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November 17, 1976

Mr. Marvin Colvin, etal
P.O. Box 1332
St. Johns, AZ 85936

Re: Preliminary field investigation cavern area, workings and vicinity approximately six miles southwest of Bouse, Sec. 1, T.6N., R.18W., and vicinity, Yuma County, Ariz.
GEOEX Job #1142

Gentlemen:

This letter constitutes our report of the results of my field trip made with you and Dave on Thursday, 4 November, 1976, and of the related matters which were involved and considered by us in connection with the overall investigation.

INTRODUCTION AND BACKGROUND

Our original introduction to the subject of a possible large guano cave in the area dates to the inquiry made to our Tucson office on 5 August 1975 by Mr. Colvin. Three brief conferences were held in Tucson with Mr. Colvin, first with Chris Ludwig, and later on with Walter Heinrichs and finally with both of us. Ultimately, a preliminary one day field inspection was conducted by Walter Heinrichs.

The area is said to be: "honeycombed with air pockets", and reportedly one very large pocket, estimated perhaps one hundred feet wide by two hundred feet long and containing up to a forty foot thick deposit of bat guano, had once been found, seen, reported or mentioned in the past, but had since been lost, or naturally or artificially concealed, on purpose or by accident. The prime area of concern was originally thought to cover only one to two acres. After expending considerable unsuccessful underground effort over several recent years, last year GEOEX was contacted by Mr. Colvin and associates with the thought that the actual occurrence of such a cave in the area might be more readily confirmed by geophysical work.

GEOPHYSICS

During the interim, prior to my field trip, a representative collection

Mr. Marvin Colvin, etal
November 17, 1976
Page Two

of various rocks from the known cave, associated workings and nearby surface area, were submitted to us by Mr. Colvin. A brief study of these did not suggest any specifically advantageous geophysical situation. It had been hoped that some particular physical rock property might stand out as a special aid to the investigation by perhaps enhancing a geophysical approach. Unfortunately, this does not seem to be the case.

The general consensus of experience in cavity detection by geophysical methods is that the costs are very high, or the results are extremely uncertain. That is true in most cases except for relatively large cavities which are very near surface and where the proximity of them is already narrowed down to a very small area so that extremely detailed coverage is practical.

Some of the geophysical methods we have considered are magnetics, gravity, electrical, and seismic. Included, are also the newer acoustical holography technique and a special new radar reflection system. Unfortunately, the use of any one or all of these methods cannot definitely assure that a cavity will be detected, even assuming that such does exist beneath the area which is to be ultimately covered by the particular methods selected. Therefore, all geophysical methods applied, must be done so in more or less an experimental sense. The same must be said for dye solutions, gas or vapor detection methods, and other less classical or more direct tests such as trace or micro element geochemical gridding of the neighboring plants, rocks, and soil - hoping to delineate a halo effect of a sort that might be caused by a large cave occupied by bats. Arbitrary application of any of these methods in an areal sense, hoping to pick up some favorably interpretable clue on the surface or at depth, would cost roughly \$5.00 to \$10.00 per acre per method and up, assuming a minimum surface coverage of several hundred acres. Similar costs would accrue if proportionately smaller areas were covered in greater detail. Estimated minimum costs for a radar or acoustical holography survey of even a few acres would be the same order of magnitude or perhaps even greater.

GEOLOGY

Geologically, there is definite small cave solution cavern evidence. The main area excavated from the flat incline shaft clearly shows a sharp southwesterly dipping contact between massive white colored gypsum, in places obviously solution dissolved, and the overlying dirty, cherty, cavitated massive limestone. Commonly along this contact is a seam varying in thickness from nothing to a foot or more of gray to brown spongy gossanous breccia material sometimes evenly and finely vugged and at other times coarse or varying sized in vugginess. Exact origin or nature of this material is uncertain. It could be indigenous and altered in place, the result of downward percolation of surface water or hydrothermal action from below. Local dips vary from flat to steep both in structure and in bedding. Extent of the limestone was noted to cover at least several hundred acres. These formations are very similar to rocks formerly observed across the valley to the east in the Granite Wash Mountains near the

old Yuma Mine and vicinity. On the east the limestone is flanked by a steep dipping, poorly sorted angular polygenetic sandstone conglomerate and alluvium. On the west lies the main gneiss and schist of the Plomosa Mountains, with some apparent dolomitic lenses or interbedding, localized tactite lenses and sparse epidote. This situation continues at least two or three thousand feet both to the north and to the south of the main area.

