CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
3550 N. Central Ave, 2nd floor
Phoenix, AZ, 85012
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

The following file is part of the Walter E. Heinrichs, Jr. Mining Collection

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

September 25, 1969

Mr. Joe Juhan
3018 East 6
Tucson, Arizona

Re: #469 G.S.B. Property
Whetstone Mtns.
Cochise County, Ariz.

Dear Joe:

Enclosed is a memo which is self-explanatory on our staff's impressions of the New Jersey Zinc data.

The New Jersey Zinc personnel seem to have neglected the area to the Northeast of the Mascot workings and they may have reasons that we at the moment are not aware of for doing so. From the facts as we know them at present, they certainly have missed a good bet.

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If you have any questions regarding the enclosed please let me know.

Very truly yours,

HEINRICHS GEOEXPLORATION COMPANY

E. Grover Heinrichs
Vice President

EGH/md

Enclosure

new file folder

HEINRICHS GEOEXPLORATION COMPANY

806 WEST GRANT ROAD, TUCSON, ARIZONA, 85703. P.O. BOX 5671. PHONE: (AREA CODE 602) 623-0578

September 19, 1969

RE: 469

Mr. Joe Juhan
3018 East Sixth
Tucson, Arizona

Dear Mr. Juhan:

As you are aware, the Twin Buttes Area has been one of the most extensively explored and exploited mining districts in the country during the past twenty years. Prior to the discovery of the Pima Mine there had been significant production from several underground mines. The new open pit operations were the result of extensive and well organized geological and geophysical exploration, followed by a lengthy period of development work.

The major portion of the older production came from the upper plate of the San Xavier thrust, well to the east of the twelve sections Mr. Hazen believes he can control. The new low grade production has been in this enviroment as well as on other areas not so easily defined. For example, the mineralization at Esperanza seems to be related to a quartz monzonite intruded into the fringes of the main granodroite stock.

Mr. Hazen's area is entirely within the granodiorite and to my knowledge has no past production of ore. In my opinion there are two possibilities for ore to exist in this area:

(1) That the granodiorite is in fact another relatively thin thrust plate overlaying geology similar to that of the Pima, Mission or Banner properties. I know of no direct evidence of such a thrust fault.

(2) A quartz monzonite intrusion not visible at surface may exist in Mr. Hazen's area which could be mineralized. Again, I am unaware of evidence to support this view.

Either of these possibilities imply that any economic ore deposit will be nearly or completely hidden with no surface expression and therefore ameanable to exploration only by indirect methods. In addition, I would expect such an ore deposit to be at least 500 feet deep. Were it not for the proximity of several major mines I would not recommend any but a cursory examination of the property. The odds are low that an ore body will be found even with an intensive exploration program in this (or any other) district. In fact, it is probably not practical for any but a major company to contemplate an exploration program and carry through to ultimate production of a metal product, esppcially when a deep shaft or extensive stripping operation will be needed.

It is most likely that at some early stage in the initial phases of exploration, such as a valid drill core intersection of ore grade mineralization, the property should be put up for option to the major producers in the area. This would likely net maximum gain to the first investors through some sort of royalty on production plus a flat price.

As a preliminary estimate I would think that a geophysical reconnaissance survey of the twelve (12) square miles would cost between $15,000.00 and $20,000.00 and would hopefully detect an area of further interest. Detail geophysics would cost $5,000.00 to $10,000.00. The drill target so isolated could conceivably be saleable to a large company without having actually drilled it.

From this point on, the cost of developing a property rises very rapidly. One drill hole will likely cost more than $10,000.00 and the first one will seldomehit the target sought. I would expect that you should expect to expend a minimum of $50,000.00 to develop this property to the point of having found commercial grade mineralization in core samples. Should no area of interest be developed by the initial reconnaissance program we would recommend no additional work and the property to be dropped. The cost to this point could be as little as $5,000.00.

I have attempted to evaluate this problem as well as possible without actual field work and as a result my thoughts are somewhat pessimistic in regards to the area. "Elephant Country" is a good tag for the general vicinity, however, any open ground near Pima or Mission is worthy of more than a cursory inspection. It is also virtually certain that more than one competent exploration program has been completed on Mr. Hazen's area before. The hope is that we can either do a better job or use different concepts to guide the program.

