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September 6, 2001

Mr. M.M. Underwood, Jr.  
Director of Physical Resources  
U.S. Forest Service - Rocky Mountain Region  
P.O. Box 25127  
Lakewood, CO 80225-0127

Dear Mr. Underwood:

This is in response to your August 28, 2001 request for information on locatable mineral resources in a land exchange proposal in which Land Uses Resource Center has offered certain non-Federal lands within the Pike and San Isabel National Forests in exchange for Federal lands within the Pike National Forest.

In accordance with the working agreement under Public Law 86-509, we are providing you with a report on the locatable mineral resources on the lands described in "Exhibits A and B", included with your request. These lands comprise 331 acres, more or less, in Park, Douglas, Chaffee, and Custer Counties, Colorado.

Sincerely yours,

Anna B. Wilson, Geologist  
Mineral Resources Program, Central Region

Copies:       W.C. Day  
                  E.A. duBray  
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LOCATABLE MINERAL REPORT FOR THE  
LAND USES RESOURCE CENTER LAND EXCHANGE OFFER,  
PIKE AND SAN ISABEL NATIONAL FORESTS,  
PARK, DOUGLAS, CHAFFEE, and CUSTER COUNTIES, COLORADO

By  
Anna B. Wilson  
U.S. Geological Survey

September 6, 2001

*The following report is based on information contained in USGS mineral resource and commodity files, mineral information databases (MRDS and MAS), and on reports and maps available in the USGS library. These data are occasionally augmented with unpublished documents, personal communications, and professional experiences. No field studies or on-site visits were performed in preparing this report. Emphasis is primarily on locatable mineral resources. Leasable and salable resources are covered only if they appear in the above documents. Mineral resource assessments are subjective: the opinions expressed herein are entirely those of the author.*

For the legal location description of lands considered for exchange, refer to Exhibits A and B in Attachment A.

## **NON-FEDERAL**

### **PARCEL 1: Hickle**

Montezuma 1:24,000; Denver West 1:100,000; and Denver 1:250,000 quadrangles. Pike NF.

A Locatable Mineral Report of the Hickle property (September 5, 1997) is included in the USGS Open-File Report 97-535 (Wilson, 1997, p. 29). It is excerpted below, with minor revisions.

The Hickle property is between Kirby Gulch and Geneva Creek east of Landslide Peak. The area is mapped as 1.7 Ga Idaho Springs Formation intruded by 1.4 Ga Silver Plume Granite (Lovering, 1935; see Attachment B). Small Proterozoic pegmatite pods are present in the area (Lovering, 1935).

No mines, prospects, or occurrences are known on the tract (Lovering and Goddard, 1950; McFaul and others, 2000) yet it is only a couple of miles east of an area assigned high potential for Au, Ag, Cu, Pb, Zn, As, Sb, and Bi in veins (Toth and others, 1993) in the Montezuma district. There is no indication from currently available mapping to suggest the property could be mineralized but because the geology is similar to that near Montezuma and Silver Plume, mineral potential is expected to be moderate. The probability of there being a minable deposit on the property is low.

### **Parcel 2: Falkenberg**

Platte Canyon 1:24,000; Bailey 1:100,000; and Denver 1:250,000 quadrangles. Pike NF. See Attachment C.

A Locatable Mineral Report of the Falkenberg property (September 5, 1997) is included in the USGS Open-File Report 97-535 (Wilson, 1997, p. 30). It is excerpted below, with minor revisions.

The Falkenberg property is entirely within Precambrian migmatite, composed mostly of interlayered biotite gneiss and granitic rocks, and cut by an inferred northwest-trending Laramide fault (Peterson, 1964; see Attachment C).

The only mineral deposits in this quadrangle include a rock quarry in the Pikes Peak Granite and several pegmatites near Raleigh Peak that were mined for feldspar (Peterson, 1964, p. C22). No mines, prospects, or occurrences are known on the Falkenberg property. Mineral potential for this tract is low.

### **Parcel 3: St. Elmo**

St. Elmo 1:24,000; Gunnison 1:100,000; and Montrose 1:250,000 quadrangles. San Isabel NF.

