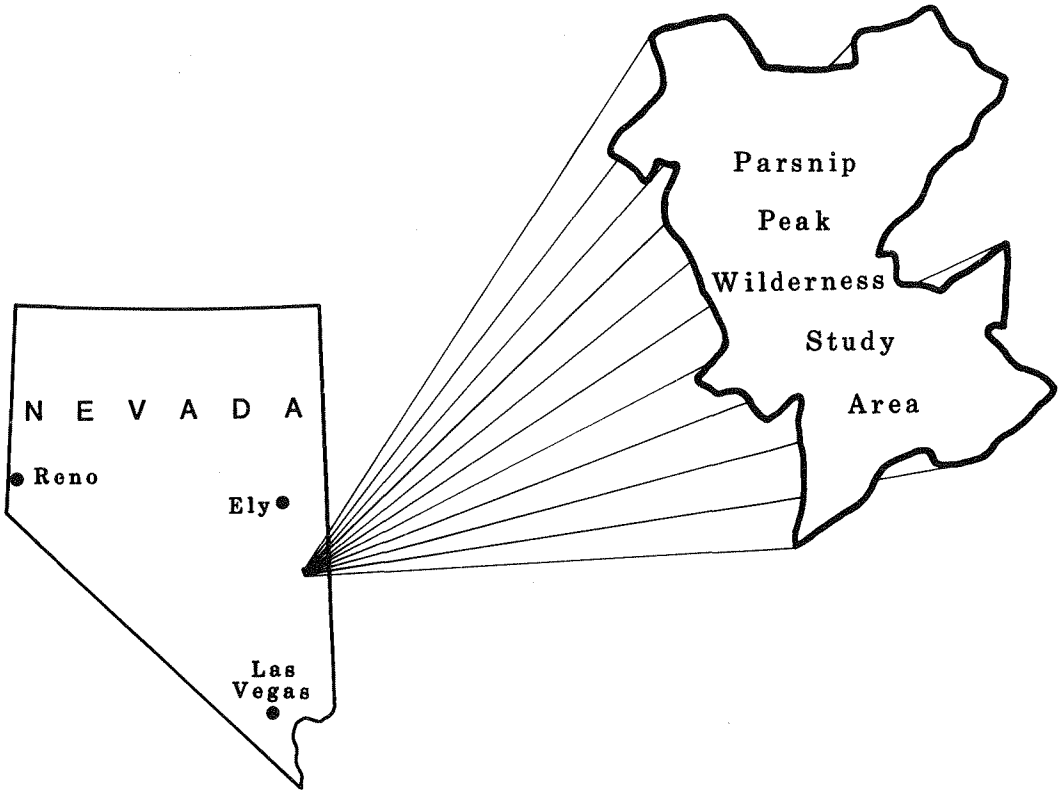
MLA 42-85

Mineral Land Assessment
Open File Report/1985

Mineral Resources of the Parsnip Peak Wilderness Study Area (NV-040-206), Lincoln County, Nevada



United States Department of the Interior
Bureau of Mines

United States Department of the Interior

BUREAU OF MINES

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August 19, 1985

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Mr. Schilling:

Enclosed is a copy of the following U.S. Bureau of Mines Open-File Report:

MLA 42-85 MINERAL RESOURCES OF THE PARSNIP PEAK WILDERNESS STUDY AREA (NV-040-206), LINCOLN COUNTY, NEVADA

Sincerely,

Uldis Jansons

Uldis Jansons, Chief
MLA Branch

Enclosure-1
(listed above)

cc: Project File

MINERAL RESOURCES OF THE PARSNIP PEAK WILDERNESS STUDY AREA (NV-040-206), LINCOLN COUNTY, NEVADA

by

Diann D. Gese

MLA 42-85
1985

Intermountain Field Operations Center, Denver, Colorado

UNITED STATES DEPARTMENT OF THE INTERIOR
Donald P. Hodel, Secretary

BUREAU OF MINES
Robert C. Horton

PREFACE

The Federal Land Policy and Management Act (Public Law 94-579, October 21, 1976) requires the U.S. Geological Survey and the U.S. Bureau of Mines to conduct mineral surveys on certain areas to determine the mineral values, if any, that may be present. Results must be made available to the public and be submitted to the President and the Congress. This report presents the results of a mineral survey of the Parsnip Peak Wilderness Study Area (NV-040-206), Lincoln County, Nevada.

This open-file report summarizes the results of a Bureau of Mines wilderness study and will be incorporated in a joint report with the Geological Survey. The report is preliminary and has not been edited or reviewed for conformity with the Bureau of Mines editorial standards. Work on this study was conducted by personnel from Intermountain Field Operations Center, Building 20, Denver Federal Center, Denver, CO 80225.

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UNITS OF MEASURE USED IN THIS REPORT

°F	degrees Fahrenheit
ft	foot/feet
ft^2	square feet
lbs/cu ft	pounds per cubic foot
mi	mile(s)
oz	ounce(s)
ppm	parts per million

MINERAL RESOURCES OF THE PARSNIP PEAK WILDERNESS STUDY AREA (NV-040-206), LINCOLN COUNTY, NEVADA

by

Diann D. Gese, Bureau of Mines

SUMMARY

In accordance with the Federal Land Policy and Management Act (Public Law 94-579), a mineral survey was conducted in July 1984 to appraise the resources in the Parsnip Peak Wilderness Study Area. The area studied consists of 53,650 acres in Lincoln County, Nevada.

Perlite crops out along the western boundary of the study area. Densities of expanded perlite samples from these outcrops range from 3.9 to 8.2 pounds per cubic foot. The inferred resource of this perlite is 4 million tons.