Immediately above and a few yards to the west and south of the present incline portal, access to the natural underground cavities which have been explored to date, are several large cracks up to two feet wide and thirty feet long in the limestone at the surface. These seem to be somewhat randomly oriented. They could be due to slump effects related to surface erosion, or subsurface caverning, or both, but they appear older than if they were just caused by slumpage. Occasional cavities from a few feet to ten feet or more in diameter were seen on nearby limestone cliffs and elsewhere where the limestone is exposed in the immediate vicinity.

CONCLUSIONS AND RECOMMENDATIONS

Possibility of the existence of a large cave in the area cannot be positively ruled out. Obviously, where small caves are known, a large hidden one could exist. Other than that, no specific large cave evidence was recognized. First hand reports of the small cavern "breathing" in a manner not correlating with surface winds, would require some accurate and recorded quantification in order to assess the significance of that if any. The somewhat hearsay nature of the large cave reports, tends to make their validity somewhat questionable. Usually, in the realm of successful experience in similar matters related to finding lost mines or treasure, there is usually at least one plausible specific fact or element of factuality. Somehow, I was unable to perceive a specific fact in this particular case. This, of course, tends to throw suspicion on the absolute truth of the various reports that a large cave was known to exist. These are of course geological - geophysical conclusions and not those of an experienced speleologist. Someone who has devoted a career to studying caves and cave life might see some important evidence not recognized by this observer. If the matter is to be pursued further, it is recommended that such a person be contacted first. We believe such people might be reached by or through inquiries at Arizona State University or University of Arizona.


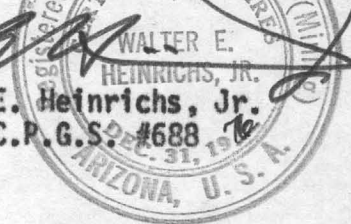
If you are convinced you are already on the right track of the large cave vicinity or, if further other type work yields favorable results suggesting the presence and position of a large cave, it is strongly recommended that confirmation testing plans consider drilling as an alternate approach to heavy excavating. For example, several air track drill holes might be successfully drilled progressively down dip from the surface, and/or underground, below the present "coyoted" workings at less expense than coyoting and perhaps more reliably than the indirect methods mentioned above.

Mr. Marvin Colvin, etal
November 17, 1976
Page Four

Please do not hesitate to contact us right away or at any time later on, if you have more questions or any should arise. If further effort is considered, we would be pleased to work with you in planning, executing and interpreting the results.

Respectfully submitted,

Heinrichs GEOExploration Co., (Inc.)


Walter E. Heinrichs, Jr.
P.E. & C.P.G.S. #688


WEH:mt

GEOEX JOB #1142
11/17/76
(602) 623-0578
Box 5964
Tucson, AZ 85703

I.C.O.S.

Cable near Base, Az.



