DMEA [illegible]m 1

DEFENSE MINERALS EXPLORATION ADMINISTRATION
Control Slip

CONTROLLED DOCUMENT

DMEA Docket No. 4509

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To:	500	Date	10/25/56
To:	Of. Comm	Date	11/2/56
To:	Oper Comm	Date	11-7-56
To:	F.E. Johnson	Date	11-7-56
To:	Com	Date	11-7-56
To:	M+7	Date	11-7-56
To:	Base Metals	Date	11/8/56
To:	Administrator	Date	11/16/56
To:	Com	Date	11-16-56
To:	Base Metals	Date	11/19/56
To:	130	Date	3-15-57
To:	110	Date	3-18-57
To:		Date	
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DMEA Form 9

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE

DMEA NO. 4509

Application (Denied
(Withdrawn
(After disposition, delete items not applicable)

Contract (Terminated - not Certified
(Cancelled
(Terminated - Certified
(Royalty Agreement

This is the official contract file containing all official records of the project. The records contained in the files are checked and are arranged in this order:

Left Side

Interim Royalty Audits
Reports of Royalty Review
Certification of Discovery
Certificate of Audit (Final)
Interim Audit(s)
Report of Review
Termination Notice or Agreement
Recision Notice
Assignment of Contract
Contract Amendments (latest on top)
Contract with all exhibits and annexes
✓ Owner's Consent to Lien
Subordination Agreement
✓ Leases and assignments of leases
✓ Application and attachments
(3) Envelope for maps

Right Side

Project summary
Work completed analysis
All other material is filed in chronological order with correspondence including the following reports as checked:

Final Field Team Report (Tab)
Operator's Final Report
(2R) Interim Reports
(2R) Operator's monthly reports and all attachments (latest on top)
✓ On-site Exam Report(s) (Tab)
(4) Settlement Sheets

When the volume of records is expected to warrant additional folders, or when convenience of reference warrants separate folders for certain records, they should be set up in this order:

Left Side

Folder No. 2: (In chron. order) Interim Summary Reports by W. O. Engineers

Right Side

Operator's Semi-Annual Report for Certified Project, Field Team Interim Reports, Operator's Monthly Report with transmittal, narrative, maps, and Field Team review.

Folder No. 3: Maps (Use pocket folder or envelope. Fold maps with title block out and show reference to related document or correspondence.)

Folder No. 4: Settlement Sheets

Folder No. 5: Drill Logs

9775

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

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October 15, 1956

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: New application (Copper-Nickel, also Gold-Silver)
McPhail Engineering Co.
Phantom Creek Copper, Inc.
Chelan and Kittitas Counties, Wash.

Dear Mr. Selfridge:

Enclosed are the original and two copies of an application submitted by the McPhail Engineering Company for the exploration of the Pickwick mine. You will recall that in 1951 we entered into a contract (Docket No. DMEA-1353) with S. J. Holden & Associates to explore this same property. This contract was assigned later to Phantom Creek Copper, Inc., which was merely Holden and Associates under a corperate name. The purpose of the project was essentially to open up the old Pickwick mine for thorough sampling and geologic examination; it also included some bulldozing.

The contract from our point of view was quite unsatisfactory, work progressed very slowly, and very little of it was done. In 1954 the property was taken over by McPhail Engineering Company and in November of 1954 this company paid to the Government $675.58, the total amount that had been advanced by the Government under the contract, thus releasing both Holden and McPhail Engineering Company from any further obligation.

McPhail Copper Company has done essentially the same work that was planned under the original exploration project and now submits an application for further work. A long list of samples is attached but these are not very informative as they do not give much clue as to where or how they were taken. As we do not know the results of the cleaning of the old workings, it appears that an examination will be required to determine whether further work should be done. The first snow had already begun to fall on the Cascades last week, and because we have fieldmen available in the area, we have gotten in touch with them by phone and have requested they make an examination while it is still possible. We have particularly requested them to thoroughly map and sample the pertinent parts of the Van Eps Adit.

Very truly yours,

A. E. Weissenborn

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, NW District

Enclosures

cc: USBM (2)
Kellum

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Form Approved.
Budget Bureau No. 42-R1035.2.

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U. S. G. S.
SPOKANE, WASH.

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

Not to be filled in by applicant

Docket No. 4509
Metal or Mineral Copper
Date Received 10-19-56
Estimated Cost $147,359
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: McPhail Engineering Co., P. O. Box 1503, Tacoma, Washington.
Charles McPhail, sole owner of the above named Company, organized in the State of Washington.

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract Mining claims located in Sections 9, 10, and 16, Township 23 North, Range 15 East, Willamette Meridian, Leavenworth Mining District, Chelan and Kittitas Counties, Washington.

(*b*) State any mine name by which the property is known. Phantom Creek Copper, Inc.,

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Lessee

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property.

(*e*) If you own the land, describe any liens or encumbrances on it None

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. All listed on enclosed drawings.

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. None

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore Copper, Gold, Silver and Nickel

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc.

(*c*) The work will start within 10 days and be completed within 24 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations.

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.).

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants.

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel.

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be.

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project.

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes.

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)? Yes.

(*b*) How do you propose to furnish your share of the costs?

[x] Money & [x] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper.

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated Sept. 27, 1956

Thos. M. O'Neal
(Applicant)

By

[redacted]

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

McPhail Engineering Co.,
P. O. Box 1503,
Tacoma, Washington.

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4.(a) PHYSICAL DESCRIPTION

1. Sunk a new shaft 110 ft. deep, 4x10, with manway and skip compartment in old working, and cross cut approximately 30', 5x7, in old working, then continued through a vein 22 feet thick, of which I am enclosing an assay report sheet of a chip sample we cut for the full length. Before we sunk the shaft we cut a trench roughly 40 feet deep, of which I am enclosing assay report sheets. As we were sinking our shaft, we used quite a bit of our deep trench for disposal of our new shaft.

We cleaned out the old 2500 Ft. tunnel and re-timbered part of the portal. Built messhall, kitchen, four bunkhouses, shower room, generating power plant building, small shop building, etc.

2. My interest in the mine is that I am the lessee from Phantom Creek Copper, Inc., and McPhail Engineering, which is owned by me individually, has constructed and paid for in full all of the operations and work that have been developed to date, with the exception of the old 2500 ft. adit which was constructed by Van Epps in the early 1900's.

3. There is a good mountain road to our workings and headquarters. We built a five mile road that joins with the forest service road and from there to the pavement it is approximately 12 miles.

4. (b)

Thirteen tons shipped to Tacoma Smelter in November, 1915. An assay of the ore is enclosed with the sample tabulations.

4. (c) See separate sheet.

4. (d)

The project is accessible by a road that is 22 miles to the railroad spur, also 25 miles to a residential area.

4. (e)

The availability of manpower is good on account of the coal mines in Roslyn 27 miles away and there is a surplus of hard rock miners in that area. I have had as many as fourteen employees at one time and had no trouble securing them. Materials, supplies, equipment and water is good, but for power we use gas driven generators. Should this develop into an operating mine there is sufficient water for a good power site.

McPhail Engineering Co.,
P. O. Box 1503,
Tacoma, Wash.

Geology:
4 (C)

In general, the area is predominately peridotite with diorite intrusions into the mass and bounded to the east and southeast by the Coast Range Batholith.

In the immediate area of the Van Epps tunnel and shaft the peridotite is considerably altered in the contact areas with diorite.

The principal mineralization is copper as bornite and chalcopyrite with smaller amounts of gold, silver and traces of nickel and molybdenum. One form of mineralization occurs as a fine-grained dissemination in the diorite of the tunnel from the portal area to the location of survey station number six, a distance of three hundred and ninety feet, and in the area immediately underlying the shaft.

A chip sample of 39 feet taken from the right wall of the tunnel at 236 feet to 275 feet from the portal, assays 0.71 Copper and 0.12 ounces Silver. This same area contains considerable visible molybdenum, which was not assayed at the time.

The other form of mineralization occurs as high grade veins or veinlets, varying from one-half to as much as 22 inches in width, all of which are readily observed in the shaft and its immediate area. A five foot sample of the bottom of the 110 foot shaft assayed 0.05 Gold, 0.25 Silver and 0.52 Copper. The 22 inch vein on the 80 foot level is solid chalcopyrite and bornite. This vein structure has a strike of north 10 degrees west and a dip to the west of 46 degrees. Smelter assay report enclosed on this 22 inch vein.

McPhail Engineering Co.,
P. O. Box 1503,
Tacoma, Wash.

Proposed Work:
5 (B)

In the enclosed 100 scale plan map, the working areas, outlined in red, have shown by actual surface and underground samples to have the most favorable possibilities. Shearing patterns and mineralized zones have a definite north ten degrees west strike with a pronounced tendency to be projected laterally and in depth.

It is proposed that the most satisfactory type of exploration to undertake immediately in these areas, would be diamond drilling both underground and surface.

The first area recommended for drilling is the area lying between survey stations number T6 and T9 in the end of the Van Epps tunnel, just west of and underlying the shaft area. The north 10 degree west strike of the surface exposures, south and east of the shaft collar and the high grade vein on the 80 foot level, with a similar strike and dip of 46 degrees west, project their extensions to an area 120 feet west of the end of the tunnel.

It is proposed to drill four flat holes of 250 feet each from the vicinity of survey stations T6 and T9. The two flat holes from T6 to be drilled on bearings of south 80 degrees west and south 45 degrees west. The south 45 degree west hole to be followed by a plus 45 degree hole drilled to a depth of 200 feet. The two flat holes to be drilled from T9 to be drilled on bearings of south 80 degrees west and north 45 degrees west. The south 80 degree west hole to be followed by a plus 45 degree hole drilled to a depth of 200 feet.

McPhail Engineering Co.,
P. O. Box 1503,
Tacoma, Wash.

Proposed Work:
5 (B) Continued.

To further explore this favorable projection area it is proposed to extend the present tunnel a distance of 250 feet to the west. The actual bearing of this development to be dependent upon the results obtained in the diamond drilling program of this immediate area.

As the present raise from the tunnel to the bottom of the shaft is plugged completely shut, and of little operating value, it is proposed to deepen the existing 110 foot of vertical shaft to the present tunnel elevation, which would be an additional 158 feet. This same development would further explore the existing ore showings on the 50 and 80 foot levels and in the manway compartment at the bottom of the shaft.

A pattern of seven surface diamond drill holes to explore the lateral trend of the ore is proposed for the shaft area. This hole spacing to be at intervals of 250 feet apart and to minimum depths of 400 feet each.

A similar program of drilling is proposed for the portal area. A pattern of eight flat drill holes should be drilled at right angles to the tunnel walls at 100 foot intervals to depths of 200 feet each, four of the holes to be drilled in the north wall and four in the south wall. These flat holes to be followed by plus 45 degree holes with the same bearings and at the same location to depths of at least 100 feet. This program to be followed by surface diamond drilling with a pattern of six holes at 250 foot intervals to minimum depths of 400 feet.

To accomplish the tunnel work, it will be necessary to restore the track, as well as air and water lines for a distance of 2500 feet. A slough for 80 feet in the end of the tunnel will have to be cleaned up and hauled to the dump.

McPhail Engineering Co.,
P. O. Box 1503,
Tacoma, Wash.

5(d) Operating Experience and Background of Applicant:

McPhail Engineering has been operating a successful construction business for the last fourteen years, doing all types of construction, and as I have previously mentioned, I am the sole owner of this Company. I, personally, have been in the construction business since 1929. The supervision of this exploratory work will be under the guidance of Mr. Cline Tedrow, Consulting Mining Engineer, Vice President and Director of Mine Consultants, Inc., 528 Hutton Building, Spokane, Washington. Mr. Tedrow has already made a study of my property on the location and will enclose a copy of his report on the same.

6. Estimate of Costs. (see separate sheet)

6 (a) The only work that will be let on contract is the diamond drilling.

6 (b) Labor, Supervisor and Consultants' Expense:

1 cook @ $2.00 per hr,	$400.00 per mo.	or	$4800.00 for two year program.
1 laborer @ $1.75 per hr.	$280.00 " " "		$3360.00 " "
1 truck driver-mechanic, @$2.75 per hr.	$450.00 " " "		$5400.00 " "
1 supervising engineer,	$500.00 per mo.	or	$6000.00 " "
1 consultant,	$300.00 " " "		$3600.00 " "
	Total		$23,160.00

Miners' rates of pay at $2.00 per hour is included in cost of crosscutting. The cook in this case to do the cooking for all parties concerned, including the diamond drill contractors.

McPhail Engineering Co.,
P. O. Box 1503,
Tacoma, Wash.

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Estimate of Costs:
6 (A)

The cost of drilling, both surface and underground, will be based entirely upon existing contracts and experience in the Metaline Mining District, Metaline Falls, Washington.

The average cost of underground drilling for EX core is $5.00 per foot, which includes moving time, setting up, bit costs, all labor and repairs, as well as compressed air.

The average cost of surface drilling for EX core is $7.00 per foot, which includes moving and setting up at $8.00 per hour, Stand-piping at $10.00 per foot, reaming at $2.00 per foot, and average core drilling costs to 400 feet at $4.75 per foot.

The rehabilitation of the tunnel will average $2.00 a foot, for 16 pound rail, 2 inch air line, and 1 inch water line and the subsequent clean up at the end of the tunnel.

The exploration drift at the end of the tunnel will average $35.00 per foot, for a 6 by 7 foot heading, which includes; powder, labor, rail, pipe and compressed air.

The shaft extension for a fully timbered 4 foot by 10 foot shaft will be $70.00 per foot. This will include 8 inch by 8 inch timber fully framed in five foot sets, half inch mild steel hangers and fully lagged with three inch timber, with platforms each ten feet and ladders in the manway compartment.

McPhail Engineering Co.,
P. O. Box 1503,
Tacoma, Washington.

Estimate of Costs:
6 (A)

The summation of these costs is as follows:

(A) Underground Diamond Drilling:

Total of holes at shaft

4 holes of 250 feet @ $5.00 = $5,000.00
2 holes at 200 feet @ $5.00 = 2,000.00
8 holes of 200 feet @ $5.00 = 8,000.00
8 holes of 100 feet @ $5.00 = 4,000.00

(B) Surface Diamond Drilling:

7 holes @ 400 feet each = 2800 @ $7.00 per foot = $19,600.00
6 holes @ 400 feet each = 2400 @ $7.00 per foot = $16,800.00

(C) Rehabilitation of tunnel:

2500 feet @ $4.00 per foot = $10,000.00

(D) Exploratory 250 foot drift:

250 feet @ $35.00 per foot = $8,750.00
Timbering where needed @ $5.00 per foot

(E) Shaft Extension:

158 feet @ $70.00 per foot = $11,060.00

6(c) Operating material and supplies in use at present time, and their value.

Mohail Engineering Co.,
P. O. Box 1503,
Tacoma, Wash.

1	McCullough 16" chain saw	$ 264.00
1	Lincoln 200 Amp gas driven elec. welder	594.00
10	Wheat forty miners elec. lamp complete with six unit single phase charger	396.00
1	Precision #111B scintillator	425.00
1	75 KW gas driven electric generator, single phase 110-220V.	700.00
1	40 KW gas driven electric generator, single phase 220 - 110V	350.00
1	Thor #380 jack leg mining drill	600.00
1	Ambassador 9 Cu. Ft. freezer	310.00
1	Deisel burning & electric blowing Hart range	342.00
1	Stationary 3/4" electric drill mounted on stand	215.00
1	Blacksmith forge & anvil	35.00
2	Thor air drill ---$76.00 ea.	152.00
20'	2'-0 drill steel 7/8" hex. steel	40.00
36'	4'-0 drill steel 7/8" hex. steel	40.00
30'	6'-0 drill steel 7/8" hex. steel	45.00
32'	8'-0 drill steel 7/8" hex. steel	48.00
1	set of 6"-double shives block & tackle	11.00
1	set of 8"- " " " "	16.00
1	set of dies for threading bolts 1/16" to 1"	61.00
1	set of dies for ½" to 2" pipe	21.00
1	tripod pipe vise	26.80
1	6" pipe vise bench type	8.50
2	detonators	56.00
175'	½" garden hose	35.00
250'	1" rubber hose extra for compressor	225.00
2	double bit axes	13.18
5	single bit mine axes	27.90
10	round nose shovels, Peerless #2	25.60
8	miners picks - drift pick	49.60
4	peevies	32.60
400'	1½" fire hose	400.00
1	portable gas driven pump with 2½" suction + 2½" outlet	255.00
3	5'-0" steel pinch bars	43.50
2	mine saws	17.88
2	M-70300 R-4 mine lamps complete (Edison)	82.80
1	M-7030 portable magnetic lock operator R-145-0201 for above	11.71
3	carbide lamps	8.25
4	water bags	4.60
4	claw hammers	3.56
1	1½ ton c/n puller	68.82
140'	5/16" chain	63.00
1	0-1 Thor line oiler	17.95
16	1½" carbide bits	247.20
5	fire extinguishers	23.25
1	blow torch	9.71
		$6422.41

McPhail Engineering Co.,
P. O. Box 1503,
Tacoma, Wash.

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6 (c) Continued.

LARGE MINE EQUIPMENT

1	D7 Caterpillar 9G series 1941	$4830.00
1	3/8 yd. Ensley shovel with dipper stocks, 1942,	3600.00
1	Denver duplex mining jig 1954	960.00
1	American saw mill complete	2000.00
1	Dodge dump truck - new motor - 1947	600.00
1	Chev. cab over engine 4 wheel drive, 1942,	760.00
1	red Willys jeep, new motor, 1942,	400.00
1	International 4-wheel drive, power wagon, 1942,	618.00
1	1955 Chev. 4-wheel drive pickup,	3008.95
1	Austin gyratory cone crusher,	1000.00
1	Austin jaw crusher with power plant,	1250.00
		$19,026.95
Small equipment as listed,		6422.41
Misc. small equipment not listed,		500.00
Cooking utensils, dishes & appliances,		500.00
6	Misc. buildings,	5700.00
		$32,149.36

McPhail Engineering Co.,
P. O. Box 1503,
Tacoma, Washington.

6(d) OPERATING EQUIPMENT

Rental of	D7 Caterpillar with winch, 2 seasons 6 mo's. 1200 hrs. @ $10.00 per hr.	$12,000.00
Rental of	105 Cu. Ft. Worthington Deisel Compressor, 2 seasons - 6 months,	5,000.00
Rental of	Whirley air pump for pumping shaft, etc., use allowance - 2 seasons - 6 months each,	1,100.00
Rental of	No. 1 American Saw Mill for sawing timbers, etc., use allowance 2 seasons - 6 months ea.	1,000.00
Rental of	two drum hoist for operating skip in shaft,	1,000.00
Rental of	Thor tack leg drill - use allowance - two seasons,	700.00
Rental of	Carbide bits-drill steel and air hammer, use allowance - 2 seasons,	700.00
Rental of	1946-4 wheel drive Chev. cab over engine truck used to haul equipment-use allowance 2 seasons,	1,800.00
Rental of	1955 4-wheel drive Chev. 3/4 ton pickup, used to haul gas and supplies, - two seasons,	2,400.00
Rental of	1942 4-wheel drive International power wagon, used to haul equipment and personnel,	1,700.00
Rental of	1942 Willys jeep - used to haul personnel, use allowance, 2 seasons,	1,600.00
1	7.5 KW 220-110 volt single phase - nearly new gas driven generator - use allowance 2 seasons,	3,300.00
1	4.0 KW 220-110 volt single phase gas driven generator, 3 years old. Use allowance 2 seasons,	1,500.00
		$33,800.00

The above equipment is based on being used intermittently for two seasons of 6 months each and the prices of each include gas, oil and repairs, but prices do not include the operator with the exception of the D7 Caterpillar which is priced fully equipped with operator.

6 (c) Operating Materials and Supplies: (see separate sheet)

6 (d) Operating Equipment: (see separate sheet)

6 (e) Rehabilitation and Repairs:

All equipment and installations are in usable and livable condition at the present and will not entail any additional expense.

6 (f) New Buildings, Improvements, Installations:

No new buildings or installations will be necessary for the project.

6 (g) Miscellaneous:

Bookkeeping at $200.00 per month =	$2400.00
Workmens' compensation and employers liability insurance @ 6% of Item 6(b) ($23,160.00) =	$1389.00
	$3789.00

6 (h) Contingencies:

Upkeep and repair of seven miles of road including snow removal at $100.00 per mile,	$1400.00

Summation of Program Expense for Two-Six Months Field Seasons:

6 (a)	Underground diamond drilling:	$19,000.00
6 (a)	Surface diamond drilling:	$36,400.00
6 (a)	Rehabilitation of tunnel:	$10,000.00
6 (a)	Exploratory 250' drift:	$ 8,750.00
6 (a)	Shaft extension:	$11,060.00
6 (b)	Cook, labor, mechanical and supervisor expense:	$23,160.00
6 (d)	Equipment rental:	$33,800.00
6 (g)	Bookkeeping:	$ 2,400.00
6 (g)	Insurance, compensation:	$ 1,389.00
6 (h)	Road maintenance:	$ 1,400.00
	Grand Total	$147,359.00

DIAMOND CORE DRILLING
MINING
QUARRIES
SHAFT SINKING
TUNNEL DRIVING

Boyles Bros.
DRILLING COMPANY

CONTRACTORS — ENGINEERS — GEOLOGISTS
GENERAL OFFICES
1321 SOUTH MAIN STREET PHONE 84-4401
SALT LAKE CITY 15, UTAH

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FIELD OFFICE CORRESPONDENCE

REPLY TO:

August 18, 1956

McPhail Engineering Company
312 South 112 th,
Tacoma, Washington

Gentlemen:

We would like to submit the following quotation for your proposed drilling program on your Fortune Creek Property.

1. Standpiping $ 12.00 per hour

2. Drilling rates EXH size

0-200 Ft.	$ 5.40
200-400	5.80
400-600	6.30
600-800	6.90
800-1000	7.60

3. Plug Bit drilling will be 0.50¢ less per foot than the core drilling rates in item 2 above.

4. Cementing will be charged for at the rate of $ 9.60 per hour, plus cost of cement or cement substitute, including drilling mud.

5. Reaming for EX Casing $ 2.00 per foot

6. Casing lost in holes will be charged at list F.O.B. the job.

7. Delays ordered by the Company including surveying to be charged at $ 9.00 per hour.

8. Underground drilling will be $ 1.00 per foot less than the drilling rates in item 2 above.

Air and water to be furnished at no cost to contractor

Sincerely yours,
O.C. Bouquot
O.C.Bouquot
District Manager

PHONE 4741

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OCT 19 1956

J. H. BEATTY
DIAMOND DRILL CONTRACTOR
OF METALINE, WASHINGTON

24 July 1956

McPhail Engineering Company,
312 So. 112th,
Tacoma, Wash.