INTRODUCTION

In July 1984, the Bureau of Mines, in coordination with the U.S. Geological Survey, conducted a mineral survey to investigate the mineral resources within the Parsnip Peak Wilderness Study Area (WSA) in southeastern Nevada. The Bureau surveys and studies mines, prospects and mineralized areas to appraise identified resources. The Geological Survey assesses the potential for undiscovered mineral resources based on regional geological, geochemical, and geophysical surveys. This report presents the results of the Bureau's study.

Geographic and geologic setting

The Parsnip Peak WSA encompasses 88,175 acres in east-central Lincoln County, Nevada. Of this acreage, 53,650 acres were considered suitable by the Bureau of Land Management (BLM) to be included in the wilderness system and therefore studied by the Bureau of Mines and the Geological Survey. The study

area includes the southern half of the north-trending Wilson Creek Range in the Basin and Range physiographic province (fig. 1). The Wilson Creek Range is one of the highest and least accessible ranges in Lincoln County. Peaks along the crest of the range exceed 8,000 ft in elevation. Elevations range from approximately 6,000 ft on the southeast flank of the Wilson Creek Range to 8,916 ft at Parsnip Peak. Access to the WSA is by improved and unimproved dirt roads; interior access is by foot and jeep trails. Pioche, the nearest town, is approximately 10 mi southwest of the study area and Caliente, the nearest shipping point, is approximately 15 mi south of Pioche.

The Wilson Creek Range is composed predominantly of Tertiary volcanics, ranging in composition from rhyolite to basalt, flanked by Pliocene lake bed deposits and Quaternary alluvium deposits. Paleozoic carbonate rocks crop out in secs. 22 and 23, T. 3 N., R. 68 E. Normal faults that trend to the northwest cut the volcanic rocks (see Tschanz and Pampeyan, 1970).

Present investigation

Prior to the field investigation, Bureau personnel reviewed pertinent published and unpublished literature. Files at the BLM State Office in Reno, Nevada, were reviewed for patented and unpatented mining claim locations and oil and gas and geothermal leases and lease applications. Lessees, mining claim holders, and persons having knowledge of mineral occurrences and mining activities within and near the area studied were contacted.

Two Bureau employees spent 12 days in the field and collected a total of 53 chip, grab, and select samples (table 1). Twenty-three perlite samples were crushed and screened to a 30-50 mesh fraction and expanded in the Perlite Corporation's model LVD laboratory perlite expander (table 2). The perlite was tested at the standard settings with no preheat, and with preheats of

