CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

The following file is part of the Grover Heinrichs Mining Collection

ACCESS STATEMENT

These digitized collections are accessible for purposes of education and research. We have indicated what we know about copyright and rights of privacy, publicity, or trademark. Due to the nature of archival collections, we are not always able to identify this information. We are eager to hear from any rights owners, so that we may obtain accurate information. Upon request, we will remove material from public view while we address a rights issue.

CONSTRAINTS STATEMENT

The Arizona Geological Survey does not claim to control all rights for all materials in its collection. These rights include, but are not limited to: copyright, privacy rights, and cultural protection rights. The User hereby assumes all responsibility for obtaining any rights to use the material in excess of "fair use."

The Survey makes no intellectual property claims to the products created by individual authors in the manuscript collections, except when the author deeded those rights to the Survey or when those authors were employed by the State of Arizona and created intellectual products as a function of their official duties. The Survey does maintain property rights to the physical and digital representations of the works.

QUALITY STATEMENT

The Arizona Geological Survey is not responsible for the accuracy of the records, information, or opinions that may be contained in the files. The Survey collects, catalogs, and archives data on mineral properties regardless of its views of the veracity or accuracy of those data.

JAMES D. LOGHRY
Consulting Geologist
2121 East Monte Vista Drive
Tucson, Arizona 85719
(602) 793-2945
323

April 26, 1981

Update on Lower Deadwood Creek Placers
Circle Mining District, Alaska

Owner: Jeff Knaebel
Knaebel Mining Ventures
P. O. Box 81467
Fairbanks, Alaska 99708
(907) 452-8685

Since my report of May 20, 1980, Jeff Knaebel has acquired 15 additional Federal placer claims, so he presently holds 93 Federal placer claims and 14 State placer claims. He also negotiated and got right of first refusal on other adjoining claims. 1980 sampling program expanded indicated reserves to 29,000 ounces gold and inferred reserves to 39,000 ounces for a combined total of 68,000 ounces. Limited operations in 1980 produced 460 ounces from 24,000 yards. Planned production for 1981 is estimated at 1500 ounces. Knaebel feels that the property can produce 5000 to 7000 ounces per year. He will consider a fair offer to purchase the property, but is more desirous of obtaining financing to help achieve that production.

Signed: James D. Loghry
James D. Loghry

JAMES D. LOGHRY
Consulting Geologist
2121 East Monte Vista Drive
Tucson, Arizona 85719
(602) ~~793~~ 323-2945

Lower Deadwood Creek Gold (Tin and Tungsten) Placer Deposits
Circle Mining District, Alaska

Owner: Jeff Knaebel
P. O. Box 81467
Fairbanks, Alaska 99708

(907) 456-5780

May 20, 1980

The Lower Deadwood gold (tin, tungsten) placer property is near Central and Circle Hot Springs with their State airfields and is 132 miles by all weather paved and gravel road northeast of Fairbanks, Alaska.

Holdings consist of 78 unpatented Federal mining claims and 14 State mining claims covering about 1790 acres creek bottom and bench placer ground along 2½ miles of lower Deadwood Creek. The claims lie in the historic Circle district having production since 1893 estimated at 750,000 fine ounces, making it the state's fourth most productive district. Dredging operations were conducted on four of the district's creeks as well as Deadwood and other large scale bulldozer, dragline and hydraulic operations were also carried out in the district. This is a permafrost region but the ground on Deadwood is known to be [redacted] thawed. The claims lie within a large area of State Selection lands so Federal control and regulation of mining activities are expected to be less onerous than elsewhere.

Bedrock is believed to be less than 20 feet deep. A 1929 drilling map suggests that pay ground is 6½ to 16 feet thick with an average thickness of about 11½ feet. The map reports indicated reserves of 1,740,415 yards @ $ 0.90 per yard calculated at a price of $ 20.67 per Troy ounce or 0.0435 ounces per yard, a value of $ 21.75 per yard at $ 500 per ounce. These reserves were in a single central channel of upper Deadwood Creek, and were largely mined but they do extend into unmined ground on the lower Deadwood property where there are at least four channels of partly proven and potential placer ground. Drill holes and shafts in three areas on the lower Deadwood showed 7 feet @ $1.05, 16 feet @ $ 0.50 and 16 feet @ $ 0.25 per yard, an average of 13 feet @ $ 0.496 or 0.0235 ounces per yard or $ 11.75 at $ 500.00 per ounce. Significant cuantities of tin and tungsten are likely to occur in the gravels. A present day operator says he pays for his mining with tin and tungsten values. A 1910 report (B. L. Johnson, U.S.G.S. Bulletin 442) states "The best data available at present indicates that where the wolframite and cassiterite are found most abundantly in the stream gravels they will yield an average of 1 to 2 pounds of concentrates (principally wolframite and cassiterite with some magnetite and garnet) per cubic yard of gravel."

Jeff Knaebel and his associates have carefully evaluated the property and believe the 1929 map and work to be valid. They suggest reserves of 2400 ounces gold, indicated reserves of 12,300 ounces in the partly tested areas and inferred

JAMES D. LOGHRY
Consulting Geologist
2121 East Monte Vista Drive
Tucson, Arizona 85719
(602) ~~793~~ 323-2945

total reserves of 51,000 ounces. Knaebel advises that further exploration is needed to confirm these reserves and that purchase of the property is subject to substantial risk. From an evaluation of the report, maps and photos, I feel that the property offers a large potential of 2,000,000 to 4,000,000 yards at $ 5.00 to $ 25.00 per yard and is well worth the risk entailed in a program of mapping, geophysics and drilling.

The owner desires to sell the property outright, although option agreements will be considered. It is offered for sale on a nonexclusive, first come-first served basis. For further details including price, contact Jeff Knaebel by telephone.

Signed: James D Loghry
James D. Loghry

REGISTERED GEOLOGIST
CERTIFICATE NO.
11365
JAMES DAVY
LOGHRY
Date Signed 5-20-80
ARIZONA, U.S.A.

James D Loghry

JAMES D. LOGHRY
Consulting Geologist
2121 East Monte Vista Drive
Tucson, Arizona 85719
(602) 323-2945

April 28, 1981

To Whom It May Concern:

I have been asked to represent Knaebel Mining Ventures in Arizona and adjacent states. Following is a description of the group, its management and gold/silver properties presently for sale or joint venture. For further information, you may contact me at the above address or contact Jeff Knaebel, c/o

Knaebel Mining Ventures
P. O. Box 81467
Fairbanks, Alaska 99708
(907) 452-8685.

Signed: James D. Loghry
James D. Loghry

MANAGEMENT

Knaebel Mining Ventures

The exploration and mining ventures of Knaebel presently comprise the American Creek Mine (operated by American Creek Partners) which produced 1630 ounces of gold in 1980; the Deadwood Creek Mine which produced 460 ounces in 1980 (joint venture with Beach River Corp.); gold and silver exploration operations in Alaska, Idaho and Nevada which have acquired the properties subject of this prospectus and other properties optioned to mining companies; contract exploration and management services in Alaska and Colorado and exploration in New Mexico (operated by LV Partners) of a molybdenum deposit previously discovered by Knaebel. Knaebel's basic equipment spread includes two Caterpillar D-9G tractors, Cat D-6, Cat 966C loader, two Allis Chalmers 14 x 12 pumps (340 HP), Ross sluice box, 6 x 6 fuel tank truck, 10 x 12 Stang pump, 2000 ft of 20" pipe, grease van, welder, shop equipment, seven 4 x 4 vehicles, two light aircraft and various mining ancillary equipment and camp facilities.

