[redacted]

M-d

DUVAL CORPORATION #37 STATE NO PERMIT
SE NE Sec. 4-T18N-R26E APACHE COUNTY 1-46

1-46

County Apache

Area Holbrook Basin

Lease No. State

Well Name Duval Corporation #37 State

Location SE NE Sec 4 Twp 18N Range 26E Footage 2390' FNL - 660' FEL

Elev 5760' Gr 5765 KB Spud Date 5-2-64 ~~Completed~~ Abandon 5-8-64 Total Depth 1564'? per Duval sheet

Contractor

Drilled by Rotary
Cable Tool

Casing Size	Depth	Cement

Production Horizon

Initial Production

REMARKS This hole drilled as a potash test.

See file for Core Lithology (Footage 1390' - 1563')

Elec Logs Gamma Ray-Neutron;

Applic. to Plug ___ Plugging Record x Completion Report x

Sample Log
Sample Descript.
Sample Set P-1305
Core Analysis
DSTs

Water well accepted by

Bond Co. & No. None

Bond Am't $ Cancelled Date Organization Report None

Filing Receipt None Dated Well Book x Plat Book x

API No. ~~None~~ 02-001-05046 Loc. Plat Dedication None (Strat)

Permit Number None Date Issued

1-46

WELL COMPLETION OR RECOMPLETION REPORT AND WELL LOG

DESIGNATE TYPE OF COMPLETION:

New Well ☑ Work-Over ☐ Deepen ☐ Plug Back ☐ Same Reservoir ☐ Different Reservoir ☐ Oil ☐ Gas ☐ Dry ☐

DESCRIPTION OF WELL AND LEASE

Operator	Address
DUVAL CORPORATION	4715 E. FT. LOWELL RD. TUCSON, ARIZONA

Lease Name	Well Number	Field & Reservoir
	37	

Location: 2890' NORTH & 660' W OF S.E COR. SEC. 4 — Sec.—TWP-Range or Block & Survey: T 16N, R 26E

County	Permit number	Date Issued	Previous permit number	Date Issued
APACHE				

Date spudded	Date total depth reached	Date completed, ~~ready~~ to ~~produce~~	Elevation (DF, RKB, RT or Gr.) feet	Elevation of casing hd. flange feet
5-2-64	5-8-64	5/8/64		

Total depth	P.B.T.D.	Single, dual or triple completion?	If this is a dual or triple completion, furnish separate report for each completion.
1557			

Producing interval (s) for this completion	Rotary tools used (interval)	Cable tools used (interval)

Was this well directionally drilled?	Was directional survey made?	Was copy of directional survey filed?	Date filed

Type of electrical or other logs run (check logs filed with the commission)	Date filed
GAMMA RAY - NEUTRON	

CASING RECORD

Casing (report all strings set in well—conductor, surface, intermediate, producing, etc.)

Purpose	Size hole drilled	Size casing set	Weight (lb./ft.)	Depth set	Sacks cement	Amt. pulled

TUBING RECORD			LINER RECORD				
Size in.	Depth set ft.	Packer set at ft.	Size in.	Top ft.	Bottom ft.	Sacks cement	Screen (ft.)

PERFORATION RECORD			ACID, SHOT, FRACTURE, CEMENT SQUEEZE RECORD	
Number per ft.	Size & type	Depth Interval	Am't. & kind of material used	Depth Interval

INITIAL PRODUCTION

Date of first production	Producing method (indicate if flowing, gas lift or pumping—if pumping, show size & type of pump:)

Date of test	Hrs. tested	Choke size	Oil prod. during test bbls.	Gas prod. during test MCF	Water prod. during test bbls.	Oil gravity ° API (Corr)

Tubing pressure	Casing pressure	Cal'ted rate of Production per 24 hrs.	Oil bbls.	Gas MCF	Water bbls.	Gas—oil ratio

Disposition of gas (state whether vented, used for fuel or sold):

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the.....of the .....(company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Date ..... Signature .....