Mountain

Mud
to hills
100 yds

natural entrance

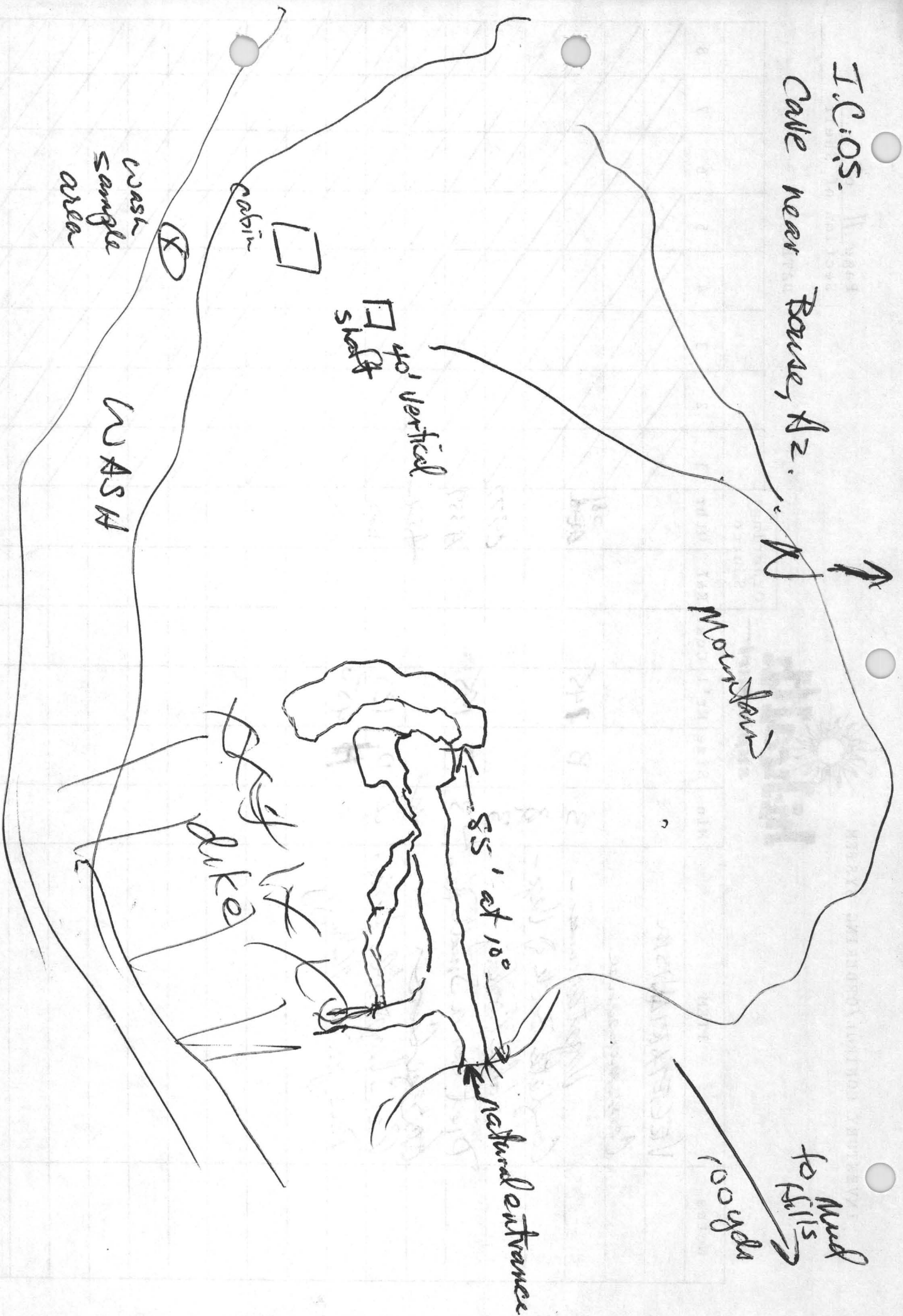
SS' at 10°

40' vertical
shaft

cabin

wash
sample
area

WASH



RECEIVED
GEO
Cable: GEOEX
MAR 9 1977
BOX 5964 TUCSON, ARIZONA 85703
Phone: (AREA 602) 623-0578

I.C.O.S.
21421 N24 Ave.
Phoenix, Arizona
85027

3/6/77

Walter Heinrichs, President
Heinrichs Geoelectrical Co.
P.O. Box 5964
Tucson, Arizona 85703

Dear Walter,

We have been so occupied with removal of our equipment and "improvements" and closing up and cleaning up at the cave site that we have not even been attempting to liquidate. We should be in a position to start doing so after the middle of this month.

In the meantime, you will find enclosed a payment, albeit small, as promised in my last letter.

We hope all is going well with you and your operations.

Gill later - our best.

Sharon L. Colon
for
I.C.O.S.

JL # 1142

I.C.O.S.
21421 N. 24 Ave
Phoenix, Arizona
85827
1/6/77

Walter Heinrichs, President
Heinrichs Geos exploration Co.
P.O. Box 5964
Tucson, Arizona 85703

RECEIVED
GEOEX

Cable: GEOEX



REC'D

JAN 10 1977

REC'D

BOX 5964 TUCSON, ARIZONA 85703
Phone: (AREA 602) 623-0578

Dear Walter,

Thank you for your quick response to our last communication. Thank you also for your proposal to reduce our balance by half.

We accept your compromise balance of \$99.73. Regrettably, however, we still are not in a position to give you full payment right away.

If it does not appear that we shall be able to clear our debt with you by liquidation of our assets by the end of February, then we shall begin sending you payments. In any event, however, we do not intend to keep you waiting long.

Thank you again for your communications and cooperation.

Harold S. Blum
President, I.C.O.S.

(P.S.: New personal address as of January 15th)
P.O. Box 1934, Cottonwood, Az, 86326

December 17, 1976

Mr. Marvin Colvin, President
Institute of Creative Organized Sciences
P.O. Box 1332
St. Johns, Arizona 85936

Dear Marvin:

Many thanks for your two letters of 7 and 14 December 1976. Also, for your \$280.00 check enclosed with the last letter which arrived today.

You presented some logical arguments regarding our statement, and the mutual agreement or understanding we each had. Certainly there was no intention to inveigle you into a larger fee situation. If for no other reason than the long time delay we should have confirmed the details in advance in writing. Moreover, I perhaps excessively indulged the report. However, I did want you to have the benefit of as much written thought and opinion as possible in order to provide your associates a maximum range of the problems, possibilities and probabilities. Anyway, under the circumstances, I regret the misunderstanding and would agree to meet you half way, on the balance, i.e.:

	\$479.47	Charges
Less	280.00	Paid 12/17/76
	<u>199.47</u>	
	2	= <u>\$99.73,</u>

if you feel that is a reasonably equitable compromise.

