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TUNGSTEN DEPOSITS OF THE CHERRY CREEK DISTRICT, WHITE PINE COUNTY, NEVADA

PRELIMINARY REPORT

M. R. Klepper Junior Geologist

Helan Lanky Loumon Pile Ruby Valley, Neveda August 12, 1942

SUMMARY OF RESERVES

Property	AND DESCRIPTION OF THE PERSON NAMED IN COLUMN	WO3 U	e Ore Units WO3*	COLUMN TO SERVICE AND ADDRESS OF THE PARTY O	WO3 U	Ore	STATE OF THE OWNER, WHEN PERSON NAMED IN	ed Ore	its W03*
Block 1 Block 2 A Body	4900(1) 1050 300	0.75 0.69 0.65	3120 615 155	4900(1) (3) (3)	0.75	3120	12,000(2) 1,250 300	0.75 0.60 0.60	7650 635 150
Total	6250		3890	4900		3120	13,550		8435
Chance South North Others	1750 50 (4)	1.00	1485	(3) 100 200	2.50	210 340	500 100 200	1.00 2.00 1.50	425 170 255
Total	1800		1590	300		550	800		850
Campanella	150	1.00	125	200	1.00	170	1500	1.00	1275
Fillmore	(4)			200	2.00	340	500	1.50	635
Geneva	(4)			150	1.50	190	300	1.50	380
Schafer	-		-	-			300	1.00	255
TOTAL	8200		5605	5750		4370	16,950	1	1,850

^{*. 85%} recovery assumed.

^{(1).} Sorted from 12,250 tons of 0.37% ore. 80% sorting efficiency assumed. See text.

^{(2).} Sorted from 30,000 tons of 0.37% ore. " " " " " " "

^{(3).} Included with measurable ore.

^{(4).} Included with indicated ore.

Introduction

Schoolite deposits occur in a northeasterly belt about 22 miles long a few miles west and northwest of Cherry Creek, White Pine County, Mevada (1). Schoolite was first discovered in 1915 and more than 100 units were produced during World War 1. In 1940 the Cherry Creek Tungsten Mining Co. constructed a small mill and started to mine a schoolite ore body about 200' east of the Ticup Silver Mine on a claim leased from the Biscuit Mining Co. of Salt Lake City, Utah. A 50 ten mill was completed in October, 1941 and operated until January, 1942. Since then it has been idle. Production from the district is tabulated below:

Year	Tons ore	Units WO	Property
1916	Several	8	Original discovery (2)
1916	7	126 (3)	Change
1937	1.4	8 (3)	Change
1941	About	1745 (4)	Cherry Creek Tungston Mining Co.
1942	3000	185 (4)	Cherry Greek Tungsten Mining Co.
Total		2064	* * * * * * * * * * * * * * * * * * *

- (1). Location, accosibility, etc. are discussed by:

 Hill, J. M., Notes on some Mining Districts in Eastern Nevada, U. S.

 G. S. Bull. 648, 161-166, 1916; and Schrader, F. C., Cherry Creek

 District, Univ. Nevada Bull., v. 25, # 7, 25-30, 58, 1951.
- (2). Property now owned by F. H. Schafer, Cherry Creek, Nevada.
- (3). Confidential. One of claimants to property refuses permission to publish.
- (4). Data and written permission to publish given by Kenneth J. Cleghorn, Cherry Creek Tungsten Mining Co., Cherry Creek, Nevada.

Geology

A thick WNW dipping sedimentary section, supposedly Cambrian (5), underlies the area. Six units were mapped and are listed below:

Unit	Description	Thickness
6	Black and gray limestone, 50' shale mem-	1500' plus
	ber at base.	
5	Black limestone, platy horizons.	150-2001
4	Gray limestone.	150-2001
3	Gray and black limestone (Eldorado Ls ?).	1000 plus
2	Shale with ss. and ls. member (Pioche Sh).	5501
1	Quartzite (Prospect Mountain Quartzite).	1500' plus

The Tieup Vein, a zone of silicified limestone with silver-bearing quartz lenses follows the sheared contact between Units 5 and 6. Units
5, 4 and 5 are progressively out out southward by an ENE normal fault that
brings Units 1 and 6 into contact and has a stratigraphic displacement of
more than 2000'. In places the zone of brecciation and silicification is
100' wide. The limestone in this wedge is out by steeply dipping NW faults.
Much of it is traversed by numerous thin impersistent calcite stringers. Two
post-Ticup dikes, a 40' rhyolite and a 10' decite, intrude the limestone on
the Chance Property.

^{(5).} Schrader, F. C., op. cit., 26-27.

Scheelite Deposits

Scheelite is associated with either calcite or quartz or both. In limestone host rock (Units 4, 5 and 6) scheelite occurs in calcite stringers ers varying in thickmess from and the almost a foot. Although these stringers cut much of the limestone in the southern part of the wedge between the Ticup Vein and the fault, only in two zones are they of sufficient grade and abundance to be ore. In the A Ore Body of the Cherry Creek Tungsten Mining Co., now almost mined out, a brecciated zone in partly silicified limestone is comented by coarse calcite, a little quartz and about 1% scheelite. Drill cores beneath this ore body intersect only a few thin scheelite-bearing calcite stringers, probably feeders to the ore body.

More than a dozen scattered lenses, ranging from a few tons to a few hundred tons of 1-2% WO3 ere occur in the Tieup Vein and in silicified fault zones similar in mineralogy to the Tieup. In these occurrences scheelite is associated with quartz. Calcite is absent.

Reserves

Cherry Creek Tungsten Mining Company. Two bedies of low grade ore have been partially blocked out by the U. S. Bureau of Mines exploratory campaign. Both bodies are concentrations of scheelite-bearing calcite stringers in limestone and seem to rake southward at a low angle (Fig. 1).

In Block 1 a semi-ellipsoid containing 12,250 tons of 0.37% ore is blocked out and the same amount indicated. An estimate of 50,000 tons of inferred ore is based on the assumption that the ore zone intersected in Hole 9 is part of the same shoot outlined by Holes 1, 1-A, 2 and 10. There is no geologic feature recognized that might delimit the shoot north

of the fault shown in Fig. 1. If, however, several small flat shoots (rather than one larger continuous shoot) exist reserves of inferred ore are less than 30,000 tons. On the other hand, if the shoot continues to this fault, a displaced segment may lie at greater depth on the south side, and reserves may exceed 30,000 tons.

The average grade of this shoot, computed from U. 3. Sureau of Mines assays of surface channel samples and drill hole cores, is only 0.37% WO3.

However, the schoolite is concentrated in calcite stringers separated by barren limestone, and it is thought that this entire block can be mined and sorted under an ultra-violet lamp to 0.75% WO3 mill feed. The estimated tennages of measurable and indicated one would thus each yield 4900 tons of mill feed (80% sorting efficiency) or 3120 units (85% recovery). Inferred one may yield as much as 12,000 tons of mill feed or about 7650 units.

At the present price of tungsten this block is near marginal, but it is doubtful whether selective mining of the narrow, discontinuous higher grade streaks would be more likely to be profitable than mining of the entire body at any price of tungsten. For this reason only estimates of the block as a whole have been made. If only the higher grade streaks are mined reserves are cut to a fraction of these estimates.

In Block 2 available assays show a minable width of mill grade ore. Measurable and indicated ore comprise about 1050 tons @ 0.69% W03. Frobably not more than 1250 tons of inferred ore occurs as a flat south-raking extension of the blocked out zone (see Fig. 1).

A few hundred tens of 0.6-0.7% WO3 ore remain in the A ore body which has been delimited by mine workings, two diamond drill holes beneath and a number of prospect holes into the hanging and footwall.

ment work correspondent the drill core data provisions will be made so that operations can be continued through the winter, and milling will probably begin about October 1. If the ore can be sorted to satisfactory mill heads a monthly production of 500-400 units may be attained during the last quarter. Ohence Property. The South Ore Body of sill-like scheelite-bearing cal-cite stringers in limestone is outlined by continuous surface exposure, a 50° inclined shaft and three drill heles. 1750 tone of 1% ore is measurable and indicated. Not more than 500 tone is inferred.

The North Ore Body, near the hanging wall of the Ticup Vein, may yield a few hundred tone of 2-% ore. Three similar small lenses are known, and others undoubtedly exist, but it is not likely that any of them can be mined profitably.

The Cherry Creek Tungsten Mining Co. is interested to mino and mill the South Cre Body on a royalty basis, but there is little likelihood of production this year, as title to the property is contested. Campanella Property. Several zones of calcite with schoolite have been prospected. In one 150 tons of 1% ore is in sight and there may be 1000 tons of inferred ore. Two other prospects may open up lenges of comparable size. This is the most promising of the prospects in the area but the owner has no plans for production in in the mear future.

Other Properties. (Schoolite King Group, Geneva Claim, Schafer Property, Log Gabin Fraction). This group is characterized by small bodies of 1-2% ore. There is little likelihood that larger are bodies will be discovered, and production, if any, will be small.

We coul

rive in the production of minerals with to the prosecution of the war. these reports is to provide essential information to the war agencies of the do available to the Department from other sources. The primary purpose ited States Department of the Interior to give official expression to the conrts are based upon the field work of the Bureau of Mines and upon data ions reached on various investigations relating to domestic minerals. States Government and to assist owners and operators of mining prop-The War Minerals Reports of the Bureau of Mines are issued by the

WAR MINERALS REPORT TITE CHEVEY

UNITED STATES DEPARTMENT OF THE INTERIOR - BUREAU OF MINES

W.M.R. 216 - Tungsten

... August 944

CHERRY CREEK TUNGSTEN DISTRICT

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White Pine County, Nev.

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miles north of the town of Ely and about 45 miles from the Utah State line. tungsten deposits in that area. The district is in White Pine County, 50 Nevada by the Bureau of Mines for the purpose of exploring and developing THE REAL PROPERTY OF core drilling was in progress from April through July 1942. All exposures amined, surveyed, and mapped. The work of rehabilitating the mine work-Mining Co. and at the Chance mine, although the entire district was ex-Most of the work was done on the property of the Cherry Creek Tungsten and developed. of scheelite were examined, and the more important deposits were explored ings, surveying, trenching, long-hole drilling, drifting, shaft sinking, and Work was undertaken in the Cherry Creek district in northeastern

indicated ore averaging 0.49 percent tungsten trioxide and containing 4,700 slightly. It is estimated that these five ore bodies contain 12,600 tons of and the reserve tonnage of two lenses previously mined was increased Three new tungsten deposits were discovered and partly developed

recoverable units of W0₃ and 39,400 tons of inferred ore averaging 0.32 percent W0₃ and containing 9,000 recoverable units of W0₃.

Ore from the Chance miss contains over 1 percent WO₃. A dispute regarding ownership should be settled, and arrangements should be made with the Cherry Creek Tungsten Mining Co. to mine and mill this readily available ore, from which an additional 1,742 units could be obtained.

The new mill of the Cherry Creek Tungsten Mining Co. is adecided asset, not only for the treatment of ore from its own property but as a stimulus for the exploration and production from other properties in the district known to have minable ore. Estimated ore reserves are adequate for a minimum of 2-1/2 years' continuous operation of the mill, and if custom ore is accepted, operation will be prolonged. If mill capacity to handle custom ore and lower-grade ore from their own property is increased slightly, and if mill recovery is improved, this district should produce a minimum of 7,000 units of W03 annually.

INTRODUCTION

In cooperation with the United States Geological Survey, the Bureau of Mines undertook to explore and partly develop the more important occurrences of tungsten in the Cherry Creek district of Nevada, particularly to determine the tonnage and grade of ore at the Cherry Creek and Chance mines.

Tungstendeposits on the Cherry Creek Tungsten Mining Co.property (hereinafter referred to as the Cherry Creek mine) adjacent to the company's old Ticup silver mine, were first examined in October 1941 by an engineer of the Bureau to determine the advisability of an exploration project under the strategic-minerals program. The project was recommended, and work was begun on April 16, 1942. Subsequent examination of the Chance claim,

1,200 feet north of the Ticup shaft, led to extension of the project to include exploration of two known scheelite occurrences on that property.

PHYSICAL FEATURES AND COMMUNICATIONS

Tungsten deposits described in this report are those at the Cherry Creek tungsten mine, adjacent to the old Ticup silver mine, and those on the Chance lode claim, together with some lesser showings on nearby prospects.

The Cherry Creek district may be reached by automobile leaving Highway 50 at Schellbourne station, 40 miles north of Ely, and proceeding 12 miles in a northwesterly direction over a graveled road to the village of Cherry Creek. A steep mountain road with 20-percent grades extends 3.8 miles from Cherry Creek to the Cherry Creek tungsten mine, and a road 0.6 mile in length leads from this property to the Chance mine. The road rises from 5,800 feet at Cherry Creek to 8,200 feet at the mine.

The Nevada Northern Railroad, which connects with the Western Pacific Railroad at Shafter and the Southern Pacific at Cobre, has a station 4 miles east of Cherry Creek, from which freight and express shipments may be made. Mail is delivered to Cherry Creek by bus, and telegrams may be received and sent from the Nevada Northern station. Supplies can be purchased at Ely, 50 miles south of Cherry Creek.

No transmitted electric power is available in Cherry Creek or at the mines.

Water is not available at the Cherry Creek and Chance mines. The nearest source is the mill of the Cherry Creek Tungsten Mining Co. in Cherry Creek Canyon, 0.8 mile west of town and 3 miles from the Cherry Creek mine. An adequate supply of water here averages 1,000 gallons per minute the year around.

OLY TAICHTAN CELEVISION VILLA

Scattered mountain mahogany and small pine trees could supply a little timber, enough for the mine workings.

Summers are hot and dry, autumn is late and mild, and winters are severe, with heavy snows occurring until May. Surface work can be done from May through December, and with an improved road from mill to mine the mine could operate continuously throughout the year.

OWNERSHIP

The property of the Cherry Creek Tungsten Mining Co. comprises two patented claims, known as 97 and 97 No. 1, and six unpatented claims, designated Old Timer and Old Timer Nos. 1 to 5, inclusive. These are in secs. 24 and 25, T. 24 N., R. 62 E., and sec. 19, T. 24 N., R. 63 E., on the east slope of the Egan Mountains, White Pine County, Nevada. This company is incorporated in Utah and has offices in Cherry Creek, Nev. Kenneth L. Cleghorn is president and general manager; William Cleghorn, secretary-treasurer; and John Cleghorn, Stanley Cleghorn, John Boundy, and Murray Wilson are stockholders.

Ownership of the Chance lode claim is disputed. It appears that the claim of a half interest by Sophia Monro Callahan of Ely, Nev., is clear, but the other claims to title are obscure and will have to be settled by court action or by mutual agreement. Deposits at the Chance mine are covered by one patented lode claim, the Chance, in sec. 24, T. 24 N., R. 62 E., 1,200 feet north of the Ticup shaft. The Cherry Creek and Chance properties lie between 8,200 and 8,300 feet altitude.

HISTORY AND PREVIOUS DEVELOPMENT

The Ticupmine on the property of the Cherry Creek Tungsten Mining Co. was operated as a silver mine in the 1890's and from 1905 to 1912 produced that metal from argentite, a sulfide of silver. Scheelite ore was

discovered by the Cleghorns in September 1940 in a lens-shaped mineralized zone of limestone 200 feet east of the Ticup shaft. Two other small deposits were discovered subsequently 500 feet east and 400 feet south of that shaft. A few small pockets of scheelite were found on the tenth, or bottom, level of the Ticup mine but were not large enough to be of commercial value.

Amill was built in Cherry Creek Canyon 3 miles south of the Cherry Creek mine and 0.8 mile west of Cherry Creek. In this canyon, an adequate supply of water for milling is available the year around. Records show that approximately 800 tons of ore averaging 2.0 percent W03 was milled. This ore was produced from shaft-sinking operations on the scheelite lens 200 feet east of the Ticup shaft, now designated lens A. The concentrates, averaging 70 percent W03, were sold to the Molybdenum Corporation, Pittsburgh, Pa.

The Molybdenum Corporation advanced \$32,000 to the Cherry Creek Tungsten Mining Co., and a new mill was constructed, which has a rated daily capacity of 35 tons and was in operation during November and December 1941. Eleven hundred forty-four tons of ore averaging 1 percent WO₃ was produced from the stope on lens A and milled, 74 percent of the tungsten being recovered. Since December 1941, a few short mill runs have been made in an effort to improve the metallurgical process and increase recovery.

The Cherry Creek mine workings comprise the Ticup and Cleghorn shafts, an old adit, and a new 100-foot shaft. The old Ticup shaft was sunk 1,000 feet at an inclination of 40° on a limestone shale contact, with levels at approximately 50-foot intervals. The Cleghorn shaft was sunk 95 feet at an inclination of 60° on lens A, from which this ore body was mined, forming a stope 50 feet long and 7 feet wide. The new 100-foot shaft in

the hanging wall of lens B, 250 feet east of the Cleghorn shaft, was sunk at an inclination of 60°.

. .

Little is known of the history of the Chance mine except that it was one of the several small producers of silver operated in the 1870's. Scheelite was discovered in place and on the dumps in 1918, and it is reported that 2,800 pounds of ore averaging 5.63 percent WO₃ was shipped to the Nevada-Massachusetts Co. at Mill City, Nev., in 1937.

The Chance mine is being developed by south and north shafts and short drifts and crosscuts. The south shaft was sunk 52 feet in the limestone footwall at an inclination of 32°. A crosscut driven west from the shaft bottom intersects the Ticup vein 58 feet from the shaft, and adrift follows the vein north from the end of the crosscut for 21 feet. The north shaft was sunk 100 feet on the Ticup vein at an inclination of 44° and was then stoped from the shaft bottom to within 20 feet of the surface.

EQUIPMENT

Equipment at the Cherry Creek mine consists of a new Diesel-driven, 360-c.f.m., Gardner-Denver compressor, an old Diesel-driven, direct-connected hoist, and an old Ingersoll-Rand portable compressor. New jack-hammers, stopers, air hoists, and necessary small equipment have been purchased and put in service by the Cherry Creek Tungsten Mining Co.

The 35-ton mill is new throughout, with the exception of the Fairbanks-Morse 100-kv.a. Diesel generator. This equipment is efficient and modern.

A 1-ton Chevrolet stake-body truck is used for transporting men and supplies from Cherry Creek to the mine. Two dump trucks will be purchased for hauling ore from mine to mill.

The Chance mine has no equipment.

ORE DEPOSITS

The Cherry Creek tungsten deposits are found in sedimentary beds consisting of shale, limestone, and quartzite. Their strike is generally north, and they dip 35° to 60° west. The shale lies conformably upon the limestone, and the limestone is underlain by quartzite. Along the limestone-quartzite contact is a brecciated zone known locally as the Cherry Creek fault, and the shale-limestone contact is the Ticup vein, which is a zone of silicified limestone. The limestone formation between the shale and quartzite is cut by numerous steeply dipping faults that trend northwesterly. Tungstendeposits are found in these faults, and the ore occurs as scheelite associated with either calcite or quartz, or both, in lens-shaped bodies.

Scheelite in lens A occurs as separate crystals in masses of calcite and quartz in a brecciated zone of silicified limestone characterized by cross faulting and in thin, discontinuous stringers of calcite and quartz.

Lenses B and C are situated along the eastern part of the wedge-shaped limestone close to the Cherry Creek fault. Scheelite in these two deposits occurs in narrow, discontinuous calcite stringers in the limestone and ranges in width from 1/64 inch to 1 foot. These stringers are numerous and sufficiently close together to form bodies of low-grade milling ore.

The south ore body at the Chance mine is in the limestone footwall below the Ticup vein. Scheelite occurs as crystals in stringers of calcite and quartz in a series of short, narrow fissures parallel to the bedding. These fissures range in width from 1/2 to 1 inch and are rarely continuous for more than 10 feet. They are banded close together and form an ore body with surface exposures 64 feet long and 5 feet wide.

Scheelite at the north ore body occurs in narrow quartz stringers and silicified limestone in the footwall of the Ticupvein over a width of 2.5 feet.

From Tungsten Deposits of the Cherry Creek District, White Pine County, Nevada; preliminary reports by M. R. Kleyper, Jr., Geologist, U. S. Geological Survey, Aug. 12, 1942.

MINING AND MILLING PRACTICE

Mining operations of the Cherry Creek tungsten mine have been confined to the production of ore from the original tungsten stope (lens A) and the sinking of a new shaft adjacent to lens B from which it is planned to develop and mine this deposit. Operations at lens A included sinking the Cleghorn shaft on this mineralized zone to a depth of 95 feet and subsequent stoping of the lens. This work produced a stope 50 feet long and 7 feet wide. Recently, it was reported by the owners that additional high-grade ore is being mined from the footwall of this deposit and that 400 tons have been stock-piled. The shaft at lens B was sunk 100 feet in the hanging was done from the bottom of 60°, and a small amount of crosscutting and drifting so far in this lens averages 1 to 1.5 percent W03.

The new mill of the Cherry Creek Tungsten Mining Co., built in 1941, was placed in operation in October 1941. The mill was shut down in December 1941, as there was not enough ore to keep the plant in continuous operation. Since then, only a few short test runs have been made. Records show that 1.144 tons averaging 1 percent WO3 was milled, with a recovery of 74 percent.

It is reported that the plant is now being redesigned to allow for more extensive gravity operations. Milling procedure will utilize jig and table concentration, followed by flotation of the slime. An estimated recovery of 85 percent by means of gravity is anticipated, plus an additional 10 percent by flotation. It is estimated that milling costs will be \$1.75 per ton of ore treated.

PLAN OF PROJECT

The work of the Bureau of Mines at the Cherry Creek tungsten deposits comprised rehabilitation of the mine workings, surveying, and road

building, followed by exploration of the ore bodies. The deposits at the Cherry Creek mine were the immediate objective, and a systematic trenching plan was established to determine the surface limits of the lenses. Lens A, previously mined, was further explored by a series of longholes drilled from the bottom of the Cleghorn shaft, the purpose of which was to prospect for possible parallel mineralized zones in the hanging wall and footwall of the lens. A short adit was driven on lens C, in addition to trenching, to determine the advisability of exploring this lens further by core drilling. Lens D was explored and delimited by a shaft sunk on a small outcropping of scheelite. This work supplied pertinent data relative to the mineralized zones in this locality, from which further development by diamond drilling was planned.

Examination and sampling of the Chance mine indicated that further work was warranted on the larger of the two ore bodies. A road was constructed by the Bureau between the Cherry Creek and Chance mines. Holes were located and drilled to intersect the possible downward lateral extensions of the south ore body.

WORK PERFORMED

Rehabilitation and Surveying

The Ticup and Cleghorn shafts at the Cherry Creek mine were repaired, new ladders were installed, and the underground workings made accessible and safe for examination and surveying. The old underground workings at the Ticup mine, the shaft and stope on lens A, and the adjacent surface were examined thoroughly. Topographic and geologic mapping was done by the Geological Survey.

Trenching

Trenches were excavated at regular intervals normal to the strike of the mineralized zones across lens A at the Cleghorn shaft and along the Cherry Creek fault, between the limestone and quartzite, to locate and outline the surface limits of lenses B, C, and D. A small amount of trenching was done at the Chance mine, also, to locate possible lateral extensions of the north and southore bodies. Fifty-four trenches were excavated, having a total length of 2,897 feet.

Sampling

The sampling method followed in the trenches comprised cleaning off the bedrock by means of a compressed-air chipping hammer and examination of the fresh exposures at night with an ultraviolet-ray lamp.

Underground samples were taken from 6- by 4-inch channel cuts in the backs of drifts and sides of shafts normal to the strike of the ore bodies.

145 Channel samples having a combined length of 549 feet were taken.

Conclusions derived from this trenching and sampling indicated the presence of three tungsten deposits at the Cherry Creek mine, adjacent to the Ticup shaft, and one at the Chance mine of a size and grade to warrant further exploration and development. These deposits were lenses A, B, and C and the south ore body.

Long-hole Drilling

Sampling of the adit D-1, trenches A2 to A7, inclusive, and the Cleghorn stope indicated the possible existence of parallel scheelite stringers in the hanging wall and footwall of this lens. Long-hole drilling was done to prospect this ground. From the bottom of the Cleghorn shaft, four holes were drilled into the hanging wall, two into the footwall, and one southward along the strike of the lens. These holes ranged in length from 14 to 42 feet, and 57 samples were taken from the cuttings at 4-foot intervals.

Shaft Sinking

Lamping of the surface near lens D indicated a small local mineralized zone. Trenching failed to locate any lateral extensions; but to further explore this lens, a 3- by 5-foot shaft was sunk in it to a depth of 23 feet. The excavated material was quartered to obtain a final sample for analysis.

Drifting

Surface lamping indicated an extensive zone of scheelite at the north end of lens C. Therefore, a 5- by 4-foot adit was driven southward along the strike of the lens for 17 feet to explore this zone further.

ore Drilling

Thirteen holes were core-drilled on the deposits at the Cherry Creek mine and three on the south ore body at the Chance mine. In all, 194 core and sludge samples were taken.