Management of Knaebel Mining Ventures

Jeff Knaebel - Manager - a mining engineer graduated cum laude from Colorado School of Mines in 1963, Mr. Knaebel worked as geologist, engineer and mine foreman for major companies (e.g. Anaconda, Molycorp) prior to forming an exploration company in 1970. Begining with a $1,000 investment this company (RAA) grew during the 9 years that Knaebel was chairman and CEO to exploration contract revenues of $9,000,000 annually, a staff of about 100 (primarily professional geologists and engineers), offices in 5 cities and clients including Anaconda, Gulf Oil, International Nickel, Kennecott, Cominco American, International Minerals and Chemical and various other majors. The company made in excess of 100 discoveries for its partners that are presently being explored or developed, including major massive sulfide, tungsten, precious metals and uranium deposits. During this time Mr. Knaebel also organized and served as Director and Vice President of Cordilleran Engineering Corp., Ocean Home Exploration, Ltd., and Charles Bettisworth & Co. In 1979 partially as a result of differences over management policies, Mr. Knaebel left RAA to pursue independent interests as decribed in the preceding. He is a registered professional geologist and member of AIME, CIMM, SEG, AIPG.

Don Jennings - Geologist and Project Manager - Mr. Jennings has sixteen years experience in mineral exploration in the Western U.S. and Alaska; almost half of this time has been spent in precious metals exploration. He has been personally involved in the discovery of several deposits currently scheduled for production.

He has previously worked for Cordero Mining Company, Cordilleran Exploration (Canada), and Cordex Exploration. He holds a B.S. in geology from the University of Idaho (1966), and is a member of AIME.

Eric Twelker - Geologist and Project Manager - Mr. Twelker has ten years exploration experience in Alaska including exploration and sampling of placer gold, hardrock gold, and polymetallic sulfide deposits. His geological expertise includes the gology and geomorphology of placer deposits and the geology of most types of hardrock deposits. He has worked as a geologist for Resource Associates of Alaska, Kennecott, Rio Tinto, and El Paso Co. He holds a B.S. in Geology from the University of Washington (1972) and is a member of AIME, SEG, SEPM.

Karl Hanneman - Mining Engineer - direct experience in planning, design and operation of a 1,000 yard per day placer gold mine. Mr. Hannemen has four years experience in Alaskan exploration and development projects, including exploration geophysics, hydraulics engineering and exploration geology with ARCO, Houston Oil & Minerals and others. He has been involved in the evaluation of several placer deposits and has been associated with placer mining for six years. He holds a B.S. in Mining Engineering (magna cum laude) from the University of Alaska, and is a member of AIME.

John Bergelin, P.E. - Mining Engineer - a graduate of Michigan Tech with mining and construction experience in excess of 15 years, Mr. Bergelin has worked as engineer and manager of a wide range of exploration and mining projects in Alaska including examination, valuation and management of placer mines. Mr. Bergelin presently operates the Deadwood Creek Mine in joint venture with Knaebel. Prior to coming to Alaska, Mr. Bergelin held responsible positions with Copper Range Corp. and others. He is a member of AIME.

James D. Loghry - Geologist - a graduate of Dartmouth with 25 years experience, Mr. Loghry is a registered professional geologist. Formerly employed as geologist, regional geologist and exploration manager (Kerr McGee, NL Industries, Towne Mines & others), Mr. Loghry has been an independent since 1976, counting among his clients such majors as AMAX, ASARCO, Cyprus Mines and Anschutz. His experience includes uranium as well as base and precious metals in Alaska, Western U.S., Canada and Mexico. He is a member of AIME and SEG.

DESCRIPTION OF PROPERTIES

Deadwood Creek Placer Mine, Alaska

Location & land position: 78 Federal & 14 State placer mining claims (1790 acres), 132 road miles northeast of Fairbanks.

Contiguous past production: 75,000 ounces Au.

Estimated reserves: Indicated (based on physical sampling): 29,000 oz.; inferred 39,000 oz. Combined total 68,000 oz.

Production in 1980: 460 ounces from 24,000 cu. yds. Production for 1981 estimated at 1500 oz.

Potential annual production: 5000 to 7000 ounces at an estimated cost of approximately $312 per ounce.

Estimated Net Present Value: Using only the physically sampled indicated reserves and at 25% discount rate, approximately $6.3 million; at 15% discount rate, approximately $7.8 million, based upon distribution in kind and election out of subchapter K of the internal revenue code.

Estimated capital pay out period: 1 year.

Fourth of July Hill/Deep Creek Placer Prospect, Alaska

Location and land position: 40 State & 11 Federal claims (1940 acres) 45 road miles northwest of Fairbanks.

Contiguous past production: 215,000 oz. Au.

Estimated reserves: Possible underground 10,000 ounces; Deep Creek 5,700 ounces; Tertiary "conglomerate" 50,000 ounces.

Potential annual production: Underground 2,500 ounces; Deep Creek 1,900 oz.; Tertiary 7,000 oz.

Livengood Placer/Lode Prospect, Alaska

Location and land position: 22 Federal mining claims and 40 State claims (2040 acres) 75 road miles north of Fairbanks.

Past production: Probably several times the 640 ounces published from "old timer" hand drifting operations. The Livengood District, of which this property is a part, has produced a total in excess of 380,000 ounces.

Estimated reserves, placer: 30,000 oz. possible.

Potential annual production, placer: 4,000 oz.

Geologic model for lode target: Production from the Hollinger, McIntyre & Dome Mines in the Porcupine District (Ontario) is over 1 billion dollars to date; Alaska Treadwell produced 2,428,776 ounces; the Homestake Mine has produced 35,000,000 ounces to date.

Mineral Hill Mine, Boise County, Idaho

Land position & location: 36 unpatented Federal lode claims in the Boise Basin District, 30 airline miles northeast of Boise. Initial discussions indicate favorable outlook for lease-option of 7 additional patented claims.

Past production: 3,800 ounces from oxide ore prior to 1908.

Estimated reserves: Probable of 30,000 tons grading 0.58 oz/ton Au and 31,250 tons grading 0.33 oz/ton Au. Possible reserves remain open on known veins, and at least 4 additional veins are unexplored.

Geologic model: Gold Hill Mine, 4 miles southwest of Mineral Hill, produced 400,000 ounces.

Shelje Prospect, Blaine County, Idaho

Land position & location: 18 unpatented Federal lode claims 10 miles northeast of Carey, Idaho.

Exploration targets: (1) a window of Roberts Mountain Formation in which trench samples average 0.0198 oz. Au/ton and 0.118 oz Ag/ton over a length of 500 ft. and width of 50 ft, (2) a zone greater than 5500 ft. long by 200-500 ft. wide with locally high (to 3.25% Zn) geochem values in mineralized fractures, which could host bedded replacement deposits at depth; (2) the intersection of the two mineralized zones.

Geologic model: Triumph Mine: 0.09 oz Au/ton, 7.8 oz Ag/ton, 4% Pb, 6.5% Zn. Minnie Moore Mine: 20 oz Ag/ton, 12% Pb. Clayton Mine: 3.5 oz Ag/ton, 5% combined Pb-Zn. The Roberts Mt. Formation hosts disseminated gold deposits currently in production, such as Carlin Gold Mines (subsidiary of Newmont Mining).

Kramer Hill Prospect, Humboldt County, Nevada

Land position & location: 19 unpatented Federal lode claims 15 miles southeast of Winnemucca, Nevada. Two enclosed patented claims were available for lease on reasonable terms when last checked.

