



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

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Volume 5 ; Book 1

add

TOMBSTONE

Mining District

Cochise County

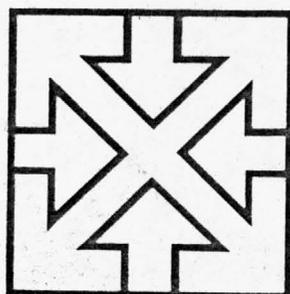
ARIZONA

Drilling Index

Misc. Drilling 1930's to 1941

Consultants in:

- base & precious metals • uranium
- coal • geothermal • environment
- remote sensing • color aerial photography
- interpretation-image processing
- Worldwide Mobilization



4500 E. Speedway, Suite 14
Tucson, Arizona 85712
(602) 795-6097

James A. Briscoe, President
Registered Professional
Geologist

Southwestern Exploration Associates, Inc.

February 28, 1979

TOMBSTONE DRILLING SUMMARY

<u>Drilling Group</u>	<u>Date</u>	<u>Drill Hole No.</u>	<u>Depth</u>	<u>Location</u>
Bunker Hill	1936	DD-1	23'	T.D.C. Claims
Bunker Hill	1936	DD-2	75'	T.D.C. Claims
Bunker Hill	1936	DD-3	123'	T.D.C. Claims
Bunker Hill	1936	DD-4	151'	T.D.C. Claims
Bunker Hill	1936	DD-5	78'	T.D.C. Claims
Bunker Hill	1936	DD-6	20'	T.D.C. Claims
Bunker Hill	1936	DD-7	6'	T.D.C. Claims
Bunker Hill	1936	DD-8	40'	T.D.C. Claims
Bunker Hill	1936	DD-9	56'	T.D.C. Claims
Bunker Hill	1936	DD-10	180'	T.D.C. Claims
Bunker Hill	1936	DD-11	211'	T.D.C. Claims
Bunker Hill	1936	DD-11	75'	T.D.C. Claims
Bunker Hill	1937	CDH-1	380'	T.D.C. Claims
Bunker Hill	1937	CDH-2	75'	T.D.C. Claims
Bunker Hill	1937	CDH-3	460'	T.D.C. Claims
Bunker Hill	1937	CDH-4	430'	T.D.C. Claims
Bunker Hill	1937	CDH-5	385'	T.D.C. Claims
Bunker Hill	1937	CDH-6	295'	T.D.C. Claims
Bunker Hill	1937	CDH-7	506'	T.D.C. Claims
Bunker Hill	1937	CDH-8	298'	T.D.C. Claims
Bunker Hill	1937	CDH-9	295'	T.D.C. Claims
Bunker Hill	1937	CDH-10	385'	T.D.C. Claims
Bunker Hill	1937	CDH-11	400'	T.D.C. Claims
Bunker Hill	1937	CDH-12	215'	T.D.C. Claims
Bunker Hill	1937	CDH-13		T.D.C. Claims
Newmont	1954	DD-7	1650'	Silver Thread
Newmont	1955	DD-9	667'	West Side

<u>Drilling Group</u>	<u>Date</u>	<u>Drill Hole No.</u>	<u>Depth</u>	<u>Location</u>
Duval	1967	RDH-1	247'	T.D.C. Claims
Duval	1967	RDH-2	250'	T.D.C. Claims
Duval	1967	RDH-3A	250'	T.D.C. Claims
Duval	1967	RDH-3	108'	T.D.C. Claims
Duval	1967	RDH-4	80'	T.D.C. Claims
Duval	1967	RDH-5	50'	T.D.C. Claims
Duval	1967	RDH-6	250'	T.D.C. Claims
Duval	1967	RDH-7	219'	T.D.C. Claims
Duval	1967	RDH-8	148'	T.D.C. Claims
Duval	1967	RDH-8A	148'	T.D.C. Claims
Frankovitch	1959	DDH-1	230'	T.D.C. Claims
Frankovitch	1959	DDH-2	95'	T.D.C. Claims
Frankovitch	1959	DDH-3	51'	T.D.C. Claims
Frankovitch	1959	DDH-4	40'	T.D.C. Claims
Frankovitch	1959	DDH-5	270'	T.D.C. Claims
Frankovitch	1959	DDH-6	188'	T.D.C. Claims
Frankovitch	1959	DDH-7	90'	T.D.C. Claims
Frankovitch	1959	DDH-8	192'	T.D.C. Claims
Frankovitch	1959	DDH-9	125'	T.D.C. Claims
Frankovitch	1959	DDH-10	511'	T.D.C. Claims
Frankovitch	1959	DDH-11	287'	T.D.C. Claims
Frankovitch	1959	DDH-12	180'	T.D.C. Claims
Frankovitch	1959	DDH-13	146'	T.D.C. Claims
Frankovitch	1959	DDH-14	329'	T.D.C. Claims
Frankovitch	1959	DDH-15	350'	T.D.C. Claims
Frankovitch	1959	DDH-16	160'	T.D.C. Claims
Frankovitch	1959	DDH-17	205'	T.D.C. Claims
Frankovitch	1959	DDH-18	77'	T.D.C. Claims
71 Minerals	1976	RDH-1A	75'	Skip Shaft Area
71 Minerals	1976	RDH-101	55'	Skip Shaft Area
71 Minerals	1976	RDH-106	60'	Skip Shaft Area
71 Minerals	1976	RDH-107	60'	Skip Shaft Area
71 Minerals	1976	RDH-108	60'	Skip Shaft Area
71 Minerals	1976	RDH-109	60'	Skip Shaft Area
71 Minerals	1976	RDH-110	60'	Skip Shaft Area
71 Minerals	1976	RDH-111	60'	Skip Shaft Area
71 Minerals	1976	RDH-112	60'	Skip Shaft Area
71 Minerals	1976	RDH-113	60'	Skip Shaft Area
71 Minerals	1976	RDH-114	80'	Skip Shaft Area
71 Minerals	1976	RDH-115	60'	Skip Shaft Area
71 Minerals	1976	RDH-116	60'	Skip Shaft Area
71 Minerals	1976	RDH-117	80'	Skip Shaft Area
71 Minerals	1976	RDH-118	80'	Skip Shaft Area
71 Minerals	1976	RDH-119	80'	Skip Shaft Area
71 Minerals	1976	RDH-120	60'	Skip Shaft Area

<u>Drilling Group</u>	<u>Date</u>	<u>Drill Hole No.</u>	<u>Depth</u>	<u>Location</u>
71 Minerals	1976	RDH-120A	80'	Skip Shaft Area
71 Minerals	1976	RDH-121	60'	Skip Shaft Area
71 Minerals	1976	RDH-122	60'	Skip Shaft Area
71 Minerals	1976	RDH-123	73'	Skip Shaft Area
71 Minerals	1976	RDH-124	80'	Skip Shaft Area
71 Minerals	1976	RDH-125	130'	Skip Shaft Area
71 Minerals	1976	RDH-126	60'	Skip Shaft Area
71 Minerals	1976	RDH-127	80'	Skip Shaft Area
71 Minerals	1976	RDH-128	80'	Tranquility Shaft Area
71 Minerals	1976	RDH-129	70'	Tranquility Shaft Area
71 Minerals	1976	RDH-130	70'	Tranquility Shaft Area
71 Minerals	1976	RDH-131	65'	Tranquility Shaft Area
71 Minerals	1976	RDH-132	70'	Tranquility Shaft Area
71 Minerals	1976	RDH-133	73'	Tranquility Shaft Area
71 Minerals	1976	RDH-134	80'	Tranquility Shaft Area
71 Minerals	1976	RDH-135	80'	Tranquility Shaft Area
71 Minerals	1976	RDH-136	65'	Tranquility Shaft Area
71 Minerals	1976	RDH-137	55'	Tranquility Shaft Area
71 Minerals	1976	RDH-138	50'	Tranquility Shaft Area
71 Minerals	1976	RDH-139	50'	Tranquility Shaft Area
71 Minerals	1976	RDH-140	50'	Tranquility Shaft Area
71 Minerals	1976	RDH-141	50'	Tranquility Shaft Area
71 Minerals	1973	AT-1	55'	Unpatented T.D.C. Claims
71 Minerals	1973	AT-2	50'	Unpatented T.D.C. Claims
71 Minerals	1973	AT-3	75'	Unpatented T.D.C. Claims
71 Minerals	1973	AT-4	65'	Unpatented T.D.C. Claims
71 Minerals	1973	AT-5	50'	Unpatented T.D.C. Claims
71 Minerals	1973	AT-6	80'	Unpatented T.D.C. Claims

<u>Drilling Group</u>	<u>Date</u>	<u>Drill Hole No.</u>	<u>Depth</u>	<u>Location</u>
71 Minerals	1973	AT-7	100'	Unpatented T.D.C. Claims
71 Minerals	1973	AT-8	104'	Unpatented T.D.C. Claims
71 Minerals	1973	AT-9	100'	Unpatented T.D.C. Claims
71 Minerals	1973	AT-10	100'	Unpatented T.D.C. Claims
71 Minerals	1973	AT-11	100'	Unpatented T.D.C. Claims
71 Minerals	1973	TDC-1	50'	Unpatented T.D.C. Claims
71 Minerals	1973	TDC-2	45'	Unpatented T.D.C. Claims
71 Minerals	1973	TDC-3	48'	Unpatented T.D.C. Claims
71 Minerals	1973	TDC-4	10'	Unpatented T.D.C. Claims
71 Minerals	1973	TDC-5	10'	Unpatented T.D.C. Claims
71 Minerals	1973	TDC-6	10'	Unpatented T.D.C. Claims
71 Minerals	1973	TDC-7	48'	Unpatented T.D.C. Claims
71 Minerals	1973	TDC-8	48'	Unpatented T.D.C. Claims
71 Minerals	1973	TDC-9	48'	Unpatented T.D.C. Claims
71 Minerals	1973	TDC-10	48'	Unpatented T.D.C. Claims
71 Minerals	1973	TDC-11	48'	Unpatented T.D.C. Claims
71 Minerals	1973	RD-1	210'	Unpatented T.D.C. Claims
71 Minerals	1974	RD-1	608'	TMR Claims
71 Minerals	1974	RD-2	10'	TMR Claims
71 Minerals	1974	RD-3	185'	TMR Claims
71 Minerals	1974	RD-4	32'	TMR Claims
71 Minerals	1974	RD-5	500'	TMR Claims
71 Minerals	1974	RD-6	415'	TMR Claims
71 Minerals	1975	WWP-1	270'	State Of Maine
71 Minerals	1975	1-75	175'	Fox

<u>Drilling Group</u>	<u>Date</u>	<u>Drill Hole No.</u>	<u>Depth</u>	<u>Location</u>
Austral Oil	1968	DD-1	252'	West-Fox
Austral Oil	1968	DD-2	876'	West-Fox
Austral Oil	1968	DD-3	550'	West-Fox
Austral Oil	1968	DD-4	98'	West-Fox
Austral Oil	1968	DD-5	216'	West-Fox
Austral Oil	1968	DD-6	257'	West-Fox
Austral Oil	1968	H-1	300'	West-Fox
Austral Oil	1968	H-2	215'	West-Fox
Austral Oil	1968	H-3	500'	West-Fox
Austral Oil	1968	H-4	300'	West-Fox
Austral Oil	1968	H-5	250'	West-Fox
Austral Oil	1968	H-6	250'	West-Fox
Austral Oil	1968	H-7	250'	West-Fox
Austral Oil	1968	H-8	100'	West-Fox
Austral Oil	1968	H-9	140'	West-Fox
Austral Oil	1968	H-10	426'	West-Fox
Austral Oil	1968	H-11	250'	West-Fox
Austral Oil	1968	H-12	270'	West-Fox
Austral Oil	1968	H-13	250'	West-Fox
Austral Oil	1968	H-14	250'	West-Fox
Austral Oil	1968	H-15	250'	West-Fox
Austral Oil	1968	H-16	170'	West-Fox
Austral Oil	1968	H-17	285'	West-Fox
Austral Oil	1968	H-18	313'	West-Fox
Austral Oil	1968	H-19	490'	West-Fox
Austral Oil	1968	H-20	300'	West-Fox
Austral Oil	1968	H-21	270'	West-Fox
Austral Oil	1968	H-22	290'	West-Fox
Austral Oil	1968	H-23	207'	West-Fox
Austral Oil	1968	H-24	270'	West-Fox
Austral Oil	1968	H-25	290'	West-Fox
Austral Oil	1968	H-26	500'	West-Fox
Austral Oil	1968	H-27	200'	West-Fox
Austral Oil	1968	H-28	230'	West-Fox
Austral Oil	1968	H-29	235'	West-Fox
Austral Oil	1968	H-30	280'	West-Fox
71 Minerals	1973	HRD-1	265'	Seth Horn Claims
71 Minerals	1973	HRD-2	120'	Robbers Roost
71 Minerals	1973	HRD-3	120'	Robbers Roost
71 Minerals	1973	HRD-4	10'	Robbers Roost
71 Minerals	1973	HRD-5	10'	Robbers Roost
71 Minerals	1973	HRD-6	10'	Robbers Roost
71 Minerals	1973	HRD-7	35'	Robbers Roost

<u>Drilling Group</u>	<u>Date</u>	<u>Drill Hole No.</u>	<u>Depth</u>	<u>Location</u>
71 Minerals	1973	E-1	50'	So. Charleston Lead Mine
71 Minerals	1973	E-2	50'	So. Charleston Lead Mine
71 Minerals	1973	E-3	50'	So. Charleston Lead Mine
71 Minerals	1973	F-1	35'	So. Charleston Lead Mine
71 Minerals	1973	F-2	50'	So. Charleston Lead Mine
71 Minerals	1973	F-3	50'	So. Charleston Lead Mine
71 Minerals	1973	F-4	50'	So. Charleston Lead Mine
71 Minerals	1973	F-5	50'	So. Charleston Lead Mine
71 Minerals	1973	F-6	50'	So. Charleston Lead Mine
71 Minerals	1973	F-7	50'	So. Charleston Lead Mine
71 Minerals	1973	F-8	50'	So. Charleston Lead Mine
71 Minerals	1973	F-10	55'	So. Charleston Lead Mine
71 Minerals	1973	E-4	85'	So. Charleston Lead Mine

1930 DRILLING SUMMARY

<u>Diamond Drill Hole No.</u>	<u>Location</u>	<u>Remarks</u>
1	West Side - 300 Level	Gold ore in very brecciated dark shale - last hole.
2	West Side - 300 Level	Slight mineralization
3	West Side - 300 Level	Slight mineralization
4	Sulphuret - 500 Level	Good - Au, Ag, & Pb in blue ls.
5	Sulphuret - 500 Level	Very Good - Au, Ag, Pb, & Zn in blue ls.
6	West Side - 300 Level	Slight mineralization in shale
7	Empire - 300 Level	Good - Au, Ag in Kaolin fault breccia
8	Empire - 300 Level	Slight - Ag in blue ls.
9	Sulphuret - 500 Level	Fair - Ag in blue ls.
10	Sulphuret - 500 Level	Some Au, Ag, Pb, & Zn in blue ls.
11	Sulphuret - 500 Level	Very Good - Au & Ag in ls.
12	Sulphuret - 500 Level	Some Ag in blue ls.

1930 DRILLING SUMMARY

<u>Churn Drill Hole Number</u>	<u>Location</u>	<u>Remarks</u>
CDH - 1	Blue Monday Claim	Very weak mineralization
CDH - 2	So. Ext. Toughnut	"
CDH - 3	Toughnut Claim	Weak mineralization
CDH - 4	"	Some weak silver
CDH - 5	"	Weak Au & Ag
CDH - 6	"	Weak Ag
CDH - 7	Mesquite Claim	Qual.
CDH - 8	Manzanita Claim	Qual. & Bisbee
CDH - 9	Taco Tecalote Claim	Qual. & Bisbee
CDH - 10	Cholla Claim	Qual. & Bisbee
CDH - 11	Cholla Claim	Qual. & Bisbee
CDH - 12	Nogales Claim	Qual. & Bisbee

NEWMONT DRILLING SUMMARY

<u>Diamond Drill Hole Number</u>	<u>Location</u>	<u>Remarks</u>
DDH- 7	Silver Thread	Intervals of very high- grade Ag, Pb, Cu, & Zn.
DDH- 9	West Side	Same as above.

DUVAL DRILLING SUMMARY

<u>Rotary Drill Hole No.</u>	<u>Location</u>	<u>Remarks</u>
1	Contention Area	weak mineralization, ore below Novaculite
2	So. Tranquility	weak mineralization, ore in Novaculite
3A	Contention Area	weak mineralization, low-grade ore in silty quartz sandstone
3	Contention Area	Los Hole in Novaculite
4	Contention Area	weak mineralization
5	Silver Thread Area	weak mineralization, last hole in stope
6	So. Tranquility	weak mineralization, ore in siltstone, shale, meta siltstone member
7	No. Empire	weak mineralization
8	E. Empire	weak mineralization
9	E. Empire	very weak mineraliz- ation

FRANKOVITCH DRILLING SUMMARY
(No Assays Shown)

<u>Diamond Drill Hole No.</u>	<u>Location</u>
1	Silver Reef Property
2	Silver Reef Property - Governor Henderson Claim
3	Silver Reef Property
4	Silver Reef Property
5	Silver Reef Property
6	Silver Reef Property
7	Silver Reef Property
8	Silver Reef Property
9	Silver Reef Property
10	Silver Reef Property
11	Silver Reef Property - #2 Claim
12	Poor X Claim
13	?
14	?
15	Roll 614
16	?
17	Ingersol Anticline
18	Vigina - Tribute Drift

71 MINERALS DRILLING

<u>Rotary Drill Hole No.</u>	<u>Location</u>	<u>Remarks</u>
1A	Skip Shaft Area	Qual. - no samples
101	Skip Shaft Area	Qual. - no samples
106	Skip Shaft Area	Fair - mineralization
107	Skip Shaft Area	Fair - mineralization
108	Skip Shaft Area	Weak - mineralization
109	Skip Shaft Area	Weak - mineralization
110	Skip Shaft Area	Weak - mineralization
111	Skip Shaft Area	Weak - mineralization
112	Skip Shaft Area	Weak - mineralization
113	Skip Shaft Area	Weak - mineralization
114	Skip Shaft Area	Fair - hit stope
115	Skip Shaft Area	Fair
116	Near Skip Shaft Fissure	High-Grade Intervals
117	Skip Shaft Area	Qual. - no samples
118	Skip Shaft Area	Qual. - no samples
119	Skip Shaft Area	Qual. no samples
120	Skip Shaft Area	Qual. - no samples

<u>Rotary Drill Hole No.</u>	<u>Location</u>	<u>Remarks</u>
120A	Skip Shaft Area	Qual. - no samples
121	Skip Shaft Area	Qual. - no samples
122	Skip Shaft Area	Qual. - no samples
123	Skip Shaft Area	Qual. - no samples
124	Skip Shaft Area	Weak - mineralization
124	Skip Shaft Area	Weak - mineralization
125	Skip Shaft Fissure	Some High-Grade Intervals
126	Skip Shaft Area	Weak - mineralization
127	Skip Shaft Area	Fair - mineralization
128	Skip Shaft - Tranquility Area	Good - mineralization
129	Tranquility Shaft Area	Weak - mineralization
130	Tranquility Shaft Area	Weak - mineralization
131	Tranquility Shaft Area	Weak - mineralization
132	Tranquility Shaft Area	Good - mineralization
133	Tranquility Shaft Area	Good - mineralization
134	Tranquility Shaft Area	Weak - mineralization
135	Tranquility Shaft Area	Fair - mineralization
136	Skip Shaft Area	Weak - mineralization

<u>Rotary Drill Hole No.</u>	<u>Location</u>	<u>Remarks</u>
137	Skip Shaft Area	Weak - mineralization
138	N. Skip Shaft	Good - mineralization
139	Empire Shaft Area	Weak - mineralization
140	Empire Shaft Area	Weak - mineralization
141	Empire Shaft Area	Weak - mineralization

TOMBSTONE DEVELOPMENT CO. - UNPATENTED CLAIMS
(18 Unpatented Claims)

<u>Drill Hole No.</u>	<u>Remarks</u>
AT-1	55' deep, no mineralization
AT-2	50' deep, good silver mineralization
AT-3	75' deep, very weak silver
AT-4	65' deep, no mineralization
AT-5	50' deep, no mineralization
AT-6	80' deep, some Ag
AT-7	100' deep, some Ag
AT-8	104' deep, good Ag
AT-9	100' deep, some good Ag
AT-10	100' deep, some very good Ag
AT-11	100' deep, weak Ag

<u>Rotary Drill Hole No.</u>	<u>Remarks</u>
TDC-1	very weak mineralization
TDC-2	weak mineralization
TDC-3	weak Ag, Cu, Pb, Zn
TDC-4	weak Ag & Cu
TDC-5	very weak mineralization
TDC-6	very weak mineralization
TDC-7	some weak Cu, Pb, & Zn
TDC-8	some weak Cu, Pb, & Zn
TDC-9	fair Pb & Zn
TDC-10	weak Au, Ag, Cu, Pb, & Zn
TDC-11	weak Au, Ag, Cu, Pb, & Zn
RD-1	210' feet

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BUNKER HILL
1930's

1930 DRILLING SUMMARY

<u>Diamond Drill Hole No.</u>	<u>Location</u>	<u>Remarks</u>
1	West Side - 300 Level	Gold ore in very brecciated dark shale - last hole.
2	West Side - 300 Level	Slight mineralization
3	West Side - 300 Level	Slight mineralization
4	Sulphuret - 500 Level	Good - Au, Ag, & Pb in blue ls.
5	Sulphuret - 500 Level	Very Good - Au, Ag, Pb, & Zn in blue ls.
6	West Side - 300 Level	Slight mineralization in shale
7	Empire - 300 Level	Good - Au, Ag in Kaolin fault breccia
8	Empire - 300 Level	Slight - Ag in blue ls.
9	Sulphuret - 500 Level	Fair - Ag in blue ls.
10	Sulphuret - 500 Level	Some Au, Ag, Pb, & Zn in blue ls.
11	Sulphuret - 500 Level	Very Good - Au & Ag in ls.
12	Sulphuret - 500 Level	Some Ag in blue ls.

