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Major-element chemistry, radiometric ages, and locations of samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska

By

Susan L. Douglass[1], John H. Webster[2], Peter D. Burrell[3], Marvin L. Lanphere[1], and David A. Brew[1]

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[1] Menlo Park, California

[2] Deceased

[3] Present address: 1465A Big Basin Way, Saratoga, CA 95070

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INTRODUCTION

This report is a compilation of major-element geochemical, petrographic, and geochronologic data on rock samples from the Petersburg and parts of the adjacent Port Alexander and Sumdum quadrangles, Alaska. Collection of the 341 samples was part of the reconnaissance mapping effort which produced the previously published U.S.Geological Survey geologic map of the area (Brew and others, 1984). Although the rock unit terms used on that map agree with those in this report, one unit, incorrectly labeled "Tmd" on the 1984 geologic map, is here relabeled "QTd".

The following items are included in this report: (1) a table of major-element chemical analyses, CIPW (Cross and others, 1902) normative minerals, and selected modes (Table 1); (2) brief petrographic descriptions of each analyzed sample (Table 2); (3) potassium-argon determinations for selected samples (Table 3); and (4) a 1:250,000-scale sample-location map (plate 1).

Samples are listed in Table 1 by map unit and by decreasing weight percent silica dioxide. Corresponding field numbers and map numbers (see plate 1 of this report) are also given. The major-element chemical analyses were performed at the USGS Denver and Menlo Park facilities using the X-ray fluorescence spectometry (XRF) techniques as described by Taggart and others (1987). Rapid rock analyses are by the method of Shapiro (1975). Lab values are listed as reported; normalized oxide and CIPW normative mineral percentages have been rounded to retain the correct number of significant figures. Thus the sums of the normalized oxide and normative values may actually be plus or minus 0.01 percent from 100. Those rock samples analyzed by rapid rock, or a non-specified method (values taken from Buddington and Fairchild (1932)), are indicated in Table 2.

Table 2 provides additional information on the petrography (including alteration minerals), latitude/longitude, and 1:63,360-scale quadrangle locations for each of the samples listed in Table 1. Intrusive rock names are based on modal data and are classified according to Streckeisen (1973) (although in some cases, chemical analyses show abnormally low SiO_2).

The potassium-argon determinations in Table 3 are previously unpublished. Here, they are listed by increasing geologic age and also by geologic map unit of Brew and others (1984). All ages have been calculated using the abundance and decay constants of Steiger and Jäger (1977).

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska

(Major elements by quantitative x-ray spectroscopy; analysts: J. Baker, A. Bartel, L. Espos, T. Holmes, G. Kawakita, R. Lerner, J. Taggart, J.S. Wahlberg. FeO by chemical method; analysts: L. Artis, E. Brandt, Z.A. Hamlin, P. Klock, D. Kobilis, G. Mason, V. McDaniel, F. Newman, J. Pastore, J. Rivello, J. Ryder, D. Shepard, N. Skinner)

Unit	Qb										Qtr	
Map No.	1**	2	3**	4**	5**	6	7**	8	9	10**	11	12
Field No.	BUDD-006	78SH054A	71ABg179	71ABg178	BB-3	79AF031A	71ABg189	79AF029A	82RK852B	BUDD-002	82SK167A	8DDB056B
XRF chemical analyses (weight percent)												
SiO_2	52.05	50.45	49.7	48.8	48.66	48.24	47.9	47.89	47.7	46.60	76.8	76.6
Al_2O_3	15.03	14.38	15.4	14.9	13.40	16.45	14.6	15.09	16.2	14.55	11.2	12.1
Fe_2O_3	2.78	4.29	2.8	1.5	1.29	2.34	2.4	4.34	4.2	2.49	0.88	0.20
FeO	5.54	8.50	9.5	10.6	11.58	7.07	9.9	7.77	7.98	9.70	1.02	0.92
MgO	4.94	3.40	9.1	9.1	8.72	7.28	8.9	9.57	4.84	9.51	<0.10	0.14
CaO	9.27	7.87	8.9	8.7	8.92	9.24	9.5	8.85	9.00	8.59	<0.02	0.28
Na_2O	2.33	3.46	2.9	2.9	3.34	3.44	3.0	3.24	3.31	3.61	2.63	3.45
K_2O	1.01	1.39	0.51	0.55	0.80	1.01	0.38	0.52	0.85	1.28	4.89	4.24
TiO_2	1.42	2.58	0.77	0.89	2.77	1.58	0.70	1.67	2.74	2.73	0.13	0.10
P_2O_5	0.28	0.74	0.26	0.27	0.35	0.44	0.20	0.23	0.50	0.54	<0.05	<0.05
MnO	0.07	0.19	0.14	0.17	0.12	0.16	0.17	0.16	0.21	0.19	<0.02	<0.02
LOI	5.70	*	0.40	0.59	0.27	*	1.59	*	1.26	0.16	0.95	0.44
Total	100.42	97.25	100.38	98.97	100.22	97.25	99.24	99.33	98.82	99.95	98.69	98.50
Oxides normalized to 100%												
SiO_2	54.95	51.88	49.7	49.6	48.68	49.60	49.1	48.21	48.9	46.70	78.6	78.1
Al_2O_3	15.87	14.79	15.4	15.1	13.41	16.91	14.9	15.19	16.6	14.58	11.5	12.3
Fe_2O_3	2.94	4.41	2.8	1.5	1.29	2.41	2.5	4.37	4.3	2.49	0.90	0.20
FeO	5.85	8.74	9.5	10.8	11.59	7.27	10.1	7.82	8.18	9.72	1.04	0.94
MgO	5.21	3.50	9.1	9.3	8.72	7.49	9.1	9.64	4.96	9.53	0.10	0.14
CaO	9.79	8.09	8.9	8.8	8.92	9.50	9.7	8.91	9.22	8.61	0.02	0.29
Na_2O	2.46	3.56	2.9	2.9	3.34	3.54	3.1	3.26	3.39	3.62	2.69	3.52
K_2O	1.07	1.43	0.51	0.56	0.80	1.04	0.39	0.52	0.87	1.28	5.00	4.32
TiO_2	1.50	2.65	0.77	0.90	2.77	1.63	0.72	1.68	2.81	2.74	0.13	0.10
P_2O_5	0.30	0.76	0.26	0.27	0.35	0.45	0.20	0.23	0.51	0.54	0.05	0.05
MnO	0.07	0.16	0.14	0.17	0.12	0.16	0.17	0.16	0.22	0.19	0.02	0.02
CIPW normative minerals												
Q	9.72	4.73							0.1		43.2	39.8
C											1.6	1.5
Or	6.30	8.45	3.0	3.3	4.73	6.14	2.3	3.09	5.1	7.58	29.6	25.5
Ab	20.81	30.10	24.5	24.9	28.27	29.93	26.0	27.60	28.7	22.27	22.8	29.8
An	29.10	20.15	27.5	26.4	19.22	27.21	25.9	25.26	27.5	19.76		1.1
Ne										4.52		
Wo	7.31	6.27	6.2	6.5	9.51	7.09	8.8	7.28	6.2	8.11		
En	12.98	8.71	13.1	9.9	6.14	4.93	7.9	9.26	12.4	5.10	0.3	0.4
Fs	5.97	8.39	8.2	7.5	4.48	2.37	5.5	3.19	7.2	2.50	1.0	1.4
Fo			6.7	9.2	10.92	9.61	10.4	10.32		13.06		
Fa			4.6	7.6	8.78	5.10	7.9	3.93		7.05		
Mt	4.26	6.40	4.1	2.2	1.87	3.49	3.6	6.33	6.3	3.62	1.30	0.30
Il	2.85	5.04	1.5	1.7	5.26	3.09	1.4	3.19	5.33	5.20	0.25	0.19
Ap	0.68	1.76	0.6	0.6	0.81	1.05	0.5	0.54	1.19	1.25	0.12	0.12
He												

LOI = Loss on ignition
* = No LOI specified in lab report
** = Non-XRF analysis - see Table 2

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	QTr											
Map No.	13	14	15	16**	17	18	19	20	21**	22	23	24
Field No.	80SK537A	82DB180A	79SK178A	BB-44	82DB199A	82SK180A	83SK414C	83DB160A	BUDD-003	82SK178A	82SK179A	79DB036A
XRF chemical analyses (weight percent)												
SiO_2	76.3	76.2	76.19	76.18	76.1	75.8	75.7	75.6	75.47	75.3	75.0	73.91
Al_2O_3	12.3	11.6	11.48	12.95	12.6	12.0	12.3	12.8	9.39	12.1	11.9	13.25
Fe_2O_3	0.47	1.71	0.46	0.01	0.83	1.09	1.53	1.00	1.21	1.00	1.33	1.03
FeO	0.69	0.46	1.30	2.05	0.12	0.62	0.12	0.20	3.31	0.81	1.17	1.18
MgO	0.14	0.10	0.19	Trace	0.11	<0.10	0.18	0.13	0.10	<0.10	<0.10	0.3
CaO	0.51	0.02	0.20	0.05	0.48	<0.02	0.37	0.51	0.10	0.02	<0.02	0.30
Na_2O	3.28	4.04	2.19	3.33	3.14	3.21	3.14	3.36	2.49	3.13	3.39	4.76
K_2O	4.67	4.55	5.78	4.59	5.17	4.83	4.63	4.99	4.46	4.73	4.52	2.57
TiO_2	0.08	0.13	0.14	0.15	0.19	0.13	0.23	0.19	0.65	0.13	0.14	0.21
P_2O_5	<0.05	<0.05	0.02	Trace	<0.05	<0.05	<0.05	<0.05	0.05	<0.05	<0.05	0.04
MnO	<0.02	<0.02	0.038	Trace	<0.02	<0.02	<0.02	<0.02	0.00	<0.02	<0.02	0.06
LOI	0.89	0.33	*	0.87	0.81	1.04	1.40	0.70	1.24	1.09	1.04	*
Total	99.40	99.21	97.99	99.30	99.62	98.91	99.67	99.55	98.47	98.48	98.68	97.61
Oxides normalized to 100%												
SiO_2	77.5	77.1	77.75	76.68	77.0	77.4	77.0	76.5	77.62	77.1	76.8	75.72
Al_2O_3	12.5	11.7	11.71	13.04	12.7	12.3	12.5	12.9	9.66	12.4	12.2	13.57
Fe_2O_3	0.48	1.65	0.47	0.01	0.84	1.11	1.56	1.01	1.24	1.03	1.36	1.06
FeO	0.70	0.54	1.33	2.64	0.12	0.63	0.12	0.20	3.40	0.83	1.20	1.21
MgO	0.14	0.10	0.19	0.01	0.11	0.10	0.18	0.13	0.10	0.10	0.10	0.3
CaO	0.52	0.02	0.20	0.05	0.49	0.02	0.38	0.52	0.10	0.02	0.02	0.31
Na_2O	3.33	4.09	2.24	3.35	3.18	3.28	3.19	3.40	2.56	3.21	3.47	4.88
K_2O	4.74	4.60	5.90	4.62	5.23	4.94	4.71	5.05	4.59	4.86	4.63	2.63
TiO_2	0.08	0.13	0.14	0.15	0.19	0.13	0.23	0.19	0.67	0.13	0.14	0.21
P_2O_5	0.05	0.05	0.02	0.01	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04
MnO	0.02	0.02	0.04	0.01	0.02	0.02	0.02	0.02	0.00	0.02	0.02	0.06
CIPW normative minerals												
Q	38.3	35.5	40.65	37.79	37.5	39.3	39.5	36.2	43.07	39.7	38.4	35.78
C	1.1	0.0	1.33	2.45	1.1	1.5	1.6	1.1	0.42	1.9	1.5	2.24
Or	28.0	27.2	34.86	27.30	30.9	29.2	27.8	29.8	27.11	28.7	27.4	15.56
Ab	28.2	34.6	18.91	28.36	26.9	27.8	27.0	28.8	21.67	27.2	29.4	41.26
An	2.2		0.88	0.18	2.1		1.5	2.2	0.17			1.26
Ne												
Wo												
En	0.4	0.3	0.48	0.02	0.3	0.3	0.5	0.3	0.26	0.3	0.2	0.8
Fs	0.8		1.89	3.55		0.1			4.12	0.5	0.9	1.11
Fo												
Fa												
Mt	0.69	1.42	0.68	0.01		1.61		0.16	1.80	1.49	1.97	1.53
Il	0.15	0.25	0.27	0.29	0.30	0.25	0.30	0.36	1.27	0.25	0.27	0.41
Ap	0.12	0.12	0.05	0.02	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.09
He	0.67				0.84		1.56	0.90				
Ru					0.03		0.07					

* = No LOI specified in lab report
** = Non-XRF analysis - see Table 2

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	QTr											
Map No.	25	26	27	28	29	30	31	32	33	34	35**	36
Field No.	83SK467A	83SK422A	79DB133B	82KR114A	83SK422B	83DB142A	83DB151A	83SK418A	80SK536A	83SK436A	BUDD-008	83SK415A
XRF chemical analyses (weight percent)												
SiO_2	73.5	73.3	72.45	72.2	71.9	71.9	71.5	70.9	70.4	67.6	67.01	66.1
Al_2O_3	12.8	12.4	13.84	12.8	12.8	12.5	12.7	8.78	14.4	12.3	13.94	15.1
Fe_2O_3	1.59	0.82	0.37	0.88	0.75	3.05	0.82	5.7	1.58	0.7	1.00	3.4
FeO	0.08	0.08	1.55	3.47	0.60	0.88	0.56	2.6	1.56	3.5	3.47	1.1
MgO	<0.10	0.32	0.75	0.18	0.14	<0.10	0.15	0.10	0.52	0.36	0.45	0.58
CaO	0.44	0.62	1.78	<0.02	0.69	0.34	0.74	0.40	1.64	2.38	1.90	2.30
Na_2O	2.78	1.05	3.20	2.89	4.84	4.60	4.30	3.65	4.08	1.99	5.63	3.91
K_2O	6.06	6.63	3.17	4.28	2.34	4.84	2.88	4.00	4.16	6.10	2.92	4.47
TiO_2	0.22	0.21	0.26	0.27	0.19	0.32	0.19	0.51	0.36	0.64	0.40	0.62
P_2O_5	<0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.09	0.19	0.08	0.16
MnO	<0.02	<0.02	0.04	0.08	<0.02	0.06	<0.02	0.32	0.05	0.24	0.08	0.08
LOI	2.07	3.82	*	1.25	5.11	0.65	5.96	2.11	0.57	3.35	3.48	1.66
Total	99.71	99.32	97.46	98.37	99.43	99.29	99.87	99.12	99.41	99.35	100.36	99.48
Oxides normalized to 100%												
SiO_2	75.3	76.8	74.34	74.3	76.2	72.9	76.1	73.1	71.2	70.4	69.17	67.6
Al_2O_3	13.1	13.0	14.20	13.2	13.6	12.7	13.5	9.05	14.6	12.8	14.39	15.4
Fe_2O_3	1.63	0.86	0.38	0.91	0.79	3.09	0.87	5.9	1.60	0.8	1.03	3.5
FeO	0.08	0.08	1.59	3.57	0.64	0.89	0.60	2.7	1.58	3.6	3.58	1.1
MgO	0.10	0.34	0.77	0.18	0.15	0.10	0.16	0.10	0.53	0.38	0.46	0.59
CaO	0.45	0.65	1.83	0.02	0.73	0.34	0.79	0.41	1.66	2.48	1.96	2.35
Na_2O	2.85	1.10	3.28	2.98	5.13	4.66	4.58	3.76	4.13	2.07	5.81	4.00
K_2O	6.21	6.94	3.25	4.41	2.48	4.91	3.07	4.12	4.21	6.35	3.01	4.57
TiO_2	0.22	0.22	0.27	0.28	0.20	0.32	0.20	0.53	0.36	0.66	0.41	0.63
P_2O_5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.09	0.20	0.08	0.16
MnO	0.02	0.02	0.04	0.08	0.02	0.06	0.02	0.33	0.05	0.25	0.08	0.08
CIPW normative minerals												
Q	34.0	42.0	36.86	37.4	35.1	26.9	36.0	35.9	26.5	27.1	17.87	21.4
C	1.0	2.6	2.08	3.5	1.2		1.4		0.4			0.0
Or	36.7	41.0	19.22	26.0	14.7	29.00	18.1	24.4	24.9	37.5	17.81	27.0
Ab	24.1	9.3	27.78	25.2	43.4	37.9	38.7	23.6	34.9	17.5	49.17	33.8
An	1.9	2.9	8.73		3.3		3.6		7.6	6.9	4.27	10.6
Ne												
Wo						0.6		0.7		1.7	2.05	
En	0.3	0.8	1.92	0.5	0.4	0.2	0.4	0.3	1.3	0.9	1.16	1.5
Fs			2.24	5.5	0.2		0.1	1.9	1.1	5.4	5.20	
Fo												
Fa												
Mt			0.55	1.31	1.15	2.13	1.27	4.9	2.32	1.1	1.50	2.0
Il	0.22	0.22	0.51	0.53	0.38	0.62	0.38	1.0	0.69	1.3	0.78	1.2
Ap	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.21	0.46	0.19	0.38
He	1.63	0.86				1.14						2.0
Ru	0.11	0.10										
Ac						1.4		7.3				

* = No LOI specified in lab report
** = Non-XRF analysis - see Table 2

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	QTr							QTf			QTa	
Map No.	37	38	39	40	41	42**	43	44	45	46	47	48
Field No.	82PB067A	83DB139A	82SK175A	82RK849A	830B221B	788G089C	80DB056A	79SK001E	82KR019A	82KR020A	82SK475A	79DB027A
XRF chemical analyses (weight percent)												
SiO_2	58.6	55.4	49.6	49.1	48.8	45.6	44.2	55.49	68.0	66.7	63.3	52.94
Al_2O_3	17.0	15.2	13.8	14.0	18.7	17.8	16.5	17.4	13.2	13.0	14.2	15.62
Fe_2O_3	2.24	2.7	4.1	4.8	2.7	3.7	1.5	4.22	0.65	3.36	4.4	4.67
FeO	4.12	4.8	9.38	9.83	6.4	5.0	8.25	3.07	4.41	2.60	3.7	5.71
MgO	2.24	3.41	3.95	3.75	5.12	4.6	6.33	2.1	0.24	0.33	0.30	3.6
CaO	4.85	6.70	7.90	7.70	9.49	10.01	8.17	6.99	1.87	2.41	1.68	7.57
Na_2O	4.70	3.47	3.10	3.38	3.56	3.6	2.61	4.26	3.77	3.69	4.15	4.52
K_2O	1.97	1.80	1.69	1.10	0.14	0.59	1.00	0.84	4.12	3.50	4.87	1.27
TiO_2	1.21	1.09	3.36	3.23	1.34	1.6	1.60	1.29	0.39	0.50	0.64	0.81
P_2O_5	0.46	0.27	0.63	0.55	0.28	0.4	0.23	0.20	<0.05	0.08	0.12	0.42
MnO	0.13	0.13	0.23	0.24	0.15	0.3	0.17	0.11	0.11	0.11	0.17	0.18
LOI	1.32	4.38	0.70	1.22	2.58	5.80	6.70	*	1.84	2.28	1.63	*
Total	98.84	99.35	98.44	98.90	99.26	99.09	97.26	95.97	98.65	98.83	99.16	98.31
Oxides normalized to 100%												
SiO_2	60.1	58.4	50.8	50.3	50.5	48.9	48.8	57.82	70.2	69.2	64.9	53.93
Al_2O_3	17.4	16.0	14.1	14.3	19.4	19.1	18.2	18.1	13.6	13.5	14.6	15.91
Fe_2O_3	2.30	2.8	4.2	4.8	2.7	4.0	1.7	4.40	0.67	2.08	4.5	3.37
FeO	4.23	5.1	9.60	10.11	6.6	5.4	9.11	3.20	4.55	4.22	3.8	7.06
MgO	2.30	3.59	4.04	3.84	5.30	4.9	6.99	2.2	0.25	0.34	0.31	3.7
CaO	4.97	7.06	8.08	7.88	9.82	10.8	9.02	7.28	1.93	2.50	1.72	7.71
Na_2O	4.82	3.65	3.17	3.46	3.68	3.9	2.88	4.44	3.89	3.83	4.26	4.60
K_2O	2.02	1.90	1.73	1.13	0.15	0.63	1.10	0.87	4.26	3.63	4.99	1.29
TiO_2	1.24	1.15	3.44	3.31	1.39	1.7	1.77	1.34	0.40	0.52	0.66	1.84
P_2O_5	0.47	0.28	0.64	0.56	0.29	0.4	0.25	0.21	0.05	0.08	0.12	0.43
MnO	0.13	0.14	0.24	0.25	0.15	0.3	0.19	0.11	0.11	0.11	0.17	0.18
CIPW normative minerals												
Q	10.1	10.2	3.7	3.7				11.95	24.0	25.6	16.5	1.58
C												
Or	11.9	11.2	10.2	6.7	0.9	3.7	6.5	5.2	25.1	21.5	29.5	7.64
Ab	40.8	30.9	26.8	29.3	31.2	31.1	24.4	37.6	32.9	32.3	36.0	38.96
An	20.0	21.7	19.2	20.3	35.8	32.9	33.5	27.0	7.2	8.9	5.9	18.93
Ne						0.8						
Wo	0.7	4.8	7.0	6.3	4.6	7.5	4.0	3.26	0.9	1.2	0.8	6.90
En	5.7	8.9	10.1	9.6	11.3	5.1	6.8	5.4	0.6	0.9	0.8	9.1
Fs	4.1	5.3	8.9	9.6	6.8	1.8	5.0	0.23	7.4	5.4	2.5	7.48
Fo					1.3	5.0	7.4					
Fa					0.9	2.0	6.0					
Mt	3.33	4.1	6.1	7.0	4.0	5.7	2.4	6.38	0.97	3.01	6.5	4.89
Il	2.36	2.2	6.53	6.28	2.6	3.3	3.35	2.55	0.76	0.98	1.3	3.50
Ap	1.09	0.66	1.49	1.30	0.67	1.0	0.59	0.48	0.12	0.19	0.29	0.99
He												

* = No LOI specified in lab report
** = Non-XRF analysis - see Table 2

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	QTa					QTb						
Map No.	49	50	51	52	53	54	55	56	57	58	59	60
Field No.	79DG037A	79SH002A	79SH006A	85DB209A	83SK469A	82KR005A	85DB170A	82DB277A	80DB184A	80DB198A	82KR117A	78DB239A
XRF chemical analyses (weight percent)												
SiO_2	52.18	51.12	49.30	48.4	48.0	68.9	57.0	56.1	55.8	54.8	51.9	51.87
Al_2O_3	15.62	14.53	15.74	15.5	15.7	13.3	15.1	17.4	18.0	16.0	16.6	17.33
Fe_2O_3	1.81	3.37	4.29	5.0	6.4	0.36	4.1	3.56	3.19	2.3	4.3	3.63
FeO	7.03	6.08	8.08	9.0	7.1	1.60	5.5	4.17	3.92	7.66	5.64	5.59
MgO	3.1	3.5	4.4	4.08	3.83	0.12	2.80	2.81	3.16	3.46	3.75	4.87
CaO	6.95	7.91	8.71	7.88	7.54	0.66	6.26	5.30	7.41	7.34	6.39	7.93
Na_2O	3.63	3.63	3.90	3.43	3.48	4.88	3.55	4.58	4.00	3.99	4.49	3.49
K_2O	1.51	1.14	0.87	1.16	1.23	3.86	1.71	1.74	0.94	1.13	0.71	0.60
TiO_2	1.49	1.7	2.45	2.58	2.60	0.15	1.54	1.38	1.25	1.86	1.80	1.42
P_2O_5	0.35	0.43	0.70	0.68	0.72	<0.05	0.39	0.34	0.27	0.49	0.41	0.26
MnO	0.16	0.20	0.18	0.24	0.20	0.04	0.15	0.13	0.11	0.18	0.18	0.12
LOI	*	*	*	1.16	2.76	5.29	1.21	1.36	2.23	0.35	2.38	*
Total	93.83	93.61	98.35	99.11	99.56	99.21	99.31	98.87	100.28	99.56	98.56	97.11
Oxides normalized to 100%												
SiO_2	55.61	54.61	49.85	49.4	49.6	73.4	58.1	57.6	56.9	55.2	53.9	53.41
Al_2O_3	16.65	15.52	16.00	15.8	16.2	14.2	15.4	17.9	18.4	16.1	17.3	17.85
Fe_2O_3	1.93	3.60	4.36	5.1	6.6	0.38	4.2	2.96	2.81	2.3	4.5	3.74
FeO	7.49	6.49	8.22	9.2	7.3	1.70	5.6	4.91	4.40	7.72	5.84	5.76
MgO	3.3	3.7	4.5	4.16	3.96	0.13	2.85	2.88	3.22	3.49	3.90	5.01
CaO	7.41	8.45	8.86	8.05	7.79	0.70	6.38	5.44	7.56	7.40	6.64	8.17
Na_2O	3.87	3.88	3.97	3.50	3.59	5.20	3.62	4.70	4.08	4.02	4.67	3.59
K_2O	1.61	1.22	0.88	1.18	1.27	4.11	1.74	1.79	0.96	1.14	0.74	0.62
TiO_2	1.59	1.8	2.49	2.63	2.69	0.16	1.57	1.42	1.28	1.88	1.87	1.46
P_2O_5	0.37	0.46	0.71	0.69	0.74	0.05	0.40	0.35	0.27	0.49	0.43	0.27
MnO	0.17	0.21	0.18	0.25	0.21	0.04	0.15	0.13	0.11	0.18	0.19	0.12
CIPW normative minerals												
Q	5.10	5.91		1.5	3.6	24.7	13.3	6.9	9.0	5.9	4.5	5.25
C						0.0						
Or	9.51	7.20	5.23	7.0	7.5	24.3	10.3	10.6	5.7	6.7	4.4	2.65
Ab	32.73	32.81	33.55	29.6	30.4	44.0	30.6	29.8	34.5	34.0	39.5	30.41
An	23.30	21.35	23.26	24.0	24.4	3.1	20.6	22.4	29.0	22.6	24.0	30.74
Ne												
Wo	4.59	7.34	6.69	4.8	3.9		3.5	1.0	2.8	4.5	2.6	3.35
En	8.2	9.3	10.5	10.4	9.9	0.3	7.1	7.2	8.0	8.7	9.7	12.49
Fs	9.86	6.35	7.28	8.8	3.9	2.6	4.5	4.5	3.9	9.5	4.3	5.30
Fo			0.4									
Fa			0.33									
Mt	2.80	5.22	6.32	7.4	9.6	0.56	6.0	4.28	4.07	3.3	6.5	5.42
Il	3.02	3.4	4.73	5.0	5.1	0.30	3.0	1.69	2.42	3.56	3.55	2.78
Ap	0.86	1.06	1.65	1.61	1.72	0.12	0.92	0.81	0.64	1.14	0.99	0.62
He												

* No LOI specified in lab report

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	QTb										QTc	
Map No.	61	62	63	64	65	66	67	68	69	70	71**	72
Field No.	83SK413A	79DG041A	82RK719A	79DB029A	83DB196A	82PB132A	B2PB139D	82SH013A	82SK168A	83DB200A	BUDD-007	79DG040A
XRF chemical analyses (weight percent)												
SiO_2	51.6	51.32	50.2	49.64	49.3	48.7	4B.6	4B.1	47.0	41.9	57.70	50.51
Al_2O_3	15.2	15.17	13.2	15.16	14.6	17.6	16.4	15.6	15.9	15.0	16.28	16.69
Fe_2O_3	6.2	2.90	4.6	4.27	6.3	3.7	5.40	5.1	4.5	6.4	2.83	1.55
FeO	5.2	9.44	9.49	7.99	5.6	5.82	0.69	8.60	7.33	7.7	6.00	6.87
MgO	2.50	3.5	3.74	4.5	2.93	6.52	2.00	3.73	4.76	3.51	1.55	4.2
CaO	7.23	7.40	8.04	8.72	7.62	9.21	7.50	7.95	9.28	8.04	5.30	10.48
Na_2O	3.61	4.03	3.06	3.92	4.00	3.20	3.06	3.42	2.33	3.21	4.90	3.24
K_2O	2.26	0.67	0.94	0.89	1.39	0.63	1.94	1.13	0.81	1.11	0.89	0.50
TiO_2	2.04	2.45	2.97	2.39	2.94	1.50	0.77	2.67	2.35	2.97	0.91	1.35
P_2O_5	0.50	1.02	0.44	0.66	1.02	0.35	0.17	0.67	0.41	0.60	0.56	0.25
MnO	0.21	0.19	0.23	0.19	0.22	0.17	0.12	0.21	0.20	0.26	0.16	0.17
LOI	2.32	*	2.27	*	3.07	1.60	12.80	1.89	4.16	8.35	2.88	*
Total	98.87	98.09	99.18	98.33	98.99	99.00	99.45	99.07	99.03	99.05	100.01	95.81
Oxides normalized to 100%												
SiO_2	53.4	52.32	51.8	50.48	51.4	50.0	56.1	49.5	49.6	46.2	59.41	52.72
Al_2O_3	15.7	15.46	13.6	15.42	15.2	18.1	18.9	16.0	16.8	16.5	16.76	17.42
Fe_2O_3	6.4	2.96	4.8	4.34	6.5	3.83	6.23	5.3	4.1	7.1	2.96	1.62
FeO	5.4	9.62	9.79	8.13	5.8	5.97	0.80	8.85	8.30	8.5	6.18	7.17
MgO	2.59	3.6	3.86	4.60	3.06	6.69	2.31	3.84	5.02	3.87	1.60	4.4
CaO	7.49	7.54	8.29	8.87	7.95	9.45	8.66	8.18	9.79	8.86	5.46	10.94
Na_2O	3.74	4.11	3.16	3.99	4.17	3.28	3.53	3.52	2.46	3.54	5.04	3.38
K_2O	2.34	0.68	0.97	0.90	1.45	0.65	2.24	1.16	0.85	1.22	0.92	0.52
TiO_2	2.11	2.50	3.06	2.43	3.07	1.54	0.89	2.75	2.48	3.27	0.94	1.41
P_2O_5	0.52	1.04	0.45	0.67	1.06	0.36	0.20	0.69	0.43	0.66	0.58	0.26
MnO	0.22	0.19	0.24	0.19	0.23	0.17	0.14	0.22	0.21	0.29	0.16	0.18
CIPW normative minerals												
Q	6.8	3.96	7.1	0.32	5.7		8.2	2.2	4.0		11.26	2.04
C												
Or	13.8	4.04	5.7	5.35	8.6	3.8	13.2	6.9	5.1	7.2	5.41	3.08
Ab	31.6	34.76	26.7	33.73	35.3	27.8	29.9	29.8	20.8	29.9	42.69	28.61
An	19.3	21.74	20.1	21.50	18.5	32.6	29.2	24.6	32.2	25.6	20.38	30.81
Ne												
Wo	6.1	3.71	7.5	7.56	5.8	5.0	5.2	4.8	5.7	5.9	1.22	9.08
En	6.4	8.9	9.6	11.4	7.6	14.6	6.7	9.6	12.5	6.9	3.97	10.9
Fs	1.5	11.46	9.4	7.68	0.7	4.9		7.7	8.2	3.5	7.65	9.83
Fo						1.5				1.9		
Fa						0.5				1.1		
Mt	9.3	4.29	7.0	6.30	9.5	5.6	0.44	7.7	5.9	10.3	4.30	2.35
Il	4.0	4.74	5.82	4.6	5.8	2.92	1.69	5.22	4.71	6.2	1.78	2.68
Ap	1.19	2.41	1.05	1.55	2.46	0.83	0.45	1.60	1.00	1.53	1.33	0.60
He							5.93					

* = No LOI specified in lab report
** = Non-XRF analysis - see Table 2

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	QTc		QTd									
Map No.	73	74	75	76	77	78	79	80	81**	82	83**	84
Field No.	80DB175A	80RS084A	79DB121B	82SH009C	78OV040A	79DG035A	82SH009A	80SK472A	BUDD-005	82SH061A	BUDD-004	82PB064A
			XRF chemical analyses (weight percent)									
SiO_2	45.9	45.3	74.13	72.5	67.38	56.07	55.2	53.5	53.40	51.6	51.45	51.4
Al_2O_3	16.6	14.8	13.05	12.8	14.02	15.30	14.3	13.8	13.35	15.1	16.30	14.5
Fe_2O_3	2.53	3.8	0.31	0.55	1.22	2.22	1.53	1.9	2.58	1.00	2.43	4.1
FeO	6.40	7.88	1.22	1.48	3.26	4.60	6.84	10.48	11.25	7.92	7.20	8.12
MgO	2.95	2.27	0.40	0.26	0.25	2.2	3.39	3.01	2.33	3.27	3.16	3.61
CaO	8.91	10.7	0.91	0.86	1.70	5.79	4.19	6.55	6.58	5.76	7.45	7.65
Na_2O	3.05	3.11	4.04	2.09	5.29	3.83	3.89	3.81	3.80	3.77	2.77	3.87
K_2O	0.51	0.59	4.35	5.81	2.56	1.78	1.99	1.26	1.36	1.73	2.33	1.05
TiO_2	1.29	2.55	0.18	0.24	0.41	1.24	1.71	2.42	2.03	1.60	2.38	2.47
P_2O_5	0.24	0.44	0.03	0.07	0.05	0.30	0.35	0.73	0.75	0.37	0.35	0.59
MnO	0.13	0.31	0.04	0.03	0.11	0.12	0.14	0.23	0.13	0.15	0.12	0.21
LOI	11.20	7.27	*	2.23	*	*	4.98	1.27	2.79	6.09	3.68	1.68
Total	99.71	99.02	98.66	98.92	96.25	93.45	98.51	98.96	100.35	98.36	99.62	99.25
			Oxides normalized to 100%									
SiO_2	51.9	49.4	75.14	75.0	70.00	60.00	59.0	54.7	54.74	55.9	53.63	52.7
Al_2O_3	18.8	16.1	13.23	13.2	14.57	16.37	15.3	14.1	13.68	16.4	16.99	14.9
Fe_2O_3	2.85	4.2	0.31	0.57	1.27	2.38	1.64	2.0	2.64	1.08	2.53	4.2
FeO	7.23	8.58	1.24	1.53	3.39	4.92	7.31	10.72	11.53	8.58	7.50	8.32
MgO	3.33	2.47	0.40	0.27	0.26	2.4	3.62	3.08	2.39	3.54	3.29	3.70
CaO	10.07	11.7	0.92	0.89	1.77	6.20	4.48	6.70	6.75	6.24	7.76	7.84
Na_2O	3.45	3.39	4.10	2.16	5.50	4.10	4.16	3.90	3.89	4.09	2.89	3.97
K_2O	0.58	0.64	4.41	6.01	2.66	1.90	2.13	1.29	1.39	1.88	2.43	1.08
TiO_2	1.46	2.78	0.18	0.25	0.43	1.33	1.83	2.48	2.08	1.73	2.48	2.53
P_2O_5	0.27	0.48	0.03	0.07	0.05	0.32	0.37	0.75	0.77	0.40	0.37	0.61
MnO	0.15	0.34	0.04	0.03	0.11	0.13	0.15	0.23	0.13	0.16	0.12	0.21
			CIPW normative minerals									
Q	2.9	2.1	31.14	36.4	21.96	12.39	9.1	6.1	6.45	3.5	5.60	4.5
C			0.11	1.7								
Or	3.4	3.8	26.05	35.5	15.72	11.25	12.6	7.6	8.24	11.1	14.35	6.4
Ab	29.2	28.7	34.65	18.3	46.50	34.68	35.2	33.0	32.96	34.6	24.43	33.6
An	34.0	26.9	4.38	3.9	7.22	20.65	16.8	17.2	15.74	20.8	26.22	19.6
Ne												
Wo	5.9	11.6			0.50	3.34	1.3	4.7	5.30	3.2	4.14	6.4
En	8.3	6.2	1.01	0.7	0.65	5.9	9.0	7.7	5.95	8.8	8.20	9.2
Fs	8.8	8.3	1.78	2.0	4.68	5.12	9.3	14.4	15.80	12.3	7.82	8.0
Fo												
Fa												
Mt	4.14	6.1	0.46	0.82	1.84	3.44	2.37	2.9	3.83	1.57	3.67	6.1
Il	2.77	5.28	0.35	0.47	0.81	2.52	3.47	4.70	3.95	3.29	4.71	4.81
Ap	0.63	1.1	0.07	0.17	0.12	0.74	0.87	1.73	1.78	0.93	0.85	1.40
He												

