

DIAMOND TESTING

P. O. Box 157

HOISINGTON, KANSAS 67544

(316) 653-7550

KCC

NOV 01 1999

ORIGINAL

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Company Landmark Energy Exploration, Inc. Lease & Well No. Peterson No. 1-28

Elevation 2848 KB Formation Morrow Effective Pay 7 Ft. Ticket No. 1404

Date 12-27-98 Sec. 28 Twp. 30S Range 31W County Haskell State Kansas

Test Approved By Craig Caulk Diamond Representative Roger D. Friedly

Formation Test No. 2 Interval Tested from 5,300 ft. to 5,450 ft. Total Depth 5,450 ft.

Packer Depth 5,295 ft. Size 6 3/4 in. Packer Depth -- ft. Size -- in.

Packer Depth 5,300 ft. Size 6 3/4 in. Packer Depth -- ft. Size -- in.

Depth of Selective Zone Set -- ft.

Top Recorder Depth (Inside) 5,281 ft. Electronic Recorder Number 21098 Cap. 5,000 psi

Bottom Recorder Depth (Outside) 5,447 ft. Recorder Number 13556 Cap. 5,475 psi

Below Straddle Recorder Depth -- ft. Recorder Number -- Cap. -- psi

Drilling Contractor Murfin Drlg Co., Inc. - Rig 20 Drill Collar Length 245 ft. I.D. 2 1/4 in.

Mud Type Chemical Viscosity 54 Weight Pipe Length 284 ft. I.D. 2 7/8 in.

Weight 9.1 Water Loss 12.0 cc. Drill Pipe Length 4,739 ft. I.D. 3 1/2 in.

Chlorides 8,000 P.P.M. Test Tool Length 32 ft. Tool Size 3 1/2 - IF in.

Jars: Make Bowen Serial Number 1 Anchor Length 24' perf. w/126' drillpipe Size 4 1/2 - FH in.

Did Well Flow? No Reversed Out No Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 - XH in.

Blow: 1st Open: Strong blow. Off bottom of bucket in 1 min. Gas to surface in 4 mins. Fair, 1 1/2 in., blow back during shut-in. (SEE GAS VOLUME REPORT)

2nd Open: Strong blow. Off bottom of bucket immediately. Fair, 1 1/2 in., blow back during shut-in.

Recovered 250 ft. of drilling mud = 1.24555 bbls.

Recovered -- ft. of --

Recovered -- ft. of --

Recovered -- ft. of --

Recovered -- ft. of --

Remarks --

RELEASED

MAR 05 2000

FROM CONFIDENTIAL

Time Set Packer(s) 5:45 ~~XXX~~ P.M. Time Started Off Bottom 10:30 ~~XXX~~ P.M. Maximum Temperature 112°

Initial Hydrostatic Pressure (A) 2479 P.S.I. PLUGGING ACTION

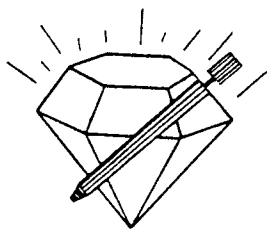
Initial Flow Period Minutes 30 (B) 432 P.S.I. to (C) 438 P.S.I.

Initial Closed In Period Minutes 60 (D) 1670 P.S.I.

Final Flow Period Minutes 75 (E) 260 P.S.I. to (F) 208 P.S.I.

Final Closed In Period Minutes 120 (G) 1628 P.S.I.

Final Hydrostatic Pressure (H) 2381 P.S.I.



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(800) 542-7313

FLUID SAMPLE DATA

Company Landmark Energy Exploration, Inc.

Lease & Well No. Peterson No. 1-28

Date 12-27-98 Sec. 28 Twp. 30 S Range 31 W

Formation Test No. 2 Interval Tested From 5,300 ft. to 5,450 ft. Total Depth 5,450 ft.

Formation Morrow

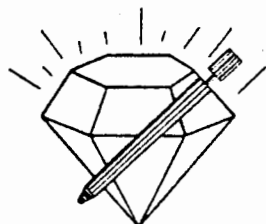
	<u>MUD PIT</u>	<u>RECOVERY</u>
Viscosity	<u>54</u> CP	<u>70+</u> CP
Weight	<u>9.1</u>	<u>9.0</u>
Water Loss	<u>12.0</u> CC	<u>10.0</u> CC
PH Factor	<u>10.5</u>	<u>11.0</u>

	<u>RESISTIVITY</u>	<u>CHLORIDE CONTENT</u>
Recovery Water	<u>--</u> @ <u>--</u> °F. <u>--</u> ppm	
Recovery Mud	<u>.60</u> @ <u>74</u> °F. <u>10,000</u> ppm	
Recovery Mud Filtrate	<u>.62</u> @ <u>72</u> °F. <u>9,500</u> ppm	
Mud Pit Sample	<u>.62</u> @ <u>70</u> °F. <u>9,500</u> ppm	
Mud Pit Sample Filtrate	<u>.64</u> @ <u>72</u> °F. <u>9,000</u> ppm	

Sample Taken By ROGER D. FRIEDLY

Witness By Craig Caulk

Remarks Pit filtrate triton dish chlorides were 8,000 Ppm.
Recovery filtrate triton dish chlorides were 8,500 Ppm.



DIAMOND TESTING
P. O. Box 157
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GAS VOLUME REPORT

Company Landmark Energy Exploration, Inc. Lease & Well No. Peterson No. 1-28
Date 12-27-98 Sec. 28 Twp. 30S Rge. 31 W Location 28 30S 31W County Haskell State KS
Drilling Contractor Murfin Drlg Co., Inc. - Rig 20 Formation Morrow DST No. 2
Remarks: 1st Open: Gas to surface in 4 mins. Gas burns nicely.

INITIAL FLOW

Open Tool: 5:45 p.m.

Time O'Clock	Orifice Size	Gauge	MCF/D
5:55 p.m.	1½ in.	3 psi	654
6:00 p.m.	1½ in.	4½ psi	814
6:05 p.m.	1½ in.	4½ psi	814
6:10 p.m.	1½ in.	4 3/4 psi	838
6:15 p.m.	1½ in.	4 3/4 psi	838
	in.		
	in.		
	in.		
	in.		
	in.		

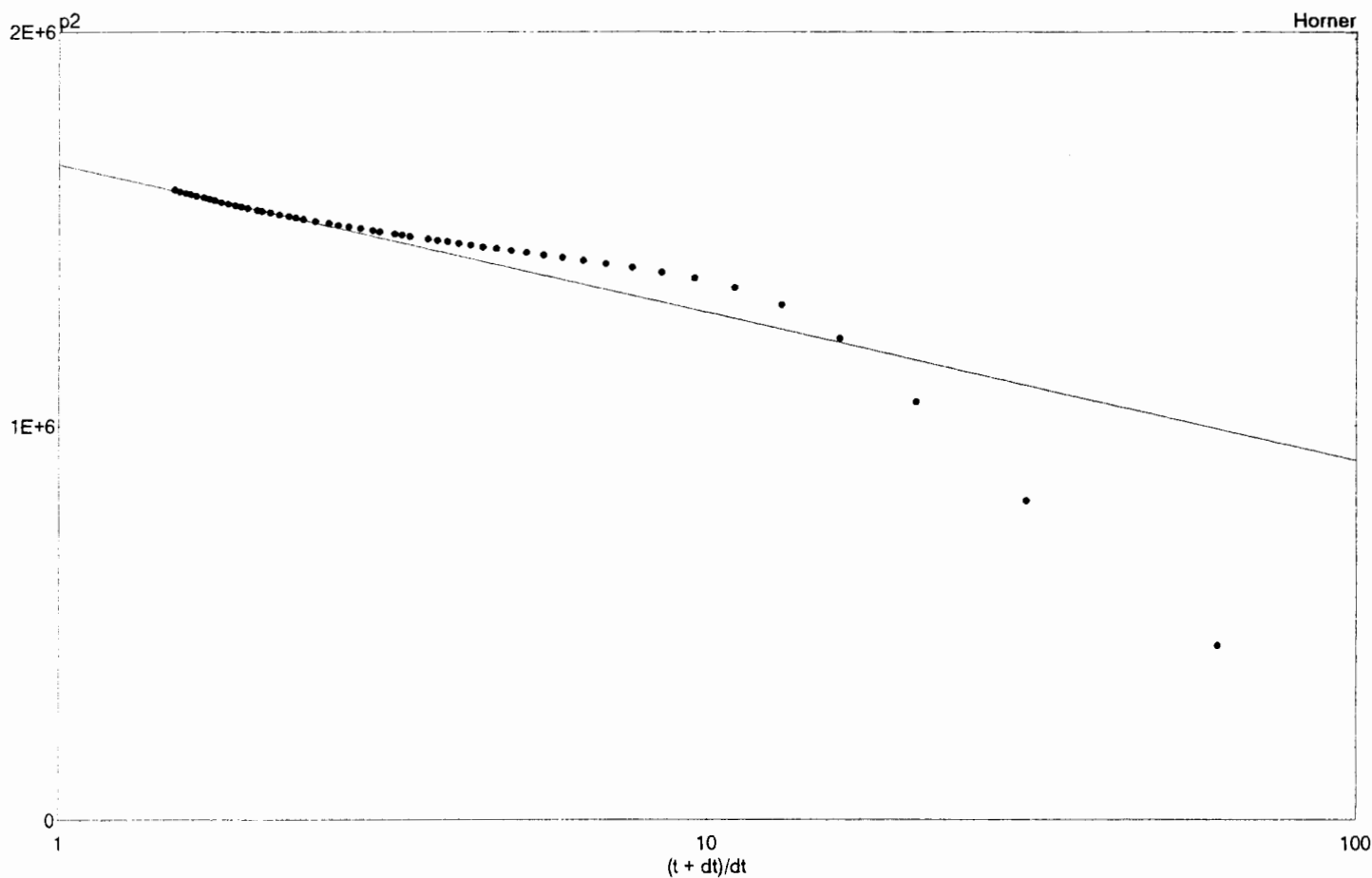
FINAL FLOW

Open Tool: 7:15 p.m.

Time O'Clock	Orifice Size	Gauge	MCF/D
7:20 p.m.	1 in.	37 psi	2,976
7:25 p.m.	1 in.	38 psi	3,036
7:30 p.m.	1 in.	38 psi	3,036
7:35 p.m.	1 in.	36 psi	2,919
7:40 p.m.	1 in.	36 psi	2,919
7:45 p.m.	1 in.	35 psi	2,858
7:50 p.m.	1 in.	33 psi	2,737
7:55 p.m.	1 in.	30 psi	2,558
8:00 p.m.	1 in.	26 psi	2,319
8:05 p.m.	1 in.	25½ psi	2,288
8:10 p.m.	1	26 psi	2,319
8:15 p.m.	1	25½ psi	2,288
8:20 p.m.	1	25½ psi	2,288
8:25 p.m.	1	26 psi	2,319
8:30 p.m.	1	25½ psi	2,288