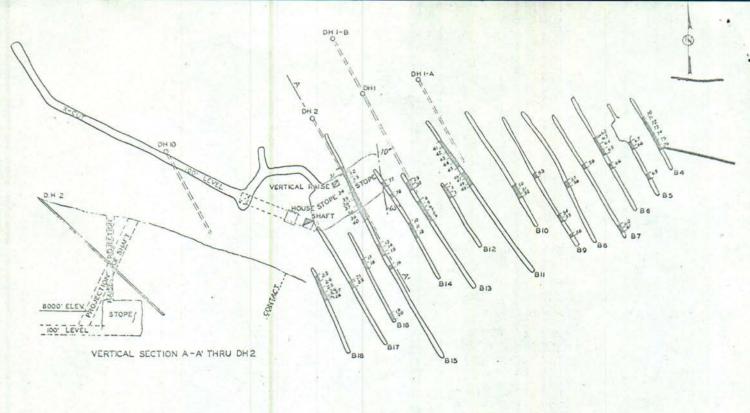
Road Building

A 3,000-foot road was constructed between the Ticup and Chance mines to permit hauling of water and supplies to the drill sites on the Chance claim. A bulldozer rented from the Nevada State Highway Department built 2,400 feet of this road, and 600 feet were drilled and blasted out of a rock ledge.

ORE RESERVES

Exploration and development on the Cherry Creek tungsten deposit indicated an estimated 12,600 tons of ore averaging 0.49 percent $W0_3$ contained in five ore bodies (table 1). Following is a tabulation of the work done and the estimated tonnage developed on each deposit.

Lens A. - This is the original scheelite discovery at the Cherry Creek
mine, but the deposit has been virtually mined out. An estimated 800 tons



SAMPLE-LOCATION MAP SHOWING LOCATION AND PROJECTION
OF CORE-DRILL HOLES AND TRENCHES ON LENS B

of ore averaging 2 percent W03 was mined from this lens and treated in the old mill;1,144 tons averaging 1 percent W03 were removed and treated in the new mill. Samples taken by the Bureau of Mines indicate a small tonnage remaining along the footwall of this lens. This tonnage is estimated to be 1,250 tons of inferred ore averaging 0.98 percent W03.

No ore zones of economic value were located by core-drill holes Nos. 8 and 9, which were planned to outline the possible downward and southward extensions of lens A.

Lens B. - This lens, delimited by trenches B4 and B18 and core-drill holes 1, 1A, 1B, 2, 9, and 10, is the largest of the three deposits at the Cherry Creek mine. The estimate of indicated ore in this lens, as shown by trenching and drilling, is 7,300 tons averaging 0.36 percent W0₃. Trenching and sampling indicate that this lens extends an additional 150 feet to the north. This portion of the lens, with an average width of 7 feet and an average grade of 0.32 percent W0₃, is estimated to contain an indicated 1,600 tons. The total indicated ore in this block is 8,900 tons with an average grade of 0.33 percent W0₃. An additional 36,000 tons of inferred ore is estimated in this block and has an average grade of 0.27 percent W0₃.

Lens C. - Sampling of trenches B22 plus 10, 20, 40, 60, B23, and adit 3 indicated the presence of a small mineralized zone south of lens B, close to the brecciated fault zone. Results of trenching, drifting, and diamond drilling on lens C indicated about 1,900 tons of ore averaging 0.51 percent W03 and 1,600 tons of inferred ore averaging 0.51 percent W03. Ore of this grade is suitable for milling.

Lens D. - This small, local, mineralized area, indicated by surface lamping, was explored by shaft 3 to a depth of 23 feet. Only a few scattered scheelite crystals were evident at this depth, and mineralization was poor throughout.

yond drill hole C-J is 400 tons averaging 1.1 percent W03. tons averaging 1.1 percent WO3, and the inferred ore assumed to extend beof indicated ore obtained by trenching, shaft sampling, and drilling is 1,750 distance of 67 feet with an average surface width of 5 feet. The estimate wall below the Ticup vein and is continuous along the face of the cliff for a South ore body. - The south ore body outcrops in the limestone foot-

exposures indicate it to be 45 feet in length, 2.5 feet in width, and averaging averaging 2.5 percent WO3. aging 2.5 percent WO3. The inferred ore indicated by trenching is 150 tons 2.5 percent WO3. The estimated reserve of indicated ore is 50 tons averthe 100-foot shaft to within 20 feet of the surface. Samples taken along the North ore body. - The north ore body was mined from the bottom of

amined by Bureau of Mines' engineers and M.R. Klepper of the Geological ore that can be exploited at a profit under profit under present conditions. have small showings of scheelite, but not of size or grade to be considered stimulate further exploration by the owners. The remaining properties this property may open larger ore bodies. Government stock piling would estimated 150 tons of 1-percent WO3 in a small lens, and further work on mineralized scheelite zones have been prospected. One adit contains an Survey. The most promising of these is the Campanella, on which several King, Geneva, Schafer, and the Log Cabin Fraction, all of which were exexploration. Other properties in the district are the Campanella, Scheelite, mineralized zones too small to be of commercial value or to warrant further of Mines. Lamping of the surface in the Ticup-Chance area disclosed other posits in the Cherry Creek district explored and developed by the Bureau Other deposits. - The five ore bodies described are the principal de-

and the same of	Indicated ore					Inferred ore		
Ore body	By trenching and drilling		By trenching		Units WO3	Tons	WOz.	Units WO3
	Tons	WO3, percent	Tons	WO3, percent	- ",		percent	,
Cherry Creek Tungsten Mining Co.:								
Lens A	-	-				1,250	0.98	1,225
Lens B	7,300	0.36			2,628		-	-
Do			1,600	0.32	512		-	-
Do	/					36,000	.27	9,720
Lens C	1,900	.51			969	-		
Do		-				1,600	- 51	818
Chance mins:	3 750							
South ore body	1,750	1.10			1.925	400	1 10	1110
North ore body			50	2.50	125		1.10	
Do				2.50	129	150	2.50	375
20						190	2.50	212
	10,950		1,650		6,159	39,400	0.32	12,576
Total indicated			10,950		A COLOR			0.157.000
ore			12,600					

MINING

Since completion of Bureau exploration on this property, company work has included sinking an inclined shaft near lens B to the 100 level (86 feet vertically below collar of the shaft), driving crosscuts to the A and B ore bodies, partly stoping the B deposit, and stripping some of the ore remaining on the footwall of lens A. This work was done in accordance with Bureau recommendations.

The crosscut to lens A was driven too far to the north, but will be turned and advanced under the ore body to explore for its possible downward extension. An additional 500 tons averaging 2 percent WO₃ was stripped from the footwall of the old stope on this lens, and it is estimated that between 500 and 600 tons of indicated ore of equal grade remains in the deposit. This ore comprises a block on the footwall 25 feet wide, 50 feet deep, and 5 feet thick. It is planned to remove the remaining ore through the crosscut to be driven under the ore body.

The crosscut driven northeast on the 100 level from the new shaft intersected ore about 45 feet east of the shaft. Subsequent development of this ore body indicated it to be similar in shape and grade to lens A and to contain a tonnage larger than the Bureau's former estimate. It has been mined for a length of 60 feet, a width of 30 feet, and a height of 25 feet, and has yielded approximately 3,750 tons of ore averaging over 1 percent WO₃. A vertical raise was driven to surface from about the center of the northwest side of the stope, and this raise was reported in ore for its entire height. The length of the stope decreases as it nears surface, owing to a northeasterly dipping fault that cuts across its east end. It is estimated that 2,350 tons of indicated ore extending 25 feet above the stope back and 2,000 tons of inferred ore extending an additional 35 feet to surface,

both averaging over 1 percent WO₃, remain above the 100 level in lens B. Assuming that the ore extends 20 feet below the 100 level, the reserve will be 3,000 tons of indicated ore averaging over 1 percent WO₃. Further exploration by the company is planned for this area to pick up the ore indicated by Bureau of Mines drill holes 1, 1A, and 2. A core drill has been ordered for underground prospecting.

The estimated reserve of indicated ore in the A and B ore bodies is 5,850 tons containing not less than 1 percent W03, or 5,850 units, which will assure operation of the mill on a 30-ton daily basis for 6 or 7 months. Further development should add substantially to these reserves.

No work has been done on lens C. It is planned to continue the short adit and to explore this area, but this work is contingent upon obtaining adequate labor. Bureau work on lens C indicated the existence of a small ore body.

MILLING

During the past year, metallurgical tests have been made in the company's mill and have resulted in greatly increasing the percentage of recovery. Twenty-eight tons of ore is now being treated daily. Heads are averaging about 1.32 percent WO₃, and the final tail about 0.15 percent WO₃. Recovery is between 85 and 90 percent.

The ore is crushed and screened, jigged, and tabled. The jig and table concentrate, comprising about 75 percent of the total, averages over 70 percent W03. A low-grade flotation concentrate containing between 15 and 20 percent W03 is made from the table tail and is shipped to the Metals Reserve Co. in Salt Lake City, Utah.

CONCLUSIONS

Exploration, comprising trenching, sampling, and core drilling, by the Bureau of Mines on the Cherry Creek tungsten deposits disclosed an estimated 12,600 tons of indicated ore averaging 0.49 percent W03 and 39,400 tons of inferred ore averaging 0.32 percent W03.

Development of the B ore body by the Cherry Creek Tungsten Mining Co. has resulted in the production of 3,750 tons of scheelite ore averaging over 1 percent WO₃. Estimated reserves remaining in this lens are 5,350 tons of indicated and 2,000 tons of inferred ore of similar grade. Further exploration in this area should increase this tonnage substantially. About half of the estimated tonnage remaining in the A deposit has been mined, leaving about 500 to 600 tons in reserve. No work has been done on the C lens, but its exploration is planned as soon as adequate labor can be obtained.

Existing reserves of indicated ore are large enough to supply the mill at its rated daily capacity of 30 tons for 6 to 7 months and should yield not less than 5,000 units of $W0_3$.

RECOMMENDATIONS

- Assistance should be provided by Governmentagencies to develop and prepare the mine to produce tonnage enough to supply the mill continuously at capacity.
- 2. The Government should purchase and stock-pile ores from other producers in the district, which would eventually be milled by the Cherry Creek Tungsten Mining Co.
- 3. The owners of the Cherry Creek Tungsten Mining Co. should be approached regarding the possibility of increasing the capacity of their mill and accepting custom ore from the proposed Government stock pile. Handling of custom ore would stimulate exploration and development on other properties and lead to greater production of tungsten and possible discovery of new deposits.

		Hem 47
	UN 175	PERIOD
BIG GIANT -	183	1954
CHANCE -	300	1916, 1937, 41977
CHRISTIANSON -	0	
Gypsy	22	1954
ONLY CHANCE -	1,886	1952-57
PINENUT -	1,000	1943, 195-2-56
SCHBBLITE KING -	341	1954-56
SHOESTRING -	1,800	1916-18, 1951-59 + 1979
TICUP -	24,589	1941-56, 1972, 1977
	29,521	
	21 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	
	No. of the least	
	April 1999	
	deles	
	41.48.25	
	THE WILL SHOW	

PRODUCTION - CHERRY CREEK MINE (TICUP, BISCUIT, OLD TIMER)

1940	D	DISCOVERED IN OCTOBER BY CLEGHORNS
41	1,897	CH, CRK, TONG, MAG, Co.
42	172	
43	4,855	The second of the second
14	4,731	
45	4,492	
46	2,789	
47	 -	
48	1,492	
49	1,225	
50	217	
51	562	BOUNTY - CLEGHORN (SHOESTRING?) (CHANCE?)
52		" CEASHOOP.
53	1,560	BALT, - CAMAS MINES, INC. (TICUP)
54	198	CH, CRK TURG, MAG. Co.
55	18 (00mp) 48	PHIL FOWARDS
56	\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	BLOWNER UR. CO. 11 11
	(103	TICUP BLOUALLE, & EDWARDSABIDA.
57		
58	The second second	
59		
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62	P ASSET	
C3		
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4		
LIX NATION		
1966		
67		
68		
69		
70		
71		
72	49	OLD TIMER - PAN BAST INDUSTRIES INC
7.3		Z_{ic}
74		
75		
76		
77	48	OLD TIMER - TRAKS. Mrcs. Conp
78		
79		
8-0		THE PERSON NAMED IN COMPANY
81		
81 82 83		
83		
	24,589	
La la Company		
	Anna Mar 18	
	Take 1 Cas	
	TWATENS	



strong as in the upper workings, the surrounding stockwork is a good prospect for another tungsten ore body.

of 7 percent ore, and a bedded vein 6 feet thick yielded a hundred tone or more of ore containing several percent of WO3. On the waste dumps are 450 tone of rock estimated to contain 0.5 percent of WO3. Scheelite-bearing material containing 0.6 to 1.0 percent of WO3 is exposed in several other small pods, but material of this grade was not conserval ore because of the small quantity evailable.

Egan Rango

Cherry Creek district

Schoolite was found in 1915 in the Cherry Greek district, and in 1916, ore containing 126 units of WOz was shipped from the Chance claim. In 1940, tungsten ore was discovered in and near the old

Tioup silver mine. The Cherry Creek Tungsten Company was organized by Kenneth J. Cleghorn, Willard Cleghorn, and John Boundy, a 50-ton mill was built, and several ore bodies were developed. Up to the end of 1946, production was about 18,956 units of WOg from 20,906 tons of ore treated. The U. S. Bureau of Zines explored the Tioup mine area and the Chance property in 1942 by surface trenches and

The town of Cherry Creek is 52 miles north of Ely by read, and 4 miles west of the Nevada Borthern Railroad. The mines are west of Cherry Creek in the rugged Egan Range, and formerly produced comsiderable silver and gold.

The ore bodies of the district occur as veins and replacements in Cambrian sedimentary rocks and to a lesser extent in a small body

Anonymous, Cherry Creek tungsten district, White Fine County, Nevada: U. S. Dureau of Mines, Mar Minerals Report 216, 18 p., 1944.

of intrusive quarts monscrite west of Cherry Creek. The Sambrian rocks include the thick Prospect Mountain quarteits, the Picche shale, the Eldorade limestone, and overlying shale and limestone. Schoolite in important commentrations is found only where the country rock is limestone, although small amounts are also present in short, narrow, quartz veins in quarts monscrite near Cherry Creek, and in a quartz vein in quartsite at the Star mine (fig. 174).

Cherry Creek Tungsten Mining Co. (Ticup and Old Timer)

The Cherry Creek Tungsten Mining Co. leases the Tioup mine of 2 patented claims from the Biscuit Mining Co., and owns the a djoining Old Timer group of 6 unpatented claims. The property is in secs.
24 and 25, T. 24 N., R. 62 E., and sec. 19, T. 24 N., R. 63 E., S.8
miles northwest of Cherry Creek by steep mountain road. The tungsten
mill is 0.8 mile west of town in Cherry Creek Canyon.

Fig. 174. Sketch map showing tungsten occurrences in the Cherry Creek district, White Pine County, Nevada.

The Ticup mine was opened by a shaft sunk 1,000 feet at an inclimation of 60° on a mineralised limestone-shale contact, with levels
at intervals of approximately 50 feet. It is reported that silver ore
workh \$3,000,000 was taken from stopes extending 200 feet south from
the shaft. The silver ore was found in lenticular bodies of white
quarts that replaced the footwall limestone beneath a fault gouge. The
ore mineral was argentite or stromeyerite. A few small pockets of
abbeelits were found with quarts on the tenth level, at the bottom of
the mine, but were not large enough to be of commercial value.

The principal structural feature of the Ticup area is a fault that strikes northeast, dips 55° - 60° NW., and cuts across the bedding at an acute angle (figs. 175, 176, and 177). The fault zone

Fig. 175. Geologic map of the north part of the tungsten belt. Cherry Creek district, White Pine County, Nevada.

Fig. 176. Geologic map of the Tioup mine and vicinity, Cherry Creek district, White Pine County, Nevada.

Fig. 177. Geologic sections in the vicinity of the Ticup mine, Cherry Creek district, White Pine County, Nevada.

is breccisted and silicified for widths of 20 to 100 feet. Bear the mine, the footwall of this fault is Prospect Mountain quartrite, and the hanging wall is younger limestone and shale that belong about 2,000 fest higher in the stratigraphic section. The limestone beds in the hanging wall sequence can be divided into several mappa ble units distinguished by differences in color and texture, but in the . mineralized area, these differences are obliterated, and bedding itself is distinguished with difficulty. The Tioup vein is at the sheared contact of these limestons beds with an overlying shale which is poorly exposed. The thickness of shale is unknown, for the upper limit was not mapped; one drill hole penetrated a thickness of more than 100 feet.

Most of the scheelite produced ceme from the "A" and "B" cre bodies found at or near the surface 200 and 450 feet east of the Ticup shaft. The ore bodies are small, irregular, breccia pipes that follow bedding in limestone and are controlled in part by

cross fractures. The west, or "A" ore body, was 50 feet long and about 7 feet wide at the surface, and had been mined to a depth of 250 feet by 1945 (fig. 178). Between 95 and 150 feet, the ore channel

V Pig. 178. Geologic map of the underground workings of the Cherry Creek Tungsten Mining Co., Cherry Greek district, White Pine County, Nevada.

was very small, hardly larger than the raise. Below 150 feet, the shoot was circular in shape, about 25 feet in diameter, and contained about 1.5 percent of WOz.

The spex of the east ore body, the "B" ore body, was at a depth
of about 40 feet, and the overlying mineralisation at the sufface consisted of narrow calcite stringers containing a little scheelite. The
ore body mined was 70 feet long, 30 feet wide at the maximum, and 70
feet high. There has been no exploration at depth in search of
possible downward extensions of the ore body, which appeared to pinch
out at the bottom of the underhand a tope.

The ore in these 2 shoots is a breccia with large fragments

of limestone cemented by coarsely-crystalline white calcite, quarts, and schoolite. The content of WO3 ranges from 1 to 5 percent.

Many small, irregular veinlets of calcite with scheelite are exposed elsewhere in the w.edge of limestone between the Ticup vein and the major fault. Ore bodies might be found beneath several small areas where mineralisation is more concentrated. The surface exposures contain only 0.5 percent or less of WOs.

Chance

The patented Chance claim adjoins on the north the property of the Cherry Creek Tungsten Mining Co., and is about 1,900 feet northeast of the Ticup shaft. Two small a checkite ore bedies occur in and near the Ticup vein, but they have not been mired because ownership of the property is in dispute.

The South ore bedy, in the limestone footwall 20 feet below the Ficup vein, is 64 feet long and 5 feet wide at the surface. It consists of closely spaced, narrow stringers of calcite and quarts with

coarsely crystalline scheelite, parallel to bedding. The stringers are one-half to 1 inch thick, and are rarely continuous for more than 10 feet. The ore body is prospected by an inclined shaft 52 feet deep, and by 3 drill hodes, the central one of which cored 6 feet of ere 115 feet down the dip of the vein. It is estimated that this ore shoot contains 2,150 tons of indicated and inferred ere, with a content of 1.1 percent of WO3.

The North ore body, on the footwall of the Ticup vein, was opened by a 100-foot shaft, and mined to within 20 feet of the surface. At the surface, it was 45 feet long, 2.5 feet wide, and averaged 2.5 percent of WOz. A few hundred tons of similar ore may remain in the shoot.

Scheelite King

The Scheelite King claims, owned by H. L. illmore, adjoin the Ticup claims on the southwest. Scheelite mineralization, but not in commercial ore bodies, is found in an adit at the edge of the main fault some of the area.

Companella (PINENUT)

The Louis Campanella group of 6 claims is 3.5 miles northwest of Cherry Creek by graded road. There are 2 small scheelite ore bodies with a grade of 8.5 to 0.75 percent of MOz on the property, and numberous small occurrences of low-grade mineralization (fig. 180). The

Fig. 180. Geologic map of the Campanella property, Cherry Creek district, White Pine County, Nevada.

scheelite is found in lenses of coarsely-crystalline calcite that are aligned along a shear with small displacement. The well rock is Cambrian limestones the underlying Pieche shale is exposed in the southeast part of the property.

The East ore body is opened by an 80-foot adit, and appears to be 4 feet wide for a length of 50 feet. Another short adit, started 250 feet west and 65 feet lower, exposes only spotty, sub-commercial mineralization.

The other ere body is 900 feet to the west, and is exposed only

at the surface, where it is 5 feet wide for a length of 40 feet.

F. H. Schafer (SHOESTRING)

The F. H. Schafer clairs are near the crest of the Egan Range,

4.8 miles by road northwest of Cherry Creek. Scheelite was found on

The claims in 1915, and a few tons of sorted ore were shipped. The

deposits are small, irregular lenses of brecciated limestone cemented

by calcite, quarts, and scheelite. The scheelite is erratically dis
tributed, and much of it is coarse-grained in masses weighing 3 to 6

pounds. The ore is catily scrted, and several hundred tons of high

grade might be produced from shallow workings.

Roy Moore (SHOESTRICK)

Scheelite occurs in a quartz-calcite vein on the Roy Moore claims about half a mile by trail northeast of the Schafer claims. The vein is 2 to 4 feet wide, and crops out for a length of 75 feet; it comtains cluseters of large, poorly-formed scheelite crystals near the footwall.

1070 0018

Shoshone, Nevada (325) May 25, 1941 Frem 47

Memorandum to T. B. Nolan

Tungsten deposits at Cherry Creak, Revada

On May 20 Don Wyant, E. W. Newman, and I spent the day in the Cherry Creek district, White Pine County, Nevada, and stayed until after dark to examine the Ticup mine area with the ultraviolet lamp.

Schoolite occurs in or near the Chance and Tioup mines at an elevation of about 8,000 feet, and this is the only part of the district that appears to have potentialities as a tungsten producer. Elsewhere in the district, Schrader reported schoelite in a specimen from the Star mine, and local residents report scheelite and huebnerite in small, narrow quarts lenses 20 to 40 feet long in granite near the town of Cherry Creek.

During 1918 5 tens of ore were shipped from the Chance mine to Mill City, and subsequently a larger tennage was milled at the U. S. Tungsten mill in the Bub district in the Snake Bange. All of this ere was packed off the mountain, for there was no read at that time.

In October 1940 the Cleghorn brothers discovered scheelite in a lenticular some in limestone about 200 feet east of the shaft of the old Ticup silver mine, and have subsequently found other spots in the nine workings and on the surface 400 feet east of the shaft. They have sold about 450 units of WOg this spring, production being from the surface lens near the shaft. This lens contains ore reported to average 3.0% of WOz for a length of 40 feet, a width of 6 feet, and a depth of at least 25 feet. It is bordered by low grade rock containing perhaps 0.5% of WOg. An old drift 60 feet long extends southward from the high-grade lens, and the dump from this drift is reported to a verage

0.5% of WOg. The scheelite occurs in calcite stringers that are roughly parallel to the bedding of the enclosing limestone. The scheelite does not occupy any strong structure, and it seems likely that the lens now being mined will be small. Other similar lenses can probably be found, but there discovery will be difficult.

There has been no work on the zone 400 feet east of the Tioup shaft. There may be another lens here similar to the one now being mined. Stringers of scheelite bearing rock can be traced for several hundred yards southward but this part of the zone appears too low-grade to be mined profitably. There appears to be no northward continuation to either of these zones.

In the Ticup mine itself two streaks of scheelite ore reported to assay 1.5% of WO₃ have been discovered in the footwall of the silver vein on the 10th. level (about 450 feet beneath the surface.) Neither of these streaks is developed, the exposures being two dimensional. They certainly have no direct connection with the surface lenses, and the presumption, until proved etherwise, is that they are small pockets.

The Molybdenum Corporation of America has advanced the Cleghern brothers \$32,000 for the erection of a 60 ton mill near Cherry Creek.

Booth-Thompson was to start construction this week. I suspect that the mill will prove at least twice as big as the mine warrants.

The only feature of the Ticup area favorable for a Bureau project is the presence of the Ticup shaft near the tungsten lenses. It would be possible to drill from the mine workings on the lower levels eastward through the limestone to the quartitie, and thus attempt to intersect extensions of the surface lenses of scheelite ore. The absence of strong controlling structure makes location of drill holes a gamble, and the small size of the lenses makes their discovery especially difficult without such control.

I If the Bureau does undertake a project here, it will be necessary to make a transit survey of the Ticup mine and a geologic map of the workings and surface. The district does not at present contain sufficiently important tungsten orebodies to warrant extensive work by the Geological Survey unless the Bureau goes ahead with a project. With completion of the Cleghorns' new mill, there will be an added impetus to prospecting, and new discoveries may be made.

In the Chance mine (owned by Callahan and Cannon of Ely)
the scheelite-bearing calcite stringers lie within 30 feet of the
Ticup silver lode. Scheelite is occasionally found in quartz stringers
at the edge of the silver vein. The scheelite is very coarsely crystalline,
but there is not very much showing in exposed faces. The North shaft
is reported to contain a 2-foot vein of high grade ore.