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1930 DRILLING SUMMARY

<u>Churn Drill Hole Number</u>	<u>Location</u>	<u>Remarks</u>
CDH - 1	Blue Monday Claim	Very weak mineralization
CDH - 2	So. Ext. Toughnut	"
CDH - 3	Toughnut Claim	Weak mineralization
CDH - 4	"	Some weak silver
CDH - 5	"	Weak Au & Ag
CDH - 6	"	Weak Ag
CDH - 7	Mesquite Claim	Qual.
CDH - 8	Manzanita Claim	Qual. & Bisbee
CDH - 9	Taco Tecalote Claim	Qual. & Bisbee
CDH - 10	Cholla Claim	Qual. & Bisbee
CDH - 11	Cholla Claim	Qual. & Bisbee
CDH - 12	Nogales Claim	Qual. & Bisbee

Diamond Drill Hole No. 2 West Side Mine 300 level

Co-ord Start: Lat -824 Co-ord End: Lat -818 Elev. Start 4348
 Dep -647 Dep -639 End 4274

Depth 75 feet Strike N 52 E Dip -83N Assays

from	to	feet	No.	core			No.	sludge			
				Au	oz	Ag		Au	oz	Ag	%
0	5	5					7553	tr	0.1		
15	18	3					7554	tr	0.2		
18	22	4					7555	tr	0.1		
33	35	2	7556	tr	0.1						
35	38	3	7562	.02	0.8						
38	40	2	7563	-	tr	7557	-	tr			
40	42	2	7564	tr	0.1						
42	43	1	7560	tr	0.1						
	45						7558	tr	0.1		
50	55						7561	tr	0.1		
55	60						7565	tr	0.1		
60	65						7566	tr	0.2		
65	70						7567	tr	0.2		
70	75						7568	tr	0.3		

Diamond Drill Hole No. 3

West Side Mine

300 level

Co-ord Start: Lat -824
Dep -649

Co-ord End: Lat -860
Dep -700

Elev. Start 4348
End 4241

Depth 123 feet

Strike S 55 W

Dip -60 W

Assays

from	to	feet	No.	Core			No.	Sludge		
				Au oz	Ag	% Pb		Au oz	Ag	% Pb
45	50	5				7576	-		tr	
50	55	5				7577	-		tr	
55	60	5				7578	-		tr	
60	65	5				7579	tr		0.2	
10	15	5				7580	-		tr	
30	35	5				7581	-		tr	
40	45	5				7582	-		tr	
65	70	5				7589	tr		0.3	
70	75	5				7590	tr		0.2	
80	85	5				7597	-		tr	
95	100	5				7599	tr		0.2	
90	95	5				7600	-		tr	
110	115	5				7601	tr		0.1	

Diamond Drill Hole No. 3

West Side Mine

300 level

Co-ord Start: Lat -824
Dep -649

Co-ord End: Lat -860
Dep -700

Elev. Start 4348
End 4241

Depth 123 feet

Strike S 55 W

Dip -60 W

Geology by CEH

from	to	% core	feet	
0	2	-	2	Standpipe no core
2	3	100	1	Dense gray silicified shale with small fractures filled with calcite and pyrite
3	6	100	3	Silicified gray shale with numerous small reticulated stringers of calcite
6	7	100	1	Light colored silicified shale with 1/4 inch stringers of coarse brown calcite
7	11	100	4	Light gray chert with black bands
11	13	90	2	Lime breccia recemented with calcite. Some chert is present in the form of small stringers
13	14	90	1	Light colored shale with small bands of calcite
14	16	100	2	Dense light colored limestone with pinkish sandy laminae
16	19	100	3	Banded light gray chert
19	24	100	5	Gray chert with many small fractures silled with calcite
24	25	100	1	Thin layers of limestone alternate with thin bands dark chert. Iron oxides occur along small seams
25	27	90	2	Bleached reddish shale with small bands of calcite
27	29	100	2	Light and black stringers of chert. The bands indicate a dip of -30
29	31	90	2	Broken hard shale
	31			A three inch stringer of coarse calcite
31	34	100	3	Black silicified shale
34	37	90	3	Black silicified shale stained by iron oxides along small fractures
37	39	100	2	Gray banded chert. Some calcite along small fractures
39	42	100	3	Dark brown mottled limestone with stringers of calcite. No shines of pyrite
42	44	100	2	Dense banded chert with a few traces of pyrite
44	47	100	3	Mottled lime breccia with seams of calcite
47	48	100	1	Black chert. Small stringers of calcite
48	49	100	1	Chert stained with iron oxides. About 10 per cent calcite as small stringers
49	54	100	5	Dense blue limestone that shows no bedding The bed is crowded with small cup corals. This is probably the top of 10 foot bed
54	55	100	1	White chert with a few dark bands
55	60	100	n5	Dense blue limestone breccia that is recemented with calcite. A few stringers of chert are present. No shines of pyrite.

10 ft

Diamond Drill Hole No. 3 (cont'd) West Side Mine 300 level

Co-ord Start: Lat -824 Co-ord End: Lat -860 Elev. Start 4348
 Dep -649 Dep -700 End 4241

from	to	% core	feet	
60	66	65	6	Gray chert with a few scattered stringers of calcite
66	68	90	2	White fine grained limestone with considerable silica, which is present as pink sandy laminae Calcite fills steep fractures
68	69	100	1	Light gray chert with steep fractures filled with chert and calcite
69	70	100	1	Banded brown mottled limestone and stringers of chert. The bands indicate a dip of -20 NE
70	77	80	7	Light colored silicified shale with numerous fractures filled with iron oxides.
77	80	90	3	Light and dark banded shale with small stringers of quartz and abundant iron oxides. The bands indicate a dip of 20 NE
80	85	40	5	Fine grained silicified shale with iron stained patches from weathered pyrite
85	88	90	3	Calcareous shale with lime pebbles and a few steep fractures filled with calcite.
88	94	100	6	Dark carbonaceous limestone with stringers of calcite. A few steep fractures are stained with iron oxides. No ore is present. This is the top of 35 foot Blue limestone
94	102	100	8	Blue limestone that is crushed and bleached. A little oxidized pyrite is present.
120	115	100	13	Blue limestone with shell fragments and small cup corals. The limestone has steep porous fractures.
115	120	100	5	Blue limestone that has been recemented.
120	123	100	3	Dense blue limestone with thin bedding that is caused by thin partings of shale, most of which is yellow.
	123		-	3 inches of bleached yellow shale that is apparently at the bottom of the 35 foot Blue limestone. The water was lost in the broken shale.

35 ft

end of hole

Diamond Drill Hole No. 4 Sulphuret Mine 500 Level
 Co-ord Start: Lat -1682 Co-ord End: Lat -1660 Elev. Start 4161
 Dep 63 Dep 52 End 4019
 Depth 151 feet Strike N 54 W Dip -75 W Geology by CEH
 Hole started Dec 3, 1936 Finished Dec. 19, 1936

from	to	% core	feet	
0	1.5	-	1.5	Standpipe. No core
1.5	4	100	2.5	Dense blue limestone with small fractures filled with calcite. A few scattered sulphides of Fe, Pb and Zn. Small cavities show copper stains. The top of Blue limestone is 12 feet above standpipe.
4	10	100	6	Dense blue limestone. The whole shows a few scattered sulphides of Fe, Pb and Zn
10	15	100	5	Dense blue limestone with a very few sulphides of Fe, Pb and Zn which occur mostly along small seams. Small cavities show copper stains.
15	20	100	5	Blue fine grained limestone with a little silica that is present as pink sandy laminae. A little disseminated pyrite and traces of galena
20	25	100	5	Blue limestone with small stringers of light grey chert
25	30	100	5	Blue limestone. Some pink aragonite occurs in the limestone
	30			Bottom of blue limestone
30	43	100	13	White chert. A few traces of pyrite
43	46	100	3	White chert. Pyrite along small seams.
46	48	100	2	White fine grained limestone with considerable silica, which is present as yellow sandy laminae or as chert nodules. About 5 per cent is pink fibrous aragonite. A little disseminated pyrite and galena.
48	52	100	4	White limestone with traces of galena and pyrite
52	56	100	4	White limestone and nodules of chert
56	57	100	1	Altered white limestone stained with iron and manganese oxides
57	59	100	2	White limestone and nodules of chert
	59			A few fine grained sulphides, mostly galena, in white limestone.
59	70	100	11	White fine grained limestone with considerable silica which is present as chert nodules. A little disseminated pyrite
70	78	100	8	White hard novaculite with a few lime pebbles.
78	80	100	2	White hard novaculite with considerable pyrite along small seams
80	82	100	2	White novaculite with scales of iron oxides
82	97	100	15	White hard novaculite with a few lime pebbles.
97	98	100	1	Lime alteration in novaculite. Abundant pyrite.
98	101	100	3	White hard novaculite with some calcite along small reticulated stringers.

35 ft

Diamond Drill Hole No. 4 (cont'd) Sulphuret Mine

500 level

Co-ord Start: Lat -1682
Dep 63

Co-ord End: Lat -1660
Dep 32

Elev. Start 4161
End 4019

from	to	% core	feet	
101	105	100	4	Fine grained white quartzite. No shale partings
105	113	80	8	Fine grained white quartzite that is somewhat fractured. No shale partings.
113	118	80	5	White fine grained quartzite with small fractures filled with calcite
118	122	90	4	White fine grained quartzite with numerous thin brown weathering lime stringers and lime pebbles as much as 2 inches in diameter.
122	123.5	90	1.5	A thin bed of recrystallized white limestone with a few scattered sulphides of iron and lead
123.5	126	90	2.5	Grey chert with brown weathered pebbles of lime as much as 2 inches in diameter. Also small calcite seams.
126	134	90	8	Gray chert with a few small fractures filled with calcite
134	137	100	3	Fine grained dark bluish grey limestone. No oxidation and only a few traces of pyrite
137	139.5 139.5	100	2.5	White bleached limestone with soft lime stringers 3 inches show good sulphides of lead and zinc in the limestone. No limonite occurs with the ore
139.5	140	100	.5	Light blue limestone with traces of sulphides.
140	144	100	4	Considerably more than half is grey chert with layers of pink silica. Balance is apparently lime pebbles.
144	147	100	5	Grey chert with numerous vugs almost completely filled with pink fibrous aragonite. Also calcite fills cracks.
147	150	100	3	Grey chert with scattered 1/4 inch layers of lime.
150	151	100	1	A small layer of lime contains oxidized pyrite and traces of chalcopyrite
	151			3 inches of dense grey chert

lime not Naco

hole discontinued

Diamond Drill Hole No. 4

Sulphuret Mine

500 level

co-ord Start: Lat -1682
Dep 63

Co-ord End: Lat -1660
Dep 32

Elev. Start 4161
End 4019

Depth 151 feet

Strike N 54 W

Dip -75 W

Assays

from	to	feet	No.	core			No.	Sludge		
				Au oz	Ag	% Pb		Au oz	Ag	% Pb
0	5	5	7570	.02	1.1					
5	7	2	7574	tr	1.6					
7	10	3	7575	.01	1.5	1.0	7571	.03	1.1	
10	13	3	7586	.04	1.6					
13	15	2	7587	.04	2.1		7572	.09	5.4	
15	20	5	7588	.02	0.4		7573	.03	3.4	
20	25	5	7591	.02	0.8					
25	30	5					7585	-	tr	
45										
46.5	48	1.5	7594	-	tr		7596	tr	0.6	
49.5	50	.5	7595	tr	0.4					
60	65	5					7598	tr	0.2	
71.5	72.5	1	7593	tr	1.4					
82	83	1	7592	tr	0.3					
85	90	5	7602	tr	0.3					
122	123.5	1.5	7630	tr	1.4					

Diamond Drill Hole Nol 5 Sulphuret Mine 500 level
 Co-ord Start: Lat -1684 Co-ord End: Lat -1695 Elev. Start 4161.5
 Dep 63 Dep 40 End 4088
 Depth 78 feet strike S 65 W Dip -70 W Geology by CEH
 Hole started Dec. 11, 1936 Finished Dec. 16, 1936

from	to	% core	feet	
0	10	100	10	Blue limestone affected by recrystallization and showing increased grain size. The limestone shows a fair amount of pyrite and traces of other sulphides. The top of Blue lime is 12 feet above collar.
10	15	100	5	Recrystallized blue limestone. A few fractures are filled with calcite.
15	21	100	6	Blue limestone. Traces of sulphides.
21	24	100	3	Limestone becomes whiter and shows pink sandy laminae
24	25	100	1	Bleached white limestone. A fair amount of mixed sulphides are present
25	29	100	4	Blue limestone. A few disseminated sulphides of Fe, Pb, and Zn are scattered throughout
29	32	100	3	Hard grey chert. Small fractures are filled with calcite
32	34	100	2	White fine grained limestone with a few scattered sulphides of Fe, Pb and Zn
34	36.4	100	2.4	recrystallized white limestone with fair sulphides of Fe, Pb and Zn scattered throughout
36.4	38.	100	1.6	Ore. Stringers show good sulphides of Fe, Pb and Zn in limestone. No oxidation. Ore near a branch of the Arizona Queen fissure. See sample No. 7621
38	39.8	100	1.8	Fair sulphides of Fe, Pb and Zn in limestone. No oxidation
39.8	42	100	2.2	Grey chert with traces of pyrite
42	43	100	1	Blue and white limestone. Small amounts of fine grained galena
43	45	100	2	Recrystallized blue limestone. No sulphides.
45	49	100	4	Bleached and recrystallized limestone with some pink and white aragonite
49	51	100	2	Fine grained white limestone and chert with areas of characteristic pink silica
51	56.5	100	5.5	A breccia of blue and white limestone
56.5	57.5	100	1	A fair amount of sphalerite, and some pyrite and galena, in limestone. No oxidation
57.5	59	100	1.5	White limestone affected by recrystallization. A few disseminated sulphides of Fe, Pb and Zn
59	70	100	11	Fine grained white limestone with yellow layers.
70	76	100	6	Blue limestone breccia, some pyrite at 72 feet.
76	76.6	100	.6	A few to fair sulphides of Fe, Pb and Zn in dense limestone. A few stringers of black manganese oxides
76.8	78	100	1.2	Blue limestone with a little white aragonite. A few traces of galena
				end of hole

35 ft. Blue limestone

Diamond Drill Hole No. 6

WestSide Mine

300 Level

Co-ord Start: Lat -822
Dep -647

Co-ord End: Lat -819
Dep -644

Elev. Start 4357
End 4376

Depth 20 feet

Strike N 55 E

Dip -75N

Geology by CEH

Hole Started Dec. 11, 1936

Finished Dec. 12, 1936

from	to	% core	feet		
0	1	90	1	Light colored silicified shale, with patches of iron oxides	
1	2	90	1	Thin bedded light colored limestone with brown arenaceous material	
2	3	90	1	Black silicified shale	
3	5	100	2	Light gray silicified shale	
5	9	90	4	Light gray silicified shale, fractured and broken	
9	11	90	2	Light gray silicified shale with talc along small fractures	
11	13	90	2	Thin layers of blue limestone alternate with 1/2 in. layers of black chert	
13	15	100	2	Black silicified shale	
15	16	100	1	Thin bedded light colored limestone with some chert in the center. Bottom of 6 foot limestone	} 6 foot
16	17	100	1	Black silicified shale	
17	18	100	1	Soft black limestone with the bedding marked by a concentration of white clay	
18	19	100	1	Black silicified shale	
19	20	100	1	Light gray chert with a little calcite along small fractures	

from	to	feet	No.	Core			No.	Sludge		
				Au	oz	%		Au	oz	%
15	20	5				7608	tr	0.3		

Diamond Drill Hole No. 7 Empire Mine 300 Level

Co-ord Start: Lat -308 Co-ord End: Lat -310 Elev. Start 4301
 Dep 910 Dep 912 End 4306

Depth 6 feet Strike S 65 E dip 65 Geology by CEH

Hole started Dec. 15, 1936 Finished Dec. 15, 1936

from	to	% core	feet	
0	2	90	2	Soft kaolin material with about 10 percent quartz gangue and a few areas of limonite. The limonite is a little more abundant in the sludge sample. The drill hole starts in a steep fault zone in the 35 foot blue limestone. Along the course of the hole the limestone has been crushed and altered. The texture has been changed and many fragments of fault breccia added. The limonite is the only indication of ore.
2	3	80	1	Dark quartz breccia and gray chert with numerous cavities filled with soft kaolin material.
3	6	80	3	Soft kaolinized fault breccia with a few hard fragments. Only traces of limonite in the cavities.

