DMEA Form 9
Rev. 6/57

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE Idm-E NO._____ DMEA NO. 5004

Application
- [X] Denied
- [ ] Withdrawn

Contract
- [ ] Terminated - Not Certified
- [ ] Terminated - Certified
- [ ] Cancelled
- [ ] Royalty Agreement

The records contained in this file are marked (x) and arranged in this order:

Folder No. 1:

Left Side

- [ ] Royalty Audits
- [ ] Certification of Discovery
- [ ] Closing Letter
- [ ] Cost Audits
- [ ] Termination Notice or Agreement
- [ ] Recision Notice
- [ ] Assignment of Contract
- [ ] Contract Amendments
- [ ] Contract with all exhibits and annexes
- [X] Owner's Consent to Lien and Subordination Agreement
- [X] Application and attachments

Right Side

- [ ] Project summary (final)
- [ ] Work Completed analysis (final)

All other material filed in chronological order including the following reports if checked:

- [ ] Field Team Semi-Annual Report for Certified Project
- [ ] Final Field Team Report (Tab)
- [ ] Operator's Final Report (Tab)
- [ ] Interim Field Team Reports
- [ ] Operator's monthly reports and all attachments
- [X] On-site Exam Report (Tab)
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

Left Side

Folders No. _____: Report

- [ ] Analysis of Semi-Annual Inspection Reports
- [ ] Project Summary (Interim) by DMEA Engineers

Right Side

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

Folders No. 2: Maps (Use pocket folder or envelope)

Folders No. _____: Settlement Sheets

Folders No. _____: Drill Logs

Folders No. _____: Royalty material

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

OFFICIAL FILE COPY
DMEA
RECEIVED 5 1958
DATE

224 New Customhouse
Denver 2, Colorado
May 1, 1958

Memorandum

To: Secretary to the Operating Committee

From: Acting Executive Officer, DMEA Field Team, Region III

Subject: Application for DMEA aid (Lead-Copper) Glen Larsen (Iron Blosom No. 1 Mine) Juab County, Utah

Enclosed are two copies of the subject application in the amount of $54,564.11. This application was submitted to the DMEA office in Salt Lake City April 29, 1958.

One copy of the application was retained by the Salt Lake City DMEA Office and one copy is being retained in our file.

One copy of the lease agreement between Larsen and Tintic Stanard Mining Company is included with the original copy of the application and one copy of the lease is being retained with our copy of the application.

E. N. Harshman

E. N. Harshman

Form MF–103
Revised Oct. 1957

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42–R1035.3
Approval expires June 30, 1958

APPLICATION FOR AID IN AN EXPLORATION PROJECT

PURSUANT TO DMEA ORDER I, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

NAME OF APPLICANT (Full legal name and mailing address as it should appear on contract if one is executed)

Glen Larsen
Eureka, Utah

RECEIVED MAY 5 1958 D.M.E.A.

DMEA
DEPARTMENT OF THE INTERIOR
MAY 1 - 1958
REGION III
DENVER, COLORADO

APPLICANT NOT TO USE THIS BLOCK

Docket Number: DMEA-5004
Date Received: 5-5-58
Government Participation %:
Region: III
Division Code: 500

BUSINESS ORGANIZATION (Check one)

- Individual [X]
- Corporation [ ]
- Partnership [ ]
- Other (Specify) [ ]

State in which firm is organized: Utah

LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE

Name	Address	Title

Mineral(s) for which you wish to explore: Lead, copper, silver and gold

Estimated Cost of Project: $ 54,564.11

LOCATION OF PROPERTY

Name	County	State
Iron Blossom No. 1 Mine of Tintic Standard Mining Company,	Juab County,	Utah

GENERAL INSTRUCTIONS

Before filling out this application, please read DMEA Order–I, Revised, "Government Aid in Defense Exploration Projects." To assure prompt action, your application must provide all applicable material and information specified on the back of this application form. Avoid unnecessary correspondence and delays by submitting complete and accurate information. *Please submit four copies of this application and all accompanying papers* except as otherwise noted. Place your name and address on each sheet. Each item of information, maps, and reports required as a part of this application is described on the back of this form. Identify each attached statement by the item number to which it applies. If an item does not apply to your application, show the item number on your statement and after it write "not applicable." Maps or sketches should be used to supplement narrative descriptions of the property location and boundaries in item 1, existing mine workings and geology in item 2, and the proposed exploration project in item 4. When this information is not too complex, all of it may be shown on one map or sketch. All documents and other attachments submitted as a part of this application, except those in item 2(g) which you mark to be returned, become the property of the Government and will not be returned to the applicant. Send true copies, *not originals*, of leases, contracts, and other documents which are an essential part of your business records. *File this application with the Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest DMEA Field Office.*

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

× Glen Larsen
BY (Signature)

Title

A wilfully false statement or certification to any Department or Agency of the United States Government is a criminal offense. U. S. Code, Title 18, Sec. 1001.

INFORMATION REQUIRED WITH THIS APPLICATION

1. *Applicant's Property Rights:*

(a) State the legal description (section, township, and range; metes and bounds; patent number of claims) of the land upon which you wish to explore and all land adjacent to the proposed project area which you own or control. Describe any part of the project land or workings which should not be subject to Government lien for royalty payments. If the land consists of unpatented claims, state the book and page number for each recorded location notice, including amended locations, and the place where recorded (courthouse, recorder's office, county, and state).

(b) State all the names by which you know the property.

(c) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise. If you are not the owner, submit with this application one exact copy of the lease, contract, or other document (with address of owner) under which you control the property.

(d) Describe all liens, mortgages, or other encumbrances on the property.

2. *Physical Description:*

(a) Describe in detail and illustrate with maps or sketches all mining or exploration operations which you know have been or are being conducted upon the lands, including existing mine workings. Describe all production facilities.

(b) State your interest, if any, in operations stated in 2*(a)*.

(c) State, as far as you know, the past and current production, supporting your statement with copies of settlement sheets, mine records, or published data if available.

(d) Describe known ore reserves on the property giving quantities and grades and sampling methods used, supporting your statement with copies of assay certificates and assay maps if available.

(e) Describe by narrative and maps or sketches the geologic features of the property, including ore minerals, geologic formations if known, and type of deposit (vein, bedded, etc.).

(f) State your reasons for expecting to find ore, and if you have sampled the area you propose to explore, show where the samples were taken, describe sampling methods used, and provide copies of assay certificates.

(g) Send with your application at least *two* copies of all geologic or engineering reports, assay maps, or technologic information which you may have, indicating on each whether you require its return to you.

3. *Accessibility of Project:*

(a) To aid DMEA representatives who may be required to examine the property, state the name and address of the person who will meet the DMEA representative; give directions for reaching the property; and describe accessibility of the property including the mine workings.

(b) Name the shipping and supply points and places where employees reside and state the distances between them and the property.

4. *The Exploration Project:*

(a) Describe fully the proposed exploration project giving individual footages and sizes of openings *for each item of work*. Use narrative, maps, plans, and longitudinal and cross sections as necessary. Show the location of the proposed work as related to geologic features such as veins, ore-bearing beds, contacts of rock formations, etc. Show also the relation of the proposed work to any existing mine workings and to *property boundaries* or to the closest identifiable corner.

(b) If an access road to the project must be built, show the location on the property map and state the length, type, and construction methods proposed.

(c) In the event that an exploration contract with DMEA is executed, how soon will the work start and how many months will be required to complete it? State your anticipated average daily or monthly rate of progress for each type of work.

5. *Experience:*

State your operating experience and background with relation to your ability to carry out this exploration project, and also that of the person or persons who will supervise the operations.

6. *Estimate of Costs:*

Furnish detailed estimates of the costs *for each item of the work proposed in 4(a)* under the headings listed below with a total for each heading and the estimated total cost of the project. Costs for any work to be performed by an independent contractor should be shown separately under category *(a)* below. Costs for any work that is not to be performed by an independent contractor should be given in detail under categories *(b)* through *(g)*.

(a) Independent contracts. State the cost of any proposed independent contract for the performance of all or any part of the work, expressed in units of work, such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved. Cost estimates should be supported by bids from three contractors if possible. *(Note* – If none of the work is to be contracted, write "none" after this item.)

(b) Personal services. For necessary supervision, engineering and geological services, and labor, include an itemized schedule of numbers, classes, rates of wages, salaries or fees, and periods of employment. State whether these technicians and employees are available.

(c) Operating materials and supplies. List items of material and supplies with their cost. Include under this heading power, water, and fuel, and units of equipment and tools costing less than $50 each.

(d) Operating equipment. List items of operating equipment to be used giving specifications and indicating how each item is to be acquired – i.e., rented, purchased, or provided by the applicant. If it is rented or purchased, state the estimated rental or purchase price. If it is to be furnished by the applicant, give its present fair market value.

(e) Initial rehabilitation and repairs. Describe the type and the cost of necessary *initial* rehabilitation or repair of existing buildings, fixtures, installations (exclusive of mine workings), and movable operating equipment now owned by the applicant, which will be used on the exploration project.

(f) New buildings, fixtures, installations. Describe each building, fixed improvement, and installation to be purchased, constructed, or installed for the exploration project stating specifications and cost including labor, materials and supervision.

(g) Miscellaneous. For the operating equipment listed in 6*(d)*, describe the type and estimate the cost of repairs and maintenance expected during project operations. Do not repeat initial repairs listed in 6*(e)*. Show also the costs of analytical work, accounting, workmen's compensation and employees' liability insurance, payroll taxes, and other required costs that do not fall within the previous categories.

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)* State whether you are prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation stated in Sec. 7 of DMEA Order–I, Revised.

(b) Explain to what extent you propose to furnish your share of the costs by providing money, by use of equipment owned by you, or otherwise.

* * * * * *

INT.-DUP. SEC., WASH., D.C. 25960

MF-205
(Combines and supercedes MF-201 and MF-205)
June 1956

RECEIVED
MAY 5 1958
D.M.E.A.

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

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of Juab, State of Utah, described ~~xxxxxxxxxxx~~ 2/

in a Lease and Agreement dated April 1, 1958

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;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

None

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

2/ 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.

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: None (State "None" or "See Annex No.____")

Dated this 25th day of April, 1958

H E Raddatz Pres. [Seal] 1395 Coast Blvd., La Jolla, Calif. [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, Glen Hardy certify that I am the Secretary (Secretary, etc.) of the corporation named herein; that H. E. Raddatz who signed this agreement was then 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.

Glen Hardy

[Corporate Seal]

FILE COPY
DMEA
RECEIVED 5 1958

Glen Larsen, Eureka, Utah — Supplemental Sheet A

1.(a) Legal description of mining claims (as patented) to be included in this project, is as follows:

U. S. Mineral Survey No. 4548 Una lode,
" " " " " ~~5171 Little Chief~~ lode,
" " " " " 5171 Excelsior lode,
" " " " " 5171 Mild Winter lode,
" " " " " Lot No. 115 Iron Blossom lode
" " " " " 5171 Little Giant lode (limited to that portion which lies southerly of a straight line drawn from Corner No. 2 to Corner No. 5 of said Little Giant lode, said line having a course and distance of S. 67° 17' E. 599.1 feet.) (See Map No. 8-2)

Description of the exterior boundaries of this tract is given in a Lease and Agreement, dated April 1, 1958, by and between Tintic Standard Mining Company as Lessor and Glen Larsen as Lessee.

The said mining claims constitute only a portion of the property of the owner, Tintic Standard Mining Company. (See Map 8-2)

1.(b) The property is known by the name Iron Blossom Mine.

1.(c) The applicant herein holds the described property under a Lease and Agreement, dated April 1, 1958, one exact copy of which is herewith included.

1.(d) There are no liens, mortgages, or other incumbrances on the property.

2. Physical Description.

(a) The premises held by the applicant, under Lease and Agreement above referred to, include extensive underground workings shown in part in composite form on Map 310. The only present access to these workings is through No. 1 Tunnel. All other former adits are inaccessible.

The applicant has rehabilitated Tunnel No. 1 through a distance of about 300 feet beginning at the portal, has sunk the Larsen Winze to a depth of about 100 feet below the tunnel, and has driven a crosscut about 145 feet on the 300 Level, has drifted about 45 feet northerly from said crosscut, and has reopened about 80 feet of drift southerly from the crosscut.

The applicant has equipped his operation with a Diesel-powered compressor, mine track, air-powered hoist, mine cars, rock drills, etc. A wooden ore bin near the mine portal affords storage for ore prior to transportation to the Utah smelters. There are no other operations within the leased premises.

2.(b) The applicant is the only operator within the described premises and his interest is that of lessee.

2.(c) The entire Iron Blossom property has a record of production that dates back more than fifty years. The total known production is in excess of 636,000 dry tons of crude ore from which, according to published reports, dividends amounting to $3,525,000 were paid.

2.(d) There are no known commensurable ore reserves on the property. Production during the past twenty five or thirty years has been made under the leasing system in which the operators have mined along extensions of fissures, stope fills left as gob, and low-grade ores in blocks between old stopes. Many of such small extensions of old workings have not been surveyed or mapped and are not shown on existing maps. The applicant has encountered on the 300 Level a small body of ore adjacent to a caved raise (not shown on maps). This ore does not extend above the 300 Level but is expected to be encountered on the 400 Level. Shipments of about 400 tons of this ore have assayed 0.13 to 0.20 ounces gold, 5.0 to 14.5 ounces silver, 4.7 to 6.5% lead, 41.5 to 53.8% silica, with somewhat higher values in silver and lead for shipments not yet settled for.

2.(e) The geology and ore deposits of the property are described in U. S. Government publications covering the Tintic District.

2.(f) The applicant, by reason of many years of mining experience in the Tintic District, especially in the Iron Blossom mine and in the Dragon mine which adjoins the south end of the Iron Blossom, has an intimate knowledge of many of the old workings, is familiar with the habit of the ore occurrence, with the trend of the fissures, and with the history of many of the workings from which ore has been mined by lessees. He expects to find ore by following extensions of known fissures and by entering unexplored areas adjacent to old stopes.

2.(g) Four copies of each of the following maps are included with this application:

No. 8-2 Claim Map - 200 Scale
No. 8-3 Project Map - 40 Scale
No. 310 Composite Map of Workings - 100 Scale
No. 332 200 Level with some geology - 100 Scale
No. 332 400 Level with some geology - 100 Scale

3.(a) The project is accessible from Eureka, Utah, by road. The DMEA representative should contact the applicant at Eureka, Utah by telephone.

3.(b) Eureka, Utah is the shipping and supply point and is approximately three miles north of the project.

4. The Exploration Project.

(a) Project 1 - Sinking. Coincidental with Project 2, the Larsen Winze, 6 x 10 feet in cross-section, is to be extended from the 300 Level to the 400 Level, distance 105 feet. From the 200 Level to the 300 Level, this winze is equipped with a cage and air-powered hoist to handle one-ton capacity

cars. The cage compartment is 4 x 4 feet inside of timber. The man-way side, below the 300 Level is planned for sinking with a bucket while the cage is being used from the 300 Level to the 200 Level for hoisting waste from all of the project operations on the 300 Level. The winze is to be timbered on six-foot centers and fully lagged. The rock to be penetrated is rhyolite (or monzonite-porphyry), firm but not excessively hard, shatters well and without excessive overbreak.

Project 2 - Crosscutting - 300 Level - 5 x 7 feet in cross-section. From point "A", drive approximately N.30°W. 30 feet, to intersect existing drift at rhyolite-limestone contact, point "B". From point "B", drive approximately N.42°W. 150 feet to crosscut a known fissure zone of the 400 Level. At distances of approximately 85 feet and 120 feet on this course, points "C" and "D" respectively, fissures projected from the 400 Level are expected to be intersected. Total distance 180 feet.

Project 3 - Drifting - 300 Level - 5 x 7 feet in cross-section. From point "B", follow the rhyolite-limestone contact N.50°E. (or on its actual course), 50 feet to point "E", thence continue on said contact S.86°E. 155 feet, more or less, with the eventual objective of intersecting Hadfield Raise at point "F". The Hadfield Raise was driven on an ore-bearing fissure through a zone of strong silicification and is considered to be a good prospect at this elevation. Total distance 205 feet, more or less.

Project 4 - Crosscutting - 400 Level - 5 x 7 feet in cross-section. From Larsen Winze Station, after completion of Project 1, drive S.65°W. 65 feet to point "G" for connection with existing 400 Level. From point "G", rehabilitate the drift going southerly to point "K", about 210 feet. It is anticipated that this drift will be blocked at points "H" and "J" by waste runs. At point "K", a vertical raise 40 feet high is to be re-timbered with a chute and manway (lagging and ladders on stulls). The raise exposes a strongly mineralized quartz fissure. See Project 9. Crosscutting 65 feet; cleanup 210 feet.