* No LOI specified in lab report
** Non-XRF analysis - see Table 2

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	QTd		Tmae					Tmge				
Map No.	85	86	87	88	89	90	91	92	93	94	95	96
Field No.	82PB065A	82SH0098	79DB139A	80DB057A	79SK088A	81RK266A	79DG114A	81RK268A	81TM063C	79SK151A	81RK271A	81TM062B
XRF chemical analyses (weight percent)												
SiO_2	49.1	44.9	77.01	76.5	73.60	66.8	61.55	76.9	76.5	76.34	76.2	76.0
Al_2O_3	16.8	18.1	12.30	11.4	13.17	15.5	14.84	12.5	12.8	12.89	12.8	12.8
Fe_2O_3	2.33	2.3	0.92	1.06	1.D3	1.66	1.34	0.37	0.89	0.48	0.88	0.51
FeO	6.82	7.39	0.73	0.89	1.36	2.46	6.75	0.57	0.19	0.62	0.32	0.51
MgO	4.38	7.84	0.17	<0.10	0.40	0.33	0.67	0.11	<0.10	0.13	<0.10	<0.10
CaO	10.0	10.2	0.34	0.03	0.71	1.11	2.92	0.37	0.12	0.28	0.20	0.39
Na_2O	2.60	2.26	3.90	4.04	3.98	4.97	4.40	3.47	3.91	3.53	3.86	3.91
K_2O	0.76	0.24	4.44	4.42	4.34	5.14	4.72	4.63	4.66	5.02	4.80	4.80
TiO_2	1.70	1.28	0.12	0.06	0.23	0.54	0.71	0.06	0.06	0.11	0.06	0.07
P_2O_5	0.44	0.20	0.03	<0.05	0.07	0.07	0.14	<0.05	<0.05	0.03	<0.05	<0.05
MnO	0.16	0.15	0.03	<0.02	0.05	0.15	0.30	<0.02	<0.02	0.03	<0.02	<0.02
LOI	4.21	4.29	*	0.24	*	0.12	*	0.34	*	*	0.34	0.26
Total	99.30	99.06	99.99	98.81	98.94	98.85	98.34	99.39	99.30	99.44	99.63	99.42
Oxides normalized to 100%												
SiO_2	51.6	47.3	77.02	77.5	74.39	67.7	62.59	77.6	77.0	76.77	76.7	76.6
Al_2O_3	17.7	19.1	12.30	11.7	13.31	15.7	15.09	12.6	12.9	12.96	12.9	12.9
Fe_2O_3	2.45	2.4	0.92	1.07	1.04	1.68	1.36	0.37	0.90	0.48	0.89	0.51
FeO	7.17	7.79	0.73	0.90	1.37	2.49	6.86	0.58	0.19	0.62	0.32	0.51
MgO	4.61	8.27	0.17	0.10	0.40	0.33	0.68	0.11	0.10	0.13	0.10	0.10
CaO	10.5	10.8	0.34	0.03	0.72	0.12	2.97	0.37	0.12	0.27	0.20	0.39
Na_2O	2.73	2.38	3.90	4.09	4.02	5.03	4.47	3.50	3.94	3.55	3.89	3.94
K_2O	0.80	0.25	4.44	4.48	4.39	5.21	4.80	4.67	4.69	5.04	4.83	4.84
TiO_2	1.79	1.35	0.12	0.06	0.23	0.55	0.72	0.06	0.06	0.11	0.06	0.07
P_2O_5	0.46	0.21	0.03	0.05	0.07	0.07	0.14	0.05	0.05	0.03	0.05	0.05
MnO	0.17	0.16	0.03	0.02	0.05	0.15	0.31	0.02	0.02	0.03	0.02	0.02
CIPW normative minerals												
Q	4.1		36.24	36.1	31.64	14.6	7.77	38.2	35.9	35.87	35.2	34.1
C			0.53	0.1	0.81			1.2	1.2	1.25	1.0	0.6
Or	4.7	1.5	26.24	26.4	25.92	30.8	28.36	27.6	27.7	29.77	28.6	28.6
Ab	23.1	20.2	33.00	34.6	34.04	42.6	37.86	29.6	33.3	30.04	32.9	33.4
An	33.6	40.6	1.49		3.10	4.9	6.92	1.5	0.3	1.15	0.7	1.6
Ne												
Wo	6.5	4.7				0.1	2.87					
En	11.5	9.6	0.42	0.3	1.0	0.8	1.70	0.3	0.3	0.33	0.3	0.3
Fs	8.5	4.9	0.44	0.7	1.37	2.6	10.95	0.7		0.62		0.4
Fo		7.7										
Fa		4.3										
Mt	3.55	3.5	1.33	1.56	1.50	2.44	1.98	0.54	0.51	0.70	0.93	0.75
Il	3.39	2.56	0.23	0.12	0.44	1.04	1.37	0.12	0.12	0.21	0.11	0.13
Ap	1.1	0.49	0.07	0.18	0.16	0.16	0.33	0.12	0.12	0.07	0.12	0.12
He									0.55		0.24	
Modal calculations (percent volume)												
K-feldspar			65.9	57.3	64.2	77.0	73.7			53.5		
Plagioclase			0.2	4.0	4.4	3.5	13.8			20.1		
Quartz			31.0	35.2	28.3	11.2	4.8			24.3		
Mafic minerals			2.9	3.5	3.1	8.3	7.7			2.1		
Total			100	100	100	100	100			100		

* No LOI specified in lab report

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	Tmge											
Map No.	97	98	99	100	101	102	103	104	105	106	107	108
Field No.	81TM064A	81TM065A	81SH043C	81TM061B	78RS121B	82DB097A	82DB263A	82SH107A	82RK703A	82SK149A	82DB095A	79SH059A
XRF chemical analyses (weight percent)												
SiO_2	75.2	75.2	75.0	74.3	74.20	72.7	72.6	72.2	72.2	71.9	70.6	70.24
Al_2O_3	13.1	13.3	13.4	13.5	13.51	13.8	13.9	14.1	14.1	13.9	14.2	14.33
Fe_2O_3	0.71	0.92	0.82	0.81	0.89	0.78	0.26	0.79	0.96	0.91	0.44	1.03
FeO	0.43	0.36	0.52	0.51	0.95	1.03	1.29	0.91	0.96	0.97	1.90	1.94
MgO	<0.10	<0.10	<0.10	0.16	0.23	0.22	0.33	0.18	0.19	0.14	0.60	0.38
CaO	0.30	0.19	0.27	0.40	0.60	0.72	1.05	0.80	0.69	0.72	1.42	1.56
Na_2O	3.92	3.78	4.08	3.76	3.92	4.09	3.53	3.93	4.14	4.11	3.82	4.09
K_2O	4.78	4.76	4.74	5.01	5.05	5.02	4.92	5.04	5.09	4.83	4.82	4.25
TiO_2	0.06	0.07	0.08	0.11	0.20	0.17	0.23	0.17	0.19	0.14	0.28	0.34
P_2O_5	<0.05	<0.05	<0.05	<0.05	0.03	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	0.06
MnO	<0.02	<0.02	<0.02	<0.02	0.04	0.02	<0.02	<0.02	0.03	0.03	0.04	0.05
LOI	0.30	0.70	0.30	0.26	*	0.39	0.31	0.15	0.44	0.89	0.75	*
Total	98.97	99.45	99.38	98.89	99.62	99.07	98.49	98.34	99.04	98.59	98.93	98.27
Oxides normalized to 100%												
SiO_2	76.2	76.2	75.7	75.3	74.48	73.7	73.9	73.5	73.2	73.6	71.9	71.48
Al_2O_3	13.3	13.5	13.5	13.7	13.56	14.1	14.2	14.4	14.3	14.2	14.5	14.58
Fe_2O_3	0.72	0.9	0.83	0.82	0.89	0.79	0.26	0.80	0.97	0.93	0.45	1.05
FeO	0.44	0.36	0.52	0.52	0.95	1.04	1.31	0.93	0.97	0.99	1.93	1.97
MgO	0.10	0.10	0.10	0.16	0.23	0.22	0.34	0.18	0.19	0.14	0.61	0.39
CaO	0.30	0.19	0.27	0.41	0.60	0.73	1.07	0.82	0.70	0.74	1.45	1.59
Na_2O	3.97	3.83	4.12	3.81	3.94	4.15	3.59	4.00	4.20	4.21	3.89	4.16
K_2O	4.84	4.82	4.78	5.08	5.07	5.09	5.01	5.13	5.16	4.94	4.91	4.32
TiO_2	0.06	0.07	0.08	0.11	0.20	0.17	0.23	0.17	0.19	0.14	0.28	0.35
P_2O_5	0.05	0.05	0.05	0.05	0.03	0.05	0.05	0.05	0.05	0.05	0.06	0.06
MnO	0.02	0.02	0.02	0.02	0.04	0.02	0.02	0.02	0.03	0.03	0.04	0.05
CIPW normative minerals												
Q	33.8	35.0	32.8	32.7	30.30	27.9	30.4	28.4	27.1	28.2	25.4	25.87
C	1.1	1.7	1.2	1.3	0.58	0.5	1.0	0.9	0.7	0.7	0.3	0.31
Or	28.6	28.5	28.3	30.0	29.96	30.1	29.6	30.3	30.5	29.2	29.0	25.56
Ab	33.6	32.4	34.8	32.3	33.29	35.1	30.4	33.9	35.5	25.6	32.9	35.22
An	1.2	0.6	1.0	1.7	2.79	3.3	4.9	3.7	3.1	3.3	6.8	7.48
Ne												
Wo												
En	0.3	0.3	0.3	0.4	0.57	0.6	0.8	0.5	0.5	0.4	1.5	0.96
Fs	0.1		0.2	0.1	0.76	1.0	1.8	0.8	0.7	0.9	2.8	2.28
Fo												
Fa												
Mt	1.04	1.03	1.20	1.19	1.30	1.15	0.38	1.17	1.41	1.35	0.65	1.52
Il	0.11	0.13	0.15	0.21	0.38	0.33	0.45	0.33	0.37	0.27	0.54	0.66
Ap	0.12	0.12	0.12	0.12	0.07	0.12	0.12	0.12	0.12	0.12	0.14	0.14
He		0.22										
Modal calculations (percent volume)												
K-feldspar					64.0	59.5		56.4	59.4	59.0	44.4	52.4
Plagioclase					12.0	8.7		15.1	12.2	10.7	26.4	21.9
Quartz					20.0	28.7		26.1	24.3	28.7	23.0	20.7
Mafic minerals					3.0	3.2		2.4	4.1	1.6	6.2	5.0
Total					99.0	100.1		100	100	100	100	100

* No LOI specified in lab report

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit		Tmme										
Map No.	109	110	111	112	113	114	115	116	117	118	119	120
Field No.	7AA114	82DB260A	82TM059B	79AF020A	82KR090A	79SK083A	81SK169C	81TM061A	82RK836B	82KR089A	82DB254A	79RS131A
		XRF chemical analyses (weight percent)										
SiO_2		74.6	68.8	63.56	63.1	61.47	60.5	59.2	58.5	57.4	57.0	56.70
Al_2O_3		13.2	15.3	16.33	16.1	16.75	16.7	17.5	17.3	16.3	17.6	15.42
Fe_2O_3		0.18	1.53	1.45	0.99	1.51	0.56	1.51	1.19	0.71	0.52	0.64
FeO		1.03	1.95	3.01	3.95	3.69	4.28	4.20	5.29	6.42	6.16	7.65
MgO	Age data only	0.14	0.37	1.71	1.70	2.92	2.58	2.63	1.96	3.16	3.23	3.25
CaO		0.57	1.38	3.31	3.62	4.91	5.17	5.76	4.73	6.35	6.41	6.16
Na_2O		3.62	4.51	4.54	3.77	4.42	4.02	4.05	4.51	3.67	3.25	3.75
K_2O		4.90	4.88	3.64	3.67	2.52	2.31	2.55	1.93	1.90	2.11	1.93
TiO_2		0.12	0.40	0.81	0.91	0.87	0.91	0.84	1.09	1.65	0.86	1.81
P_2O_5		<0.05	0.07	0.23	0.29	0.26	0.31	0.33	0.44	0.44	0.28	0.43
MnO		<0.02	0.08	0.096	0.09	0.11	0.08	0.12	0.14	0.12	0.15	0.14
LOI		0.34	0.17	*	0.43	*	1.67	0.68	1.25	0.28	0.89	*
Total		98.77	99.44	98.69	98.62	99.43	99.09	99.37	98.33	98.40	98.46	97.88
		Oxides normalized to 100%										
SiO_2		75.8	69.3	64.40	64.3	61.82	62.1	60.0	60.3	58.5	58.4	57.93
Al_2O_3		13.4	15.4	16.55	16.4	16.85	17.1	17.7	17.8	16.6	18.0	15.75
Fe_2O_3		0.18	1.54	1.47	1.01	1.52	0.57	1.53	1.23	0.72	0.53	0.65
FeO		1.05	1.96	3.05	4.02	3.71	4.39	4.26	5.45	6.54	6.31	7.82
MgO		0.14	0.37	1.73	1.73	2.94	2.65	2.67	2.02	3.22	3.31	3.32
CaO		0.58	1.39	3.35	3.69	4.94	5.31	5.84	4.87	6.47	6.57	6.29
Na_2O		3.68	4.54	4.60	3.84	4.44	4.13	4.10	4.65	3.74	3.33	3.83
K_2O		4.98	4.92	3.69	3.74	2.53	2.37	2.58	1.99	1.94	2.16	1.97
TiO_2		0.12	0.40	0.82	0.93	0.88	0.93	0.85	1.12	1.68	0.88	1.85
P_2O_5		0.05	0.07	0.23	0.29	0.26	0.32	0.33	0.45	0.45	0.28	0.44
MnO		0.02	0.08	0.10	0.09	0.11	0.08	0.12	0.14	0.12	0.15	0.14
		CIPW normative minerals										
Q		33.3	19.9	13.28	15.6	11.00	12.4	9.2	10.1	9.3	8.6	7.70
C		1.0	0.3		0.0				0.3			
Or		29.4	29.0	21.79	22.1	14.98	14.0	15.3	11.7	11.4	12.8	11.65
Ab		31.1	38.4	38.92	32.5	37.61	34.9	34.7	39.3	31.6	28.2	32.42
An		2.5	6.4	13.61	16.4	18.53	21.2	22.3	21.2	22.8	27.9	19.96
Ne												
Wo				0.63		1.78	1.3	1.9		2.7	1.2	3.50
En		0.4	0.9	4.32	4.3	7.31	6.6	6.6	5.0	8.0	8.2	8.27
Fs		1.6	1.8	3.22	5.2	4.32	6.2	5.4	7.4	8.9	10.0	11.72
Fo												
Fa												
Mt		0.27	2.24	2.13	1.46	2.20	0.83	2.22	1.78	1.05	0.77	0.95
Il		0.23	0.77	1.56	1.76	1.66	1.77	1.62	2.13	3.19	1.67	3.51
Ap		0.12	0.16	0.54	0.68	0.61	0.74	0.77	1.05	1.04	0.66	1.02
He												
		Modal calculations (percent volume)										
K-feldspar			58.9	38.9	20.5			10.8				5.9
Plagioclase			17.5	41.4	40.4			58.4				73.5
Quartz			18.1	6.6	13.9			8.4				1.6
Mafic minerals			5.5	12.9	25.2			22.4				19.0
Total			100	99.8	100			100				100

* No LOI specified in lab report

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	Tmme					Tmaz						Tmqk
Map No.	121	122	123	124	125	126**	127	128	129	130	131	132**
Field No.	82SK157A	79RS068A	82DB262C	82SK154A	82KR086A	78BG016A	82SK004A	79DB121A	79OG098A	82RK700A	79SK130A	BUDD-009
XRF chemical analyses (weight percent)												
SiO_2	53.8	52.82	52.0	50.2	47.8	75.0	74.8	74.53	74.45	70.6	69.24	72.62
Al_2O_3	17.2	17.80	16.5	18.0	18.6	12.2	13.0	13.40	13.18	14.6	13.22	10.17
Fe_2O_3	0.60	1.53	0.70	1.79	0.63	0.83	0.59	0.90	0.86	1.14	1.58	4.60
FeO	5.99	6.74	8.01	6.75	5.61	0.58	0.75	0.77	0.70	1.31	2.27	1.88
MgO	5.95	5.46	6.06	6.62	9.93	0.15	0.24	0.40	0.20	0.23	0.60	0.10
CaO	8.02	7.93	8.98	8.71	13.0	0.27	0.61	0.93	0.42	0.75	1.15	0.10
Na_2O	3.19	3.97	2.96	3.17	1.73	3.9	3.66	3.76	3.90	4.55	4.35	4.53
K_2O	1.66	1.38	1.06	0.82	0.22	4.9	4.91	4.69	4.97	5.13	4.28	4.78
TiO_2	0.90	1.27	1.34	1.21	0.34	0.15	0.16	0.22	0.16	0.23	0.44	0.35
P_2O_5	0.31	0.31	0.28	0.29	0.07	0.05	<0.05	0.04	0.03	<0.05	0.09	trace
MnO	0.11	0.15	0.15	0.15	0.10	0.04	<0.02	0.03	0.03	0.04	0.08	trace
LOI	0.91	*	0.50	0.96	0.96	*	0.51	*	*	0.29	*	0.45
Total	98.64	99.36	98.54	98.67	98.99	98.07	99.30	99.67	98.90	98.92	97.30	99.58
Oxides normalized to 100%												
SiO_2	55.0	53.16	53.0	51.4	48.8	76.5	75.7	74.78	75.28	71.58	71.16	73.26
Al_2O_3	17.6	17.92	16.8	18.4	19.0	12.4	13.2	13.44	13.33	14.80	13.59	10.26
Fe_2O_3	0.61	1.54	0.71	1.83	0.64	0.85	0.60	0.90	0.87	1.16	1.62	4.64
FeO	6.13	6.78	8.17	6.91	5.72	0.59	0.76	0.77	0.71	1.33	2.33	1.90
MgO	6.09	5.49	6.18	6.78	10.13	0.15	0.24	0.40	0.20	0.23	0.62	0.10
CaO	8.21	7.98	9.16	8.91	13.3	0.27	0.62	0.93	0.43	0.76	1.18	0.10
Na_2O	3.26	4.00	3.02	3.24	1.76	4.0	3.70	3.77	3.94	4.61	4.47	4.57
K_2O	1.70	1.39	1.08	0.84	0.22	5.0	4.97	4.71	5.02	5.20	4.40	4.82
TiO_2	0.92	1.28	1.37	1.24	0.35	0.15	0.16	0.22	0.16	0.23	0.45	0.35
P_2O_5	0.32	0.31	0.29	0.30	0.07	0.05	0.05	0.04	0.03	0.05	0.09	0.0
MnO	0.11	0.15	0.15	0.15	0.10	0.04	0.02	0.03	0.03	0.04	0.08	0.0
CIPW normative minerals												
Q	1.7		0.8			33.5	33.3	32.18	31.82	22.5	24.33	29.85
C						0.1	0.7	0.54	0.70	0.3		
Or	10.0	8.21	6.4	5.0	1.3	29.5	29.4	27.81	29.69	30.7	25.99	28.49
Ab	27.6	33.81	25.5	27.4	14.9	33.7	31.3	31.92	33.37	39.0	37.83	25.92
An	28.4	26.84	29.2	33.2	43.2	1.0	2.7	4.37	1.91	3.4	4.01	
Ne												
Wo	4.3	4.47	6.0	3.8	9.2						0.52	0.21
En	15.2	9.84	15.4	13.6	11.6	0.4	0.60	1.00	0.50	0.6	1.54	0.25
Fs	9.5	6.72	12.4	7.6	4.4	0.2	0.7	0.36	0.37	1.2	2.35	2.27
Fo		2.70		2.3	9.6							
Fa		2.03		1.4	4.0							
Mt	0.89	2.23	1.03	2.66	0.93	1.23	0.87	1.31	1.26	1.68	2.35	1.10
Il	1.75	2.43	2.60	2.35	0.66	0.29	0.30	0.42	0.31	0.44	0.86	0.67
Ap	0.73	0.72	0.66	0.69	0.16	0.12	0.12	0.09	0.07	0.12	0.21	
He												
Ac												11.22
Modal calculations (percent volume)												
K-feldspar		0					49.9	49.9	64.4	70.9	69.0	
Plagioclase		60.9					16.2	11.8		3.9	6.7	
Quartz		2.1					33.9	34.9	32.6	21.7	20.1	
Mafic minerals		37.0					0.9	3.4	3.0	3.5	4.2	
Total		100					100	100	100	100	100	

* No LOI specified in lab report
** Non-XRF analysis - see Table 2

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	Tmqk											
Map No.	133	134	135	136	137	138	139	140	141	142	143	144
Field No.	82KR014A	83KR017A	82KR015A	81KR016A	79RS155A	82SH052A	78DB223A	80DB069A	83SK476A	82SH060A	85DB202A	79DG039A
XRF chemical analyses (weight percent)												
SiO_2	74.0	72.8	71.8	71.1	69.91	69.9	66.61	66.0	65.5	63.8	56.7	49.89
Al_2O_3	10.0	9.54	9.92	10.0	14.47	14.4	15.26	16.1	15.1	15.1	14.9	16.75
Fe_2O_3	4.88	5.98	6.00	6.37	1.45	1.88	1.67	1.64	2.7	0.81	3.6	2.55
FeO	0.34	0.51	0.62	0.61	1.53	1.62	1.94	2.69	2.5	3.78	5.6	7.24
MgO	<0.10	<0.10	<0.10	<0.10	0.54	0.41	0.99	1.18	0.68	1.05	2.71	5.6
CaO	0.07	0.16	0.12	0.12	1.13	0.11	2.17	2.77	2.09	2.65	5.47	10.98
Na_2O	4.70	5.34	5.26	5.46	4.32	5.02	4.83	4.99	4.91	4.39	4.45	3.05
K_2O	4.43	4.03	4.37	4.19	4.80	3.66	3.10	2.74	3.72	2.91	2.41	0.87
TiO_2	0.23	0.28	0.27	0.31	0.40	0.42	0.63	0.74	0.63	0.70	1.62	0.75
P_2O_5	<0.05	<0.05	<0.05	<0.05	0.07	0.07	0.15	0.20	0.15	0.21	0.40	0.24
MnO	0.04	0.08	0.07	0.11	0.06	0.08	0.08	0.09	0.1	0.14	0.19	0.17
LOI	0.51	0.28	0.42	0.64	*	0.25	*	0.56	0.86	3.39	1.39	*
Total	99.35	99.15	99.00	99.06	98.68	98.82	97.43	99.70	98.94	98.93	99.44	98.06
Oxides normalized to 100%												
SiO_2	74.9	73.9	73.1	72.6	70.84	70.9	68.37	66.6	66.8	66.8	57.8	50.88
Al_2O_3	10.1	9.69	10.11	10.2	14.66	14.6	15.66	16.2	15.4	15.8	15.2	17.08
Fe_2O_3	4.94	1.81	1.80	1.85	1.47	1.91	1.71	1.65	2.7	0.85	3.6	2.29
FeO	0.34	4.36	4.51	4.81	1.55	1.64	1.99	2.71	2.5	3.96	5.7	7.66
MgO	0.10	0.10	0.10	0.10	0.55	0.42	1.02	1.19	0.69	1.10	2.76	5.7
CaO	0.07	0.16	0.12	0.12	1.14	1.13	2.23	2.79	2.13	2.77	5.58	11.20
Na_2O	4.75	5.42	5.36	5.57	4.38	5.09	4.96	5.03	5.01	4.59	4.54	3.11
K_2O	4.48	4.09	4.45	4.28	4.86	3.71	3.18	2.76	3.79	3.05	2.46	0.89
TiO_2	0.23	0.28	0.27	0.32	0.41	0.43	0.65	0.75	0.64	0.73	1.65	0.77
P_2O_5	0.05	0.05	0.05	0.05	0.07	0.07	0.15	0.20	0.15	0.22	0.41	0.24
MnO	0.04	0.08	0.07	0.11	0.06	0.08	0.08	0.09	0.1	0.15	0.19	0.17
CIPW normative minerals												
Q	32.9	31.7	29.5	28.2	23.21	23.9	20.90	18.4	17.6	18.9	7.2	
C					0.28	0.3	0.38	0.4		0.4		
Or	26.5	24.2	26.3	25.3	28.74	21.9	18.80	16.3	22.4	18.0	14.5	5.24
Ab	27.1	27.1	27.2	28.7	37.04	43.1	41.94	42.6	42.4	38.9	38.4	26.32
An					5.22	5.1	10.04	12.5	8.3	13.3	13.8	30.03
Ne												
Wo		0.2	0.1	0.1					0.5		4.7	9.99
En	0.2	0.2	0.2	0.2	1.36	1.0	2.53	3.0	1.7	2.7	6.9	8.3
Fs		7.7	8.0	8.5	1.08	0.9	1.33	2.6	1.5	5.6	5.1	7.32
Fo												3.5
Fa												3.01
Mt	0.56				2.13	2.76	2.49	2.40	4.0	1.23	5.3	3.33
Il	0.44	0.54	0.52	0.60	0.77	0.81	1.23	1.42	1.2	1.39	3.1	1.45
Ap	0.12	0.12	0.12	0.12	0.16	0.16	0.36	0.47	0.35	0.51	0.94	0.57
He	0.54											
Di	0.0											
Ac	11.6											
Modal calculations (percent volume)												
K-feldspar					43.9		41.3					
Plagioclase					34.4		41.7					
Quartz					14.2		10.1					
Mafic minerals					7.5		6.9					
Total					100		100					

* No LOI specified in lab report

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	Tmqk		Tmgk			Tmdk			Tmgb			
Map No.	145	146	147	148	149	150	151	152	153	154	155	156
Field No.	79DG038A	80DB043B	82SH054B	80DB111A	80RS051A	80DB049A	82SH053A	82SH049A	80SK541A	82KR018A	80SK532A	80DB190A
XRF chemical analyses (weight percent)												
SiO_2	48.59	47.5	73.8	73.2	72.2	71.6	68.9	51.8	57.8	56.2	54.6	49.7
Al_2O_3	18.46	18.0	13.4	14.1	14.5	14.1	14.1	17.2	14.6	14.3	15.3	14.0
Fe_2O_3	2.25	2.23	0.96	1.51	1.13	1.18	1.32	2.0	4.62	3.65	3.99	2.1
FeO	7.51	6.83	0.97	1.26	1.52	1.51	3.03	7.3	3.61	5.40	7.21	9.87
MgO	4.4	5.89	0.18	0.32	0.42	0.36	0.64	5.05	3.98	3.85	2.81	5.92
CaO	11.71	5.67	0.50	1.10	1.54	1.06	1.85	9.09	6.17	6.18	6.42	7.74
Na_2O	3.21	4.01	4.37	4.44	4.48	4.40	5.02	3.38	3.92	4.44	3.95	3.86
K_2O	1.10	1.52	4.05	3.63	3.26	3.42	3.07	0.47	1.78	1.59	1.61	0.60
TiO_2	1.17	0.95	0.17	0.22	0.27	0.24	0.51	2.17	1.05	1.07	1.95	1.68
P_2O_5	0.35	0.38	<0.05	<0.05	0.05	<0.05	0.11	0.18	0.15	0.16	0.87	0.35
MnO	0.19	0.29	<0.02	0.04	0.05	0.05	0.09	0.14	0.15	0.17	0.19	0.17
LOI	*	4.19	0.27	0.28	0.35	0.78	0.25	0.44	2.08	2.29	0.78	3.10
Total	98.94	97.16	98.74	100.15	99.80	98.75	98.89	99.30	99.91	99.30	99.68	99.09
Oxides normalized to 100%												
SiO_2	49.11	50.9	74.9	73.3	72.6	73.1	69.9	52.4	59.2	57.93	55.2	51.8
Al_2O_3	18.66	19.3	13.6	14.1	14.6	14.4	14.3	17.4	15.0	14.74	15.5	14.6
Fe_2O_3	2.27	2.39	0.97	1.51	1.14	1.20	1.34	2.0	2.61	3.76	3.49	2.2
FeO	7.59	7.32	0.98	1.26	1.53	1.54	3.07	7.5	5.61	5.57	7.79	10.28
MgO	4.4	6.31	0.18	0.32	0.42	0.37	0.65	5.11	4.08	3.97	2.84	6.16
CaO	11.84	6.08	0.51	1.10	1.55	1.08	1.88	9.19	6.32	6.37	6.49	8.06
Na_2O	3.24	4.30	4.44	4.45	4.51	4.49	5.08	3.42	4.01	4.58	4.00	4.02
K_2O	1.11	1.63	4.11	3.64	3.28	3.49	3.11	0.48	1.82	1.64	1.63	0.62
TiO_2	1.18	1.02	0.17	0.22	0.27	0.24	0.52	2.19	1.08	1.10	1.97	1.75
P_2O_5	0.35	0.41	0.05	0.05	0.05	0.05	0.11	0.18	0.15	0.16	0.88	0.36
MnO	0.19	0.31	0.02	0.04	0.05	0.05	0.09	0.14	0.15	0.18	0.19	0.18
CIPW normative minerals												
Q			31.8	30.5	29.4	30.2	22.3	2.9	9.5	6.8	7.7	
C		0.4	1.1	1.0	0.9	1.4						
Or	6.57	9.6	24.3	21.5	19.4	20.6	18.4	2.8	10.8	9.7	9.6	3.7
Ab	24.07	36.4	37.5	37.6	38.1	38.0	43.1	28.9	34.0	38.7	33.8	34.1
An	33.06	27.5	2.2	5.1	7.4	5.0	7.0	30.7	17.4	14.8	19.5	19.9
Ne	1.83											
Wo	9.75						0.7	5.7	5.4	6.6	2.9	7.4
En	4.9	1.7	0.4	0.8	1.0	0.9	1.6	12.7	10.2	9.9	7.1	11.0
Fs	4.63	1.1	0.5	0.8	1.5	1.5	3.9	8.7	6.6	5.6	8.5	10.4
Fo	4.3	9.9										3.0
Fa	4.51	7.2										3.1
Mt	3.30	3.47	1.41	2.19	1.65	1.75	1.94	2.9	3.79	5.46	5.06	3.2
Il	2.25	1.94	0.33	0.42	0.52	0.46	0.98	4.2	2.04	2.09	3.75	3.32
Ap	0.82	0.94	0.12	0.12	0.12	0.12	0.26	0.42	0.36	0.38	2.04	0.84
He												
Modal calculations (percent volume)												
K-feldspar	3.4		31.0		33.0							
Plagioclase	61.2		34.8		35.7							
Quartz			28.0		25.6							
Mafic minerals	35.4		6.2		5.7							
Total	100		100		100							

* No LOI specified in lab report

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	Kwqo											
Map No.	157	158	159	160	161	162	163	164	165	166	167	168
Field No.	80SK443A	79DB108A	79SK022A	79RS018A	78DB204A	79SK072A	80RS015A	80RS019A	80DB077A	82SH056B	79DB097A	82SH057A
XRF chemical analyses (weight percent)												
SiO_2	69.0	68.62	68.58	68.24	67.68	67.25	67.0	66.5	66.0	65.2	64.95	61.5
Al_2O_3	15.8	15.44	16.36	17.21	15.37	16.15	16.3	16.6	16.5	16.3	17.66	16.3
Fe_2O_3	1.45	1.52	1.05	0.76	1.77	1.81	1.90	2.06	1.94	1.84	1.66	2.33
FeO	1.40	0.94	1.10	0.90	1.40	1.25	1.66	1.36	1.87	2.02	1.45	3.29
MgO	1.20	0.71	1.2	0.51	1.29	1.01	1.51	0.91	1.65	1.65	1.39	2.20
CaO	3.99	2.83	4.14	4.16	3.61	3.48	4.60	3.67	4.93	4.85	5.44	5.93
Na_2O	3.85	4.62	4.0	4.81	3.19	4.79	3.56	3.72	3.58	3.80	4.33	3.42
K_2O	2.28	2.75	2.46	1.31	3.49	2.62	2.50	4.27	2.56	2.35	1.32	2.70
TiO_2	0.26	0.32	0.24	0.19	0.35	0.40	0.32	0.41	0.35	0.42	0.3	0.61
P_2O_5	0.08	0.06	0.08	0.07	0.11	0.08	0.1	0.13	0.11	0.14	0.11	0.17
MnO	0.06	0.10	0.06	0.05	0.07	0.10	0.08	0.08	0.09	0.08	0.10	0.13
LOI	0.05	*	*	*	*	*	0.30	0.26	0.21	0.58	*	0.56
Total	99.87	97.91	99.27	98.21	98.33	98.94	99.83	99.97	99.79	99.23	98.71	99.14
Oxides normalized to 100%												
SiO_2	69.4	70.09	69.08	69.48	68.83	67.97	67.3	66.7	66.3	66.1	65.80	62.4
Al_2O_3	15.9	15.77	16.48	17.52	15.63	16.32	16.4	16.6	16.6	16.5	17.89	16.5
Fe_2O_3	1.46	1.55	1.06	0.77	1.80	1.83	1.91	2.07	1.95	1.87	1.68	2.36
FeO	1.41	0.96	1.11	0.92	1.42	1.26	1.67	1.36	1.88	2.05	1.47	3.34
MgO	1.21	0.72	1.2	0.52	1.31	1.02	1.52	0.91	1.66	1.67	1.41	2.23
CaO	4.02	2.89	4.17	4.24	3.67	3.52	4.62	3.68	4.95	4.92	5.51	6.01
Na_2O	3.87	4.72	4.0	4.90	3.24	4.84	3.58	3.73	3.59	3.85	4.39	3.47
K_2O	2.29	2.81	2.48	1.33	3.55	2.65	2.51	4.28	2.57	2.38	1.34	2.74
TiO_2	0.26	0.33	0.24	0.19	0.36	0.40	0.32	0.41	0.35	0.43	0.3	0.62
P_2O_5	0.08	0.06	0.08	0.07	0.11	0.08	0.1	0.13	0.11	0.14	0.11	0.17
MnO	0.06	0.10	0.06	0.05	0.07	0.10	0.08	0.08	0.09	0.08	0.10	0.13
CIPW normative minerals												
Q	27.5	24.82	25.39	25.87	26.57	21.12	24.7	19.9	22.6	21.8	21.43	16.0
C				0.49	0.04							
Or	13.6	16.60	14.64	7.88	20.97	15.65	14.8	25.3	15.2	14.1	7.90	16.2
Ab	32.8	39.92	34.1	41.44	27.45	40.96	30.3	31.6	30.4	32.6	37.11	29.4
An	19.2	13.55	19.56	20.55	17.48	14.99	21.2	16.0	21.5	20.8	25.18	21.5
Ne												
Wo	0.1	0.16	0.25			0.81	0.4	0.6	1.0	1.1	0.60	3.0
En	3.0	1.81	3.0	1.29	3.27	2.54	3.8	2.3	4.1	4.2	3.51	5.6
Fs	1.1	0.13	0.87	0.82	0.67	0.33	1.1	0.3	1.4	1.7	0.99	3.4
Fo												
Fa												
Mt	2.12	2.25	1.53	1.12	2.61	2.65	2.77	3.00	2.83	2.70	2.44	3.43
Il	0.50	0.62	0.46	0.37	0.68	0.77	0.61	0.78	0.67	0.81	0.6	1.17
Ap	0.19	0.14	0.19	0.17	0.26	0.19	0.2	0.30	0.26	0.33	0.26	0.40
He												
Modal calculations (percent volume)												
K-feldspar	13.5	25.3	17.6	5.0	21.5	18.4	25.0	34.0	19.0		7.4	
Plagioclase	56.4	53.8	52.6	65.9	45.9	59.5	45.9	42.6	53.3		65.4	
Quartz	22.7	18.8	24.6	24.6	24.5	16.2	17.8	16.8	16.6		18.6	
Mafic minerals	7.4	2.1	5.2	4.5	8.1	5.9	11.3	6.6	11.1		8.6	
Total	100	100	100	100	100	100	100	100	100		100	