Gentlemen:

I would like to submit the following bids for diamond drilling on your Fortune Creek Property. I understand the maximum depth of hole would be 1,000 feet with the total maximum footage of 5,200 feet for surface drilling and a 200 foot maximum depth of hole in underground drilling with a total maximum footage of 4,000 feet.

I further understand that the drilling is to be done with standard size E.X.H. double tube core-barrel producing a core about 7/8th inch in diameter.

Depth From	Depth To	Price per ft. No Core Required	Price per ft. Core Bits Required.
0 feet	100 feet	$3.125	$5.25
100	200	3.25	5.50
200	300	3.375	5.75
300	400	3.50	6.00
400	500	3.625	6.25
500	600	3.75	6.50
600	700	3.875	6.75
700	800	4.00	7.00
800	900	4.125	7.25
900	1000	4.25	7.50

Standpiping, cementing, surveys and delays chargeable at the standard contract rate of $9.00 per hour.

Respectfully submitted,

J. H. Beatty
J. H. BEATTY.

M - G DEVELOPMENT CO.

Suite 916 Washington Bldg. ✦ BRoadway 4297

Tacoma 2, Washington

September 5, 1956

McPhail Engineering
P. O. Box 1503
Tacoma 1, Washington

Dear Sir:

We are pleased to submit to you our prices for Diamond Drilling up at your Van Epps property in Chelan County, Washington. At the present time, we are drilling at this property for you on a cost plus percentage basis and for that reason we feel we should be able to submit to you the best competitive bid.

We understand that drilling will be performed under the direction of your consultant, Mr. Cline Tedrow, and drill sizes will be E X or A X, whichever is the most practical to suit the conditions.

Drilling Rates:

0 to 200 ft.	E X or A X - - -	$5.25 per ft.
200 to 400 ft.	E X or A X - - -	5.65 per ft.
400 to 600 ft.	E X or A X - - -	6.10 per ft.
600 to 800 ft.	E X or A X - - -	6.70 per ft.
800 to 1,000 ft.	E X or A X - - -	7.20 per ft.

Cementing holes will be charged for at the rate of $9.00 per hour.

Standby charges caused by others will be at the rate of $9.00 per hour.

Reaming for Casing will be at the rate of $2.00 per foot.

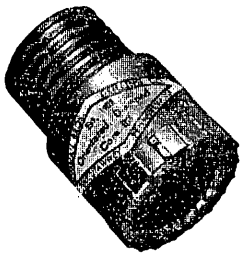
Water or air to be furnished by owner.

Trusting this meets with your approval,

Sincerely,

M & G DEVELOPMENT COMPANY

By W. N. Goodwin
W. N. Goodwin

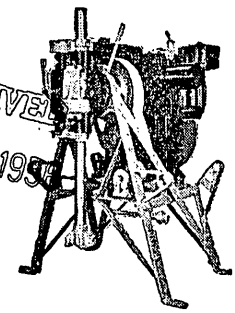


Western Distributor of
HOFFMAN BROS.
"Oriented"
Diamond Set Bits

J. L. HAVLICK

Diamond Drilling Supplies

112 SOUTH CEDAR STREET • PHONE TEMPLE 1789
SPOKANE 4, WASHINGTON



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Dealer Washington-Idaho
BOYLES BROS.
X-Ray
Diamond Core Drill

August 14, 1956

Mr. Cline Tedrow
Mine Consultants, Inc.
528 Hutton Bldg.
Spokane, Wash.

Dear Mr. Tedrow:

Attached to this letter you will find five copies of my bid for the proposed drilling you outlined when you were in my office.

I think I have covered all of the variations you discussed and if there are any questions you would like to ask, I would be pleased to answer them.

Thanking you for the opportunity to bid on this work, I remain

Yours very truly,

J. L. Havlick

J. L. Havlick

JLH:M

A G R E E M E N T

THIS AGREEMENT made and entered into this 14th day of August 19 56 by and between McPHAIL ENGINEERING COMPANY of 312 So. 112th St., Tacoma, Washington hereinafter referred to as "THE COMPANY" and ~~HAVLICK DIAMOND DRILLING CO., INC.~~ J. L. HAVLICK, diamond drilling contractors, whose address is ~~1509 West Second Ave.~~ 112 So. Cedar St., Spokane, Wash., hereinafter referred to as "THE CONTRACTOR".

In consideration of certain payments hereby agreed to be made by the Company, the Contractor agrees to drill Five Thousand, Two Hundred lineal feet at or near _____ and more especially known as the Fortune Creek Property at drill sites to be selected by the Company, subject to the terms and conditions hereinafter set forth, provided this agreement is accepted within fifteen days of the above date.

1. LABOR AND MACHINERY: The Contractor undertakes to supply all the necessary diamonds, diamond drill machinery and men skilled in the operation thereof.

2. SIZE OR CORE AND RECOVERY: All holes under this agreement shall be drilled with standard size EXH double tube core-barrel producing a core about 7/8 inches in diameter, the drill crew shall exercise every care and precaution to recover as high a percentage of core as the core-barrels used and the nature of the ground drilled will permit, and to deliver all such core to the person or persons designated by the Company, the Company shall determine the depth and angle of each hole, make provisions for the safe keeping of all cores recovered and keep such records as it may deem advisable in respect to them.

3. DEPTH OF MEASUREMENT OF HOLES AND COMPLETION THEREOF:

(a) No one hole shall exceed a depth of 1,000 feet; the Contractor shall use his best endeavors to complete all holes according to the wishes of the Company, but should cavaties or loose and caving material be encountered of such a nature as to prevent successful completion of any hole, the Contractor does not guarantee to drill to any certain depth, but shall drill as far as practicable under the conditions and shall be paid for such hole or holes at the rate herein specified for all footage completed.

(b) All measurements of holes shall be from the floor, the top of the casing or collar of holes.

4. DRILLING UNDER EXTRAORDINARY CONDITIONS: In the event that deeper drilling be found necessary, or drilling of concrete, drilling of extra large holes or drilling of holes not provided for in this agreement, it shall be performed at a special rate to be agreed upon between the parties hereto.

5. COMMENCEMENT AND EXECUTION OF WORK: Work under this agreement shall commence on or about the 20th day of August 1956, with one drills, with minimum of two shifts and shall continue with all due diligence until completed, provided always the Contractor shall not be liable for any loss or damage suffered by the Company by reason of strikes, accidents, acts of God, war, or action of the elements.

6. RATES FOR DRILLING: The Company agrees to pay for all drilling according to the following base drilling price schedules: This schedule is for vertical or angle holes where the Contractor supplies gasoline powered drills.

From a depth of	0	feet to a depth of	100	feet	$5.50	per foot.
From a depth of	100	feet to a depth of	200	feet	5.75	per foot.
From a depth of	200	feet to a depth of	300	feet	6.00	per foot.
From a depth of	300	feet to a depth of	400	feet	6.25	per foot.
From a depth of	400	feet to a depth of	500	feet	6.50	per foot.
From a depth of	500	feet to a depth of	600	feet	6.75	per foot.
From a depth of	600	feet to a depth of	700	feet	7.00	per foot.
From a depth of	700	feet to a depth of	800	feet	7.25	per foot.
From a depth of	800	feet to a depth of	900	feet	7.50	per foot.
From a depth of	900	feet to a depth of	1000	feet	7.75	per foot.

7. STANDPIPING, CASING AND CEMENTING OF HOLES: In the event of driving standpipe through overburden or casing being found necessary or advisable, or should cementing of any hole be deemed advisable, the Contractor shall be paid additional to the above base drilling price, in Clause Six, for such work as performed at the following schedule:

(a) STANDPIPING to be priced from a depth of 0 to 100 feet $10.00 per foot.
STANDPIPING to be priced from a depth of xx to _____ feet xx per foot.
STANDPIPING to be priced from a depth of xx to _____ feet xx per foot.

(b) CASING HOLES: When it becomes necessary to put casing in any hole, the price per lineal ft. for reaming the hole shall be at the following rates:

$ 1.50 per ft. for E.X. Casing
$ 2.00 per ft. for A.X. Casing
$ 2.50 per ft. for B.X. Casing
$ 3.00 per ft. for N.X. Casing

plus a charge of $ 1.10 per lineal ft. for inserting and removing each line or size of casing. Casing left in the hole at the Company's request, will be priced at cost - plus 10%.

(c) The price of cementing holes shall be $5.00 per hour for delayed time putting in cement and for drilling out cement and furnishing cement.

8. DELAYS: Delays for which the Company is responsible, the Company shall pay the Contractor $5.00 per hour, except where the Company gives the Contractor 24 hours written notice, in which event there will be no delayed-time charges.

9. SET-UPS AND WATER: The Company agrees to prepare set-ups and supply sufficient water and sufficient compressed air at the drill and to prepare necessary space to pull five feet of rods where holes do not exceed 100 feet in depth, and where holes exceed a depth of 100 feet, shall prepare enough space to pull ten feet of rods.

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10. PAYMENT: The Company hereby agrees to make payments at the rates and according to the terms hereinbefore specified, on or before the fifteenth day of each month for all footage drilled between the first and thirty-first days of the preceding month. On accounts unpaid thirty days from invoice date, interest will be charged at the rate of 10% per annum.

11. The Contractor agrees to take care of all Compensation, Taxes and Insurance on all men employed on the above work.

12. The Company agrees to transport the drilling equipment from the nearest freight terminal to the mine and return to the freight terminal on completion of the contract.

13. ~~The Company will endeavor to provide meals and accommodations for the drill crew at prevailing rates.~~

14. The Company shall furnish satisfactory evidence of ability to pay for all work completed under this agreement or the Company agrees to place in escrow a copy of this agreement with the Washington Trust Company, Spokane, Washington together with sufficient funds to cover cost of drilling under this agreement. The Contractor is to be paid for the drilling completed each month from these escrow funds upon presentation of invoices for the month, approved by the Company's official in charge of the operations.

SPECIAL CLAUSES

A. Underground drilling will be priced $1.00 per foot less than surface drilling prices as outlined in paragraph #6 of this agreement.

B. Non-core or plug bit where core is not required will be priced at 1/2 (one-half) the base price as shown in paragraph #6 of this agreement.

NOTICE: Any notice to be given hereunder shall be properly given if delivered in writing to the:

COMPANY'S ADDRESS AS FOLLOWS:

McPHAIL ENGINEERING CO.

~~312 So. 112 Street~~

Tacoma, Washington

CONTRACTOR'S ADDRESS AS FOLLOWS:

J. L. HAVLICK

112 So. Cedar St.

Spokane, 4, Washington

IN WITNESS WHEREOF these presents have been executed by the parties hereto the day and year first above written.

COMPANY _____

WITNESS _____

CONTRACTOR J. L. Havlick

WITNESS _____

MF-203
Revised March 24, 1955

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OCT 19 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator _____
Docket No. DMEA- _____
Contract No. Idm-E _____
Contract Date _____

CONSENT TO LIEN

To the United States of America:

Referring to that certain land in the County of Chelan, State of Washington, described as follows:1/ The following mining claims lying in Sections 9 and 10, Township 23 North, Range 15 E.W.M., in the Leavenworth Mining District and filed for record with the Auditor of Chelan County, to-wit: Arame Grande, Billey, Charley, Campbell, Funkhouser, Shorty, Patric, Patric South Extension, Patric No. 1, Jumbo, Jumbo Extension, Jumbo No. 1, Nettie Jan, Lolly, Yankee Girl, Yankee Boy, Hershey, Dunlap, Iron Cap, Funkhouser South Extension, Sweeney, Alpine, Snowshoe, Shorty South Extension, Campbell South Extension, Lolly Extension and Copper Buckle.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of a percentage royalty on production as may be provided for by the contract;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

None

3. Undertakes and agrees neither to commit any act nor assert any claim in conflict with the provisions of this Consent to Lien; and to give advance notice of the Government's rights under this Consent to Lien to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, or interest in the land; and

None

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

3/ Write "none" if that is the case. Do not leave lines blank.

4. Consents to all amendments and assignments of the contract without notice thereof, and agrees that this Consent to Lien shall extend and apply thereto.

5. Added provision: And it is expressly understood and agreed that the foregoing described mining property is owned by the Phantom Creek Copper, Inc, and is leased to Charles McPhail, and that in no way shall royalty as agreed in lease shall be effected, and that the original lines and boundaries as owned by the said Phantom Creek Copper, Inc., shall not be changed or deveiated from, the original location lines as located by S. J. Holden and associates , and Phanton Creek Copper, Inc. shall be recoginzed in the agreement, and and no other lines or boundaries shall be recognized.

Dated this 17th day of July, 1956.

J M Holden [Seal]

S J Holden [Seal]

[Seal]

I, S. J. Holden certify that I am the Secretary-Treasurer (Secretary, etc.) of the corporation named herein; that J. M. Holden who signed this agreement was then Vice President (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

[Corporate Seal]

MF-203
Revised March 24, 1955

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For Government's Use Only
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Operator
Docket No. DMEA-
Contract No. Idm-E
Contract Date

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2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of a percentage royalty on production as may be provided for by the contract;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

None

3. Undertakes and agrees neither to commit any act nor assert any claim in conflict with the provisions of this Consent to Lien; and to give advance notice of the Government's rights under this Consent to Lien to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, or interest in the land; and

None

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3/ Write "none" if that is the case. Do not leave lines blank.

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Dated this 17th day of July, 1956.

J. M. Holden [Seal]

S. J. Holden [Seal]

[Seal]

I, S. J. Holden certify that I am the Secretary-Treasurer (Secretary, etc.) of the corporation named herein; that J. M. Holden who signed this agreement was then Vice President (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

[Corporate Seal]

MF-203
Revised March 24, 1955

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Operator
Docket No. DMEA-
Contract No. Idm-E
Contract Date

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2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of a percentage royalty on production as may be provided for by the contract;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

None

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J. M. Holden [Seal]

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[Corporate Seal]

MF-203
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2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of a percentage royalty on production as may be provided for by the contract;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

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4. Consents to all amendments and assignments of the contract without notice thereof, and agrees that this Consent to Lien shall extend and apply thereto.

5. Added provision: ~~And it is expressly understood and agreed that the foregoing described mining property is owned by the Phantom Creek Copper, Inc, and is leased to Charles McNeil, and that in no way shall royalty as agreed in lease shall be effected, and that the original lines and boundaries as owned by the said Phantom Creek Copper, Inc., shall not be changed or deveiated from, the original location lines as located by S. J. Holden and associates , and Phanton Creek Copper, Inc. shall be recognized in the agreement, and and no other lines or boundaries shall be recognized.~~

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J. M. Holden [Seal]

S. J. Holden [Seal]

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MF-203
Revised March 24, 1955

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator_____
Docket No. DMEA-_____
Contract No. Idm-E_____
Contract Date_____

CONSENT TO LIEN

To the United States of America:

Referring to that certain land in the County of Chelan, State of Washington, described as follows:1/ The following mining claims lying in Sections 9 and 10, Township 23 North, Range 15 E.W.M., in the Leavenworth Mining District and filed for record with the Auditor of Chelan County, to-wit: Arame Grande, Billey, Charley, Campbell, Funkhouser, Shorty, Patric, Patric South Extension, Patric No. 1, Jumbo, Jumbo Extension, Jumbo No. 1, Nettie Jan, Lolly, Yankee Girl, Yankee Boy, Hershey, Dunlap, Iron Cap, Funkhouser South Extension, Sweeney, Alpine, Snowshoe, Shorty South Extension, Campbell South Extension, Lolly Extension and Copper Buckle.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of a percentage royalty on production as may be provided for by the contract;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

None

3. Undertakes and agrees neither to commit any act nor assert any claim in conflict with the provisions of this Consent to Lien; and to give advance notice of the Government's rights under this Consent to Lien to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, or interest in the land; and

None

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

3/ Write "none" if that is the case. Do not leave lines blank.

4. Consents to all amendments and assignments of the contract without notice thereof, and agrees that this Consent to Lien shall extend and apply thereto.

5. Added provision: And it is expressly understood and agreed that the foregoing described mining property is owned by the Phantom Creek Copper, Inc, and is leased to Charles McPhail, and that in no way shall royalty as agreed in lease shall be effected, and that the original lines and boundaries as owned by the said Phantom Creek Copper, Inc., shall not be changed or deveiated from, the original location lines as located by S. J. Holden and associates , and Phanton Creek Copper, Inc. shall be recoginzed in the agreement, and and no other lines or boundaries shall be recognized.

Dated this 17th day of July, 1956.

S. J. Holden [Seal]

J. M. Holden [Seal]

[Seal]

I, S. J. Holden certify that I am the Secretary-Treasurer (Secretary, etc.) of the corporation named herein; that J. M. Holden who signed this agreement was then Vice President (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

[Corporate Seal]

MF-203
Revised March 24, 1955

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator _____
Docket No. DMEA- _____
Contract No. Idm-E _____
Contract Date _____

CONSENT TO LIEN

To the United States of America:

Referring to that certain land in the County of Chelan, State of Washington, described as follows:1/ The following mining claims lying in Sections 9 and 10, Township 23 North, Range 15 E.W.M., in the Leavenworth Mining District and filed for record with the Auditor of Chelan County, to-wit: Arame Grande, Billey, Charley, Campbell, Funkhouser, Shorty, Patric, Patric South Extension, Patric No. 1, Jumbo, Jumbo Extension, Jumbo No. 1, Nettie Jan, Lolly, Yankee Girl, Yankee Boy, Hershey, Dunlap, Iron Cap, Funkhouser South Extension, Sweeney, Alpine, Snowshoe, Shorty South Extension, Campbell South Extension, Lolly Extension and Copper Buckle.

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1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of a percentage royalty on production as may be provided for by the contract;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

None

3. Undertakes and agrees neither to commit any act nor assert any claim in conflict with the provisions of this Consent to Lien; and to give advance notice of the Government's rights under this Consent to Lien to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, or interest in the land; and

None

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

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3/ Write "none" if that is the case. Do not leave lines blank.

4. Consents to all amendments and assignments of the contract without notice thereof, and agrees that this Consent to Lien shall extend and apply thereto.

5. Added provision: And it is expressly understood and agreed that the foregoing described mining property is owned by the Phantom Creek Copper, Inc, and is leased to Charles McPhail, and that in no way shall royalty as agreed in lease shall be effected, and that the original lines and boundaries as owned by the said Phantom Creek Copper, Inc., shall not be changed or deveiated from, the original location lines as located by S. J. Holden and associates , and Phanton Creek Copper, Inc. shall be recoginzed in the agreement, and and no other lines or boundaries shall be recognized.

Dated this 17th day of July, 1956.

[Seal]

[Seal]

[Seal]

I, S. J. Holden certify that I am the Secretary-Treasurer (Secretary, etc.) of the corporation named herein; that J. M. Holden who signed this agreement was then Vice President (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

[Corporate Seal]

RECEIVED
OCT 19 1956

A G R E E M E N T

THIS AGREEMENT, Made and entered into between PHANTOM CREEK COPPER, INC., a Washington corporation, incorporated for the purpose of carrying on the business of mining and milling and processing precious metals, and hereinafter referred to as Phantom or said company, and CHARLES McPHAIL, of Tacoma, Washington, hereinafter referred to as McPhail.

WITNESSETH:

I. PURPOSE. Phantom owns and controls mining claims located in the State of Washington, but said company does not have sufficient financial resources with which to explore, mine, process the ore, and otherwise proceed with the development of said mining claims. Phantom is desirous of realizing financial returns from said mining claims and makes this agreement with McPhail with the understanding that McPhail is presently willing and able to finance the proper exploration, mining, processing and development of the aforesaid mining claims in accordance with the terms and conditions set forth herein.

II. McPHAIL AGREEMENTS: McPhail promises and agrees as follows:

(1) That he will expeditiously obtain necessary equipment to begin an exploration operation on the aforementioned mining claims, which claims are hereinafter more particularly described.

(2) That he will, as soon as he can practicably do so, begin the exploration operation and will carry on all mining in accordance with good mining practice.

(3) That he will determine, as soon as he can practicably do so, whether, in his opinion, there is sufficient ore of sufficient value in the aforesaid mining claims to warrant

constructing an ore mill to service said claims.

(4) That if he determines that the quality and quantity of ore available at said mining claims warrant the construction of an ore mill, he agrees to begin construction of an ore mill capable of processing a minimum of two hundred fifty (250) tons of raw ore per day. That construction of said ore mill will be commenced no later than October 1, 1955, and that said mill will be completed no later than October 1, 1957.

(5) That he will pay Phantom for ore extracted by him, or his assigns, from the hereinafter described mining claims in accordance with the schedules hereto attached and made a part hereof by reference.

(6) McPhail will pay to Phantom four thousand five hundred dollars ($4,500) advanced royalties upon McPhail's completion of the exploration of the properties hereinafter described and his validating this agreement by continuing to mine on the said properties after the exploration period.

III. PHANTOM AGREEMENTS. Phantom promises and agrees as follows:

(1) That said company warrants it is the owner of the hereinafter described mining claims, free of any outstanding leases, liens, or encumbrances of any nature whatsoever not specifically set forth herein.

(2) That in consideration of McPhail's promises and agreements set forth herein, said company gives sole and exclusive right to McPhail to explore, mine, process the ore and develope the mining claims herein referred to in accordance with good mining practice.

(3) To accept as full compensation for all ore extracted from said mining claims the sums set forth in the schedules hereto attached and made a part hereof by reference.

(4) To do nothing that will in any way hamper or impede McPhail in working and developing the mining claims

described herein.

(5) Phantom agrees to hold McPhail harmless on account of any claims by any third persons for money owed for services rendered or money advanced by said third persons to Phantom, and which money may now be due or become due to said third persons, the term "third persons" to include firms, corporations or governmental agencies.

IV. MUTUAL UNDERSTANDINGS. It is mutually understood and agreed by the parties hereto that McPhail shall have ninety (90) days following the date of execution of this agreement in which to explore the said mining claims described herein and extract such ore as he is able to extract in said period of time; and it is further mutually understood that McPhail shall retain as his own all proceeds obtained from the sale of said ore without accounting to Phantom therefor in any manner. It is further mutually agreed and understood that if at the end of ninety (90) days exploration period McPhail deems it unprofitable to proceed with the development of the aforesaid mining claims, then this agreement shall be null and void and of no force and effect. If McPhail determines to continue to develop the mining claims, then the term of this agreement shall be for a period of ninety-nine (99) years, with an option on the part of McPhail, his heirs or assigns, to renew this agreement for a like period by continuing under the same terms and conditions.

