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PRELIMINARY REPORT ON DIAMOND-DRILL EXPLORATION AND PLANS FOR ADDITIONAL DRILLING IN LONG PARK AND VICINITY, MONTROSE COUNTY, COLORADO

Trace Elements Memorandum Report 297

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

IN REPLY REFER TO:

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AEC-576/2

Dr. Phillip L. Merritt, Assistant Director
Division of Raw Materials
U. S. Atomic Energy Commission
P. O. Box 30, Ansonia Station
New York 23, New York

Dear Phil:

Transmitted herewith for your information are copies 5-6 of Trace Elements Memorandum Report 297, "Preliminary report on diamond-drill exploration and plans for additional drilling in Long Park and vicinity, Montrose County, Colorado", by H. G. Stephens and E. B. Ekren, January 1952.

Geological Survey exploration in the Long Park area from April 1949 through mid-November 1951 has resulted in the discovery of about 135,000 short tons of carnotite ore, classed as indicated and inferred reserves. The average grade of this material is estimated to be about 0.20 percent U_3O_8 and 1.75 percent V_2O_5.

This preliminary report summarizes the exploration done in the Long Park area from March 1951 to mid-November 1951. This exploration resulted in the discovery of several carnotite deposits. Most of these deposits are along the common boundary of secs. 20 and 21, T. 47 N., R. 17 W., New Mexico principal meridian. Indicated and inferred reserves for these deposits are estimated to be about 5,000 short tons, whose average grade is about 0.30 percent U_3O_8 and 2.0 percent V_2O_5.

Sincerely yours,

for W. H. Bradley
Chief Geologist

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Geology - Mineralogy

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UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

PRELIMINARY REPORT ON DIAMOND-DRILL EXPLORATION AND PLANS FOR ADDITIONAL DRILLING IN LONG PARK AND VICINITY, MONTROSE COUNTY, COLORADO /

~~Classification changed to~~

By ~~by authority of~~

~~by~~ date

H. G. Stephens and E. B. Ekren

January 1952

Trace Elements Memorandum Report 297

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A. H. Koschmann, Denver	17
TEPCO, Washington (Including master)	18-21

CONTENTS

ILLUSTRATION

PRELIMINARY REPORT ON DIAMOND-DRILL EXPLORATION AND PLANS FOR ADDITIONAL DRILLING IN LONG PARK AND VICINITY MONTROSE COUNTY, COLORADO

By H. G. Stephens and E. B. Ekren

INTRODUCTION

Long Park and vicinity includes the area in T. 47 N., R. 17 W., New Mexico principal meridian, that is east of Hieroglyphic Canyon and between the north rim of Paradox Valley and Colorado Highway 141, Montrose County, Colo. (fig. 1). The area consists dominantly of public land, but includes 186 privately owned claims and Government-leased ground.

Total known production of carnotite ore from the mines in Long Park up to February 1951 was 256,720 short tons. Of this amount, 213,000 tons, averaging 0.30 percent U_3O_8 and 1.77 percent V_2O_5, was produced between 1911 and 1945 (Smith, 1946). The Long Park area produced only a few tons of ore during 1946-1948. Records for this period are incomplete. A total of 43,720 tons of ore, averaging 0.40 percent U_3O_8 and 2.20 percent V_2O_5, was produced between 1948 and February 1951.

This report summarizes the results of U. S. Geological Survey exploration between April 21, 1949, and November 15, 1951, in Long Park and vicinity. Additional drilling in this area is planned by the Geological Survey.

GEOLOGY

Rocks exposed in Long Park and vicinity consist of sedimentary beds of Mesozoic age. These beds dip about 5° NE. All the major productive carnotite deposits are in the upper part of the Salt Wash member of the Morrison formation. This member consists of sandstone interbedded with mudstone and is overlain by the Brushy Basin shale member of the Morrison formation. In places, erosional remnants of the Burro Canyon formation overlie the Brushy Basin shale.

GEOLOGICAL SURVEY EXPLORATION

Three separate drilling contracts have been completed in the Long Park area: (1) April 21, 1949, to January 28, 1950; (2) April 21, 1950, to January 25, 1951; and (3) March 31, 1951, to November 15, 1951. During these three contracts, 485 holes were drilled for a total of 143,550 feet. Of this total footage, 100,172 feet was drilled during the first two contracts in land withdrawn from mineral entry under P. L. O. 459. The remaining 43,378 feet, completed under the third contract, was drilled in land withdrawn from mineral entry under P. L. O. 459 and P. L. O. 698.