Project 5 - 300 Level - 5 x 7 feet in cross-section. From point "L", drive around a caved area S.32½°W. 53 feet to point "M", thence S.2°W. 22 feet to intersect an existing drift at point "N". From point "N" to point "O", rehabilitate the existing drift, which is expected to be free of obstructions, 240 feet. Drifting 75 feet; cleanup 240 feet.

Project 6 - 300 Level - 5 x 7 feet in cross-section. From point "D", drift northeasterly on fissure toward final objective of fissure intersection, 220 feet. The possibilities for ore in this area are inferred from known workings at a lower elevation. Drifting 220 feet.

Project 7 - 300 Level - 5 x 7 feet in cross-section. From point "C", drive southwesterly on fissure to the locus of an existing raise at lower elevation where there is known to be residual ore. Drifting 260 feet.

Project 8 - Drifting - 300 Level - 5 x 7 feet in cross-section. From Point "O", drive southwesterly on the "Gold" fissure 150 feet to a point about 60 feet from the property boundary. Drifting 150 feet.

Project 9 - Drifting - 400 Level - 5 x 7 feet in cross-section. From top of raise at point "K", about 40 feet above 400 Level, drift southwesterly along fissure, 300 feet to a point about 65 feet from the property boundary. drifting 300 feet.

4.(b) No access road is necessary.

4.(c) Time Schedule of Work.

Project No.		Distance	Average Daily Progress	Dates Start	Dates Completion
1	Larsen Winze	105 feet	2 feet	Zero	10th week
2	Crosscut, 300 Level	180	5	Zero	7th
3	Drift, 300 Level	205	4.5	8th week	16th
4	Crosscut, 400 Level	65	5	11th	13th
	Cleanup " "	210	14	13th	16th
	Retimbering " "	40	(2 days)		16th
5	Drift, 300 Level	75	4.5	17th)	
	Cleanup " "	240	(3 days)	)	20th
6	Drift, 300 Level	220	5	17th	25th
7	Drift, 300 Level	260	5	21st	31st
8	Drift, 300 Level	150	5	26th	31st
9	Drift, 400 Level	300	5	32nd	43rd

Note: It may be necessary to adjust the chronology of this schedule, depending upon availability of equipment such as the loading machine, for work in the various headings.

5. Experience. The applicant will be the working supervisor of all the operations. He has been mining in the same locality during the past sixteen years. Included in this experience are one year as mine foreman for Newmont Mining Company at its lease in the Apex Standard Mine, one year as foreman for International Smelting and Refining Company at its Godiva Mine. Most of his experience has been in leasing as an independent operator, in which he has been successful.

6. Estimate of Costs.

(a) There will be no independent contracts.

(b) Personal Services. The following schedule includes the applicant, and these workmen are presently available.

1	Hoistman	@ $ 20.26/day	$ 20.26
1	Topman-Trammer	20.26	20.26
4	Miners	20.26	81.04
	Labor, per day		$ 121.56
	Labor, per week of 5 days		$ 607.80

After completion of Project 3, it may be necessary to add another man to the labor force on account of the extra tramming distance, raising the labor cost to $709.10 per week.

Services of an engineer-geologist are expected to cost not more than $100.00 per month, or an average of approximately $25.00 per week.

Total cost of labor and engineer services, Projects 1, 2, 3 $ 632.80/wk.
after Project 3 734.10/wk.

(c) Operating Materials and Supplies.

Winze timber, 16 sets

32 pcs.	8 x 8 - 10	1706' BM @	85.00	$ 145.01
16	8 x 8 - 12	1024	"	87.04
6	6 x 8 - 12	288	"	24.48
500	2 x 12 - 6	6000	75.00	450.00
16	4 x 4 - 14 guides	298	120.00	35.76
Blocks and wedges		768	85.00	65.28

Timber cost per foot of winze	$ 8.00
Hanging rods " " " "	1.00
Explosives cost per foot of winze or drift	$ 4.00
Miscellaneous hand tools, such as axe, hammer, pick, shovel, saws, pipe wrench, track wrench, square, per foot of drift	$ 0.50
Fuel for Diesel engine	50.00/week
Oils for engine, compressor, drills, loader	5.00
Gasoline for trucking water and supplies	10.00
Total for fuel, oils, gasoline	$65.00/week

(c) Operating Materials and Supplies - Cont'd.

Mine track, 12# rails in 15-ft. lengths 9½lb.	$ 1.52/ft. of drift
Splices and bolts	.08
Spikes	.02
Wooden ties 4x4-2½ @ 25¢/ft.	.07
Total, track complete	$ 1.69
Track switches	15.00 each
Pipe for compressed air, 2", per foot	0.55
Couplings each	0.85
Tees	1.50
Unions	1.70
Elbows	1.05
Valves, plug cock	13.00

(d) Operating Equipment, supplied by applicant

		Present Value	Depreciation Charge per month	Depreciation Charge per week
1	Mancha B locomotive, with charger, less battery and transformers	$ 3,600	$ 60.00	$ 13.80
1	Eimco 12B loader	2,000	35.00	7.70
1	Air-powered hoist	1,200	20.00	4.60
10	Mine cars	1,000	17.00	3.80
1	Compressor, 315 C.F.M.	3,000	50.00	11.50
1	Diesel engine, 165 HP	4,000	67.00	15.40
1	Scraper	100	1.50	.40
1	Double-drum slusher hoist	600	10.00	2.30
2	Single-drum tuggers	700	13.00	2.70
1	Pickup truck, 1957 GMC	1,500	25.00	6.00
1	Pickup truck, 1952 Ford	600	10.00	2.30
2	Rock drill with jackleg	900	15.00	3.40
	Totals	19,200	323.50	73.90
	Operating equipment to be purchased			
1	Locomotive Battery	900	15.00	3.40
2	Transformers, 5000-440/220 volts (smaller sizes not available for this voltage)	1,000	17.00	3.80
2	Rock Drills with jackleg	1,000	17.00	3.80
	Totals	2,900	49.00	11.00
	Total cost of operating equipment	$ 22,100	$ 372.50	$ 84.90

(e) Initial Rehabilitation and Repairs. None

(f) New Buildings, Fixtures, Installations. None.

(g) The estimated cost of repairs and maintenance expected during project operations is included in the item for contingencies listed for each part of the project individually. Payroll cost in addition to direct labor cost, including workmen's compensation insurance, FICA tax, unemployment compenation tax, occupational disease compensation insurance, liability insurance, vacation pay, are calculated at the rate of 15% of labor cost.

6. Summary of Costs. Labor and fuel costs are halved between two headings working simultaneously.

Project 1 - Larsen Winze - 300 to 400 Level - 105 feet - 10 weeks.

Labor @ ½ of $632.80 per week	$ 3,164.00	
Additional payroll cost, 15% of above	474.60	
Fuel, oils, gasoline ½ of $65.00 per week	325.00	
Drill steel and bits @ $0.25 per foot	26.25	
Explosives @ $4.00 per foot	420.00	
Timber See 6.(c)	840.00	
Hanging rods @ $1.00 per foot	105.00	
Pipe and fittings, 105' @ 55¢, 2 valves 26.00, 4 couplings 3.40, 1 tee 1.50	75.65	
Miscellaneous tools @ $0.50 per foot	52.50	
Equipment depreciation ½ of $84.90 per week	424.50	
Contingencies @ $1.00 per foot	105.00	$ 6,012.50

Project 2 - Crosscut on 300 Level - 180 feet - 7 weeks.

Labor	2,214.80	
Additional payroll cost	332.22	
Fuel, oils, gasoline	227.50	
Drill steel and bits	45.00	
Explosives	720.00	
Timber, 10% of distance, 18 ft. @ $3.60/ft.	64.80	
Mine track, 180 ft. @ $1.69 per foot	304.20	
Track switch	15.00	
Pipe and fittings	123.60	
Miscellaneous tools	90.00	
Equipment depreciation	297.15	
Contingencies	180.00	4,614.27

Project 3 - Drift on 300 Level - 205 feet - 9 weeks.

Labor	$ 2,847.60	
Additional payroll cost	427.14	
Fuel, oils, gasoline	292.50	
Drill steel and bits	51.25	
Explosives	820.00	
Timber, 10% of distance @ $3.60 per foot	73.80	
Track and switch	353.00	
Pipe and fittings	136.90	
Miscellaneous tools	102.50	
Equipment depreciation	382.05	
Contingencies	205.00	$ 5,691.74

Project 4 - Crosscut on 400 Level - 65 feet - 3 weeks.

Labor	1,101.15
Additional payroll cost	165.17
Fuel, oils, gasoline	97.50
Drill steel and bits	16.25
Explosives	260.00
Timber, 10% of distance @ $3.60 per foot	23.40
Track, $109.85; crossover switch $25.00	134.85
Pipe and fittings	52.80
Miscellaneous tools	32.50
Equipment depreciation	127.35
Contingencies	65.00
	2,075.97

Cleanup on 400 Level - 210 feet - 4 weeks.

Labor	1,468.20
Additional payroll expense	220.23
Fuel, oils, gasoline	130.00
Timber, 30 feet @ $3.60 per foot	108.00
Mine track	354.90
Pipe and fittings	138.50
Miscellaneous tools	105.00
Equipment depreciation	169.80
Contingencies	210.00
	2,904.63

Retimbering raise - 400 Level - 40 feet - 2 days

Labor	146.82
Additional payroll expense	22.02
Fuel, oils, gasoline	13.00
Timber	52.36
Pipe and fittings	29.42
Equipment depreciation	16.98
	280.60

Total cost of Project 4, three parts $ 5,261.20

Project 5 - Drift on 300 Level - 75 feet - 3 weeks.

Labor	$ 1,101.15	
Additional payroll cost	165.17	
Fuel, oils and gasoline	97.50	
Drill steel and bits	19.25	
Explosives	300.00	
Timber, 10% of distance, 7.5 @ $3.60	27.00	
Pipe and fittings	111.00	
Miscellaneous tools	37.50	
Equipment depreciation	127.35	
Contingencies	75.00	
Mine track	126.75	
	2,187.67	

Cleanup on 300 Level - 240 feet - 3 days.

Labor	220.23	
Additional payroll cost	33.03	
Fuel, oils, gasoline	19.50	
Timber, 24 ft. @ $3.60	86.40	
Mine track	405.60	
Pipe and fittings	143.90	
Miscellaneous tools	120.00	
Equipment depreciation	25.47	
Contingencies	240.00	
	1,294.13	
Total cost of Project 5, two parts		$ 3,481.80

Project 6 - Drift on 300 Level - 220 feet - 9 weeks.

Labor	3,303.45	
Additional payroll cost	495.82	
Fuel, oils, gasoline	292.50	
Drill steel and bits	55.00	
Explosives	880.00	
Timber, 22 feet @ $3.60	79.20	
Mine track and switch	386.80	
Pipe and fittings	143.35	
Miscellaneous tools	110.00	
Equipment depreciation	382.05	
Contingencies	220.00	6,348.17

Project 7 - Drift on 300 Level - 260 feet - 11 weeks.

Labor	$ 4,037.55	
Additional payroll cost	605.63	
Fuel, oils, gasoline	357.50	
Drill steel and bits	65.00	
Explosives	1,040.00	
Timber, 26 feet @ $3.60	93.60	
Mine track and switch	454.40	
Pipe and fittings	167.05	
Miscellaneous tools	130.00	
Equipment depreciation	466.95	
Contingencies	260.00	$ 7,677.68

Project 8 - Drift on 300 Level - 150 feet - 6 weeks.

Labor	2,202.30	
Additional payroll cost	330.35	
Fuel, oils, gasoline	195.00	
Drill steel and bits	37.50	
Explosives	600.00	
Timber	54.00	
Mine track	236.60	
Pipe and fittings	84.45	
Miscellaneous tools	75.00	
Equipment depreciation	254.70	
Contingencies	150.00	4,219.90

Project 9 - Drift from Raise on 400 Level - 300 feet - 12 weeks.

Labor	6,078.00	
Additional payroll cost	911.70	
Fuel, oils, gasoline	780.00	
Drill steel and bits	75.00	
Explosives	1,200.00	
Timber, 30 feet @ $3.60	72.00	
Mine track	490.10	
Pipe and fittings	181.25	
Miscellaneous tools	150.00	
Equipment depreciation	1,018.80	
Contingencies	300.00	11,256.85

Glen Larsen, Eureka, Utah

Supplemental Sheet K

Tabulation of Costs.

		Feet	Cost	Per Foot
Project 1	Sinking winze	105	$ 6,012.50	$ 57.26
Project 2	Crosscut 300 Level	180	4,614.27	25.63
Project 3	Drift 300 Level	205	5,691.74	27.76
Project 4	Crosscut 400 Level	65	2,075.97	31.94
	Cleanup 400 Level	210	2,904.63	13.83
	Retimber Raise 400 Level	40	280.60	7.03
Project 5	Drift 300 Level	75	2,187.67	29.17
	Cleanup 300 Level	240	1,294.13	5.39
Project 6	Drift 300 Level	220	6,348.17	28.85
Project 7	Drift 300 Level	260	7,677.68	29.53
Project 8	Drift 300 Level	150	4,219.90	28.13
Project 9	Drift 400 Level	300	11,256.85	37.52
			$ 54,564.11	

Sinking	105	$ 6,012.50	57.26
Drifting	1,455	44,072.25	30.29
Cleanup	450	4,198.76	9.33
Retimbering raise	40	280.60	7.01 7.01
		$ 54,564.11	

Totals,	Labor	$ 27,885.25
	Additional payroll expense	4,183.08
	Fuel, oils, gasoline	2,827.50
	Drill steel and bits	390.50
	Explosives	6,240.00
	Timber	1,679.56
	Mine track	3,262.20
	Pipe and fittings	1,387.87
	Miscellaneous tools	1,005.00
	Equipment depreciation	3,693.15
	Contingencies	2,010.00
		$ 54,564.11

7.(a) The applicant is prepared to furnish his share (50%) of the cost of the proposed project in the form of

(b) Labor and of use of equipment owned by him.

DMSA
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LEASE AND AGREEMENT

THIS LEASE AND AGREEMENT, made and entered into this 1st day of April 1958 by and between TINTIC STANDARD MINING COMPANY a corporation of the State of Utah, hereinafter termed the Lessor, and GLEN LARSEN hereinafter termed Lessee;

W I T N E S S E T H :

That the Lessor, for and in consideration of the rentals and royalties hereinafter required to be paid and of the covenants to be performed and kept by the Lessee, hereby leases and lets unto the Lessee, all that portion of the mining property of the Lessor, situated in Tintic Mining District, Juab County, State of Utah, embraced within the patented lode mining claims listed below:

Lot No. 115 Iron Blossom lode.
Survey No. 4548 Una lode
" " 5171 Excelsior lode
" " 5171 Little Chief lode
" " 5171 Mild Winter lode
" " 5171 Little Giant lode (limited to that portion which lies southerly of a straight line drawn from Corner No. 2 to Corner No. 5 of said Little Giant lode, said line having a course and distance of South 67 degrees 17 minutes East 599.1 feet.)