V. DESCRIPTION OF CLAIMS. The following are the claims of Phantom Creek Copper, Inc., by name, which claims are more particularly described as lying in Sections Nine (9) and Ten (10), Township twenty-three (23) North, Range Fifteen (15) East of the Willamette Meridian in the Leavenworth Mining District in Chelan County, Washington, and filed for record with the Auditor of said county, to-wit:

1. Arame Grande
2. Billey
3. Charley
4. Campbell
5. Funkhouser
6. Shorty
7. Patric
8. Patric South Extension
9. Patric No. 1
10. Jumbo
11. Jumbo Extension
12. Jumbo No. 1
13. Nettie Jan
14. Lolly
15. Yankee Girl
16. Yankee Boy

Phantom Creek agrees to file claims for record with the Chelan County Auditor after McPhail completes the location work in compliance with the laws of the State of Washington to validate said claims, which have already been staked by S. J. Holden, an officer of Phantom Creek Copper, Inc., and titled, (1) Hershey Claim, (2) Dunlap Claim, (3) Iron Cap claim, (4) Funkhouser South Extention, (5) Sweeney Claim, (6) Alpine Claim, (7) Snowshoe Claim, (8) Shorty South Extention, (9) Campbell South Extention, (10) Lolly Extension, and (11) Copper Buckle Claim.

The aforesaid claims are staked fifteen hundred (1,500) feet in length by six hundred (600) feet in width, in a solid block, in the said Leavenworth Mining District in Chelan County, and lying in Sections Nine (9) and Ten (10), Township twenty-three (23) North, Range fifteen East of the Willamette Meridian.

The aforementioned claims, including the ones to be filed by Phantom and those described as having been filed with the Auditor of Chelan County, comprise the claims to be explored by McPhail under the terms of this agreement.

VI. PARTIES BOUND. This agreement shall be binding upon the parties hereto and upon all parties signing said agreement, both in an individual and in a corporate capacity. The Board of Directors of Phantom Creek Copper, Inc., have signed this agreement, as has the President, the Vice-President and the Secretary-Treasurer, as officers of the said corporation. The Board of Directors and the said officers represent that they will give legal notice of a stockholders meeting to be held for the special purpose of obtaining the ratification of the stockholders

of the said corporation of the acts of the Board and the officers in entering into this agreement, and agree to append a record of the minutes of the meeting of the ratification by the stockholders of this agreement. It is further represented by the Board of Directors and officers that Phantom Creek Copper, Inc., is in financial distress and that it is for the best interests of the said corporation to enter into this agreement because of the corporate financial condition, and that this agreement has been made by the corporation and entered into by the corporation for the financial benefit and welfare of its stockholders.

IN WITNESS WHEREOF, Said parties have hereunto set their hands and corporate seal this_____ day of_____, 1954.

PHANTOM CREEK COPPER, INC.
By:

_____
President

_____
Vice-President

_____
Secretary-Treasurer

BOARD OF DIRECTORS:

_____

_____

_____

_____

_____

.....

_____
CHARLES McPHAIL

STATE OF WASHINGTON)
) ss.
COUNTY OF PIERCE)

I, THE UNDERSIGNED, a Notary Public in and for the State of Washington, do hereby certify that on this_____day

of_____, 1954, before me personally appeared_____

_____,

to me known to be the_____,

of the Phantom Creek, Inc., that executed the within and foregoing agreement, and acknowledged the said agreement to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that _____authorized to execute said agreement, and that the seal affixed is the corporate seal of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.

_____
Notary Public in and for the State of Washington, residing at Tacoma.

STATE OF WASHINGTON)
) ss.
COUNTY OF PIERCE)

I, THE UNDERSIGNED, a Notary Public in and for the State of Washington, do hereby certify that on this_____day of _____, 1954, before me personally appeared CHARLES McPHAIL, to me known to be the individual in and who executed the within agreement, and acknowledged that he signed and sealed the same as his free and voluntary act and deed for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.

_____
Notary Public in and for the State of Washington, residing at Tacoma.

The schedule of payments to be made by McPhail to Phantom is as follows:

(1) Five per cent (5%) of the receipts from the smelter for all ores, either crushed or raw, shipped to the smelter prior to the operation of the ore mill.

(2) If McPhail mines less than 1,000 tons per day, McPhail agrees to pay ten per cent (10%) of the returns received from the sale of the concentrate, after the amount mined has been milled.

(3) If McPhail mines more than 1,000 tons per day, but less than 2,000 tons per day, he agrees to pay to Phantom six per cent (6%) of the returns received from the concentrate of the mined ore that has been milled.

(4) If McPhail mines over 2,000 tons per day, he agrees to pay five per cent (5%) of the returns received from the sale of the concentrate derived from the ore that has been mined.

The aforesaid percentages are payable on the entire output for the particular day.

(COPY)

RECEIVED
OCT 1 9 1953

KNOWN ASSAYS TAKEN FROM THE PHANTOM CREEK COPPER, INC., MINE.

Assayer	Date	Oz. Per Ton				Percent		
		Gold	Value	Silver	Value	Copper	Value	Total
Hodges Mill run	1898	0.70	$24.50	11.00	$9.68	15.00	$89.25	$123.43
Klessatel	Nov.1911							
23' in shear zone		0.00	0.00	0.00	0.00	1.50	8.92	8.92
110' level stringer in sheared zone		0.40	14.00	1.30	1.14	15.80	93.01	109.15
110' level vein sheared zone		0.20	7.00	4.10	3.60	10.80	64.26	75.36
Tacoma Smelter	1915							
13 tons shipped in Nov.		1.13	39.55	0.00	0.00	4.22	25.10	64.65
Tacoma Smelter-Nov.	1946							
100# average 5' vein		0.10	3.50	0.60	0.52	16.10	95.79	95.81
Lambert & McKay-Dec.	1946							
Grab sample at shaft		0.01	0.35	1.05	0.93	3.25	19.35	20.63
Colorado Assay Co.	1947	0.01						
24' leached in open pit near surface		0.01	0.35	0.30	0.26	0.70	4.16	4.77
Peridotite sample no sign of mineral		0.02	0.70	0.04	0.04	0.80	4.76	5.50
6' blue and white leached mineral		0.05	1.75	0.60	0.51	2.90	17.25	19.51
Anaconda M.C. Sept.	1950							
Shaft dump, very dirty		0.02	0.70	1.10	0.97	1.63	9.70	11.36
6' leached serpentine in pit		0.01	0.35	0.20	0.16	1.88	11.18	11.69
14' channel in open pit, leached		0.03	1.05	0.40	0.35	2.39	14.32	15.72
Willis Ott Aug.	1951							
Vertical sample, pit		tr.	0.00	0.00	0.00	3.07	18.37	18.37
Grab sample, dump of deep shaft		tr.	0.00	0.00	0.00	2.81	16.72	16.72
Bennetts Lab.-Dec.16,	1952							
Four-50' composit samples		tr.	0.00	0.20	0.16	1.48	8.80	8.96
in 200 ft. cut with bull-		tr.	0.00	0.06	0.05	0.58	3.45	3.50
dozer across vein about		0.00	0.00	0.10	0.09	0.95	5.60	5.69
2' from surface		0.02	0.70	0.06	0.06	0.74	4.40	5.16
Tacoma Smelter-Sept.3,	1953							
Average of 4 higrade veins shipping ore		0.04	1.40	1.40	1.20	8.30	48.39	50.98
Magill-D.M.E.A. Oct.	1953	0.04	1.40	1.40	1.20	7.69	45.75	48.35
Quares sample with black unidentified mineral		0.01	0.35	0.10	0.08	1.11	6.60	7.03

(COPY)

TACOMA SMELTER
American Smelting & Refining Company

Tacoma 1, Washington

E. R. Marble
Manager

Glenn E. Sigler
Asst. Manager

Paul T. Benson
Genl. Supt.

September 3, 1953

Mr. S. J. Holden
Cle Elum, Washington

Quotation No. 350
Copper Ore

Dear Sir:

We have analyzed the sample of ore which we received from you on August 18, 1953, with the following results:

Oz. Pr. Ton		Percent										
Au	Ag	Pb	Cu	Zn	As	Sb	Ni	SiO2	Fe	CaO	S	Al2O3
0.04	1.40	No	8.3	1.5	0.23	No	0.21	28.3	22.9	3.9	10.4	0.8

We are enclosing our Domestic Purchase Schedule, Quotation No. 350 to govern the payments and deductions for ore having a similar analysis.

Under the terms of the schedule, and using the average copper price for the week ending September 2nd (which was 29.67¢), ore having the above analysis would return approximately $28.50 per net dry ton, f.o.b. cars at our plant when shipped in carload quantities.

Should you have any further questions in your mind about shipping this ore, we would be very glad to discuss the matter with you. Kindly advise us.

Very truly yours,

/s/ D. A. Somverville
D. A. Somerville

DAS:GG
cc: Settlement Office (2)
Quotation File

W. G. Rouillard
Manager

R. E. Shinkoskey
Asst. Manager

TACOMA SMELTER
American Smelting & Refining Co.
Tacoma 1, Wash.

(COPY)
C. R. Los
Genl. Superintendent

Ben R. Petrie
Office Manager

D. A. Somerville
Ore Buyer

September 22, 1955

Mr. Chas. McPhail
P. O. Box 1503
Tacoma, Washington

Dear Sir:

The ore sample which you recently sent to us from the Van Epps Mine had the following assays:

Oz. P. Ton		Percent										
Au	Ag	Pb	Cu	Zn	As	Sb	Ni	SiO2	Fe	CaO	S	Al2O3
0.10	1.30	No	17.30	1.2	Tr	Tr	1.17	17.2	24.5	1.0	21.8	0.5

We understand this mine is about 32 miles north of Cle Elum.

This appears to be very good ore, and on the basis of our open copper schedule would net you about $120 per ton after smelter treatment charges. Out of this you would have to pay your mining, hauling and freight costs.

We would be pleased to receive a trial carload shipment of this ore, and on the basis of the analysis of this carload, we would be in a position to tell you how much we can handle per month.

Very truly yours,

/s/ R. E. Shinkoskey

R. E. Shinkoskey

RES:GG

C
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P
Y

BENNETTS CHEMICAL LABORATORY, INC.

Chemists, Assayers and Metallurgists

901 South 9th BR 4507 Tacoma 3, Washington

REPORT OF ANALYSIS

July 28, 1954

Our analysis of the sample of: Ores

From: Mr. Charles McPhail

COPPER ---- 11.6%

To: Mr. Charles McPhail
2301 South Watoma Way
Tacoma, Washington

BENNETTS CHEMICAL LABORATORY, INC.

By M. S. Maddess
Samples held for 90 days

C O P Y

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RECEIVED
OCT 10 1956

LEWIS E. JEKLIN

Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Mr. Chas. McPhail

Date: July 28, 1954

File: 14,836-x

The sample submitted for analysis has been tested and shows the following results:

Received: July 27, 1954

Hand Sample Suphide Ore

Gold - oz. per ton	0.06	$ 2.10
Silver	2.0	$ 1.80
Copper	12.26%	$ 73.56

Gold at $35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .30 per lb.

By: Lewis E. Jeklin

COPY

C
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LEWIS E. JEKLIN

Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Chas. McPhail

Date: Aug. 6, 1954

File: 14,847-x

The sample submitted for analysis has been tested and shows the following restults:

Received: Aug. 5, 1954

Hand Sample Pit

Gold- oz. per ton - - - - -	0.03	- - $ 1.05
Silver - - - - - - - - - - -	0.1	- - $ .09
Copper - - - - - - - - - - -	1.80%	- - $ 10.80

Gold at $35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .30 per lb.

By: Lewis E. Jeklin

C O P Y

C
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Y

LEWIS E. JEKLIN

Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Chas. McPhail
Tacoma, Wash.

Date: Aug. 11, 1954

File: 14,852-x

The sample submitted for analysis has been tested and shows the following results:

Received: Aug. 9, 1954

Hand Sample: Pit

Gold - oz. per ton - - - - - - -	0.01 - -	$ .35
Silver - - - - - - - - - - - - -	0.05 - -	$ .05
Copper - - - - - - - - - - - - -	1.51% -	$ 9.36

Gold at $35.00 per oz.
Silver at $.90 per oz.
Copper at $.30 per lb.

By: Lewis E. Jeklin

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LEWIS E. JEKLIN

Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Mr. McPhail
Tacoma, Wash.

Date: Aug. 16, 1954

File: 14,847-x

The sample submitted for analysis has been tested and shows the following results:

Received: Aug. 6, 1954

Hand Samples - Out of Pit

Spectrographic Qualitative Analysis

Element	Estimated Quantity
Iron	Major Constituent
Silicon)	
Magnesium)	Intermediate Constituents
Copper	1. %
Calcium	1. %
Aluminum	0.5 %
Nickel	0.5 %
Chromium	0.5 %
Cobalt	0.1 %
Manganese	0.1 %
Zinc	0.05 %
Barium	0.05 %
Zirconium	0.01 %
Gallium	0.01 %
Titanium	0.005 %
Vanadium	0.005 %
Germanium	0.005 %
Tin	0.001 %
Molybdenum	0.001 %
Silver	Present
Indium)	
Rare Earths)	
Lead)	
Tungsten)	None Found

C O P Y

By: Lewis E. Jeklin

C
O
P
Y

LEWIS E. JEKLIN

Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Chas. McPhail
Tacoma, Wash.

Date: Aug. 16, 1954

File: 14,847-x

The sample submitted for analysis has been tested and shows the following results:

Received: Aug. 6, 1954

Hand Sample

Spectrographic Qualitative Analysis

Element	Estimated Quantity
Iron	Major Constituent
Silicon) Magnesium)	Intermediate Constituents
Copper	1. %
Calcium	1. %
Aluminum	0.5 %
Nickel	0.5 %
Chromium	0.5 %
Cobalt	0.1 %
Manganese	0.1 %
Zinc	0.05 %
Barium	0.05 %
Zirconium	0.01 %
Gallium	0.01 %
Titanium	0.005 %
Vanadium	0.005 %
Germanium	0.005 %
Tin	0.001 %
Molybdenum	0.001 %
Silver	Present
Indium) Rare Earths) Lead) Tungsten)	None Found

By: Lewis E. Jeklin

COPY

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RECEIVED
OCT 19 1953

LEWIS E. JEKLIN

Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Chas. McPhail
Tacoma, Wash.

Date: Aug. 16, 1954

File: 14,863-x

The sample submitted for analysis has been tested and shows the following results:

Received: Aug. 13, 1954

Samples Marked:

Concentrate Bottle		
Gold - oz. per ton - - -	0.02 - -	$ .70
Silver - - - - - - - - -	0.25 - -	$ .23
Copper - - - - - - - - -	3.5 % -	$21.00
Small Piece		
Gold - oz. per ton - - -	Trace	
Silver - - - - - - - - -	0.1	$ .09
Copper - - - - - - - - -	0.34 %	$ 2.04
Dump (Lower)		
Gold - oz. per ton - - -	Trace	
Silver - - - - - - - - -	Trace	
Copper - - - - - - - - -	0.04 %	
Upper Dump		
Gold - oz. per ton - - -	0.02 - -	$ .70
Silver - - - - - - - - -	0.80 - -	$ .72
Copper - - - - - - - - -	0.76 % -	$ 4.56
White Rag - Creek Bed Bank		
Gold - oz. per ton - - -	0.03 - -	$ 1.05
Silver - - - - - - - - -	0.1 - -	$ .09
Copper - - - - - - - - -	0.07 - -	
Small Paper Sack		
Gold - oz. per ton - - -	0.04 - -	$ 1.40
Silver - - - - - - - - - -	0.60 - -	$ .54
Copper - - - - - - - - - -	2.06 - -	$12.36
Red Rag - Creek Bed		
Gold - oz. per ton - - -	0.02 - -	$ .70
Silver - - - - - - - - - -	0.15 - -	$ .13
Copper - - - - - - - - - -	6.46 % -	$38.76

Gold at $35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .30 per lb.

By: Lewis E. Jeklin

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BENNETTS CHEMICAL LABORATORY, INC.

Chemists, Assayers, and Metallurgists
901 South 9th BR 4507 Tacoma 3, Washington

REPORT OF ANALYSIS

August 19, 1954

Our analysis of the sample of: Hand Sample

From: Charles McPhail

Copper ----------0.7%

BENNETTS CHEMICAL LABORATORY, Inc.

By: Galen B. Prine
Samples held for 90 days

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BENNETTS CHEMICAL LABORATORY, INC.

Chemists, Assayers, and Metallurgists
901 South 9th BR 4507 Tacoma 3, Washington

REPORT OF ANALUSIS

September 7, 1954

Our analysis of the sample of: Cu. Ore

From: Charles McPhail

Marked: As shown

Out of Pit

Sample No.	Gold	Silver	Copper
1	Trace	0.16	0.6 %
2	0.08	0.78	23.0 %

Note. Gold & silver values given in troy ounces per ton of 2000 pounds.

BENNETS CHEMICAL LABORATORY, Inc.

By: Galen B. Prine

Samples held for 90 days

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LEWIS E. JEKLIN

Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Chas. McPhail
Tacoma, Washington

Date: Sept. 16, 1954

File: 14,900-x

The sample submitted for analysis has been tested and shows the following results:

Received: Sept. 14, 1954

Sample Marked: Bottom of Pit

" A " --	Gold - oz. per ton	0.03	-	$ 1.05
	Silver - - - - - - - -	0.10	-	$ .09
	Copper - - - - - - - -	0.76	%	$ 4.56

Cut made by Cat Driver

" B " --	Gold - oz. per ton	0.01	-	$ .35
	Silver - - - - - - -	Trace		
	Copper - - - - - - -	0.13	%	$ .78

Wall of Pit

"C" - -	Gold - oz. per ton	0.03	-	$ 1.05
	Silver - - - - - - - -	Trace		
	Copper - - - - - - - -	0.48	%	$ 1.68

Gold at $35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .30 per lb.

By: Lewis E. Jeklin

C O P Y

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LEWIS E. JEKLIN

Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Chas. McPhail
Tacoma, Wash.

Date: Dept. 22, 1954

File: 14,912-x

The sample submitted for analysis has been tested and shows the following results:

Received: Sept. 20, 1954

Sample Marked: Tailings

Gold - oz. per ton - - -	0.04 -	$ 1.40
Silver - - - - - - - - - -	1.0 -	$ .90
Copper - - - - - - - - - -	1.17 %	$ 7.02

Gold at $ 35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .30 per lb.

By: Lewis E. Jeklin

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LEWIS E. JEKLIN

Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Chas. McPhail
Tacoma, Washington

Date: Sept. 30, 1954

File: 14,922-x

The sample submitted for analysis has been tested and shows the following results:

Received: Sept. 28, 1954

Marked:	Pit PW-1	Gold - oz. per ton -	0.01 --	$ .35
		Silver - - - - - -	Trace	
		Copper - - - - - -	0.68 % -	$ 4.08
	PW-2	Gold - oz. per ton -	0.01 --	$ .35
		Silver - - - - - - -	Trace	
		Copper - - - - - - -	0.35 % -	$ 2.10
	Rock 9/30/54	Gold - oz. per ton -	0.08 --	$ 2.80
		Silver - - - - - - -	1.40 --	$ 1.26
		Copper - - - - - - -	11.21 % -	$67.20

Gold at $35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .30 per lb.

By: Lewis E. Jeklin

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OCT 10 1954

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Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Mr. McPhail
Tacoma, Washington

Date: Oct. 5, 1954

File: 14,927-x

The sample submitted for analysis has been tested and shows the following results:

Received: Oct. 1, 1954

Sample # PW-3 Pit

Gold - oz. per ton ---	0.06 --	$ 2.10
Silver ----------	1.0 --	$ .90
Copper ----------	13.55 % -	$ 81.30

PW-4 Pit

Gold - oz. per ton ---	0.01 --	$ .35
Silver ----------	Trace	
Copper ----------	0.40 % -	$ 1.68

Gold at $35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .30 per lb.

By: Lewis E. Jeklin

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Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Mr. McPhail
Tacoma, Washington

Date: Oct. 7, 1954

File: 14,934-x

The sample submitted for analysis has been tested and shows the following results:

Received: Oct. 6, 1954

Sulphide Ore - Out of Dump			
	Gold - oz. per ton	0.03	$ 1.05
	Silver	0.50	$ .45
	Copper	1.54 %	$ 9.24
Oxidized Ore - From Stope			
	Gold - oz. per ton	0.01	$ .35
	Silver	Trace	
	Copper	0.55 %	$ 3.30

Gold at $35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .30 per lb.

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By: Lewis E. Jeklin

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Chemist Assayer Testing
517 Provident Building Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Mr. McPhail
Tacoma, Washington

Date: Oct. 10, 1954

File: 14,939-x

The sample submitted for analysis has been tested and shows the following results:

Received: Oct. 8, 1954

Small Sample -	Gold - oz. per ton - - -	0.08 - -	$ 2.80
	Silver - - - - - - - - - -	0.40 - -	$ .36
	Copper - - - - - - - - - -	13.76 % -	$ 82.56
Large Rock - West Side of Pit			
	Gold - oz. per ton - - -	0.09 - -	$ 3.15
	Silver - - - - - - - - - -	0.25 - -	$ .23
	Copper - - - - - - - - - -	7.23 % -	$ 43.38

Gold at $35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .30 per lb.

By: Lewis E. Jeklin

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Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Mr. McPhail
Tacoma, Washington

Date: Oct. 14, 1954
File: 14,943-x

The sample submitted for analysis has been tested and shows the following results:

Received: Oct. 11, 1954

Marked:

Pit Large Rocks -	Gold - oz. per ton	0.04		$ 1.40
	Silver	0.25		$ .23
	Copper	2.75	%	$ 16.50
Uncovered by Bulldozer	Gold	Trace		
	Silver	Trace		
	Copper	0.04	%	
Right of Higrade	Gold - oz. per ton	0.01		$ .35
	Silver	0.1		$ .09
	Copper	0.55	%	$ 3.30
PW-# 5	Gold - oz. per ton	0.01		$ .35
	Silver	0.15		$ .14
	Copper	0.38	%	$ 2.28
H-6-C	Gold - oz. per ton	0.02		$ .70
	Silver	0.15		$ .14
	Copper	2.64	%	$ 15.84
L-6-C	Gold - oz. per ton	0.01		$ .35
	Silver	0.1		$ .09
	Copper	0.27	%	$ 1.62

Gold at $35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .30 per lb.