* No LOI specified in lab report

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	Kwqo										Ksm	Tr hh
Map No.	169	170	171	172	173	174	175	176	177	178	179	180
Field No.	79DB031C	82SH055A	79DB017A	79DB033A	79DB032A	79RS021A	79SH035A	80DB086A	79DB091A	80SK447A	82SK046A	82SK051A
XRF chemical analyses (weight percent)												
SiO_2	61.17	60.1	60.04	57.5	53.75	53.45	53.1	52.9	52.11	42.6	45.4	51.5
Al_2O_3	17.75	17.0	17.39	18.08	17.87	16.07	17.72	18.9	19.69	17.8	18.0	17.9
Fe_2O_3	1.34	2.21	2.97	3.75	3.29	4.51	0.40	4.54	3.50	7.92	1.65	1.76
FeO	1.81	3.63	2.53	3.03	4.83	5.17	7.77	3.85	3.64	5.65	7.44	5.56
MgO	2.18	2.71	2.2	2.33	3.93	4.6	4.3	2.85	3.34	5.65	4.00	5.06
CaO	7.14	6.54	6.63	7.17	9.07	8.46	9.0	9.71	9.52	17.3	8.52	5.57
Na_2O	4.31	3.53	4.00	4.45	3.52	4.33	3.55	4.07	3.64	1.08	4.22	4.50
K_2O	3.16	2.20	2.73	2.01	1.73	0.86	0.45	1.59	2.22	0.22	0.30	2.37
TiO_2	0.62	0.63	0.57	0.78	0.88	1.40	0.12	1.05	0.67	1.37	1.97	1.15
P_2O_5	0.22	0.16	0.22	0.27	0.27	0.23	0.25	0.38	0.27	0.09	0.46	0.34
MnO	0.10	0.13	0.12	0.19	0.15	0.19	0.14	0.21	0.16	0.19	0.13	0.12
LOI	*	0.42	*	*	*	*	*	0.28	*	0.33	6.94	3.11
Total	99.80	99.26	99.40	99.56	99.29	99.27	96.79	100.33	98.75	100.20	99.03	98.94
Oxides normalized to 100%												
SiO_2	61.29	60.8	60.40	57.8	54.13	53.84	54.9	52.9	52.77	42.7	49.3	53.7
Al_2O_3	17.79	17.2	17.49	18.16	18.00	16.19	18.31	18.9	19.94	17.8	19.5	18.7
Fe_2O_3	1.34	2.24	2.99	3.77	3.31	4.54	0.41	4.54	3.54	7.93	1.79	1.84
FeO	1.81	3.67	2.54	3.04	4.87	5.21	8.03	3.85	3.69	5.66	8.08	5.80
MgO	2.18	2.74	2.2	2.34	3.96	4.6	4.4	2.85	3.38	5.66	4.34	5.28
CaO	7.15	6.62	6.67	7.20	9.14	8.52	9.3	9.70	9.64	17.3	9.25	5.81
Na_2O	4.32	3.57	4.02	4.47	3.54	4.36	3.67	4.07	3.69	1.08	4.58	4.70
K_2O	3.17	2.23	2.75	2.02	1.74	0.87	0.46	1.59	2.25	0.22	0.33	2.47
TiO_2	0.62	0.64	0.57	0.78	0.89	1.41	0.12	1.05	0.68	1.37	2.14	1.20
P_2O_5	0.22	0.16	0.22	0.27	0.27	0.23	0.26	0.38	0.27	0.09	0.50	0.35
MnO	0.10	0.13	0.12	0.19	0.15	0.19	0.13	0.21	0.15	0.19	0.14	0.13
CIPW normative minerals												
Q	8.55	13.5	11.02	7.4	3.20	2.94	2.0	2.0				
C												
Or	18.71	13.2	16.23	11.9	10.30	5.12	2.7	9.4	13.28	1.3	1.9	14.6
Ab	36.54	30.2	34.05	37.8	30.00	36.91	31.0	34.4	31.19	6.0	35.8	39.7
An	19.79	24.3	21.56	23.5	28.05	22.03	32.1	28.6	31.22	43.1	31.8	22.6
Ne										1.7	1.6	
Wo	5.95	3.1	4.21	4.4	6.47	7.82	5.1	7.1	6.19	17.6	4.5	1.6
En	5.44	6.8	5.5	5.8	9.86	11.5	11.1	7.1	7.46	13.8	2.3	1.7
Fs	1.38	4.1	1.48	1.5	5.01	3.84	14.4	2.0	2.66	1.9	2.1	1.0
Fo									0.67	0.2	6.0	8.0
Fa									0.26	0.0	6.1	4.9
Mt	1.95	3.24	4.33	5.46	4.80	6.59	0.60	6.58	5.14	11.50	2.60	2.66
Il	1.18	1.21	1.09	1.49	1.68	2.68	0.24	1.99	0.29	2.60	4.06	2.28
Ap	0.51	0.38	0.51	0.63	0.63	0.54	0.6	0.88	0.63	0.2	1.16	0.82
He												
Modal calculations (percent volume)												
K-feldspar	24.1		18.7	14.9	5.4	1.0		7.4	9.1			
Plagioclase	49.7		55.4	66.2	55.6	60.6	55.2	58.2	62.0	53.6		
Quartz	13.6		10.6	6.4	2.9	6.7	5.7	13.5	3.3	2.7		
Mafic minerals	12.6		15.3	12.5	36.1	31.7	39.1	20.9	25.6	43.7		
Total	100		100	100	100	100	100	100	100	100		

* No LOI specified in lab report

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	Tkhh								Tkk		Ktef	
Map No.	181	182**	183	184**	185	186	187	188	189	190	191	192
Field No.	78ABg127A	63S192a-2	89SK599A	62A192a-1	78ABg129A	78ABg128B	82SH009A	82SK038A	78ABg130A	78ABg131A	82DB099A	82PB087A
XRF chemical analyses (weight percent)												
SiO_2	51.46	50.86	50.4	47.95	46.96	43.24	42.35	39.2	74.99	73.01	67.6	65.1
Al_2O_3	16.53	17.56	15.2	16.91	15.92	17.64	14.69	13.6	11.52	10.37	16.0	15.8
Fe_2O_3	4.87	0.79	1.83	0.65	4.17	2.61	1.85	1.99	1.38	1.81	0.36	0.54
FeO	2.32	4.23	7.26	9.36	8.67	2.38	4.05	7.12	0.51	0.69	2.46	3.70
MgO	3.00	3.27	7.53	7.04	6.45	4.60	4.11	5.24	0.08	0.54	0.96	2.32
CaO	4.27	3.84	8.52	11.09	4.17	11.00	14.07	12.9	0.12	1.45	3.52	4.61
Na_2O	6.53	2.81	4.46	2.47	3.82	3.22	2.60	4.60	0.28	1.27	3.95	3.11
K_2O	0.79	2.47	0.05	0.52	1.52	3.76	1.34	0.08	8.05	6.23	2.60	2.44
TiO_2	1.30	1.87	1.11	1.75	2.59	0.94	1.49	1.41	0.19	0.18	0.35	0.44
P_2O_5	0.22	0.28	0.09	0.24	0.34	0.23	0.30	0.29	0.01	0.02	0.16	0.20
MnO	0.06	0.06	0.13	0.17	0.31	0.12	0.14	0.14	0.04	0.15	0.07	0.09
LOI	*	9.68	3.08	1.58	*	*	*	12.00	*	*	1.09	0.26
Total	91.35	97.72	99.66	99.73	94.92	89.74	86.99	98.57	97.17	95.72	99.12	98.61
Oxides normalized to 100%												
SiO_2	56.33	57.77	52.2	48.85	49.47	48.18	48.68	45.3	77.17	76.28	69.0	66.2
Al_2O_3	18.09	19.94	15.7	17.23	16.77	19.66	16.89	15.7	11.86	10.83	16.3	16.1
Fe_2O_3	5.33	0.90	1.90	0.66	4.39	2.91	2.13	2.30	1.42	1.89	0.37	0.55
FeO	2.54	4.80	7.52	9.54	9.13	2.65	4.66	8.22	0.53	0.72	2.51	3.76
MgO	3.28	3.71	7.80	7.17	6.80	5.13	4.72	6.05	0.08	0.56	0.98	2.36
CaO	4.67	4.36	8.82	11.30	4.39	12.26	16.17	14.9	0.12	1.51	3.59	4.69
Na_2O	7.15	3.19	4.62	2.52	4.02	3.59	2.99	5.31	0.29	1.33	4.03	3.16
K_2O	0.87	2.81	0.05	0.53	1.60	4.19	1.54	0.09	8.28	6.51	2.65	2.48
TiO_2	1.42	2.12	1.15	1.78	2.73	1.05	1.71	1.63	0.20	0.19	0.36	0.45
P_2O_5	0.24	0.32	0.09	0.24	0.36	0.26	0.35	0.34	0.01	0.02	0.16	0.20
MnO	0.07	0.07	0.13	0.17	0.33	0.13	0.16	0.16	0.04	0.16	0.07	0.09
CIPW normative minerals												
Q		12.34							43.44	40.27	24.9	22.6
C		4.49			1.29				2.22		0.7	0.1
Or	5.11	16.58	0.3	3.13	9.46	21.41	9.10	0.5	48.95	38.46	15.7	14.7
Ab	60.48	27.01	39.1	21.29	34.05		11.13	5.2	2.44	11.23	34.1	26.8
An	14.73	19.56	22.1	34.15	19.46	25.15	28.11	18.7	0.55	4.38	16.7	21.9
Ne						16.45	7.67	21.5				
Wo	2.87		8.8	8.48		14.19	17.37	22.1		1.25		
En	3.85	9.25	6.7	9.22	10.31	11.58	11.77	12.4	0.20	1.40	2.4	5.9
Fs		4.70	3.6	7.40	5.63	0.89	4.26	8.9			3.8	5.9
Fo	3.04		8.9	6.06	4.63	0.83		1.9				
Fa			5.4	5.36	2.79	0.07		1.5				
Mt	4.27	1.30	2.75	0.96	6.37	4.22	3.08	3.33	1.26	2.29	0.53	0.80
Il	2.70	4.03	2.18	3.39	5.18	1.99	3.25	3.09	0.37	0.36	0.68	0.85
Ap	0.56	0.74	0.22	0.57	0.83	0.59	0.80	0.8	0.02	0.05	0.38	0.47
He	2.38								0.53	0.31		
Lc						2.63						
Modal calculations (percent volume)												
K-feldspar											1.3	4.8
Plagioclase											51.8	48.4
Quartz											22.6	27.5
Mafic minerals											24.3	19.3
Total											100	100

* No LOI specified in lab report
** Non-XRF analysis - see Table 2

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	Ktef											
Map No.	193	194	195	196	197	198	199	200	201	202	203	204
Field No.	82SK100B	82RK777A	81PB032A	81RK319A	82KR002A	82DB205A	82PB106A	82DB198A	82PB086A	78RS097A	82SK090A	81DB118A
XRF chemical analyses (weight percent)												
SiO_2	64.5	63.7	63.60	63.0	62.6	62.0	62.0	61.9	61.4	61.33	61.2	61.2
Al_2O_3	15.3	17.3	15.40	16.6	16.7	16.5	16.9	16.9	16.1	17.40	16.2	17.3
Fe_2O_3	0.38	0.44	1.44	0.89	0.86	0.53	0.46	0.67	0.60	1.09	0.61	0.92
FeO	3.77	3.31	3.63	4.16	4.20	4.24	4.16	5.00	4.94	4.00	5.27	5.01
MgO	2.63	1.66	2.41	2.40	1.69	2.84	2.32	2.36	2.97	1.91	2.76	2.18
CaO	5.07	5.63	4.79	5.23	5.42	6.29	5.33	5.38	5.53	5.22	5.80	5.87
Na_2O	3.15	3.66	2.93	3.23	3.57	3.31	3.14	3.00	2.94	3.51	3.01	3.10
K_2O	2.75	1.88	3.04	2.63	2.16	1.84	2.75	1.89	2.38	2.72	1.98	2.20
TiO_2	0.47	0.40	0.52	0.54	0.63	0.56	0.49	0.64	0.60	0.62	0.65	0.61
P_2O_5	0.25	0.30	0.24	0.25	0.31	0.33	0.22	0.26	0.27	0.23	0.31	0.33
MnO	0.08	0.09	0.11	0.12	0.11	0.10	0.11	0.11	0.11	0.14	0.14	0.14
LOI	0.44	0.62	0.70	0.50	0.45	0.31	0.41	0.59	0.46	*	0.34	0.29
Total	98.79	98.99	98.81	99.55	98.70	98.85	98.29	98.70	98.30	98.17	98.27	99.15
Oxides normalized to 100%												
SiO_2	65.6	64.8	64.82	63.6	63.7	62.9	63.3	63.1	62.8	62.47	62.5	61.9
Al_2O_3	15.6	17.6	15.70	16.8	17.0	16.7	17.3	17.2	16.5	17.72	16.5	17.5
Fe_2O_3	0.39	0.45	1.47	0.90	0.88	0.54	0.47	0.68	0.61	1.11	0.62	0.93
FeO	3.83	3.36	3.70	4.20	4.27	4.30	4.25	5.10	5.05	4.08	5.38	5.07
MgO	2.67	1.69	2.46	2.42	1.72	2.88	2.37	2.41	3.04	1.95	2.82	2.20
CaO	5.15	5.72	4.88	5.28	5.52	6.38	5.45	5.48	5.65	5.32	5.92	5.94
Na_2O	3.20	3.72	2.99	3.26	3.63	3.36	3.21	3.06	3.00	3.58	3.07	3.14
K_2O	2.80	1.91	3.10	2.65	2.20	1.87	2.81	1.93	2.43	2.77	2.02	2.22
TiO_2	0.48	0.41	0.53	0.54	0.64	0.57	0.50	0.65	0.61	0.63	0.66	0.62
P_2O_5	0.25	0.30	0.24	0.25	0.32	0.34	0.22	0.27	0.28	0.23	0.32	0.33
MnO	0.08	0.09	0.11	0.12	0.11	0.10	0.11	0.11	0.11	0.14	0.14	0.14
CIPW normative minerals												
Q	20.1	19.6	20.4	17.7	18.2	17.1	16.5	19.7	16.9	14.96	17.4	16.6
C								0.8				
Or	16.5	11.3	18.3	15.7	13.0	11.0	16.6	11.4	14.4	16.37	11.9	13.1
Ab	27.1	31.5	25.3	27.6	30.7	28.4	27.1	25.9	25.4	30.25	26.0	26.5
An	19.8	25.6	20.3	23.2	23.6	25.1	24.4	25.5	24.2	24.13	25.4	27.1
Ne												
Wo	1.7	0.3	1.0	0.5	0.7	1.8	0.5		0.8	0.30	0.8	0.1
En	6.7	4.2	6.1	6.0	4.3	7.2	5.9	6.0	7.6	4.85	7.0	5.5
Fs	6.1	5.3	4.9	6.3	6.3	6.7	6.8	7.9	8.0	5.79	8.5	7.8
Fo												
Fa												
Mt	0.56	0.65	2.1	1.30	1.27	0.78	0.68	0.99	0.89	1.61	0.90	1.35
Il	0.91	0.77	1.0	1.03	1.22	1.08	0.95	1.24	1.16	1.12	1.26	1.17
Ap	0.59	0.71	0.6	0.58	0.73	0.78	0.52	0.61	0.64	0.54	0.73	0.77
He												
Modal calculations (percent volume)												
K-feldspar	4.5		13.2	7.4	5.0		8.3		3.4	7.5		
Plagioclase	42.9		38.6	42.3	44.0	47.8	41.7		48.3	56.5	51.8	
Quartz	27.8		22.7	24.1	26.0	20.9	16.8		23.0	14.7	22.8	
Mafic minerals	24.8		25.5	26.2	25.0	31.3	33.2		25.3	21.3	25.4	
Total	100		100	100	100	100	100		100	100	100	

* No LOI specified in lab report

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	Ktef											
Map No. / Field No.	205 82SH134A	206 82SK089A	207 82SK096A	208 82RK781A	209 82SK142A	210 82SK124A	211 81TM002A	212 78RS132A	213 82RK779A	214 78DB113A	215 82PB072A	216 82KR065A
XRF chemical analyses (weight percent)												
SiO_2	61.1	60.9	60.8	60.6	60.5	60.4	60.4	60.18	60.0	59.36	58.3	57.5
Al_2O_3	17.3	17.8	17.2	16.3	17.3	17.9	17.3	16.30	16.0	17.22	16.9	17.1
Fe_2O_3	0.62	0.93	0.78	0.49	0.72	0.87	0.34	1.15	0.65	1.03	1.18	0.90
FeO	3.65	4.47	4.76	5.23	4.99	3.67	5.53	5.11	5.60	5.33	5.39	5.87
MgO	1.44	1.76	2.34	3.14	2.65	1.92	2.69	3.02	3.62	2.91	3.38	3.34
CaO	7.07	5.80	5.47	5.78	5.70	7.07	6.08	5.85	6.18	6.25	6.80	6.69
Na_2O	3.73	3.29	2.90	3.07	2.81	3.35	3.13	2.88	2.76	2.91	2.96	2.97
K_2O	1.35	2.30	2.10	2.25	2.06	1.91	1.80	2.28	1.97	2.00	2.04	2.03
TiO_2	0.64	0.58	0.68	0.64	0.64	0.97	0.70	0.68	0.70	0.81	0.73	0.76
P_2O_5	0.43	0.26	0.26	0.29	0.22	0.46	0.28	0.30	0.29	0.30	0.29	0.32
MnO	0.12	0.16	0.13	0.11	0.14	0.11	0.14	0.14	0.13	0.14	0.17	0.13
LOI	1.60	0.41	0.84	0.33	0.51	0.69	0.47	*	0.33	*	0.40	0.41
Total	99.05	98.66	98.26	98.23	98.24	99.32	98.86	97.88	98.23	98.26	98.54	98.02
Oxides normalized to 100%												
SiO_2	62.7	62.0	62.4	61.9	61.9	61.2	61.4	61.48	61.3	60.41	59.4	58.9
Al_2O_3	17.8	18.1	17.7	15.6	17.7	18.1	17.6	16.65	16.3	17.53	17.2	17.5
Fe_2O_3	0.64	0.95	0.80	0.50	0.74	0.88	0.35	1.18	0.66	1.05	1.20	0.92
FeO	3.75	4.55	4.89	5.34	5.11	3.72	5.62	5.22	5.72	5.42	5.49	6.01
MgO	1.48	1.79	2.40	3.21	2.71	1.95	2.73	3.08	3.70	2.96	3.44	3.42
CaO	7.25	5.90	5.61	5.90	5.83	7.17	6.18	5.98	6.31	6.36	6.93	6.85
Na_2O	3.83	3.35	2.98	3.14	2.87	3.40	3.18	2.94	2.82	2.96	3.02	3.04
K_2O	1.39	2.34	2.16	2.30	2.11	1.94	1.83	2.33	2.01	2.04	2.08	2.08
TiO_2	0.66	0.59	0.70	0.65	0.65	0.98	0.71	0.70	0.72	0.82	0.74	0.78
P_2O_5	0.44	0.26	0.27	0.30	0.23	0.47	0.28	0.31	0.30	0.31	0.30	0.33
MnO	0.12	0.16	0.13	0.11	0.14	0.11	0.14	0.13	0.13	0.14	0.17	0.13
CIPW normative minerals												
Q	17.4	15.9	18.6	15.0	17.6	15.8	15.3	15.90	15.6	14.80	12.1	11.0
C			0.9		0.6							
Or	8.2	13.8	12.7	13.6	12.5	11.4	10.8	13.76	11.9	12.03	12.3	12.3
Ab	32.4	28.3	25.2	26.5	24.3	28.7	26.9	24.90	23.9	25.06	25.5	25.7
An	27.2	27.5	26.1	24.6	27.5	28.6	28.3	25.35	26.0	28.51	27.3	28.0
Ne												
Wo	2.5	0.0		1.2		1.7	0.2	0.96	1.4	0.44	2.1	1.6
En	3.7	4.5	6.0	8.0	6.8	4.8	6.8	7.68	9.2	7.37	8.6	8.5
Fs	5.5	6.9	7.4	8.5	8.0	4.7	9.1	7.72	9.0	8.00	8.2	9.2
Fo												
Fa												
Mt	0.92	1.37	1.16	0.73	1.07	1.28	0.50	1.70	0.96	1.52	1.74	1.34
Il	1.25	1.12	1.33	1.24	1.24	1.87	1.35	1.32	1.36	1.57	1.41	1.48
Ap	1.02	0.61	0.62	0.69	0.52	1.08	0.66	0.71	0.69	0.71	0.68	0.76
He												
Modal calculations (percent volume)												
K-feldspar				0.2	0.6			0.9		1.2	4.1	
Plagioclase	54.0	50.5		42.9	53.4	55.9	50.2	55.1		49.1	45.4	
Quartz	16.0	23.9		24.0	14.9	24.3	20.1	15.3		10.2	12.0	
Mafic minerals	30.0	25.6		32.9	31.1	19.8	29.7	28.7		39.5	38.5	
Total	100	100		100	100	100	100	100		100		

* No LOI specified in lab report

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	Ktef								Ktif			
Map No.	217	218	219	220	221	222	223	224	225**	226	227	228
Field No.	82DB206A	78RM295A	82SK145A	82PB124A	82KR064A	83DB189A	82PB122A	82PB003A	78BG030A	78RS118A	81DB129A	79DB192A
XRF chemical analyses (weight percent)												
SiO_2	57.4	56.72	55.2	54.7	53.7	53.2	48.9	61.7	61.4	61.32	60.9	60.90
Al_2O_3	16.9	17.25	16.7	18.4	17.3	17.8	18.1	16.4	16.6	16.39	16.5	16.96
Fe_2O_3	0.65	2.59	0.69	1.11	0.81	1.09	4.3	1.89	1.4	1.23	1.09	1.46
FeO	6.11	4.82	6.40	6.85	7.18	7.54	5.59	3.19	4.5	4.62	4.62	4.61
MgO	3.98	2.92	3.51	3.29	4.88	3.90	4.12	1.79	2.2	2.26	2.83	2.44
CaO	7.85	6.53	6.44	7.78	8.03	8.71	9.99	5.28	5.2	5.07	5.78	6.19
Na_2O	3.26	3.09	2.67	2.83	3.15	3.09	3.15	3.16	3.7	3.22	3.25	3.58
K_2O	1.15	2.21	1.96	1.50	1.28	1.18	1.68	3.26	2.6	2.82	2.28	2.30
TiO_2	0.66	0.65	0.77	0.89	0.79	1.04	0.83	0.50	0.61	0.62	0.58	0.59
P_2O_5	0.37	0.33	0.26	0.37	0.34	0.52	0.47	0.25	0.28	0.23	0.25	0.25
MnO	0.16	0.17	0.16	0.20	0.17	0.20	0.21	0.14	0.15	0.13	0.13	0.14
LOI	0.43	*	3.27	0.72	0.51	0.53	0.59	1.11	1.06	*	0.32	*
Total	98.92	97.28	98.03	98.64	98.14	98.80	97.92	98.67	99.70	97.91	98.53	99.43
Oxides normalized to 100%												
SiO_2	58.3	58.31	58.3	55.9	55.0	54.1	50.2	63.2	62.3	62.63	62.0	61.26
Al_2O_3	17.2	17.73	17.6	18.8	17.7	18.1	18.6	16.8	16.8	16.74	16.8	17.06
Fe_2O_3	0.66	2.66	0.73	1.13	0.83	1.11	4.4	1.94	1.4	1.26	1.11	1.47
FeO	6.20	4.96	6.75	7.00	7.35	7.67	5.74	3.27	4.6	4.72	4.70	4.64
MgO	4.04	3.00	3.70	3.36	5.00	3.97	4.23	1.84	2.2	2.31	2.88	2.45
CaO	7.97	6.71	6.80	7.94	8.23	8.86	10.26	5.41	5.3	5.18	5.89	6.23
Na_2O	3.31	3.18	2.82	2.89	3.23	3.14	3.24	3.24	3.8	3.29	3.31	3.60
K_2O	1.17	2.27	2.07	1.53	1.31	1.20	1.73	3.34	2.6	2.88	2.32	2.31
TiO_2	0.67	0.67	0.81	0.91	0.81	1.06	0.85	0.51	0.62	0.63	0.59	0.59
P_2O_5	0.38	0.34	0.27	0.38	0.35	0.53	0.48	0.26	0.28	0.23	0.26	0.25
MnO	0.16	0.17	0.17	0.20	0.17	0.20	0.22	0.14	0.15	0.13	0.13	0.14
CIPW normative minerals												
Q	9.8	11.24	10.3	8.0	3.6	4.4		17.1	14.2	15.87	15.2	13.40
C												
Or	6.9	13.42	12.2	9.1	7.7	7.1	10.2	19.7	15.6	17.02	13.7	13.67
Ab	28.0	26.88	23.8	24.5	27.3	26.6	27.4	27.4	31.7	27.83	28.0	30.47
An	28.5	27.42	29.3	33.8	30.0	31.8	31.1	21.5	21.3	22.41	24.1	23.55
Ne												
Wo	3.6	1.52	1.1	1.3	3.6	3.7	7.0	1.6	1.3	0.73	1.4	2.38
En	10.1	7.48	9.2	8.4	12.4	9.9	7.7	4.6	5.6	5.75	7.2	6.11
Fs	10.0	6.12	10.8	10.8	11.8	11.8	4.3	3.8	6.5	6.83	7.0	6.60
Fo							2.0					
Fa							1.2					
Mt	0.96	3.86	1.06	1.64	1.20	1.61	6.4	2.80	2.1	1.82	1.61	2.13
Il	1.27	1.27	1.54	1.73	1.54	2.01	1.6	0.97	1.2	1.20	1.12	1.13
Ap	0.87	0.78	0.64	0.87	0.81	1.22	1.12	0.59	0.7	0.54	0.59	0.58
He												
Modal calculations (percent volume)												
K-feldspar			0.2					17.0	5.2	7.0	5.1	5.5
Plagioclase	44.2		48.8	47.2	43.1	46.0		34.7	48.6	52.0	49.0	51.0
Quartz	12.4		6.2	10.8	14.8	6.0		28.0	18.6	17.0	20.5	15.5
Mafic minerals	43.4		44.8	42.0	42.1	48.0		20.3	27.6	24.0	25.4	28.0
Total	100		100	100	100	100		100	100	100	100	100

* No LOI specified in lab report
** Non-XRF analysis - see Table 2

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	Ktif										Ktop	
Map No. / Field No.	229 79RS174A	230 79RS188A	231 78BG039A	232 79DB191A	233 82SH005A	234 82SH004A	235 78RM378A	236 78RM376A	237 82SH006A	238 82RK727A	239 82KR096A	240 82KR074A
XRF chemical analyses (weight percent)												
SiO_2	60.08	60.01	59.4	59.39	59.3	59.0	58.40	57.11	56.6	48.6	66.3	58.7
Al_2O_3	18.33	17.04	17.0	15.60	17.5	17.1	17.95	18.87	17.5	18.2	17.1	17.6
Fe_2O_3	1.86	1.23	2.4	1.57	2.21	2.32	2.37	3.05	1.92	3.4	0.27	1.01
FeO	3.68	5.15	3.3	5.23	3.61	3.86	4.23	3.24	5.01	6.69	2.66	4.79
MgO	2.07	2.89	2.0	3.62	2.11	2.18	2.59	1.98	2.50	4.41	1.23	2.42
CaO	6.59	5.86	5.6	6.12	6.27	5.58	6.62	7.25	6.32	9.65	5.06	7.36
Na_2O	3.55	3.28	4.1	3.05	3.25	3.61	3.88	3.63	3.59	3.45	3.58	3.10
K_2O	2.32	2.64	2.4	2.54	2.90	2.37	2.06	1.70	2.24	1.63	1.26	2.00
TiO_2	0.56	0.64	0.59	0.67	0.63	0.69	0.68	0.66	0.68	1.09	0.42	0.75
P_2O_5	0.17	0.26	0.28	0.19	0.28	0.28	0.27	0.30	0.35	0.57	0.14	0.45
MnO	0.17	0.14	0.16	0.14	0.15	0.20	0.16	0.21	0.19	0.23	0.08	0.14
LOI	*	*	1.47	*	1.00	1.75	*	*	2.13	0.47	0.39	0.65
Total	99.38	99.14	98.70	98.12	99.22	98.94	99.21	98.00	99.03	98.36	98.49	98.97
Oxides normalized to 100%												
SiO_2	60.46	60.53	61.1	60.53	60.4	60.7	58.87	58.28	58.4	49.6	67.6	59.7
Al_2O_3	18.44	17.19	17.5	15.90	17.8	17.6	18.09	19.26	18.1	18.6	17.4	17.9
Fe_2O_3	1.87	1.24	2.5	1.60	2.25	2.39	2.39	3.11	1.98	3.4	0.27	1.03
FeO	3.70	5.19	3.4	5.33	3.68	3.97	4.26	3.31	5.17	6.83	2.71	4.87
MgO	2.08	2.91	2.1	3.69	2.15	2.24	2.61	2.02	2.58	4.50	1.25	2.46
CaO	6.63	5.91	5.8	6.24	6.38	5.74	6.67	7.40	6.52	9.86	5.16	7.49
Na_2O	3.57	3.31	4.2	3.11	3.31	3.71	3.91	3.70	3.70	3.52	3.65	3.15
K_2O	2.33	2.66	2.5	2.59	2.95	2.44	2.08	1.73	2.31	1.66	1.28	2.03
TiO_2	0.56	0.65	0.61	0.68	0.64	0.71	0.69	0.67	0.70	1.11	0.43	0.76
P_2O_5	0.17	0.26	0.29	0.19	0.29	0.29	0.27	0.31	0.36	0.58	0.14	0.46
MnO	0.17	0.14	0.16	0.14	0.15	0.21	0.16	0.21	0.20	0.24	0.08	0.14
CIPW normative minerals												
Q	12.75	12.06	12.1	12.47	12.9	13.4	9.68	11.67	8.9		27.0	13.1
C											1.0	
Or	13.80	15.74	14.6	15.30	17.4	14.4	12.27	10.25	13.7	9.8	7.6	12.0
Ab	30.22	27.99	35.7	26.30	28.0	31.4	33.09	31.34	31.3	29.1	30.9	26.7
An	27.40	24.18	21.5	21.78	25.0	24.1	25.68	30.79	25.8	30.0	24.7	28.7
Ne										0.4		
Wo	1.83	1.43	2.2	3.29	2.0	1.0	2.36	1.63	1.7	6.3		2.3
En	5.19	7.26	5.1	9.18	5.4	5.6	6.50	5.03	6.4	3.5	3.1	6.1
Fs	4.64	7.71	3.5	7.60	4.1	4.5	5.02	2.79	7.1	2.6	4.2	7.1
Fo										5.4		
Fa										4.4		
Mt	2.71	1.80	3.6	2.32	3.26	3.46	3.46	4.51	2.87	5.0	0.40	1.49
Il	1.07	1.23	1.2	1.30	1.22	1.35	1.30	1.28	1.33	2.12	0.81	1.45
Ap	0.40	0.61	0.7	0.45	0.66	0.67	0.63	0.71	0.84	1.35	0.33	1.06
He												
Modal calculations (percent volume)												
K-feldspar	5.3	5.5		9.6	11.6	10.1		3.5	7.4			4.6
Plagioclase	54.8	50.7		39.7	45.1	50.6	57.3	58.9	53.6	47.8	59.5	53.1
Quartz	15.8	15.8		16.9	14.5	18.2	18.0	11.0	15.0	2.4	22.8	14.4
Mafic minerals	24.1	28.0		33.8	28.8	21.1	24.7	26.6	24.0	49.8	17.7	27.9
Total	100	100		100	100	100	100	100	100	100	100	100

* No LOI specified in lab report

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	Ktop		Ktoc							Kqop		
Map No.	241	242	243	244	245	246	247	248	249	250	251	252
Field No.	82DB103A	82PB125A	82DB222A	82KR074C	82DB236C	82PB098A	81SK135A	82PB100A	82RK806A	82SK129A	79AF141A	82RK710A
XRF chemical analyses (weight percent)												
SiO_2	58.0	49.5	65.8	62.5	61.4	61.0	60.9	60.1	55.3	63.1	62.39	61.6
Al_2O_3	17.3	17.6	17.5	19.5	17.3	15.3	17.5	17.9	17.2	17.4	16.01	18.2
Fe_2O_3	0.83	1.3	0.34	0.71	0.01	0.92	1.06	0.74	1.20	1.80	2.00	1.77
FeO	6.12	8.72	2.22	2.65	4.46	5.02	4.47	4.74	6.20	2.39	2.79	2.65
MgO	2.57	5.77	0.94	0.61	1.97	2.96	1.93	2.12	3.16	1.57	1.93	1.48
CaO	7.64	9.05	4.48	6.30	5.19	5.84	5.17	5.92	8.79	5.32	4.98	5.98
Na_2O	3.24	2.41	3.66	3.81	2.93	2.69	3.32	3.08	2.95	3.76	4.04	3.69
K_2O	1.34	1.49	2.87	1.87	2.67	2.61	2.36	2.32	1.15	2.38	3.12	2.08
TiO_2	0.93	1.15	0.47	0.38	0.68	0.86	0.52	0.71	1.22	0.39	0.56	0.41
P_2O_5	0.50	0.38	0.24	0.25	0.30	0.41	0.29	0.29	0.74	0.20	0.21	0.22
MnO	0.16	0.26	0.05	0.06	0.12	0.13	0.15	0.13	0.21	0.13	0.14	0.16
LOI	0.46	0.80	0.44	0.39	0.48	0.93	1.00	0.43	0.81	0.73	*	0.76
Total	99.09	98.44	99.01	99.03	98.51	98.67	98.67	98.48	98.93	99.17	98.18	99.00
Oxides normalized to 100%												
SiO_2	58.8	50.7	66.8	63.4	62.6	62.4	62.4	61.3	56.4	64.1	63.55	62.7
Al_2O_3	17.5	18.0	17.8	19.8	17.6	15.7	17.9	18.3	17.5	17.7	16.31	18.5
Fe_2O_3	1.84	1.3	0.34	0.72	1.03	0.94	1.08	0.75	1.22	1.83	2.04	1.80
FeO	6.21	8.93	2.25	2.69	4.55	5.14	4.58	4.83	6.32	2.43	2.84	2.70
MgO	2.61	5.91	0.95	0.62	2.01	3.03	1.98	2.16	3.22	1.59	1.97	1.51
CaO	7.75	9.27	4.54	6.39	5.29	5.97	5.29	6.04	8.96	5.40	5.07	6.09
Na_2O	3.29	2.47	3.71	3.86	2.99	2.75	3.40	3.14	3.01	3.82	4.11	3.76
K_2O	1.36	1.53	2.91	1.90	2.72	2.67	2.42	2.37	1.17	2.42	3.18	2.12
TiO_2	0.94	1.18	0.48	0.38	0.69	0.88	0.53	0.72	1.24	0.40	0.57	0.42
P_2O_5	0.51	0.39	0.24	0.25	0.31	0.42	0.30	0.30	0.75	0.20	0.21	0.22
MnO	0.16	0.27	0.05	0.06	0.12	0.13	0.15	0.13	0.21	0.13	0.14	0.16
CIPW normative minerals												
Q	12.4		22.1	18.0	18.4	17.6	16.7	15.3	10.3	18.4	14.50	17.0
C			0.8	0.4	0.9		0.8	0.3				
Or	8.0	9.0	17.2	11.2	16.1	15.8	14.3	14.0	6.9	14.3	18.78	12.5
Ab	27.8	20.9	31.4	32.7	25.3	23.3	28.8	26.6	25.4	32.3	34.82	31.8
An	29.1	33.6	21.0	30.3	24.3	22.5	24.3	28.0	30.9	23.9	16.64	27.4
Ne												
Wo	2.5	4.1				1.8			3.6	0.6	2.98	0.5
En	6.5	12.3	2.4	1.5	5.0	7.5	4.9	5.4	8.0	4.0	4.90	3.8
Fs	9.4	11.6	3.2	3.8	6.6	7.4	6.9	7.3	8.9	2.5	2.86	3.1
Fo		1.7										
Fa		1.8										
Mt	1.22	1.9	0.50	1.04	1.49	1.37	1.57	1.09	1.77	2.65	2.95	2.61
Il	1.79	2.24	0.91	0.73	1.32	1.67	1.01	1.37	2.36	0.75	1.08	0.79
Ap	1.17	0.90	0.56	0.59	0.71	0.07	0.69	0.68	1.75	0.47	0.50	0.52
He												
Modal calculations (percent volume)												
K-feldspar			6.8	1.7		0.6	0.3			9.1	13.8	8.8
Plagioclase	44.7		49.8	59.9	52.2	55.9	52.0			55.8	43.9	52.3
Quartz	20.6		28.0	22.6	26.1	31.5	26.4			17.6	22.5	18.4
Mafic minerals	34.7		15.4	15.8	21.7	12.0	21.3			17.5	19.8	20.5
Total	100		100	100	100	100	100			100	100	100