The St. Elmo parcel is located less than 1/2 mi southwest of Saint Elmo on the northeast end of the ridge between North Fork Chalk Creek, Chalk Creek, and Wildcat Gulch (Attachment D).

The area is mapped as Mount Princeton quartz monzonite. A northeast-trending dike of Mount Aetna quartz monzonite porphyry and a small granite aplite dike parallel to it on the west side are exposed on the nose of the ridge on or near this parcel. Dings and Robinson (1957, p. 25-31) describe these host rocks in detail.

The claims are above and west of the St. Elmo Queen mine (#169, Dings and Robinson, 1957, pl. 1). No vein is exposed at the surface in altered Mt. Princeton quartz monzonite. Pyrite, sphalerite, galena, and chalcopryrite along with quartz, calcite, and silicified quartz monzonite gangue were reported on the dump (Dings and Robinson, 1957, p. 103). Sometime between 1932 and 1950 the adit caved. No production records are available prior to 1901. The only recorded production through 1950 was 20 tons in 1932, which yielded 16 oz gold, 198 oz silver, and 1,789 lbs. lead (Dings and Robinson, 1957, p. 103).

The parcel is on the edge of an area assigned high potential for gold and silver (Taylor and others, 1984, pl. 2). Historically, these claims were of sufficient value to merit a patent. Today, however, patents are unlikely to have been granted. On a site specific scale, the resource potential of this parcel is moderate.

### **Parcel 4: Comerford**

Hardscrabble Mountain 1:24,000; Canon City 1:100,000; and Pueblo 1:250,000 quadrangles. San Isabel NF.

The area surrounding the Comerford parcel is mostly Proterozoic migmatitic gneiss (Xgn) (Scott and others, 1978; Taylor and others, 1984). There may be several mines in the region (McFaul and others, 2000). Both parcels appear to be just north of areas assigned high potential for both thorium vein deposits with rare-earth elements related to igneous rocks that intruded about 515 Ma and for vein deposits containing base metals (mostly lead) and uranium in siliceous host rocks (Taylor and others, 1984: see Attachment E). At the scale of available data it is not possible to determine with any certainty the relationship and proximity of the parcel in question to the known mines. These parcels should be examined for their resource potential.

## **FEDERAL**

### **Insmont**

Bailey 1:24,000; Bailey 1:100,000; and Denver 1:250,000 quadrangles. Pike NF.

A Locatable Mineral Report of the Insmont property (September 5, 1997) is included in the USGS Open-File Report 97-535 (Wilson, 1997, p. 30). It is excerpted below, with minor revisions.

1.75 Ga biotite gneiss (unit Xb, Attachment F) underlies the tract on the north slope of Insmont Hill (Bryant, 1976). Northwest-trending Laramide faults may just cross the northeast and southwest corners of the tract.

Molybdenum (Mo) was detected at a very low concentration (.002 percent) in one of two panned concentrate samples taken within one mile of the property (Ellis, 1983, plate 1 and p. 27).

No mineral deposits are known in this area (Streufert and Cappa, 1994; McFaul and others, 2000; Ellis, 1983). Mineral potential on this parcel is low.

### **Echo Valley**

Windy Peak 1:24,000; Bailey 1:100,000; and Denver 1:250,000 quadrangles. Pike NF. See Attachment F.

A Locatable Mineral Report of the Echo Valley property (September 5, 1997) is included in the USGS Open-File Report 97-535 (Wilson, 1997, p. 30-31). It is excerpted below, with minor revisions.

Echo Valley appears (at 1:250,000 scale) to be in Precambrian biotite gneiss (unit Xb) adjacent to the main body of the Pikes Peak Granite (Bryant and others, 1981; see Attachment H).

No mineral deposits are known on this property (Streufert and Cappa, 1994; McFaul and others, 2000) although the Lone and Lonesome pegmatite (Ellis, 1983) is about 2 miles to the south. Potassium feldspar, biotite, and topaz(?) were mined from an open cut on the Lone and Lonesome pegmatite (Ellis, 1983, p. 13 and 21). Mineral potential in Echo Valley is expected to be low.