South of the Ticup mine on the Scheelite King claims are small scheelite-bearing seams in a shear zone that parallels the Ticup lode on the west. The shear zone is as much as 14 feet wide, and has been prospected in numerous places for silver. Some ore can be hand-sorted from this structure, and a profitable lens might be found by extensive drifting. No portion of the shear zone could be mined and milled without sorting.

The general geology of the area is indicated on the attached sketch map and sections. The main scheelite orebody lies near the intersection of the Ticup vein and the fault to the west that brings limestone into contact with quartzite. The fault apparently has considerable offset, for the stratigraphic displacement is large.

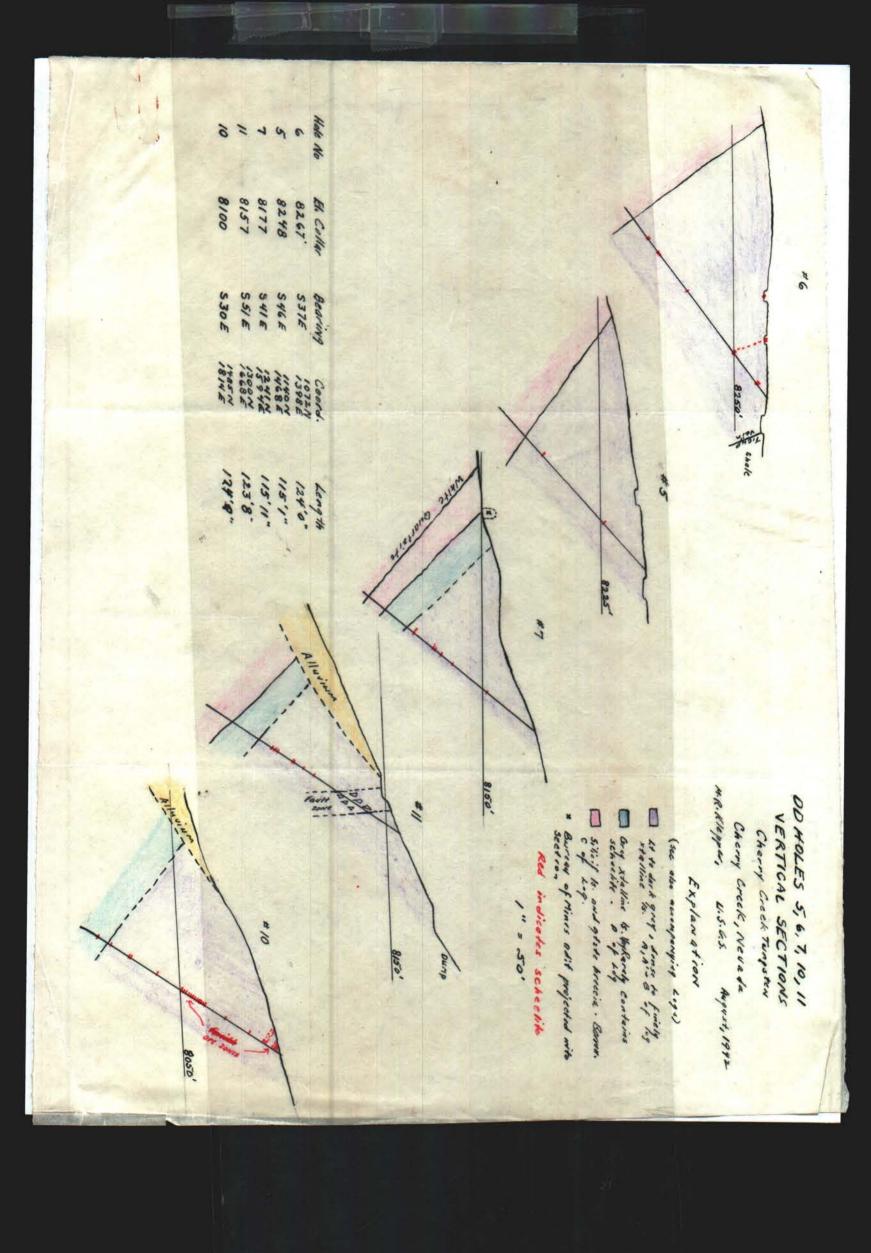
In my opinion, the chances are poor for conducting a successful drill program in search of the small, high grade lenses. After the Cleghorns have extended their workings, it may be possible to plan several holes that will assist in insuring continuity to their operations, but it is very doubtful if drilling will actually block out tonnage.

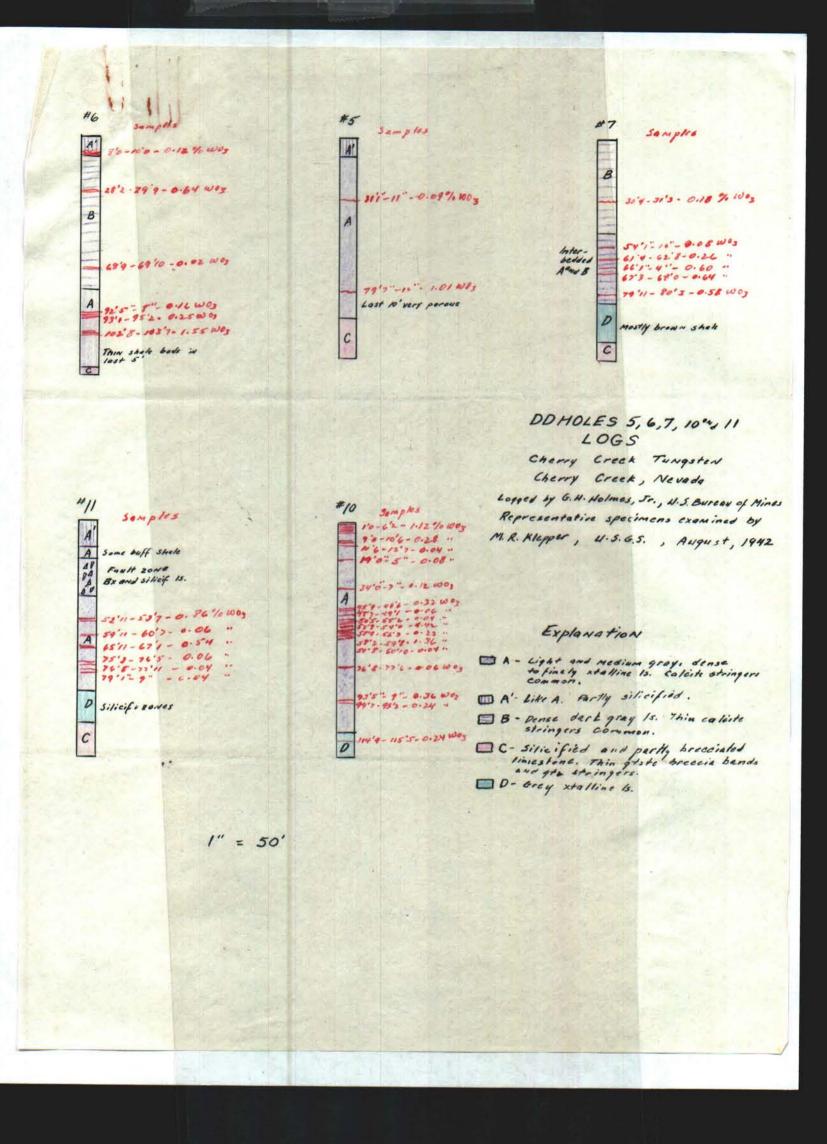
EXPLANATION Fault Silver voin Schooling lances Rhyolite dike 615 Upper limestane Esh Buff and red state
equivalent to Socret Conyon
shale and Minera shale (1) Esh DIE. Dark, play limestone equivalent to Upper Black of Binera; ander of Euroka; 6e TICUP MINE A Probably equivalent of Eldoredo et Eureka, ends bevon Mayor Black at Minera. Can be subdivided. Ep Pioche shale Tungsten Epm HEELITH KING CLAIMS Prospect Men. Quartzite A Cherry Creek GEOLOGIC SKETCH MAP SHOWING TUNGSTEN PROSPECTS CHERRY CREEK DISTRICT NEVADA Cott Core €e 1 inch = querex. 2000 Feet B TICUP SHAFT EAST-WEST SECTION THRU TICUP SHAFT Dwight M. Lemmon May 20, 1941

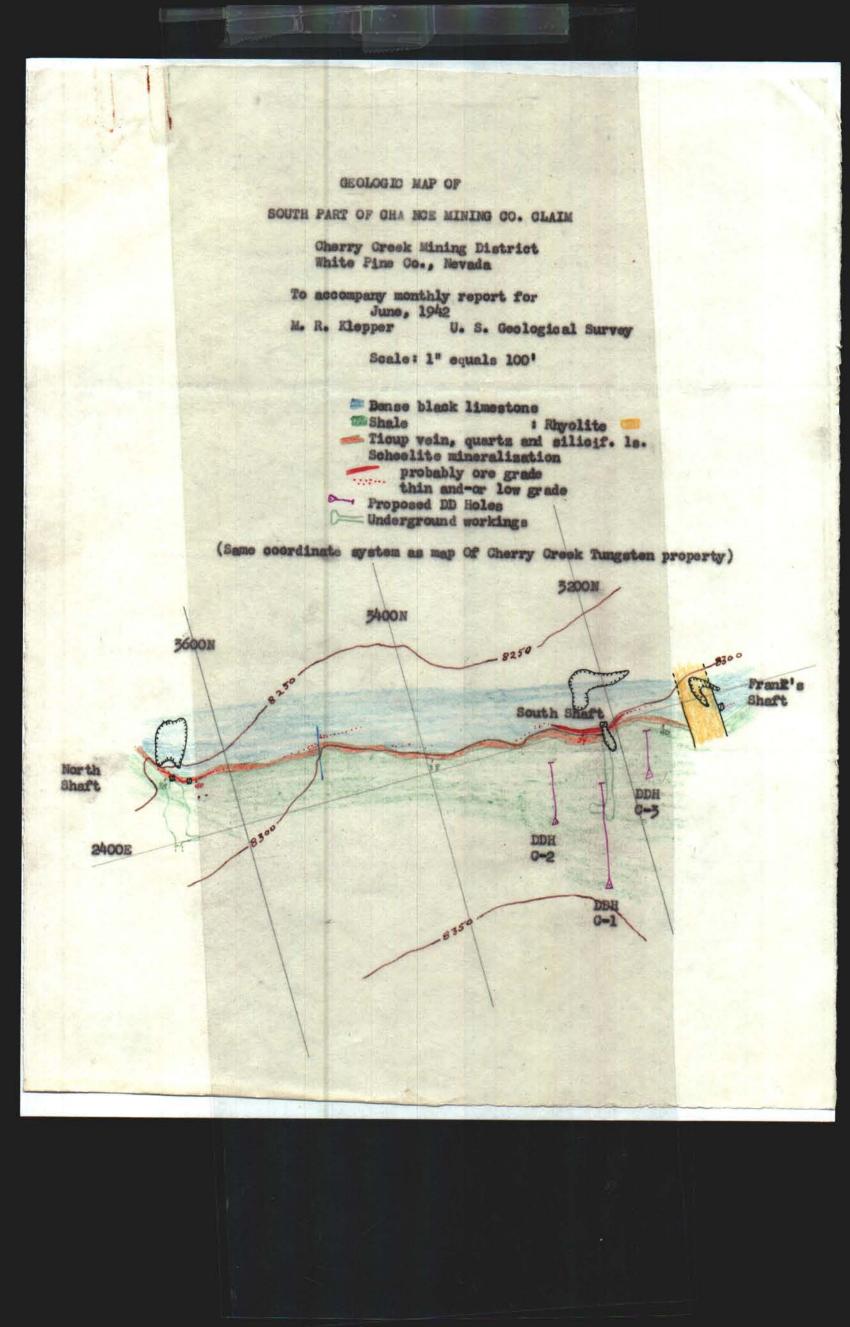
Continue of the Continue of th Narram seconders of waters entity TICUAL SHAFT T Mine try. 12 was in was _ ---for in crassial in ist time, range consisted and contact with some of the contact Simile 4 - of 1825 who are so you so you TICUP SHAFT Upper tunusten lests (projected) Lower tungsten lens 6317 Smale limestone Level 10 17 de GEOLOGIC SKETCH MAP AND SECTION SHOWING OCCURRENCE OF TUNGSTEN IN THE TICUP MINE CHERRY CREEK, NEVADA I IN I = OPPIN 200 Dwight M. Lemmen May 20 1841

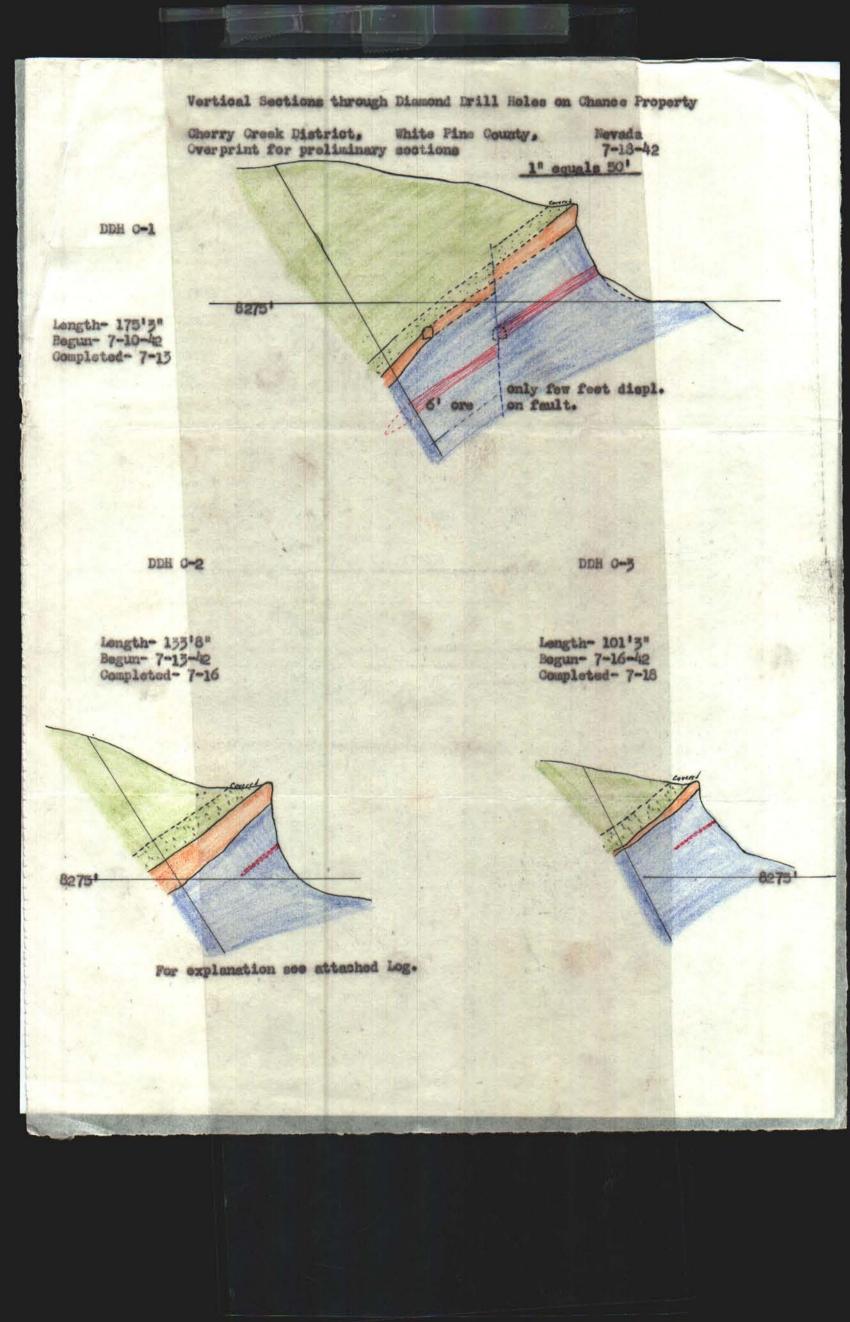
1070 0018 UNITED STATES DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY Cherry Orook, Neveda April 28, 1942 Mr. D. G. Legisy Box 4506, University Station Tuccon, Arizona Subject: Cherry Oreck Tungeten, Monthly Seport, April, 1942 Dear Mr. Lasty. The enclosed map and projection briefly guamerize the geologic work completed at Cherry Creek between April 15 and 25. Schoolite ore in the Tungsten Co. stope occurs in a some of brecelated limestone traversed by prominent No joints. To the north it is bounded by a No cheer. Southward it grades into leaner minorelization in less fractured limestone. Some ore still remains in the footwall and bottom of the stope. Spotty schoolite mineralization occurs in the U.S.B. trenches north and south of the open out. Forty-Took liner holes are being drilled into the stope walls in en attempt to define the limits of schoolite mineralization. The zone of schoolite mineralization forther east is being trenched and channel compled by the U.S. Marcan of Wines. Schoolite occurs in thin calcite stringers (generally less than an inch thick), end locally as disseminated crystals where the limestone is more frectured. The overall grade of this aineralized zone appears to be quite low. No high grade lenees of eny a preciable width or length have been uncovered in this zone. The quartaite-limentone fault contect is not mineralised. Geologic work planned for the next worth includes mapping in the Picup shoft, examination (and if warranted, mapping) of the Chance and adjacent proporties, continued necturnal examination of areas uncovered by trenching, end completion of the carfece map. The next week will be spent at Tungstonia with Wiese to complete the surface mapping essential to the U.S. Bureau of Minos work there. Very truly yours, No Re Elepper Jr. Geologist oc. Mr. Nolan Mr. Lemmon File

Stoped area is zone of bredciated limestone recemented with calcite and quartz with scheelite. Dip is 60 west. Non-brecciated EXPLANATION @ Ore horses are lean or barren. Brecciated zone terminates at north against a NW fault. Lime-Low grade scheelite stone is brokenless to the south, and has low grade dissem. mineralization. scheelite in crosscut. Disseminated scheelle in K-cut. approx 0.3% WOZ Barren limestone. Hanging wall mineralized, but of sub-ore grade Block of - 40-foot liner holes except locally. Footwall probable low-grade from stope of mineralization reported to be to be drilled still ore in most places. into foot and 0.52 Was hanging wall and south face. Vertical Projection through Tungsten Co. stope looking N75W Scale: 1" equals 50' 8300 EXPLANATION M Shale M Limestone Quartzite Brecciated quartz and silicified limestone. U.S.B.M. trenches Geologic Map - completed Property of Cherry Creek Tungsten Mining Co. - projected Cherry Creek, Nevada Scale: one inch equals 200 feet Scheelite mineralization To accompany April, 1942, progress report by M.R.Klepper, U.S.Geological Survey









PRELIMINARY VERTICAL SECTIONS OF

PROPOSED DIAMOND DRILL HOLES

Change Mining Co. CLAIM Cherry Greek Mining District White Pine Co. Nevada

To accompany Monthly Report for June, 1942

M. R. Klepper

U. S. Geological Survey

1" equals 50°

Looking M125 at each section

DDH C-1
Bearing- \$78E
Inclin.- -60
Coord.- 3250N,2236E
Collar- 8547'
Length - /255
Begun
Completed

Shale

Tioup voin

C channel sample

10 channel samples bottom of shaft projected into section.

ore zone expected in this range unless f-f was feeded channelway.

DDH 0-2
Bearing- S78E
Inclin.- -57
Coord.- 5287N, 2315E
Collar- 8550*
Length - 113-'-2
Begun
Completed

Shale

Tioup

vein

ore

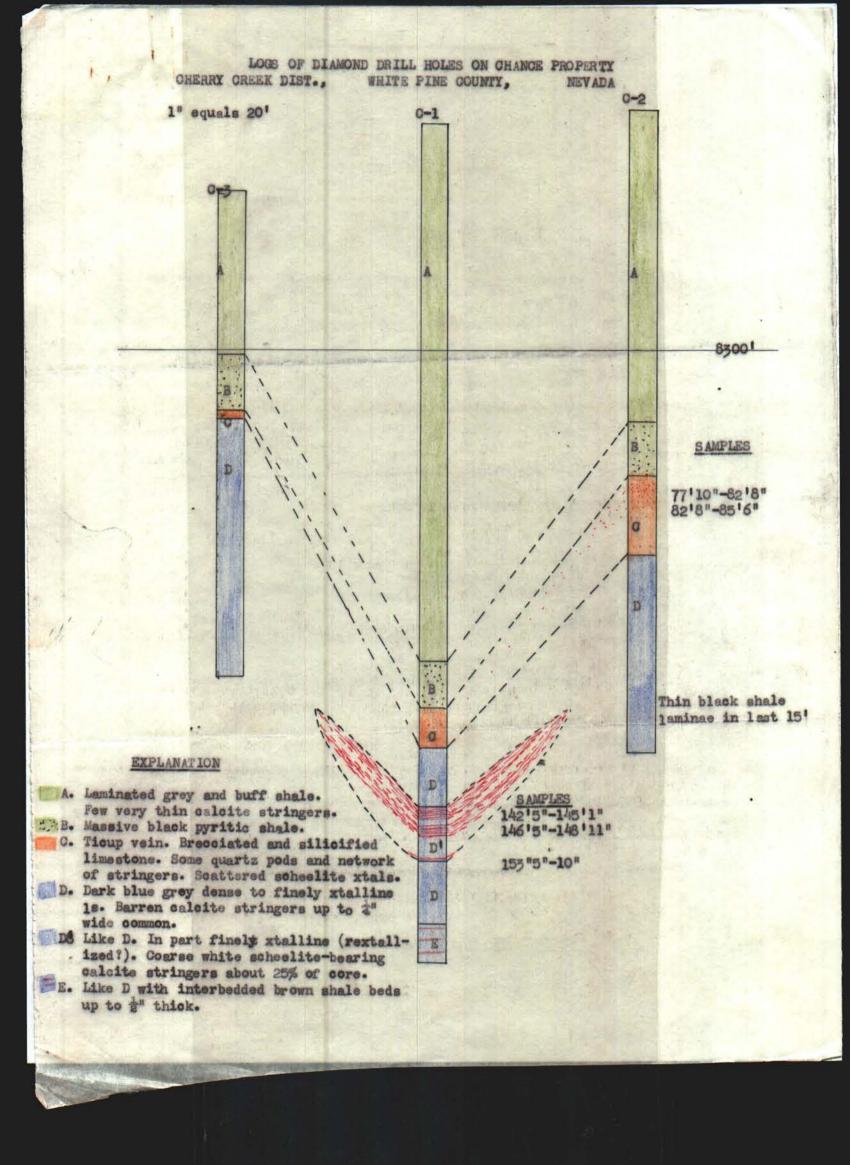
Possible range of predicted ore zone

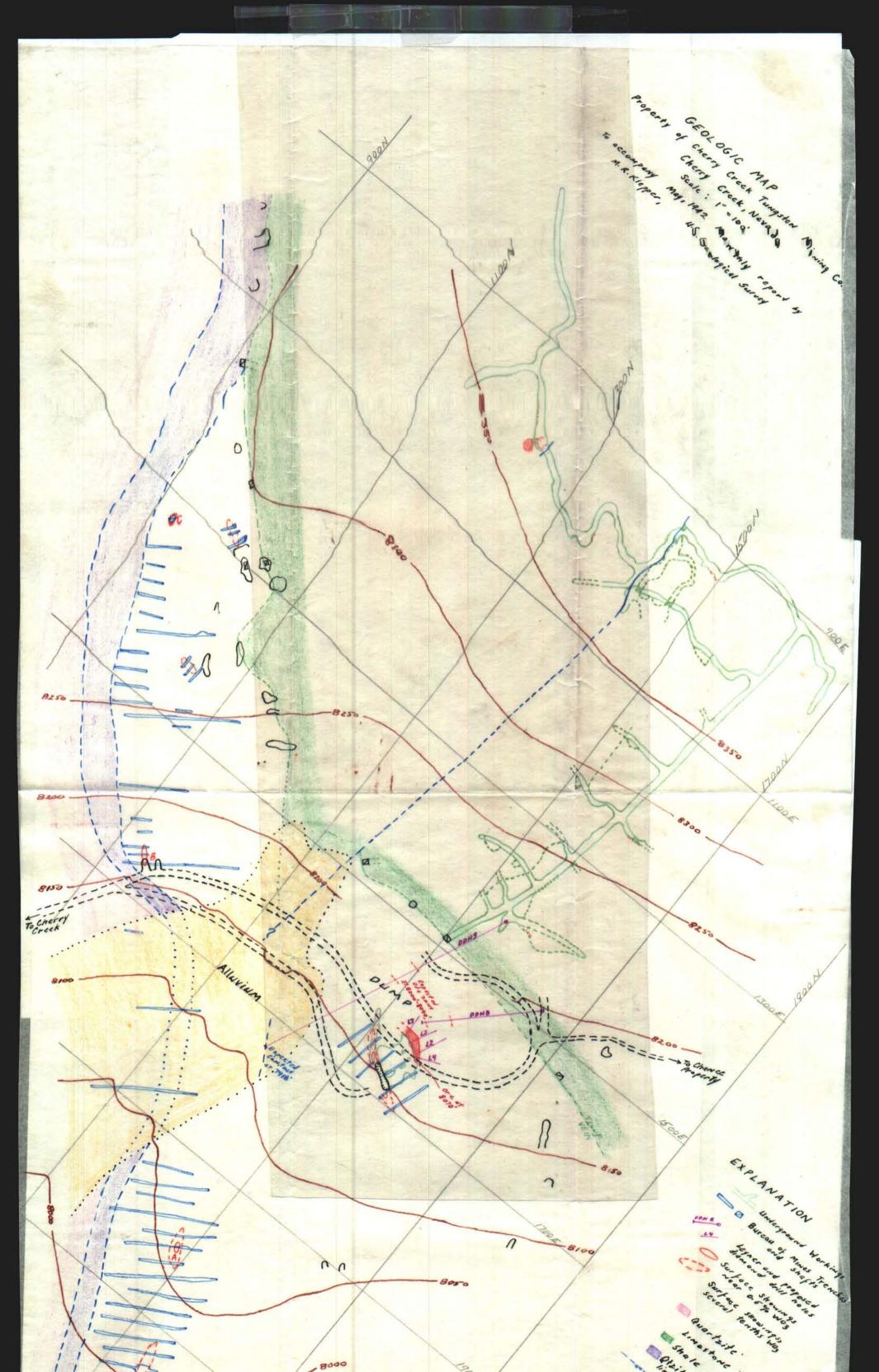
Bearing- 878E
Inclin.- -63
Coord.- 5179N, 2537E
Collar- 8555'
Length - - - - Completed
Begun

Possible, range of predicted ore zone

Shale

S end mineralized zone; 1-2' wide





Cherry Crobk, Nevada May 28, 1942

Mr. S. G. Lasky Box 4356, University Station Lucson, Arizona

Subject: CHERRY CREEK TUNGSTEN, Monthly Report, May, 1942

Dear Mr. Lasky:

The enclosed map, suitable for overprinting the one sent you May 10, brings the geologic and Bureau of Mines work up to date. Some changes have been made in contacts as the result of further geologic work.

