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UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
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October 27, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Joint Report of Examination, DMEA Docket 3887 (Uranium), Treasury Vault Uranium Corporation, Champaign and Conny mining claims, Park County, Colorado

Enclosed are the original and three copies of the report pertaining to the above application.

The examiners conclude that there is no known relation between the very minor radiometric anomalies noted in the area and the presence of significant uranium deposits along any of the veins.

We concur in their recommendation that the application be denied without prejudice.

W. M. Traver

By J. W. Townsend
J. W. Townsend

E. M. Hardinman
E. M. Hardinman

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
11-7-55
(date)

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IN REPLY REFER TO:
DMEA
Date Rec'd.
OCT 27 1955
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

October 26, 1955

TRANSMITTED
OCT 27 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: E. N. Harshman
John F. Shaw

Subject: DMEA Docket 3887 (Uranium), Treasury Vault Uranium Corp., Champaign and Coney mining claims, Park County, Colorado

Enclosed are the original and nine copies of a joint examination report by R. U. King, U. S. Geological Survey, and W. D. MacMillan, U. S. Bureau of Mines, covering their examination of the subject property.

The applicant proposes a program of exploration for uranium ore by drifting, crosscutting, and diamond drilling at an estimated cost of $281,820.00.

The examiners conclude that there is no known relation between the very minor radiometric anomalies noted in the area and the presence of significant uranium deposits along any of the veins. They recommend the application for exploration assistance be denied without prejudice.

We concur with this recommendation.

E. N. Harshman
E. N. Harshman
Member, Field Team

John F. Shaw
John F. Shaw
Supervising Mining Engineer

Enclosures (10)

ENHarshman:arh

Reviewed by
DMEA OPERATING COMMITTEE
11-7-55
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS MCKAY, SECRETARY

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DEFENSE MINERALS EXPLORATION ADMINISTRATION

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REPORT OF EXAMINATION BY FIELD TEAM
REGION XII

DMEA 3887

Treasury Vault Uranium Corporation

Champaign and Caney Mining Claims

London Mining District

Park County, Colorado

Uranium

Joint Engineering and Geologic Report

by

W. D. McMillan
U. S. Bureau of Mines

R. U. King
U. S. Geological Survey

October 1955

Reviewed by
DMEA OPERATING COMMITTEE
11-7-55
(date)

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DMEA 3887
TREASURY VAULT URANIUM CORPORATION
CHAMPAIGN AND CONKY MINING CLAIMS
LONDON MINING DISTRICT
PARK COUNTY, COLORADO

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By W. D. McMillan and Robert U. King

INTRODUCTION

The Treasury Vault Uranium Corporation applied to the Defense Minerals Exploration Administration for Government assistance to explore for uranium ore on their property in the London mining district, Park County, Colorado. They propose to drill 20,000 feet of core hole from surface locations, 6,000 feet of core hole from underground locations, and to drive 6,000 feet of drifts and crosscuts. The applicant's estimated total cost of the project is $281,820.00, Government participation 75 percent or $211,365.00.

An examination was made on September 7, 1955, by a Region III examining team consisting of W. D. McMillan of the Bureau of Mines, and Robert U. King of the Geological Survey. A representative of the applicant failed to appear, but three shareholders were visiting the property at the time of the examination. These were F. C. Squire, Washington, D. C., H. E. Parkhille, Grafton, West Virginia, and Russel A. Smith, Pinnalles Park, Florida.

The examination included a field check of a number of claim corners, radioactivity traverses across selected localities that were reported by the applicant to contain anomalous radioactivity, and a radioactivity traverse of the No. 4 adit of the Champaign mine including 300 feet of drifting performed by the applicant since July 1955.

Although radioactivity anomalies are numerous on the surface and in the No. 4 adit of the Champaign mine, they are all small, and they are probably not economically significant. No structural or petrologic controls which would indicate specific loci of deposits of uranium that might be the source of the radioactivity anomalies were found, nor were any reported by the applicant.

It is concluded that the search for uranium in the Champaign and Comey mines is in the nature of prospecting, and the examining team, therefore, recommends that the application for Government assistance to explore for uranium be denied.

ACKNOWLEDGMENTS

The merits of the radioactive deposits in the Champaign mine in regard to their potential as an economic source of uranium were discussed with members of the Denver Exploration Branch of the U. S. Atomic Energy Commission. They agree with the conclusions and recommendations presented in this report.

