

Geol. Dept.

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Kedv

CORE ANALYSIS REPORT

013 2421

FOR

47 013 02 421 crds

PENNZOIL UNITED, INC.
G. B. HOWELL NO. 6 WELL
HENRIETTA BIG INJUN FIELD
CALHOUN COUNTY, WEST VIRGINIA



MG - 40

COUNTY Calhoun STATE W. Va.

FARM G. B. Howell #6

DISTRICT Sherman PERMIT NO. 2421

COMPANY Penn E MAP NOS. _____

LOGGED BY Pryce

ELEVATION _____

DEPTH	DOLO	LS.	SLT.	SH.	SS.	FLUOR.	CUT	Ø	
1600-10						B. wh			wh med sub-ord v. clean sd. 10% cal gr sh.
20						B. wh			"
30									"
40									gr. to gr-bl silts tone
50									"
60									wh med sub-ord to sub-arg v. clean sd. v. sl cal.
70									" w few crystal faces.
80									"
90									40% above 60% gr to gr-ga silts
1700									20% sd. 80% gr to gr-ga silts.
10									wh to lt bc fin gr sub-arg. arg sd. & gr silts & sh.
20									gr-ga to ga silty shale
30									" small amt of dk bc arg ls.
40									gr. to gr-bc silty sh & dk bc arg ls.
50									gr-bc to bc arg ls.
55									"
60									"
65									"
70						5/ B. wh			20% wh fin gr sub-arg sd. sl cal.
75						9/ B. wh			80% "

Dive Mon.

C O R E D E S C R I P T I O N

Well Name: G. B. Howell #6
District: Sherman
County: Calhoun
State: West Virginia
Permit No: Cal. 2421

- 1892-1894 Lt. buff to off white sdy dol w/abundant well rounded large frosted sand grains w/slight blue-white fluorescence.
- 1894-1896 Lt. buff dolomite w/dark brown dolomite intermingled with abundant dolomite crystal faces w/secondary pin-point porosity and blue-white fluorescence.
- 1896-1897 No sample
- 1897-1898 Buff to br dol w/styolites of dark br dolomite w/abundant dolomite crystals w/pryrite and some anhydrite within the styolites w/pin-point porosity, blue-white fluorescence.
- 1898-1904 Light buff to near white dolomite w/abundant dolomite crystal faces w/blue-white fluorescence.
- 1904-1906 Lt. buff to near white dolomite w/few med round sand grains scattered throughout w/small amounts of glauconite, blue-white fluorescence.
- 1906-1909 Near white dolomite w/abundant dolomite crystals w/moderate med sub rd sand grains oo ghost replaced by secondary dolomite crystals w/spotted blue-white fluorescence.
- 1909-1911 Buff to dark buff-brown dolomite w/bands of large frosted quartz sand grains and scattered glauconite. Poor fluorescence.
- 1911-1918 Lt. buff to near white dolomite w/abundant oo ghost replaced by dolomite crystals and abundant large frosted quartz grains w/scattered glauconite specks. Pin-point porosity within old oo ghost w/excellent blue-white fluorescence.

G. B. HOWELL #6 CORE

<u>Foot</u>	<u>Depth</u>	
1	1884-85	White dolomite - no show
2	86	" " "
3	87	" " "
4	88	Banded dolomite - gray-black-white - no show.
5	89	"
6	90	"
7	91	"
8	92	"
9	93	White dolomite - no show.
10	94	"
11	95	White dolomite - bleeding @ 1894.5
12	96	White dolomite - bleeding
13	97	White dolomite w/black stylolites bleeding.
14	98	"
15	99	White dolomite - heavy bleeding.
16	1900	White dolomite - bleeding
17	1	" "
18	2	" "
19	3	" "
20	4	White dolomite - slight bleeding.
21	5	White dolomite - heavy bleeding. 1904.6-1904.8 - Black shaley break.
22	6	White dolomite with some banding - heavy black.
23	7	" "
24	8	" "
25	9	White dolomite - bleeding.
26	10	White dolomite - lower 0.7' dry.
27	11	" - dry.
28	12	White dolomite - bleeding.