The exterior boundary of the above described tract is as follows (see Lessor's map No. 8-2, hereto attached):

Beginning at Corner No. 3, Survey No. 4548, Una lode, and running thence
S. 40° 05' W. 1,208.8 feet to Corner No. 4 of said Una lode, thence
S. 31° 17' W. 152.4 feet to Corner No. 5 of said Una lode, thence
N. 63° 45' W. 266.8 feet to the point of intersection with line 6-5, Survey No. 4519, March lode, thence along said line 6-5 of said March lode, thence
N. 47° 42' W. 125.2 feet to Corner No. 5 of said March lode, on line 1-4, Survey No. 4519, Eastern lode, thence
N. 36° 17' E. 140.0 feet to Corner No. 4 of said Eastern lode, thence
N. 47° 42' W. 200.0 feet to Corner No. 3 of said Eastern lode, identical with Corner No. 5, Survey No. 4519, Turk lode, and with Corner No. 1, Survey No. 5171, Little Chief lode, thence
N. 47° 42' W. 200.0 feet to Corner No. 4 of said Turk lode, on line 4-1 of Lot No. 85 Govenor lode, thence
N. 37° 50' E. 52 feet, more or less, to Corner No. 1 of said Govenor lode, thence
N. 49° 00' W. 200.0 feet to Corner No. 2 of said Govenor lode, thence
S. 37° 50' W. 599.9 feet to the point of intersection with line 1-2 of said Little Chief lode, thence
S. 75° 39' W. 173.6 feet to Corner No. 2 of said Little Chief lode, on line 4-3, Lot No. 115, Iron Blossom lode, thence
S. 40° 15' W. 123.0 feet, more or less, to Corner No. 4 of said Iron Blossom lode, thence
N. 63° 50' W. 190.0 feet, more or less, to Corner No. 1 of said Iron Blossom lode, thence
N. 39° 36' E. 910.0 feet, more or less, to Corner No. 1, Survey No. 5171, Mild Winter lode, thence

N. 39° 27' W. 39.9 feet to Corner No. 2 of said Mild Winter lode, thence

N. 13° 28' E. 882.6 feet to Corner No. 3 of said Mild Winter lode, thence

S. 80° 51' E. 138.2 feet to Corner No. 4 of said Mild Winter lode, identical with Corner No. 5, Lot No. 244 Wolf lode, thence

N. 36° 40' E. 577.0 feet to Corner No. 5 of said Mild Winter lode, identical with Corner No. 6 of said Wolf lode and with Corner No. 2, Survey No. 5472 Hemitite lode, thence

S. 39° 27' E. 452.5 feet to Corner No. 6 of said Mild Winter lode, identical with Corner No. 1 of said Hemitite lode and with Corner No. 3, Survey No. 5171 Excelsior lode, thence

S. 63° 50' E. 6.2 feet to the point of intersection with line 3-4 of Lot No. 122 La Bonta lode, thence

S. 18° 35' W. 92.6 feet to Corner No. 4 of said La Bonta lode, thence

S. 89° 43' E. 210.6 feet to Corner No. 5 of said La Bonta lode, identical with Corner No. 4 of said Excelsior lode and with Corner No. 2, Survey No. 5171 Little Giant lode, thence

S. 67° 17' E. 599.1 feet to Corner No. 5 of said Little Giant lode, thence

N. 75° 39' E. 154.4 feet to Corner No. 5 of said Little Chief lode, thence

S. 49° 15' W. 608.9 feet to the point of intersection with line 2-3 of said Una lode, thence

S. 63° 45' E. 384.6 feet to Corner No. 3 of said Una lode, the point of beginning.

That the term of this lease shall be a period of two years, commencing at noon April 1, 1958 and ending at noon on April 1, 1960 provided, however, that this lease and agreement shall remain in effect for successive and consecutive periods of one year each, unless terminated by reason of default on the part of the Lessee, or unless terminated at the end of the original term or at the end of any successive one-year period thereafter, by either the Lessor or the Lessee, by written notice by either to the other given at least fifteen days prior to the end of the said term or to the end of any successive one-year period, as the case may be.

That the purpose of this lease and agreement is the mining and marketing or ores from the leased premises described above.

That the Lessor has executed a Consent to Lien and Subordination Agreement (Form MF-205) in favor of the United States of America in order that the Lessee may fulfill requirements for an Application for Aid in an Exploration Contract (Form MF-103.)

IN CONSIDERATION OF said demise, the said Lessee covenants and agrees with the Lessor as follows:

1. That the Lessee is an independent contractor and there shall be no privity of contract between the Lessor and the employees of the Lessee, but all such employees, whether on a wage or profit-sharing basis shall be selected by the Lessee, discharged by the Lessee, directed by the Lessee, and paid by the Lessee; and that subject only to the specific limitations herein set out, the Lessee shall have exclusive dominion and control of the leased property and of the operations therein during the term of this lease.

2. That the Lessee shall enter upon said leased premises during every month of the term hereof and cause the same to be worked with reasonable diligence (by the term "reasonable diligence" as used herein, the parties agree that sixty man-shifts of work per month shall constitute prima facie evidence of such reasonable diligence); that they will cause all work in said demised premises to be performed in a safe and miner-like manner in accordance with the mining laws of the State of

Utah, and with such rules and regulations as may have been or may be issued by the Industrial Commission of Utah or by the State Metal Mine Inspector. All mine openings necessary to the work hereunder to be performed and all mine openings necessary for ingress to or egress from the demised premises shall be maintained in accordance with standards established by the above mentioned rules and regulations and that such openings shall be kept clear of waste rock, rubbish or other obstruction unless prevented by extraordinary mining casualty. Openings from which ore has been removed shall be back-filled with waste rock if necessary for safe and economical mining practice to prevent the caving of walls or ore in place.

3. That the Lessee shall permit the Lessor to deduct from the proceeds of settlements on ores mined and shipped by the Lessee the amount of all occupation, net proceeds and other taxes accruing on account of or chargeable upon the operations conducted by the Lessee on the leased property. That because of the practical impossibility of determining in advance the amount to be deducted to cover such net proceeds taxes, it is hereby agreed that the Lessor may deduct from the proceeds of settlements on ores and retain, without obligation to account further to the Lessee therefor, as in full settlement of any obligation of the Lessee with respect to such net proceeds taxes, a sum equal to the amount of such taxes at the rate levied by the county for the preceding year, based on or measured by net proceeds equal to the net proceeds of said Lessee and without regard to any other operations in said mine.

4. That the Lessee shall, at Lessee's own expense, carry Workmen's Compensation Insurance and Occupational Disease Compensation Insurance covering all of Lessee's employees and that the Lessee shall pay any taxes, and/or make any deductions under the Federal Social Security Act, and/or Utah Employment Security Act for which the Lessee may become obligated, and shall comply with all other laws, rules and regulations of any governmental authority affecting the Lessee's operations on said demised premises and shall supply the Lessor with supporting evidence of such compliance.

5. That there shall be reserved to the Lessor the right of entry into said property for the purpose of inspection of the workings, for surveying and sampling, and for checking on compliance with safety rules and regulations.

6. That the Lessee shall pay any loss or expense resulting from any shipment of ores, the proceeds from which are insufficient to meet all freight, smelter and other costs and charges in connection therewith.

7. That the Lessee shall forthwith post and thereafter keep posted in conspicuous places on the demised premises as many written notices as may be necessary to adequately notify all persons who may come within or upon the said demised premises, that the same are held by the Lessee under lease from the Lessor, and the Lessee and not the Lessor is liable for all labor performed and supplies and/or materials used by the Lessee in and upon the demised premises, and that the Lessee and not the Lessor shall be responsible for all debts and expenses incurred in mining operations in or upon the demised premises.

8. That the Lessee shall hold the Lessor harmless and shall fully indemnify the Lessor against all claims and demands of any kind and nature which may be made upon the Lessor or against the demised premises for or on account of any debts or expenses contracted or incurred by the Lessee as well as from and against all acts, transactions, or omissions by the Lessee, his agents and servants, including claims, demands, causes of action, costs and expenses, arising during the continuance of this lease agreement, from or on account of injury to any person, whether occasioned by any unsafe or dangerous condition of any part of the demised premises or any workings thereon or therein used by the Lessee, or otherwise, and shall defend the Lessor at his own cost and expense from any such liability or asserted liability.

9. That the Lessee shall not assign or sub-let this lease, or any interest therein, or the premises affected thereby, or in any portion thereof, without the written consent of the Lessor nor allow any person not in privity with the parties hereto to take or hold said premises, or any part thereof, under any pretense whatsoever.

10. That the Lessee shall deliver to the Lessor the said premises with appurtenances and improvements, in good order and condition, with all shafts, tunnels, levels and other permanent workings thoroughly clear of waste, rubbish and water and ready for immediate working, accidents not arising from negligence alone excepted, without demand or further notice on the last day of the term, or any extension of term hereof, or at any time previous thereto, upon demand for forfeiture; provided, that the Lessee shall have thirty days from and after the date of any such termination in which to remove all broken ore from the property for shipment under the terms of this agreement; and Lessee shall have the right during such interim, to remove from the said premises all tools, equipment and supplies owned by the Lessee.

11. That all ores produced by the Lessee shall be shipped in the name of the Lessor for the account of the Lessee, and the Lessor is hereby given a lien upon all ores extracted from the premises during the term of this lease and agreement to secure to the Lessor any and all sums due or owing by the Lessee, and from the net smelter or mill returns the Lessor shall make all deductions for any advances or any money, materials and/or supplies furnished, for taxes, rentals, royalties and all other proper charges, paying over to the Lessee any remaining balances of net smelter or mill returns within ten days from the receipt thereof.

That the Lessee shall have access to all original records of mine, mill and smelter returns to enable him to check such receipts, deductions and payments. The Lessee shall have the right to be present or be represented at the sampling of any ores shipped by him should he so desire. The Lessee shall pay the cost of assaying mine samples and settlement control samples, and also the cost of any surveys desired by him. The Lessor shall not be liable for ores lost by theft, accident, or financial difficulties of the ore buyer not arising from its negligence, nor shall the Lessor collect any royalties on ores so lost.

12. That, should the Lessee participate with the United States of America in an Exploration Project Contract, there shall first be paid to the United States of America out of the proceeds from sale of any ores mined as a result of the exploration carried out under provisions of said contract, its royalty as specified in the terms of said contract.

That from the remainder of all proceeds, after royalty shall have been paid to the United States of America, there shall be paid to the Lessor, as rental for property leased to him, a royalty equal to a percentage of the "net smelter value receivable" from the ore buyer on all ores marketed, as set forth in the Royalty Schedule below. That the term "net smelter value receivable" shall be, and is herein understood to mean the net sum of money receivable from the ore buyer in settlement of a shipment hereunder, after all deductions for treatment, freight charges, and taxes thereon for which the ore buyer is liable, shall have been made.

That the Lessee agrees, in the event any subsidy shall be paid to the Lessee by the United States Government or any agency thereof during the term of this agreement on the metal content of the ores mined from the leased premises, an additional rate of royalty shall be applied to such subsidy payments, based on the Royalty Schedule below, if and to the extent that Government regulations permit.

ROYALTY SCHEDULE

On all ores having a "net smelter value" per dry ton of not more than $12.50, a royalty of 10%. On all ores having a "net smelter value" per dry ton in excess of $12.50, the royalty to increase above 10% at the rate of 1% for each $1.00 increase in "net smelter value" per dry ton, fractions in proportion calculated to the nearest $0.01 per ton, to a maximum royalty of 25%.

13. That the Lessee shall furnish at his sole expense all operating supplies, materials and equipment required in the performance of work under this agreement, but the Lessee may purchase from the Lessor, at Lessor's option, such

supplies, materials and equipment as the Lessor may have on hand and available for sale.

That the cost of re-opening and maintaining mine workings necessary to the operations under this agreement shall be at the sole expense of the Lessee.

14. Upon violation by the Lessee of any of the covenants of this agreement, the term of the agreement shall, at the option of the Lessor, terminate and expire and the lease and leasehold rights of the Lessee in the demised premises shall be forfeited if such fault or violation shall continue at the expiration of ten days next after the Lessor shall have given the Lessee written notice of such violation or default and demand for possession of the leased premises because thereof, the Lessee being given said ten days time to overcome the cause of such forfeiture in full compliance with the violated covenants, and if such cause be not so overcome, at the expiration of said ten days time, without further demand or notice the Lessor, by its agents or attorneys, may enter upon the leased premises and dispossess all persons occupying the same. In the event the Lessee deny that a violation had occured or that a default existed, of which notice had been so given he may, not more than five days after receipt of said notice, serve written demand upon the Lessor for submission of such disagreement to arbitration. Thereupon the Lessor and the Lessee each, within five days from the making of said demand, shall appoint an arbiter and if the two so appointed do not agree within five days, such arbiters shall promptly select a third. The decision of any two such arbiters in agreement shall be rendered within ten days of the selection of the third one and shall be conclusive and binding upon the Lessor and the Lessee as to the fact of the occurrence or non-occurrence of such claimed violation or default, except as provided in paragraph 15 below. Any expense incurred in said arbitration shall be borne by the party found to be at fault by the arbiters.

15. That all operations shall be conducted in a safe and prudent manner and it is agreed that, should any dispute arise between the Lessor and the Lessee regarding the conduct of operations in a safe and prudent manner, such dispute shall be referred to the State Mine Inspector for decision, such decision to be final and binding upon both parties.

16. That this agreement applies only to the ore bodies, veins or ledges within the property owned or controlled by the Lessor and in no event or circumstances shall the Lessor be held liable if the Lessee's operations continue beyond the outside boundaries of the demised premises herein described.

17. That no officeror employee of the Lessor shall have an interest in or participate in the profits derived from this lease.

18. That no provision contained in this agreement shall be construed to require the Lessor to continue its operations or to continue to make available to the Lessee any equipment, materials, services or supplies if, to do so, would result in financial loss to the Lessor, and that operations may be suspended by either party to this agreement due to causes beyond the control of such party, such as acts of god, fire, destruction of mine, strikes, riots, unavailability of labor, materials, or supplies, or unfavorable prices of metals produced hereunder.

19. That any written notice or demand to be given under the terms hereof may be given by mail and will be deemed served if and when mailed in the State of Utah if given by Lessor, addressed to Lessee at Eureka, Utah, and if given by Lessee, addressed to Lessor, 1114 Walker Bank Building, Salt Lake City, Utah.

20. That this lease and agreement shall be binding upon and inure to the benefit of the successors and assigns of the Lessor, and of the heirs, executors, administrators, personal representatives and consent assigns of the Lessee.

21. That this Lease and Agreement supercedes and replaces a similar Lease and Agreement dated March 1, 1954, by and between the parties hereto, and

that the said former agreement is hereby cancelled and rendered null and void.

IN WITNESS WHEREOF, the said Lessor has caused this document to be signed by its authorized officers and the said Lessee has set its signature on the date first above written.

Lessor TINTIC STANDARD MINING COMPANY

By M. D. Paine
M. D. Paine, Treasurer

WITNESS:

F. W. Hanson
4-8-58

Lessee Glen Larsen

WITNESS:

Glen Lloyd Larsen

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6/26	Simmel	500
6/30	Selfridge	130
6/30	McMahon	130
6/30	Kidgaard	130
"	Johnson	110
"	Mittendorf	100
		225

JUN 30 1958

Mr. Glen Larsen
Eureka, Utah

Re: Docket No. DMEA-5004 (Lead-Copper)
Glen Larsen
Iron Blossom No. 1 Mine
Juab County, Utah

Dear Mr. Larsen:

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 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 6/26/58
Copy to: Docket
Admr R File
Op. Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region III (2)
Chron.

8623

June 26, 1958

Memorandum for the Docket

From: Director, Division of Base Metals

Subject: Justification for Denial of Application, Docket No. DMEA-5004, Glen Larsen, Iron Blossom No. 1 Mine, Juab County, Utah, Lead-Copper.

The project, as presented by the Applicant, consisted of a multitude of small jobs, all concerned with finding little spots of ore for a lessee to extract; at some profit to himself. We have no quarrel with this motive, yet the work fell far short of being true exploration, it actually would only be "clean-up" and "scavenging".

The examiners recommended a modified program but the Field Team did not concur, for the reason stated above.

Both commodity members recommend denial since they feel the work is largely "clean-up" and there is insufficient virgin ground remaining in the project area to warrant DMEA participation. Base Metals Divsion concurs that there is little expectancy for any discovery of a serious nature.

W. R. Griswold

WRG/er
Copy to: Docket
Admr R File
Chron.

Excerpt from Mr. Mittendorf's diary, 6/23/58:

Glenn Larsen phoned from Eureka, Utah, regarding DMEA-5004. He was very anxious to get a contract before June 30. He said they are just about ready to shut down.

I noted that I did not have the case on my list of those which we are attempting to get out before June 30. After checking with Griswold, I learned that a denial has been recommended. I therefore sent a telegram to Larsen telling him a denial was proposed.

Larsen, by the way, told me he was talking with Howes in Salt Lake this morning, and apparently Howes told him he had sent in a recommendation for approval two or three weeks ago.

DMEA Form 7
(12-56)

C. O. Mittendorf, Administrator

Defense Minerals Exploration
Administration

OFFICIAL FILE COPY

Date	Surname	Code
6/23	C	200
6/24	[illegible]	500

DMEA-5004

JUNE 23, 1958

GLENN LARSEN
EUREKA, UTAH

REGRET TO ADVISE THAT DENIAL OF YOUR APPLICATION IS PROPOSED.

C. O. Mittendorf (fw)

C. O. MITTENDORF, ADMINISTRATOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

COMittendorf/fw
6/23/58

cc: Docket
Admr. Reading File
Reg. III

NOTE; Telegram sent at request (by phone) of applicant.

8623

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 24 1958

DATE	INITIALS	CODE
6/24	C	220
6/24	WRG	500

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

June 23, 1958

Re: DMEA 5004; Lead-Copper
$54,504
Glenn Larsen
Iron Blossom Mine
Juab County, Utah

Memorandum

To: W. R. Griswold, DMEA

From: O. M. Bishop, USBM

Subject: Review of field examiner's report dated June 10 and received Washington June 13, 1958

The field examiners recommend a modified exploration program consisting of 1,090 feet of drifts and crosscuts and 240 feet of drift clean-up at a total estimated cost of $30,626.