The sample data presented in table 1 were obtained by the Geological Survey during the period from 1952 to 1954 in connection with its Trace Elements program.

The cooperation of the Colorado State Public Health Department and Dr. Jacoe, Director, in making available the results of a gas survey made in July 1955 of the Champaign mine is acknowledged.

E. H. Roseboom of the U. S. Geological Survey mapped in detail the geology of the No. 3 and No. 4 adits of the Champaign mine in July 1953; data from this investigation have been used in this report.

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LOCATION AND PHYSICAL FEATURES

The Champaign and Coney mines are in the London mining district 5 miles airline west-northwest of Alma in Park County, Colorado. Alma is 6 miles north of Fairplay on Colorado Highway 9; Fairplay, on U. S. Highway 287, is 87 miles west of Denver (fig. 1).

The applicant's claims are in secs. 1, 6, 31, and 36, Tps. 8 and 9 S., Rs. 78 and 79 W., 6th principal meridian, on the east slope of the Mosquito Range. Altitudes range from 11,500 to 13,000 feet above sea level. North Mosquito Creek flows southeastward across the claims, and joins the South Platte River about 1 mile south of the town of Alma.

The Champaign mine is reached from Colorado Highway 9 by 3 miles of graded and county-maintained road and by 3 miles of ungraded road along North Mosquito Creek. The last 2 miles of the road have steep grades and are passable only with truck or 4-wheel drive vehicles. The Coney mine, on the southeast end of Treasure Vault Mountain, is 2,000 feet N. 76° W. of the portal of the No. 4 adit of the Champaign mine.

Because of the high altitude, the winter season is long and severe. Heavy snowfall and sub-zero temperatures would restrict surface operations chiefly to the summer months. An adequate water supply for mining and drilling purposes is available from Mosquito Creek or from the mine water. Native timber would be available from local sources within 5 miles of the mine. The nearest public utility power supply is at Alma, 6 miles east of the property. Housing could be provided at Park City, 4 miles from the property.