* No LOI specified in lab report

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	Kqop								Ktgp			
Map No.	253	254	255	256	257	258	259	260	261	262	263	264
Field No.	80SK148A	78RM254A	81SH056A	80SK594A	82PB014A	78SH053A	82PB023A	78AF142C	78RS082A	78RM258A	81DB161A	82SK146A
XRF chemical analyses (weight percent)												
SiO_2	58.9	58.58	58.2	57.3	57.2	57.15	54.1	50.8	66.08	64.33	53.3	51.4
Al_2O_3	18.2	17.73	16.8	20.0	18.1	17.99	18.2	18.44	16.45	17.41	15.4	16.6
Fe_2O_3	2.26	2.56	2.55	2.87	2.54	2.39	3.34	2.85	1.52	0.67	3.3	1.4
FeO	3.40	3.41	4.22	2.93	4.18	4.07	4.95	6.47	2.04	2.46	7.37	8.36
MgO	1.90	2.30	2.58	1.75	2.47	2.57	3.52	4.11	1.35	1.32	4.01	3.90
CaO	6.76	6.62	6.48	7.61	7.48	6.98	8.53	8.06	4.49	4.27	7.28	8.50
Na_2O	3.54	3.68	3.44	4.11	3.53	3.51	3.36	3.09	3.18	3.51	3.89	3.59
K_2O	2.31	1.82	3.22	1.81	2.04	1.52	1.54	2.80	1.88	2.80	1.55	1.07
TiO_2	0.55	0.56	0.79	0.60	0.72	0.62	0.73	1.05	0.41	0.44	2.01	2.15
P_2O_5	0.24	0.26	0.39	0.29	0.34	0.28	0.27	0.45	0.16	0.19	0.46	0.83
MnO	0.20	0.15	0.18	0.22	0.22	0.19	0.21	0.16	0.08	0.07	0.19	0.16
LOI	0.81	*	0.56	0.63	0.50	*	0.58	*	*	*	0.49	0.41
Total	99.07	97.67	99.41	100.12	99.32	97.27	99.33	98.28	97.64	97.47	99.25	98.37
Oxides normalized to 100%												
SiO_2	59.9	59.98	58.9	57.6	57.9	58.75	54.8	51.7	67.68	66.00	54.0	52.5
Al_2O_3	18.5	18.15	17.0	20.1	18.3	18.49	18.4	18.76	16.85	17.86	15.6	16.9
Fe_2O_3	2.30	2.62	2.58	2.89	2.57	2.46	3.38	2.90	1.56	0.69	3.4	1.4
FeO	3.46	3.49	4.27	2.94	4.23	4.18	5.01	6.58	2.09	2.52	7.46	8.53
MgO	1.93	2.36	2.61	1.76	2.50	2.64	3.56	4.18	1.38	1.35	4.06	3.98
CaO	6.88	6.78	6.55	7.65	7.57	7.18	8.64	8.20	4.60	4.38	7.37	8.68
Na_2O	3.60	3.77	3.48	4.13	3.57	3.61	3.40	3.14	3.26	3.60	3.94	3.66
K_2O	2.35	1.86	3.26	1.82	2.06	1.56	1.56	2.85	1.92	2.87	1.57	1.09
TiO_2	0.56	0.57	0.80	0.60	0.73	0.64	0.74	1.07	0.42	0.45	2.03	2.20
P_2O_5	0.24	0.27	0.39	0.29	0.34	0.29	0.27	0.46	0.16	0.20	0.47	0.85
MnO	0.20	0.15	0.18	0.22	0.22	0.20	0.21	0.16	0.08	0.07	0.19	0.16
CIPW normative minerals												
Q	12.4	13.05	9.1	8.4	9.6	11.90	5.7		29.00	21.63	3.8	2.1
C									1.44	1.33		
Or	13.9	11.01	19.2	10.8	12.2	9.23	9.2	16.8	11.38	16.97	9.3	6.5
Ab	30.5	31.88	29.4	35.0	30.2	30.53	28.8	26.6	27.56	30.47	33.3	31.0
An	27.4	27.12	21.1	30.9	27.8	29.65	30.4	28.7	21.74	20.46	20.2	26.6
Ne												
Wo	2.1	1.99	3.7	2.1	3.1	1.70	4.5	3.8			5.6	4.6
En	4.8	5.86	6.5	4.4	6.2	6.58	8.9	6.6	3.44	3.37	10.1	9.9
Fs	3.9	3.58	4.7	2.4	4.9	4.96	5.6	5.2	2.01	3.46	7.9	11.2
Fo								2.7				
Fa				-				2.3				
Mt	3.34	3.80	3.74	4.18	3.73	3.56	4.90	4.21	2.26	0.10	4.9	2.1
Il	1.06	1.09	1.52	1.14	1.38	1.21	1.40	2.03	0.80	0.86	3.86	4.17
Ap	0.57	0.62	0.91	0.68	0.80	0.67	0.63	1.06	0.38	0.45	1.08	1.96
He												
Modal calculations (percent volume)												
K-feldspar	9.3		10.8	5.1	6.4		2.2			4.5	8.8	3.5
Plagioclase	53.6		47.7	56.4	52.5		46.2		58.0	49.0	48.6	44.8
Quartz	10.7		13.4	10.6	13.1		34.0		21.0	33.6	5.8	4.2
Mafic minerals	26.4		28.1	27.9	28.0		48.2		21.0	12.9	36.8	47.5
Total	100		100	100	100		100		100	100	100	100

* No LOI specified in lab report

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	Kqo					Kdi	Kmgf	Ksg			Kss	
Map No.	265	266	267	268	269	270	271	272**	273**	274	275	276
Field No.	82RK712A	82RK725A	80RS145A	80SK587A	80SK128A	79SH113A	82SK144A	71ABg247	78AF1278	78AF127A	82KR055A	81SK137A
XRF chemical analyses (weight percent)												
SiO_2	57.2	52.3	53.2	51.3	50.8	48.26	57.0	51.9	47.74	46.01	71.2	70.9
Al_2O_3	15.5	14.3	17.8	16.5	16.6	11.33	13.2	13.7	14.95	13.29	11.4	11.6
Fe_2O_3	2.48	2.9	3.12	3.6	3.4	4.52	1.03	1.9	4.25	3.87	0.43	0.22
FeO	5.20	7.35	6.16	6.47	7.14	14.28	6.99	7.4	7.13	7.17	4.78	4.32
MgO	3.81	6.29	3.35	4.08	4.27	3.61	7.30	8.0	7.91	9.33	3.53	4.45
CaO	7.01	9.11	7.92	8.95	8.55	8.30	7.28	10.3	8.10	12.50	1.43	0.63
Na_2O	2.95	2.85	3.59	3.31	3.28	2.62	2.51	3.0	2.55	1.46	2.08	2.37
K_2O	2.90	2.59	2.40	2.90	2.06	0.35	1.08	0.83	3.01	1.95	1.58	1.41
TiO_2	0.78	0.97	1.02	1.12	1.13	4.17	0.81	0.65	1.02	0.98	0.66	0.55
P_2O_5	0.37	0.51	0.56	0.55	0.60	0.29	0.17	0.26	0.23	0.31	0.13	0.12
MnO	0.14	0.18	0.20	0.21	0.21	0.26	0.16	0.23	0.19	0.19	0.03	0.03
LOI	0.45	0.02	0.39	0.58	0.36	*	0.56	1.82	*	*	1.30	2.05
Total	98.37	98.79	99.37	99.71	99.57	98.40	97.99	98.09	99.99	97.08	97.06	98.65
Oxides normalized to 100%												
SiO_2	58.2	52.6	53.6	51.8	51.8	49.25	58.4	52.9	49.18	47.40	73.2	73.4
Al_2O_3	15.8	14.4	17.9	16.7	16.9	11.56	13.5	13.9	15.40	13.69	11.7	12.0
Fe_2O_3	2.52	2.9	3.14	3.6	3.4	4.61	1.06	1.9	4.38	3.99	0.44	0.23
FeO	5.29	7.40	6.20	6.54	7.29	14.57	7.17	7.5	7.34	7.39	4.92	4.47
MgO	3.87	6.33	3.37	4.12	4.36	3.68	7.48	8.2	8.15	9.61	3.63	4.61
CaO	7.13	9.17	7.97	9.04	8.72	8.47	7.46	10.5	8.34	12.88	1.47	0.65
Na_2O	3.00	2.87	3.61	3.34	3.35	2.67	2.57	3.1	2.63	1.50	2.14	2.45
K_2O	2.95	2.61	2.42	2.93	2.10	0.36	1.11	0.85	3.10	2.01	1.63	1.46
TiO_2	0.79	0.98	1.03	1.13	1.15	4.26	0.83	0.66	1.05	1.01	0.68	0.57
P_2O_5	0.38	0.51	0.56	0.56	0.61	0.30	0.17	0.26	0.24	0.32	0.13	0.12
MnO	0.14	0.18	0.20	0.21	0.21	0.27	0.16	0.23	0.20	0.20	0.03	0.03
CIPW normative minerals												
Q	9.1		1.6			6.72	10.4				42.9	42.4
C											4.1	5.5
Or	17.4	15.4	14.3	17.3	12.4	2.11	6.5	5.0	18.32	11.87	9.6	8.6
Ab	25.4	24.3	30.6	28.3	28.3	22.62	21.8	25.9	19.70	10.71	18.1	20.8
An	20.8	18.7	25.5	21.8	25.0	18.49	22.1	21.9	21.07	24.68	6.4	2.4
Ne									1.37	1.09		
Wo	5.0	9.8	4.4	8.1	6.0	9.02	5.8	11.9	7.84	15.50		
En	9.6	13.3	8.4	5.9	10.5	9.17	18.6	17.6	5.14	10.43	9.0	11.47
Fs	6.6	8.3	7.5	4.3	8.8	16.41	11.2	10.1	2.15	3.90	7.6	7.14
Fo		1.7		3.0	0.2			1.9	10.62	9.47		
Fa		1.2		2.4	0.2			1.2	4.90	3.91		
Mt	3.66	4.3	4.55	5.3	5.0	6.69	1.53	2.8	6.35	5.78	0.64	0.33
Il	1.51	1.85	1.95	2.15	2.19	8.08	1.57	1.3	2.00	1.92	1.29	1.08
Ap	0.87	1.19	1.31	1.29	1.42	0.69	0.40	0.6	0.55	0.74	0.31	0.29
He												
Modal calculations (percent volume)												
K-feldspar	3.5	12.1	6.9	3.7	8.0	8.9						
Plagioclase	44.8	36.7	48.6	48.1	38.3	39.5						
Quartz	4.2	5.2	4.5	6.7	2.6	2.8						
Mafic minerals	47.5	46.0	40.0	41.5	51.1	48.8						
Total	100	100	100	100	100	100						

* = No LOI specified in lab report
** = Non-XRF analysis - see Table 2

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	Kss				Ksp		Kuk	Khb				
Map. No.	277	278	279	280	281**	282	283	284	285	286	287	288
Field No.	82KR064B	83KR053B	82KR051A	78RM290A	71ABg260	80SK150A	80SK580A	78AF197G	81SK170A	78AF146G	82RK708B	78CH008D
XRF chemical analyses (weight percent)												
SiO_2	66.6	62.3	61.6	48.63	50.8	48.4	47.7	55.44	48.1	47.96	44.2	43.35
Al_2O_3	12.5	17.8	17.4	15.06	13.2	15.6	1.67	16.02	15.8	4.80	19.6	14.57
Fe_2O_3	0.72	0.34	0.87	0.00	3.8	1.5	2.7	1.18	2.2	2.40	2.95	2.65
FeO	3.92	5.22	5.82	10.85	6.4	8.00	6.59	7.70	10.70	6.66	9.22	10.22
MgO	3.28	2.70	2.84	5.85	8.6	7.70	23.7	4.79	6.25	17.56	4.67	11.15
CaO	7.52	2.06	1.73	10.40	10.9	6.63	14.9	6.92	8.66	14.34	12.10	10.34
Na_2O	2.13	4.64	2.43	3.16	2.8	3.51	0.28	3.37	2.29	0.78	2.89	1.89
K_2O	0.21	1.09	1.90	1.98	0.64	1.41	0.28	1.19	1.86	0.29	0.75	1.10
TiO_2	0.55	0.69	0.81	0.72	0.76	0.97	0.21	1.00	1.16	0.44	1.27	1.70
P_2O_5	0.24	0.15	0.16	0.34	0.29	0.25	<0.05	0.27	0.60	0.09	0.63	0.23
MnO	0.20	0.05	0.08	0.17	0.22	0.15	0.18	0.12	0.22	0.19	0.24	0.17
LOI	0.65	1.54	2.97	*	1.83	3.47	0.85	*	0.77	*	0.48	*
Total	98.52	98.58	98.61	97.16	100.00	97.59	100.11	98.00	98.61	95.51	99.00	97.37
Oxides normalized to 100%												
SiO_2	68.0	64.2	64.4	50.05	51.6	51.4	48.6	56.57	49.2	50.22	44.9	44.52
Al_2O_3	12.8	18.3	18.2	15.50	13.4	16.6	1.70	16.35	16.1	5.03	19.9	14.96
Fe_2O_3	0.74	0.35	0.91	0.00	3.9	1.6	2.7	1.20	2.3	2.51	2.99	2.72
FeO	4.01	5.38	6.08	11.17	6.5	8.50	6.71	7.86	10.94	6.97	9.36	10.50
MgO	3.35	2.78	2.97	6.02	8.7	8.18	24.1	4.89	6.39	18.39	4.74	11.45
CaO	7.68	2.12	1.81	10.70	11.1	7.04	15.2	7.06	8.85	15.01	12.28	10.62
Na_2O	2.18	4.78	2.54	3.25	2.8	3.73	0.28	3.44	2.34	0.82	2.93	1.94
K_2O	0.22	1.12	1.99	2.04	0.65	1.50	0.28	1.21	1.91	0.30	0.76	1.13
TiO_2	0.56	0.71	0.85	0.74	0.77	1.03	0.21	1.02	1.19	0.46	1.29	1.75
P_2O_5	0.25	0.16	0.17	0.35	0.30	0.27	0.05	0.28	0.61	0.09	0.64	0.24
MnO	0.20	0.05	0.08	0.18	0.22	0.16	0.18	0.12	0.22	0.20	0.24	0.17
CIPW normative minerals												
Q	33.6	20.0	30.0					6.49				
C		5.8	9.0									
Or	1.3	6.6	11.7	12.04	3.8	8.9	1.7	7.17	11.2	1.79	4.5	6.68
Ab	18.4	40.5	21.5	17.88	24.1	31.6	2.4	29.10	19.8	6.91	15.7	10.77
An	24.4	9.5	7.9	21.68	21.9	24.1	2.5	25.58	27.9	9.15	38.9	28.78
Ne				5.22							5.0	3.06
Wo	5.0			12.17	13.0	3.8	30.2	3.19	5.0	27.02	7.5	9.34
En	8.3	6.9	7.4	5.27	21.2	5.9	26.1	12.17	9.4	29.43	3.5	5.82
Fs	6.2	8.5	9.2	6.89	7.7	3.7	4.4	11.97	9.9	6.64	3.9	2.95
Fo				6.81	0.4	10.2	23.8		4.6	11.46	5.8	15.90
Fa				9.82	0.2	7.1	4.4		5.3	2.85	7.1	8.89
Mt	1.07	0.51	1.32		5.6	2.3	4.0	1.75	3.3	3.64	4.34	3.95
Il	1.07	1.35	1.61	1.41	1.5	1.96	0.41	1.94	2.25	0.88	2.45	3.32
Ap	0.57	0.36	0.39	0.81	0.7	0.61	0.12	0.64	1.42	0.22	1.48	0.55
He												

* = No LOI specified in lab report
** = Non-XRF analysis - see Table 2

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	Khb			KJsv							KJss	
Map No.	289	290	291	292**	293	294**	295**	296**	297**	298	299**	300**
Field No.	80DB035A	81DB242C	82RK708A	71ABg232	79DB115A	71ABg231	71ABg256	BUDD-001	71ABg230	79RS115A	71ABg229	71ABg242
XRF chemical analyses (weight percent)												
SiO_2	40.1	37.4	35.2	54.4	49.39	49.3	49.1	48.17	47.7	46.27	49.3	49.3
Al_2O_3	17.4	10.6	11.6	16.8	17.07	17.9	16.5	12.64	17.2	16.38	12.2	17.9
Fe_2O_3	6.9	8.0	10.6	1.7	2.51	2.4	5.6	5.87	1.5	4.78	2.0	2.7
FeO	7.61	12.47	11.40	5.1	6.33	7.0	5.0	6.46	7.4	5.15	6.5	5.8
MgO	8.30	9.20	10.7	4.0	6.59	4.9	5.1	8.73	5.1	6.03	11.3	4.6
CaO	12.9	13.0	12.7	7.7	8.14	9.7	10.9	11.76	10.6	9.47	12.7	8.5
Na_2O	1.57	1.49	1.43	3.8	3.60	2.8	3.1	1.99	2.9	3.12	2.1	3.6
K_2O	0.93	1.44	0.96	1.40	1.39	1.1	1.9	0.63	1.9	0.54	0.22	1.1
TiO_2	1.47	2.20	2.17	0.60	0.87	0.75	0.84	0.75	0.96	0.76	0.48	1.6
P_2O_5	0.07	1.47	<0.05	0.18	0.10	0.12	0.42	0.22	0.32	0.07	0.08	0.51
MnO	0.21	0.37	0.17	0.18	0.17	0.21	0.21	0.20	0.20	0.20	0.21	0.20
LOI	0.55	0.42	0.89	4.02	*	4.05	1.21	2.72	3.78	*	3.15	3.77
Total	98.01	98.06	97.87	99.88	96.16	100.23	100.00	100.14	100.00	92.77	100.24	99.58
Oxides normalized to 100%												
SiO_2	41.1	38.3	36.3	56.7	51.36	51.3	49.8	49.45	49.8	49.88	50.8	51.5
Al_2O_3	17.8	10.9	12.0	17.5	17.75	18.6	16.7	12.97	18.0	17.66	12.6	18.7
Fe_2O_3	7.1	8.2	11.0	1.8	2.61	2.5	5.7	6.03	1.6	5.15	2.1	2.8
FeO	7.81	12.77	11.75	5.3	6.58	7.3	5.1	6.63	7.7	5.55	6.7	6.1
MgO	8.51	9.42	11.03	4.2	6.85	5.1	5.2	8.96	5.3	6.50	11.6	4.8
CaO	13.2	13.3	13.1	8.0	8.47	10.1	11.0	12.07	11.1	10.21	13.1	8.9
Na_2O	1.61	1.52	1.47	4.0	3.74	2.9	3.1	2.04	3.0	3.36	2.2	3.8
K_2O	0.95	1.47	0.99	1.5	1.45	1.1	1.9	0.65	2.0	0.58	0.23	1.1
TiO_2	1.51	2.25	2.24	0.6	0.91	0.78	0.85	0.77	1.00	0.82	0.49	1.7
P_2O_5	0.07	1.50	0.05	0.2	0.10	0.12	0.43	0.23	0.33	0.08	0.08	0.53
MnO	0.22	0.38	0.18	0.2	0.18	0.22	0.21	0.21	0.21	0.22	0.22	0.21
CIPW normative minerals												
Q				4.5				0.99				
C												
Or	5.6	5.8		8.6	8.54	6.8	11.4	3.82	11.7	3.44	1.3	6.8
Ab	2.8			33.5	31.68	24.6	26.2	17.28	20.6	28.46	18.3	31.8
An	38.6	18.4	23.1	25.7	27.36	34.3	25.8	24.32	29.5	31.36	23.9	30.7
Ne	5.9	7.0	6.8				0.2		2.7			
Wo	11.1	15.8	11.9	5.4	5.82	6.2	10.9	14.23	9.7	7.84	16.9	4.1
En	7.8	9.5	8.2	10.4	5.10	11.8	7.8	22.32	5.0	12.30	19.2	11.3
Fs	2.3	5.5	2.7	7.6	2.62	9.7	2.2	6.31	4.4	3.76	6.7	6.1
Fo	9.4	9.8	13.5		8.39	0.6	3.6		5.8	2.79	6.9	0.4
Fa	3.1	6.3	5.0		4.75	0.6	1.1		5.6	0.95	2.7	0.3
Mt	10.3	11.9	15.9	2.6	3.78	3.6	8.2	8.74	2.3	7.47	3.0	4.1
Il	2.86	4.28	4.25	1.2	1.72	1.5	1.6	1.46	1.9	1.56	0.9	3.2
Ap	0.2	3.5	0.12	0.4	0.24	0.3	1.0	0.52	0.8	0.18	0.2	1.2
He												
Lc		2.3	4.6									
Ca-orthosil			4.0									

* = No LOI specified in lab report
** = Non-XRF analysis - see Table 2

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	Mzv	Mzgb	Tr hv	Tdr		Tag			Tgdb			
Map No.	301	302	303	304	305	306	307	308	309	310	311	312
Field No.	82SH008A	82SK002A	80SK153A	82KR070A	A33125	82DB199A	82KR071A	A52716	81DB215A	81SH066A	81SK235A	81SK243A
						XRF chemical analyses (weight percent)						
SiO_2	41.5	47.5	48.5	74.6		74.7	72.8		73.9	70.9	69.1	66.9
Al_2O_3	14.5	16.8	13.4	13.1		13.5	15.6		14.1	15.2	15.5	16.2
Fe_2O_3	6.6	3.0	2.7	0.55		0.07	0.01		0.68	1.18	1.49	1.66
FeO	8.38	8.04	10.34	0.59		0.76	0.34		0.48	0.93	1.17	1.54
MgO	8.06	5.38	5.89	0.11	Age data only	<0.10	0.25	Age data only	0.27	0.62	0.78	0.99
CaO	11.7	10.6	10.50	0.19		0.42	2.58		1.66	3.01	3.44	3.86
Na_2O	1.46	2.69	1.83	3.95		4.28	4.78		3.43	3.42	3.50	3.40
K_2O	0.38	1.74	0.16	4.44		4.51	1.50		4.29	3.49	3.22	3.16
TiO_2	1.68	0.83	1.87	0.02		<0.02	0.06		0.12	0.23	0.35	0.39
P_2O_5	0.15	0.60	0.18	<0.05		<0.05	<0.05		<0.05	0.10	0.15	0.17
MnO	0.24	0.23	0.17	<0.02		0.03	<0.02		0.04	0.05	0.06	0.07
LOI	3.48	1.33	2.35	0.71		0.35	0.31		0.18	0.34	0.38	0.23
Total	98.13	98.74	97.89	98.33		98.79	98.30		99.20	99.47	99.14	99.57
						Oxides normalized to 100%						
SiO_2	43.8	48.8	50.8	76.4		75.9	74.3		74.6	71.5	70.0	68.0
Al_2O_3	15.3	17.3	14.0	13.4		13.7	15.9		14.2	15.3	15.7	16.5
Fe_2O_3	7.0	3.0	2.8	0.56		0.07	0.01		0.69	1.19	1.51	1.69
FeO	8.85	8.16	10.82	0.60		0.77	0.35		0.48	0.94	1.19	1.57
MgO	8.52	5.52	6.16	0.11		0.10	0.25		0.27	0.62	0.79	1.01
CaO	12.4	10.9	10.99	0.20		0.43	2.63		1.68	3.04	3.48	3.92
Na_2O	1.54	2.76	1.91	4.05		4.35	4.88		3.46	3.45	3.54	3.46
K_2O	0.40	0.79	0.17	4.55		4.58	1.53		4.33	3.52	3.26	3.21
TiO_2	1.77	0.85	1.96	0.02		0.02	0.06		0.12	0.23	0.35	0.40
P_2O_5	0.16	0.62	0.19	0.05		0.05	0.05		0.05	0.10	0.15	0.17
MnO	0.25	0.24	0.18	0.02		0.03	0.02		0.04	0.05	0.06	0.07
						CIPW normative minerals						
Q			5.3	34.7		31.5	33.9		34.0	30.6	28.5	25.8
C				1.6		0.9	1.6		0.9	0.6	0.4	0.6
Or	2.4	10.6	1.0	26.9		27.1	9.0		25.6	20.8	19.3	19.0
Ab	13.1	22.8	16.2	34.2		36.8	41.3		29.3	29.2	12.0	29.3
An	33.7	29.4	29.2	0.6		1.8	12.7		8.0	14.4	16.5	18.3
Ne		0.3										
Wo	11.1	8.6	10.1									
En	12.6	4.5	15.4	0.3		0.3	0.6		0.7	1.6	2.0	2.5
Fs	4.8	3.8	14.6	0.6		1.4	0.6		0.2	0.45	0.5	1.0
Fo	6.0	6.5										
Fa	2.5	6.1										
Mt	10.1	4.4	4.1	0.82		0.10	0.01		1.00	1.73	2.19	2.45
Il	3.37	1.62	3.72	0.04		0.04	0.12		0.23	0.44	0.67	0.75
Ap	0.37	1.43	0.44	0.12		0.12	0.12		0.12	0.23	0.35	0.40
He												
						Modal calculations (percent volume)						
K-feldspar									29.8	8.0	20.9	11.9
Plagioclase									37.9	43.7	40.7	51.5
Quartz									28.4	38.8	30.1	25.1
Mafic minerals									3.9	9.5	8.3	11.5
Total									100	100	100	100

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	Tgdb	Tgdp		Ttos								
Map No.	313	314	315	316	317	318	319	320	321	322	323	324
Field No.	81DB107A	81DB210A	81RK210A	78RM241A	78AF141C	81DB106A	78DB137A	78DB248A	82RK796A	80DB072A	80DB242A	82SK107A
XRF chemical analyses (weight percent)												
SiO_2	63.1	70.7	66.0	66.13	61.17	61.1	60.56	58.97	58.6	58.5	58.5	58.5
Al_2O_3	17.3	15.0	16.4	16.36	16.78	17.4	17.33	17.27	17.7	18.2	17.6	17.7
Fe_2O_3	1.68	1.08	1.21	1.35	2.34	2.22	2.25	2.43	2.16	2.51	2.60	1.98
FeO	2.77	1.17	2.59	1.96	3.42	3.09	3.58	4.09	4.01	4.23	4.44	4.44
MgO	1.77	0.73	1.51	1.54	2.46	1.96	2.74	2.93	2.89	2.97	3.26	2.86
CaO	5.24	2.73	3.89	4.45	5.29	5.55	5.81	6.14	6.58	6.75	6.12	6.13
Na_2O	3.69	3.35	3.77	3.56	3.74	4.14	3.55	3.32	3.29	3.64	3.31	3.28
K_2O	2.10	3.59	2.54	2.04	1.59	1.98	1.77	1.70	1.77	1.56	1.87	1.91
TiO_2	0.65	0.28	0.51	0.54	0.70	0.63	0.66	0.71	0.71	0.74	0.73	0.81
P_2O_5	0.26	0.11	0.20	0.18	0.34	0.33	0.23	0.27	0.26	0.29	0.24	0.25
MnO	0.08	0.05	0.1	0.04	0.01	0.12	0.11	0.11	0.11	0.12	0.13	0.11
LOI	0.46	0.22	0.26	*	*	0.59	*	*	0.40	0.26	0.70	0.51
Total	99.10	99.01	98.98	98.15	97.94	99.11	98.59	97.94	98.48	99.77	99.50	98.48
Oxides normalized to 100%												
SiO_2	64.0	71.6	66.9	67.38	62.46	62.02	61.43	60.21	59.7	58.8	59.2	59.7
Al_2O_3	17.5	15.2	16.6	16.67	17.13	17.66	17.58	17.63	18.0	18.3	17.8	18.1
Fe_2O_3	1.70	1.09	1.23	1.37	2.39	2.25	2.28	2.48	2.20	2.52	2.63	2.02
FeO	2.81	1.18	2.62	2.0	3.49	3.14	3.63	4.18	4.09	4.25	4.49	4.53
MgO	1.79	0.74	1.53	1.57	2.51	1.99	2.78	2.99	2.95	2.98	3.30	2.92
CaO	5.31	2.76	3.94	4.53	5.40	5.63	5.89	6.27	6.71	6.78	6.19	6.26
Na_2O	3.74	3.39	3.82	3.63	3.82	4.20	3.60	3.39	3.35	3.66	3.35	3.35
K_2O	2.13	3.63	2.57	2.08	1.62	2.01	1.79	1.74	1.80	1.57	1.89	1.95
TiO_2	0.66	0.28	0.52	0.55	0.71	0.64	0.67	0.72	0.72	0.74	0.74	0.83
P_2O_5	0.26	0.11	0.20	0.18	0.35	0.33	0.23	0.28	0.27	0.29	0.24	0.25
MnO	0.08	0.05	0.1	0.04	0.11	0.12	0.12	0.12	0.11	0.12	0.13	0.11
CIPW normative minerals												
Q	19.5	30.8	23.2	26.02	18.12	14.9	16.00	14.96	13.8	11.8	12.9	13.4
C	0.1	0.9	0.9	0.65	0.10							
Or	12.6	21.5	15.2	12.28	9.59	11.9	10.61	10.26	10.7	9.3	11.2	11.5
Ab	31.7	28.7	32.3	30.69	32.31	35.6	30.47	28.68	28.4	31.0	28.3	28.3
An	24.6	13.0	18.2	21.29	24.53	23.4	26.50	27.77	28.9	28.9	28.0	28.5
Ne												
Wo						1.0	0.51	0.64	1.1	1.2	0.5	0.4
En	4.5	1.8	3.8	3.91	6.25	5.0	6.92	7.45	7.3	7.4	8.2	7.3
Fs	2.8	0.9	3.1	1.70	3.47	3.1	3.88	4.63	4.7	4.7	5.1	5.5
Fo												
Fa												
Mt	2.47	1.58	1.77	1.99	3.46	3.27	3.31	3.60	3.19	3.66	3.82	2.93
Il	1.25	0.54	0.98	1.04	1.36	1.21	1.27	1.38	1.37	1.41	1.40	1.57
Ap	0.61	0.26	0.47	0.43	0.80	0.78	0.54	0.64	0.61	0.67	0.56	0.59
He												
Modal calculations (percent volume)												
K-feldspar	18.4	18.5	6.9	5.6	8.8	7.8	2.4	0.7		2.0	0.3	
Plagioclase	40.6	40.6	50.8	50.5	45.7	52.7	55.5	54.6		57.0	52.3	
Quartz	24.5	30.8	24.2	28.2	20.3	22.2	17.8	13.0		12.0	21.7	
Mafic minerals	16.5	10.1	18.1	15.7	25.2	17.3	24.3	31.6		29.0	25.7	
Total	100	100	100	100	100	100	100	99.9		100	100	

* = No LOI specified in lab report

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	Ttos											
Map No.	325	326	327	328	329	330	331	332	333	334	335	336
Field No.	81SK239A	81SK248A	81DB253A	82SK216A	81SK123A	81SK236A	79RS203A	82DB195A	82KR066A	78RS092A	82SK122A	80SK609A
XRF chemical analyses (weight percent)												
SiO_2	58.3	58.2	58.0	57.9	57.3	57.2	56.83	56.8	56.8	56.31	56.2	55.5
Al_2O_3	17.7	17.0	18.2	17.8	18.3	18.1	17.71	18.4	18.2	17.92	17.1	18.4
Fe_2O_3	2.08	2.26	2.65	1.74	2.08	2.70	2.68	2.55	1.76	2.12	2.05	3.26
FeO	4.38	4.89	3.91	5.24	4.46	4.38	4.44	4.50	5.20	5.13	4.99	4.76
MgO	3.38	3.65	3.01	3.10	3.10	3.42	3.30	3.05	3.05	3.30	4.09	3.75
CaO	6.74	6.64	7.06	6.89	7.56	7.21	7.36	7.03	6.87	6.95	7.66	7.73
Na_2O	3.34	3.01	3.30	3.27	3.43	3.29	3.77	3.28	3.24	3.48	3.24	3.27
K_2O	1.65	1.88	1.45	1.58	1.30	1.51	1.41	1.52	1.58	1.62	1.82	1.36
TiO_2	0.75	0.84	0.71	0.75	0.75	0.80	0.76	0.72	0.78	0.77	0.81	0.84
P_2O_5	0.24	0.27	0.26	0.28	0.38	0.29	0.24	0.28	0.28	0.28	0.35	0.31
MnO	0.12	0.13	0.11	0.12	0.11	0.12	0.13	0.13	0.12	0.12	0.12	0.14
LOI	0.56	0.55	0.36	0.49	0.27	0.40	*	0.33	0.46	*	0.35	0.29
Total	99.24	99.32	99.02	99.16	99.04	99.42	98.63	98.59	98.34	98.00	98.80	99.61
Oxides normalized to 100%												
SiO_2	59.1	58.9	58.8	58.7	58.0	57.8	57.62	57.8	58.0	57.46	57.1	55.9
Al_2O_3	17.9	17.2	18.4	18.0	18.5	18.3	17.96	18.7	18.6	18.29	17.4	18.5
Fe_2O_3	2.11	2.29	2.69	1.76	2.11	2.73	2.72	2.59	1.80	2.16	2.08	3.28
FeO	4.44	4.95	3.96	5.31	4.52	4.42	4.50	4.58	5.31	5.23	5.07	4.79
MgO	3.42	3.70	3.05	3.14	3.14	3.45	3.35	3.10	3.12	3.37	4.15	3.78
CaO	6.83	6.72	7.16	6.98	7.65	7.28	7.46	7.15	7.02	7.09	7.78	7.78
Na_2O	3.39	3.05	3.35	3.31	3.47	3.32	3.82	3.34	3.31	3.55	3.29	3.29
K_2O	1.67	1.90	1.47	1.60	1.32	1.53	1.43	1.55	1.61	1.65	1.88	1.37
TiO_2	0.76	0.85	0.72	0.76	0.76	0.81	0.77	0.73	0.80	0.79	0.82	0.85
P_2O_5	0.24	0.27	0.26	0.28	0.38	0.29	0.24	0.29	0.29	0.29	0.36	0.31
MnO	0.11	0.13	0.11	0.12	0.11	0.12	0.13	0.13	0.12	0.12	0.12	0.14
CIPW normative minerals												
Q	12.2	12.9	13.3	11.8	11.2	11.3	9.0	11.4	10.9	8.91	8.0	8.9
C												
Or	9.9	11.2	8.7	9.5	7.8	9.0	8.4	9.1	9.5	9.77	11.0	8.1
Ab	28.6	25.8	28.3	28.0	29.4	28.1	32.3	28.2	28.0	30.05	27.8	27.9
An	28.8	27.7	31.0	29.6	31.1	30.5	27.6	31.5	31.1	29.07	27.1	31.7
Ne												
Wo	1.5	1.6	1.2	1.3	1.8	1.6	3.3	0.9	0.8	1.77	3.8	2.0
En	8.5	9.2	7.6	7.8	7.8	8.6	8.3	7.7	7.8	8.39	10.3	9.4
Fs	5.4	6.0	4.1	7.3	5.5	4.8	5.0	5.3	7.2	6.76	6.5	5.0
Fo												
Fa												
Mt	3.06	3.32	3.89	2.56	3.05	3.95	3.9	3.76	2.61	3.14	3.02	4.76
Il	1.44	1.61	1.37	1.44	1.44	1.53	1.5	1.39	1.51	1.49	1.56	1.61
Ap	0.56	0.63	0.61	0.66	0.89	0.68	0.6	0.66	0.66	0.66	0.82	0.72
He												
Modal calculations (percent volume)												
K-feldspar	1.5		0.41							0.7		
Plagioclase	48.4		53.5			27.1				38.2		53.2
Quartz	17.8		18.1			39.1				34.7		14.3
Mafic minerals	32.3		28.0			33.8				26.4		32.5
Total	100		100			100				100		100