The Field Team points out that the proposed work is based on data furnished by the applicant from memory and from old maps. They conclude there is insufficient virgin ground remaining in the project area to justify DMEA participation.

I agree with the Field Team. The proposed work is more accurately classified as "clean-up" than as "exploration". I, therefore, recommend denial.

O. M. Bishop

O. M. Bishop

cc: Division of Minerals
Mr. Kiilsgaard
Mr. Lamb
Mr. Callaway
F I L E S

IN REPLY REFER TO:

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 19 1958

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

6/19 C 220
6/19 Cwtg 500

June 18, 1958
Re: DMEA 5004
Glenn Larsen
Iron Blossom No. 1 Mine
Juab County, Utah
Appl. Est. $54,564.11
Rec'd Est. $30,626.44
Lead-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 drift rehabilitation and the driving of several drifts and crosscuts to explore parts of undeveloped vein zones and give access to old workings from new openings on the 300 level of the mine.

The examiners recommend a modified program but the Field Team recommends that the application be denied.

The vein zones are called 'fissures' on the maps and sections, but the plans suggest bedded replacement deposits have been mined. No cross sections are available. As shown on the longitudinal sections, the average stoping height is about 110 feet, but in the south end near the Dragon boundary, the height is 360 feet. By comparison with the stoped areas to the north, the production has been relatively small in the blocks concerned. The crosscuts and drifts, in what I take to be barren ground, imply the top and bottom limits of the immediate favorable ore horizon have been pretty well determined and no substantial ore bodies remain undiscovered. The Bluebell dolomite in which the ore occurs has a greater average thickness (700 - 1, 100 feet) than that of the stoping range (0 - 360 feet) and the thickness of the favorable horizon in Bluebell beds appears to be much less than the average thickness of the formation.

If we assume, as I do, that the stopes in the West Fissure reached the upper limit of the ore, Projects 6 and 7 promise little. Project 8 appears to be a duplication of a drift on the same level from the South Stope No. 3 Gold Stope. Therefore, Project 5 lacks an objective. Project 3 may have some merit but not enough to warrant a contract.

I agree with the Field Team that there is insufficient virgin ground remaining in the project area to justify DMEA participation. I recommend denial of the application.

N. E. Nelson

N. E. Nelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado
June 10, 1958

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 13 1958

DATE		CODE
6/13	C	220
6/16	243	130
6/17	C	220
6/17	w pls.	500

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket No. DMEA 5004 (Lead-Copper), Glenn Larsen, (Iron Blossom No. 1 mine) Juab County, Utah - Joint Report of Examination

Enclosed are three copies of a joint engineering and geologic report on the subject property, by M. H. Howes, USBM, and F. B. Moore, USGS.

The Field Examiners recommend a modified exploration program consisting of 1090 feet of drifts and crosscuts and 240 feet of drift clean-up at a total extimated cost of $30,626.44.

At the time of the examination the only accessible workings in the project area were the No. 1 tunnel (200 level) to a point slightly beyond the Larsen winze, and the 300 level from Larsen winze to caved area near the start of Project 5 (fig. 3). The proposed work is therefore based on data furnished by the applicant and that shown on old plan and section maps.

Although the proposed work might result in the discovery of ore grade material along the east and west (main) fissures and along the rhyolite-dolomite contact we feel that there is insufficient virgin ground remaining in the project area to justify DMEA participation. We view the proposed work as a "clean-up" operation and not exploration for new or undiscovered ore deposits. Accordingly, we recommend denial of this application for exploration assistance.

Enclosed are eight (8) extra copies each of Figure 2 and Figure 3.

9 cys

10 cys

Reviewed by
DMEA OPERATING COMMITTEE
6-16-58
(date)

J. W. Townsend

E. N. Harshman

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

REGION III

INTERMOUNTAIN
EXPERIMENT STATION

June 6, 1958

1600 EAST 1ST SOUTH STREET
SALT LAKE CITY, UTAH

Memorandum

To: E. N. Harshman, Acting Executive Officer, DMEA Field Team, Region III

From: M. H. Howes

Subject: Docket No. DMEA-5004 (Lead-copper), Glen Larsen, Iron Blossom No. 1 mine, Juab County, Utah

Attached are 10 copies of the engineering and geologic report for the subject docket by M. H. Howes, Bureau of Mines, and F. B. Moore, Geological Survey, together with 11 prints each of figures 1, 2, 3, 4, 5, 6, 7, and 8; an extra 10 prints each of figures 2 and 3 (for use in contract); routing control sheet; and the set of colored prints of New Park Mining Co., DMEA-4981.

M. H. Howes

M. H. Howes

TRANSMITTED

JUN 11 1958

Enclosures

cc: J. B. Clemmer

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 13 1958

DATE	INITIALS	CODE
6/16	JHB	130
		220

DMEA
DEPARTMENT OF THE INTERIOR
JUN 9 - 1958
REGION III
DENVER, COLORADO

Reviewed by
DMEA OPERATING COMMITTEE
6-16-58
(date)

FOR GOVERNMENT USE ONLY

GLEN LARSEN
IRON BLOSSOM NO. 1 MINE
JUAB COUNTY, UTAH
DMEA-5004
Lead-Copper

6/16 JHB 130 220

TRANSMITTED

JUN 11 1958

Engineering and Geologic Report

by M. H. Howes
Mining Engineer
Bureau of Mines

and

F. B. Moore
Geologist
Geological Survey

June 6, 1958

Reviewed by
DMEA OPERATING COMMITTEE
6-16-58
(date)

GLEN LARSEN
IRON BLOSSOM NO. 1 MINE
JUAB COUNTY, UTAH

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ILLUSTRATIONS

Fig. 1. Location map, Glen Larsen, Iron Blossom No. 1 mine, Tintic Standard Mining Co., Juab County, Utah
Fig. 2. Claim map, 200 scale
Fig. 3. Project map, 40 scale
Fig. 4. Composite map of workings, 100 scale
Fig. 5. 200 Level map, 100 scale
Fig. 6. 400 Level map, 100 scale
Fig. 7. Longitudinal Section, East Vein, 40 scale
Fig. 8. Longitudinal Section, West Vein, 40 scale

INTRODUCTION

An application dated April 24, 1958, for Government aid in an exploratory project under docket No. DMEA-5004, was submitted by Glen Larsen, Eureka, Utah. The proposed program consists of 9 parts, including 105 feet of winze sinking, 245 feet of crosscutting, 1,210 feet of drifting, and 450 feet of cleanup, designed to explore for lead-copper ores in the Bluebell dolomite of Ordovician age in the Iron Blossom No. 1 mine of Tintic Standard Mining Co. The total estimated cost of the project is $54,564.11.

A field examination of the property was made May 9, 1956; by F. B. Moore, Geological Survey, and M. H. Howes, Bureau of Mines, to determine the feasibility of the proposed exploratory work and to appraise the estimated costs and the engineering aspects of the job. The field examiners were accompanied by Glen Larsen and F. W. Hanson.

Since the target area on the 400 level is indefinite, the field examiners recommend that the applicant's proposals for work below the 300 level be denied. All proposed projects on the 300 level appear to have merit and are recommended for approval. The 300-level projects consist of 1,090 feet of drifting and crosscutting and 240 feet of drift cleanup at a total estimated cost of $30,626.44.

LOCATION AND PHYSICAL FEATURES

The Iron Blossom No. 1 mine lies high on the east slope of the East Tintic Mountains, in the Tintic district, approximately 4 miles southeast from Eureka, Utah, by road through Knightsville (figs. 1 and 2). Altitudes range from about 6,800 feet to over 7,400 feet.

The climate is semiarid. During summer months, days are hot and nights are cool. Winter weather is usually severe, with low temperatures not uncommon. Prevailing winds with moderately heavy snowfalls cause continuous snow drifting. However, the roads are kept open by periodic blading.

Vegetation is comprised largely of desert plants, of which sagebrush is most common.

HISTORY AND PRODUCTION

Production began in the Iron Blossom mine in 1908, was practically continuous through 1930, and thereafter has been intermittant to the present time. The property was originally acquired by the Jesse Knight interests and operated by this group until 1925, when the mine was purchased by Tintic Standard Mining Co. A few years before the above transaction was made, when known ore deposits were nearing exhaustion, the Knight interests changed the method of mine operation from production by company-employed miners to production by block-lessees. This system proved highly successful, not only in ore production, but in finding and developing new ore. This policy has been followed by the Tintic Standard Mining Co. to the present time.

It is reported that total known production from the Iron Blossom property is in excess of 636,000 dry tons of crude ore from which dividends amounting to $3,525,000 were paid.

OWNERSHIP AND EXTENT

The property to be included in this project consists of six patented lode-mining claims in the Iron Blossom No. 1 mine area (fig. 2). The claims are owned by the Tintic Standard Mining Co., Walker Bank Building, Salt Lake City, Utah, and are listed as follows:

Una lode	U.	S.	Mineral	Survey	No.	4548
Little Chief lode	"	"	"	"	"	5171
Excelsior lode	"	"	"	"	"	5171
Mild Winter lode	"	"	"	"	"	5171
Iron Blossom lode	"	"	"	"	"	Lot No. 115
Little Giant lode	"	"	"	"	"	5171

The above-listed property is held by Glen Larsen of Eureka, Utah, under a Lease and Agreement with Tintic Standard Mining Co., dated April 1, 1958. The exterior boundary of this tract is described as follows:

Beginning at Cor. No. 3, Sur. No. 5448, Una lode, and running

thence S. 40° 05' W. 1,208.8 feet to Cor. No. 4 of said Una lode,

thence S. 31° 17' W. 152.4 feet to Cor. No. 5 of said Una lode,

thence N. 63° 45' W. 266.8 feet to the point of intersection with line 6-5, Sur. No. 4519, March lode,

thence along said line 6-5 of said March lode,

thence N. 47° 42' W. 125.2 feet to Cor. No. 5 of said March lode on line 1-4, Sur. No. 4519, Eastern lode,

thence N. 36° 17' E. 140.0 feet to Cor. No. 4 of said Eastern lode

thence N. 47° 42' W. 200.0 feet to Cor. No. 3 of said Eastern lode, identical with Cor. No. 5, Sur. No. 4519, Turk lode, and with Cor. No. 1, Sur. No. 5171, Little Chief lode,

thence N. 47° 42' W. 200.0 feet to Cor. No. 4 of said Turk lode, on line 4-1 of Lot No. 85, Governor lode,

thence N. 37° 50' E. 52 feet, more or less, to Cor. No. 1 of said Governor lode,

thence N. 49° 00' W. 200.0 feet to Cor. No. 2 of said Governor lode,

thence S. 37° 50' W. 599.9 feet to the point of intersection with line 1-2 of said Little Chief lode,

thence S. 75° 39' W. 173.6 feet to Cor. No. 2 of said Little Chief lode, on line 4-3, lot No. 115, Iron Blossom lode,

thence S. 40° 15' W. 123.0 feet, more or less, to Cor. No. 4 of said Iron Blossom lode,

thence N. 63° 50' W. 190.0 feet, more or less, to Cor. No. 1 of said Iron Blossom lode,

thence N. 39° 36' E. 910.0 feet, more or less, to Cor. No. 1, Sur. No. 5171, Mild Winter lode,

thence N. 39° 27' W. 39.9 feet to Cor. No. 2 of said Mild Winter lode,

thence N. 13° 28' E. 882.6 feet to Cor. No. 3 of said Mild Winter lode,

thence S. 80° 51' E. 138.2 feet to Cor. No. 4 of said Mild Winter lode, identical with Cor. No. 5, Lot No. 244, Wolf lode,

thence N. 36° 40' E. 577.0 feet to Cor. No. 5 of said Mild Winter lode, identical with Cor. No. 6 of said Wolf lode and with Cor. No. 2, Sur. No. 5472, Hemitite lode,

thence S. 39° 27' E. 452.5 feet to Cor. No. 6 of said Mild Winter lode identical with Cor. No. 1 of said Hemitite lode and with Cor. No. 3, Sur. No. 5171, Excelsior lode,

thence S. 63° 50' E. 6.2 feet to the point of intersection with line 3-4 of lot No. 122, La Bonta lode,

thence S. 18° 35' W. 92.6 feet to Cor. No. 4 of said La Bonta lode,

thence S. 89° 43' E. 210.6 feet to Cor. No. 5 of said La Bonta lode, identical with Cor. No. 4 of said Excelsior lode and with Cor. No. 2, Sur. No. 5171, Little Giant lode,

thence S. 67° 17' E. 599.1 feet to Cor. No. 5 of said Little Giant lode,

thence S. 75° 39' E. 154.4 feet to Cor. No. 5 of said Little Chief lode,

thence S. 49° 15' W. 608.9 feet to the point of intersection with line 2-3 of said Una lode,

thence S. 63° 45' E. 384.6 feet to Cor. No. 3 of said Una lode, the point of beginning.

The above-described property lies in sections 29 and 30, T. 10 S., R. 2 W., S. L. B. and M., in Juab County, Utah

GEOLOGY

The Tintic mining district is underlain by a series of sedimentary rocks at least 13,000 feet thick which range in age from Cambrian to Mississippian. The stratigraphic section was established by Lindgren (U. S. G. S. Professional Paper 107, p. 22) as follows:

Age	Name	Thickness in feet
Upper Mississippian	Humbug formation	250
Lower Mississippian	Pine Canyon ls.*	1,000
" "	Gardner dolomite*	435 - 700
" "	Victoria quartzite	0 - 85
	Unconformity	
Devonian	Missing in the mining district proper	
Ordovician	Bluebell dolomite*	700 - 1,100
Lower Ordovician	Opohonga ls.*	825+
" "	Ajax limestone*	570
	Unconformity	
Upper Cambrian	Opex dolomite*	390
Middle Cambrian	Cole Canyon dolomite	510
" "	Bluebird dolomite	175 - 200
" "	Herkimer ls.	235
" "	Dagmar ls.	100
" "	Teutonic ls.	556
" "	Ophir formation*	355
Lower Cambrian	Tintic quartzite	6,000+

* Productive formations in the Tintic district

Igneous rocks present include rhyolite, monzonite, latite, and andesite. Monzonite or monzonite porphyry has intruded the sediments as small stocks and dikes in a few places.

The sedimentary rocks in the district have been folded into a large asymmetric syncline with a steep west limb and a more gently dipping east limb. The axis of the syncline is northerly in trend and passes through the eastern part of the district in the vicinity of the Iron Blossom No. 1 mine.

Faulting is extensive, but too complicated to allow for simple generalization. Faults of east trend appear most numerous; large faults of northeast trend are prominent; and faults of northerly trend are known in underground workings but, being parallel to the beds, are obscure at the surface.

ORE DEPOSITS

Ore deposits in the Tintic district occur in both igneous and sedimentary rocks; however, most of the production of the district has come from certain limestone beds. The ore bodies lie along fissure zones, but form bedded replacement deposits in the limestones. The igneous rocks contain northeasterly veins of steep dip, "some of which have yielded considerable amounts of ore from their oxidized zones above the water table." Of the limestones, the Bluebell dolomite is the most favorable host rock; it contains large ore bodies in many places throughout the district. Considerable ore has been produced from other limestones in limited areas as follows: (1) Pine Canyon limestone in the eastern part of the district; (2) Opex dolomite and Ajax limestone in the

Bullion Beck group; (3) Gardner dolomite in the Southern Iron Blossom area; (4) Opohonga limestone in the Grand Central mine. In the Iron Blossom No. 1 mine, most of the ore occurs in the Bluebell dolomite.

Four vein zones or "ore runs," of northerly trend, are recognized in the limestones. From west to east they are: (1) Gemini; (2) Mammoth; (3) Godiva; and (4) Iron Blossom. The Iron Blossom No. 1 mine is in the southern part of the Iron Blossom zone which has been mined for a lateral distance of over 10,000 feet.

Most of the Iron Blossom No. 1 workings are currently inaccessible; therefore much of the following data are based on the operator's knowledge of the area, or on Professional Paper 107. The Iron Blossom ore zone, which contains bedded replacement ore bodies in and north of the Iron Blossom No. 3 mine, becomes more veinlike in character in the Iron Blossom No. 1 area. Still farther south, in the area of the Governor and Dragon mines, it is classed as a vein-type deposit by Lindgren. The operator reports that the zone contains four strands in the Iron Blossom No. 1 mine. From east to west they are: (1) a contact zone (No. 1 East) between rhyolite and limestone, which is currently being mined on the 300 level; (2) the East vein of Lindgren, locally called the Gold fissure, which produced from the Gold stope; (3) the West, or "main" vein, which contains most of the stopes on the 500 and 600 levels; and (4) a zone at the contact of limestone with a porphyry dike.

