417	7102598	Eagle	A1 Amphibolite
01MBW60A	485380	7103006	Eagle	A1 White mica-bearing orthogneiss
01MBW63A	485264	7103538	Eagle	A1 Biotite amphibolite
01MBW73A	486159	7104629	Eagle	A1 Porphyritic basalt
01MBW77B	484886	7103656	Eagle	A1 White mica-bearing orthogneiss
01MBW95B	487383	7103865	Eagle	A1 Chlorite orthogneiss
01MBW105B	488185	7109470	Eagle	A1 Weakly foliated, biotite tonalite
01MBW123A	485561	7116584	Eagle	A1 Tonalitic to granodioritic orthogneiss
01MBW125A	485657	7116523	Eagle	A1 Granitic, biotite orthogneiss
01MBW126A	485769	7116480	Eagle	A1 Fine-grained, white mica-bearing gneiss
01MBW130A	486097	7116177	Eagle	A1 Foliated, granitic, hornblende-bearing plutonic rock
01MBW134A	486626	7115762	Eagle	A1 Coarse-grained pegmatite
01MBW144A	488047	7113060	Eagle	A1 Weakly foliated, fine-grained, biotite granodiorite
01MBW165A	490263	7114227	Eagle	A1 Slightly foliated, granitic biotite orthogneiss
01MBW171A	491244	7114304	Eagle	A1 Amphibolite
01MBW180A	488564	7107923	Eagle	A1 Granite
01MBW183A	489005	7108308	Eagle	A1 White mica-biotite-quartz-feldspar orthogneiss
01MBW187A	489438	7108703	Eagle	A1 Garnet-bearing amphibolite
01MBW225A	493660	7119820	Eagle	A1 Slightly foliated, tonalitic, biotite orthogneiss
01MBW226B	493250	7119650	Eagle	A1 Amphibolite
01MBW244A	496112	7113298	Eagle	A1 Orthogneiss or metaconglomerate
01MBW245A	496062	7113303	Eagle	A1 Meta-pebble sandstone or metavolcanic rock
01MBW246B	496020	7113310	Eagle	A1 Amphibolite

Table 3. Location and description of rock samples collected in the Eagle and Tanacross quadrangles for major-oxide, minor oxide, and trace element analyses.

SAMPLE	UTM E	UTM N	Quadrangle		Rock Type
01MBW252A	495356	7113359	Eagle	A1	Metagabbro
01MBW255A	485537	7122352	Eagle	A1	Biotite granodiorite dike
01MBW287B	491702	7106318	Eagle	A1	Biotite amphibolite
01MBW288A	491500	7106400	Eagle	A1	Biotite tonalite or orthogneiss
01MBW289A	491328	7106576	Eagle	A1	Amphibolite
01MBW294A	490273	7106862	Eagle	A1	White mica-biotite-quartz-feldspar orthogneiss
01MBW304A	499603	7122956	Eagle	A1	Amphibolite
01MBW313A	499530	7122081	Eagle	A1	Biotite-quartz-feldspar gneiss
01MBW314A	499282	7122042	Eagle	A1	Amphibolite
01MBW319A	498555	7121989	Eagle	A1	Amphibolite
01MBW321A	497159	7121787	Eagle	A1	White mica-bearing orthogneiss
01MBW327A	497934	7123708	Eagle	A1	White mica-bearing orthogneiss
01MBW330A	496727	7124032	Eagle	A1	Amphibole-feldspar gneiss
01MBW335A	495017	7119640	Eagle	A1	Slightly foliated gabbro
01MBW336A	494844	7119734	Eagle	A1	Biotite-hornblende-quartz-feldspar orthogneiss
01MBW344A	494346	7121018	Eagle	A1	Amphibolite
01MBW367A	480627	7098608	Eagle	A1	Tonalitic or trondhjemitic, white mica-bearing orthogneiss dike or sill
01MBW371A	481412	7098989	Eagle	A1	Pegmatitic, biotite-bearing orthogneiss
01MBW376A	483234	7119461	Eagle	A1	Biotite granodioritic (?) orthogneiss
01MBW377B	483058	7119640	Eagle	A1	Porphyritic biotite-hornblende monzonite (dike?)
01MBW381B	482972	7120238	Eagle	A1	Slightly foliated, biotite monzonite
01MBW383A	482964	7120551	Eagle	A1	White mica-bearing orthogneiss
01MBW402A	482004	7120580	Eagle	A1	Fine-grained, biotite-bearing? Amphibolite
01MBW403A	482081	7120862	Eagle	A1	Granodioritic, biotite orthogneiss
01MBW418A	487391	7121431	Eagle	A1	Granodioritic, biotite orthogneiss
01MBW432A	493542	7106770	Eagle	A1	Amphibolite
01MBW433A	493682	7106916	Eagle	A1	Biotite amphibolite
01MBW436A	493918	7107213	Eagle	A1	White mica-bearing granite sill
01RN13A	480015	7099751	Eagle	A1	Biotite amphibolite
01RN22A	486905	7101189	Eagle	A1	Biotite-bearing amphibolite
01RN46A	482430	7100811	Eagle	A1	Biotite-bearing paragneiss
01RN61B	486375	7105321	Eagle	A1	Biotite-garnet amphibolite
01RN75A	487649	7112236	Eagle	A1	Amphibolite
01RN102B	488186	7120555	Eagle	A1	Amphibolite
01RN117A	489816	7107373	Eagle	A1	Amphibolite
01RN128A	488775	7106615	Eagle	A1	Amphibolite
01RN134B	492248	7110365	Eagle	A1	Amphibolite
01RN136A	490928	7116038	Eagle	A1	Amphibolite
01RN151A	495272	7104279	Eagle	A1	Amphibole gneiss

Table 3. Location and description of rock samples collected in the Eagle and Tanacross quadrangles for major-oxide, minor oxide, and trace element analyses.

SAMPLE	UTM E	UTM N	Quadrangle		Rock Type
01RN157A	496494	7102630	Eagle	A1	Granodioritic biotite orthogneiss
01RN167A	494935	7112806	Eagle	A1	Amphibolite
01RN171A	494278	7113639	Eagle	A1	Dioritic biotite orthogneiss
01Z11A	485583	7099624	Eagle	A1	Garnet-bearing amphibolite
01Z19A	485233	7102549	Eagle	A1	Garnet-bearing amphibolite
01Z21A	484849	7102492	Eagle	A1	Garnet-bearing amphibolite
01Z33B	487977	7107537	Eagle	A1	Garnet-bearing amphibolite
01Z35A	487768	7106971	Eagle	A1	Biotite granodiorite dike
01Z36A	487664	7106808	Eagle	A1	Amphibolite
01Z50A	484547	7106598	Eagle	A1	Biotite orthogneiss
01Z58A	486621	7115762	Eagle	A1	Trondhjemitic pegmatitic orthogneiss
01Z58B	486621	7115762	Eagle	A1	Trondhjemitic orthogneiss
01Z61A	487333	7115917	Eagle	A1	Amphibolite
01Z63B	487609	7115801	Eagle	A1	Amphibolite
01Z65A	487942	7115744	Eagle	A1	Biotite granodiorite dike
01Z70A	488783	7115517	Eagle	A1	Biotite-garnet paragneiss
01Z72A	489165	7115661	Eagle	A1	Biotite-garnet amphibolite
01Z81A	490612	7116165	Eagle	A1	Granodioritic biotite orthogneiss
01Z82A	490707	7116101	Eagle	A1	Garnet-bearing amphibolite
01Z92A	491844	7117106	Eagle	A1	Garnet-bearing amphibolite and amphibole gneiss
01Z93A	491933	7117085	Eagle	A1	Garnet-bearing amphibolite
01Z95A	492218	7117183	Eagle	A1	Amphibolite
01Z98A	490677	7106959	Eagle	A1	Biotite- and garnet-bearing paragneiss
01Z108A	492956	7108308	Eagle	A1	Equigranular biotite granite
01Z121A	495569	7116344	Eagle	A1	Granitic biotite orthogneiss
01Z126A	495829	7117068	Eagle	A1	Granodioritic biotite orthogneiss
01Z132A	495249	7118076	Eagle	A1	Tonalitic biotite orthogneiss
01Z158A	495098	7119507	Eagle	A1	Vesicular basalt
01Z158C	495098	7119507	Eagle	A1	Fine-grained, hornblende-rich, latite dike
01Z158E	495098	7119507	Eagle	A1	Fine-grained, biotite granodiorite
01Z160A	494764	7119436	Eagle	A1	Slightly foliated, biotite-hornblende tonalite
01Z167B	488682	7120850	Eagle	A1	Biotite granite (dike?)
01Z176A	489901	7121612	Eagle	A1	Amphibolite
01Z185A	493016	7122391	Eagle	A1	Amphibole gneiss
01Z186A	493257	7122416	Eagle	A1	Granodioritic biotite orthogneiss
01Z209A	498872	7120597	Eagle	A1	Granodioritic biotite orthogneiss
01Z225A	497782	7119650	Eagle	A1	Paragneiss, possibly metaconglomerate
01Z230A	487689	7095218	Tanacross	D1	Slightly foliated biotite trondhjemitite
01Z235A	488980	7094970	Tanacross	D1	Biotite amphibolite

Table 3. Location and description of rock samples collected in the Eagle and Tanacross quadrangles for major-oxide, minor oxide, and trace element analyses.