The first two diamond drill holes, #8 and #9 are planned to intersect the ore body at about 50° beneath the bottom of the stope. The drillers arrived yesterday and probably will begin to drill #8 in a day or two.

All surface trenches have been lamped and scheelite showings of reasonable grade and size are shown on the map. These estimates are visual only. As yet no assay reports have been returned. Only three areas show much provide. At A a zone 25'x 10' is out by a number of scheelite-bearing calcite stringers and may average 0.5% WOJ. At B a similar some occurs. Volin plans a short adit here. At C a 20' shaft has been sumk on a 6'x 10' zone of about 0.5% WOJ. At the present bottom it has pretty nearly petered out, but several more rounds may be put in. The other gones are of a similar type of mineralization (discontinuous stringers) but lower grade.

The ore gone at the bottom of the shaft was cutlined by four layner holes. Its position has strongly influenced our planning of the first two dismond drill holes.

In the Ticup there are a number of places a thin scheelitebearing stringer or a few scheelite crystals occur. The only showing of any size was stoped above the tenth level and all the ore, about 25 tons of less than 1.0% #05, was removed. Some scheelite remains in the floor but it is not likely that any sizeable body of ore remains below the level. This zone, like the main stope, is fractured and an irregular set of NW joints can be discerned. At the north end this zone is bounded by a NW fault with a few feet displacement.

The outlook is not optomistic. None of the surface showings seem to warrant drilling and if holes 8 and 9 do not show ore it will be a problem to locate subsequent holes. I em also enclosing a copy of a memorandum on lexington Mines, near Baker, Nevada, visited by me on May 24.

Sincerely yours,

M. R. Klepper

The map enclosed is complete to date, including all data shown on the map sent to Mr. Kasky on May 10.

CHERRY CREEK, NEV. June 25, 1942 Mr. S. G. Lasky Box 4356, University Station Tueson, Arizona Door Mr. Lasky: Subject: Monthly Report, June, 1942, Cherry Creek Tungsten. During the past month a district map including the Chance, Fillmore (Scheelite King) and Cherry Creek Tungsten Mining Co. properties has been almost completed. Fart of the Chance property has been mapped in greater detail and three sites for diamond drill holes have been located. A copy of the latter map and preliminary sections through the preposed holes are enclosed, also an overprint for the map of the Cherry Creek Tungsten Mining Co. property amended to June 25. No assays from diamond drill holes are yet available. Visual examination of cores suggests three possible ore zones, all low grade unless only very small widths are considered: (1). Holes & and 9 intersected, within the predicted range, the downward extension of the ore body previously mined by the company. Grade is thought to be considerably lower (not over 0.4% WO30 but could possibly be raised by sorting. The company has just secured an RFC loan and are going to X-cut toward the predicted mineralized at an elevation of 7863' (from 7th level of Ticup Mine). If assays are favorable this zone may be tested by another hole.

(2). Holes 1, 1-A and 2 indicate a mineralized zone, possibly ore, beneath surface area" A"at an average depth of 45'.

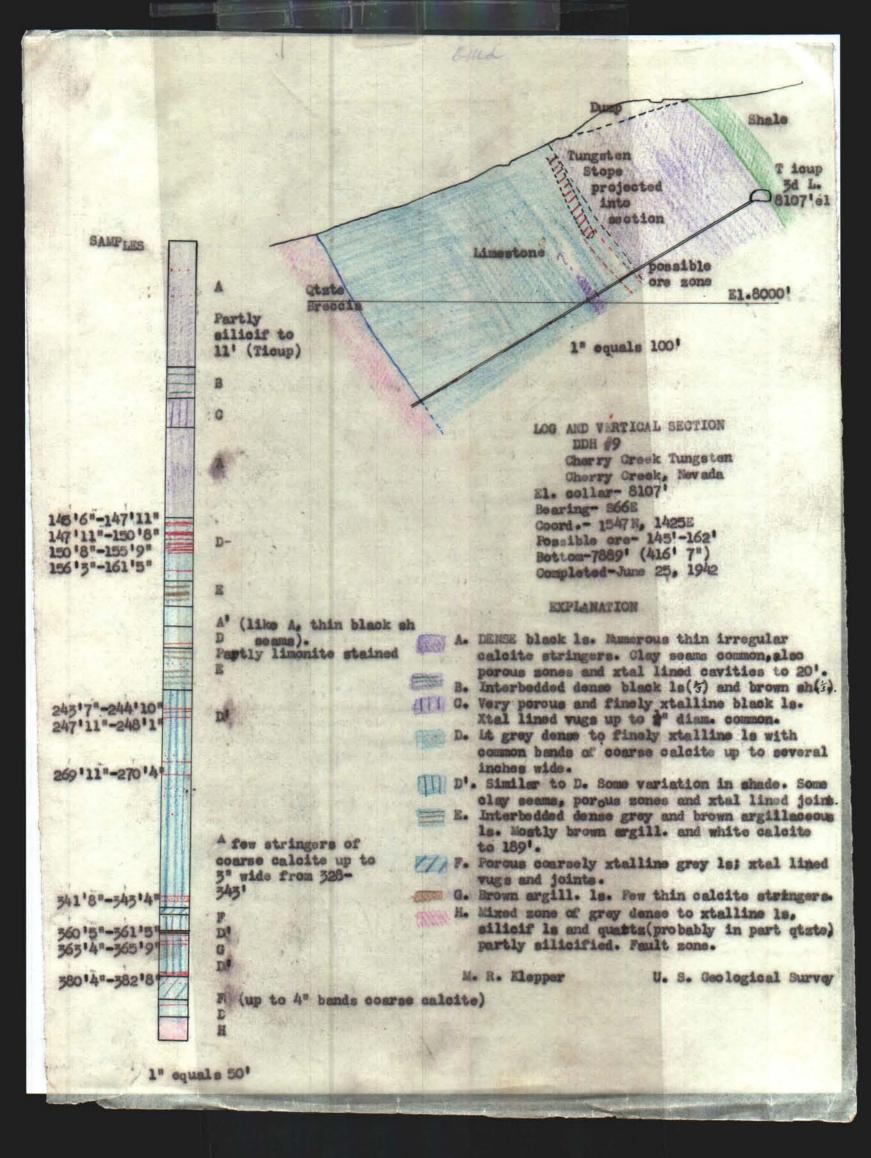
(3). Hele 3 intersected two promising zones within 45° of the Quartzite contact. One of these is the extension of the zone followed in the adit. No surface indication of the other can be found. Hele 4 will explore these zones 50° deeper.

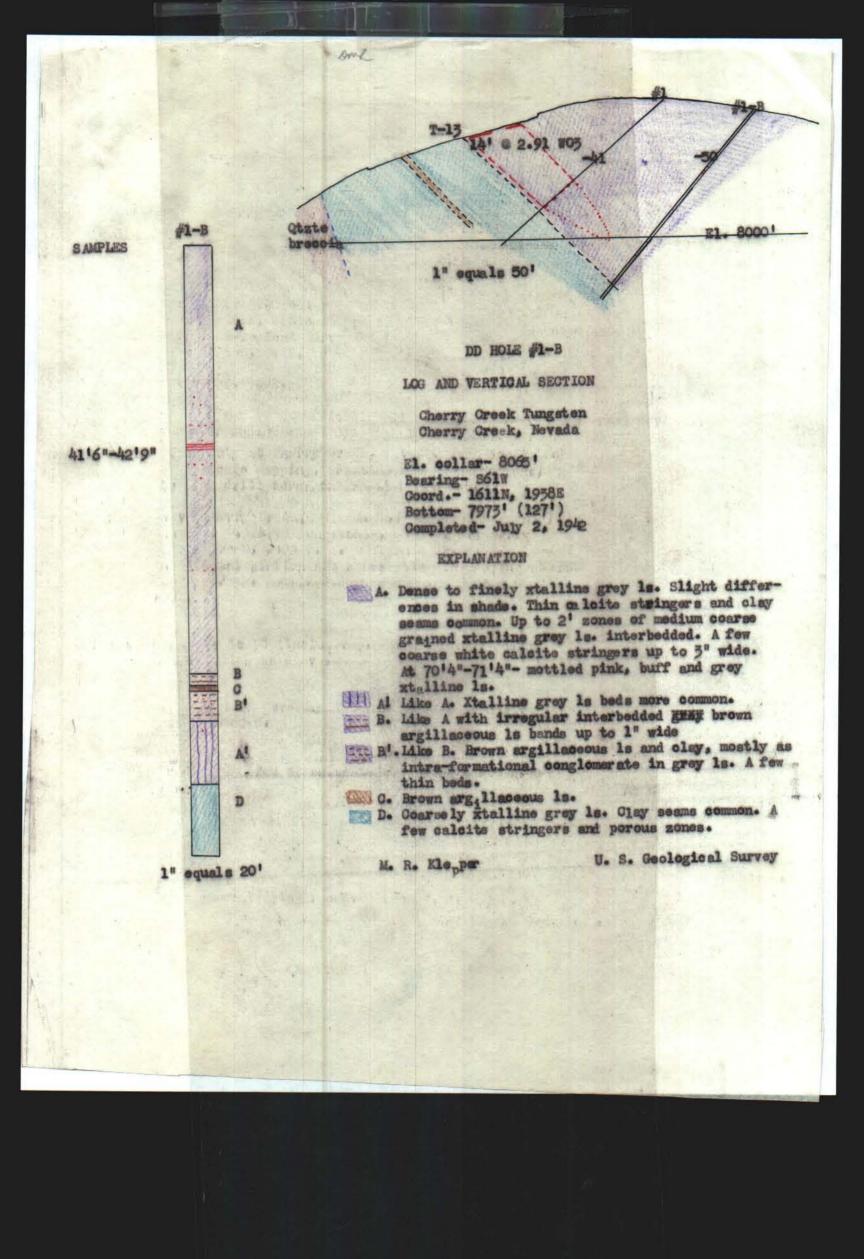
Plans for the next few weeks include mapping of underground workings on the Scheelite King claims preliminary to Bureau of Mines work, completion of the district map and examination of a number of other prospects in the vicinity of Cherry Creek.

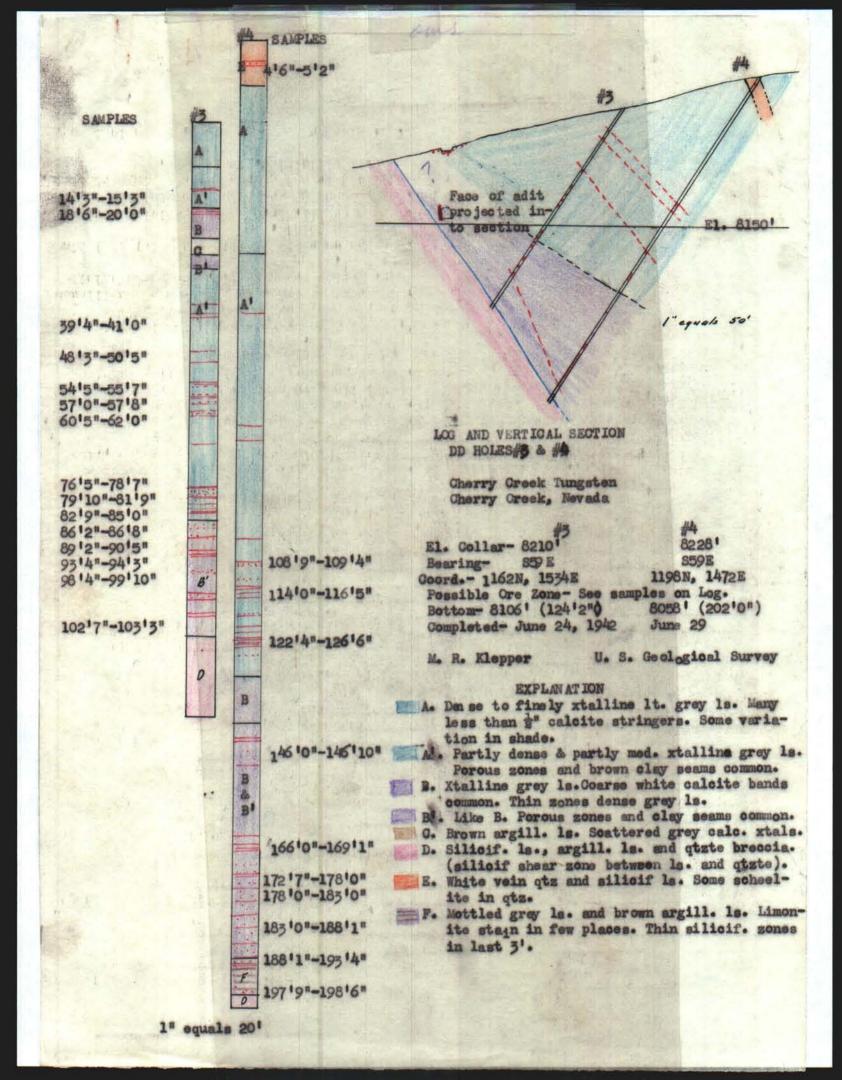
Yours very truly,

M. R. Klepper

OVERPR INT for GEOLOGIC MAP OF CHERRY CREEK TUNGSTEN MINING COMPANY; CHERRY CREEK, NEVADA
to accompany monthly report for June, 1942
M. R. Klepper
U. S. Geological Survey
1" equals 100' DDH 4 DDH 3 completed June 28. X-cut to be %ineral. zones at 80-90'and 95-105' warrant DDH 4 driven by Co.
Expect mineralized some (ore?) as shown. El. 7865' DDH 9 RAL3 1 18031 Mineralized zone, possibly ore, out-line: by holes 8 & 9. Position on June 25. Thin Schoolitebearing string re below DDH 8 indicated zone are con but no lower zone likely to be ore. To be continued to quartsite (about 40'). Mineralized sone, probably not over 0.1-2% #03. DDH 2 Possible ore some outlined by holes 1, 184 and 2 DDH 1 DDH 1-A







Elko, Navada July, 28, 1942 Mr. S. C. Lasky Box 4756, University Station Tueson, Arigona Dear by. Lasky: Subject: Monthly Report for July, 1942, Cherry Creek, Nev., Tungsten Goologic work in the Cherry Creek District has been completed. Only a brief statement, without maps, will be made in this report, as the Paresu of Mines exploration program will probably be completed by August 4, and my preliminary report on the property will be propared immediately thereafter. Core holes 1-8 and 4 did not intersect ore. Holes 5 and 6, spaced at equal intervals between the ore gone intersected in hole 3 and the small ore pod in the Bureau of Mines shaft, were very poorly mineralized. The bottom and northern limit of this shoot is thus fairly well known. Three more holes are now being drilled to explore the area that lies between the #5 shoot and that intersected by holes 1, 1-A and 2. This area is mostly covered by alluvium. Unless these three holes encounter ore exploration work will probably terminate. On the Chance Property the middle hole (#C-1) intersected 6' of ores the other two holes were berren. A triangular lone of about 1700 tone of 1-12% ore is indicated and 500 to 750 tons of geologic ore may be expected. The new shaft of the Cherry Creek Tungeten Mining Co. is 40' deep. If work continues at the present rate they should be in the ore gone early in September. The owners plan to begin milling as soon as development work in the ore permits. Two copies of the Harrison Pass maps are enclosed. Sincerely yours, M. R. Klepper go: Mr. Nolan Er. Lemmon V File

coul Assay data from T-15 SAMPLES Qtzte breccia E1. 8000 A few porous zones 1" equals 50' up to 2" wide in first 12'; very thin and uncommon 2813"-3013" beyond. DD HOLE #2 3411"-3613" LOG AND VERTICAL SECTION 4611"-47'5" Cherry Creek, Tungsten 5016"-5519" Cherry Creek, Nevada 5910"-8" El. collar- 8085' Bearing- S29E Coord-- 1550N, 1925E B (2" brown argill. ls. at 60') 67112-6" Mineralized zones:

26'- 77', rather continuous low grade
103'- 119', " " very low g 71'7"-72'2" 7517"-7616" very low grade Bottom- 7999 (125 2") Begun- June 12, 1942 Completed- June 15 AC A E C EXPLANATION B A. Dense grey limestone; clay seems and thin calcite stringers (less than 2") common. In places network a of paper thin stringers. Few coarse calcite stringers up to 4" wide. B. Coarsely xtalline white calcite. Thin clay selvages common. A few "ghosts" of orystalline grey lime. 霰 C in poorly defined gones of variable width. D. Brown ergillaceous ls.

| E. Like C. In part limonite stained.

F. Porous xtalline grey ls. Thin calcite stringers. 1" equals 20 M. R. Klepper U. S. Geological Survey

Overburden Shale Quartz Silicif. Ls. 18" dissem. WO3 Black Ls., numer ous less than 2" calcite stringers 1" equals 100' and joints and small vugs lined with calcite xtals. Clay seams and sutures common. Occasional small scheelite grains in LOG AND VERTICAL SECTION the stringers , rarely in the 1s. No zone likely to DD HOLE #8 give positive assay. Cherry Creek Tungsten Cherry Creek, Nevada El. Collar- 8199' Mineralized zone - 8010-7990 Bottom - 7974; Hole length- 284; Begun- May 28, 1942 Completed- June 7 M. R. Klepper, U. S. Geol. Survey Dense light grey ls. Occasional calcite stringers, crystal lined joints and small vugs . Some stringers carry a little scheelite, with occasional specks in adjacent ls. No zones wider than a would assay and these

are widely spaced.
As above. Several 1' brecciated zones,

coarse calcite common. Scheelite occurs in upper 10 and lower 6 feet,,

calcite stringers. Some dissem. xtals in ls. Black ls. . Numerous thin calcite stringers.

most commonly in thin (1-32 to 1")

Only several specks of scheelite

1" equals 40"

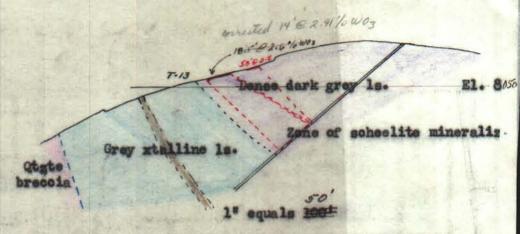
0000000000 PAT TERRE SAMPLES 513"-11" E1.8000 11'5"-13'6 1" equals 50' A few 1" perous zones (joints?) with spongy calcite and brown clay. 36 10"-40" DD Hole 1-A 41810"-4218 LOG AND VERTICAL SECTION About % coarse calcite 46'8"-51'10 in veins up to 6" wide. Cherry Creek Tungsten Cherry Creek, Nevada El. collar- 8061' 6312"-6" Bearing-S29E Goord.- 1580N, 2002E Mineralized somes:

3'5"-13'6", very lean

36'10"-12'8", possible low grade ore

42'8"-54'11", very lean

63'2"-6", estimated 5-10% WO3 C Bottom-7981' (107'6") Begun- June 16, 1942 Completed- June 18 D R EXPLANATION A. Dense dark grey is. Thin calcite stringers (less than 1" equals 201 19) with no uniformity of orientation are common. Few 1" stringers of coarse calcite. Will B. Donce light grey ls. Thin clay seams and calcite string common. C. Coarse white calcite. Few las remnents. D. Porous argillaceous brown is. Thin calcite stringers common. E. Porous xtalline grey ls. Thin calcite stringers. M.R. Klepper U.S. Geological Survey



5' 7"

41 3"

21 3"

See below

Crystalline it grey is partly silicif.; several 2 scheelite-bearing calcite stringers

Dense dark grey las A few thin brown clay seams and suturesi Out by numerous paper thin to la calcite stringers, mostly barren. A few contain scheelite in varying amounts from a very small isolated xtal to 50- 75% of the stringer. Schoolite- bear-

Porous orystalline grey ls.; few veins of coarse calcite up to 4" wide. Network of very thin irregular calcite stringers. Olsy seems, sutures and olots common. No scheelite.

DD HOLE 1

LOG AND VERTICAL SECTION

Cherry Creek Tungsten Cherry Creek, Nevada

El. collar- 8072' Bearing- S29E Coord.- 1570N, 1960E Mineralized zones: 40' 4" - 45' 1" 62' 5" - 63' 12 65' 7" - 68' 11" 70' 7" - 74' 2" 76' 8" - 80' 11" possib low gr ore zon

Begun- June 8, 1942 Completed- June 12

831 2" - 851 5"

11565 M.R. Klepper

1" equals 201

UNITED STATES DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY 2180 Bryant Street Palo Alto, California May 2, 1942 Mr. M. R. Klepper U. S. Ggological Survey Box 1, Cherry Creek, Nevada Dear Monty: In reply to your letter of April 29: will have to walk, I guess. The only way I know to get Re-caps is through the local tire board, and you are eligible for essential re-caps under class B-4 (I think that is the one). If the board, has refused them, ask for a written statement for transmittal to Nolan; he probably cannot do anything about the matter. Unless you receive an order for truck recaps, they won't do you much good anyway, for the regular passenger camelback would not last 3,000 miles off the highway. I just got an order for a couple of recaps from the P. A. I strongly recommend that you stick to Tungstonia and Cherry Creek for the present, and ignore the prospects being touted by numerous Ely promoters. It might be a good idea to send me a note about the gossip you hear, but there is no particular point in visiting the property without a request from Nolan or myself. I have been to most of the known prospects in the Snake Range, including Lexington, Sacramento pass, Dirty Shirt, Black Horse, etc. I do not recall Garrett — Lexington Mines were being promoted by a Hollywood outfit last June. last June. Jermain is supposed to visit the Elke (Star) tungsten group in the Ruby Range semetime. If he already has, it would be a good idea to get his dope; if he is still going, it would be a good idea to go along if you can manage. Best regards, Dwight M. Lemmon oc Nolan

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Box 1 Cherry Creek, Nevada April 29, 1942

Mr. D. M. Lemmon 2180 Bryant Street Palo Alte, Calif.

Dear Dwight:

Yours of April 19 to hand and contents noted. In order to preserve the virginal qualities of my digestion I shall bargain with the Bureau forthe occasional sack I need.

Sent you a copy yesterday of the Cherry Creek and Tungstonia month y reports. I fear the former resembled the window of a cut rate drug store and still didn't impart what little information I had to offer as effectively as it might have been done. Any suggestions you have to offer on this monthly report business will be gratefully accepted. I'm damned if I can show clearly on a projection what I'd like to about a setup like the Cleghorn stope.

Johnnie was over to Cherry Creek the past few days to help finish up the surface map. Volin lent a hand one day and loaned me one of his men several others. Volin has trenched the eastern zone and we lamped it one night . 6" of snow prevented us from getting the dope on the map the next night . That will be my first chore onmy return (I forgot to mention that after yesterdays snow I came to Tungstonia with Johnnie for a week to finish essential mapping). The eastern zone doesn't look very promising but I hope the assays turn out better than I expect them to.