The contact ore body (No. 1 East) being mined on and below the 300 level is irregular in form, but generally is 10 to 12 feet wide. The ore is highly oxidized and consists of a soft, cellular mass in which

cerussite is the chief ore mineral. Silver is present in considerable amounts, probably as secondary minerals or possibly carried by other minerals. The ore is heavily stained with limonite and, locally, with manganese oxide. Small amounts of pyrite are reported by the operator and traces of copper stain occur in places. The zinc content is low. Gangue minerals are quartz and barite. The operator reports that the last shipment assayed 7.65 percent lead, 2.5 percent copper, and 0.195 ounce gold and 12.63 ounces silver per ton.

The ore throughout the Iron Blossom zone is generally uniform in character, although in places in the Iron Blossom No. 1 mine the copper-gold content is higher and the lead-silver content is lower than in mines farther north. The vein ore in mines to the south is less plentiful and of lower grade, indicating that the Iron Blossom No. 1 mine is in a transition zone. Shipments of ore made about 1927 may indicate the tenor of ore to be expected in the inaccessible areas proposed for exploration. Ore from the Layshon stope contained 11 percent lead and 0.35 ounce gold and 90 to 213 ounces silver per ton. Ore from the Muhlstein stope contained 1 to 11 percent copper, up to 20 percent lead, and 18 to 70 ounces of silver per ton. The operator reports that ore produced along the contact zone in the mine was valued at $2 million.

PRESENT STATUS

The proposed exploratory program will be conducted from the Larsen winze located approximately 310 feet from the portal of Iron Blossom No. 1 Tunnel. The extensive mine workings of the Iron Blossom No. 1 mine area (fig. 4) are at present inaccessible, but will be opened as work progresses from the Larsen winze.

The existing usable facilities that will be devoted to the exploratory work are:

Compressor house
Change house
Wooden ore bin
Diesel-powered compressor
Air-driven hoist
Mine cars
Mine track in the tunnel
Rock drills
Miscellaneous small tools

Ores discovered in the project area, after being mined and transported to the mine ore bin, will be trucked 3-1/4 miles to Eureka Summit loading ramp on the D. and R. G. R. R., and then will be hauled by train to Salt Lake Valley smelters.

Ample labor is available in Eureka, Utah.

Materials, supplies, and equipment not now on hand at the property can be obtained in Eureka or Salt Lake City.

PROPOSED EXPLORATION

The applicant proposes to explore for extensions of known ore bodies by a series of short crosscuts and drifts, mostly on the 300 level. A proposal is also made to deepen the Larsen winze and follow a quartz mass on the 400 level.

RECOMMENDED EXPLORATION

Parts of the applicant's proposed exploratory program appear to be warranted; other parts do not. The project numbers used below are the same as those of the applicant.

Work proposed below the 300 level does not appear to have a specific target and it is recommended that it be denied. This work includes three separate projects. Project 1 consists of deepening the Larsen winze 100 feet. Project 4 includes drifting, and project 9, crosscutting on the 400 level. The target on the 400 level is a mineralized quartz mass which may or may not be a vein. The area is outside the trend of the major ore "runs" and is more prospecting than exploratory in nature.

The remaining projects, all on the 300 level, are designed to explore the major ore zones in favorable strata of the Bluebell dolomite. They are believed to be geologically justified.

Projects 2, 6, and 7 consist of crosscutting 180 feet to the main ore zone, and then drifting northerly 220 feet and southerly 260 feet. The northern 2/3 of this area has been stoped continuously between the 400 and 500 levels. Stopes at either end of the proposed exploratory drifts show that the horizon is favorable. Because of the great lateral continuity of the ore bodies along the Iron Blossom ore zone, this area should be especially favorable.

Project 3 follows the contact between rhyolite and limestone from an ore-bearing area to the Hadfield raise which reportedly was driven on an ore-bearing fissure at or near the contact. The fissure is probably the No. 1 East vein, which contains ore to the north. The ore apparently does not occur in the rhyolite, but may have been deflected along the contact where the rhyolite protrudes into the limestone across the vein. The contact ore being mined on the 300 level may be related to the No. 1 East vein, the East (Gold) vein, or to both.

Projects 5 and 8 are designed to explore the East (Gold) vein south of the Gold stope and above south stope No. 4. Project 5 bypasses a cave into old workings, which, according to the applicant, were accessible about 10 years ago and were driven in ground which should stand well. Drifting along the vein is limited to 150 feet because of the property boundary which will be 60 feet from the end of the proposed drift. The distance to the boundary is somewhat less than usually recommended, because of the special circumstances.

The recommended exploratory program, all on the 300 level, is tabulated below (fig. 3).

Project 2 - crosscutting	180 feet
To intersect fissures along the main vein zone	
Project 3 - drifting on contact	205 feet
To follow contact ore zone	
Project 5* - crosscutting	75 feet
To bypass caved area	
Project 6 - drifting	220 feet
To explore main vein zone northerly	
Project 7 - drifting	260 feet
To explore main vein zone southerly	
Project 8 - drifting	150 feet
To explore the East vein southerly	

* Three days will be needed to clean up old workings to reach the Project 8 area

Samples should be taken at intervals of not more than 10 feet when drifting in ore or material approaching ore in grade. The samples should be split; one-half should be assayed for lead, zinc, copper, gold, and silver; the remaining half should be retained for use of the Government. It is estimated that 60 samples may be required.

ESTIMATED COSTS OF PROJECT PROPOSALS

A careful check of the estimated costs submitted in the application indicates that they are reasonable and fair. Since the original proposals have been curtailed, it was necessary to make a new cost estimate. This was done by using the applicant's methods and figures wherever they are applicable.

Time Schedule of Projects

Project No.	Distance	Ave. daily progress	Start	Finish	Weeks
(2) Crosscut	180 feet	5.0 feet	1st week	7th week	7
(3) Drift	205 "	4.5 "	4th "	13th "	9
(5) Drift	75 "	4.5 "	1st "		
Cleanup	240 "	(3 days)		4th "	4
(6) Drift	220 "	5.0 feet	13th "	22nd "	9
(7) Drift	260 "	5.0 "	7th "	18th "	11
(8) Drift	150 "	5.0 "	18th "	24th "	6
Total					46

Note: The chronology of the schedule will be adjusted so that by working 2 places simultaneously, 5 days per week, the work will be completed in 23 weeks.

Estimate of Costs

(a) No independent contracts

(b) Personal Services

1 Hoistman at $20.26 per day	$20.26
1 topman-trammer at $20.26 per day	20.26
4 miners at $20.26 per day	81.04
Engineer-geologist at $100 per month, $25 per week, $5 per day	5.00
Labor and Engineer, per day	$126.56
Labor and Engineer, per week	$632.80

(c) Operating Materials and Supplies

Explosives per foot of drift	$ 4.00
Miscellaneous hand tools (ax, hammer, pick, shovel, saw, wrenches, square) per foot of drift	.50
Fuel for diesel engine	50.00 per week
Oils for engine, compressor, drills, loader-	5.00 per week
Gasoline for trucking water and supplies	10.00 per week
Total for fuel, oils, gasoline	$ 65.00 per week
Mine track (12-lb. rails, splices, bolts, spikes, ties), per foot of drift	$ 1.69
Track switches, each	15.00
2-inch black pipe for compressed air, per foot	.55
Couplings, each	.85
Tees, each	1.50
Unions, each	1.70
Elbows, each	1.05
Valves, plug cock	13.00

(d) Operating Equipment, supplied by applicant

	Present value	Depreciation per month	Charge per week
1 Mancha B locomotive, with charger, less battery and transformers	$3,600	$60.00	$13.80
1 Eimco 12B loader	2,000	35.00	7.70
1 air-powered hoist	1,200	20.00	4.60
10 mine cars	1,000	17.00	3.80
1 compressor, 315-c.f.m.	3,000	50.00	11.50

	Present value	Depreciation per month	Charge per week
1 pickup truck, 1952 Ford	$ 600	10.00	2.30
1 diesel engine, 165 hp.	$4,000	$ 67.00	$15.40
1 scraper	100	1.50	.40
1 double-drum slusher hoist	600	10.00	2.30
2 single-drum tuggers	700	13.00	2.70
1 pickup truck, 1957 GMC	1,500	25.00	6.00
2 rock drills with jacklegs	900	15.00	3.40
Totals	$19,200	$323.50	$73.90
Operating Equipment to be purchased			
1 locomotive battery	$ 900	$ 15.00	$ 3.40
2 transformers, 5,000-440/220 volt. (smaller sizes not available for this voltage)	1,000	17.00	3.80
2 rock drills with jacklegs	1,000	17.00	3.80
Totals	$2,900	$49.00	$11.00
Total cost of operating equipment	$22,100	$372.50	$84.90

(e) Initial Rehabilitation and Repairs ---------- None

(f) New Buildings, Fixtures, Installations ---------- None

(g) The estimated cost of repairs and maintenance expected during project operations is $1.00 per foot.

The cost of 60 assays for lead, zinc, copper, gold, and silver at $5.00 per assay is $300. Therefore, the cost per foot for 1,090 feet of drifting and crosscutting is approximately $0.30.

Payroll cost in addition to direct labor cost includes workmen's compensation insurance, F.I.C.A. tax, unemployment compensation tax, occupational disease compensation insurance, liability insurance, and vacation pay, and is calculated at the rate of 15 percent of the labor cost.

Summary of Costs

Labor, fuel, and depreciation costs are halved between two headings working simultaneously.

Project 2 - Crosscut on 300 Level - 180 feet - 7 weeks

Labor at 1/2 of $632.80 per week	$2,214.80	
Additional payroll cost, 15 percent of above	332.22	
Fuel, etc., at 1/2 of $65.00 per week	227.50	
Drill steel and bits at $0.25 per foot	45.00	
Explosives at $4.00 per foot	720.00	
Timber, 10 percent of dist., 18 feet at $3.60 per foot	64.80	
Track at $1.69 per foot	304.20	
Switch	15.00	
Pipe and fittings	123.60	
Misc. tools at $0.50 per foot	90.00	
Equipment depreciation at 1/2 of $84.90 per week	297.15	
Contingencies at $1.00 per foot	180.00	
Assays at $0.30 per foot	54.00	
		$4,668.27

Project 3 - Drift on 300 Level - 205 feet - 9 weeks

Labor at 1/2 of $632.80 per week	$2,847.60	
Additional payroll cost, 15 percent of above	427.14	
Fuel, etc., at 1/2 of $65.00 per week	292.50	
Drill steel and bits at $0.25 per ~~week~~ foot	51.25	
Explosives at $4.00 per foot	820.00	
Timber, 10 percent of dist., 20.5 feet at $3.60 per foot	73.80	
Track at $1.69 per foot	346.45	
Switch	15.00	
Pipe and fittings	136.90	
Misc. tools at $0.50 per foot	102.50	
Equipment depreciation at 1/2 of $84.90 per week	382.05	
Contingencies at $1.00 per foot	205.00	
Assays at $0.30 per foot	61.50	
		$5,761.69

Project 5 - Drift on 300 Level - 75 feet - 3 weeks

Labor at 1/2 of $632.80 per week	$ 949.20
Additional payroll cost, 15 percent of above	142.38
Fuel, etc., at 1/2 of $65.00 per week	97.50
Drill steel and bits at $0.25 per foot	18.75
Explosives at $4.00 per foot	300.00
Timber, 10 percent of dist., 7.5 feet at $3.60 per foot	27.00

Track at $1.69 per foot	$ 126.75	
Pipe and fittings	58.55	
Misc. tools at $0.50 per foot	37.50	
Equipment depreciation at 1/2 of $84.90 per week	127.35	
Contingencies at $1.00 per foot	75.00	
Assays at $0.30 per foot	22.50	
	$1,982.48	

Cleanup on 300 Level - 240 feet - 3 days

Labor at 1/2 of $126.56 per day	$ 189.84	
Additional payroll cost, 15 percent of above	28.48	
Fuel, etc., at 1/2 of $13.00 per day	19.50	
Timber, 10 percent of dist., 24 feet at $3.60 per foot	86.40	
Track at $1.69 per foot	405.60	
Pipe and fittings	143.90	
Misc. tools at $0.50 per foot	120.00	
Equipment depreciation at 1/2 of $16.98 per day	25.47	
Contingencies at $1.00 per foot	240.00	
	$1,259.19	
Total cost of Project 5, two parts		$3,241.67

Project 6 - Drift on 300 Level - 220 feet - 9 weeks

Labor at 1/2 of $632.80 per week	$2,847.60	
Additional payroll cost, 15 percent of above	427.14	
Fuel, etc., at 1/2 of $65.00 per week	292.50	
Drill steel and bits at $0.25 per foot	55.00	
Explosives at $4.00 per foot	880.00	
Timber, 10 percent of dist., 22 feet at $3.60 per foot	79.20	
Track at $1.69 per foot	371.80	
Switch	15.00	
Pipe and fittings	143.35	
Misc. tools at $0.50 per foot	110.00	
Equipment depreciation at 1/2 of $84.90 per week	382.05	
Contingencies at $100 per foot	220.00	
Assays at $0.30 per foot	66.00	
		$5,889.64

Project 7 - Drift on 300 Level - 260 feet - 11 weeks

Labor at 1/2 of $632.80 per week	$3,480.40	
Additional payroll cost, 15 percent of above	522.06	
Fuel, etc., at 1/2 of $65.00 per week	357.50	
Drill steel and bits at $0.25 per foot	65.00	
Explosives at $4.00 per foot	1,040.00	
Timber, 10 percent of dist., 26 feet at $3.60 per foot	93.60	
Track at $1.69 per foot	439.40	
Switch	15.00	
Pipe and fittings	167.05	
Misc. tools at $0.50 per foot	130.00	
Equipment depreciation at 1/2 of $84.90 per week	466.95	
Contingencies at $1.00 per foot	260.00	
Assays at $0.30 per foot	78.00	
		$7,114.96

Project 8 - Drift on 300 Level - 150 feet - 6 weeks

Labor at 1/2 of $632.80 per week	$1,898.40	
Additional payroll cost, 15 percent of above	284.76	
Fuel, etc., at 1/2 of $65.00 per week	195.00	
Drill steel and bits at $0.25 per foot	37.50	
Explosives at $4.00 per foot	600.00	
Timber, 10 percent of dist., 15 feet at $3.60 per foot	54.00	
Track at $1.69 per foot	253.50	
Pipe and fittings	102.35	
Misc. tools at $0.50 per foot	75.00	
Equipment depreciation at 1/2 of $84.90 per week	254.70	
Contingencies at $1.00 per foot	150.00	
Assays at $0.30 per foot	45.00	
		$3,950.21

Tabulation of Costs

	Distance, feet	Cost	Cost per foot
Project 2 crosscut	180	$ 4,668.27	$25.93
Project 3 drift	205	5,761.69	28.10
Project 5 drift	75	1,982.48	26.43
cleanup	240	1,259.19	5.25
Project 6 drift	220	5,889.64	26.77
Project 7 drift	260	7,114.96	27.36
Project 8 drift	150	3,950.21	26.35
Total cost of proposed project		$30,626.44	
Government participation at 50 percent		$15,313.22	

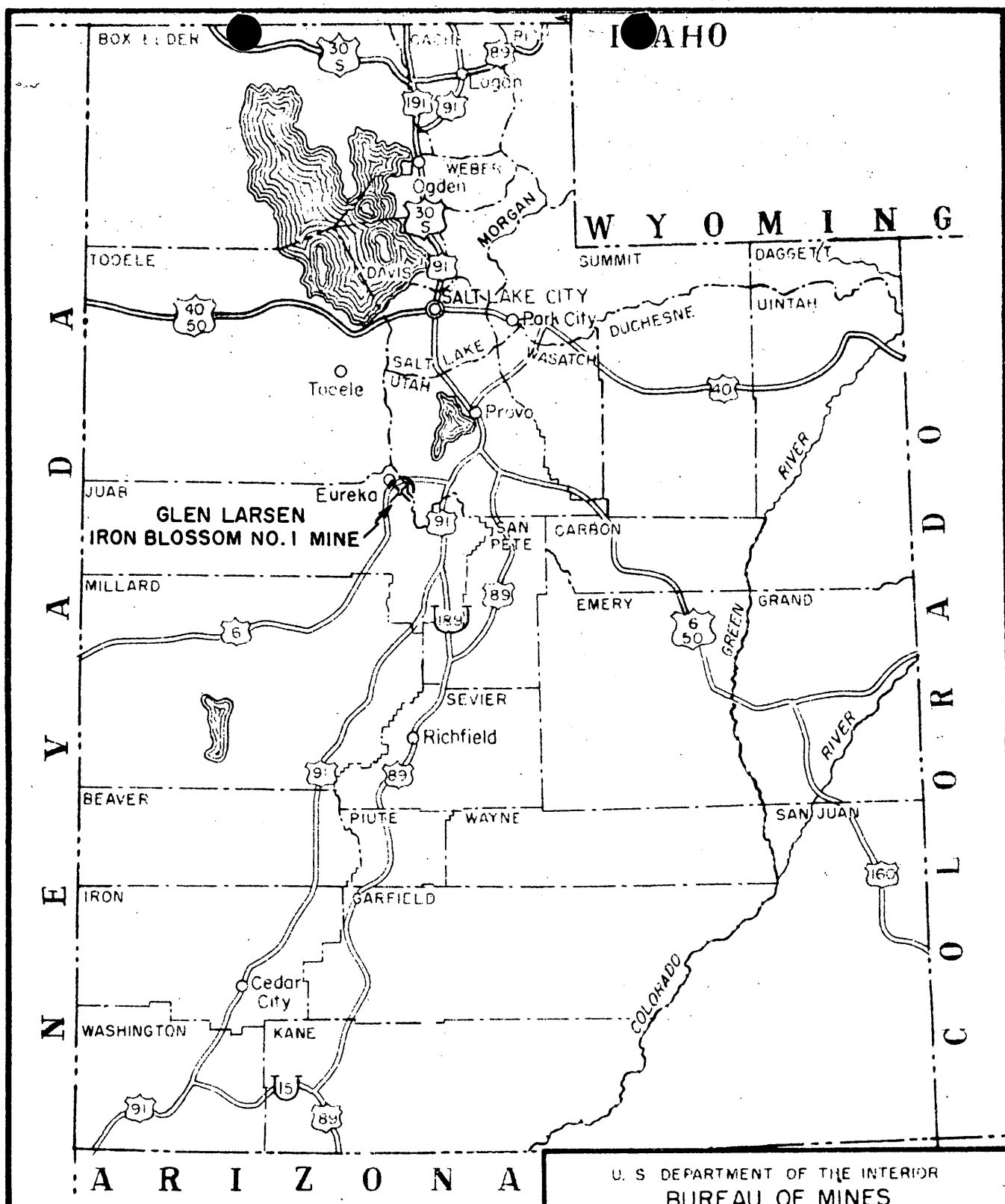
PROPOSED FINANCING

The applicant is prepared to furnish $15,313.22 in the form of labor and equipment in the proposed exploratory project, which is 50 percent of the total estimated cost of $30,626.44, in accordance with the regulations on Government participation, as stated in section 7, DMEA Order 1, Amended.