Of the 485 holes drilled, 50 are in material of ore grade. Ninety-four holes cut weakly mineralized sandstone. Drilling to date has resulted in the discovery of about 30 deposits, some of which have been partly delimited. About half the total footage was used in wide-spaced

holes and the remainder was used in close-spaced holes.

About 75 percent of the holes are in public land and the remaining 25 percent are in privately owned claims.

RESERVES

Preliminary reserve estimates, based on gamma-ray data, incomplete chemical assay data, and visual estimates of grade, total about 135,000 short tons of indicated and inferred carnotite ore averaging about 0.20 percent U_3O_8 and 1.75 percent V_2O_5. The reserves include only material containing 0.10 percent or more U_3O_8 or 1.0 percent or more V_2O_5 in layers 1 foot or more thick. Of the total reserves, about 130,000 tons was discovered by Geological Survey drilling during the period April 12, 1949, to January 25, 1951 (Stephens and Newman, 1951).

The 5,000 tons of indicated and inferred ore reserves found as the result of Geological Survey drilling since January 1951 are located in adjacent ore bodies along the common boundary of secs. 20 and 21 (Stephens and Cramer, 1951), and in sec. 23, T. 47 N., R. 17 W. (fig.1). They average about 0.30 percent U_3O_8 and 2.0 percent V_2O_5.

PLANS

A minimum of 50,000 feet of additional drilling is planned for Long Park and vicinity in 1952. Of this amount, about 30,000 feet is planned to test partly explored and unexplored areas and the remainder will be used to find and partly outline deposits.

BIBLIOGRAPHY

Smith, C. T., Report on Uravan District, San Miguel Plateau area, Colorado: Union Mines Development Corp. classified report. p. 23, 1946.

Stephens, H. G., and Newman, W. L. , Preliminary report on diamond-drill exploration and plans for additional drilling in Long Park and vicinity, Montrose County, Colorado: U.S. Geol. Survey Trace Elements Memorandum Rept. 201, June 1951.

Stephens, H. G., and Cramer, M. A., Preliminary Reserve Statement 17, Reserve blocks C and D, Long Park area, Montrose County, Colorado: U. S. Geol. Survey Trace Elements Memorandum Rept. 193, September 1951.

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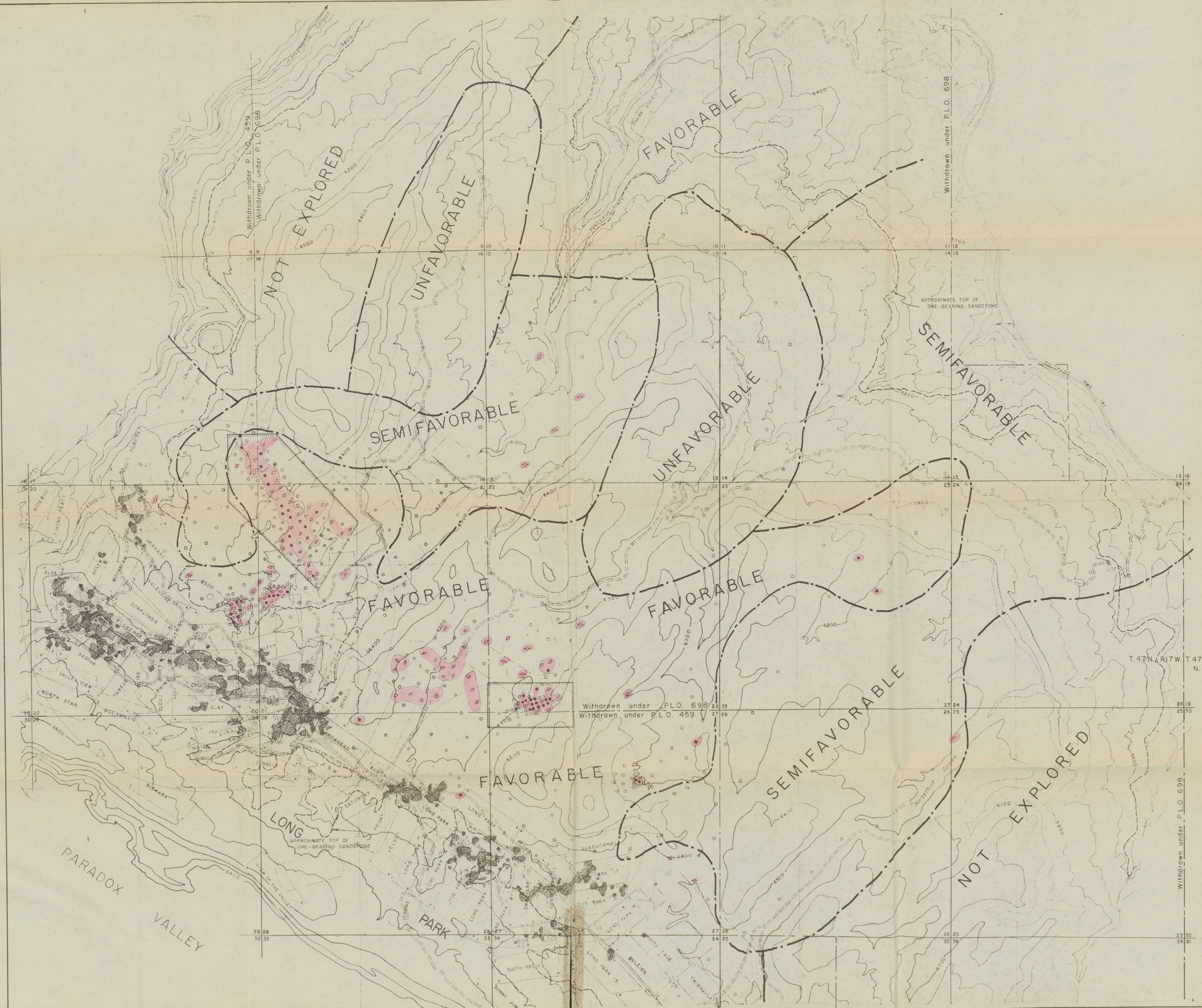