35 ft Blue limestone

Hole discontinued because of faulted and broken ground

The sludge sample from 0 to 6 feet shows a little more limonite than the core, the small seams of a mixture of calcite and limonite being apparently ground up. The assay of a single sludge sample is -

Assay No. 7661 .04 Au 1.7 Ag

Diamond Drill Hole No. 9 Sulphuret Mine 500 level

Co-ord Start: Lat -1678 Co-ord End: Lat -1692 Elev. Start 4162
 Dep 86 Dep 106 End 4112

Depth 56 feet Strike S 55 E Dip -64 E Geology by CEH

Hole started Dec. 19, 1936 Finished Dec. 22, 1936

from	to	% core	feet	
0	2	-	2	Standpipe. No core
2	7	100	5	Dense blue limestone with a few laminae of bright pink silica. A few sulphides of Fe & Zn
7	15	100	8	Dense blue limestone
15	16	100	1	Blue limestone with a little quartz gangue, casts of bright pink silica, a little galena and pyrite, and a few cavities filled with iron oxides
16	25	100	9	Dense blue limestone with a few stringers of coarse calcite
25	27	100	2	Blue limestone. A little staining by manganese and iron oxides
27	31	100	4	Blue limestone with a few layers of yellow silica
31	33	100	2	A few disseminated sulphides of Fe, Pb, and Zn Mottled and recemented blue limestone. Barren of sulphides.
33	35	100	2	About 70 percent chert and 30 percent dense blue limestone. A few seams of chert show bright pink color. Rhodonite. A little disseminated pyrite.
35	37	100	2	Dense blue limestone with layers of yellow silica. barren of sulphides
37	40	100	3	Dense gray chert with a very few sulphides of lead and zinc along small fractures
40	43	90	3	Layers of chert and limestone. No oxidation. A very few sulphides of iron and lead and a little silver. Sample No. 7633
43	47	95	4	Layers of grey chert and white limestone. Aragonite fills cavities and there is a little pyrite.
47	48	100	1	Layers of grey chert and dense white limestone with about 20 percent aragonite gangue
48	51	100	3	Bleached white limestone with angular fragments of chert. A few traces of galena and sphalerite.
51	54	100	3	Dense blue limestone
54	55	100	1	Limestone with oxidized pyrite and a very few shins of galena and sphalerite. Bottom of 35 foot blue limestone which apparently has a thickness of 44 feet.
55	56	100	1	Grey chert

35 ft. Blue limestone

from	to	feet	No.	Au	Ag	Pb	No.	Au	Ag	Pb
26½	29	2½	7629	tr	0.6					
29	30½	1½	7630	tr	1.4					
33	35	2	7631	tr	0.8					
37	40	3	7632	tr	0.7					
40	43	3	7633	.04	3.1					
48	50	2	7637	tr	1.4					
50	55	5				7635	tr	1.2		

Diamond Drill Hole No. 10 Sulphuret Mine 500 Level

Co-ord Start: Lat -1673 Co-ord End: Lat -1640 Elev. Start 4162
Dep 86 Dep 129 End 3973

Depth 197 feet Strike N 52 E dip -74 NE Geology by CEH

Hole started Dec. 23, 1936 Finished Jan. 11, 1937

from	to	core	feet	
0	2	-	2	Standpipe. No core.
2	4	100	2	Coarsely crystalline medium gray limestone that includes casts of fossils. A very few scattered areas of sphalerite. The top of the 35 foot blue limestone is 10 feet above.
4	9	100	5	Massive blue limestone crowded with fossil shells that are about 1 inch in diameter. No sulphides except pyrite.
9	10	100	1	Massive blue limestone with abundant pyrite.
10	12	100	2	Massive blue limestone with a few small stringers showing sphalerite and galena
12	19	100	7	Fine grained dark blue limestone with a few layers of gray chert
19	27	100	8	Blue limestone affected by recrystallization and showing a little bleached calcite.
27	28	100	1	Blue limestone with iron stained patches from oxidized pyrite
28	29	100	1	Lime pebble stained with iron and managanese oxides.
29	32	100	3	Blue limestone with dark stains from manganese oxides.
	32			Bottom of 35 foot blue limestone
32	33	100	1	Gray chert with heavy pyrite and a little fine grained galena
33	42	100	9	Light gray chert
42	49	100	7	Light colored banded chert with a little pyrite along small fractures
49	50	100	1	Chert stained by iron oxides
50	51	100	1	Chert showing abundant pyrite
51	53	100	2	Light colored banded chert
53	56	100	3	Start of white bleached limestone which shows considerable silica as yellow sandy laminae or as chert nodules. About 10 percent pink aragonite as gangue. A very few fine grained sulphides of iron and lead.
	56			1/4 inch stringer of galena and sphalerite
56	59	100	3	Lime pebbles, fragments of chert, and about 10 percent aragonite. A little disseminated pyrite
59	63	100	4	Mostly white bleached limestone. Some 1 inch fragments of chert.
	63			1 inch shows fine grained galena and sphalerite in limestone
63	74	100	11	Pebbles of lime and chert with a very few scattered areas of pyrite
74	80	100	6	A breccia of chert fragments and lime pebbles. A few crenulated stringers of quartz are stained black with manganese oxides

35 ft Blue limestone

Lime 20

Diamond Drill Hole No. 10 (cont'd) Sulphuret Mine

500 level

Co-ord Start: Lat -1673
Dep 86

Co-ord End: Lat -1640
Dep 129

Elev. Start 4162
End 3973

From	to	% core	feet	
80	84	100	4	Dense white limestone with rather abundant pyrite and a few scattered sulphides of lead and zinc. Assay No. 7640 shows sample barren
84	88	100	4	White lime pebbles with about 40 percent chert and 10 percent pink aragonite. The sandy laminae show a light yellow cast.
88	92	100	4	White limestone pebbles with about 50 percent chert. A fair amount of pyrite is scattered throughout.
92	92-96	100	4	Traces of fine grained galena Apparently near the bottom of the bleached white lime bed. There is a little pyrite and traces of galena and sphalerite
96	104	100	8	Light gray chert with a few small lime pebbles.
104	120	100	16	Considerably more than half is light gray chert. Laminae of light yellow silica and small pebbles of white lime make up the balance. Probably quartzite member.
120	123	100	3	Pebbles of white bleached lime. About 20 percent angular fragments of chert. There is a little pyrite at 122½ feet.
123	130	100	7	White limestone pebbles with about 50 percent chert
130	138	70	8	Light gray chert. Chopped some of the core that dropped out of barrel
138	140	100	2	Light gray chert with a few small seams of lime.
140	141	100	1	Start of a thin bed of white bleached limestone. some chert nodules
141	144	100	3	Dense fine grained white limestone with a little sprinkled pyrite and traces of galena and sphalerite. The lime is somewhat bleached.
144	145	100	1	White limestone stained brown from alteration of manganiferous calcite
145	147	100	2	White limestone with a little sprinkled pyrite and a few traces of sphalerite and galena
147	148	100	1	Dense brown mottled limestone with about 10 percent calcite gangue. There is a little oxidized pyrite and a few traces of galena and sphalerite
148	150	100	2	Light gray chert with a few small pebbles of white lime.
150	158	100	8	Light blue chert
	158			A 2 inch stringer of coarse calcite with some pyrite
158	170	100	12	Light blue chert
170	175	100	5	Dense brown chert with a few lighter bands
175	178	100	3	A chertified breccia that is light blue in color and with a few casts of yellow silica. Calcite stringers fill a few steep cracks.
178	180	100	2	Light blue chert with steep fractures filled with calcite

Lime 20 cont

Lime 21

Diamond Drill Hole No. 10 (Cont'd) Sulphuret Mine 500 level

Co-ord Start:	Lat -1673	Co-ord End:	Lat -1640	Elev. Start	4162
	Dep 86		Dep 129	End	3973

		%	
from	to	core	feet
180	197	100	17

Fine grained blue gray dense limestone with no evidence of bedding. This is at the top of the Naco limestone. The limestone shows no metallization.

Naco /s

End of hole

Diamond Drill Hole No. 11 Sulphuret Mine 500 Level

Co-ord Start: Lat -1680 Co-ord End: Lat -1582 Elev. Start 4162
Dep -8 Dep -2 End 3976

Depth 211 feet Strike N 3 E dip -62 Geology by CEH

Hole started Dec. 30, 1936 Finished Jan. 22, 1937

from	to	% core	feet	
0	2	-	2	Standpipe. No core
2	12	100	10	Coarsely crystalline medium gray limestone which shows nodules of chert and small casts of shells. A few small crystals of pyrite are scattered throughout. Top of blue lime is 11 feet above
12	13	100	1	Almost entirely light gray chert. A little pyrite along small seams.
13	14	100	1	Small areas of bright pink rhodonite and a very few sprinkled sulphides of Fe and Pb in altered blue limestone. Considerable silica is present as chert nodules.
14	22	100	8	Coarsely crystalline blue limestone crowded with shells about 1 inch in diameter.
22	34	100	12	Fine grained blue limestone with laminae of yellow silica and a very few shinses of pyrite.
34	35	100	1	Blue limestone with steep fractures filled with calcite and showing a little staining and bleaching
35	40	100	5	Blue limestone with a few layers of chert
40	42	100	2	Limestone stained brown by manganese and iron oxides and with steep fractures filled with soft calcite and aragonite.
42	44	95	2	Blue limestone somewhat bleached and with laminae of yellow silica
	44			Bottom of 35 foot blue limestone
44	49	100	5	Light gray novaculite
	49			6 inch lime pebble stained with manganese oxides
49	56	100	7	Light gray novaculite
56	61	100	5	Gray chert with a few small pebbles of lime
61	64	100	3	Start of limestone bed. The limestone has a dark brown mottled appearance from manganese stains. some layers of yellow silica. No sulphides are present.
	64			Lost water at 64 feet and could not cement. No return water below this depth.
64	67	100	3	Recemented limestone breccia with about 15 percent manganiferous calcite as gangue. Also staining by iron and manganese oxides. Barren
67	69	100	2	Dense white recrystallized limestone with a fair amount of scattered pyrite.
69	71.5	100	2.5	Ore. Good sulphides of Fe, Pb, and Zn are scattered throughout the limestone. Small fractures show a very few iron oxides. About 10 percent calcite gangue. Assay No. 7645 Au 0.70 oz Ag 41.3 oz

35 ft Blue limestone

lime 20

Diamond Drill Hole No. 11 (cont'd) Sulphuret Mine

500 level

co-ord Start:	Lat -1680	Co-ord End:	Lat -1582	Elev. Start	4162
	Dep -8		Dep -2	End	3976

from	to	core	feet	
71.5	73.5	100	2	White bleached limestone with a few small crystals of pyrite. Apparently barren
73.5	76	100	2½	Chert and pebbles of white lime with a fair amount of pyrite and a few fine grained sulphides of lead and zinc. Assay No. 7749
76	79	100	3	White bleached limestone with a few fragments of chert. A little scattered pyrite is present
79	82	100	3	Mostly dense chert with a very few fine grained sulphides, iron being most abundant. A few small fractures are stained with iron oxides.
82	86	100	4	Lime pebbles and fragments of chert
86	87	100	1	Lime pebbles with oxidized pyrite
87	90	100	3	Recemented breccia of porous light blue limestone. A few seams of soft white calcite. Barren of sulphides.
90	93	100	3	Mostly lime pebbles splotted tan with manganese and iron oxides. Bottom of the white lime bed.
93	108	95	15	Chert with numerous small seams filled with calcite.
108	109	100	1	Lime pebbles splotted tan with iron oxides.
109	120	95	11	White quartzite with a few small fractures.
120	125	95	5	White quartzite with a few small fractures stained with iron oxides
125	126	100	1	White quartzite with a few small lime pebbles
126	127	100	1	Quartzite with reddish impurities in the sand grains
127	128	100	1	White quartzite
128	131	100	3	Gray chert with lime pebbles not over 1 inch in diameter and a little staining by Fe and Mn oxides
131	136	100	5	2 inches of light blue limestone
131	136	100	5	Light gray chert
136	137	100	1	Light gray chert with small lime pebbles
137	143	100	6	Fine grained light blue limestone with no bedding. Barren of sulphides
143	146	100	3	Mostly gray chert with a very few fine grained sulphides and a few small patches of manganese oxides. Assay No. 7668 shows material barren.
146	149	100	3	Light gray chert with a few small fractures showing iron staining
149	154	100	5	Light blue limestone with a very general presence of fine lamination, caused chiefly by variations in the amount of darker pigment present in the laminae and to a much less degree by variations in the grain size.
154	157	100	3	Recemented breccia of light blue limestone and a few fragments of chert. Bleached red at 157.
157	158.5	100	1.5	Light blue limestone
158.5	159	100	.5	6 inches show a very few iron stained patches and traces of galena in bleached limestone.
159	162	100	3	White quartzite
162	163	100	1	White quartzite stained with iron oxides and with a few small fractures filled with calcite.

Lime 20 cont

Lime 21

Diamond Drill Hole No. 11 (cont'd) Sulphuret Mine 500 level

co-ord Start: Lat -1680 Co-ord End: Lat -1582 Elev. Start 4162
 Dep -8 Dep -2 End 3976

from	to	% core	feet	
163	193	100	30	Light gray chert with a few small lime pebbles
193	195	95	2	A chertified breccia of light pink color. A few 2 inch lime pebbles.
195	196	95	1	A chertified breccia with small reticulated stringers filled with calcite
196	197	100	1	Calcite stringers in chert material. Some green staining by iron oxides
197	198	100	1	About 70 percent steep dipping calcite stringers the balance being chert. The whole is much stained with iron oxides.
198	201	100	3	Calcareous sandstone cream tintes generally soft and crumbly
	201			Calcite stringers with green stains due to iron oxides.
201	205	100	4	Light gray chert
205	207	100	2	Light gray chert with a few small fractures.
207	208	100	1	Mostly all bleached limestone. A few iron stained patches from oxidized pyrite.
208	210	100	2	Brown chert with quartz filled fractures
210	211	100	1	Light colored even grained limestone with a few small quartz stringers. This apparently the top of the Naco limestone.

Naco limestone

hole discontinued and equipment moved out of mine

Assay Record Hole No. 11

from	to	feet	No	core sample			
				oz	% Zn		
				Au	Ag	Pb	Zn
65	67	2	7646	tr	0.2		
67	69	2	7647	tr	2.0		
69	71.5	2.5	7645	0.70	41.3		
71.5	73.5	2	7716	tr	1.8		
73.5	76	2.5	7749	0.08	12.6		
77	79	2	7750	tr	3.0		
79	82	3	7648	tr	0.4		
96	97	1	7663	tr	0.3		
143	146	3	7668	tr	0.9		

Not able to get return water and sludge on the above core samples

Jan 17
S. - 3

Diamond Drill Hole No. 12 Sulphuret Mine 500 level

Co-ord Start: Lat -1674 Co-ord End: Lat -1642 Elev. Start 4162
Dep 83 Dep 64 End 4097

Depth 75 feet Strike N 42 W Dip -60 NW Geology by CEH

Hole started Jan 12, 1937 Finished Jan 16, 1937

from	to	Core	feet	S
0	2	-	2	Standpipe. No core
2	10	70	8	Massive blue limestone with a very few sprinkled sulphides of Fe, Pb and Zn. Chopped some of core that dropped out of the barrel. No soft limonite.
10	18	100	8	Dense blue limestone with a little quartz gangue and casts of pink silica. A little pyrite scattered throughout.
18	20	100	2	Dense blue limestone with a little oxidized pyrite and a very few shingles of galena and sphalerite
20	21	100	1	A few steep stringers of calcite Soft and porous blue limestone with a few small areas of bright pink rhodonite. Also a few stringers of manganiferous calcite.
21	22	100	1	Dense blue limestone
22	25	100	3	Coarsely crystalline medium gray limestone with a few areas of oxidized pyrite and small patches with manganese oxides.
25	27	100	2	Dense blue limestone with a few layers of yellow silica
27	28	100	1	Blue limestone with a very few sulphides of Fe, Pb, and Zn along small stringers. Also a few bands of bright pink rhodonite. Assay No. 7656 shows the material to be barren
	28			Bottom of 35 foot Blue limestone
28	31	100	3	Gray chert with a little scattered pyrite
31	37	100	6	Gray chert with a little pyrite along small seams
37	40	70	3	Gray chert with small crystals of pyrite scattered throughout. Chopped some of the core that dropped out of barrel. No soft limonite.
40	47	100	7	Gray banded chert with a little scattered pyrite.
47	50	100	5	Start of white bleached limestone which shows considerable silica as yellow sandy laminae or as chert nodules. A little white aragonite and a very few fine grained sulphides as small stringers.
50	53	100	3	Limestone partly softened and stained brown with manganese and iron oxides.
53	60	100	7	Bleached white limestone with a few layers of chert.
60	68	100	8	Bleached white limestone with a few traces of pyrite and galena
68	73	100	5	White recrystallized limestone. Barren
73	75	100	2	Dense chert and limestone stained brown with iron and manganese oxides. A loss of water and 6 inch cavity at bottom of hole.

35ft Blue limestone

Hole discontinued.

Diamond Drill Hole No. 12

Sulphuret Mine

500 Level

Co-ord Start: Lat -1674
Dep 83

Co-ord End: -1642
Dep 64

Elev. Start 4162
End 4097

Depth 75 feet

Strike N 42 W

Dip -60 NW

Assays

from	to	feet	No.	core			No	sludge		
				Au	oz	%		Au	oz	%
2	5	3				7717	tr		0.3	
5	10	5				7718	tr		0.9	
10	15	5				7719	.02		1.0	
15	20	5				7657	tr		0.3	
20	21	1	7662	tr	0.6					
22	25	3	7655	tr	0.4					
27	28	1	7656	-	tr					
47	50	3	7720	tr	0.6					
50	53	3	7686	tr	0.2					
60	64	4	7685	tr	0.2					
64	67	3	7683	tr	0.6					
73	75	2	7682	tr	0.7					

GEORGE M. FOWLER
CONSULTING GEOLOGIST
JOPLIN NATIONAL BANK BUILDING
JOPLIN, MISSOURI

January 19, 1953

30
LST
JAN 22 1953

Mr. Fred Searls, Jr.,
Newmont Mining Corporation,
14 Wall Street,
New York 5, N. Y.

Dear Fred:

Churn Drill Holes -
Tombstone Mining District, Arizona.

The copies of the above churn drill hole logs which you requested many months ago were received from Dr. E. D. Wilson last week and are enclosed herewith for your files together with a geologic map of the Tombstone District which shows the locations of the holes. A few diamond drill holes were also completed but practically all of them were drilled from underground locations which are not immediately accessible to me. If I can find these locations I will send them to you together with a copy of the logs.

All of the above drilling was done under my direction during 1936 and 1937. Most of the holes were logged by Charles E. Higdon who is a competent and careful observer.

As stated in our conversation in New York last week, my charge will be for reimbursement for the trip to Tucson and expenses while there. I will delay submitting a statement until I have an opportunity to talk with Dr. Wilson regarding his charges for obtaining these logs. I expect to see him at Tucson next month.