SAMPLE	UTM E	UTM N	Quadrangle		Rock Type
01Z237A	490306	7096891	Eagle	A1	Biotite amphibolite
01Z245A	484693	7104914	Eagle	A1	Biotite-garnet amphibolite
01Z250A	480239	7119764	Eagle	A1	Biotite-hornblende granodiorite
01Z254A	480905	7120204	Eagle	A1	Amphibolite
01Z256A	481248	7120608	Eagle	A1	Biotite amphibolite
01Z258A	481428	7120723	Eagle	A1	Granitic biotite orthogneiss
01Z262A	480111	7121396	Eagle	A1	Tonalitic biotite orthogneiss
01Z267A	481089	7120820	Eagle	A1	Granodioritic biotite orthogneiss
01Z272A	482115	7124203	Eagle	A1	Biotite-garnet paragneiss

Note: Sample 00RN568A was previously identified as 00RN586A in DGGS publication RDF2000-4

Table 4. Concentration of major-oxides, minor oxides, and trace elements in rock samples from the Eagle and Tanacross quadrangles, Alaska.

Note: — = not analyzed.

SAMPLE NUMBER	Al ₂ O ₃ %	CaO %	Cr ₂ O ₃ %	Fe ₂ O ₃ %	K ₂ O %	MgO %	MnO %	Na ₂ O %	P ₂ O ₅ %	SiO ₂ %	TiO ₂ %	LOI %	TOTAL %	Ba ppm	Rb ppm	Nb ppm	Sr ppm	Zr ppm	Y ppm	BaO %
99MBW079	22.52	1.86	0.01	3.98	3.20	1.12	0.04	1.70	0.14	60.20	0.93	2.90	98.60	1485	138	26	280	204	44	—
99MBW095B	9.60	2.08	<.01	1.71	1.11	0.73	<.01	0.11	0.03	72.59	0.13	11.00	99.09	2460	78	34	2420	240	38	—
00DS121	13.80	4.70	<.01	5.60	0.75	2.78	0.09	3.74	0.11	65.92	0.59	0.95	99.03	250	22	10	198	87	30	—
00JG014-6/28	16.34	5.37	<.01	7.36	2.10	5.04	0.13	3.20	0.19	57.54	0.73	1.06	99.12	—	64	10	—	129	22	0.03
00JG032-6/29	14.71	9.77	<.01	10.83	1.48	8.19	0.18	2.56	0.22	49.30	0.81	1.45	99.55	—	34	6	—	62	20	0.02
00JG092-6/20	18.51	4.10	<.01	11.18	2.82	4.01	0.26	5.13	0.12	51.56	0.81	0.85	99.43	—	56	8	—	54	18	0.08
00JG095-6/20	17.26	6.31	<.01	9.85	2.44	6.26	0.18	4.39	0.35	50.15	1.20	1.17	99.74	—	58	12	—	143	26	0.14
00MBW194	14.52	1.43	<.01	0.57	2.78	0.06	0.01	3.70	0.03	75.27	0.06	0.63	99.06	3120	72	8	762	51	8	—
00MBW213C	14.57	1.06	0.01	0.83	4.73	0.18	0.02	3.60	0.03	73.08	0.08	0.55	98.74	1995	80	6	554	69	14	—
00MBW535	14.47	3.12	<.01	5.00	4.30	1.52	0.10	2.37	0.29	65.50	0.56	1.52	98.75	1775	82	18	654	162	26	—
00MBW549	15.31	1.08	0.01	0.45	3.54	0.03	0.03	5.30	0.01	72.96	0.04	0.18	98.94	3570	64	10	968	48	6	—
00RF001A	13.68	1.80	0.03	6.75	3.18	4.18	0.05	1.34	0.23	62.54	0.92	3.99	98.69	—	—	—	—	—	—	—
00RF054	13.85	2.16	<.01	4.96	2.62	2.44	0.07	3.45	0.18	68.09	0.70	1.05	99.57	1885	104	16	264	171	32	—
00RF061	15.49	14.63	0.15	6.61	0.11	11.03	0.11	1.06	<.01	46.97	0.25	2.59	99.00	—	—	—	—	—	—	—
00RF061	15.79	14.61	0.10	6.59	0.10	11.16	0.11	1.13	0.01	47.22	0.25	2.60	99.67	40	14	6	82	15	12	—
00RF092A	19.99	12.05	0.05	4.87	0.60	9.37	0.08	1.77	0.03	46.43	0.12	3.52	98.88	—	—	—	—	—	—	—
00RF092A	20.37	12.06	0.04	4.80	0.62	9.40	0.08	1.90	0.01	46.37	0.11	3.55	99.31	585	22	4	128	15	6	—
00RF112A	14.74	9.88	0.01	11.08	0.49	7.59	0.18	3.43	0.14	49.01	1.52	1.71	99.78	165	18	10	148	93	28	—
00RF113B	14.09	1.21	<.01	1.45	5.16	0.24	0.07	1.72	0.04	72.01	0.17	2.93	99.09	2260	204	20	254	120	26	—
00RF118	11.71	1.23	0.03	6.01	3.91	2.83	0.08	1.16	0.53	68.38	0.95	1.75	98.57	910	162	28	90	192	20	—
00RF126A	13.62	2.72	<.01	5.08	3.30	1.81	0.07	1.00	0.09	68.54	0.62	1.97	98.82	—	—	—	—	—	—	—
00RF126A	13.74	2.77	<.01	5.30	3.14	1.75	0.07	1.05	0.10	68.01	0.65	2.00	98.58	995	112	20	164	231	30	—
00RF126B	15.67	11.00	0.01	10.23	0.43	7.53	0.18	1.59	0.05	50.07	0.43	1.89	99.08	160	16	6	116	27	16	—
00RF134	16.15	13.86	<.01	7.22	0.09	8.46	0.14	1.92	<.01	48.88	0.42	1.69	98.83	—	—	—	—	—	—	—
00RF134	16.27	13.71	<.01	7.25	0.10	8.33	0.14	1.89	0.04	49.17	0.42	1.73	99.05	60	10	4	98	18	14	—
00RF160	11.02	0.16	0.02	2.19	4.76	1.87	0.03	0.14	0.05	76.74	0.20	1.75	98.93	—	—	—	—	—	—	—
00RF174A	17.36	6.12	<.01	11.16	2.29	4.85	0.18	4.46	0.36	49.53	1.04	1.39	98.74	2360	64	6	310	108	26	—
00RF201A	12.89	2.31	0.01	1.87	1.07	1.40	0.04	2.18	<.01	75.27	0.12	1.59	98.75	—	—	—	—	—	—	—
00RF236A	14.85	12.12	0.06	11.33	0.49	8.23	0.18	2.16	0.12	45.99	1.22	2.26	99.01	355	20	6	220	81	22	—
00RF322A	12.75	14.72	0.03	7.66	0.07	11.60	0.14	1.15	0.22	48.69	0.40	1.68	99.11	40	12	6	50	18	14	—
00RF340B	17.44	0.69	<.01	1.96	0.09	0.53	0.03	<.01	0.24	75.94	0.95	1.64	99.51	—	8	28	—	210	22	<.01
00RF345A	11.82	10.54	0.10	7.53	0.54	12.85	0.15	1.72	0.14	50.10	0.20	3.58	99.27	610	24	6	102	18	14	—
00RF349A	15.22	8.85	<.01	9.92	0.42	8.35	0.13	2.92	0.10	50.34	0.85	1.93	99.03	795	18	8	324	57	20	—
00RF349B	2.65	11.92	0.10	5.97	0.23	19.52	0.19	0.02	0.03	55.68	0.04	3.10	99.45	455	16	6	6	12	8	—
00RF357C	15.33	7.12	0.01	9.90	0.31	7.30	0.15	3.05	0.35	51.97	0.98	2.85	99.32	225	16	8	422	75	24	—
00RF376	14.76	6.50	<.01	12.20	0.54	5.42	0.20	4.21	0.11	52.08	1.25	1.29	98.56	195	20	8	144	66	24	—
00RF454	9.51	0.64	0.02	2.75	2.48	0.76	0.04	1.17	0.09	79.83	0.35	1.36	99.00	650	96	14	70	201	22	—

Table 4. Concentration of major-oxides, minor oxides, and trace elements in rock samples from the Eagle and Tanacross quadrangles, Alaska.

Note: — = not analyzed.