By: Lewis E. Jeklin

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Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Mr. McPhail
Tacoma, Washington

Date: Oct. 18, 1954

File: 14,951-x

The sample submitted for analysis has been tested and shows the following results:

Received: Oct. 15, 1954

Sample Marked: B-1 - Pit

Gold - oz. per ton - -	0.03 - -	$ 1.05
Silver - - - - - - - - -	0.1 - -	$ .09
Copper - - - - - - - - -	2.06 % -	$ 12.36

B-2

Gold - oz. per ton - -	0.02 - -	$ .70
Silver - - - - - - - - -	Trace	
Copper - - - - - - - - -	0.70 % -	$ 4.20

D

Gold - oz. per ton - -	0.04 - -	$ 1.40
Silver - - - - - - - - -	0.15 - -	$ .14
Copper - - - - - - - - -	3.44 % -	$ 20.64

Gold at $35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .30 per lb.

By: Lewis E. Jeklin

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LEWIS E. JEKLIN

Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Mr. McPhail
Tacoma, Wash.

Date: Oct. 26, 1954

File: 14,958-x

The sample submitted for analysis has been tested and shows the following results:

Received: Oct. 25, 1954

Marked: Pit

Large Rocks	Gold - oz. per ton	0.01	$ .35
	Silver	0.1	$ .09
	Copper	0.41 %	$ 2.46
3 - DH	Gold - oz. per ton	0.08	$ 2.80
	Silver	2.65	$ 2.40
	Copper	6.47 %	$38.82
B - 3	Gold - oz. per ton	TRACE	
	Silver	Trace	
	Copper	0.20 %	
2 - DH	Gold - oz. per ton	0.02	$ .70
	Silver	0.20	$ .18
	Copper	1.23 %	$ 7.38
1 - DH	Gold - oz. per ton	0.01	$ .35
	Silver	0.1	$ .09
	Copper	0.66 %	$ 3.96

Gold at $35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .30 per lb.

C O P Y

By: Lewis E. Jeklin

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LEWIS E. JEKLIN

Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Mr. McPhail
Tacoma, Washington

Date: Oct. 30, 1954

File: 14,961-x

The sample submitted for analysis has been tested and shows the following results:

Received: Oct. 28, 1954

Marked: Pit Samples

Washed Sample:	Gold - oz. per ton -	0.04 -	$	1.40
	Silver - - - - - - - -	0.15 -	$	.14
	Copper - - - - - - - -	0.62 %	$	4.92
	Gold - oz. per ton -	0.03 -	$	1.05
	Silver - - - - - - - -	0.30 -	$	.27
	Copper - - - - - - - -	1.10 %	$	6.60
	Gold - oz. per ton -	0.04 -	$	1.40
	Silver - - - - - - - -	0.30 -	$	.27
	Copper - - - - - - - -	1.23 %	$	7.38

Gold at $35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .30 per lb.

By: Lewis E. Jeklin

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All quotations on ores & metals not under contract subject to change without notice.

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TACOMA SMELTER

American Smelting & Refining Co.

Tacoma 1, Wash.

E. R. Marble
Manager

Glenn E. Sigler
Asst. Manager

C. R. Low
Genl. Supt.

November 4, 1954

Mr. C. W. McPhail
P. O. Box 1503
Tacoma 1, Washington

Dear Mr. McPhail:

The two 100 lb. samples of mineralized rock from Pit which you brought in here on October 25th have the following analysis:

Oz. Per Ton		Percent			
Au	Ag	Cu	Zn	As	Sb
0.01	0.25	0.96	No	Tr	No
0.03	0.17	1.02	No	Tr	No

Neither of these samples contain enough values to warrant shipping ore represented by them.

Very truly yours,

/s/ D. A. Somerville

D. A. SOMVERVILLE

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LEWIS E. JEKLIN

Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Mr. McPhail
Tacoma, Washington

Date: Nov. 4, 1954

File: 14,972-x

The sample submitted for analysis has been tested and shows the following results:

Received: Nov. 1, 1954

Sample of Rock - from Tailings Van Epps 2500' Tunnel

Gold - oz. per ton - - -	0.01 -	$ .35
Silver - - - - - - - - - -	0.1 -	$ .09
Copper - - - - - - - - - -	1.76 %	$ 10.06

Fines - Tailings from Tunnel

Gold - oz. per ton - - -	0.08 -	$ 2.80
Silver - - - - - - - - - -	0.15 -	$ .14
Copper - - - - - - - - - -	0.55 %	$ 3.30

Gold at $35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .30 per lb.

By: Lewis E. Jeklin

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LEWIS E. JEKLIN

Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

CERTIFICATE OF ANALYSIS

For: Mr. McPhail
Tacoma, Wash.

Date: Nov. 5, 1954

File: 14,961-x

The sample submitted for analysis has been tested and shows the following results:

Received: Oct. 29, 1954

Large Rock Sample of Oct. 25, 1954

Qualitative Spectrographic Analysis

Element	Estimated Quantity
Silicon) Magnesium)	Major Constituents
Iron	Intermediate Constituent
Copper	1.0 %
Aluminum	0.5 %
Manganese	0.5 %
Chromium	0.5 %
Nickel	0.1 %
Calcium	0.05 %
Zinc	0.01 %
Gallium	0.005 %
Cobalt	0.005 %
Boron	0.005 %
Vanadium	0.005 %
Titanium	0.005 %

Wet Assay for Copper	0.41 %
Gold - oz. per ton	0.01
Silver	0.10

By: Lewis E. Jeklin

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Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Mr. C. McPhail
Tacoma, Wash.

Date: Mar. 30, 1955

File: 15,152-x

The sample submitted for analysis has been tested and shows the following results:

Received: Mar. 14, 1955

Hand Sample Heavy Iron Ore - Chipped out of floor in Pit

Gold - oz. per ton - - - -	0.12 - -	$ 4.20
Silver - - - - - - - - -	0.40 - -	$ .36
Copper - - - - - - - - -	1.77 % -	$ 12.39
Nickel - - - - - - - - -	TRACE ONLY	

Gold at $35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .35 per lb.

By: Lewis E. Jeklin

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LEWIS E. JEKLIN

Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Mr. Chas. McPhail
Tacoma, Wash.

Date: May 10, 1955

File: 15,219-x

The sample submitted for analysis has been tested and shows the following results:

Received: May 9, 1955

Hand Sample out of Vein in Pit

Gold - oz. per ton	0.01	$ .35
Silver	0.50	$ .45
Copper	19.06	$133.42

Gold at $35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .35 per lb.

By: Lewis E. Jeklin

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BENNETTS CHEMICAL LABORATORY, INC.

Chemists, Assayers, and Metallurgists
901 South 9th BR 4507 Tacoma 5, Washington

REPORT OF ANALYSIS

May 25, 1955

Our analysis of the sample of: Copper Ores & Copper Water

From: Mr. Charles McPhail

Marked: as follows:

	COPPER %
Cuprite ----------	45.17
Water ----------	0.04

To: Mr. Charles McPhail
S. 138th & E Airport Road
Tacoma, Washington

BENNETTS CHEMICAL LABORATORY, Inc.

By M. S. Maddess

Samples held for 90 days

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LEWIS E. JEKLIN

Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: McPhail Engineering
Tacoma, Wash.

Date: May 27, 1955

File: 15, 232-x

The sample submitted for analysis has been tested and shows the following results:

Received: May 23, 1955

Copper Water Sample

Copper - - - - - - 0.005 oz. per gallon

Copper ppt. in Bottle

Copper - - - - - - 50.51 %

By: Lewis E. Jeklin

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BENNETTS CHEMICAL LABORATORY, INC.

Chemists, Assayers, and Metallurgists
901 South 9th BR 4507 Tacoma 5, Washington

REPORT OF ANALYSIS

July 7, 1955

Our analysis of the sample of: Copper Ores

From: McPhail Engineering

Marked: Vein Crosscut

North East side of Pit

Gold	---------	Trace
Silver	---------	0.36 ozs. troy per 2000 lbs.
Copper	---------	2.04%

To: Mr. Charles McPhail
Tacoma 1, Washington

BENNETTS CHEMICAL LABORATORY, Inc.

By M. S. Maddess

Samples held for 90 days

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BENNETTS CHEMICAL LABORATORY, INC.

Chemists, Assayers, and Metallurgists
901 South 9th BR 4507 Tacoma 5, Washington

REPORT OF ANALYSIS

July 30, 1955

Our analysis of the sample of: Ore

From: Mr. Charles McPhail

Marked: July 26, 1955

Southwest side of Pit

Gold	--------	Trace
Silver	--------	0.08 Ozs. troy per 2000 lbs.
Copper	--------	0.70%
Nickle	--------	0.45%

To: Mr. Charles McPhail
Tacoma, Washington

BENNETTS CHEMICAL LABORATORY, Inc.

By M. S. Maddess

Samples held for 90 days

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Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Mr. Chas. McPhail
Tacoma, Wash.

Date: Sept. 6, 1955

File: 15,360-x

The sample submitted for analysis has been tested and shows the following results:

Received: Aug. 29, 1955

Marked: West Wall of Pit

Gold - oz. per ton - - -	0.01 -	$ .35
Silver - - - - - - - -	0.1 -	$ .09
Copper - - - - - - - -	0.55 %	$ 4.40

Qualitative Spectrographic Analysis

Element	Approximate Quantity
Silicon - -)	
Magnesium -) -	Major Constituents
Aluminum - -)	
Copper - -) -	Intermediate Constituents
Iron - -	1.0 %
Calcium -	0.5 %
Manganese - -	0.05 %
Lead - - -	0.05 %
Vanadium - -	0.005 %
Nickel - - -	0.001 %

Tungsten, Titanium, Molybdenum,
Barium, Zinc, Rare Earths,
None Found

Marked:

50 ft. level in shaft:

Gold - oz. per ton - - -	0.02 - -	$ .70
Silver - - - - - - -	0.30 - -	$ .27
Copper - - - - - - -	1.10 % -	$ 8.80

Vein Next to Shaft:

Gold - oz. per ton - - -	0.01 - -	$ .35
Silver - - - - - - -	0.10	$ .09
Copper - - - - - - -	2.45 %	$ 19.60

Gold at $35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .40 per lb.

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By: Lewis E. Jeklin

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BENNETTS CHEMICAL LABORATORY, INC.

Chemists, Assayers, and Metallurgists
901 South 9th BR 4507 Tacoma 5, Wash.

REPORT OF ANALYSIS

September 9, 1955

Our analysis of the sample of: Ores

From: Mr. Charles McPhail

Marked: As follows:

Sample No.	Gold	Silver	Copper
	Ozs. troy per 2000 lbs.		%
Vein Crosscut ----	-	-	3.89
#4 ----	Trace	0.20	0.92
#5 ----	Trace	0.08	0.21

To: Mr. Charles McPhail
Tacoma, Washington

BENNETTS CHEMICAL LABORATORY, Inc.

By M. S. Maddess

Samples held for 90 days

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Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Mr. Chas. McPhail
Tacoma, Wash.

Date: Sept. 28, 1955

File: 15,436-x

The sample submitted for analysis has been tested and shows the following results:

Received: Sept. 26, 1955

Hand Sample from 600 ft. in Tunnel.

Gold - oz. per ton - - - - -	0.01	-	$ .35
Silver - - - - - - - - - -	0.1	-	$ .09
Copper - - - - - - - - - -	0.24	%	$ 1.92
MOLYBDENUM - - - Mo - - -	0.07	%	

Gold at $35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .40 per lb.

By: Lewis E. Jeklin

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LEWIS E. JEKLIN

Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Mr. Chas. McPhail
Tacoma, Wash.

Date: Oct. 24, 1955

File: 15,450-x

The sample submitted for analysis has been tested and shows the following results:

Received: Oct. 4, 1955

Hand Sample Sulphides

25' in Crosscut bottom of Shaft

Gold - oz. per ton - - -	0.02	- -	$ .70
Silver - - - - - - - -	0.30	- -	$ .27
Copper - - - - - - - -	1.52	% -	$ 12.16
Nickel - - - - - - - -	0.23	% -	$ 2.30

Nickel @ .60
Gold at $35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .40 per lb.

By: Lewis E. Jeklin

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LEWIS E. JEKLIN

Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Mr. Chas. McPhail
Tacoma, Washington

Date: Oct. 24, 1955

File: 15,477-x

The sample submitted for analysis has been tested and shows the following results:

Received: Oct. 17, 1955

Marked: Drift Sample bottom of shaft
Hard Intrusion Rock
22' Vein Crosscut in bottom of shaft

Gold - oz. per ton - - -	0.05 - -	$ 1.75
Silver - - - - - - - -	0.25 - -	$ .22
Copper - - - - - - - -	0.52 % -	$ 4.16

Gold at $35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .40 per lb.

By: Lewis E. Jeklin

COPY

C
O
P
Y

LEWIS E. JEKLIN

Chemist Assayer Testing
517 Provident Bldg. Main 5772

TACOMA ASSAY OFFICE
Tacoma, Washington

ASSAY CERTIFICATE

For: Mr. Chas. McPhail
Tacoma, Washington

Date: Oct. 31, 1955

File: 15,493-x

The sample submitted for analysis has been tested and shows the following results:

Received: Oct. 27, 1955

Samples Marked:

End of Tunnel -	Gold - oz. per ton -	Trace	
	Silver - - - - - - -	0.15	$ .12
	Copper - - - - - - -	0.40 %	$ 3.20
70 ft. from End of Tunnel -	Gold - oz. per ton - -	Trace	
	Silver - - - - - - -	0.15	$ .12
	Copper - - - - - - -	0.37 %	$ 2.96

Gold at $35.00 per oz.
Silver at $ .90 per oz.
Copper at $ .40 per lb.

By: Lewis E. Jeklin

COPY

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
3/14	Hummel	500
3/18	Selfridge	130
"	Johnson	110
18	Mittendorf	100
3/18	C	225

Kilsgaard
Bishop

MAR 18 1957

Mr. Charles M. McPhail
McPhail Engineering Company
Post Office Box 1503
Tacoma, Washington

Re: Docket No. DMEA-4509 (Copper)
McPhail Engineering Company
Fortune Creek (Pickwick) Property
Chelan & Kittitas Counties, Washington

Dear Mr. McPhail:

Your application for aid for an exploration project and other data available to us in Washington concerning your application have been reviewed.

Projects approved by the Defense Minerals Exploration Administration must, in its judgment, show definite promise of yielding materials of acceptable grade in quantities that will significantly improve the mineral supply position for the National Defense Program.

Careful study of all our information, although noting copper mineralization on your property, indicates to us that the probability of disclosing significant ore reserves is not sufficiently promising to justify Government participation. We regret to advise you, under these circumstances, that your application for exploration assistance is denied.

We wish to thank you for your interest in the Defense Mineral Program and for bringing your property to our attention.

Sincerely yours,

C. O. Mittendorf

Administrator

WRGriswold/er 3/14/57
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. McMahon, USBM
Mr. Kiilsgaard, USGS
Region I, NW Dist. (2)
Chron.
Senator W.M. Magnuson

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
3/14	Griswold	508
3/18	Hudgens	130
	Johnson	110
18	Hittendorf	104
		225

MAR 18 1957

Kiilsgaard
Bishop

Hon. Warren G. Magnuson
United States Senate
Washington, D. C.

Re: Docket No. DMEA-4509 (Copper)
McPhail Engineering Company
Fortune Creek (Pickwick) Property
Chelan & Kittitas Counties, Washington

Dear Senator Magnuson:

With reference to our letter to you of November 19, 1956, concerning the cited property, we are enclosing a copy of our letter of this date to Mr. McPhail.

We regret that our reports and other available information indicate that Government assistance is not warranted in this particular case.

I am sure you will feel free to call upon me at any time when I might be of service.

Sincerely yours,

C. O. Hittendorf (for)

Administrator

Enclosure

WRGriswold/er 3/14/57
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region I, NW Dist. (2)
Chron.

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

500

Date	Surname	Code

March 14, 1957

Memorandum

To: The Administrator

From: Chief, Base Metals Division

Kulzgaard
Bishop

Subject: Denial of Application, Docket No. DMEA-4509, McPhail Engineering Company, Fortune Creek (Pickwick) Property, Chelan & Kittitas Counties, Washington

The DMEA formerly had a contract on this property under which some bulldozing was done, results inconclusive. The Applicant now wants help with underground work.

The examining engineer recommends denial; however, the Field Team would be willing to do a little underground drilling.

A few pods of copper ore have been mined (maybe 2,000 tons in all) from a sheared zone in peridotite. As contrasted to this, a large amount of exploratory work has already been done; aside from the bulldozing there have been three diamond drill holes from surface, 330 feet of combined shaft and raise, some 300 feet of drifting and a 2100-foot adit.

It seems typical of properties with small ore pods where you have to "go a mile to get a ton". Probably other small ore pods may exist but we find it difficult to believe they would be more than of a casual and sporadic nature.

It is interesting to note that the long adit shows a wide diorite dike (180 ft.) that contains copper mineralization. Careful fractional sampling was not done, but preliminary sampling indicates a probability of an over-all grade of 0.2 - 0.3 per cent copper. Obviously, such a grade is of no present importance.

W. R. Griswold

W. R. Griswold

WRG/er
Copy to: Docket
Chron.

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 12 1957

DATE	INITIALS	CODE
3/12	C	220
		500
March 11, 1957		

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

From: Commodity Specialist, Branch of Base Metals

Subject: Review of application examination report, Docket No. DMEA 4509 (copper), McPhail Engineering Company, Fortune Creek (Pickwick) Property, Chelan and Kittitas Counties, Washington

For a number of reasons the examiners feel that the applicant's proposed exploration program is not justified:

1. The examination of accessible workings did not indicate any structure or mineralization extending from the stoped area.

2. There is no particular indication that other ore bodies would be found by exploration along a projection of the stoping.

3. Assays of a thick copper-bearing dike near the Van Epps adit portal indicate that it is of insufficient over-all grade to constitute low grade ore.

The Field Team suggested some additional sampling in the Van Epps adit and some diamond drilling from the end of the 110 level to test the ground under the old stopes but stated they would not argue vigorously for such a program.

Although it appears that both the examiners and the Field Team feel the property has some merit the examination does not justify an exploration program on the available information and it is recommended that the application be denied without prejudice to the property.

A. D. McMahon

A. D. McMahon

Copy to: Division of Minerals
Branch of Base Metals (2)
Thor Kiilsgaard, U.S.G.S.
F. D. Lamb
Files

IN REPLY REFER TO:

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 4 1957

DATE	INITIALS	CODE
3/4	C	220
3/4	WRG	500

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

March 1, 1957
Re: DMEA 4509
McPhail Engineering Company
Pickwick Property
Chelan & Kittitas Counties, Wash.
$147,359.00 - Copper

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team Report

The applicant requested assistance in exploring further, by diamond drilling and underground work, a prospect on which much work has been done and from which small shipments of good grade copper ore have been made. The exploratory and development work already done includes 3 diamond drill holes, a 330 foot shaft-raise, a 300-foot adit, and the 2100-foot Van Epps adit.

The shaft, about 95 feet deep, developed a short good grade lense of ore, (4-5%) all of which was probably mined. The lense occurs in sheared peridotite. In the Van Epps adit, low grade (0.18 to 0.36%) copper mineralization occurs in peridotite and in diorite dikes which cut the peridotite. The dike near the portal of the adit is at least 180 feet wide.

The applicant proposed drilling in search of the downward extension of the lense mined in the shaft and to test the wide dike near the portal of the long adit. The examiners and the Field Team tentatively recommend underground drilling.

It appears likely the known pods of good grade material near the shaft have been mined out and no continuing structure, laterally or downward, seems to have been revealed by the drilling and underground openings. The cost of the work and the value of the production are not commensurable and it appears unlikely further work will reduce the disproportion materially, if at all.

I recommend that the application be denied.

N. E. Nelson

N. E. Nelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 25 1957

DATE	INITIALS	CODE
2/25	C	720
		130
3/4	C	220
3/14	WRW	500

February 19, 1957

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-4509 (Copper)
McPhail Engineering Company
Fortune Creek (Pickwick) Property
Chelan & Kittitas Counties, Washington

Dear Mr. Selfridge:

The above-referenced property was examined by E. A. Magill, Mining Engineer, U. S. Bureau of Mines and Donald F. Kellum, Geologist, U. S. Geological Survey, on October 15, 1956. Enclosed is a memorandum from Donald F. Kellum recommending denial of the application for exploration assistance. The examiners base their denial on the fact that the copper-bearing diorite dikes in the Van Epps adit are too low in grade to be of interest and that the ore bodies explored in the shaft working, which occur in sheared peridotite are too small and scattered to justify the applicant's proposal to test their downward extension by drilling from the end of the Van Epps adit.

There is no question but that the examiners' adverse recommendation of the applicant's proposal is justified. Some of the samples from the diorite dike in the Van Epps adit show interesting amounts of copper. This is not enough to justify the proposed drilling but does suggest that this wide dike should be sampled more adequately, and with samples not exceeding 25 feet in length. Unless it can be demonstrated by such sampling that the dike has potentially commercial quantities of copper, diamond drilling under and on the sides of the level seems pointless. Sampling of the nature described above is outside the scope of a DMEA examination.

Likewise the probably small size of the shaft ore shoots does not appear to warrant the cost of rehabilitating and ventilating the Van Epps adit and installing the track and air and water lines that would be required if drilling were done from the end of the adit; nevertheless, ore has been mined from the shaft area. The lateral extent of the stoping cannot be determined, but there is evidence of fairly continuous stoping from the 110 level to the surface and the

Reviewed by
DMEA OPERATING COMMITTEE
3-1-57
(date)

grade of the ore lenses according to the meager information available may have run between 4 and 5 percent copper. Unconfirmed reports state that 10,000 tons were mined. This seems excessive, but it is possible that from 1,000 to 2,000 tons were taken out. The widespread, low-grade mineralization is intriguing, suggesting the possibility that somewhere in this area there might be minable bodies of ore. Four or five holes drilled from the end of the 110 level to test the ground under the old stopes to the presumed hanging wall of the dike would determine at small cost whether there was sufficient continuity to the ore lenses to justify a more extensive program. This possibility was not considered by the examiners but, although admittedly risky, would show whether the more expensive exploration from the adit would be justified. The Field Team would not argue vigorously for such a program but suggests that it might be worth considering.