- * Gas sample taken
** Some surging action

LANDMARK ENERGY PETERSON #1-28 DST 2 INITIAL SHUT-IN



LANDMARK ENERGY PETERSON #1-28 DST 2 INITIAL SHUT-IN

Analysis Results: Horner

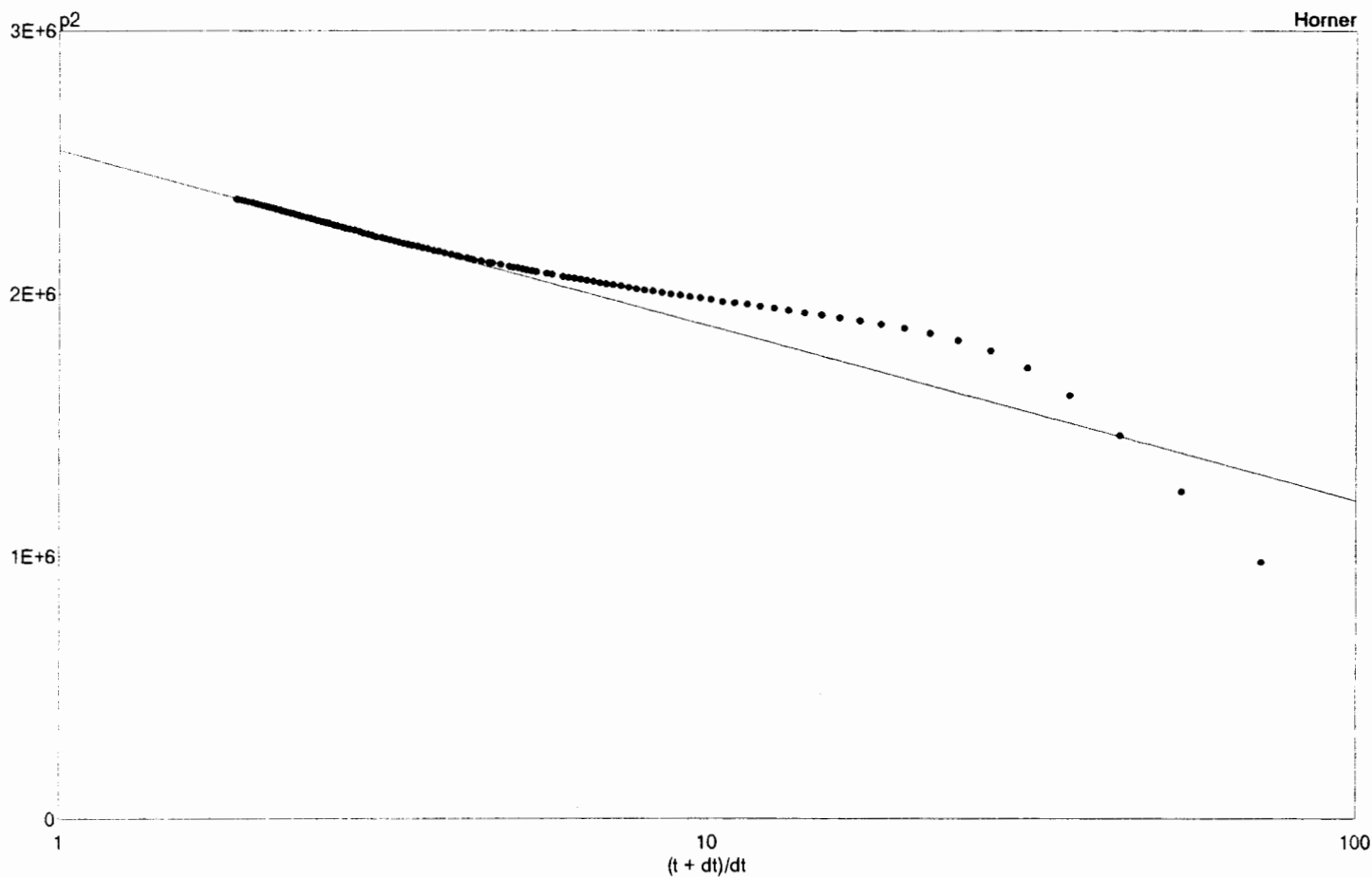
Parameters:

Slope = -376278
 $m(1 \text{ hr}) = 1.5980E+6$
 Prd Time: = 0.5 hr

Calculated Values:

$kh = 436797 \text{ md-ft}$
 $k = 62399.6 \text{ md}$
 $Skin = -2.62942$
 $P^* = 1688.7 \text{ psi}$

LANDMARK ENERGY PETERSON 1-28 DST 2 FINAL SHUT-IN



LANDMARK ENERGY PETERSON 1-28 DST 2 FINAL SHUT-IN

Analysis Results: Horner

Parameters:

Slope = -669421

$m(1 \text{ hr}) = 2.2534\text{E}+6$

Prd Time: = 1.75 hr

Calculated Values:

$kh = 670350 \text{ md-ft}$

$k = 95764.2 \text{ md}$

Skin = -3.67378

$P^* = 1683.8 \text{ psi}$

DIAMOND TESTING
CALCULATION OF FORMATION CHARACTERISTICS
FROM DST DATA

FOR:	LANDMARK ENERGY	
LEASE:	PETERSON #1-28	DST #2
LOCATION:	28-30S-31W	FORMATION: MORROW
COUNTY:	HASKELL, KS	ELEVATION: 2848 KB
GAUGE DEPTH:	5281	DATUM: -2433

*****TEST PARAMETERS*****

TEST INTERVAL: 5300 - 5450	EST PAY: 7
TIME INTERVAL: 30 - 60 - 75 - 120	GAS COMPRESSIBILITY: 1.22
INITIAL FLOW PRESS: 432.0- 438.0	VISCOSITY OF GAS: .033
FINAL FLOW PRESS: 260.0- 208.0	POROSITY FRACTION: .30
SHUT-IN PRESS(I-F):1670.0-1628.0	D.C. CAPACITY: 0.00492
BOTTOM HOLE TEMPERATURE: 112	W.P. CAPACITY: 0.00750
TOTAL FEET OF RECOVERY: 250	D.P. CAPACITY: 0.01422
STAB FLOW RATE: 2288 MCF	TOTAL BBLS FLUID: 1.2418

*****EXTRAPOLATED PRESSURE*****

EXTRAPOLATED INITIAL SHUT-IN PRESSURE (PSI): 1689
SLOPE (PSI²-CYCLE): 375245 POINTS USED: 15

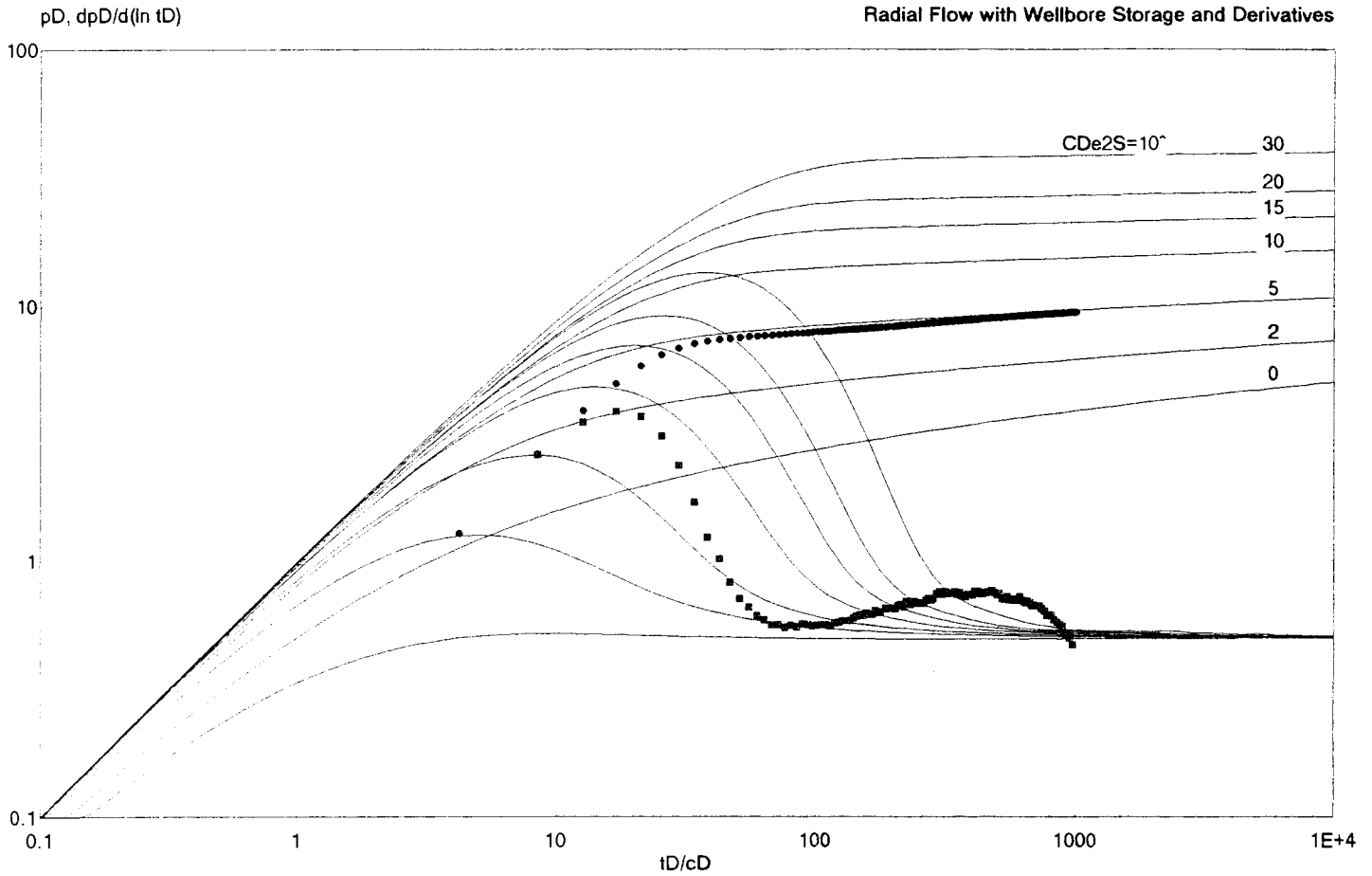
EXTRAPOLATED FINAL SHUT-IN PRESSURE (PSI): 1683
SLOPE (PSI²-CYCLE): 639128 POINTS USED: 30

***** GAS CALCULATIONS *****

TRANSMISSIBILITY (MD-FT/CP)	:	4089.52
THEORETICAL FLOW CAPACITY (MD-FT)	:	134.95
INDICATED FLOW CAPACITY (MD-FT)	:	111.62
AVERAGE EFFECTIVE PERMABILITY (MD)	:	19.28
DAMAGE RATIO	:	1.209
SKIN FACTOR (S)	:	-6.8
DRAWDOWN FACTOR (%)	:	0.355
APPROXIMATE RADIUS OF INVESTIGATION (FT)	:	45.0
POTENTIOMETRIC SURFACE (FT)	:	1469.9

LANDMARK ENERGY PETERSON 1-28 DST 2 FINAL SHUT-IN

Radial Flow with Wellbore Storage and Derivatives



LANDMARK ENERGY PETERSON 1-28 DST 2 FINAL SHUT-IN

Analysis Results: Radial Flow with Wellbore Storage and Derivatives

Dimensionless Parameters:

tD/CD 1hr: = 508.474

pD 1 psi = 0.0000039883

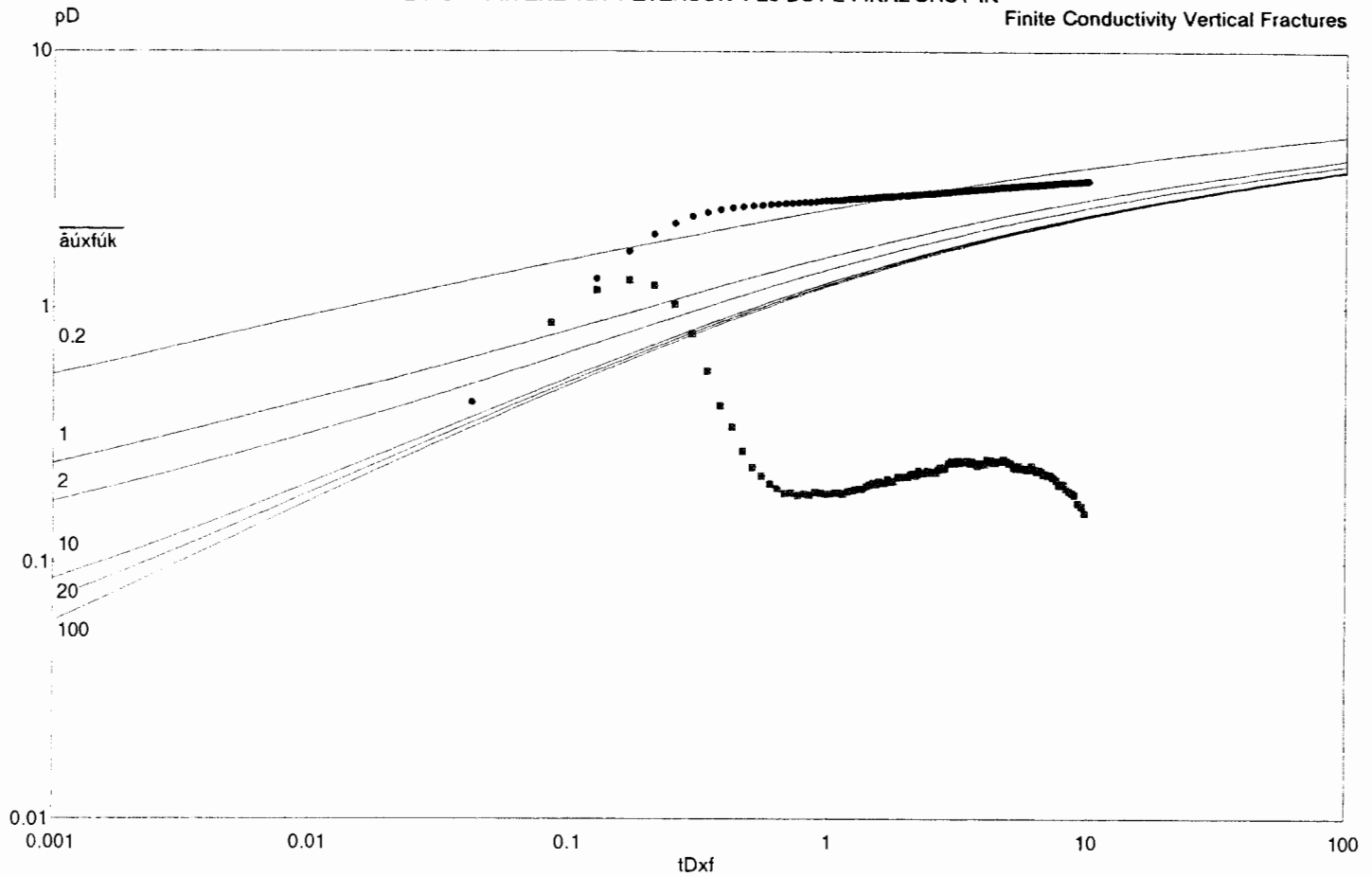
Calculated Values:

k = $2.22E+5$ md

kh = $1.555E+6$ md-ft

LANDMARK ENERGY PETERSON 1-28 DST 2 FINAL SHUT-IN

Finite Conductivity Vertical Fractures



LANDMARK ENERGY PETERSON 1-28 DST 2 FINAL SHUT-IN

Analysis Results: Finite Conductivity Vertical Fractures

Dimensionless Parameters:

$t_{D/CD} \text{ 1hr: } = 5.08474$

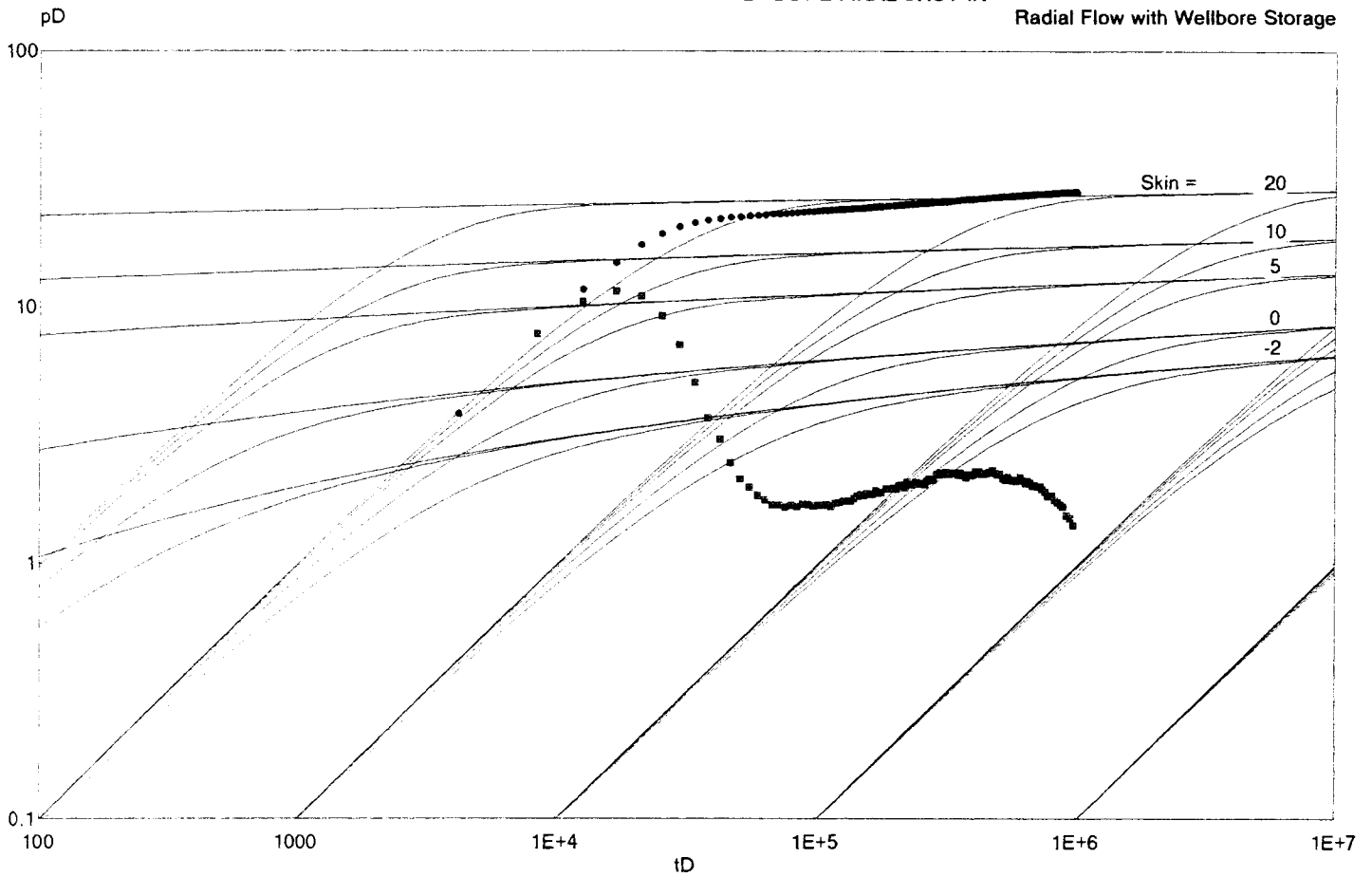
$p_D \text{ 1 psi} = 0.0000013294$

Calculated Values:

$k = 7.40E+4 \text{ md}$

$kh = 5.182E+5 \text{ md-ft}$

LANDMARK ENERGY PETERSON 1-28 DST 2 FINAL SHUT-IN



LANDMARK ENERGY PETERSON 1-28 DST 2 FINAL SHUT-IN

Analysis Results: Radial Flow with Wellbore Storage

Dimensionless Parameters:

tD/CD 1hr: = 508474

pD 1 psi = 0.000011965

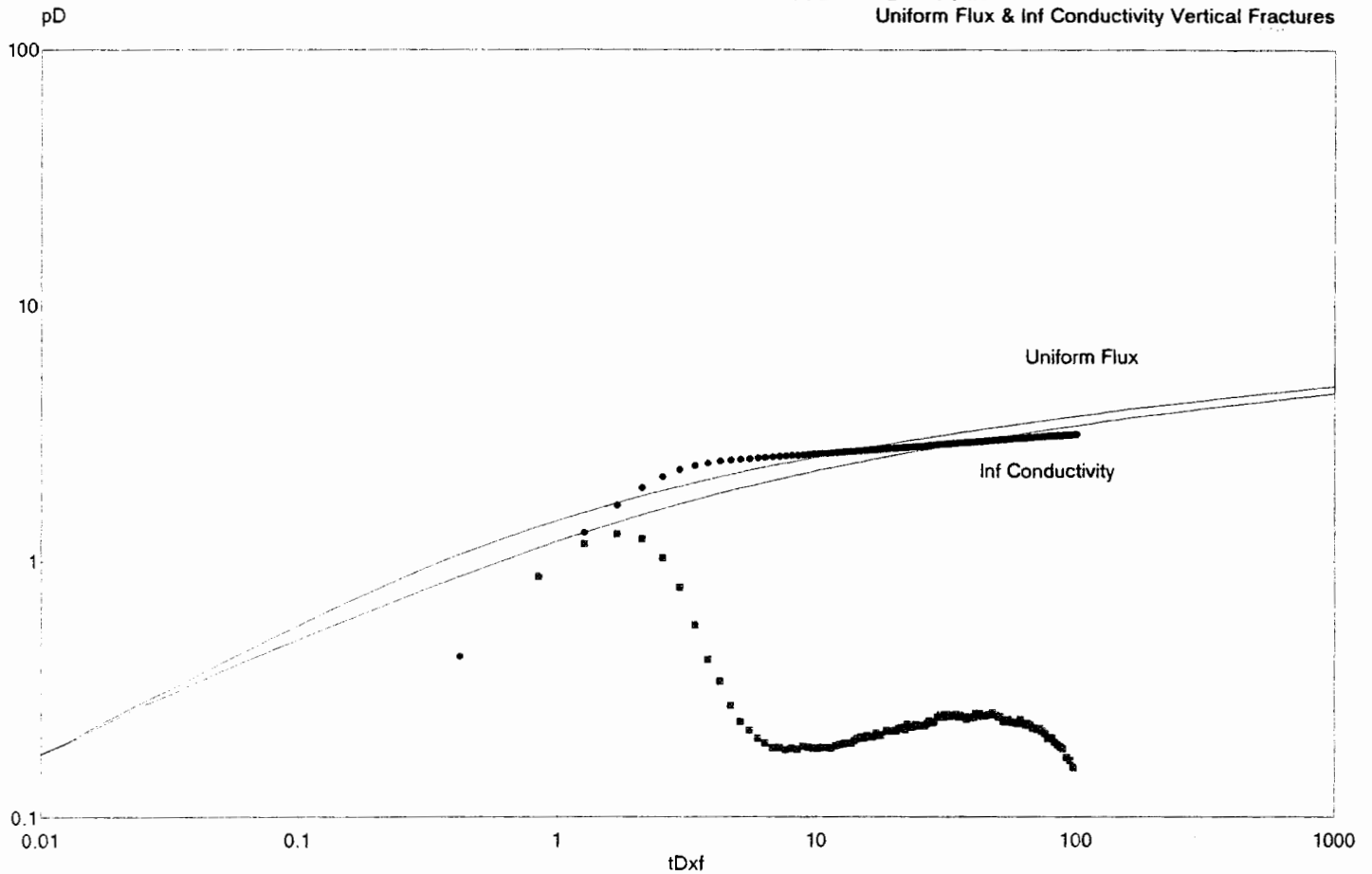
Calculated Values:

k = 6.66E+5 md

kh = 4.664E+6 md-ft

LANDMARK ENERGY PETERSON 1-28 DST 2 FINAL SHUT-IN

Uniform Flux & Inf Conductivity Vertical Fractures



LANDMARK ENERGY PETERSON 1-28 DST 2 FINAL SHUT-IN

Analysis Results: Uniform Flux & Inf Conductivity Vertical Fractures

Dimensionless Parameters:

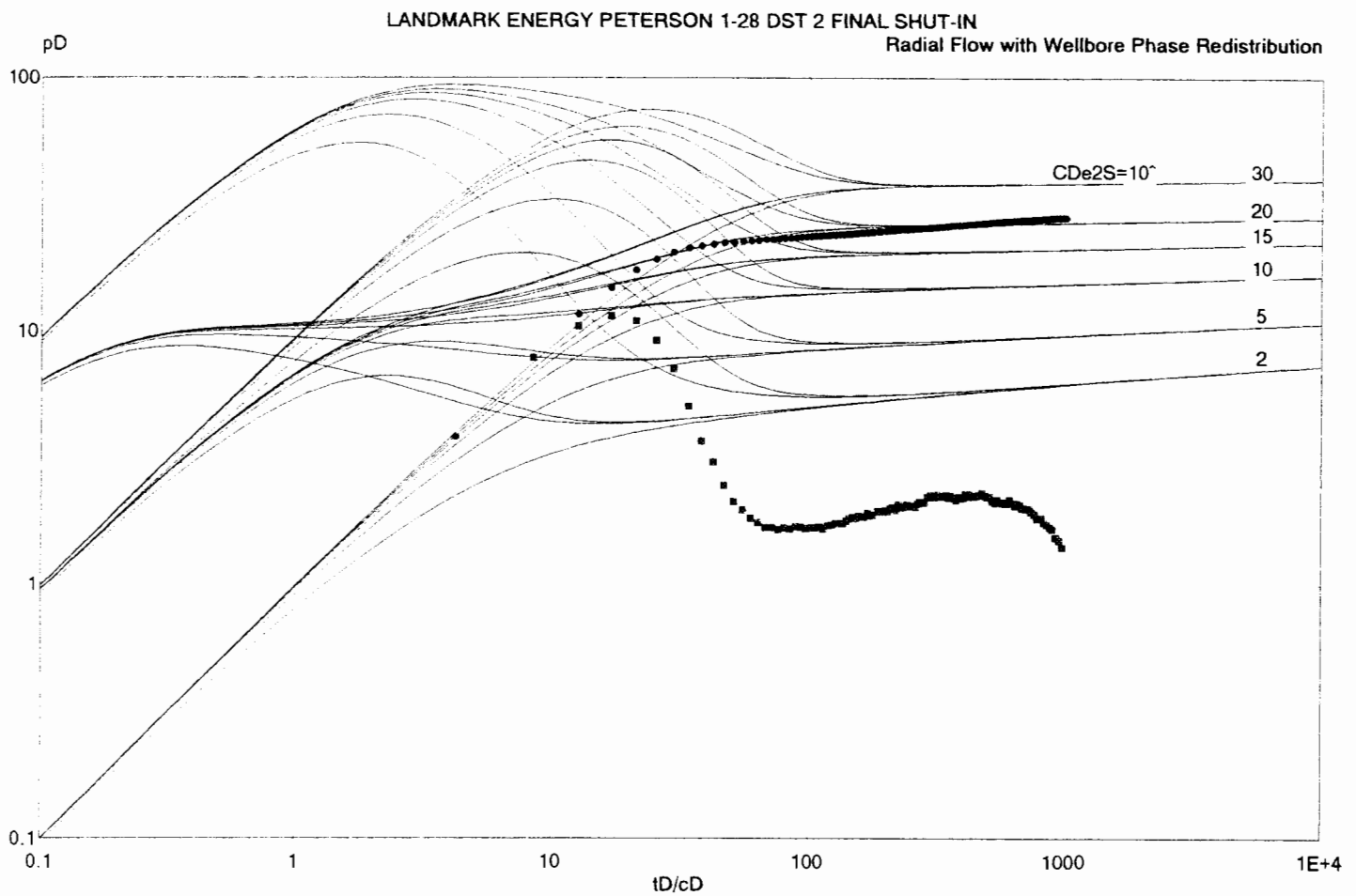
tD/CD 1hr: = 50.8474

pD 1 psi = 0.0000013294

Calculated Values:

k = 7.40E+4 md

kh = 5.182E+5 md-ft



LANDMARK ENERGY PETERSON 1-28 DST 2 FINAL SHUT-IN

Analysis Results: Radial Flow with Wellbore Phase Redistribution

Dimensionless Parameters:

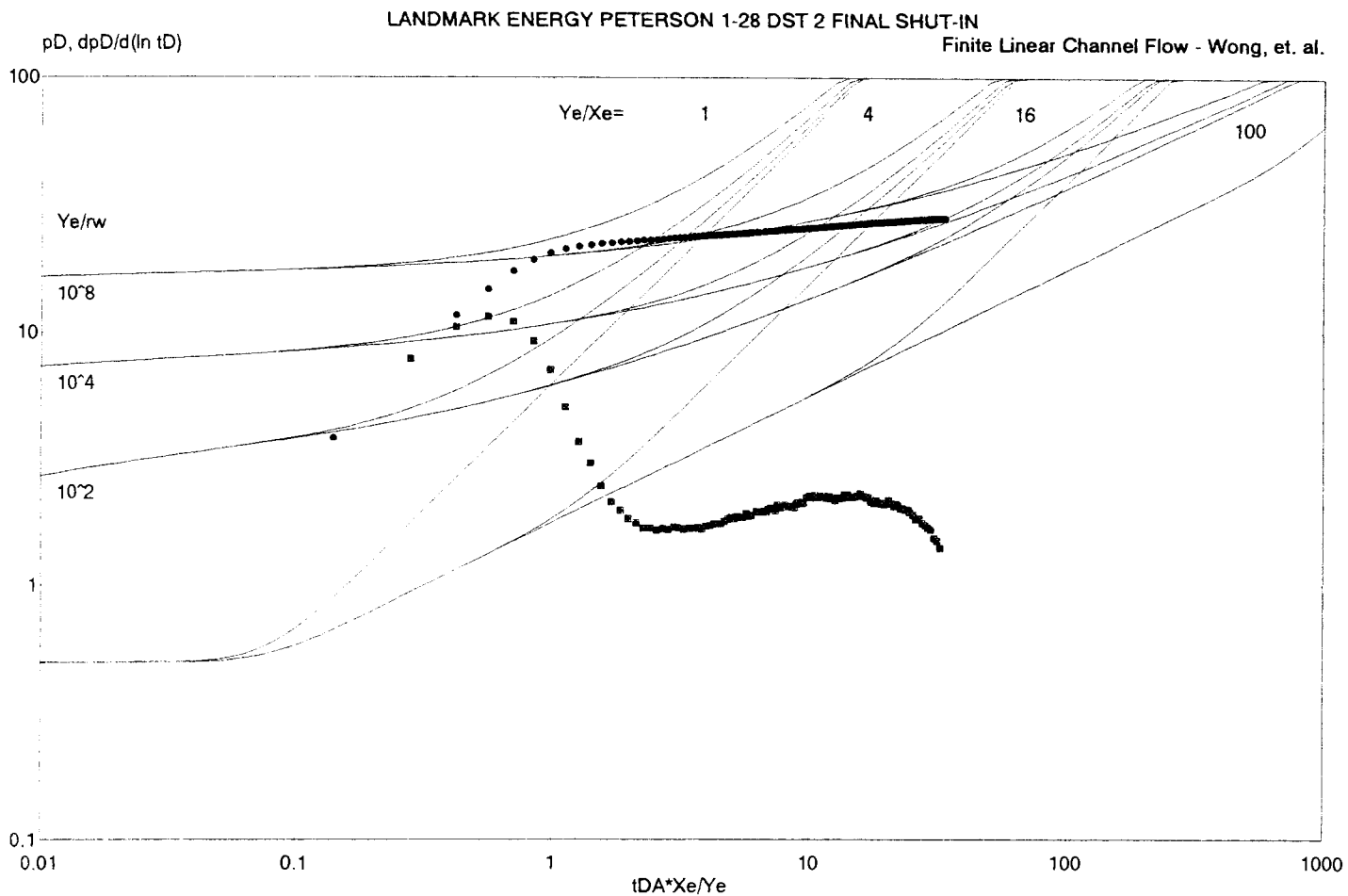
tD/CD 1hr: = 508.474

pD 1 psi = 0.000011965

Calculated Values:

$k = 6.66E+5$ md

$kh = 4.664E+6$ md-ft



LANDMARK ENERGY PETERSON 1-28 DST 2 FINAL SHUT-IN

Analysis Results: Finite Linear Channel Flow - Wong, et. al.

Dimensionless Parameters:

tD/CD 1hr: = 16.9491

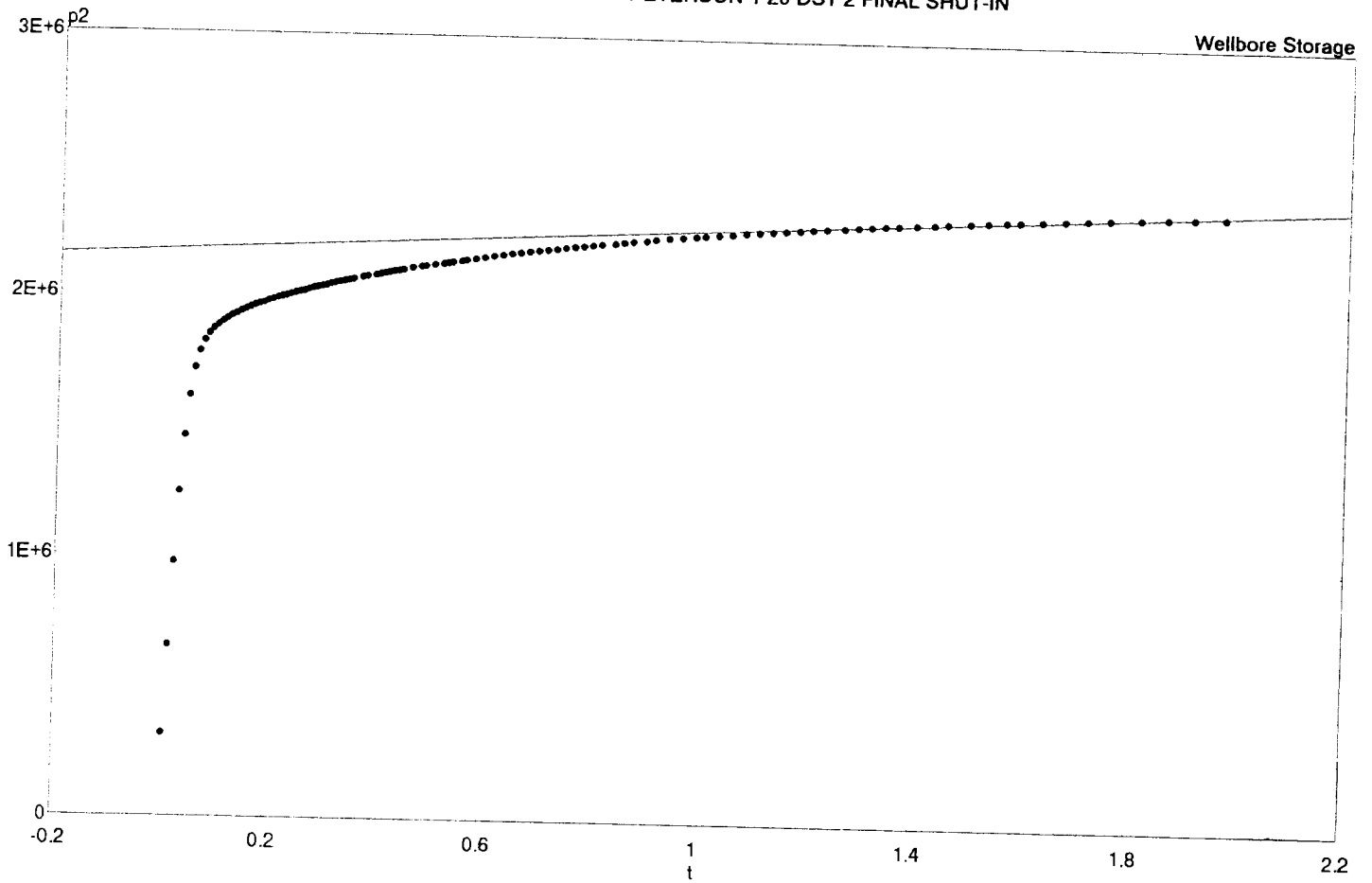
pD 1 psi = 0.000011965

Calculated Values:

k = 6.66E+5 md

kh = 4.664E+6 md-ft

LANDMARK ENERGY PETERSON 1-28 DST 2 FINAL SHUT-IN



LANDMARK ENERGY PETERSON 1-28 DST 2 FINAL SHUT-IN

Analysis Results: Wellbore Storage

Parameters:

Slope = 98863.1

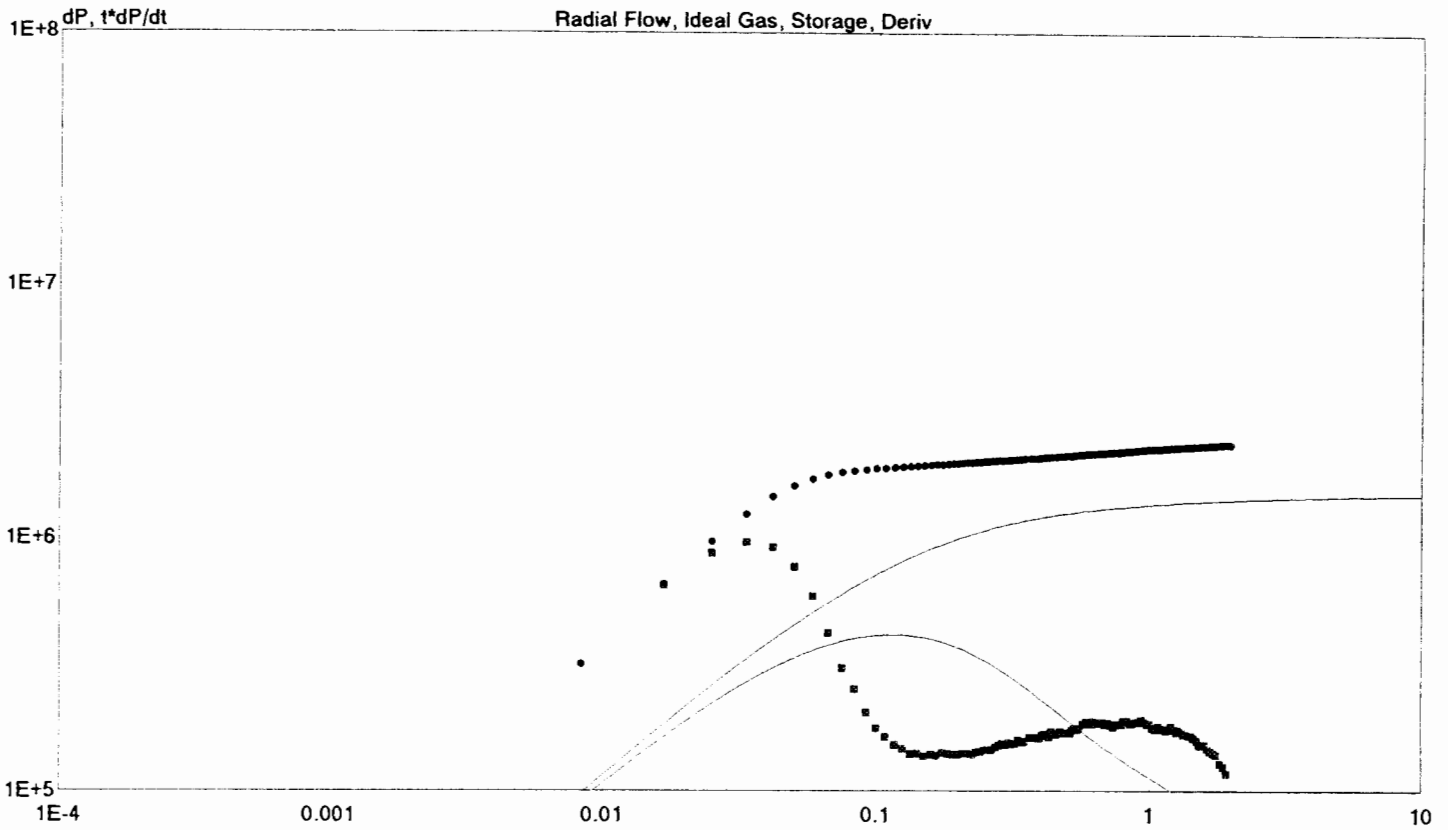
p_2 0 hr: = $2.1722E+6$

Calculated Values:

Storage: = 0.0009643 mcf/psi

CD: = 0.81838

LANDMARK ENERGY PETERSON 1-28 DST 2 FINAL SHUT-IN



LANDMARK ENERGY PETERSON 1-28 DST 2 FINAL SHUT-IN

Analysis Results: Radial Flow, Ideal Gas, Storage, Deriv

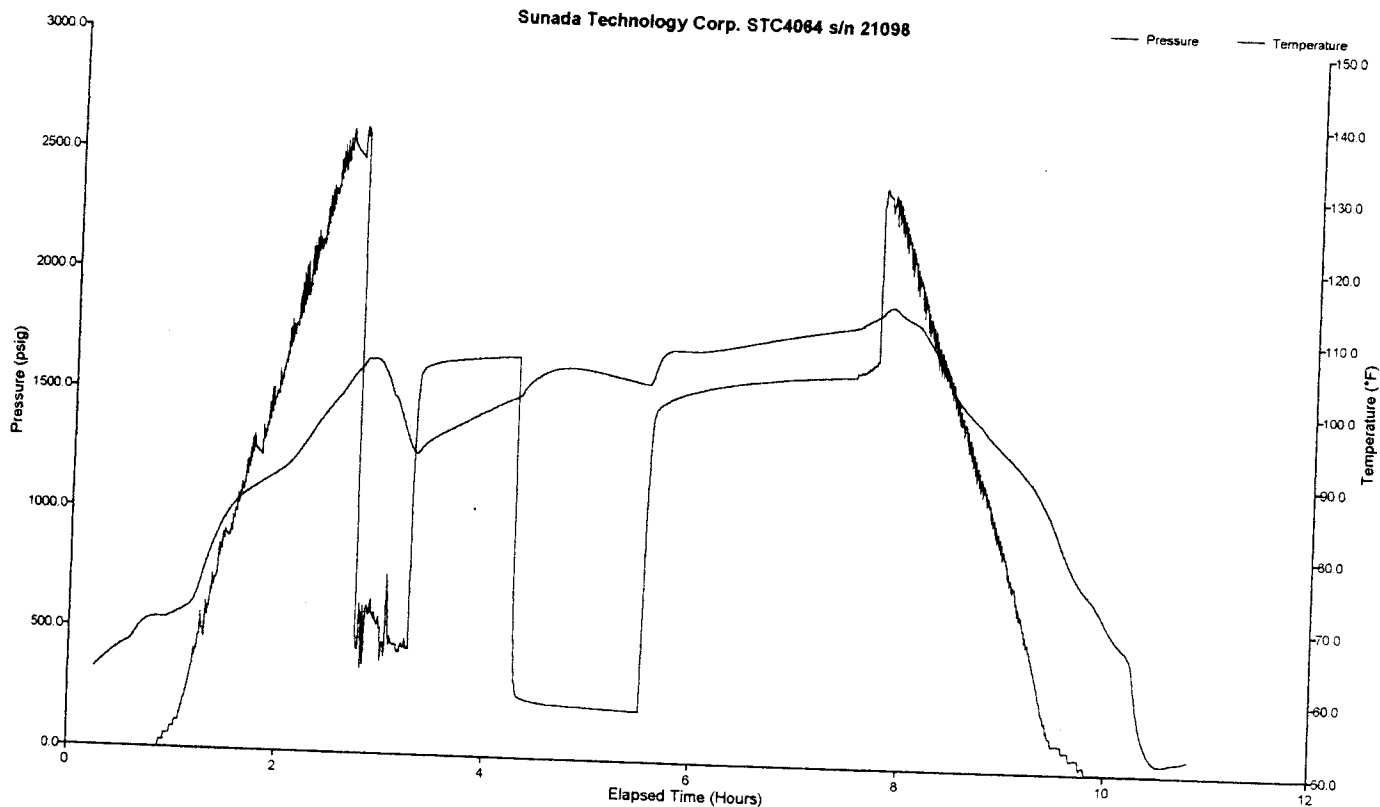
Dimensionless Parameters:

$tD/CD(1) = 50.847$
 $pD(1) = 3.988E-6$
 $CaDe2S = 1000$
 $CD/CaD = 1$

Calculated Values:

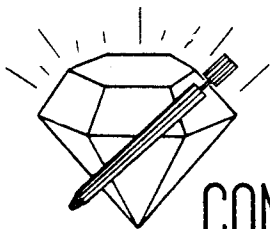
Std Dev = $9.284E+5$
 $k = 2.221E+5$ md
 $kh = 1.55E+6$ md-ft
 $S = -0.435$
 $CD = 2388$

Well Name: PETERSON 1-28 DST 2
 Company: LANDMARK ENERGY
 Battery on: Dec 27, 1998 at 15:00:00
 Notes: RECOVERED 250' HEAVY DRILLING MUD.



This is an actual photograph of recorder chart.

POINT	PRESSURE	
	Field Reading	Office Reading
(A) Initial Hydrostatic Mud	2479	2479
(B) First Initial Flow Pressure.....	432	432
(C) First Final Flow Pressure	438	438
(D) Initial Closed-in Pressure	1670	1670
(E) Second Initial Flow Pressure	260	260
(F) Second Final Flow Pressure.....	208	208
(G) Final Closed-in Pressure.....	1628	1628
(H) Final Hydrostatic Mud	2381	2381



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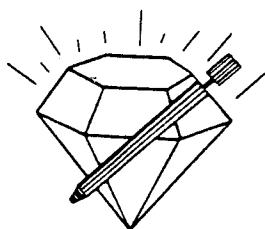
Company Landmark Energy Exploration, Inc. Lease & Well No. Peterson No. 1-28
Elevation 2848 KB Formation Cherokee Effective Pay Ft. Ticket No. 1403
Date 12-20-98 Sec. 28 Twp. 30S Range 31W County Haskell State Kansas
Test Approved By Craig Caulk Diamond Representative Roger D. Friedly
Formation Test No. 1 Interval Tested from 5,161 ft. to 5,254 ft. Total Depth 5,254 ft.
Packer Depth 5,156 ft. Size 6 3/4 in. Packer Depth ft. Size in.
Packer Depth 5,161 ft. Size 6 3/4 in. Packer Depth ft. Size in.
Depth of Selective Zone Set ft.
Top Recorder Depth (Inside) 5,142 ft. Electronic Recorder Number 21098 Cap. 5,000 psi
Bottom Recorder Depth (Outside) 5,251 ft. Recorder Number 13556 Cap. 5,475 psi
Below Straddle Recorder Depth ft. Recorder Number Cap. psi
Drilling Contractor Murfin Drlg Co., Inc. - Rig 20 Drill Collar Length 245 ft. I.D. 2 1/4 in.
Mud Type Chemical Viscosity 45 Weight Pipe Length 410 ft. I.D. 2 7/8 in.
Weight 9.2 Water Loss 10.0 cc. Drill Pipe Length 4,474 ft. I.D. 3 1/2 in.
Chlorides 3,000 P.P.M. Test Tool Length 32 ft. Tool Size 3 1/2 - IF in.
Jars: Make Bowen Serial Number 1 Anchor Length 29' perf. w/64' drill pipe Size 4 1/2 - FH in.
Did Well Flow? No Reversed Out No Surface Choke Size 1 in. Bottom Choke Size 5/8 in.
Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 - XH in.
Blow: 1st Open: Strong blow. Off bottom of bucket in 1 min. Weak surface blow back during shut-in.
2nd Open: Fair, 3 in., blow. Off bottom of bucket in 45 mins. Weak surface blow back during shut-in.
Recovered 250 ft. of gas in pipe
Recovered 250 ft. of gassy mud = 1.24555 bbls. (Grind out: 10%-gas; 90%-mud)
Recovered 124 ft. of slightly oil specked gassy watery mud = .99572 bbls. (Grind out: 2%-oil; 10%-gas; 30%-water; 58%-mud)
Recovered 376 ft. of salt water = 3.38598 bbls.
Recovered 750 ft. of TOTAL FLUID = 5.62725 bbls.
Remarks

RELEASED

MAR 05 2000

FROM CONFIDENTIAL

Time Set Packer(s) 10:17 ~~A.M.~~ ~~P.M.~~ Time Started Off Bottom 2:02 ~~P.M.~~ Maximum Temperature 122°
Initial Hydrostatic Pressure (A) 2466 P.S.I.
Initial Flow Period Minutes 30 (B) 213 P.S.I. to (C) 309 P.S.I.
Initial Closed In Period Minutes 45 (D) 1853 P.S.I.
Final Flow Period Minutes 60 (E) 315 P.S.I. to (F) 374 P.S.I.
Final Closed In Period Minutes 90 (G) 1708 P.S.I.
Final Hydrostatic Pressure (H) 2359 P.S.I.



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FLUID SAMPLE DATA

Company Landmark Energy Exploration, Inc.

Lease & Well No. Peterson No. 1-28

Date 12-20-98 Sec. 28 Twp. 30 S Range 31 W

Formation Test No. 1 Interval Tested From 5,161 ft. to 5,254 ft. Total Depth 5,254 ft.

Formation Cherokee

	<u>MUD PIT</u>	<u>RECOVERY</u>	
Viscosity	<u>45</u> CP	<u>54</u> CP	
Weight	<u>9.2</u>	<u>9.1</u>	
Water Loss	<u>10.0</u> CC	<u>10.5</u> CC	Water
PH Factor	<u>11.0</u>	<u>11.0</u>	<u>6.5</u>