CONCLUSIONS AND RECOMMENDATIONS

The ore bodies in the Iron Blossom ore zone form bedded and, to a limited extent, vein-type deposits along northerly trending fissures in the Bluebell dolomite and the Pine Canyon limestone. The zone has been worked for a strike distance of over 10,000 feet. Individual ore bodies show remarkable continuity, having been mined laterally for thousands of feet.

Certain unworked areas in the Iron Blossom No. 1 mine are favorable targets for exploratory work because of the lateral persistence of the ore, because of thorough preparation of the favorable Bluebell dolomite for reception of ore bodies by the prevalent system of faults, and because of the close proximity to the igneous rocks. It is therefore recommended that the above-described exploratory program, consisting of 1,090 feet of drifts and crosscuts and 240 feet of drift cleanup at a total estimated cost of $30,626.44, be approved.



U. S DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Fig. 1 DMEA Docket No. 5004
Location Map

GLEN LARSEN
IRON BLOSSOM NO. 1 MINE
TINTIC STANDARD MINING CO.
JUAB COUNTY, UTAH

ENGINEER M. H. HOWES | DATE: MAY 27, 1958
TRACED: MAY, 1958; A.P.T.S.
CHECKED:
1500-1236-G

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 21 1958

DATE	INITIALS	CODE
5/21	E. N.	225
5/21	[illegible]	500

224 New Customhouse
Denver 2, Colorado
May 19, 1958

Memorandum

To: E. N. Harshman
DMEA/Salt Lake City

From: Acting Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 5004 (Lead-copper) Glen Larsen (Iron Blossom No. 1 mine) Juab County, Utah

Enclosed for your information are the following:

1. Memorandum of Review of the subject application by W. F. Williams, USGS.

2. Memorandum of Review of the subject application by O. M. Bishop, USBM.

3. Copy of a letter of transmittal of the foregoing from the Chairman, Operating Committee dated May 14, 1958.

4. Routing Control sheet.

Original signed by
E. N. HARSHMAN

E. N. Harshman

EMH:dp

cc: Sec. Op. Comm. 2
Docket
Chron.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
5/13	Griswold	500
5/14	Lefebvre	130
5/14	Smith	130
5/14	Williams	130
"	Johnson	110
"	Mittendorf	100
5/14	C. O.	220
		500

MAY 14 1958

Mr. Glen Larsen
Eureka, Utah

Re: Docket No. DMEA-5004 (Lead-Copper)
Glen Larsen
Iron Blossom No. 1 Mine
Juab County, Utah

Dear Mr. Larsen:

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

Mr. E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse Bldg.
Denver 2, Colorado

If additional information concerning your application is needed, the Field Team will get in touch with you at an early date.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

WRGriswold/er 5/13/58
Copy to: Docket
Admr R File
Op. Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region III (2)
Chron.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
5/13	Miriam	500
5/14	GCS	130
"	Johnson	110
"	Hartnedoy	100
		220
		500

500

MAY 14 1958

Mr. E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse Bldg.
Denver 2, Colorado

Re: Docket No. DMEA-5004 (Lead-Copper)
Glen Larsen
Iron Blossom No. 1 Mine
Juab County, Utah

Dear Mr. Harshman:

The cited application is being referred to your office for consideration, a field examination of the property if warranted, and recommendations. Copies of memoranda, dated May 8 and 12, 1958, by W. P. Williams, Geological Survey, and O. M. Bishop, Bureau of Mines, respectively, relating to the project are enclosed for your information.

We are also enclosing one extra copy of the application for the Field Team use.

It appears that a great deal of the proposed work is actually concerned with clean-up and scavenging, rather than true exploration.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)
WRGriswold/er 5/13/58
Copy to: Docket
Admr R File
Op. Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Chron.

Enclosures

APPROVED:

Frank D. Lamb (GCS)
Member, Bureau of Mines

W. P. Williams (GCS)
Member, Geological Survey

8623

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 12 1958

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

May 12, 1958

Re: DMEA 5004; Lead-Copper
$54,504
Glen Larsen
Iron Blossom Mine
Juab County, Utah

Memorandum

To: W. R. Griswold, DMEA

From: O. M. Bishop, USBM

Subject: Review of application received Salt Lake office April 29 and received Washington May 5, 1958

The applicant requests DMEA assistance in a program to explore known and projected fissures on the 300 and 400 levels of the Iron Blossom Mine. The project has 9 components that include 105 feet of winzing, 1,210 feet drifting, 245 feet crosscutting, and 450 feet cleanup.

The detail with which the applicant defines the project is commendable. However, I believe he needs to demonstrate the fact that worthy targets will be explored by the projects.

I recommend an investigation by the field team with emphasis on geologic justification.

O. M. Bishop

O. M. Bishop

cc: Division of Minerals
Mr. Kiilsgaard
Mr. Lamb
Mr. Callaway
F I L E S

IN REPLY REFER TO:

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

5/9 C 220
5/9 WPS 500

Memorandum

May 8, 1958

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

From: W. P. Williams, U. S. Geological Survey

Subject: Review of application, DMEA 5004, (lead-copper), Glen Larsen, Iron Blossom No. 1 mine, Juab County, Utah.

The applicant proposes to explore for lead, copper, gold, and silver ore deposits on five and a fraction mining claims known as the Iron Blossom Mine property. Old mine workings on the claims constitute part of the Tintic Standard Mining Company workings.

The applicant proposes an underground exploration project consisting of 105 feet of shaft sinking, 245 feet of crosscutting, and 1,210 feet of drifting at a total estimated cost of $54,564.

The purpose of the proposed work would be to seek for extensions of worked out ore bodies and for overlooked deposits adjacent to worked-out stopes.

The applicant has already done a fair amount of work on his own. He found a small ore body, but assays from the ore for the base metals are not impressive.

The property should be visited by an examining team because the applicant has rehabilitated old workings and has made new mine openings.

W. P. Williams

W. P. Williams

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

May 6, 1958

Mr. Glen Larsen
Eureka, Utah

Subject: DMEA-5004

Dear Mr. Larsen:

Your application for exploration assistance, dated Undated submitted to our office at Denver, Colorado has been assigned Docket Number DMEA-5004 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, Director
Operations Control and
Statistics Division

Copy to: Region III.

IRON BLOSSOM MINE

Longitudinal Section

West Fissure

SCALE 1 IN. = 40 FT.