By Field Team, Region I, NW District

for D R MacLaren
A. E. Weissenborn, Executive Officer
U. S. Geological Survey

Wing G. Agnew
Wing G. Agnew, Member
U. S. Bureau of Mines

Enclosures

Distribution:
USBM (2)
USGS (SRO)
Kellum

DMEA

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 25 1957

DATE	INITIALS	CODE
		130
		220

ON-SITE Report

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
So. 157 Howard Street
Spokane 4, Washington

February 8, 1957

MEMORANDUM

To: DMEA Field Team, Region I, Northwest District

From: Donald F. Kollum, Geologist, U. S. Geological Survey

Subject: Application examination report, Docket No. DMEA-4509 (copper), McPhail Engineering Company, Fortune Creek (Pickwick) Property, Chelan and Kittitas Counties, Washington

INTRODUCTION

The McPhail Engineering Company, P. O. Box 1503, Tacoma, Washington, is organized in the State of Washington and is owned entirely by Charles McPhail.

The applicant's rehabilitation work described in this report is similar to that specified in a former Defense Minerals Exploration Administration contract on the Pickwick property (Docket No. DMEA-1353). The former contract, issued to S. J. Holden and Associates operating under the name of Phantom Creek Copper, Inc., was for reopening old workings to permit sampling and geologic examination and was rescinded after a limited amount of surface work had been completed when the present applicant leased the property in 1954.

SUMMARY AND CONCLUSIONS

Before the former DMEA contract was rescinded, bulldozing had indicated several low-grade oxidized copper lenses and a number of copper and iron-stained stringers within an area about 250 feet wide near a caved shaft and workings. To obtain information about the subsurface extent of the oxidized copper lenses the applicant did additional bulldozing at the shaft collar, rehabilitated the shaft and a small portion of its workings, and drilled three diamond drill holes in the shaft area. No work has been done in the Van Epps adit.

Reviewed by
DMEA OPERATING COMMITTEE
3-1-57
(date)

The rehabilitation at the shaft shows that ore had been stoped from near the surface down to the 110-foot level, but because exposures are limited, it is not certain if either the ore or stoping was continuous through this entire distance. Laterally, a stope 8-12 feet wide has been exposed to the present 80-foot level face 23 feet southeast of the shaft, while diamond drilling indicates that workings extend at least 77 feet beyond the face. No ore was seen in this stope from which most or all of the ore-grade material has probably been mined. Samples of muck from the 80-foot level indicate that the stoped ore could have averaged 5 percent copper. Nothing is known of either the extent or the continuity of the stoping or the ore in the caved workings southeast of the shaft.

An examination of the accessible workings did not indicate any stope-aligned structure or mineralization extending from the stoped area. Disseminated sulfides containing copper in sub-ore grade amounts were found in weak shears striking at distinct angles to the stoping and in randomly fractured and sheared peridotite adjacent to the stoped area. The applicant feels that these sulfides may have a zonal relationship to the ore bodies, but since sparse sulfides in similarly sheared peridotite are distributed widely throughout the area, the presence of disseminated sulfides in the shaft area is apparently of no particular significance as a specific guide to higher grade ore bodies; thus, at present there are no indications that the stoped ore is within a "zone" which is either separable or distinguishable from other sheared areas on the property, nor is there any particular indication that other ore bodies would be found by exploration along a projection of the stoping. It is possible that other ore bodies or a zone of minable low-grade ore exists in the peridotite, but on the basis of present information the probability of a discovery is considered poor.

Assays of a thick copper-bearing dike near the Van Epps adit portal indicate that it is of insufficient over-all grade to constitute low-grade ore.

RECOMMENDATION

It is recommended that the application be denied. If further exposures are made accessible in the shaft area and the Van Epps crosscut, a re-examination of the property would be warranted.

EXAMINATION

An examination was made on October 16, 1956, by E. A. Magill, mining engineer, Bureau of Mines, and D. F. Kellum, geologist, Geological Survey. The examiners were accompanied by Cline Tedrow, consulting engineer for the applicant.

The examination consisted of mapping the reopened shaft workings on the 80- and 110-foot levels (fig. 1); making a traverse from the shaft collar to three surface diamond drill holes; and inspecting about 1,500 feet of the Van Epps crosscut.

The inspection in the Van Epps adit was necessarily brief because of bad air, particularly beyond 1,500 feet; a lack of oxygen prevented access to the face. A Bureau of Mines map (pl. 1) showing the geology of about 1,865 feet of the crosscut, was used as a base map.

Approximately 5 hours were spent on the property.

LOCATION AND ACCESSIBILITY

The property is on the Chelan-Kittitas County boundary in secs. 9, 10, 11, and 16, T. 23 N., R. 15 E. W.M., Leavenworth Mining District, Chelan and Kittitas Counties, Washington. It may be reached from Cle Elum, the nearest sizable town, by following State Highway 2E north 9 miles to Cle Elum lake, thence north on the Cle Elum River road, a continuation of State Highway 2E, 17.5 miles to Fortune Creek, thence 2.2 miles easterly up Fortune Creek to the applicant's access road, and then 4.7 miles easterly by poor to fair dirt road over Van Epps Pass (altitude 6,000 feet) to the camp area at an altitude of about 5,400 feet.

Mountainous terrain accentuated by glaciation is characteristic of the area. The camp and shaft are on a local flat area mantled by glacial debris up to 20 feet thick. Glacial overburden is in excess of 30 feet at lower elevations down to and below the Van Epps adit portal.

After the first snowfall, usually in November, access to the area may be blocked by heavy snows which occur until May and by drifts which remain as late as mid-July.

PROPERTY RIGHTS

Drawing No. 1-A accompanying the application shows a group of 20 unpatented claims held by the applicant. The applicant's exploration area lies entirely within the following unpatented claims -- all located in sec. 9 except for part of Yankee Girl, which is also in sec. 10.

somewhere beyond the present drift face. The stope walls are firm and require little support in contrast to adjacent moderately heavy ground. An examination of the few visible portions of the shaft walls and of the stope walls above the 80-foot level failed to indicate definitely either an extension of the mineralized material or the presence of a stope-aligned structure. A grab sample of mineralized peridotite which the applicant had saved from rehabilitation of the 80-foot level may approximate the grade of ore originally mined from this part of the stope. This sample (S 754-A) contained 0.02 ounce gold and 3.10 ounces silver per ton, and 4.62 percent copper and 0.16 percent nickel. A 300-pound sample of this material taken by the applicant assayed a trace gold and 3.20 ounces silver per ton, and 5.7 percent copper and 0.04 percent nickel.

Two weak, steeply dipping shears, one intersecting the west wall of the 80-foot level near the face and the other at the face of the 110-foot level, were the only mineralized structures seen in the shaft workings. Both have a N. 65° W. strike in contrast to the more northerly stope trend. The shear on the 80-foot level dips 70°-80° NE. and contains several inches of chalcopyrite where it is exposed in a shallow pit dug in the drift sill. It is probable that some of the material which has been removed from this pit was included in the applicant's stockpile tested by sample 754-A. A downward extension of this shear was not exposed on the 110-foot level. Water-worked fill on both sides of the 110-foot level from 10 to 20 feet southwest of the shaft may indicate either slabbing or limited stoping in the footwall of a flat northwesterly dipping fault; the 80-foot level shear is in the hanging wall of this fault. At the face of the 110-foot level, also in the hanging wall of the flat fault, is a second mineralized shear at least 12 feet wide which consists of a zone of sheared dark- to light-brown peridotite and green serpentine containing minor amounts of disseminated chalcopyrite. A grab sample (S 753-A) was taken of material which had sloughed from the shear; this assayed trace gold and trace silver per ton, and 0.34 percent copper and 0.02 percent nickel. Peridotite exposed in the remainder of the 110-foot level is dark brown to black in color and is cut by numerous small anastomosing shears and fractures having no particular orientation or continuity. A 20-foot chip sample (S 752-A) of this material, containing very sparse sulfides, was taken along the south wall of the crosscut. This assayed 0.02 ounce gold and a trace silver per ton, and 0.19 percent copper and 0.23 percent nickel.

Surface diamond drilling

Three vertical diamond drill holes, collared at the surface in and near the shaft area (pl. 2), intersected sparse sulfides contained in some of the sheared and altered peridotite and dioritic dikes. Presumably, these holes tested for a lateral extension of

the ore zone along a southerly trend but, because of their location and orientation, were not particularly informative. The position of DDH's 1 and 2 in relation to the shaft workings are shown in figure 1.

DDH 1, collared 100 feet S. 32½° E. from the shaft collar, intersected filled workings of either the 50- or 80-foot levels. DDH 2, collared 51 feet S. 61½° W. of the shaft and about 90 feet above the 110-foot level face, intersected zones from 95 to 106 feet and from 116 to 117 feet which the applicant reported to assay as follows:

95-100 ft.	-	trace gold and trace silver per ton, and 0.47 percent copper
100-106 ft.	-	0.01 ounce gold and 0.10 ounce silver per ton, and 0.14 percent copper
116-117 ft.	-	0.02 ounce gold and 0.64 ounce silver per ton, and 3.66 percent copper and 0.11 percent nickel

This hole followed the steeply dipping mineralized shear exposed at the face of the 110-foot level; the assays, however, are from the footwall side of the flat fault which is exposed on the 110-foot level and which intersects the mineralized shear about 5 feet below the 110-foot level. Therefore, these assays may or may not be from a downward continuation of the shear. DDH 2 was bottomed in barren peridotite at 153.6 feet. DDH 3 collared 375 feet S. 3° E. from the shaft, had been drilled to a depth of 218 feet on the date of inspection. Core from this hole contained very minor amounts of chalcopyrite and pyrite in some of the dioritic dikes and sheared peridotite; no assays were reported by the applicant.

Van Epps crosscut

Exposures in this crosscut consist of sheared and altered peridotite and a number of variously oriented diorite dikes (pl. 1). The dikes are part of a group of dioritic intrusives which are most numerous in the peridotite-serpentine areas west of Mt. Stuart and are described by G. O. Smith (Mt. Stuart Folio, p. 5) as being chemically similar to the Mt. Stuart granodiorite; however, none of the dikes seen by Smith could be traced into the granodiorite.

In the Van Epps crosscut both the peridotite and dikes contain various amounts of disseminated sulfides. As a whole, the dikes appear to contain a greater abundance of sulfides than does the peridotite, but because of a heavy coating of dust on the crosscut walls, this relative difference may be more apparent than real.

One dike near the adit portal contains a sufficient amount of disseminated sulfides throughout its exposed thickness to warrant sampling. The dike has an apparent north-northwesterly trend and, based on this, a possible maximum thickness of about 300 feet. Some of the other dike exposures in the crosscut also contain minor amounts of disseminated sulfides which are estimated to be of similar or lower grade. Adequate ventilation would be required in the crosscut to obtain more detailed information on the other peridotite and dike exposures farther from the portal.

Altered and unaltered peridotite in the accessible portion of the Van Epps crosscut is black to dark brown in color and, like exposures on the 110-foot level, is cut by numerous small fractures and shears. Most of this shearing has no particular orientation or continuity except near the margin of some of the dikes. Alteration of the peridotite occurs in rather broad zones bordering some of the diorite dikes. Contacts between the dikes and peridotite may be either sharp or gradational, usually the latter which consists of a transition from mixed dioritic material through progressively less silicified peridotite. Serpentinization of the peridotite occurs locally at some faults within sheared but otherwise unaltered peridotite.

Sparse sulfides, traceable for not more than several feet in any one occurrence, were found in portions of the sheared peridotite and in some of the altered peridotite zones near the dike margins.

Two contiguous samples (755-A and 756-A) were taken from the mineralized diorite dike previously mentioned (pl. 1). This dike is exposed from 115 to 575 feet inside the adit portal. Sample 755-A, representing a 100-foot section of the dike, contained a trace gold and a trace silver per ton, and 0.18 percent copper, nil nickel, and 0.015 percent MoS_2; sample 756-A, representing an 80-foot section of the dike, contained 0.02 ounce gold and 0.3 ounce silver per ton, and 0.36 percent copper, nil nickel, and 0.013 percent MoS_2.

Three other samples of parts of this dike were taken by the Bureau of Mines in 1954 (pl. 1). USBM sample 2-24, taken 80 feet northwest of DMEA sample 755-A, assayed 0.71 percent copper over a 39-foot sampling width. The other two samples, 2-22 (3 feet) and 2-23 (20 feet), assayed 0.10 percent copper and 0.26 percent copper, respectively. This dike contains disseminated sulfides consisting mainly of pyrite and lesser amounts of chalcopyrite with occasional traces of molybdenite. A more detailed sampling program than has been done would be required to determine the distribution of higher grade portions within the dike. The probable bulk grade, however, is believed to be about that indicated by samples 755-A and 756-A.

APPLICANT'S PROPOSAL

The applicant proposes to explore the lateral and downward extension of ore showings in the shaft area by diamond drilling from the surface and by further diamond drilling and underground openings from the face of the Van Epps crosscut. He also proposes diamond drilling from underground and from the surface to test the lateral extent of the mineralized dike exposed near the adit portal in the Van Epps crosscut.

Following the examination, Mr. Magill and I discussed the application with Mr. Tedrow to determine what modifications of the proposed program, providing the assays were sufficiently encouraging, would be acceptable to the applicant. It was agreed that surface diamond drilling was not a feasible means of exploration because of probable overburden difficulties and a lack of specific information concerning the extent and distribution of ore pods and disseminated sulfides in the peridotite and dikes. A modified program consisting of (1) underground diamond drilling to test the mineralized dike and (2) minimum rehabilitation to permit access to the Van Epps crosscut face for examination and further possible diamond drilling to explore for the downward extension of the ore stoped from the shaft workings was outlined by the examiners and was agreed to by Mr. Tedrow as being acceptable to the applicant.

Enclosures
Distribution:
DMEA(4)
USBM(2)
USGS(SRO)
Docket
Kellum

Claim	Book	Page
Arame Grande	529	554
Campbell	429	452
Funkhouser	429	451
Charley	429	456
Yankee Girl	480	522

These claims are recorded in the Chelan County Auditor's office at Wenatchee, Washington. The records were not checked.

It should be noted that the names and locations of the claims, as presented by the applicant, are not all the same as those which covered essentially the same area and were included in the previous contract (Docket No. DMEA-1353).

DESCRIPTION OF THE PROPERTY

Workings on the property include the Van Epps crosscut which was portaled at about 5,000 feet elevation and driven an estimated 2,100 feet toward the downward projection of ore bodies which were mined through a 110-foot shaft. The shaft workings are 1,800 feet northwesterly from the Van Epps portal and are 330 feet higher. An inclined raise, which is now inaccessible, was driven from the crosscut face to the bottom of the shaft.

The Van Epps crosscut is timbered only in glacial overburden near the portal, contains no track, and aside from the replacement of a few portal timbers, is in the same condition as when the former contract was terminated. It is open to the face, although there is about 80 feet of caved material occurring 1,850 feet from the portal. Due to insufficient oxygen no more than about 1,500 feet of crosscut is safely accessible.

The applicant has reopened the two-compartment shaft to the bottom on the 110-foot level and has rehabilitated 23 feet of the 80-foot level and advanced the 110-foot level an additional 35 feet beyond the old face. Originally, development from the shaft was made on levels at 50, 80, and 110 feet. the 50-foot level was reportedly driven from the surface as a 175-foot crosscut and 80-foot drift to intersect the shaft, but the actual extent of work on this level is not known. The level is blocked at the shaft and at the only portal found on the surface.

According to Mr. Tedrow, stoping near the shaft was more or less continuous from the 50- to 110-foot levels. This could not be verified, and it is doubtful that continuous stoping extended deeper than the 80-foot level. A stope observed from the 80-foot level was from 8 to 12 feet wide, about 30 feet in exposed length, and open vertically to a set of timbers about 20 feet above the back. This stope continues southwest beyond the present 80-foot level face. On the 110-foot level, fill west of the shaft indicated some stoping which may or may not connect to the 80-foot level. The extent of stoping above the 50-foot level is not known although some was probably done. Mr. Tedrow stated that bulldozing had uncovered indications of grassroots operations near the shaft.

Trenches cut during the previous contract are either slumped or completely filled by debris from later bulldozing operations near the shaft collar. As a result of these bulldozing operations, the present collar elevation of the shaft is now about 15 feet less than it was originally.

Buildings on the property consist of a combination bunkhouse, dry, and mess hall with eating facilities for 10 men and sleeping facilities for four men, three additional two-man bunkhouses, an 8- by 10-foot shop, a generator building about 12 by 16 feet, and a fuel storage shed.

SAMPLE DATA

Prelimary assays of five samples taken by the examiners were made by Willis H. Ott of Seattle, Washington. The copper and nickel values in the preliminary assays did not agree with either a visual impression of the material sampled or with assays of similar material sampled at various times by the applicant and other examiners. Accordingly, a second determination was made by Ott to check his first results.

Ott's second group of assays indicated a more probable value for copper but still showed anomalously high nickel values. Since no definite nickel minerals had been identified in the sampled areas, the sample rejects were submitted to Peter Mack of Wallace, Idaho, for a third set of check assays; these results agreed closely with the previously corrected copper values and indicated a lower, and it is believed a more probable, nickel content. This set of assays was used in evaluating the property; the Ott second set of assays and the Mack assays are tabulated on the following page for comparison.

		Ott's assays (2d set)	Mack's assays
S 752-A	Au	nil	0.02 oz/ton
	Ag	nil	trace
	Cu	0.26%	0.19%
	Ni	1.57%	0.23%
S 753-A	Au	nil	trace
	Ag	0.16 oz/ton	trace
	Cu	0.27%	0.34%
	Ni	not assayed	0.02%
S 754-A	Au	nil	0.02 oz/ton
	Ag	0.14 oz/ton	3.1 oz/ton
	Cu	4.40%	4.62%
	Ni	1.19%	0.16%
S 755-A	Au	trace	trace
	Ag	2.72 oz/ton	trace
	Cu	0.22%	0.18%
	Ni	not assayed	none
	MoS_2	0.08%	0.015%
S 756-A	Au	nil	0.02 oz/ton
	Ag	0.08 oz/ton	0.3 oz/ton
	Cu	0.32%	0.36%
	Ni	not assayed	none
	MoS_2	0.20%	0.013%

GEOLOGY

General

The Pickwick property is near the northwestern edge of the Mt. Stuart batholith and is underlain by peridotite which has been intruded by variously oriented diorite dikes and irregular bodies related to the Mt. Stuart grandiorite (U. S. Geol. Survey Mt. Stuart Folio No. 106, by George Otis Smith, 1904). Pyrite, chalcopyrite, pyrrhotite, and minor amounts of molybdenite occur as low-grade disseminations within some of the sheared peridotite and in the diorite dikes exposed in the Van Epps crosscut, and as both disseminations and higher grade bodies in sheared peridotite at the shaft workings.

During the former contract, trenching in the shaft area disclosed several nearly vertical, north to northwesterly trending lenses of low-grade oxidized copper to the south of the shaft, and several copper-stained stringers to the north. Other discontinuous stringers and copper-stained areas in the DMEA trench from about 50 feet west to 250 feet southeast of the shaft dip steeply and range in strike from N. to N. 30° W. (pl. 2).

Nothing specific is known about the downward extension of these ore occurrences beneath the shaft workings. Comments on a presumed change in dip of the ore, from vertical to 50° southwesterly, are included in excerpts of a report dated November 1911 by Richard Klessatel, E.M. (included as Exhibit "B" with original application Docket No. DMEA-1353).

Mr. Klessatel thought that the ore might be localized in sheared peridotite along the hanging wall of a southwesterly dipping diorite dike which he says may be seen in a 50-foot level crosscut about 175 feet northeast from the shaft. He assumes that this dike is identical with a much thicker one whose footwall was penetrated in the Van Epps crosscut. The dike mapped nearest to the face of the crosscut, which may or may not be the ore referred to by Klessatel, strikes northeasterly and dips nearly vertical. It is therefore impossible to correlate this dike with any southwesterly dipping dike such as Klessatel described on the 50-foot level. A hypothetical section (fig. 2) drawn through the shaft workings illustrates Klessatel's inferred downward extension of the shaft ore occurrences.

Shaft workings

The limited amount of rehabilitation done by the applicant on the 80-foot level indicates that stoping was directed about N. 30° W. along a downward extension of the oxidized copper showings exposed in the DMEA trench. The northward and downward limit of this stoping is apparently at the shaft, whereas the southward limit is

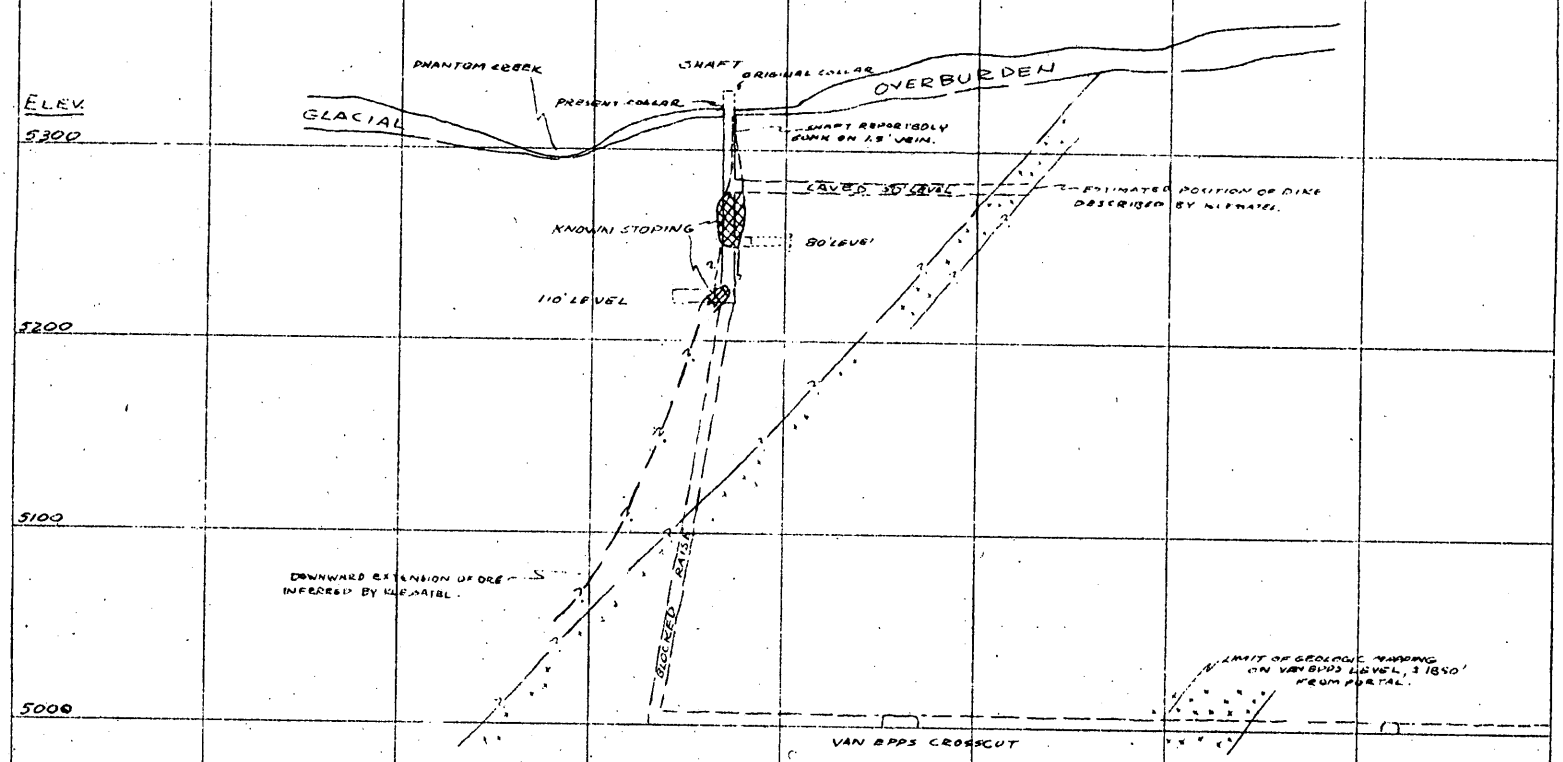


FIGURE 2

HYPOTHETICAL SECTION
THROUGH SHAFT WORKINGS
LOOKING N 10° W
PICKWICK PROPERTY
CHELAN CO., WASH.
1" = 100'

"ALBANENE" No. 195M K&E CO., N.Y.
REG. U.S. PAT. OFF.