What do you know about Lexington Mines? Garrett of Eyy wants me to take a day over there. Thinks he has considerable good grade alluvial scheelite . How about Sacramento pass? Margineau of Ely has 25 ton mill there and no ore to keep it going. Is there any use looking around any of these properties, the Dirty Shirt, Black Horse, etc. Do you know anything about the Payday, Lobo, Oreana or Green claims around Toy? Saw a too good looking report on them by a L. Paul Jones, Consulting Mining Engineer of San FRancisco. If I can shake a day 100se later in the month would it be wise to appease Garrett by running over to the Lexington with him to get an idea what is there?

Expect to return to C. C. within a week, finish the map work and plan several holes with Volin. He expects drillers in in several weeks. Tire situation critical. Am planning retiring to the quiet life of the apiary when Minnie arrives.

Mosty

Box 4356, Univ. Station, Pucson, Arisone, April 18, 1942.

Mr. M. R. Klepper, U. S. Geological Survey, c/o Tungeten Minerals, Inc., Tungetenia, via McGill, Nevada.

Dear Klepper:

Thanks for your letter of April 14 about Cherry

Your statement that the "fractured somes seem to approximate the bedding", is presumably your gentle way of letting me know that the idea of control by intersection of faults and bedding is not so bet.

What do you think of carefully suppling the various bods for several hundred feet along the strike in the vicinity of the ore with the idea that changes of strike and dip may have caused the shattering? If such a thing as that should be the control, it might be relatively easy to prophesy the size of the shattered sones and their position in space.

Very truly yours,

39.C.

S. G. Lasky

Too SOL TARY

cc: Mr. Nolan

Mr. Lemmon /

2000

1070 0018

Supplementary Memorandum on the CHERRY CREEK TUNGSTEN MINING COMPANY Cherry Creek, Nevada

Abstract

Since September 1942 five hundred tons of ore have been mimed from the "A" ore body on the property of the Cherry Creek Tungsten Mining Co.; the "B" ore body has been developed by a drift 86° below the outerop, and a raise to the surface. About 1000 tons of scheelite ore have been milled and 1200 units of W03 recovered. Reserves on the property comprise 1000 tons measured, 4500 tons indicated with reasonable assurance, and 3000 tons inferred. Grade is expected to average near 1% W03. If mining and milling are continued at the present rate, this reserve will be exhaus ted in about ten months. A production of 7500 units of W03 is anticipated.

Ceneral

On May 25 D. M. Lemmon, Conrad Mrauskopf and I visited the property of the Cherry Creek Tungsten Mining Co., four miles northwest of Cherry Creek, White Pine County, Nevada. Since September 1942 five hundred tons of 2% WO5 ore has been mined from the footwall of the "A" ore body; the "B" ore body has been partly outlined (see map attached). Since early in April 1943 about 1000 tons of ore have been milled, half from the "A" and helf from the "B". Twelve hundred units of WO5 have been recovered. The mill has been remodeled, and at present about 75% of the concentrate is recovered by gravity methods, and averages between 65% and 70% WO5. The low-grade flotation concentrate is shipped to the Metals Reserve Co. plant at Salt Lake City. Between 25 and 30 tons of ore are milled daily, and between 400 and 1000 pounds of concentrate are recovered. Assays of the tailings contain between 0.15% and 0.25% WO3. Current tailings are lost down Cherry Creek.

The ore body that is being developed just south of, and a little below,

U. S. B. M. drill hole No. 2 is designated as the "B" ore body. Brilling and

trenching partly outlined a zone of scheelite ore that was expected to be nearmarginal. An inclined shaft was sunk to prospect this zone. From a station 100'

down the shaft, cross cuts were driven to the northwest and to the east. The

northwest crosscut was directed toward the "A" ore bedy, but was turned too far

to the north. Sixty feet southeast of the face a 6" scheelite-bearing calcite

vein was intersected.

The east crosscut entered the "B" ore body 50° east of the station and 86° below the surface. Contrary to our expectation, the "B" ore body is similar to the "A" ore body in type of mineralization and cause of localization. Scheelite occurs with coarsely crystalline calcite and some quartz, comenting a lens of breccisted limestone. The limestone, veined by narrow scheelite-bearing calcite stringers, that was intersected by U. S. B. M. drill holes No. 1, 1-A and 2 may be part of a low-grade surrounding this ore body.

The ore body has been fairly well cutlined on this level. A vertical raise, started near the center of the body, was in ore to within a few feet of the surface. The body has been mined for a length of 50', a width or 25', and to an average height of 15'. This work suggests that the "B" ore body is similar to the "A" ore body in shape, size, and trend, but that it dips more steeply (see section attached).

Between the surface and the back of the stops 1000 tons of ore estimated to contain 1% WO3 can be measured, and 4000 tons are indicated with reasonable assurance. On the basis of its similarity to the "A" ore body, 3000 tons are inferred beneath the level. This reserve will supply the mill with 30 tons daily for about 9 months. A production of 7000 units is anticipated.

Proposed Exploration

The northwest crosscut will be turned south to prospect the mone beneath the "A" cre body. Mr. John Boundy of the Cherry Creek Tungsten Mining Co. estimates that 500 tons of 1% WO3 ore still remain in the flotwall of this body. A continuation of this core may also be found farther to the south beneath mineralized outcrops.

A crosscut will be driven southwest from the 100° station to prospect the mineralized zone intersected in U. S. B. M. drill hole No. 10.

If enough men are available, a shaft will be sunk on the ore zone east of the road between Cherry Creek and the Ticup Mine (Lens C on U. S. B. M. General Plan Map). Outcrops, a short adit, and a U. S. B. M. drill hole suggest that a small ore body may lie here.

T. B. Nolan (3)

D. M. Lenmon

S. G. Lasky

G. L. Allen

File

M. R. Mapper

Assistan Goodogist

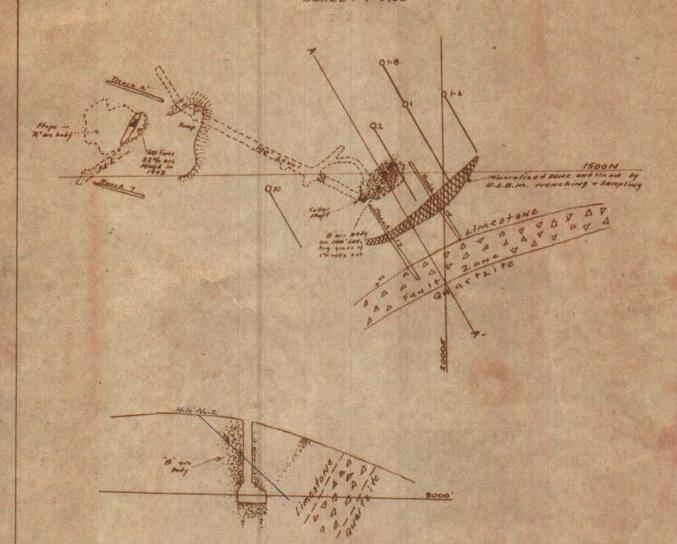
Mill City, Nevada

May 25, 1943

CHERRY CREEK TUNGSTEN MINING COMPANY CHERRY CREEK DIST., WHITE PINE COUNTY, NEVADA OVERLAY FOR U.S.B.M. GENERAL PLAN MAP

M. R. KLEPPER

U.S. GEOLOGICAL SURVEY MAY 25, 1943 SCALE: 1" = 100"



VERTICAL SECTION ALONG A-A' HOLE NO.2 IS PROJECTED ON TO SECTION INTENSITY OF BOTS INDICATES APPROXIMATE GRADE OF SCHEELITE ORE

1070 0018

(325) Flem 47

Supplementary Memorandum TUNGSTEN DEPOSITS OF THE CHERRY CREEK DISTRICT White Fine County, Nevada

and the second of the second o

T. B. Nolan (3)

D. M. Lenmon

S. G. Lasty

File

M. R. Mapper

Assistant Geologist

Ely, Nevada

August 29, 1943

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Illustrations

- Plate 1. Recommandance Map of the Cherry Greek Tungsten Belt.
 - 11. Part of the Property of the Cherry Creek Tungsten Mining Company.
 - 111. Geology of Workings in the B Ore Body.
 - 1V. Geologic Map of the Louis Campanella Tungeten Property.

Supplementary Memorandum

TUNGSTEN DEPOSITS OF THE CHERRY CREEK DISTRICT

White Pine County, Nevada

Abstract

During August 1943 the writer and P. Joralemon spent nine days in the Cherry Greek District, supplementing the work done by the writer in 1942.

The Cherry Greek Tungsten Mining Company developed a new ore body during the fall and winter. They resumed milling in April, after a lapse of 15 months. Between April 7 and August 19, 2856 tons of ore were milled and 2994 unite of W03 recovered. Reserves of measured, indicated and inferred ore total 6250 tons or 5470 units, enough for 8 or nine months operation at the present rate. The company plans to explore several areas on the property with a diamond drill. They may be able to discover more ore before this reserve is exhausted.

The company has recently reached an agreement with Louis Campanella, owner of a scheelite property three miles west of the tungsten mill. They will develop one or two of the best showings and mill the ore. On the Campanella property the scheelite occurs in small lenses along a shear zone in limestone. These lenses appear to be localized where minor cross-breaks intersect the shear zone. The scheelite is associated with coarsely crystalline white calcite and brown carbonate, probably ankerite. The reserve of ore probably does not exceed 1500 tons averaging 0.5-0.75% WO3.

Several small pods of high-grade ore have been prospected on the F. H. Schafer property. Scheelite, associated with quartz, coarsely crystalline calcite, and oxidized silver minerals, locally permeates fractured areas in the limestone. There appears to be no continuity between the small pods. It is believed that one or two good "chloriders" could extract a few hundred tons of 2.0-3.0% W03 ore from shallow workings.

On the Roy Moore property scheelite occurs as sparsely scattered coarse clusters in a quartz-calcite vein. Fifteen tons of ore estimated to average between 0.6 and 0.75% WO3 was sorted and sacked during the last war, but it was never packed from the property. The reserve of ore indicated and inferred is not more than a few hundred yons. In view of the relative inaccessibility of the property, the ore already sacked will probably never be shipped.

General Statement

The writer and P. Joralemon spent nine days during August in the Cherry Creek
District. During this time we revised the surface geologic map of the Cherry Creek
Tungsten Mining Company property and mapped the underground workings completed during
the past year. We also mapped the geology of the Louis Campanella property. The
writer made a reconnaisance map of the tungsten belt and briefly examined the F. H.
Schafer and Roy Moore properties.

Cherry Crock Tungsten Mining Company

General. In August 1942 the Cherry Greek Tungsten Mining Co., after a sixmonth period of inactivity, began sinking a shaft to develop a mineralized zone indicated by U. S. Bureau of Mines diamond drill holes and surface trenches. This work
was financed by two \$10,000 R. F. C. loans. The shaft was sunk 100° on a 60° incline, and crosscuts were driven east and west from the bottom of the shaft. The
B ore body was penetrated by the sast crosscut in March 1945. The mill at Cherry Greek
was remodeled and the first concentrates were recovered on April 7. Since that time
an average of 20 tons of ore have been milled daily. The R. F. C. obligation has been
paid, but the company is still substantially indebted to the Molybdemum Corporation,
which financed the construction and remodeling of the mill.

Production. Between April 7 and August 19 the company milled 2856 tons of ore and recovered 2995.92 units of WO3. About 2150 tons of this ore was mined from the stope in the B ore body (See plats 3), 600 tons from the A ore body, and 100 tons from the adit in the C ore body. Production since January 1941 totals 4923.76 units of WO3 recovered from about 5850 tons of ore. Production during the next month or two may drop below 400 units, but after the B ore body has been developed below the 100 level, production should again reach 600-700 units a month.

Assays of millheads, and of sand and sli e tailings indicate that current recovery is almost 90%. A substantial part of the tailings is carried away by Cherry Greek and apread out over the flat.

by a crew of 18-20 men. All of the B cre body above the 100° level has been staped.

A raise to the surface from the east end of this ore body has just been completed.

Part of the rock in this raise was low-grade ore (scheelite-bearing calcite stringers in limestone); part was barren. A sub-kevel is being driven from the raise at an elevation of 25° below the surface. From this sub-level the small lens of high-grade ore labeled B° on plate 2 will be stoped. A winze was started today from the floor of the stope to furnish ore during the next few weeks. As soon as a larger hoist

is installed, the shaft will be deepened, and a prosecut will be driven to the ore body 50° below the 100° level. The writer thinks it likely that the ore lens continues to this depth.

The adit in the C ore body has recently been extended. Ore has averaged between 0.4 and 0.5% WO3. The face of the adit has been driven beyond the limit of mineralization at the surface, and will probably soon pass into barren rock.

The Cherry Creek Tungsten Mining Co. has recently reached an agreement with Louis Campanella. The company will develop the two promising showings on his property and will the cre. Two men have been working at the property for a week. One that had been mined and stockpiled at the property, about 100 tons estimated to giverage 0.7% WOS, is now being milled.

Plans for Future Operations. The owners have ordered a dismond drill. With it they plan to test zones of B', C, D, and E (see plate 2), as well as the wells of the A and B ore bodies. The following underground development work, to be guided more or less by drilling, is planned:

- (1). Deepen the shaft and crosscut to the B ore body 50' below the 100' level;
- (2). Stope ore lens Bas
- (3). Drive a branch from the west drift beneath the A ore body and beneath zone
 D. Surface mineralization in this zone is encouraging. The Bureau of Mines did not
 sample it;
- (4). Drift slong the C ore body to the limit of ore. Then sink somewhere within the mineralized zones
- (5). Drift under zone E, an area of sparse and spotty surface mineralization, from the 100° level.

Scheelite Deposite. The underground and surface were completed during the past year leads to a clearer understanding of the cause of localization of the ore. Both the A and B ore bodies are breccia lenses that have been comented with coarsely crystalline calcite, quartz, and scheelite. Both are surrounded by a low-grade aureole of scheelite-bearing calcite stringers. U. S. B. M. drill holes 1, 1-A, 1-B,

and 2 penetrated this low-grade surcole of the B ore body. If hele 2 had been inclined more steeply, it would have passed through the center of the ore body (see section on plate 2). Holes 1, 1-A and 1-B were north of the body.

The transition from high-grade breesia are (1% plus WO3) to low-grade (0.25-0.5%) stringer-type mineralization is well exposed in the back and along the walls of the stops. The only significant difference between the A and B are badies is that the former was exposed by erosion; the latter was not.

The C ore body appears to be similar, but, judging from the exploratory work, is smaller and of lower grade.

These breccie zones are believed to have firmed concurrently with movement along the major fault between quartite and limestone. Although they are not strictly parallel in strike and dip, the long axis of each one roughly parallels the major fault zone. The breccie lenses seem to pinch out completely around their periphery; no fractured, sheared, or gougy zone continues beyond the limits of the lens. The mechanics of the formation of these lenses is not known, although it seems possible that the major faulting nearby may have induced the collapse of the walls of solution cavities. The writer believes that the scheelite-bearing solutions migrated upward along the many fractures that are now filled with calcite and calcite-scheelite stringers, and that when breccis lenses were encountered, calcite, quartz, and scheelite were deposited, partly by replacement of the limestone and partly as an interstitial coment.

Within the ore bodies smooth and irregular fracture surfaces of little or no displacement exerted a control upon the deposition of scheelite. To cite an example: good ore frequently terminates at a fracture and commences again a few feet distant upon passing through another fracture. Fractures of several different attitudes are equally important. The east termination of the ore body is at a gougy slip, or a number of closely spaced, parallel slips. The writer believes that these slips limited the deposition of scheelite, and that they do not fault off a segment of the ore body. The north termination of the A ore body was at a similar gougy slip seam.

bedies. The writer believes that the A ore body is practically exhausted, but the operators expect a continuation to greater depth and will drive the west drift of the 100 level to the projected position of the anticipated continuation.

The Bore body pinched out completely 40' above the floor of the stope, yielding 2150 tons of ore. The ore is widest at the floor of the stope, and the writer feels resconably certain that the lens continues for 50' below the floor. If this belief is correct, and if the lens pinches out document so it did upward, it contains at least 5000 tons of ore that probably averages 1% plus 803. If it continues to greater depth, it may contain as much as 60 tons per additional vertical foot.

The small tennage of ore that has been mined from the C ore body has been marginal. Drill hole 5 suggests that ore of better grade might be developed by sinking. Reserves of measured, indicated and inferred ore on the property will last about eight months at the present rate of operation.

Summer of Reserves.

Ore Body	Magured		Indicated		Inferred			Total			
	Tons	% NO5	Unite	Tons	% 1105	Unita	Tons %	₩G3	Units	Tons	Units
A	0		0	100	1.0	100	200	1.0	200	300	500
3	100	1.0	100	750	1.0	750	2500	1.0	2500	3350	3350
91	1.00	1.0	100	100	1.0	100	300	1.0	300	500	500
ď	150	0.5	75	350	0.6	210	1000	0.7	700	1500	985
D	0		0	500	0.5	250	Explor	ation	might mnego o	reveal	a sub-
E	0		0	100	0.5	50	ore be	nesth	the ou	terop.	-
Total	550		275	1900		1460	4000		5700	6250	外罗

Louis Campanella Property

The scheelite property of Louis Campanella of Cherry Creek consists of six unpatented claims located in a south-flowing campon tributary to Cherry Creek Canyon. The property is 2.7 miles northwest of the tungsten mill by graded gravel and dirt roads. (See plate 1). A road extends to one of the two zones of probable commercial ore on the property. This road could be extended without much difficulty to the other ore zone, shown near the southwest corner of plate 4.

Geology. Almost the entire property is underlain by massive blue and gray limestone. Most of the limestone sequence is believed to be of Eldoredo age; that underlying the western part of the property may be younger. Near the eastern edge of the property Pioche shale and Prospect Mountain quartzite crop out. The limestone is well exposed in the southern part of the property, but bedding is very obscure. The few reliable attitudes that could be taken suggest a continuation of the west-dipping homoclinal structure mapped farther north in the district.

morth dipping shear zone. Although displacement along this shear zone appears to be small, lenses of coarsely crystalline calcite, and locally ankerite or siderite with scheelite, can be traced more or less continuously across the property. Two distinct periods of movement along this zone are indicated. The first is believed to have been of the shearing type. Contemporaneous with, or slightly later than, this movement coarsely crystalline carbonate minerals, and locally a little scheelite, were deposited along the zone. Where certain beddings, or cross-fractures nearly parallel to bedding, intersect the main shear zone, larger lenses were formed. Later movement along the zone produced a breccia of limestone and coarsely crystalline carbonate fragments cemented by earthy carbonate. In the vicinity of the two adits the breccia is the footwall of the coarsely crystalline zone; near the southwest corner of the map the breccia is in the center of the coarsely crystalline zone. Total movement appears to have been small, for the limestone-shale contact, although

poorly exposed, does not seem to be displaced appreciably. None of the limestone beds are distinctive enough to be recognized with certainty on opposite sides of the shear.

Near the northwest corner of the property, a zone similar to the one described above is indicated by a train of coarsely crystalline calcite float. Overburden is heavy in this area, but a few prospect pits expose calcite in place.

Schoolite Deposits. Schoolite has been found only along the main shear zone and along cross-fractures (possibly some of these are beddings) that intersect the main zone. At these intersections the zone of coarsely crystalline carbonates is generally wider than elsewhere. Although exposures are not continuous enough to give conclusive evidence, it seems probable that appreciable amounts of schoolite, and the brown carbonate with which it is almost always associated, occur only at or near these intersections.

Two small bodies of commercial scheelite ore are exposed. One, hereafter referred to as the East ore body, is developed by an 80' adit (Upper adit). Surface and underground exposures indicate that this lens is 50' long, averages 4'-5' wide, and averages between 0.5 and 0.75% w03. In the Lower adit mineralization along the shear zone is spotty and sub-commercial.

The Cherry Creek Tungsten Mining Co. has just begun to develop the East ore body. They are driving the lower adit eastward along the shear zone to intersect the projected continuation of the ore body exposed in the Upper adit. If the ore body continues down dip to the level of the Lower adit, it contains between 1250 and 1500 tons of ore.

The ore body shown near the southwest corner of plate 4 has been prospected at the surface only. The south split has approximately the same dimensions as the East ore body. The grade is believed to average between 0.75 and 1.0% #03. The north split averages only 1 wide and is probably non-commercial. This ore body probably contains 20 tons per vertical foot. If mining of the East ore body is profitable,

this western ore zone will probably be more thoroughly developed.

Other small areas of low-grade scheelite mineralization are exposed along the main shear zone and cross-fractures extending away fom it. It is doubtful if any of these contain commercial ore within a reasonable distance below the surface.

A little scheelite float is found in the northwest corner of the area mapped. a dozen pits have been excavated in this area, but no scheelite was found in place. It is likely that one or more small scheelite-bearing lenses occur along the shear zone, the approximate location of which is shown on plate 4. The sparsity of float fragments containing scheelite, and the small area in which they occur, suggests to the writer that the probability of a near surface body of commercial ore in this area is small.

Ore Reserve .-

Ore Body	Measured			Indicated			Inferred Tons % WO3 Units
The state of the s	Tons	% 1103	Units	Tons	% WO3	Units	Tons % WO3 Unita
East	150	0.6	90	300	0.6	180	20 T. @ 0.6% per vert. ft
West	50	0.75	38	100	0.75	75	20 T. @ 0.75% p. vert. ft
Total	200		128	400		255	1000 tons probable.

F. H. Schafer Property

Location. The scheelite property of F. H. Schafer of Cherry Creek is situated on the east flank near the crest of the Cherry Greek Mountains. It is four miles from the tungsten mill by graded gravel and dirt roads. (See plate 1). The property consists of 6 unpatented mining claims. The first scheelite in the Cherry Creek District was discovered on these claims in 1915. During the last war the property was owned by a Mr. Nelson and associates and leased to a Mr. Kimball. A few tons of sorted high-grade ore are said to have been shipped by the leases.

Geology. The property is underlain by a thick sequence of massive to platy, blue and gray limestone beds. At least one shale member is interbedded with the limestone. The age of the sequence is believed to be post-Eldorado. As is common in the southwestern part of the district, bedding is rather obscure. The sequence as a whole strikes to the north and northeast and dips west.

Stringers of finely crystalline white calcite and irregular bodies of coarsely crystalline white calcite are common in the part of the property that has been most thoroughly prespected. Small irregular pods and stockworks of quartz also occur, sometimes associated with the coarse calcite. Generally, the limestone adjacent to these zones is silicified. Scheelite and oxidized silver minerals occur with both quartz and calcite, but the greatest concentration appears to be in the quartz.

Scheelite Deposits and Reserve. Scheelite occurs in narrow calcite stringers and in fractured zones in the limestons, partly replaced by and partly cemented with calcite and quartz. The type of mineralization is somewhat similar to that on the Cherry Creek Tungsten Mining Co. property. The writer believes that here also the scheelite-bearing solutions migrated along cracks that are now filled with calcite and calcite-scheelite stringers, depositing coarsely crystalline calcite, quartz, and scheelite in more permeable fractured zones.

The stringer-type mineralization is nowhere of high enough grade to be ore. In some of the small, irregular quartz-calcite-scheelite bodies, however, scheelite is an important constituent. Much of the scheelite is very coarse-grained. Mr.

Schafer has sorted out from some of the recently broken ore, masses of almost pure scheelite weighing from 5 to 6 pounds. Pieces of about the same size are now exposed in two cuts.

The irregularity and relatively small size of the bodies is best shown by some of the old workings. Probably the largest body was mined from an open cut with a 25° shaft in the floor and a 20° adit in one wall. Only a few schoolite crystals have been left in quartz and calcite stringers extending into the walls of the cut. Judging from the amount of cre on the dump and the very small shipment of ore from the property, not more than 100 tons of one could have been mined from this body. Several other bodies, including two that Mr. Schafer now occasionally exploits, may contain 50 to 75 tons of 1.0 to 2.0% WO5 one. In these bodies the distribution of the schoolite is very spotty, but because most of it is coarse-grained, a high grade product can be sorted for shipment. Most of the schoolite ore assays a few dollers Ag, and in some of the old silver workings on the property there is an appreciable amount of schoolite.

although the property is not likely to be attractive to a mining company, it might be to one or two lessers. In a short time good "chloriders" could mine and sort out a few hundred tone of 2.0-4.0% WO3 ore from shallow workings in several of these bodies. Further exploration might reveal other similar bodies or extensions to known bodies. Furthermore, several dumps on the property total between 150 and 200 tone of ore averaging an estimated 0.75-1.0% WO3

Roy Moore Property

Location. The scheelite property of Roy Moore of Cherry Creek is located near the head of the canyon northeast of the Schafer property. It is reached by a half mile trail, in part rather steep, from the end of Schafer's read. The property was prospected during the last war, and about 15 tons of sorted ore were sacked but never removed from the property. The ground had been open for many years, until Moore located it a few months ago.

Geology. The property is underlain by about the same limestone sequence as is the Schafer property.

Scheelite Deposits and Reserve. On the property scheelite occurs (1) in a 2-4° wide composite vein consisting of coarsely crystelline white calcute near the hanging wall and quartz with some scheelite near the footwall; and (2) in a small irregular body of coarsely crystelline calcute.