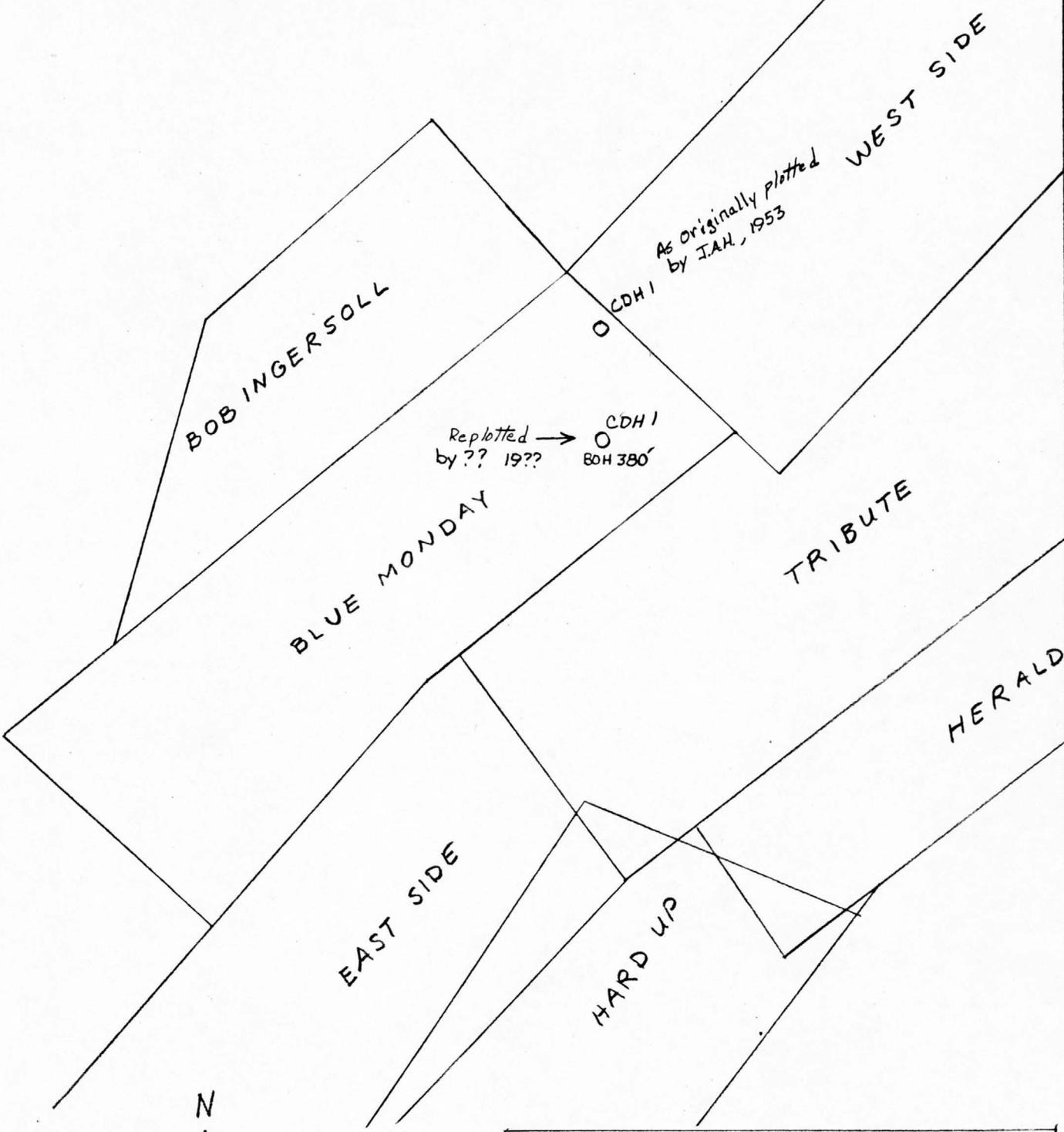
With best wishes,

Sincerely yours,

Geo. M. Fowler

George M. Fowler-
C

Encls.



DRILL HOLE MAP
 TOMBSTONE COCHISE CO., AZ
 LOCATION OF CDH 1
 DRAWN BY: E. Speer 4/76
 SCALE: 1" = 300'

TOUGH NUT

GOOD ENOUGH

WAY UP

EMPIRE

As Originally plotted by
J.A.H. 1953

CDH 5
BOH 385'

CDH 6
BOH 295'

CDH 4
BOH 430'

CDH 3
BOH 460'

As Replotted
by ? 19??

CDH 6

CDH 5

HAWK EYE
LITTLE WONDER

FIRST SOUTH
EXTENSION OF THE
TOUGH NUT

CDH 2
BOH 75'

TRANQUILITY

SULPHURET



DRILL HOLE MAP
 TOMBSTONE COCHISE CO., AZ
 LOCATION OF CDH 2, 3, 4, 5 & 6
 DRAWN BY: E. Speer 4/76
 SCALE: 1" = 300'

CDH 9
BOH 295'

Tecalote

EDGE OF TOMBSTONE TOWNSHIP

Encino

CDH 8
BOH 298'

Manzanita

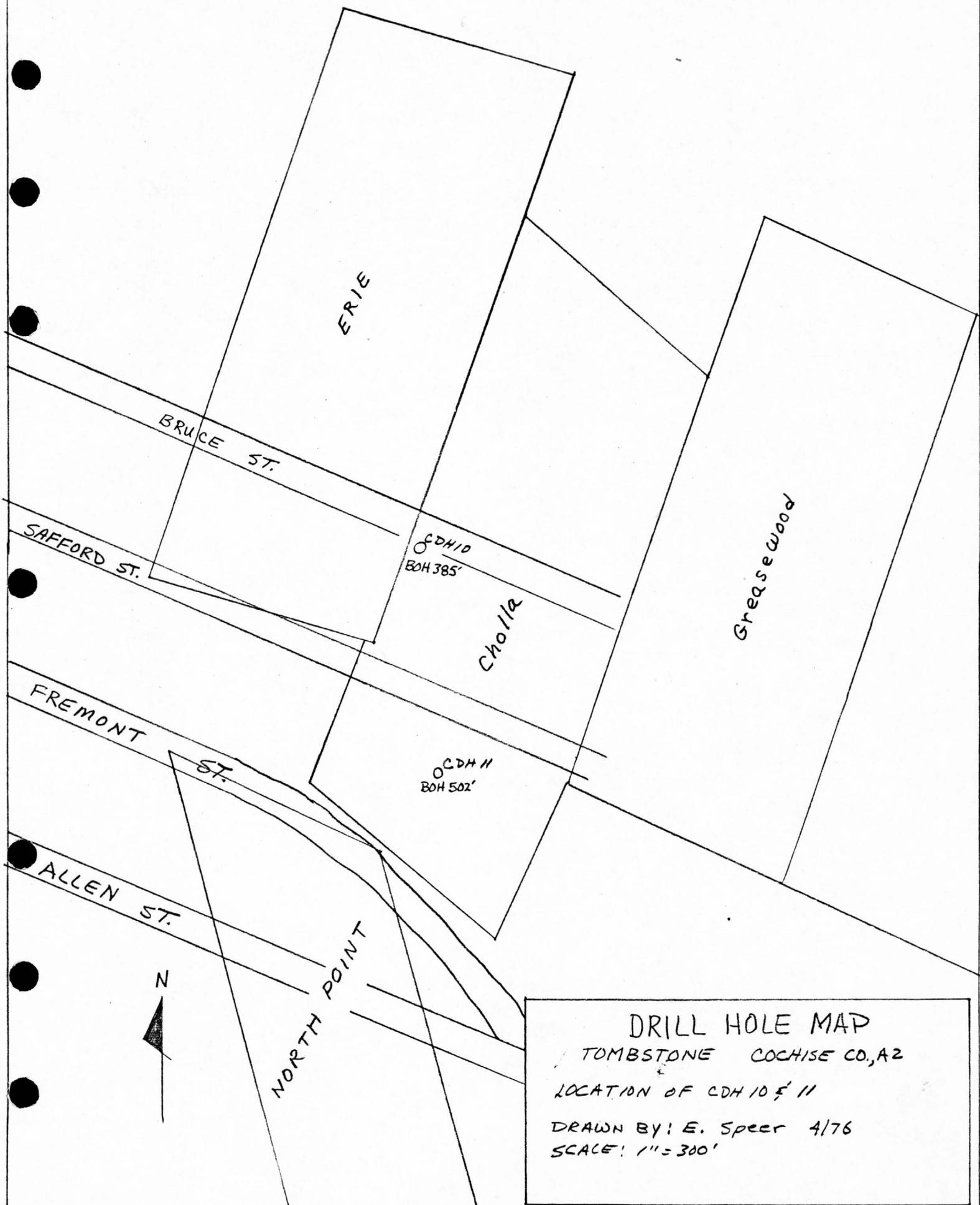
Nogales

Cochise

CDH 12
BOH 215'



DRILL HOLE MAP
 TOMBSTONE DISTRICT COCHISE CO AZ
 LOCATION OF CDH 8, 9, 12
 DRAWN BY: E. Speer 4/76
 SCALE 1" = 300'



DRILL HOLE MAP
 TOMBSTONE COCHISE CO., AZ
 LOCATION OF CDH 10 & 11
 DRAWN BY: E. Speer 4/76
 SCALE: 1" = 300'

Churn Drill Hole No. 1

Blue Monday claim

Co-ord: Lat -1687

Elev. Start 4551
End 4171

Depth 380 feet

Hole started Nov. 23, 1936 Finished Dec, 28, 1936 Assays

from	to	feet	Assay No.	Au.	oz. Ag.
230	235	5	7603	tr	0.2
235	240	5	7604	-	tr
245	250	5	7583	-	tr
250	255	5	7584	-	tr
317 $\frac{1}{2}$	320	2 $\frac{1}{2}$	7628	-	tr
322 $\frac{1}{2}$	325	2 $\frac{1}{2}$	7626	-	tr
325	327 $\frac{1}{2}$	2 $\frac{1}{2}$	7627	-	tr
340	342 $\frac{1}{2}$	2 $\frac{1}{2}$	7675	tr	0.2
342 $\frac{1}{2}$	345	2 $\frac{1}{2}$	7676	-	tr
372 $\frac{1}{2}$	375	2 $\frac{1}{2}$	7678	-	tr

The above samples to 327 $\frac{1}{2}$ inclusive showed only a few shins of pyrite and were barren of other sulphides. No iron oxides were present. The samples below the depth of 340 feet showed red impurities in the sand grains and apparently a very little limonite along small seams. Below the depth of 340 feet the samples showed only a very few traces of pyrite.

CDH 1

elev 4551

NO Geology Log (E.S.)

Traces of
pyrite & limonite

100'

200'

300'

BOH 380'

oz/ton

Au Ag

Tr 0.2
Tr

Tr
Tr

← Ag
← Tr
← Tr
← Tr

← 0.2
← Tr

← Tr

DRILL HOLE NO. CDH 1
 DRILL HOLE SECTION
 TOMBSTONE COCHISE CO., AZ
 DRILLED: 1936 TYPE: CHURN
 DRAWN: E. Speer 4/76
 SCALE: 1" = 50'
 LOCATION: BLUE MONDAY CLAIM

Churn Drill Hole No. 2

South Extension of Toughnut

Co-ord: Lat -606
Dep 421Elev. Start 4606
End 4531

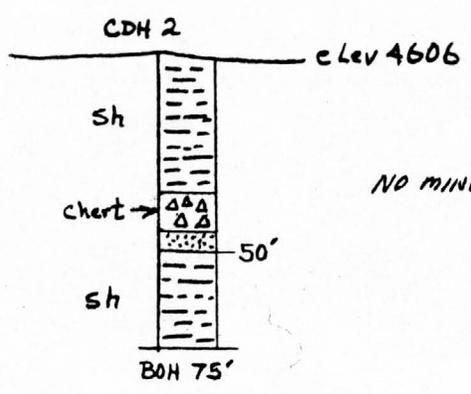
Hole started Dec. 22, 1936. Finished Jan. 16, 1937.

from	to	feet	
0	10	10	Coarse rock and olive green shale
10	15	5	Kahki colored shale 80 per cent, gray chert 20.
15	20	5	Kahki colored shale.
20	25	5	White bleached shale.
25	35	10	Light yellow shale
35	45	10	Gray chert.
45	50	5	Light yellow sandstone
50	55	5	Light brown and bleached shale
55	60	5	Bleached light yellow shale
60	70	10	Even grained light green shale and a little yellow sandstone.
70	75	5	Dark Kahki colored shale

All the above cuttings were barren of any metallization.

Hole discontinued and Cyclone drill moved off property.

(PROBABLY
BISBEE FM)
E.S.



NO MINERALIZATION NOTED

DRILL HOLE NO. CDH 2

DRILL HOLE SECTION

TOMBSTONE COCHISE CO., AZ
 LOCATION: So. Ext. Tough Nut Claim
 DRILLED: 1937 DRAWN: E. Speer 4/76
 SCALE: 1" = 50'

1st 50 Ext

Churn Drill Hole No. 3

Toughnut Claim

Co-ord: Lat -387
Dep -197

Elev. Start 4612
end 4152

Depth 460 feet

Hole started Dec. 29, 1936 Finished Jan. 12, 1937 Geology of CEH

From	to	Feet	Description
0	30	30	Hard kahki colored shale 70 percent, olive green shale 30.
30	35	5	Red arenaceous shale.
35	50	15	Dark green shale.
50	70	20	Dull green shale with yellow partings.
70	80	10	Dull black shale.
80	93	13	Hard kahki colored shale.
93	120	27	Black carbonaceous shale.
120	125	5	Black carbonaceous shale 60 percent, gray chert 40.
125	130	5	Light gray chert. No lime.
130	135	5	White colored even grained shale.
135	137	2	Dense yellow shale with bands of darker pigment.
137	139	2	4 feet limestone bed. About 1 foot of dark blue limestone mixed with lighter fragments. No limonite or other oxides are present.
139	145	6	White siliceous sandstone very hard.
145	160	15	Black carbonaceous shale with a few layers of lighter color.
160	167 $\frac{1}{2}$	7 $\frac{1}{2}$	Black carbonaceous shale
167 $\frac{1}{2}$	170	2 $\frac{1}{2}$	Light kahki colored silicified shale.
170	172 $\frac{1}{2}$	2 $\frac{1}{2}$	About 60 percent white recrystallized limestone. 6 foot limestone bed. About 40 percent is light yellow shale. No limonite. A few shinses of pyrite. Assay No. 7654 Au tr Ag 0.4 oz.
172 $\frac{1}{2}$	175	2 $\frac{1}{2}$	6 foot limestone bed. Thin layers of white limestone with light yellow shale. No limonite. A few shinses of pyrite. Assay No. 7650. Barren.
175	180	5	Light brown shale with a few layers of chert and a little lime along bedding. A very few shinses of pyrite are present. Assay No. 7651 Au tr Ag 0.6
180	185	5	Light brown shale with a few layers of gray chert. A very few shinses of pyrite are present.
185	190	5	Bleached yellow shale with a few layers of chert.
190	195	5	Light brown shale.
195	205	10	Hard black shale with a little red arenaceous shale.
205	207 $\frac{1}{2}$	2 $\frac{1}{2}$	Crevice. Most of cuttings lost. Bleached yellow shale with a little yellow mud. Assay No. 7652. Barren.
207 $\frac{1}{2}$	210	2 $\frac{1}{2}$	Dark gray chert.
210	215	5	Considerably more than half is gray chert, the balance is dark brown shale. Assay No. 7653. Barren.
215	225	10	Hard gray chert with a few traces of pyrite. No lime.
225	230	5	10 foot limestone bed (?). Dense light gray chert with thin plates of white lime. Although it is rather indefinite, this is apparently the top of the 10 foot lime bed. No indication of ore.
230	240	10	Hard gray chert with a little sprinkled pyrite. This apparently still part of the 10 foot lime bed. No limonite and no ore.

Churn Drill Hole No. 3 (cont'd)

1st So. Ext
Toughnut Claim

Co-ord: Lat -387
Dep -197

Elev. Start 4612 Depth 460 feet
4152

from	to	feet	
240	245	5	Light gray chert with a little pyrite along small seams.
245	254	9	Light yellow siliceous sandstone.
254	260	6	Even grained dark blue shale with a little pyrite as scales along fractures. In texture this rock resembles limestone but there is no effervescence with hot strong HCL.
260	265	5	See description above. Dark blue shale with a little pyrite.
265	270	5	Gray chert 60 percent, yellow and black shale 40.
270	275	5	Light yellow siliceous sandstone.
275	280	5	Light yellow and bleached siliceous sandstone.
280	285	5	Soft and bleached siliceous sandstone 70 percent, black shale 30.
285	302	17	Black carbonaceous shale.
302	305	3	Light kahki colored shale.
305	307	2.	Gray chert with a few fragments of lime.
307	307		35 foot Blue limestone starts
307	310	3	Light blue limestone 60 percent, gray chert 40.
310	315	5	Assay No. 7659 barren. Light blue limestone with traces of fresh pyrite. No limonite. Assay No. 7666 barren.
315	320	5	White chert with a few fragments of bleached limestone. A few traces of pyrite. Material is barren.
320	327*	7*	Black carbonaceous limestone. Barren.
327*	335	7*	Black carbonaceous limestone with some pink aragonite and calcite which apparently fill crevices. Barren.
335	340	5	Dense blue limestone with laminae of yellow and pink silica.
340	345	5	Mixed fragments of blue and bleached white limestone.
345	350	5	Dark carbonaceous limestone.
350	355	5	More than half chert and pink areas of silica. Balance is blue limestone.
355	360	5	Blue limestone with about 10 percent brown calcite stringers.
360	365	5	Blue limestone. No limonite.
365	365		Bottom of 35 foot Blue limestone.
365	370	5	Light yellow quartzite.
370	372*	2*	White massive quartzite with a few reddish impurities in the sand grains.
372*	375	2*	White massive quartzite.
375	385	10	Dull gray quartzite,
385	394	9	Dull gray quartzite with a few brown impurities in the sand grains.
394	410	16	Lime bed. Light blue limestone with a few layers of yellow silica. No indication of limonite and only a few traces of pyrite. Barren.
410	415	5	Still light blue limestone but it is bleached and altered. Barren.
415	435	20	Gray chert.

1st 50 Ext

Churn Drill Hole No. 3 (cont'd)

Toughnut claim

Co-ord: Lat -387
Dep -197

Elev. Start 4612 Depth 460 feet
End 4152

from	to	feet
435	440	5
440	445	5
445	460	15

Gray chert with a few lime pebbles.
Even grained olive green shale with layers of gray chert. A few fragments show a dark purple color.
Light blue Naco limestone. No limonite and only a few traces of pyrite.

Hole discontinued.