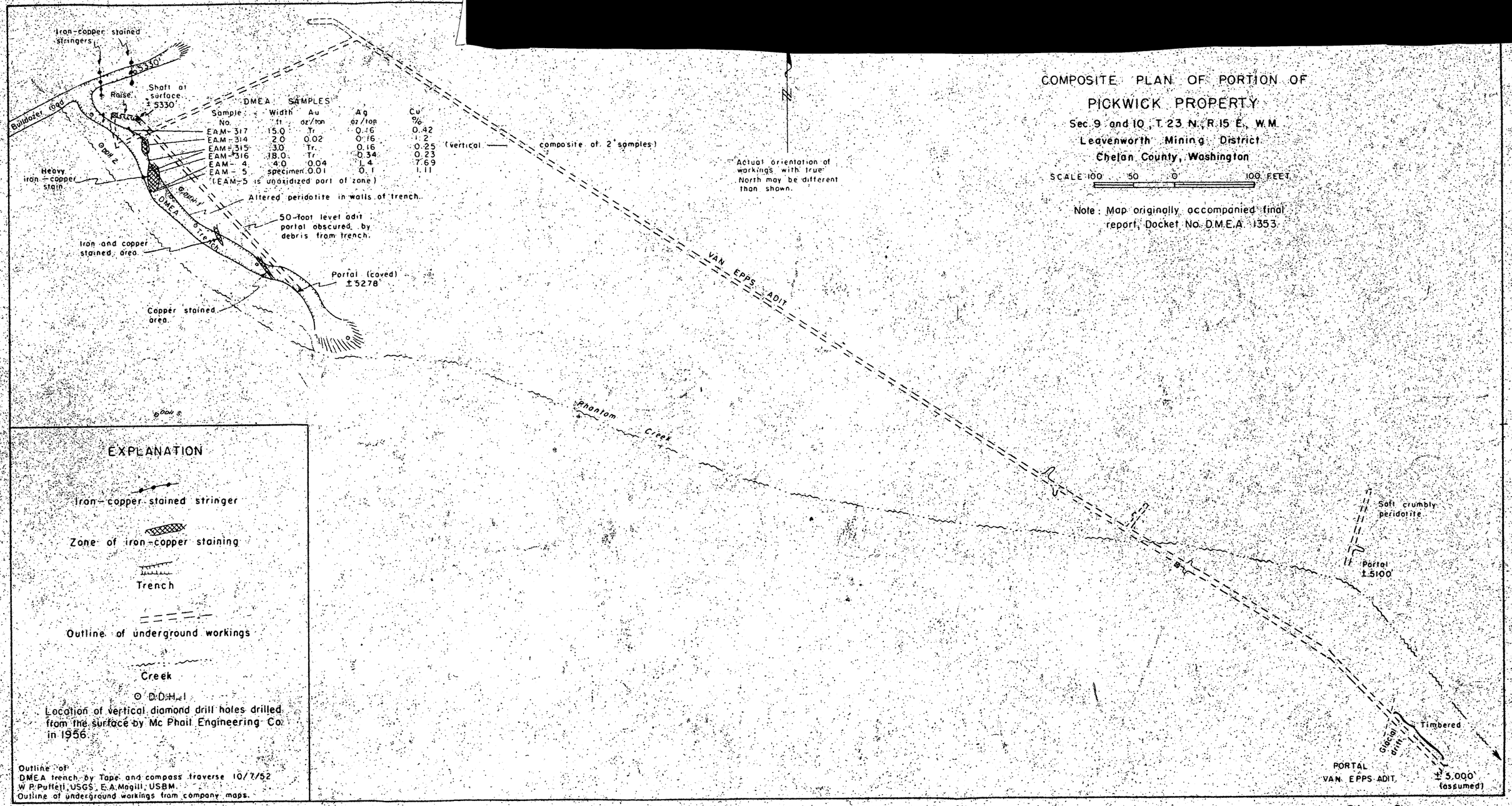
RECEIVED
FEB 25 1957
D.M.E.A.

COMPOSITE PLAN OF PORTION OF PICKWICK PROPERTY

Sec. 9 and 10, T. 23 N., R. 15 E., W.M.
Leavenworth Mining District
Chelan County, Washington

SCALE 100 50 0 100 FEET

Note: Map originally accompanied final report, Docket No. D.M.E.A. 1353



DMEA SAMPLES				
Sample No.	Width ft	Au oz/ton	Ag oz/ton	Cu %
EAM-317	15.0	Tr	0.16	0.42
EAM-314	2.0	0.02	0.16	1.2
EAM-315	3.0	Tr.	0.16	0.25
EAM-316	18.0	Tr	0.34	0.23
EAM-4	4.0	0.04	1.4	7.69
EAM-5	specimen	0.01	0.1	1.11

(EAM-5 is unoxidized part of zone)

Plate 2

DMEA-4509.

File Copy
Surname
Griswold

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

NOV 19 1956

Hon. Warren G. Magnuson
United States Senate
Washington, D. C.

Re: Docket No. DMEA-4509 (Copper)
McPhail Engineering Company
Fortune Creek (Pickwick) Property
Chelan & Kittitas Counties, Washington

My dear Senator Magnuson:

I have your letter of November 14, 1956, inquiring as to the status of the above application, which you cite as The Phantom Creek Copper Company.

The application was referred by us to our Spokane field office on November 7, for a field examination and recommendations. It is our understanding that the examination actually was made in October, prior to our field referral, since the approach of snow conditions made it imperative to avoid any delay.

We shall keep you advised when any further action is taken by this office.

Please feel free to call upon me at any time when I can be of service to you.

Sincerely yours,

C. O. Mitteer (for)

Administrator

WRGriswold/er 11/16/56
Copy to: Docket
Adm R File
Op. Committee
Base Metals
Mr. Pennington, USBM
Mr. Kiilsgaard, USGS
Region I, NW Dist. (2)
Chron.

R.C.B.

~~H 15 56~~

Grosvold

WARREN G. MAGNUSON, WASH., CHAIRMAN

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THOMAS A. WOFFORD, S. C.

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EDWARD JARRETT, CHIEF CLERK

United States Senate

COMMITTEE ON
INTERSTATE AND FOREIGN COMMERCE

RECEIVED
NOV 15 1956
D.M.E.A.

November 14, 1956

Mr. C. O. Mittendorf, Administrator
Defense Minerals Exploration Administration
Department of the Interior
Washington, D. C.

Dear Mr. Mittendorf:

RE: Application DMEA 4509
Phantom Creek Copper Company

I have received some inquiries from my state in connection with the above application for an exploration loan.

I will appreciate it very much if you will advise me the status of this application.

Kindest regards.

Sincerely,

Warren G. Magnuson

WARREN G. MAGNUSON, U.S.S.

WGM:R

File Copy
Surname

500

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

NOV - 7 1956

Mr. A. E. Weissenborn
Executive Officer
DMEA Field Team, Region I
Northwest District
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA-4509 (Copper)
McPhail Engineering Company
Fortune Creek (Pickwick) Property
Chelan & Kittitas Counties, Washington

Dear Mr. Weissenborn:

The cited application is being referred to your office for a field examination and recommendations. We understand that the examination had already been scheduled, due to the availability of personnel and the approach of snow conditions.

We are enclosing copies of memoranda dated October 25 and 29, 1956, relating to the project, by N. K. Nelson, Geological Survey, and J. W. Pennington, Bureau of Mines, respectively.

Sincerely yours,

Chairman, Operating Committee (H/B)

WRGriswold/er 11/2 & 5/56
Copy to: Docket
Admr R File
Op. Committee
Base Metals
~~MECCBCSBOPCCUSBM~~
Mr. Pennington, USBM
Mr. Kiilsgaard, USGS
Chron.

Enclosures

APPROVED:

(H/B)
Member, Bureau of Mines

(H/B)
Member, Geological Survey

File Copy
Surname
Lamb
Kilsgaard
Selfridge

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

NOV - 7 1956

Mr. Charles McPhail
McPhail Engineering Company
Post Office Box 1503
Tacoma, Washington

Re: Docket No. DMEA-4509 (Copper)
McPhail Engineering Company
Fortune Creek (Pickwick) Property
Chelan & Kittitas Counties, Washington

Dear Mr. McPhail:

Your application for Government assistance to explore the cited property has been reviewed by the Base Metals Division of the Defense Minerals Exploration Administration and is being referred for a field examination to:

Mr. A. E. Weissenborn
Executive Officer
DMEA Field Team, Region I
Northwest District
South 157 Howard Street
Spokane 4, Washington

The Regional Office will contact you at an early date as to when an examination is to be made, if it has not already been done. Any assistance that you may give the members of the Field Team during the examination will be appreciated.

Sincerely yours,

Frank E. Johnson
ACTING Administrator

WRGriswold/er 11/2/5/56
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Pennington, USBM
Mr. Kiilsgaard, USGS
Region I, NW Dist (2)
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

RECEIVED
OCT 29 1956

October 29, 1956

Griswold

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

From: Commodity Specialist, Branch of Base Metals

Subject: Review of application, Docket No. DMEA 4509 (copper) McPhail Engineering Co., Phantom Creek Copper Mine, Chelan and Kittitas Counties, Washington. $147,359.00

The applicant proposes to explore for copper mineralization by 10,000 feet of surface and underground drilling, 2,500 feet of tunnel rehabilitation, 250 feet of exploratory drifting, 158 feet of shaft extension at an estimated total cost of $147,359.00.

A previous project (DMEA 1353 - amended Contract Idm-E 172) to explore the mine by the Phantom Creek Copper Co. Inc., was not completed. The property was taken over by McPhail Engineering Co. who repaid the Government the full amount contributed by the Government under the contract. Since then the McPhail Company has conducted exploration work on the property.

Although the applicant states that assays of various samples are included, no assay reports accompanied the application.

It is my understanding that an examination of the property is being made because the Field Team engineers are in the area.

It is recommended that the application be referred to the Field Team for appraisal.

J. W. Pennington

J. W. Pennington

Copy to: Division of Minerals
Branch of Base Metals (2)
Thor Kiilsgaard, U.S.G.S.
F. D. Lamb
F i l e s

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

RECEIVED NOV 1 1956 D.M.E.A.

October 25, 1956

Re: DMEA 4509
McPhail Engineering Co.
Phantom Creek Copper Prop.
Chelan Co. Wash.
$147,359.00 - Copper

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of application

The applicant requests assistance in additional exploration of a large low-grade zone of copper-bearing rocks , by surface and underground diamond drilling, by underground openings from the 2,500-foot Van Epps tunnel and by sinking from the bottom of a 110-foot shaft.

Data submitted indicate that the work done in the early 1900's explored the zone through a vertical distance of 258 feet and at points 2,000 feet apart. Narrow veins of solid chalcopyrite are mentioned but sampling by the applicant suggests the average grade is less than 1% copper, perhaps less than 0.75%. A shipment of 13 tons of ore was made in 1915.

Referral of the application to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
Washington 25, D. C.

October 25, 1956

Fortune Creek Prospect

McPhail Engineering Co.
P. O. Box 1503
Tacoma, Washington

Subject: DMEA-4509
Re: Exploration Assistance
Phantom Creek Copper, Inc.

Dear Mr. McPhail

Your application for exploration assistance, dated September 27, 1956 submitted to our office at Spokane, has been assigned Docket Number DMEA-4509 and referred to the Base Metals Division in the Washington office. Kindly identify all future correspondence relating to your application by this Docket Number.

Sincerely yours,

Allen S. Dakan, Chief
Operations Control and
Statistics Division

Copy to:

Region I, N.W. Spokane 4, Washington
Code 500

3571

RECEIVED
OCT 19 1956

[redacted]
No. 157 Howard Street
Spokane 4, Washington

October 15, 1956

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: New application (Copper-Nickel, also Gold-Silver)
McPhail Engineering Co.
Phantom Creek Copper, Inc.
Chelan and Kittitas Counties, Wash.

Dear Mr. Selfridge:

Enclosed are the original and two copies of an application submitted by the McPhail Engineering Company for the exploration of the Pickwick mine. You will recall that in 1951 we entered into a contract (Docket No. DMEA-1353) with S. J. Holden & Associates to explore this same property. This contract was assigned later to Phantom Creek Copper, Inc., which was merely Holden and Associates under a corporate name. The purpose of the project was essentially to open up the old Pickwick mine for thorough sampling and geologic examination; it also included some bulldozing.

The contract from our point of view was quite unsatisfactory, work progressed very slowly, and very little of it was done. In 1954 the property was taken over by McPhail Engineering Company and in November of 1954 this company paid to the Government $675.50, the total amount that had been advanced by the Government under the contract, thus releasing both Holden and McPhail Engineering Company from any further obligation.

McPhail Copper Company has done essentially the same work that was planned under the original exploration project and now submits an application for further work. A long list of samples is attached but these are not very informative as they do not give much clue as to where or how they were taken. As we do not know the results of the cleaning of the old workings, it appears that an examination will be required to determine whether further work should be done. The first snow had already begun to fall on the Cascades last week, and because we have fieldmen available in the area, we have gotten in touch with them by phone and have requested they make an examination while it is still possible. We have particularly requested them to thoroughly map and sample the pertinent parts of the Van Eps Adit.

Very truly yours,

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, NW District

cc: USBM (2)
Kellum

EXTRA COPY
DMEA
RECEIVED FEB 25 1957

DATE	INITIALS	CODE
2/26	WRA	500

xxxxxxxxxxxxxxxxxx
So. 157 Howard Street
Spokane 4, Washington

February 19, 1957

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-4509 (Copper)
McPhail Engineering Company
Fortune Creek (Pickwick) Property
Chelan & Kittitas Counties, Washington

Dear Mr. Selfridge:

The above-referenced property was examined by E. A. Magill, Mining Engineer, U. S. Bureau of Mines and Donald F. Kellum, Geologist, U. S. Geological Survey, on October 15, 1956. Enclosed is a memorandum from Donald F. Kellum recommending denial of the application for exploration assistance. The examiners base their denial on the fact that the copper-bearing diorite dikes in the Van Epps adit are too low in grade to be of interest and that the ore bodies explored in the shaft working, which occur in sheared peridotite are too small and scattered to justify the applicant's proposal to test their downward extension by drilling from the end of the Van Epps adit.

There is no question but that the examiners' adverse recommendation of the applicant's proposal is justified. Some of the samples from the diorite dike in the Van Epps adit show interesting amounts of copper. This is not enough to justify the proposed drilling but does suggest that this wide dike should be sampled more adequately, and with samples not exceeding 25 feet in length. Unless it can be demonstrated by such sampling that the dike has potentially commercial quantities of copper, diamond drilling under and on the sides of the level seems pointless. Sampling of the nature described above is outside the scope of a DMEA examination.

Likewise the probably small size of the shaft ore shoots does not appear to warrant the cost of rehabilitating and ventilating the Van Epps adit and installing the track and air and water lines that would be required if drilling were done from the end of the adit; nevertheless, ore has been mined from the shaft area. The lateral extent of the stoping cannot be determined, but there is evidence of fairly continuous stoping from the 110 level to the surface and the

Reviewed by
DMEA OPERATING COMMITTEE

(date)

grade of the ore lenses according to the meager information available may have run between 4 and 5 percent copper. Unconfirmed reports state that 10,000 tons were mined. This seems excessive, but it is possible that from 1,000 to 2,000 tons were taken out. The widespread, low-grade mineralization is intriguing, suggesting the possibility that somewhere in this area there might be minable bodies of ore. Four or five holes drilled from the end of the 110 level to test the ground under the old stopes to the presumed hanging wall of the dike would determine at small cost whether there was sufficient continuity to the ore lenses to justify a more extensive program. This possibility was not considered by the examiners but, although admittedly risky, would show whether the more expensive exploration from the adit would be justified. The Field Team would not argue vigorously for such a program but suggests that it might be worth considering.

By Field Team, Region I, NW District

A. E. Weissenborn, Executive Officer
U. S. Geological Survey

Wing G. Agnew, Member
U. S. Bureau of Mines

Enclosures

Distribution:
USBM (2)
USGS (SRO)
Kellum

DMEA

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
So. 157 Howard Street
Spokane 4, Washington

EXTRA COPY DMEA RECEIVED FEB 25 1957		
DATE	INITIALS	CODE

February 8, 1957

MEMORANDUM

To: DMEA Field Team, Region I, Northwest District

From: Donald F. Kellum, Geologist, U. S. Geological Survey

Subject: Application examination report, Docket No. DMEA-4509 (copper), McPhail Engineering Company, Fortune Creek (Pickwick) Property, Chelan and Kittitas Counties, Washington

INTRODUCTION

The McPhail Engineering Company, P. O. Box 1503, Tacoma, Washington, is organized in the State of Washington and is owned entirely by Charles McPhail.

The applicant's rehabilitation work described in this report is similar to that specified in a former Defense Minerals Exploration Administration contract on the Pickwick property (Docket No. DMEA-1353). The former contract, issued to S. J. Holden and Associates operating under the name of Phantom Creek Copper, Inc., was for reopening old workings to permit sampling and geologic examination and was rescinded after a limited amount of surface work had been completed when the present applicant leased the property in 1954.

SUMMARY AND CONCLUSIONS

Before the former DMEA contract was rescinded, bulldozing had indicated several low-grade oxidized copper lenses and a number of copper and iron-stained stringers within an area about 250 feet wide near a caved shaft and workings. To obtain information about the subsurface extent of the oxidized copper lenses the applicant did additional bulldozing at the shaft collar, rehabilitated the shaft and a small portion of its workings, and drilled three diamond drill holes in the shaft area. No work has been done in the Van Epps adit.

Reviewed by
DMEA OPERATING COMMITTEE

(date)

The rehabilitation at the shaft shows that ore had been stoped from near the surface down to the 110-foot level, but because exposures are limited, it is not certain if either the ore or stoping was continuous through this entire distance. Laterally, a stope 8-12 feet wide has been exposed to the present 80-foot level face 23 feet southeast of the shaft, while diamond drilling indicates that workings extend at least 77 feet beyond the face. No ore was seen in this stope from which most or all of the ore-grade material has probably been mined. Samples of muck from the 80-foot level indicate that the stoped ore could have averaged 5 percent copper. Nothing is known of either the extent or the continuity of the stoping or the ore in the caved workings southeast of the shaft.

An examination of the accessible workings did not indicate any stope-aligned structure or mineralization extending from the stoped area. Disseminated sulfides containing copper in sub-ore grade amounts were found in weak shears striking at distinct angles to the stoping and in randomly fractured and sheared peridotite adjacent to the stoped area. The applicant feels that those sulfides may have a zonal relationship to the ore bodies, but since sparse sulfides in similarly sheared peridotite are distributed widely throughout the area, the presence of disseminated sulfides in the shaft area is apparently of no particular significance as a specific guide to higher grade ore bodies; thus, at present there are no indications that the stoped ore is within a "zone" which is either separable or distinguishable from other sheared areas on the property, nor is there any particular indication that other ore bodies would be found by exploration along a projection of the stoping. It is possible that other ore bodies or a zone of minable low-grade ore exists in the peridotite, but on the basis of present information the probability of a discovery is considered poor.

Assays of a thick copper-bearing dike near the Van Epps adit portal indicate that it is of insufficient over-all grade to constitute low-grade ore.

RECOMMENDATION

It is recommended that the application be denied. If further exposures are made accessible in the shaft area and the Van Epps crosscut, a re-examination of the property would be warranted.

EXAMINATION

An examination was made on October 16, 1956, by E. A. Magill, mining engineer, Bureau of Mines, and D. F. Kollum, geologist, Geological Survey. The examiners were accompanied by Cline Tedrow, consulting engineer for the applicant.

The examination consisted of mapping the reopened shaft workings on the 80- and 110-foot levels (fig. 1); making a traverse from the shaft collar to three surface diamond drill holes; and inspecting about 1,500 feet of the Van Epps crosscut.

The inspection in the Van Epps adit was necessarily brief because of bad air, particularly beyond 1,500 feet; a lack of oxygen prevented access to the face. A Bureau of Mines map (pl. 1) showing the geology of about 1,865 feet of the crosscut, was used as a base map.

Approximately 5 hours were spent on the property.

LOCATION AND ACCESSIBILITY

The property is on the Chelan-Kittitas County boundary in secs. 9, 10, 11, and 16, T. 23 N., R. 15 E. W.M., Leavenworth Mining District, Chelan and Kittitas Counties, Washington. It may be reached from Cle Elum, the nearest sizable town, by following State Highway 2E north 9 miles to Cle Elum lake, thence north on the Cle Elum River road, a continuation of State Highway 2E, 17.5 miles to Fortune Creek, thence 2.2 miles easterly up Fortune Creek to the applicant's access road, and then 4.7 miles easterly by poor to fair dirt road over Van Epps Pass (altitude 6,000 feet) to the camp area at an altitude of about 5,400 feet.

Mountainous terrain accentuated by glaciation is characteristic of the area. The camp and shaft are on a local flat area mantled by glacial debris up to 20 feet thick. Glacial overburden is in excess of 30 feet at lower elevations down to and below the Van Epps adit portal.

After the first snowfall, usually in November, access to the area may be blocked by heavy snows which occur until May and by drifts which remain as late as mid-July.