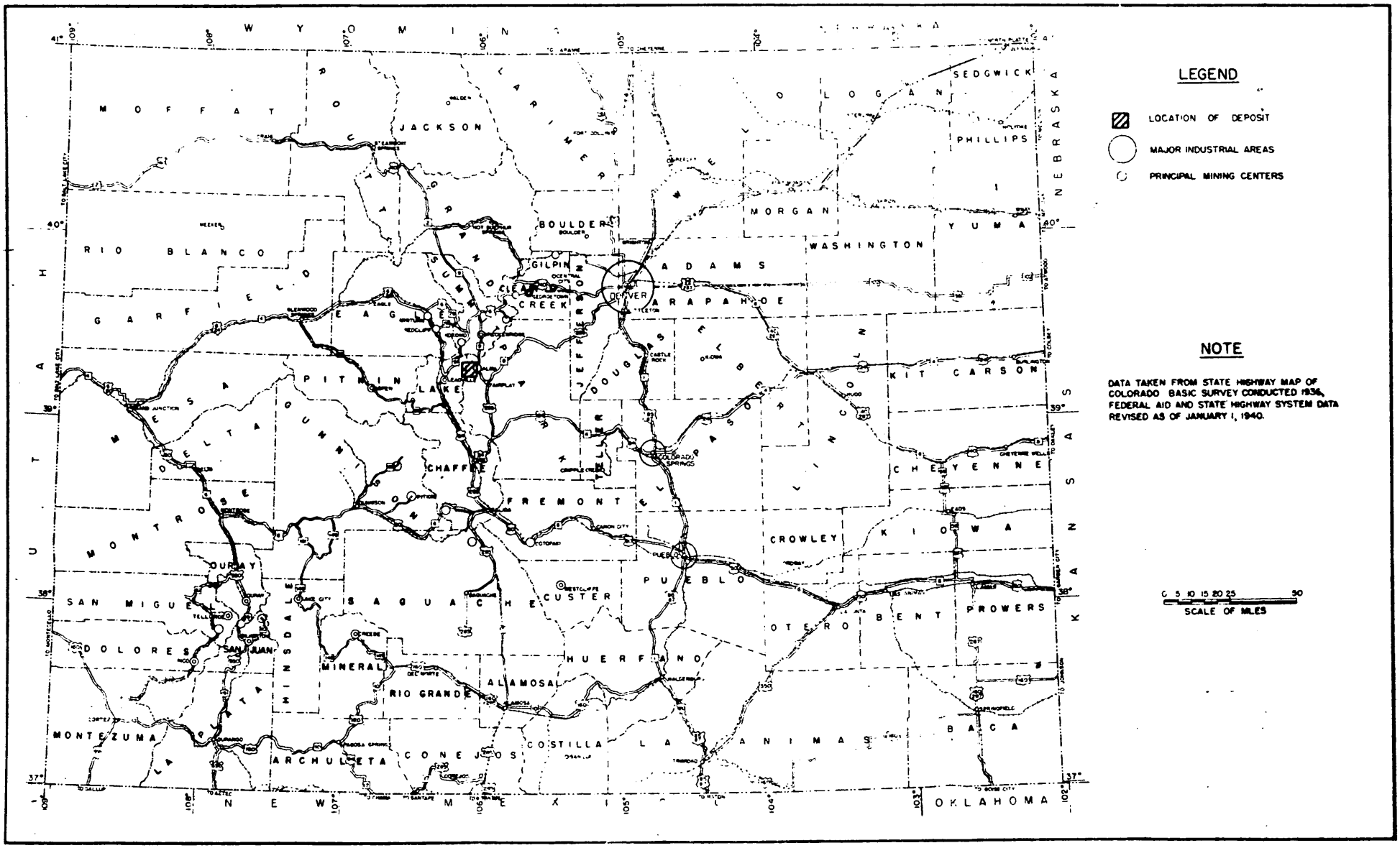

FIGURE 1 - LOCATION MAP, TREASURY VAULT URANIUM CORPORATION, CHAMPAIGN AND CONEY CLAIM GROUP, LONDON MINING DISTRICT, PARK COUNTY, COLO. DMEA 3887

HISTORY, PRODUCTION, AND OWNERSHIP

The first mining in Park County was for placer gold in 1859, which was soon followed by lode mining of gold, silver, copper, lead, and zinc. Production from 1859 to 1923 had a total value of $19,671,080, of which $10,435,801 was from gold and $6,910,809 was from silver. Most of this production was from the Alma (London) mining district.

The Champaign mine was discovered in 1876 and was operated intermittently from 1882 to 1900. The estimated production is $850,000 from sorted ore probably with average unit content of 80 ounces of silver and 2 ounces of gold per ton. Production from 1901 to 1929 was 42 tons containing 49 ounces of gold and 5,795 ounces of silver. There has not been any production since 1929.

Pitchblende was discovered in July 1951 in the Alma (London) mining district by the U. S. Geological Survey acting on behalf of the U. S. Atomic Energy Commission, and vein material from the Champaign mine was found to contain as much as 0.013 percent uranium (U.S.G.S. Circ. 294, 1953).

In September 1952 Geological Survey field parties noted the presence of extremely high radioactivity in the Champaign mine during a traverse of the No. 4 adit. The presence of radon gas was suspected because the Geiger counters used were contaminated for several hours after leaving the mine.

In March 1953 a gas survey was made of the No. 3 adit, and the presence of radon in the mine openings was confirmed.

The applicant states that he controls 25 claims by record ownership in entirety, 2 claims one-quarter owned and three-quarters under lease and option, 1 claim two-thirds held by lease and option, and a Colorado state lease on one-half section. In view of the recommendation for denial, a check of the applicant's holdings was not made.

PRESENT STATUS

Exploration and Development

Exploration and development on the Fanny vein on the Champaign claim consist of four adits designated from top to bottom as Nos. 1 to 4, inclusive, with respective lengths of 80, 260, 1,500, and 1,320 feet. Adits Nos. 2, 3, and 4 are connected by raises and small stopes. Driving of No. 4, the lowest adit, is being continued (see fig. 2).

Mining equipment and other facilities

A frame building has been rehabilitated and is used for storage of supplies and for shop maintenance. Mining equipment consists of one 220 CFM Gardner-Denver diesel-driven compressor, two air receivers, two jack-hammers mounted on jack-legs, three mine cars, one pressure tank, mine rail, compressed air pipe, one gasoline-powered blower, and 8-inch ventilation pipe.

GEOLOGY AND ORE DEPOSITS

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The geology and ore deposits of the Alma district that included the area surrounding the Champaign and Comey mines, has been described by Singewald in Bulletin 911 of the U. S. Geological Survey. The Champaign and Comey mines are in a terrane of Precambrian granite and schist. The Precambrian rocks have been faulted and intruded by porphyry dikes of Tertiary age (fig. 3). The area is about 1 mile north of the main center of mineralization that has accounted for the highly productive London silver-lead mines.