Very truly yours,

HEINRICHS GEOEXPLORATION COMPANY

Paul A. Head
Geophysicist

PAH/md

TO

Mr. Joe T. Juhan
3018 E. 6th Street
Tucson, Arizona 85716

HEINRICHS GEOEX
GEOPHYSICAL ENGINEERS TUCSON, ARIZONA

HEINRICHS GEOEXPLORATION COMPANY
808 W. GRANT ROAD - P. O. BOX 5671
TUCSON, ARIZONA 85703
Area Code 602 Phone 623-0578
Geophysical Exploration Research Engineering

SUBJECT: Whetstone Mountains Area Geex 66 # 469-69 DATE: November 17, 1969

2ND FOLD

Dear Joe:

We will likely have an I. P. & or Mag. crew free to do some preliminary reconnaissance for sulfides and contact magnetite (beyond what New Jersey did) for-from a few days up to ten days-most any time on short notice (1 week to 10 days) starting on or about 24 November 1969 and for a month or so thereafter.

Looks like a good wild-cat bet for a sleeper. Let us know when you get Abe Kalaf's et. al. pinned down, so we can firm schedule and start.

Best regards,

Sincerely,

Walter E. Heinrichs, Jr.

WEH:jh
Encl: Memorandum dated Nov. 17, 1969
from D. B. Cooley

1ST FOLD

PLEASE REPLY TO ⟶ SIGNED

DATE SIGNED

SEND WHITE AND PINK COPIES WITH CARBON INTACT. PINK COPY IS RETURNED WITH REPLY.

DETACH THIS COPY–RETAIN FOR ANSWER

Preliminary

MEMORANDUM Re: #469-69

HEINRICHS GEOEXPLORATION COMPANY

806 WEST GRANT ROAD, TUCSON, ARIZONA, 85703. P.O. BOX 5671. PHONE: (AREA CODE 602) 623-0578

November 17, 1969

To: W. E. Heinrichs, Jr.; Files
From: D. B. Cooley, Geologist
Subject: Mascot Claim Group Property Evaluation, Whetstone Mts., Cochise County, Arizona

The purpose of my trip was to evaluate both the property and the geology done by New Jersey Zinc. New Jersey has drilled a number of holes in the best looking areas. The existing workings are in shears within the contact deposit areas. One or more potential small higher-grade operations may still exist.

Much magnetitie, serpentine, some garnet epidote and calcite all indicate contact deposit where the monzonite rock has intruded the limestones. Malachite, azurite and some pyrite and chalcopyrite are present, but the mineralization is not strong. North of the intrusion the limestones are crystalized into granular marble and a few small intrusive dike or sill-like features were found.

From a standpoint of immediate exploration in this area, I. P. lines (500' "a" spacing) oriented about N to NE run in the area just north of Mine Canyon Road could be the best bet. At least one dipole (number one) should be on or very near the Mine Canyon Road, to facilitate logistics. Also all available magnetic data should be reviewed and consideration given to the need for additional magnetic coverage.

Regionally, quite a few possibilities exist for additional mines within the Whetstone Mountains. The intrusions and/or contact type deposits may produce a suitable target if a careful complete comprehensive exploration program is carried out over the entire mountain group. Any further work contemplated could be greatly speeded up and enhanced technically by acquiring the following references:

Tyrrell, W. W., Jr. 1957, Geology of the Whetstone Mountains area Cochise and Pima Counties, Arizona. Unpub. doctoral thesis, Yale University.

Burnette, C. R., 1957, Geology of the Middle Canyon, Whetstone Mountains, University of Arizona, Unpub. M. S. thesis.

DBC: jh
cc: J. T. Juhan

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HEINRICHS GEOEXPLORATION COMPANY

806 WEST GRANT ROAD, TUCSON, ARIZONA, 85703. P.O. BOX 5671. PHONE: (AREA CODE 602) 623-0578

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E. Grover Heinrichs
Vice President

EGH/md

Enclosure

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TO: E. Grover Heinrichs

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Don Cooley, Geologist

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The intrusive, while mineralized, does not seem to be as good a target as the area to the northeast. Additional geophysics should indicate whether the mineralized contact zone extends any distance below the surface. Several small outliers of the intrusive are present and the possibility of an enlarged or additional mineralized zone is quite good. The work of New Jersey Zinc Company does not seem to have tested this area at all.