In any event, we wish to reciprocate in our Season's best wishes to you and yours.

Sincerely,

Heinrichs GEOEXploration Co.

WEH:mt
Extra carbon copy enclosed.

Walter E. Heinrichs, Jr.
President & General Manager

Heinrich's Geoexploration Co.

P.O. Box 5964

Tucson, Arizona 85703

J. C. O. S.

421 N. 24 Ave

Phoenix, Arizona

85027

17 1976

12/14/76

BOX 5964 TUCSON, ARIZONA 85703

Phone: (AREA 602) 623-0578

Dear Walter,

Enclosed you will find \$280⁰⁰ as partial payment for your services.

As I mentioned in my last message, your bill rather took us by surprise. This was due to a misunderstanding on my part. When I checked with you verbally, about the cost of the field consultation, all you indicated at the time was \$250⁰⁰ per day plus expenses. Later, when you suggested a sample analysis, I also questioned the cost. You quoted \$125⁰⁰ - 150⁰⁰ per hour, depending on whether actual chemical and other laboratory tests were used. You said you doubted lab tests would be involved and doubted the examination would last over an hour in this preliminary preparatory stage. The reason I asked those questions was so that I would have a figure to present to the other members of the group. You are aware of the "sketching" level of our activities. When we ~~plan~~ undertake a project, we have to plan ahead to assure that the necessary funds are available.

I am aware that the \$150⁰⁰ for "preparation, sample examination, communications, interpretation, and report" is probably quite justified according to the rate sheet you furnished. I accept the responsibility for not being sharp enough to spot the possibility of that kind of charge. I thought I was making it apparent from my questioning that I needed to know the cost factors involved, and I thought you were providing them, verbally.

Well, anyway, you have \$280⁰⁰ now. We could have come up with the \$328.47 at this time, if that were the total bill.

We have decided, however, to abandon the cave project and are liquidating our assets.

These include an ore car, 230 feet of 16 pound track (460 feet of ^{single} rails), and a winch or hoist (~~\$~~ 200 feet of 1/2" cable, powered by 4 cylinder Continental engine, has brake and clutch and throttle controls). We intend to pay you as quickly as we can with the proceeds of the sale of these. If you know of anyone interested in any of these items, let us know; and we shall both benefit.

We want you to know that we greatly appreciate your assistance and counsel. The day we spent with you was largely responsible for our decision, as a group, to let go of the cave project. There are some of us Richards who still believe, in spite of everything, that there is a cavern there. But we all agree that it is time to stop putting energy into it.

Our corporation (Institute of Creative Organized Sciences) is remaining in existence, and we, as the corporation, are assuming responsibility for the balance of payment of your services.

Thank you,

Marvin L. Colvin
Marvin L. Colvin
President, I.C.O.S.

P.S. Merry Christmas to you and your
staff.

$$\begin{array}{r} 479.47 \\ 158.00 \\ \hline 329.47 \end{array}$$

I.C.O.S.
21421 N. 24 Ave.
Phoenix, Az

85027
12/7/76

Heinrich's Geoexploration Co.

P.O. Box 5964, Tucson
Tucson, Arizona
85703

RECEIVED
GEOEX
TUCSON, ARIZONA

DEC 8 1976
BOX 5964 TUCSON, ARIZONA 85703
PHONE: (AREA 602) 623-0578

Dear Walter,

I am quickly dashing this letter off to you, as someone here needs to go to town today and I wanted to let you know what is happening. (Our post office is 25 miles away, in St. Johns).

I will be sending you money for your services this weekend. I am awaiting arrival here of the pledge money ~~sent~~ from other members of the corporation before I send you check to you.

It will not be full payment, as we were gearing ourselves for "\$250.00 plus expenses" to have ready for you at this time. You will have a fuller explanation and proposed arrangements for additional payment with the check.

Sincerely

Marion L. Brown
President I.C.O.S.