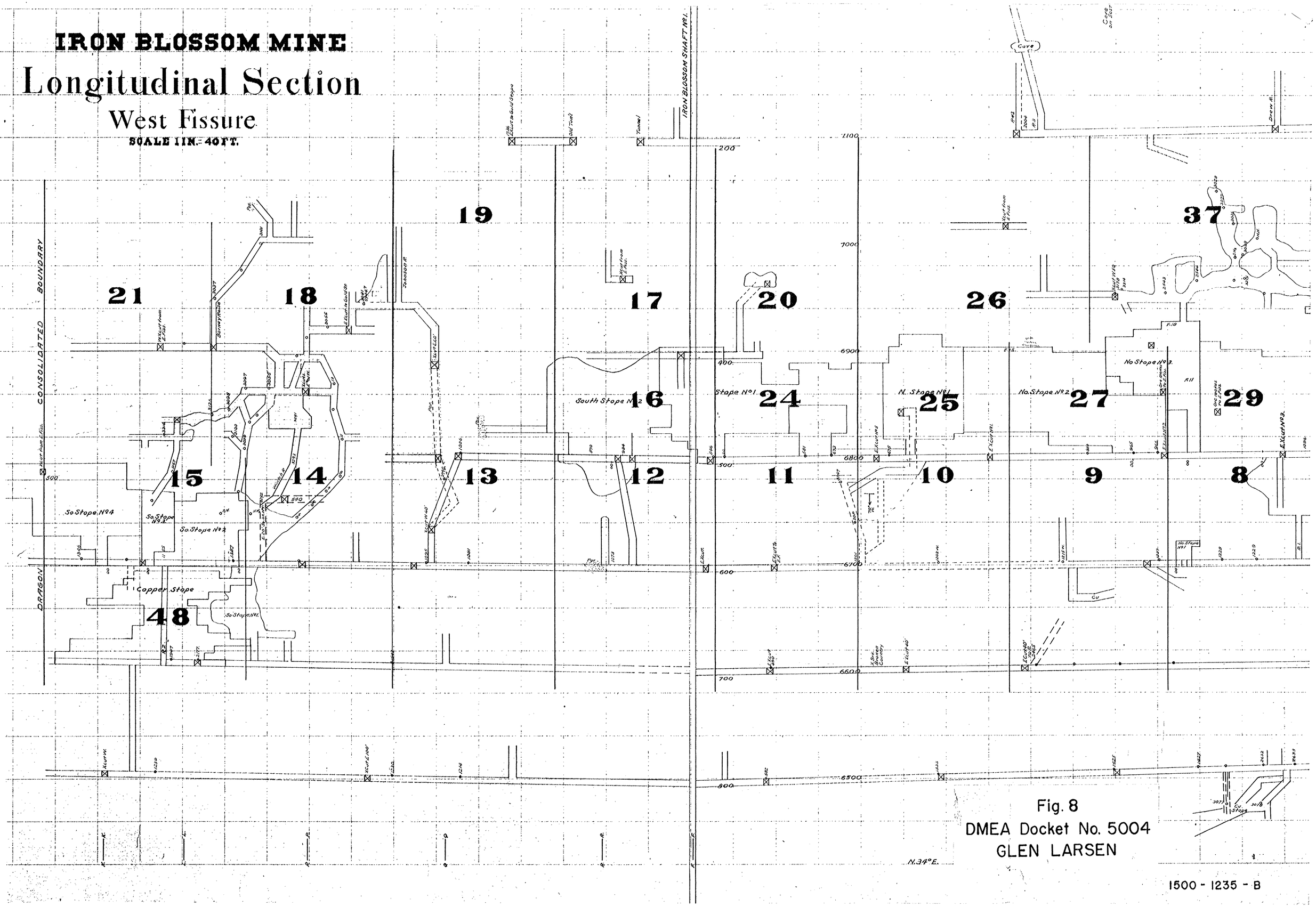


Fig. 8
DMEA Docket No. 5004
GLEN LARSEN

1500 - 1235 - B

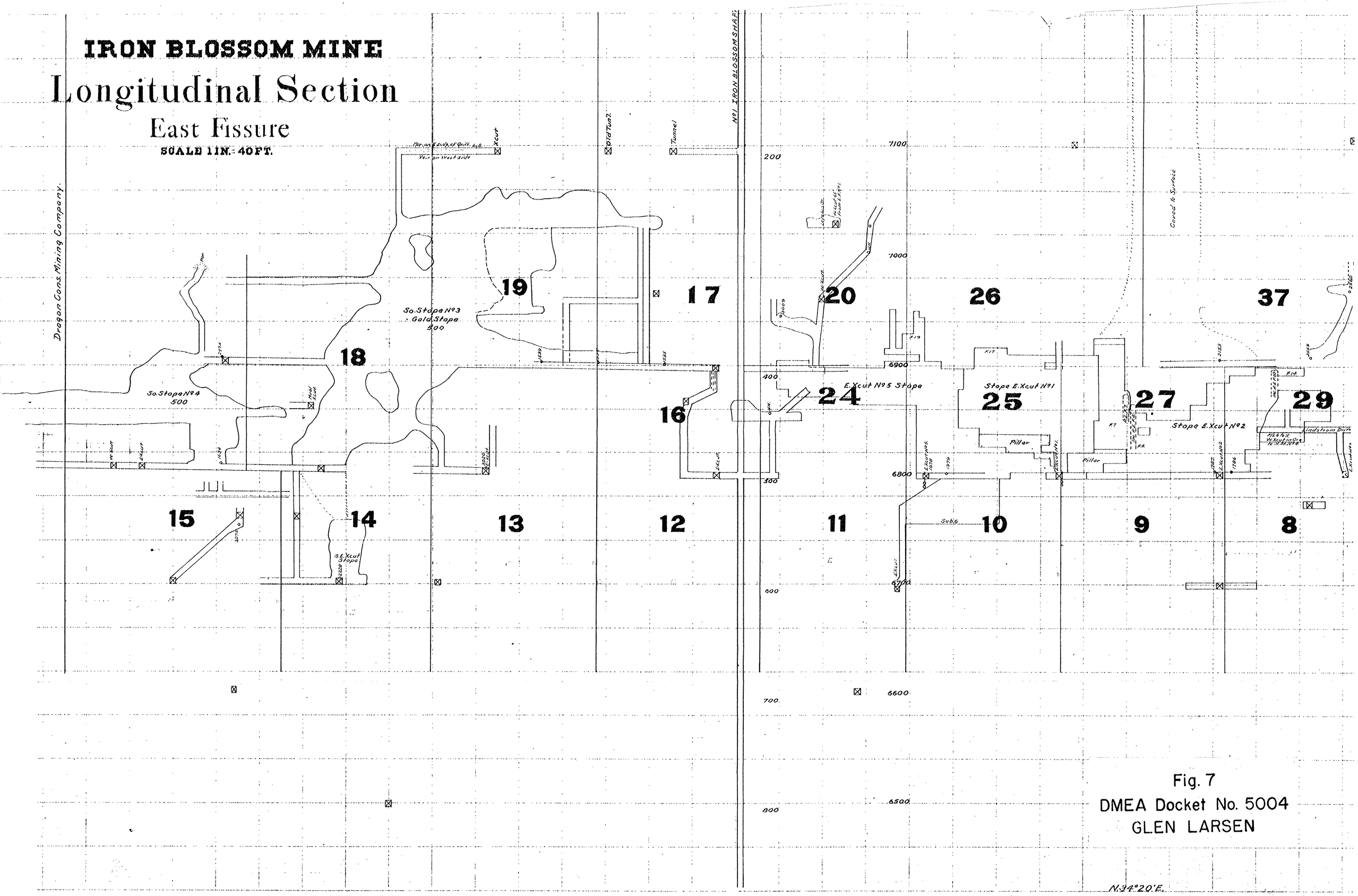


Fig. 7
DMEA Docket No. 5004
GLEN LARSEN

1500-1234-B

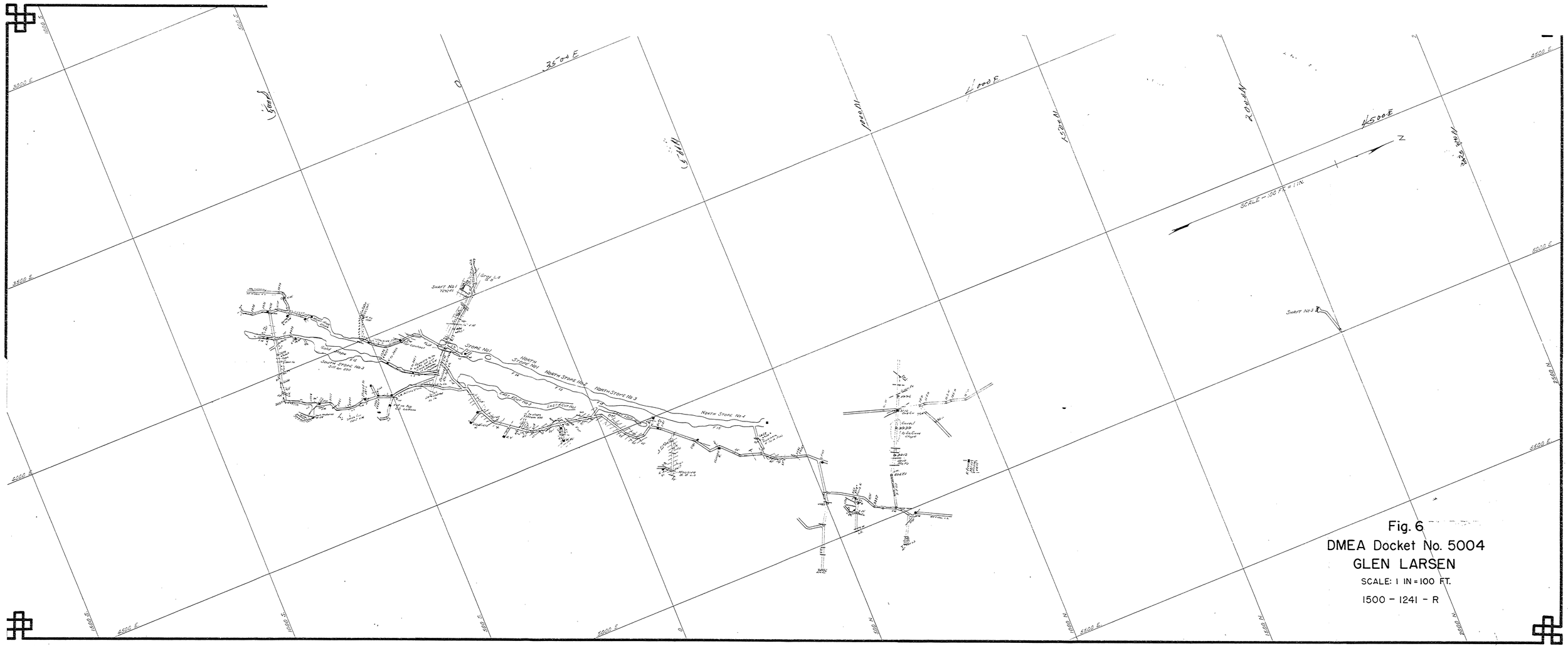
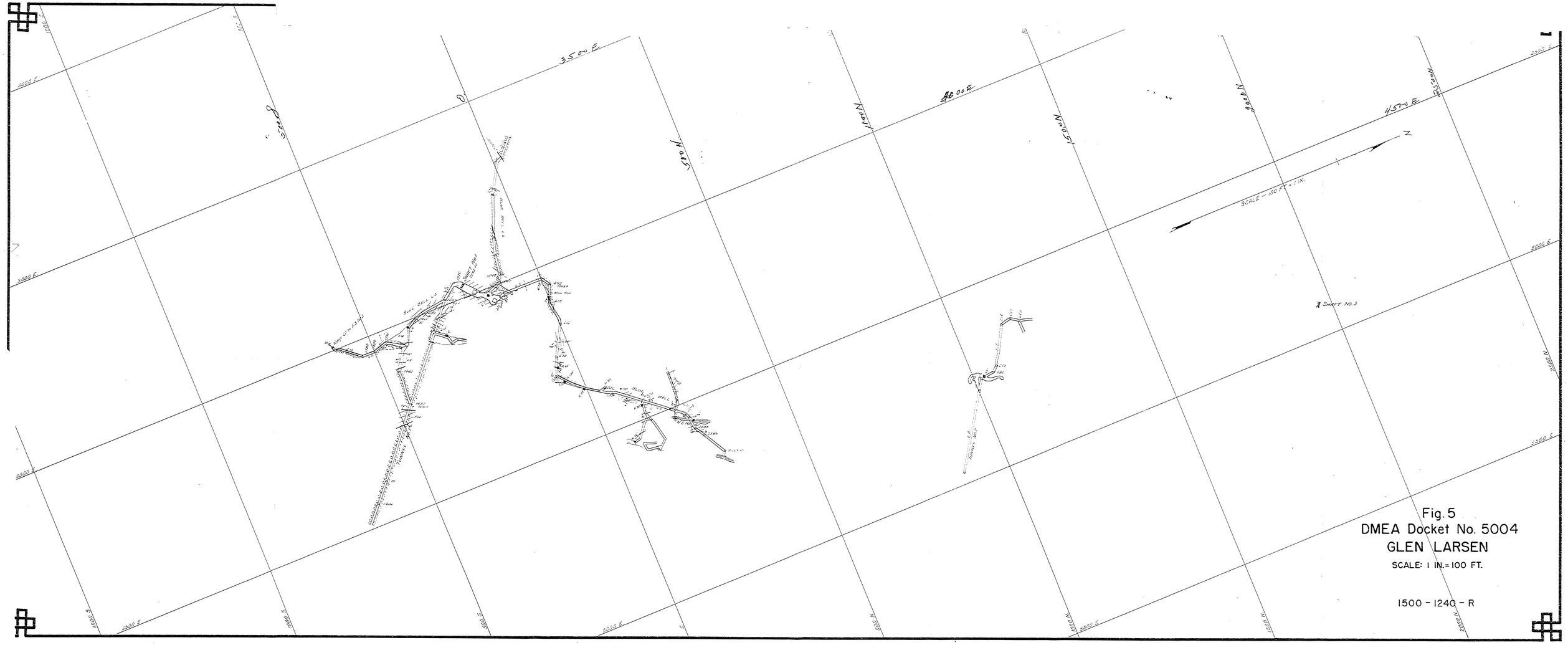


Fig. 6
DMEA Docket No. 5004
GLEN LARSEN
SCALE: 1 IN = 100 FT.
1500 - 1241 - R

IRON BLOSSOM MINE
400 LEVEL NO 1



IRON BLOSSOM MINE
200 LEVEL NO. 1

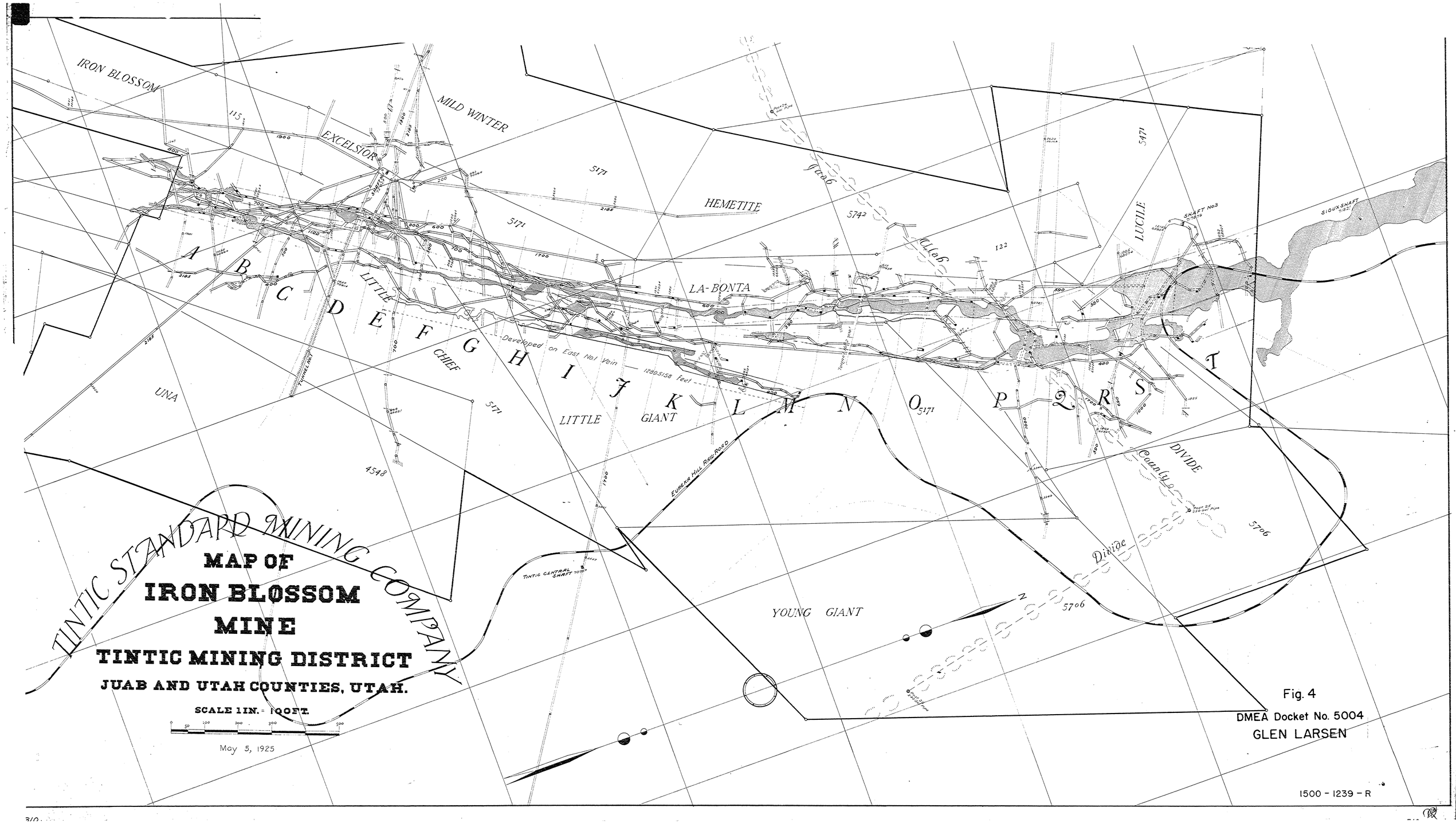


Fig. 4
DMEA Docket No. 5004
GLEN LARSEN

1500 - 1239 - R

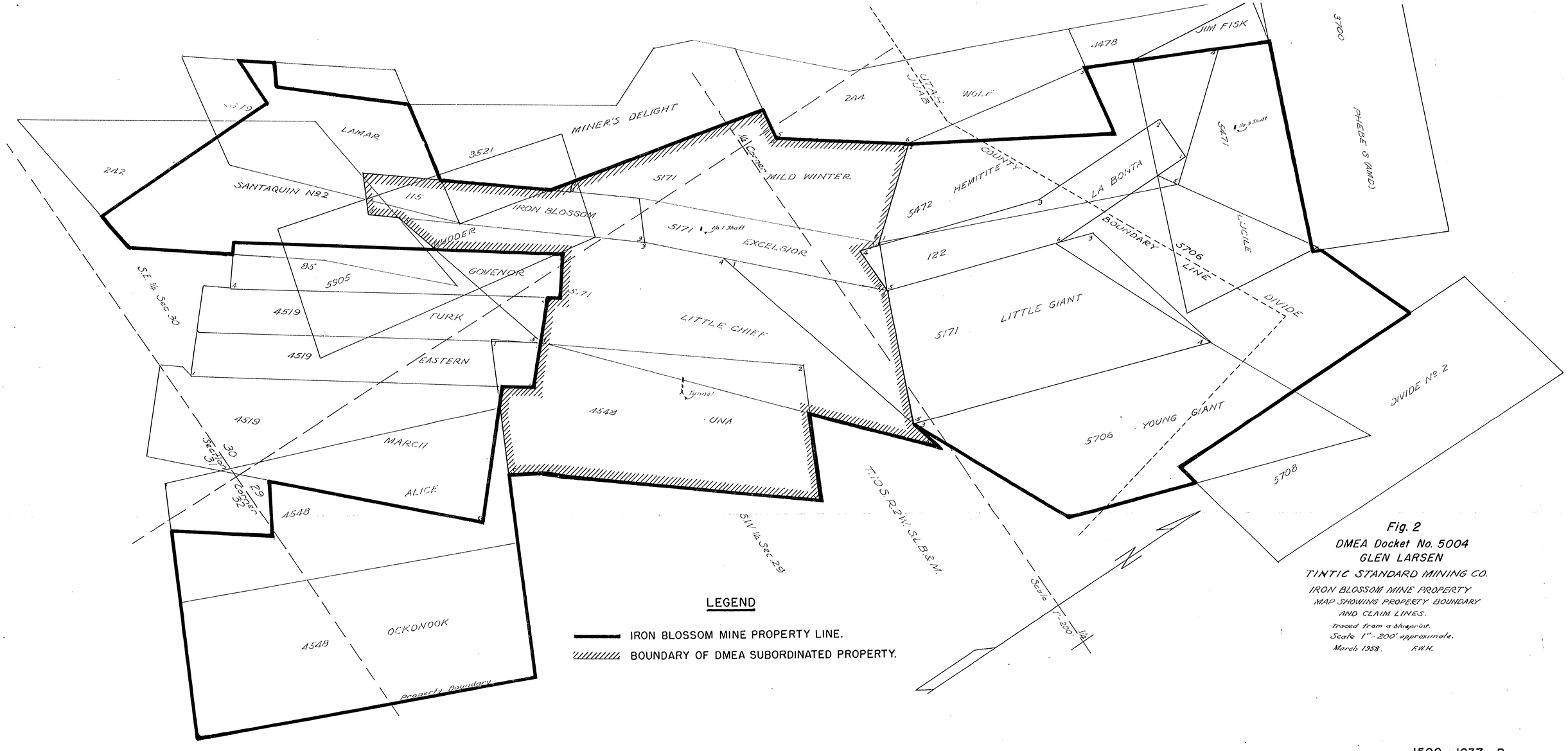
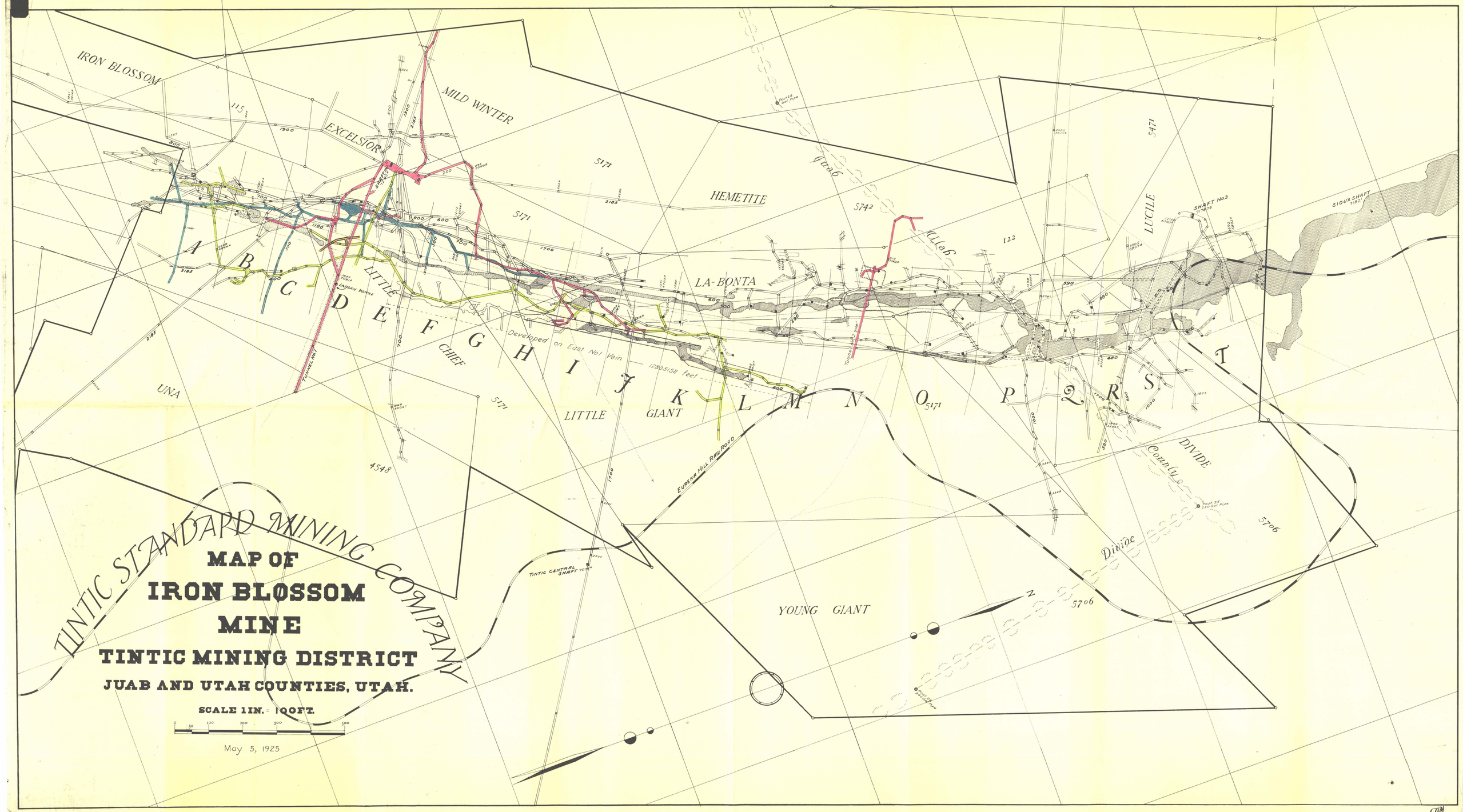


Fig. 2
DMEA Docket No. 5004
GLEN LARSEN
TINTIC STANDARD MINING CO.
IRON BLOSSOM MINE PROPERTY
MAP SHOWING PROPERTY BOUNDARY
AND CLAIM LINES.
Traced from a blueprint.
Scale 1" = 200' approximate.
March, 1958. F.W.H.