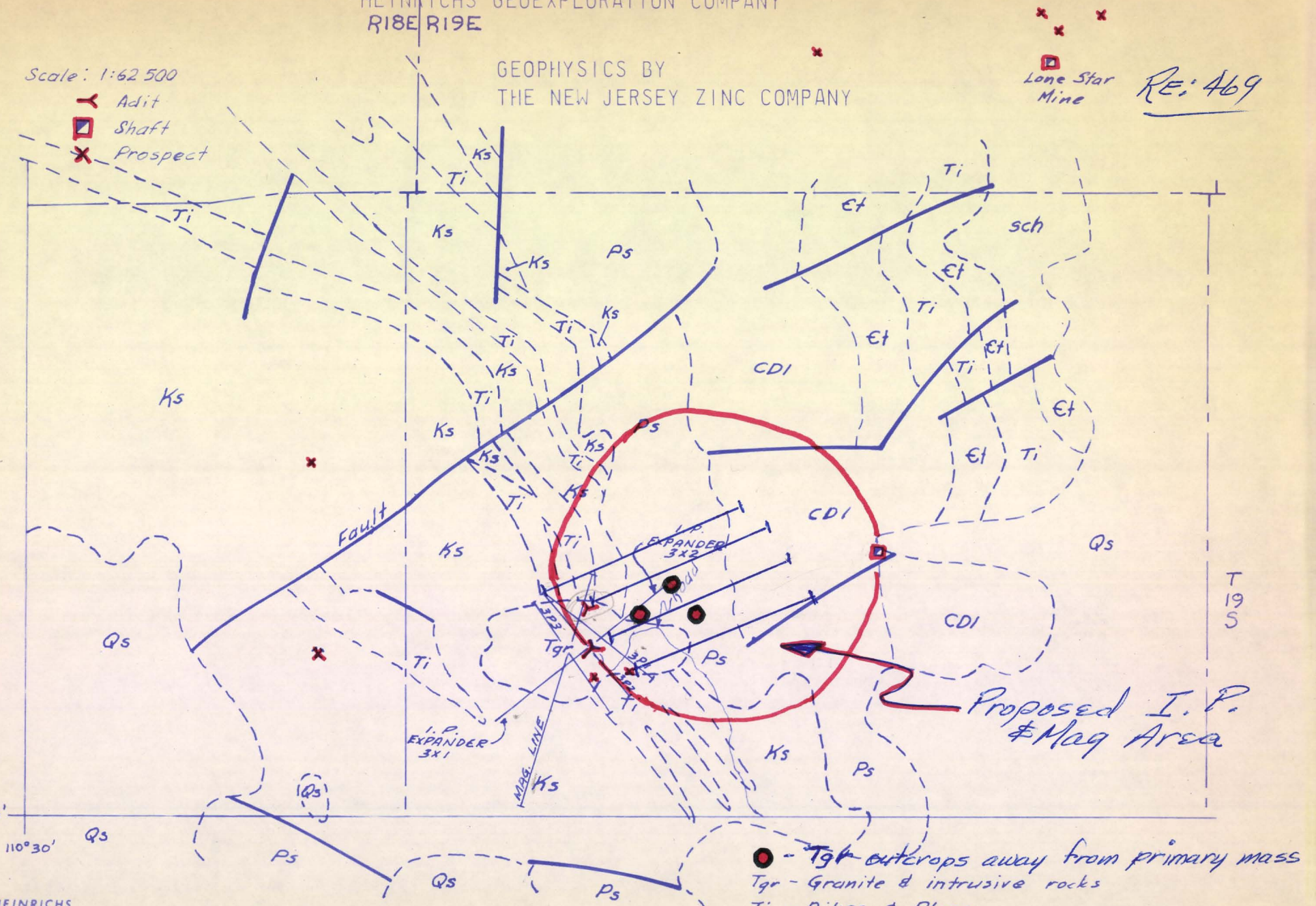
Prepared For
JOE T. JUHAN
by
HEINRICHS GEOEXPLORATION COMPANY

R18E R19E

GEOPHYSICS BY
THE NEW JERSEY ZINC COMPANY

Lone Star Mine

RE: 469



● - Tgr outcrops away from primary mass
Tgr - Granite & intrusive rocks
Ti - Dikes & Plugs
Ks - Conglomerate & limestone
Qs - Silt, sand & gravel
Ps - Permian limestone
Et - Bolsa & Troy quartzites