## REFERENCES:

- Bryant, Bruce, 1976, Reconnaissance geologic map of the Bailey quadrangle, Jefferson and Park Counties, Colorado: U.S. Geological Survey Miscellaneous Field Studies Map MF-816, scale 1:24,000.
- Bryant, Bruce, McGrew, L.W., and Wobus, R.A., 1981, Geologic map of the Denver 1° X 2° quadrangle, north-central Colorado: U.S. Geological Survey Miscellaneous Investigations Series Map I-1163, scale 1:250,000.
- Dings, M.G., and Robinson, C.S., 1957, Geology and ore deposits of the Garfield quadrangle, Colorado: U.S. Geological Survey Professional Paper 289, 110 p.
- Ellis, C.E., 1983, Mineral Investigation of the Lost Creek Wilderness, Park and Jefferson Counties, Colorado: U.S. Bureau of Mines [Open-File Report] MLA 61-83.
- Lovering, T.S., 1935, Geology and ore deposits of the Montezuma quadrangle, Colorado: U.S. Geological Survey Professional Paper 178, 119 p, scale 1:62,500.
- Lovering, T.S., and Goddard, E.N., 1950, Geology and ore deposits of the Front Range, Colorado: U.S. Geological Survey Professional Paper 223, 319 p.
- McFaul, E.J., Mason, G.T., Jr., Ferguson, W.B., Lipin, B.R., 2000, U. S. Geological Survey mineral databases--MRDS and MAS/MILS: U.S. Geological Survey Digital Data Series DDS-0052, 2 discs.
- Peterson, W.L., 1964, Geology of the Platte Canyon quadrangle, Colorado: U.S. Geological Survey Bulletin 1181-C, 23 p., scale 1:24,000.
- Scott, G.R., Taylor, R.B., Epis, R.C., and Wobus, R.A., 1978, Geologic map of the Pueblo 1° X 2° quadrangle, south-central Colorado: U.S. Geological Survey Miscellaneous Investigations Series Map I-1022, scale 1:250,000.
- Streufert, R.K., and Cappa, J.A., 1994, Location map and descriptions of metal occurrences in Colorado with notes on economic potential: Colorado Geological Survey Map Series 28, scale 1:500,000.
- Taylor, R.B., Stoneman, R.J., and Marsh, S.P., 1984, An assessment of the mineral resource potential of the San Isabel National Forest, south-central Colorado *with a section on Salable minerals*, by John S. Dersch: U.S. Geological Survey Bulletin 1638, 42 p., scale 1:250,000.

Toth, M.I., Wilson, A.B., Cookro, T.M., Bankey, Viki, and Case, J.E., 1993, Mineral Resource Potential and Geology of the White River National Forest and the Dillon Ranger District of the Arapaho National Forest, Colorado *with a section on* Salable commodities, by John S. Dersch: U.S. Geological Survey Bulletin 2035, 117 p., scale 1:250,000.

Wilson, A.B., 1997, Locatable Mineral Reports for Colorado, South Dakota, and Wyoming provided to the U.S. Forest Service in Fiscal Years 1996 and 1997: U.S. Geological Survey Open-File Report 97-535, 108 p. (Includes report on Land Use Resource Center Exchange, p. 28-35).

#### LIST OF ATTACHMENTS:

- A. Exhibits A and B (provided by U.S. Forest Service)
- B. Geology in the vicinity of the Hickle Parcel, Montezuma 15-minute quadrangle (Lovering, 1935).
- C. Geology in the vicinity of the Falkenberg Parcel, Plate Canyon quadrangle (Peterson, 1964).
- D. Geology in the vicinity of the St. Elmo Parcel, Garfield 15-minute quadrangle (Dings and Robinson, 1957).
- E. Geology and mineral resource potential tracts in the vicinity of the Comerford Parcel, San Isabel National Forest (Taylor and others, 1984).
- F. Geology in the vicinity of the Insmont Parcel, Bailey quadrangle (Bryant, 1976).
- G. Geology in the vicinity of the Echo Valley Parcel, Denver 1° X 2° quadrangle (Bryant and others, 1981).