Assay Record Churn Drill Hole No. 3

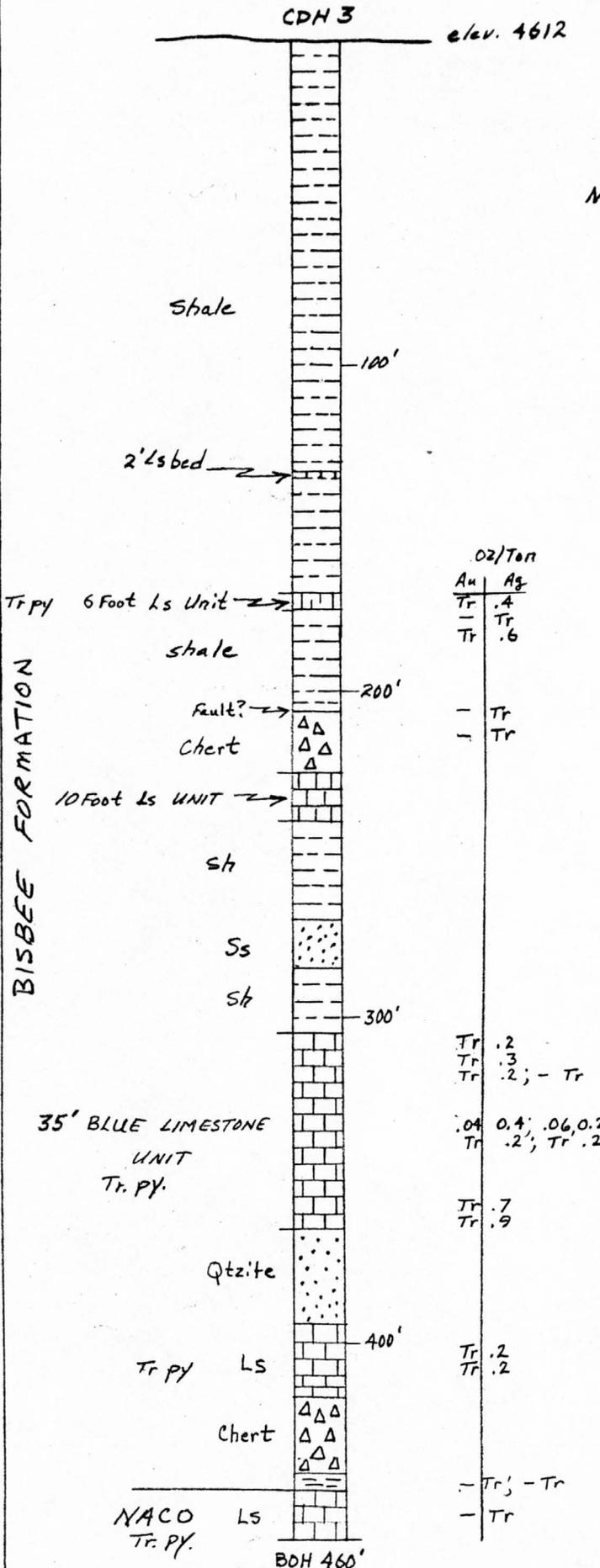
from	to	feet	Assay No.	Au	oz	Ag
170	172½	2½	7654	tr		0.4
172½	175	2½	7650	-		tr
175	177½	2½	7651	tr		0.6
205	207½	2½	7652	-		tr
210	215	5	7653	-		tr
307½	310	2½	7659	tr		0.2
310	315	5	7666	tr		0.3
315	317½	2½	7667	tr		0.2
317½	320	2½	7660	-		tr
330	332½	2½	7658	.04		0.4
332½	335	2½	7664	.06		0.2
335	337½	2½	7755	tr		0.2
337½	340	2½	7672	tr		0.2
355	360	5	7674	tr		0.7
360	365	5	7673	tr		0.9
400	405	5	7665	tr		0.2
405	410	5	7670	tr		0.2
445	447½	2½	7681	-		tr
447½	450	2½	7679	-		tr
450	455	5	7680	-		tr

Blue
mistone

poraculite

CDH 3 elev. 4612

NOTE: little to no limonite or other oxides were observed by logger



Oz/Ton	
Au	Ag
Tr	.4
Tr	.6

-	Tr
-	Tr

Tr	.2
Tr	.3
Tr	.2; - Tr

.04	0.4; .06, 0.2
Tr	.2; Tr .2

Tr	.7
Tr	.9

Tr	.2
Tr	.2

-	Tr; - Tr
-	Tr

DRILL HOLE NO. CDH 3
 DRILL HOLE SECTION
 TOMBSTONE COCHISE CO., AZ
 LOCATION: TOUGH NUT CLAIM
 DRILLED: 1937 DRAWN: E. Speer 476
 SCALE 1" = 50'

Churn Drill Hole No. 4

1st 50 Ext
Toughnut claimCo-ord: Lat -388
Dep -252Elev. Start 4607
End 4177

Depth 430 feet

Hole started Dec. 30, 1936. Finished Feb. 1, 1937 Geology by CEH

from	to	feet	
0	35	35	Hard kahki colored shale.
35	45	10	Light yellow shale.
45	55	10	Black carbonaceous shale.
55	65	10	Hard kahki colored shale.
65	70	5	Kakhi colored shale 80 percent, reddish shale 20.
70	82	12	Black carbonaceous shale.
82	90	8	Kakhi colored shale 90 percent, layers of chert 10
90	105	15	Black carbonaceous shale.
105	125	20	Dull black shale 60 percent, light bleached shale 40.
125	130	5	Black carbonaceous shale.
130	132	2	Open ground. No cuttings.
132	138	6	Black carbonaceous shale.
138	145	7	Light yellow sandstone.
145	150	5	Light yellow sandstone 80 percent, black shale 20.
150	156	6	Open crevice lined with late vuggy water quartz. Also 2 inch fragments of blue flint rock and fine grained white quartz. No limonite or sulphides observed. Assay No. 7760 Au tr. Ag. 0.4 oz.
156	160	4	Open crevice lined with late vuggy water quartz. Also fragments of blue flint rock and fine grained white quartz. No limonite or sulphides observed. Assay No. 7761. Au tr. Ag 0.8 oz.
160	165	5	Open ground with most of fine sludge lost in crevices. Breccia of blue flint rock and angular fragments of shale. Also fragments of coarsely crystalline water quartz. No indication of metallization.
165	170	5	White flint rock 70 percent, black carbonaceous shale 30. Also small seams of white water quartz.
170	180	10	Black silicified shale with bands of lighter color.
180	187½	7½	Light yellow shale 60 percent, black carbonaceous shale 20, white chert 20.
187½	190	2½	Pink chert 80 percent, white chert, 20.
190	195	5	Mostly all chert -blue, white, pink.
195	200	2½	Pink and white chert.
200	210	10	Black carbonaceous shale.
210	220	10	Black carbonaceous shale. A few stringers of quartz.
220	225	5	Blue chert 70 percent, black and yellow shale 30.
225	230	5	Black carbonaceous shale 60 percent, yellow shale 30 white chert 10.
230	232½	2½	Silicified yellow shale 40 percent, reddish shale 30, black carbonaceous shale 30.
232½	237½	5	Open crevice. No cuttings.
237½	240	2½	6 foot limestone. Dark blue limestone and black carbonaceous shale. No evidence of limonite or other oxidation products. Barren. Assay No. 7712. Au - Ag Tr.
240	245	5	Black shale and dark blue shale. No limestone. Assay No. 7713 Au - Ag tr

Churn Drill Hole No. 4 (cont'd)

1st 59 Ext.
Toughnut claim

Co-ord: Lat -388
Dep -252

Elev. Start 4607
End 4177

Depth 430

from	to	feet	
245	247½	2½	Light yellow shale 60 percent, black shale 20, chert 20
247½	250	2½	Gray chert 80 percent, yellow shale 20. The chert shows small crystals of pyrite
250	255	5	10 foot limestone. Dark blue limestone with a few layers of yellow shale. No limonite and only traces of pyrite. Barren.
255	265	10	Gray chert. A little pyrite along small seams.
265	272½	7½	Gray chert with a few fragments of yellow shale.
272½	280	7½	Light yellow siliceous sandstone.
280	295	15	Yellow shale 80 percent, black shale 20.
295	300	5	Yellow shale 60 percent, black shale 40.
300	312½	12½	Assemblage of yellow and black shale.
312½	315	2½	Gray chert.
	315		Top of 35 foot blue limestone.
315	320	5	Blue limestone, bleached and altered by recrystallization. No limonite and only traces of pyrite. Barren.
320	330	10	Black carbonaceous limestone.
330	335	5	Blue limestone with layers of chert.
335	340	5	Blue limestone.
340	345	5	White chert 80 percent, blue limestone 20.
345	355	10	Dark blue limestone.
355	357½	2½	Equal parts of gray chert and blue limestone.
357½	370	12½	Blue limestone with layers of yellow silica.
370	372½	2½	An assemblage in which bleached and white limestone averages 60 percent, Blue limestone 30 percent, and light green shale 10 percent.
	372½		Bottom of 35 foot blue limestone.
372½	375	2½	Assemblage of gray novaculite and fine-grained black shale.
375	380	5	Gray and reddish novaculite 80 percent, black shale 20.
380	385	5	Gray novaculite 80 percent, black shale 20.
385	395	10	Dense brown novaculite.
395	415	20	Novaculite mostly gray, some pink colors.
415	427½	12½	Novaculite mostly brown, some pink colors.
427½	430	2½	Novaculite brown and gray, with 5 percent small fragments of white lime. A few small crystals of fresh pyrite in the sample. Barren.

Hole discontinued.

Churn Drill Hole No. 4 (cont'd)

1st Sp
Ext
Toughnut claim

Co-Ord: Lat -388
Dep -252

Elev; Start 4607 - Depth 430
End 4177

Hole started Dec. 30, 1936

Finished Feb. 1, 1937 Assays

	from	to	feet	Assay No.	Au	oz. Ag
	150	156	6	7760	tr	0.4
	156	160	4	7761	tr	0.8
	237½	240	2½	7712	-	tr
	240	245	5	7713	-	tr
	250	252½	2½	7714	tr	0.3
	252½	255	2½	7715	tr	0.2
	315	317½	2½	7721	-	tr
	317½	320	2½	7722	-	tr
	320	322½	2½	7723	-	tr
	322½	325	2½	7724	-	tr
	325	327½	2½	7725	tr	0.6
	327½	330	2½	7726	tr	0.1
<i>Blue Ls.</i>	330	335	5	7727	-	tr
	335	340	5	7728	tr	0.2
	340	345	5	7729	tr	0.1
	345	350	5	7730	tr	0.1
	350	355	5	7731	-	tr
	355	360	5	7739	-	tr
	360	365	5	7740	-	tr
	365	370	5	7741	tr	0.3
<i>Novaculite</i>	370	375	5	7742	tr	0.2
	375	380	5	7743	tr	0.6

All the above samples showed only a few traces of pyrite and were apparently barren.

CDH 4 elev 1607

Shale

100'

Fault zone?

200'

6 Foot Ls unit

10 Foot Ls Unit
Tr PY Chert

Shale

300'

Tr. Py

35' Blue Ls unit

NOUACULITE

Tr PY

BOH 430'

Oz/Ton

Au	Ag
Tr	0.4
Tr	0.8

Tr	
Tr	
-	0.3, Tr 0.2

Tr	Tr
Tr	Tr
Tr	0.6, Tr 0.1
Tr	Tr
Tr	0.2
Tr	0.1
Tr	0.1
Tr	Tr
Tr	Tr
Tr	0.3
Tr	0.2
Tr	0.6

BISBEE FORMATION

DRILL HOLE NO. CDH4

DRILL HOLE SECTION

TOMBSTONE COCHISE CO., AZ

DRILLED: 1937

DRAWN: E. Speer 4/76

LOCATION: TOUGH-NUT CLAIM

SCALE: 1" = 50'

Churn Drill Hole No.5

Hawkeye Little Wonder
~~Thought~~ claim

Co-ord: Lat 134
Dep 524

Elev. Start 4557
End 4172

Depth 385

Hole started Jan. 12, 1937

Finished Jan. 23, 1937

Geology by CEH

from	to	feet	
0	15	15	Hard black shale with a few seams showing iron oxides.
15	35	20	Kakhi colored and brown shale.
35	60	25	Dull black shale with fragments of reddish shale toward the bottom.
60	70	10	Light green shale with fine grained blue quartz.
70	75	5	Light gray siliceous sandstone.
75	80	5	Light gray siliceous sandstone 80 percent, black shale 20.
80	84	4	Open ground lost water. Black shale 80 percent, chert 20.
84	90	6	Kakhi colored shale 80 percent, black shale 20.
90	100	10	Dull black shale 80 percent, light silicified shale 20.
100	105	5	Black carbonaceous shale.
105	106	1	Black carbonaceous limestone about 1 foot thick. This is probably the 6 foot lime bed. No limonite and only a few traces of pyrite. Assay No. 7687 shows the material to be barren.
106	110	4	Black carbonaceous shale with a little yellow clay along bedding.
110	113	3	Black carbonaceous shale and a few fragments of yellow shale.
113	115	2	Black carbonaceous limestone. A thin bed above the 10 foot limestone. No limonite. Assay No. 7686 barren.
115	120	5	Black carbonaceous shale with thin partings of lime probably along the bedding.
120	125	5	10 foot limestone bed. Black carbonaceous limestone with about 10 percent brown calcite. No limonite. Barren.
125	130	5	Dark blue limestone 30 percent, white bleached limestone 30 percent, balance is layers of yellow chert.
130	130		End of 10 foot limestone.
130	150	20	Dense yellow shale. A few seams of clay along the bedding.
150	160	10	Light yellow siliceous sandstone.
160	165	5	Light reddish shale 60 percent, kakhi colored shale 30, black 10.
165	180	15	Black carbonaceous shale. No lime.
180	182½	2½	About 10 percent is thin layers of light blue limestone, yellow bleached shale 60 percent, black shale 30 percent.
182½	185	2½	Gray chert 60 percent, black shale 30. The balance is thin layers of light blue limestone.
185	190	5	Light gray chert. A few fragments of blue lime.
190	195	5	Gray chert 50, reddish and bleached shale 20, black shale 20, blue limestone 10. A little yellow mud but no limonite.
195	197½	2½	Gray chert with traces of pyrite.
	197½		Start of 35 foot blue limestone.
197½	200	2½	Bleached light blue limestone with concentrations of

pink clay. No limonite. Assay No. 7695. Au 0.18 oz.
Ag 0.5 oz. Little evidence of ore.

200

217½

17½ Dense blue limestone with yellow sandy laminae. Barren/

Churn Drill Hole No. 5 (cont).

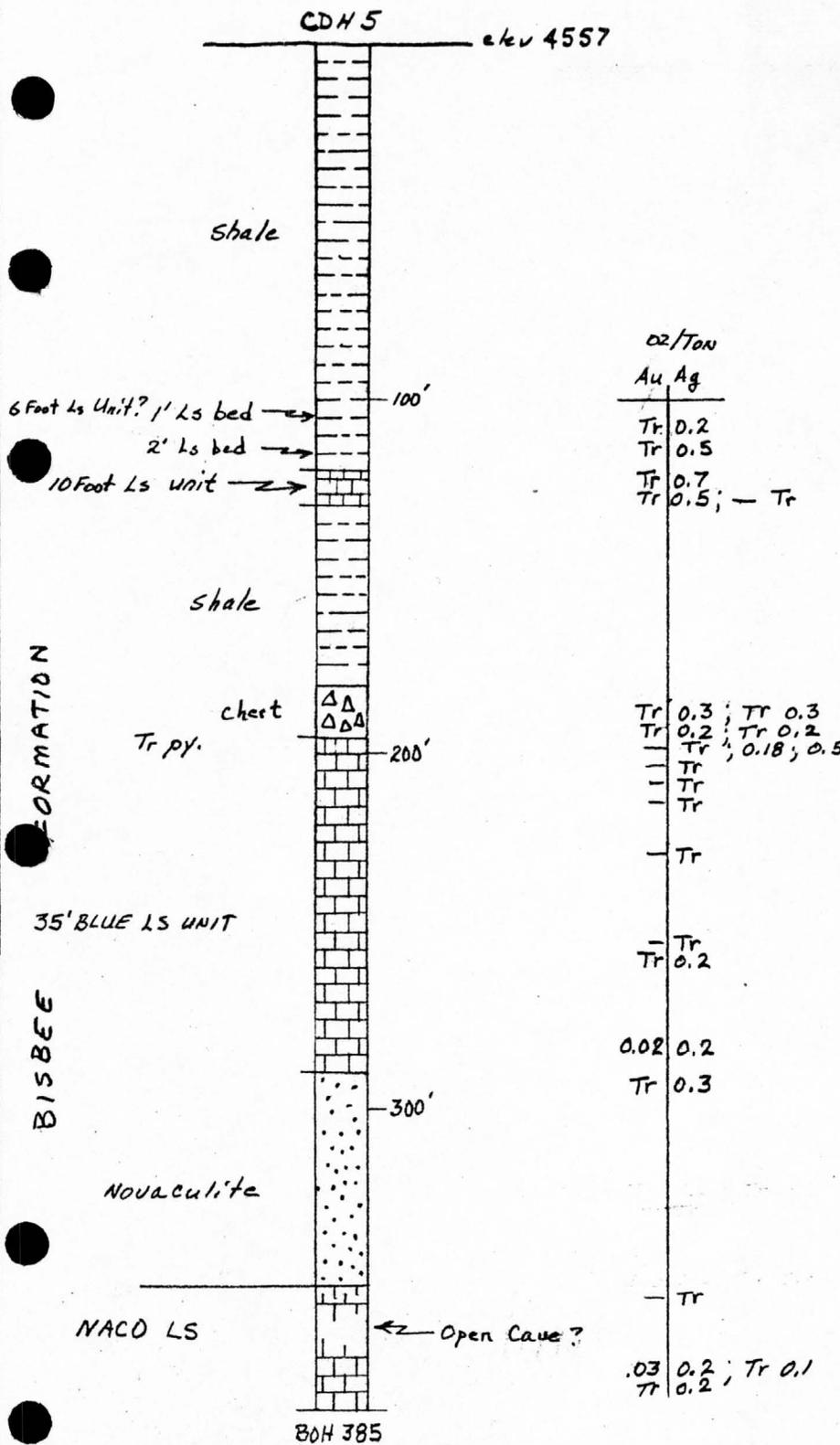
~~Toughnut~~ claim

Co-ord: Lat 134 Elev. Start 4557
 Dep 524 End 4172 Depth 385

From	to	feet	Description
217 1/2	220	2 1/2	Open ground. No cuttings.
220	230	10	Dense blue limestone with a little chert. Barren
220	250	20	Dense blue limestone with considerable silica present as chert nodules.
250	255	5	Blue limestone with stringers brown calcite.
255	257 1/2	2 1/2	Blue limestone with a small amount of pyrite. Barren
257 1/2	275	17 1/2	Dense blue limestone with yellow sandy laminae.
275	280	5	Gray chert 60 percent, dark blue limestone 40.
280	290	10	Medium gray coarsely crystalline limestone. Cavities in the limestone are filled with aragonite.
	290		Bottom of 35 foot Blue limestone.
290	300	10	Light brown novaculite.
300	325	25	Light gray novaculite.
325	330	5	White quartzite. The sand grains are angular.
330	335	5	Light yellow quartzite.
335	345	10	White quartzite.
345	350	5	Top of light blue Naco limestone. No oxidation and only traces of pyrite. A few nodules of dark gray chert.
350	355	5	Light blue Naco limestone. Barren.
355	370	15	Open ground. No cuttings.
370	385	15	Light blue Naco limestone. No limonite and practically no pyrite.

