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James Doyle Sell Mining Collection

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TAB

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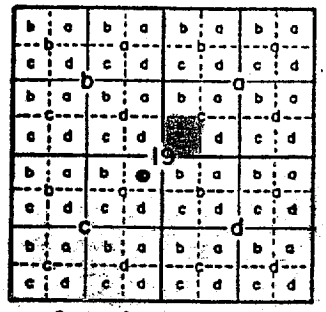
Section Location Example



Section 19caa

J.D.S.

DRILL RECORD

HOLE DESIGNATION Bonanza No. 1

T 1S R 12E

SEC 33 acc

General File Reference: Bonanza Project (Aa-14A. 14.19A)

Total Depth: 4707 ft., vertical

Postmineral thickness: 2510 ft.

Premineral bedrock:

2510-2620	Dripping Spring Quartzite
2620-3300	diabase
3300-3520	Dripping Spring Quartzite
3520-3875	diabase
3875-3900	Fault (Schlumberger logs).
3900-4707	diabase

Source of Information: Drill logs, schlumberger logs.

Drill Contractor: Signal Oilfield Services, Inc.

Company: Superior Oil Company, Minerals Division

Date: October 20 - November 10, 1971

Geologic Log: yes, see file
Also AIME Reprint 73 I 48.

Assays, Geochem: yes, see file

Core, cuttings on file: Spot cores @ 2334-2344; 2524-2542; 2688-2696; and 2992-2999.

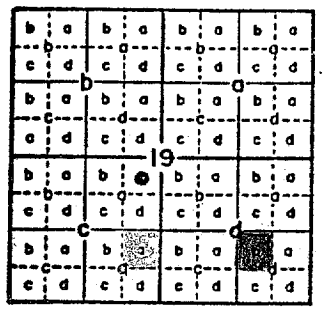
Drilling Problems, Depth to Water: Twisted off. Probable cause of swelling ground after passing fault zone.

Other:
Rotary drill hole 8 3/4" in diameter;
42 ft of 9 5/8" surface casing.
Collar elevation 2760 ft.
Pinal County, Arizona
Pioneer (Superior) Mining District.

9-12-74

Section Location Example

J.D.S.



Section 19caa

DRILL RECORD

HOLE DESIGNATION Bonanza DDH #7

T 1S R 12E

SEC 33 ddb

General File Reference: Bonanza Project (Aa-16A. 16.19A)

Total Depth: 4101 ft., vertical

Postmineral thickness: 2855 feet

Premineral bedrock:

2855-3107	diabase
3107-3188	Apache Group basalt
3188-3487	Mescal Limestone
3487-3575	Fault zone
3575-3843	Dripping Spring Quartzite
3843-4101	diabase

Source of Information: Drill Log

Drill Contractor: Longyear

Company: C.R. Sewell & Associates

Date: January 1970

Geologic Log: Yes, see file

Assays, Geochem: yes, see file

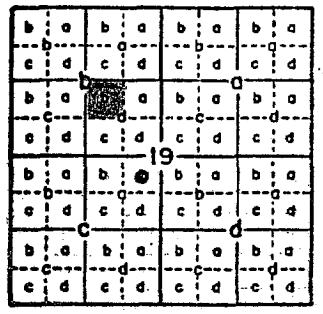
Core, cuttings on file: with owner
0-65 Rock bit
65-3525 NX core
3525-4101 BX core

Drilling Problems, Depth to Water:
Caving problem in fault zone

Other:
Collar elevation 2740 ft
Pinal County, Arizona
Pioneer (Superior) Mining District

9-12-74

Section location example



Section 19caa

J.D.S.

DRILL RECORD

HOLE DESIGNATION Bonanza No. 2

T 1S R 12E

SEC 34 bdb

General File Reference: Bonanza Project (Aa-16A. 16.19A)

Total Depth: 5940 ft., vertical

Postmineral thickness: 4016 ft.

Premineral bedrock:

4016-4130 Martin Limestone (Devonian)
4130-4230 Bolsa Quartzite (Cambrian)
4230-4250 Fault
4250-4410 ~~Abrigo Spring~~ Quartzite (PE)
4410-4750 Mescal Limestone
4750-4900 Abrigo Spring Quartzite
4900-4950 Feldspar Porphyry dike (?) (Lara.)
4950-5520 Diabase
5520-5580 Abrigo Spring
5580-5940 diabase

Source of Information: Drill Logs, Schlumberger logs.

Drill Contractor: Signal Oilfield Services, Inc.

Company: Superior Oil Company, Minerals Division

Date: Dec. 4, 1971 - Jan. 3, 1972.

Geologic Log: yes, see file
Also, AIME Reprint 73 I48

Assays, Geochem: yes, see file

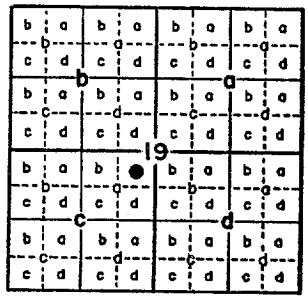
Core, cuttings on file: Spot core at 4190-4200 feet.

Drilling Problems, Depth to Water:

Other: Rotary drill hole 7 7/8" diameter
31 ft of 9 5/8" surface casing
Collar elevation 2880 ft.
Pinal County, Arizona
Pioneer (Superior) Mining District.

9-12-74

Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION MC-1 & MC-2

T 1 S R 31 E

SEC NW 1/4, UNSURV. (SEC'S 4 & 5 ?)

General File Reference: STACY - BLUE RIVER AREA (CONOCO - MAPLE CANYON PROJECT) SEE FILE Aa-7B.0.0

Total Depth: MC-1 = 3072.5, MC-2 = 3475

Postmineral thickness: ALL IN MID(?) TERTIARY VOLCANIC FLOWS

Premineral bedrock: NO PRE TERTIARY ROCK PENETRATED

Source of Information: ED & GEORGE STACY, ALSO LOGGED ALL CORE (SEE REPT).

Drill Contractor: JOY(?)

Company: CONOCO

Date: 1976 THROUGH 1978 ?

Geologic Log: TERTIARY VOLCANIC FLOWS & DIKES THROUGHOUT, SEE FILE MEMO W/ ATTACHED SCAN LOGS.

Assays, Geochem: NONE FILED, MOST < 500 PPM Cu, 20 PPM Mo.

Core, cuttings on file: COMPLETE SKELETONIZED CORE SPECIMENS FROM BOTH HOLES IN STORAGE AT VENTURA WAREHOUSE.

Drilling Problems, Depth to Water: NOT KNOWN

Other: _____

S. R. DAVIS
2-1-79

9-12-74

TAB

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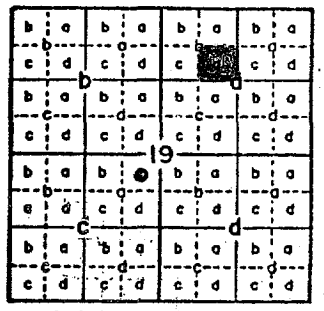
Section Location Example



Section 19caa

J.D.S.

DRILL RECORD

HOLE DESIGNATION Bonanza DDH #6

T 2S R 12E

SEC 6 abd

General File Reference: Bonanza Project (Aa-16A.16.19A)

Total Depth: 2005 ft (vertical).

Postmineral thickness: 1061 ft.

Premineral bedrock:
1061-1552 diabase
1552-1635 Dripping Spring Quartzite
1635-1706 diabase
1706-2005 Dripping Spring Quartzite

Source of Information: Drill Log.

Drill Contractor: Longyear

Company: C.R. Sewell and associates

Date: Start October 23, 1969

Geologic Log: yes, see file.

Assays, Geochem: yes, see file

Core, cuttings on file: with owner
Surface - 5 ft. Rock Bit
5 - 2005 ft NX Core

Drilling Problems, Depth to Water: —

Other:
Collar elevation 2525 feet
Pinal County, Arizona
Pioneer (Superior) Mining District.

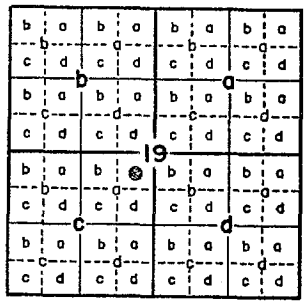
9-12-74

TAB

3

J.R.K.

Section Location Example



Section 19caa

Competitor drilling

DRILL RECORD

Hole Designation _____

T 3S R 8E

SEC 35 d

General File Reference: Pinal Co., Pediment Program, Cholla Butte

Total Depth: ?

Postmineral thickness: ?

Premineral bedrock: ?

Source of Information:

Drill Contractor: Joy ddh

Company: ?

Date: Dec 74

Geologic Log: –

Assays, Geochem:

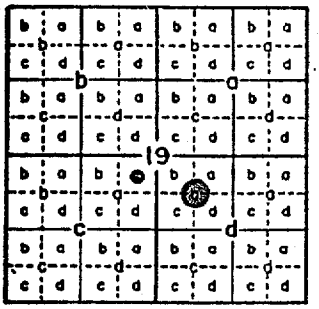
Core, cuttings on file:

Drilling Problems, Depth to Water:

Other: Competitor unknown, ~~mobile~~ trailer at rig with guard dog attached.

9-12-74

Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION Humble State 14-1

T 3S R 11W

SEC 25 db (center).

20 miles NW of Sentinel

General File Reference: Yuma County General, Aa-25A.0.0

Total Depth: 2,653 ft.

Postmineral thickness:
2550 ~~2,588~~

Premineral bedrock:
Granite Gneiss

Source of Information:
Ariz. Oil & Gas Comm.

Drill Contractor:
Loffland Drilling Co

Company:
Humble Oil & Refining Co.

Date:
Spudded 7-31-72
Completed 8-10-72

Geologic Log:
Operators log.

0-322	Sand & gravel
322-1,333	Volcanics, red & brown.
1,333-2,325	Volcanics with quartz
2,325-2588	Volcanics & granite
2588-2653	Granite (gneiss).

Assays, Geochem:
None.

Core, cuttings on file:
Prob. on file with OGC.

Drilling Problems, Depth to Water:

Other:
Collar Elevation 783 feet
Yuma County, Arizona
Other Logs. Gamma Ray - BHC Sonic, Induction, Comp-Sim Density, Neutron Porosity.

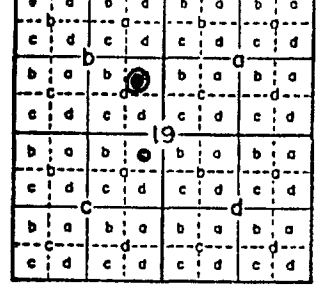
9-12-74

JMS

Puio Aa 16.0.0
Puial Aa-16A 0.0
yuuc Aa - 25A.00

TAB

4



Section 19caa

DRILL RECORD

HOLE DESIGNATION Oil Well Roosevelt

T 4 N R 12 E

SEC 4

General File Reference:

Total Depth: ± 3400'

Postmineral thickness: Aluv. 0-2060'

Premineral bedrock: Diabase 2060'-3315'
Cgl. 3315'-3400' TD

Source of Information:

Drill Contractor: Bob James Drilling

Company: Sanches-O'Brian Oil and Gas Corp.

Date: 3-14-83 To 4-23-83

Geologic Log: None

Assays, Geochem: None

Core, cuttings on file: None

Drilling Problems, Depth to Water: ? Drilling rate: 3-4 ft/Hr from diabase contact @ 2060' to T.D.

Other:
County: Gila - Approx. 3 miles N 25°E of Roosevelt Dam.
Collar Elevation: ± 2200'

4-26-83

TCB

9-12-74

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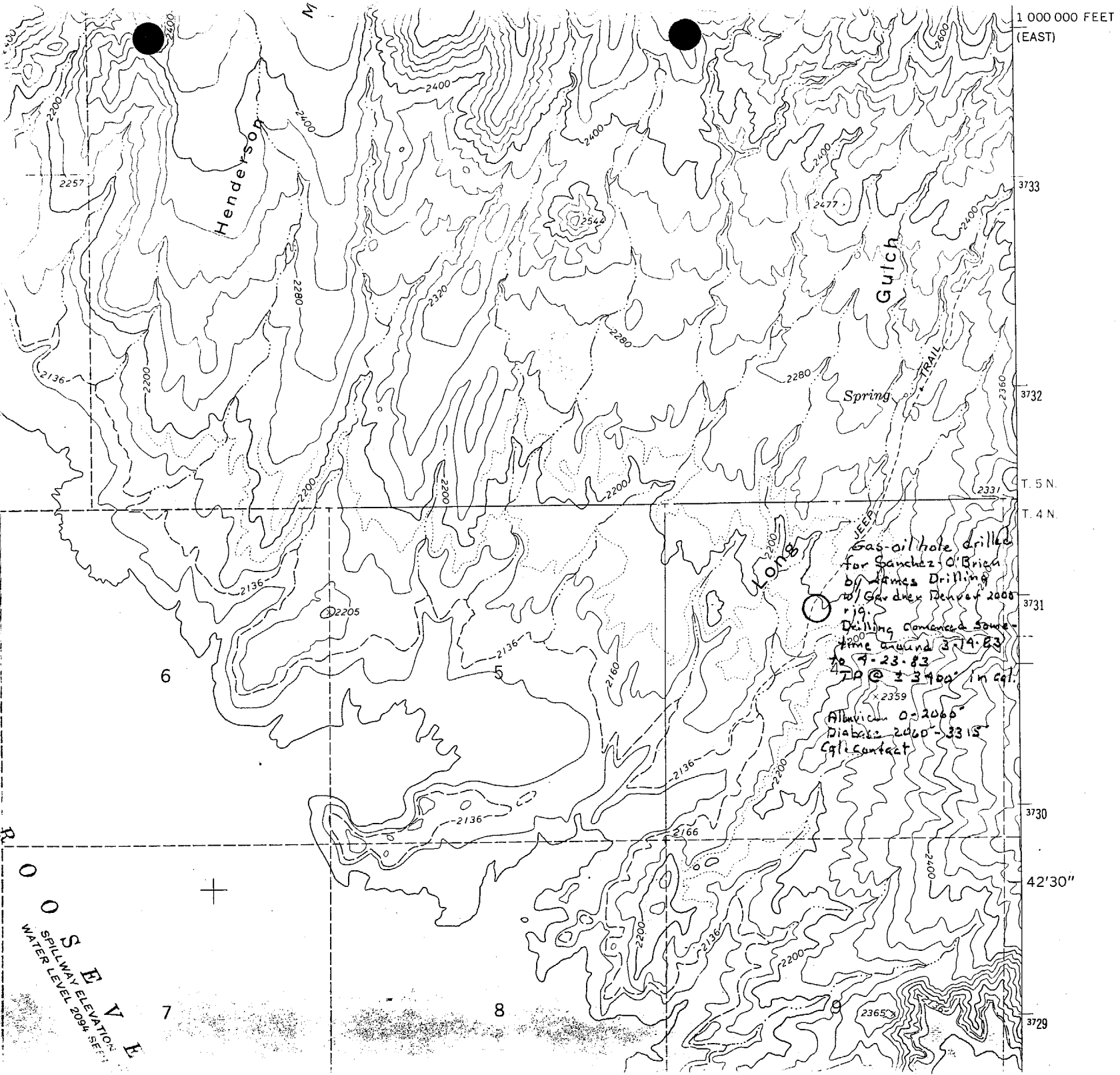
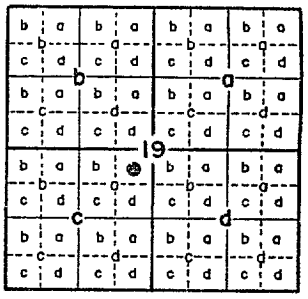

1 000 000 FEET
(EAST)
3733
3732
T. 5 N.
T. 4 N.
3731
3730
42'30"
3729
Henderson
Gutch
Spring
TRAIL
JEEP
Long
Gas-oil hole drilled
for Sanchez-O'Brien
by James Drilling
w/ Gardner Denver 2000
rig.
Drilling commenced some-
time around 3-19-83
to 4-23-83
TD @ ± 3400' in cgl.
Alluvium 0-2060'
Diabase 2060'-3315'
Cgl. contact
6
5
7
8
9
R
O O S E V E
SPILLWAY ELEVATION
WATER LEVEL 2094 SEET

J.R.K.

Section Location Example



Section 19caa

Composite drill,

DRILL RECORD

Hole Designation 8 holes

T 4S R 8E

SEC 26 25 3536

General File Reference: Pinal County Pediment Program Chulla Butte

Total Depth: unknown, one hole +1200 to water

Postmineral thickness: ?

Premineral bedrock: ?

Source of Information: Field checked

Drill Contractor: Joy ddh, drilling terminated 9 Dec 74

Company: Conoco

Date: 73-74 - eight holes drilled, only one of them ddh, the rest rdy

Geologic Log:

Assays, Geochem:

Core, cuttings on file:

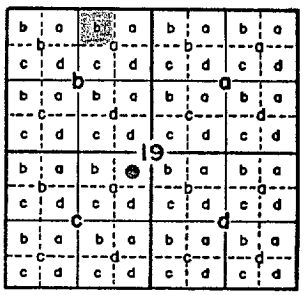
Drilling Problems, Depth to Water:

Other: map in file shows drill holes with minimum depths as determined by dropping pebbles down the hole

JRK

9-12-74

Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION PR-2

T 4 S R 10 E

SEC 16 bab

General File Reference: PICTURE ROCK-PEDIMENT DRILL PROJECT Aa-16 A.6.16 A

Total Depth: 1496'

Postmineral thickness: 1496'

Premineral bedrock: NONE

Source of Information: ASARCO-REPORT

Drill Contractor: HUNTER-SHELTON DRILLING CO.

Company: ASARCO

Date: DEC 24, 1974 to JAN 16, 1975 (SERIES)

Geologic Log: 0-60' Qal
60'-1496' Tc - OLDER CONGLOMERATES - PANTANO(?)