Silver Plume granite, a gray to pink medium-grained biotite-muscovite granite, and associated pegmatite, make up the bulk of the host rocks that contain the vein deposits of the Champaign and Comey mines. Two small bodies of biotite schist of the Idaho Springs formation occur in the immediate vicinity. Dikes of porphyritic rocks that range in composition from diorite to granite are common in the area.

The London fault, the major structural feature in the area, is about three-fourths of a mile west of the Champaign mine. It is a steeply-dipping reverse fault that extends for several miles northwest and southeast of the area; sedimentary rocks of Paleozoic age are in fault contact with Precambrian crystalline rocks. Most of the productive ore deposits of the Alma (London) district are within a narrow zone of highly folded and faulted limestone immediately west of the London fault.

Faults that trend northeast and along which minor displacement has occurred are common in the Precambrian rocks and may be related

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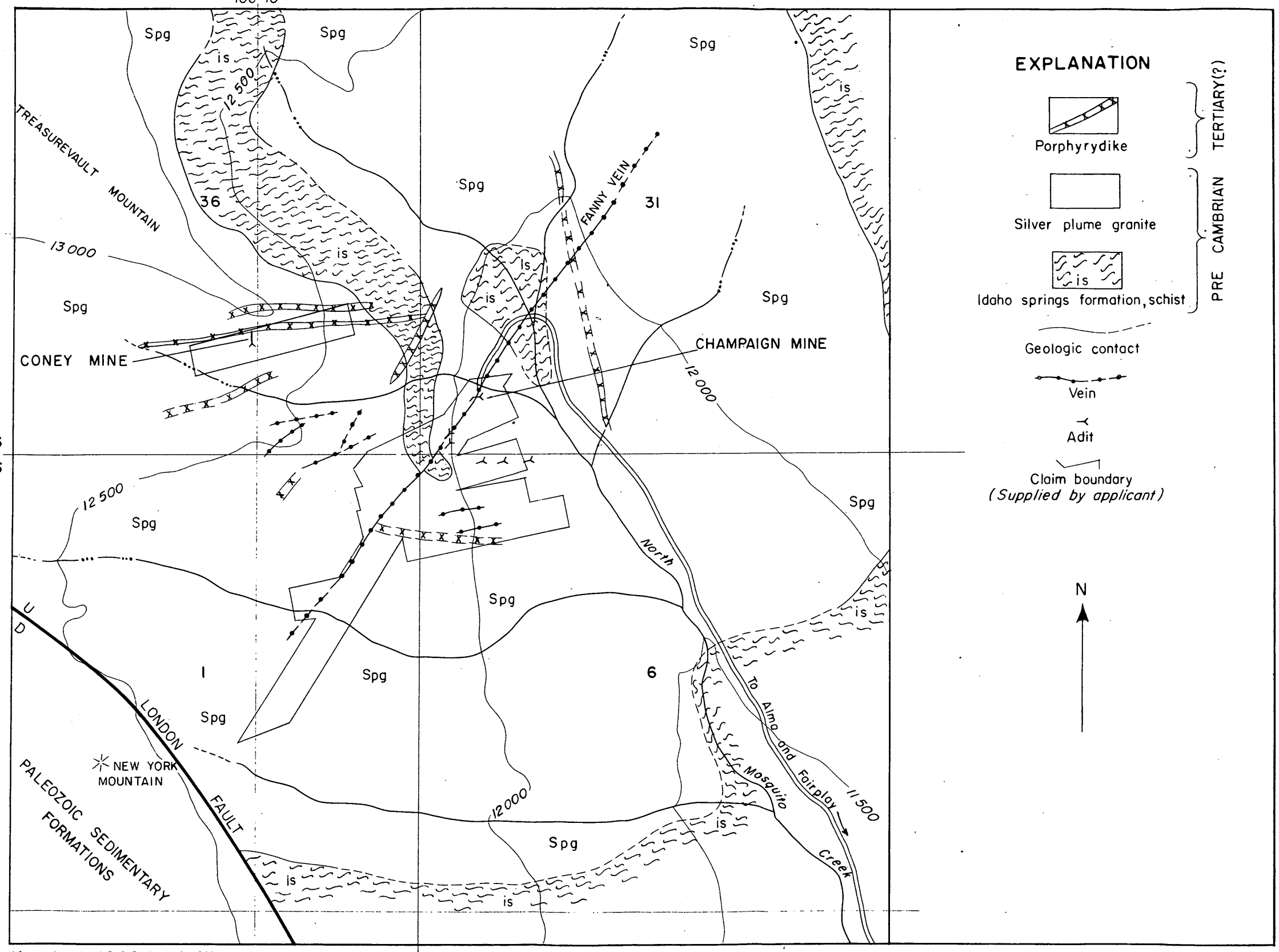