Exploration target: The prospect is on a north-northeast trend which hosts gold deposits whith total production plus reserves in excess of 722,000 ounces Au. These are the Adelaide, Preble, Pinson and Getchell deposits.

Geologic model: Pinson Mine, presently producing at 1000 tpd at average grade of 0.12 oz Au/ton. Mill reserves are 3,250,000 tons plus 5,500,000 tons of lower grade heap leach material.

Little Bald Mountain Prospect, White Pine County, Nevada

Land position & location: 67 unpatented Federal lode claims situated between claim blocks held by major companies, 45 miles northeast of Eureka, Nevada.

Exploration target: A major disseminated gold deposit within a district which hosts reserves in excess of 1,000,000 ounces. Preliminary sampling on LBM claims shows values as high as 0.14 oz Au/ton along a structure that is mineralized intermittantly in excess of 5000 ft. long and up to 100 ft. wide.

Geologic model: Although ages and lithologies are different, the nature of the target sought is analogous to those on adjacent ground held by Selco (Alligator Ridge Mine, in production with reserves between 5-8 million tons at 0.12 oz Au/ton) and Placer Amex on the west side of Bald Mt. with estimated reserves greater than 2 million tons.

Zeke Prospect, Eureka County, Nevada

Land position & location: 26 unpatented Federal lode claims under lease-option, 65 miles southwest of Elko, Nevada.

Exploration target & geologic model: The Buckhorn Mine is 1.5 miles north of Zeke with published reserves of 822,000 tons grading 0.12 oz Au/ton and 1.02 oz Ag/ton. Rumored reserves are in excess of 2 million tons. The geochemical halo at Zeke (2000 ft. x 4000 ft.) could overly a moderate to major gold deposit. The nearby Cortez Gold Mine and Gold Acres Mine have produced over 900,000 and 300,000 ounces Au respectively. Also nearby are the Horse Canyon (Placer Amex) and Mill Canyon (Homestake) deposits.

PRELIMINARY REPORT
ON THE
LOWER DEADWOOD PROPERTY,
CIRCLE MINING DISTRICT, ALASKA

Jeff Knaebel Enterprises

P.O. Box 81467
Fairbanks, Alaska 99708
(907) 456-5780

James D. Loghry
2121 E. Monte Vista Drive
Tucson, Arizona 85719

PRELIMINARY REPORT
ON THE
LOWER DEADWOOD PROPERTY,
CIRCLE MINING DISTRICT, ALASKA

Prepared by:

Eric Twelker, Geologist

for

Jeff Knaebel Enterprises
Box 81467
Fairbanks, Alaska 99708

ABSTRACT

The Lower Deadwood Property consists of 78 unpatented Federal mining claims and 14 State mining claims, which together cover 1790 acres or two and one half miles of valley floor and benches on Lower Deadwood Creek in the Circle Mining District. The property is an unmined extension of a historic mining creek that produced as much as 150,000 ounces of gold. On the upstream end of the property, immediately adjacent to areas mined in the 1930's, drill holes and shafts on the Shane #2 Claim indicate a readily mineable reserve of 2397 ounces, contained in 74,000 yards of gravel valued at 0.0324 ounces per yard. Drill hole data and a bulldozer pit as much as 4000 feet below the last mining indicate a reserve of 12,300 ounces on one pay channel. Three other potential pay channels have inferred reserves of 36,400 ounces. One of these, the Knik Channel, is on a bench which directly adjoins previously mined areas and can be traced on airphotos for about 9000 feet from the point where mining stopped. The continuation of gold values into the unmined areas is supported by the lower drill holes and pit, by favorable geologic indications and by old reserve records which show the values do not drop off appreciably downstream in the areas that were mined. Notes from the drill holes and pit also indicate the ground is partially thawed and that bedrock is approximately twenty feet deep.

Access and logistics are excellent; 132 miles of all weather road connect the creek to Fairbanks. Groceries, gasoline, telephone, accomodations, and libations are locally available.

Drill Holes by Guise			
No	Depth	oz/yd	Remarks
1	16'	0.016	thawed
2	16'	0.008	"
3	16'	colors	"
4	16'	colors	frozen
average depth = 16'			
average value = 0.012 oz			

Shafts by Ellinger			
No	Depth	oz/yd	Remarks
1	6'	0.073	
2	8'	0.041	
3	7'	0.043	
4	—		
average depth = 7'			
average value = 0.52 oz.			

Drill holes by Guise			
No.	Depth	oz/yd	Remarks
1	9'	Colors	thawed
2	12'	Colors	"
3	12'	Colors	"
4	15'	0.020	"
5	16'	0.036	froz. muck
6	17'	0.017	"
7	14'	Colors	"
8	14'	colors	"
9	14'	colors	"
average depth = 16'			
average value = 0.024 oz.			

JEFF KNAEBEL ENTERPRISES

LOWER DEADWOOD PROPERTY
Claims and Prospect Data

Date: Mar. 21, 1980 Drawn By: ET, JRT

INTRODUCTION

Location and Access

The Lower Deadwood Property is located 100 airline miles northeast of Fairbanks, Alaska and four miles south of Central, Alaska. Access is by 132 miles of State maintained all weather, partly paved and partly gravel highway from Fairbanks. The north edge of the property is accessed directly by the State highway, and the southern portion is served by a gravel surfaced secondary road. The village of Central has two small grocery stores, two gas stations, a lodge, and a bar. Another lodge and a bar are found at Circle Hot Springs five miles to the east. There are State maintained airfields at Central and Circle Hot Springs. (see Figure 1)

Property

The claim position here consists of 78 unpatented Federal mining claims and 14 State mining claims covering approximately 1790 acres of creek bottom and bench placer ground along two and one half miles of lower Deadwood Creek in the Circle Mining District. Shane #2 and Knik #11 are located adjacent to the lowest mined areas on the creek. The down-stream end of the property is approximately coincident with the Circle Hot Springs Road. (see Figure 1 and Plate 1)

The Circle Mining District

Deadwood Creek is located within the Circle Mining District. About 750,000 fine ounces of gold were produced from this district