Assays, Geochem: Cu AVE ±65 PPM, HIGH 85 PPM
Mo AVE ±3 PPM, HIGH 6 PPM

Core, cuttings on file: SPOT CORE & SELECT CUTTINGS, SEE FILE

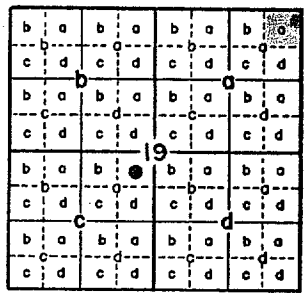
Drilling Problems, Depth to Water: NO DRILLING PROBLEMS, WATER EST@ ±300'

Other: SEE FILES FOR LOGS & ASSAYS
PINAL COUNTY, ARIZONA
FLORENCE MINING DISTRICT

S.R. Davis
(9-29-75)

9-12-74

Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION PR-1

T 4 S R 10 E

SEC 32 aaa

General File Reference: PEDIMENT DRILL PROJECT – PICTURE ROCK Aa-16 A.6.16A

Total Depth: 1496'

Postmineral thickness: 1496'

Premineral bedrock: NONE

Source of Information: ASARCO REPORT

Drill Contractor: HUNTER-SHELTON DRILLING COMPANY

Company: ASARCO SW EXPL. DEPT.

Date: DECEMBER 24, 1974 TO JANUARY 16, 1975 (SERIES)

Geologic Log:
0-40' Qal
40'-740' QT cgl.
740'-890' Tv - SPECKLED AN-BAS FLOW
890'-1496' Tc - OLDER CONGLOMERATES (PANTANO?)

Assays, Geochem: Cu AVE ± 35 PPM, HIGH 85 PPM

Mo AVE ± 3 PPM, HIGH 4 PPM

Core, cuttings on file: SPOT CORE & SELECTED CUTTINGS STORED, SEE FILE.

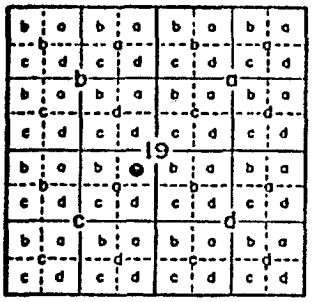
Drilling Problems, Depth to Water: CONSIDERABLE LOST CIRCULATION, TOP OF WATER TABLE NOT DEFINITE, ESTIMATED @ ± 300'

Other: SEE FILES FOR LOGS & ASSAYS
PINAL COUNTY, ARIZONA
FLORENCE MINING DISTRICT

S.R. Davis
(9-29-75)

9-12-74

Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION Red Hills

T 4S R 11E

SEC 34-33

General File Reference: Red Hills

Total Depth:

Postmineral thickness: see files for logs, data etc

Premineral bedrock:

Source of Information:

Drill Contractor:

Company: Phelps Dodge, Kaiser, & Red Hills Mining

Date:

Geologic Log: ✓

Assays, Geochem: ✓

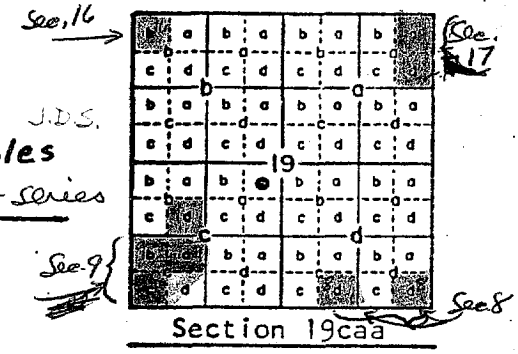
Core, cuttings on file: ✓

Drilling Problems, Depth to Water:

Other:

9-12-74

Section Location Example



J.D.S.

DRILL RECORD 9 holes

HOLE DESIGNATION Minbanco J-series

T 4S R 13E

SEC parts of 8, 9, 16, 17.

General File Reference: Kelvin Prospect (Aa-16A.18.11

Total Depth: ~~[illegible]~~ Geological Report of the Kelvin Prospect, Pinal County for Tipperary Resources Corporation June 1970

Postmineral thickness:

Premineral bedrock:

Source of Information: by C.R. Williams & William Zelinski

Drill Contractor:

Company:

Date: 9 holes ~~rotary~~ rotary-air-mud by Wholley Drilling Company. Sept 11, 1968 – Feb. 27, 1969

Geologic Log:

J-1, 530 ft. Sec 9 ccb
J-2, 582 ft. Sec. 9 cbd
J-3, 1165 ft. Sec. 8 ddd
J-4, 426 ft. Sec 16 bbb
J-5 – ~~[illegible]~~ 800 Sec. 9 cca (No assay sheet)
J-6, 1244 ft. Sec. 17 aad
J-7, 581 ft. Sec. 8 dcd
J-8, 972 ft. Sec. 9 ccc
J-9, 2320 ft. Sec. 17 aaa

Assays, Geochem:

Core, cuttings on file:

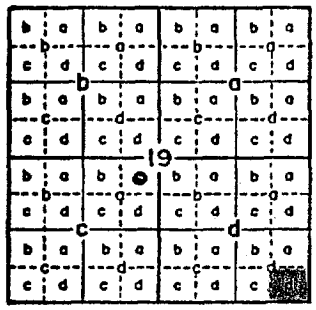
Drilling Problems, Depth to Water:

Other:

See file for logs and assays.
Pinal County, Arizona
Kelvin Mining District.

9-12-74

J.D.S.



Section 19caa

DRILL RECORD

HOLE DESIGNATION T-1 (CCH-1)

T 4S R 13E

SEC 8 ddd

General File Reference: Kelvin Prospect (Aa-16A. 18.11)

Total Depth: 1400 ft.

Postmineral thickness: 35 ft.

Premineral bedrock:
35-144 Pt granite
144-153 diabase
153-235 pt granite
235-918 Tertiary monzonite
918-1400 pt granite

Source of Information:
Xerox log, report.

Drill Contractor:
Eberberg Exploration Inc.
Con-cor reverse circulation

Company:
Tipperary Resource Corp.

Date:
March 1970

Geologic Log: Yes, See file

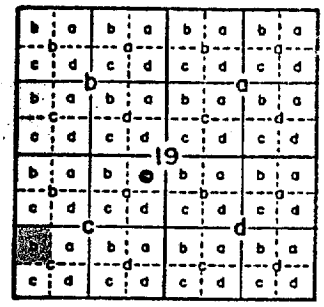
Assays, Geochem: few in log, See file
135'-144' with 0.6% Cu and 0.05% Mo
720'-785' with 0.2% Cu and 0.1% Mo.

Core, cuttings on file: ——

Drilling Problems, Depth to Water:

Other:
6 5/8" surface casing to 52 ft.
~~Rotary~~ drill hole. (Con-core)
Collar elevation ≈ 2170 ft.
Pinal County, Arizona
Kelvin Mining District
Note: See Cyprus hole KE-1 for update on age date.

9-12-74



DRILL RECORD

HOLE DESIGNATION T-2 (CCH-2)

T 4S R 13E

SEC 9 ccb

General File Reference: Kelvin Prospect (Aa-16A.18.11)

Total Depth: 1625 ft. (vertical).

Postmineral thickness: 32 ft.

Premineral bedrock:

32-49 pt granite
49-62 diabase
62-110 pt granite
110-118 diabase
118-234 pt granite
234-237 diabase
237-647 pt granite
647-650 Laramide diorite
650-678 pt granite
678-703 Laramide monzonite
703-765 Laramide diorite
765-880 pt granite
880-885 Laramide diorite
885-970 pt granite
970-981 diabase
981-985 diorite porphyry ~~dio~~
985-996 pt granite
996-1010 gtz diorite porphyry
1010-1177 pt granite
1177-1183 diorite porphyry
1183-1252 pt granite
1252-1283 diabase
1283-1376 pt granite
1376-1391 diabase
1391-1625 pt granite

Source of Information: Xerox log, report.

Drill Contractor: Ellenburg Exploration Inc

Company: Tipperary Resource Corp

Date: March 1970

Geologic Log: yes, See file

Assays, Geochem: yes, see file

Core, cuttings on file: ___

Drilling Problems, Depth to Water:

Other:

~~Rotary~~ ~~Chum~~ Well hole. (Con-core)

Collar elevation: 2080 ft.

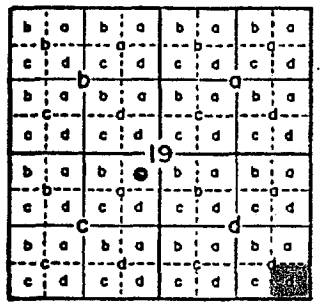
Pinal County, Arizona

Kelvin Mining District.

Note: See ~~hole~~ Cyprus hole KE-1 for update on age date.

9-12-74

Section Location Example



DRILL RECORD

HOLE DESIGNATION K-6

T 4S R 13E

SEC 9 ddd

General File Reference: Kelvin-Riverside Project (Aa-14A. 18.11)

Total Depth: 500 ft.
NC, vertical

Postmineral thickness:
None

Premineral bedrock: 0-500 pt quartz monzonite

Source of Information:
Drill Log

Drill Contractor:
Joy Mfg Co.

Company:
Kerr-McGee Corp

Date:
June 22 - July 6, 1973

Geologic Log:
Yes, see file

Assays, Geochem:
yes, see file

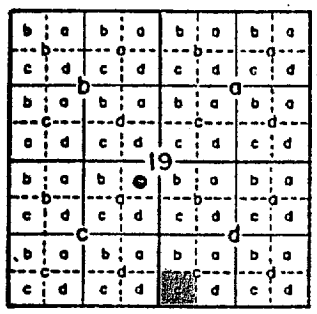
Core, cuttings on file:

Drilling Problems, Depth to Water:

Other:
Collar elevation 2220 ft
Riverside-Kelvin Mining District
Pinal County, Arizona

9-12-74

Section Location Example



Section 19caa

J.D.S.

DRILL RECORD

HOLE DESIGNATION K-4

T 4S R 13E

SEC 10 dcc

General File Reference: Kelvin-Riverside Project (Aa-16A. 18-11)

Total Depth: 500 ft

Postmineral thickness: ~~21 ft~~ NC Vertical

Premineral bedrock: none

0-155 Laramide(?) q. monzonite breccia with breccia fault & porphyritic dike lost 17 ft.

155-378 pt quartz monzonite with faults.

378-475 diabase

475-500 pt quartz monzonite

Source of Information: Drill Log

Drill Contractor: Joy Mfg Co.

Company: Ken-McGee Corp.

Date: May 9, 1973

Geologic Log: See file

Assays, Geochem: See file

Core, cuttings on file:

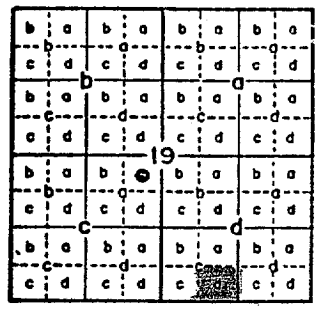
Drilling Problems, Depth to Water:

Other:

Collar elevation 1960'
Riverside-Kelvin Mining District
Pinal County, Arizona

9-12-74

Section Location Example



Section 19caa

J.D.S.

DRILL RECORD

HOLE DESIGNATION K-1

T 4S R 13E

SEC 11 dcd

General File Reference: Kelvin-Riverside Project (Aa-16A.18.11)

Total Depth: 1500 ft.

NC, vertical.

Postmineral thickness: None

Premineral bedrock:

0 - 780 ~~Granid~~ PЄ quartz monzonite with few diabase dikes.

780-838 Fault breccia

838-1500 ~~Granid~~ PЄ quartz monzonite to granite with few diabase dikes.

Source of Information: Drill Log

Drill Contractor: Joy Mfg.

Company: Kerr-McGee Corp.

Date: July 1, ~~1972~~ - Sept. 11, 1972

Geologic Log: yes, See file

Assays, Geochem: yes, see file

800-1,030' with 0.26% Cu.

Core, cuttings on file:

Drilling Problems, Depth to Water:

Other:

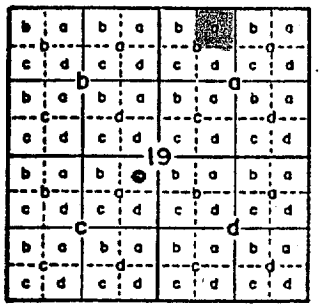
Collar Elevation 2100'

Riverside - Kelvin Mining District.

Pinal County, Arizona.

9-12-74

Section Location Example



Section 19caa

J.D.S.

DRILL RECORD

HOLE DESIGNATION K-2

T 4S R 13E

SEC 14aba

General File Reference: Kelvin-Riverside Project (Aa-16A.18.11)

Total Depth: 1377 ft.
NX, vertical

Postmineral thickness: ~~30 ft.~~
none

Premineral bedrock:

0-331 pC quartz monzonite cut by numerous faults.

331-491 diabase

491-1377 pC quartz monzonite, minor diabase, brecciated.

Source of Information:
Drill log

Drill Contractor:
Joy Mfg.

Company:
Kerr-McGee Corp.

Date:
Feb 24 - March 28, 1973

Geologic Log: yes, See file

Assays, Geochem: yes, See file

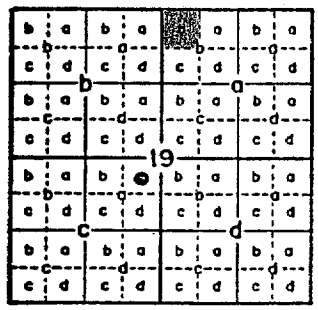
Core, cuttings on file:

Drilling Problems, Depth to Water:

Other:
Collar elevation 2160 ft.
Riverside-Kelvin Mining District
Pinal County, Arizona.

9-12-74

Section Location Example



Section 19caa

J.D.S.

DRILL RECORD

HOLE DESIGNATION K-3

T 4S R 13E

SEC 14abb

General File Reference: Kelvin-Riverside Project (Aa-16A. 18-11)

Total Depth: 1386 ft.

Postmineral thickness: NC, vertical ~~ft~~

Premineral bedrock: none ~~ft.~~

0-350. pE quartz monzonite
350-398 Fault zone
398-1215 pE quartz monzonite with minor diabase
1215-1236 Shear zone.
1236-1386 pE quartz monzonite

Source of information: Drill Log.

Drill Contractor: Joy Mfg.

Company: Kerr-McGee

Date: March 30 - May 3, 1973

Geologic Log: Yes, See files

Assays, Geochem: Yes, see files
630'-780' with 0.223 % Cu., partially oxidized.

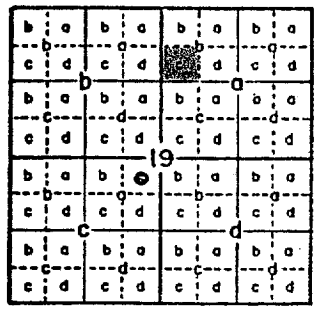
Core, cuttings on file:

Drilling Problems, Depth to Water:

Other:
Collar elevation
Riverside-Kelvin Mining District
Pinal County, Arizona

9-12-74

Section Location Example



DRILL RECORD

HOLE DESIGNATION K-5

T 4S R 13E

SEC 15abc

General File Reference: Kelvin-Riverside Project (Aa-16A. 18-11)

Total Depth: 1497 ft

Postmineral thickness: ~~21 ft.~~ NC, vertical

Premineral bedrock: none

0-1497' pt qtz monzonite; highly brecciated and shattered

Source of Information:
Drill Log

Drill Contractor:
Joy Mfg Co.

Company:
Kerr-McGee Corp

Date:
May 14 - June 13, 1973

Geologic Log:
yes, see file

Assays, Geochem:
yes, see file
100% oxidized with no sulfides to total depth.

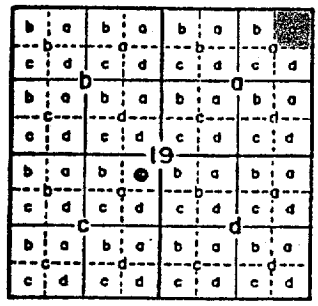
Core, cuttings on file:

Drilling Problems, Depth to Water:

Other:
Collar Elevation 2010 ft
Riverside-Kelvin Mining District
Pinal County, Arizona

9-12-74

Section Location Example



Section 19caa

J.D.S.

DRILL RECORD

HOLE DESIGNATION KE-1

T 4S R 13E

SEC 17 aaa

General File Reference: Kelvin Prospect (Aa-16 A & 18.11)

Total Depth: 2500' bearing N0°E, inclined -60° N.

Postmineral thickness: 10 ft.

Premineral bedrock:
See Summary log for detail.

10-550 pE granite & diabase
550-690 Laramide Grayback gd.
690-720 Fissure vein.
720-1540 Laramide Grayback gd.
1540-2500 pE granite & diabase

Source of Information:
Summary Log, Report

Drill Contractor:
Joy Manufacturing Co.

Company:
Cyprus Mines Corporation

Date:
Feb. 5 - May 2, 1972

Geologic Log:
Summary log, see files

Assays, Geochem:
Summary log, see files

Core, cuttings on file:

Drilling Problems, Depth to Water:
Twisted off 1254 feet, unable to recover ~~Wedged off~~ ~~Wedged~~ Wedged new hole.

Other:
Surface - 1254 with NX wireline
1254 - 2500 with BX wireline
Collar elevation 2195 ft.
Pinal County, Arizona
Kelvin Mining District

9-12-74

TAB

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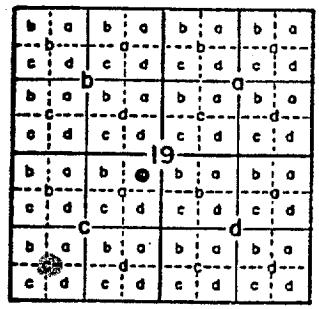
Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION Western Oil Fields, Inc. No. 1 Florence

T 5 S R 10 E

SEC 31 cc (center)

General File Reference: Pinal County General Aa-16A-0-0

Total Depth: 5142 ft.