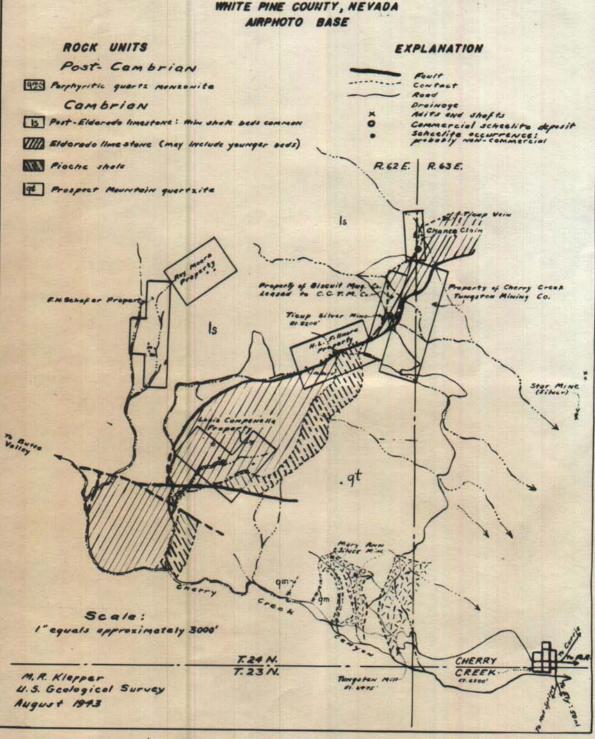
The composite vein crops out prominently for a length of 75. It can be traced no farther, and probably pinches out at each end of the prominent outcrop. At the surface, clusters of poorly formed, rather large blue-white fluorescing scheelite crystals are scattered through the quartzose half of the vein. A 25 add follows the vein to a depth of 25. There is scheelite in the vein at the portal, but none beyond. Fifteen tons of sorted ore from the open cut leading to the add and from a few smaller surface cuts is estimated to average between 0.6 and 0.75% WOJ.

The irregular calcite body is exposed a few hundred feet north of the vein.

It is only a few feet square. Near its center is a cluster of scheelite crystals that can be covered by a miner's hat.

Recause of the relative inaccessibility of this property, it is not likely that the ore already sorted will be shipped; nor is it likely that the rather unpromising showings will be more extensively prospected.

RECONNAISANCE MAP OF THE CHERRY CREEK TUNGSTEN BELT WHITE PINE COUNTY, NEVADA



Supplementary Memorandum TUNGSTEN DEPOSITS OF THE CHERRY CREEK DISTRICT White Fine County, Nevada

T. B. Nolan (3)

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D. M. Lemmon

S. G. Lasky

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M. R. Klepper
Assistant Geologist
Ely, Nevada
August 29, 1943

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Supplementary Memorandum

TUNGSTEN DEPOSITS OF THE CHERRY CREEK DISTRICT

White Pine County, Nevada

Abstract

During August 1943 the writer and P. Joralemon spent nine days in the Cherry Greek District, supplementing the work done by the writer in 1942.

The Cherry Creek Tungsten Mining Company developed a new ore body during the fall and winter. They resumed milling in April, after a lapse of 13 months. Between April 7 and August 19, 2856 tons of ore were milled and 2994 units of WO3 recevered. Reserves of measured, indicated and inferred ore total 6250 tens or 5470 units, enough for 8 or nine months operation at the present rate. The company plans to explore several areas on the property with a diamond drill. They may be able to discover more ore before this reserve is exhausted.

The company has recently reached an agreement with Louis Campanella, owner of a scheelite property three miles west of the tungsten mill. They will develop one or two of the best showings and mill the ore. On the Campanella property the scheelite occurs in small lenses along a shear zone in limestone. These lenses appear to be localized where minor cross-breaks intersect the shear zone. The scheelite is associated with coarsely crystalline white calcite and brown carbonate, probably ankerits. The reserve of ore probably does not exceed 1500 tons averaging 0.5-0.75% w03.

Several small pods of high-grade ore have been prospected on the F. H. Schafer property. Scheelite, associated with quartz, coarsely crystalline calcite, and exidized silver minerals, locally permeates fractured areas in the limestone. There appears to be no continuity between the small pods. It is believed that one or two good "chloriders" could extract a few hundred tone of 2.0-3.0% WO3 ere from shallow workings.

On the Roy Moore property scheelite occurs as sparsely scattered cearse clusters in a quartz-calcite vein. Fifteen tons of ore estimated to average between 0.6 and 0.75% WO3 was sorted and sacked during the last war, but it was never packed from the property. The reserve of ore indicated and inferred is not more than a few hundred yens. In view of the relative inaccessibility of the property, the ore already sacked will probably never be shipped.

General Statement

The writer and P. Joralemon spent nine days during August in the Cherry Creek

District. During this time we revised the surface geologic map of the Cherry Creek

Tungsten Mining Company property and mapped the underground workings completed during

the past year. We also mapped the geology of the Louis Sampanella property. The

writer made a reconnaisance map of the tungsten belt and briefly examined the F. H.

Schafer and Roy Moore properties.

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Cherry Creek Tungsten Mining Company

General. In August 1942 the Cherry Creek Tungsten Mining Co., after a six menth period of inactivity, began sinking a shaft to develop a mineralized zone indicated by U. S. Bureau of Mines diamond drill holes and surface trenches. This work was financed by two \$10,000 R. F. C. loans. The shaft was sunk 100° on a 60° incline, and crosscuts were driven east and west from the bottom of the shaft. The B ore body was penetrated by the east crosscut in March 1945. The mill at Cherry Creek was remodeled and the first concentrates were recovered on April 7. Since that time an average of 20 tons of ore have been milled daily. The R. F. C. ebligation has been paid, but the company is still substantially indebted to the Molybdemum Corporation, which financed the construction and remodeling of the mill.

Winds (

Production. Between April 7 and August 19 the company milled 2856 tons of ore and recovered 2993.92 units of W03. About 2150 tons of this ore was mined from the stope in the B ore body (See plate 3), 600 tons from the A ore body, and 100 tons from the adit in the C ore body. Production since January 1941 totals 4923.76 units of W03 recovered from about 5850 tons of ore. Production during the next month or two may drop below 400 units, but after the B ere body has been developed below the 100' level, production should again reach 600-700 units a month.

Assays of millheads, and of sand and sline tailings indicate that current recovery is almost 90%. A substantial part of the tailings the carrianterway by Cherry
Creek and spread out over the flat.

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Current Operations. The mill is operated three shifts Constructed the mine two ONLY by a crew of 18-20 men. All of the B ore body above the 100' level has been staped. A raise to the surface from the east end of this ore body has just been completed. Part of the rock in this raise was low-grade ore (scheelite-bearing calcite stringers in limestone); part was barren. A sub-level is being driven from the raise at an elevation of 25' below the surface. From this sub-level the small lens of high-grade ore labeled B' on plate 2 will be stoped. A winze was started today from the floor of the stope to furnish ore during the next few weeks. As soon as a larger hoist

is instalded, the shaft will be deepened, and a crosscut will be driven to the ore body 50' below the 100' level. The writer thinks it likely that the ore lens continues to this depth.

The adit in the C ore body has recently been extended. Ore has averaged between 0.4 and 0.5% WO3. The face of the adit has been driven beyond the limit of mineralization at the surface, and will probably soon pass into barren rock.

The Cherry Creek Tungsten Mining So. has recently reached an agreement with Louis Campanella. The company will develop the two promising showings on his property and mill the ore. Two men have been working at the property for a week. Ore that had been mined and stockpiled at the property, about 100 tone estimated to average 0.7% WO3, is now being milled.

Plans for Future Operations. The owners have ordered a diamond drill. With it they plan to test zones & B', C, D, and E (see plate 2), as well as the walls of the A and B are bodies. The following underground development work, to be guided more or less by drilling, is planned:

- (1). Deepen the smalt and crosscut to the B ore bedy 50' below the 100' level;
- (2). Stepe ore lens a Bis

- (3). Drive a branch from the west drift beneath the A ore body and beneath zone

 D. Surface mineralization in this zone is encouraging. The Bureau of Mines did not completely the control of the control
- (4). Drift along the C ore body to the limit of ore . The The remembers within the mineralized zone;
- (5). Drift under zone E, an area of sparse and spotty surface mineralization, from the 100! level.

Scheelite Deposits.— The underground and surface work completed during the past year leads to a clearer understanding of the cause of localization of the ore. Both the A and B ere bedies are breccia lenses that have been comented with coarsely crystalline calcite, quartz, and scheelite. Both was are surrounded by a low-grade aureole of scheelite-bearing calcite stringers. U. S. B. M. drill heles 1, 1-A, 1-B,

and 2 penetrated this low-grade aurecle of the B ore body. If hole 2 had been inclined more steeply, it would have passed through the center of the ore body (see section on plate 2). Heles 1, 1-A and 1-B were north of the body.

The transition from high-grade breecia ore (1% plus WO3) to low-grade (0.25-0.5%) stringer-type mineralization is well exposed in the back and along the walls of the stope. The only significant difference between the A and B ore bodies is that the former was exposed by erosion; the latter was not.

The C ore body appears to be similar, but, judging from the exploratory work, is smaller and of lower grade.

These breccia zones are believed to have formed concurrently with movement along the major fault between quartzite and limestone. Although they are not strictly parallal in strike and dip, the long axis of each one roughly parallels the major fault zone. The breccia lenses seem to pinch out completely around their periphery; no fractured, sheared, or gougy zone continues beyond the limits of the lens. The machanics of the formation of these lenses is not known, although it seems possible that the major faulting nearby may have induced the collapse of the walls of solution cavities. The writer believes that the scheelite-bearing solutions migrated upward along the many fractures that are now filled with calcite and calcite-scheelite stringers, and that when breccis lenses were encountered, calcite, quartz, and scheelite were deposited, partly by replacement of the limestone and partly as an interstitial cement.

Within the ore bodies smooth and irregular fracture surfaces of little or no displacement exerted a control upon the deposition of scheelite. To cite an example: good ore frequently terminates at a fracture and commences again a few feet distant upon passing through another fracture. Fractures of several different attitudes are equally important. The east termination of the ore body is at a gougy slip, or a number of closely spaced, parallel slips. The writer believes that these slips limited the deposition of scheelite, and that they do not fault off a segment of the ore body.

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FOR USE OF U. S. GOVERNMENT ONLY <u>Ore Reserve.</u> At present there is no ore developed in either the A or B bodies. The writer believes that the A ore body is practically exhausted, but the operators expect a continuation to greater depth and will drive the west drift of the 100' level to the projected position of the anticipated continuation.

The B ore body pinched out completely 40' above the floor of the stope, yielding 2150 tons of ore. The ore is widest at the floor of the stope, and the writer feels reasonably certain that the lens continues for 50' below the floor. If this belief is correct, and if the lens pinches out downward as it did upward, it contains at least 3000 tons of ore that probably averages 1% plus 2003. If it continues to greater depth, it may contain as much as 60 tons per additional vertical foot.

The small tonnage of ore that has been mined from the C ore body has been marginal. Drill hole 3 suggests that ore of better grade might be developed by sinking.

Reserves of measured, indicated and inferred ore on the property will last about eight months at the present rate of operation.

Summary of Reserves .-

Ore Body	ly Measured			Indicated			Infe rred			Total	
	Tons	% W03	Units	Tons	% W03	Units	Tons 9		Units	Tons	Units
A	0		0	100	1.0	100	200	1.0	200	300	500
В	100	1.0	100	750	1.0	750	2500	1.0	2500	3350	3350
Bt	100	1.0	100	100	1.0	100	300	1.0	300	500	500
O	150	0.5	75	350	0.6	210	1000	0.7	700	1500	985
D	0		0	500	0.5	250	Explor	ation	might :	reveal	a sub-
E	_0		0	100	0.5	50	ore be	al to	nnage of	crop.	rcial
Total	350		275	1900		1460	4000		3700	6250	5435

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Louis Campanella Property

The scheelite property of Louis Campanella of Cherry Creek consists of sax unpatented claims located in a south-flowing canyon tributary to Cherry Creek Canyon. The property is 2.7 miles northwest of the tungsten mill by graded gravel and dirt roads. (See plate 1). A road extends to one of the two zones of probable commercial ore on the property. This road could be extended without much difficulty to the other ore zone, shown near the southwest corner of plate 4.

Geology. Almost the entire property is underlain by massive blue and gray limestone. Most of the limestone sequence is believed to be of Eldorado age; that underlying the western part of the property may be younger. Near the eastern edge of the property Pioche shale and Prospect Mountain quartzite crop out. The limestone is well exposed in the southern part of the property, but bedding is very ebscure. The few reliable attitudes that could be taken suggest a continuation of the west-dipping homoclinal structure mapped farther north in the district.

The most prominent structural feature recognized is an easterly trending, north dipping shear zone. Although displacement along this shear zone appears to be small, lenses of coarsely crystalline calcite, and locally ankerite or siderite with scheelite, can be traced more or less continuously across the property. Two distinct periods of movement along this zone are indicated. The first is believed to have been of the shearing type. Contemporaneous with, or slightly later than, this movement coarsely crystalline carbonate minerals, and locally a little scheelite, were deposited along the zone. Where certain beddings, or cross-fractures nearly parallel to bedding, intersect the main shear zone, larger lenses were formed.

Later movement along the zone produced a breccia of line GEOL SURVEY crystalline carbonate fragments cemented by earthy carbonate. In the opicinity of the two adits the breccia is the footwall of the coarsely crystalline; zone; near the southwest corner of the map the breccia is in the center of the coarsely crystalline zone.

Total movement appears to have been small, for the limestene-shale contact, although

poorly exposed, does not seem to be displaced appreciably. None of the limestone beds are distinctive enough to be recognized with certainty on opposite sides of the shear.

Near the northwest corner of the property, a zone similar to the one described above is indicated by a train of coarsely crystalline calcite float. Overburden is heavy in this area, but a few prospect pits expose calcite in place.

Scheelite Deposits. Scheelite has been found only along the main shear zone and along cross-fractures (possibly some of these are beddings) that intersect the main zone. At these intersections the zone of coarsely crystalline carbonates is generally wider than elsewhere. Although exposures are not continuous enough to give conclusive evidence, it seems propable that appreciable amounts of scheelite, and the brown carbonate with which it is almost always associated, occur only at or near these intersections.

Two small bodies of commercial scheelite ore are exposed. One, hereafter referred to as the East ore body, is developed by an 80' adit (Upper adit). Surface and underground exposures indicate that this lens is 50' long, averages 4'-5' wide, and averages between 0.5 and 0.75% WO3. In the Lower adit mineralization along the shear zone is spotty and sub-commercial.

The Cherry Creek Tungsten Mining Co. has just begun to develop the East ore body. They are driving the Lower adit eastward along the shear zone to intersect the projected continuation of the ore body exposed in the Upper adit. If the ore body continues down dip to the level of the Lower adits stokedwards between 1250 and 1500 tons of ore.

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The ore body shown near the southwest corner of FIGURALE been prospected at ONLY
the surface only. The south split has approximately the same dimensions as the East ore body. The grade is believed to average between 0.75 and 1.0% %03. The north split averages only 1' wide and is probably non-commercial. This ore body probably contains 20 tons per vertical foot. If mining of the East ore body is profitable,

this western ore zone will probably be more thoroughly developed.

Other small areas of low-grade scheelite mineralization are exposed along the main shear zone and cross-fractures extending away fom it. It is doubtful if any of these contain commercial ore within a reasonable distance below the surface.

A little scheelite float is found in the northwest corner of the area mapped. a dozen pits have been excavated in this area, but no scheelite was found in place. It is likely that one or more small scheelite-bearing lenses occur along the shear zone, the approximate location of which is shown on plate 4. The sparsity of float fragments containing scheelite, and the small area in which they occur, suggests to the writer that the probability of a near surface body of commercial ore in this area is small.

Ore Reserve .-

Ore Body	Measured			Indicated '			Inferred
	Tons	% W03	Units		% 期03	Unite	Tens % WO3 Units
East	150	0.6	90	300	0.6	180	20 T. @ 0.6% per vert. ft
West	_50	0.75	38	100	0.75	75	20 T. @ 0.75% p. vert. ft
Total	200		128	400		255	1000 tons probable.

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F. H. Schafer Property

Location. The scheelite property of F. H. Schafer of Cherry Creek is situated on the east flank near the crest of the Cherry Creek Mountains. It is four miles from the tungsten mill by graded gravel and dirt roads. (See plate 1). The property consists of 6 unpatented mining claims. The first scheelite in the Cherry Creek District was discovered on these claims in 1915. During the last war the property was owned by a Mr. Nelson and associates and leased to a Mr. Kimball. A few tons of sorted high-grade ere are said to have been shipped by the lessee.

Geology. The property is underlain by a thick sequence of massive to platy, blue and gray limestone beds. At least one shale member is interbedded with the limestone. The age of the sequence is believed to be post-Eldorado. As is common in the southwestern part of the district, bedding is rather obscure. The sequence as a whole strikes to the north and northeast and dips west.

Des St.

Stringers of finely crystalline white calcits and irregular bodies of coarsely crystalline white calcite are common in the part of the property that has been most thoroughly prospected. Small irregular peds and stockworks of quartz also occur, sometimes associated with the coarse calcite. Generally, the limestone adjacent to these zones is silicified. Scheelite and oxidized silver minerals occur with both quartz and calcite, but the greatest concentration appears to be in the quartz.

Scheelite Deposits and Reserve. Scheelite occurs in narrow calcite stringers and in fractured zones in the limestone, partly replaced by and partly cemented with calcite and quartz. The type of mineralization is semewhat similar to that on the Cherry Creek Tungsten Mining Co. property. The writer believes that here also the scheelite-bearing solutions migrated along cracks that are now filled with calcite and calcite-scheelite stringers, depositing coarsely crystalence servers, quartz, and scheelite in more permeable fractured zones. CONFIDENTIAL

The stringer-type mineralization is nowhere of high scovernment of the small, irregular quartz-calcite-scheelite bedies, however, scheelite is an important constituent. Much of the scheelite is very coarse-grained. Mr.

Schafer has sorted out from some of the recently broken ore, masses of almost pure scheelite weighing from 5 to 6 pounds. Pieces of about the same size are now exposed in two cuts.

The irregularity and relatively small size of the bodies is best shown by some of the old workings. Probably the largest body was mined from an open cut with a 25' shaft in the floor and a 20' adit in one wall. Only a few scheelite crystals have been left in quartz and calcite stringers extending into the walls of the cut. Judging from the amount of ore on the dump and the very small shipment of ore from the property, not more than 100 tons of ore could have been mined from this body. Several other bodies, including two that Mr. Schafer now eccasionally exploits, may contain 50 to 75 tons of 1.0 to 2.0% W03 ore. In these bodies the distribution of the scheelite is very spetty, but, because most of it is coarse-grained, a high grade product can be sorted for shipment. Most of the scheelite ore assays a few dollars Ag, and in some of the old silver workings on the property there is an appreciable amount of scheelite.

Although the property is not likely to be attractive to a mining company, it might be to one or two leasers. In a short time good "chloriders" could mine and sort out a few hundred tons of 2.0-4.0% W03 ore from shallow workings in several of these bedies. Further exploration might reveal other similar bedies or extensions to known bedies. Furthermore, several dumps on the property total between 150 and 200 tons of ore averaging an estimated 0.75-1.0% W03

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Roy Moore Property

Location. The scheelite property of Roy Moore of Cherry Creek is located near the head of the canyon northeast of the Schafer property. It is reached by a half mile trail, in part rather steep, from the end of Schafer's road. The property was prospected during the last war, and about 15 tons of sorted ore were sacked but never removed from the property. The ground had been open for many years, until Moore located it a few months age.

Geology. The property is underlain by about the same limestone sequence as is the Schafer property.

Scheelite Deposits and Roserve. On the property scheelite occurs (1) in a 2-4 wide composite vein consisting of coarsely crystelline white calcite near the hanging wall and quartz with some scheelite near the footwall; and (2) in a small irregular bedy of coarsely crystalline calcite.

The composite vein crops out prominently for a length of 75'. It can be traced no farther, and probably pinches out at each end of the prominent outcrop. At the surface, clusters of poorly formed, rather large blue-white fluorescing scheelite crystals are scattered through the quartzose half of the vein. A 25' adit follows the vein to a depth of 25'. There is scheelite in the vein at the portal, but none beyond. Fifteen tons of sorted ore from the open cut leading to the adit and from a few smaller surface cuts is estimated to average between 0.6 and 0.75% w03.

The irregular calcite body is exposed a few hundred feet north of the vein.

It is only a few feet square. Near its center is a cluster of scheelite crystals that can be covered by a miner's hat.

Because of the relative inaccessibility of this property, it is not likely that the ore already sorted will be shipped; nor is it likely that the rather unpromising showings will be more extensively prospected.

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U. S. GOVERNMENT ONLY

RECONNAISANCE MAP OF THE CHERRY CREEK TUNGSTEN BELT WHITE PINE COUNTY, NEVADA AIRPHOTO BASE EXPLANATION ROCK UNITS Post- Cambrian Fault Contact 979 Porphyritic quartz monzonite Road Drainage Auits and Shafts Cambrian 15 Post-Eldoredo limestone : Min shek beds common Commercial scheetito deposit scheetite occurrence: probably mon-commercial TIM Eldorado lime stone (may include younger beds) R. 62 E. R. 63 E. Pioche shele de Prospect Mountoin quertzite 24 ls 23 Tungston Mining Co. E. H. Schof or Pr No Burse .gt Scale: I" equals approximately 3000' CHERRY 7.23 N. CREEK M. R. Klepper 4.5. Geological Survey August 1943

CONFIDENTIAL

FOR USE OF U. S. GOVERNMENT OHLY

Jem un

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECHETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM REGION III

Contract No.: Idm-E136

DMEA-227 (tungsten), Cherry Greek Tungsten Mine White Pine County, Nevada

George H. Holmes, Jr., Mining Engineer U. S. Bureau of Mines

R. M. Smith, Geologist U. S. Geological Survey

January 16, 1963

DOCKET NO.: DMEA-227 (tungsten)

Hame and address of operator: Cherry Greek Tungsten Mining Co., Cherry Greek, Nevada.

Hame and location of property: Cherry Creek Tungston Mine, White Pine County, Neveda

Contract Wo.: Idm-E156

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Exploration under the DMSA contract at the Cherry Creek tungsten mine, Cherry Creek, Nevada, started on Sept. 6, 1951 and continued until May 28, 1952, when work was suspended pending approval of a requested amendment to the contract which would permit continuing exploration on the 300-foot level instead of sinking the shaft an additional 100 fest and drifting on the 400-foot level.

Work completed comprised sinking the shaft 199 feet to the 300foot level; excavating a 15 ten capacity skip pocket at this level;
crosscutting 100 feet southerly on the 300-foot level; and drifting
ll feet and dismend drilling 317 feet on the 100-foot level. Cost
of this work was \$23,607.33.

No discovery of ore was made by this work. Subsequent exploration by the operators has opened what appears to be a downward extension of the "B" ore body. Mineralisation is low-grade but offers oncouragement that future work along this body will encounter oregrade material.

The Cherry Creek mine ore bodies are pipe-like in shape and plunge west at moderately steep angles. Rearly all the ore mined

has come from the "A" and "B" are bodies, both of which are in linestone. In addition, a tabular body of calcite stringers, striking
about H. 60° E. and dipping steeply northwest, is currently being
explored. Exploration of the western end of this zone on the 300foot level is planned by the operators.

Exploration by diamond drilling is also planned on the argentitebearing occurrence in the ore pocket at the 500-foot level station. Scheelite ore bodies have occasionally been closely associated with small quantities of silver-bearing minerals.

The present plan of exploration will confine the remainder of DMEA exploration to the 300-foot level. A drift will be driven 250 feet west on this level to explore for the continuation of the mineralized zone encountered on the 100, 200, and 300-foot levels. Three 100-foot diamond drill holes from the end of this drift, and two 100-foot holes from the 300-level ore pocket, are tentatively planned. Adequate funds remain for this work.

The DMEA field team concurs with the plans of the operator and recommends that the requested amendment to the contract for continued DMEA exploration on the 300-foot level, and cancellation of former plans to sink to and drift on the 400-foot level be approved.

DESCRIPTION AND COST OF THE WORK COMPLETED

Work completed between the start of the project on Sept. 6, 1951 and its suspension on May 28, 1952, pending approval of a requested emendment to the contract, comprised: Exploration on the 300-foot level on company account since May 28, 1952, and for which reimbursement by DMSA funds is requested, consists of:

Crossoutting 11 feet
Drifting 140 feet

cost of DMEA work was \$25,607.33, leaving an unexpended belance of \$51,592.67, which is adequate to pay the cost of the proposed DMEA exploration on the 500-foot level, and to reimburse the company for exploration completed since suspension of the contract.

GEOLOGY.