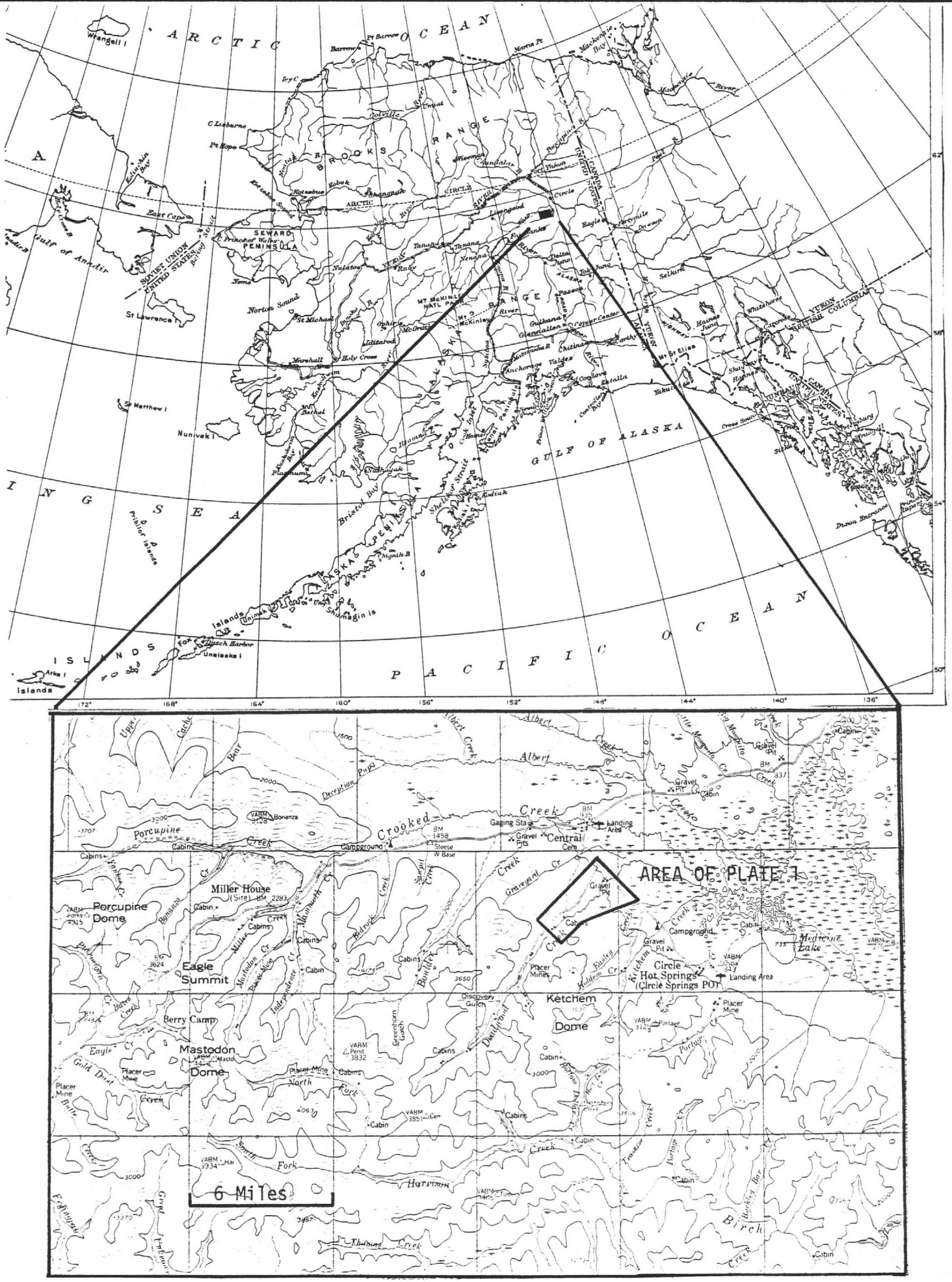


FIGURE 1: Location of Lower Deadwood Property.

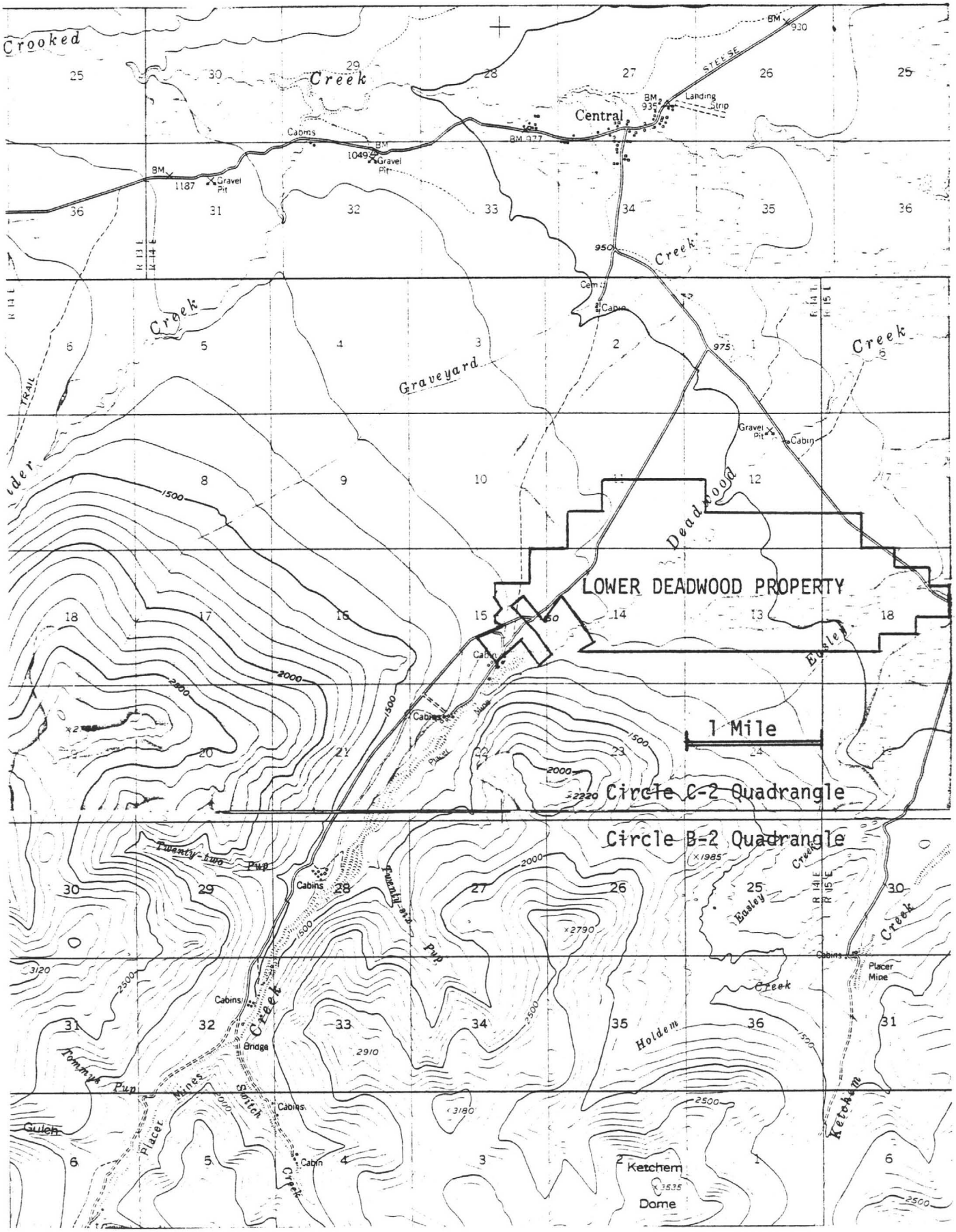


FIGURE 2: Claim outline Lower Deadwood Property, one inch equals one mile scale.

between its discovery in 1893 and 1968 (Cobb, 1973) making it the fourth most productive placer gold district in the State. Dredging operations have been conducted on four creeks in the district including Deadwood Creek. Numerous other large dragline, bulldozer, and hydraulic operations have also operated in the district.

The History of Deadwood Creek

Gold was discovered on Deadwood Creek in 1893 and has been mined there almost continously ever since. Initially mining was concentrated in the creek bottom in the narrow part of the canyon above about a mile upstream from where the creek merges with Crooked Creek flats. Eventually mining expanded to include benches and creek bottom over 12 of its almost 20 miles in length. Small operations predominated for the first thirty years but during the twenties and thirties several large hydraulic and dragline operations were in production. During this time the lower part of the creek was explored as a dredging possibility, and in 1937 and 1938 the Deadwood Mining Company, an operation of the Olsen family (later of Goodnews Bay Mining), operated a dredge on the Creek. After World War II gold mining on Deadwood Creek, the Circle District, as well as all over the world declined. In 1968 a small operation on Deadwood Creek was the only operation in the Circle District.