Postmineral thickness: 3310 ft.

Premineral bedrock: Diorite (bx)

Source of Information: Ariz. Oil & Gas Comm.

Drill Contractor:

Company: Western Oil Fields, Inc.

Date: 3-6-53 thru 5-27-53

Geologic Log: Operators logs. (See file for excerpts).
Oil & Gas Comm File #15

Assays, Geochem:

Core, cuttings on file: On file w/ Az Bur. Mines #260

Drilling Problems, Depth to Water:

Other:
County: Pinal County, Arizona
Collar Elevation: ~~[illegible]~~ ± 1665 GL.

9-12-74

WESTERN OIL FIELDS, INC.-- NO. 1 FLORENCE PINAL COUNTY, ARIZONA

Section 31 Center SW SW, T-5S, R-10E

Driller's Log

DATE	DEPTHS	FORMATION	REMARKS
3-6-53			Spudded 8:00 a.m.
	0-140	Surface sand	
	140-313	Water sand	
	313-376	Red beds	
3-7-53	376-402	Red beds	Run 385'-10 3/4" casing. Cemented at 397' w/100 sacks. Plug down at 9:00 p.m.
3-8-53			W.O.C.
3-9-53	402-524	Sand and gravel	9 7/8" bit. Drilled plug at 9:00 p.m. re-cem. surface w/15 sax.
3-10-53	524-610	Sand and gravel	Pulled 10 3/4" csg. and drill ahead.
3-11-53	610-761	Sand and gravel	15" bit.
	761-785	Red beds	
	785-795	Gravel	
3-12-53			W.O. 10 3/4" csg.
3-13-53			W.O. 10 3/4" csg.
3-14-53			Run 808'-10 3/4"-32.75# csg. cem. at 795' w/200 sacks. Plug down at 10:30 a.m.
3-15-53			W.O.C.
3-16-53			W.O.C.
3-17-53	795-925	Sand and gravel	9 7/8" bit.
3-18-53	925-946	Sandy lime	
	946-1115	Sand and shale	
3-19-53	1115-1263	Sand and shale	
3-20-53	1263-1297	Sand and shale	
	1297-1323	Sand	
	1323-1378	Sand and shale	
3-21-53	1378-1433	Sand and lime	
	1433-1520	Sand and shale	
3-22-53	1520-1674	Sand and shale	
3-23-53	1674-1878	Sand and shale	
3-24-53	1878-1948	Sand and shale	
3-25-53	1948-1995	Sand and shale	
3-26-53	1995-2117	See Geological Report 1995 to T.D.	Fishing for D.P.
3-27-53			Fishing
3-28-53	2117-2220		
3-29-53	2220-2331		
3-30-53	2331-2458		
3-31-53	2458-2578		
4-1-53	2578-2678		
4-2-53	2678-2743		
4-3-53	2743-2835		
4-4-53	2835-2936		
4-5-53	2930-3044		
4-6-53	3044-3125		
4-7-53	3125-3221		
4-8-53	3221-3283		
4-9-53	3283-3298		Twisted off-fishing
4-10-53			Fishing
4-11-53	3298-3345		Red. fish.
4-12-53	3345-3408		
4-13-53	3408-3456		Reamed 120' to bottom
4-14-53	3456-3490		
4-15-53	3490-3533		
4-16-53	3533-3570		
4-17-53	3570-3710		
4-18-53	3710-3817		
4-19-53	3817-3970		
4-20-53	3970-4096		
4-21-53	4096-4166		

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DATE	DEPTHS	FORMATION	REMARKS
4-22-53	4166-4235		
4-23-53	4235-4313		
4-24-53	4313-4383		
4-25-53	4383-4438		
4-26-53	4438-4506		
4-27-53	4506-4562		
4-28-53	4562-4583		Down 8 hrs. straighten kelley
4-29-53	4583-4609		Down 8 hrs. straighten kelley
4-30-53	4609-4692		
5-1-53	4692-4734		
5-2-53	4734-4778		
5-3-53	4778-4835		
5-4-53	4835-4889		
5-5-53	4889-4926		
5-6-53	4926-4942		Down 8 hrs. lost cones
5-7-53	4942-4942		Fished out cones-reaming
5-8-53	4942-4971		
5-9-53	4971-5003		
5-10-53	5003-5040		
5-11-53	5040-5071		
5-12-53	5071-5090		
5-13-53	5090-5109		
5-14-53	5109-5133		
5-15-53	5132-5142		
5-16-53 to 5-19-53			W.O. Orders
5-19-53 to 5-27-53			Dismantling rig

GEOLOGICAL REPORT OF FORMATIONS PENETRATED

1995-2005 Sandstone 100%, arkosic, gray, medium to coarse grained, medium soft, loosely consolidated, good intergranular porosity; no odor, no stain, no fluorescence, no carbon tetrachloride cut;

2005-2050 Sandstone 100%, arkosic, gray, medium to coarse grained, medium soft, loosely consolidated, angular, red hematite stain, good intergranular porosity; no odor, no stain, no fluorescence, no carbon tetrachloride cut.

2050-2115 Sandstone 100%, gray, arkosic, white and pink, medium to very coarse grained feldspar and some quartz, good intergranular porosity; no odor, no stain, no fluorescence, no cut.

2115-2135 Sandstone 100%, arkose, white, gray to pink, very coarse grain feldspar, loosely to unconsolidated, angular, good intergranular porosity; no odor, no stain, no fluorescence, no cut.

2135-2155 Sandstone 100%, arkose, white to gray, fine to coarse grained, medium soft, loosely consolidated, angular, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

2155-2160 Sandstone 100%, arkose, white to gray to red, fine to coarse grained, medium soft, loosely consolidated, angular, copper and iron staining predominant, traces of free copper imbedded in calcite; no odor, no fluorescence, no carbon tetrachloride cut.

2160-2180 Sandstone 100%, arkose, white to gray, fine to coarse grained, medium soft, loosely consolidated, angular, copper and iron staining predominant, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

2180-2275 Sandstone 100%, arkose, clear, white, gray with pink less common, fine to coarse grained, loosely consolidated, angular, probably fairly good intergranular porosity; no odor, no stain, no fluorescence, no cut.

2275-2325 Sandstone 100%, arkose, white to gray, medium to coarse grained, medium soft, angular, loosely consolidated, no odor, no stain, no fluorescence, no cut.

2325-2375 Sandstone 100%, arkose, white, gray to pink, hard, coarse grain, loosely to unconsolidated, no odor, no stain, no fluorescence, no cut.

2375-2550 Sandstone 100%, arkose, white to gray, medium to coarse grained, loosely consolidated, angular, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

2550-2660 Sandstone 100%, arkose, gray, white, pink, coarse grained, angular, loosely consolidated, no visible but probable porosity; no odor, no stain, no fluorescence, no cut.

2660-2665 Sandstone 70%, arkose, white, gray, pink, coarse grained, angular, medium soft, fairly well consolidated, serpentine 30%, light green to gray, medium soft, no porosity; no odor, no stain, no fluorescence, no cut.

2665-2670 Sandstone 90%, arkose, white, gray, coarse grained, angular, medium soft, fairly well consolidated, no visible but probable porosity, serpentine 10%, light green, to gray, medium soft, no porosity; no odor, no stain, no fluorescence, no cut.

2670-2765 Sandstone 100%, arkose, white to gray, fine to medium grained; medium soft, loosely consolidated, angular, no odor, no stain, no fluorescence, no cut.

2765-2835 Sandstone 100%, arkose, white, pink to gray, medium to coarse grained, medium soft, angular, loosely consolidated; no odor, no stain, no fluorescence, no carbon tetrachloride cut.

2835-2855 Sandstone 100%, arkose, white to gray, medium grain, angular, loosely consolidated, no odor, no stain, no fluorescence, no cut.

2855-2860 Sandstone 100%, arkose, white to light gray with pink less common, coarse to very coarse grained, angular, loosely consolidated; no odor, no stain, no fluorescence, no carbon tetrachloride cut.

2860-2880 Sandstone 100%, arkose, white to light gray with pink less common, spotted black with ferro-magnesium minerals, coarse to very coarse grained, angular, loosely consolidated; no odor, no stain, no fluorescence, no cut.

2880-2925 Sandstone 100%, arkose, white to light gray with pink less common, coarse to very coarse grained, angular, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

2925-3015 Sandstone 100%, arkose, white to gray, medium to very coarse, angular, no odor, no stain, no fluorescence, no cut, no visible porosity.

3015-3040 Sandstone 100%, arkose, white to light gray with some pink, coarse grained, angular, good intergranular porosity; no odor, no stain, no fluorescence, no carbon tetrachloride cut.

3040-3070 Sandstone 100%, arkose, white to gray, coarse grain, loosely consolidated, no odor, no stain, no fluorescence, no cut, no visible porosity.

3070-3090 Sandstone 100%, arkose, white to gray, fine to medium grained, angular, loosely consolidated, medium soft, no visible porosity; no odor, no stain, no fluorescence, no carbon tetrachloride cut.

3090-3125 Sandstone 100%, arkose, white to light gray, with pink less common, angular, loosely consolidated, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

3125-3165 Sandstone 100%, arkose, white to gray, coarse grain, angular, loosely consolidated, no visible porosity; no odor, no stain, no fluorescence, no cut.

3165-3180 Sandstone 100%, arkose, white, gray and pink, medium to coarse grained, medium soft, angular, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

3180-3195 Sandstone 100%, arkose, white and gray, medium to coarse grained, angular, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

3195-3205 Sandstone 100%, arkose, white to light gray, some pink, coarse grained, angular, loosely consolidate, no odor, no stain, no fluorescence, no cut.

3205-3220 Sandstone 100%, arkose, white, gray, pink, green, black, coarse grained, angular, loosely consolidated, medium soft, no odor, no stain, no fluorescence, no cut.

3220-3260 Sandstone 100%, arkose, white, light gray, coarse grain, angular, loosely consolidated, no visible porosity; no odor, no stain, no fluorescence, no cut.

3260-3275 Sandstone 80%, arkose, gray, white to pink, coarse grained, medium soft, loosely consolidated, angular, no odor, no stain, no fluorescence, no cut.

3275-3290 Sandstone 10%, arkose, white, light gray, green black, some pink and yellow, medium to coarse grained, angular, loosely consolidated, no odor, no stain, no fluorescence, no cut.

3290-3310 Sandstone 100%, arkose, gray to white, medium to coarse grained, loosely consolidated, no odor, no stain, no fluorescence, no cut with carbon tetrachloride cut.

3310-3355 Talus Breccia 100%, diorite, light gray to light pink, with green and black, equi-granular texture, angular fragments, hard, no visible but probably interstitual porosity; no odor, no stain, no fluorescence, no carbon tetrachloride cut.

3355-3385 Diorite Breccia 100%, gray to white, some green and black, angular fragments, loosely consolidated, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

3385-3390 Siltstone 100%, red and brown, medium soft, dull luster, chunky arenaceous, very micaceous, hematite, slightly calcareous; no odor, no stain, no fluorescence, no carbon tetrachloride cut.

3390-3395 Talus breccia 95%, diroite, light gray to white, with green and black ferro-magnesium minerals, angular fragments, hard, loosely consolidated, no visible but probable interstitial porosity; Shale 5%, red, pink and spotted with black ferro-magnesium minerals, siltstone and claystone sized, arenaceous, no odor, no stain, no fluorescence, no cut.

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3395-3405 Talus breccia 100%, diorite, light gray, white with some pink, green and black, angular fragments loosely consolidated, no visible but probable interstitial porosity; no odor, no stain, no fluorescence, no cut.

3405-3430 Diorite Breccia 100%, white to gray, medium to coarse grained, some green and black, bright to vitreous luster, angular, loosely consolidated, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

3430-3455 Strongly Alterated Feldspar 100%, light to dark gray with some green, pink and black, very micaceous, trace pyritic, medium soft, angular, loosely consolidated, granular; poor interstitial porosity; no odor, no stain, no fluorescence, no cut.

3455-3460 Talus Breccia 100%, white to gray, medium to coarse grained, hard, angular fragments loosely consolidated, no odor, no stain, no fluorescence, no cut.

3460-3510 Talus Breccia 100%, diorite, light gray to white, some pink, green and black, angular fragments, loosely consolidated, hard, no visible but probably interstitial porosity; no odor, no stain, no fluorescence, no carbon tetrachloride cut.

3510-3535 Diorite Breccia 100%, white, gray, some pink, medium to coarse grained, some green and black, angular fragments, loosely consolidated, no odor, no stain, no fluorescence, no cut.

3535-3575 Diorite breccia 100%, white and gray, medium to coarse grained, some green and black, hard, angular fragments, no visible porosity; no odor, no stain, no fluorescence, no cut.

3575-3735 Diorite breccia 100%, white and gray, some red, green and black, medium to coarse grained, hard, angular fragments, some iron staining, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

3735-4125 Diorite Breccia 100%, white and gray, some green, brown, and black, medium to coarse grained, medium soft, angular fragments, badly decomposed feldspar in appreciable quantity, much iron staining, no odor, no stain, no fluorescence, no cut.

4125-4205 Quartz-Diorite Breccia 100%, white and gray, some green and yellow, hard, angular fragments, no visible porosity; no odor, no stain, no fluorescence, no carbon tetrachloride cut.

4205-4225 Breccia 100%, decomposed feldspar and pyroxenes, green, medium soft, dull luster, moderatly calcareous, chunky, angular, minor quantity of diorite breccia; no odor, no stain, no fluorescene, no cut.

4225-4615 Diorite Breccia 100%, green and white, medium hard, angular fragments, no odor, no stain, no fluorescence, no cut.

4615-4635 Syenite Breccia 100%, light salmon pink, some white, gray, green, and black, angular, chunky fragments, no visible porosity; no odor, no stain, no fluorescence, not cut.

4635-4955 Diorite Breccia 100%, white, gray, some pink, black and green, medium hard, angular fragments, no odor, no stain, no fluorescence, no cut.

4955-4960 Shale 90%, gray, green, some red, soft, chunky, dull luster, slightly silty, calcareous, Diorite Breccia 10%, gray, green and white, some black and red, hard, flaky to angular fragments, no visible porosity; no odor, no stain, no fluorescence, no carbon tetrachloride cut.

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4960-4965 Diorite Breccia 90%, white, pink, some green, black and red, hard, angular, flaky to chunky frags; no visible porosity; no odor, no stain, no fluorescence, no cut.

4965-5125 Diorite Breccia 100%, white, gray, some pink, green, black, red, hard, angular, chunky, no visible porosity; no odor, no stain, no fluorescence, no cut.

5125-5130 Granodiorite Breccia 100%, white, clear, gray, some black, green, pink and red, hard, vitreous luster, angular fragments, no visible porosity; no odor, no stain, no fluorescence, no cut.

5130-5142 Diorite Breccia 100%, white, clear, gray, some black, green, pink and red, hard, angular fragments, no visible porosity; no odor, no stain, no fluorescence, no cut.

GEOLOGICAL WELL SERVICE CO.
"Geo-Service"
WHITE BLDG. • ABILENE, TEXAS • U. S. A. • PHONES: 2-8996
2-6185
2-8355
2-9934

RECOMMENDATION

We do not recommend further drilling or testing on this lease. The tremendous amount of recent valley fill plus absence of possible oil and gas producing formations and penetration of almost 100% detrital grano-diorite (quartz diorite) consisting of quartz, plagioclase feldspar, ferromagnesian minerals, (biotite, hornblende, and pyroxene) indicates basement complex or close proximity to basement complex which rules out the possibility of penetrating a sedimentary section necessary for oil and gas accumulation.

Dan Kralis
Co-Owner
Geologist-in-charge

WESTERN OIL FIELDS, INC.--NO. 1 FLORENCE

PINAL COUNTY, ARIZONA

SECTION 31 CENTER SW SW, T-5S, R-10E

FGA Flowline Gas Analysis
MGA Mud Gas Analysis
CGA Cuttings Gas Analysis

1995-2000 Sandstone 100%, arkosic, gray, medium to coarse grained, medium soft, loosely consolidated, 60% plagioclase, 10% orthoclase, angular, 10% quartz, 20% chlorite, minor quantities of olivine, biotite and muscovite, hematitic stain on 20% of feldspar fragments, siliceous cement, bright to vitreous luster, good intergranular porosity; trace of caliche; no odor, no stain, no fluorescence, no carbon tetrachloride cut; FGA Methane 0.0%, Ethane 0.0%, MGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 1995-96-10 minutes; 96-97-9 minutes; 97-98-8 minutes; 98-99-9 minutes; 99-2000-9 minutes.

2000-2005 Sandstone 100%, arkosic, gray, medium to coarse grained, medium soft, loosely consolidated, angular fragments, bright to vitreous luster, siliceous cement, 70% plagioclase, 10% orthoclase, 5% quartz, 15% chlorite, minor quantities of olivine, biotite and muscovite, hematitic stain on 50% of feldspar fragments, good intergranular porosity; trace of caliche; no odor, no stain, no fluorescence, no cut with carbon tetrachloride; FGA Methane 0.0%, Ethane 0.0%, MGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2000-01-9 minutes; 01-02-5 minutes; 02-03-8 minutes; 03-04-10 minutes; 04-05-13 minutes.

Round trip at 2009'; out of hole 9:45 A.M.; on bottom and drilling at 11:43 A.M.

Ran Bit #22, Hughes OWS, 9 7/8".

2005-2010 Sandstone 100%, arkosic, gray, medium to coarse grained, medium soft, loosely consolidated, angular, bright to vitreous luster, siliceous cement, 80% plagioclase, 10% orthoclase, 10% chlorite, minor quantities of olivine, biotite, 75% of sample has hematite stain, good intergranular porosity; trace of caliche; no odor, no stain, no fluorescence, no carbon tetrachloride cut; FGA Methane 0.0%, Ethane 0.0%, MGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2005-06-10 minutes; 06-07-11 minutes; 07-08-11 minutes; 08-09-17 minutes; 09-10-8 minutes.

