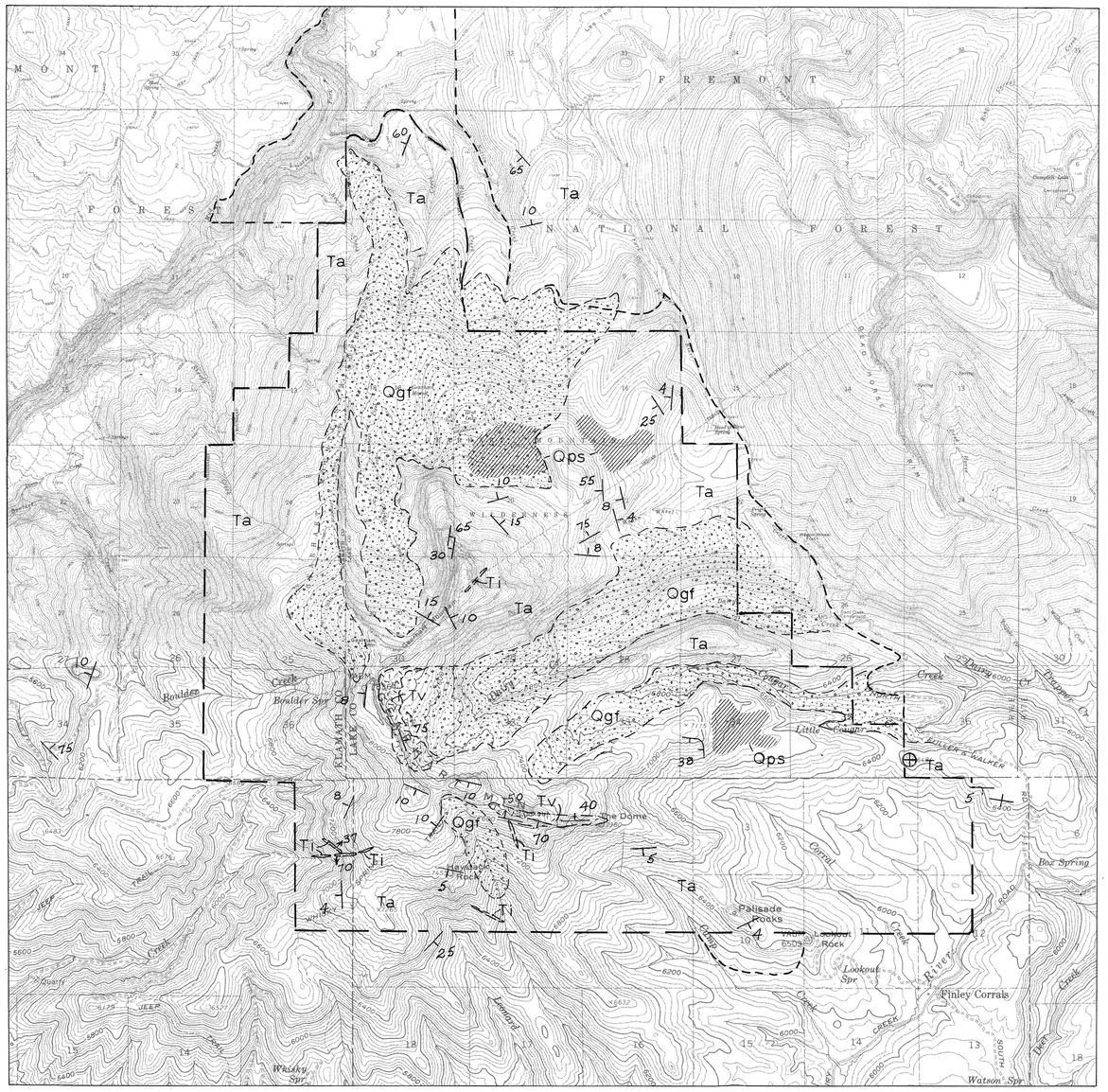

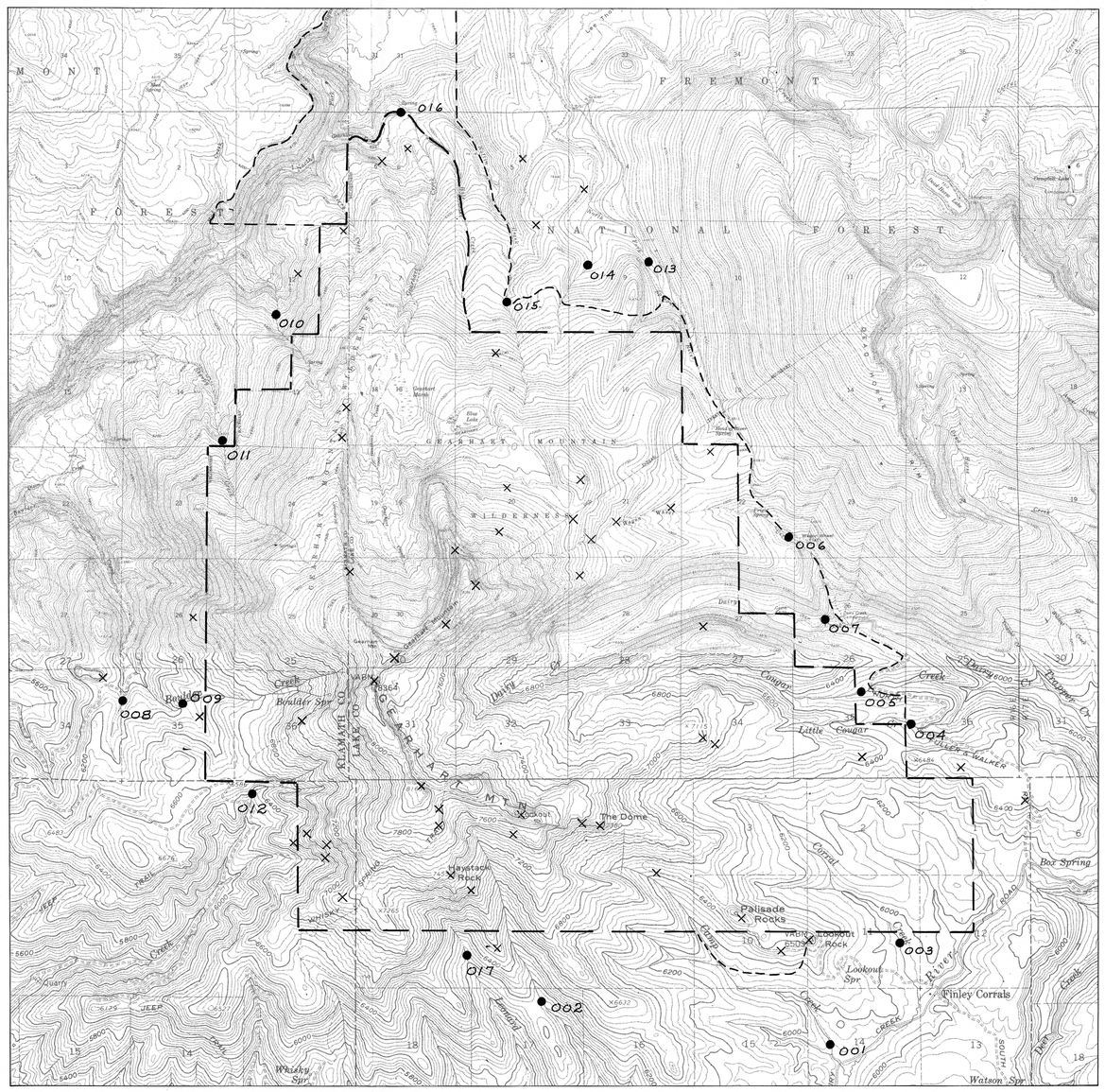

Base from U.S. Geological Survey, 1:62,500, Fishhole Mountain, 1960; 1:24,000, Lee Thomas Crossing, Sandhill Crossing, 1966

SCALE 1:48 000

1 ½ 0 1 2 3 MILES

1 .5 0 1 2 3 KILOMETERS

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

TRUE NORTH
MAGNETIC NORTH
18°
APPROXIMATE MEAN DECLINATION, 1982

RECONNAISSANCE GEOLOGIC MAP

Geology by G. W. Walker, 1980

AREA OF MAP

Samples collected by G. W. Walker, 1980

SCALE 1:48 000

1 ½ 0 1 2 3 MILES

1 .5 0 1 2 3 KILOMETERS

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

SAMPLE LOCALITY MAP

RECONNAISSANCE GEOLOGIC MAP AND MINERAL RESOURCE POTENTIAL OF THE GEARHART MOUNTAIN WILDERNESS AND ROADLESS AREA (6225), LAKE AND KLAMATH COUNTIES, OREGON

By
George W. Walker and James Ridenour
U.S. Geological Survey U.S. Bureau of Mines

1982

CORRELATION OF MAP UNITS

Unit	Epoch	Period
Qps	Holocene	QUATERNARY
Qgf	Holocene and Pleistocene	QUATERNARY
Ti	Pliocene or Miocene	TERTIARY
Ta	Pliocene or Miocene	TERTIARY
Tv	Pliocene or Miocene	TERTIARY