The early seventies saw a resurgence of activity. Clinton Rathburn made a living from 1969 until 1978 on the part of the creek immediately upstream from the Lower Deadwood property. He reportedly recovered

about 350 ounces in his best season, operating single handed with a 1940's model D-8 bulldozer and a crude sluice box. Samples from his sluice box tailings indicate that he lost significant values which could have been recovered with a better washing set up.

Total production on Deadwood Creek is unknown but a reasonable estimes may be as much as 150,000 ounces.

Specific Background on the Lower Deadwood Property

Though considerable work was done on this property in the early days, the entire area was inactive and open to staking in 1970. The Shane #2 claim was staked by Clinton and Robert Rathburn in 1971, the Duke #1, #2 and #3 claims were staked by David Michael and Thomas McKee in 1975, the Johnathan, Golden D, Duke #4, Duke #5, and Winesap Claims were staked by John and Martha Thomas in 1978 and the Pudding Claims were staked by Resource Associates of Alaska in 1978. We acquired the above claims by purchasing them or by receiving them in partial compensation for Resource Associates of Alaska stock. The Knik Claims were located on behalf of Jeff Knaebel Enterprises in 1979. Knik #0 was located in 1980 to cover a fraction.

GEOLOGY

Bedrock Geology

The Circle District is underlain by the Paleozoic to Precambrian Birch Creek Schist and granitic intrusives. In this district, as is the case with other gold producing areas around the state, the schist is derived from a mixture of volcanic and sedimentary rocks. The gold, as well as tin and tungsten which are found on Deadwood Creek, were derived from metamorphosed volcanic related "exhalite" layers in the schist. These layers are believed to be exposed on upper Deadwood and Switch Creeks.

The nature of the bedrock underlying the Lower Deadwood property is not known with any degree of certainty. On the immediately adjacent upstream claims the bedrock is a very hard, blocky greenstone (probably meta-andesite).

Geomorphology

Deadwood Creek in its upper part is a relatively narrow valley with the east side being steeper than the west. The valley widens out as it nears Crooked Creek, and in the area immediately above the Lower Deadwood property pay gravels have been mined on benches as well as in the creek bottom. Gravel here is 10 to 15 feet thick.

Deadwood Creek has eroded a valley into the bottom of Crooked Creek Flats as far as the Circle Hot Springs Road. This can be seen on Figure 2. This fact that the valley is erosional rather than depositional, as, say, in the case of an alluvial fan, suggests the presence of a pay streak for approximately this distance.

The gravels on Lower Deadwood are only intermittently frozen, as much of the shaft and drill information on the Casper Ellinger Map shows.

RESERVES

Information about reserves on the Lower Deadwood Property comes from three sources: 1) a drilling and prospect summary map made by Casper Ellinger in 1929; 2) discussions with miners and prospectors familiar with the ground; and 3) geology and airphoto interpretation.

Shane #2

A reasonable estimate of probable reserves on this claim may be made from the Casper Ellinger Map. Twelve drill holes and four shafts shown on this map lie within the Shane #2 Claim (see Appendix II). The probable reserves are about 74,000 yards of material valued at 0.0324 ounces per yard or a total of 2397 ounces. The width of the pay streak here is about 300 feet. In addition, mining immediately upstream suggests the possibility that two other pay streaks may be present on the claim. An area 500 feet wide on the right limit immediately upstream from the Shane #2 has been dredged and a 200 foot wide zone upstream on the left limit was mined by John Sipes in 1979. These two zones may contain an additional 3200 ounces.

Lower Claims

There is a significant amount of positive data on the lower claims (the area covered by the Pudding Claims) which suggests that a gold bearing pay channel extends at least 4000 feet downstream from the Shane #2 Claim. A line of drill holes on the Casper Ellinger Map (re-plotted on Plate 1) which is located 4000 feet downstream

from Shane #2 shows values of 0.0121 ounces per yard and is partly thawed. This line crosses only about 300 feet of the approximate 4000 foot width of prospective creek bottom at this point. A bulldozer hole dug by Dave Michael on the south end of Duke #2 hit bedrock at a 20 foot depth, and, according to Michael showed "good but fine gold". It is also encouraging to note that reserve data on the Casper Ellinger Map shows no decrease in values going downstream.

The above data was used to calculate an indicated reserve of 12,300 ounces. The proportion of decrease between the two lines of drill holes on the Casper Ellinger Map which fall on our claims was projected to a cutoff point of .005 ounces per yard. The cross sectional area of the channel as it is found on Shane #2 was multiplied by the projected value and length to arrive at the above reserve. Inferred reserves of 13,500 ounces were calculated for the other two channels which may be projected from the Shane #2 Claim. The values in the right limit channel were assumed to be equal to those in the center channel. The values in the left limit channel, starting with Sipes' sample values of .017 ounces per yard, were projected to decrease in proportion to those in the center channel. Further exploration will be necessary to define proven reserves in these areas.

Exploration of this lower ground would be a much simpler matter today than it was in the days of Casper Ellinger. The use of economical modern electromagnetic and seismic devices to detail the bedrock surface and the application of modern hydraulic excavators and drills for sampling would be quick and efficient.

Knik

The Knik Claims were staked on the downstream extension of a previously mined channel that was traced on high altitude air photos. Mine tailings are included and abut the upper part of the claims. No reserves as such can be discerned from available data. No discovery other than the airphoto interpretation has been made. Nevertheless there is no reason to believe, either geological or historical, that the pay cut off at this point. The width of mining adjacent to virgin ground on the Knik Claims is about 300 feet. The depth to bedrock is not known for certain but the lack of stripping and scarps around the tailings in the mined part of the channel suggest depths of less than ten to fifteen feet. With this relatively shallow depth and with the good drainage of the bench, the channel is likely to be thawed as well. Should the Knik Channel have the same tenor and value distribution as the center channel, then reserves of 19,700 ounces can be inferred.

Tin and Tungsten Values

Significant quantities of tin in the form of cassiterite and tungsten in the form of wolframite and sheelite are concentrated in the placers on Deadwood Creek. Johnson (1910) stated that a yard of material can contain up to 1 to 2 pounds of concentrate, principally wolframite and cassiterite. Hap Stringfellow, who is currently mining about 1 mile upstream from the Shane #2, Claim says he pays for his mining with tin and tungsten values. No specific tin-tungsten data exists for Shane #2 or the other Lower Deadwood claims.

APPENDIX I

Annotated Bibliography

ANNOTATED BIBLIOGRAPHY

Prindle, L.M., 1906. U.S. Geol. Survey Bull. 295, p21.

"Deadwood Creek - This creek is about 20 miles long. It is divided into two parts, an upper about 12 miles long where it flows in a narrow valley bounded by ridges 1,200 feet above it, and a lower about 8 miles long where the individuality of the valley is lost in that of Crooked Creek. The fall in the upper part is about 150 feet to the mile. The stream flat is several hundred feet wide and is bounded on the east by a rather steep slope, near which the stream flows through most of its course. The west side of the valley has a more or less well-defined bench which rises gradually from a level about 20 feet above the stream toward the ridge separating Deadwood and Boulder Creeks. Switch Creek is the most important tributary.

"The bed rock in most of the valley is a rather massive, blocky quartzite schist, and quartz-mica schist. A structure observed at one locality showed a strike N.60°E. and a dip of 20° to 25° to the southeast. The rocks show evidence of minor folding and contain numerous small quartz stringers. Intrusive granite is very prominent in the region farther east, especially in the valley of Ketchum Creek, only a few miles east of Deadwood Creek, where weathering has carved it into very striking pinnacled forms. On Deadwood Creek it is not so conspicuous, but forms the bedrock over a considerable part of the creek. Dark-colored dikes of diabase occasionally occur.