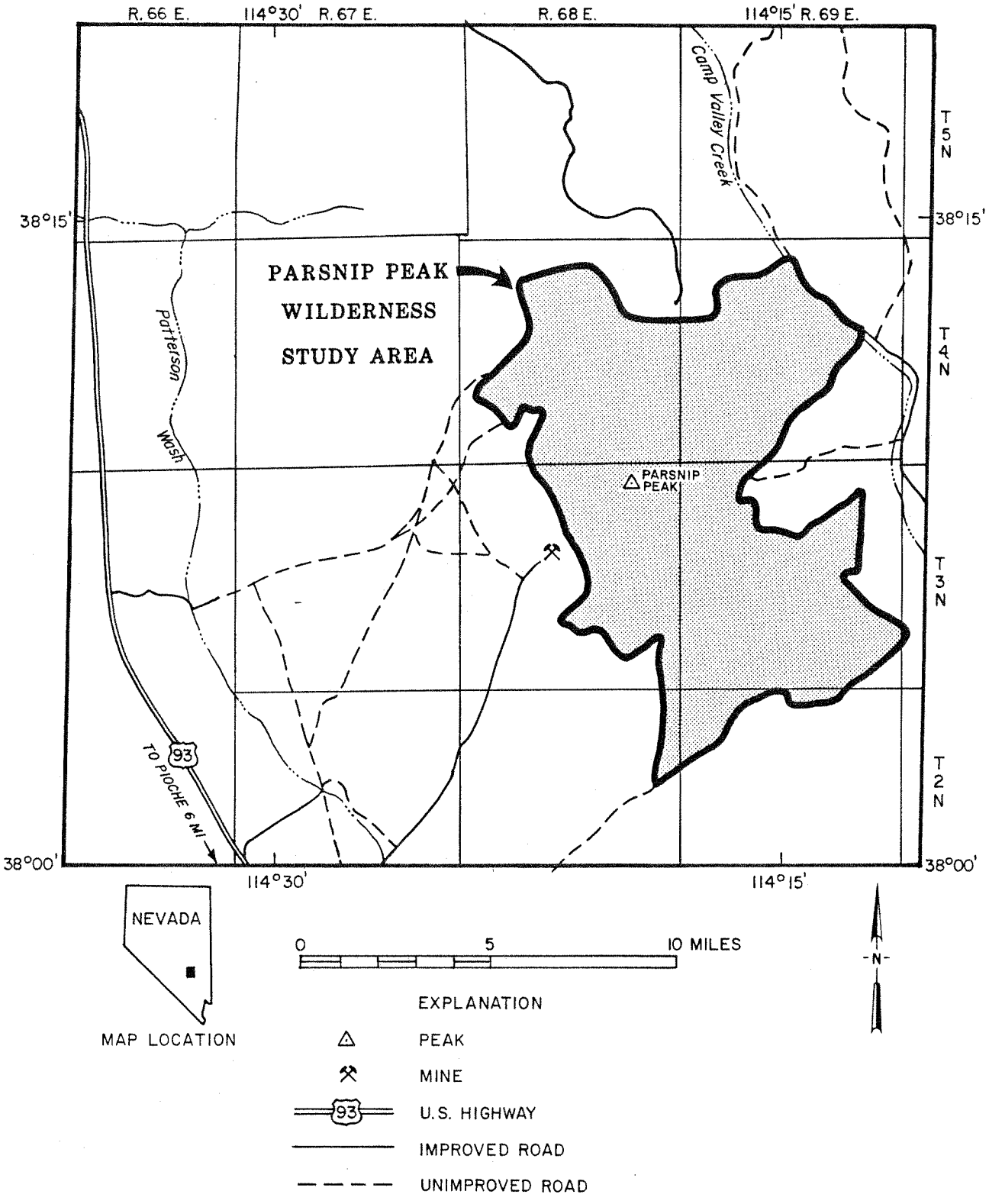

Figure 1.--Index map of the Parsnip Peak Wilderness Study Area, Lincoln County, Nevada.

300°F and 600°F. The density of the resulting expanded product determined the suitability of the perlite for various industrial uses and types of furnaces. Seventeen samples were fire assayed for gold and silver (table 3); 13 samples were analyzed by semiquantitative optical emission spectrographic methods for 40 elements (see appendix).

Tonnages for perlite deposits that occur within the area studied were calculated by multiplying the area of a deposit times its thickness, and dividing the resulting volume by a tonnage factor of 13.9. The area of perlite outcrop mapped in the field was estimated by using a planimeter; the thickness was measured in the field. Areas and thicknesses used to calculate the perlite resources at various deposits in this report are given in Table 4.

Complete analytical results for all samples are available for public inspection at the Bureau of Mines, Intermountain Field Operations Center, Building 20, Denver Federal Center, Denver, CO 80225.

Acknowledgments

Appreciation is extended to K. L. Olinghouse and James W. Cole, claim owners, for information concerning their respective claims.

MINING HISTORY

Although there are no mining districts within the Parsnip Peak WSA, the area is near the Atlanta (Silver Park, Silver Springs) mining district, approximately 25 mi to the north; the Bristol (Jackrabbit) mining district, approximately 15 mi to the northwest; and the Pioche (Ely) mining district approximately 10 mi to the west. Silver deposits in the Bristol and Pioche districts and gold and silver deposits in the Atlanta district were discovered in the late 1860's.

Perlite occurrences have been found within and near the study area. Perlite was produced from the late 1940's until the early 1970's from the Hollinger pit, one mi west of the study area.

In July 1984, mining activity within the WSA consisted of assessment work on two groups of claims, the Blue Rock placer claims and the Gold Tower lode claims. Oil and gas leases cover parts of the WSA; however, as of March 1984, no oil or gas wells had been drilled on these leases (Weimer-McMillion, 1984) (pl. 1).

COMMODITY HIGHLIGHTS

Perlite, a glassy volcanic rock with 2 to 5 percent combined water (Bates, 1969, p. 50; Harben and Bates, 1984, p. 69), is the only identified resource within the study area. When sized grains of crushed perlite are heated quickly in either a stationary vertical or a rotary horizontal furnace to the temperature of incipient fusion, usually 1,400°F to 2,000°F, they increase in volume from 10 to 20 times (Harben and Bates, 1984) (fig. 2).

The capacity to swell into light cellular particles makes perlite commercially valuable. Expanded perlite has a low bulk density, large surface area of its particles, low thermal conductivity, high resistance to fire, and low sound transmission; these characteristics make expanded perlite a desirable industrial mineral, especially in the construction industry. It is used as concrete and plaster aggregate, as an insulator, a soil conditioner, and as a filter aid (Naert, 1974; Chesterman, 1975; Kadey, 1983).

A commercially acceptable expanded perlite must have a bulk density between 2 and 15 lbs/cu ft without the production of an excessive amount of fines or expandibles, and particle sizes ranging from +20 to -100 mesh (Benton, 1984, p. 3). Expansion has to occur in an economically defined