STATE OF ARIZONA OIL & GAS CONSERVATION COMMISSION
Well Completion or Recompletion Report and Well Log
Form No. P-7 File two copies

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PLUGGING RECORD

Operator	Address
DUVAL CORPORATION	4715 E. FT. LOWELL RD. TUCSON, ARIZONA

Name of Lease	Well No.	Field & Reservoir
	37	

Location of Well	Sec-Twp-Rge or Block & Survey	County
2690' NORTH & 660' WEST OF S.E. COR SEC 4	T18N, R26E	APACHE

Application to drill this well was filed in name of	Has this well ever produced oil or gas	Character of well at completion (initial production): Oil (bbls/day)	Gas (MCF/day)	Dry?

Date plugged:	Total depth	Amount well producing when plugged: Oil (bbls/day)	Gas (MCF/day)	Water (bbls./day)
5-8-64	1557			

Name of each formation containing oil or gas. Indicate which formation open to wellbore at time of plugging	Fluid content of each formation	Depth interval of each formation	Size, kind & depth of plugs used Indicate zones squeeze cemented, giving amount cement.

CASING RECORD

Size pipe	Put in well (ft.)	Pulled out (ft.)	Left in well (ft.)	Give depth and method of parting casing (shot, ripped etc)	Packers and shoes

Was well filled with mud-laden fluid, according to regulations?	Indicate deepest formation containing fresh water.

NAMES AND ADDRESSES OF ADJACENT LEASE OPERATORS OR OWNERS OF THE SURFACE

Name	Address	Direction from this well:

In addition to other information required on this form, if this well was plugged back for use as a fresh water well, give all pertinent details of plugging operations to base of fresh water sand, perforated interval to fresh water sand, name and address of surface owner, and attach letter from surface owner authorizing completion of this well as a water well and agreeing to assume full liability for any subsequent plugging which might be required.

Use reverse side for additional detail
File this form in duplicate with the State of Arizona Oil & Gas Conservation Commission

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the.....of the .....(company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Date ..... Signature .....

STATE OF ARIZONA OIL & GAS CONSERVATION COMMISSION

Plugging Record File two copies

Form No. P-15

Hole No.	Interval (feet)	Formation or Member
37	Ground elevation 5760'	
	0-100	(No samples)
	-263	Upper Petrified Forest
	263-	Lower Petrified Forest
	553-	Top of greenish-grey unit
	842-999	Lower Hupatki
	999-1327	Coconino
	1327-	Supai
	1406	Top of 1st marker Anhydrite
38	Ground elevation 6210'	
	0-85	(No samples)
	-290	Bidahochi (with basal conglomerate)
	290-	Upper Petrified Forest
	1003-	Lower Petrified Forest
	1282-	Top of greenish-grey unit
	1599-1655	Lower Hupatki
	1655-1722	Kaibab
	1722-2035	Coconino
	2035-	Supai
	2113	Top of 1st marker Anhydrite
39	Ground elevation 6100'	
	0-308	Bidahochi
	308-	Upper Petrified Forest
	753-	Lower Petrified Forest
	1040-	Top of greenish-grey unit
	1295-	Shinarump
	1322-1468	Lower Hupatki
	1466-1753	Coconino
	1753-	Supai
	1855	Top of 1st marker Anhydrite
40	Ground elevation 5810'	
	0-15	Dune Sand
	15-66	Bidahochi
	66-571	Upper Petrified Forest
	571--22	Sonsela
	622-	Lower Petrified Forest
	765- (CPN log)	Top of greenish grey unit?
	1008-	Shinarump
	1069-1109	Lower Hupatki
	1109-1174	Kaibab
	1174-1484	Coconino
	1484-	Supai
	1589 (Approx.)	Top of 1st marker Anhydrite