"The gravels are composed of the varieties of rock outcropping in the drainage area and consist of subangular fragments. mostly under a foot in diameter, more or less irregularly arranged, containing much finely broken material of the same nature. The depth to beck rock varies in the creek from 3 to 12 feet, and on the bench to the west, so far as known, from 6 to 20 feet. The gravels in the creek vary in thickness up to about 8 feet, and there is generally but small overburden to be removed. The values are generally close to bed rock and are found also within it to a depth of 2 or more feet. When the bedrock is massive and is divided into blocks through jointing, values are found sometimes to a depth of 4 feet along the joint planes. The width over which pay is found varies from about 25 to 300 feet. The average width is said to be from 150 to 200 feet, and the average value of the ground for the entire creek to be about $50 to the box length of 12 by 16 feet, or 25 cents to the square foot. Some ground has averaged as high as $200 to the box length. Some work has been done on the bench on the west side of the valley, but little is known of the extent or values of the gravels found there. In a few cases, however, these gravels are being investigated and values have been found.

The creek gold is generally flattened, and at the entrance of the valley is rather flaky; the bench gold is rougher and more lumpy. The coarsest piece found thus far on the creek was worth $122.

"Ground is worked at various places throughout the narrow part of the valley, a distance of about 12 miles. The open-cut system has been employed on most of the ground and it has been found advantageous to work the cuts generally to a width of 16 feet. The season of 1905 was a prosperous one and new discoveries were made on Switch Creek. The bench trail, about 4 miles in length, from Central House across the flat to the entrance of the valley, is a good one, but in wet weather that along the creek is soft and difficult to travel."

Brooks, A.H., 1909 Mineral Resources of Alaska 1908: U.S. Geol. Survey Bull. 370, p54.

"Some prospecting has been done on the lower part of Deadwood Creek to test the ground for dredging."

Ellsworth, C.E., 1910, Mineral Resources of Alaska, 1909: U.S. Geol. Survery Bull. 442, p235 and 236.

"Deadwood and Switch Creeks - Deadwood Creek, which comes second in production, was mined by methods similar to those used on Mastodon Creek.

"During the winter of 1908-09 seventeen claims were being worked on Deadwood Creek and eight or nine on Switch Creek, and their output for that period is variously estimated from $25,000 to $60,000. Nuggets valued at $41, $31, and $23 were found, and several $8 to $10 nuggets were picked up. Most of the gold is much finer. The rougher and coarser gold is found near the heads of the creeks. The miners receive $16 an ounce for the gold.

"The lower part of the creek, after it merges into the Crooked Creek flats, has been prospected with that object in view, but the results are not known. There has also been some talk of hydraulicking below Switch Creek. Daily records of stream flow were kept on Deadwood Creek just above Switch Creek during the last season. They show that possibly during the period covered by records sufficient water was available, but in order to obtain a working head it might be necessary to divert the water so far above as to make the supply insufficient during periods of drought. Nevertheless it does not seem improbable that such an enterprise might be successful, and it is recommended that an effort be made to obtain as complete records of stream flow as possible. If capital is to be interested, these records will be the first information called for as they will require the most time to obtain satisfactorily."

Johnson, B.L., 1910, Occurrence of Wolframite and Cassiterite in the Gold Placers of Deadwood Creek, Birch Creek District: U.S. Geol. Survey Bull. 442.

"The best data available at present indicates that where the wolframite and cassiterite are found most abundantly in the stream gravels they will yield an average of 1 to 2 pounds of concentrates (principally wolframite and cassiterite with some magnetite and garnet) per cubic yard of gravel."

Ellsworth, C.E. and Parker, 1911, Mineral Resources of Alaska, 1910: U.S. Geol. Survey Bull. 480, p162 and 163.

"Deadwood Creek - Mining operations on Deadwood Creek during the winter of 1909 and summer of 1910, though handicapped on account of the low water, were about the same as in the previous two years. Here there seems to be no tendency toward adopting methods leading to a reduction in the cost of extracting the gold. The fact that most of the claims are worked by one to three men with pick, shovel, and hand windlass as the only labor-saving devices makes it evident that ground worked at a profit in this manner would pay well if more extensive equipment were provided. If the increased activity in hydraulicking in other parts of the district proves successful no doubt this method can be applied advantageously in working the Deadwood deposits. The water supply available for this purpose above Switch Creek is stated on page 200. During part of the season good results were obtained from the operation of an automatic dam about a mile above Discovery claim. Considerable difficulty was experienced on the upper part of the creek with the "glacier" which formed on the claims during the winter to a depth of 15 feet in places and which did not disappear until late in July. Since there was very little water in Switch Creek after the spring thaw, operators were compelled to shut down work soon after the winter dumps had been sluiced. Information collected indicates that about 30 men were occupied in mining on 16 clamins during the open season and that about 20 men worked 14 claims in the winter."

Prindle, L.M., 1913, Geologic Reconnaissance of the Circle Quadrangle: U.S. Geol. Survey Bull. 538, p61 and 62.

"More than a hundred 500-foot claims have been staked on Deadwood Creek and more or less work has been done on about 70 of these. Gold has been found in commercial quantities from a point about a mile above the mouth throughout the length of the creek. Switch Creek also carries pay gravel. Nearly all the mining on Deadwood Creek has been done by small operators using simple methods. In the lower mile of its course, where its valley broadens and gradually merges with that of Crooked Creek, the gold is more disseminated and is not susceptible to profitable exploitation by

crude hand methods. This part of the field is worthy of careful examination by those looking for dredging ground. At a point half a mile above the mouth of the valley the depth to bedrock is only 10 feet. It does not seem probable that the bedrock floor slopes more than 25 feet to the mile, and therefore it is not to be expected that the depth to bedrock between this point and the mouth of the valley will be found to be more than 35 feet."

Ellsworth, C.E. and Davenport, 1913, Mineral Resources of Alaska, 1912: U.S. Geol. Survey Bull. 542, p211.

"Deadwood and Switch Creeks - Mining was conducted on Deadwood Creek during 1912 by the usual hand methods and to about the same extent as in previous years. The number of men engaged in mining varied from twenty-five to thirty-five, divided into fifteen to twenty different parties."

Chapin, Theodore, 1914, Mineral Resources of Alaska, 1913: U.S. Geol. Survey Bull. 592, p360.

"On Deadwood Creek and tributaries from 40 to 50 miners were working winter and summer."

Brooks, A.H., 1915, Mineral Resources of Alaska, 1914: U.S. Geol. Survey Bull. 622, p61.

"Deadwood Creek was worked by eight to ten small outfits by opencut methods. Some drift mining also was done on lower Deadwood Creek during the winter. It is proposed to install a hydraulic plant on upper Deadwood Creek next season. Switch Creek, tributary to Deadwood Creek, supported the operation of two drift-mining outfits throughout the summer. A hydraulic plant, intended to work claims Nos. 3 to 6, inclusive, on Switch Creek, was landed at Circle during the summer and is to be installed for operation in 1915."

Smith, P.S., 1933, Mineral Resources of Alaska, 1930: U.S. Geol. Survey Bull. 836, p37.

"On Deadwood Creek and its tributary, Switch Creek, five small camps employing a total of 12 men maintained an output of gold comparable with that taken from this valley in 1929. A crew of half a dozen men were busy during much of the later part of the season on Deadwood Creek, putting in a ditch for use in 1931 in connection with the proposed dredging operations."