* = No LOI specified in lab report

Table 1--XRF chemical analyses, CIPW norms, and selected modes of rock samples from the Petersburg and parts of the Port Alexander and Sumdum quadrangles, southeastern Alaska--Continued

Unit	Ttos	Tgdg	TKbs		TKhs
Map No.	337	338	339	340	341
Field No.	78RS066A	79DB225A	81SK159A	82KR068A	82KR071B
XRF chemical analyses (weight percent)					
SiO_2	52.98	62.11	61.6	51.1	55.9
Al_2O_3	17.43	19.12	17.5	13.1	17.3
Fe_2O_3	3.55	1.49	1.91	1.9	1.02
FeO	4.26	1.95	4.06	12.10	6.74
MgO	3.04	1.18	1.62	6.14	3.87
CaO	7.79	6.06	5.21	9.53	7.57
Na_2O	3.39	4.32	3.80	1.34	3.31
K_2O	4.19	2.44	2.09	0.77	1.20
TiO_2	0.78	0.41	0.75	0.77	0.70
P_2O_5	0.50	0.13	0.32	0.09	0.12
MnO	0.18	0.12	0.20	0.23	0.16
LOI	*	*	0.44	1.06	0.60
Total	98.09	99.33	99.50	98.13	98.49
Oxides normalized to 100%					
SiO_2	54.01	62.53	62.2	52.6	57.1
Al_2O_3	17.77	19.25	17.7	13.5	17.67
Fe_2O_3	3.62	1.50	1.93	2.0	1.04
FeO	4.34	1.96	4.10	12.46	6.89
MgO	3.10	1.89	1.63	6.32	3.95
CaO	7.94	6.10	5.26	9.81	7.73
Na_2O	3.46	4.35	3.84	1.38	3.38
K_2O	4.27	2.46	2.11	0.79	1.23
TiO_2	0.79	0.41	0.76	0.79	0.72
P_2O_5	0.51	0.13	0.32	0.09	0.12
MnO	0.18	0.12	0.20	0.24	0.26
CIPW normative minerals					
Q		13.28	16.7	6.4	7.4
C			0.3		
Or	25.24	14.52	12.5	4.7	7.2
Ab	29.24	36.80	32.5	11.7	28.6
An	20.36	25.75	24.0	28.3	29.4
Ne					
Wo	6.56	1.53		8.3	3.4
En	5.16	2.96	4.1	15.7	9.8
Fs	2.68	1.91	5.1	20.3	10.9
Fo	1.79				
Fa	1.03				
Mt	5.25	2.17	2.80	2.9	1.51
Il	1.51	0.78	1.44	1.51	1.36
Ap	1.18	0.30	0.75	0.22	0.28
He					
Modal calculations (percent volume)					
K-feldspar		8.0			
Plagioclase		65.0			
Quartz		14.0			
Mafic minerals		13.0			
Total		100			

* = No LOI specified in lab report

Table 2.--Petrographic descriptions of sample localities.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
	Qb				Extrusive basaltic rocks and underlying sedimentary rocks exposed along southern shore of Kupreanof Island and on High Castle Island in Duncan Canal--Olivine basalt; minor pyroxene basalt. Fresh, commonly in columnar jointed flows less than 1 m thick. Locally underlain by aa flows, mafic volcanic breccia, conglomerate, sandstone, and siltstone. Equivalent rocks be included in unit QTb.
1	BUDD-006	56°26'17" 133°34'25"	Petersburg B-5	Qb	Labradorite Basalt--Consists of a mesh of plagioclase laths with intersertal granules or granular aggregates of monoclinic pyroxene, plates of ilmenite, magnetite, and interstitial cryptocrystalline areas. Pyroxene is much altered to chlorite and carbonate. Minor number of vesicles with calcite, chlorite and quartz. Method of chemical analysis not specified.
2	78SH054A	56°31'35" 133°05'56"	Petersburg C-4	Qb	Basalt--Hypocrystalline; sparsely plagioclase porphyritic. Groundmass consists of unoriented plagioclase laths, rose-brown intergranular augite, with intersertal brown volcanic glass (up to 12 percent). Interstitial opaques. Minor chlorite. Pyrite noted in field.
3	71ABg179	56°28'00" 133°08'40"	Petersburg B-4	Qb	Olivine Basalt--Porphyritic with intergranular to subophitic groundmass. Forsteritic olivine forms iddingsite-rimmed glomerocrysts. Intergrown pale-brown clinopyroxene and plagioclase laths, olivine, opaques, and ilmenite make up the groundmass. Chemical analysis by rapid rock method.
4	71ABg178	56°28'48" 133°07'42"	Petersburg B-4	Qb	Olivine Basalt--Glomeroporphyritic with intergranular groundmass. Forsteritic olivine forms glomerocrysts. Andesine plagioclase laths, interstitial green-brown clinopyroxene, ilmenite, and granular olivine make up the groundmass. Minor iddingsite alteration. Chemical analysis by rapid rock method.
5	BB-3	56°27'04" 133°11'30"	Petersburg B-4	Qb	Olivine Basalt--Holocrystalline; porphyritic. Consists of a mat of labradorite plagioclase laths, grains of clinopyroxene and olivine, and minor interstitial palagonite. Accessory magnetite and ilmenite. Rock is fresh and in outcrop exhibits fissile platy structure parallel to flows. Method of chemical analysis not specified.
6	79AF031A	56°27'26" 133°13'33"	Petersburg B-4	Qb	Olivine Basalt--Porphyritic; sparsely glomeroporphyritic, with a pilotaxitic groundmass. Phenocrysts of plagioclase and forsteritic olivine with iddingsite alteration. Groundmass of andesine plagioclase and intergranular clinopyroxene along with accessory opaques, secondary calcite, orange-brown mica, and chlorite.
7	71ABg189	56°26'50" 133°06'40"	Petersburg B-4	Qb	Olivine Basalt--Porphyritic with intergranular groundmass. Anhedral to subhedral forsteritic olivine phenocrysts in a matt of calcic andesine plagioclase laths, granular clinopyroxene and olivine, opaques, and minor volcanic glass. Minor secondary calcite. Chemical analysis by rapid rock method.
8	79AF029A	56°26'34" 133°10'24"	Petersburg B-4	Qb	Olivine Basalt--Porphyritic with ophitic to subophitic groundmass. Forsteritic olivine forms phenocrysts and sparse glomerocrysts; clinopyroxene is poikilitic. Groundmass is of andesine to labradorite plagioclase laths and interstitial opaques. Minor iddingsite alteration. Sample is from volcanic flow; contains up to 5 percent vesicles.
9	82RK852B	56°27'09" 133°39'31"	Petersburg B-5	Qb	Basalt--Porphyritic with pilotaxitic groundmass. Andesine plagioclase phenocrysts with concentric zoning; albite twins have clear rims and rarely include clinopyroxene. Most clinopyroxene is altered to green mica and calcite. Groundmass contains up to 10 percent opaques; secondary chlorite and calcite in patches. Massive in outcrop.
10	BUDD-002	56°40'30" 133°10'00"	Petersburg C-4	Qb	Olivine Basalt--Holocrystalline; composed of a groundmass of small laths of plagioclase and monoclinic pyroxene with abundant accessory minute grains of magnetite and ilmenite. A crude flow structure is present. Numerous phenocrysts of olivine up to 0.4 mm. No alteration. Method of chemical analysis not specified.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
	QTr	Volcanics of southwest and south central Kupreanof Island, southwest Zarembo Island and northwest Etolin Island--Rhyolite, rhyodacite and related siliceous extrusive and intrusive rocks. Aphanitic to crystalline, quartz and feldspar porphyritic, locally layered. Pyrite and zeolite common. Stratigraphy includes lava flows, obsidian flows, ash tuffs and diking. Local areas of extreme alteration and brecciation.			
11	82SK167A	56°32'27" 133°31'47"	Petersburg C-5	QTr	Welded Rhyolite Tuff--Approximately 30 percent devitrified glass fiamme in a matrix of cryptocrystalline material, devitrified glass, and dust particles. Lenticular shaped fiamme are lined with perpendicular alkali feldspar growth, spherulites, and quartz.
12	80DB056B	56°20'50" 132°55'47"	Petersburg B-3	QTr	Felsite--Very strongly altered. Approximately one-half of the thin section found to consist of secondary calcite, chlorite, epidote, and zeolites(?). Relict feldspar phenocrysts and altered microlites, minor quartz, and opaques present. Sample from dike or flow.
13	80SK537A	56°48'34" 133°45'19"	Petersburg D-6	QTr	Microgranite--Very fine grained. Embayed quartz; subhedral to anhedral plagioclase phenocrysts in a matrix of alkali feldspar-rich perthite, microperthite, and micrographic to granophyric quartz intergrowths. Sparse red-brown biotite present; moderate amount of dust and clay alteration of plagioclase.
14	82DB180A	56°27'39" 133°29'30"	Petersburg B-5	QTr	Rhyolite--Fibrous spherulitic alkali feldspar-quartz microlites with approximately 7 percent anhedral quartz patches. Very fine-grained sparse blue-green amphibole. Two percent opaques and dust. Outcrop of columnar flows.
15	79SK178A	56°32'23" 133°29'06"	Petersburg C-5	QTr	Flow-banded Rhyolite--Cryptocrystalline texture with thin veins of secondary quartz parallel to the flow structure. Little sericitic alteration. On an outcrop scale the rock exhibits alternating thin white and light green bands.
16	BB-44	56°27'52" 133°05'35"	Petersburg B-4	QTr	Rhyolite--Cryptocrystalline with thin secondary quartz veins parallel to fluxion structure. Minor sericitic alteration. Outcrop is flow-banded with alternating thin white and light green bands. Method of chemical analysis not specified.
17	83DB199A	56°37'05" 133°33'53"	Petersburg C-5	QTr	Welded Tuff--Irregular millimeter-scale streaky laminations are defined by brown glass-rich fiamme, clear quartz, or dust-rich layers. Anhedral, spherulitic structures of quartz and feldspar are common. Minor red-brown biotite and very fine-grained opaques. Most glass is devitrified.
18	82SK180A	56°32'15" 133°32'05"	Petersburg C-5	QTr	Rhyolite Tuff--Eutaxitic. Banded, welded tuff containing polycrystalline quartz stringers in an alkali feldspar, anhedral to micrographic dusty matrix. Less than 1 percent calcite present as irregular patches and rarely as lenticular quartz cavity lining.
19	83SK414C	56°29'20" 133°30'40"	Petersburg B-5	QTr	Welded Tuff--No thin section. Field notes indicate "sulphide-bearing, brecciated and spherulitic welded tuff."
20	83DB160	56°36'45" 133°32'34"	Petersburg C-5	QTr	Welded Tuff--Irregular millimeter-scale layers are defined by brown devitrified glass, dust-rich, and quartz-rich layers. Abundant quartz-rich spherulites; sparse biotite; common opaque dust.
21	BUDD-003	56°27'08" 133°27'45"	Petersburg B-5	QTr	Rhyolite Porphyry--Groundmass consists of micrographic and microgranitic intergrowths of quartz and feldspar with corroded phenocrysts of quartz and euhedral crystals of feldspars. Minute grains of magnetite scattered throughout rock. Minor secondary iron staining. Some alteration to clay minerals. Method of chemical analysis not specified.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
22	82SK178A	56°32'15" 133°32'05"	Petersburg C-5	QTr	Rhyolite Tuff--Microscopic texture which borders on flow-banded rhyolite tuff and a trachytic microcrystalline tuffaceous rhyolite. Common quartz; less common polycrystalline quartz stringers. Sparse, euhedral plagioclase phenocrysts occur amongst ahnedral patches of microcrystalline alkali feldspar. Abundant volcanic ash; minor iron staining, and secondary calcite present.
23	82SK179A	56°32'14" 133°31'49"	Petersburg C-5	QTr	Rhyolite Tuff--Non-welded. Quartz and alkali feldspar-rich with minor secondary calcite as cavity lining. Dominant texture is spherulitic. Pyrite noted in outcrop.
24	79DG036A	56°35'47" 133°42'26"	Petersburg C-6	QTr	Rhyolite Crystal Tuff--Sodic plagioclase occurs as glomerocrysts and broken individual grains. Matrix contains abundant micro- to cryptocrystalline alkali feldspar and quartz along with small plagioclase laths, accessory opaques, and dust. Less than 3 percent secondary calcite and sericite.
25	83SK467A	56°33'42" 133°27'44"	Petersburg C-5	QTr	Rhyolite--Porphyritic with aphanitic devitrified glassy matrix. Fifteen percent phenocrysts consist of euhedral alkali feldspar, some albite, and minor quartz crystals. Small veins and pockets of secondary chalcedony, trace of white mica, and less than 1 percent opaques present in rock. Sample from core of altered zone.
26	83SK422A	56°35'13" 133°32'19"	Petersburg C-5	QTr	Rhyodacite(?)--Porphyritic with euhedral to anhedral plagioclase phenocrysts in a devitrified glassy matrix. Few angular glassy fragments; some broken phenocrysts; rock looks fragmental. Sample from a dike.
27	79DB133B	56°18'15" 132°57'09"	Petersburg B-3	QTr	Rhyolite--Plagioclase porphyritic with irregularly shaped quartz-calcite-filled amygdules. Groundmass of microcrystalline alkali feldspar, minor plagioclase, dust, and sparse devitrified glass. Approximately 5 percent secondary calcite, chlorite, and white mica. Few secondary quartz veinlets; minor opaques.
28	82KR114A	56°33'31" 133°40'18"	Petersburg C-6	QTr	Rhyodacite--Porphyritic; hyaloopilitic. Poorly twinned plagioclase forms phenocrysts; small laths in groundmass. Groundmass also contains abundant anhedral alkali feldspar, common quartz, and green-brown devitrified glass. Trace of pyrite. Fairly fresh.
29	83SK422B	56°35'13" 133°32'19"	Petersburg C-5	QTr	Obsidian--Black-colored, banded and spherulitic. Contains angular fragments of brown volcanic rock and unwelded glass shards.
30	83DB142A	56°34'37" 133°34'46"	Petersburg C-5	QTr	Rhyolite--Sanidine phenocrysts in an anhedral microcrystalline feldspar-quartz bearing groundmass. Minor very fine-grained green-blue amphibole and common yellow-brown limonite weathering.
31	83DB151A	56°34'48" 133°31'43"	Petersburg C-5	QTr	Obsidian--Holohyaline pitchstone with perlitic cracks. Crystallites define a flow structure. Tan-colored in thin section; five-meter-thick flow in the field.
32	83SK418A	56°30'33" 133°37'32"	Petersburg C-5	QTr	Dacitic(?) Tuff--Dark green-gray hypocrystalline tuff. Glass matrix encloses plagioclase and quartz phenocrysts, plagioclase microlites, and small radiating quartz-feldspar grains. Phenocrysts are broken. No mafics present.
33	80SK536A	56°49'12" 133°45'32"	Petersburg D-6	QTr	Rhyodacite--Glomeroporphyritic with oligoclase to andesine plagioclase and hornblende glomerocrysts and phenocrysts along with smaller isolated biotite flakes. Groundmass consists of microcrystalline anhedral alkali feldspar, scattered quartz grains, and accessory opaques. Thin section is moderately weathered.
34	83SK436A	56°44'28" 133°34'48"	Petersburg C-5	QTr	Silicic Welded Tuff--Contains 40 percent feldspar microlites, 15 percent flow-rotated plagioclase phenocrysts, and 10 percent ore within light-brown glass. Cavities contain chalcedony.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
35	BUDD-008	56°32'05" 133°52'20"	Petersburg C-6	QTr	Quartz Keratophyre--Hyalocrystalline groundmass with a hyalopilitic texture traversed by a few fractures faced with epidote. Euhedral phenocrysts comprising about 5 percent by volume. Groundmass consists of microlites with a pronounced flow structure in a glass matrix. Pyroxene considerably altered to calcite and to a slight extent to chlorite. Method of chemical analysis not specified.
36	83SK415A	56°29'22" 133°30'57"	Petersburg B-5	QTr	Dacite--Hypocrystalline. Devitrified glass matrix surrounds resorbed anhedral to subhedral plagioclase phenocrysts (30%), ore (10%), irregular amygdule fillings, clinopyroxene (5%), and sparse subhedral epidote. Outcrop is banded.
37	82PB067A	56°33'00" 133°42'44"	Petersburg C-6	QTr	Andesite--Porphyritic with a trachytic groundmass. Phenocrysts are andesine plagioclase, hornblende, and sparse clinopyroxene. Groundmass contains mostly aligned plagioclase laths along with common opaques and dust. Minor amount of secondary calcite from plagioclase and green mica from pyroxene.
38	83DB139A	56°34'35" 133°34'08"	Petersburg C-5	QTr	Andesite(?)--Palotaxitic with intergranular to subophitic and glomeroporphyritic clinopyroxene. Plagioclase laths are andesine in composition. Minor amount of micrographitic potassium feldspar, olive-brown biotite, scattered opaques and secondary carbonate present in thin section.
39	82SK175A	56°30'59" 133°40'11"	Petersburg C-6	QTr	Basalt--Very fine- grained to cryptocrystalline. Sparsely plagioclase porphyritic with an intergranular, but glass-bearing, groundmass. Plagioclase microlites are crudely oriented; opaques are very abundant; clinopyroxene is present. Roughly 10 percent devitrified glass, dust, and cryptocrystalline alteration.
40	82RK849A	56°27'24" 133°27'10"	Petersburg B-5	QTr	Basalt--Porphyritic with intergranular and intersertal groundmass. Phenocrysts of calcic andesine plagioclase, titanium-rich clinopyroxene, and small grains of olivine. Groundmass of non-oriented plagioclase microlites, granular clinopyroxene, common opaques, and devitrified glass.
41	83DB221B	56°35'07" 133°18'48"	Petersburg C-4	QTr	Altered Basalt/Andesite(?)--Strongly altered. Abundant calcic andesine plagioclase forms phenocrysts in an intersertal groundmass. Both phenocrysts and groundmass contain secondary pumpellyite, chlorite, and epidote.
42	78BG089C	56°16'15" 132°56'10"	Petersburg B-3	QTr	Altered Basalt(?)--Strongly altered. Porphyritic with intersertal groundmass. Original phenocrysts have been replaced by a pleochroic green-gold mica, chlorite, and calcite. Other phenocrysts are sparse plagioclase, and altered olivine(?). Groundmass of andesine microlites, interstitial granular grains of the above green-gold mica, chlorite alteration, and approximately 7 percent opaques. Chemical analysis by rapid rock method.
43	80DB056A	56°20'50" 132°55'47"	Petersburg B-3	QTr	Rhyodacite(?)--Aphanitic anhedral granular to anhedral spherulitic in texture. Irregular and spherulitic patches of feldspar, quartz, and devitrified glass. Three percent anhedral polycrystalline calcite patches. Accessory opaques. Cryptocrystalline dust common.
	QTf	Volcanic extrusives of eastern Kuiu and western Kupreanof Islands--Altered quartz latite, medium to light gray. Contains microphenocrystic clinopyroxene in plagioclase groundmass, with quartz, K-feldspar, green biotite and myrmekite. Intercalated with basalt and sandstone.			
44	79SK001E	56°31'23" 133°53'18'	Petersburg C-6	QTf	Andesite--Porphyritic with a pilotaxitic groundmass. Abundant andesine phenocrysts along with less common orthopyroxene phenocrysts. Randomly oriented andesine microlites, abundant fine-grained opaques, and sparse granular pyroxene occur in the groundmass. Secondary minerals (total 5 percent) are limonite, carbonate replacing plagioclase, and green-gold mica replacing pyroxene.

Table 2.--Petrographic descriptions of sample localities.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
45	82KR019A	56°48'09" 133°45'59"	Petersburg D-6	QTf	Rhyodacite(?)--Sparse plagioclase phenocrysts and calcite pseudomorphs of hornblende (?) are surrounded by anhedral to subhedral intergrowths of plagioclase, alkali feldspar, and quartz. Trace of fine-grained brown biotite in part altered to green biotite. Approximately 6 percent secondary calcite, pumpellyite, green biotite, and clay minerals.
46	82KR020A	56°48'05" 133°45'54"	Petersburg D-6	QTf	Rhyodacite(?)--Porphyritic, with a microcrystalline groundmass of micrographic and granophyric alkali feldspar-quartz intergrowths; tabular plagioclase, and minor amounts of subequant clinopyroxene and green-brown hornblende. Secondary calcite and limonite occur in minor amounts.
	QTa	Extrusive volcanics at south central Kupreanof Island, southwestern Zarembo Island and the southern Rocky Pass area--Andesite, pyroxene and feldspar porphyritic, massive to vesicular and amygdaloidal flows 10-50 cm thick.			
47	83SK475A	56°35'40" 133°24'54"	Petersburg C-5	QTa	Andesite--Porphyritic; layered. Phenocrysts of altered plagioclase and quartz. Contains 1 percent pyrite.
48	79DB027A	56°37'01" 133°41'25"	Petersburg C-6	QTa	Andesite-Porphyritic with hyaloophitic groundmass. Plagioclase, clino- and orthopyroxene phenocrysts. Groundmass contains subaligned andesine and oligoclase microlites, intergranular clinopyroxene, interstitial opaques, and up to 4 percent green-brown devitrified glass.
49	79DG037A	56°36'26" 133°43'45"	Petersburg C-6	QTa	Andesite--Strongly altered in thin section. Porphyritic with pilotaxitic groundmass. Relict plagioclase phenocrysts replaced by calcite, sericite, and chlorite. Groundmass of subaligned plagioclase microlites along with fine-grained opaques and rare quartz. Secondary minerals total to 35 percent.
50	79SH002A	56°33'37" 133°45'08"	Petersburg C-6	QTa	Andesite(?)--Amygdaloidal; strongly altered. Approximately 3 percent chlorite/calcite-filled amygdules in a groundmass consisting of altered unali gned plagioclase laths, abundant opaques, sparse quartz, and up to 25 percent calcite and chlorite.
51	79SH006A	56°35'16" 133°42'35"	Petersburg C-6	QTa	Basalt--Porphyritic with intergranular groundmass. Sparse plagioclase phenocrysts are up to 3 mm in length. Abundant interstitial clinopyroxene and opaques within the andesine to labradorite plagioclase groundmass. Colorless to pale green acicular amphibole appears secondary along with approximately 5 percent green-brown clinopyroxene alteration mineral.
52	83DB209A	56°32'24" 133°24'13"	Petersburg C-5	QTa	Basalt--Porphyritic with hyaloophitic and intergranular groundmass. Plagioclase phenocrysts up to 1 cm in length with groundmass of andesine to labradorite plagioclase, intergranular clinopyroxene, sparse olivine, and common opaques. Minor amount of devitrified glass.
53	83SK469A	56°35'27" 133°24'52"	Petersburg C-5	QTa	Basalt--Holocrystalline; porphyritic with a pilotaxitic groundmass. Broken plagioclase phenocrysts. Groundmass microlites intergrown with amphibole and opaques. Rock is fresh; massive in outcrop.
	QTb	Mafic extrusive rocks of northeastern Kuiu Island extending to western Kupreanof Island. Also exposed on northwestern Zarembo Island--Basalt, platy, blocky or columnar jointed flows 50 cm to several meters thick. Commonly vesicular and amygdaloidal; amygdule fillings include calcite, epidote, chalcedony, chlorite and zeolites.			
54	82KR005A	56°30'57" 133°33'36"	Petersburg C-5	QTb	Obsidian--Dominantly perlitic glass with partially devitrified pale-brown spherulites and acicular microlites. One plagioclase phenocryst and few quartz-filled, spherulitic-rimmed cavities in thin section. Accessory opaques. Black and buff-colored; banded in outcrop.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
55	83DB170A	56°42'00" 133°36'00"	Petersburg C-5	QTb	Andesite--Andesine plagioclase and clinopyroxene porphyritic with a pilotaxitic groundmass of plagioclase microlites and fine-grained clinopyroxene and opaques. Phenocrysts form rare glomerocrysts. Few chlorite/celadonite-filled amygdules present.
56	82DB277A	56°36'48" 133°40'29"	Petersburg C-6	QTb	Andesite--Porphyritic with trachytic groundmass. Phenorcysts are oligoclase to andesine plagioclase (rimmed by less calcic plagioclase), clinopyroxene, relict hornblende(?), and opaques. aligned groundmass composed mostly of plagioclase along with interstitial granular clinopyroxene, fine-grained opaques, and devitrified glass. Moderate amount of secondary green mica, limonite, and (?) pumpellyite (up to 10 percent.
57	80DB184A	56°34'08" 133°40'44"	Petersburg C-6	QTb	Andesite--Porphyritic. Phenocrysts of andesine to labradorite plagioclase along with less than 2 percent clinopyroxene. Partially glassy; hyalopilitic groundmass dominated by non-oriented plagioclase laths. Interstices filled with opaques (up to 10 percent), altered glass, and granular clinopyroxene. Up to 2 percent calcite alteration.
58	80DB198A	56°37'56" 133°46'57"	Petersburg C-6	QTb	Basalt-Andesite--Sparsely plagioclase and clinopyroxene porphyritic with a pilotaxitic groundmass of suboriented microcrystalline plagioclase which is subophitic with granular clinopyroxene. Interstitial opaques up to 10 percent. Flow-banded in outcrop.
59	82KR117A	56°34'22" 133°41'09"	Petersburg C-6	QTb	Basalt--Hyalopilitic. Non- aligned partially altered plagioclase microlites are separated by abundant very fine-grained clinopyroxene, abundant opaques (up to 10 percent), and a trace of orange-brown secondary mica. Dust, devitrified glass, and a trace of calcite are present.
60	78DB239A	56°30'48" 133°54'57"	Petersburg C-6	QTb	Basalt--Fine-grained andesine plagioclase laths are dominantly subophitic; less commonly intergranular with clinopyroxene. Approximately 7 percent intersertal devitrified glass. Accessory opaques; trace of calcite present. Sample from 3-meter-thick amygdaloidal flow.
61	83SK413A	56°29'19" 133°30'00"	Petersburg B-5	QTb	Basalt--Hypocrystalline porphyritic. Phenocrysts consist of 6 percent subhedral to anhedral plagioclase with reaction rims, 1 percent euhedral clinopyroxene, and 1 percent olivine(?). Groundmass includes aligned, felted plagioclase microlites, up to 3 percent ore, and 30 percent interstitial glass.
62	79DG041A	56°35'34" 133°49'30"	Petersburg C-6	QTb	Basalt--Hypocrystalline with trachytic texture. Approximately 50 percent crystalline with 2 size populations of plagioclase, less than 5 percent clinopyroxene; 10 percent opaques. Volcanic glass is partially devitrified and contains interstitial cryptocrystalline material. Trace of carbonate present.
63	82RK719A	56°42'18" 133°24'49"	Petersburg C-5	QTb	Basalt--Hypocrystalline; trachytic. Clinopyroxene and plagioclase form sparse phenocrysts in aligned matrix of small andesine plagioclase laths and interstitial glass, opaques, and clinopyroxene aggregates. Up to 10 percent devitrified glass and alteration.
64	79DB029A	56°38'16" 133°41'59"	Petersburg C-6	QTb	Basalt--Porphyritic with an intergranular and intersertal groundmass. Sparse labradorite plagioclase and relict olivine(?) phenocrysts in a groundmass of labradorite to andesine plagioclase laths, fine-grained clinopyroxene, and opaques. Approximately 5 percent devitrified glass.
65	83DB196A	56°37'48" 133°37'32"	Petersburg C-5	QTb	Basalt--Trachytic with minor amount of devitrified glass. Plagioclase laths range in composition from sodic andesine to labradorite. Intergranular clinopyroxene is of moderate abundance as are opaques. Flow laminations are defined by iron staining.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
66	82PB132A	56°35'53" 133°38'16"	Petersburg C-5	QTb	Altered Basalt--Porphyritic with a pilotaxitic groundmass. Sparse plagioclase phenocrysts up to 2 mm in length are surrounded by partially oriented andesine to labradorite plagioclase laths and abundant granular opaques. Relict clinopyroxene and olivine(?) replaced by green-gold mica (chlorophaeite); chlorite, and clinozoisite form over 20 percent of thin section.
67	82PB139D	56°33'43" 133°51'05"	Petersburg C-6	QTb	Altered Basalt(?)--Porphyritic with fine-grained pilotaxitic groundmass. Phenocrysts totally replaced by secondary calcite and sericite. Possible amygdules; up to 3 percent secondary quartz present. Secondary minerals total up to 40 percent.
68	82SH013A	56°34'06" 133°22'10"	Petersburg C-5	QTb	Basalt--Subhedral plagioclase phenocrysts occur within a very fine-grained trachytic groundmass. Interstitial clinopyroxene, abundant opaques, and sparse olivine present in groundmass as are chlorite, devitrified glass, and rare calcite-filled amygdules.
69	82SK168A	56°33'15" 133°39'19"	Petersburg C-5	QTb	Altered Basalt-- Porphyritic with pilotaxitic groundmass. Phenocrysts are labradorite to andesine plagioclase up to 4 mm in length along with rare clinopyroxene. Crudely oriented fine-grained plagioclase laths dominate the groundmass. Abundant opaques. Secondary calcite and chlorite are abundant.
70	83DB200A	56°38'54" 133°32'34"	Petersburg C-5	QTb	Basalt--Amygdaloidal; sparsely plagioclase porphyritic with an intersertal groundmass. Calcite-filled amygdules comprise up to 15 percent of thin section. Seriate andesine plagioclase laths, abundant opaques and abundant interstitial devitrified glass make up remainder of rock.
	QTc	Volcaniclastic Deposits--Pyroclastic deposits, felsic to mafic tuff and lahars, ash deposits, and oligomictic conglomerates. Deposits lap onto volcanic centers, are intercalated with extrusive rocks, and range from thick, massive, matrix supported to well-bedded cm.-scale graded and upward-fining beds.			
71	BUDD-007	56°36'30" 133°52'26"	Petersburg C-6	QTc	Andesite--Pilotaxitic texture with minor interstitial glass. Plagioclase occurs mostly as microlites, but laths up to .5 mm are common. Also common are microscopic grains of monoclinic pyroxene and magnetite. Method of chemical analysis not specified.
72	79DG040A	56°36'52" 133°44'43"	Petersburg C-6	QTc	Altered Basalt--Strongly altered, porphyritic, and amygdaloidal. Groundmass of pilotaxitic plagioclase microlites, approximately 5 percent opaques, and up to 25 percent secondary chlorite, calcite, epidote, and pumpellyite(?).
73	80DB175A	56°39'47" 133°53'40"	Petersburg C-6	QTc	Altered Volcanic--Strongly altered. One phenocryst replaced by microcrystalline quartz and calcite. Fine-grained plagioclase-rich groundmass is pilotaxitic. Seven percent opaques; 50 percent secondary calcite and interstitial quartz present.
74	80RS084A	56°45'22" 133°54'52"	Petersburg D-6	QTc	Basalt--Porphyritic with intersertal groundmass. Plagioclase phenocrysts up to 1 mm in length occur as sparse glomerocrysts in a groundmass of labradorite plagioclase laths and interstitial green-brown devitrified glass. Seven percent opaques. Eight percent secondary calcite.
	QTd	Dikes, sills and extrusive rocks west of Threemile Arm on Kuiu Island and on Conclusion and Zarembo Islands--Extremely complicated, heterogenous dikes, flows, sills and breccias ranging in composition from basalt to rhyolite. Some xenoliths of metamorphic country rock.			
75	79DB121B	56°20'53" 132°48'09"	Petersburg B-3	QTd	Rhyolite--Porphyritic. Euhedral albite to oligoclase plagioclase phenocrysts along with a few relict hornblende(?) phenocrysts in a microcrystalline anhedral groundmass of potassium feldspar, plagioclase, and small irregular patches and veins of quartz. Moderate calcite and minor sericite alteration of phenocrysts.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
76	82SH009C	56°27'08" 132°56"35"	Petersburg B-3	QTd	Rhyolite--Spherulitic; porphyritic. Abundant phenocrysts of potassium feldspar and plagioclase; common alkali feldspar-quartz spherulites in a matrix of dusty alkali feldspar, quartz, and few opaques. Secondary alteration, up to 7 percent, includes white mica, calcite, and chlorite. Sample from 6-meter-wide dike.
77	78OV040A	56°31'43" 133°52'05"	Petersburg C-6	QTd	Rhyodacite(?)--Porphyritic with a pilotaxitic groundmass. Phenocrysts of oligoclase plagioclase, sanidine, clinopyroxene, and iron-rich olivine. Groundmass is a microcrystalline combination of feldspars and quartz, contains elongate and granular clinopyroxene, and sparse opaques. Sparse secondary calcite present.
78	79DG035A	56°35'10" 133°05'30"	Petersburg C-6	QTd	Altered Andesite(?)--Porphyritic with pilotaxitic groundmass of oligoclase to andesine plagioclase laths, interstitial quartz, and fine-grained subhedral opaques. Plagioclase phenocrysts contain secondary calcite and minor sericite. Small quartz phenocrysts are polycrystalline. Chlorite occurs along with calcite as amygdule fillings, in the groundmass, and as small clots.
79	82SH009A	56°27'08" 132°56'35"	Petersburg B-3	QTd	Altered volcanic--Porphyritic with pilotaxitic groundmass. Phenocrysts of albitized plagioclase; possibly 1 relict augite grain in thin section. Groundmass of unoriented plagioclase laths, roughly 5 percent opaques, and minor interstitial quartz. Strongly altered--over 15 percent secondary calcite and chlorite present. Part of dike complex.
80	80SK472A	56°35'07" 134°05'03"	Port Alexander C-1	QTd	Greenstone--Recrystallized microdiorite(?). Subophitic albitized plagioclase with partially recrystallized hornblende, interstitial quartz, and accessory magnetite. Secondary acicular amphibole occurs throughout along with chlorite, calcite, and minor clinozoisite.
81	BUDD-005	56°28'26" 133°49'09"	Petersburg B-6	QTd	Andesite--Hyalocrystalline with hyalopilitic texture and a pronounced flow structure. Consists of microscopic laths of plagioclase, and numerous grains and rods of monoclinic pyroxene in a glass groundmass. Skeletal magnetite and ilmenite plates occur in the glass. Method of chemical analysis not specified.
82	82SH061A	56°31'46" 133°46'37"	Petersburg C-6	QTd	Altered volcanic--Pilotaxitic. Subhedral, dusty plagioclase laths and rosettes and primary quartz occur with interstitial secondary chlorite and calcite. Accessory opaques. Pyrite noted in the field. Over 30 percent secondary minerals.
83	BUDD-004	56°31'48" 133°40'10"	Petersburg C-6	QTd	Basalt--Holocrystalline texture; consists of plagioclase laths in a groundmass of altered ferromagnesian minerals with abundant minute grains of magnetite and plates of ilmenite. Alteration products consist of chlorite, epidote, and a little carbonate. Plagioclase is in part altered to epidote and carbonate. Green hue of rock is due to alteration products. Method of chemical analysis not specified.
84	82PB064A	56°31'50" 133°50'20"	Petersburg C-6	QTd	Basalt--Plagioclase and clinopyroxene porphyritic with well developed trachytic texture. Flow aligned andesine microlites occur with minor interstitial fresh and devitrified glass, and intergranular clinopyroxene. One percent calcite-filled and fewer quartz-filled amygdules. Abundant intergranular opaques. Fairly fresh.
85	82PB065A	56°32'26" 133°47'37"	Petersburg C-6	QTd	Altered Basalt--Plagioclase and clinopyroxene porphyritic with a subophitic groundmass. Euhedral to subhedral zoned and twinned labradorite and smaller less abundant clinopyroxene phenocrysts. Groundmass of andesine laths, strongly altered clinopyroxene laths, and intergranular opaques. Thin section shows up to 25 percent secondary chlorite and calcite.
86	82SH009B	56°27'08" 132°56'35"	Petersburg B-3	QTd	Altered Basalt--Subophitic and porphyritic. Sparse labradorite plagioclase phenocrysts up to 5 mm in length occur along with smaller calcic andesine laths. Subophitic clinopyroxene is well altered to green mica, calcite, and chlorite. Approximately 4 percent opaques present. Outcrop is 10-meter-thick flow.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
	Tmae	Granite of Central and Northern Etolin Island--Amphibole alkali granite, granite and alkali quartz syenite with minor amounts of quartz syenite to syenite. Massive, nonfoliated, lacks miarolitic cavities, homogeneous at outcrop scale. Petrographic features include: coarse graphic texture, distinct mafic mineralogy of sodic amphiboles, dark brown to reddish-brown biotite, and abundant iron-rich pyroxene. Accessory minerals include sphene, allanite, rare fluorite and magnetite.			
87	79DB139A	56°07'46" 132°35'01"	Petersburg A-2	Tmae	Biotite Alkali Granite--Medium-grained, miarolitic, seriate with accessory magnetite; C.I. 03; biotite altered to chlorite; perthitic and graphic intergrowths. Station near contact with hornfelsed graywacke and argillite.
88	80DB057A	56°10'13" 132°23'39"	Petersburg A-2	Tmae	Biotite-Amphibole Alkali Granite--Medium-grained, miarolitic, seriate with accessory sphene; C.I. 03; graphic and perthitic intergrowths.
89	79SK088A	56°09'01 132°22'35	Petersburg A-2	Tmae	Biotite-Hornblende Alkali Granite--Fine- to medium-grained, massive, seriate with accessory opaque minerals; C.I. 03; perthitic feldspar. Small basalt dike present.
90	81RK266A	56°01'50" 132°16'32"	Petersburg A-1	Tmae	Biotite-Hornblende Alkali-Quartz Syenite--Medium-grained, massive, equigranular with minor clinopyroxene and accessory sphene and magnetite . Perthitic feldspar. In sharp contact with Tmme. Small basalt dike present.
91	79DG114A	56°07'15" 132°34'10"	Petersburg A-2	Tmae	Biotite-Pyroxene Quartz Syenite--Medium- to coarse-grained, massive, seriate with accessory olivine, opaque minerals and allanite. C.I. 08. Mafic minerals altered to chlorite.
	Tmge	Granite of Central and Northern Etolin Island--Massive, nonfoliated; weathers distinctive pale orange to white; miarolitic cavities common; homogeneous at outcrop scale. Petrographic features: graphic and micrographic intergrowths; well developed microperthite; dark brown to greenish brown biotite and subordinate green to blue-green hornblende, which are often partially altered to chlorite; accessory minerals include sphene, allanite, and magnetite; locally, epidote fills miarolitic cavities.			
92	81RK268A	56°05'05" 132°17'00"	Petersburg A-1	Tmge	Biotite Granite--Fine- to medium-grained, inequigranular with accessory opaque minerals and sphene. C.I. 03; minor perthite, epidote in vugs. Minor alteration to chlorite.
93	81TM063C	56°06'56" 132°21'31"	Petersburg A-2	Tmge	Biotite Alkali Granite--Fine- to medium-grained, miarolitic, seriate with accessory sphene and magnetite. C.I. 02. Biotite altered to chlorite.
94	79SK151A	56°06'59" 132°28'28"	Petersburg A-2	Tmge	Biotite Granite--Epidote bearing, fine- to medium-grained, equigranular granite with minor alteration. C.I. 02; outcrop contains rounded, fine-grained hornblende-biotite inclusions with C.I. 15.
95	81RK271A	56°05'03" 132°21'41"	Petersburg A-2	Tmge	Biotite-Amphibole Alkali Granite--Medium-grained, equigranular; extremely altered. Aphanitic rhyolite dike exposed in outcrop.
96	81TM062B	56°07'18" 132°21'33"	Petersburg A-2	Tmge	Hornblende-Biotite Alkali Granite--Medium-grained, seriate, C.I. 03. Mafic minerals altered to chlorite. Sample collected near contact with quartz monzodiorite. Numerous alkali granite dikes and apophyses into quartz monzodiorite.
97	81TM064A	56°06'32" 132°22'02"	Petersburg A-2	Tmge	Clinopyroxene-Biotite-Amphibole Alkali Granite--Medium-grained, seriate, C.I. 03. Alteration of mafic minerals to chlorite and plagioclase, epidote fills vugs.
98	81TM065A	56°05'53" 132°21'33"	Petersburg A-2	Tmge	Biotite Alkali Granite/Granite--Medium-grained, seriate, C.I. 05. Biotite extremely altered to chlorite.
99	81SH043C	56°03'50" 132°18'22"	Petersburg A-1	Tmge	Biotite Alkali Granite/Granite--Medium-grained, inequigranular, C.I. 03. Biotite altered to chlorite. Cut by quartz and K-spar porphyry rhyolite dikes.