After plate 1, U.S.G.S. Bulletin 911 106° 10' R 79 W R 78 W

R. U. King, September, 1955

FIGURE 3.– GEOLOGIC MAP OF THE CHAMPAIGN-CONEY MINES AREA SHOWING THE OUTLINES OF THE PRINCIPAL CLAIMS OF THE TREASURYVAULT URANIUM CORPORATION.
PARK COUNTY, COLORADO

0' 500' 1000' 2000' 3000' 4000'

Contour interval 500 feet

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to the Lowden fault. Some of these minor faults are mineralized and constitute the ore deposits of the Champaign and Coney mines area.

The ore deposits of the area consist of gold- and silver-bearing quartz-sulfide veins that occupy minor fault fissures. The Champaign and Coney mines exploit veins that are along such faults.

The workings of the Coney mine are inaccessible, and geologic information is limited to observations that can be made from the dump material. The workings apparently were intended to explore an east-northeast trending mineralized fault that cuts porphyry dike rocks, granite, and schist. No new data are submitted by the applicant concerning the Coney mine.

The Champaign mine exploits the Fanny vein, a northeast-trending fissure along which some small displacement of the granite and schist wall rocks has occurred. The vein has been traced on the surface for over 1 mile. It dips steeply to the northwest and ranges in width from a knife-edge to as much as 5 feet. The vein material consists of gold- and silver-bearing base metal sulfides, and small quantities of pyrite and chalcopyrite in a gangue of quartz and altered wall rock.

A westward-trending vein (Clipper vein) one-fourth of a mile southeast of the Fanny vein, has been explored by three short adits. This vein that dips steeply to the south, is poorly exposed on the surface. According to the late Mr. Redman, it presumably crosses the Fanny vein in the No. 3 adit about 500 feet southwest of the portal of the adit. The Clipper vein is a quartz-sulfide vein that has been mined for lead, zinc, and silver, but no production data are available.

According to the late Mr. Redman, one of the principal owners of the Champaign mine, pitchblende was reported to have been found in the Champaign mine in a stope above the No. 3 adit level near where the Clipper vein crosses the Fanny vein.

A sample of radioactive vein material from the dump of the No. 4 adit of the Champaign mine contained 0.006 percent eU and 0.005 percent U ((Pierson and Singewald, USGS Circular 294, 1953). Vein material from the Champaign fissure contained 0.010 percent eU and 0.013 percent U. Results of analyses of samples collected by the Geological Survey during early investigations of the Champaign mine are given in table 1.

The radon content of 14 gas samples, collected by the Geological Survey during the early part of 1953, ranges from 760 to 25,300 micro-micro curies per liter.

A gas study was made by the Colorado Public Health Department in July of 1955 in the No. 3 and No. 4 adits of the Champaign mine. Radon daughter products in the air at the face of the No. 4 adit, during a period when mining was in progress and fresh air was being supplied at the rate of 18,000 linear feet per minute, amounted to 215 micro-micro curies per liter; in the No. 3 adit through which no air was circulating, the radon daughters amounted to 26,000 micro-micro curies per liter, and the radon gas content of the air amounted to 17,000 micro-micro curies per liter.

Although anomalous radioactivity due to radium emanations including radon gas and radon daughter products, is very noticeable in the mine workings of the Champaign and Clipper mines, and is measurable on

Table 1.--Analyses of samples collected from the Champaign mine and vicinity, Park County, Colorado