Smith, P.S., 1938, Mineral Resources of Alaska, 1936: U.S. Geol. Survey Bull. 897-A, p49 and 50.

"It is reported that Deadwood Mining Co. has ordered a new dredge for installation on the company's property on Deadwood Creek, but delivery and construction of this dredge will not be undertaken until 1937."

APPENDIX II

Casper Ellinger Map

Appendix II

CASPER ELLINGER MAP

This map was prepared by Casper Ellinger, an old timer who came to Alaska during the gold rush, and eventually settled on Deadwood Creek. Ellinger apparently owned or controlled much of the creek from the mid-twenties, or before, until his death sometime in the mid-sixties. Before his death Ellinger gave this map, along with much verbal information to Henry Choate of Central (Mr. Choate now spends winters in Califormia, I'm not certain where). In 1979 we photographed the map at Choate's house in Central and discussed as much of the history as he knew; Henry Choate is himself an old timer now, he is about 70 years old.

Registration

Exact points of registration are difficult because of changes in names of natural features and the possibility of changes in location of cultural ones. It appears that "28 Pup" on the Ellinger map is called "26 Pup" on the 15 minute topo sheet and "23 Pup" is "22 Pup". Old maps and recent airphotos indicate that Circle Hot Springs Road is in the same location as in 1929. Scaling as precisely as is reasonable on the maps and airphotos, we find that the location of drill line and shafts falls within 300 feet of our plotted location on the Shane #2 Claim.

Confirmation and more exact registration comes via word of mouth from Henry Choate. He states that the cabin on the unnamed claim just below 49 below is a ruined cabin which we have plotted with relation to claim corners on Shane #2 and has been used to plot the locations of the shafts and drill line on Plate #1.

Data

Because the map was drawn in 1929, we have assumed that the gold values were based on the $20.67 price which prevailed at that time. Values taken from this map which appear in the report and on Plate #1 are expressed in ounces per yard calculated using $20.67.

We believe there is no reliable way to determine depth to bedrock with this map. The statement just left of the title block states that all depths include gravel and bedrock only. We believe that an arbitrary difference in the choice of mining section thickness between the drill holes and shafts on Shane #2 explains the differences in pay thickness and value.

APPENDIX III

List of Claims and Recording Data

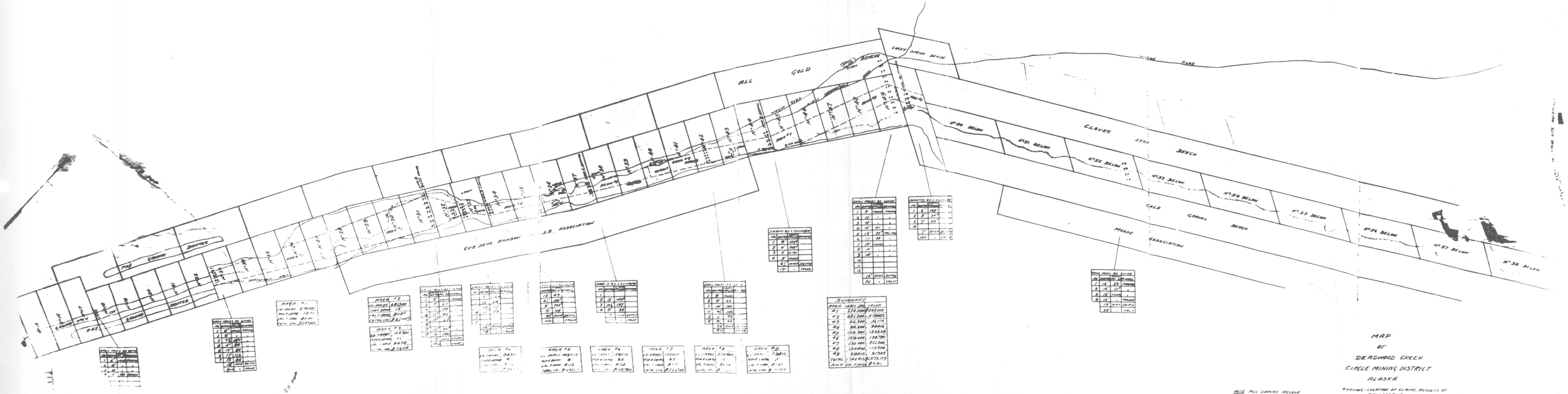
Claim	BLM	Date Located	Date Recorded	Recording Dist	Book	Page
PUDDING						
1	F-40643	9-21-78	10-6-78	Fairbanks	125	0440
2	F-40644	"	"	"	"	0441
3	F-44905	10-27-78	11-9-78	"	129	0723
4	F-44906	"	"	"	"	0724
5	F-44907	"	"	"	"	0725
6	F-44908	10-26-78	"	"	"	0726
7	F-44909	"	"	"	"	0727
8	F-44910	"	"	"	"	0728
9	F-44911	"	"	"	"	0729
10	F-44912	"	"	"	"	0730
11	F-44913	"	"	"	"	0731
12	F-44914	"	"	"	"	0732
13	F-44915	"	"	"	"	0733
14	F-44916	"	"	"	"	0734
15	F-44917	"	"	"	"	0735
16	F-44918	"	"	"	"	0736
17	F-44919	"	"	"	"	0737
18	F-44920	10-25-78	"	"	"	0738
19	F-44921	10-24-78	"	"	"	0739
20	F-44922	"	"	"	"	0740
102	F-44883	10-27-78	"	"	"	0741
103	F-44884	"	"	"	"	0742
104	F-44885	"	"	"	"	0743
105	F-44886	"	"	"	"	0744
106	F-44887	"	"	"	"	0745
107	F-44888	"	"	"	"	0746
108	F-44889	10-28-78	"	"	"	0747
109	F-44890	"	"	"	"	0748
110	F-44891	"	"	"	"	0749
111	F-44892	"	"	"	"	0750
112	F-44893	"	"	"	"	0751
113	F-44894	"	"	"	"	0752
114	F-44895	10-26-78	"	"	"	0753
115	F-44896	"	"	"	"	0754
116	F-44897	"	"	"	"	0755
117	F-44898	"	"	"	"	0756
118	F-44899	"	"	"	"	0757
119	F-44900	10-25-78	"	"	"	0758
120	F-44901	"	"	"	"	0759
121	F-44902	"	"	"	"	0760