SAMPLE NUMBER	Al ₂ O ₃ %	CaO %	Cr ₂ O ₃ %	Fe ₂ O ₃ %	K ₂ O %	MgO %	MnO %	Na ₂ O %	P ₂ O ₅ %	SiO ₂ %	TiO ₂ %	LOI %	TOTAL %	Ba ppm	Rb ppm	Nb ppm	Sr ppm	Zr ppm	Y ppm	BaO %
00RF467	14.77	10.60	0.01	11.85	0.61	5.05	0.19	2.87	0.17	50.06	1.62	1.37	99.17	165	28	10	156	96	26	—
00RF487B	14.07	1.36	<.01	1.71	3.69	0.50	0.13	<.01	0.03	71.03	0.17	5.83	98.52	—	—	—	—	—	—	—
00RF488	5.16	0.17	0.01	0.50	1.65	0.52	0.01	<.01	0.06	87.61	0.27	2.58	98.54	1645	62	12	120	66	16	—
00RF517	13.91	6.53	0.01	6.50	2.40	4.95	0.13	2.45	0.23	56.31	0.62	4.89	98.93	1165	66	12	472	108	22	—
00RF547B	11.21	11.19	0.02	12.70	1.74	10.50	0.18	3.38	0.92	40.08	3.04	4.06	99.02	795	54	102	972	225	24	—
00RF549A	13.32	0.93	0.01	4.00	4.27	0.82	0.07	1.01	0.10	70.98	0.42	2.79	98.72	—	—	—	—	—	—	—
00RF552	11.88	0.18	0.01	3.76	1.81	4.74	0.10	0.92	0.13	71.87	0.46	3.18	99.04	—	—	—	—	—	—	—
00RF563	16.19	10.66	0.05	11.77	0.64	4.90	0.17	3.18	0.22	47.06	1.88	1.92	98.64	530	22	10	236	132	32	—
00RF617	15.18	8.57	0.04	11.44	1.16	5.45	0.20	2.92	0.19	51.68	1.17	0.86	98.86	390	32	10	258	78	24	—
00RF681	15.55	8.28	0.01	10.26	0.57	5.15	0.24	1.98	0.19	53.11	1.09	1.99	98.42	230	18	8	206	63	24	—
00RN204B	16.18	10.18	<.01	8.93	1.66	6.99	0.17	2.68	0.23	49.07	1.43	1.43	98.95	905	48	24	476	108	22	—
00RN256A	16.19	10.79	<.01	13.15	1.10	4.18	0.18	3.19	0.45	45.37	3.03	0.91	98.54	405	20	38	588	132	18	—
00RN268A	16.51	6.50	<.01	8.51	2.68	3.95	0.17	4.18	0.20	54.15	0.78	1.43	99.06	1560	54	14	574	75	18	—
00RN277B	14.88	10.79	0.01	11.93	1.51	7.71	0.18	2.26	0.53	44.74	1.99	2.05	98.58	490	34	34	504	180	26	—
00RN370A	15.00	8.15	<.01	10.42	0.97	6.52	0.18	4.08	0.30	51.17	1.06	1.28	99.14	—	26	7	—	65	22	<.01
00RN413	17.95	7.20	<.01	9.84	0.52	5.50	0.10	2.56	0.09	52.96	0.68	1.35	98.75	220	18	8	338	54	20	—
00RN454A	17.12	8.31	<.01	10.78	0.38	5.51	0.17	2.28	0.08	51.86	0.69	1.38	98.56	210	14	8	236	54	18	—
00WM117	16.60	9.05	0.01	10.39	1.11	7.63	0.28	2.88	0.14	48.02	0.93	1.66	98.70	290	36	12	266	60	18	—
00WM225	15.82	6.20	0.03	9.63	0.89	4.98	0.16	5.08	0.08	53.89	0.77	1.09	98.62	825	26	6	166	48	18	—
00WM250C	17.04	7.76	<.01	10.38	1.74	6.77	0.30	3.93	0.26	48.32	0.88	1.27	98.76	—	44	9	—	67	22	0.06
00WM252B	17.47	9.52	<.01	9.23	0.85	8.49	0.15	2.91	0.26	47.39	1.21	2.03	99.55	—	24	6	—	91	24	0.01
00WM321A	13.23	11.20	<.01	17.60	1.26	9.46	0.24	1.73	0.36	41.69	1.65	1.25	99.71	—	22	6	—	41	24	0.03
01JEA2A	12.59	8.03	<.01	10.15	0.81	3.14	0.22	2.42	0.22	59.15	1.44	1.07	99.31	420	22	<10	—	110	34	0.03
01JEA35A	14.98	8.54	0.05	13.46	0.58	5.92	0.19	2.68	0.27	50.04	1.56	1.26	99.58	330	16	<10	—	90	28	0.03
01JEA39B	15.03	10.60	0.05	11.43	0.77	6.36	0.17	2.76	0.15	49.16	1.54	1.29	99.38	440	20	<10	—	90	30	0.03
01JEA47A	14.98	8.63	0.04	7.16	0.79	4.72	0.14	3.04	0.05	57.06	0.44	1.44	98.57	630	20	<10	—	50	16	0.05
01JEA51B	13.79	10.20	0.03	8.52	0.82	5.82	0.21	2.30	0.23	54.17	0.85	1.43	98.45	330	18	10	—	80	22	0.01
01JEA55B	14.94	1.95	0.01	1.03	1.71	0.29	0.01	3.65	0.05	73.14	0.15	0.98	98.29	2370	46	<10	—	80	12	0.27
01JEA60A	15.08	7.17	0.01	9.52	0.67	4.82	0.18	4.10	0.17	55.86	0.79	1.02	99.46	400	18	<10	—	70	26	0.02
01JEA90A	14.18	8.07	0.01	8.70	2.53	6.87	0.17	2.35	0.29	54.36	0.70	1.22	99.62	1120	44	<10	—	80	22	0.12
01JEA138A	16.01	4.50	<.01	4.16	2.98	1.00	0.12	3.03	0.20	64.31	0.45	1.13	98.14	1480	80	20	—	190	26	0.16
01JEA238A	14.68	9.88	<.01	11.98	0.43	5.45	0.19	2.09	0.09	51.64	0.91	1.72	99.11	280	16	<10	—	50	20	<.01
01JEA243A	12.65	4.64	<.01	6.37	2.35	4.14	0.13	2.10	0.07	64.47	0.43	1.86	99.37	1280	74	10	—	120	28	0.13
01JEA257B	14.97	12.21	0.05	10.55	0.73	7.77	0.22	2.11	0.50	46.38	2.16	1.59	99.37	570	20	70	—	180	26	0.06
01JEA259B	16.16	9.24	0.03	10.08	0.98	6.21	0.18	3.96	0.22	49.75	1.77	1.32	99.96	460	32	20	—	140	30	0.03
01JEA311B	16.58	1.70	<.01	0.72	3.06	0.20	0.02	5.10	0.03	69.97	0.11	1.14	99.02	2090	68	<10	—	80	10	0.24
01KC8D	14.80	1.36	0.02	1.19	3.08	0.32	0.04	4.76	0.03	72.83	0.12	0.54	99.52	2580	52	<10	—	80	12	0.28

Table 4. Concentration of major-oxides, minor oxides, and trace elements in rock samples from the Eagle and Tanacross quadrangles, Alaska.

Note: — = not analyzed.