Foot

Depth

29	13	White dolomite - bleeding.
30	14	"
31	15	"
32	16	"
33	17	"
34	18	"
35	19	Shale @ 1918.

CORE ANALYSIS RESULTS

Company PENNZOIL UNITED, INC. Formation BIG INJUN File CP-1-6979
 Well G. B. HOWELL NO. 6 Core Type DIAMOND Date Report 7-10-69
 Field HENRIETTA BIG INJUN Drilling Fluid _____ Analysts BOYLE
 County CALHOUN State W. VA. Elev. _____ Location _____

Lithological Abbreviations

SAND - SD	DOLOMITE - DOL	ANHYDRITE - ANHY	SANDY - SDY	FINE - FN	CRYSTALLINE - XLN	BROWN - BRN	FRACTURED - FRAC	SLIGHTLY - SL/
SHALE - SH	CHERT - CH	CONGLOMERATE - CONG	SHALY - SHY	MEDIUM - MED	GRAIN - GRN	GRAY - GY	LAMINATION - LAM	VERY - V/
LIME - LM	GYP SUM - GYP	FOSSILIFEROUS - FOSS	LIMY - LMY	COARSE - CSE	GRANULAR - GRNL	VUGGY - VGY	STYLOLITIC - STY	WITH - W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS		POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		GRAIN DENSITY	SAMPLE DESCRIPTION AND REMARKS
		PERM. MAX.	PERM. 90°		OIL	TOTAL WATER		
CONVENTIONAL ANALYSIS								
1	1892-93	0.1		7.5	8.9	48.1	2.737	Sd, lmy
2	93-94	0.1		8.0	14.3	47.6	2.725	Lm, s1/sdy
3	94-95	0.2		11.9	18.7	39.6	2.736	Lm, s1/sdy
4	95-96	1.1		13.6	28.0	26.1	2.855	Dol, succ
5	96-97	0.1		9.1	26.0	11.5	2.860	Dol, succ
6	97-98	0.2		17.1	42.6	19.1	2.909	Dol, succ
7	98-99	0.3		19.0	28.7	16.2	2.816	Dol, succ
8	99-00	0.6		20.4	26.5	21.9	2.830	Dol, succ
9	1900-01	0.6		22.4	23.7	25.8	2.839	Dol, succ
10	01-02	0.5		21.4	28.1	22.7	2.819	Dol, succ
11	02-03	0.7		22.0	29.3	17.8	2.829	Dol, succ
12	03-04	0.6		23.6	32.0	20.3	2.833	Dol, succ
13	04-05	0.2		25.1	30.7	27.1	2.847	Dol, succ
14	05-06	0.3		14.6	27.4	25.7	2.847	Dol, succ
15	06-07	0.1		14.0	30.4	21.4	2.833	Dol, succ
16	07-08	0.8		13.8	30.9	23.6	2.832	Dol, succ
17	08-09	0.1		6.4	20.3	48.6	2.740	Lm, succ
18	09-10	<0.1		4.8	0.0	76.3	2.734	Lm, succ
19	10-11	0.1		4.3	0.0	79.5	2.738	Lm, succ
20	11-12	0.2		15.3	27.0	20.7	2.795	Lm, succ. s1/sdy
21	12-13	0.3		17.0	25.6	19.9	2.833	Dol, succ, s1/sdy
22	13-14	0.2		15.0	26.3	18.1	2.830	Dol, succ
23	14-15	0.1		15.9	27.8	18.5	2.830	Dol, succ
24	15-16	0.1		17.4	27.9	22.3	2.837	Dol, succ
25	16-17	0.1		15.7	29.8	18.8	2.838	Dol, succ
26	1917-18	0.1		12.6	34.7	20.4	2.858	Dol, succ

11 97 1 100

2.812
AVERAGE

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitableness of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

C O R E D E S C R I P T I O N

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District: Sherman
County: Calhoun
State: West Virginia
Permit No: Cal. 2421

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CORE DESCRIPTION

MG - 40

COUNTY CALHOUN STATE W. Va.