2010-2015 Sandstone 100%, arkosic, gray, medium to coarse grained, medium soft, loosely consolidated, angular, bright to vitreous luster, siliceous cement, 80% plagioclase, 10% orthoclase, 10% chlorite, minor quantities of quartz, olivine and biotite, red hematitic stain predominant, good intergranular porosity; trace of caliche; no odor, no stain, no fluorescence, no carbon tetrachloride cut; FGA Methane 0.0%, Ethane 0.0%, MGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2010-11-10 minutes; 11-12-5 minutes; 12-13-4 minutes; 13-14-5 minutes; 14-15-4 minutes.

2095-2100 Sandstone 100%, arkose, white, gray to pink, very coarse grain feldspar, loosely to unconsolidated, angular, subvitreous to vitreous luster, siliceous, limey cement, 60% plagioclase, 30% orthoclase, 10% quartz, strong trace chlorite and hornblend, good intergranular porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%; BMGA Methane 0.0%, Ethane 0.0%; CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2095-96-8 minutes; 96-97-13 minutes;97-98-9 minutes; 98-99-5 minutes; 99-2100-7 minutes;

2100-2105 Sandstone 100%, arkose, white, gray to pink, very coarse grain feldspar, loosely to unconsolidated, angular, subvitreous to vitreous luster, siliceous, limey cement, 60% plagilclase, 30% orthoclase, 10% quartz, strong trace of chlorite and hornblend, good intergranular porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%; BMGA Methane 0.0%, Ethane 0.0%; CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2100-01-6 minutes; 01-02-6 minutes; 02-03-5 minutes; 03-04-4 minutes; 04-05-4 minutes;

2105-2110 Sandstone 100%, arksoe, white, gray to pink, very coarse grain feldspar, loosely to unconsolidated, angular, subvitreous luster, siliceous, limey cement, 60% plagioclase, 30% orthoclase, 10% quartz; strong trace of chlorite and hornblende, good intergranular porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%; BMGA Methane 0.0%, Ethane 0.0%; CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2105-06-5 minutes; 06-07-5 minutes; 07-08-6 minutes; 08-09-7 minutes; 09-10-5 minutes;

2110-2115 Sardstone 100%, arkose, white, gray to pink, very coarse grain, feldspar, loosely to unconsolodiated, anuglar, subvitreous to vitreous luster, limey, silicerou cement; 60% plagilclase, 30% orthoclase, 10% quartz, strong trace of chlorite and hornblende, good intergranular porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%; BMGA Methane 0.0%, Ethane 0.0%; CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2110-11-6 minutes; 11-12-6 minutes; 12-13-5 minutes; 13-14-7 minutes; 14-15-8 minutes;

Twisted off pipe at 2117' at 2:06 a.m., waiting on overshot;

';00 a.m., still waiting on overshot to arrive.

2675-2680 Sandstone 100%, arkose, white to gray, medium grained, loosely consolidated, poorly cemented, angular, predominantly plagioclase; strong trace of quartz, chlorite, talc, hematite, serpentine; no odor, no stain, no fluorescence, no cut; MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2675-76-23 minutes; 76-77-17 minutes; 77-78-16 minutes; 78-79-13 minutes; 79-80-19 minutes.

2680-2685 Sandstone 100%, arkose, white to gray, medium grain, loosely consolidated, poorly cemented, angular, predominantly plagioclase; strong trace of quartz, chlorite, talc, serpentine, hematite; no odor, no stain, no fluorescence, no cut; MGA, BMGA, CGA Methane 0.0%, Ethane0.0%; Drilling time: 2680-81-20 minutes; 81-82-13 minutes; 82-83-8 minutes; 83-84-10 minutes; 84-85-18minutes.

Weight on bit: 20,000#.

2685-2690 Sandstone 100%, arkose, white to gray, medium grain, angular, loosely consolidated, poorly cemented, predominantly plagioclase; strong trace of quartz, chlorite, serpendtine, talc, hematite; no odor, no stain, no fluorescence, no cut; MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2685-86-20 minutes; 86-87-15 minutes; 87-88-21 minutes; 88-89-21 minutes; 89-90-17 minutes.

Weight on bit: 20,000#.

2690-2695 Sandstone 100%, arkose, white to gray, medium grains, angular, loosely consolidated, poorly cemented, predominantly plagioclase; strong trace of quartz, chlorite, serpentine, talc, hematite; no odor, no stain, no fluorescence, no cut; MGA, BMGA, CGA Methane0.0%, Ethane0.0%; Drilling time: 2690-91-16 minutes; 91-92-10 minutes; 92-93-20 minutes; 93-94-19 minutes; 94-95-19 minutes.

Weight on bit: 20,000#.

2695-2700 Sandstone 100%, arkose, white to gray, medium grain, angular, consolidated, poorly cemented, predominantly plagioclase; strong trace of quartz, chlorite, serpentine, talc, hematite, calcite; no odor, no stain, no fluorescence, no cut; MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2695-96-12 minutes; 96-97-18 minutes; 97-98-10 minutes; 98-99-17 minutes; 99-00-13 minutes.

2700-2705 Sandstone 100%, arkose, white to gray, medium grain, angular, loosely consolidated, poorly cemented, predominantly plagioclase; strong trace of quartz, chlorite, serpentine, talc, hematite, calcite; no odor, no stain, no fluorescence, no cut; MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2700-01-15 minutes; 01-02-15 minutes; 02-03-13 minutes; 03-04-11 minutes; 04-05-8 minutes.

8:00 a.m.

2705-2710 Sandstone 100%, arkose, white to gray, medium to coarse grained, angular, loosely consolidated, poorly consolidated, bright to subvitreous luster, 90% plagioclase, 10% chlorite, minor quantities of orthoclase; serpentine, hematite and calcite; no odor, no stain, no fluorescence, no carbon tetrachloride cut; FGA, MGA, CGA Methane0.0%, Ethane 0.0%; Drilling time: 2705-06-11 minutes; 06-07-11 minutes; 07-08-8 minutes; 08-09-11 minutes; 09-10-16 minutes.

Round trip at 2713'; out of hole at 9:23 a.m.; ran bit # 30, Hughes OWS-R; 8 3/4"; reamed 7' to bottom; on bottom and drilling at 12:37 p.m.

2710-2715 Sandstone 100%, arkose, white to gray, coarse grained, medium soft, angular, bright to subvitreous luster, loosely consolidated, 70% plagioclase, 20% orthoclase, 5% hornblende, 5% chlorite; minor quantities of calcite, serpentine, biotite; no odor, no stain, no fluorescence, no carbon tetrachloride cut; FGA, MGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2710-11-25 minutes; 11-12-15 minutes; 12-13-13 minutes; 13-14-18 minutes; 14-15-20 minutes.

2715-2720 Sandstone 100%, arkose, white to gray, coarse grained, medium soft, angular, bright to subvitreous luster, loosely consolidated, 60% plagioclase, 20% orthoclase, 10% hornblende, 10% chlorite; minor quantities of calcite, serpentine and biotite; no odor, no stain, no fluorescence, no carbon tetrachloride cut; MGA, FGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2715-16-24 minutes; 16-17-21 minutes; 17-18-5 minutes; 18-19-15 minutes; 19-20-18 minutes.

4:00 p.m.

2720-2725 Sandstone (?) 100%, arkose, white to gray, pink, coarse grained, angular, subvitreous luster, loosely consolidated, 50% plagioclase, 30 % orthoclase; 10% quartz, 10% hornblende, chlorite and biotite; trace calcite, hematite and serpentine; no odor, no stain, no fluorescence, no carbon tetrachloride cut;MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2720-21-34 minutes; 21-22-23 minutes; 22-23-20 minutes; 23-24-22 minutes; 24-25-23 minutes.

Weight on bit: 25,000#.

2725-2730 Sandstone 100%, arkose, white, gray, coarse grained, angular, subvitreous to vitreous, loosely consolidated, 70% plagioclase, 20% orthoclase, 10% hornblend, chlorite and biotite; trace calcite, hemitite, serpentine; no odor, no stain, no fluorescence, no carbon tetrachloride cut; MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2725-26-13 minutes; 26-27-16 minutes; 27-28-17 minutes; 28-29-15 minutes; 29-30-18 minutes.

2730-2735 Sandstone (?) 100%, arkose, white to gray, coarse grained, angular, loosely consolidated, 80% plagioclase, 10% orthoclase, 10%hornblende, chlorite and biotite; strong trace calcite, hematite and talc; no odor, no stain, no fluorescence, no carbon tetrachloride cut;MGA, BMGA, CGA Methane0.0%, Ethane 0.0%; Drilling time: 2730-31-17 minutes; 31-32-11 minutes; 32-33-20 minutes; 33-34-20 minutes; 34-35-20 minutes.

Weight on bit: 23,000#.

Stopped drilling at 8:11 p.m.; connection at 2737'; resumed drilling at 8:17.

Mud Analysis: (9:30 p.m.) Viscosity 30, water loss 14, pH 6, Weight 8.6, Cake 1/32, Salt none.

Round trip: 3200'; out of hole 1:52 P.M.

4:00 P.M. April 7, 1953

New Bit #34, Hughes OWC; totco 11°.

On bottom 8:52 P.M.; total time 6 hours for trip and reaming.

3195-3200 Sandstone 100%, arkose, white to light gray, some pink, coarse grained, angular, vitreous to subvitreous luster, loosely consolidated, 60% plagioclase, 30% orthoclase, 10% chlorite, trace biotite and talc; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3195-96-8 minutes; 96-97-10 minutes; 97-98-8 minutes; 98-99-13 minutes; 99-3200-17 minutes.

Drilling weight 20,000#.

3200-3205 Sandstone 100%, arkose, white, gray and pink, coarse grained, angular, loosely consolidated, vitreous to subvitreous luster, medium soft, 45% plagioclase, 40% orthoclase, 15% chlorite and talc; trace biotite; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3200-01-10 minutes; 01-02-10 minutes; 02-03-14 minutes; 03-04-8 minutes; 04-05-11 minutes.

3205-3210 Sandstone 100%, arkose, white, gray, pink, green, black, coarse grained, angular, loosely consolidated, vitreous to subvitreous luster, medium soft, 55% plagioclase, 30% orthoclase, 15% chlorite and talc, trace biotite; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3205-06-9 minutes; 06-07-11 minutes; 07-08-8 minutes; 08-09-8 minutes; 09-10-9 minutes.

Drilling weight 20,000#.

3210-3215 Sandstone 100%, arkose, white, gray, pink, green, black, medium to coarse grained, angular, loosely consolidated, vitreous to subvitreous luster, medium soft, 75% plagioclase, 10% orthoclase, 15% chlorite and talc, trace biotite; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3210-11-8 minutes; 11-12-10 minutes; 12-13-7 minutes; 13-14-7 minutes; 14-15-9 minutes.

Stopped drilling 10:10 P.M.; connection 3216'; resumed drilling 10:17 P.M.

3215-3220 Sandstone 100%, arkose, white, light gray, pink, dark green, black, medium to coarse grained, angular, loosely consolidated, vitreous to subvitreous luster, medium soft, 75% plagioclase, 10% orthoclase, 15% chlorite, trace biotite and talc; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3215-16-4 minutes; 16-17-5 minutes; 17-18-5 minutes; 18-19-9 minutes; 19-20-8 minutes.

12:00 Midnight

3495-3500 Talus Breccia Diorite 100%, gray to white, speckled with pink, green, black, angular fragments, loosely consolidated, hard, subvitreous luster; 80% plagioclase, 10% orthoclase, 10% chlorite, biotite; trace of olivene, hematite, calcite, limonite; no visible porosity; no odor, no stain, no fluorescence, no cut; MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3495-96-25 minutes; 96-97-26 minutes; 97-98-20 minutes; 98-99-22 minutes; 99-00-21 minutes.

3500-3505 Talus Breccia Diorite 100%, gray to white, speckled with pink, green and black; angular fragments, loosely consolidated, hard, subvitreous luster; 80% plagioclase, 10% orthoclase, 10% chlorite and biotite; trace of olivene, hematite, limonite, calcite; no visible porosity; no odor, no stain, no fluorescence, no cut; MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3500-01-27 minutes; 01-02-33 minutes; 02-03-21 minutes; 03-04-13 minutes; 04-05-21 minutes.

3505-3510 Talus Breccia Diorite 100%, gray to white, speckled with pink, green and black, angular fragments, loosely consolidated, hard, subvitreous luster; 80% plagioclase, 10% orthoclase, 10% chlorite and biotite; trace of olivene, hematite, limonite and calcite; no odor, no visible porosity, no stain, no fluorescence, no cut; MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3505-06-21 minutes; 06-07-21 minutes; 07-08-24 minutes; 08-09-23 minutes; 09-10-21 minutes.

8:00 a.m. April 15, 1953.

from 3788.15 to 3787.15'; jetted pits.

3780-3785 Diorite Breccia 100%, gray, white, some green, medium to coarse grain, dull to vitreous luster, calcareous and hematitic cement, angular fragments, 60% plagioclase, 20% orthoclase, 20% chlorite and talc, no visible porosity; trace of hematite, calcite and olivine; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3780-81-9 minutes; 81-82-6 minutes; 82-83-8 minutes; 83-84-6 minutes; 84-85-8 minutes.

Down from 7:21 to 7:27 P.M.; jetted pits.

3785-3790 Diorite Breccia 100%, white to gray, some green, medium to coarse grain, subvitreous to vitreous luster, calcareous and hematitic cement, angular fragments, 70% plagioclase, 20% orthoclase, 10% chlorite and talc; no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3785-86-7 minutes; 86-87-8 minutes; 87-88-6 minutes; 88-89-7 minutes; 89-90-7 minutes.

3790-3795 Diorite Breccia 100%, white to gray, some green, medium to coarse grain, red, subvitreous to vitreous luster, calcareous and hematitic cement, angular fragments, 70% plagioclase, 20% orthoclase, 10% chlorite and talc; trace of hematite; no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3790-91-6 minutes; 91-92-8 minutes; 92-93-7 minutes; 93-94-9 minutes; 94-95-9 minutes.

Drilling weight 20,000#.

3795-3800 Diorite Breccia 100%, white to gray, some green, red, medium to coarse grain, subvitreous to vitreous luster, calcareous and hematitic cement, angular fragments, 70% plagioclase, 20% orthoclase, 10% chlorite and talc; trace of hematite; no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3795-96-10 minutes; 96-97-10 minutes; 97-98-9 minutes; 98-99-9 minutes; 99-3800-7 minutes.

3800-3805 Diorite Breccia 100%, white to gray, some green, red, medium to coarse grain, subvitreous to vitreous luster, calcareous and hematitic cement, angular fragments, 70% plagioclase, 20% orthoclase, 10% chlorite and talc; trace of hematite; no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3800-01-8 minutes; 01-02-7 minutes; 02-03-8 minutes; 03-04-7 minutes; 04-05-8 minutes.

3805-3810 Diorite Breccia 100%, dark gray, white, gray, some green and pink, coarse grain, dull to subvitreous luster, calcareous cement, angular fragments, badly weathered feldspar in part, plagioclase 60%, orthoclase 20%, chlorite 10%, talc 10%; no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3805-06-7 minutes; 06-07-8 minutes; 07-08-11 minutes; 08-09-7 minutes; 09-10-8 minutes.

4295-4300 Diorite Breccia 100%, gray and white, some green and buff, medium hard, angular fragments, subvitreous to vitreous luster, calcareous cement, 60% plagioclase, 10% decomposed feldspar, 10% orthoclase, 10% chloride, 10% talc, no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 4295-96-6 minutes; 96-97-3 minutes; 97-98-10 minutes; 98-99-8 minutes; 99-4300-12 minutes.

Drilling weight 25,000#.

4300-4305 Diorite Breccia 100%, white and gray, some green and pink, medium hard, angular fragments, calcareous cement, subvitreous to vitreous luster, 60% plagioclase, 20% chlorite, 10% talc, 10% orthoclase, minor quantities of hematite, no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0 %, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 4300-01-14 minutes; 01-02-7 minutes; 02-03-7 minutes; 03-04-12 minutes; 04-05-13 minutes.

6:00 P.M.

4305-4310 Diorite Breccia 100%, white and gray, some green and pink, coarse grain, angular fragments, calcareous cement, subvitreous to vitreous luster, 75% plagioclase, 10% orthoclase, 10% chlorite, 5% talc; trace of hematite; no visible porosity; no odor, stain fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 4305-06-15 minutes; 06-07-22 minutes; 07-08-26 minutes; 08-09-18 minutes; 09-10-22 minutes.

Round trip at 4313'; stopped drilling at 8:40 P.M.; resumed drilling 12:15 A.M.; total time 3 hours 35 minutes.

Bit #53, Hughes OWS-R.

Drilling weight 22,000#.

4310-4315 Diorite Breccia 100%, white and gray, some green and pink, coarse grain, angular fragments, calcareous cement, subvitreous to vitreous luster, 70% plagioclase, 10% orthoclase, 10% chlorite, 10% talc, trace of olivene and hematite; no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 4310-11-22 minutes; 11-12-25 minutes; 12-13-10 minutes; 13-14-22 minutes; 14-15-22 minutes.

4315-4320 Diorite Breccia 100%, white and gray, some green and pink, coarse grain, angular fragments, calcareous cement, subvitreous to vitreous luster, 70% plagioclase, 10% orthoclase, 10% chlorite, 10% talc, trace of olivine and hematite; no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 4315-16-9 minutes; 16-17-18 minutes; 17-18-10 minutes; 18-19-16 minutes; 19-20-12 minutes.