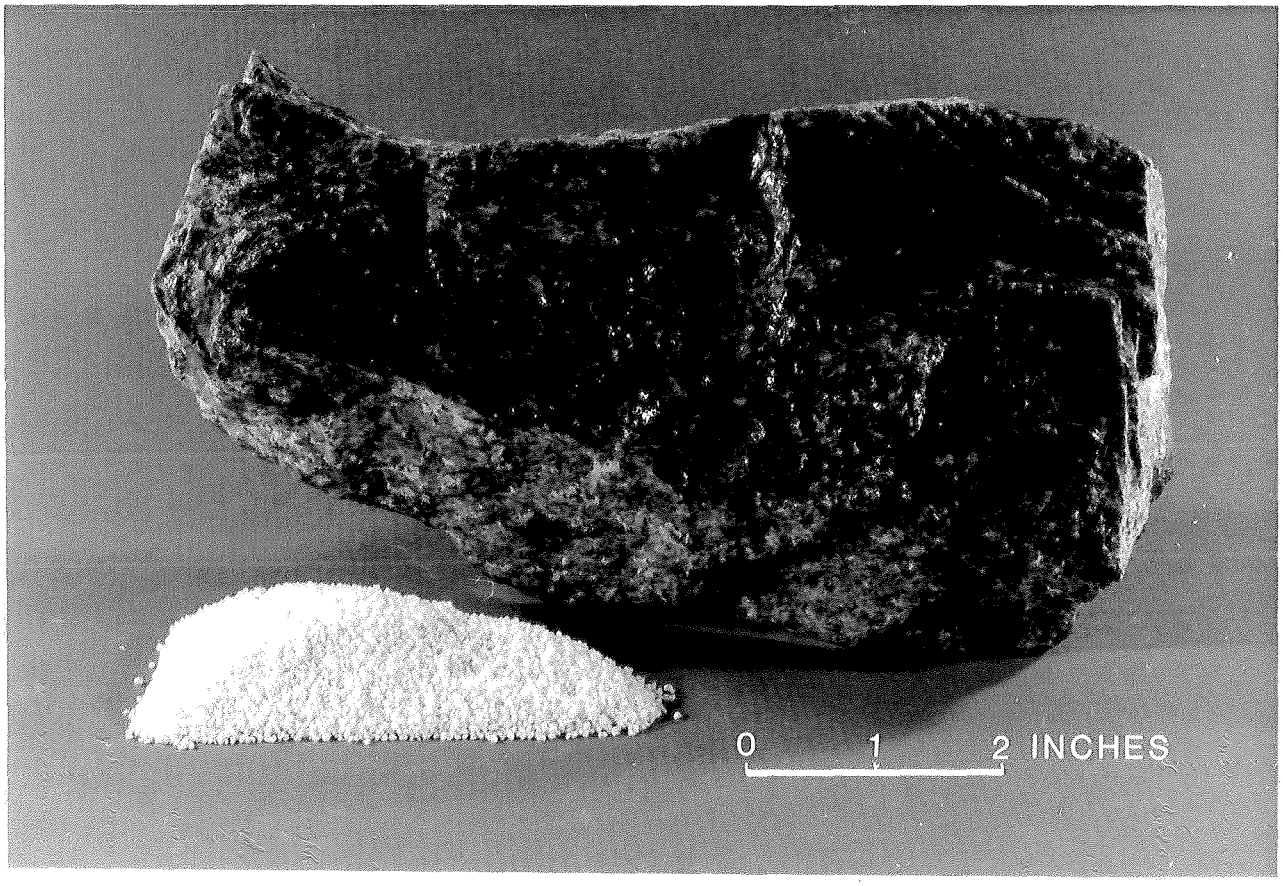

Figure 2.--Photograph of perlite and expanded perlite from the Parsnip Peak Wilderness Study Area.

temperature range; temperatures greater than 1,850°F are not considered economical due to the high cost of fuel (Naert, 1974). The 1984 average value per ton of perlite was $33.00 f.o.b. mine (U.S. Bureau of Mines, 1985, p. 112).

Expansion characteristics, accessibility, size, and location of the deposit determine the value of a perlite deposit. The industry in the United States is controlled by a few relatively large corporations that mine large deposits of uniform quality perlite (Naert, 1974). In 1984, all perlite in the United States was produced from 12 operations (Benton, 1984); 85 percent of the total production was from two large deposits in New Mexico. The United States supplies all of its own perlite needs (Kadey, 1983, p. 1011).

Perlite is most commonly mined by open pit methods, then crushed and sized at either the mine or shipping point before it is sent to an expanding plant. Expanding plants are near market areas because of the high freight costs for the light weight and bulky expanded perlite.

APPRAISAL OF SITES EXAMINED

Four perlite deposits, the Free deposit and three unnamed deposits, and a possible gold and silver occurrence, the Gold Tower claims, were examined within the study area.

Free perlite deposit

The Free perlite deposit occurs in secs. 5 and 6, T. 2 N., R. 69 E. (pl. 1, sample 53; table 5, sample 53). The deposit is intruded and capped by dacite. The average density of the expanded perlite from this deposit is 4.7 lbs/cu ft (table 2, sample 53). The sample shattered and produced black smoke when expanded in a laboratory furnace. Shattering and smoking in the furnace could have been due to an excessive amount of combined water in the sample (Kadey, 1983, p. 1009). Perlite of this density may produce an acceptable concrete or plaster aggregate.

Cochran (1951, p. 15) estimated the indicated reserves of the Free perlite deposit to be 450,000 tons and the inferred reserves to be 1 million tons using a deposit size of 800 ft long by 300 ft wide by 25 ft thick. The Bureau estimated the inferred perlite resources of the Free deposit to be 250,000 tons (table 4, sample 53).

At the present time, there is no road to the Free perlite deposit. The deposit is probably too small in size to be of economic importance in the near future.

Unnamed perlite deposits

Three unnamed perlite deposits occur within the study area in secs. 25-27, T. 3 N., R. 68 E. (pl. 1, samples 48-52).

Samples 48 and 49 (table 5) were taken from a perlite deposit in the SE 1/4 sec. 27, T. 3 N., R. 68 E. Expanded perlite densities ranged from 5.7 to 8.2 lbs/cu ft (table 2, samples 48 and 49). Perlite of this density could possibly be used as plaster and concrete aggregates. The Bureau estimated the inferred resources of this deposit to be 700,000 tons.

Samples 50 and 51 (table 5) were taken from a perlite deposit in the SW 1/4 sec. 26, T. 3 N., R. 68 E. Sample densities ranged from 3.9 to 5.6 lbs/cu ft (table 2, samples 50 and 51). Perlite of this density would probably be acceptable as plaster and concrete aggregate. The inferred perlite resources of this deposit are estimated by the Bureau to be 2 million tons.

Sample 52 (table 5) was taken from a perlite deposit in the SW 1/4 sec. 25, T. 3 N., R. 68 E. The average sample density was 4.0 lbs/cu ft (table 2, sample 52). This deposit would produce perlite that would be acceptable as plaster and concrete aggregate. The inferred resources of this perlite deposit were estimated by the Bureau to be 420,000 tons.