SAMPLE NUMBER	Al ₂ O ₃ %	CaO %	Cr ₂ O ₃ %	Fe ₂ O ₃ %	K ₂ O %	MgO %	MnO %	Na ₂ O %	P ₂ O ₅ %	SiO ₂ %	TiO ₂ %	LOI %	TOTAL %	Ba ppm	Rb ppm	Nb ppm	Sr ppm	Zr ppm	Y ppm	BaO %
01KC16B	14.81	1.62	<.01	1.18	2.21	0.23	0.03	5.29	0.03	73.48	0.16	0.39	99.80	2110	46	<10	—	80	14	0.23
01KC23B	16.39	1.16	<.01	0.82	1.67	0.25	0.02	7.13	0.03	71.14	0.09	0.31	99.24	1170	28	30	—	90	10	0.12
01KC39A	17.18	1.76	<.01	3.56	0.40	0.08	0.19	8.19	0.08	66.44	0.34	0.38	98.64	190	10	240	—	930	46	<.01
01KC39B	13.41	11.83	<.01	16.80	1.11	5.64	0.22	2.29	0.61	41.34	4.49	1.19	99.04	250	18	20	—	90	18	0.03
01KC41A	14.07	1.54	<.01	2.08	2.17	0.63	0.05	4.23	0.05	73.46	0.29	0.75	99.67	2200	50	10	—	130	14	0.24
01KC42A	14.14	2.12	<.01	2.01	2.70	0.44	0.05	4.00	0.06	71.15	0.26	0.60	98.07	2900	50	10	—	150	28	0.33
01KC47B	13.65	3.30	0.01	4.86	1.41	2.39	0.10	3.92	0.06	68.67	0.40	0.58	99.41	650	42	10	—	100	24	0.05
01KC51B	14.72	2.69	<.01	1.02	1.55	0.22	0.01	4.69	0.03	72.51	0.14	0.29	98.19	1630	34	<10	—	80	12	0.18
01KC57A	17.26	15.09	<.01	15.12	0.59	2.76	0.20	1.45	0.23	43.74	1.42	1.42	99.34	150	20	<10	—	70	24	<.01
01KC58A	17.99	7.75	<.01	11.16	2.97	5.00	0.17	3.12	0.40	46.62	1.10	2.19	98.68	1300	66	10	—	120	26	0.12
01KC59A	15.82	5.98	<.01	7.14	2.99	2.70	0.14	2.91	0.29	59.35	0.70	1.12	99.46	2000	74	10	—	100	24	0.21
01KC61A	14.22	9.82	<.01	14.81	1.71	6.68	0.21	1.91	0.77	45.95	1.26	1.74	99.23	820	38	10	—	60	24	0.10
01KC66B	15.44	7.67	0.01	10.40	2.31	4.15	0.17	2.31	0.46	53.96	0.91	1.44	99.50	1920	56	<10	—	100	22	0.20
01KC69B	16.86	7.29	<.01	5.66	2.06	2.03	0.13	3.15	0.24	58.43	0.61	1.38	98.14	1870	50	10	—	110	20	0.20
01KC95C	16.29	1.57	<.01	0.97	4.03	0.16	0.03	5.10	0.04	68.93	0.11	0.24	98.08	2860	80	20	—	90	10	0.34
01KC95D	11.21	11.84	<.01	21.41	2.29	9.60	0.19	0.83	1.80	34.91	1.52	3.91	99.57	390	54	<10	—	30	18	0.03
01MBW10A	16.64	1.58	<.01	0.82	1.61	0.15	0.01	6.29	0.03	69.68	0.09	0.64	98.07	3060	20	<10	—	70	8	0.36
01MBW14A	17.60	5.40	<.01	4.97	1.51	2.14	0.11	3.40	0.09	61.55	0.41	2.05	99.32	700	40	<10	—	100	20	0.05
01MBW50A	12.07	1.18	<.01	2.17	1.15	0.10	0.02	4.85	0.04	75.91	0.27	0.45	98.21	270	32	10	—	170	34	<.01
01MBW52A	17.43	14.60	<.01	10.95	0.21	6.37	0.18	1.19	0.08	46.93	0.36	1.28	99.59	60	14	<10	—	30	14	<.01
01MBW57B	16.26	10.57	0.02	10.78	0.89	4.79	0.19	3.07	0.19	48.80	1.80	1.40	98.85	490	22	10	—	120	32	0.05
01MBW60A	14.79	2.37	<.01	1.06	2.31	0.28	0.03	4.21	0.04	72.24	0.12	0.74	98.59	1970	52	10	—	80	10	0.22
01MBW63A	11.76	8.51	0.02	9.04	0.90	9.73	0.14	2.19	0.10	55.05	0.35	1.18	99.01	430	22	<10	—	40	16	0.03
01MBW73A	14.51	8.79	0.02	11.30	0.93	6.57	0.17	2.81	0.43	45.99	2.08	5.87	99.56	500	30	20	—	200	34	0.05
01MBW77B	15.46	2.27	<.01	1.26	2.46	0.41	0.02	4.43	0.05	70.85	0.16	0.74	98.44	1860	58	<10	—	110	10	0.22
01MBW95B	17.40	2.52	<.01	3.81	2.99	1.06	0.06	4.87	0.23	64.33	0.52	1.47	99.63	2410	68	60	—	260	26	0.28
01MBW105B	14.65	2.17	<.01	1.44	0.84	0.30	0.01	5.08	0.03	72.44	0.16	0.60	98.25	2990	22	<10	—	80	16	0.35
01MBW123A	15.58	3.05	<.01	1.30	2.12	0.48	0.01	4.35	0.06	71.38	0.17	0.28	99.15	1940	48	<10	—	110	8	0.23
01MBW125A	15.84	1.68	<.01	0.94	2.01	0.17	0.02	6.20	0.03	70.10	0.10	0.67	98.04	1770	38	<10	—	70	6	0.20
01MBW126A	9.72	5.21	<.01	1.94	1.29	0.96	0.05	2.64	0.04	72.11	0.37	3.89	98.26	380	52	10	—	250	22	0.01
01MBW130A	13.11	5.38	0.03	4.47	0.75	1.77	0.09	3.05	0.07	69.47	0.36	0.81	99.40	370	16	10	—	80	22	0.03
01MBW134A	15.74	0.51	<.01	0.37	3.82	<.01	0.01	5.69	0.04	71.32	0.04	0.47	98.39	2440	62	<10	—	70	8	0.30
01MBW144A	14.24	1.05	<.01	1.38	3.75	0.23	0.03	4.27	0.06	72.30	0.19	0.79	98.64	2000	82	10	—	130	14	0.23
01MBW165A	14.73	2.75	0.02	2.88	3.73	0.67	0.06	2.84	0.10	69.44	0.30	0.85	98.63	1740	84	20	—	100	16	0.19
01MBW171A	14.45	9.40	0.10	10.60	0.36	10.02	0.16	1.77	0.23	50.30	0.55	1.46	99.41	70	14	10	—	50	20	<.01
01MBW180A	15.41	1.15	<.01	0.50	0.50	0.09	0.01	7.84	<.01	72.69	0.05	0.28	98.68	800	12	<10	—	70	6	0.07
01MBW183A	15.60	1.39	<.01	0.77	1.88	0.03	0.01	4.77	0.01	74.25	0.08	0.68	99.93	2910	36	<10	—	100	14	0.32

Table 4. Concentration of major-oxides, minor oxides, and trace elements in rock samples from the Eagle and Tanacross quadrangles, Alaska.

Note: — = not analyzed.

SAMPLE NUMBER	Al ₂ O ₃ %	CaO %	Cr ₂ O ₃ %	Fe ₂ O ₃ %	K ₂ O %	MgO %	MnO %	Na ₂ O %	P ₂ O ₅ %	SiO ₂ %	TiO ₂ %	LOI %	TOTAL %	Ba ppm	Rb ppm	Nb ppm	Sr ppm	Zr ppm	Y ppm	BaO %
01MBW187A	14.02	8.07	<.01	13.20	0.63	4.10	0.23	3.11	0.22	52.59	1.84	0.44	98.52	480	18	<10	—	110	36	0.04
01MBW225A	13.59	5.10	<.01	6.48	2.23	4.07	0.11	2.08	0.09	64.26	0.44	1.18	99.75	990	72	10	—	100	24	0.10
01MBW226B	12.46	11.00	0.02	6.19	0.60	5.40	0.11	2.14	0.12	57.54	0.77	2.32	98.70	210	20	<10	—	60	20	<.01
01MBW244A	13.77	1.28	<.01	2.40	2.84	0.52	0.04	4.15	0.07	73.18	0.25	0.76	99.34	800	68	10	—	140	22	0.07
01MBW245A	16.29	3.53	<.01	2.45	2.04	0.75	0.04	4.18	0.22	67.95	0.29	1.30	99.31	1710	46	10	—	100	10	0.17
01MBW246B	14.77	9.45	<.01	12.59	0.55	5.44	0.28	2.29	0.36	49.67	1.91	1.80	99.15	250	18	<10	—	80	28	0.01
01MBW252A	16.25	6.12	<.01	7.67	2.99	2.91	0.15	3.44	0.37	57.30	0.67	1.04	99.28	2160	64	10	—	90	24	0.25
01MBW255A	14.95	4.70	<.01	6.02	3.71	1.59	0.13	2.28	0.36	63.56	0.66	1.11	99.31	1440	98	20	—	170	30	0.16
01MBW287B	16.45	7.67	<.01	8.68	0.41	5.24	0.17	3.99	0.09	53.94	1.00	1.42	99.15	500	18	<10	—	70	22	0.04
01MBW288A	16.23	1.50	<.01	0.50	0.83	0.10	0.01	5.71	0.02	73.89	0.05	0.56	99.71	1030	20	10	—	50	8	0.12
01MBW289A	14.97	6.79	<.01	11.89	0.71	4.31	0.19	3.83	0.17	54.44	1.22	1.05	99.65	780	20	<10	—	60	26	0.07
01MBW294A	16.31	0.97	<.01	1.10	1.54	0.34	0.01	3.97	0.03	73.93	0.14	0.92	99.64	2340	30	10	—	80	16	0.25
01MBW304A	14.61	8.86	<.01	13.17	0.53	5.13	0.23	3.33	0.20	49.51	1.71	1.87	99.17	190	20	<10	—	100	32	<.01
01MBW313A	14.26	4.30	<.01	4.07	1.60	0.84	0.07	2.96	0.07	69.92	0.46	0.97	99.63	730	46	20	—	130	28	0.06
01MBW314A	14.59	10.52	<.01	11.48	0.45	6.37	0.18	1.75	0.16	50.75	1.35	1.85	99.47	NA	18	7	—	95	32	<.01
01MBW319A	19.54	6.90	<.01	8.28	0.28	4.50	0.11	5.32	0.07	52.69	0.54	1.52	99.76	80	14	10	—	60	18	<.01
01MBW321A	12.83	0.33	<.01	1.09	4.85	<.01	0.05	3.62	0.01	74.29	0.09	0.73	98.02	900	136	20	—	70	26	0.10
01MBW327A	13.38	0.44	<.01	1.19	4.38	0.05	0.05	3.34	0.02	74.51	0.06	0.60	98.14	950	146	20	—	80	28	0.10
01MBW330A	14.58	4.48	<.01	7.87	1.75	3.03	0.27	1.65	0.12	63.16	0.66	1.77	99.47	1060	48	10	—	120	26	0.10
01MBW335A	14.17	6.49	0.01	8.07	1.44	5.44	0.14	1.81	0.09	59.54	0.54	1.68	99.50	600	52	10	—	80	22	0.05
01MBW336A	13.50	4.86	0.01	5.93	2.40	3.42	0.11	2.08	0.10	65.02	0.43	1.16	99.15	990	82	10	—	100	26	0.10
01MBW344A	17.85	7.29	0.01	11.52	0.48	3.48	0.38	4.11	0.49	51.05	1.62	0.86	99.17	290	18	20	—	190	34	<.01
01MBW367A	15.21	1.38	<.01	0.79	2.45	0.14	0.01	5.35	0.03	71.47	0.11	0.53	98.03	3340	44	<10	—	50	10	0.42
01MBW371A	15.23	1.15	<.01	0.56	1.37	0.01	0.01	7.09	<.01	71.65	0.07	0.42	98.08	2340	22	<10	—	60	6	0.31
01MBW376A	15.96	4.34	<.01	4.75	3.62	1.19	0.13	2.81	0.22	64.69	0.44	1.02	99.45	1640	100	20	—	160	26	0.19
01MBW377B	15.06	3.87	<.01	4.94	3.66	1.37	0.13	2.97	0.26	65.14	0.52	0.93	99.16	1800	98	20	—	160	28	0.20
01MBW381B	15.58	3.74	<.01	2.22	2.56	0.71	0.04	4.64	0.11	67.44	0.25	0.42	98.01	1670	58	10	—	110	10	0.19
01MBW383A	15.55	1.34	<.01	0.48	1.69	0.03	0.01	6.20	0.03	72.26	0.04	0.44	98.16	650	50	10	—	50	6	0.06
01MBW402A	13.76	6.52	<.01	14.26	0.46	3.60	0.22	4.33	0.06	55.50	0.82	0.32	99.86	130	14	<10	—	40	18	<.01
01MBW403A	15.35	3.29	<.01	1.08	1.64	0.07	0.02	5.04	0.04	71.15	0.09	0.30	98.29	940	40	<10	—	90	4	0.10
01MBW418A	14.99	2.72	<.01	1.40	1.62	0.29	0.02	4.85	0.04	71.58	0.16	0.62	98.55	1210	40	<10	—	90	14	0.12
01MBW432A	16.12	6.63	0.01	6.72	0.53	3.35	0.14	4.43	0.15	59.12	0.86	1.01	99.13	410	12	10	—	100	30	0.03
01MBW433A	15.00	5.91	0.01	6.59	0.99	4.54	0.19	2.70	0.11	59.78	0.70	1.77	98.35	470	24	10	—	120	28	0.03
01MBW436A	20.60	0.17	<.01	0.88	2.64	0.34	0.01	0.05	0.01	68.99	0.08	5.59	99.55	1670	70	10	—	70	8	0.19
01RN13A	14.06	8.71	0.07	8.82	1.67	8.83	0.14	1.91	0.27	52.00	1.19	1.81	99.60	870	44	20	—	120	22	0.08
01RN22A	15.26	5.46	<.01	7.63	1.41	3.41	0.14	3.84	0.24	60.16	0.73	1.07	99.58	1610	36	20	—	120	24	0.16
01RN46A	9.27	1.47	0.01	5.00	2.10	2.80	0.12	0.82	0.14	75.68	0.55	1.41	99.54	1620	62	10	—	110	28	0.15