Assay Record Churn Drill Hole No. 5

From	to	feet	Assay No.	Au oz	Ag
105	107 1/2	2 1/2	7687	tr	0.2
112 1/2	115	2 1/2	7686	tr	0.5
120	125	5	7699	tr	0.7
125	127 1/2	2 1/2	7693	tr	0.5
127 1/2	130	2 1/2	7688	-	tr
180	182 1/2	2 1/2	7689	tr	0.3
182 1/2	185	2 1/2	7692	tr	0.3
185	187 1/2	2 1/2	7691	tr	0.2
190	195	5	7690	tr	0.2
195	197 1/2	2 1/2	7694	-	tr
197 1/2	200	2 1/2	7695	0.18	0.5
200	205	5	7696	-	tr
205	210	5	7697	-	tr
210	215	5	7698	-	tr
225	231	5	7700	-	tr
250	255	5	7701	-	tr
255	257 1/2	2 1/2	7702	tr	0.2
280	285	5	7703	0.02	0.2
285	290	5	7704	tr	0.3
345	347 1/2	2 1/2	7705	tr	0.2
347 1/2	350	2 1/2	7706	tr	0.3
350	355	5	7707	-	tr
370	372 1/2	2 1/2	7708	.03	0.2
372 1/2	375	2 1/2	7709	tr	0.1
375	380	5	7710	tr	0.2



FORMATION
BISBEE

DRILL HOLE NO. CDH5
 DRILL HOLE SECTION
 TOMBSTONE COCHISE CO., AZ.
 LOCATION: TOUGH NUT? Claim
 DRILLED: 1937 DRAWN: E. Speer 4/76
 SCALE: 1" = 50'

Hawkeye Little Wonder
~~Toughnut~~ claim

Churn Drill Hole No. 6

Co-ord: Lat 233
Dep 445

Elev. Start 4577
End 4282

Depth 295

Hole started Jan. 23, 1937

Finished Feb. 1, 1937

Geology by CEH

from	to	feet	
0	25	25	Yellow shale 80 percent, red shale 20.
25	35	10	Yellow shale 60 percent, fine-grained light green shale.
35	45	10	Yellow shale.
45	55	10	Dull black shale.
55	60	5	Black shale with yellow partings.
60	70	10	Yellow shale 80 percent, red shale 20.
70	90	20	Dull black shale.
90	94	4	Black shale with some gray chert.
94	100	6	Yellow silicified shale with laminae of black pigment.
100	107	7	Cream colored silicified shale and chert.
107	108	1	6 foot limestone. Fragments are dark blue limestone. No oxidation. Barren.
108	110	2	Light colored silicified shale, with a few fragments of black shale.
110	111	1	6 foot limestone. Fragments of dark blue limestone. No oxidation. Barren.
111	115	4	Silicified shale generally light colored but with some darker bands.
115	120	5	Light yellow silicified shale.
120	135	15	Black carbonaceous shale.
135	140	5	Black carbonaceous shale 60 percent, light colored silicified shale 40.
140	142½	2½	10 foot limestone. About 8 inches is limestone bleached and splotched with a tan discoloration. Balance is mostly gray chert with a few fragments of black carbonaceous shale. Assay No. 7766- barren.
142½	145	2½	10 feet limestone. About 6 inches is limestone bleached and splotched with a tan discoloration. Balance is light gray chert. Assay No. 7732 barren.
145	147½	2½	Assemblage of black carbonaceous shale and gray chert.
147½	150	2½	10 foot limestone. About 6 inches of black carbonaceous limestone. In the balance black carbonaceous shale averages 70 percent, red and white chert 30. Barren.
150	155	5	Black shale 60 percent, chert 40 percent. Also small stringers of coarsely crystalline quartz.
155	157½	2½	A breccia of silicified light and dark shale. About 10 percent is pink chert.
157½	160	2½	Assemblage of yellow silicified shale, red and white chert, dense blue flint rock.
160	162½	2½	Crevice with most of smaller cuttings lost. Dense blue flint rock, black chert, and a little white chert.
162½	167½	5	Dark blue chert.
167½	175	7½	Gray chert.
175	180	5	Gray chert a little pyrite along small seams.

Churn Drill Hole No. 6

~~Toughnut~~ claim

Ord: Lat 233
Dep 445

Elev. Start 4577
End 4282

Depth 295

from	to	feet	
180	192½	12½	Gray chert.
192½	200	7½	Light yellow siliceous sandstone and light green shale. A few traces of pyrite.
200	210	10	Assemblage of yellow and dull black shale.
210	215	5	Dark red arenaceous shale 40 percent, dull black shale 60 per cent. Some yellow mud.
215	217½	2½	Dull black shale 80 percent, silicified shale hues of yellow and pink 20 percent.
217½	221	3½	Dull black shale 80 percent, light colored silicified shale 20 percent.
221	222½	1½	Apparently start of the 35 foot blue limestone member. Over 60 percent dark blue limestone. Balance is light and dark colored silicified shale. A few traces of pyrite. Barren.
222½	225	2½	Mostly all dark blue limestone. Barren.
225	227½	2½	About 60 percent fine-grained black shale, perhaps from caving. Balance is white chert and thin layers of blue limestone. A little limonite apparently along small seams. Barren.
227½	230	2½	About 40 percent fine-grained black shale. Balance is white chert and thin layers of blue limestone. A little limonite apparently along small seams. Barren.
230	235	5	Dark blue limestone 60 percent, gray chert 40.
235	260	25	Dark blue limestone with a little pink clay along bedding.
260	265	5	Blue limestone with a little pink clay along the bedding. Also about 30 percent pink sandy clay and a little pink chert. The arenaceous shale is probably from caving ground.
265	267½	2½	Black carbonaceous limestone.
267½	270	2½	Black carbonaceous limestone with about 40 percent gray chert.
270	272½	2½	Coarse crystalline blue limestone with about 40 percent pink sandy clay.
272½	275	2½	Coarse crystalline blue limestone. About 20 percent is pink aragonite apparently filling fractures.
275	282	7	Open ground. No cuttings.
282	290	8	Dense blue limestone with yellow sandy laminae and also a little chert. Some caving from the open ground above.
290	295	5	Dense blue limestone with yellow sandy laminae and about 20 percent gray chert. Considerable material falling into the hole from open ground above.

Hole discontinued.

Churn Drill Hole No. 6

Toughnut claim

Co-ord: Lat 233
Dep 445

Elev. Start 4577
End 4282

Depth 295

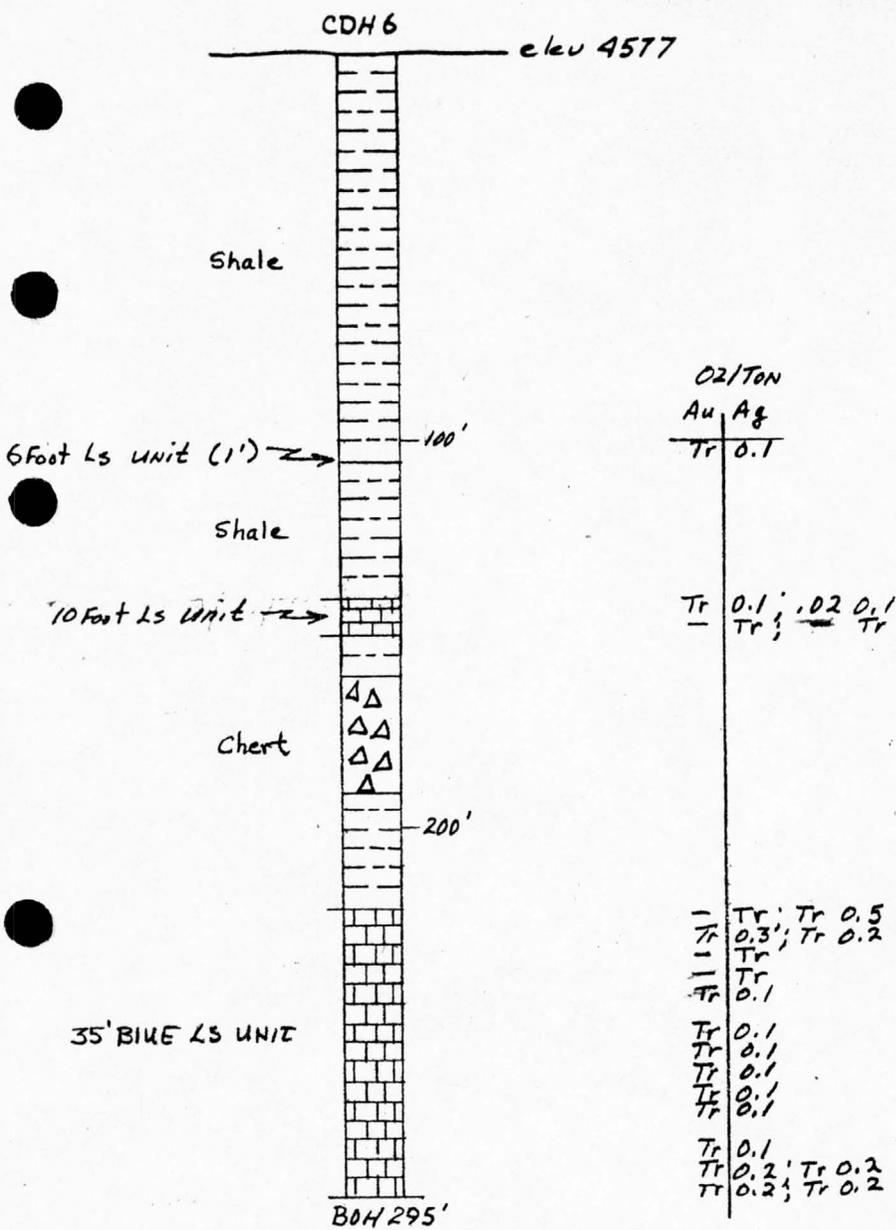
Hole started Jan. 23, 1937

Finished Feb. 1, 1937

Assays

from	to	feet	Assay No.	Au	oz	Ag
110	115	5	7765	tr		0.1
140	142½	2½	7766	tr		0.1
142½	145	2½	7732	.02		0.1
145	147½	2½	7733	-		tr
147½	150	2½	7767	-		tr
220	222½	2½	7744	-		tr
222½	225	2½	7768	tr		0.5
225	227½	2½	7745	tr		0.3
227½	230	2½	7746	tr		0.2
230	235	5	7734	-		tr
235	240	5	7735	-		tr
240	245	5	7736	tr		0.1
250	255	5	7737	tr		0.1
255	260	5	7738	tr		0.1
260	265	5	7747	tr		0.1
265	270	5	7748	tr		0.1
270	275	5	7751	tr		0.1
282	284	2	7752	tr		0.1
284	287½	3½	7762	tr		0.2
287½	290	2½	7753	tr		0.2
290	292½	2½	7763	tr		0.2
292½	295	2½	7754	tr		0.2

Blue
Limestone



DRILL HOLE NO. CDH 6
 DRILL HOLE SECTION
 TOMBSTONE COCHISE CO., AZ.
 LOCATION: TOUGH NUT? CLAIM
 DRILLED: 1937 DRAWN: E. Speer 4/76
 SCALE: 1" = 50'

Churn Drill Hole No. 7

Mesquite claim

Co-ord: Lat 1714
Dep 3886

Elev. Start 4526
End 4020

Depth 506

Hole started Feb. 4, 1937

Finished Feb. 17, 1937

Geology by CEH

from	to	feet	
0	60	60	Gravel. Mostly lime pebbles derived from Pennsylvanian and Permian sediments. The fragments are well cemented with calcareous matrix forming caliche. Very little black sand. Casing to 12 ft.
60	90	30	Gravel. Over 50 percent pebbles of limestone derived from Pennsylvanian and Permian sediments. Balance of fragments are quartzite and arkose. The fragments are well cemented with calcareous matrix forming caliche and with very little caving to this depth.
90	120	30	Gravel poorly cemented with calcium carbonate. An assemblage of arkose, yellow sandstone, green shale, and lime. The fragments are embedded in a dark red sandy matrix. There is a fair amount of black sand.
120	130	10	Gravel. Mostly dense green shale with a little yellow quartzite. Apparently large boulders of shale. A small amount of black sand. Loose and unconsolidated
130	155	25	Gravel. An assemblage of yellow sandstone, green shale, arkose, and a few pebbles of lime. Fairly well cemented with calcium carbonate.
155	170	15	Gravel fairly well cemented with calcium carbonate. An assemblage of light green shale, yellow sandstone, grit, and pebbles of volcanic rock. The volcanic rock is mostly light colored latite.
170	175	5	Gravel. Practically all green grit or sandstone. A few rounded pebbles of limestone. This may be a sandstone lense in the conglomerate.
175	190	15	Gravel. Imperfectly rounded pebbles of latite and granite preponderate. Balance is green shale and yellow sandstone.
190	210	20	Gravel. An assemblage of light yellow sandstone, green grit and arkose, shale, and a few pebbles of lime.
210	250	40	Gravel. Volcanic pebbles mostly latite 30 percent, white quartzite 30 percent, dull red and green shale. The fragments are fairly well cemented with calcium carbonate.
250	270	20	Gravel is apparently unconsolidated and in places contains a great deal of clay. Light yellow sandstone is most abundant. Balance is green shale and volcanic pebbles.
270	320	50	Gravel is fairly well cemented with calcium carbonate. An assemblage of latite and monzonite fragments, white quartzite, light green shale.

Churn Drill Hole No. 7, Cont.

Co-ord: Lat 1714
Dep 3886

from	to	feet	
320	350	50	Gravel apparently unconsolidated. Fragments of volcanic rock, white quartzite, and light green shale embedded in a red sandy matrix. A few particles of black sand.
350	410	60	Gravel poorly cemented with calcium carbonate. Light colored volcanic pebbles 40 percent, white quartzite 30 percent, green and black shale 30 percent. A small amount of black sand.
410	430	20	Gravel well cemented with calcareous matrix and forming a false bedrock. Caliche adheres to 1 inch fragments of white quartzite and volcanic pebbles. An assemblage of volcanic pebbles, quartzite, cream colored shale. Water level not reached.
430	455	25	Gravel. Fairly well cemented with calcium carbonate. An assemblage of volcanic pebbles, white quartzite, and light cream colored shales.
	455		Water level. Elevation of water table is at an elevation of approximately 4070 feet which is 42 feet lower than the water table in the mine workings of the Tombstone Development Company to the Southwest of the Drill hole. The water table to the Southwest is at an elevation of 4112 feet.
455	506	51	Gravel apparently unconsolidated. The fragments are embedded in a light sandy matrix. Most of the fragments are very white sandstone and light colored volcanic pebbles. Some arkose and dull red shale.

Hole discontinued. Solid bedrock apparently not reached. The casing was put down in the hole only 12 feet and there was some caving throughout the entire depth of the hole because of the loose nature of the gravel, and especially in the unconsolidated parts of the formation. Large fragments of volcanic pebbles up to 2½ inches in diameter were bailed out of the hole below a depth of 210 feet. Also large rounded fragments of sedimentary rock.

CDH 7 elev. 4526

CO-ORD: Lat 1714
Dep 3886

QUATERNARY GRAVEL
w/ caliche

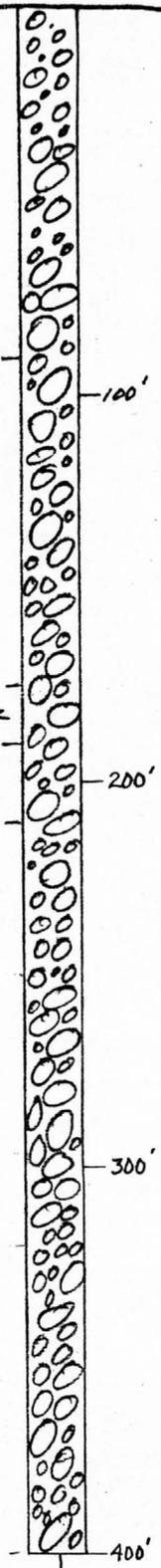
Paleozoic
ls gravel

BISBEE FM
gravel

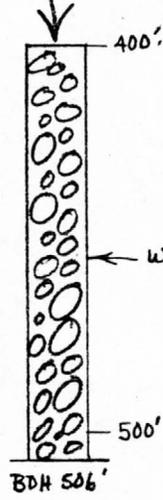
Letite & granite
gravel
Bisbee
gravel

Letite &
gravel

Letite & Bisbee
gravel



Letite & Bisbee
gravel



DRILL HOLE NO. CDH 7
 DRILL HOLE SECTION
 TOMBSTONE COCHISE CO., AZ.
 LOCATION: MESQUITE CLAIM
 DRILLED: 1937 DRAWN: E. Speer 4176
 SCALE 1"=50'

Churn Drill Hole No. 8

Manzanita claim

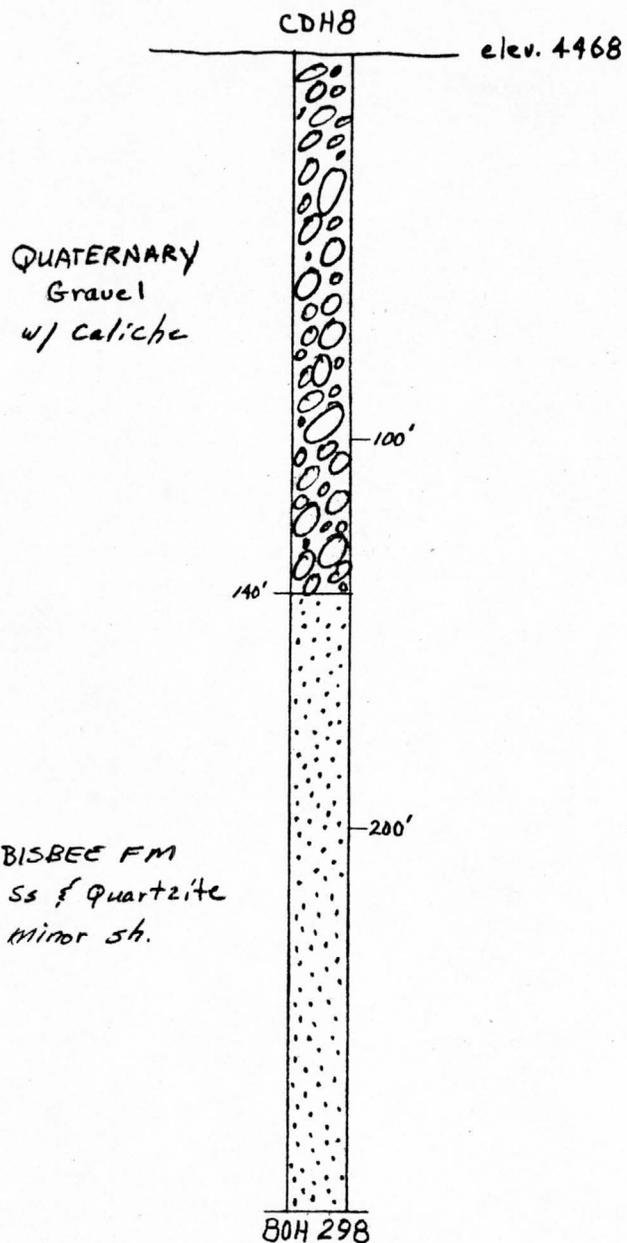
Co-ord: Lat 3345
Dep 1432Elev. Start 4468
End 4170

Depth 298

Hole started Feb. 18, 1937 Hole finished Feb. 25, 1937. Geology by CEH

from	to	feet	
0	40	40	Gravel. Mostly lime pebbles derived from Pennsylvanian and Permian sediments. The pebbles are cemented with a calcareous matrix.
40	70	30	Gravel. Pebbles of lime, green sandy shale, and buff sandstone. The pebbles are fairly well cemented, with a calcareous matrix.
70	100	30	Gravel. The gravel is apparently unconsolidated and contains a great deal of clay. Arkose fragments, green sandy shale, buff sandstone, and a few imperfectly rounded pebbles of limestone.
100	105	5	Gravel. Fragments of light green shale predominate. Some white sandstone. Probably large boulders of shale.
105	135	30	Gravel. Mostly olive green shale. About 30 percent is light yellow sandstone.
135	140	5	Gravel. Angular fragments of dark green and brown shale. A few rounded pebbles of shale and sandstone. A small amount of black sand.
140	145	5	Loose bedrock. Mostly light brown sandstone, some light green shale.
145	160	15	Solid bedrock. Mostly light brown sandstone. A little green sandy shale.
160	170	10	Yellow calcareous sandstone 60 percent, green epidote shale 40 percent. The calcareous sandstone is soft and crumbly.
170	180	10	Buff and light brown sandstone.
180	195	15	Light yellow calcareous sandstone 70 percent, light gray sandstone 30 percent.
195	225	30	Mostly light yellow sandstone, a few fragments of red sandstone and arkose.
225	230	5	White hard quartzite and grains of quartz.
230	245	15	Light yellow siliceous sandstone. A little light yellow shale.
245	260	15	Even grained white sandstone.
260	275	15	Gray siliceous shale. Very hard.
275	280	5	Mostly dull brown sandstone. A few red colors from iron oxides.
280	282½	2½	Mostly dull brown sandstone. A few red colors from iron oxides.
282½	290	7½	Bright red ferruginous shale. Bright red clay along the bedding.
290	298	8	Very white quartzite. A few specks of iron oxides in the quartz grains.