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Form 3
2M Sheets 5-54

DUVAL SULPHUR & POTASH COMPANY
POTASH DIVISION
CARLSBAD, NEW MEXICO

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

CORE LITHOLOGY

WELL NO. 37

DEPTH (Feet) From		To		INTERVAL Feet		ESTIM. % Shale	%A	DESCRIPTION
				Abbreviations:				H - Halite G - Gypsum
								A - Anhydrite C-S - Clay-Silt
								P - Polyhalite med.g. - medium grained
								S - Sylvite clr - clear
								C - Carnallite occ - occasional
								f.g. - fine grained v - very
								c.g. - coarse grained incr - increasing
								incl - inclusions decr - decreasing
								irreg - irregular brn - brown
1390	0							START CORING
1390	0	1391	9	1	9	65	35	C-S, brn, med hd.; some irreg white A stringers
								and zones.
1391	9	1403	0	11	1	97	3	C-S, brn, med soft; numerous thin white A/G partings,
								0.2' band at 1402.0'.
1403	0	1403	8	0	8	6	94	A/G, white, few small Selenite zones; few medium
								brn C-S incls.
1403	8	1406	6	2	8	96	4	C-S, brn, med soft, few small white A/G blebs,
								grading out down.
1406	6	1407	1	0	5	1	99	A/G, white; thin high angle C-S parting at 1406.9'.
1407	1	1408	7	1	6	96	4	C-S, brn; some thin white A/G partings & stringers,
								30° Selenite fracture filling in slickinside at
								1408.0'.
1408	7	1411	0	2	3	3	97	A, lt. gray, v few brn C-S incls, 0.2' 80% zone at
								1410.6'.
1411	0	1412	9	1	9	90	10	C-S, brn, med soft; numerous thin white A/G partings
								& blebs incr down from 5% at top to 15% at base.
1412	9	1428	0	15	1	-	100	A, lt. gray; little brn to gray C-S in bottom 0.2'.
1428	0	1435	5	7	5	97	3	C-S, red-brn, soft; few small white A blebs.
1435	5	1436	7	1	2	15	85	A, lt. gray; 0.2' 80% brn C-S zone at base.
1436	7							TOP OF SALT
1436	7	1438	7	2	0	-	4	H, v clr, med.g.; few small white A stringers & tan
								A/P blebs in lower 1/3, ½" A band at 1438.4'.

Form 3-A

DUVAL CORPORATION

Core Lithology, Supplemental Page

WELL NO. 37 CORE LITHOLOGY PAGE NO. 2

DEPTH (Feet) From		DEPTH (Feet) To		INTERVAL Feet		ESTIM. % Shale	ESTIM. % A*	DESCRIPTION
1438	7	1440	2	1	5	20	3	H, med to c.g.; some lg. brn C-S incls in zones; few small white A blebs & stringers.
1440	2	1445	7	5	5	8	3	H, med.g.; many small to med. brn C-S incls; few small white A blebs.
1445	7	1447	9	2	2	16	2	H, med to c.g.; some med to lg. brn C-S incls; few med white A blebs.
1447	9	1449	5	1	6	35	1	H, med.g.; many med to v lg. brn C-S incls; v few small white A blebs.
1449	5	1452	0	2	5	8	2	H, med to c.g.; numerous small brn C-S incls incr down from 4 at top to 12 at base; few med white A blebs.
1452	0	1452	6	0	6	60	-	C-S, brn, med soft, & H, f.g. to c.g. as irreg zones & fracture fillings.
1452	6	1454	8	2	2	2	-	H, clr, med.g.; few small brn C-S incls; occ white A blebs.
1454	8	1460	8	6	0	1	2	H, clr, med to c.g., few small white A stringers in bottom 1.0', ½" band at 1460.4; v few brn C-S incls grading out downward.
1460	8	1466	1	5	3	-	85	~~A, lt. gray; few H, med.g. intergrowths.~~
1466	1	1468	7	2	6	4	2	~~H, med to c.g., clr in lower half; 0.1' brn C-S band at top, few other incls in top half; few white A stringers.~~
1468	7	1471	2	2	5	18	2	H, med to c.g., many med to lg. brn C-S incls incr down from 6% at top to 30% at base; few small white A stringers, thin parting at top.