Table 4. Concentration of major-oxides, minor oxides, and trace elements in rock samples from the Eagle and Tanacross quadrangles, Alaska.

Note: — = not analyzed.

SAMPLE NUMBER	Al ₂ O ₃ %	CaO %	Cr ₂ O ₃ %	Fe ₂ O ₃ %	K ₂ O %	MgO %	MnO %	Na ₂ O %	P ₂ O ₅ %	SiO ₂ %	TiO ₂ %	LOI %	TOTAL %	Ba ppm	Rb ppm	Nb ppm	Sr ppm	Zr ppm	Y ppm	BaO %
01RN61B	15.17	8.10	<01	11.52	0.83	5.91	0.19	2.97	0.13	53.04	0.90	0.93	99.73	390	26	10	—	60	20	0.02
01RN75A	15.55	7.17	<01	7.35	0.81	3.02	0.21	3.96	0.36	58.63	0.78	1.28	99.20	460	20	10	—	70	24	0.03
01RN102B	15.35	8.29	0.04	9.48	1.36	7.60	0.17	2.98	0.11	51.39	0.74	1.90	99.48	400	50	<10	—	50	18	0.03
01RN117A	11.30	10.11	0.13	8.87	1.69	10.70	0.16	2.13	0.05	52.88	0.31	1.27	99.64	440	38	<10	—	20	12	0.03
01RN128A	14.60	7.77	<01	10.96	0.42	5.22	0.16	3.91	0.15	53.68	1.14	0.77	98.82	180	12	<10	—	60	24	<01
01RN134B	17.23	4.32	<01	8.89	1.90	2.57	0.27	4.80	0.18	56.72	0.85	1.46	99.30	650	60	10	—	100	30	0.06
01RN136A	14.64	13.49	0.05	14.66	1.12	7.12	0.21	1.44	0.52	43.53	1.08	1.66	99.65	520	20	<10	—	50	22	0.04
01RN151A	17.34	15.77	0.25	4.93	0.08	11.88	0.08	0.70	0.02	45.76	0.20	2.78	99.80	40	8	<10	—	20	10	<01
01RN157A	14.24	1.11	<01	2.61	1.82	0.68	0.04	4.99	0.05	72.55	0.32	0.92	99.58	2280	64	10	—	150	28	0.24
01RN167A	14.42	9.21	<01	12.32	0.72	4.07	0.25	3.24	0.18	52.67	1.24	1.43	99.80	310	20	<10	—	60	22	0.01
01RN171A	15.96	6.15	<01	7.62	2.60	2.87	0.15	3.34	0.35	57.87	0.72	1.33	99.29	1910	62	10	—	90	24	0.21
01Z11A	14.46	11.41	0.02	12.27	0.66	7.49	0.21	2.47	0.17	46.94	1.60	1.20	98.94	250	20	<10	—	90	32	0.01
01Z19A	17.23	11.07	0.04	10.58	0.65	5.35	0.16	3.35	0.16	48.17	1.33	1.44	99.57	180	16	<10	—	80	30	<01
01Z21A	14.43	8.78	<01	10.13	1.42	7.78	0.16	2.45	0.11	51.31	0.87	1.85	99.46	1430	44	<10	—	60	22	0.15
01Z33B	15.29	7.22	<01	11.73	1.03	5.06	0.22	2.83	0.33	52.86	1.09	1.39	99.13	530	32	<10	—	80	28	0.04
01Z35A	14.92	2.47	<01	1.05	2.29	0.30	0.03	5.11	0.05	70.61	0.13	0.68	98.12	2320	42	<10	—	110	20	0.30
01Z36A	9.60	12.74	0.08	13.01	0.98	12.72	0.18	1.65	0.31	46.36	0.97	1.16	99.78	250	20	<10	—	40	22	<01
01Z50A	12.30	2.58	<01	5.74	2.50	2.80	0.10	1.62	0.15	69.06	0.80	0.90	98.73	1530	72	20	—	150	24	0.16
01Z58A	15.55	0.59	<01	0.33	2.07	<01	<01	6.13	0.03	73.76	0.05	0.50	99.25	1390	46	<10	—	50	8	0.15
01Z58B	13.95	4.56	0.01	4.37	1.00	1.92	0.09	4.14	0.10	67.15	0.40	0.67	98.48	910	26	10	—	90	22	0.09
01Z61A	15.13	9.62	0.01	9.49	2.91	6.85	0.32	2.52	0.07	49.94	0.74	1.92	99.68	1240	46	<10	—	40	22	0.13
01Z63B	14.85	4.20	<01	5.89	1.26	4.40	0.09	4.14	0.08	62.12	0.47	1.46	99.09	1030	40	10	—	80	20	0.10
01Z65A	13.71	2.86	<01	3.68	3.01	1.16	0.07	3.12	0.17	69.83	0.54	0.91	99.59	3170	66	20	—	250	32	0.39
01Z70A	9.86	0.64	<01	5.18	2.90	1.47	0.09	0.29	0.05	76.21	0.49	1.26	98.52	860	106	10	—	90	22	0.07
01Z72A	15.40	6.83	<01	9.94	1.31	4.07	0.19	2.61	0.11	56.23	0.59	1.10	98.62	1830	36	<10	—	70	20	0.19
01Z81A	13.68	1.05	<01	3.22	2.19	0.70	0.04	4.08	0.06	73.15	0.32	0.94	99.59	1280	64	20	—	190	40	0.13
01Z82A	11.80	13.10	<01	15.49	1.05	10.30	0.21	1.17	0.19	43.40	1.27	1.37	99.38	310	16	<10	—	40	18	<01
01Z92A	15.33	7.65	<01	10.88	0.36	5.23	0.17	3.67	0.12	54.22	0.92	0.99	99.57	190	16	<10	—	60	24	<01
01Z93A	13.96	8.58	<01	12.76	0.79	5.85	0.20	3.14	0.20	51.14	1.62	1.20	99.48	310	24	<10	—	80	26	0.01
01Z95A	14.42	8.78	0.01	8.30	0.55	5.90	0.15	3.51	0.07	56.28	0.58	0.90	99.47	130	16	10	—	80	30	<01
01Z98A	11.17	1.81	<01	4.22	1.05	1.43	0.06	3.06	0.05	75.30	0.36	1.04	99.64	920	36	10	—	90	24	0.08
01Z108A	15.74	1.67	<01	3.49	3.77	0.85	0.08	2.76	0.16	67.78	0.42	1.96	98.97	1930	108	20	—	170	14	0.22
01Z121A	13.16	0.86	<01	3.21	3.36	1.05	0.06	3.18	0.07	72.82	0.36	1.11	99.41	1410	106	20	—	160	30	0.16
01Z126A	14.38	4.33	<01	6.25	2.78	1.59	0.10	2.35	0.09	65.64	0.56	1.17	99.34	920	94	20	—	150	26	0.08
01Z132A	13.82	3.81	0.09	5.69	1.95	2.99	0.12	2.57	0.10	66.79	0.45	1.11	99.58	730	62	10	—	110	24	0.07
01Z158A	12.27	9.68	0.05	13.50	1.92	9.39	0.19	2.26	1.04	43.53	2.81	3.07	99.88	670	34	70	—	270	24	0.06
01Z158C	15.30	4.54	<01	5.90	3.84	1.55	0.15	2.51	0.31	62.71	0.60	1.55	99.23	1600	92	20	—	170	32	0.18

Table 4. Concentration of major-oxides, minor oxides, and trace elements in rock samples from the Eagle and Tanacross quadrangles, Alaska.