FARM G. B. Howell #4

DISTRICT Sherman PERMIT NO. _____

COMPANY Penn 301 MAP NOS. _____

LOGGED BY Proyer

ELEVATION _____

DEPTH	DOLO	LS.	SLT.	SH.	SS.	FLUOR.	CUT	Ø	
1893						sl. B. wh			lt buff to off-white schy dol w/ abd. L.F. QG, well rounded
94						B. wh			" "
95						B. wh.	φ		Above to sl less schy w/ dk br dol w/ secondary pin-point φ
96						B. wh	φ		buff to br dol w/ abd. crystal faces. pin point φ almost all dol
97									NO SAMPLE
98						B. excell wh	φ		buff to br dol w/ stylolites of dk br dol w/ pyrite & sph
99						B. excell wh			lt buff to near wh dol. w/ abd. dol crystal faces.
1900						B. excell wh			Above
01						B. excell wh			lt buff dol w/ dol. cry faces.
2						B. wh.			"
3						B. wh			"
4						B. wh			"
5						B. wh			" w/ few glauconite streak & few scattered schy. med. br.
6						B. spotted wh			near wh dol w/ dol cry faces w/ moderate med sub-rd sand gr.
7						B. spotted wh			near-wh/buff dol w/ too goost replaced by dol. few med-rd schy gr.
8						"			above
9						"			lt buff dol few crystal faces more dense texture w/ glauconite
10						No			buff to dk buff-br dol w/ abd L.F. QG. in bands.
11						Poor			buff to buff-br dol w/ phd. L.F. QG.
12						excell	φ		lt buff to wh dol w/ too goost replaced w/ mod. L.F. QG. & glauconite streaks

Base Max 102

L.L.S.

B.M.B.

Pencil

B.L.S.

1921

148'