Connection at 4324'; down from 2:53 to 3:03 A.M.

fluorescence, no cut; FGA Methane 0.0%, Ethane 0.0%; MGA Methane 0.0%, Ethane 0.0%; CGA Methane 0.0%, Ethane 0.0%; Drilling time: 4485-86-20 minutes; 86-87-15 minutes; 87-88-20 minutes; 88-89-22 minutes; 89-90-17 minutes;

4490-4495 Diorite breccia 100%, dark gray, green, black and white, medium grained, medium hard, bright to vitreous luster, angular to tabular fragments, 50% plagioclase with chlorite and biotite inclusions, 20% biotite, 15% chlorite, 15% talc, no visible porosity; no odor, no stain, no fluorescence, no cut; FGA Methane 0.0%, Ethane 0.0%; MGA Methane 0.0%, Ethane 0.0%; CGA Methane 0.0%, Ethane 0.0%; Drilling time: 4490-91-21 minutes; 91-92-21 minutes; 92-93-16 minutes; 93-94-18 minutes; 94-95-16 minutes;

6:00 p.m.

4495-4500 Diorite breccia 100%, dark gray, white, green, black, medium grained, wub-vitreous to vitreous luster, angular fragments, 60% plagioclase, 20% biotite, 15% talc, 5% chlorite; trace of quartz and gabbro; no visible porosity; no odor, no stain, no fluorescence, no cut; FGA Methane 0.0%, Ethane 0.0%; BMGA Methane 0.0%, Ethane 0.0%; CGA Methane 0.0%, Ethane 0.0%; Drilling time: 4495-96-22 minutes; 96-97-23 minutes; 97-98-23 minutes; 98-99-16 minutes; 99-4500-26 minutes;

Drilling weight 20,000#

Down from 6:43 to 6:50 p.m.

Stopped drilling at 7:42 p.m.; round trip at 4504'; resumed drilling at 11:55; slapsed time 4 hours and 13 minutes; Bit #57, OWS-R;

Connection at 4506', down from 12:11 to 12:20 a.m.

4500-4505 Diorite breccia 100%, white, green, black, dark gray, medium grain, sub-vitreous to vitreous luster, angular fragments, 50% plagioclase, 20% chlorite, 20% biotite, 10% talc, trace of calcite, quartz, and muscovite; no visible porosity, no odor, no stain, no fluorescence, no cut; FGA Methane 0.0%, Ethane 0.0%; BMGA Methane 0.0%, Ethane 0.0%; CGA Methane 0.0%, Ethane 0.0%; Drilling time: 4500-01-28 minutes; 01-02-38 minutes; 0-203-13 minutes; 03-04-20 minutes; 04-05-34 minutes;

4505-4510 Diorite breccia 100%, white, green, black, dark gray, medium grain, sub-vitreous to vitreous luster, angular fragments, 70% plagioclase, 15% chlorite, 5% talc, 10% biotite, trace of calcite, muscovite and quartz; no visible porosity; no odor, no stain, no fluorescence, no cut; FGA Methane 0.0%, Ethane 0.0%; BMGA Methane 0.0%, Ethane 0.0%; CGA Methane 0.0%, Ethane 0.0%; Drilling time: 4505-06-10 minutes; 06-07-7 minutes; 07-08-10 minutes; 08-09-14 minutes; 09-10-18 minutes;

Down from 2:22 to 2:26 a.m.

4510-4515 Diorite breccia 100%, white, gray, green, black, some pink, medium grain, hard, sub-vitreous to vitreous luster, angular fragments, 50% plagioclase, 20% orthoclase, 15% biotite, 10% chlorite, 5% talc, traces of calcite, miscovite and quartz; no visible porosity; no odor, no stain, no fluorescence, no cut; FGA Methane 0.0%, Ethane 0.0%; BMGA Methane 0.0%

Mud Analysis: (3:00 A.M. May 14, 1953) viscosity 31, weight 8.6, water loss 20.4, filter cake 1/32, pH 7, salt content--nil.

5110-5115 Diorite Breccia 90%, gray, white, some pink, black, and red, hard, subvitreous to vitreous luster, angular to subangular fragments, 40% plagioclase, 20% orthoclase, 10% talc, 10% serpentine, 5% chlorite, 5% quartz; shale 10%, gray, gray green, some red, fissile, flaky to chunky, soft to medium hard, slightly calcareous, no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%, Drilling time: 5110-11-76 minutes; 11-12-37 minutes; 12-13-28 minutes; 13-14-47 minutes; 14-15-48 minutes.

6:00 A.M. May 14, 1953

5115-5120 Diorite Breccia 100%, gray and white, some black, green and red, medium hard, vitreous luster, angular to subrounded fragments, calcareous, 60% plagioclase, 15% biotite, 15% orthoclase, 10% talc, traces of quartz and shale; no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%; Drilling time: 5115-16-46 minutes; 16-17-40 minutes; 17-18-80 minutes; 18-19-41 minutes; 19-20-45 minutes.

Drilling weight 25,000#.

Round trip at 5122'; out of hole 10:00 A.M.; reamed 45' to bottom; on bottom and drilling 3:10 P.M.; total time 5 hours 10 minutes.

Ran Bit #78, Hughes, W7R, 7 7/8".

5120-5125 Diorite Breccia 100%, gray and white, some black, green and red, medium hard, vitreous luster, angular to subrounded fragments, calcareous, 60% plagioclase, 15% orthoclase, 10% biotite, 10% talc, 5% hematite and limonite; traces shale and quartz, no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 5120-21-56 minutes; 21-22-23 minutes; 22-23-29 minutes; 23-24-21 minutes; 24-25-51 minutes.

6:00 P.M. May 14, 1953

Down from 6:23 to 6:46 P.M.; jet pits.

5125-5130 Granodiorite Breccia 100%, white, clear, gray, some black, green, pink and red, hard, vitreous luster, angular fragments, calcareous, 40% plagioclase, 20% orthoclase, 20% quartz, 10% biotite, 5% chlorite, 5%, talc; traces of hematite, no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 5125-26-45 minutes; 26-27-40 minutes; 27-28-49 minutes; 28-29-56 minutes; 29-30-45 minutes.

5130-5135 Diorite Breccia 100%, white, clear, gray, some black, green, pink and red, vitreous luster, hard, angular fragments, calcareous, 50% plagioclase, 15% orthoclase, 10% quartz, 10% biotite; 10% talc, 5% chlorite, no visible porosity; no odor, no stain, no fluorescence, no cut;

MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 5130-31-52 minutes; 31-32-49 minutes; 32-33-38 minutes; 33-34-59 minutes; 34-35-66 minutes.

Mud Analysis: (3:00 A.M. May 15, 1953) viscosity 33, weight 8.6, water loss 18.8, filter cake 1/32, pH 7, salt content--nil.

Drilling weight 30,000#.

Round trip at 5136'; stopped drilling 3:43 A.M.

6:00 A.M. May 15, 1953.

Ran bit # 79, Hughes OWSR-7 7/8"; on bottom and drilling at 8:20 a.m.

Connection at 5140'; down from 12:37 p.m. to 12:44 p.m.

5135-5140 Diorite Breccia 100%, gray and white, some black, green, and red, hard, subvitreous to vitreous luster, angular to subrounded fragments, calcareous, 60% plagioclase, 15% orthoclase, 10% biotite, 10% quartz, 5% talc, trace of chlorite and hematite, no visible porosity; no odor, no stain, no fluorescence, no carbon tetrachloride cut; FGA Methane 0.0%, MGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 5135-36-59 minutes; 36-37-83 minutes; 37-38-75 minutes; 38-39-83 minutes; 39-40-48 minutes.

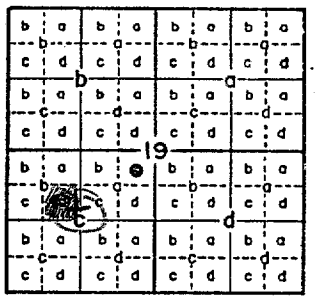
Round trip at 5141'; out of hole at 4:02p.m.; on bottom and drilling; total time elapsed: 4 hours, 1 minute; bit # 80, Hughes W7R.

Stopped drilling at 8:36 p.m.; waiting for orders.

Depth--5142'; Depth correction 5141' (trip)--5142'.

Total Depth ----- 5142'.

Section Location Example



Section 19caa

J.D.S.

DRILL RECORD

Hole Designation Unknown (See below).

T 5 S R 16 E

SEC 2 cbd

General File Reference: Little Gold Gulch (Aa-16A.19.12B)

Total Depth: 3209 ft. (vertical)

Postmineral thickness: 0-65 Overburden

Premineral bedrock: 65-2040 Cretaceous volcanics (predominant).
2040-3173 Cretaceous sedimentary (predominant).
3173-3209 Pennsylvanian Naco Limestone.

Source of Information: Hanna files

Drill Contractor: ~~Unknown~~

Company: ICC

Date: June 26, 1958 — October 27, 1958.

Geologic Log: See file.
See Little Gold Gulch (Hanna) Map file for cross-section

Assays, Geochem: Few notes on log & cross-section

Core, cuttings on file: —

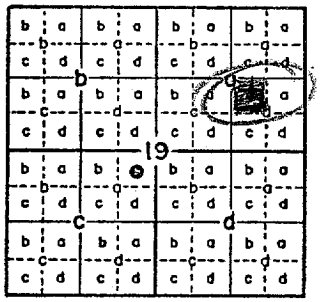
Drilling Problems, Depth to Water: —

Other:

Inspiration Consolidated Copper Company
Hole No. 1958 (Hanna's designation - year drilled).
Collar elevation 2400 feet.
Pinal County, Arizona
Saddle Mountain District

9-12-74

Section Location Example



Section 19caa

J.D.S.

DRILL RECORD

Hole Designation LGG-71-1

T 5 S. R 16 E

SEC 3 adb adb

General File Reference: Little Gold Gulch (Aa-16A. 19. 12B)

Total Depth: 2353 feet (vertical)

Postmineral thickness: 0-6 Overburden

Premineral bedrock: 6-2236 Cretaceous volcanics (predominant).
2236-2353 Cretaceous sediments (predominant).

Source of Information: Hanna Files

Drill Contractor: Longyear Drilling Company

Company: Hanna Mining Company

Date: October 7, 1971 – January 27, 1972

Geologic Log: yes, see files
Altered Cretaceous volcanoclastic (Silver Bell type) units
See Little Gold Gulch (Hanna) map file for cross-section.

Assays, Geochem: yes, see file. Cu, MoS_2

Core, cuttings on file: —

Drilling Problems, Depth to Water: —

Other:
The Hanna Mining Company
Hole No. LGG-71-1.
Collar elevation 2550 feet
Pinal County, Arizona.
Saddle Mountain District

9-12-74

TAB

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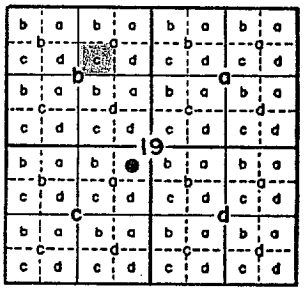
Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION AZ-1

T 6 S R 6 E

SEC 33 bac

General File Reference: ARIZOLA AREA, PEDIMENT DRILL PROJECT - Aa-16 A.3.1

Total Depth: 1500'

Postmineral thickness: 1500'(?)

Premineral bedrock: POSSIBLE LARAMIDE OR EARLY TERTIARY (PYRITIZED) ANDESITE FROM 1440' - 1500'.

Source of Information: ASARCO REPORT

Drill Contractor: HUNTER SHELTON DRILLING CO.

Company: ASARCO

Date: FEBRUARY 19th MARCH 6th, 1975 (SERIES)

Geologic Log. 0-295' Qal

295'-1500' ~~TKV~~ V - ANDESITE FLOWS (PYRITE 1440'-1500')

Assays, Geochem: CU AVE ± 40 PPM, HIGH 200 PPM

MO AVE ± 4 PPM, HIGH 10 PPM

Core, cuttings on file: SELECT CUTTINGS STORED, SEE FILE.

Drilling Problems, Depth to Water: NO PROBLEMS, WATER LEVEL NOT DETERMINED.

Other: SEE FILES FOR LOGS & ASSAYS

PINAL COUNTY, ARIZONA

S. R. Davis

(10-1-75)

9-12-74

TAB

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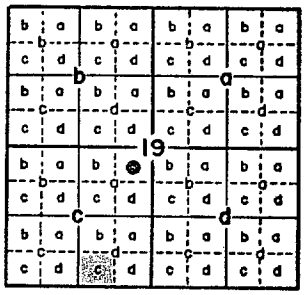
Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION FM-2

T 7 S R 1 W

SEC 8 cdc

General File Reference: FREEMAN AREA - PEDIMENT DRILL PROJECT Aa-13.10.6

Total Depth: 1500'

Postmineral thickness: 1500'

Premineral bedrock: NONE

Source of Information: ASARCO REPORT

Drill Contractor: HUNTER SHELTON DRILLING CO.

Company: ASARCO

Date: JANUARY 19 TO 31, 1975 (SERIES)

Geologic Log:
0 - 640' QTal & cgl
640' - 1000' Tv - RED SPECKLED ANDESITE & OLDER cgl
1000' - 1500' Tc - OLDER TERTIARY cgl

Assays, Geochem:
Cu AVE <20 PPM, HIGH 25 PPM
Mo AVE <2 PPM, HIGH 2 PPM

Core, cuttings on file: SELECT CUTTINGS ARE STORED, NO CORE.

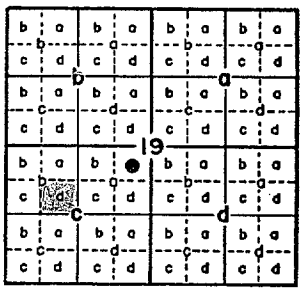
Drilling Problems, Depth to Water: LOCAL HARD ZONES, NO MAJOR PROBLEMS, WATER LEVEL NOT DETERMINED.

Other: SEE FILES FOR LOGS & ASSAYS
MARICOPA COUNTY, ARIZONA

S. R. Davis
(9-30-75)

9-12-74

Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION FM-1

T 7 S R 2 W

SEC 12 cbd

General File Reference: FREEMAN AREA-PEDIMENT DRILL PROJECT Aa-13.10.6

Total Depth: 1600'

Postmineral thickness: 1600'

Premineral bedrock: NONE

Source of Information: ASARCO REPORT

Drill Contractor: HUNTER-SHELTON DRILLING CO.

Company: ASARCO

Date: JANUARY 19 TO 31, 1975 (SERIES)

Geologic Log:

0-1300' Qal & TQ cgls w/MINOR Tv flows(?)
1300'-1420' SLIDE BLOCK OF PRE-€ CHLORITE SCHIST
1420'-1440' Tv - RED SPECKLED ANDESITE FLOW-cgl?
1440'-1600' Tc - OLDER TERTIARY cgl

Assays, Geochem:

Cu AVE ± 20 PPM, HIGH 30 PPM
Mo AVE < 2 PPM, HIGH 2 PPM

Core, cuttings on file: SPOT CORE & SELECT CUTTINGS STORED, SEE FILE.

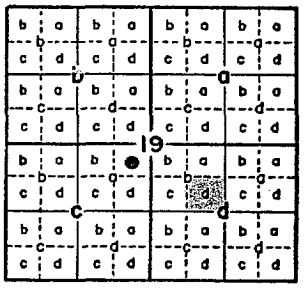
Drilling Problems, Depth to Water: LOCAL HARD ZONES, WATER LEVEL UNKNOWN.

Other: SEE FILES FOR LOGS & ASSAYS
MARICOPA COUNTY, ARIZONA

S. R. Davis
(9-30-75)

9-12-74

Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION AZ-2

T 7 S R 6 E.

SEC 12 dbd

General File Reference: ARIZOLA AREA, PEDIMENT DRILL PROJECT Aa-16 A.3.1

Total Depth: 933'

Postmineral thickness: 890'

Premineral bedrock: PRECAMBRIAN PINAL SCHIST

Source of Information: ASARCO REPORT

Drill Contractor: HUNTER - SHELTON DRILLING CO.

Company: ASARCO

Date: FEBRUARY 9TH - MARCH 6TH 1975 (SERIES)

Geologic Log:
0 - 480' QTg - ALLUVIUM & GRAVEL - cgl
480' - 890' Tg - OLDER cgls (MONOLITHIC)
890' - 933' pCsc - PINAL SCHIST

Assays, Geochem: Cu AVE ±20 PPM, HIGH 35 PPM
Mo AVE ± 5 PPM, HIGH 6 PPM

Core, cuttings on file: SPOT CORE AND SELECT CUTTINGS STORED.

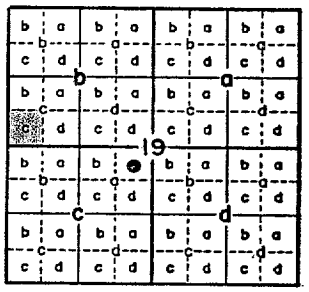
Drilling Problems, Depth to Water: SLOW DRILLING (HARD) PREMINERAL ROCK. WATER SURFACE NOT DETERMINED.

Other: SEE FILES FOR LOGS & ASSAYS
PINAL COUNTY, ARIZONA

S. R. Davis
(10-1-75)

9-12-74

Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION AZ-3

T 7 S R 6 E

SEC 2 bcc

General File Reference: ARIZOLA AREA - PEDIMENT DRILL PROJECT Aa-16A.3.1

Total Depth: 646'

Postmineral thickness: 585'

Premineral bedrock: PRECAMBRIAN PINAL SCHIST

Source of Information: ASARCO REPORT

Drill Contractor: HUNTER SHELTON DRILLING CO.

Company: ASARCO

Date: FEBRUARY 9 TO MARCH 6, 1975 (SERIES)

Geologic Log: 0-320 QTg ALLUVIUM & GRAVEL-CGL

Assays, Geochem: Cu AVE ± 10 PPM, HIGH 20 PPM
Mo AVE ± 5 PPM, HIGH 14 PPM

Core, cuttings on file: SPOT CORE AND SELECT CUTTINGS IN STORAGE.