PROPERTY RIGHTS

Drawing No. 1-A accompanying the application shows a group of 20 unpatented claims held by the applicant. The applicant's exploration area lies entirely within the following unpatented claims -- all located in sec. 9 except for part of Yankee Girl, which is also in sec. 10.

Claim	Book	Page
Arame Grande	529	554
Campbell	429	452
Funkhouser	429	451
Charley	429	456
Yankee Girl	480	522

These claims are recorded in the Chelan County Auditor's office at Wenatchee, Washington. The records were not checked.

It should be noted that the names and locations of the claims, as presented by the applicant, are not all the same as those which covered essentially the same area and were included in the previous contract (Docket No. DMEA-1353).

DESCRIPTION OF THE PROPERTY

Workings on the property include the Van Epps crosscut which was portaled at about 5,000 feet elevation and driven an estimated 2,100 feet toward the downward projection of ore bodies which were mined through a 110-foot shaft. The shaft workings are 1,800 feet northwesterly from the Van Epps portal and are 330 feet higher. An inclined raise, which is now inaccessible, was driven from the crosscut face to the bottom of the shaft.

The Van Epps crosscut is timbered only in glacial overburden near the portal, contains no track, and aside from the replacement of a few portal timbers, is in the same condition as when the former contract was terminated. It is open to the face, although there is about 80 feet of caved material occurring 1,850 feet from the portal. Due to insufficient oxygen no more than about 1,500 feet of crosscut is safely accessible.

The applicant has reopened the two-compartment shaft to the bottom on the 110-foot level and has rehabilitated 23 feet of the 80-foot level and advanced the 110-foot level an additional 35 feet beyond the old face. Originally, development from the shaft was made on levels at 50, 80, and 110 feet. the 50-foot level was reportedly driven from the surface as a 175-foot crosscut and 80-foot drift to intersect the shaft, but the actual extent of work on this level is not known. The level is blocked at the shaft and at the only portal found on the surface.

According to Mr. Tedrow, stoping near the shaft was more or less continuous from the 50- to 110-foot levels. This could not be verified, and it is doubtful that continuous stoping extended deeper than the 80-foot level. A stope observed from the 80-foot level was from 8 to 12 feet wide, about 30 feet in exposed length, and open vertically to a set of timbers about 20 feet above the back. This stope continues southwest beyond the present 80-foot level face. On the 110-foot level, fill west of the shaft indicated some stoping which may or may not connect to the 80-foot level. The extent of stoping above the 50-foot level is not known although some was probably done. Mr. Tedrow stated that bulldozing had uncovered indications of grassroots operations near the shaft.

Trenches cut during the previous contract are either slumped or completely filled by debris from later bulldozing operations near the shaft collar. As a result of these bulldozing operations, the present collar elevation of the shaft is now about 15 feet less than it was originally.

Buildings on the property consist of a combination bunkhouse, dry, and mess hall with eating facilities for 10 men and sleeping facilities for four men, three additional two-man bunkhouses, an 8- by 10-foot shop, a generator building about 12 by 16 feet, and a fuel storage shed.

SAMPLE DATA

Prelimary assays of five samples taken by the examiners were made by Willis H. Ott of Seattle, Washington. The copper and nickel values in the preliminary assays did not agree with either a visual impression of the material sampled or with assays of similar material sampled at various times by the applicant and other examiners. Accordingly, a second determination was made by Ott to check his first results.

Ott's second group of assays indicated a more probable value for copper but still showed anomalously high nickel values. Since no definite nickel minerals had been identified in the sampled areas, the sample rejects were submitted to Peter Mack of Wallace, Idaho, for a third set of check assays; these results agreed closely with the previously corrected copper values and indicated a lower, and it is believed a more probable, nickel content. This set of assays was used in evaluating the property; the Ott second set of assays and the Mack assays are tabulated on the following page for comparison.

		Ott's assays (2d set)	Mack's assays
S 752-A	Au	nil	0.02 oz/ton
	Ag	nil	trace
	Cu	0.26%	0.19%
	Ni	1.57%	0.23%
S 753-A	Au	nil	trace
	Ag	0.16 oz/ton	trace
	Cu	0.27%	0.34%
	Ni	not assayed	0.02%
S 754-A	Au	nil	0.02 oz/ton
	Ag	0.14 oz/ton	3.1 oz/ton
	Cu	4.40%	4.62%
	Ni	1.19%	0.16%
S 755-A	Au	trace	trace
	Ag	2.72 oz/ton	trace
	Cu	0.22%	0.18%
	Ni	not assayed	none
	MoS_2	0.08%	0.015%
S 756-A	Au	nil	0.02 oz/ton
	Ag	0.08 oz/ton	0.3 oz/ton
	Cu	0.32%	0.36%
	Ni	not assayed	none
	MoS_2	0.20%	0.013%

GEOLOGY

General

The Pickwick property is near the northwestern edge of the Mt. Stuart batholith and is underlain by peridotite which has been intruded by variously oriented diorite dikes and irregular bodies related to the Mt. Stuart granodiorite (U. S. Geol. Survey Mt. Stuart Folio No. 106, by George Otis Smith, 1904). Pyrite, chalcopyrite, pyrrhotite, and minor amounts of molybdenite occur as low-grade disseminations within some of the sheared peridotite and in the diorite dikes exposed in the Van Epps crosscut, and as both disseminations and higher grade bodies in sheared peridotite at the shaft workings.

During the former contract, trenching in the shaft area disclosed several nearly vertical, north to northwesterly trending lenses of low-grade oxidized copper to the south of the shaft, and several copper-stained stringers to the north. Other discontinuous stringers and copper-stained areas in the DMEA trench from about 50 feet west to 250 feet southeast of the shaft dip steeply and range in strike from N. to N. 30° W. (pl. 2).

Nothing specific is known about the downward extension of these ore occurrences beneath the shaft workings. Comments on a presumed change in dip of the ore, from vertical to 50° southwesterly, are included in excerpts of a report dated November 1911 by Richard Klessatel, E.M. (included as Exhibit "B" with original application Docket No. DMEA-1353).

Mr. Klessatel thought that the ore might be localized in sheared peridotite along the hanging wall of a southwesterly dipping diorite dike which he says may be seen in a 50-foot level crosscut about 175 feet northeast from the shaft. He assumes that this dike is identical with a much thicker one whose footwall was penetrated in the Van Epps crosscut. The dike mapped nearest to the face of the crosscut, which may or may not be the ore referred to by Klessatel, strikes northeasterly and dips nearly vertical. It is therefore impossible to correlate this dike with any southwesterly dipping dike such as Klessatel described on the 50-foot level. A hypothetical section (fig. 2) drawn through the shaft workings illustrates Klessatel's inferred downward extension of the shaft ore occurrences.

Shaft workings

The limited amount of rehabilitation done by the applicant on the 80-foot level indicates that stoping was directed about N. 30° W. along a downward extension of the oxidized copper showings exposed in the DMEA trench. The northward and downward limit of this stoping is apparently at the shaft, whereas the southward limit is

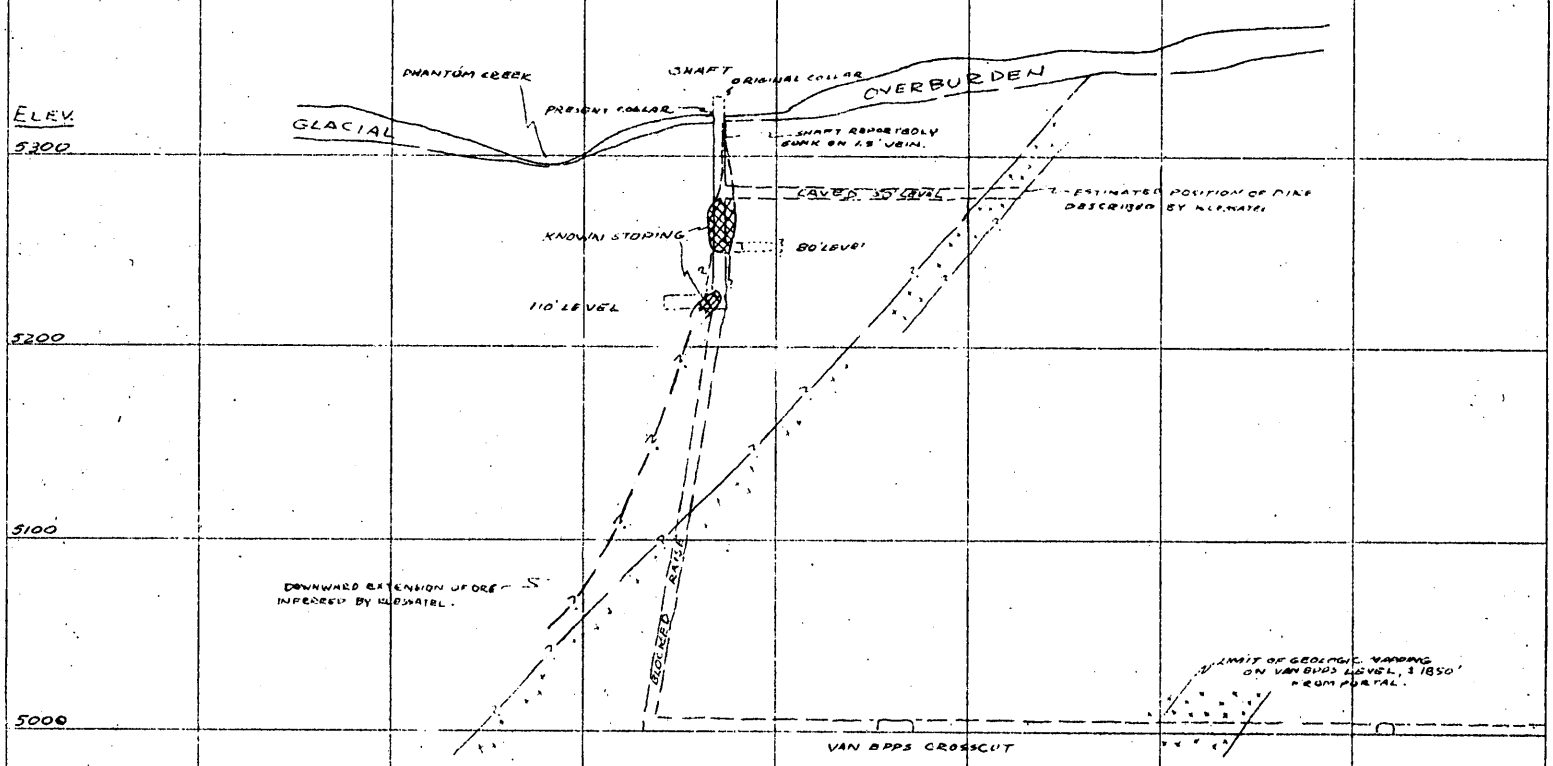


FIGURE 2

HYPOTHETICAL SECTION
THROUGH SHAFT WORKINGS
LOOKING N 10° W
PICKWICK PROPERTY
CHELAN CO., WASH.
1" = 100'

"ALBANENE" NO. 1.95M K&E CO., N.Y.
REG. U.S. PAT. OFF.

RECEIVED
FEB 25 1957
D.M.E.A.

somewhere beyond the present drift face. The stope walls are firm and require little support in contrast to adjacent moderately heavy ground. An examination of the few visible portions of the shaft walls and of the stope walls above the 80-foot level failed to indicate definitely either an extension of the mineralized material or the presence of a stope-aligned structure. A grab sample of mineralized peridotite which the applicant had saved from rehabilitation of the 80-foot level may approximate the grade of ore originally mined from this part of the stope. This sample (S 754-A) contained 0.02 ounce gold and 3.10 ounces silver per ton, and 4.62 percent copper and 0.16 percent nickel. A 300-pound sample of this material taken by the applicant assayed a trace gold and 3.20 ounces silver per ton, and 5.7 percent copper and 0.04 percent nickel.

Two weak, steeply dipping shears, one intersecting the west wall of the 80-foot level near the face and the other at the face of the 110-foot level, were the only mineralized structures seen in the shaft workings. Both have a N. 65° W. strike in contrast to the more northerly stope trend. The shear on the 80-foot level dips 70°-80° NE. and contains several inches of chalcopyrite where it is exposed in a shallow pit dug in the drift sill. It is probable that some of the material which has been removed from this pit was included in the applicant's stockpile tested by sample 754-A. A downward extension of this shear was not exposed on the 110-foot level. Water-worked fill on both sides of the 110-foot level from 10 to 20 feet southwest of the shaft may indicate either slabbing or limited stoping in the footwall of a flat northwesterly dipping fault; the 80-foot level shear is in the hanging wall of this fault. At the face of the 110-foot level, also in the hanging wall of the flat fault, is a second mineralized shear at least 12 feet wide which consists of a zone of sheared dark- to light-brown peridotite and green serpentine containing minor amounts of disseminated chalcopyrite. A grab sample (S 753-A) was taken of material which had sloughed from the shear; this assayed trace gold and trace silver per ton, and 0.34 percent copper and 0.02 percent nickel. Peridotite exposed in the remainder of the 110-foot level is dark brown to black in color and is cut by numerous small anastomosing shears and fractures having no particular orientation or continuity. A 20-foot chip sample (S 752-A) of this material, containing very sparse sulfides, was taken along the south wall of the crosscut. This assayed 0.02 ounce gold and a trace silver per ton, and 0.19 percent copper and 0.23 percent nickel.

Surface diamond drilling

Three vertical diamond drill holes, collared at the surface in and near the shaft area (pl. 2), intersected sparse sulfides contained in some of the sheared and altered peridotite and dioritic dikes. Presumably, these holes tested for a lateral extension of

the ore zone along a southerly trend but, because of their location and orientation, were not particularly informative. The position of DDH's 1 and 2 in relation to the shaft workings are shown in figure 1.

DDH 1, collared 100 feet S. $32\frac{1}{2}^{\circ}$ E. from the shaft collar, intersected filled workings of either the 50- or 80-foot levels. DDH 2, collared 51 feet S. $61\frac{1}{2}^{\circ}$ W. of the shaft and about 90 feet above the 110-foot level face, intersected zones from 95 to 106 feet and from 116 to 117 feet which the applicant reported to assay as follows:

95-100 ft.	-	trace gold and trace silver per ton, and 0.47 percent copper
100-106 ft.	-	0.01 ounce gold and 0.10 ounce silver per ton, and 0.14 percent copper
116-117 ft.	-	0.02 ounce gold and 0.64 ounce silver per ton, and 3.66 percent copper and 0.11 percent nickel

This hole followed the steeply dipping mineralized shear exposed at the face of the 110-foot level; the assays, however, are from the footwall side of the flat fault which is exposed on the 110-foot level and which intersects the mineralized shear about 5 feet below the 110-foot level. Therefore, these assays may or may not be from a downward continuation of the shear. DDH 2 was bottomed in barren peridotite at 153.6 feet. DDH 3 collared 375 feet S. 3° E. from the shaft, had been drilled to a depth of 218 feet on the date of inspection. Core from this hole contained very minor amounts of chalcopyrite and pyrite in some of the dioritic dikes and sheared peridotite; no assays were reported by the applicant.

Van Epps crosscut

Exposures in this crosscut consist of sheared and altered peridotite and a number of variously oriented diorite dikes (pl. 1). The dikes are part of a group of dioritic intrusives which are most numerous in the peridotite-serpentine areas west of Mt. Stuart and are described by G. O. Smith (Mt. Stuart Folio, p. 5) as being chemically similar to the Mt. Stuart granodiorite; however, none of the dikes seen by Smith could be traced into the granodiorite.

In the Van Epps crosscut both the peridotite and dikes contain various amounts of disseminated sulfides. As a whole, the dikes appear to contain a greater abundance of sulfides than does the peridotite, but because of a heavy coating of dust on the crosscut walls, this relative difference may be more apparent than real.

One dike near the adit portal contains a sufficient amount of disseminated sulfides throughout its exposed thickness to warrant sampling. The dike has an apparent north-northwesterly trend and, based on this, a possible maximum thickness of about 300 feet. Some of the other dike exposures in the crosscut also contain minor amounts of disseminated sulfides which are estimated to be of similar or lower grade. Adequate ventilation would be required in the crosscut to obtain more detailed information on the other peridotite and dike exposures farther from the portal.

Altered and unaltered peridotite in the accessible portion of the Van Epps crosscut is black to dark brown in color and, like exposures on the 110-foot level, is cut by numerous small fractures and shears. Most of this shearing has no particular orientation or continuity except near the margin of some of the dikes. Alteration of the peridotite occurs in rather broad zones bordering some of the diorite dikes. Contacts between the dikes and peridotite may be either sharp or gradational, usually the latter which consists of a transition from mixed dioritic material through progressively less silicified peridotite. Serpentinization of the peridotite occurs locally at some faults within sheared but otherwise unaltered peridotite.

Sparse sulfides, traceable for not more than several feet in any one occurrence, were found in portions of the sheared peridotite and in some of the altered peridotite zones near the dike margins.

Two contiguous samples (755-A and 756-A) were taken from the mineralized diorite dike previously mentioned (pl. 1). This dike is exposed from 115 to 575 feet inside the adit portal. Sample 755-A, representing a 100-foot section of the dike, contained a trace gold and a trace silver per ton, and 0.18 percent copper, nil nickel, and 0.015 percent MoS_2; sample 756-A, representing an 80-foot section of the dike, contained 0.02 ounce gold and 0.3 ounce silver per ton, and 0.36 percent copper, nil nickel, and 0.013 percent MoS_2.

Three other samples of parts of this dike were taken by the Bureau of Mines in 1954 (pl. 1). USBM sample 2-24, taken 80 feet northwest of DMEA sample 755-A, assayed 0.71 percent copper over a 39-foot sampling width. The other two samples, 2-22 (3 feet) and 2-23 (20 feet), assayed 0.10 percent copper and 0.26 percent copper, respectively. This dike contains disseminated sulfides consisting mainly of pyrite and lesser amounts of chalcopyrite with occasional traces of molybdenite. A more detailed sampling program than has been done would be required to determine the distribution of higher grade portions within the dike. The probable bulk grade, however, is believed to be about that indicated by samples 755-A and 756-A.

APPLICANT'S PROPOSAL

The applicant proposes to explore the lateral and downward extension of ore showings in the shaft area by diamond drilling from the surface and by further diamond drilling and underground openings from the face of the Van Epps crosscut. He also proposes diamond drilling from underground and from the surface to test the lateral extent of the mineralized dike exposed near the adit portal in the Van Epps crosscut.

Following the examination, Mr. Magill and I discussed the application with Mr. Tedrow to determine what modifications of the proposed program, providing the assays were sufficiently encouraging, would be acceptable to the applicant. It was agreed that surface diamond drilling was not a feasible means of exploration because of probable overburden difficulties and a lack of specific information concerning the extent and distribution of ore pods and disseminated sulfides in the peridotite and dikes. A modified program consisting of (1) underground diamond drilling to test the mineralized dike and (2) minimum rehabilitation to permit access to the Van Epps crosscut face for examination and further possible diamond drilling to explore for the downward extension of the ore stoped from the shaft workings was outlined by the examiners and was agreed to by Mr. Tedrow as being acceptable to the applicant.

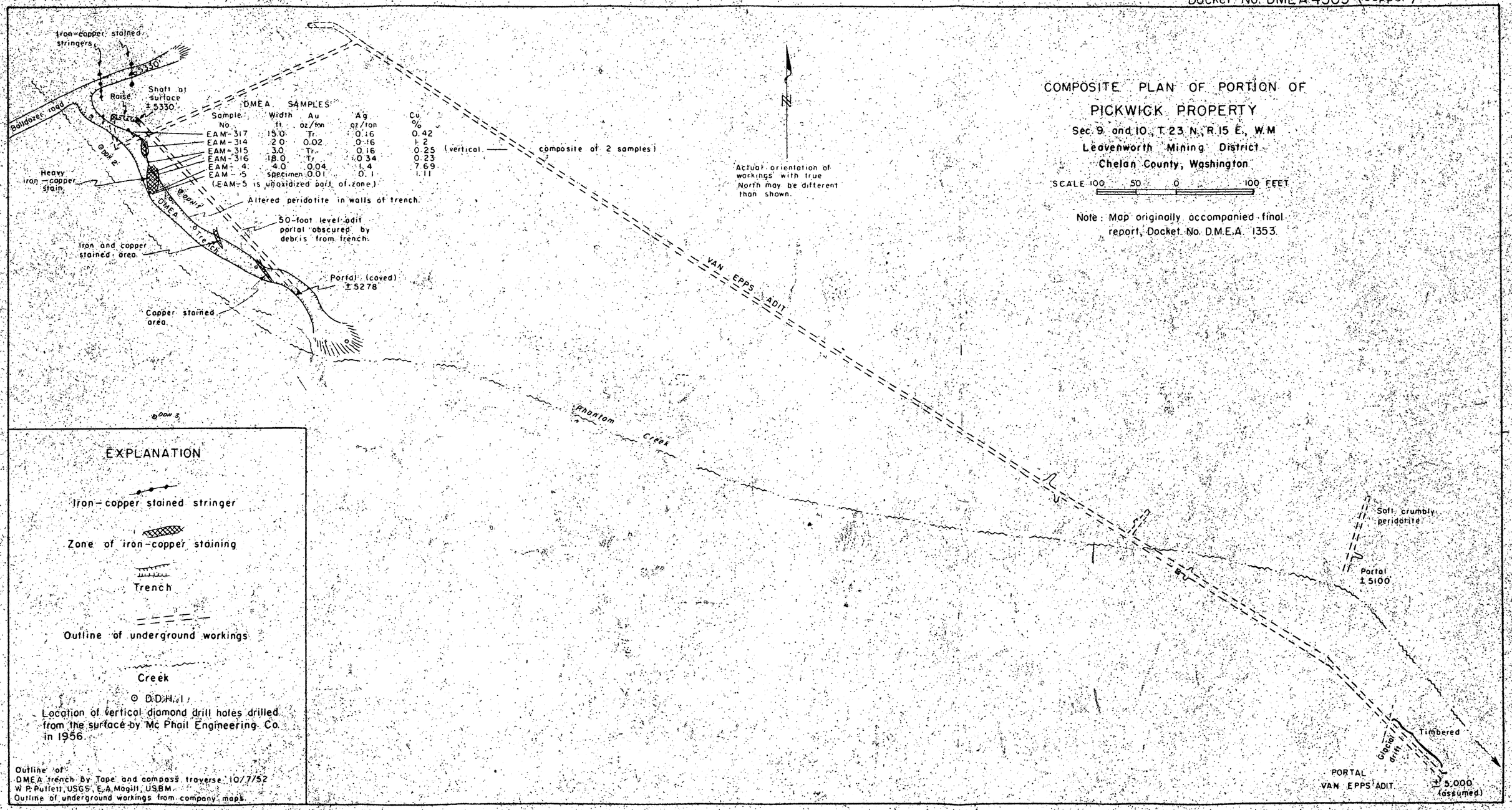
Enclosures
Distribution:
DMEA(4)
USBM(2)
USGS(SRO)
Docket
Kollum

COMPOSITE PLAN OF PORTION OF PICKWICK PROPERTY

Sec. 9 and 10, T. 23 N., R. 15 E., W.M.
Leavenworth Mining District
Chelan County, Washington

SCALE 100 50 0 100 FEET

Note: Map originally accompanied final report, Docket No. D.M.E.A. 1353.