Table 2.--Petrographic descriptions of sample localities-Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
100	81TM061B	56°07'27" 132°21'47"	Petersburg A-2	Tmge	Biotite Alkali Granite--Medium-grained, seriate, C.I. 04. Sample is from a dike in quartz monzodiorite of unit Tmme.
101	78RS121B	56°16'36" 132°40'39"	Petersburg B-2	Tmge	Biotite Granite--Fine- to coarse-grained, inequigranular, and locally porphyritic; miarolitic with accessory hornblende, sphene and opaque minerals. C.I. 03. Perthitic and graphic intergrowths. K-spar has plagioclase cores. Biotite altered to chlorite.
102	82DB097A	56°16'27" 132°30'26"	Petersburg B-2	Tmge	Hornblende-Biotite Granite--Fine- to medium-grained, massive, equigranular with accessory sphene and opaque minerals. C.I. 03. Perthitic with K-spar rimming some plagioclase. Minor chlorite alteration of biotite and hornblende.
103	82DB263A	56°02'24" 132°06'00"	Petersburg A-1	Tmge	Hornblende-Biotite Granite--Seriate, dominantly medium-grained, massive, C.I. 08. Porphyritic with minor inclusions up to 5 mm. Accessory opaques and minor apatite. Some chlorite alteration from hornblende.
104	82SH107A	56°02'56" 132°11'19"	Petersburg A-1	Tmge	Amphibole-Biotite Granite--Fine- to medium-grained, equigranular, C.I. 02. Zoned plagioclase.
105	82RK703A	56°15'30" 132°32'02"	Petersburg B-2	Tmge	Hornblende-Biotite Granite--Medium- to coarse-grained, miarolitic, inequigranular with accessory sphene and opaques. C.I. 04. Graphic with K-spar rimming plagioclase. Mafic minerals are intergrown.
106	82SK149A	56°00'10" 132°11'50"	Petersburg A-1	Tmge	Biotite Granite--Fine- to medium-grained, sparsely porphyritic with plagioclase phenocrysts rimmed by K-spar, C.I. 02.
107	82DB095A	56°13'14" 132°28'47"	Petersburg A-2	Tmge	Hornblende-Biotite Granite--Medium- to coarse-grained, massive, seriate with accessory opaques and sphene. C.I. 06. Minor perthite, twinned plagioclase rimmed by K-spar. Minor chlorite and carbonate alteration.
108	79SH059A	56°05'34" 132°25'49"	Petersburg A-2	Tmge	Hornblende-Biotite Granite--Medium-grained, seriate, C.I. 05. Magnetite is abundant. Mafic minerals are fresh.
109	7AA114	56°16'55" 132°31'45"	Petersburg B-2	Tmge	Miarolitic Granite--(Amax sample--Age data only. Other descriptive information and geochemical values not included in this report.)
	Tmme	Migmatitic Granitic Rocks of Central and Northern Etolin Island--Migmatitic nature locally reflected by extensive diking and abundant inclusions. Massive and extremely heterogeneous. Petrographic features include zoned plagioclase locally rimmed by K-spar, clots of interstitial K-spar, and rare micrographic intergrowths. Mafic minerals are commonly intergrown; include abundant clinopyroxene and sparse orthopyroxene, which commonly occur as cores in hornblende, biotite, rare olivene and a secondary fibrous amphibole. Accessory minerals include sphene, apatite, magnetite and allanite.				
110	82DB260A	56°03'16" 132°07'04"	Petersburg A-1	Tmme	Hornblende-Biotite Granite--Medium-grained, porphyritic, C.I. 10. Accessory allanite. Granite in contact with agmatite.
111	81TM059B	56°00'29" 132°16'08"	Petersburg A-1	Tmme	Biotite-Hornblende Quartz Syenite--Fine- to medium-grained, inequigranular. C.I. 06. Occurs as dikes in fine-grained monzodiorite. Fresh rock.
112	79AF020A	56°09'18" 132°28'08"	Petersburg A-2	Tmme	Biotite-Hornblende Quartz Monzonite--Medium-grained, seriate to very sparsely porphyritic. C.I. 13. Moderate alteration of mafic minerals to chlorite. Cut by basalt dike.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
113	82KR090A	56°04'39" 132°14'46"	Petersburg A-1	Tmme	Hornblende-Biotite Quartz Monzodiorite--Fine- to medium-grained, equigranular. C.I. 25. Plagioclase has K-spar rims and sericite alteration; minor pyroxene. Very small biotite-rich tonalite inclusions present. Fresh mafics.
114	79SK083A	56°09'39" 132°29'51"	Petersburg A-2	Tmme	Pyroxene-bearing Biotite Monzonite--Very fine-grained and felsic matrix with phenocrysts of zoned plagioclase, clinopyroxene, biotite, potassium feldspar and blue-green amphibole. Hypidiomorphic, C.I. approximately 40. Rock is altered and is probably hypabyssal or a border zone.
115	81SK169C	56°11'02" 132°12'41"	Petersburg A-1	Tmme	Biotite Syenite--Medium-grained, inequigranular, C.I. 10, highly altered, zoned plagioclase. Rock intrudes a finer grained quartz syenite. Accessory opaques. Plagioclase highly seritized.
116	81TM061A	56°07'27" 132°21'47"	Petersburg A-2	Tmme	Hornblende-Biotite Quartz Monzodiorite--Fine- to medium-grained, porphyritic. C.I. 22. Biotite phenocrysts, K-spar clots and minor clinopyroxene. Some mafic mineral alteration to chlorite. Cut by dike of alkali granite.
117	82RK836B	56°02'04" 132°12'38"	Petersburg A-1	Tmme	Biotite-Hornblende Quartz Monzodiorite--Fine-grained, microporphyry. C.I. 20. Chlorite and epidote fill vugs.
118	82KR089A	56°03'25" 132°14'40"	Petersburg A-1	Tmme	Pyroxene-Biotite Granodiorite--Fine-grained, equigranular. C.I. 17. Minor hornblende, zoned plagioclase, irregular K-spar "clots". Thin random felsic segregation layers. Some alteration to chlorite.
119	82DB254A	56°01'51" 132°04'01"	Petersburg A-1	Tmme	Biotite Granite--Inequigranular, C.I. 08. Disseminated molybdenite, accessory sphene, and allanite. Chlorite alteration. Granite is leucosome of migmatite with a quartz monzonite melasome.
120	79RS131A	56°05'48" 132°28'10"	Petersburg A-2	Tmme	Hornblende-Pyroxene-Biotite Quartz Diorite--Medium-grained, equigranular. C.I. 19. Quartz monzonite dikes present.
121	82SK157A	56°01'49" 132°10'18"	Petersburg A-1	Tmme	Pyroxene-Hornblende-Biotite Quartz Monzodiorite--Medium-grained, equigranular, C.I. 30. Local agmatite with monzodiorite, also irregular quartz veins.
122	79RS068A	56°04'18" 132°25'15"	Petersburg A-2	Tmme	Pyroxene-Hornblende-Biotite Diorite--Medium-grained, equigranular. C.I. 37. Zoned plagioclase; hornblende with clinopyroxene cores. Secondary biotite, actinolite, and chlorite.
123	82DB262C	56°03'11" 132°05'41"	Petersburg A-1	Tmme	Biotite Quartz Diorite--Equigranular, C.I. 30. Quartz diorite is oldest unit in agmatite zone, cut by irregular porphyritic granite dikes and crosscutting granite aplite dikes.
124	82SK154A	56°02'13" 132°12'28"	Petersburg A-1	Tmme	Pyroxene-Biotite-Hornblende Gabbro--Medium-grained, subophitic, inequigranular. C.I. 35. Zoned plagioclase altering to sericite, mafic minerals altering to chlorite.
125	82KR086A	56°04'00" 132°01'44"	Petersburg A-1	Tmme	Gabbro--Fine- to medium-grained; subophitic in texture. C.I. 35. Magnesian olivine with iddingsite, red-brown biotite, pale amphibole, and opaques as reaction rims. Labradorite plagioclase is partly enclosed by clinopyroxene. Minor chloritization.
				Tmaz	Alkali Granite of Northwestern Etolin and Southeastern Zarembo Islands--Homogeneous, massive, nonfoliated, medium- to coarse-grained, with miarolitic cavities and local hornfels inclusions. Petrographic features include perthitic alkali feldspar, graphic and micrographic textures. Mafic minerals are altered to chlorite; they include green, blue-green and blue amphibole, dark brown to reddish-brown biotite, local green pyroxene; accessory minerals include magnetite, sphene, allanite, and apatite; locally epidote fills miarolitic cavities. Includes minor subophitic hornblende-biotite-pyroxene diorite similar to those of unit Tmme.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
126	78BG016A	56°16'43" 132°39'25"	Petersburg B-2	Tmaz	Biotite Granite--Medium-grained, equigranular. C.I. 04. Biotite extremely altered to chlorite. Chemical analysis by rapid rock method.
127	82SK004A	56°17'50" 132°39'00"	Petersburg B-2	Tmaz	Hornblende-Biotite Granite--Medium-grained, equigranular, C.I. 02. Abundant mafic alteration to chlorite.
128	79DB121A	56°20'53" 132°48'09"	Petersburg B-3	Tmaz	Amphibole-Biotite Granite--Fine- to medium-grained, C.I. 03. Anhedral to subhedral plagioclase is weakly zoned. Cut by rhyodacite and basalt dikes.
129	79DG098A	56°20'53" 132°48'09"	Petersburg B-3	Tmaz	Amphibole-Biotite Alkali Granite--Medium-grained, inequigranular, C.I. 03. Cut by altered basalt dike.
130	82RK700A	56°12'26" 132°34'32"	Petersburg A-2	Tmaz	Biotite-Hornblende Alkali Granite--Medium-grained, inequigranular, C.I. 04. Small hornfels inclusions. Mafic minerals fairly fresh.
131	79SK130A	56°19'26" 132°46'16"	Petersburg B-3	Tmaz	Biotite-Hornblende Alkali Granite--Fine- to medium-grained, glomeroporphyritic, C.I.. 04. Minor mafic alteration to chlorite. Fine-grained inclusions of intermediate composition.
	Tmqk	Heterogeneous Granitic Rocks of Central Kupreanof and Northeastern Kuiu Islands--Poorly exposed, nonfoliated, inequigranular to porphyritic, fine- to medium-grained. Miarolitic with microperthitic K-spar and micrographic intergrowths. Mafic minerals consist of brown biotite, green-brown to blue-green hornblende and rare pyroxene; accessory minerals include sphene, magnetite and allanite; epidote fills miarolitic cavities. Includes minor pyroxene-rich quartz monzodiorite and pyroxene-biotite diorite similar to rocks associated with unit Tmgk.			
132	BUDD-009	56°47'17" 133°44'01"	Petersburg D-6	Tmqk	Riebeckite-albite microgranite--Forms a sill or laccolith in Eocene sandstone and conglomerate. Fine-grained aggregate consists of riebeckite, quartz and feldspar. Feldspar shows no distinct twinning and is clouded by slight weathering. Riebeckite makes up about 15 percent of the rock. Method of chemical analysis not specified.
133	82KR014A	56°46'67" 133°43'06"	Petersburg D-6	Tmqk	Alkali Granite--Fine-grained; subequigranular. C.I. 6. Poorly developed granophyric texture. Angular intergrowths of alkali feldspar within equant anhedral quartz grains. Minor plagioclase; aegirine; accessory opaques present. Massive and homogeneous in outcrop.
134	82KR017A	56°48'01" 133°47'59"	Petersburg D-6	Tmqk	Aegirine Microgranite--Fine- to very fine-grained. C.I. 10. Hypidiomorphic granular. Anhedral quartz commonly intergrown with alkali feldspar. Subhedral plagioclase. Aegirine and rare alkali feldspar phenocrysts present. Minor iron staining.
135	82KR015A	56°47'13" 133°43'48"	Petersburg D-6	Tmqk	Aegirine Microgranite--Fine- to very fine-grained. C.I. 8. Hypidiomorphic subequigranular with graphic quartz, alkali feldspar intergrowths. Common aegirine and sparse aegirine-rimmed green-blue amphibole present. Quartz-filled miarolitic cavities common.
136	82KR016A	56°47'36" 133°43'07"	Petersburg D-6	Tmqk	Aegirine Microgranite--Fine- to very fine-grained; hypidiomorphic inequigranular. C.I. 6. Generally subhedral alkali feldspar laths up to 1 mm in length intergrown with micrographic quartz/alkali feldspar grains, plagioclase, and aegirine pyroxene. Accessory allanite and sparse green-blue amphibole present. Minor iron staining.
137	79RS155A	56°37'56" 133°24'49"	Petersburg C-5	Tmqk	Biotite-Hornblende Quartz Monzonite--Fine- to medium-grained, inequigranular, C.I. 08. Plagioclase laths are rimmed by K-spar. Moderate chlorite alteration. Inclusions of more mafic quartz monzonite to quartz diorite present.
138	82SH052A	56°36'06" 134°01'50"	Port Alexander C-1	Tmqk	Biotite-Hornblende Quartz Syenite--Medium-grained, inequigranular, C.I. 07. Twinned plagioclase laths rimmed by K-spar. Abundant mafic mineral alteration to chlorite. Inhomogeneous outcrop with variable textures and compositions.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
139	78DB223A	56°35'17" 133°59'40"	Petersburg C-6	Tmqk	Hornblende Quartz Monzonite--Fine- to medium-grained, porphyritic, C.I. 15. Plagioclase phenocrysts with sericite alteration and K-spar rims. Abundant chlorite alteration. Aplite dikes present.
140	80DB069A	56°35'46" 134°00'21"	Port Alexander C-1	Tmqk	Biotite-Hornblende Quartz Monzodiorite--Fine-grained, porphyritic, C.I. 08. Twinned and zoned plagioclase phenocrysts with sericite alteration. Abundant chlorite alteration. Very fine grained quartz diorite inclusions.
141	83SK476A	56°36'25" 133°22'37"	Petersburg C-5	Tmqk	Quartz Monzonite--Fine-grained; inequigranular with crowded plagioclase phenocrysts and 20 percent interstitial quartz, 10 percent ore, 5 percent chlorite. C.I. 25. Strongly altered.
142	82SH060A	56°32'00" 133°45'57"	Petersburg C-6	Tmqk	Chlorite Quartz Monzonite--Medium-grained, inequigranular, C.I. 12. Twinned plagioclase with sericite alteration. Mafic minerals completely altered to chlorite.
143	83DB202A	56°37'55" 133°36'37"	Petersburg C-5	Tmqk	Quartz Monzodiorite--Fine- to medium-grained; seriate textured. C.I. 20. Oligoclase to andesine plagioclase commonly rimmed by myrmykitic intergrowths. Subophitic clinopyroxene; hornblende replaced by chlorite; 5 percent opaques; accessory apatite. 7 percent secondary chlorite, epidote, and actinolite.
144	79DG039A	56°36'24" 133°45'42"	Petersburg C-6	Tmqk	Pyroxene-Amphibole Diorite--Fine-grained, sparsely porphyritic, C.I. 40. Scattered; zoned plagioclase phenocrysts. Moderate chlorite alteration.
145	79DB038A	56°36'09" 133°45'41"	Petersburg C-6	Tmqk	Amphibole Diorite--Medium-grained, seriate, C.I. 08. Zoned plagioclase laths. Pyroxene occurs as cores in hornblende. Abundant chlorite alteration.
146	80DB043B	56°32'24" 133°10'39"	Petersburg C-4	Tmqk	Quartz Latite--Aphanitic, homogeneous, somewhat porphyritic. Phenocrysts are plagioclase rimmed by pyroxene. Groundmass consists of 10 percent potassium feldspar, quartz plagioclase. Accessory pyrite, apatite, and epidote. Normative olivine. Possible dike.
	Tmgk	Granite of Northwestern Kuiu Island--Massive, homogeneous, equigranular to seriate, locally porphyritic; fine- to medium grained. Miarolitic cavities and fine-grained mafic inclusions. Petrographic features include microperthitic K-spar and local alteration of plagioclase. Mafic minerals include dark brown to red-brown biotite and brownish-green to blue-green hornblende. Accessory minerals ae sphene, magnetite and allanite. Mafic minerals alter to chlorite.			
147	82SH054B	56°44'39" 134°20'18"	Port Alexander C-2	Tmgk	Hornblende-Biotite Granite--Fine- to medium-grained, equigranular, C.I. 05. Granite has chilled margin against a gabbro field contact.
148	80DB111A	56°42'25" 134°18'17"	Port Alexander C-1	Tmgk	Biotite-Hornblende Granite--Medium-grained, equigranular, C.I. 06. Fine-grained diorite inclusions.
149	80RS051A	56°42'41" 134°18'52"	Port Alexander C-1	Tmgk	Hornblende-Biotite Granite--Fine- to medium-grained, inequigranular, C.I. 06. Minor chlorite alteration.
	Tmdk	Heterogeneous Dioritic Rocks of Northern Kuiu Island--Massive, seriate, medium- to coarse-grained extensively diked and locally migmatitic. Petrographic features include zoned plagioclase, K-spar clots, intergrown subophitic mafic minerals consisting of clinopyroxene, green-brown hornblende, minor biotite, local orthopyroxene and olivine; accessory minerals include sphene, apatite, magnetite, and allanite.			
150	80DB049A	56°42'16" 134°16'17"	Port Alexander C-1	Tmdk	Biotite Granite--Fine- to medium-grained, porphyritic, C.I. 08. Plagioclase phenocrysts altered to sericite. Miarolitic cavities locally filled with carbonate. Abundant alteration of biotite to chlorite. Granite is in sharp contact with diorite.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
151	82SH053A	56°41'08" 134°18'22"	Port Alexander C-1	Tmdk	Biotite-Hornblende Quartz Monzodiorite--Fine- to medium-grained, porphyritic, C.I. 12. Plagioclase phenocrysts are rimmed by K-spar. Minor pyroxene cores in hornblende.
152	82SH049A	56°43'30" 134°21'17"	Port Alexander C-2	Tmdk	Biotite-Pyroxene-Hornblende Diorite--Medium-grained, seriate, C.I. 35. Intergrown mafic minerals with abundant alteration to chlorite.
	Tmgb	Gabbros of Kuiu Island and Keku Islets--Medium-grained, dark gray fresh and weathered, olivine and clinpyroxene-bearing, locally deuterically altered. Forms gently dipping sills up to 500 m thick.			
153	80SK541A	56°48'23" 133°42'53"	Petersburg D-6	Tmgb	Microgabbro--Very fine-grained; seriate texture. C.I. 30. Abundant intergranular clinopyroxene and sparse hypersthene occur as glomerocrysts and scattered grains along with interstitial quartz, green-brown mica, accessory opaques and sphene.
154	82KR018A	56°48'20" 133°42'52'	Petersburg D-6	Tmgb	Microdiorite--Holocrystalline; fine-grained. C.I. 35. Porphyritic with intergranular groundmass. Slightly altered, zoned plagioclase phenocrysts with groundmass of plagioclase laths, granular clinopyroxene, interstitial quartz and acicular amphibole. Accessory magnetite; secondary calcite and(?) devitrified glass. Massive outcrop.
155	80SK532A	56°48'59" 133°45'48"	Petersburg D-6	Tmgb	Quartz Monzodiorite--Fine-grained. C.I. 30. Intergranular texture with clinopyroxene, hornblende, magnetite, and less common altered glass patches. Interstitial micrographic and granophyric potassium feldspar and quartz. Trace of apatite. Minor secondary green mica and chlorite.
156	80DB190A	56°51'59" 133°37'11"	Petersburg D-5	Tmgb	Microdiorite--Fine-grained. C.I. 40. Subophitic diabase texture. Mafics are clinopyroxene, hornblende, and opaques (pyrite noted in the field). Interstices and amygdules are filled with secondary celadonite(?), sphene, and calcite.
	Kwqo	Intrusive rocks of the Chilkat-Prince of Wales plutonic province exposed on Prince of Wales, Kosciusko and Kuiu Island. Hornblende quartz monzodiorite with minor tonalite, granodiorite, quartz diorite, diorite, quartz monzonite and monzodiorite. Massive to foliated, equigranular to locally porphyritic, medium grained, locally hornblende porphyritic local mafic inclusions. Petrographic features are seriate plagioclase, interstitial K-spar, occasional poikilitic K-spar clots, local pyroxene.			
157	80SK443A	56°05'00" 134°12'20"	Port Alexander A-1	Kwqo	Biotite Granodiorite--Medium-grained, hypidiomorphic-granular, inequigranular, C.I. 07. Interstitial material is very fine-grained quartz and potassium feldspar. Minor amount of accessory opaques, sphene and epidote. Plagioclase is highly sericitized.
158	79DB108A	56°12'36" 133°26'38"	Petersburg A-5	Kwqo	Hornblende Quartz Monzodiorite--Potassium feldspar porphyritic, seriate but dominantly medium-grained, C.I. 02. Accessory minerals include opaques and sphene. Plagioclase is altered, hornblende is chloritized.
159	79SK022A	56°10'30" 133°22'51"	Petersburg A-5	Kwqo	Hornblende Granodiorite--Medium-grained, hypidiomorphic-granular, C.I. 05. Minor opaques and euhedral sphene are accessory minerals. Minor plagioclase and hornblende alteration. Visible pyrite, chalcopyrite, bornite and clots of molybdenite to 1 cm at outcrop scale.
160	79RS018A	56°09'48" 133°24'15"	Petersburg A-5	Kwqo	Hornblende Tonalite--Foliated, porphyritic quartz, medium-grained, C.I. 05. Minor sphene and opaques. Biotite totally chloritized, hornblende slightly altered. Visible pyrite at outcrop scale.
161	78DB204A	56°16'01" 134°10'43"	Port Alexander B-1	Kwqo	Biotite-Hornblende Granodiorite--Medium-grained, hypidiomorphic-granular, C.I. 08. Euhedral sphene and opaques are accessory minerals. Plagioclase is highly sericitized, hornblende is dominantly engulfed by chloritization, and biotite is only slightly altered.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
162	79SK072A	56°13'20" 133°25'35"	Petersburg A-5	Kwqo	Hornblende Quartz Monzodiorite--Medium-grained, hypidiomorphic, equigranular, C.I. 06. Subhedral sphene and opaques are accessory minerals. Plagioclase is sericitized; hornblende is largely unaltered.
163	80RS015A	56°06'13" 134°11'18"	Port Alexander A-1	Kwqo	Biotite-Hornblende Granodiorite--Fine- to medium-grained. Hypidiomorphic granular, C.I. 12. Andesine to oligoclase plagioclase is oscillatory zoned and slightly sericitized. Thirty percent anhedral quartz along with anhedral to subhedral interstitial alkali feldspar present. Hornblende and biotite contain minor chlorite. Accessory sphene and magnetite.
164	80RS019A	56°07'01" 133°23'50"	Petersburg A-5	Kwqo	Hornblende Quartz Monzonite--Potassium feldspar porphyritic, medium-grained, hypidiomorphic. C.I. 07. Accessory magnetite. Hornblende slightly altered, plagioclase is altered. Very minor myrmekite intergrowths.
165	80DB077A	56°05'47" 134°10'33"	Port Alexander A-1	Kwqo	Biotite-Hornblende Quartz Monzodiorite--Medium-grained, inequigranular, serioporphyritic. C.I. 11. Disseminated magnetite and sphene up to 2 mm. Minor chlorite alteration in hornblende and biotite. Occasional myrmekite intergrowths.
166	82SH056B	56°07'49" 134°10'00"	Port Alexander A-1	Kwqo	Biotite-Hornblende Granodiorite--Foliated, equigranular, coarse-grained, C.I. 15. Seriate, well zoned plagioclase with minor alteration of the cores. Accessory minerals include opaques, apatite and diamond-shaped euhedral sphene.
167	79DB097A	56°05'59" 133°29'20"	Petersburg A-5	Kwqo	Biotite-Hornblende Quartz Monzodiorite--Slightly foliated, medium-grained, C.I. 09. Well zoned, seriate plagioclase, with minor sericite alteration. Accessory minerals include sphene and opaques. Biotite is commonly altered to chlorite.
168	82SH057A	56°08'25" 134°09'58"	Port Alexander A-1	Kwqo	Hornblende Quartz Diorite--Massive, plagioclase porphyritic, fine- to medium-grained. C.I. 20. Seriate, well zoned plagioclase with common sericite. Accessory opaques, sphene, and apatite. Rounded, fine-grained mafic inclusion present.
169	79DB031C	56°09'03" 133°26'53"	Petersburg A-5	Kwqo	Quartz Monzodiorite--Fine grained, equigranular, C.I. 13. No biotite, abundant pyroxene, minor hornblende. Accessory apatite and sphene. Sample is a 10-m-thick sill.
170	82SH055A	56°08'07" 134°09'05"	Port Alexander A-1	Kwqo	Biotite-Hornblende Granodiorite--Medium-grained, equigranular, massive, C.I. 17. Accessory minerals include opaques, apatite and sphene. Seriate, well zoned plagioclase with minor sericite alteration. Minor myrmekite intergrowths.
171	79RS017A	56°05'40" 133°21'34"	Petersburg A-5	Kwqo	Hornblende Quartz Monzodiorite--Foliated, inequigranular, hypidiomorphic, C.I. 15. Scattered magnetite and sphene. No biotite. Hornblende partly altered to chlorite. Some myrmekite intergrowths. Visible pyrite at outcrop.
172	79DB033A	56°07'23" 133°25'43"	Petersburg A-5	Kwqo	Hornblende Quartz Monzodiorite--Medium-grained, equigranular, C.I. 13. Minor pyroxene and biotite. Accessory apatite, sphene and opaques. Chlorite alteration in hornblende.
173	79DB032A	56°08'42" 133°26'21"	Petersburg A-5	Kwqo	Hornblende Quartz Diorite--Seriate, inequigranular, hypidiomorphic, C.I. 36. Minor accessory sphene and opaques. Abundant subhedral plagioclase with common myrmekite intergrowths.
174	79RS021A	56°11'08" 133°25'55"	Petersburg A-5	Kwqo	Hornblende-Biotite Quartz Diorite--Foliated, coarse-grained, equigranular, C.I. 32. Accessory minerals are magnetite, seen largely as inclusions, and minor amounts of sphene and clinopyroxene. Biotite clots of fresh unaltered flakes to 1.5 cm. Hornblende altered to chlorite, plagioclase shows minor alteration to sericite.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
175	79SH035A	56°00'35" 132°49'51"	Petersburg A-3	Kwqo	Biotite-Pyroxene Diorite--Medium-grained, equigranular, hypidiomorphic, C.I. 39. Minor hornblende and accessory magnetite and pyrite. Alteration of pyroxene to green amphibole. Plagioclase laths are altered to sericite.
176	80DB086A	56°14'00" 133°26'09"	Petersburg A-5	Kwqo	Biotite-Hornblende Quartz Monzodiorite--Medium-grained, inequigranular, C.I. 21. Unaltered biotite, chloritized hornblende, and pyroxene are accessory minerals. Minor amount of myrmekite.
177	79DB091A	56°02'04" 133°24'40"	Petersburg A-5	Kwqo	Hornblende Monzodiorite--Foliated, seriate, dominantly medium-grained, hypidio-, morphic. C.I. 26. Minor pyroxene, sphene, and opaques. Minor chloritization of hornblende; plagioclase altered.
178	80SK447A	56°06'37" 133°21'59"	Petersburg A-5	Kwqo	Hornblende-Pyroxene Gabbro--Slight foliation of mafics, agmatitic, pegmatitic, medium- to coarse-grained, C.I. 44. Accessory pyrite, magnetite and sphene. Minor amount of biotite. Pyroxene shows some alteration to chlorite.
	Ksm	Stephens Passage Group Rocks exposed near Pt. Hamilton on Kupreanof Island and north of Kadake Bay on Kuiu Island. Calcareous lithic wacke and arenite, thin bedded, fine- to very fine-grained with mudstone interbeds. Original textures and structures generally preserved.			
179	82SK046A	56°49'40" 134°00'02"	Port Alexander D-1	Ksm	Altered Basalt(?)--Common plagioclase and sparse relict pyroxene phenocrysts in a hyalopilitic groundmass. Plagioclase microlites are surrounded by altered pyroxene(?), devitrified glass, chlorite, sphene and calcite. Contains pyrite. Outcrop described as agglomerate; volcanic breccia.
	Tr hh	Hound Island Volcanics--Basaltic pillow breccia and pillow lava flows, andesitic volcanic breccia, aquagene tuff, tuff breccia and minor thin-bedded limestone. Basaltic flows are massive and are polygonally jointed with vesicular tops. Unit thickness ranges from a few 100's of m to more than 650 m.			
180	82SK051A	56°52'18" 134°00'48"	Port Alexander D-1	Tr hh	Altered Volcanic--Porphyritic. Abundant andesine phenocrysts up to 2.5 mm in length in a groundmass containing plagioclase laths, granular to subophitic clinopyroxene and up to 13 percent secondary chlorite, calcite, pumpellyite(?), and clay minerals. Forms massive flows in the field.
181	78ABg127A	56°52'53" 133°56'02"	Petersburg D-6	Tr hh	No thin section. Field notes indicate "pillow basalt?".
182	63S192a-2	56°52'28" 133°55'32"	Petersburg D-6	Tr hh	Basaltic Volcanic Glass--Green; undevitrified. Sample from central portions of glass fragments in an aquagene tuff. Glass fragments are angular; sand sized; veined and rimmed by partially devitrified brown glass (sample 184, this report). Sample contains 1 percent calcite cement. Information from Brew and Muffler (1966) and Muffler and others (1969). Chemical analysis by gravimetric method.
183	80SK599A	57°05'07" 134°00'29"	Sitka A-1	Tr hh	Altered Basalt--Amygdaloidal. Contains at least 25 percent secondary minerals. Dominantly subophitic with some intergranular clinopyroxene and intersertal devitrified glass. Secondary minerals include chlorite, pumpellyite, zeolite, and cryptocrystalline material. Sample from pillow-flow outcrop.
184	63S192a-1	56°52'28" 133°55'32"	Petersburg D-6	Tr hh	Basaltic Volcanic Glass--Brown; partially devitrified rims of green glass fragments (sample 182, this report) and brown glass fragments in an aquagene tuff. Sample is 95 percent brown glass; 40 percent of which contains crystallites and devitrified glass. Remaining 5 percent of sample contains calcite, plagioclase, and crystallites from the glass/cement boundaries. Information from Brew and Muffler (1966) and Muffler and others (1969). Chemical analysis by gravimetric method.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
185	78ABg129A	56°53'07" 133°56'22"	Petersburg D-6	TRhh	No thin section. Sample from "massive basalt flow".
186	78ABg126A	56°52'57" 133°56'49"	Petersburg D-6	TRhh	No thin section. Field notes indicate "andesite(?) breccia".
187	78ABg128B	56°53'06" 133°56'50"	Petersburg D-6	TRhh	No thin section. Field notes indicate "pillow basalt?".
188	82SK038A	56°51'55" 133°55'25"	Petersburg D-6	TRhh	Altered Basalt(?)--Strongly altered; amygdaloidal. Hyallophitic with interstitial green devitrified glass and abundant calcite-filled amygdules. Contains calcite pseudomorphs of (?) pyroxene and acicular plagioclase rosettes. Sample from 1 meter thick pillow flow.
	TRk	Keku volcanics exposed on the Cornwallis Peninsula and adjacent Keku Islets. Altered felsic flows and flow breccia; flow-banded, aphanatic, feldspar-microporphyritic. Minor mafic flows and flow breccia, volcanic wacke, volcanic 38 conglomerate, sandstone, polymictic pebble conglomerate, green aquagene tuff, and thick-bedded oolitic limestone.			
189	78ABg130A	56°53'46" 134°05'19"	Port Alexander D-1	TRk	No thin section. Field notes indicate "rhyolite".
190	78ABg131A	56°53'56" 134°06'00	Port Alexander D-1	TRk	No thin section. Field notes indicate "rhyolite tuff".
	Ktef	Intrusive rocks of Admiralty-Revillagigedo plutonic belt exposed on Etolin, Wrangell, Dry, Farm, and Sergief Islands--Hornblende-biotite tonalite, granodiorite, quartz monzodiorite and quartz diorite. Foliated to massive equigranular, dominantly medium-grained. Mineralogy includes complexly twinned, well zoned plagioclase, subhedral epidote and local garnet and pyroxene.			
191	82DB099A	56°17'02" 132°29'29"	Petersburg B-2	Ktef	Biotite Quartz Monzodiorite--Foliated, medium-grained, C.I. 15. Highly altered and weathered sample. Chlorite abundant, accessory apatite, opaques and secondary epidote. Plagioclase cloudy, altered, sericitized.
192	82PB087A	56°15'46" 132°08'58"	Petersburg B-1	Ktef	Biotite-Hornblende Tonalite--Medium-grained, inequigranular, C.I. 19. Outcrop is cut by minor quartz veins.
193	82SK100B	56°20'05" 132°07'08"	Petersburg B-1	Ktef	Hornblende-Biotite Tonalite--Foliated, fine- to medium-grained, inequigranular, C.I. 25, Sample collected at contact between Ktef and TKbs.
194	82RK777A	56°17'06" 132°06'23"	Petersburg B-1	Ktef	Hornblende-Biotite Granodiorite--Foliated, fine- to medium-grained, equigranular, C.I. 10. Minor primary epidote, sphene and apatite. Common myrmekite intergrowths.
195	81PB032A	56°16'12" 132°23'18"	Petersburg B-2	Ktef	Hornblende-Biotite Granodiorite--Well foliated, inequigranular, medium-grained, C.I. 25. Euhedral, primary epidote, minor clinozoisite, and accessory sphene and apatite. Minor sericite alteration, extensive biotite alteration to chlorite.
196	81RK319A	56°18'28" 132°19'58"	Petersburg B-1	Ktef	Hornblende-Biotite Granodiorite--Medium-grained, serioporphyritic plagioclase, C.I. 26, with accessory minerals of epidote, apatite, and sphene. Outcrop cut by very minor pegmatite dike.
197	82KR002A	56°29'52" 132°33'25"	Petersburg B-2	Ktef	Hornblende-Biotite Tonalite--Fine- to medium-grained, hypidiomorphic-granular, C.I. 25, with accessory minerals of clinozoisite and sphene. Plagioclase with sericite alteration.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
198	82DB205A	56°19'23" 132°10'01"	Petersburg B-1	Ktef	Biotite-Hornblende Tonalite--Medium-grained, porphyritic seriate, C.I. 31, with minor accessory sphene. Biotite is partially altered to chlorite.
199	82PB106A	56°15'14" 132°15'45"	Petersburg B-1	Ktef	Hornblende-Biotite Granodiorite--Foliated, medium-grained, porphyritic, C.I. 33, with minor epidote and pyroxene. Outcrop is cut by minor quartz veins.
200	82DB198A	56°35'04" 132°19'10"	Petersburg C-1	Ktef	Hornblende-Biotite Tonalite--Foliated, seriate, inequigranular, C.I. 25. Secondary sphene, epidote and clinozoisite. Minor amount of garnet and apatite. Some localized sericite alteration.
201	82PB086A	56°18'22" 132°09'09"	Petersburg B-1	Ktef	Biotite-Hornblende Tonalite--Foliated, fine- to medium-grained, porphyritic, C.I. 27, with minor epidote.
202	78RS097A	56°25'47" 132°01'34"	Petersburg B-1	Ktef	Biotite-Hornblende Quartz Diorite--Foliated, medium- to coarse-grained, poikilitic garnet phenocrysts, C.I. 20, with minor epidote and sphene. Minor biotite chloritization and common myrmekite intergrowths.
203	82SK090A	56°18'26" 132°14'41"	Petersburg B-1	Ktef	Biotite-Hornblende Tonalite--Foliated, inequigranular, serioporphyritic plagioclase, C.I. 25. Accessory apatite, sphene and minor secondary epidote. Minor amount of sericite.
204	81DB118A	56°38'26" 132°28'12"	Petersburg C-2	Ktef	Biotite-Hornblende Tonalite--Foliated, seriate, inequigranular, C.I. 20. Worm-like alteration(?) to epidote and clinozoisite. Common myrmekite intergrowth and minor sericite.
205	82SH134A	56°20'57" 132°20'19"	Petersburg B-2	Ktef	Biotite Tonalite--Massive, equigranular, medium-grained, C.I. 30. Common euhedral garnet, abundant clinozoisite, minor epidote. Accessory sphene and apatite. Plagioclase highly altered to sericite.
206	82SK089A	56°19'04" 132°14'40"	Petersburg B-1	Ktef	Hornblende-Biotite Tonalite--Foliated, medium-grained, inequigranular, serioporphyritic plagioclase, C.I. 26, with accessory garnet, epidote, and opaques.
207	82SK096A	56°34'10" 132°19'21"	Petersburg C-1	Ktef	Hornblende-Biotite Granodiorite--Foliated, inequigranular, fine-grained, C.I. 12. Accessory sphene. Secondary epidote and clinozoisite rimming hornblende and biotite. Minor primary epidote. Plagioclase highly altered to sericite.
208	82RK781A	56°18'29" 132°08'39"	Petersburg B-1	Ktef	Hornblende-Biotite Tonalite--Foliated, medium-grained, equigranular, seriate plagioclase with accessory epidote, pyroxene and sphene. Outcrop contains 1 percent elongate mafic inclusions and minor granodiorite dikes.
209	82SK142A	56°04'38" 132°08'50"	Petersburg A-1	Ktef	Hornblende-Biotite Tonalite--Foliated, fine- to medium-grained, inequigranular, C.I. 31, with accessory garnet, clinozoisite and apatite. Plagioclase has minor sericite alteration.
210	82SK124A	56°27'13" 132°19'53"	Petersburg B-1	Ktef	Hornblende-Biotite Tonalite--Medium-grained, inequigranular, C.I. 20, with primary epidote and accessory sphene.
211	81TM002A	56°35'07" 132°44'38"	Petersburg C-2	Ktef	Hornblende-Biotite Tonalite--Medium- to coarse-grained, serioporphyritic, C.I. 30, with epidote as inclusions in biotite. Plagioclase shows minor alteration to sericite.
212	78RS132A	56°15'45" 132°20'33"	Petersburg B-2	Ktef	Biotite-Hornblende Tonalite--Foliated, inequigranular, plagioclase porphyritic, hypidiomorphic. Accessory sphene, apatite, opaques, secondary epidote, and clinozoisite. Myrmekite intergrowths common. Minor amount of sericite.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
213	82RK779A	56°16'55" 132°07'50"	Petersburg B-1	Ktef	Hornblende-Biotite Granodiorite--Weak lineation, equigranular, fine- to medium-grained, C.I. 25. Minor accessory minerals of sphene, apatite, secondary epidote and opaques. No alteration or intergrowths.
214	78DB113A	56°31'51" 133°19'12"	Petersburg C-1	Ktef	Hornblende-Biotite Quartz Diorite--Slightly foliated, medium grained, hypidiomorphic-granular, C.I. 40. Sphene, clinozoisite, apatite and sparse garnet are accessory minerals. Plagioclase occurs as phenocrysts, mostly as subhedral laths. Sericitization common, biotite and hornblende intergrown.
215	82PB072A	56°16'43" 132°00'14"	Petersburg B-1	Ktef	Hornblende-Biotite Quartz Diorite--Foliated, medium- to coarse-grained, porphyritic, C.I. 39, with primary epidote and accessory sphene and apatite.
216	82KR065A	56°16'36" 132°18'23"	Petersburg B-1	Ktef	Biotite-Hornblende Tonalite--Slightly foliated, equigranular, C.I. 30. Accessory sphene, minor opaques, apatite and secondary epidote. Minor alteration; few myrmekite intergrowths.
217	82DB206A	56°16'06" 132°09'23"	Petersburg B-1	Ktef	Hornblende-Biotite Tonalite--Foliated, equigranular, medium-grained, C.I. 35. Accessory sphene and opaques. Minor biotite alteration to chlorite.
218	78RM295A	56°12'25" 132°20'32"	Petersburg A-2	Ktef	Garnet-Bearing Biotite Tonalite--Foliated, inequigranular, hypidiomorphic-granular, C.I. 25. Abundant accessory minerals; subhedral garnet, well zoned, primary and secondary epidote, zoned clinozoisite, minor apatite and secondary twinned calcite. No alteration.
219	82SK145A	56°04'34" 132°11'11"	Petersburg A-1	Ktef	Biotite-Hornblende Quartz Diorite--Foliated, fine- to medium-grained, inequigranular to porphyritic, C.I. 45, with garnet, clinozoisite and accessory apatite and sphene. Minor amounts of seritization and biotite altering to chlorite. Outcrop contains schlieren and xenoliths of country rock.
220	82PB124A	56°07'58" 132°14'44"	Petersburg A-1	Ktef	Biotite-Hornblende Quartz Diorite--Foliated, medium- to coarse-grained, serioporphyritic, C.I. 42, with garnet, epidote and clinozoisite. Abundant plagioclase with sericite alteration. Hornblende and biotite altering to chlorite.
221	82KR064A	56°16'20" 132°14'00"	Petersburg B-1	Ktef	Biotite-Hornblende Tonalite--Well foliated, medium-grained, inequigranular, C.I. 42, with epidote, sphene and opaques. Occasional biotite-rich areas up to 8 cm long.
222	82DB189A	56°21'35" 132°09'54"	Petersburg B-1	Ktef	Biotite-Hornblende Quartz Diorite--Medium-grained, seriate, C.I. 48. Minor sphene, epidote and clinozoisite. Very altered plagioclase.
223	82PB122A	56°05'54" 132°13'12"	Petersburg A-1	Ktef	Biotite-Hornblende Monzodiorite--Foliated, fine- to medium-grained, C.I. 50, accessory sphene and opaques. Abundant epidote occurs mostly as inclusions in plagioclase, biotite and hornblende. Biotite and hornblende intergrown and seen as clumps. Biotite altering to chlorite.
	Ktif	Intrusive rocks of Admiralty-Revillagigedo plutonic belt exposed on Mitkof, Zarembo and Woronkofski Islands--Hornblende-biotite tonalite, granodiorite, quartz monzodiorite and quartz diorite; equigranular to sparsely porphyritic, weakly foliated, medium-grained. Local ultramafic inclusions. Mineralogic features include zoned, seriate plagioclase, mafic clumps, subhedral epidote and clinozoisite and rare garnet.			
224	82PB003A	56°25'36" 133°38'28"	Petersburg B-2	Ktif	Biotite-Hornblende Granodiorite--Foliated, medium-grained, inequigranular, C.I. 20, with accessory allanite, and apatite. Minor epidote as inclusions in biotite. Potassium feldspar is commonly poikilitic.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
225	78BG030A	56°22'26" 132°38'53"	Petersburg B-2	Ktif	Hornblende-Biotite Tonalite--Medium- to coarse-grained, serioporphyritic, C.I. 18, with primary and secondary epidote and accessory sphene, magnetite and apatite. Minor amount of plagioclase altering to sericite. Chemical analysis by rapid rock method.
226	78RS118A	56°22'57" 132°33'35"	Petersburg B-2	Ktif	Biotite-Hornblende Tonalite--Foliated, equigranular, medium-grained, C.I. 25. Common apatite inclusions; epidote and clinozoisite alteration of hornblende, along with minor opaques. Plagioclase highly altered with common myrmekite intergrowths.
227	81DB129A	56°35'59" 132°36'33"	Petersburg C-2	Ktif	Hornblende-Biotite Tonalite--Foliated, inequigranular, medium- to coarse-grained, C.I. 25. Crowded plagioclase porphyritic. Euhedral to subhedral epidote as inclusions in biotite.
228	79DB192A	56°39'30" 132°45'16"	Petersburg C-3	Ktif	Garnet-Bearing Hornblende-Biotite Tonalite--Foliated, fine-grained, C.I. 28, with accessory sphene and ragged primary epidote. Plagioclase shows minor alteration to muscovite and clay.
229	79RS174A	56°33'18" 132°54'59"	Petersburg C-3	Ktif	Biotite-Hornblende Tonalite--Foliated, slightly porphyritic plagioclase, medium- to coarse-grained, C.I. 24. Hornblende with sieve texture, primary epidote; accessory apatite and sphene.
230	79RS188A	56°40'09" 132°42'55"	Petersburg C-3	Ktif	Sphene-Bearing Hornblende-Biotite Tonalite--Foliated, equigranular, medium grained, C.I. 28. Minor hornblende with sieve texture. Accessory garnet, opaques, and primary and secondary epidote. Myrmekite intergrowths.
231	78BG039A	56°27'00" 132°47'28"	Petersburg B-3	Ktif	Biotite-Hornblende Quartz Monzonite--Porphyritic inequigranular. C.I. 15. Andesine plagioclase ranges from mostly seriate to sparse 1.5 cm. phenocrysts. Microcline forms large (2 cm.) anhedral oikocrysts. Interstitial quartz, hornblende, and partially chloritized biotite present. Accessory magnetite, apatite, and sphene.
232	79DB191A	56°38'39" 132°44'07"	Petersburg C-3	Ktif	Biotite-Hornblende Granodiorite--Foliated, inequigranular, medium-grained, C.I. 40. Highly altered, fractured rock. Common secondary epidote, minor amounts of sphene, opaques, and clinozoisite. Plagioclase highly altered to sericite. Common myrmekite intergrowths.
233	82SH005A	56°27'25" 132°45'04"	Petersburg B-3	Ktif	Hornblende Granodiorite--Foliated, inequigranular, seriate, C.I. 29. Minor biotite. Euhedral sphene, minor apatite and opaques, common secondary epidote. Plagioclase highly altered. Myrmekite intergrowths common.
234	82SH004A	56°26'47" 132°41'04"	Petersburg B-3	Ktif	Hornblende Granodiorite--Massive, serioporphyritic, C.I. 21. Accessory minerals are euhedral sphene, apatite, opaques and primary epidote. Plagioclase is highly altered to sericite, and contains minor epidote inclusions. Hornblende is altered to chlorite.
235	78RM378A	56°25'27" 132°43'00"	Petersburg B-3	Ktif	Hornblende-Biotite Tonalite--Medium-grained, seriate, inequigranular, C.I. 25. Euhedral sphene, common epidote and clinozoisite. Plagioclase is highly sericitized. Myrmekite common.
236	78RM376A	56°25'27" 132°49'44"	Petersburg B-3	Ktif	Epidote-Hornblende Quartz Diorite--Medium-grained, hypidiomorphic-granular. Minor highly altered biotite; hornblende highly chloritized. Abundant primary and secondary epidote. Plagioclase highly sericitized. Minor myrmekite intergrowths.
237	82SH006A	56°27'23" 132°52'13"	Petersburg B-3	Ktif	Epidote-Hornblende Quartz Monzodiorite--Seriate, massive, hypidiomorphic-granular, C.I. 24. Accessory minerals include subhedral sphene, and epidote. Plagioclase highly altered, hornblende and biotite both altered to chlorite.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
238	82RK727A	56°58'34" 133°15'41"	Petersburg D-4	Ktif	Biotite-Hornblende Monzodiorite--Foliated, inequigranular, medium- to coarse-grained, C.I. 50. Seriate plagioclase with minor myrmekite intergrowths. Abundant primary and secondary epidote; accessory sphene, opaques and apatite.
	Ktop	Intrusive rocks of Admiralty-Revillagigedo plutonic belt exposed on Lindenberg Peninsula, Mitkof, Rynda, Kadin, Woronkofski, and Wrangell Islands. Hornblende-biotite tonalite is porphyritic, locally foliated; medium- to coarse-grained. Rare hornfels inclusions. Petrographic features include seriate plagioclase, epidote and zoned garnet, and clumped mafics.			
239	82KR096A	56°00'47" 132°03'22"	Petersburg A-1	Ktop	Hornblende-Biotite Tonalite--Massive, seriporphyritic, hypidiomorphic-granular, C.I. 18. Garnet, apatite and primary epidote are accessory minerals.
240	82KR074A	56°29'40" 132°22'10"	Petersburg B-2	Ktop	Hornblende-Biotite Quartz Diorite--Serioporphyritic plagioclase, medium-grained, C.I. 28. Accessory sphene, opaques, and common clinozoisite. Plagioclase highly altered to sericite. Some myrmekite intergrowths.
241	82DB103A	56°32'00" 132°26'29"	Petersburg C-2	Ktop	Hornblende-Biotite Tonalite--Serioporphyritic, medium- to coarse-grained, C.I. 35. Subhedral sphene, allanite with biotite and hornblende inclusions, subhedral garnet, and clinozoisite are accessory minerals. Plagioclase grains are subhedral laths with epidote inclusions.
242	82PB125A	56°00'18" 132°05'29"	Petersburg A-1	Ktop	Biotite-Hornblende Diorite--Porphyritic garnet, inequigranular, fine- to coarse-grained. C.I. 60. Minor accessory minerals of opaques, sphene and apatite. Plagioclase highly altered to sericite.
	Ktoc	Intrusive rocks of Admiralty-Revillagigedo plutonic belt exposed on northern Wrangell, Mitkof, Woronkofski and Etolin Islands--Garnet-biotite tonalite and minor granodiorite; nonfoliated crowded plagioclase rock, inequigranular to porphyritic, fine- to medium-grained. Mineralogy includes garnet, clinozoisite and local muscovite.			
243	82DB222A	56°28'24" 132°21'26"	Petersburg B-2	Ktoc	Garnet-Bearing Biotite Granodiorite--Equigranular, fine-grained, C.I. 15. Sphene, garnet, mostly as inclusions, and primary epidote are accessory minerals. Plagioclase is subhedral and partly altered to sericite. Minor amount of muscovite seen as inclusions in plagioclase.
244	82KR074C	56°29'40" 132°22'10"	Petersburg B-2	Ktoc	Garnet-Bearing Biotite Tonalite--Crowded plagioclase porphyry, inequigranular, C.I. 16. Euhedral, inequigranular garnet. Accessory clinozoisite, and apatite. Plagioclase well altered.
245	82DB236C	56°24'28" 132°14'11"	Petersburg B-1	Ktoc	Garnet-Bearing Biotite Tonalite--Equigranular, fine-grained, C.I. 22. Less than .5 percent opaques, euhedral garnet, and epidote constitute the accessory minerals. Epidote occurs as inclusions in plagioclase and garnet. Primary muscovite.
246	82PB098A	56°27'43" 132°17'30"	Petersburg B-1	Ktoc	Hornblende-Biotite Tonalite--Serioporphyritic plagioclase, inequigranular, fine- to medium-grained, C.I. 12. Both primary and secondary epidote and clinozoisite, local secondary muscovite, and minor amounts of apatite, sphene and garnet. Plagioclase highly altered to sericite.
247	81SK135A	56°40'57" 132°29'55"	Petersburg C-2	Ktoc	Garnet-Bearing Biotite Tonalite--Crowded plagioclase porphyry, inequigranular, C.I. 21. Disseminated garnet to 2 mm. Accessory clinozoisite, sphene and secondary muscovite. Minor biotite alteration to chlorite.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
248	82PB100A	56°26'39" 132°14'49"	Petersburg B-1	Ktoc	Biotite Tonalite--Serioporphyritic plagioclase, inequigranular, fine- to medium-grained, C.I. 20. Abundant clinozoisite; minor epidote present. Apatite and sphene common as inclusions. Euhedral garnet occurs as inclusions in biotite. Minor myrmekite intergrowths present.
249	82RK806A	56°25'52" 132°12'00"	Petersburg B-1	Ktoc	Garnet-Bearing Biotite-Hornblende Quartz Diorite--Porphyritic garnet, inequigranular, fine- to medium-grained, C.I. 25. Crowded plagioclase with minor sericite alteration. Accessory sphene, opaques and clinozoisite.
	Kqop	Intrusive rocks of Admiralty-Revillagigedo plutonic belt exposed on Lindenberg Peninsula, Kupreanof Island, southwestern Mitkof, Woronofski and northern Zarembo Island. Biotite-epidote-hornblende quartz monzodiorite; locally foliated, plagioclase porphyritic with fine- to medium-grained groundmass. Mineralogical features include primary and secondary epidote, sericite alteration of plagioclase cores, and euhedral hornblende.			
250	80SK129A	56°48'41" 133°06'48"	Petersburg D-4	Kqop	Hornblende-Biotite Granodiorite--Equigranular, hypidiomorphic-granular, medium-grained, C.I. 18. Crowded plagioclase with minor alteration. Minor epidote and accessory apatite and opaques.
251	79AF141A	56°50'53" 132°46'37"	Petersburg D-3	Kqop	Biotite-Hornblende Granodiorite-Serioporphyritic plagioclase, medium-grained, C.I. 25. Accessory apatite, sphene, euhedral garnet, and epidote. Plagioclase is well altered to sericite.
252	82RK710A	56°23'09" 132°46'40"	Petersburg B-3	Kqop	Hornblende-Biotite Granodiorite--Serioporphyritic plagioclase up to 9 mm, massive, C.I. 21. Accessory minerals include opaques, euhedral sphene, zoned allanite, and euhedral to subhedral epidote seen largely as inclusions in plagioclase. Plagioclase contains minor sericite alteration. Biotite partly altered to chlorite.
253	80SK148A	56°42'36" 132°57'27"	Petersburg C-3	Kqop	Biotite-Hornblende Quartz Diorite--Foliated, tabular to equant porphyritic plagioclase, medium-grained, C.I. 26. Disseminated pyrite and chalcopyrite. Secondary and primary epidote, accessory apatite and sphene.
254	78RM254A	56°46'08" 133°13'47"	Petersburg D-4	Kqop	Biotite-Hornblende Quartz Diorite--Foliated, porphyritic, medium-grained, C.I. 20. Primary and secondary epidote, accessory sphene, apatite and opaques. Myrmekite intergrowths and plagioclase with sericite alteration.
255	81SH056A	56°47'26" 132°54'20"	Petersburg D-3	Kqop	Biotite-Hornblende Granodiorite--Slightly foliated, seriate, medium-grained, C.I. 25. Accessory sphene, apatite, opaques and secondary epidote. Myrmekite intergrowths. Plagioclase altering to clay and muscovite.
256	80SK594A	56°52'27" 133°02'23"	Petersburg D-4	Kqop	Biotite-Hornblende Quartz Diorite--Porphyritic plagioclase, medium-grained, C.I. 28. Minor amounts of garnet, sphene, and epidote. Plagioclase altering to muscovite and clay.
257	82PB014A	56°44'02" 133°01'54"	Petersburg C-4	Kqop	Biotite-Hornblende Quartz Diorite--Serioporphyritic plagioclase, medium-grained, C.I. 28. Zoned plagioclase. Accessory sphene and allanite; minor epidote occurs as inclusions.
258	78SH053A	56°31'06" 133°04'45"	Petersburg C-4	Kqop	Hornblende Quartz Diorite--Porphyritic, inequigranular, C.I. 30. Large, zoned phenocrysts of plagioclase up to 1.5 cm. Fine-grained quartz, potassium feldspar, and plagioclase. Minor amounts of epidote, sphene and opaques.
259	82PB023A	56°42'55" 133°01'45"	Petersburg C-4	Kqop	Biotite-Hornblende Quartz Diorite--Seriopyritic plagioclase, very fine- to fine-grained groundmass of mafics, quartz and potassium feldspar, C.I. 48. Primary epidote, accessory sphene, apatite and opaques. Plagioclase shows minor to moderate alteration.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
260	78AF142C	56°23'20" 132°24'32"	Petersburg B-2	Kqop	Biotite Quartz Diorite--Porphyritic plagioclase, medium-grained, C.I. 40. Zoned primary epidote and abundant clinozoisite. Plagioclase contains abundant inclusions and is altered. Few large euhedral opaques present.
	Ktgp	Intrusive rocks of Admiralty-Revillagigedo plutonic belt exposed on Etolin Island. Biotite tonalite, quartz diorite and granodiorite are foliated, porphyritic, and medium- to coarse-grained. Features include complexly twinned plagioclase, chloritized biotite, absence of hornblende, and the presence of garnet.			
261	78RS082A	56°27'42" 132°03'03"	Petersburg B-1	Ktgp	Garnet-bearing Biotite Tonalite--Foliated, porphyritic, medium- to coarse-grained, C.I. 10. Clinozoisite, sphene, garnet and opaques are the accessory minerals. Plagioclase commonly altered to sericite, biotite partly altered to chlorite.
262	78RM258A	56°26'47" 132°04'26"	Petersburg B-1	Ktgp	Garnet-bearing Biotite Tonalite--Foliated, porphyritic, inequigranular, C.I. 13. Anhedral clinozoisite, sphene as inclusions, garnet, and apatite are the accessory minerals. Plagioclase is generally fresh with minor myrmekite intergrowths, biotite shows minor chloritization.
263	81DB161A	56°00'00" 132°15'27"	Petersburg A-1	Ktgp	Biotite-Hornblende Quartz Monzodiorite--Foliated, graphic intergrowths common, few miarolitic cavities, seriate, C.I. 37. Mafic minerals include clinopyroxene and minor amounts of secondary and primary epidote. Accessory apatite, sphene, zircon and opaques. Minor chlorite alteration. Mapped incorrectly as Tmme in Brew and others (1984).
264	82SK146A	56°00'00" 132°12'12"	Petersburg A-1	Ktgp	Biotite-Hornblende Quartz Diorite--Medium-grained, hypidiomorphic, inequigranular, C.I. 47. Accessory apatite, sphene, magnetite and pyrite. Plagioclase has some secondary alteration to sericite. Mapped incorrectly as Tmme in Brew and others (1984).
	Kqo	Intrusive rocks of Admiralty-Revillagigedo plutonic belt exposed on northern Lindenberg Peninsula and central Mitkof Island. Pyroxene-biotite-hornblende quartz monzodiorite, quartz diorite, monzodiorite and diorite. Locally foliated, equigranular, medium-grained. Mafic inclusions, pegmatitic veins and diabase dikes present. Petrographic features include poikilitic hornblende, twinned, zoned and crowded plagioclase, and hornblende as the dominant mafic mineral.			
265	82RK712A	56°41'28" 132°47'20"	Petersburg C-3	Kqo	Pyroxene-Biotite-Hornblende Quartz Monzodiorite--Foliated, equigranular to biotite porphyritic, C.I. 46. Accessory sphene, opaques and sparse epidote. Pyroxene is partially altered.
266	82RK725A	56°58'40" 133°09'42"	Petersburg D-4	Kqo	Biotite-Pyroxene Quartz Monzodiorite--Massive, fine- to very fine-grained, equigranular. C.I. 40. Accessory opaques intergrown with pyroxene. Myrmekite intergrowths.
267	80RS145A	56°54'38" 133°01'12"	Petersburg D-4	Kqo	Biotite-Hornblende Quartz Diorite--Foliated, porphyritic plagioclase, seriate, C.I. 42. Primary and secondary epidote, minor pyroxene and accessory apatite, opaques and zoisite.
268	80SK587A	56°53'54" 133°02'52"	Petersburg D-4	Kqo	Hornblende Quartz Monzodiorite--Medium-grained, hypidiomorphic, inequigranular, C.I. 51. Primary and secondary epidote, minor pyroxene, and accessory sphene, apatite and garnet. Most plagioclase contains clay and muscovite alteration.
269	80SK128A	56°55'13" 133°01'12"	Petersburg D-4	Kqo	Hornblende-Biotite Quartz Monzodiorite--Foliated, serioporphyritic plagioclase, inequigranular, C.I. 49. Other minerals are pyroxene, sphene, opaques and epidote. Minor alteration of plagioclase.
	Kdi	Intrusive rocks of Admiralty-Revillagigedo plutonic belt exposed on Woewodski Island. Hornblende diorite, quartz diorite, and minor tonalite. Medium- to very coarse-grained, equigranular; weathers light to dark green; highly altered to epidote- and chlorite-rich rocks.			