injun

2000

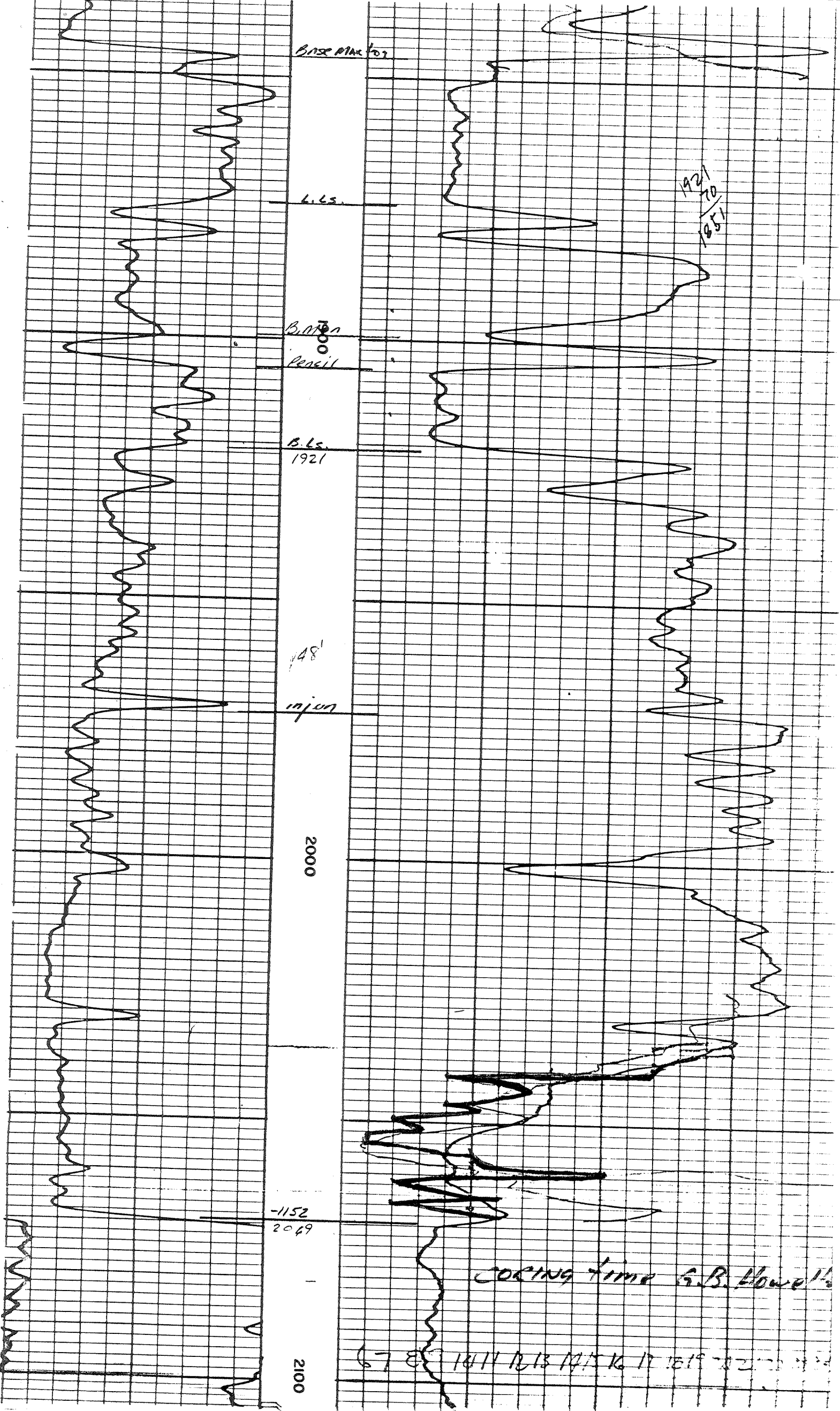
-1152
2069

2100

1921
70
1851

COCKING TIME G.B. Howell's

67 E 1411 1413 1415 1416 1417 1418 1419 1420 1421 1422



CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

July 31, 1969

REPLY TO
8 N. W. 42ND ST.
OKLAHOMA CITY, OKLA.
73118

Pennzoil United, Inc.
P. O. Drawer 1588
Parkersburg, West Virginia 26101

Attn: Mr. John R. Blomberg

Subject: Core Analysis
G. B. Howell No. 6 Well
Henrietta Big Injun Field
Calhoun County, West Virginia
CLI File No. CP-1-6979

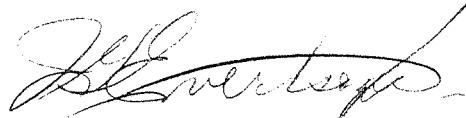
Gentlemen:

Diamond cores taken in the Big Injun Sand from the subject well were shipped to our Oklahoma City Laboratory for analysis. Data obtained from tests on samples selected from the interval 1892 to 1718 feet are submitted in this report.

We appreciate this opportunity to be of service.

Yours very truly,

CORE LABORATORIES, INC.



J. G. Evertson, Jr.
District Manager

JGE:sh
4cc: Addressee

CORE ANALYSIS RESULTS

Company PENNZOIL UNITED, INC. Formation BIG INJUN File CP-1-6979
 Well G. B. HOWELL NO. 6 Core Type DIAMOND Date Report 7-10-69
 Field HENRIETTA BIG INJUN Drilling Fluid _____ Analysts BOYLE
 County CALHOUN State W. VA. Elev. _____ Location _____

Lithological Abbreviations

SAND - SD SHALE - SH LIME - LM	DOLOMITE - DOL CHERT - CH GYPSUM - GYP	ANHYDRITE - ANHY CONGLOMERATE - CONG FOSSILIFEROUS - FOSS	SANDY - SDY SHALY - SHY LIMY - LMY	FINE - FN MEDIUM - MED COARSE - CSE	CRYSTALLINE - XLN GRAIN - GRN GRANULAR - GRNL	BROWN - BRN GRAY - GY UGGY - VGY	FRACTURED - FRAC LAMINATION - LAM STYLOLITIC - STY	SLIGHTLY - SL/ VERY - V/ WITH - W/
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