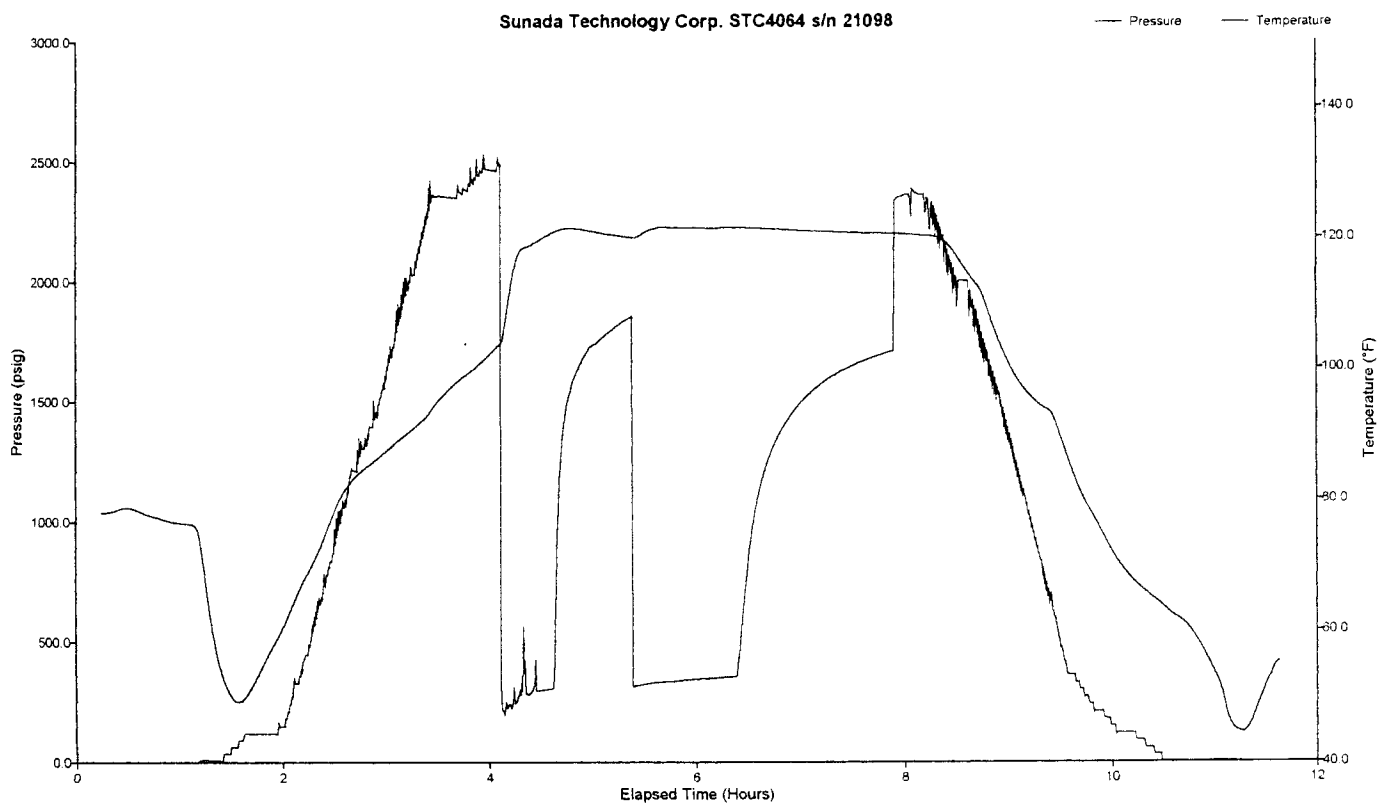
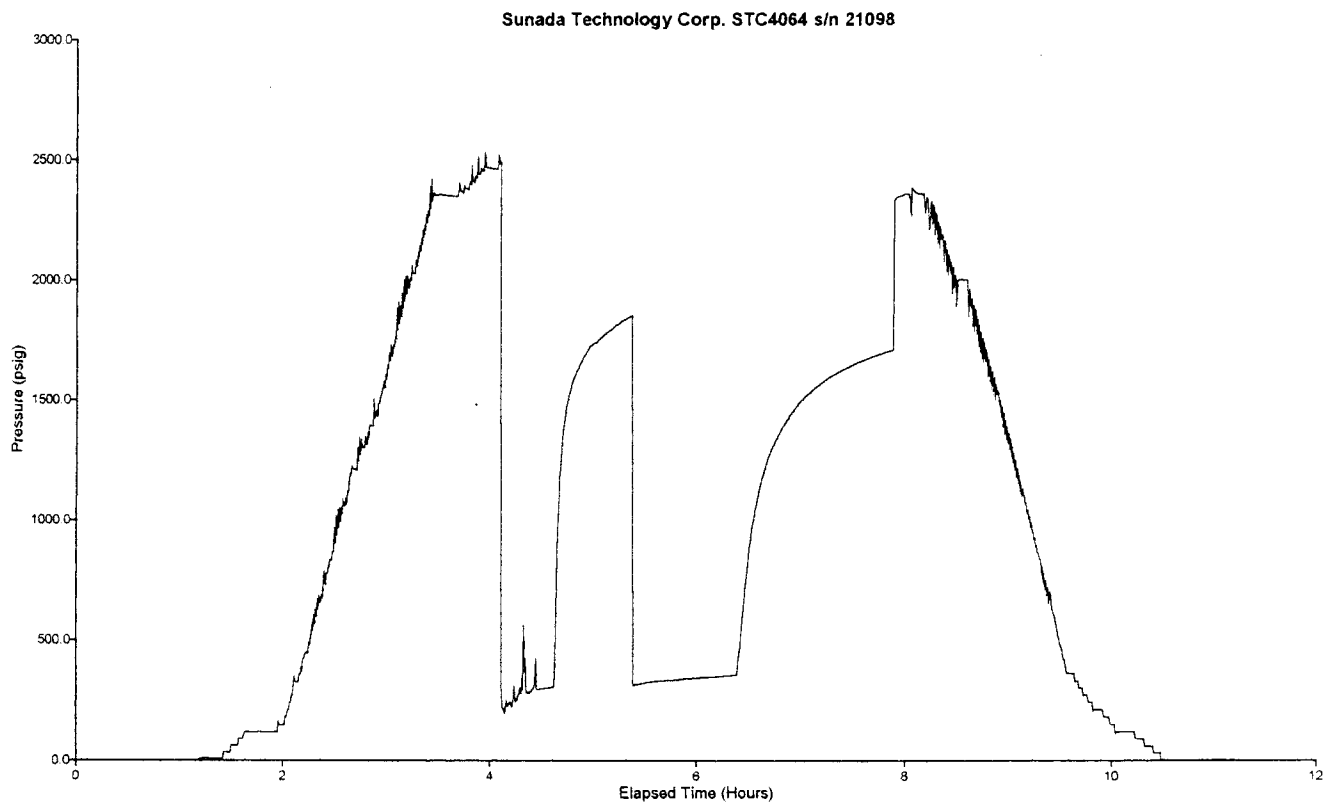
	<u>RESISTIVITY</u>	<u>CHLORIDE CONTENT</u>
Recovery Water	<u>.20 @ 90 °F.</u>	<u>26,000 ppm</u>
Recovery Mud	<u>1.20 @ 60 °F.</u>	<u>6,000 ppm</u>
Recovery Mud Filtrate	<u>1.30 @ 58 °F.</u>	<u>5,000 ppm</u>
Mud Pit Sample	<u>1.40 @ 60 °F.</u>	<u>5,000 ppm</u>
Mud Pit Sample Filtrate	<u>1.50 @ 62 °F.</u>	<u>4,500 ppm</u>

Sample Taken By ROGER D. FRIEDLY

Witness By Craig Caulk

Remarks Pit filtrate triton dish chlorides were 3,000 Ppm.
Recovery filtrate triton dish chlorides were 4,000 Ppm.
Recovery water dish chlorides were 26,500 Ppm.

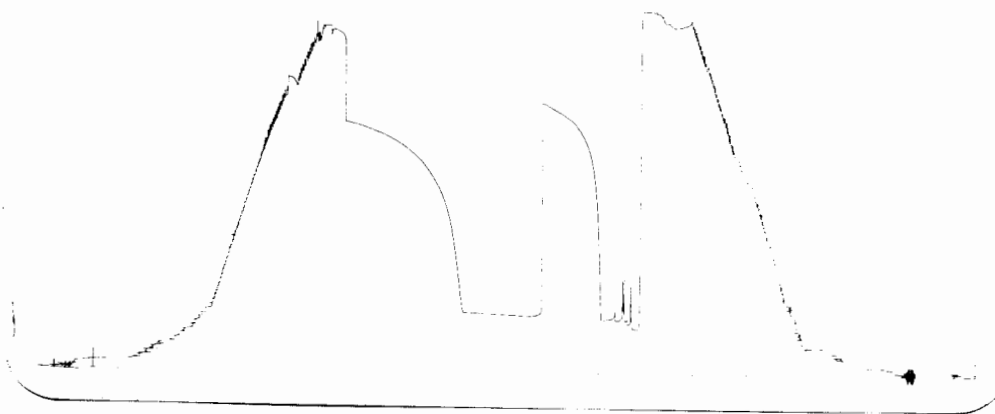
Well LSD: DST #1
Well Name: PETERSON 1-28 DST 1
Company: LANDMARK ENERGY EXPL
Battery on: Dec 20, 1998 at 06:10:00
Notes: RECOVERED 250' GASSY MUD, 124 SOSGWM, 376' SW, 750' TOTAL FLUID. 250' G.I.P.



DST # 1049512 13556
Clock 6913

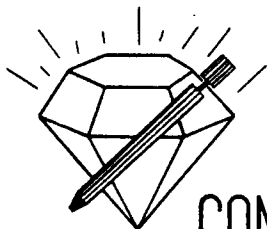
Cherokee

5161-5254
Loc 5251



This is an actual photograph of recorder chart.

POINT	PRESSURE		
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud	2466	2466	PSI
(B) First Initial Flow Pressure.....	213	213	PSI
(C) First Final Flow Pressure	309	309	PSI
(D) Initial Closed-in Pressure	1853	1853	PSI
(E) Second Initial Flow Pressure	315	315	PSI
(F) Second Final Flow Pressure.....	374	374	PSI
(G) Final Closed-in Pressure.....	1708	1708	PSI
(H) Final Hydrostatic Mud	2359	2359	PSI



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Company Landmark Energy Exploration, Inc. Lease & Well No. Peterson No. 1-28
Elevation 2848 KB Formation Chester Sand Effective Pay -- Ft. Ticket No. 1405
Date 12-28-98 Sec. 28 Twp. 30S Range 31W County Haskell State Kansas
Test Approved By Craig Caulk Diamond Representative Roger D. Friedly

Formation Test No. 3 Interval Tested from 5,470 ft. to 5,521 ft. Total Depth 5,521 ft.

Packer Depth 5,465 ft. Size 6 3/4 in. Packer Depth -- ft. Size -- in.

Packer Depth 5,470 ft. Size 6 3/4 in. Packer Depth -- ft. Size -- in.

Depth of Selective Zone Set -- ft.

Top Recorder Depth (Inside) 5,451 ft. Electronic Recorder Number 21098 Cap. 5,000 psi

Bottom Recorder Depth (Outside) 5,518 ft. Recorder Number 13556 Cap. 5,475 psi

Below Straddle Recorder Depth -- ft. Recorder Number -- Cap. -- psi

Drilling Contractor Murfin Drlg Co., Inc. - Rig 20 Drill Collar Length 245 ft. I.D. 2 1/4 in.

Mud Type Chemical Viscosity 60 Weight Pipe Length 410 ft. I.D. 2 7/8 in.

Weight 9.0 Water Loss 10.0 cc. Drill Pipe Length 4,783 ft. I.D. 3 1/2 in.

Chlorides 9,600 P.P.M. Test Tool Length 32 ft. Tool Size 3 1/2 - IF in.

Jars: Make Bowen Serial Number 1 Anchor Length 19' perf. w/32' drill pipe Size 4 1/2 - FH in.

Did Well Flow? No Reversed Out No Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 - XH in.

Blow: 1st Open: Weak, 1/2 in., blow increasing to 1 in. Decreasing after 20 mins to a weak, 1/2 in., blow at end.

2nd Open: No blow.

Recovered 120 ft. of drilling mud = .5904 bbls.

Recovered -- ft. of --

Recovered -- ft. of --

Recovered -- ft. of --

Recovered -- ft. of --

Remarks FROM CONFIDENTIAL

Time Set Packer(s) 4:52 ~~XXM.~~ P.M. Time Started Off Bottom 6:52 ~~XXM.~~ P.M. Maximum Temperature 116°

Initial Hydrostatic Pressure (A) 2669 P.S.I.

Initial Flow Period Minutes 30 (B) 25 P.S.I. to (C) 51 P.S.I.

Initial Closed In Period Minutes 30 (D) 73 P.S.I.

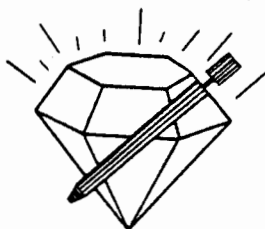
Final Flow Period Minutes 30 (E) 46 P.S.I. to (F) 55 P.S.I.

Final Closed In Period Minutes 30 (G) 72 P.S.I.

Final Hydrostatic Pressure (H) 2518 P.S.I.

RELEASED

MAR 05 2000



DIAMOND TESTING
P. O. Box 157
HOISINGTON, KANSAS 67544
(800) 542-7313

FLUID SAMPLE DATA

Company Landmark Energy Exploration, Inc.

Lease & Well No. Peterson No. 1-28

Date 12-28-98 Sec. 28 Twp. 30 S Range 31 W

Formation Test No. 3 Interval Tested From 5,470 ft. to 5,521 ft. Total Depth 5,521 ft.