March 1, 1957
Re: DMEA 4509
Nefhail Engineering Company
Pickwick Property
Chelan & Kittitas Counties, Wash.
$147,359.00 - Copper

Memorandum

To: R. A. Griswold, Defense Minerals Exploration Administration

From: K. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team Report

The applicant requested assistance in exploring further, by diamond drilling and underground work, a prospect on which much work has been done and from which small shipments of good grade copper ore have been made. The exploratory and development work already done includes 3 diamond drill holes, a 330 foot shaft-raise, a 300-foot adit, and the 2100-foot Van Epps adit.

The shaft, about 95 feet deep, developed a short good grade lense of ore, (4-5%) all of which was probably mined. The lense occurs in sheared peridotite. In the Van Epps adit, low grade (0.18 to 0.36%) copper mineralization occurs in peridotite and in diorite dikes which cut the peridotite. The dike near the portal of the adit is at least 180 feet wide.

The applicant proposed drilling in search of the downward extension of the lense mined in the shaft and to test the wide dike near the portal of the long adit. The examiners and the Field Team tentatively recommend underground drilling.

It appears likely the known pods of good grade material near the shaft have been mined out and no continuing structure, laterally or downward, seems to have been revealed by the drilling and underground openings. The cost of the work and the value of the production are not commensurable and it appears unlikely further work will reduce the disproportion materially, if at all.

I recommend that the application be denied.

K. E. Nelson

K. E. Nelson

Copy to: James C. Pennington, 3623
Director's reading, 4212
Branch reading, 4212
Docket file
Chron. file
DMEA (3)

NENelson:pbb
G: 3/1/57

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

EXTRA COPY
DMEA
RECEIVED MAR 12 1957
DATE | INITIALS | CODE

March 11, 1957

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

From: Commodity Specialist, Branch of Base Metals

Subject: Review of application examination report, Docket No. DMEA 4509 (copper), McPhail Engineering Company, Fortune Creek (Pickwick) Property, Chelan and Kittitas Counties, Washington

For a number of reasons the examiners feel that the applicant's proposed exploration program is not justified:

1. The examination of accessible workings did not indicate any structure or mineralization extending from the stoped area.

2. There is no particular indication that other ore bodies would be found by exploration along a projection of the stoping.

3. Assays of a thick copper-bearing dike near the Van Epps adit portal indicate that it is of insufficient over-all grade to constitute low grade ore.

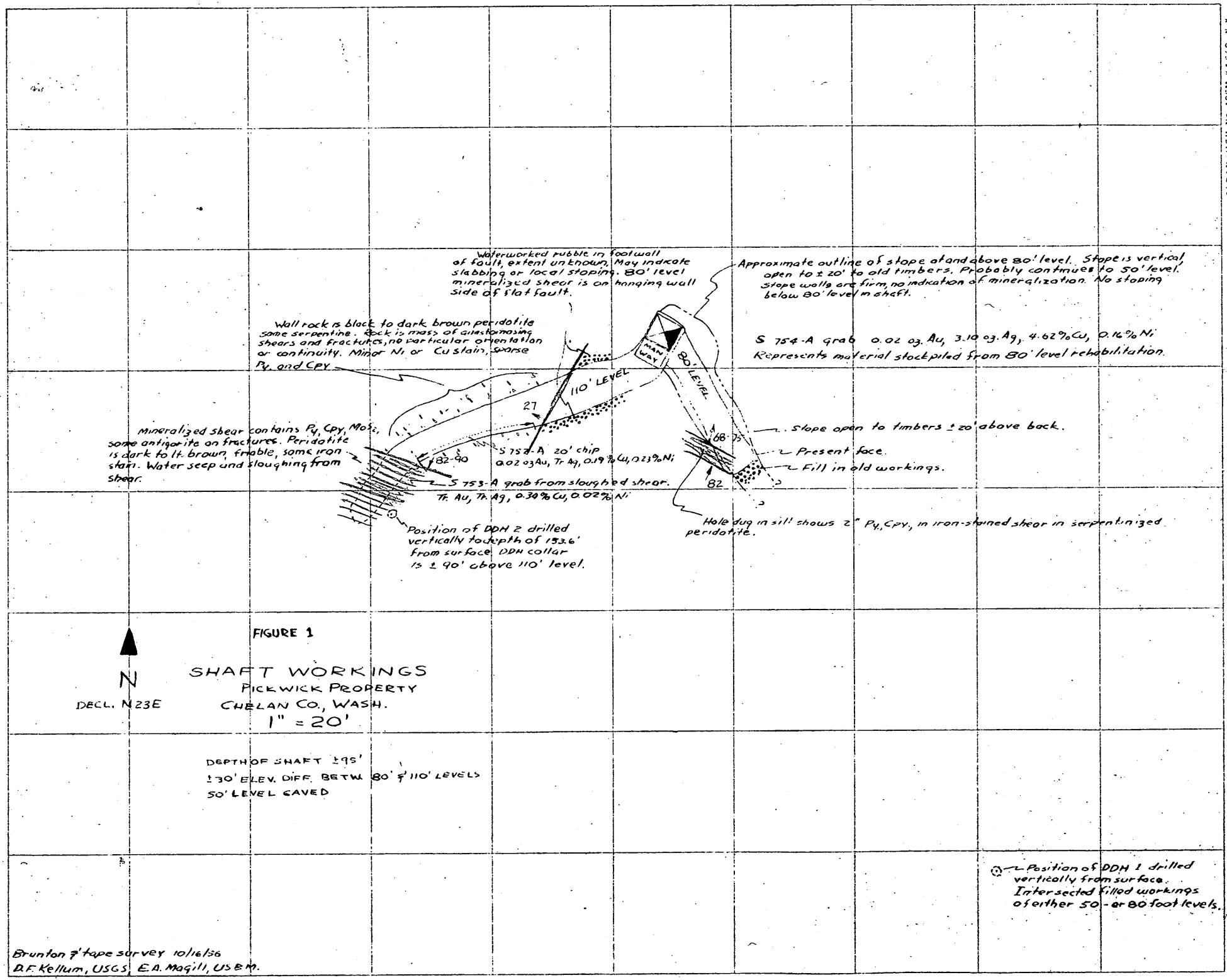
The Field Team suggested some additional sampling in the Van Epps adit and some diamond drilling from the end of the 110 level to test the ground under the old stopes but stated they would not argue vigorously for such a program.

Although it appears that both the examiners and the Field Team feel the property has some merit the examination does not justify an exploration program on the available information and it is recommended that the application be denied without prejudice to the property.

A. D. McMahon

A. D. McMahon

Copy to: Division of Minerals
Branch of Base Metals (2)
Thor Kiilsgaard, U.S.G.S.
F. D. Lamb
F i l e s



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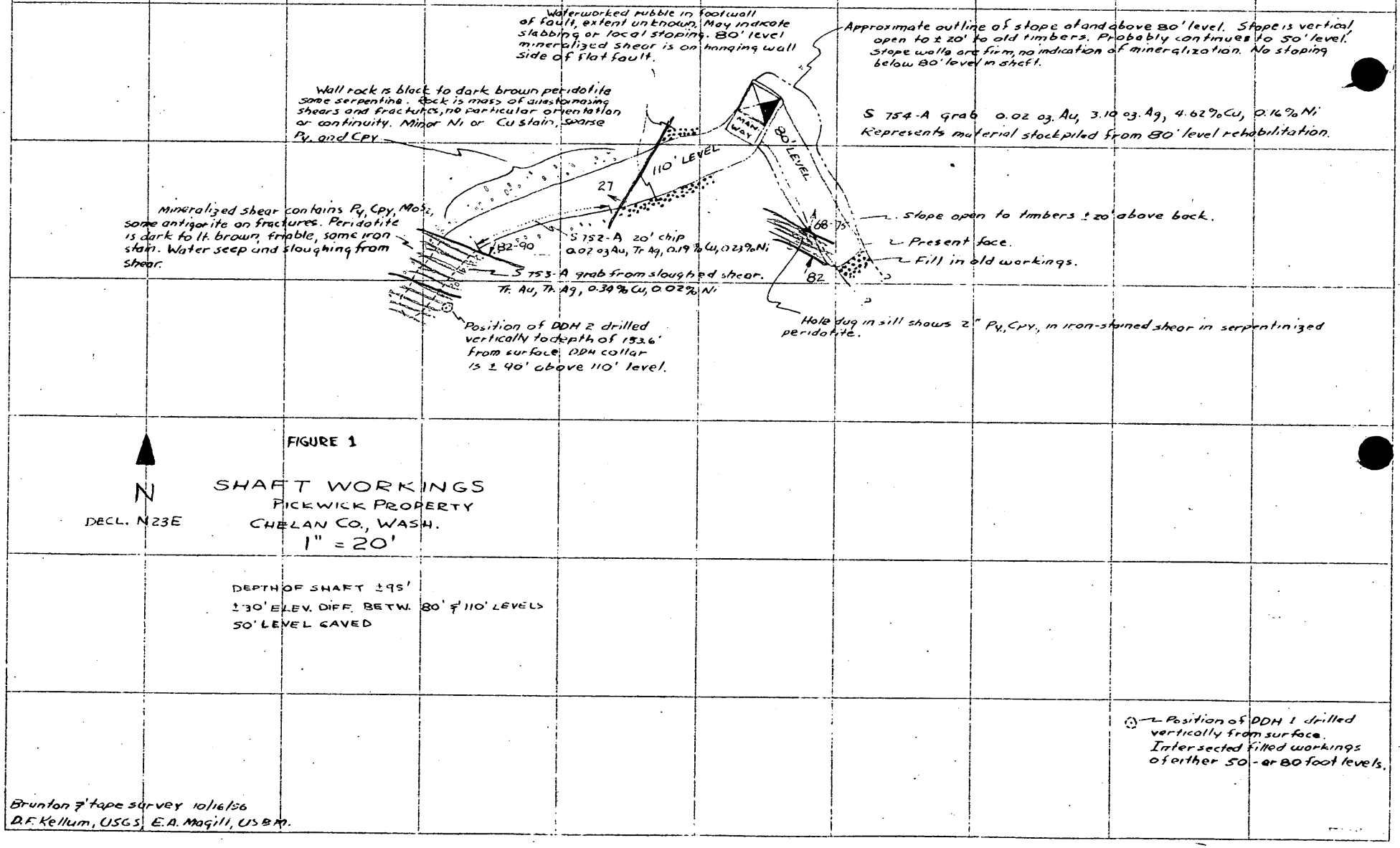

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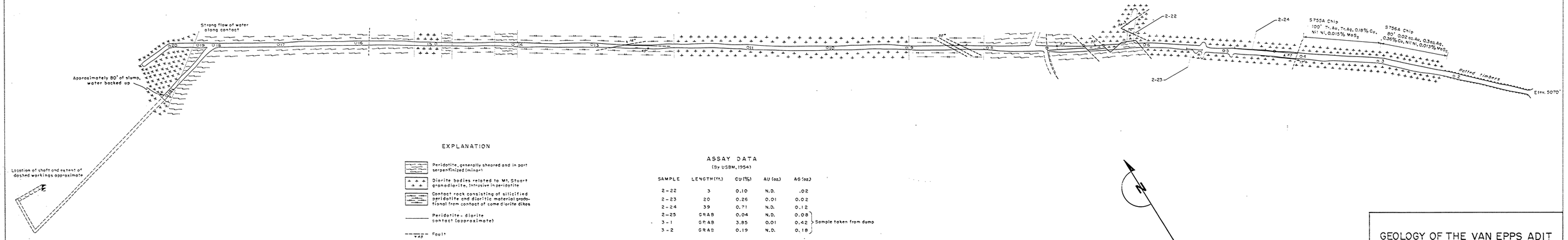


EXPLANATION

- Peridotite, generally sheared and in part serpentinized (minor)
- Diorite bodies related to Mt. Stuart granodiorite. Intrusive in peridotite
- Contact rock consisting of silicified peridotite and dioritic material gradational from contact of some diorite dikes
- Peridotite - diorite contact (approximate)
- Fault
- S755 A Sample by DMEA examiners 10/16/56

Gradational contacts dip and strike not measured

ASSAY DATA

(By USBM, 1954)

SAMPLE	LENGTH (ft.)	CU (%)	AU (oz.)	AG (oz.)	
2-22	3	0.10	N.D.	.02	
2-23	20	0.26	0.01	0.02	
2-24	39	0.71	N.D.	0.12	
2-25	GRAB	0.04	N.D.	0.08	Sample taken from dump
3-1	GRAB	3.85	0.01	0.42	Sample taken from dump
3-2	GRAB	0.19	N.D.	0.18	Sample taken from dump

Geology by R.N. Appling, USBM, 10/17/54

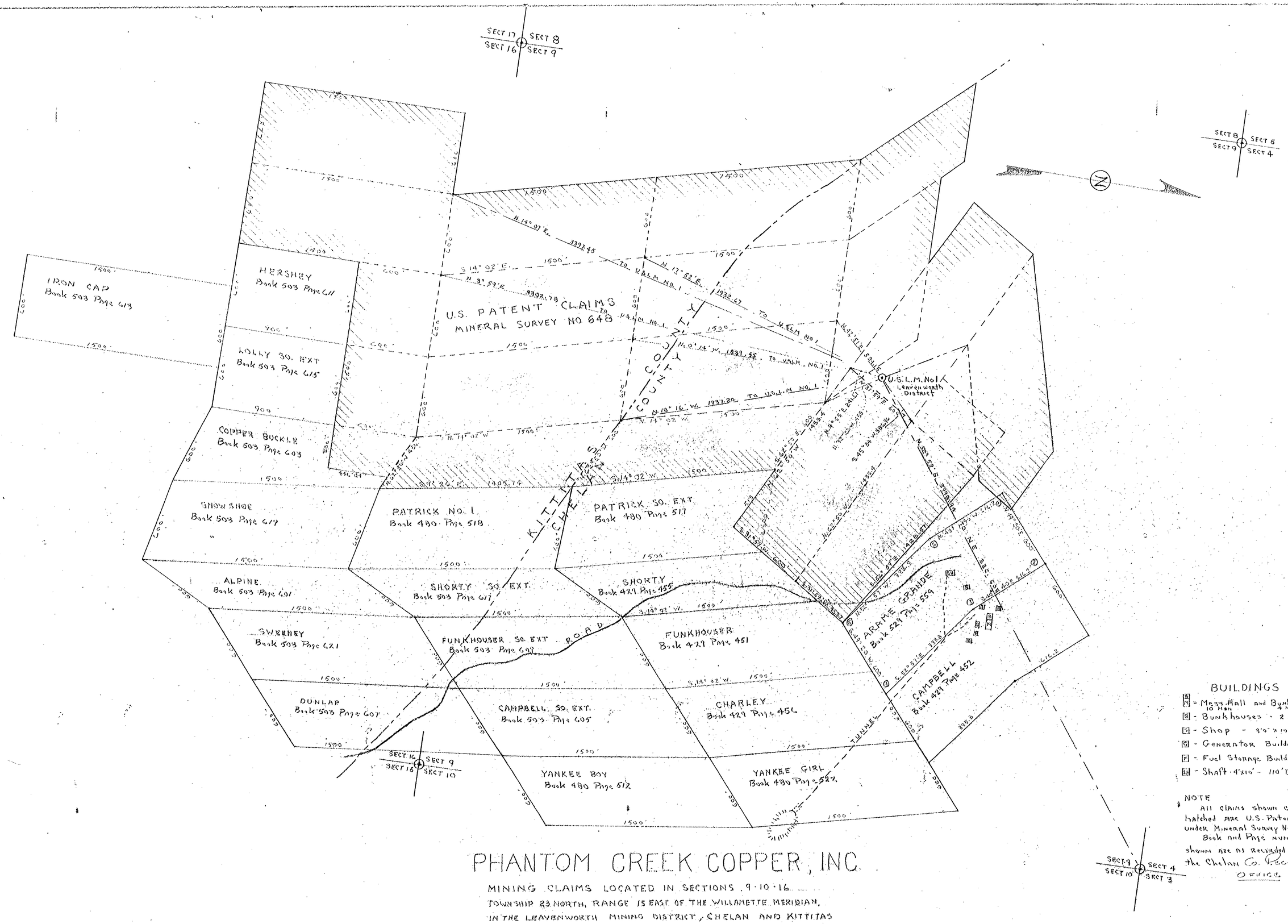
GEOLOGY OF THE VAN EPPS ADIT

PICKWICK PROPERTY

CHELAN COUNTY, WASHINGTON

0 25 50 100 FEET

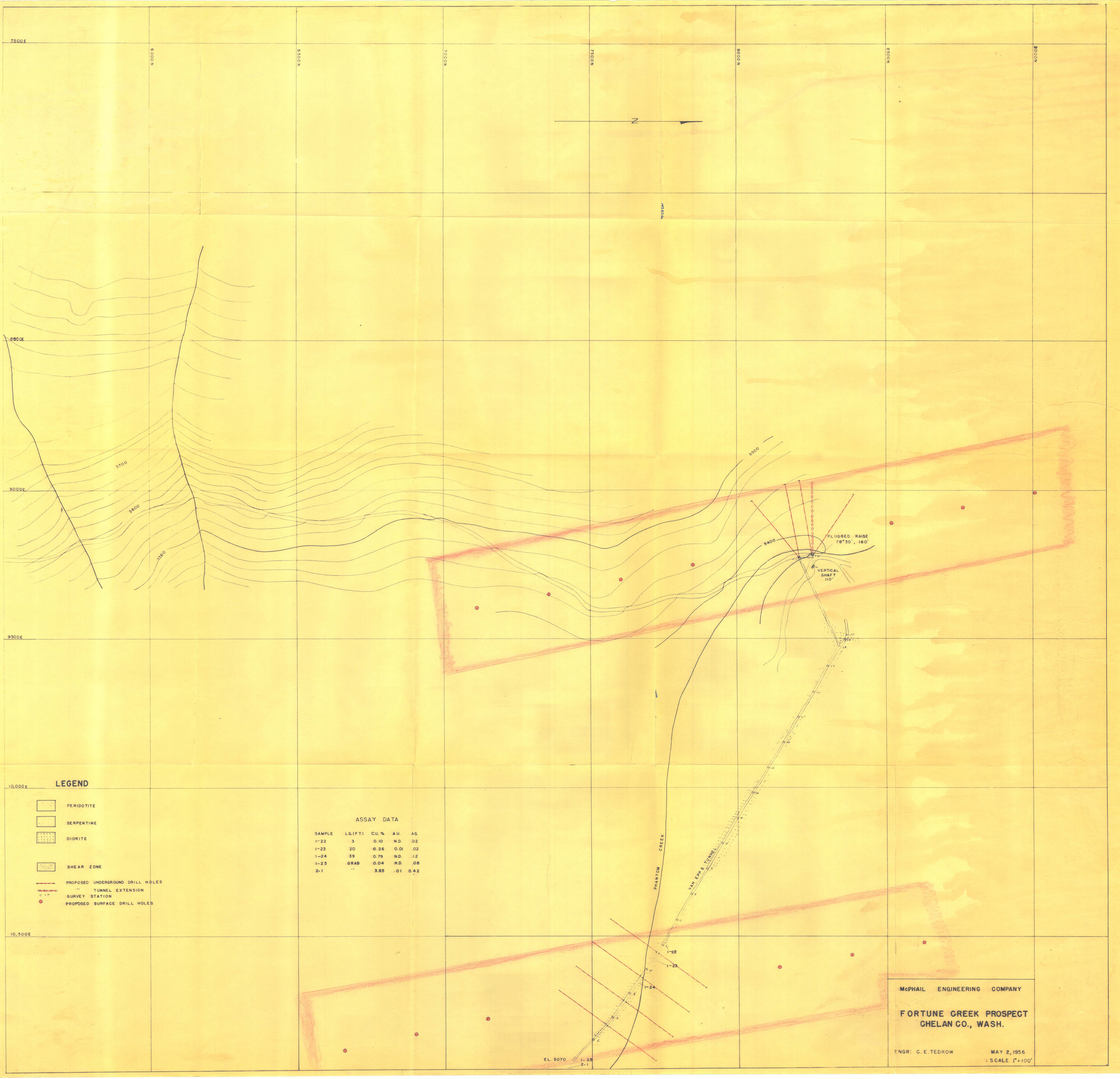
PLATE I



PHANTOM CREEK COPPER, INC.

MINING CLAIMS LOCATED IN SECTIONS 9-10-16
TOWNSHIP 23 NORTH, RANGE 15 EAST OF THE WILLAMETTE MERIDIAN,
IN THE LEAVENWORTH MINING DISTRICT, CHELAN AND KITTITAS
COUNTIES, WASHINGTON.

SCALE 1" = 300'


7500E
8000E
9000E
9500E
10,000E
10,500E
6000N
6500N
7000N
7500N
8000N
8500N
9000N
N
5700
5600
5500
5400
5300
PLUGGED RAISE
78°30', 160'
VERTICAL
SHAFT
110'
PHANTOM CREEK
VAN EPP'S TUNNEL
1-22
1-23
1-24
1-25
2-1
EL. 5070
LEGEND
PERIDOTITE
SERPENTINE
DIORITE
SHEAR ZONE
PROPOSED UNDERGROUND DRILL HOLES
" TUNNEL EXTENSION
SURVEY STATION
PROPOSED SURFACE DRILL HOLES
ASSAY DATA
SAMPLE LG.(FT.) CU.% AU. AG.
1-22 3 0.10 N.D. .02
1-23 20 0.26 0.01 .02
1-24 39 0.79 N.D. .12
1-25 GRAB 0.04 N.D. .08
2-1 " 3.85 .01 0.42
McPHAIL ENGINEERING COMPANY
FORTUNE CREEK PROSPECT
CHELAN CO., WASH.
ENGR: C. E. TEDROW
MAY 2, 1956
SCALE 1"=100'