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GEOEXPLORATION COMPANY
POST OFFICE BOX 5671, TUCSON, ARIZONA, 85703
Phone: 602/623-0578 Cable: GEOEX, Tucson
vancouver
sydney
geophysical engineers

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HEINRICHS GEOEXPLORATION COMPANY

R18E R19E

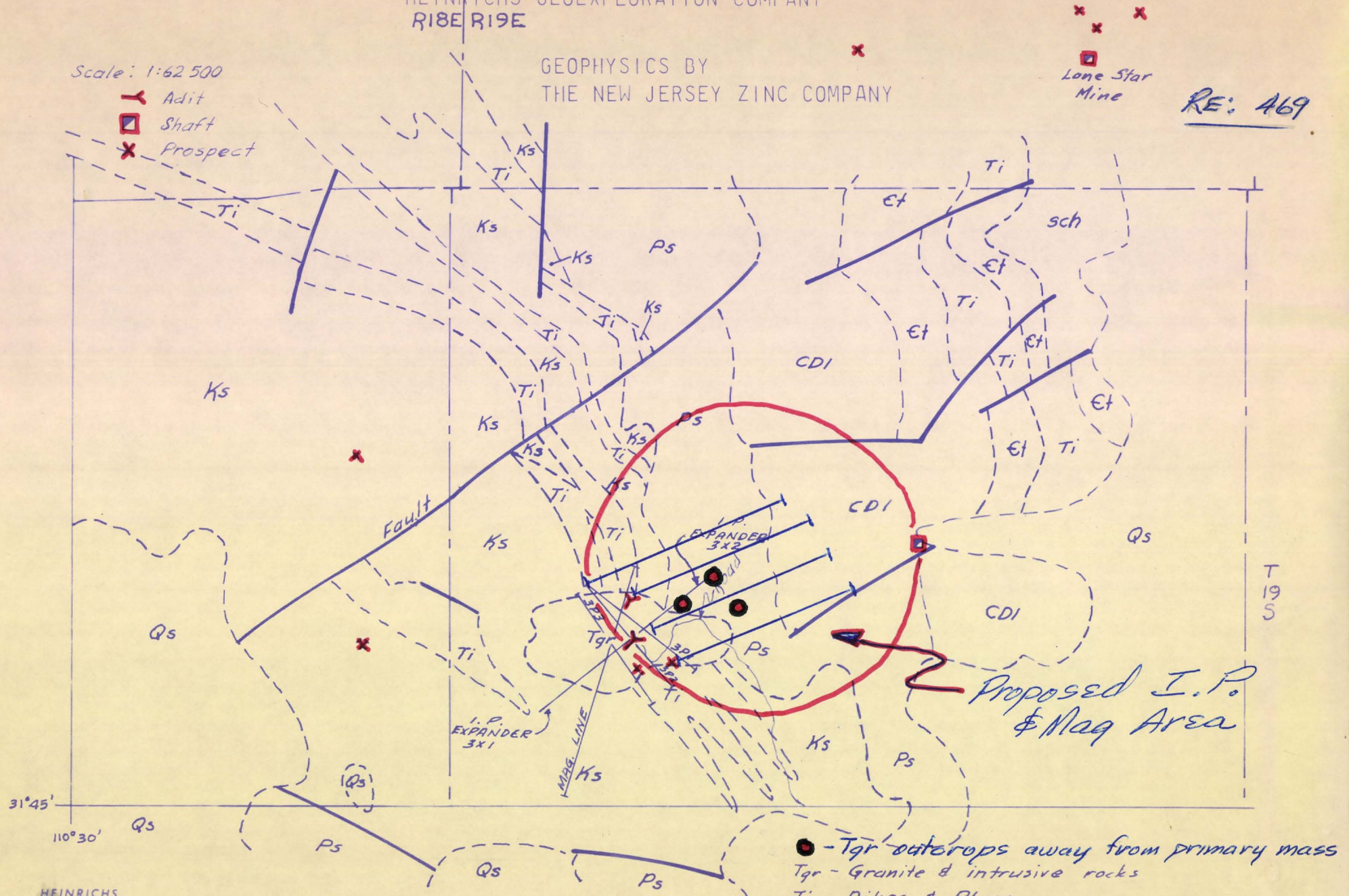