Note: — = not analyzed.

SAMPLE NUMBER	Al ₂ O ₃ %	CaO %	Cr ₂ O ₃ %	Fe ₂ O ₃ %	K ₂ O %	MgO %	MnO %	Na ₂ O %	P ₂ O ₅ %	SiO ₂ %	TiO ₂ %	LOI %	TOTAL %	Ba ppm	Rb ppm	Nb ppm	Sr ppm	Zr ppm	Y ppm	BaO %
01Z158E	13.56	3.58	0.01	4.97	2.48	2.39	0.09	2.13	0.08	67.90	0.42	1.94	99.70	1220	86	10	—	130	22	0.12
01Z160A	13.46	5.61	0.02	5.88	2.02	3.51	0.09	2.28	0.11	64.52	0.47	1.23	99.29	630	74	10	—	110	24	0.06
01Z167B	15.96	1.34	<0.1	0.53	3.58	0.15	0.01	4.75	0.04	70.28	0.08	0.45	98.05	5240	72	<10	—	40	8	0.78
01Z176A	15.62	10.48	0.07	10.01	0.27	4.60	0.14	3.75	0.18	52.00	1.17	1.22	99.54	100	12	10	—	90	26	<0.1
01Z185A	16.58	6.89	<0.1	9.53	0.82	5.43	0.16	4.72	0.09	51.50	0.97	1.77	98.50	310	28	<10	—	60	18	0.01
01Z186A	14.87	3.12	<0.1	3.43	0.55	0.77	0.06	4.37	0.10	71.24	0.35	0.62	99.52	160	18	<10	—	230	38	<0.1
01Z209A	13.41	2.27	<0.1	3.66	1.78	0.79	0.07	3.78	0.07	70.38	0.38	1.58	98.30	840	54	10	—	130	26	0.09
01Z225A	9.62	0.52	0.01	2.45	3.56	0.69	0.04	1.52	0.07	78.78	0.38	1.23	99.00	1000	86	20	—	220	20	0.12
01Z230A	17.13	3.66	<0.1	1.55	0.80	0.34	0.02	5.97	0.06	67.97	0.17	0.75	98.69	1000	20	10	—	90	8	0.13
01Z235A	18.69	6.25	<0.1	10.54	1.00	3.11	0.16	4.82	0.11	52.52	0.84	1.08	99.26	510	30	<10	—	50	18	0.09
01Z237A	12.91	8.30	0.10	8.62	2.09	10.41	0.21	3.14	0.09	50.88	0.34	1.86	99.12	1250	44	<10	—	30	14	0.14
01Z245A	13.51	4.75	<0.1	10.78	0.35	3.17	0.24	3.41	0.18	59.62	0.98	1.14	98.17	230	16	<10	—	80	30	0.01
01Z250A	14.30	5.08	<0.1	7.05	3.94	2.66	0.19	2.07	0.41	60.99	0.80	1.25	99.10	2330	82	20	—	180	46	0.28
01Z254A	15.56	9.24	<0.1	12.32	1.21	3.80	0.18	3.38	0.38	51.03	1.50	0.69	99.34	240	24	10	—	110	26	0.01
01Z256A	18.61	9.91	<0.1	8.66	1.12	4.35	0.14	3.87	0.08	50.12	0.68	1.59	99.19	310	32	<10	—	60	16	0.01
01Z258A	13.62	0.81	<0.1	3.23	4.76	0.79	0.08	3.55	0.05	70.55	0.31	0.44	98.38	1550	104	10	—	150	36	0.18
01Z262A	18.09	5.90	<0.1	6.94	3.13	2.42	0.06	3.04	0.19	56.28	0.95	1.19	98.36	1250	96	<10	—	110	26	0.12
01Z267A	16.52	2.61	<0.1	2.73	3.28	1.17	0.05	4.25	0.08	67.31	0.35	0.72	99.40	2120	80	20	—	90	10	0.24
01Z272A	10.32	1.90	<0.1	2.84	1.26	0.74	0.05	3.02	0.09	76.48	0.40	1.52	98.69	630	54	20	—	240	24	0.06

Table 4. Concentration of major-oxides, minor oxides, and trace elements in rock samples from the Eagle and Tanacross quadrangles, Alaska.

Note: --- = not analyzed.

SrO %	As ppm	Ce ppm	La ppm	Th ppm	U ppm	W ppm	SAMPLE NUMBER
---	---	---	---	---	---	---	99MBW079
---	---	---	---	---	---	---	99MBW095B
---	---	---	---	---	---	---	00DS121
0.03	---	---	---	---	---	---	00JG014-6/28
0.03	---	---	---	---	---	---	00JG032-6/29
<.01	---	---	---	---	---	---	00JG092-6/20
0.04	---	---	---	---	---	---	00JG095-6/20
---	---	---	---	---	---	---	00MBW194
---	---	---	---	---	---	---	00MBW213C
---	---	---	---	---	---	---	00MBW535
---	---	---	---	---	---	---	00MBW549
---	---	---	---	---	---	---	00RF001A
---	---	---	---	---	---	---	00RF054
---	---	---	---	---	---	---	00RF061
---	---	---	---	---	---	---	00RF061
---	---	---	---	---	---	---	00RF092A
---	---	---	---	---	---	---	00RF092A
---	---	---	---	---	---	---	00RF112A
---	---	---	---	---	---	---	00RF113B
---	---	---	---	---	---	---	00RF118
---	---	---	---	---	---	---	00RF126A
---	---	---	---	---	---	---	00RF126A
---	---	---	---	---	---	---	00RF126B
---	---	---	---	---	---	---	00RF134
---	---	---	---	---	---	---	00RF134
---	---	---	---	---	---	---	00RF160
---	---	---	---	---	---	---	00RF174A
---	---	---	---	---	---	---	00RF201A
---	---	---	---	---	---	---	00RF236A
---	---	---	---	---	---	---	00RF322A
<.01	---	---	---	---	---	---	00RF340B
---	---	---	---	---	---	---	00RF345A
---	---	---	---	---	---	---	00RF349A
---	---	---	---	---	---	---	00RF349B
---	---	---	---	---	---	---	00RF357C
---	---	---	---	---	---	---	00RF376
---	---	---	---	---	---	---	00RF454

Table 4. Concentration of major-oxides, minor oxides, and trace elements in rock samples from the Eagle and Tanacross quadrangles, Alaska.

Note: --- = not analyzed.

SrO %	As ppm	Ce ppm	La ppm	Th ppm	U ppm	W ppm	SAMPLE NUMBER
---	---	---	---	---	---	---	00RF467
---	---	---	---	---	---	---	00RF487B
---	---	---	---	---	---	---	00RF488
---	---	---	---	---	---	---	00RF517
---	---	---	---	---	---	---	00RF547B
---	---	---	---	---	---	---	00RF549A
---	---	---	---	---	---	---	00RF552
---	---	---	---	---	---	---	00RF563
---	---	---	---	---	---	---	00RF617
---	---	---	---	---	---	---	00RF681
---	---	---	---	---	---	---	00RN204B
---	---	---	---	---	---	---	00RN256A
---	---	---	---	---	---	---	00RN268A
---	---	---	---	---	---	---	00RN277B
0.01	---	---	---	---	---	---	00RN370A
---	---	---	---	---	---	---	00RN413
---	---	---	---	---	---	---	00RN454A
---	---	---	---	---	---	---	00WM117
---	---	---	---	---	---	---	00WM225
0.05	---	---	---	---	---	---	00WM250C
0.03	---	---	---	---	---	---	00WM252B
0.01	---	---	---	---	---	---	00WM321A
0.04	<5	30	10	4	<4	<10	01JEA2A
0.02	<5	20	10	4	<4	<10	01JEA35A
0.04	<5	10	<10	<4	<4	<10	01JEA39B
0.03	<5	20	<10	4	<4	<10	01JEA47A
0.07	5	20	10	<4	<4	<10	01JEA51B
0.11	5	<10	<10	<4	<4	<10	01JEA55B
0.05	<5	20	<10	<4	<4	<10	01JEA60A
0.05	5	20	10	4	<4	<10	01JEA90A
0.09	5	70	40	12	<4	<10	01JEA138A
0.05	<5	10	<10	<4	<4	<10	01JEA238A
0.03	5	40	20	12	<4	<10	01JEA243A
0.07	10	90	60	12	<4	<10	01JEA257B
0.03	<5	30	10	<4	<4	<10	01JEA259B
0.15	10	20	<10	8	<4	<10	01JEA311B
0.15	10	<10	<10	4	<4	<10	01KC8D

Table 4. Concentration of major-oxides, minor oxides, and trace elements in rock samples from the Eagle and Tanacross quadrangles, Alaska.