Blue Rock claims area

The Blue Rock claims consist of 3 placer claims, secs. 3 and 4, T. 3 N., R. 68 E., that have been active since they were first located in 1949 (pl. 1). Although the claims extend into the study area no perlite outcrops were found there. Perlite crops out at the boundary of and up to 3/4 mi west of the study area (table 5, samples 1-7). The deposit appears free of contaminants except for minor jasper at the top and bottom of an exposed section. Perlite sampled in 1983 expanded 14 times at 1,250°F. (K. R. Olinghouse, claim holder, oral commun., August 1984).

Four perlite samples were taken by Bureau personnel on the Blue Rock claims (pl. 1, samples 1-4). One sample was taken from a pit (table 5, sample 1) in the perlite and the rest were taken from perlite outcrops. Density of the expanded perlite sample ranged from 2.5 to 5.37 lbs/cu ft (table 2, samples 1-4). Perlite of this density would probably be suitable for plaster and concrete aggregate.

It is very likely that the perlite extends into the study area, but drilling would be necessary to confirm its presence below the surface there. Mining by surface methods is feasible on the Blue Rock claims, but there has been no known production from them. The deposit is approximately 2 mi by jeep trail from a well-maintained dirt road that provides direct access to State Highway 93.

Hollinger perlite deposit

The Hollinger perlite deposit, or Hollinger pit, in NE 1/4 sec. 16, T. 3 N., R. 68 E., is the only known perlite producer within the vicinity of the WSA (pl. 1). Literature dating back to August 1951 has incorrectly located the deposit in secs. 3 and 10, T. 3 N., R. 68 E. (Cochran, 1951). Placer

claims held by Kerr-McGee now cover the Hollinger perlite deposit including the Hollinger pit. The mine was developed by quarry methods in the late 1940's by the Combined Metals Production Co. which produced perlite until approximately 1971 (Cochran, 1951; Cammarota, 1970, p. 465; 1971, p. 477). Ore was crushed and sized at the company's grinding plant at Caselton, Nevada and hauled by railroad to various expanding plants throughout the country. Most of the perlite from the Hollinger pit was used for the production of light-weight plaster aggregate. Original reserves of minable perlite were 9 million tons of which over 250,000 tons have been produced by open pit mining. (Cochran, 1951, p. 10 and 11; Tschanz and Pampeyan, 1970, p. 123).

In July 1984, the quarry consisted of 3 benches that open up a face of approximately 90 ft of high quality perlite. Twenty-three samples were taken in the Hollinger pit area (pl. 1, samples 8-30; table 5, samples 8-30). Ten of these 23 samples were expanded in a laboratory furnace and sample densities ranged from 2.55 to 4.56 lbs/cu ft (table 2, samples 8, 10, 11, 16, 19, 21, 27-30). Expanded perlite of this density would probably be satisfactory for plaster and concrete aggregate, as a filter aid, in wallboard construction, and in cryogenics. A well maintained dirt road provides access directly from the mine to State Highway 93.

Gold Tower claims

The Gold Tower claims consist of 7 lode claims in secs. 22 and 23, T. 3 N., R. 68 E., and cover Cambrian limestones and dolomites exposed in surrounding Tertiary volcanics within the area studied (pl. 1) (Margo Toth, U.S. Geological Survey, oral commun., July 1985). The claims were located by the C and C Mining Company in January 1981, on jasperoid outcrops (James W. Cole, written commun., March 1984). Two shafts (19.5 and 60 ft deep) and two

prospect pits are on brecciated jasperoid veins in altered carbonate rocks. The shafts are approximately 400 ft apart and are along strike of the same 10-ft-wide brecciated jasperoid vein. The vein contains limonite, hematite, goethite, cinnabar, orpiment, and realgar. One of six samples taken in the area of the two shafts contained silver; none of the samples contained gold (table 3, samples 37-41, 47). Five of the samples contained from 3 to 7 ppm thallium.

Seventeen samples were taken on the Gold Tower claims; 12 samples were taken from jasperoids, both massive and brecciated, and 5 were taken from silicified limestones and dolomites. One sample contained a minor amount of gold, 0.010 ppm (table 3, sample 42), and two samples contained silver, 0.360 ppm (table 3, samples 40 and 42). Sixteen of the 17 samples contained arsenic above the detection limit of 2 ppm; the average arsenic content of the 16 samples is 170 ppm. Ten of the samples contained antimony above the detection limit of 2 ppm; the average antimony content of the 10 samples is 23 ppm. Six of the samples contained thallium above the detection limit of 2 ppm; the average thallium content of the 6 samples is 4 ppm. Two of the samples contained mercury (table 3, samples 41 and 46). Anomalously high amounts of antimony, arsenic, and mercury in jasperoids and carbonates can be indicative of disseminated gold and silver deposits (Carlin-type). However, no gold or silver resource was identified on the Gold Tower claims based on the Bureau's surface sampling.

OIL AND GAS

Oil and gas leases cover approximately 8,000 acres within the study area (pl. 1). As of March 1984, the only known oil and gas well drilled in the area was May Petroleum, Inc.'s 1-16 Federal N3258 approximately 12 mi west of

the WSA (Weimer-McMillion, 1984, p. 3). Sandberg (1983) has rated the area as having a low potential for oil and gas accumulations because it is composed almost entirely of Tertiary volcanic rocks.

CONCLUSIONS

An inferred perlite resource of four million tons exists within the study area. The quality of the perlite varied, but when expanded most appeared to produce an acceptable concrete and plaster aggregate. The deposits are minable by surface methods. All but the Free perlite deposit are currently accessible only by jeep trails. At the present time, large-tonnage high-quality perlite deposits in New Mexico meet perlite demands of the United States. It seems unlikely that any of the deposits within the WSA will be exploited in the near future.