The Cherry Creek Mining District is located on the east side of the Egan range, White Pine County, Nev. The Egan range strikes north and the sedimentary rocks of supposed Cambrian age exposed in the range dip westward at about 30° - 40°.

The sedimentary section consists of several thousand feet of quartzite equivalent to the Prospect Mountain quartzite of the Eureka, Hevada district overlain by limestones containing a few thin interbedded shales correlative with the Elderade limestone of the Eureka, Hevada district.

The sedimentary rocks are intruded by quartz mensonite and diabase dikes. M. R. Elepper mapped a silicified normal fault of about 2,000 feet stratigraphic displacement which strikes about N. 60° E. in 1/ Klepper, M. R. Strategic Minerals Investigation, Prelim. Map, fig. 2.

the mine area. Elepper also subdivided the sediments into six units which are, from oldest to youngest: (1) quartaite, (2) shale, (3) gray and black limestone, (4) gray limestone, (5) black limestone, and (6) black and gray limestone with shale at base. He also mapped two rhyolite and dacite dikes striking east several hundred foot north of the mine. The mine workings are all in limestone although a little shaly limestone and either quartaite or silicified fault gouge were seen in the easternmost workings.

GRE DEPOSITS

The Cherry Creek mine ore-bodies are pipe-like in shape and plunge west at moderately steep angles. Calcite appears to have cemented and partly replaced limestone-brecoin; and, as a late stage in this process tungston was brought in and deposited as schoolite in cracks and possibly as a replacement of some of the earlier calcite. Searly all the ore mined thus far has come from the "A" and "B" orebodies both of which are in lisestone. In addition, a tabular body of calcite stringers striking about N. 60° E. and dipping steeply northwest is being explored at the present time. This body is bounded on its southeastern side at the west and of the "East winze 100 level drift" by a strong fault and gouge zone. This fault is also seen in the stub drift that extends southeast from the 100 foot level "B" lens stope. Similarly a fault, perhaps the same one, bounds the eastern end of the 200 foot level drift on its southeastern side. The owners wish to explore the western end of the calcite some on the 300 feet level in the near future (fig. 2). Figure 5, a crosssection through the east wings, shows the relation of the 300 foot level to the upper workings.

In several cases scheelite ore bodies in this mine have been closely associated with small quantities of silver-bearing minerals. Because of this association, the owners wish to explore an occurrence of argentite in the ore pocket at the 300 foot level shaft station by means of two diamond drill holes (fig. 2). Since no scheelite was found at this place, the proposed holes are speculative in nature but might well provide useful geological information.

The greatest vertical depth reached in mining is about 240 feet from the "B" surface pit to the 300 feet level on the same ere body. At the surface the "A" body was approximately 15 feet by 50 feet while the "B" ore body was 25 feet by 50 feet. Both ore bodies change in shape, dimensions, and direction of plunge with depth. Present mining activity centers on the "B" ore body on the 200 and 300 feet levels and on the tabular body of calcite stringers.

ORK-RESERVES

In the opinion of the operators, no discovery of ore has been made through work completed with the aid of DMEA funds. Exploration work carried on by the owners has opened what appears to be a down-ward extension of the "B" ore body. The extension has been developed by drifts on the 200 and 300 foot levels. Thirty tons of mineralized material from this part of the 500 foot level produced 180 pounds of concentrate. This mineralization offers encouragement that future work along this body will encounter ore-grade material.

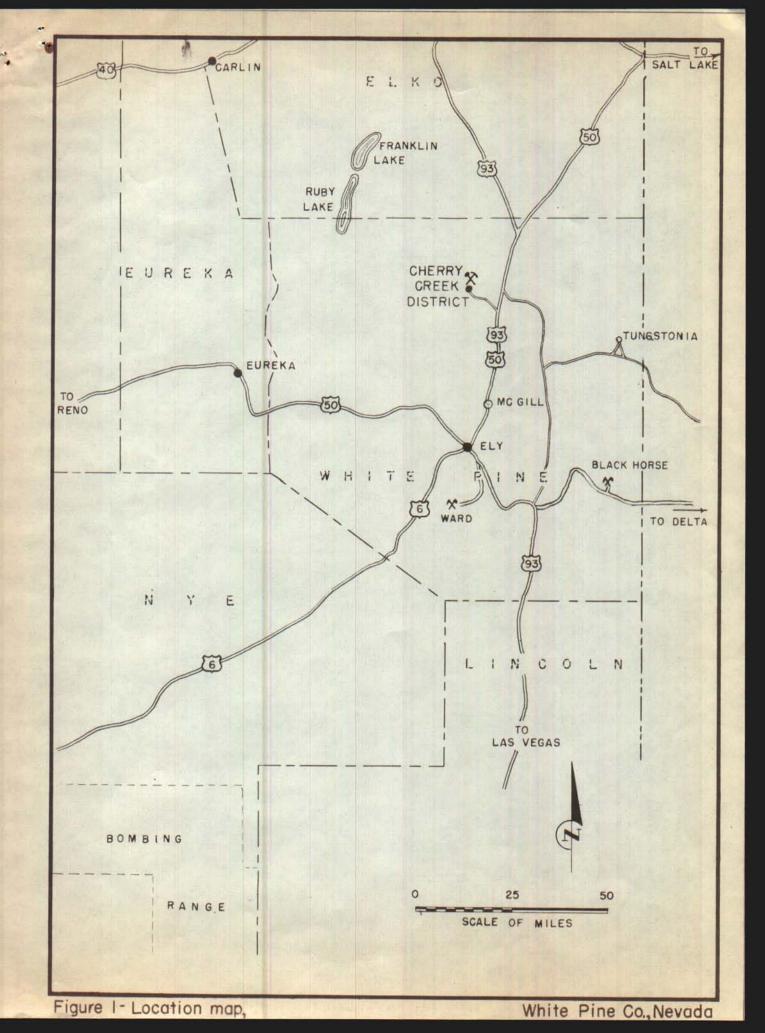
The Mining Division is in accord with the operators that no discovery has been made by DMEA work, however, subsequent mining operations by the company include stripping East winze stope walls and removing pillars along the East winze (see L. F. Muller's interim report, 6/10/52). This are is being removed through the raise connecting the 500 fact level off the main shaft and the stopes. Since are is removed through the Government contract 300-level more economically than would otherwise be possible, it is the opinion of the examining engineers that Government loss royalty payments should be made from this production, even though this are was not discovered by Government participating exploration. This may be a legal question, however, and should be referred to Washington for a decision.

The 16-months time allowed the project on Sept. 6, 1951 expired on Jan. 6, 1953. Approximately 86 months of this time were required for exploration completed under the DMEA contract, and it is anticipated an additional 6 months will be needed for the proposed 300-foot level exploration.

PROPOSED EXPLORATION

The applicants have submitted a request (with which the DMEA field team is in accord) for an amendment to their centract, Idm-ElSS, to permit drifting 250 feet west on the 300-foot level. The present objective is to explore for the continuation of a tabular body of scheelite-bearing calcite stringers encountered on the 100, 200, and 500 feet levels southwest of the "B" ore body and to find the downward extension of ore encountered on the "east winse 100-level"

drift". The applicants wish also to do 500 feet of diamond drilling on the 300-foot level at the places indicated (fig.2). They wish to drill two heles northwest and one hole southwest from the end of the proposed drift. Each hole would be approximately 160 feet long. It is suggested that instead of two holes in a northwesterly direction, a single hele of about 200 feet in length be drilled about H. 45° W. as shown on figure 2. The exact location, bearing and inclination of both these holes will be determined when the drift is completed. The exact location, bearing, and inclination of the two holes to be drilled from the ore-pocket at the 300-foot level shaft station, will be subject to further discussion between members of the field team and the operators.



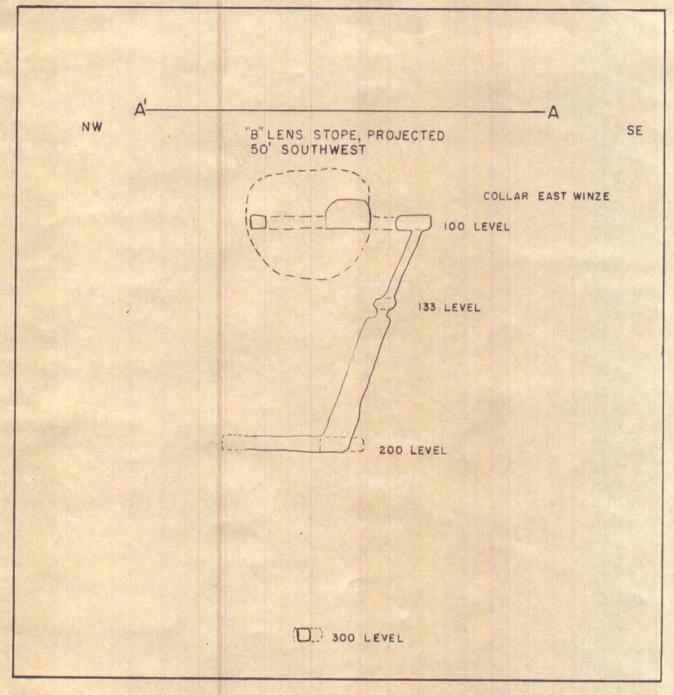
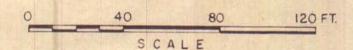


FIG. 3

VERTICAL SECTION ALONG LINE A-A'
CHERRY CREEK TUNGSTEN MINE
WHITE PINE COUNTY, NEVADA



325) Jtem 47

CHERRY CREEK (EGAN CANYON)

specimen".... from the Star Mine.

MR 1915 "Scheelite in quartz veins was found at several places between...
and Cherry Creek, 50 miles north by northwest (of Osceola)

Lincoln, pp. 242-4, Tungsten ore was discovered in 1915.

Hill, Bulletin 648, pp. 161-171, No mention of tungsten quartz-sulphide

veins in sediments near small intrusions

Schrader, F. C., Cherry Creek (Eagan Canyon) district, White Pine County,

Nevada State Bureau of Mines, University Nevada Bulletin, volume 25, 7,

pp 25-39, 1931. Mentions (p.35) "yellowish-brown scheelite was noted in one

Holmes, George H., Jrs. 1950, Investigation of Cherry Creek tungsten district, White Pine County, Nevada: U. S. Bur. Mines, Rept. Inves. 4631, 7 pp.

Tungsten ore bodies in the Cherry Creek district, Nevada, occur as vein and replacement deposits in Cambrian sedimentary rocks. No production has been recorded since 1937, at which time 2,800 pounds of ore averaging 5.63 per cent WO3 was shipped.

1070 2018 2801 Room 208 - 222 So. West Temple Salt Lake City 1, Utah September 22, 1953 Memorandum Tos Edgar H. Bailey From: Roscoe M. Smith Docket DMEA-2801 (Tungsten) Metallics Unlimited, Subject: Pine Nut Mine, White Pine County, Nevada Contract Idm-E505 The Pine Nut Mine, leased by Metallics Unlimited, P. O. Box 165, Reno. Nev., is being explored under a Defense Minerals Exploration Administration loan dated April, 1953. An inspection of the mine to evaluate a proposed amendment was made September 14, 1953 by R. M. Smith, U. S. Geological Survey. The proposed amendment is to drive a raise from the existing face of the 7,520 adit 100 feet (resurvey 9/14/53 - R. M. Smith) to the surface at an estimated cost of \$2,875.00. The DMEA work consists of three projects: (1) Crosscut 240 feet to cut the West ore body approximately 65 feet below the surface outcrop -- amended to change the portal of the crosscut adit to the location shown on the accompanying geologic map of the 7,520 adit level; (2) drift 100 feet along the West ore body from the crosscut; (3) extend the 7,550 level (Lower adit) easterly from the present face 200 feet. On September 14 all the projects had been completed except No. 2. In the 7,520 level adit two zones of calcite veinlets were cut, one which dips northeast (probably the objective vein) at 140 feet from the portal; the other, which dips southwest, at 160 feet from the portal. Exploration paralleled with the strike of the vein revealed several faults and a faulted segment of the vein which is exposed in the existing face at 275 feet from the portal of the adit as shown in the accompanying map. Here the vein is barren; the rake of the ore shoot is not known.

It is suggested that a few more feet of drifting be done to determine the continuity of the vein, and to explore for the downward continuation of the ore shoot. Henry W. Jones - interin report of September 21 - recommends that two crosscuts, each 20 feet long, be driven on the adit level near the existing face; one northeast and one southwest, to test the walls for parallel mineralized segments of the vein. Adequate funds for the proposed work remain in the project fund.

These proposals were discussed with Mr. A. C. Johnson, George H. Holmes, and Henry W. Jones. We concur that the amendment should be approved with the recommendation to the operator that before the raise is started he test both walls by crosscutting and drift as much as 25 feet along the vein.

Oscar M. Smith

cc: A. C. Johnson

A-181/29

EXPLANATION

+39

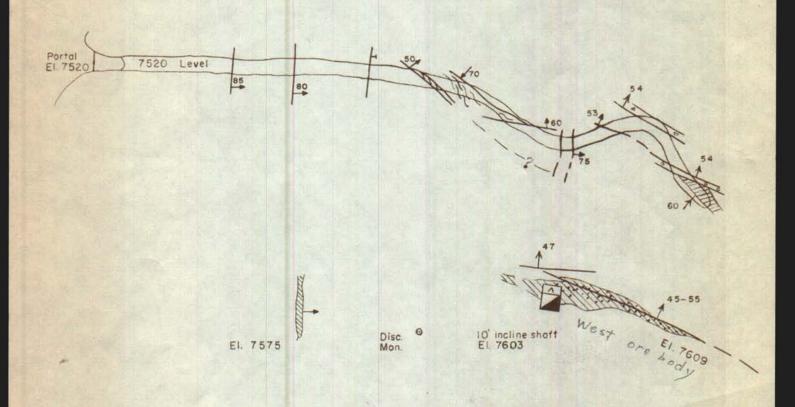
Fault, showing dip

Fault breccia

Colcite stringers

Calcite vein

Scheelite



GEOLOGIC MAP OF PINE NUT MINE
7520 ADIT LEVEL
CHERRY CREEK DISTRICT, WHITE PINE CO. NEVADA

0 20 40 80 120 ft.

1070 0018

(325) Item 47

Room 208, 222 So. West Temple Salt Lake City 1, Utah 21 August 1952

Memorandum

To: E. H. Bailey

From: R. M. Smith

Subject: DMEA-2137, IDM-E-281 (tungsten) Schafer Mine, White Pine County, Nevada.

An inspection of the Schafer Mine was made August 15, 1952, and a geologic map (fig. 4) of the workings was prepared to supplement the final report by L. F. Muller, U. S. Bureau of Mines, dated July 22, 1952.

An examination of the core from the three diamond drill holes (which were drilled on government contract) was also made, and concur with the conclusions of the engineer—that no ore was encountered in any of the holes. Small amounts of scheelite occur in calcite stringers, but in such small specks that positive identification by ultraviolet light is not, in every case, possible. This probably accounts for minor discrepancies in the reports by the Bureau of Mines and the operator.

cc: A. C. Johnson R. J. Roberts 1070 0018

IN REPLY REFER

UNITED STATES DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY



102 Old Mint Building San Francisco 3, California

June 3, 1953

Subject: DMEA - 2801 Idm - E 505 Pine Nut Mine White Pine Co., Nev.

Mr. Roscoe Smith U.S. Geological Survey Mineral Deposits Branch Salt Lake City, Utah

Dear Roscoe:

The operator of the Pine Nut mine has requested an amendment to allow him to drive an adit along a vein into the West End orebody, as shown in the sketch map which accompanies the enclosed report by Jones, instead of driving an access adit through barren ground. We asked Johnson to let us know if the altitude of the adit site was as shown on the map and to call on you for geology if necessary. Apparently he felt this unnecessary, but after reading Jones' report I am not so sure.

The applicant originally claimed the tungsten-bearing vein trended from the shaft to the new portal location, and his amendment made sense. Jones' geology indicates the picture may be more complicated. If there is a fault involved, or two different veins involved, I believe the request requires (1) a good geologic and topographic map, and (2) your comments after making such a map. If you have carefully gone over the ground already and know the geology, I see no need for you to return to the property to map it; just send me your proposal or comments.

Please let me know by return mail how soon I may expect your report.

Sincerely yours,

Edgar H. Bailey

Encs.

Ely, Nevada June 10, 1953 Subject: DMEA - 2801 Idm - E 505 Pine Nut Mine White Pine Co., Nev. Mr. Edgar H. Bailey U. S. Geological Survey 102 Old Mint Building San Francisco 3, California Dear Edgar: Jake Tillman and I made an inspection of the Pine Nut Mine today to familiarize ourselves with the geology affecting the proposed amendment referred to in your letter of June 3, 1953. A few words of explanation may be sufficient to permit the amendment to be approved and the work to continue; we will plan to extend Klepper's geologic map into the area involved as soon as possible. An adit has now been driven 10 feet east at the site of the proposed adit (revised) shown on Jones' map. The elevation of the rail is 7510 by Brunton survey. The adit is not collared on the vein, as shown, but rather in the footwall. It will be driven easterly until it intersects the vein. Thus, depending upon the actual position of the vein, the adit will intersect it within a few tens of feet or at most 150 feet. In either case this crosscut adit will be considerably shorter than the one originally proposed. The westernmost outcrop of the vein is just north of the discovery monument. West of this outcrop the vein probably pinches, but it may also be slightly offset. Jones' "Assumed Fault" was intended to explain this possible offset. As the westernmost part of the adit is actually a crosscut, faulting in this area will probably not affect the work. The structure mapped as "Min. Surface Trace" is probably not the vein. The revised plan of exploration is sound and we recommend approval of the requested amendment. Yours sincerely, Roscoe M. Smith Encs.

Commodity Edger H. Bailey August 6, 1953 Roscoe M. Smith Interim Report - Diffa 2801, Ida-8505, Pine Sut Mine (Tungston), White Pine County, Revade. The Pine But Hime, leased by Metallics Unlimited, F. C. Box 155. Reno, Nevado, is being explored under a Defense Hinsrals Exploration Administration loss dated April, 1953. An inspection of the mine to swaluate a proposed assudment was made July 29 by R. M. Smith, U. S. Canlesical Survey. The work consists of three projects: (1) Crossout 210 feet to out the west are body approximately 65 feet below the surface outerop — amended to change the portal of the crossout adit to the location shown on the accompanying geologic map of the 7,520 milt level; (2) drift 100 feet along the west one body from the ordescut; (3) extend the 7,550 level (Loser milt) easterly from the prosent face 200 feet. On July 29 Project No. 1 had been completed and the vain structure out at 130 feet from the portal. About 110 feet of work elong the strike of the wain (Project No. 2) did not reveal ore almerals but apparently the wain was not followed and may lie south of the workings as shown in the accompanying sap. A crossout to test this possibility is planted by the operator. Project No. 3 has been completed (see map and Jones' interim report, July 17, 1953). Of the footage allowed for this project, 93 feet remains unused and the operator planned to apply for an amendment to use this footage in drifting from the better or 7,500 level of the 68 foot winse located at the portal of the 7,550 level adit. On July 29, about 50 feet of drifting had been completed on the 7,500 level, and a few mentaged crystals of schoolite are revealed in three places along the drift. The operator has reconsidered his intention to apply for an associant and now intends to do the rest of this work on company account. RIS/YS CCt A. C. Johnson

V-181/35

EXPLANATION

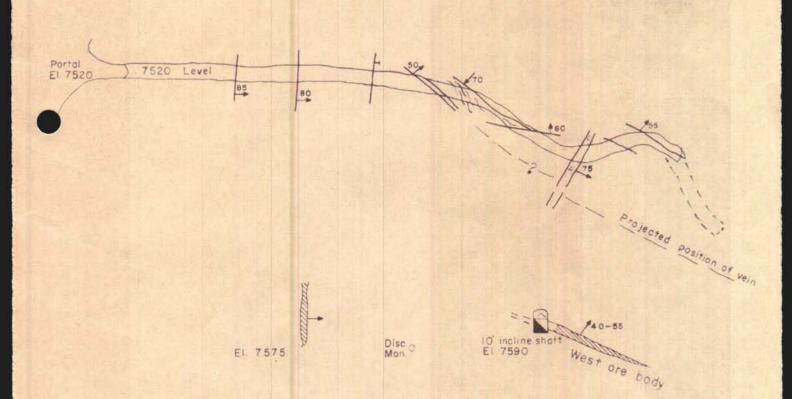
+39

Fault, showing dip

Fault breccia

Calcite stringers

Scheelite—bearing vein



GEOLOGIC MAP OF PINE NUT MINE
7520 ADIT LEVEL
CHERRY CREEK DISTRICT, WHITE PINE CO. NEVADA

0 20 40 80 120 ft.

Commodity

Room 208 - 222 So. West Temple Salt Lake City 1, Utah September 22, 1953

Memorandum

To: Edgar H. Bailey

From: Roscoe M. Smith

Subject: Docket DMEA-2801 (Tungsten) Metallics Unlimited,

Pine Nut Mine, White Pine County, Nevada

Contract Idm-E505

The Pine Nut Mine, leased by Metallics Unlimited, P. O. Box 165, Reno, Nev., is being explored under a Defense Minerals Exploration Administration loan dated April, 1953. An inspection of the mine to evaluate a proposed amendment was made September 14, 1953 by R. M. Smith, U. S. Geological Survey. The proposed amendment is to drive a raise from the existing face of the 7,520 adit 100 feet (resurvey 9/14/53 - R. M. Smith) to the surface at an estimated cost of \$2,875.00.

The DMEA work consists of three projects: (1) Crosscut 240 feet to cut the West ore body approximately 65 feet below the surface outcrop -- amended to change the portal of the crosscut adit to the location shown on the accompanying geologic map of the 7,520 adit level; (2) drift 100 feet along the West ore body from the crosscut; (3) extend the 7,550 level (Lower adit) easterly from the present face 200 feet.

On September 14 all the projects had been completed except No. 2. In the 7,520 level adit two zones of calcite veinlets were cut, one which dips northeast (probably the objective vein) at 140 feet from the portal; the other, which dips southwest, at 160 feet from the portal. Exploration paralleled with the strike of the vein revealed several faults and a faulted segment of the vein which is exposed in the existing face at 275 feet from the portal of the adit as shown in the accompanying map. Here the vein is barren; the rake of the ore shoot is not known.

It is suggested that a few more feet of drifting be done to determine the continuity of the vein, and to explore for the downward continuation of the ore shoot. Henry W. Jones - interin report of September 21 - recommends that two crosscuts, each 20 feet long, be driven on the adit level near the existing face; one northeast and one southwest, to test the walls for parallel mineralized segments of the vein. Adequate funds for the proposed work remain in the project fund.

These proposals were discussed with Mr. A. C. Johnson, George H. Holmes, and Henry W. Jones. We concur that the amendment should be approved with the recommendation to the operator that before the raise is started he test both walls by crosscutting and drift as much as 25 feet along the vein.

Roscoe M. Smith

cc: A. C. Johnson

A-181/20

True North

EXPLANATION

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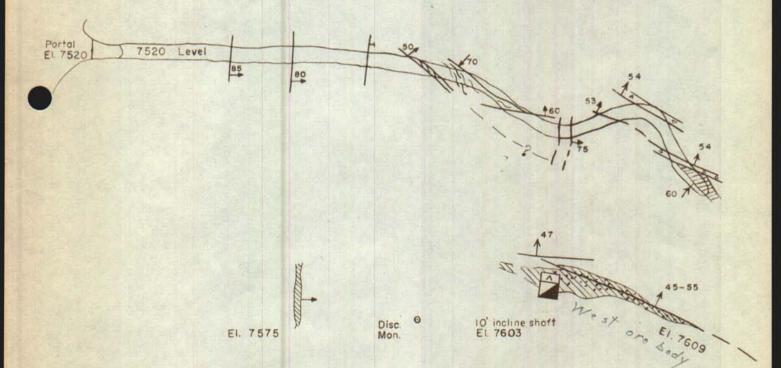
Foult, showing dip

Fault breccia

Calcite stringers

Calcite vein

Scheelite



GEOLOGIC MAP OF PINE NUT MINE
7520 ADIT LEVEL
CHERRY CREEK DISTRICT, WHITE PINE CO. NEVADA

0 20 40 80 120 ft.