EXPLANATION

- Approximate top of ore-bearing sandstone
- Boundary of favorable, semifavorable or unfavorable ground underlain by ore-bearing sandstone
- Ground underlain by carnotite-bearing rock found by Geological Survey drilling, projected to the inferred outer edges of mineralized layers, some of which overlap and are not connected between adjacent drill holes
- Carnotite deposit found and developed by private enterprise
- Ground drilled by private enterprise (individual drill holes are not shown)
- 11 | 12 / 14 | 13 — Land section corner
- Claim corner number (claims shown by dashed lines are plotted from information of doubtful reliability and are subject to correction; all claims in the area are not shown)
- Government lease
- Boundary between land withdrawn from mineral entry under P.L.O. 459, April 1, 1948 and P.L.O. 698, February 15, 1951, and boundary of land withdrawn under P.L.O. 698 where not adjacent to land withdrawn under P.L.O. 459
- Diamond-drill holes, Geological Survey. Classification by grade and thickness, based on visual estimate and/or chemical assay or gamma-ray data. Drill holes located by plane-table or pace and compass survey methods. (Numbers on drill-hole standpipes in field have the prefix LP.)
  - Barren (no significant content of U_3O_8 and V_2O_5 by visual estimate and/or chemical assay, and registers no gamma-ray value as great as 0.020% eU_3O_8)
  - Weakly mineralized (contains less than 0.10% U_3O_8 and 1.0% V_2O_5 by visual estimate and/or chemical assay, or registers gamma-ray values within the range from 0.020% to 0.099% eU_3O_8, or less than 1 foot thick regardless of grade)
  - Ore-bearing (contains 0.10% or more U_3O_8 or 1.0% or more V_2O_5 by visual estimate and/or chemical assay, or registers gamma-ray values greater than 0.099% eU_3O_8, and 1 foot or more thick)

Geology: H.G. Stephens and E.B. Ekren
Engineering: M.M. Gilkey and W.L. Emerick

N

1000 0 3000 FEET

Contour interval 100 feet
Datum is mean sea level

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TRACE ELEMENTS MEMORANDUM REPORT 297

PRELIMINARY REPORT ON DIAMOND-DRILL EXPLORATION AND PLANS FOR ADDITIONAL DRILLING ON LONG PARK AND VICINITY MONTROSE COUNTY, COLORADO December 1951

Figure 1.--Geologic map of Long Park and vicinity, Montrose County, Colorado

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