Note: — = not analyzed.

SrO %	As ppm	Ce ppm	La ppm	Th ppm	U ppm	W ppm	SAMPLE NUMBER
0.14	5	<10	<10	<4	<4	<10	01KC16B
0.11	<5	<10	<10	<4	<4	<10	01KC23B
0.04	<5	120	80	12	<4	<10	01KC39A
0.08	<5	40	20	<4	<4	<10	01KC39B
0.11	5	40	20	12	<4	<10	01KC41A
0.21	5	60	40	16	<4	<10	01KC42A
0.01	<5	30	10	8	<4	<10	01KC47B
0.14	<5	<10	<10	<4	<4	<10	01KC51B
0.06	<5	20	10	<4	<4	<10	01KC57A
0.09	<5	40	20	8	<4	<10	01KC58A
0.11	<5	40	30	8	<4	<10	01KC59A
0.05	<5	30	20	4	<4	<10	01KC61A
0.07	<5	50	30	12	<4	<10	01KC66B
0.10	<5	30	20	8	<4	<10	01KC69B
0.27	10	<10	<10	<4	<4	<10	01KC95C
0.03	<5	30	10	<4	<4	<10	01KC95D
0.17	5	<10	<10	<4	<4	<10	01MBW10A
0.04	<5	20	10	<4	<4	<10	01MBW14A
<0.1	<5	<10	<10	4	<4	<10	01MBW50A
0.01	<5	<10	<10	<4	<4	<10	01MBW52A
0.04	<5	20	10	<4	<4	<10	01MBW57B
0.18	5	<10	<10	<4	<4	<10	01MBW60A
0.01	<5	<10	<10	<4	<4	<10	01MBW63A
0.04	<5	50	30	4	<4	<10	01MBW73A
0.11	5	<10	<10	<4	<4	<10	01MBW77B
0.09	10	100	60	56	<4	<10	01MBW95B
0.18	5	<10	<10	8	<4	<10	01MBW105B
0.14	5	10	<10	<4	<4	<10	01MBW123A
0.08	<5	<10	<10	<4	<4	<10	01MBW125A
0.03	15	60	30	20	<4	<10	01MBW126A
0.01	<5	20	10	8	<4	<10	01MBW130A
0.08	5	<10	<10	<4	<4	<10	01MBW134A
0.12	10	20	<10	12	<4	<10	01MBW144A
0.07	5	30	20	8	<4	<10	01MBW165A
0.01	5	<10	<10	<4	<4	<10	01MBW171A
0.09	<5	<10	<10	<4	<4	<10	01MBW180A
0.14	10	<10	<10	8	<4	<10	01MBW183A

Table 4. Concentration of major-oxides, minor oxides, and trace elements in rock samples from the Eagle and Tanacross quadrangles, Alaska.
Note: --- = not analyzed.

SrO %	As ppm	Ce ppm	La ppm	Th ppm	U ppm	W ppm	SAMPLE NUMBER
0.03	<5	30	10	<4	<4	<10	01MBW187A
0.02	<5	40	20	8	<4	<10	01MBW225A
0.03	15	20	10	<4	<4	<10	01MBW226B
0.01	10	40	20	12	<4	<10	01MBW244A
0.10	25	20	10	<4	<4	<10	01MBW245A
0.03	<5	20	<10	<4	<4	<10	01MBW246B
0.12	<5	40	20	4	<4	<10	01MBW252A
0.08	5	70	40	16	<4	<10	01MBW255A
0.05	<5	20	10	<4	<4	<10	01MBW287B
0.19	<5	<10	<10	<4	<4	<10	01MBW288A
0.01	<5	20	<10	<4	<4	<10	01MBW289A
0.13	5	10	<10	<4	<4	<10	01MBW294A
0.02	5	20	10	<4	<4	<10	01MBW304A
0.05	5	40	20	12	<4	<10	01MBW313A
0.02	---	---	---	---	---	---	01MBW314A
0.01	<5	20	<10	4	<4	<10	01MBW319A
0.03	10	40	<10	12	<4	<10	01MBW321A
0.02	15	40	20	16	<4	<10	01MBW327A
0.03	<5	30	20	8	<4	<10	01MBW330A
0.03	<5	40	20	8	<4	<10	01MBW335A
0.03	<5	40	20	12	<4	<10	01MBW336A
0.03	<5	40	20	<4	<4	<10	01MBW344A
0.14	5	<10	<10	<4	<4	<10	01MBW367A
0.21	<5	<10	<10	<4	<4	<10	01MBW371A
0.09	5	60	40	12	<4	<10	01MBW376A
0.11	5	70	40	12	<4	<10	01MBW377B
0.11	<5	20	10	<4	<4	<10	01MBW381B
0.03	5	<10	<10	<4	<4	<10	01MBW383A
0.01	<5	<10	<10	<4	<4	<10	01MBW402A
0.12	<5	10	<10	<4	<4	<10	01MBW403A
0.14	5	<10	<10	<4	<4	<10	01MBW418A
0.03	<5	30	10	4	<4	<10	01MBW432A
0.03	<5	30	20	8	<4	<10	01MBW433A
<0.1	5	<10	<10	<4	<4	<10	01MBW436A
0.04	25	40	20	4	<4	<10	01RN13A
0.07	<5	50	30	4	<4	<10	01RN22A
0.02	5	30	30	4	<4	<10	01RN46A

Table 4. Concentration of major-oxides, minor oxides, and trace elements in rock samples from the Eagle and Tanacross quadrangles, Alaska.

Note: --- = not analyzed.

SrO %	As ppm	Ce ppm	La ppm	Th ppm	U ppm	W ppm	SAMPLE NUMBER
0.02	<5	10	<10	<4	<4	<10	01RN61B
0.05	<5	60	40	8	<4	<10	01RN75A
0.04	<5	10	<10	<4	<4	<10	01RN102B
0.01	20	<10	<10	<4	<4	<10	01RN117A
0.04	<5	10	<10	4	<4	<10	01RN128A
0.05	<5	30	10	4	<4	<10	01RN134B
0.09	<5	20	<10	<4	<4	<10	01RN136A
0.01	35	<10	<10	<4	<4	<10	01RN151A
0.01	<5	50	30	8	<4	<10	01RN157A
0.04	<5	10	<10	<4	<4	<10	01RN167A
0.12	<5	40	20	8	<4	<10	01RN171A
0.03	<5	10	<10	<4	<4	<10	01Z11A
0.04	<5	10	<10	<4	<4	<10	01Z19A
0.02	<5	10	<10	<4	<4	<10	01Z21A
0.04	<5	30	20	<4	<4	<10	01Z33B
0.18	5	70	30	8	<4	<10	01Z35A
0.02	<5	20	<10	<4	<4	<10	01Z36A
0.02	5	50	20	8	<4	<10	01Z50A
0.09	5	<10	<10	<4	<4	<10	01Z58A
0.03	<5	30	10	8	<4	<10	01Z53B
0.03	<5	<10	<10	<4	<4	<10	01Z61A
0.03	<5	10	<10	<4	<4	<10	01Z63B
0.14	5	90	60	24	<4	<10	01Z65A
0.01	10	50	20	12	<4	<10	01Z70A
0.05	<5	20	10	<4	<4	<10	01Z72A
0.03	<5	50	30	12	<4	<10	01Z81A
0.03	<5	10	<10	<4	<4	<10	01Z82A
0.03	<5	10	<10	<4	<4	<10	01Z92A
0.03	<5	20	<10	<4	<4	<10	01Z93A
0.02	<5	20	10	<4	<4	<10	01Z95A
0.01	<5	20	10	<4	<4	<10	01Z98A
0.07	5	30	10	8	<4	<10	01Z108A
0.01	<5	50	20	12	<4	<10	01Z121A
0.02	<5	40	20	12	<4	<10	01Z126A
0.02	<5	40	20	8	<4	<10	01Z132A
0.11	10	100	60	12	<4	<10	01Z158A
0.09	<5	90	50	16	<4	<10	01Z158C

Table 4. Concentration of major-oxides, minor oxides, and trace elements in rock samples from the Eagle and Tanacross quadrangles, Alaska.
 Note: --- = not analyzed.

SrO %	As ppm	Ce ppm	La ppm	Th ppm	U ppm	W ppm	SAMPLE NUMBER
0.03	<5	40	20	12	<4	<10	01Z158E
0.03	5	40	20	12	<4	<10	01Z160A
0.10	<5	<10	<10	<4	<4	<10	01Z167B
0.03	<5	20	10	<4	<4	<10	01Z176A
0.03	<5	10	<10	<4	<4	<10	01Z185A
0.04	<5	40	20	8	<4	<10	01Z186A
0.04	<5	40	20	12	<4	<10	01Z209A
0.01	10	40	20	16	<4	<10	01Z225A
0.14	<5	<10	<10	<4	<4	<10	01Z230A
0.05	<5	<10	<10	<4	<4	<10	01Z235A
0.03	20	<10	<10	<4	<4	<10	01Z237A
0.03	<5	20	<10	<4	<4	<10	01Z245A
0.08	5	80	50	16	<4	<10	01Z250A
0.04	<5	30	10	<4	<4	<10	01Z254A
0.05	<5	10	<10	<4	<4	<10	01Z256A
0.01	<5	30	10	4	<4	<10	01Z258A
0.05	<5	30	10	4	<4	<10	01Z262A
0.09	<5	10	<10	<4	<4	<10	01Z267A
0.01	10	60	40	16	<4	<10	01Z272A

Table 5. Concentration of rare-earth elements in rock samples collected in the Eagle and Tanacross quadrangles.