503 metallies Unlimited Campanella (shown on although map) an 1. Drive XC adit to cut West ore body apprex 65 felow the authory - 240 st. 2. Orift along the shear zone (one body?) from the face of the xc. - 100' · Besterly from present face - 200 pt, all workings shall be not less than 4x6 5 + timbered where necessary agreed ant costs adit & drifts - 540 @25 timbury -100 It @45 tuna stin assays 50@4 13,500,00 500,00 200,00

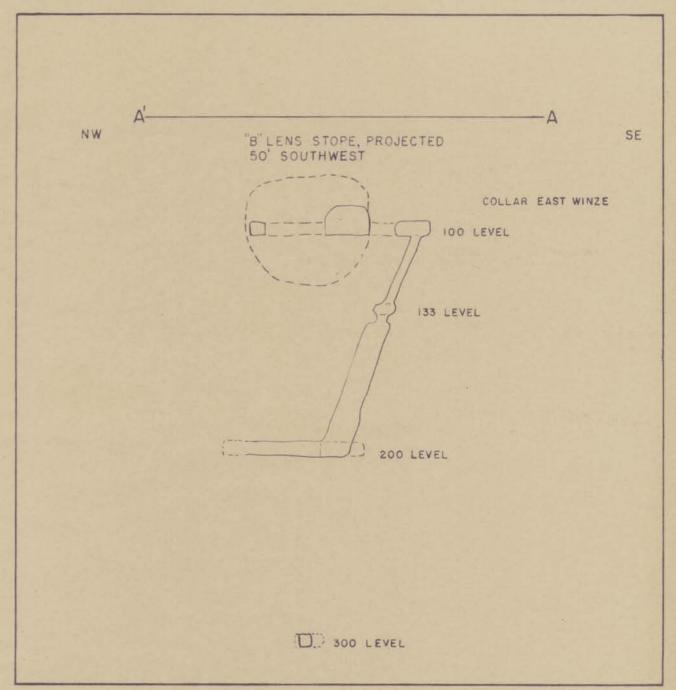


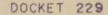
FIG. 3

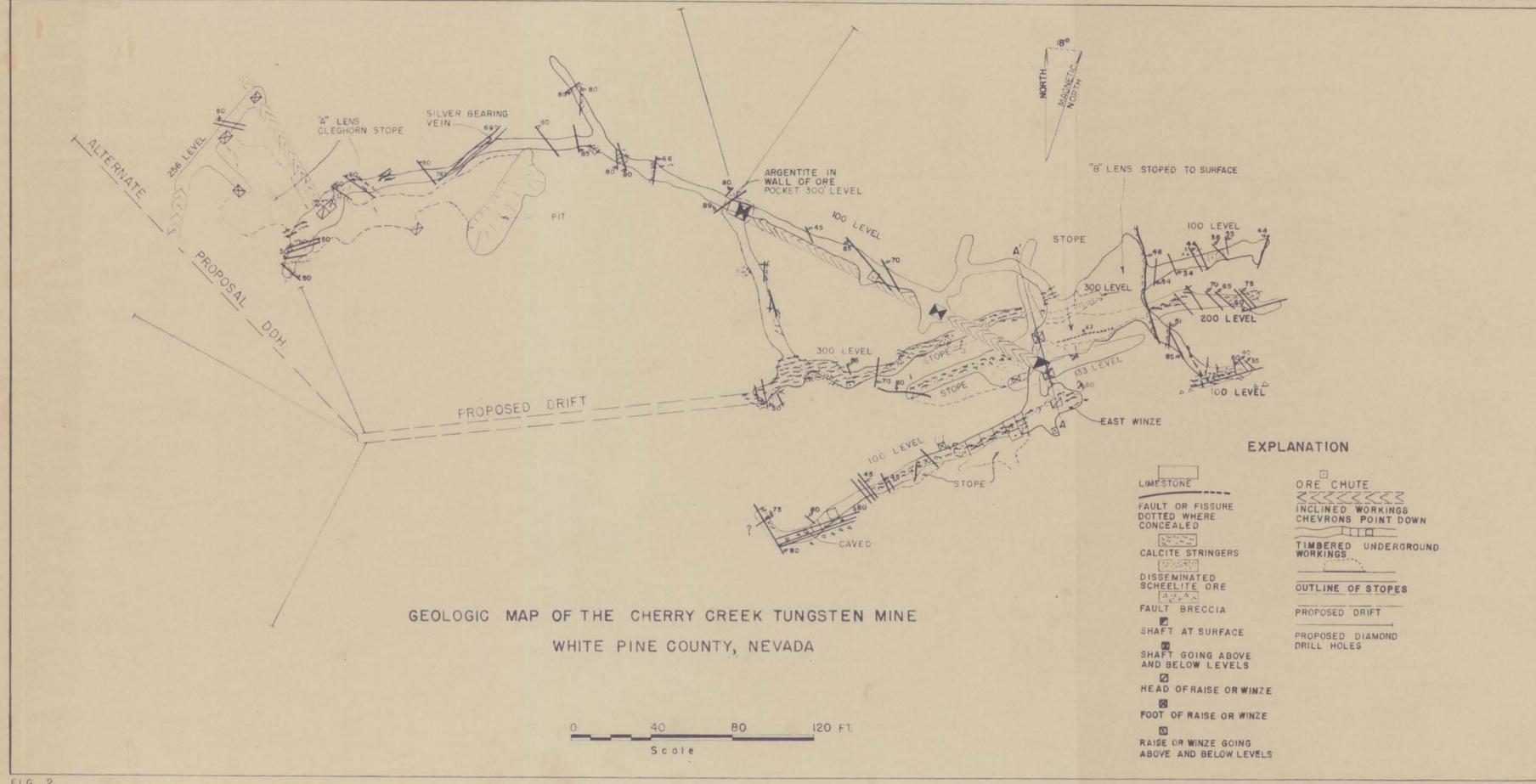
VERTICAL SECTION ALONG LINE A-A'
CHERRY CREEK TUNGSTEN MINE
WHITE PINE COUNTY, NEVADA

9 40 80 120 FT.

S C A L E

. GEOLOGICAL SURVEY





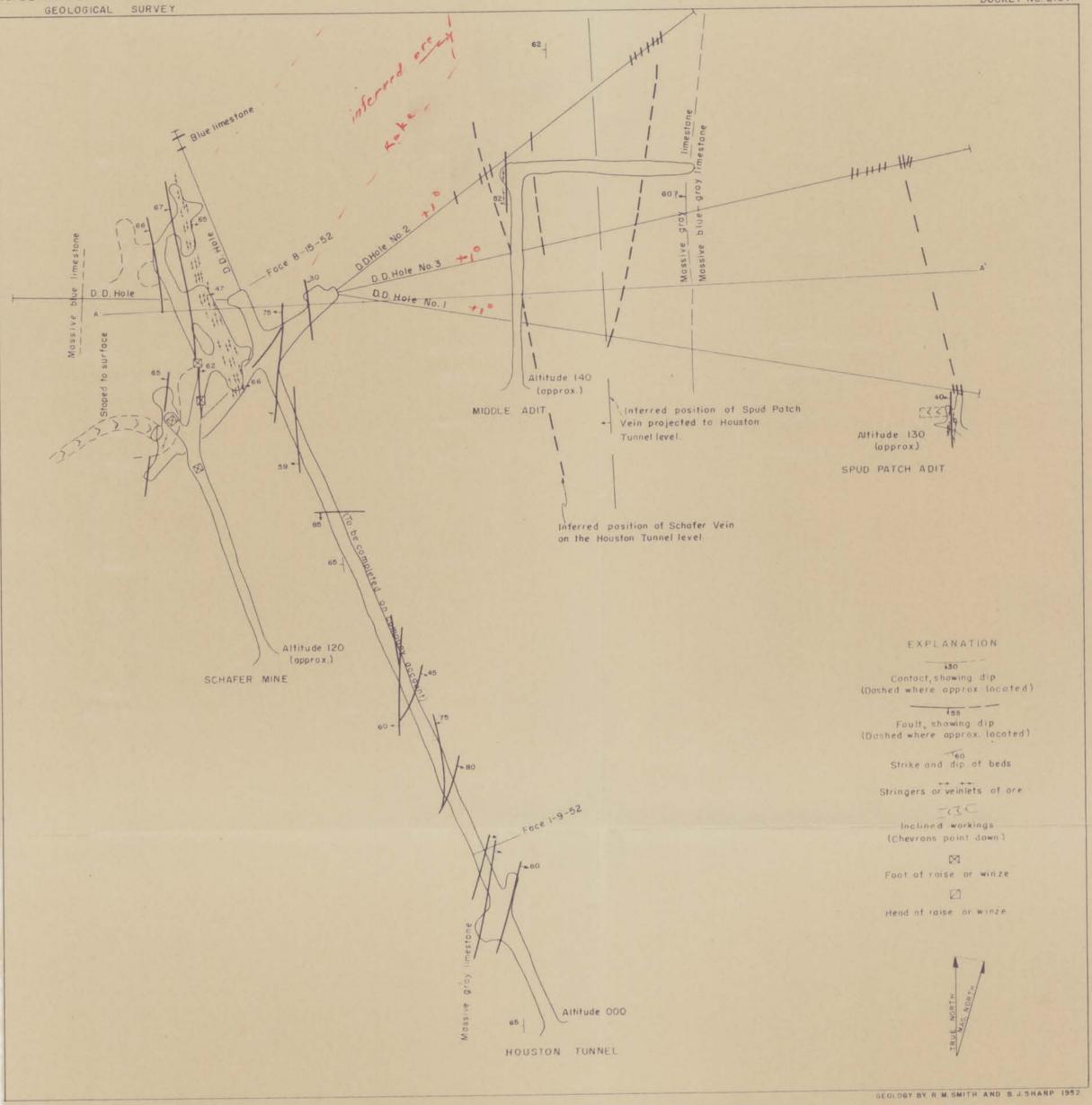


FIG. 4

GEOLOGIC SKETCH MAP OF SCHAFER MINE
CHERRY CREEK MINING DISTRICT
WHITE PINE COUNTY, NEVADA

0 40 80 FEET Scale

MAPPED BY M.R. MLEPPER AND P. JORALEMON

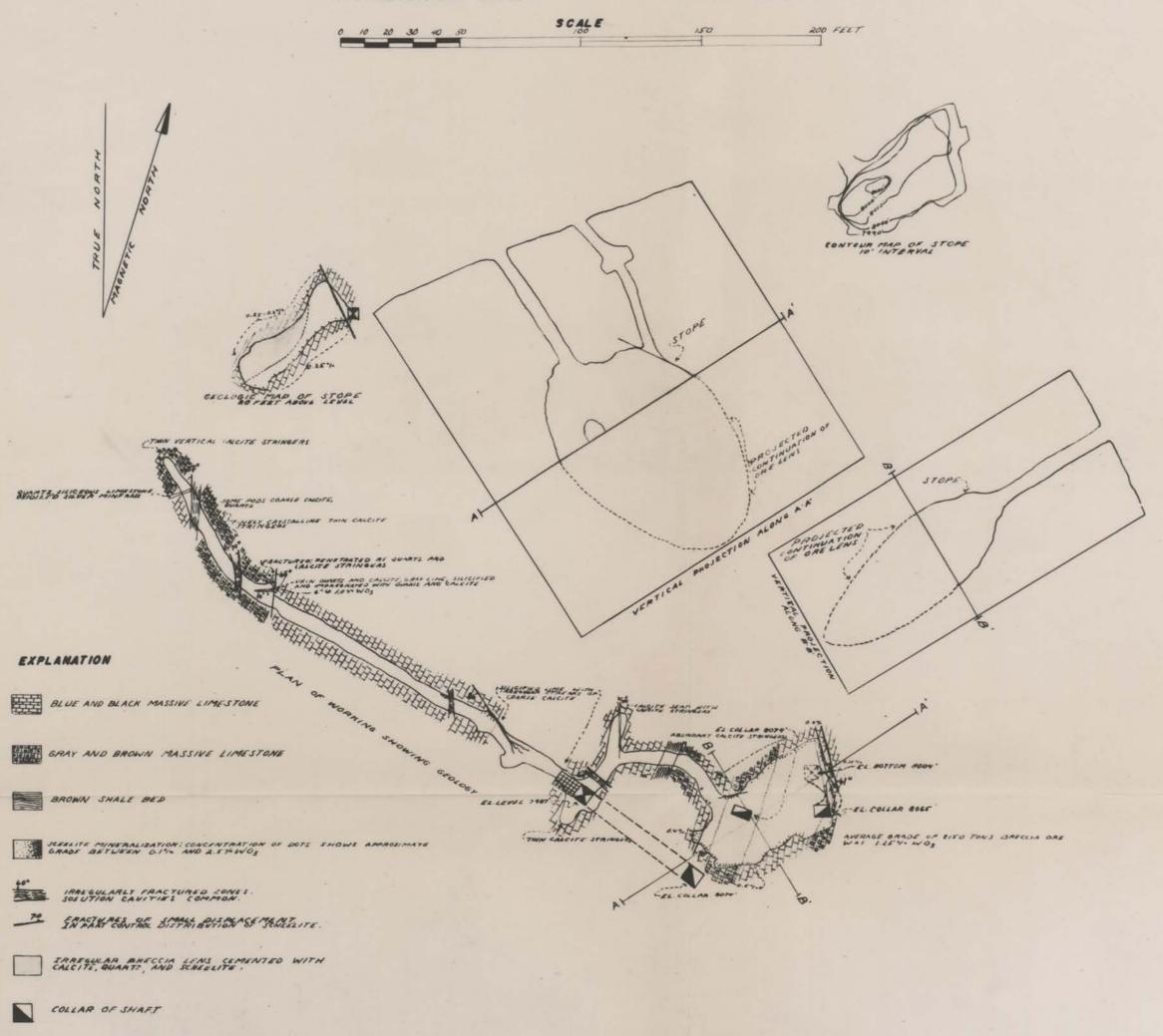
GEOLOGY OF WORKINGS IN "B" ORE BODY

CHERRY CREEK TUNGSTEN MINING COMPANY, CHERRY CREEK, NEVADA

U. S. GEOLOGICAL SURVEY

BOTTOM OF INCLINED SHAFT OR RAISE

AUGUST 26,1943



10700018

GEOLOGY OF WORKINGS IN "B" ORE BODY

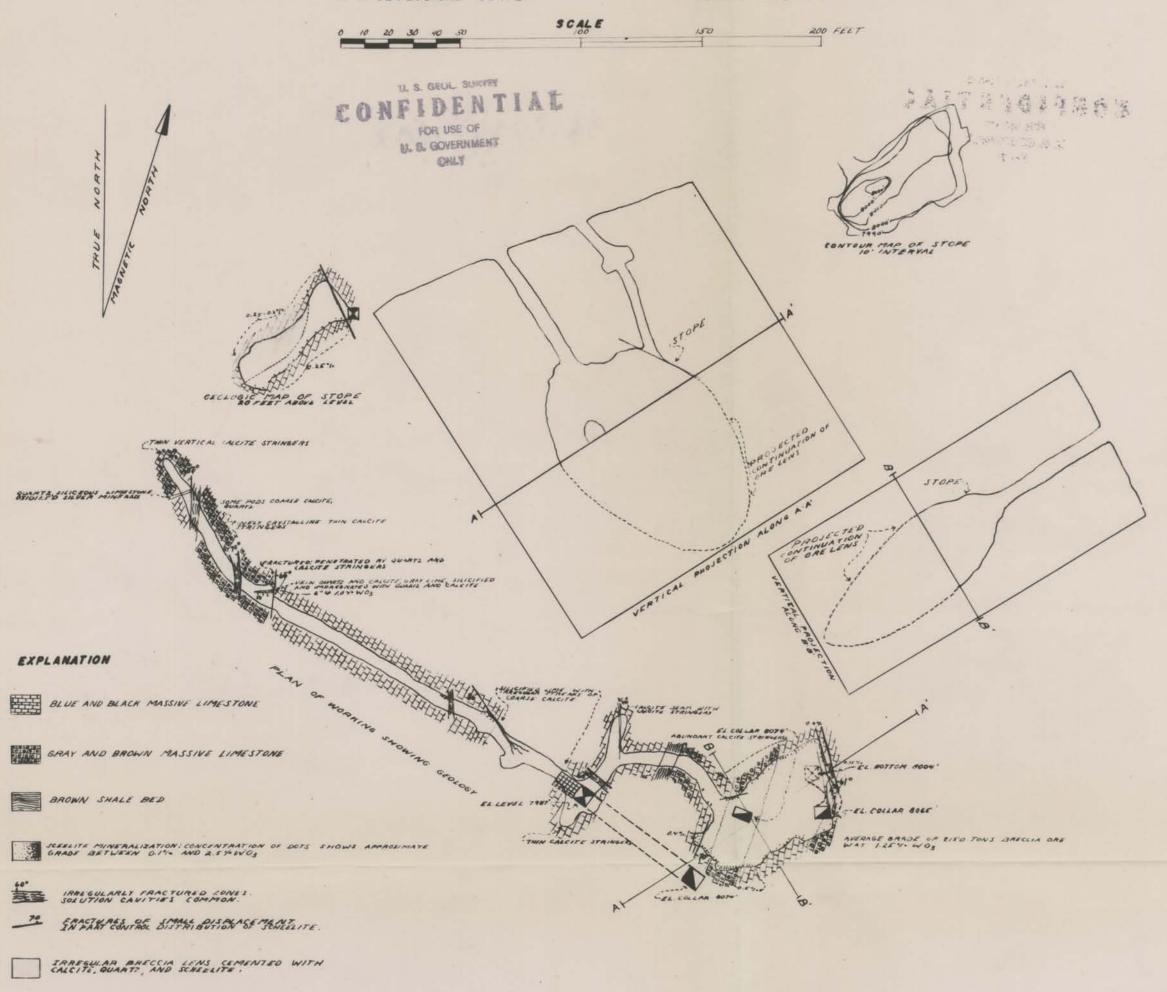
CHERRY CREEK TUNGSTEN MINING COMPANY, CHERRY CREEK, NEVADA

U. S. GEOLOGICAL SURVEY

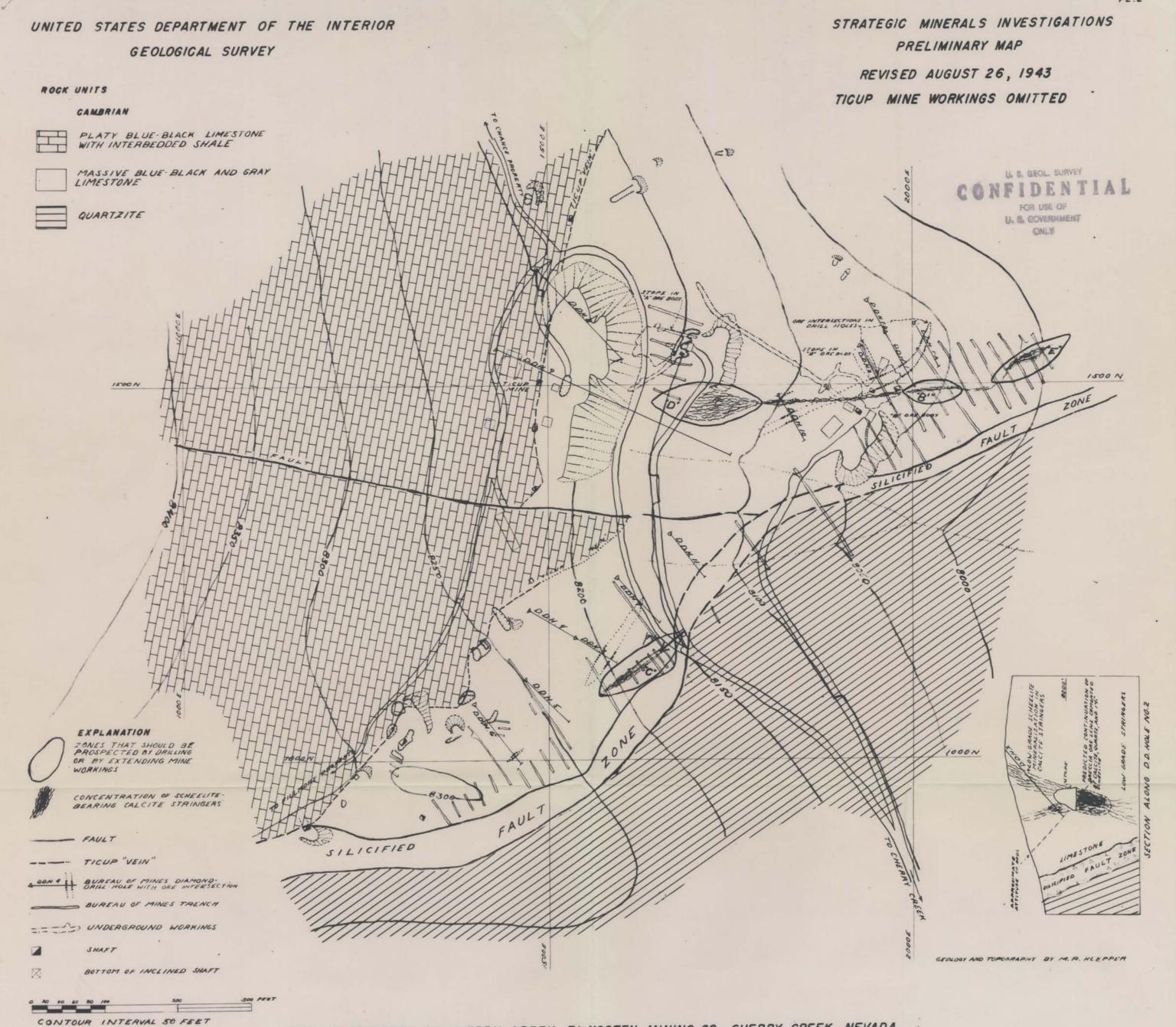
COLLAR OF SHAFT

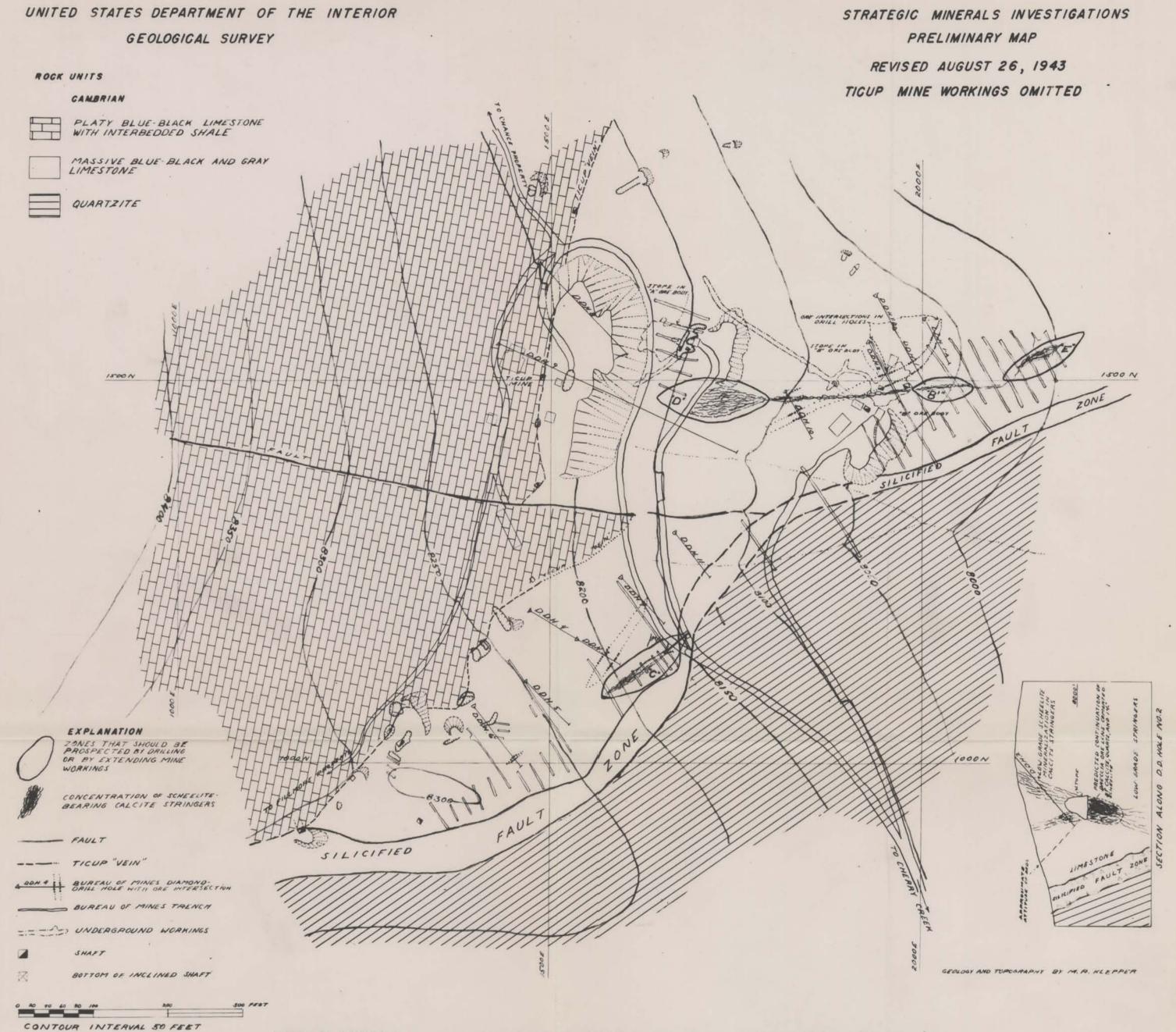
BOTTOM OF INCLINED SHAFT OR RAISE

AUGUST 26,1943



MAPPED BY M. R. MLEPPER AND P. JORALEMON





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