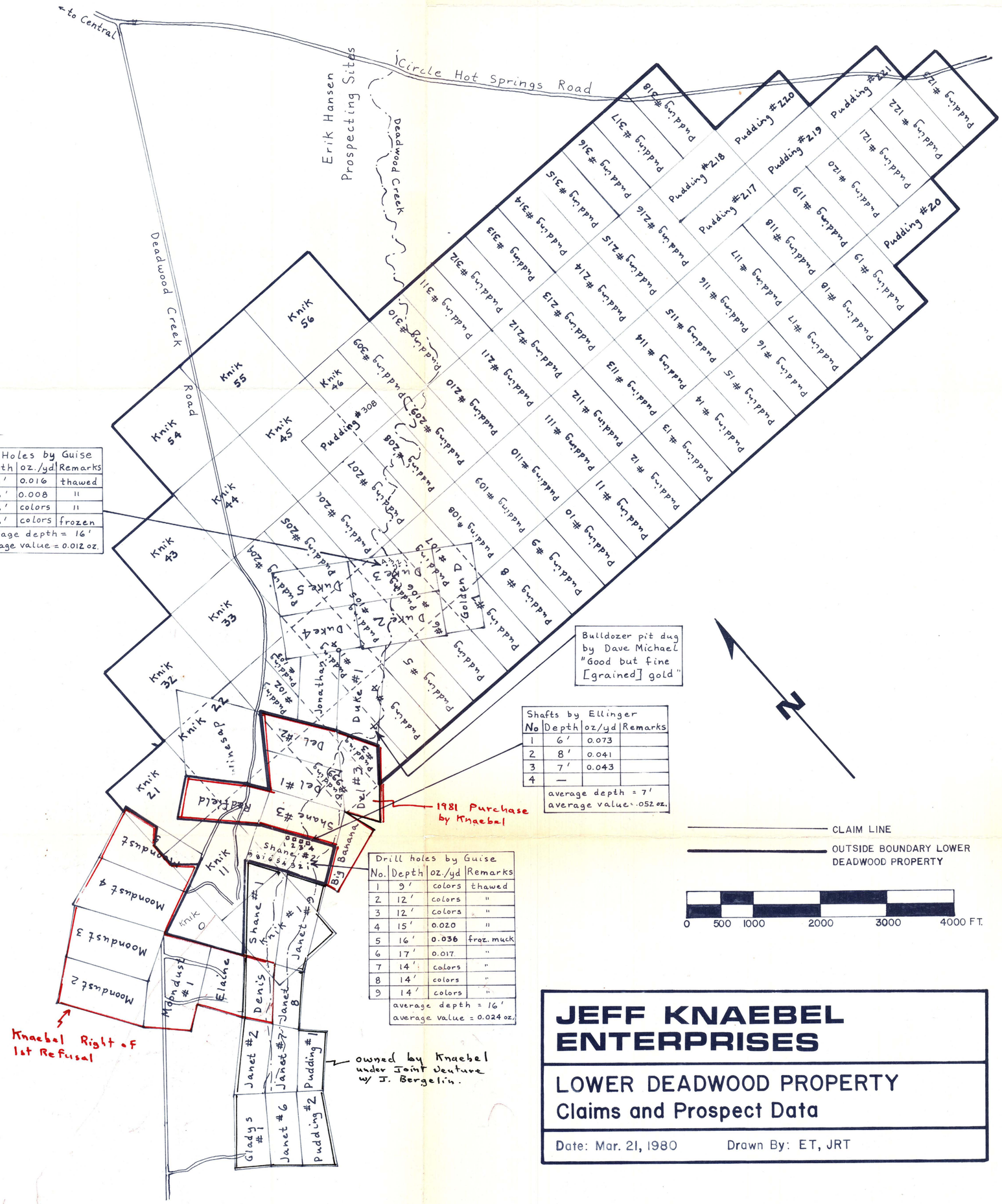
Claim	BLM	Date Located	Date Recorded	Recording Dist	Book	Page
PUDDING						
122	F-44903	10-25-78	11-9-78	Fairbanks	129	0761
123	F-44904	"	"	"	"	0762
204	F-44865	10-29-78	"	"	"	0763
205	F-44866	"	"	"	"	0764
206	F-44867	"	"	"	"	0765
207	F-44868	"	"	"	"	0766
208	F-44869	"	"	"	"	0767
209	F-44870	"	"	"	"	0768
210	F-44871	"	"	"	"	0769
211	F-44872	"	"	"	"	0770
212	F-44873	"	"	"	"	0771
213	F-44874	"	"	"	"	0772
214	F-44875	10-26-78	"	"	"	0773
215	F-44876	"	"	"	"	0774
216	F-44877	"	"	"	"	0775
217	F-44878	"	"	"	"	0776
218	F-44879	"	"	"	"	0777
219	F-44880	10-25-78	"	"	"	0778
220	F-44881	10-27-78	"	"	"	0779
221	F-44882	10-25-78	"	"	"	0780
308	F-44854	10-29-78	"	"	"	0781
309	F-44855	10-31-78	"	"	"	0782
310	F-44856	"	"	"	"	0783
311	F-44857	"	"	"	"	0784
312	F-44858	"	"	"	"	0785
313	F-44859	"	"	"	"	0786
314	F-44860	10-27-78	"	"	"	0787
315	F-44861	"	"	"	"	0788
316	F-44862	"	"	"	"	0789
317	F-44863	"	"	"	"	0790
318	F-44864	10-26-78	"	"	"	0791
999	F-44923	10-27-78	"	"	"	0722

Winesap Association	Book 115	Page 319	Fairbanks	Recording	District
Golden D	Book115	Page 318	"	"	"
Jonathon	Book 115	Page 317	"	"	"
Duke #1	Book 10	Page 22	"	"	"
Duke #2	Book 10	Page 23	"	"	"
Duke #3	Book 10	Page 24	"	"	"
Duke #4	Book 115	Page 316	"	"	"
Duke #5	Book 115	Page 320	"	"	"

CLAIM	RECORDING DISTRICT	BOOK	PAGE	DATE RECORDED
KNIK 1	Fairbanks	150	929	July 26, 1979
KNIK 11	"	150	930	"
KNIK 21	"	150	931	"
KNIK 22	"	150	932	"
KNIK 23	"	150	933	"
KNIK 32	"	150	934	"
KNIK 33	"	150	935	"
KNIK 43	"	150	936	"
KNIK 44	"	150	937	"
KNIK 45	"	150	938	"
KNIK 46	"	150	939	"
KNIK 55	"	150	940	"
KNIK 56	"	150	941	"

KNIK #0	Fairbanks	Recording	Dist.	Book 172	Page 23
KNIK #54	"	"	"	Book 172	Page 24
Shane #2	"	"	"	Book 20	Page 32


ALL GOLD
CLOVER LEAF BENCH
GOLD GRAVEL BENCH
MOOSE ASSOCIATION
CUB BEAR, RAINBOW, S.B. ASSOCIATION
LOWER DARKE BENCH
BEHKIN
CREEK
TRAIL
GROUND
SHAFTS
AREA #1
AREA #2
AREA #3
AREA #4
AREA #5
AREA #6
AREA #7
AREA #8
AREA #9
SUMMARY
MAP
OF
DEADWOOD CREEK
CIRCLE MINING DISTRICT
ALASKA
SHOWING: LOCATION OF CLAIMS, RESULTS OF PROSPECTING
SCALE: 400 FT. 1"
S.W. FAIRBANKS QUAD. (1907)
NOTE ALL DIGGINGS INCLUDE GRAVEL AND BEDROCK FILL



Drill Holes by Guise

No.	Depth	oz./yd	Remarks
1	16'	0.016	thawed
2	16'	0.008	"
3	16'	colors	"
4	16'	colors	frozen
average depth = 16'			
average value = 0.012 oz.			

Shafts by Ellinger

No	Depth	oz/yd	Remarks
1	6'	0.073	
2	8'	0.041	
3	7'	0.043	
4	—		
average depth = 7'			
average value = .052 oz.			

Drill holes by Guise

No.	Depth	oz./yd	Remarks
1	9'	colors	thawed
2	12'	colors	"
3	12'	colors	"
4	15'	0.020	"
5	16'	0.036	froz. muck
6	17'	0.017	"
7	14'	colors	"
8	14'	colors	"
9	14'	colors	"
average depth = 16'			
average value = 0.024 oz.			

JEFF KNAEBEL ENTERPRISES

LOWER DEADWOOD PROPERTY
Claims and Prospect Data

Date: Mar. 21, 1980 Drawn By: ET, JRT