Jasperoid crops out within the WSA on the Gold Tower claims. Samples from the jasperoid outcrops contain anomalously high amounts of arsenic, antimony, mercury, and thallium, elements which serve as geochemical pathfinders for Carlin-type gold and silver deposits in this part of the United States. More surface and subsurface sampling would be required to determine if a gold or silver resource exists on the Gold Tower claims.

Oil and gas leases cover part of the WSA; however, no oil or gas wells have been drilled there. Most of the area consists of Tertiary volcanic rocks which are unlikely to contain any oil or gas accumulations.

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Appendix.--Semiquantitative optical emission spectrographic analysis detection limits, U.S. Bureau of Mines, Reno Research Center.

Element	Detection limit (percent)	Element	Detection limit (percent)
Ag	0.002	Mo	0.0001
Al	.001	Na	.3
As	.01	Nb	.007
Au	.002	Ni	.0005
B	.003	P	.7
Ba	.002	Pb	.001
Be	.0001	Pt	.0001
Bi	.01	Re	.0006
Ca	.05	Sb	.06
Cd	.0005	Sc	.0004
Co	.001	Si	.0006
Cr	.0003	Sn	.001
Cu	.0006	Sr	.0001
Fe	.0006	Ta	.02
Ga	.0002	Te	.04
K	2.0	Ti	.03
La	.01	V	.005
Li	.002	Zn	.0001
Mg	.0001	Zr	.003
Mn	.001	Y	.0009

These detection limits represent an ideal situation. In actual analyses, the detection limits vary with the composition of the material analyzed. These numbers are to be used only as a guide.

Table 1.--Mineral occurrences in and near the Parsnip Peak Wilderness Study Area, Nevada.

Sample No.	Name	Locations	Commodities	Development	Description
1-4	Blue Rock placer claims.	Secs. 3 and 4, T. 3 N., R. 68 E.	Perlite	Pits	Extensive perlite outcrops.
5-7	Unnamed	Secs. 3 and 4, T. 3 N., R. 68 E.	Perlite	None	Perlite outcrops: sec. 3, outcrop 400 ft by 400 ft and 120 ft thick; sec. 4, outcrop 100 ft by 200 ft and 40 ft thick
8-30	Hollinger perlite deposit.	Sec. 16, T. 3 N., R. 68 E.	Perlite	Pits, trenches, 90-ft-deep quarry	Granular perlite occurs between two glassy flows, approximately 7.75 million tons of perlite reserves.
31-47	Gold Tower claims.	Secs. 22 and 23, T. 3 N., R. 68 E.	None	Pits, trenches, 19.5- and 60-ft-deep shafts.	Brecciated jasperoid veins and jasperoid outcrops.
48-52	Unnamed	Secs. 25-27, T. 3 N., R. 68 E.	Perlite	Pit	Perlite outcrops; inferred perlite resources of 3.1 million tons.
53	Free perlite deposit.	Secs. 5 and 6, T. 2 N., R. 69 E.	Perlite	None	Perlite outcrops; inferred perlite resources of 250,000 tons.

Table 2.--Results of laboratory expandability tests of select perlite samples from the Parsnip Peak Wilderness Study Area, Nevada.

[Analytical work by Perlite Corp., Aston, PA,]

Sample No.	Furnace Temperature (°F) 0	300	600	Furnace Temperature (°F) 0	300	600	Color	Remarks
	Sample Mass (oz)			Perlite Density (lbs/cu ft)				
1	0.26	0.23	0.01	4.56	4.1	2.5	white	Small amount of expanded sample collected at 600°F.
2	.22	.23	.01	5.37	4.6	4.7	light gray	Do.
3	.24	.14	.22	4.37	3.2	3.4	white at 0°F and 300°F, light gray at 600°F.	
4	.20	.18	.23	3.75	3.2	4.3	white	
5	.22	.19	.23	3.88	3.3	4.2	very light gray	
6	.26	.05	.08	4.74	3.3	6.2	light gray	Small amount of expanded sample collected.
7	.15	.14	.19	2.87	2.6	5.2	do.	
8	.20	.12	.04	3.68	3.5	3.5	light gray	Amount of expanded sample collected decreased as preheat temperature increased.
10	.17	.03	.03	2.99	3.9	2.6	do.	Do.
11	.19	.04	.01	3.18	3.6	3.1	very light gray	Do.
16	.17	.16	.004	2.93	3.1	2.1	do.	Small amount of expanded sample and poor yield.
19	.16	.12	.05	2.87	3.9	4.1	white	Small amount of expanded sample collected at 300°F and 600°F.
21	.22	.03	.02	3.87	2.6	3.1	light gray	Small amount of expanded sample and poor yield.

Table 2.--Results of laboratory expandability tests of select perlite samples from Parsnip Peak Wilderness Study Area, Nevada--Continued

Sample No.	Furnace Temperature (°F) 0	150	300	Furnace Temperature (°F) 0	150	300	Color	Remarks
	Sample Mass (oz)			Perlite Density (lbs/cu ft)				
27	0.25	0.05	0.03	4.56	3.6	4.2	light gray	Small amount of expanded sample and poor yield.
28	.23	.11	.09	4.06	3.3	3.5	very light gray	Poorly, but uniformly expanded.
29	.20	.21	.09	3.75	3.7	3.3	do.	Do.
30	.16	.08	.05	2.87	2.9	3.1	white	Small amount of sample collected at 600°F.
48	.31	.24	.12	7.93	6.9	8.2	light gray	Small amount of expanded sample collected.
49	.32	.30	.05	7.05	5.7	6.2	do.	Small amount of expanded sample collected at 600°F.
50	.31	.26	.16	5.56	4.4	4.8	very light gray	Do.
51	.20	.14	.10	4.31	3.9	4.6	do.	Smaller amount of expanded sample collected as preheat temperature increased.
52	.25	.24	.09	4.62	4.2	3.4	light gray	Smaller amount of expanded sample collected at 600°F.
53	.28	.20	.23	5.18	4.5	4.6	white at 0°F	Small amounts of expanded samples collected at 300°F and 600°F.