Formation Chester Sand

	<u>MUD PIT</u>	<u>RECOVERY</u>
Viscosity	<u>60</u> CP	<u>80</u> CP
Weight	<u>9.0</u>	<u>9.0</u>
Water Loss	<u>10.0</u> CC	<u>12.0</u> CC
PH Factor	<u>10.0</u>	<u>10.5</u>

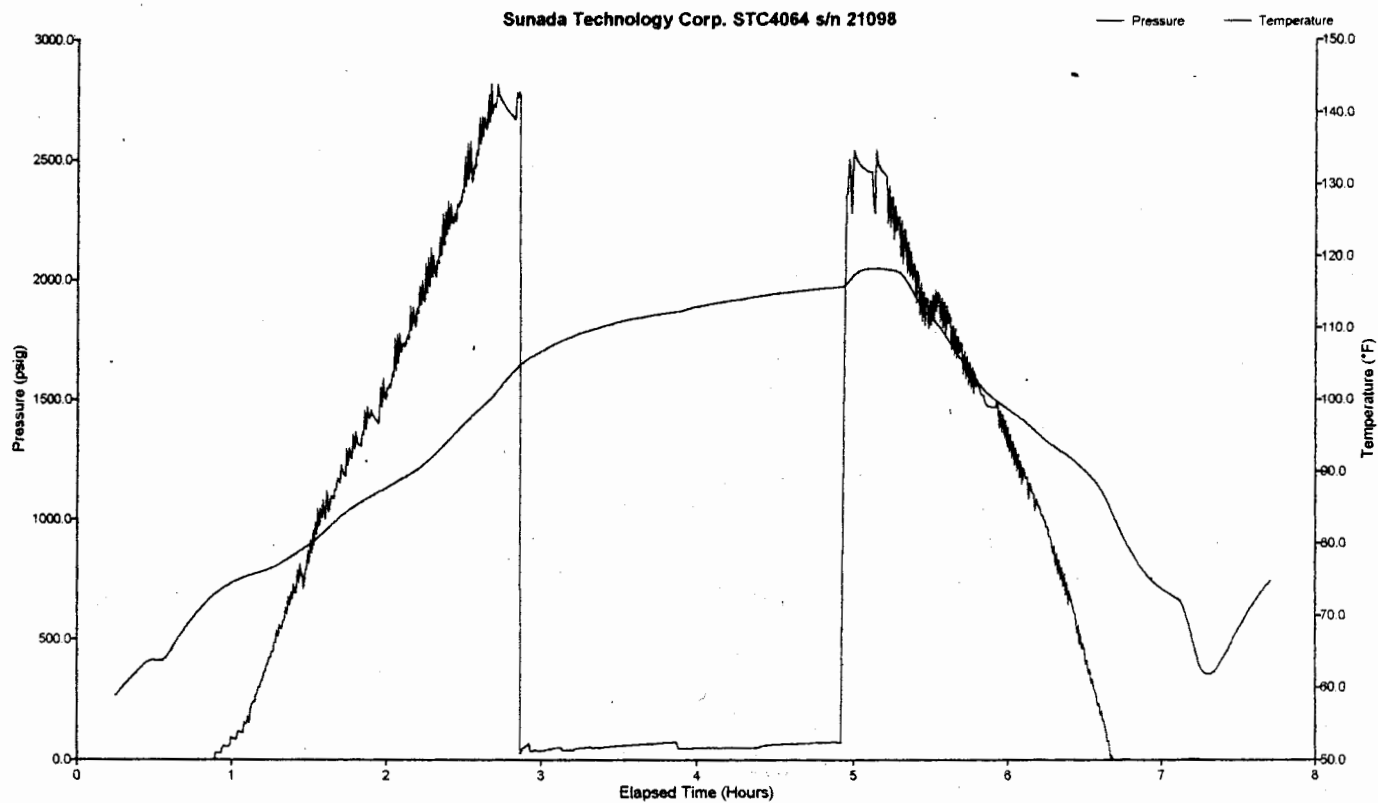
	<u>RESISTIVITY</u>	<u>CHLORIDE CONTENT</u>
Recovery Water	<u>--</u> @ <u>--</u> °F. <u>--</u> ppm	
Recovery Mud	<u>.56</u> @ <u>70</u> °F. <u>11,000</u> ppm	
Recovery Mud Filtrate	<u>.58</u> @ <u>72</u> °F. <u>10,000</u> ppm	
Mud Pit Sample	<u>.60</u> @ <u>74</u> °F. <u>10,000</u> ppm	
Mud Pit Sample Filtrate	<u>.62</u> @ <u>72</u> °F. <u>9,500</u> ppm	

Sample Taken By ROGER D. FRIEDLY

Witness By Craig Caulk

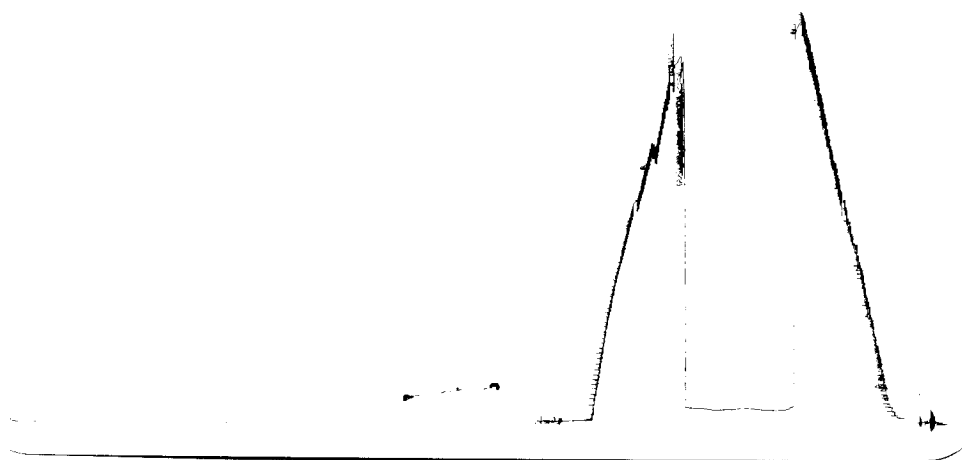
Remarks Pit filtrate triton dish chlorides were 9,600 Ppm.
Recovery filtrate triton dish chlorides were 10,000 Ppm.

Well LSD: DST #3
Well Name: PATTERSON 1-28 DST 3
Company: LANDMARK ENERGY
Battery on: Dec 28, 1998 at 14:00:00
Notes: RECOVERED 120' DRILLING MUD



DST #3 Outside 13556
Clock 26188 Chester

5478-5521
LOC 5518



This is an actual photograph of recorder chart.

POINT	PRESSURE		
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud	2669	2669	PSI
(B) First Initial Flow Pressure.....	25	25	PSI
(C) First Final Flow Pressure	51	51	PSI
(D) Initial Closed-in Pressure	73	73	PSI
(E) Second Initial Flow Pressure	46	46	PSI
(F) Second Final Flow Pressure.....	55	55	PSI
(G) Final Closed-in Pressure.....	72	72	PSI
(H) Final Hydrostatic Mud	2518	2518	PSI



CONFIDENTIAL

DIAMOND TESTING

P. O. Box 157

HOISINGTON, KANSAS 67544

(316) 653-7550

KCC

MAR 05 1999

CONFIDENTIAL

ORIGINAL

Company Landmark Energy Exploration, Inc. Lease & Well No. Peterson No. 1-28

Elevation 2848 KB Formation Morrow Effective Pay -- Ft. Ticket No. 1406

Date 12-29-98 Sec. 28 Twp. 30S Range 31W County Haskell State Kansas

Test Approved By Craig Caulk Diamond Representative Roger D. Friedly

Formation Test No. 4 Interval Tested from 5,380 ft. to 5,465 ft. Total Depth 5,575 ft.

Packer Depth 5,375 ft. Size 6 3/4 in. Packer Depth -- ft. Size -- in.

Packer Depth 5,380 ft. Size 6 3/4 in. Packer Depth -- ft. Size -- in.

Depth of Selective Zone Set 5,465 ft.

Top Recorder Depth (Inside) 5,361 ft. Electronic Recorder Number 21098 Cap. 5,000 psi

Bottom Recorder Depth (Outside) 5,460 ft. Recorder Number 13386 Cap. 3,875 psi

Below Straddle Recorder Depth 5,572 ft. Recorder Number 13556 Cap. 5,475 psi

Drilling Contractor Murfin Drlg Co., Inc. - Rig 20 Drill Collar Length 245 ft. I.D. 2 1/4 in.

Mud Type Chemical Viscosity 64 Weight Pipe Length 283 ft. I.D. 2 7/8 in.

Weight 9.0 Water Loss 10.6 cc. Drill Pipe Length 4,820 ft. I.D. 3 1/2 in.

Chlorides 8,500 P.P.M. Test Tool Length 32 ft. Tool Size 3 1/2 - IF in.

Jars: Make Bowen Serial Number 1 Anchor Length 21' perf. w/64' drill pipe Size 4 1/2 - FH in.

Did Well Flow? No Reversed Out No Tail Pipe 110 ft.

Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 - XH in.

1st Open: Strong blow. Off bottom of bucket immediately. Gas to surface in 2 1/2 mins. Weak surface blow back during shut-in. (SEE GAS VOLUME REPORT)

2nd Open: Strong blow. Off bottom of bucket immediately. Weak surface blow back during shut-in.

Recovered 71 ft. of drilling mud = .34932 bbls.

Recovered ft. of

Recovered ft. of

Recovered ft. of

Recovered ft. of

Remarks Below straddle recorder was 2,568 psi at end of DST.

RELEASED

MAR 05 2000

FROM CONFIDENTIAL

Time Set Packer(s) 11:07 ~~P.M.~~ A.M. Time Started Off Bottom 4:52 ~~P.M.~~ A.M. Maximum Temperature 110°

Initial Hydrostatic Pressure (A) 2584 P.S.I.

Initial Flow Period Minutes 30 (B) 231 P.S.I. to (C) 205 P.S.I.

Initial Closed In Period Minutes 60 (D) 1674 P.S.I.

Final Flow Period Minutes 75 (E) 187 P.S.I. to (F) 170 P.S.I.

Final Closed In Period Minutes 180 (G) 1655 P.S.I.

Final Hydrostatic Pressure (H) 2430 P.S.I.



DIAMOND TESTING
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(800) 542-7313

FLUID SAMPLE DATA

Company Landmark Energy Exploration, Inc.

Lease & Well No. Peterson No. 1-28

Date 12-29-98 Sec. 28 Twp. 30 S Range 31 W

Formation Test No. 4 Interval Tested From 5,380 ft. to 5,465 ft. Total Depth 5,575 ft.

Formation Morrow

	<u>MUD PIT</u>	<u>RECOVERY</u>
Viscosity	<u>64</u> CP	<u>90</u> CP
Weight	<u>9.0</u>	<u>9.0</u>
Water Loss	<u>10.6</u> CC	<u>10.2</u> CC
PH Factor	<u>10.0</u>	<u>10.5</u>

	<u>RESISTIVITY</u>	<u>CHLORIDE CONTENT</u>
Recovery Water	<u>--</u> @ <u>--</u> °F.	<u>--</u> ppm
Recovery Mud	<u>.62</u> @ <u>68</u> °F.	<u>10,000</u> ppm
Recovery Mud Filtrate	<u>.64</u> @ <u>70</u> °F.	<u>9,500</u> ppm
Mud Pit Sample	<u>.62</u> @ <u>72</u> °F.	<u>9,800</u> ppm
Mud Pit Sample Filtrate	<u>.63</u> @ <u>74</u> °F.	<u>9,200</u> ppm

Sample Taken By ROGER D. FRIEDLY

Witness By Craig Caulk

Remarks Pit filtrate triton dish chlorides were 8,500 Ppm.
Recovery filtrate triton dish chlorides were 9,000 Ppm.



DIAMOND TESTING
P. O. Box 157
HOISINGTON, KANSAS 67544
(316) 653-7550

GAS VOLUME REPORT

Company Landmark Energy Exploration, Inc. Lease & Well No. Peterson No. 1-28
Date 12-29-98 Sec. 28 Twp. 30 S Rge. 31 W Location 28 30S 31W County Haskell State KS
Drilling Contractor Murfin Drilg Co., Inc. - Rig 20 Formation Morrow DST No. 4
Remarks: 1st Open: Gas to surface in 2½ mins. Burns nicely.

INITIAL FLOW

Open Tool: 11:07 p.m.

Time O'Clock	Orifice Size	Gauge	MCF/D
11:17 p.m.	1½ in.	5½ psi	908
11:22 p.m.	1½ in.	6½ psi	995
11:27 p.m.	1½ in.	6½ psi	995
11:32 p.m.	1½ in.	6½ psi	995
11:37 p.m.	1½ in.	6½ psi	995
	in.		
	in.		
	in.		
	in.		
	in.		