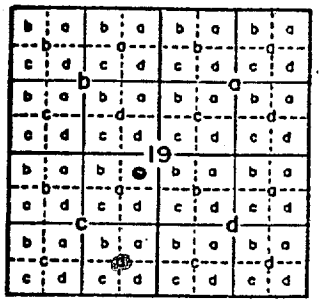
Drilling Problems, Depth to Water: SLOW DRILLING (HARD) PREMINERAL ROCKS. WATER LEVEL NOT DETERMINED.

Other: SEE FILES FOR LOGS & ASSAYS.
PINAL COUNTY, ARIZONA

S. R. Davis
(10-2-75)

9-12-74

Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION Geothermal Kinetics - AMAX Expl. 1.

T 7S R 8E

SEC 8 cd (center)

General File Reference: Pinal County General Ag-1CA-0-0

Total Depth: 8024 feet

Postmineral thickness: O&GC files not checked

Premineral bedrock: Noted as "Tertiary" in WL Map #4.

Source of Information: O&GC report: Well Location Map Focus (1977). (AS ARCO File Copy).

Drill Contractor:

Company: Geothermal Kinetics and AMAX Exploration.

Date:

Completed 8/74

Geologic Log: See Oil & Gas Comm File #022

Assays, Geochem:

Core, cuttings on file:

Drilling Problems, Depth to Water:

Other:

County: Pinal County, Arizona

Collar Elevation: 1529 Kelly Bushing (KB).

9-12-74

TAB

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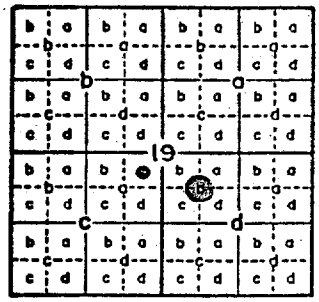
Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION Humble State 74-1

T 8S R 8E

SEC 2 dbb(center)

~~Hmble~~ N of Picacho

General File Reference: Pinal County General, Aa-16 A.0.0

Total Depth: 10,179 ft.

Postmineral thickness: 0- 10,055 ft.

Premineral bedrock:
Granite (Picacho Mtn).

Source of Information:
Ariz. Oil & Gas Conserv. Comm.

Drill Contractor:
Loffland Drilling Company

Company:
Humble Oil & Refining Company

Date:
Spudded 6-8-72
Terminated 7-14-72

Geologic Log:
Operators log.

0- 526	Sand & gravel
526 - 1690	Clay and shale
1690 - 8482	Anhydrite, shale, gypsum, salt, & tuff.
8482- 8943	Conglomerate.
8943- 10,055	Volcanic tuff, trachyte, date of 14.8 m.y (Damon).
10,055- 10,179	Granite gneiss (metamorphic complex of Picacho Mountain).

Assays, Geochem:
None

Core, cuttings on file:
Core No. 1 from 10,133 to 10,144 ft — No recovery
Core No. 2 from 10,175 to 10,179 ft — Recovered 3 ft of qtz diorite gneiss.
Sample ~~probs~~ & cuttings probably on file with ABM & AO&GCC.

Drilling Problems, Depth to Water:

Other:
Collar Elevation 1580 ft.
Pinal County, Arizona
Other logs: IES, GR-BHC Sonic, Sidewall log-9, Dipmeter

"Granite wash" from 9599-9875 with sample at 9750-9850 having pollen grains of Middle to Late Miocene to Pliocene age.

9-12-74

JDS

TAB

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EMPTY
CONTENT

TAB

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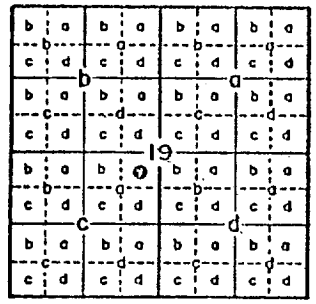
Section Location Example



Section 19caa

DRILL RECORD

T 10 S. R 6 E

SEC 34 dba

General File Reference: Au-16.19.23

Total Depth: unknown, reported 3200-3400 but no diamond drills seen

Postmineral thickness: reported 1700-2000 ft

Premineral bedrock: unknown

Source of Information: Field recon and from T. D'Ambrosia to EBCnst

Drill Contractor: unknown; Failing 1000 rotary on one site

Company: Geodata Systems, Inc

Date: 5/14/77

Geologic Log:
none

Assays, Geochem: (coming for hole in sec 34, none on others)

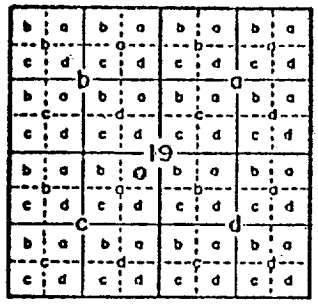
Core, cuttings on file: no

Drilling Problems, Depth to Water: unknown

Other:
See FTG memo of 5/16/77. Three completed rotary holes - uncased. No identification on drill rig.

9-12-74

Section Location Example



Section 19caa

DRILL RECORD

T 10S R 6E

SEC 35ccc

General File Reference: Aa-16.19.23

Total Depth: unknown, reported 3200-3400 but no diamond drills seen

Postmineral thickness: reported 1700-2000 ft

Premineral bedrock: unknown

Source of Information: Field recon and from T. D'Ambrosia to EBCnst

Drill Contractor: unknown; Failing 1000 rotary on one site

Company: Geodata Systems, Inc

Date: 5/14/77

Geologic Log:
none

Assays, Geochem: (coming for hole in sec 34, none on others)

Core, cuttings on file: no

Drilling Problems, Depth to Water: unknown

Other:
See FTG memo of 5/16/77. Three completed rotary holes - uncased. No identification on drill rig.

TAB

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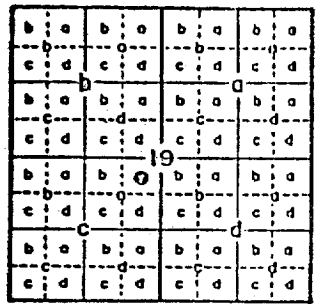
Section Location Example



Section 19caa

DRILL RECORD

T 11S R 6E

SEC 2 bdb

General File Reference: Aa-16.19.23

Total Depth: unknown, reported 3200-3400 but no diamond drills seen

Postmineral thickness: reported 1700-2000 ft

Premineral bedrock: unknown

Source of Information: Field recon and from T. D'Ambrosia to BBCnst

Drill Contractor: unknown; Failing 1000 rotary on one site

Company: Geodata Systems, Inc

Date: 5/14/77

Geologic Log:
none

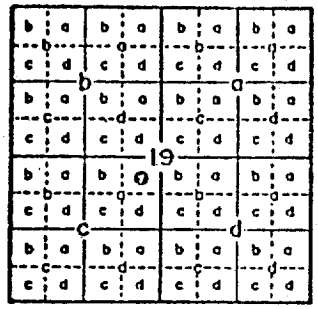
Assays, Geochem: (coming for hole in sec 34, none on others)

Core, cuttings on file: no

Drilling Problems, Depth to Water: unknown

Other:
See FTG memo of 5/16/77. Three completed rotary holes - uncased. No identification on drill rig.

Section Location Example



Section 19caa

DRILL RECORD

T 11S R 6E

SEC 12 cbb

General File Reference: Aa-16.19.23

Total Depth: unknown, reported 3200-3400 but no diamond drills seen

Postmineral thickness: reported 1700-2000 ft.

Premineral bedrock: unknown

Source of Information: Field recon and from T. D'Ambrosia to BBCnst

Drill Contractor: unknown; Failing 1000 rotary on one site

Company: Geodata Systems, Inc

Date: 5/14/77

Geologic Log:
none

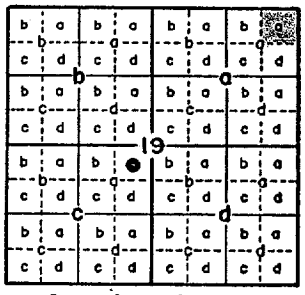
Assays, Geochem: (coming for hole in sec 34, none on others)

Core, cuttings on file: no

Drilling Problems, Depth to Water: unknown

Other:
See FTG memo of 5/16/77. Three completed rotary holes - uncased. No identification on drilling.

Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION KK-4

T 11 S R 7 E

SEC 19 aaa

General File Reference: KK HILLS AREA - PEDIMENT DRILL PROJECT Aa-16.19.11

Total Depth: 1421'

Postmineral thickness: 550'

Premineral bedrock: CRETACEOUS VOLCANIC & SEDIMENTARY COMPLEX (Kvs)

Source of Information: ASARCO REPORT

Drill Contractor: HUNTER SHELTON DRILLING CO.

Company: ASARCO

Date: MARCH 10 to APRIL 20, 1975 (SERIES)

Geologic Log:

0 - 235' QTg - ALLUVIUM & GRAVEL

235'-440' Tg - OLDER TERTIARY CONGLOMERATE & GRAVEL.

440'-550' Tv - BASALT - ANDESITE FLOW

550'-1421' Kvs - CRET. VOLC & CLASTIC SEDIMENTARY ROCKS.

Assays, Geochem:

Cu AVE ± 20PPM (BACKGROUND), HIGH 475 PPM (w/ vis Cu Ox)

Mo AVE ± 3PPM, HIGH 6 PPM

Core, cuttings on file: SPOT CORE & SELECT CUTTINGS IN STORAGE.

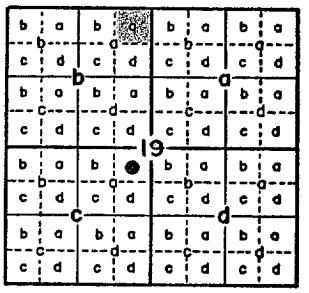
Drilling Problems, Depth to Water: NO PROBLEMS UNTIL V HARD QTZT ENCOUNTERED AT 1371. WATER LEVEL NOT DETERMINED.

Other: SEE FILES FOR LOG AND ASSAYS.
PIMA COUNTY, ARIZONA

S. R. Davis
(10-3-75)

9-12-74

Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION KK-3

T 11 S R 7 E

SEC 29 baa

General File Reference: KK HILLS AREA - PEDIMENT DRILL PROJECT Aa-16.19.11

Total Depth: 1506'

Postmineral thickness: 1506'

Premineral bedrock: NONE

Source of Information: ASARCO REPORT

Drill Contractor: HUNTER SHELTON DRILLING CO.

Company: ASARCO

Date: MARCH 10 TO APRIL 20, 1975 (SERIES)

Geologic Log: 0-280' - QTg - ALLUVIUM & GRAVEL
280'-1506' - Tg - OLDER TERTIARY GRAVEL & CONGLOMERATE

Assays, Geochem: Cu AVE ± 30 PPM, HIGH 40 PPM
Mo AVE ± 6 PPM, HIGH 8 PPM

Core, cuttings on file: SPOT CORE AND SELECT CUTTINGS STORED.

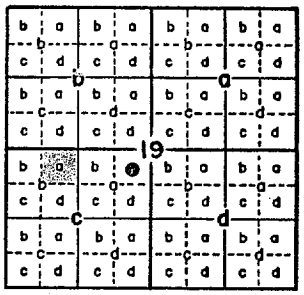
Drilling Problems, Depth to Water: NO PROBLEMS, DEPTH TO WATER NOT DETERMINED.

Other: SEE FILES FOR LOG & ASSAYS
PIMA COUNTY, ARIZONA

J.R. Davis
(10-3-75)

9-12-74

Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION KK-2

T 11 S R 7 E

SEC 33 cba

General File Reference: KK HILLS AREA - PEDIMENT DRILL PROJECT Aa-16.19.11

Total Depth: 1506'

Postmineral thickness: 1506'

Premineral bedrock: NONE

Source of Information: ASARCO REPORT

Drill Contractor: HUNTER SHELTON DRILLING CO.

Company: ASARCO

Date: MARCH 10 TO APRIL 20, 1975 (SERIES)

Geologic Log: 0-200' QTg - ALLUVIUM
200'-1506' Tg - OLDER GRAVELS & CGL.

Assays, Geochem: Cu AVE ± 20 PPM, HIGH 30 PPM.
Mo AVE ± 5 PPM, HIGH 8 PPM.

Core, cuttings on file: SPOT CORE & SELECT CUTTINGS STORED.

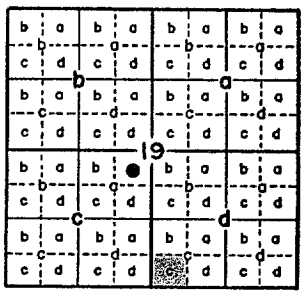
Drilling Problems, Depth to Water: NO SIGNIFICANT PROBLEMS (SOME WATER LOSS).
WATER LEVEL NOT DETERMINED.

Other: SEE FILES FOR LOG & ASSAYS
PIMA COUNTY, ARIZONA

S. R. Davis
(10-3-75)

9-12-74

Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION KK-1

T 11 S R 7 E

SEC 34 dcc

General File Reference: KK HILLS AREA - PEDIMENT DRILL PROJECT Aa-16.19.11

Total Depth: 946'

Postmineral thickness: 915'

Premineral bedrock: PRECAMBRIAN ORACLE GRANITE

Source of Information: ASARCO REPORT

Drill Contractor: HUNTER SHELTON DRILLING CO.

Company: ASARCO

Date: MARCH 10 TO APRIL 20, 1975 (SERIES)

Geologic Log:

0- 120' QTg - ALLUVIUM & GRAVEL
120'-860' QTgv - GRAVEL - CGL & VOLCANIC FLOWS? - CGL.
860-915 Tg - OLDER CGL
915-946 p€g - ORACLE GRANITE

Assays, Geochem: Cu AVE ±20 PPM, HIGH 40 ppm
Mo AVE ± 5 PPM, HIGH 8 PPM

Core, cuttings on file: SPOT CORE & SELECT CUTTINGS IN STORAGE.

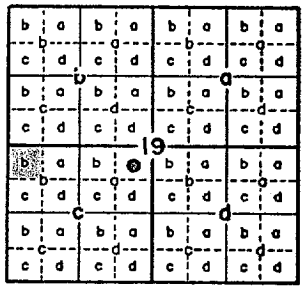
Drilling Problems, Depth to Water: NO PROBLEMS, WATER LEVEL NOT DETERMINED.

Other: SEE FILES FOR LOG & ASSAYS
PIMA COUNTY, ARIZONA

S. K. Davis
(10-2-75

9-12-74

Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION NWS-4

T 11 S R 8 E

SEC 4 cbb

General File Reference: NW SILVER BELL PROJECT, Aa-16.19.14B

Total Depth: 1549'

Postmineral thickness: 1530'

Premineral bedrock: 19'

Source of Information: ASARCO REPORT

Drill Contractor: WAYNE SHELTON DRILLING CO.

Company: ASARCO

Date: AUGUST 28 TO SEPTEMBER 2, 1975

Geologic Log: 0-1080' Tv - ANDESITIC BASALT FLOWS.
1080'-1530' Tc - CONGLOMERATE-FANGLOMERATE W LOCAL FLOWS.
1530'-1549' p€g - ORACLE GRANITE.

Assays, Geochem: SEE FILE

Core, cuttings on file: SPOT CORE AND CUTTINGS (VIALS) IN STORAGE.

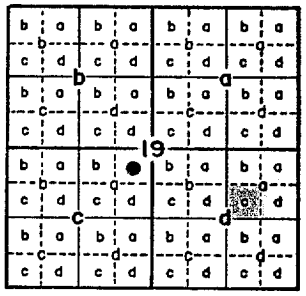
Drilling Problems, Depth to Water: HARD p€g BEDROCK, QTZ VNS IN ORACLE GRANITE. DEPTH TO WATER NOT DETERMINED.

Other: SEE FILE FOR GEOLOGIC MAPS & LOG
PIMA COUNTY, ARIZONA
SILVER BELL MINING DISTRICT.

S.R. Davis
(10-6-75)

9-12-74

Section Location Example



Section 19caa
W½ of 2 Mi² SECTION

DRILL RECORD

HOLE DESIGNATION NWS-3
T 11 S R 8 E

SEC 7(W½) dac

General File Reference: NW SILVER BELL PROJECT, Aa-16.19.14B

Total Depth: 1535'

Postmineral thickness: 1480'

Premineral bedrock: PRECAMBRIAN ORACLE GRANITE

Source of Information: ASARCO REPORT

Drill Contractor: WAYNE SHELTON DRILLING CO.

Company: ASARCO

Date: AUGUST 18 to AUGUST 28, 1975

Geologic Log: 0- 780' Tv - ANDESITIC TO BASALTIC FLOWS
780'-1480' Tc - TERTIARY FANGLOMERATE - CONGLOMERATE
1480'-1535' p€g - ORACLE GRANITE

Assays, Geochem: SEE FILE

Core, cuttings on file: SPOT CORE & CUTTINGS (VIALS) IN STORAGE.

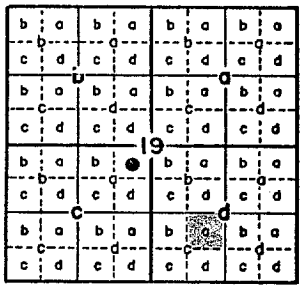
Drilling Problems, Depth to Water: MODERATE SWELLING IN CLAY ZONES, VOLC & CONGLOMERATE. DEPTH TO WATER NOT DETERMINED.

Other: SEE FILE FOR GEOLOGIC MAPS & LOG.
PIMA COUNTY, ARIZONA
SILVER BELL MINING DISTRICT.

S.R. David
(10-6-75)

9-12-74

Section Location Example



Section 19caa

W½ of 2 Mi² SECTION

DRILL RECORD

HOLE DESIGNATION NWS-1

T 11 S R 8 E

SEC 18(W½) dca

General File Reference: N W SILVER BELL PROJECT, Aa-16.19.14B

Total Depth: 1606'

Postmineral thickness: 1402'

Premineral bedrock: SILVER BELL AND CLAFLIN RANCH FORMATIONS.