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
270	79SH113A	56°33'25" 133°04'26"	Petersburg C-4	Kdi	Meta Quartz Diorite--Greenschist facies mineralogy; non-foliated; relict igneous texture. Approximately 95 percent recrystallized. Actinolite, biotite, and chlorite have replaced hornblende; plagioclase has recrystallized to epidote and chlorite; magnetite has leucoxene rims.
	Kmgf	Varied migmatitic rocks, mainly agmatite and irregular banded gneiss. Exposed in zones between hornblende-biotite tonalite and granodiorite unit (Ktef), and the metamorphosed Stephens Passage Group. Granitic leucosomes resemble main rock types in unit Ktef; the metamorphic melasomes are fine- to medium-grained biotite hornfels, schists and semischists.			
271	82SK144A	56°04'19" 132°10'03"	Petersburg A-1	Kmgf	Biotite-Hornblende Quartz Diorite--Fine- to medium-grained. Inequigranular seriate. C.I. 55. Two periods of mineral growth indicated: zones of opaque inclusions within hornblende; two size populations of biotite. Anhedral to subhedral plagioclase, interstitial quartz, and accessory apatite and sphene.
	Ksg	Metamorphosed Stephens Passage Group Rocks exposed on Lindenburg Peninsula and Kupreanof Island--Greenstone and greenschist; subgreenschist to greenschist facies rocks, dominantly fine- to medium-grained, poorly foliated. Some relict pyroxene-phenocryst-bearing epidote-albite-chlorite greenstone.			
272	71ABg247	56°12'22" 132°25'35"	Petersburg A-2	Ksg	Metavolcanic--Semischist texture; greenschist-facies metamorphosed. Metamorphic amphibole pseudomorphs after volcanic hornblende and(?) clinopyroxene; brown biotite and epidote secondary from hornblende. Fine-grained actinolite, clinozoisite, patches of plagioclase, and sparse quartz make up partially sheared groundmass. Chemical analysis by rapid rock method.
273	78AF127B	56°44'21" 133°05'00"	Petersburg C-4	Ksg	Relict-Augite Greenstone--Massive, with greenschist facies secondary mineralogy. Relict augite phenocrysts (av. 2.5 mm.) have been replaced by aggregates of actinolite and green biotite. Matrix contains clinozoisite, biotite, actinolite, and xenomorphic plagioclase. Accessory sphene. Outcrop shows local tuff-breccia fragmental texture. Chemical analysis by rapid rock method.
274	78AF127A	56°44'21" 133°05'00"	Petersburg C-4	Ksg	Relict-Augite Greenstone--30 percent relict phenocrysts now replaced by actinolite, biotite, and calcite. Actinolite, biotite, and epidote form glomeroblasts within a fine-grained granular matrix of the same minerals. Accessory sphene.
	Kss	Metamorphosed Stephens Passage Group Rocks--Schist and hornfels; greenschist and albite-epidote to hornblende-hornfels facies rocks, derived from turbidites and related rocks. Original textures and structures generally preserved. Locally foliated, common compositional layering and some clearcut thermal aureoles.			
275	82KR055A	56°21'23" 132°17'53"	Petersburg B-1	Kss	Biotite-Quartz-Feldspar Semischist--Very fine-grained; foliated. Porphyroclasts of plagioclase and quartz are wrapped by a foliation of elongate clots of biotite, chlorite, and aligned quartz. Idioblastic garnet present. Inferred graywacke protolith.
276	81SK137A	56°41'30" 132°41'08"	Petersburg C-3	Kss	Biotite-Feldspar-Quartz Semischist--Fine- to medium-grained; hornfelsic and foliated in texture. Greenschist facies metamorphic minerals include: albite, quartz, biotite, clinozoisite, chlorite, and white mica along with carbonaceous matter.
277	82KR064B	56°16'20" 132°14'00"	Petersburg B-1	Kss	Hornblende-Quartz-Feldspar Hornfels--Fine-grained; layered, with granoblastic leucocratic minerals. Greenschist/amphibolite facies metamorphic minerals include: plagioclase, quartz, hornblende, poikiloblastic garnet, clinozoisite and sphene. Thin section contains 0.6 mm. vein of calcite, chlorite, and quartz. Sample from 0.25-meter-thick inclusion in a pluton.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
278	82KR053B	56°22'13" 132°16'29"	Petersburg B-1	Kss	Feldspar-Calcite-Quartz Semischist--Fine- to medium-grained, poikiloblastic biotite; moderately well foliated. Quartz and calcite dominant with very fine-grained white mica laths parallel to foliation. Accessory sphene and opaques.
279	82KR051A	56°22'55" 132°15'23"	Petersburg B-1	Kss	Garnetiferous, Quartz-rich Phyllite--Very fine- to fine-grained; well foliated; porphyroblastic. Common 1 mm. garnet porphyroblasts in a chlorite-muscovite-quartz-rich matrix. Contains elongate quartz-chlorite-pyrite(?) grains oriented at angle to foliation. Accessory clinozoisite, sphene, and tourmaline. Carbonaceous layers may define sedimentary layering.
280	78RM290A	56°20'05" 132°24'05"	Petersburg B-2	Kss	Relict-Augite Metavolcanic--Very fine-grained matrix of granular to tabular epidote, quartz, subidioblastic biotite, actinolite, chlorite, and sphene. Pyroxene phenocrysts have been replaced by actinolite, biotite, quartz and epidote. Clacite patches and stringers common. Crudely foliated.
	Ksp	Metamorphosed Stephens Passage Group Rocks--Subgreenschist and greenschist facies phyllites and graywackes. Dominantly very fine-grained, dark-gray weathering, carbonaceous chlorite-quartz-feldspar phyllite; some interlayered graywacke; local layers and lenses of light- to dark-green weathering chlorite-rich phyllite.			
281	71ABg260	56°38'04" 132°56'50"	Petersburg C-3	Ksp	Metavolcanic--Very fine-grained foliated matrix with actinolite pseudomorphs of volcanic pyroxene(?). Greenschist facies metamorphic minerals include: actinolite, epidote, plagioclase, green biotite, chlorite, and minor quartz. Chemical analysis by rapid rock method.
282	80SK150A	56°41'33" 133°01'01"	Petersburg C-4	Ksp	Epidote-Chlorite Phyllite--Fine- to coarse-grained, foliated, and banded. Approximately 5 percent disseminated euhedral pyrite lineated along foliation. Minor pyroxene.
	Kuk	Intrusive rocks of Klukwan-Duke plutonic belt exposed at Kane Peak, northern Lindenberg Peninsula. Ultramafic complex of a) wehrlite - massive to locally layered, medium-grained, partially serpentinized, scattered inclusions of clinopyroxene; b) dunite - grades from wehrlite, partially serpentinized, medium grained, usually gray to dark gray; c) olivine pyroxenite - massive to locally layered, medium-grained. Forms narrow discontinuous zone around margin.			
283	80SK580A	56°59'40" 133°04'57"	Petersburg D-4	Kuk	Olivine Pyroxenite--Medium-grained, hypidiomorphic-granular, inequigranular, C.I. 90. Dominant pyroxene is clinopyroxene. Disseminated accessory pyrite. Minor biotite, moderately altered plagioclase and secondary epidote. Clusters of phlogopite unevenly distributed. Highly magnetic in hand sample.
	Khb	Intrusive rocks of Klukwan-Duke plutonic belt exposed on parts of Woronkofski, Mitkof and Kupreanof Islands. Hornblendite-hornblende gabbro; locally compositionally layered, fine- to medium-grained, grayish-green to black in color.			
284	78AF197G	56°12'50" 132°18'00"	Petersburg A-1	Khb	Biotite-Hornblende Meta Quartz Diorite--Fine- to medium-grained; hypidiomorphic inequigranular. C.I. 70. Hornblende poikilitically includes biotite and contains oriented opaque inclusions. Brown biotite rimmed by ilmenite, sericitized plagioclase with clear overgrowth rims, and anhedral quartz present. Accessory garnet, apatite, and magnetite.
285	81SK170A	56°11'11" 132°12'33"	Petersburg A-1	Khb	Biotite-Hornblende Quartz Diorite--Fine- to medium-grained; porphyritic. Plagioclase phenocrysts with clinozoisite and sericite centers have clear overgrowth rims. Hornblende has actinolite rims and aligned opaque inclusions. Accessory magnetite and sphene.
286	78AF146G	56°23'17" 132°26'48"	Petersburg B-2	Khb	Hornblendite--No thin section. Field notes indicate "dark green, very fine-grained hornblendite." Other thin sections from same outcrop also contain clinopyroxene, olivine, and orthopyroxene.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
287	82RK708B	56°24'39" 132°37'49"	Petersburg B-2	Khb	Hornblende Gabbro--Fine- to medium-grained; poorly foliated; inequigranular. Elongate labradorite plagioclase laths contain secondary clinozoisite and sericite, are partly recrystallized. Hornblende is commonly twinned, has brown centers, and inclusions of apatite and opaques.
288	78CH008D	56°22'55" 132°27'00"	Petersburg B-2	Khb	Hornblendite--Fine- to medium-grained; hypidiomorphic subequigranular. C.I. 99. Hornblende is commonly twinned and has opaque inclusions. Biotite, apatite, and sphene are interstitial. Minor secondary chlorite and clinozoisite.
289	80DB035A	57°03'35" 133°51'17"	Sumdum A-6	Khb	Plagioclase-Hornblende Pegmatite--Coarse- to medium-grained; hypidiomorphic inequigranular; hornblende poikilitic. C.I. 70. Hornblende subophitically encloses plagioclase, magnetite, and clinopyroxene. Andesine to labradorite plagioclase with secondary sericite and epidote alteration, subophitic clinopyroxene, biotite, and sphene also present. Minor chloritization.
290	81DB242C	56°53'16" 132°55'43"	Petersburg D-3	Khb	Hornblendite--Fine- to medium-grained; equigranular. C.I. 98. Subhedral hornblende is commonly twinned and contains numerous apatite inclusions. Interstitial magnetite and apatite, and sparse secondary chlorite, sphene, and epidote are present. Rock appears relatively unaltered and fresh in thin section.
291	82RK708A	56°24'39" 132°37'49"	Petersburg B-2	Khb	Hornblendite--Fine- to medium-grained; hypidiomorphic granular with a poorly developed foliation. C.I. 99. Poorly aligned subhedral hornblende contains very fine-grained magnetite inclusions, and is partially recrystallized to pale amphibole. Clinopyroxene altered to calcite. Sparse chlorite and sphene present.
	KJsv				Brothers Volcanics/Douglas Island Volcanics--Augite-bearing flows, volcanic breccia, and intercalated tuff, volcanic graywacke, phyllite and slate. Andesite to probably basaltic composition, relict augite phenocrysts, probably a few thousand meters thick. Individual flow or breccia units as much as a few hundred meters thick.
292	71ABg232	56°11'12" 132°42'10"	Petersburg A-3	KJsv	Andesite Breccia--Inhomogeneous in grain size, percent phenocrysts, and amount of devitrified glass. Andesine to oligoclase plagioclase is seriate and clinopyroxene forms phenocrysts. Devitrified glass and cryptocrystalline material make up 20 percent of thin section. Very altered. Chemical analysis by rapid rock method.
293	79DB115A	56°05'46" 132°35'46"	Petersburg A-2	KJsv	Basalt(?)--Porphyritic with an intersertal groundmass. Phenocrysts are clinopyroxene and altered plagioclase. Groundmass of plagioclase microlites, few small clinopyroxene glomerocrysts, and opaques. Secondary celadonite(?), zeolite, and prehnite fill irregularly shaped amygdules.
294	71ABg231	56°07'30" 132°42'00"	Petersburg A-3	KJsv	Lithic Tuff--Volcanic clasts (90 percent) are porphyritic, pilolaxitic, and hyalocophitic, with common phenocrysts of clinopyroxene, altered plagioclase, and hornblende. Clast groundmass is of microlites and cryptocrystalline material. Secondary minerals (15 percent of thin section) include chlorite, calcite, and (?) pumpellyite. Chemical analysis by rapid rock method.
295	71ABg256	56°27'30" 132°34'35"	Petersburg B-2	KJsv	Metatuff--Fragmental texture with pyroxene(?) phenocrysts replaced by pseudomorphs of pale amphibole. Plagioclase laths are euhedral; matrix dominantly very fine-grained epidote. Secondary green biotite, chlorite, and sparse calcite present along with accessory opaques. Chemical analysis by rapid rock method.
296	BUDD-001	56°08'26" 132°43'30"	Petersburg A-3	KJsv	Basalt--Porphyritic with abundant phenocrysts of diopsidic augite, 3 to 5 mm in diameter, and 2- to 3-mm labradorite laths. Groundmass of small labradorite laths, clinopyroxene granules, and magnetite grains. Minor chlorite alteration. Method of chemical analysis not specified.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
297	71ABg230	56°07'00" 132°42'00"	Petersburg A-3	KJsv	Altered Lithic Tuff--Altered volcanic fragments and crystals in an altered cryptocrystalline matrix. Volcanic fragments contain phenocrysts of patchy recrystallized hornblende, cloudy plagioclase, and pyroxene. Secondary epidote, chlorite, calcite, red-brown mica, and sparse devitrified glass present. Chemical analysis by rapid rock method.
298	79RS115A	56°09'18" 132°40'52"	Petersburg A-3	KJsv	Volcanic Breccia--Angular to subrounded lithic volcanic clasts average 2 mm in size and are similar in composition. Fragments are porphyritic hyaloopilitic with altered plagioclase, calcite-altered clinopyroxene, and anhedral opaques. Matrix is dominantly cryptocrystalline with very fine-grained opaques, microlites, chlorite, and altered glass in patches. Greater than 7 percent calcite alteration.
	KJss	Seymour Canal Formation--Graywacke, slate and minor conglomerate. Composed mostly of volcanic debris. Conglomerates are polymictic and contain granitic clasts. Most are turbidites with common sedimentary structures but few directional features. Probably a few thousand meters thick.			
299	71ABg229	56°06'28" 132°42'00"	Petersburg A-3	KJss	Basalt--Holocrystalline; porphyritic with intergranular groundmass. Twenty percent euhedral concentrically-zoned augite and altered plagioclase. Few smaller olivine(?) phenocrysts replaced by serpentine, chlorite, pumpellyite, and chlorophacite(?). Rock is altered; includes up to 7 percent secondary chlorite. Accessory opaques. Chemical analysis by rapid rock method.
300	71ABg242	56°06'00" 132°41'40"	Petersburg A-3	KJss	Hornblende-Clinopyroxene Andesite--Porphyritic with pilotaxitic groundmass. Labradorite plagioclase phenocrysts, along with a few clinopyroxene glomerocrysts make up 17 percent of rock. Groundmass includes plagioclase laths, brown hornblende, sparse clinopyroxene and quartz, and magnetite. Moderate chlorite alteration; few calcite-filled amygdules present. Chemical analysis by rapid rock method.
	Mzv	Greenschist, greenstone, phyllite, and minor semischist metamorphosed from volcanics located along Duncan Canal and on Woewodski and Zarembo Islands. Locally pillow breccia, agglomerate flows and possible tuffs. Locally abundant relict pyroxene phenocrysts. Probably several thousand meters thick.			
301	81SH008A	56°27'25" 132°55'42"	Petersburg B-3	Mzv	Metavolcanic--Poorly foliated. Actinolite and chlorite pseudomorphs replace igneous hornblende. Matrix is very fine-grained; granular with epidote, abundant chlorite, recrystallized plagioclase, and 5 percent magnetite with leucoxene. Sparse calcite. Inhomogeneous outcrop.
	Mzgb	Hornblende gabbro and pyroxene gabbro of northeast Zarembo Island. Medium- to very coarse-grained with some interstitial sulfide; cut by dikes of quartz diorite.			
302	82SK002A	56°19'19" 132°39'31"	Petersburg B-2	Mzgb	Metadiorite--Relict igneous texture. Very fine- to medium-grained. Greenschist facies metamorphic minerals include actinolite pseudomorphs after igneous hornblende, recrystallized plagioclase, epidote, quartz, and biotite with rutile needles. Contains accessory magnetite.
	TRhv	Hyd group volcanics exposed near Duncan Canal, on Castle Islands, Woewodski Island and on Zarembo Island. Felsic and intermediate volcanic flows and breccia, limestone and argillite. Dominantly very-fine to fine-grained, chlorite-quartz-muscovite-feldspar phyllite. Also some associated dark gray thin-bedded carbonaceous mudstone, siltstone, and limestone. Thickness probably several hundred meters.			
303	80SK153A	56°32'46" 133°02'23"	Petersburg C-4	TRhv	Greenstone--Greenschist facies mineral assemblage includes actinolite, as abundant anhedral clots, albite, clinozoisite, chlorite, calcite, quartz, and sphene. Nonfoliated in thin section.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
	Tdr	Intrusive Rocks of Behm Canal Plutonic Belt--Rhyolite and related rocks; generally flow-banded, locally quartz porporphyritic; occurs in broad swarm of dikes from 0.5 to a few meters wide with little included country rock. Few plugs occur along strike.			
304	82KR070A	56°32'55" 132°05'33"	Petersburg C-1	Tdr	Microgranite--Quartz porphyritic with common micrographic and granophyric quartz-alkali feldspar intergrowths. Alkali feldspar also common as glomeroocrysts which less commonly enclose plagioclase (sodic andesine). Sparse primary biotite and muscovite; spherulites; 15-meter-thick sill in outcrop.
305	A33125	56°30'35" 132°03'10" (approx.)	Petersburg C-1	Tdr	Rhyolite Porphyry (Amax sample--Age data only). Other descriptive information and geochemical values not included in this report).
	Tag	Intrusive rocks of Behm Canal Plutonic Belt exposed only on north side of Groundhog Basin--Chlorite granite; homogenous, fine- to medium-grained, chlorite replaces biotite, generally seriate texture. Some samples are distinctly bimodal with a very fine-grained mosaic interstitial to larger biotite/chlorite, quartz, plagioclase, and K-feldspar grains.			
306	82DB199A	56°31'26" 132°04'31"	Petersburg C-1	Tag	Biotite Granite--Fine- to medium-grained, inequigranular, hypidiomorphic granular, C.I. 04. Very minor amount of accessory apatite, opaques and sphene. Biotite partly altered to chlorite, minor alteration of plagioclase. Core sample.
307	82KR071A	56°32'55" 132°06'02"	Petersburg C-1	Tag	Biotite Granodiorite--Fine- to medium-grained, inequigranular, C.I. 04. Slight biotite foliation, somewhat plagioclase porphyritic. Minor accessory opaques. Minor plagioclase alteration.
308	A52716	56°31'05" 133°03'37" (approx.)	Petersburg C-1	Tag	Biotite Granite (Amax sample--Age data only. Other descriptive information and geochemical values not included in this report).
	Tgdb	Granodiorite of central Coast Metamorphic-Plutonic Complex, exposed adjacent to the International Boundary. Sphene-bearing biotite-hornblende granodiorite: nonfoliated, homogeneous, medium- to coarse-grained. Petrographic features include zoned, subhedral plagioclase, myrmekite intergrowths and chloritized biotite and hornblende.			
309	81DB215A	56°47'25" 132°02'45"	Petersburg D-1	Tgdb	Biotite Granite--Coarse-grained, seriate, inequigranular, C.I. 04 with accessory magnetite. Biotite has minor chlorite alteration. Plagioclase shows extensive sericitization.
310	81SH066A	56°49'50" 132°06'32"	Petersburg D-1	Tgdb	Hornblende-Biotite Granodiorite--Foliated, medium- to coarse-grained, equigranular, C.I. 06. Biotite and hornblende altered to chlorite. Plagioclase cores altered to sericite. Accessory sphene and magnetite. Outcrop is homogeneous.
311	81SK235A	56°50'16" 132°00'02"	Petersburg D-1	Tgdb	Hornblende-Biotite Granodiorite--C.I. 08, medium- to coarse-grained, equigranular, with accessory sphene to 5 mm. Biotite and hornblende altered to chlorite, plagioclase shows some alteration to sericite. Outcrop is homogeneous.
312	81SK243A	56°48'27" 132°03'18"	Petersburg D-1	Tgdb	Hornblende-Biotite Granodiorite--Foliated, medium- to coarse-grained, equigranular with accessory sphene and magnetite, C.I. 08. Biotite and hornblende show alteration to chlorite. Plagioclase shows alteration to sericite. Outcrop is homogeneous
313	81DB107A	56°57'28" 132°08'35"	Petersburg D-1	Tgdb	Hornblende-Biotite Granodiorite--Medium- to coarse-grained, inequigranular, C.I. 15. Biotite and hornblende show alteration to chlorite. Plagioclase is strongly zoned. Accessory sphene and magnetite.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
	Tgdp	Granodiorite of the Central Coast Metamorphic-Plutonic complex--Exposed southwest of the International Boundary. Porphyritic biotite-hornblende granodiorite, with faint mafic foliation. Petrographic features include hypidiomorphic-granular texture, euhedral to subhedral K-feldspar phenocrysts to 3.5 cm and ubiquitous myrmekite.			
314	81DB210A	56°51'17" 132°07'25"	Petersburg D-1	Tgdp	Biotite Granodiorite--Slightly foliated, coarse-grained, equigranular, K-spar to 2 cm, C.I. 10, with accessory sphene and opaques. Plagioclase is sericitized and myrmekite is abundant. Outcrop cut by minor biotite-hornblende granodiorite dikes, which are locally schlieren, to 10 cm thick.
315	81RK210A	56°52'53" 132°08'15"	Petersburg D-1	Tgdp	Hornblende-Biotite Granodiorite--Slightly foliated, medium-grained K-spar porphyry, C.I. 15, with accessory sphene and apatite. Biotite and hornblende show alteration to chlorite. Plagioclase shows minor alteration to sericite. Outcrop cut by mafic, felsic, and pegmatitic dikes.
	Ttos	Intrusive rocks of Coast Plutonic Complex Sill Belt located northeast of Coast Range megalineament--Biotite-hornblende and hornblende-biotite tonalite, quartz diorite and minor granodiorite. Homogeneous, foliated, medium- to coarse-grained, locally hornblende porphyritic, common inclusions and schlieren of dioritic composition. Texture varies from equigranular to seriate, poikilitic hornblende common and epidote minerals are rare.			
316	78RM241A	56°43'30" 132°12'33"	Petersburg C-1	Ttos	Biotite Tonalite--Gneissose texture, foliated, medium-grained, C.I. 16, with accessory sphene and apatite. Biotite shows alteration to chlorite. Plagioclase has common alteration to sericite and myrmekite intergrowths.
317	78AF141C	56°33'07" 132°01'58"	Petersburg C-1	Ttos	Hornblende-Biotite Granodiorite--Foliation defined by mafics, medium-grained, C.I. 25. Few hornblende phenocrysts with abundant inclusions. Accessory apatite, sphene, and opaques. Minor biotite alteration to chlorite.
318	81DB106A	56°58'56" 132°12'08"	Petersburg D-1	Ttos	Hornblende-Biotite Granodiorite--Gneissose, medium-grained, inequigranular, with accessory sphene, C.I. 35. Hornblende and biotite show minor alteration to chlorite. Plagioclase is slightly sericitized. Outcrop cut by biotite aplite veins.
319	78DB137A	56°31'55" 132°00'30"	Petersburg C-1	Ttos	Biotite-Hornblende Tonalite--Foliated, coarse-grained, equigranular, C.I. 24, with accessory sphene, apatite and opaques. Plagioclase highly altered to sericite, minor myrmekite intergrowths. Outcrop contains minor inclusions of biotite-hornblende gneiss and and schleiren which are parallel to the foliation.
320	78DB248A	56°33'45" 132°03'51"	Petersburg C-1	Ttos	Biotite-Hornblende Quartz Diorite--Foliated, coarse-grained, seriate texture with accessory sphene, apatite and opaques. Biotite and hornblende show minor alteration to chlorite.
321	82RK796A	56°35'46" 132°01'19"	Petersburg C-1	Ttos	Biotite-Hornblende Quartz Diorite--Slight foliation of mafics, inequigranular, dominantly coarse-grained with seriate phenocrysts of hornblende and plagioclase, C.I. 18. Accessory sphene and opaques. Some biotite alteration to chlorite, and sericitization.
322	80DB072A	56°35'08" 132°02'10"	Petersburg C-1	Ttos	Biotite-Hornblende Quartz Diorite--Foliated, medium-grained, inequigranular, C.I. 29, with accessory apatite, opaques and zircon. Hornblende and biotite intergrown.
323	80DB242A	56°48'17" 133°25'57"	Petersburg D-2	Ttos	Hornblende-Biotite Tonalite--Gneissose texture, medium-grained, hornblende porphyritic, C.I. 26, accessory sphene, epidote and zircon. Plagioclase shows alteration to sericite.
324	82SK107A	56°39'18" 132°09'59"	Petersburg C-1	Ttos	Biotite-Hornblende Tonalite--Foliation defined by mafics, serioporphyritic plagioclase and hornblende, inequigranular, C.I. 22. Accessory opaques and sphene. Biotite unaltered; hornblende shows minor chlorite alteration. Minor schlieren.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
325	81SK239A	56°45'55" 132°06'17"	Petersburg D-1	Ttos	Biotite-Hornblende Tonalitic Gneiss--Medium-grained, foliated, banded, C.I. 35. Outcrop cut by minor pegmatitic dikes.
326	81SK248A	56°44'28" 132°00'06"	Petersburg C-1	Ttos	Biotite-Hornblende Quartz Diorite--Foliated; inequigranular; medium-grained. C.I. 30. Hornblende up to 4 mm. in length poikilitically encloses plagioclase and quartz. Biotite is ragged and chloritized. Sphene is secondary; magnetite present.
327	81DB253A	56°54'10" 132°30'06"	Petersburg D-2	Ttos	Biotite-Hornblende Tonalitic Gneiss--Foliated, lineated, inequigranular, serioporphyritic hornblende, C.I. 28. Minor biotite alteration to chlorite and secondary epidote. Schlieren at outcrop scale.
328	81SK216A	56°38'20" 132°08'25"	Petersburg C-1	Ttos	Biotite-Hornblende Tonalite--Inequigranular, hypidiomorphic-granular, serioporphyritic hornblende, C.I. 18. Plagioclase has moderate amount of sericitization. Outcrop is homogeneous and massive.
329	82SK123A	56°42'39" 132°18'08"	Petersburg C-1	Ttos	Biotite Tonalite--Inequigranular, medium- to coarse-grained, lineated; C.I. 20. Accessory sphene, apatite and opaques. Myrmekite intergrowths, few plagioclase grains grains highly sericitized. Crudely foliated in outcrop.
330	81SK236A	56°46'09" 132°16'17"	Petersburg D-1	Ttos	Biotite-Hornblende Tonalite--Coarse-grained, inequigranular, C.I. 34. Mafic schleren with accessory magnetite.
331	79RS203A	56°52'44" 132°28'43"	Petersburg D-2	Ttos	Hornblende-Biotite Tonalite--Foliated, hornblende porphyritic, inequigranular, C.I. 20. Accessory sphene, magnetite and secondary epidote. Minor amount of plagioclase alteration.
332	82DB195A	56°30'27" 132°00'44"	Petersburg C-1	Ttos	Biotite-Hornblende Tonalite--Well foliated, coarse-grained, inequigranular, C.I. 30. Accessory sphene, opaques and apatite. Little or no alteration of mafics or plagioclase.
333	82KR066A	56°32'56" 132°03'09"	Petersburg C-1	Ttos	Biotite-Hornblende Tonalite--Well foliated, hornblende porphyritic, inequigranular, C.I. 30. Accessory sphene, opaques and apatite. Foliation defined by hornblende.
334	78RS092A	56°33'33" 132°03'42"	Petersburg C-1	Ttos	Biotite-Hornblende Tonalite--Foliated, medium-coarse grained, hornblende porphyritic, C.I. 26, accessory opaques. Mafic minerals intergrown; minor amount of chlorite and sphene alteration from biotite.
335	82SK122A	56°40'32" 132°08'27"	Petersburg C-1	Ttos	Biotite-Hornblende Tonalite--Medium-grained, inequigranular, hornblende porphyritic, C.I. 25. Minor accessory apatite and opaques. Myrmekite intergrowths are common; minerals appear fresh. Hornblende is aligned but found in swirls at outcrop scale.
336	80SK609A	56°48'49" 132°22'22"	Petersburg D-2	Ttos	Biotite-Hornblende Tonalite--Slightly foliated, medium-grained, C.I. 23, with accessory zircon and magnetite.
337	78RS066A	56°49'27" 132°13'06"	Petersburg D-1	Ttos	Hornblende-Gneissic Tonalite--Foliated, medium-grained, C.I. 35, with accessory sphene and magnetite. Hornblende commonly altered to chlorite; plagioclase highly sericitized.
	Tgdg	Intrusive rocks of Coast Plutonic Complex Sill Belt, exposed at Thomas Bay and possibly along the Stikine River. Gneissic biotite granodiorite and quartz monzodiorite. Homogeneous, foliated, local K-feldspar augen and K-feldspar phenocrysts to 2.5 cm, locally banded. Inequigranular texture, local disseminated garnet, and local myrmekite.			
338	79DB225A	56°58'21" 132°46'41"	Petersburg D-3	Tgdg	Hornblende and Biotite-bearing Orthogneiss--Foliated, inequigranular, C.I. 18. Composition is quartz monzodiorite. Accessory sphene, apatite and secondary epidote. Euhedral chalcopyrite and opaques. Felsic grains show common alteration, fracturing, and myrmekite intergrowths.