Hole discontinued.



CO-ord: Lat. 3345
 Dep. 1432

NO ASSAYS

DRILL HOLE NO. CDH 8
 DRILL HOLE SECTION
 TOMBSTONE COCHISE CO., AZ
 LOCATION: MANZANITA CLAIM
 DRILLED: 1937 DRAWN: E. Speer 9/26
 SCALE: 1" = 50'

Churn Drill Hole No. 9

Taco Tecalote Claim

Co-ord: Lat 3682
Dep 290

Elev. Start 4482
End 4187

Depth 295

Hole started February 27, 1937

Finished March 6, 1937

From	to	Feet	
0	35	35	Gravel. About 40 percent rounded fragments of Naco and Permian limestone. Balance in fragments of brown sandstone and dense green shale.
35	60	25	Gravel. About 30 percent is rounded fragments of Naco and Permian limestone. Balance is subangular boulders of brown sandstone.
60	75	15	Gravel. Mostly fragments of white sandstone and light green shale. Only 5 percent is small pebbles of limestone.
75	90	15	Gravel. Fragments of white sandstone and hard light green shale. A little black sand.
90	100	10	Gravel. Mostly arkose conglomerate. Some fragments of quartz. A little black sand.
100	105	5	Gravel. Fragments of green shale, arkose, and a small amount of lime. A little more abundant black sand.
105	110	5	Loose bedrock. Mostly dull brown and green shale. A few fragments of arkose. A little black sand.
110	115	5	Loose bedrock. An assemblage of light green and dull black shale. A very little black sand.
115	125	10	Solid bedrock. Dense light green and dull black shale. A little quartz cemented breccia. A little black sand.
125	130	5	Olive green and dull brown shale.
130	132½	2½	Dense green shale 90 percent, dull black shale 10 percent.
132½	140	7½	Light yellow sandstone 60 percent, light green shale 40 percent. A little lime cement.
140	142½	2½	Light yellow sandstone with a few red tints due to iron oxide cement. A little more abundant lime along bedding.
142½	150	7½	Dull red sandstone.
150	155	5	Light yellow siliceous sandstone.
155	170	15	Yellow and light red sandstone.
170	200	30	Light yellow sandstone.
200	205	5	Light red and white sandstone. About 15 percent is black shale.
205	215	10	Light yellow and white sandstone. About 15 percent in black shale.
215	225	10	Gray and yellow sandstone
225	230	5	Black carbonaceous shale.
230	235	5	Light brown sandstone with a little black shale.
235	250	15	Gray and brown sandstone.
250	265	15	Distinctive bright red ferruginous shale. A very compacted clay rock.

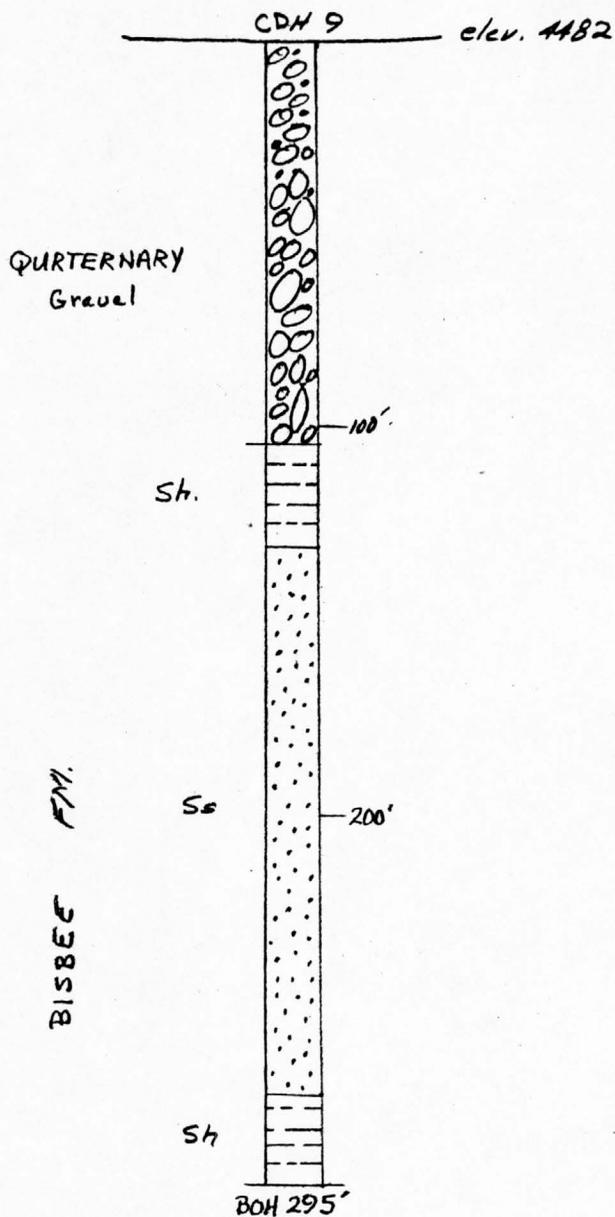
Churn Drill Hole No. 9

Taco Tecalote claim

Co-ord: Lat 3682
Dep 290Elev. Start 4482
End 4187

Depth 295

from	to	feet	
265	272½	7½	Reddish brown sandstone with a few nodules of black chert. About 30 percent is dull red shale.
272½	285	12½	Dull black speckled shale.
285	287½	2½	Dark brown shale and dull black speckled shale.
287½	295	7½	Dull red shale.



Co-ord. Lat. 3682
 Dep. 290

NO ASSAYS

BISBEE FM.

DRILL HOLE NO. CDH 9
 DRILL HOLE SECTION
 TOMBSTONE COCHISE CO., AZ.
 LOCATION: TACO TECALOTE CLAIM
 DRILLED: 1937 DRAWN: E. Speer 4/76
 SCALE: 1" = 50'

Churn Drill Hole No. 10

Cholla Claim

Depth 385

Co-ord: Lat 1286
Dep 2275Elev. Start 4532
End 4147

Hole started March 8, 1937

Finished March 18, 1937 Geology by CEH

from	to	feet	
0	35	35	Gravel. About 40 percent limestone pebbles derived from Pennsylvanian and Permian sediments. Balance is fragments of sandstone and dense green shale.
35	60	25	Gravel. Limestone pebbles and fragments of green sandy shale. The pebbles are embedded in a reddish matrix.
60	70	10	Gravel well cemented with calcareous matrix. Lime pebbles 30 percent. Balance of fragments are light yellow sandstone and dull black shale.
70	80	10	Gravel well cemented with calcareous matrix. Mostly dull black shale. Some fragments of quartz and chert. A little black sand is present.
80	105	25	Gravel. The gravel is light colored due to the abundance of light colored rhyolite and latite fragments. About 40 percent is light yellow sandstone. The fragments are well cemented with calcareous matrix which makes a false bedrock.
105	110	5	Gravel. An assemblage of volcanic pebbles, arkose light yellow sandstone, and light green shale. Comparatively soft and loose.
110	130	20	Gravel. Same fragments as the above but apparently containing a great deal of clay.
130	135	5	Gravel (?) Apparently a lense of large boulders of light yellow and gray sandstone. The sandstone is cemented by calcite.
135	140	5	Gravel (?). Lense of light yellow sandstone. About 20 percent of the fragments are arkose.
140	145	5	Gravel (?). Fragments are mostly light yellow sandstone. Some calcareous cement.
145	160	15	Gravel. An assemblage of olive green shale, gray sandstone, and arkose fragments. The pebbles are embedded in a reddish calcareous matrix.
160	165	5	Gravel. Black and green shale 50 percent, yellow sandstone 20 percent, volcanic pebbles and arkose 30 percent.
165	170	5	Gravel. Olive green shale 50 percent, yellow sandstone 20 percent, volcanic pebbles and arkose 30 percent.
170	175	5	Gravel. Green and dull black shale 40 percent, volcanic pebbles and arkose 40 percent, light yellow sandstone 20 percent.
175	180	5	Gravel. Green and dull black shale 70 percent, volcanic pebbles and arkose 20 percent, light yellow sandstone 10 percent.
180	185	5	Gravel. Another false bedrock the fragments being well cemented with reddish calcareous matrix. Dull black and green shale 50 percent, gray sandstone 40 percent, volcanic pebbles and arkose 10 percent.

Churn Drill Hole No. 10

Cholla Claim

Co-ord: Lat 1286
Dep 2275

Elev. Start 4532
End 4147

Depth 385

from to feet

185	190	5	Gravel well cemented with reddish calcareous matrix. Olive green and dull red shales 60 percent, volcanic pebbles and arkose 30 percent, cream colored sandstone 10 percent.
190	195	5	Gravel apparently unconsolidated. Olive green shale 50 percent, gray sandstone 20 percent, volcanic pebbles and arkose 30 percent.
195	200	5	Gravel. Gray sandstone 50 percent, brown and green shale 40 percent, volcanic pebbles 10 percent.
200	205	5	Gravel. An assemblage of green and black shale, white sandstone, light colored volcanic pebbles.
205	210	5	Gravel. Gray sandstone 50 percent, dull black and green shale 40 percent, volcanic pebbles 10 percent.
210	215	5	Gravel. Black and dull red shale 60 percent, light yellow sandstone 30 percent, volcanic pebbles and arkose 10 percent.
215	217½	2½	Gravel. White sandstone 40 percent, black and olive green shale 30 percent, volcanic pebbles and arkose 30 percent.
217½	222½	5	Gravel. Volcanic pebbles mostly latite 50 percent, dull gray shale 40 percent, black shale 10 percent.
222½	230	7½	Gravel. Volcanic pebbles mostly latite 50 percent, yellow sandstone 40 percent, dull red and black shale 10 percent.
230	232½	2½	Gravel. Volcanic pebbles and arkose 60 percent, gray sandstone 40 percent. A few black fragments of basalt are present.
232½	235	2½	Gravel. The bed consists chiefly of clay with only a minor amount of coarser material. Coarse fragments are mainly soft volcanic fragments.
235	240	5	Gravel fairly well cemented by calcite. Volcanic pebbles mostly latite 50 percent, white quartzite 30 percent, green shale 20 percent.
240	242½	2½	Gravel fairly well cemented by calcite and quartz. Volcanic pebbles mostly rhyolite 30 percent, white quartzite 40 percent, bright red shale 10 percent.
242½	247½	5	Gravel apparently unconsolidated. Volcanic pebbles mostly rhyolite 30 percent, gray and white sandstone 50 percent, dull red shales 20 percent.
247½	250	2½	Gravel apparently unconsolidated. White quartzite 50 percent, red sandstone 10 percent, green shale 30, granite and latite fragments 10 percent.
250	255	5	Loose bedrock. White sandstone 50 percent, light green shale 40 percent, arkose and volcanic fragments 10 percent.
255	260	5	Loose bedrock. Light green sandstone 50 percent, light red sandy shale 40 percent, clay and arkose 10 percent.

Churn Drill Hole No. 10

Cholla Claim

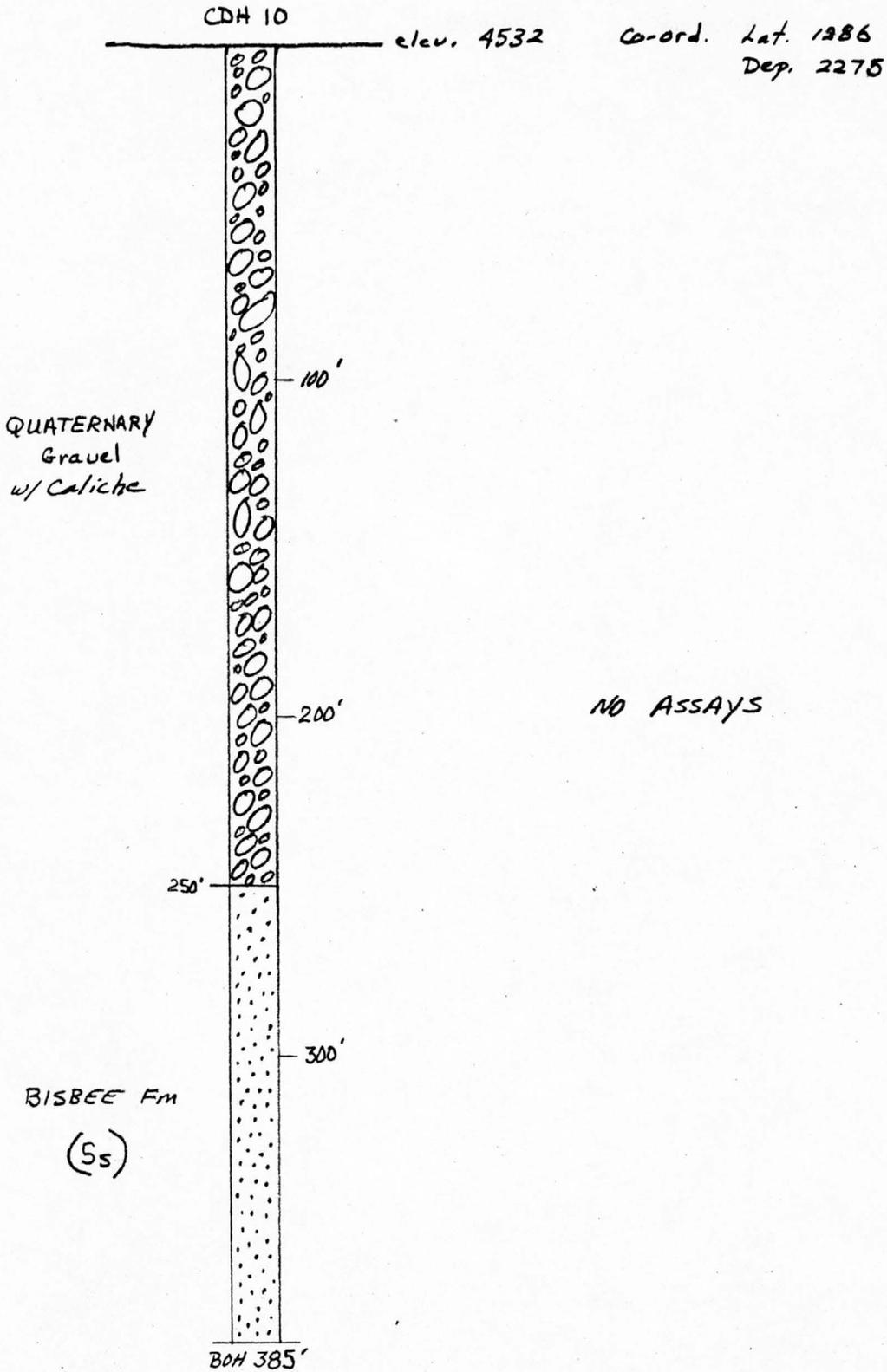
Co-ord: Lat 1286
Dep 2275

Elev. Start 4532
End 4147

Depth 385

from	to	feet	
260	265	5	Solid bedrock. Gray sandstone 70 percent, red arenaceous shale 30 percent.
265	270	5	An assemblage of white sandstone, gray sandstone, dense green shale.
270	275	5	Hard white siliceous sandstone. A little yellow sandstone.
275	277½	2½	Hard white siliceous sandstone. A few nodules of red chert.
277½	280	2½	Hard white siliceous sandstone with a little clay along the bedding.
280	355	75	Hard white siliceous sandstone. The bed is very massive and there is but little evidence of clay along the bedding.
355	360	5	The bed consists chiefly of clay with only a minor amount of coarser material. Cream colored shale preponderates. Coarser fragments are very white siliceous sandstone.
360	375	15	Cream colored shale 60 percent, very white softer sandstone 40 percent.
375	380	5	Cream colored sandstone 70 percent, cream colored shale 30 percent.
380	385	5	About equal parts of cream colored shale and cream colored sandstone.

Bit stuck at depth of 385 feet and the hole was discontinued when the tools were recovered.



DRILL HOLE NO. CDH 10
 DRILL HOLE SECTION
 TOMBSTONE COCHISE CO., AZ
 LOCATION: CHOLLA CLAIM
 DRILLED: 1937 DRAWN: E. Speer
 SCALE: 1" = 50'

Churn Drill Hole No. 11

Cholla claim

Co-ord: Lat 725
Dep 2328Elev. Start 4558
End 4056

Depth 502

Hole started March 19, 1937. Finished March 26, 1937. Geology by CEH

from	to	feet	
0	30	30	Gravel. Mostly lime pebbles.
30	50	20	Gravel. Lime pebbles and green sandy shale.
50	75	25	Gravel. Brown and green shale 70 percent, lime 30 percent.
75	80	5	Gravel. Brown and black shale, and fragments of chert. A small amount of black sand.
80	90	10	Gravel. Mostly fragments of dull brown shale.
90	100	10	Gravel. Generally lighter color due to pebbles of volcanic rock mostly rhyolite and latite. About 50 percent is gray sandstone and green sandy shale.
100	110	10	Gravel. Light colored volcanic pebbles 40 percent, green and brown shale 60 percent.
110	115	5	Gravel. Light colored volcanic pebbles 50 percent, green and brown shale 50 percent. Rather heavy black sand on false bedrock of caliche.
115	125	10	Gravel. The gravel is well cemented by calcium carbonate. Pebbles of volcanic rock, white sandstone, and green shale.
125	155	30	Gravel. Pebbles of volcanic rock, mostly latite, make 40 percent. Balance is light brown sandstone and green sandy shale.
155	185	30	Gravel. Light colored pebbles of volcanic rock 40 percent, green and gray shale 60 percent.
185	205	20	Gravel. Over 60 percent is pebbles of volcanic rock. Balance is white quartzite and shale. The gravel is apparently unconsolidated but contains a great deal of clay.
205	210	5	Gravel. Apparently a large boulder of white quartzite.
210	260	50	Gravel. Mostly pebbles of light colored volcanic rock. Balance is green grit and sandstone.
260	290	30	Gravel. Pebbles of volcanic rock, green grit, and white sandstone.
290	305	15	Loose bedrock. Mostly light pink sandstone, some pink shale. Mud is bright pink.
305	365	60	Light pink sandstone with a little pink shale. Solid bedrock apparently starts at a depth of 305 feet.
365	385	20	Mostly light pink sandstone. A little white and dark brown sandstone.
385	395	10	Light pink sandstone. Mud is a bright pink color. The material is barren.
395	420	25	Light pink sandstone. A little white and dark brown sandstone. Apparently bright pink clay along bedding. The material is barren.

Churn Drill Hole No. 11 (Cont.)