INSTITUTE OF CREATIVE ORGANIZED SCIENCES

P.O. BOX 14928 • PHOENIX, AZ 85031

% Martin Calvin

P.O. Box 1332

SP. John's Arizona

85536



Heinrichs Geography

P.O. Box 5564

Tucson, Arizona

85703

STATEMENT

November 17, 1976

Mr. Marvin Colvin, etal
P.O. Box 1332
St. Johns, AZ 85936

Re: Preliminary field in-
vestigation cavern area,
workings and vicinity
approximately six miles
Southwest of Bouse, SEc.1,
T.6N., R.18W., and vicin-
ity, Yuma County, Ariz.
GEOEX Job #1142

PROFESSIONAL FEES & SERVICES

November 4, 1976 - Field Examination

Walter E. Heinrichs, Jr.-----\$250.00

Vehicle 1 Day @ \$17.50/day----- 17.50

272 Miles @\$0.21/mile ----- 57.12

Communications \$3.04 + 15%----- 3.50

Film \$1.17 + 15%----- 1.35

Preparation, sample examinations, communications,
interpretation, report 8 Hours @ \$18.75/hr.----- 150.00

TOTAL \$479.47

#1142

M. Colvin -

Payroll

183.75
X 1.20

220.50

7.28

7.28

227.78

X 1.40

318.89

billed ~~479.47~~
99.13

~~33%~~

379.74

16%

DAILY REPORT

NAME _____ DATE _____

PROJECT _____

AREA _____

CREW NO. _____

WEATHER _____

Meals _____

Hotel _____

Entertainment _____

Phone _____

Other (Taxi, Toll, Incidentals) _____

Travel (Air, Bus, etc.) _____

Vehicle, Company No. _____ Miles Travelled _____

Vehicle, Personal mileage _____ Miles Travelled _____

TYPE OF WORK

TOTAL
HOURS

REMARKS &
EXPLANATION

Geology

Geophysics

Surveying

Sampling

Heavy Exploration

Drilling

Equipmt. Maintenance

Computing

Drafting

Office

Supervision

Travel time charged

Other

* If more than one project is worked during day, please note in remarks column.

Mark Galdin

8/5/75

referred by Ken Phillips

looking for a cavern near Bouse
in Plomosa Range

honeycombed with hair pockets

Bearings - large pocket

20 years

gypsum - cavernous

guano deposit target

100' x 200'

40'

Search area 1 acre or 2 acre

compout

ZEUSS

A generators, see: Mercantile Mfg. Co., Inc.

INSTITUTE OF CREATIVE ORGANIZED SCIENCES

P.O. BOX-14928 • PHOENIX, AZ 85031

21421 N 24 Ave
Phoenix 85022

CBOBX 1142



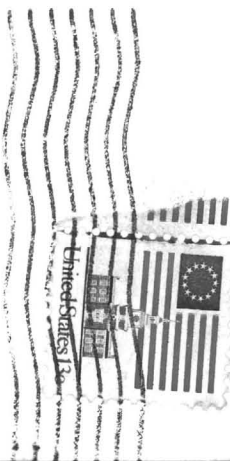
~~REGISTERED~~
CERT. GEOX



APR 22 1977
Phoenix

BOX 5964
TUCSON, ARIZONA 85703
Phone: (AREA 602) 629-0578

Hemlock Beer Gloriosa Co
P.O. Box 5964
Tucson Arizona
85703



4.22.77
\$60.00
Check
Rec'd
m

THE SCIENCE OF SPELEOLOGY

edited by

T.D. Ford

and C.H.D. Cullingford



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GEOEX

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JUL

8 1977

REC'D



C.O.S.

to Marvin Colvin
P.O. Box 1934
Cottonwood AZ
86326

Walter Heinrichs
Heinrichs GeoeXploration Co.
P.O. Box 5964
Tucson, Arizona 85703

BOX 5964 TUCSON, ARIZONA 85703
Phone: (AREA 602) 623-0578

7/5/77

INTERNATIONAL
GEOEX

Cable: GEOEX

REC'D

JUL

8 1977

REC'D



BOX 5964 TUCSON, ARIZONA 85703
Phone: (AREA 602) 623-0578

Dear Walter,

With this check, we are finally
paying off our balance to you. Thank you
for your patience.

We are just now starting to actively
advertise our hardware for sale. They
include an ore car (Capacity $7\frac{1}{3}$ - $3\frac{3}{4}$ yd);
14 • 15' sections of track (16 lb. rail) preassembled
with ties; and a hoist, complete with 150' of
 $\frac{1}{2}$ " cable, powered by 4 cylinder gasoline engine,
with throttle, clutch, and brake controls. \$750⁰⁰
for all items, or may be sold separately. If
you know anyone interested, please have them
contact Dave Moore (the fellow who accompanied
us to the cave site) by mail. His address is
1329 $\frac{1}{2}$ W. Woodland, Phoenix, 85007. He will
arrange to show the party the equipment.

Thanks once again for your help and
services. May our next adventure together
be more profitable.

encl check # 1017 for \$19.73

Marvin L. Colvin, pres.
C.O.S.