1500 - 1237 - B

8-2



310

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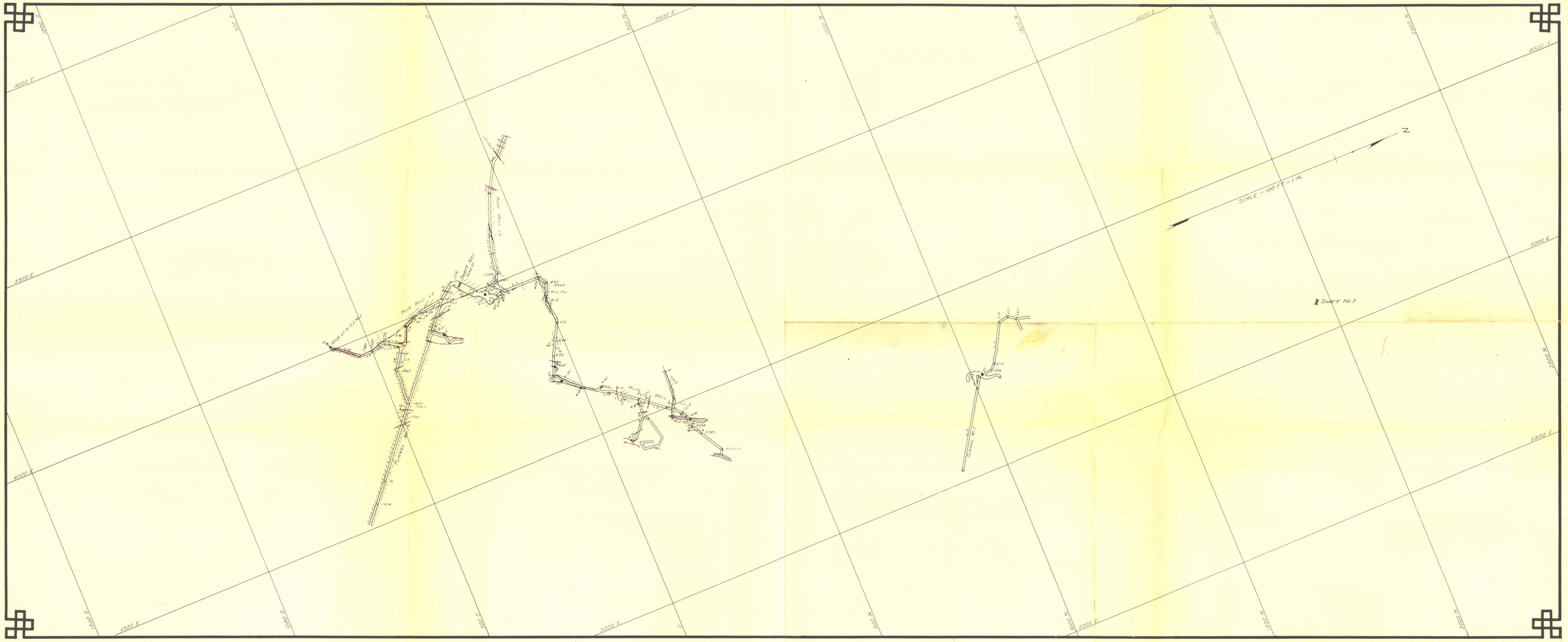
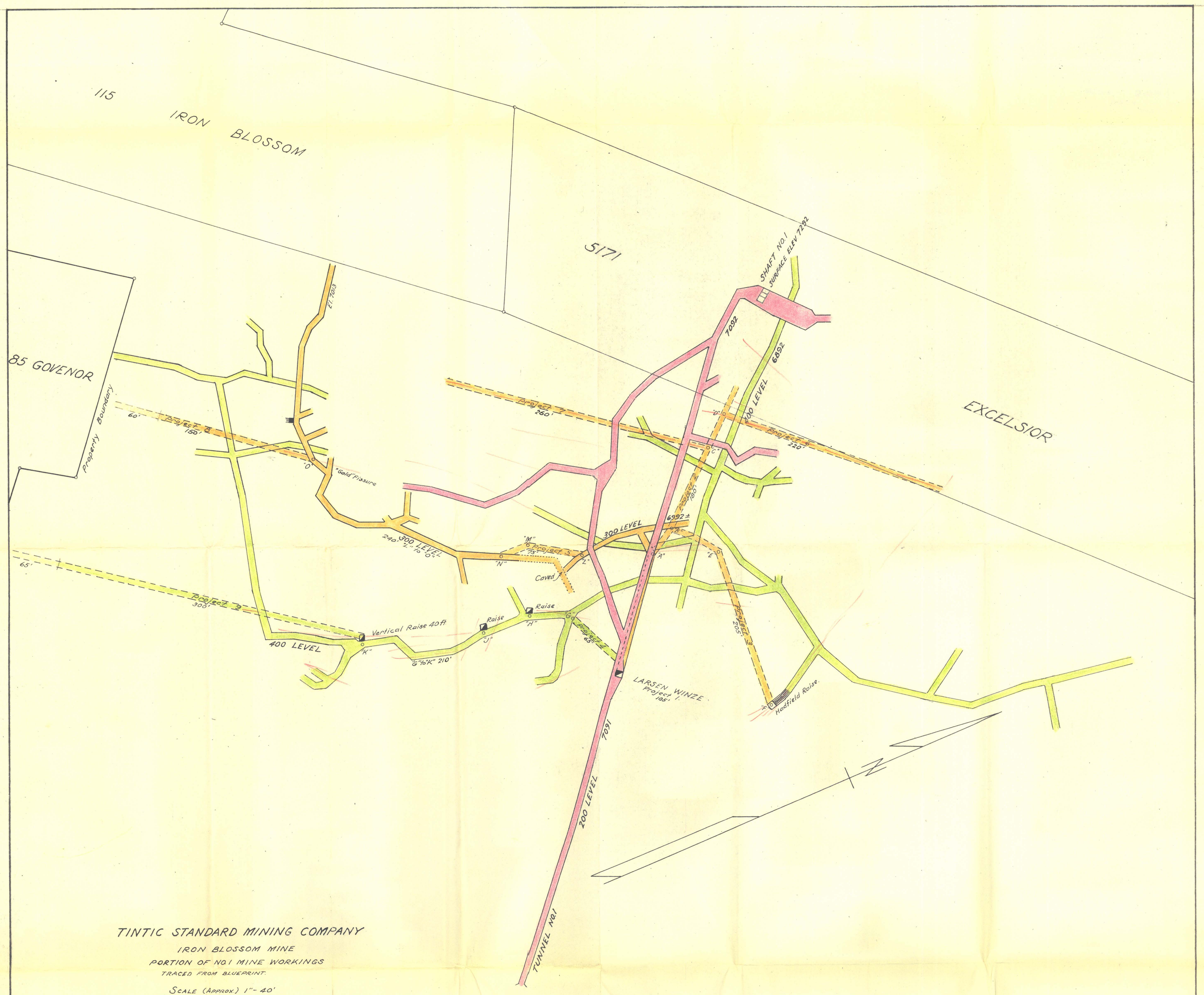


IRON BLOSSOM MINE #332
200 LEVEL NO.1 Copy 1



TINTIC STANDARD MINING COMPANY

IRON BLOSSOM MINE

PORTION OF NO.1 MINE WORKINGS

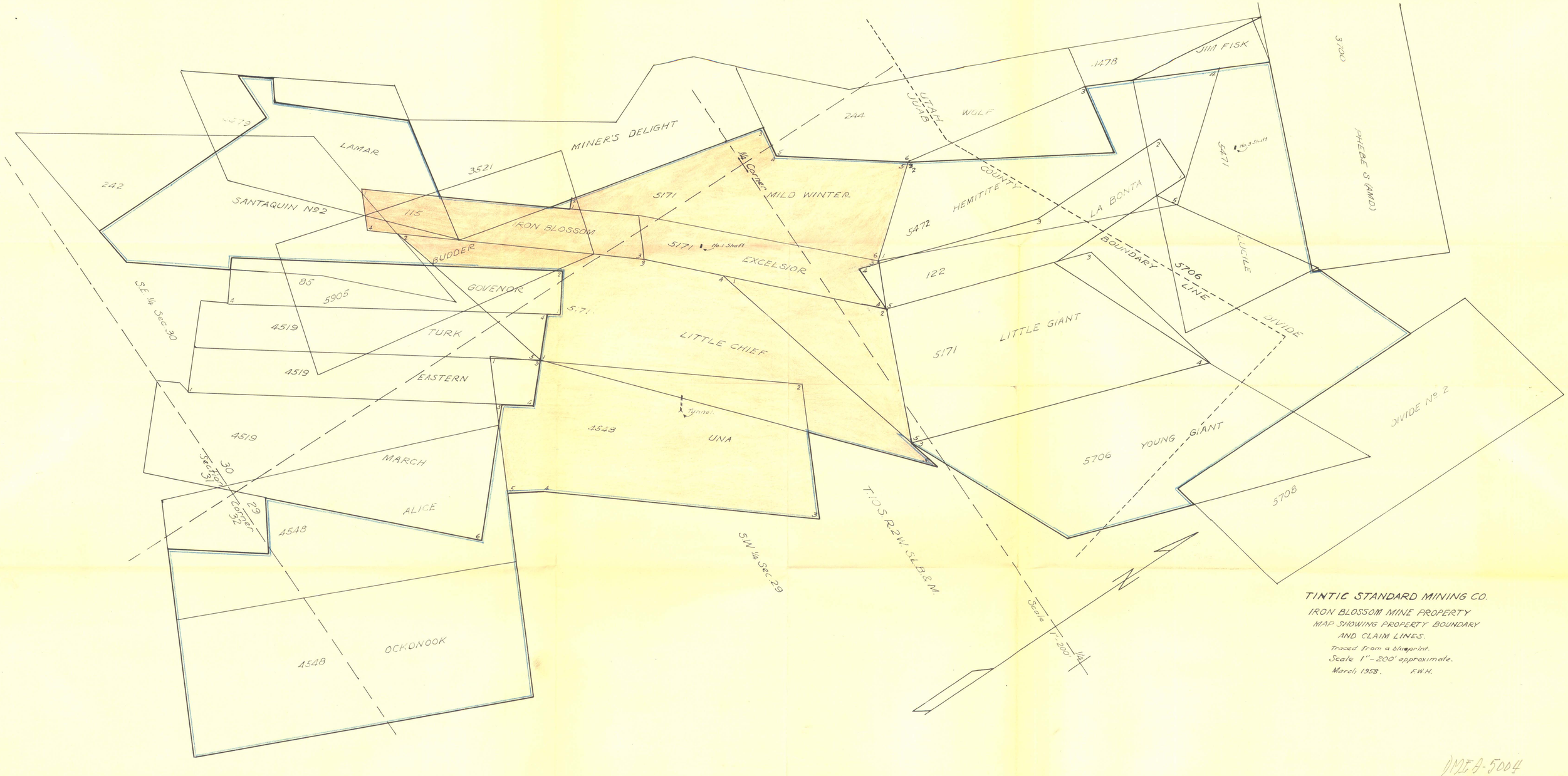
TRACED FROM BLUEPRINT.

SCALE (APPROX.) 1" - 40'

March 1958 F.N.H.

8-3

Copy 1



TINTIC STANDARD MINING CO.

IRON BLOSSOM MINE PROPERTY

MAP SHOWING PROPERTY BOUNDARY AND CLAIM LINES.

Traced from a blueprint.

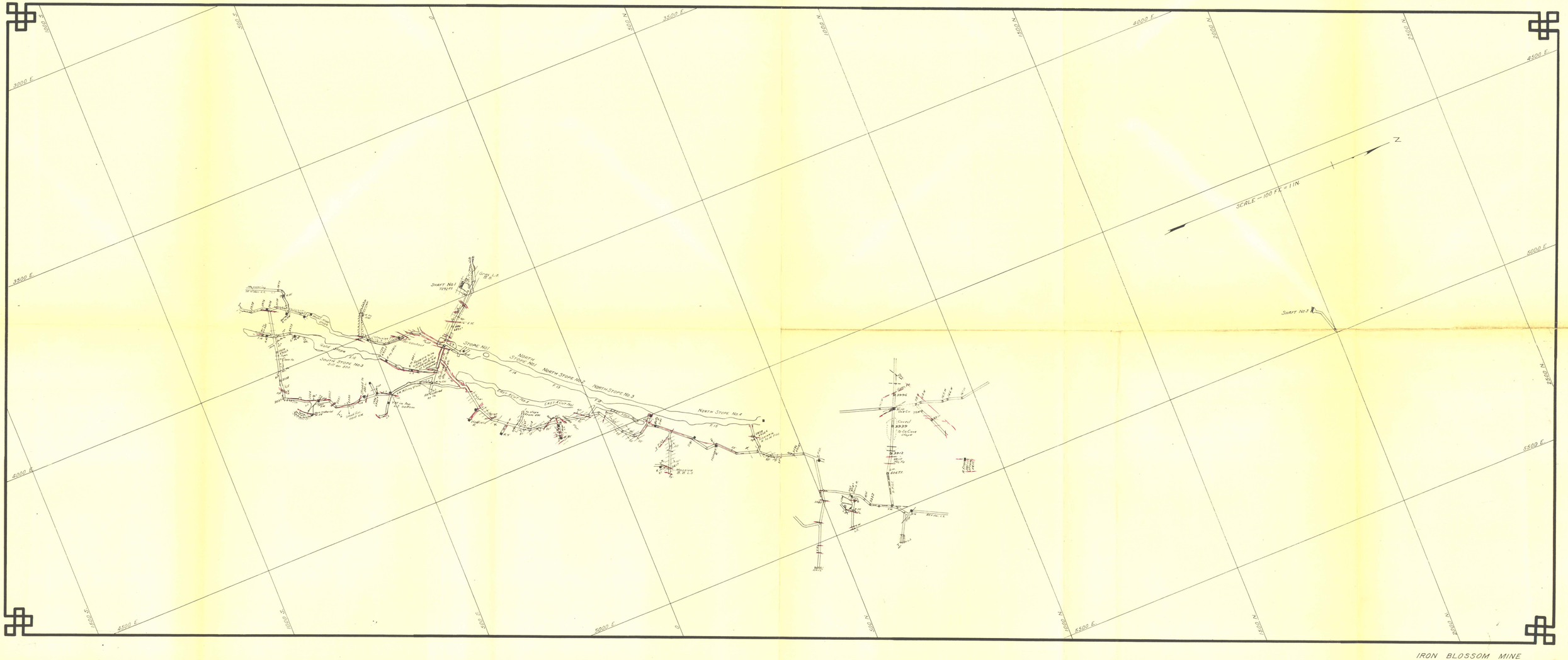
Scale 1" = 200' approximate.

March 1958. F.W.H.

UMC A-5004

Copy 4

8-2



IRON BLOSSOM MINE
400 LEVEL NO.1

#332
Copy 1

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

Examination Report

After company map

F.B. Moore, May 1958

FIGURE 3 - COMPOSITE PLAN OF PARTS OF THE 200, 300, AND 400 LEVELS SHOWING RECOMMENDED EXPLORATION, IRON BLOSSOM NO.1 MINE, JUAB COUNTY, UTAH.