Description and location of sample	Date collected	Source	eU (percent)	U (percent)	Remarks	No.
Dump, No. 4 adit, Champaign mine.	July 1951	USGS	0.006	0.005		51484
Dump, adit 500 ft SW of Champaign No. 4.	do.	do.	0.005	0.003		51483
Portal 550 ft SW of Champaign No. 4.	do.	do.	0.010	0.013		51482
Champaign No. 4, 21 ft S of sta. 25.	Aug. 1952	J.H.Redman	0.009	0.002		72624
Do. do.	do.	do.	0.009	0.001		72625
Do. near sta. 25	do.	do.	0.007	0.002		72626
Do. near sta. 26	do.	do.	0.009	0.001		72627
Do. muck pile near sta. 26.	do.	do.	0.005	0.001		72628
Champaign No. 4 X-cut near sta. 25.	Sept.1952	USGS	0.23	--	Specimen, black fracture coating.	74393
Do.	do.	do.	0.040	0.003	Vein material and wall rock.	74392
Do.	do.	do.	0.012	0.002	Fault gouge.	74394
Do.	do.	do.	0.022	0.001	do.	74395
Do.	do.	do.	0.005	0.002	Granite wall rocks.	74396
Champaign No. 3, 275 ft from portal.	do.	do.	0.008	0.005	Wall rock	74398
Middle Clipper dump	Sept.1952	A.Flanagan	0.002	--	Quartz vein, wall rocks.	75110
Pit, 75 ft SW of Corner No. 6 Little Edna claim.	July 1953	USGS	0.007	0.001	Granite pegmatite.	92696
Pit, 60 ft S of Corner 6, Little Edna claim.	do.	do.	0.002	--	Quartz porphyry.	92697
Cut, 250 ft SW Lone Star shaft.	do.	do.	0.009	0.008	General Canby vein.	92698
Dump, Lone Star shaft.	do.	do.	0.010	0.005	Vein material, black stain.	92699
Champaign No. 4, 33 ft S. sta. 26.	do.	do.	0.011	0.002	1 ft vein material.	92700
Do. X-cut, 25 ft S. of sta. 26.	do.	do.	0.005	0.002	Granite.	92701
Do. 18 ft N. of sta. 24.	do.	do.	0.005	0.001	3 ft vein material.	92702
Do. near sta. 13.	do.	do.	0.003	--	Altered granite.	92703
Champaign No. 3, near sta. 62.	do.	do.	0.008	0.003	Granite wall rock.	92704
Do. 80 ft S. of sta. 48.	do.	do.	0.001	--	Sulfide ore, 0.27 oz. Au/T; 85.48 oz. Ag/T.	92705
Do. 14 ft S. of sta. 61.	do.	do.	--	--	0.066 ppmU mine water.	92706
Do. near sta. 52.	do.	do.	--	--	0.054 ppmU do.	92707
Champaign No. 4, 60 ft S. of sta. 26.	do.	do.	--	--	0.003 ppmU do.	92708
Do. 37 ft S. of sta. 26.	do.	do.	--	--	0.058 ppmU do.	92709

the surface, no uranium minerals have been found in the vein material nor in the wall rocks that might account for the anomalous radioactivity.

Pitchblende has been identified in high-grade gold-silver-lead ore on a dump of the London Extension mine 2 miles to the south, and in the Kentucky Belle mine 4 miles to the northeast. These occurrences, although of academic interest, probably are not economically significant at this time.

Detailed geologic mapping of the No. 3 and No. 4 adits of the Champaign mine by the Geological Survey in 1952 did not reveal any relationships between veins, fracture, faults, or wall rocks, and the radioactivity anomalies either underground or on the surface.

CONCLUSIONS

The radioactivity anomalies reported by the applicant and the presence of small quantities of uranium both on the surface and underground are substantiated by the results of previous investigation by the Geological Survey made on behalf of the U. S. Atomic Energy Commission. The anomalies, however, are not greater than what might be accounted for by differences in rock type, by radioactive mineral accumulations along iron oxide coated fractures, or by deposits of radioactive minerals in pegmatites. Also the relationships between the abnormally high radon content of the air in the adits of the Champaign and Clipper mines and to possible uranium occurrences has not yet been determined.

Analyses of vein material and wall rocks submitted by the applicant are almost without exception one order of magnitude greater than analyses of samples collected previously by Geological Survey field parties. Inasmuch as some of the sample localities are virtually identical with those of the applicant, some doubt is cast on the accuracy of the applicant's analyses as submitted.

No significant uranium occurrences have been uncovered thus far by the applicant in the Champaign and Coney mines, and the examining team, therefore, concludes that the search for uranium on the subject property is in the nature of prospecting and that the search is based entirely on small differences of radioactivity not as yet correlated with any particular veins, structures, or rock types.