SAMPLE DESCRIPTION	Ce ppm	Dy ppm	Er ppm	Eu ppm	Gd ppm	Ho ppm	La ppm	Lu ppm	Nd ppm	Pr ppm	Sm ppm	Tb ppm	Th ppm	Tm ppm	U ppm	Y ppm	Yb ppm
00DS020	15	4.1	3.2	1	3.4	1	6	0.4	10	2.2	2.7	0.6	<1	0.4	0.5	25.5	2.5
00RN143	15.5	2.5	1.8	0.8	2.4	0.6	6.5	0.2	10	2.3	2.6	0.4	<1	0.2	0.5	15.5	1.7
01JEA238A	13.5	2.8	1.7	0.7	2.5	0.6	6	0.3	7.5	1.7	1.9	0.4	<1	0.2	<5	16	1.7
01MBW187A	23.5	7.1	4.3	1.6	6.2	1.5	9.5	0.7	16.5	3.3	4.7	1	1	0.6	<5	40	4.2
01MBW287B	16	2.9	1.7	0.7	2.8	0.6	9	0.3	9	2.2	2.2	0.5	1	0.2	0.5	18	1.8
01MBW304A	20	6	3.7	1.5	5.5	1.2	8	0.6	14	2.8	4.2	0.9	<1	0.5	<5	33.5	3.3
01RN102B	10.5	2.2	1.4	0.7	2	0.5	5	0.2	6	1.3	1.7	0.3	<1	0.1	<5	13	1.4
01RN167A	14	3.5	2.1	1	3.3	0.7	5.5	0.3	9.5	1.9	2.6	0.5	<1	0.3	<5	19.5	2
01Z092A	14.5	3.6	2.4	1	3.2	0.7	6.5	0.3	8.5	1.9	2.4	0.6	<1	0.3	<5	21	2.4
01Z185A	12.5	3.1	1.9	0.8	2.7	0.6	5	0.3	8	1.7	2.2	0.5	<1	0.3	<5	17.5	1.8
SAMPLE	UTM E		UTM N		Quadrangle		Rock Type										
00DS020	453364		7119650		Eagle A-2		Biotite-rich amphibolite										
00RN143	465687		7118146		Eagle A-2		Hornblende plagioclase gneiss and amphibolite										

Table 6. Coal Quality Analysis of Coal-bearing Tertiary Sedimentary Rocks in the Chicken Area.

Coal Analysis		Geochemical Testing, a division of Energy Center, Inc.			
Chicken Creek Sample # 00MBW807	UTM E 454630	UTM N 7105799	Quadrangle Eagle A-2		
	Air Dry Loss (%) 19.91	Residual Moisture (%) 9.02	As Received	Dry	Dry Ash-Free
Proximate Analysis					
	Moisture		27.13		
	Ash		23.80	32.67	51.93
	Volatile Matter		25.48	34.96	48.07
	Fixed Carbon		23.59	32.37	
Ultimate Analysis					
	Hydrogen		5.21	2.98	4.42
	Carbon		32.77	44.97	66.78
	Nitrogen		0.66	0.90	1.34
	Sulfur		0.23	0.32	0.47
	Oxygen		37.33	18.16	26.99
	Ash		23.80	32.67	
Heating Value (BTU/Lb)			5,310	7,287	10,823
Free Swelling Index			0.5		
Equilibrium Moisture			26.71		

Table 7. Detection limits for geochemical analyses.

(Analytical methods: FA-AAS = Fire Assay-Atomic Absorption Spectroscopy, ICP-AES = Inductively Coupled Plasma-Atomic Emission Spectroscopy, FA-GRAV = Fire Assay-Gravimetric, FA-ICP-ARRAY = Fire Assay-Inductively Coupled Plasma, FA-ICPMS = Fire Assay-Inductively Coupled Plasma Mass Spectrometry and AAS = Atomic Emission Spectroscopy) (ppm=parts per million, ppb=parts per billion, %=percent, g/t=grams/tonne)

Element	Units	Lower Detection Limit	Upper Detection Limit	Analytical Method
Au	ppb	5	10,000	FA-AAS
Ag	ppm	0.2	100	ICP-AES
Al	percent	0.01	15	ICP-AES
As	ppm	2	10,000	ICP-AES
B	ppm	10	10,000	ICP-AES
Ba	ppm	10	10,000	ICP-AES
Be	ppm	0.5	100	ICP-AES
Bi	ppm	2	10,000	ICP-AES
Ca	percent	0.01	15	ICP-AES
Cd	ppm	0.5	500	ICP-AES
Co	ppm	1	10,000	ICP-AES
Cr	ppm	1	10,000	ICP-AES
Cu	ppm	1	10,000	ICP-AES
Fe	percent	0.01	15	ICP-AES
Ga	ppm	10	10,000	ICP-AES
Hg	ppm	1	10,000	ICP-AES
K	percent	0.01	10	ICP-AES
La	ppm	10	10,000	ICP-AES
Mg	percent	0.01	15	ICP-AES
Mn	ppm	5	10,000	ICP-AES
Mo	ppm	1	10,000	ICP-AES
Na	percent	0.01	10	ICP-AES
Ni	ppm	1	10,000	ICP-AES
P	ppm	10	10,000	ICP-AES
Pb	ppm	2	10,000	ICP-AES
S	percent	0.01	10	ICP-AES
Sb	ppm	2	10,000	ICP-AES
Sc	ppm	1	10,000	ICP-AES
Sr	ppm	1	10,000	ICP-AES
Ti	percent	0.01	10	ICP-AES
Tl	ppm	10	10,000	ICP-AES
U	ppm	10	10,000	ICP-AES
V	ppm	1	10,000	ICP-AES
W	ppm	10	10,000	ICP-AES
Zn	ppm	2	10,000	ICP-AES
Au*	ppb	1	1000	FA-ICPMS
Pt	ppb	0.5	1000	FA-ICPMS
Pd	ppb	1	100	FA-ICPMS

Table 8. Detection limits for major-oxide, minor-oxide and trace, and rare-earth element analyses.
 (*LOI = Loss on ignition. ppm = parts per million. XRF = X-ray diffraction)

Element	Units	Lower Detection Limit	Upper Detection Limit	Analytical Method
Al ₂ O ₃	percent	0.01	100.00	XRF
BaO	percent	0.01	100.00	XRF
CaO	percent	0.01	100.00	XRF
Cr ₂ O ₃	percent	0.01	100.00	XRF
Fe ₂ O ₃	percent	0.01	100.00	XRF
K ₂ O	percent	0.01	100.00	XRF
MgO	percent	0.01	100.00	XRF
MnO	percent	0.01	100.00	XRF
Na ₂ O	percent	0.01	100.00	XRF
P ₂ O ₅	percent	0.01	100.00	XRF
SiO ₂	percent	0.01	100.00	XRF
SrO	percent	0.01	100.00	XRF
TiO ₂	percent	0.01	100.00	XRF
LOI*	percent	0.01	100.00	XRF
Total	percent	0.01	105.00	Calculation
As	ppm	5	5000	XRF
Ba	ppm	10	10,000	XRF
Ce	ppm	10	10,000	XRF
La	ppm	10	10,000	XRF
Nb	ppm	10	10,000	XRF
Rb	ppm	2	10,000	XRF
Sr	ppm	2	10,000	XRF
Th	ppm	4	10,000	XRF
U	ppm	4	10,000	XRF
W	ppm	10	10,000	XRF
Y	ppm	2	10,000	XRF
Zr	ppm	10	10,000	XRF

Table 9. Detection limits for rare-earth element analyses in Table 5.
(ppm = parts per million, ICP-MS = Inductively Coupled Plasma Mass Spectrometry)

Element	Units	Lower Detection Limit	Upper Detection Limit	Analytical Method
Ce	ppm	0.5	10,000	ICP-MS
Dy	ppm	0.1	1,000	ICP-MS
Er	ppm	0.1	1,000	ICP-MS
Eu	ppm	0.1	1,000	ICP-MS
Gd	ppm	0.1	1,000	ICP-MS
Ho	ppm	0.1	1,000	ICP-MS
La	ppm	0.5	10,000	ICP-MS
Lu	ppm	0.1	1,000	ICP-MS
Nd	ppm	0.5	10,000	ICP-MS
Pr	ppm	0.1	1,000	ICP-MS
Sm	ppm	0.1	1,000	ICP-MS
Tb	ppm	0.1	1,000	ICP-MS
Th	ppm	1	1,000	ICP-MS
Tm	ppm	0.1	1,000	ICP-MS
U	ppm	0.5	1,000	ICP-MS
Y	ppm	0.5	1,000	ICP-MS
Yb	ppm	0.1	1,000	ICP-MS