GEOPHYSICS BY
THE NEW JERSEY ZINC COMPANY

Scale: 1:62 500

Adit
Shaft
Prospect

Lone Star Mine

RE: 469



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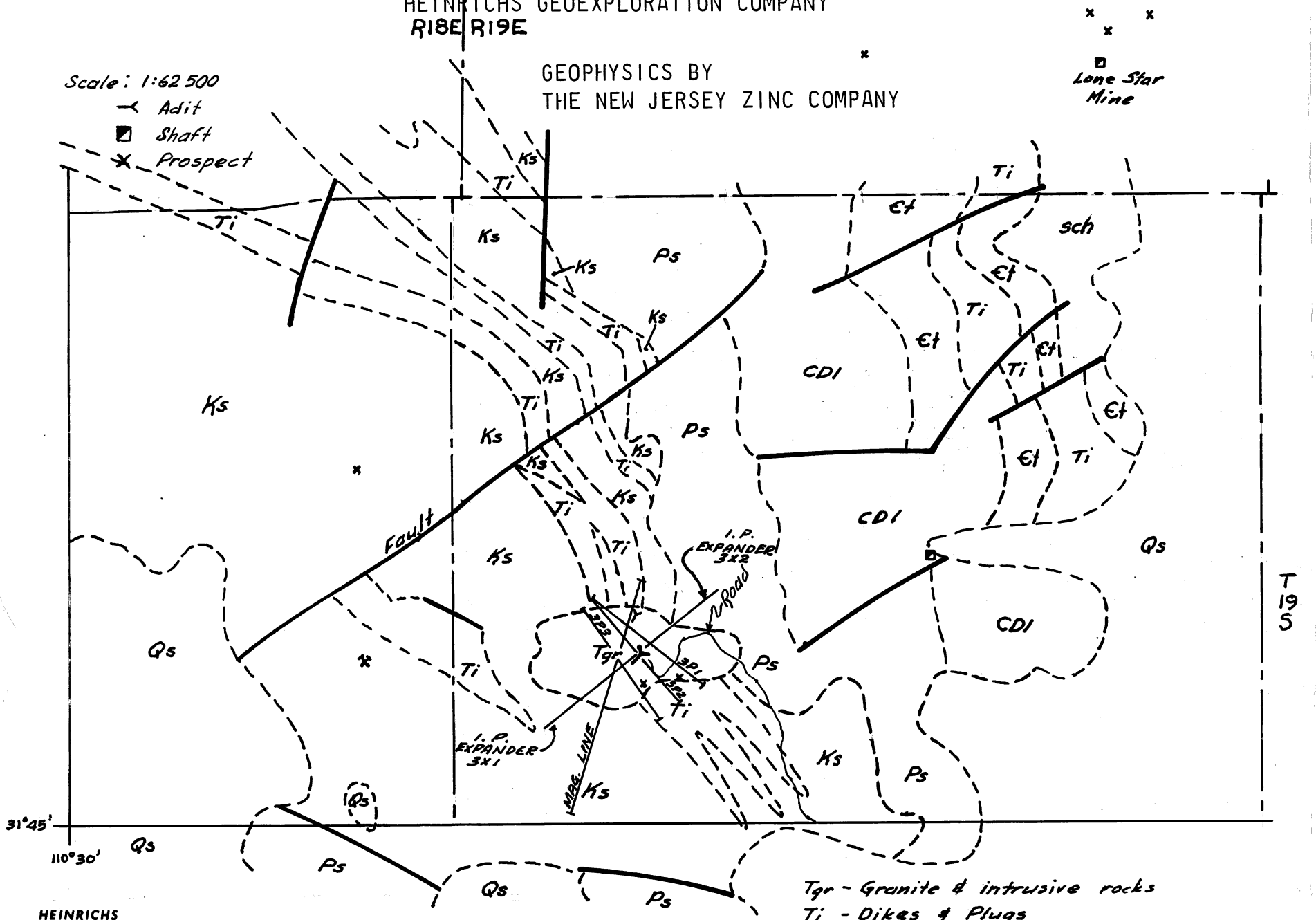

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sydney
geophysical engineers

R. 19 E.

T. 19 S.

Granite Peak 7413

GSB Boundary (approx.)