Co-ord: Lat 725
Dep 2328

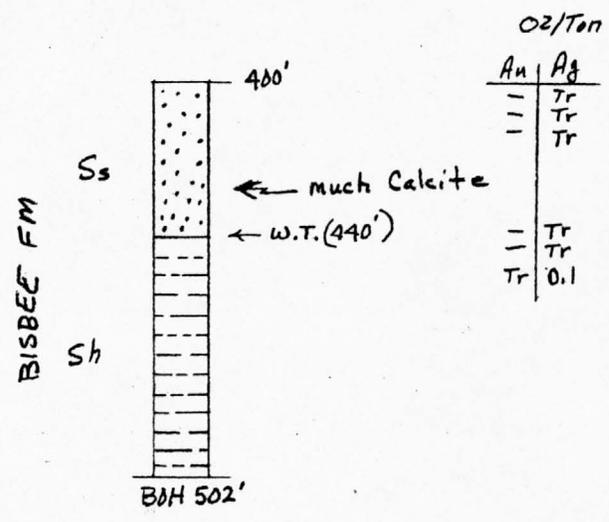
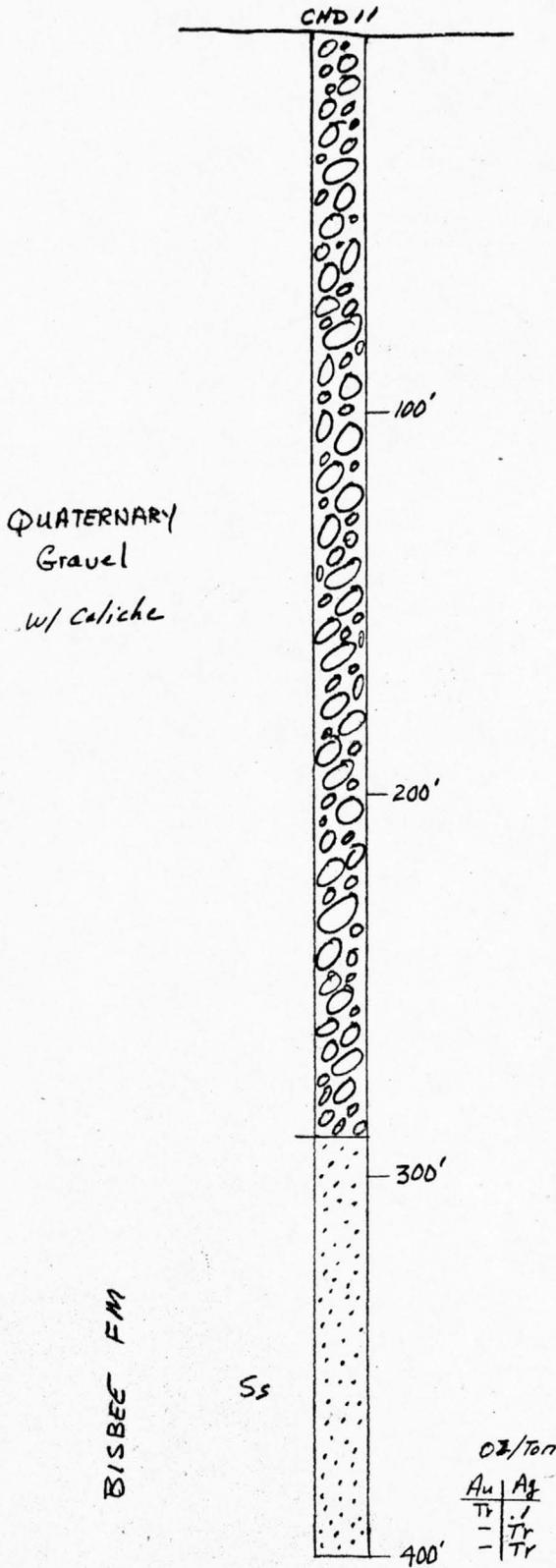
from to feet

420	422½	2½	Dull brown and light pink sandstone.
422½	430	7½	Light pink sandstone with 30 percent calcite. The calcite is thoroughly crystalline and probably formed near the water level. The calcite has apparently filled open ground in the sandstone and occurs as large 3 inch areas.
430	440	10	Thoroughly crystalline calcite 50 percent, light pink sandstone 50 percent. The water level may be at a depth of 440 feet, which would be at nearly the same elevation as the water table on the ground of the Tombstone Development Company to the south of the drill hole. The water table to the south is at an elevation of 4112 feet. The material is barren.
440	445	5	Crystalline calcite 30 percent, dull red shale 70 percent.
445	455	10	Crushed gray shale 80 percent, light pink shale 20 percent.
455	460	5	Crushed pink and gray shale.
460	465	5	Light red shale. Apparently weathered to a light red color.
465	472½	7½	Light gray sandstone.
472½	480	7½	Light red shales 80 percent, yellow and gray sandstone 20 percent.
480	490	10	Dull red and gray shale. Apparently crushed and broken. No water added below a depth of 490 feet.
490	502	12	Dull brown shale with a few dull red colors from weathering.

end of hole

Assays

from	to	feet	No.	Au	Ag
385	390	5	100	tr	0.1
390	395	5	101	-	tr
395	400	5	102	-	tr
400	405	5	103	-	tr
405	410	5	104	-	tr
410	415	5	105	-	tr
435	440	5	106	-	tr
440	445	5	107	-	tr
445	455	10	108	tr	0.1



DRILL HOLE NO. CDH 11
 DRILL HOLE SECTION
 TOMBSTONE COCHISE CO., AZ.
 LOCATION: CHOLLA CLAIM
 DRILLED: 1937 DRAWN: E. Speer 1/76
 SCALE: 1" = 50'

Churn Drill Hole No. 12

Nogales Claim

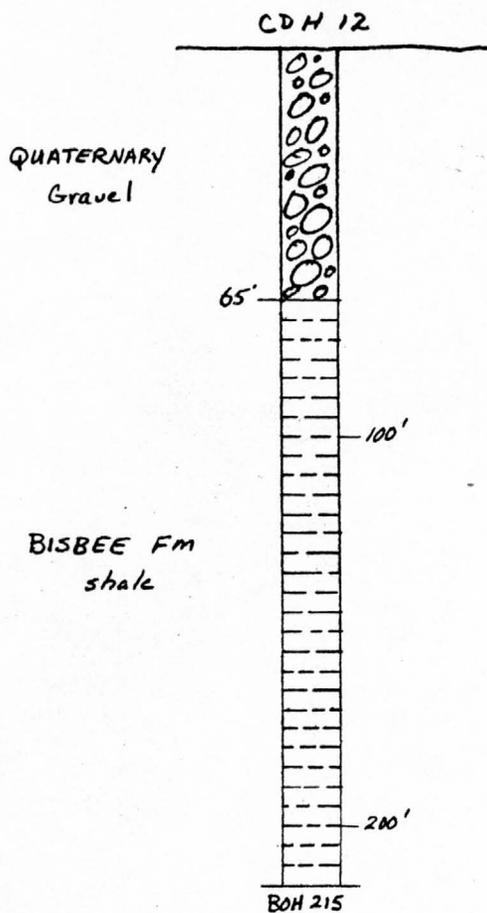
Co-ord: Lat 2101
Dep 901

Elev. Start 4502
End

Depth

Hole started March 27, 1927. Finished April 14, 1937. Geology by CEH

from	to	feet	
0	40	40	Gravel well cemented with calcareous matrix forming caliche. About 50 percent lime pebbles derived from Pennsylvania and Permian sediments. Balance of fragments are pink sandstone and dense green shale.
40	65	25	Gravel fairly well cemented with calcium carbonate. Fragments of light gray shale, cream colored sandstone, some lime. No volcanic pebbles.
65	70	5	Loose bedrock. Light red shale.
70	77½	7½	Solid bedrock. Pink compact shale and a little dull black shale.
77½	80	2½	Green and gray shale with a little red coloring along bedding planes.
80	85	5	A blue black shale bleached and stained red along small cleavage planes. A few fragments of cream colored shale.
85	95	10	Dull black shale 60 percent, light pink shale 40 percent.
95	100	5	Dull black arenaceous shale.
100	105	5	Hard gray chert 40 percent, dense black shale 60 percent. The mud is white.
105	120	15	Dull lake red shale 70 percent, dull black shale 30 percent. The mud is light pink.
120	145	25	Dense lake red shale.
145	150	5	Red, dull brown, and black shale.
150	160	10	Dull black shale 50 percent, gray shale 40 percent, gray chert 10 percent.
160	170	10	Blue flint rock 20 percent, dull hard brown shale 40 percent, gray chert 40 percent.
170	185	15	Mostly blue light brown silicified shale. A few nodules of chert.
185	195	10	Light gray shale 60 percent, dull black shale 35 percent, bright red shale 5 percent.
195	200	5	Gray chert 70 percent, dull brown chert 30 percent.
200	205	5	Dense brown silicified shale. Very white nodules of chert.
205	210	5	Dull brown silicified shale with a little lime alteration along small stringers.
210	212½	2½	Dull brown silicified shale. A few nodules of white chert.
212½	215	2½	Very hard white chert. A few fragments of olive green shale.



DRILL HOLE NO. CDH 12
DRILL HOLE SECTION
TOMBSTONE COCHISE CO., AZ
LOCATION: NOGALES CLAIM
DRILLED: 1937 DRAWN: E. Spee 4/76
SCALE 1" = 50'

288M Dr. Williams (9-30-4)

HOLE 1
S 25° W

HOLE 2
S 7° E

HOLE 3
S 10° E

HOLE 4
S 22° W

300' LEVEL

300' LEVEL

300' LEVEL

300' LEVEL

FOOTAGE	CORE				SLUDGE			
	% Fe	% Mn	% SiO ₂	% Sum	% Fe	% Mn	% SiO ₂	% Sum
127-127.0	NONE				100	17.9	77	0.20
127-128.0	83	5.4	77	0.90	69	3.7	0.20	

FOOTAGE	CORE				SLUDGE			
	% Fe	% Mn	% SiO ₂	% Sum	% Fe	% Mn	% SiO ₂	% Sum
117-120	100	2.0	0.01	1.85	50	2.7	77	1.20
120-123	100	1.9	0.02	1.20	51	1.2	0.01	6.65
123-124	100	3.8	0.01	1.95	62	9.5	0.02	2.90

FOOTAGE	CORE				SLUDGE			
	% Fe	% Mn	% SiO ₂	% Sum	% Fe	% Mn	% SiO ₂	% Sum
125-126	NONE SENT				100	6.9	77	6.70

FOOTAGE	CORE				SLUDGE			
	% Fe	% Mn	% SiO ₂	% Sum	% Fe	% Mn	% SiO ₂	% Sum
125-126	NONE SENT				50	2.7	77	0.20
127-128	NONE SENT				69	3.0	77	0.20

HOLE 5
N 13° W

HOLE 6
N 36° E

300' LEVEL

300' LEVEL

FOOTAGE	CORE				SLUDGE			
	% Fe	% Mn	% SiO ₂	% Sum	% Fe	% Mn	% SiO ₂	% Sum
11-16	NONE				100	11.1	77	1.80
16-22	100	2.1	0.05		51	6.3	77	2.80
22-23	100	9.0	0.15		63	2.3	77	2.30
24-26.5	100	8.5	0.1	1.80	40	2.7	77	1.90

FOOTAGE	CORE				SLUDGE			
	% Fe	% Mn	% SiO ₂	% Sum	% Fe	% Mn	% SiO ₂	% Sum
19-21	73	1.8	77	3.00	39	4.9	77	4.50
21-27	73	1.8	77	4.50	100	7.6	0.01	6.93
27-28.5	73	4.0	77	1.00	100	7.6	77	1.90
29-31.6	92	12.1	77	1.30	NONE			

FOOTAGE	CORE				SLUDGE			
	% Fe	% Mn	% SiO ₂	% Sum	% Fe	% Mn	% SiO ₂	% Sum
92-96	100	1.0	77	16.35				
92-93					100	8.4	0.01	6.95
96-99	100	2.0	0.01	1.80	NONE			
100-103	77	1.8	77	4.45	NONE			
107-110	80	12.9	77	2.85	NONE			

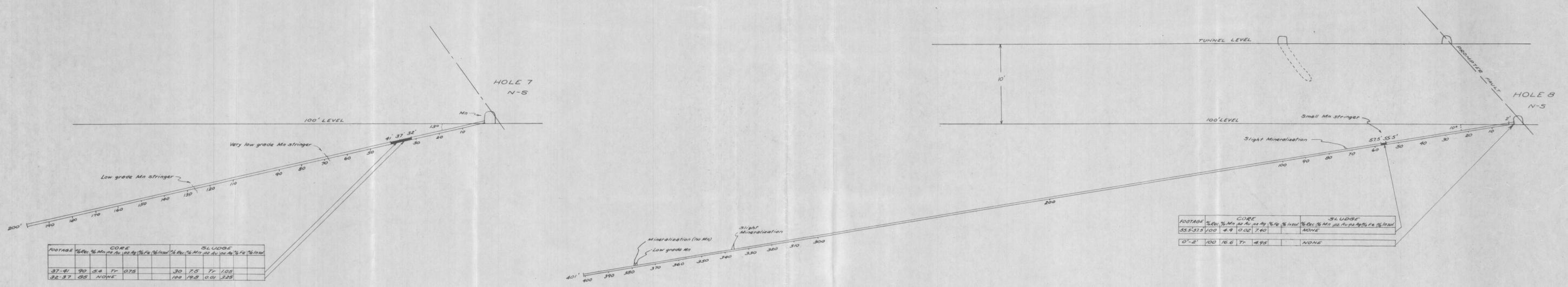
FOOTAGE	CORE				SLUDGE			
	% Fe	% Mn	% SiO ₂	% Sum	% Fe	% Mn	% SiO ₂	% Sum
106-110	100	12.8	77	3.80	40	7.8	0.01	2.20

FOOTAGE	CORE				SLUDGE			
	% Fe	% Mn	% SiO ₂	% Sum	% Fe	% Mn	% SiO ₂	% Sum
122-124	85	13.9	0.01	2.80	NONE			
124-129	85	16.3	77	2.50				
129-132	85	13.0	77	1.65				
132-133	85	10.1	0.01	2.65				
133-134	85	8.0	0.01	1.85				
134-138	100	10.4	77		NONE			

DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
PROJECT 322

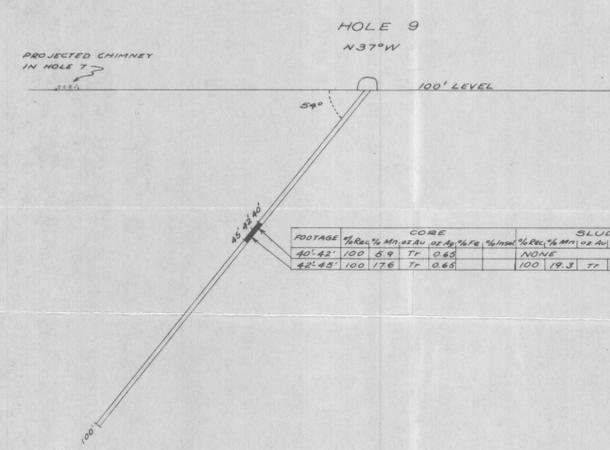
**SECTIONS AND ASSAYS
OF DIAMOND DRILL HOLES
1, 2, 3, 4, 5 & 6
OREGON MINE
TOMBSTONE, ARIZONA**

DATE: 9-30-41 SCALE: 1"=20'

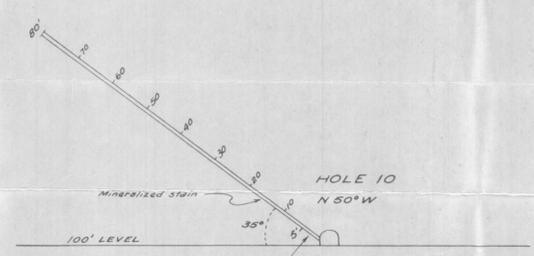


FOOTAGE	CORE					SLUDGE				
	%Fe	%Mn	oz Au	oz Ag	%InAs	%Fe	%Mn	oz Au	oz Ag	%InAs
37-41	90	3.4	Tr	0.75		30	7.5	Tr	1.05	
32-37	85	NONE				100	19.8	0.01	3.25	

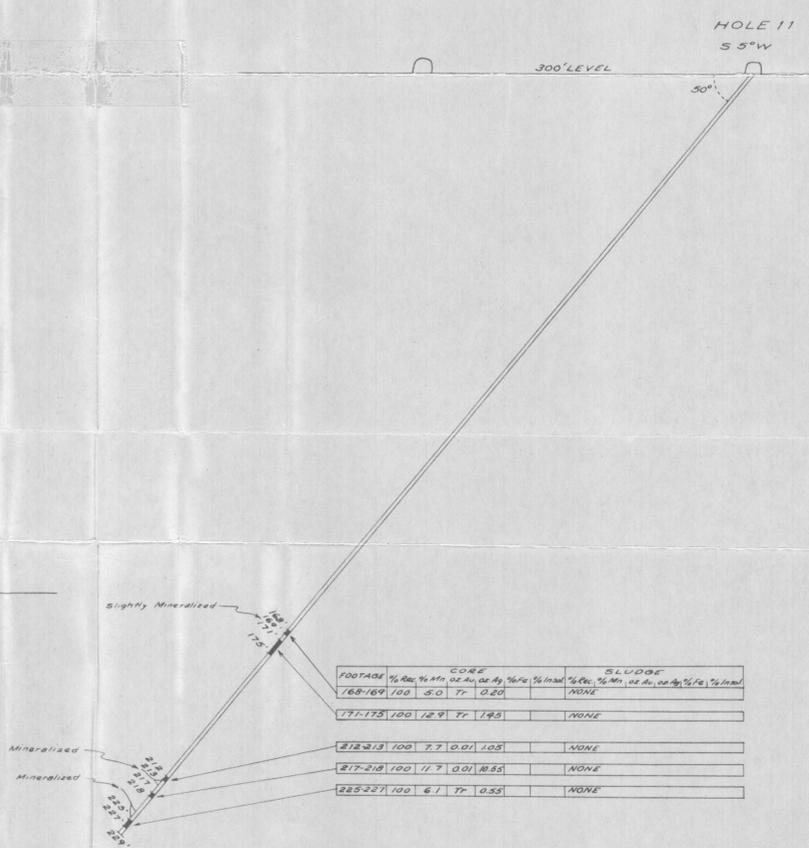
FOOTAGE	CORE					SLUDGE				
	%Fe	%Mn	oz Au	oz Ag	%InAs	%Fe	%Mn	oz Au	oz Ag	%InAs
55-57.5	100	4.9	0.02	7.40		NONE				
0'-2'	100	16.6	Tr	4.95		NONE				



FOOTAGE	CORE					SLUDGE				
	%Fe	%Mn	oz Au	oz Ag	%InAs	%Fe	%Mn	oz Au	oz Ag	%InAs
40-43	100	3.9	Tr	0.85		NONE				
42-43	100	17.6	Tr	0.85		100	19.3	Tr	0.95	



FOOTAGE	CORE					SLUDGE				
	%Fe	%Mn	oz Au	oz Ag	%InAs	%Fe	%Mn	oz Au	oz Ag	%InAs
0'-5'	80	9.2	0.01	1.70		NONE				



FOOTAGE	CORE					SLUDGE				
	%Fe	%Mn	oz Au	oz Ag	%InAs	%Fe	%Mn	oz Au	oz Ag	%InAs
168-169	100	5.0	Tr	0.20		NONE				
171-173	100	12.9	Tr	1.45		NONE				

FOOTAGE	CORE					SLUDGE				
	%Fe	%Mn	oz Au	oz Ag	%InAs	%Fe	%Mn	oz Au	oz Ag	%InAs
212-213	100	2.7	0.01	1.05		NONE				

FOOTAGE	CORE					SLUDGE				
	%Fe	%Mn	oz Au	oz Ag	%InAs	%Fe	%Mn	oz Au	oz Ag	%InAs
217-218	100	1.7	0.01	1.85		NONE				

FOOTAGE	CORE					SLUDGE				
	%Fe	%Mn	oz Au	oz Ag	%InAs	%Fe	%Mn	oz Au	oz Ag	%InAs
225-227	100	6.1	Tr	0.55		NONE				

DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
PROJECT 322
**SECTIONS AND ASSAYS
OF DIAMOND DRILL HOLES
7, 8, 9, 10 & 11
OREGON MINE
TOMBSTONE, ARIZONA**

DATE 10-27-41 SCALE 1"=20'