Source of Information: ASARCO REPORT

Drill Contractor: WAYNE SHELTON DRILLING CO.

Company: ASARCO

Date: FEBRUARY 19TH TO MARCH 3RD, 1974

Geologic Log: 0 - 60' Qal
60'- 1402' Tv - ANDESITE & BASALT FLOWS
1402'-1606' TKsb - (CLAFLIN RANCH) & SILVER BELL Fm.

Assays, Geochem: SEE FILES

Core, cuttings on file: SPOT CORE AND CUTTINGS (VIALS) IN STORAGE.

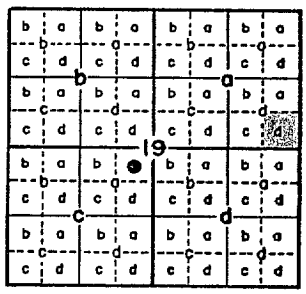
Drilling Problems, Depth to Water: No PROBLEMS, DEPTH TO WATER NOT DETERMINED.

Other: SEE FILES FOR GEOLOGIC LOG & MAPS.
PIMA COUNTY, ARIZONA
SILVER BELL MINING DISTRICT

S. E. Davis
(10-6-75)

9-12-74

Section Location Example



Section 19caa

E ½ of 2 Mi² SECTION

DRILL RECORD

HOLE DESIGNATION NWS-2

T 11 S R 8 E

SEC 19(E½) add

General File Reference: NW SILVER BELL PROJECT, Aa-16.19.14 B

Total Depth: 1770'

Postmineral thickness: 1710'

Premineral bedrock: CRET-TERTIARY(?) RHYOLITE TUFF

Source of Information: ASARCO REPORT

Drill Contractor: WAYNE SHELTON DRILLING CO.

Company: ASARCO

Date: MARCH 4 TO MARCH 16, 1974

Geologic Log:

0 - 1435' Tv - ANDESITE - BASALT FLOWS & DIKES(?)

1435'-1710' Tv - TUFF & TUFFACEOUS CLAY

1710'-1770' KML - MT LORD(?) RHYOLITE TUFF

Assays, Geochem: SEE FILE

Core, cuttings on file: SPOT CORE AND CUTTINGS (VIALS) IN STORAGE

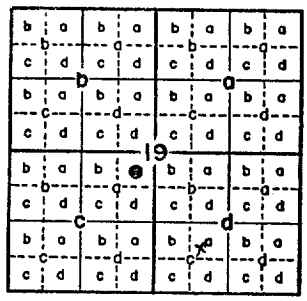
Drilling Problems, Depth to Water: NO PROBLEMS, DEPTH TO WATER UNKNOWN. WATER RETURN NOTED AS "VERY WARM" BY DRILLERS.

Other: SEE FILE FOR GEOLOGIC MAPS & LOG.
PIMA COUNTY, ARIZONA
SILVER BELL MINING DISTRICT

S. R. Davis
(10-6-75)

9-12-74

Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION WS-1

T 11 S R 27 E

SEC 22 dca

General File Reference: Aa-7A.7B.0

Total Depth: 884'

Postmineral thickness: 830'

Premineral bedrock: PRECAMBRIAN GRANITE

Source of Information: TEXASGULF WESTERN SUBMITTAL

Drill Contractor: B.J. DRILLING CO., BENSON ARIZ.

Company: TEXASGULF WESTERN

Date: SEPTEMBER 12-16, 1977

Geologic Log: SEE WILLOW SPRINGS FILE

Assays, Geochem: COPPER & MOLYBDENUM REPORTED LOW (GEOCHEM)

Core, cuttings on file: 1 SMALL SPECIMEN OF CORE, 1 PETROGRAPHIC SECTION.

Drilling Problems, Depth to Water: NONE, WATER TABLE @ ±500'

Other: GEOPHYSICAL & SOIL MERCURY MAPS IN FILE.

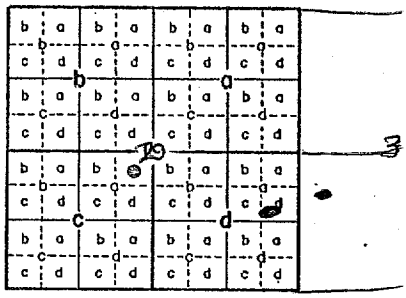
S. K. Davis

9-12-74

TAB

12

Section Location Example



DRILL RECORD

HOLE DESIGNATION

T 12S R 5E

SEC 29 & 30

General File Reference: 16.19.[redacted].36

Total Depth: ?

Postmineral thickness: ?

Premineral bedrock: metamorphosed sediment

Source of Information: Field Exam

Drill Contractor: ?

Company: ?

Date: ?

Geologic Log: ?

Assays, Geochem: ?

Core, cuttings on file: ?

Drilling Problems, Depth to Water: ?

Other:

Drill holes found during field examination, no chips or cuttings were located.

9-12-74

TAB

13

EMPTY
CONTENT

TAB

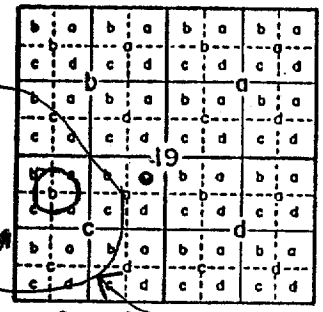
14

EMPTY
CONTENT

TAB

15

Section Location Example



Section 19caa

19cb

DRILL RECORD

HOLE DESIGNATION PC-1 thru 6

T 15S R 12E

SEC 12

General File Reference: SAGINAW HILL - A2 16.1.0B

Total Depth: PC-1 - 425'; PC-2 - 329'; PC 3 - 185'; PC 4 - 525', PC5 - 225', PC-6 - 250'

Postmineral thickness: ZERO

Premineral bedrock: LARAMIDE qtz mons por or Cretaceous Amole Fm.

Source of Information: Pzlosky explor.

Drill Contractor:

Company:

Date: 22 Oct 75

Geologic Log: } see file report

Assays, Geochem:

Core, cuttings on file: yes

Drilling Problems, Depth to Water:

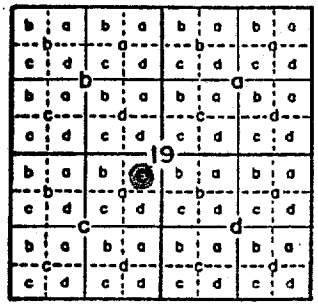
Other:
see files for old Bear Creek, Anaconda, Calumet & Ariz. & Vent, drill hole location - all in same area

JRK

9-12-74

TAB

16



Section 19caa

DRILL RECORD

HOLE DESIGNATION Humble State 32-1

T 16S R 15E

SEC 5 caa

4 miles SE of Tucson

General File Reference: Pima County General, A4-16.0.0

Total Depth: 12,556 ft.

Postmineral thickness: 11,987 ft.

Premineral bedrock: Qtz Monzonite

Source of Information: Ariz. Oil & Gas Conv. Comm.

Drill Contractor: Loffland Drilling Co.

Company: Humble Oil & Refining Co.

Date: Spudded 9/16/72 Completed 12/18/72.

Geologic Log: Operators log.

0- 2975. Sand, red clay.
2975 - 7,300 Sand, shale, conglomerate
7,300-7,710 Volc. tuff, sand, shale.
7,710-9,070 Interbedded andesite & basalt flows & shale with welded tuff at base.
9,070-9,525 Conglomerate
9,525-10,036 Basalt, volc. flow andesite & welded tuff.
10,036-11,987 Conglomerate & shale.
11,987-12,556. Quartz monzonite.

Assays, Geochem: None

Core, cuttings on file: Prob. No core. Cuttings probably on file with OOGC.

Drilling Problems, Depth to Water:

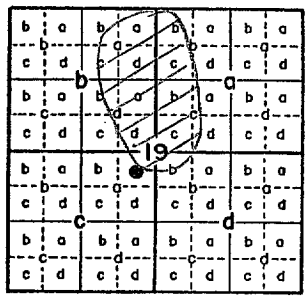
Other: Collar Elevation 2873 ft. Pima County, Arizona

Other Logs: Compensated Formation Density, Induction-Electrical, Borehole compensated Sonic log - Gamma Ray.

9-12-74

JDS

Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION CF&I Dragoon Zone

T 16S R 22E

SEC 25baabcd, bdabd, abbc, acbc

Approximately 30 holes

General File Reference:

Total Depth: ?

Postmineral thickness: ?, probably thin alluvium

Premineral bedrock: Horquilla Limestone & Abrigo Limestone

Source of Information: Field Inspection

Drill Contractor: ?

Company: Colorado Fuel & Iron

Date: Drilled mid 1960s

Geologic Log:

Assays, Geochem:

Core, cuttings on file:

Drilling Problems, Depth to Water:

Other: The Dragoon zone is reported to contain ± 20 million tons of ± 0.4% copper in skarns

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TAB

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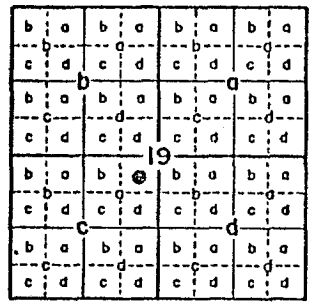
Section Location Example



Section 19caa

J.R.K.

DRILL RECORD

HOLE DESIGNATION

T 17 S R 16 E

SEC 25, 26

General File Reference: West Empire Hills Report - 1975 - JRKing

Total Depth:

Postmineral thickness:

Premineral bedrock:

Source of Information:

Drill Contractor:

Company: Cyprus, New Jersey Zinc, Cordero, Geochem Survey, Newmont

Date:

Geologic Log:

Assays, Geochem:

Core, cuttings on file:

Drilling Problems, Depth to Water:

Other:

SEE REPORT FOR DATA

SEE ATTACH MAP.

Sec 25
1 holes 25 d

Sec 26
5 holes 26 c

Sec 27
5 holes 27 c

Sec 34
1 hole 34 a a

Sec 22
4 holes 22 b & 22 c

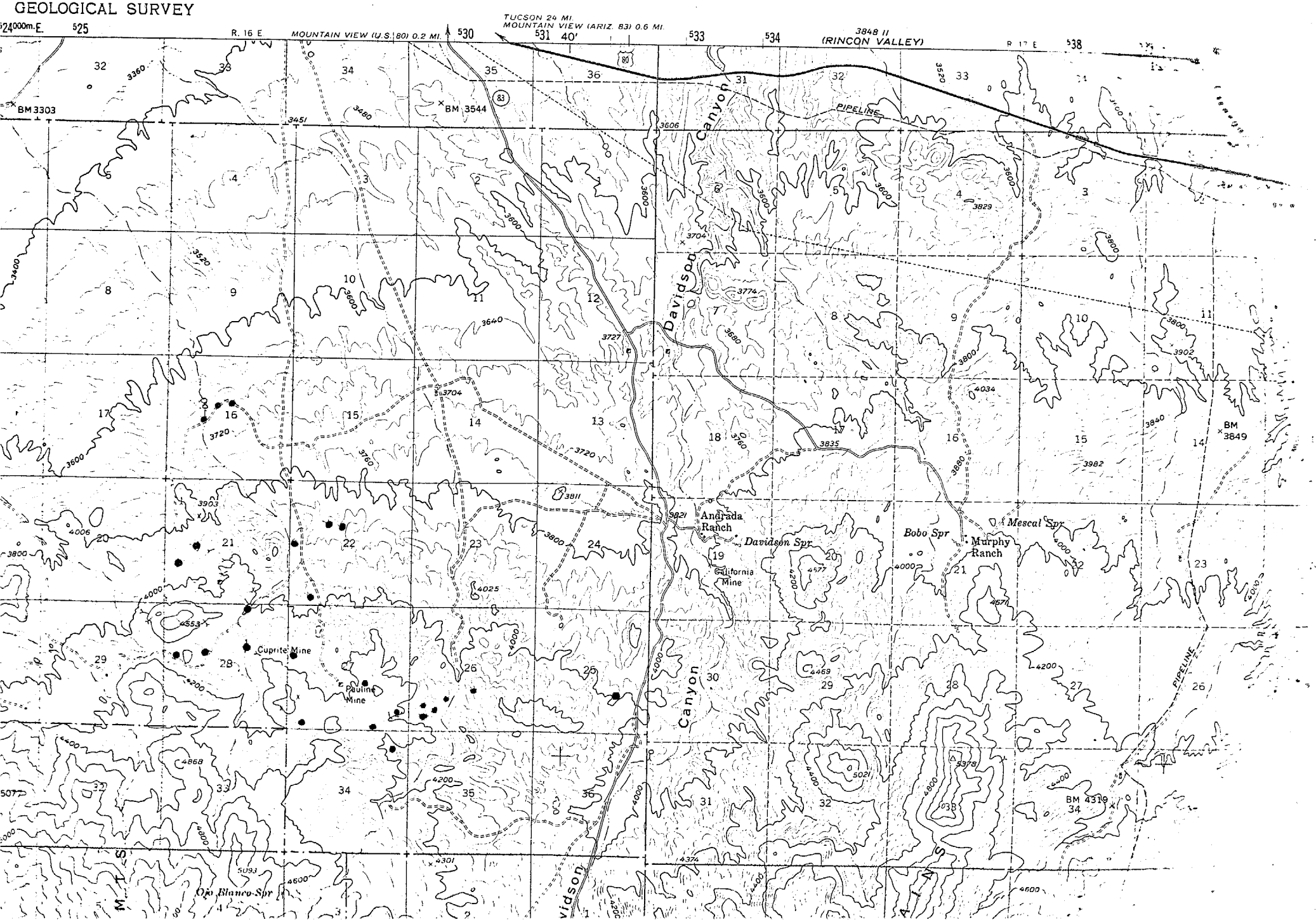
Sec 28
4 holes 28 b & 28 a

Sec 21
2 holes 21 b

Sec 16
3 holes

9-12-74

UNITED STATES
ARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



TAB

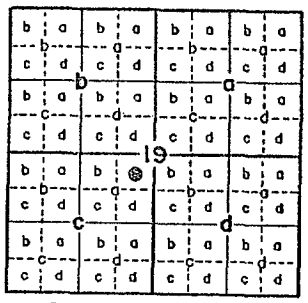
18

EMPTY
CONTENT

TAB

19

Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION T 1-04

T 19S R 22 E

SEC 34, 35, 25

see attac map

General File Reference: Tombstone - W. Mounts - JD Lowell 1974 drilling

Total Depth: less than 2100'

Postmineral thickness: ?

Premineral bedrock: ?

Source of Information:

Drill Contractor:

Company:

Date: 1974

Geologic Log:

Assays, Geochem:

Core, cuttings on file:

Drilling Problems, Depth to Water:

Other:

34 da
35 aab
35 ddb
25 dab

also T-5
T19S R23E
31cd
&
T-6
T20S R23E
sec 7aab

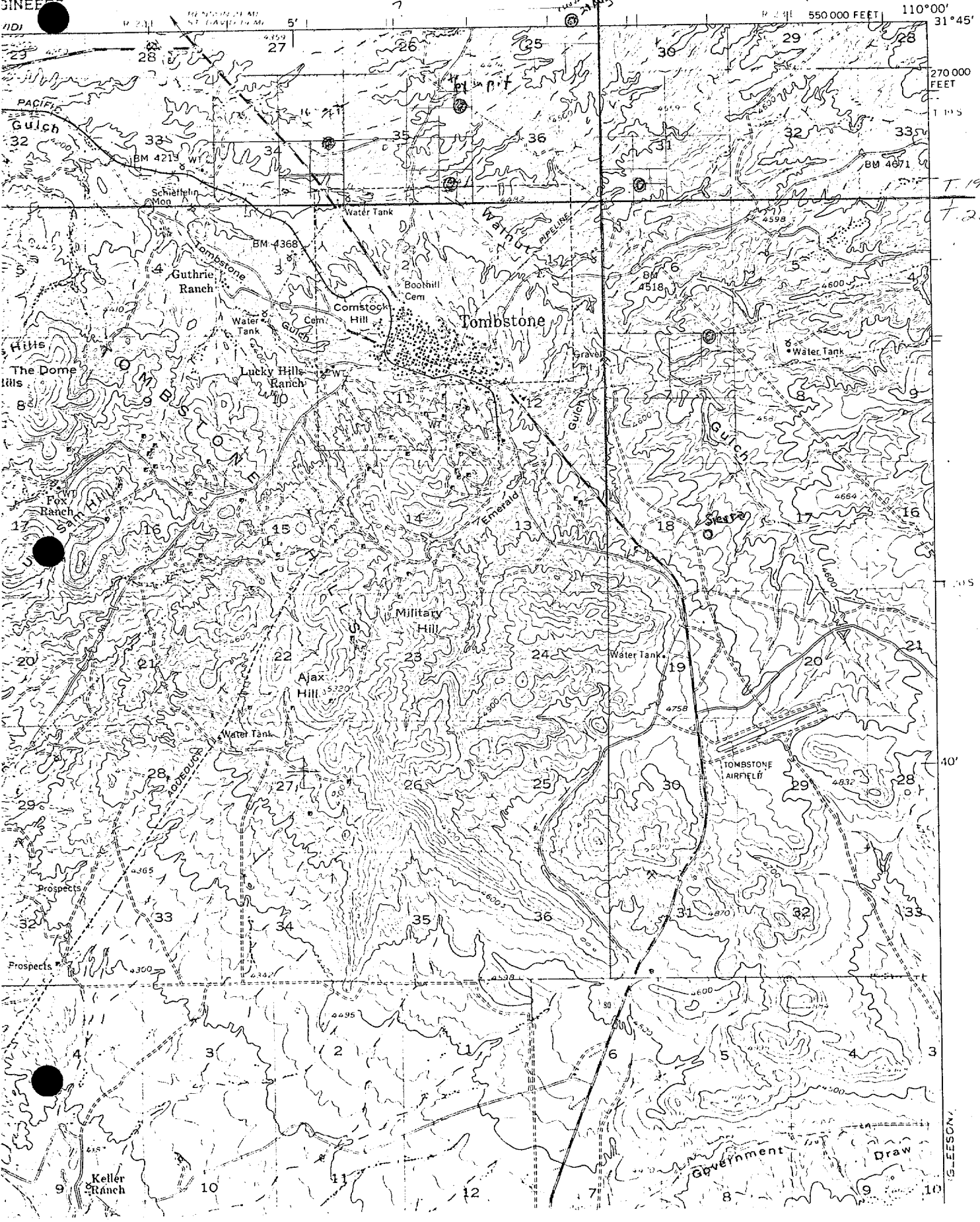
9-12-74

W. W. [illegible]
1974 [illegible]

ATES
THE ARMY
GINEERS

TOMBSTONE QUADRANGLE
ARIZONA–COCHISE CO.
15 MINUTE SERIES (TOPOGRAPHIC)

(PEARCE)



TAB

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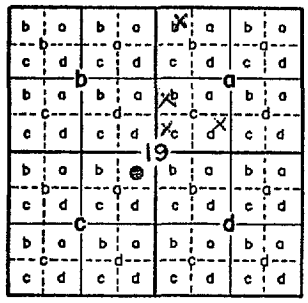
Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION

T 20 S R 22 E

SEC 17

Four ~~three~~ holes abb, acb, acb & acc

General File Reference:

Total Depth: ?