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orm 3-A

DUVAL CORPORATION

Core Lithology, Supplemental Page

WELL NO. 37 CORE LITHOLOGY PAGE NO. 3

DEPTH (Feet) From		DEPTH (Feet) To		INTERVAL Feet		ESTIM. % Shale	ESTIM. % A%	DESCRIPTION
1471	2	1476	8	5	6	8	2	H, med.g.; some small to lg. brn C-S, incls decr down from 12% at top to 4% at base; few small white A stringers.
1476	8	1479	1	2	3	2	3	H, fairly clr, med to c.g.; few small white A stringers grading out down; few small brn C-S incls.
1479	1	1481	5	2	4	8	1	H, med.g., some small to med brn C-S incls, v few white A blebs.
1481	5	1485	0	3	5	2	3	H, med to c.g., fairly clr; few small white A stringers ½" band at 1484.7; few small brn C-S incls.
1485	0	1487	5	2	5	45	2	H, med.g., & C-S, brn, soft; few small white A stringer
1487	5	1493	0	5	5	25	1	H, med.g., many lg. brn C-S incls; v few small white A stringers.
1493	0	1495	1	2	1	5	-	H, med to c.g., some med brn C-S incls grading out down; occ small white A stringer.
1495	1	1496	2	1	1	4	-	H, med to c.g., few small brn C-S incls.
1496	2	1497	6	1	4	55	2	C-S, brn, soft, & H, f.g. to med as irreg zones & blebs few small white A stringers.
1497	6	1501	4	3	8	-	4	H, clr, med.g. few small white A stringers & tan A/P zones; v few brn C-S incls.
1501	4	1503	4	2	0	-	6	H, v clr, med to c.g.; few small to med white A stringers & numerous thin partings.
1503	4							TOP OF SAMPLES.
1503	40	1504	40	1	00	-	18	H, v clr, c.g.; several gray A stringers, ¼" partings at 1503.85', 1504.20' & base. Est. K2O/S - 0%

orm 3-A

DUVAL CORPORATION

Core Lithology, Supplemental Page

WELL NO. 37 CORE LITHOLOGY PAGE NO. 4

DEPTH (Feet) From		DEPTH (Feet) To		INTERVAL Feet		ESTIM. % Shale	ESTIM. % Ax	DESCRIPTION
1504	40	1504	80	0	40	-	12	H, clr, c.g.; ½" gray A band at 1504.60'; few small red S blebs. Est. K_2O/S - 3%
1504	80	1505	20	0	40	-	70	A, lt. gray; some H, f.g. intergrowths; few small red S blebs. Est. K_2O/S - 2%
1505	20	1505	85	0	65	-	6	H, clr, med-c.g.; few small gray A stringers, 20% gray A & tan A/P zone in bottom 0.1'; v few v small red S S blebs, grading in down. Est. K_2O/S - 1%
1505	85	1507	60	1	75	12	3	H, med; some small-med brn C-S incls; few small lt. gray A blebs; v few small red S blebs. Est. K_2O/S - 1%
1507	60	1508	15	0	55	6	1	H, med; few small brn C-S incls, thin parting at base; few small-lg. milky & red-rimmed S blebs; v few small gray A blebs. Est K_2O/S - 4%
1508	15	1509	10	0	95	3	1	H, clr, med & S, milky - red-rimmed, med-c.g.; few small brn C-S incls; v few small white A blebs. Est. K_2O/S - 22%
1509	10	1510	20	1	10	1	4	H, tan, med; few small-med gray A stringers & tan A/P zones; few small red S blebs; v few brn C-S incls. Est K_2O/S - 3%
1510	20	1510	75	0	55	1	8	H, tan, med; some A, gray & tan A/P zones; few small red-rimmed milky S blebs; v few brn C-S incls. Est. K_2O/S - 2%
1510	75	1512	25	1	50	-	7	H, tan, med-c.g.; few small gray A stringers & tan A/P zones, thin A partings at 1511.00' & base; v few small red S blebs. Est. K_2O/S - 1%