Mascot Fault

Area of strong sheeting

Area of strong jointing

Black Cat Mine

Dump

Adit

Shaft

Open cut

Pit

Road

Fence

Southern limit of recrystallization

Contact

Fault

Bedding

Inclined joint or shear

Vertical joint or shear

Trend of strong joints outside of mineralized zones

Alteration

E Epidote

G Garnet

H Hornfels

T Tremolite

Ank Ankerite, principally along hot joints, with some chalcedonic quartz

Underground workings

Claim corner, located

Magnetite sand sample

Inclined Diamond Drill Hole projected to plan

Breccia

Conglomeratic facies

Dissemination copper mineralization — intensity of pattern reflects strength of mineralization

Copper mineralization along joints

Contour Interval 80 feet

LEGEND

QUATERNARY

Qal Alluvium and colluvium

CRETACEOUS

Undifferentiated Cretaceous, principally quartzite with lesser amounts of arkose and shale

PERMIAN

Pch Epitaph dolomite, includes some undifferentiated Colina limestone in lower part

Intrusive Igneous Rocks

TERTIARY

Tap Dacite porphyry dikes

Tqm Quartz monzonite

Tqd Quartz diorite

Tqp Quartz porphyry and quartz-feldspar porphyry, sill-like bodies

PIMA CO.
COCHISE CO.

WHILE WE BELIEVE THIS INFORMATION TO BE CORRECT, WE MAKE NO REPRESENTATION WITH RESPECT TO, NOR DO WE ASSUME ANY RESPONSIBILITY FOR, THE CORRECTNESS THEREOF. THE NEW JERSEY ZINC COMPANY

THIS DRAWING IN DESIGN AND DETAIL IS OUR PROPERTY AND MUST NOT BE USED EXCEPT IN CONNECTION WITH OUR WORK. ALL RIGHTS OF DESIGN AND INVENTION ARE RESERVED. THIS DRAWING MUST BE RETURNED TO THE NEW JERSEY ZINC COMPANY.

SERIAL NUMBER	DATE ISSUED

REFERENCE DRAWINGS

Base map taken from 1:62,500 topographic map of the BENSON quadrangle, 1958 (USGS 15-minute series)

Geology mapped on 1"=400' aerial photographs, Nos. EEX-1I-58 & 59 (Photography 7-11-58)

REVISIONS

THE NEW JERSEY ZINC COMPANY

TUCSON, ARIZONA

GEOLOGY	D.C. Bulmer & F.T.F. Fischer
DRAWN	F.T.F.
CHECKED	
APPROVED	

GEOLOGY OF GSB AND MASCOT-NEVADA PROPERTIES

WHETSTONE MINING DISTRICT COCHISE COUNTY, ARIZONA

DATE	May 13, 1963
SCALE	1 inch = 400 feet
File No.	AX-AR-161

R. 19 E.

T. 19 S.

LEGEND

QUATERNARY

Qal — Alluvium and colluvium

CRETACEOUS

Undifferentiated Cretaceous, principally quartzite with lesser amounts of phrase and shale

PERMIAN

Pch — Epitaph dolomite, includes some undifferentiated Colina limestone in lower part

Intrusive Igneous Rocks

TERTIARY

Tdp — Diorite porphyry dikes

Tqm — Quartz monzonite

Tqd — Quartz diorite

Tqp — Quartz porphyry and quartz-feldspar porphyry, sill-like bodies

Bedding

Inclined joint or shear

Vertical joint or shear

Areas of sheared and jointed outside of sheared zones

Alteration

E Epidote

G Garnet

H Hornfels

T Tremolite

Ank Ankerite, principally along flat joints, with some chalcedonic quartz

Cover cut } discovery

Pit

Adit

Shaft

Underground workings

Claim corner, located

Road

Magnetite sand sample

Inclined Diamond Drill Hole projected to plan

Breccia

Conglomeratic facies

Disseminated copper mineralization — intensity of pattern reflects strength of mineralization

Copper mineralization along joints

Fault, dashed where concealed

Contour, referred to mean sea level datum. Contour interval 80 feet

Granite Peak 7430

Mascot Fault

Area of strong shearing

GSB boundary (approximate)

Southern limit of recrystallization

Ridge

Qal

Tqm

Tqd

Tdp

Tqp

Pch

Pe

Ank

DDH GSB-2

DDH GSB-3

DDH GSB-4

DDH GSB-5

DDH GSB-6

DDH GSB-7

DDH GSB-8

DDH GSB-9

DDH GSB-10

DDH GSB-11

DDH GSB-12

DDH GSB-13

DDH GSB-14

DDH GSB-15

DDH GSB-16

DDH GSB-17

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DDH GSB-21

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