Table 3.--Analytical data and descriptions of Samples 31-47 from the Gold Tower claims.

[Analytical work by Bureau of Mines, Reno, Nevada; Au, gold: Ag, silver; As, arsenic; Sb, antimony; NA, not applicable; ---, assayed for but not detected.]

Sample			Assay data				
No.	Type	Length (ft)	Au	Ag	As	Sb	Remarks
			ppm				
31	Chip	0.9	---	---	120	10.5	Jasperoid vein in silicified limestone.
32	Select	NA	---	---	18.8	---	Dump; gossan of replaced carbonate, abundant goethite.
33	Grab	5-ft-grid	---	---	63	---	Dump; altered carbonate, limonite and hematite.
34	Chip	1.7	---	---	28.7	---	Altered and replaced carbonate; chert, hematite and goethite.
35	Select	NA	---	---	220	22.1	Brecciated jasperoid outcrop; chert.
36	Select	NA	---	---	---	---	Silicified carbonate; jasper, chert, and epidote.
37	Grab	5-ft-grid	---	---	73	---	Dump; brecciated jasperoid, abundant limonite and hematite, quartz veins, orpiment, and realgar; contains 4 ppm thallium.
38	Select	NA	---	---	120	22.1	Dump; sintery jasperoid, goethite; contains 3 ppm thallium.

Table 3.--Analytical data and descriptions of Samples 31-47 from the Gold Tower claims--Continued

Sample No.	Type	Length (ft)	Assay data Au (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Remarks
39	Select	NA	---	---	710	19.0	Jasperoid; goethite and hematite; contains 3 ppm thallium.
40	Grab	5-ft-grid	---	0.36	87	4	Dump; jasperoid, iron-oxide staining; contains 5.1 ppm thallium.
41	Select	NA	---	---	380	41	Jasperoid; limonite, hematite, vuggy quartz and quartz veinlets; contains 7.1 ppm thallium and 6.1 ppm mercury.
42	Select	NA	0.010	.36	140	16.7	Jasperoid; goethite and pyrolusite.
43	Chip	2.0	---	---	130	5	Massive jasperoid vein; goethite and hematite.
44	Chip	1.7	---	---	12.3	---	Silicified carbonate; veins of quartz, goethite and hematite.
45	Chip	3.0	---	---	74	4	Massive jasperoid and silicified carbonate; hematite and limonite
46	Select	NA	---	---	450	87	Massive jasperoid in silicified carbonate; limonite and hematite; contains 3 ppm thallium and 3.4 ppm mercury.
47	Select	NA	---	---	66	---	Massive jasperoid; limonite, chalcedony, abundant goethite, realgar and orpiment.

Table 4.--Data used in calculating perlite tonnages within the Parsnip Peak Wilderness Study Area.

Sample No.	Area(ft^2)	Thickness (ft)	Tons
Unnamed perlite deposits			
48,49	257,000	40	739,000
50,51	272,000	120	2,350,000
52	117,000	50	420,000
Free perlite deposit			
53	87,000	40	252,000

Table 5.--Descriptions of perlite samples from Parsnip Peak Wilderness Study Area, Nevada.

[NA, not applicable.]

Sample No.	Sample Type	Sample Length (ft)	Remarks
Blue Rock claims area			
1	Chip	5.0	Granular, fractured perlite; contains jasper.
2	Select	NA	Granular, highly jointed and fractured perlite; pearly luster, jasper inclusions, epidote and chalcedony coatings.
3	Select	NA	Granular perlite; minor jasper at bottom and top of outcrop.
4	Select	NA	Granular, jointed perlite; pearly luster, appears pure, no inclusions.
5	Select	NA	Granular, moderately shardy perlite; flow banding, jointed, epidote.
6	Select	NA	Granular perlite; interbedded with 2- to 4-in.-thick layers of rhyolite tuff; minor jasper.
7	Select	NA	Granular, fractured perlite; shardy.
Hollinger perlite deposit			
8	Select	NA	Granular perlite; shardy.
9	Chip	7.0	Granular perlite.
10	Chip	21.0	Granular, fractured perlite; flow banding.
11	Chip	21.0	Granular, fractured perlite.
12	Chip	12.0	Do.
13	Chip	5.8	Fractured jasper; numerous inclusions of perlite.
14	Chip	9.3	Granular, fractured perlite; friable, small veins of jasper and jasper at bottom of outcrop.

Table 5.--Descriptions of perlite samples from the Parsnip Peak Wilderness Study Area, Nevada--Continued

Sample No.	Sample Type	Sample Length (ft)	Remarks
15	Chip	16.0	Granular, fractured perlite; pearly luster, very shardy.
16	Chip	8.6	Granular, jointed and fractured perlite; interlayers of altered tuff with botryoidal chalcedony.
17	Chip	21.0	Granular, very fractured and friable perlite; small interlayers of jasper, chalcedony, perlite capped by 5 ft of altered tuff.
18	Chip	17.0	Granular, very fractured and friable perlite; shardy, iron oxides.
19	Chip	47.0	Granular perlite; shardy.
20	Chip	6.0	Same as sample 18; but not as fractured.
21	Chip	58.0	Granular, jointed and fractured perlite; pearly luster, chert, shardy.
22	Chip	23.0	Granular, highly fractured and jointed perlite; veinlets of jasper, flow banding.
23	Chip	9.0	Do.
24	Chip	17.0	Granular perlite.
25	Chip	17.5	Granular and fractured perlite; iron-oxide staining.
26	Chip	13.0	Granular, fractured and jointed perlite; veinlets of quartz and jasper, minor epidote.
27	Chip	7.7	Granular perlite; jasper content increases downward.
28	Chip	26.0	Same as sample 27 but contains less jasper.
29	Chip	6.0	Granular and fractured perlite; some impurities, epidote.
30	Chip	12.0	Granular perlite; fewer impurities than sample 29.