RECOMMENDATIONS

The examining team recommends that the application for assistance to explore for uranium at the Champaign and Coney mines be denied, but without prejudice to the property.

UNITED STATES DEPARTMENT OF THE INTERIOR

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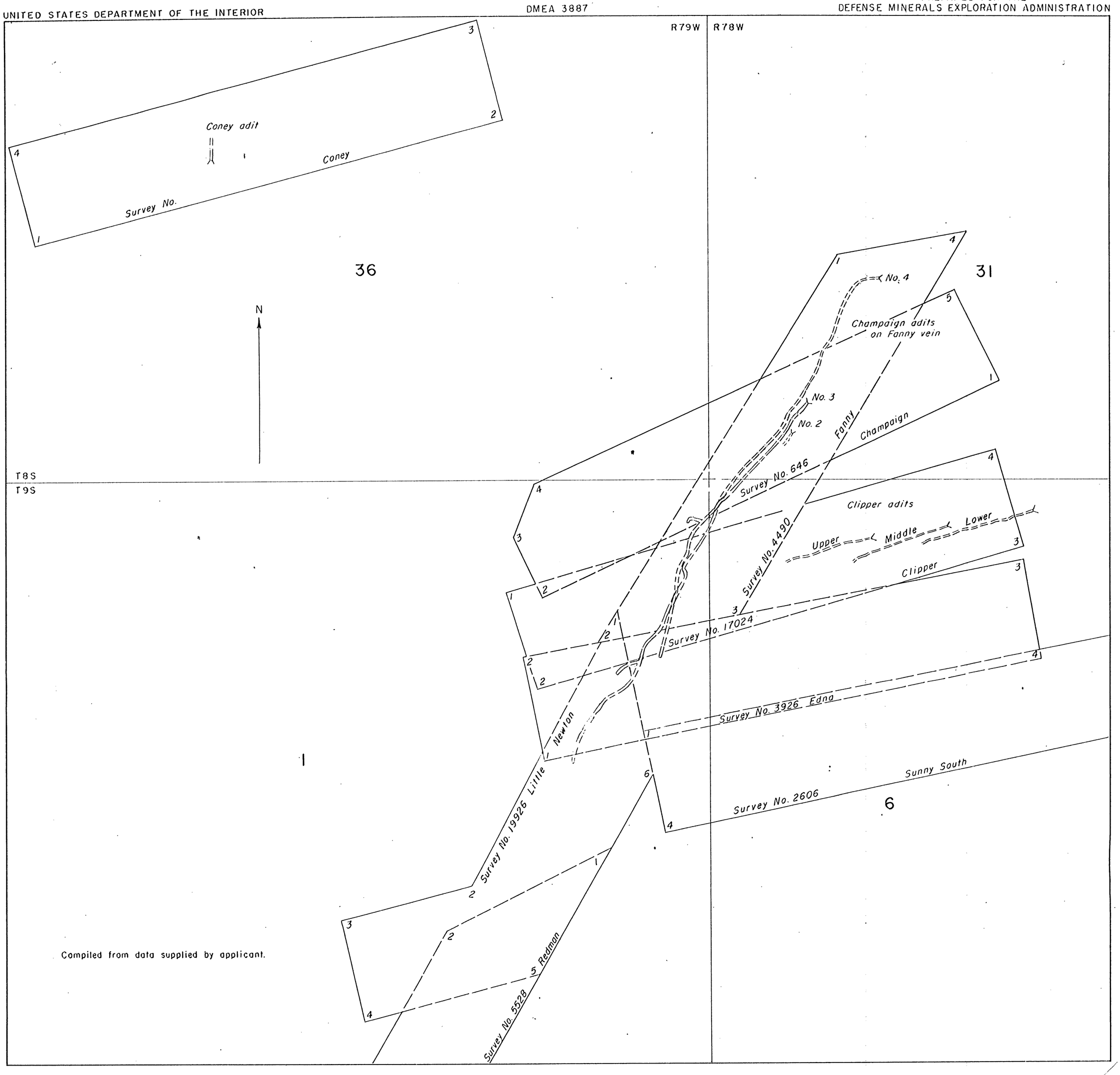

Compiled from data supplied by applicant.

FIGURE 2-PARTIAL CLAIM MAP SHOWING DEVELOPMENT, TREASURY VAULT URANIUM CORPORATION
PARK COUNTY, COLORADO

100 0 100 200 Feet