Table 2.--Petrographic descriptions of sample localities--Continued.

Map Number	Sample Number	Latitude Longitude	Quadrangle	Map Unit	Sample description
	TKbs	Metamorphic rocks of Coast Metamorphic-Plutonic Complex, exposed along eastern shores of Frederick Sound. Biotite schist, well foliated and lineated, fine- to medium-grained. Typical greenschist mineral assemblages are garnet-quartz-biotite-albite. Higher grade assemblages include garnet-quartz-biotite-plagioclase, garnet-staurolite-quartz-biotite-plagioclase, and garnet-sillimanite-biotite-plagioclase. Unit may record multiple metamorphic episodes.			
339	81SK159A	56°59'59" 132°49'22"	Petersburg D-3	TKbs	Biotite-Quartz-Feldspar Gneiss--Fine- to very fine-grained, moderately well-foliated orthogneiss. C.I. 5. Oligoclase feldspar is anhedral, quartz is strained and in stringers, green-brown biotite is poorly segregated. Accessory apatite, muscovite, and opaques. Sparse sericite, chlorite, epidote, and calcite.
340	82KR068A	56°32'55" 132°04'01"	Petersburg C-1	TKbs	Garnet-Hornblende Schist--Fine- to medium-grained, moderately well-foliated. Eighty percent hornblende; 5 percent large garnet poikiloblasts include quartz. Quartz stringers are parallel to the foliation; plagioclase is interstitial and strained. Accessory biotite, magnetite, and apatite. Minor chlorite from garnet.
	TKhs	Metamorphic rocks of Coast Metamorphic-Plutonic Complex exposed on either side of the Coast Range megalineament. Hornblende schist and semischist; poorly- to well-foliated, locally lineated interlayered hornblende schist, semischist, and lesser amounts of biotite schist. Fine- to coarse-grained, typical mineral assemblage is quartz-garnet-hornblende-plagioclase.			
341	82KR071B	56°32'55" 132°06'02"	Petersburg C-1	TKhs	Hornblende Plagioclase Gneiss--Medium-grained, poor to moderate foliation, nematoblastic. C.I. 25. Xenoblastic hornblende; oligoclase to andesine feldspar; stringers and lenses of quartz present. Other minerals are red-brown biotite, apatite, and sparse secondary chlorite and sphene.

Table 3.--Potassium-argon determinations in the Petersburg and parts of the Port Alexander and Sumdum 1:250,000 quadrangles, southeastern Alaska.

(Argon analyses by A. Berry, S. Kollman, B. Myers, J. Saburomaru, and J. Von Essen; and potassium analyses by L. Espos, P. Klock, L. Schlocker, and D. Vivit)

Map No.	Field No.	Quadrangle	Unit	Latitude and Longitude	Rock type	Material	K_2O*	$^{40}Ar_{rad}$ Moles/gm	$^{40}Ar_{rad}$ / $^{40}Ar_{total}$	Age (Ma)
3.	71ABg179A	Petersburg B-4	Qb	56°28'00" 133°08'40"	Basalt	Whole rock	0.521 0.514 0.511 0.520 (0.517)	2.006×10^{-13}	0.03	0.269±0.087
4.	71ABg178A	Petersburg B-4	Qb	56°28'48" 133°07'42"	Basalt	Whole rock	0.577 0.578 0.576 0.579 (0.578)	2.325×10^{-13}	0.04	0.279±0.085
7.	71ABg189A	Petersburg B-4	Qb	56°26'50" 133°06'40"	Basalt	Whole rock	0.461 0.521 0.471 0.464 (0.479)	2.863×10^{-12}	0.01	4.15±6.95
25.	83SK467A	Petersburg C-5	QTr	56°33'42" 133°27'44"	Rhyolite	Whole rock	5.66 5.67 5.64 5.67 (5.66)	1.675×10^{-10}	0.36	20.4±0.6
48.	79DB027A	Petersburg C-6	QTa	56°37'01" 133°41'25"	Andesite	Whole rock	1.256 1.241 1.248 1.247 (1.248)	3.893×10^{-11}	0.86	21.5±0.6
53.	83SK469A	Petersburg C-5	QTa	56°32'27" 133°24'52"	Basalt	Whole rock	1.214 1.215 1.217 1.223 (1.217)	3.733×10^{-11}	0.73	21.2±0.6
88.	80DB057A	Petersburg A-2	Tmae	56°10'13" 132°23'39"	Biotite-hornblende Granite	Hornblende	1.301 1.308 (1.304)	3.490×10^{-11}	0.28	18.5±0.6
108.	79SH059A	Petersburg A-2	Tmge	56°05'34" 132°25'49"	Hornblende-Biotite Granite	Biotite	7.48 7.574 (7.525)	2.173×10^{-10}	0.45	19.9±0.6
						Hornblende	1.065 7.57 (7.525)	3.144×10^{-11}	0.51	20.3±0.6
109.	7AA114	Petersburg B-2	Tmge	56°16'55" 132°31'45"	Miarolitic Granite	Biotite	6.017 5.976 (5.996)	0.009073 ppm 0.009412 ppm (0.009243)	0.442 0.319	21.5±0.9
110.	82DB260A	Petersburg A-1	Tmme	56°03'16" 132°07'04"	Porphyritic Biotite Granite	Biotite	8.04 8.11 (8.08)	2.254×10^{-10}	0.42	19.3±0.6
113.	82KR090A	Petersburg A-1	Tmme	56°04'39" 132°14'46"	Biotite-Hornblende Quartz Monzodiorite	Hornblende	2.224 2.259 (2.242)	6.958×10^{-11}	0.42	21.4±0.6
149.	80RS051A	Port Alexander C-1	Tmgk	56°42'41" 134°18'52"	Hornblende-Biotite Granite	Biotite	6.78 6.93 (6.86)	2.338×10^{-10}	0.35	23.5±0.7
151.	82SH053A	Port Alexander C-1	Tmdk	56°41'08" 134°18'22"	Biotite-Hornblende Quartz Diorite	Hornblende	1.029 1.043 (1.036)	2.930×10^{-11}	0.31	19.5±0.6

Table 3.--Potassium-argon determinations in the Petersburg and parts of the Port Alexander and Sumdum 1:250,000 quadrangles, southeastern Alaska--(Continued)

Map No.	Field No.	Quadrangle	Unit	Latitude and Longitude	Rock type	Material	K_2O*	$^{40}Ar_{rad}$ Moles/gm	$^{40}Ar_{rad}$ / $^{40}Ar_{total}$	Age (Ma)
158.	79DB108A	Petersburg A-5	Kwqo	56°12'36" 133°26'38"	Biotite-hornblende Granodiorite	Hornblende	0.526 0.554 (0.540)	$8.000x10^{-11}$	0.60	100.0±3.0
167.	79DB097A	Petersburg A-5	Kwqo	56°05'59" 133°29'20"	Biotite-Hornblende Granodiorite	Biotite	7.53 7.55 (7.54)	$1.204x10^{-9}$	0.91	108.0±3.5
						Hornblende	0.372 0.371 (0.3715)	$5.425x10^{11}$	0.72	98.7±3.0
170.	82SH055A	Port Alexander A-1	Kwqo	56°08'07" 134°09'05"	Biotite-Hornblende Granodiorite	Biotite	8.03 8.07 (8.05)	$1.344x10^{-9}$	0.82	112.0±3.4
212.	78RS132A	Petersburg B-2	Ktef	56°15'45" 132°20'33"	Foliated Tonalite	Biotite	9.41 9.44 (9.425)	$1.56x10^{-9}$	0.89	83.2±2.5
						Hornblende	1.155 1.163 (1.159)	$1.569x10^{-10}$	0.80	91.6±2.7
214.	78DB113A	Petersburg C-1	Ktef	56°31'51" 133°19'12"	Porphyritic Garnet-Hornblende-Biotite Quartz Diorite	Biotite	9.27 9.42 (9.345)	$1.099x10^{-9}$	0.77	79.9±2.4
						Hornblende	1.102 1.125 (1.114)	$1.455x10^{-10}$	0.77	88.6±2.7
225.	78BG030A	Petersburg B-2	Ktif	56°22'56" 132°38'53"	Biotite-hornblende granodiorite	Biotite	8.99 8.99 (8.99)	$1.200x10^{-9}$	0.53	90.4±2.7
						Hornblende	1.368 1.375 (1.372)	$1.844x10^{-10}$	0.88	93.0±2.5
228.	79DB192A	Petersburg C-3	Ktif	56°39'30" 132°45'16"	Hornblende-biotite quartz diorite	Biotite	9.54 9.58 (9.56)	$1.264x10^{-9}$	0.92	89.6±2.7
						Hornblende	1.460 1.449 (1.454)	$1.912x10^{-10}$	0.73	89.1±2.7
239.	82KR096A	Petersburg A-1	Ktop	56°00'47" 132°03'22"	Porphyritic hornblende biotite quartz diorite	Biotite	8.99 9.12 (9.055)	$9.500x10^{-10}$	0.68	71.4±2.1
254.	78RM254A	Petersburg D-4	Kqop	56°46'08" 133°13'47"	Hornblende-Biotite Tonalite	Biotite	9.35 9.35 (9.35)	$1.205x10^{-9}$	0.82	87.3±2.6
						Hornblende	1.266 1.278 (1.272)	$1.677x10^{-10}$	0.77	89.3±2.7
259.	82PB023A	Petersburg C-3	Kqop	56°42'55" 133°01'45"	Porphyritic Biotite Hornblende Quartz Diorite	Biotite	9.16 9.17 (9.165)	$1.232x10^{-9}$	0.78	91.0±2.7
						Hornblende	1.241 1.252 (1.246)	$1.605x10^{-10}$	0.36	87.3±2.6
267.	80RS145A	Petersburg D-4	Kqo	56°54'38" 133°01'12"	Foliated Porphyritic Biotite-Hornblende Diorite	Biotite	9.64 9.68 (9.66)	$1.298x10^{-9}$	0.89	91.0±2.7
						Hornblende	1.830 1.852 (1.841)	$2.429x10^{-10}$	0.77	89.4±2.7

Table 3.--Potassium-argon determinations in the Petersburg and parts of the Port Alexander and Sumdum 1:250,000 quadrangles, southeastern Alaska--(Continued).

Map No.	Field No.	Quadrangle	Unit	Latitude and Longitude	Rock type	Material	K_2O*	$^{40}Ar_{rad}$ Moles/gm	$^{40}Ar_{rad}$ / $^{40}Ar_{total}$	Age (Ma)
289.	80DB035A	Sumdum A-6	Khb	57°03'35" 133°51'17"	Pegmatite	Hornblende	1.263 1.272 (1.268)	2.011×10^{-10}	0.84	107.0±3.2
305.	A33125	Petersburg C-1	Tdr	56°30'35" 132°03'10"	Rhyolite Porphyry	Muscovite	5.577 5.354 (5.465)	0.006028 ppm 0.005714 ppm (0.005871)	0.302 0.285	15.0±0.6
308.	A52716	Petersburg C-1	Tag	56°31'05" 132°03'37"	Biotite Granite	Biotite	6.984 7.041 (7.012)	0.008305 ppm 0.008047 ppm (0.008176)	0.293 0.507	16.3±0.6
313.	81DB107A	Petersburg D-1	Tgdb	56°57'28" 132°08'35"	Biotite-Hornblende Granodiorite	Biotite	9.10 9.14 (9.12)	6.832×10^{-10}	0.65	51.3±1.5
						Hornblende	1.120 1.126 (1.123)	8.078×10^{-11}	0.74	49.3±1.5
314.	81DB210A	Petersburg D-1	Tgdp	56°51'17" 132°07'25"	Biotite hornblende granodiorite	Biotite	8.82 8.94 (8.88)	6.634×10^{-10}	0.69	51.2±1.5
331.	79RS203A	Petersburg D-2	Ttos	56°52'44" 132°28'43"	Foliated Porphyritic Biotitehornblende Quartz Diorite	Biotite	8.77 8.81 (8.79)	6.573×10^{-10}	0.40	51.2±1.5
						Hornblende	0.978 0.975 (0.9765)	7.357×10^{-11}	0.26	51.6±1.5
334.	78RS092A	Petersburg C-1	Ttos	56°33'30" 132°02'42"	Foliated Porphyritic Tonalite	Biotite	9.24 9.29 (9.265)	6.812×10^{-10}	0.84	50.4±1.5
						Hornblende	1.130 1.136 (1.133)	8.126×10^{-11}	0.45	49.1±1.5

*Average value in ( ).

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