DESCRIPTION OF MAP UNITS

Qps — PUMICEOUS SAND--Mostly well sorted, airfall pumiceous ash, probably derived from Mount Mazama (Crater Lake now occupies a caldera in this partly destroyed mountain)

Qgf — GLACIAL AND GLACIO-FLUVIAL DEPOSITS--Mostly poorly sorted andesitic debris in terminal and lateral moraines and as valley fill

Ti — ANDESITE DIKES--Consist mostly of hypersthene, olivine, and hornblende(?) andesite

Ta — ANDESITE FLOWS, BRECCIAS, AND TUFFS--Mostly hypersthene and olivine andesite, but includes some olivine basalt or basaltic andesite. Includes flows, many strongly flow jointed, flow breccia, agglomerate, and minor andesitic and basaltic tuff

Tv — ANDESITIC VENT ROCKS--Mostly hypersthene and olivine andesite with steeply inclined flow jointing. Occurs in plugs and small stock-like bodies associated with andesitic dike complexes

CONTACT--Approximately located

STRIKE AND DIP OF FLOW JOINTING

75 — Inclined

Vertical

Horizontal

70 — INCLINATION OF DIKE

STREAM SEDIMENT SAMPLE

ROCK SAMPLE

WILDERNESS BOUNDARY -- Approximately located

ROADLESS AREA (6225) BOUNDARY -- Approximately located

STUDIES RELATED TO WILDERNESS

The Wilderness Act (Public Law 88-577, September 3, 1964) and related acts require the U.S. Geological Survey and the U.S. Bureau of Mines to survey certain areas on Federal lands to determine their mineral resource potential. Results must be made available to the public and be submitted to the President and Congress. This report presents the results of a geologic, geochemical, and mineral resource potential survey of the Gearhart Mountain Wilderness and adjacent Roadless Area (6225) in the Fremont National Forest, Lake and Klamath Counties, Oregon. Gearhart Mountain Wilderness was established by Public Law 88-577, September 3, 1964. Gearhart Mountain Roadless Area (6225) was classified as Proposed Wilderness during the Second Roadless Area Review and Evaluation (RARE II) by the U.S. Forest Service, January 1979.

MINERAL RESOURCE POTENTIAL

The Gearhart Mountain Wilderness is devoid of mines and mineral prospects. Furthermore, the results of this mineral appraisal indicate that there is little likelihood that commercial deposits of metallic minerals will be found in the area. Low value rock for construction purposes is present, but better and more accessible deposits are present in adjacent regions.

There is no evidence to indicate that mineral fuels are present in the area.

Higher than normal heat flow characterizes the region containing Gearhart Mountain, indicating that it may have some, as yet undefined, potential for the development of geothermal energy. Data are not available to determine whether this higher than normal heat flow is meaningful in terms of a potential energy source or as a guide to possible furture exploration; lack of thermal springs or other evidence of localized geothermal anomalies within the Gearhart Mountain area suggest, however, that the potential for the development of geothermal energy is probably low.

Table 1. Analyses of stream-sediment samples from the Gearhart Mountain Wilderness, Oregon[1]

[AA, atomic absorption; ppm, parts per million; numbers in parentheses indicate sensitivity limit of method used; N, not detected at limit of detection, L, indicates detected, but below limit of determination; G, indicates greater than value shown. Analysts: D. J. Grimes and E. P. Welsch]