Postmineral thickness: None

Premineral bedrock:

Source of Information: Field Examination

Drill Contractor: ?

Company: Austrial Minerals ?

Date: Mid 1960s

Geologic Log: —

Assays, Geochem: —

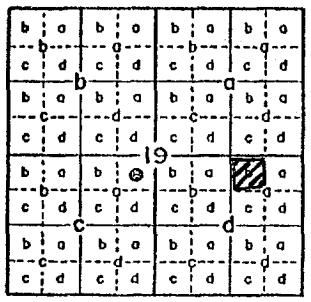
Core, cuttings on file: —

Drilling Problems, Depth to Water: —

Other: all holes drilled ~~near~~ near veins in weakly bleached Uncle Sam tuff, some limonite after pyrite.
Hole abb, encountered some hornfels, altered Bisbee formation (Kb) shales, could be Kb fragments in agglomerates or the Kb that underlies the tuff

9-12-74

Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION S-1

T 20S R 23E

SEC 18 dzb

(see map T holes for location)

General File Reference: Tombstone

Total Depth: ? less than 1000'

Postmineral thickness: ?

Premineral bedrock: ?

Source of Information:

Drill Contractor: local Tombstone driller

Company:

Date:

Geologic Log:

Assays, Geochem:

Core, cuttings on file:

Drilling Problems, Depth to Water:

Other: drilled to keep claims valid

9-12-74

TAB

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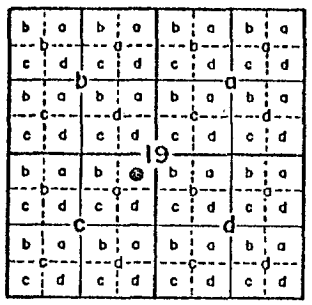
Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION T-71-2-6

T 21S R 21E

SEC 10, 11 2 & 3

General File Reference: Charleston Project - Report JKing 1973

Total Depth:

Postmineral thickness:

Premineral bedrock:

Source of Information: SEE REPORT

Drill Contractor:

Company: TENNECO

Date: 1971-72

SEE ATTACH MAP for location

10 db
11 cd
11 cdb
3 bb
3 ab

Geologic Log:

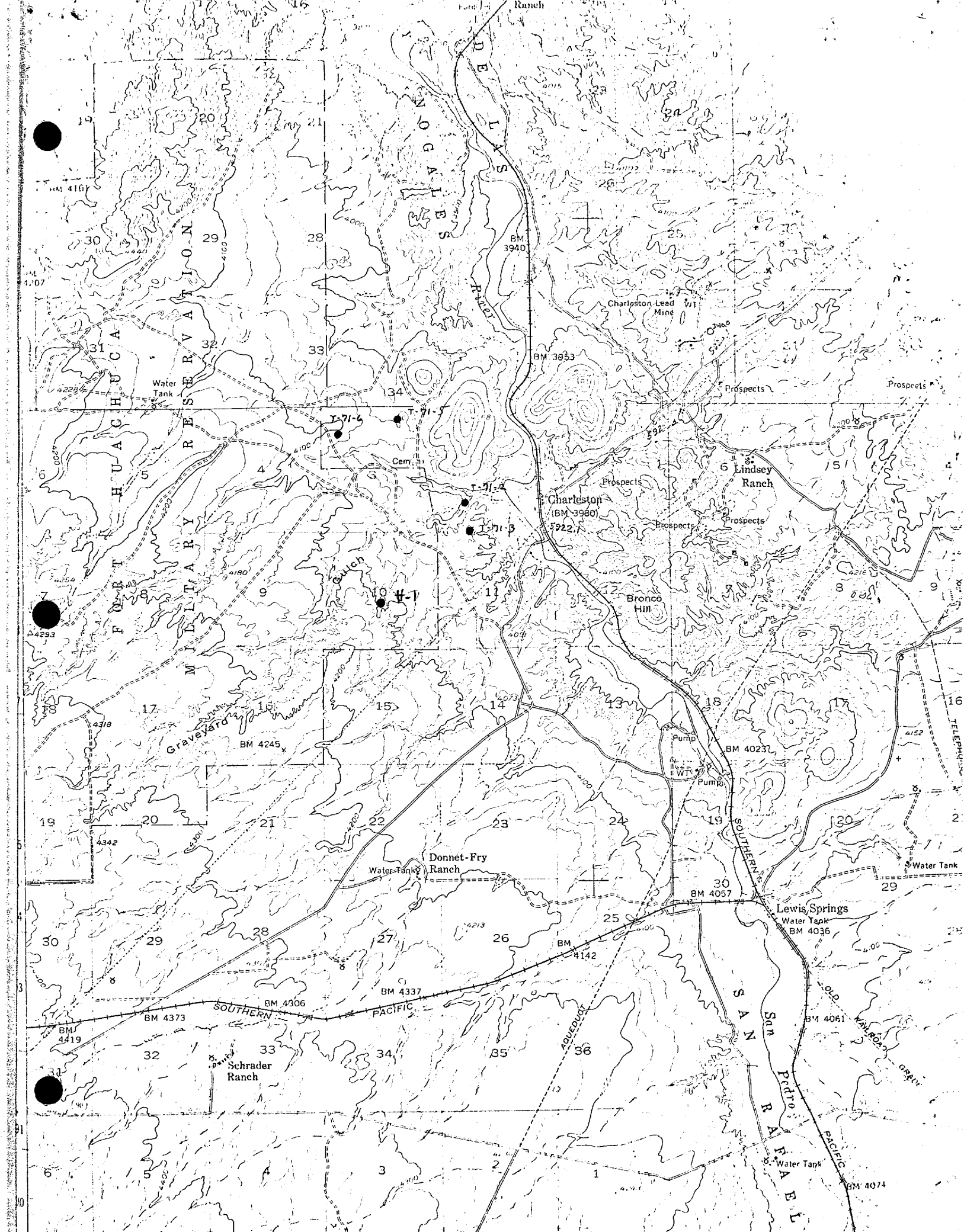
Assays, Geochem:

Core, cuttings on file:

Drilling Problems, Depth to Water:

Other:

9-12-74


Ranch
DEL NOGALES
River
BM 3940
Charleston Lead Mine
BM 3853
Prospects
Prospects
Water Tank
T-71-6
T-71-5
Cem
T-71-4
T-71-3
Charleston
(BM 3980)
5922
Lindsey Ranch
Prospects
Prospects
Prospects
Gulch
10 H-1
Bronco Hill
FORT HUACHUCA MILITARY RESERVATION
Graveyard
BM 4245
Pump
BM 4023
WT
Pump
SOUTHERN
Donnet-Fry Ranch
Water Tank
Water Tank
BM 4057
Lewis Springs
Water Tank
BM 4036
BM 4142
BM 4337
BM 4306
BM 4373
SOUTHERN PACIFIC
BM 4419
AQUEDUCT
Schrader Ranch
SAN PEDRO
San Pedro
OLD RAILROAD GRADE
BM 4061
Water Tank
PACIFIC
BM 4074

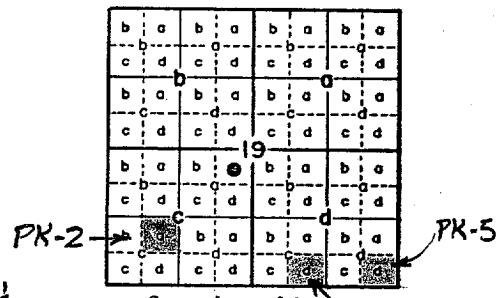
TAB

22

EMPTY
CONTENT

TAB
23

Section Location Example



Section 19caa
SEC 2 (?)

DRILL RECORD

HOLE DESIGNATION PK SERIES
T 23 S R 16 E

SEC 2 • PK-2 cca, PK-4 dcd & PK-5 ddd ; ALL UNSURVEYED!

General File Reference: GOLDBAUM CANYON - Aa - 19.16.7A

Total Depth: PK-2 = 1213', PK-4 = 657' & PK-5 = 685'.

Postmineral thickness: PK-2 = 320', PK-4 = 350' & PK-5 = 400'

Premineral bedrock: TERTIARY - MESOZOIC VOLCANIC; HARDSHELL OR CORRAL CANYON COMPLEX?

Source of Information: TEXAS GULF REPORTS by C.R. WILLIAMS & D.M. BROWN.

Drill Contractor: COPPER STATE DRILLING CO. & G.H. SHELTON DRILLING CO.

Company: RIDGE MINING CO., A TEXAS GULF SUBSIDIARY.

Date: MAY 26, 1972 TO MAY 20, 1973 - DISCONTINUOUS.

Geologic Log: PK-2 0-320' QTg 320'-1213' TMv PK-4 0-350' QTg 350'-657' TMv & PK-5 0-400' QTg 400'-685' TMv

Assays, Geochem: SEE FILE

Core, cuttings on file: NONE

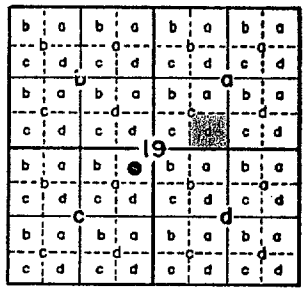
Drilling Problems, Depth to Water: NOT KNOWN

Other: SEE FILE FOR LOGS & CROSS-SECTIONS & OTHER PK HOLES.
SANTA CRUZ COUNTY, ARIZONA
HARSHAW MINING DISTRICT.

S.R. Davis
(10-7-75)

9-12-74

Section Location Example



Section 19caa

SEC 3 (?)

DRILL RECORD

HOLE DESIGNATION PK-SERIES, PK-6

T 23 S R 16 E

SEC 3 acd (?) UNSURVEYED!

General File Reference: GOLDBAUM CANYON - Aa-19:16.7 A

Total Depth: 650'

Postmineral thickness: 250'

Premineral bedrock: TERTIARY-MESOZOIC VOLCANIC; HARDSHELL OR CORRAL CANYON COMPLEX?

Source of Information: TEXAS GULF REPORTS BY C.R. WILLIAMS & D.M. BROWN.

Drill Contractor: G. H. SHELTON DRILLING CO.

Company: RIDGE MINING CO., A TEXAS GULF SUBSIDIARY.

Date: MARCH 17 TO MARCH 21, 1973.

Geologic Log: 0 - 250' QTg
250'-650' TMv

Assays, Geochem: SEE FILE

Core, cuttings on file: NONE

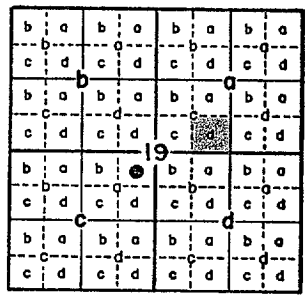
Drilling Problems, Depth to Water: NOT KNOWN

Other: SEE FILE FOR LOG, CROSS-SECTIONS & OTHER PK HOLES.
SANTA CRUZ COUNTY, ARIZONA
HARSHAW MINING DISTRICT.

S K Davis
(10-8-75)

9-12-74

Section Location Example



Section 19caa

SEC 11 (?)

DRILL RECORD

HOLE DESIGNATION H-1

T 23 S R 16 E

SEC 11acd(?) UNSURVEYED!

General File Reference: HARSHAW MINING DISTRICT, SANTA CRUZ CO., Aa-19.8.0

Total Depth: 1461'

Postmineral thickness: ±1300'

Premineral bedrock: MESOZOIC(?) GRN-GRY ANDESITE PORPHYRY (VOLCANIC).

Source of Information: RUSS CORN, KERR MCGEE CORP.

Drill Contractor: HUGH HARRIS DRILLING CO.

Company: DAVE LOWELL & UNDISCLOSED CLIENTS (NEWMONT? COMINCO?)

Date: SPRING & EARLY SUMMER 1974 ?

Geologic Log: 0 - ±1300' Qal & QTg GRAVELS & CONGLOMERATES
±1300 - 1461' Mv(?) VOLCANIC AN PO.

Assays, Geochem: STATED: "NO ALTERATION OR MINERALIZATION."

Core, cuttings on file: NONE

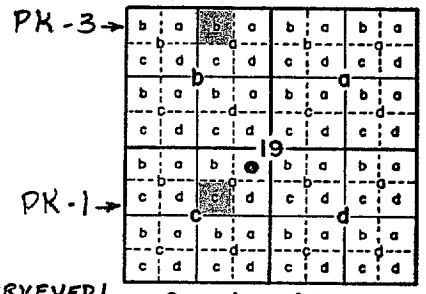
Drilling Problems, Depth to Water: PROBLEMS NOT KNOWN, WATER CURRENTLY STANDING AT 40'-60' FROM SURFACE.

Other: A MINERAL EXPLORATION HOLE, DATA ACQUIRED VIA RUSSELL CORN OF KERR MCGEE & PERSONAL OBSERVATIONS. THICK GRAVELS MAY BE VALUABLE WATER SOURCE FOR ANY PATAGONIA MTNS MILLING OPERATION (i.e. HARDSHELL, SUNNYSIDE OR RED MOUNTAIN).

S.R. Davis
(10-14-75)

9-12-74

Section Location Example



DRILL RECORD

HOLE DESIGNATION PK SERIES

T 23 S R 16 E

SEC 11 PK-1 cac(?) PK-3 bab(?) UNSURVEYED!

General File Reference: GOLDBAUM CANYON - Aa-19.16.7A

Total Depth: PK-1 • 994' TD
PK-3 • 764' TD

Postmineral thickness: PK-1 = 590' ; PK-3 = 500'.

Premineral bedrock: TERTIARY(?) - MESOZOIC VOLCANIC (CORRAL CANYON COMPLEX?) &/OR HARDSHELL-CHIEF fm.

Source of Information: TEXAS GULF REPORTS by C.R. WILLIAMS & D.M. BROWN.

Drill Contractor: COPPER STATE DRILLING Co. & G.H. SHELTON DRILLING Co.

Company: RIDGE MINING Co. (TEXAS GULF SUBSIDIARY)

Date: MAY 26, 1972 TO MAY 20, 1973 - DISCONTINUOUS

Geologic Log: PK-1 = 0-590' QTg, 590'-994' TMv PK-3 = 0-500 QTg, 500-764 TMv

Assays, Geochem: SEE FILE

Core, cuttings on file: NONE

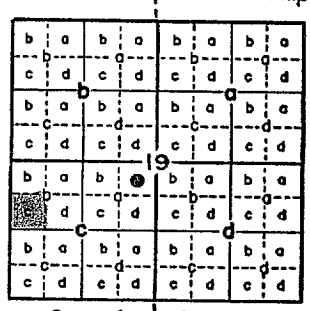
Drilling Problems, Depth to Water: NOT KNOWN

Other: SEE FILE FOR LOGS & CROSS-SECTIONS & OTHER PK HOLES.
SANTA CRUZ COUNTY, ARIZONA
HARSHAW MINING DISTRICT.

S.R. Davis
(10-7-75)

9-12-74

Section Location Example



Section 19caa

DRILL RECORD

HOLE DESIGNATION H-2

T 23 S R 16 E

SEC 13 (½ SEC) cbc(?) UNSURVEYED!

SEC 13(?) ½ SEC(W)

General File Reference: HARSHAW MINING DISTRICT, SANTA CRUZ CO., Aa-19.8.0

Total Depth: 2006.5'

Postmineral thickness: 2006.5'

Premineral bedrock: NONE

Source of Information: RUSS CORN, KERR McGEE & NORMAN HALE, HARSHAW RANCHER.

Drill Contractor: HUGH HARRIS DRILLING CO.

Company: DAVE LOWELL & UNDISCLOSED CLIENTS (NEWMONT? COMINCO?)

Date: SPRING & EARLY SUMMER, 1974?

Geologic Log: 0 - 2006.5' Qal & QTg (GILA TYPE) GRAVEL & CONGLOMERATE.

Assays, Geochem: NOT KNOWN

Core, cuttings on file: NONE

Drilling Problems, Depth to Water: PROBLEMS NOT KNOWN, RUMORED WATER AT ±600' (PERCHED?), THEN DRY OR LESS WATER TO BELOW 1,000'. PROBABLY DRILLED W/MUD, NOT RELIABLE!

Other: A MINERAL EXPLORATION HOLE, DATA ACQUIRED SECOND HAND FROM RUSS CORN & DRILLER VIA NORMAN HALE. THICK GRAVELS MAY BE VALUABLE WATER SOURCE FOR 'ANY' PATAGONIA MTNS MILLING OPERATIONS (ie. HARDSHELL, SUNNYSIDE OR RED MOUNTAIN).

S. H. Davis

(10-14-75)

9-12-74