Table 5.--Descriptions of perlite samples from the Parsnip Peak Wilderness Study Area, Nevada--Continued

Sample No.	Sample Type	Sample Length (ft)	Remarks
Unnamed perlite deposits			
48	Chip	8.0	Granular and heavily fractured and friable perlite; shardy, contains some jasper.
49	Chip	7.0	Do.
50	Select	NA	Granular and massive perlite; contains some jasper.
51	Select	NA	Do.
52	Select	NA	Fractured "onion-skin" type perlite; mafics and chalcedony veins, shardy.
Free perlite deposit			
53	Select	NA	Granular perlite.

DEPARTMENT OF THE INTERIOR
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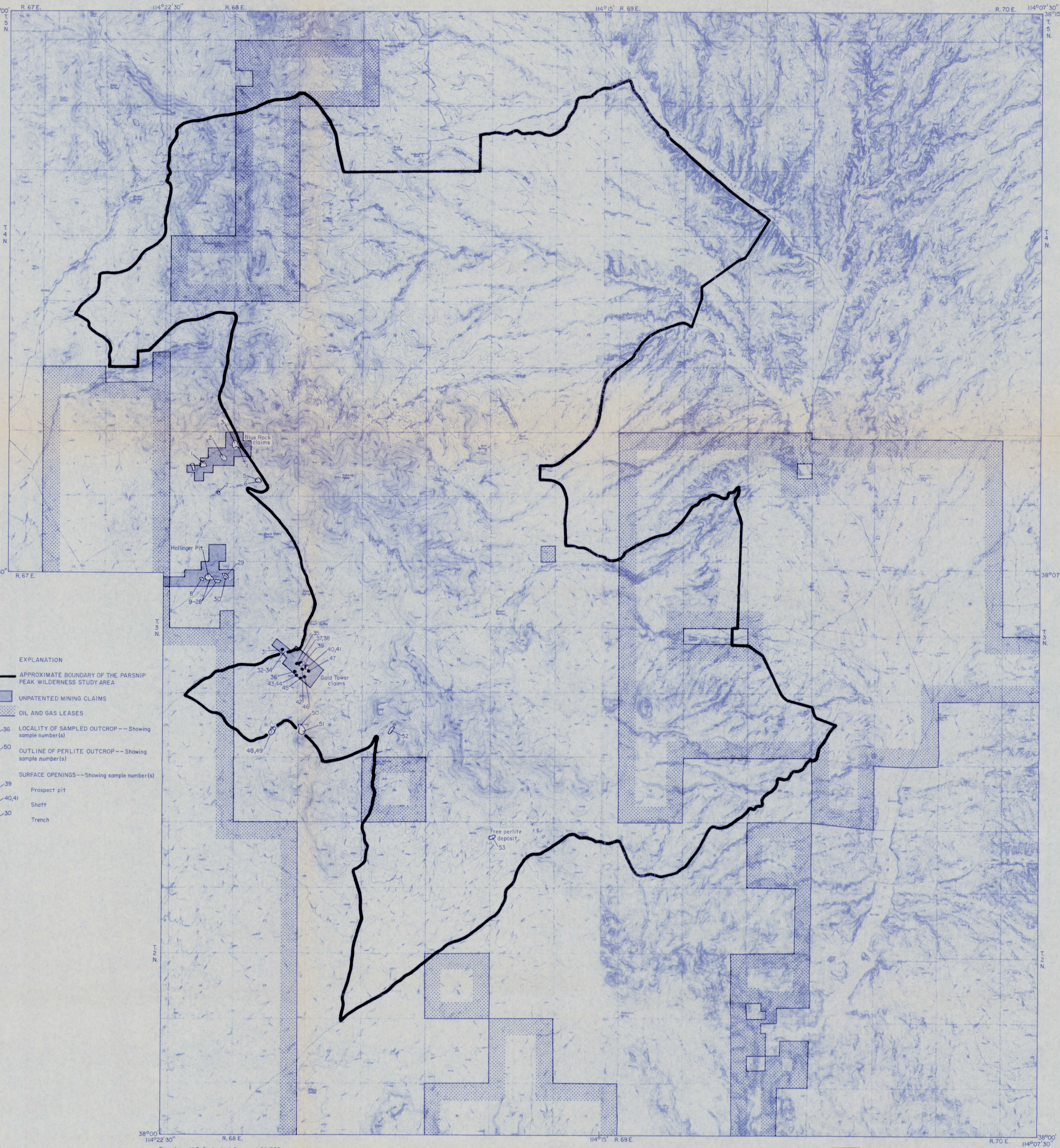
OPEN FILE REPORT
MLA 42-85
PLATE 1



MINE AND PROSPECT MAP OF THE PARSNIP PEAK WILDERNESS STUDY AREA, LINCOLN COUNTY, NEVADA

BY

DIANN D. GESE, U.S. BUREAU OF MINES

1985