Form 3-A

DUVAL CORPORATION

Core Lithology, Supplemental Page

WELL NO. 37 CORE LITHOLOGY PAGE NO. 5

DEPTH (Feet) From		To		INTERVAL Feet		ESTIM. % Shale	Ax	DESCRIPTION
1512	25	1514	4	2	15	75	-	C-S, brn, soft; some H, f.g., as irreg blebs in zones.
1514	4	1516	5	2	1	18	-	H, med.g.; some small to med brn C-S incls decr down from 30% at top to 6% at base.
1516	5	1517	6	1	1	45	2	H, med.g., & C-S, brn, soft; few small white A blebs.
1517	6-	1519	1	1	5	12	1	H, med to c.g.; some lg. brn C-S incls; v few small white A blebs.
1519	1	1525	2	6	1	1	4	H, clr, c.g.; few small white A stringers & tan A/P blebs; v few small brn C-S incls.
1525	2	1530	4	5	2	-	4	H, v clr, med to c.g., few small to lg. white A stringers, ½" bands at 1530.0' & 1530.4'.
1530	4	1533	4	3	0	55	-	C-S, brn, soft, & H, f.g. to med.g., incr down from 10% at top to 80% at base.
1533	4	1537	3	3	9	5	2	H, med to c.g., some small brn C-S incls grading out down; few med white A stringers.
1537	3	1542	0	4	7	2	-	H, clr, med to c.g., few small red-brn C-S incls; occ gray A stringers.
1542	0	1545	7	3	7	2	3	H, clr, med to c.g., few small white A stringers, tan A/P blebs & brn C-S incls.
1545	7	1546	1	0	4	15	15	H, med.g., numerous med white A blebs & stringers & brn C-S incls.
1546	1	1547	9	1	8	92	1	C-S, dk. brn, v soft; few med H, incls, grading in down; v few small white A blebs.
1547	9	1549	2	1	3	20	1	H, med.g., some lg. brn C-S incls 0.3' 40% zone at 1548.2', few small white A blebs in top ½.