	Semiquantitative spectrographic analyses (6-step)																					AA (ppm)	Fluorimetry (ppm)
	Percent				(ppm)																		
Locality number[2]	Fe (0.05)	Mg (0.02)	Ca (0.05)	Ti (0.002)	Mn (10)	B (10)	Ba (20)	Be (1)	Co (5)	Cr (10)	Cu (5)	La (20)	Ni (5)	Pb (10)	Sc (5)	Sr (100)	V (10)	Y (10)	Zn (200)	Zr (10)		Hg	U
001-S	5.	1.	.7	.7	1,500	L	500	1.	20	50	20	L	20	15	20	300	150	15	200	150		--	0.7
002-S	7.	1.5	1.	1.	1,500	10	500	1.	50	70	50	L	50	10	20	300	300	15	300	70		--	.4
003-S	3.	1.	1.	.7	1,000	L	500	N	15	30	20	20	15	15	15	500	150	15	L	100		--	.3
004-S	5.	1.	.7	1.	1,500	10	500	L	20	30	30	L	15	15	15	300	200	15	200	100		--	.4
005-S	7.	1.5	1.	1.	1,500	10	700	L	30	50	30	L	20	20	20	500	200	20	200	200		--	.3
006-S	7.	1.5	.7	1.	1,000	15	500	1.	50	50	50	L	30	15	20	300	300	15	300	100		--	.4
007-S	5.	1.5	1.	.7	1,000	15	300	N	30	50	30	L	30	15	15	300	200	15	200	100		--	.4
008-S	3.	1.	.7	.5	700	L	300	L	20	20	20	20	15	15	15	300	150	20	N	70		--	.5
009-S	10.	2.	1.	1.	1,500	15	500	1.	70	100	70	L	50	10	20	300	500	15	300	100		--	.3
010-S	10.	1.	1.	1.	1,500	10	500	L	70	100	70	L	50	10	20	300	500	15	300	100		--	.5
011-S	10.	1.	.7	1.	1,500	L	300	N	70	70	70	L	50	10	20	200	700	15	300	70		--	.4
012-S	7.	2.	1.5	1.	1,500	10	500	L	70	50	70	L	30	10	20	300	300	10	300	50		--	.4
013-S	7.	1.5	1.	1.	1,500	10	300	L	30	50	50	L	30	15	15	300	300	15	300	70		--	.5
014-S	5.	1.	1.	1.	1,000	15	500	1.	20	50	30	L	20	15	15	500	150	20	200	100		--	.3
015-S	5.	1.5	1.	1.	1,500	15	300	L	30	50	30	L	30	15	20	300	200	15	300	70		--	.4
016-S	3.	1.	1.	.7	1,000	10	500	L	15	30	20	L	15	15	15	500	150	15	200	100		--	.2
017-S	10.	2.	1.	1.	1,500	L	150	N	70	70	70	L	50	15	20	200	700	10	500	70		--	.3
						(20)		(2)	(10)	(20)		(50)		(20)	(5)			(20)	(500)				
001-C	.7	.3	5.	.3	300	50	1,000	N	10	20	10	L	L	200	10	1,500	30	50	N	1,500		<0.02	--
002-C	5.	5.	5.	1.	2,000	N	200	N	50	500	15	L	50	L	100	700	150	70	N	1,500		<.02	--
003-C	3.	2.	5.	1.	1,000	N	700	N	20	150	L	L	30	20	30	1,000	100	50	N	1,500		<.02	--
004-C	2.	1.5	3.	.7	700	N	700	L	15	100	L	L	L	L	100	1,500	70	200	N	G(2,000)		<.02	--
005-C	2.	1.5	3.	.3	1,000	N	500	L	15	70	L	L	L	L	150	1,000	70	300	N	G(2,000)		<.02	--
006-C	3.	2.	3.	1.	1,500	N	500	N	30	150	15	L	50	L	30	1,000	100	30	N	200		<.02	--
007-C	3.	3.	7.	.7	2,000	N	500	N	20	200	15	50	20	L	150	1,500	100	100	N	G(2,000)		<.02	--
008-C	2.	2.	5.	.3	1,500	N	200	N	20	150	10	L	20	20	50	700	70	30	N	500		<.02	--
009-C	5.	3.	5.	.7	2,000	100	300	N	30	150	30	50	30	L	50	1,000	150	70	N	2,000		<.02	--
010-C	3.	3.	5.	1.	1,000	N	300	N	20	700	10	L	50	20	70	1,000	100	50	N	2,000		<.02	--
011-C	.7	.5	5.	1.	200	N	500	N	10	50	10	L	20	20	15	2,000	70	20	N	150		<.02	--
012-C	1.	1.	5.	.15	700	N	300	N	15	70	L	L	15	L	20	1,500	50	20	N	200		<.02	--
013-C	1.	.7	3.	.15	500	70	500	N	10	100	L	1	30	L	15	1,500	30	L	N	150		<.02	--
014-C	1.5	1.5	3.	1.5	500	L	500	N	10	150	L	1	30	20	30	1,000	100	70	N	1,000		<.02	--
015-C	2.	2.	5.	.5	1,000	N	300	N	15	150	10	L	50	L	30	1,000	100	30	N	300		<.02	--
016-C	1.5	1.	3.	.3	500	N	500	N	10	100	10	L	30	20	15	1,000	70	30	N	300		<.02	--
017-C	2.	1.5	7.	.5	700	N	500	N	15	100	L	70	30	L	30	1,500	70	30	N	300		<.02	--

[1]Looked for but not detected: Ag, As, Au, Bi, Cd, Mo, Nb, Sb, Sn, W, Th.
[2]Locality number followed by S represents a stream-sediment sample that passes through a 1/8-in. sieve; numbers followed by C is heavy-mineral concentrate of stream-sediment sample, with magnetic fraction removed.

Interior—Geological Survey, Reston, Va.—1982
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