Form 3-A

DUVAL CORPORATION

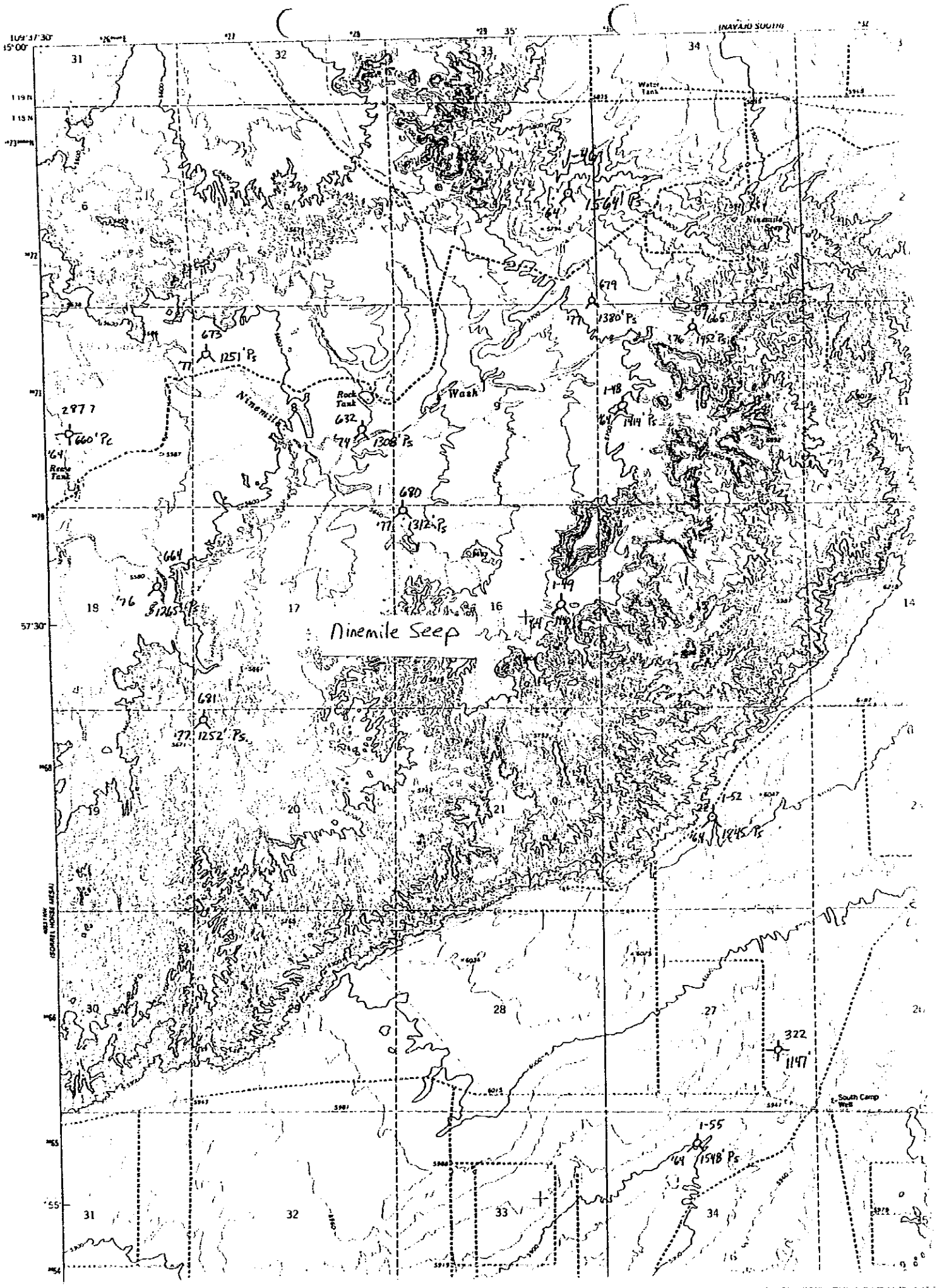
Core Lithology, Supplemental Page

WELL NO. 37 CORE LITHOLOGY PAGE NO. 6

DEPTH (Feet) From		DEPTH (Feet) To		INTERVAL Feet		ESTIM. % Shale	ESTIM. % Ax	DESCRIPTION
1549	2	1551	6	2	4	2	2	H, fairly clr, med.g., few small gray A stringers grading out down; few med brn C-S incls in lower ½.
1551	6	1555	1	3	5	1	4	H, clr, med-c.g., few med white A blebs & stringers, v few small brn C-S incls.
1555	1	1558	5	3	4	-	8	H, v clr, f.g. to c.g., numerous small white A stringers, partings at 1556.4', 1557.0' & 1557.4', & 0.1' band at 1557.9'.
1558	5	1559	5	1	0	-	85	A, lt. gray to white, some med H intergrowths grading out down.
1559	5	1561	2	1	7	94	2	C-S, red-brn, soft, few small white A blebs, few H f.g. incls grading in down.
1561	2	1563	0	2	8	1	3	H, med.g., few med to lg. white A blebs & stringers, grading in down; v few small brn C-S incls grading out down.
1563	0							TOTAL DEPTH

LOGGED BY Karl E. Elers

Karl E. Elers



Ninemile Seep
Ninemile
Wash
Rock Tank
Water Tank
South Camp Well
1-46
1564' Ps
679
1380' Ps
665
1452' Ps
673
1251' Ps
2877
660' Pc
632
1308' Ps
1-48
1414' Ps
680
1312' Ps
664
1265' Ps
1-49
681
1252' Ps
1-52
1845' Ps
322
1147'
1-55
1548' Ps

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FORM 159

DUVAL CORPORATION

INTER-OFFICE MEMORANDUM

FROM Navajo, Arizona

DATE May 14, 1964

TO Esperanza

ATTENTION B.G. Messer

SUBJECT: Duval # 37 State

Location: 2890 FSL, 660 FEL, sec.4, T.18N., R.26E.
Date Started: 5/2/64
Date Completed: 5/3/64
Elevation, G.L.: 5760
Casing Point: 1389
Depth, Top Coconino: 999 (4761)
Depth, Top Halite: 1430 (4330)
Depth, Top Sylvite: 1500 (4260)
T.D.: 1557