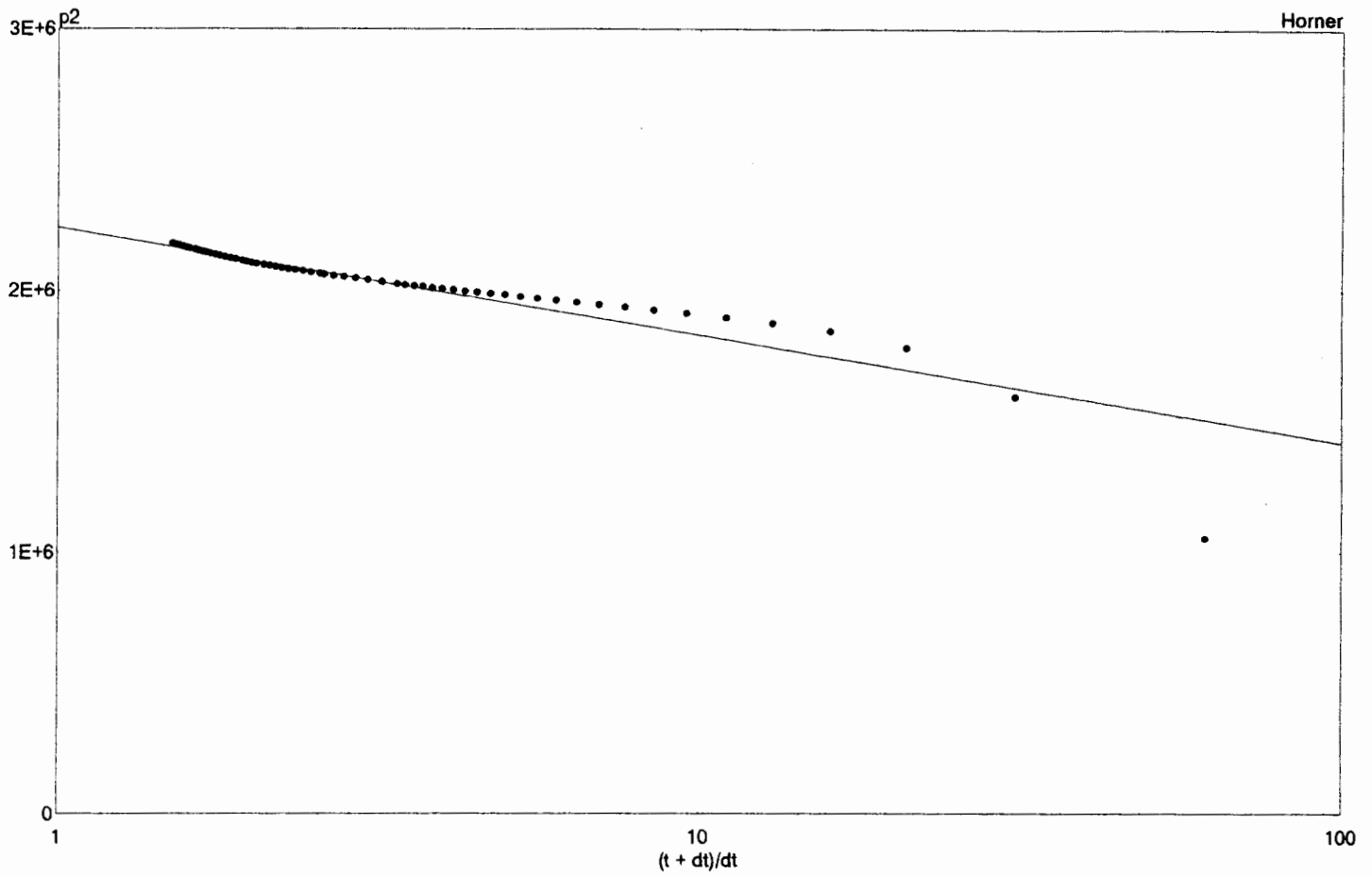
FINAL FLOW

Open Tool: 12:37 a.m.

Time O'Clock	Orifice Size	Gauge	MCF/D
12:42 a.m.	1½ in.	15 psi	1,023
12:47 a.m.	1½ in.	15½ psi	1,044
12:52 a.m.	1½ in.	15½ psi	1,044
12:57 a.m.	1½ in.	15½ psi	1,044
1:02 a.m.	1½ in.	14½ psi	1,002
1:07 a.m.	1½ in.	14 psi	980
1:12 a.m.	1½ in.	14 psi	980
1:17 a.m.	1½ in.	13½ psi	959
1:22 a.m.	1½ in.	13½ psi	959
1:27 a.m.	1½ in.	13½ psi	959
1:32 a.m.	1½ in.	13½ psi	959
1:37 a.m.	1½ in.	13½ psi	959
1:42 a.m.	1½ in.	13½ psi	959
* 1:47 a.m.	1½ in.	13½ psi	959
1:52 a.m.	1½ in.	13½ psi	959

* Sample taken.

LANDMARK ENERGY PATTERSON 1-28 DST 4 INITIAL SHUT IN



LANDMARK ENERGY PATTERSON 1-28 DST 4 INITIAL SHUT IN

Analysis Results: Horner

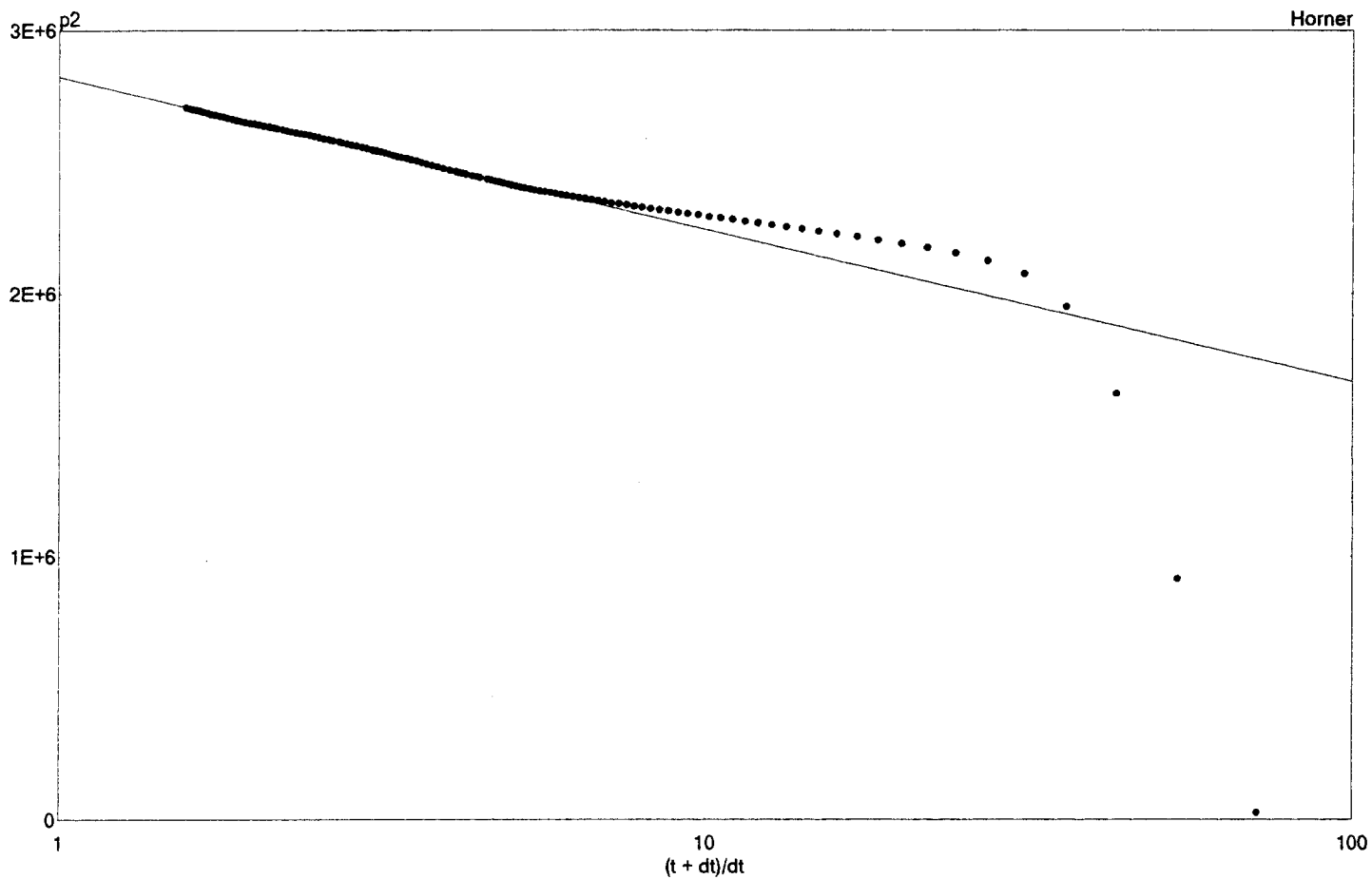
Parameters:

Slope = -411920
 $m(1 \text{ hr}) = 2.1705E+6$
 Prd Time: = 0.5 hr

Calculated Values:

$kh = 3777.19 \text{ md-ft}$
 $k = 539.599 \text{ md}$
 $S_{kin} = -1.272$
 $P^* = 1692 \text{ psi}$

LANDMARK ENERGY PATTERSON 1-28 DST 4 FINAL SHUT IN



LANDMARK ENERGY PATTERSON 1-28 DST 4 FINAL SHUT IN

Analysis Results: Horner

Parameters:

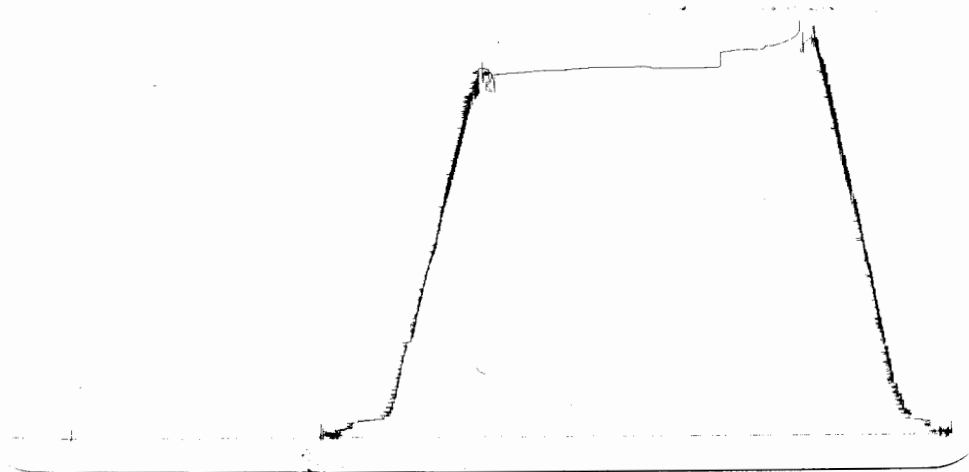
Slope = -579184
 $m(1 \text{ hr}) = 2.5708\text{E}+6$
 Prd Time: = 1.75 hr

Calculated Values:

$kh = 2635.71 \text{ md-ft}$
 $k = 376.53 \text{ md}$
 $Skin = -1.89349$
 $P^* = 1689.5 \text{ psi}$

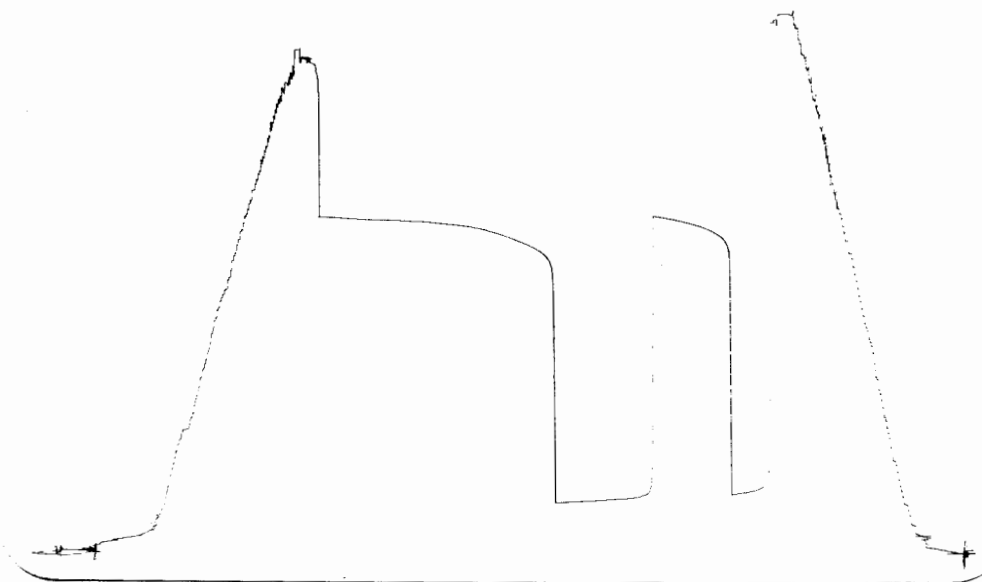
DST # 4 B&W. 5 Fraddle 13556
MOMD

5380-5445-5575
LOC 5572

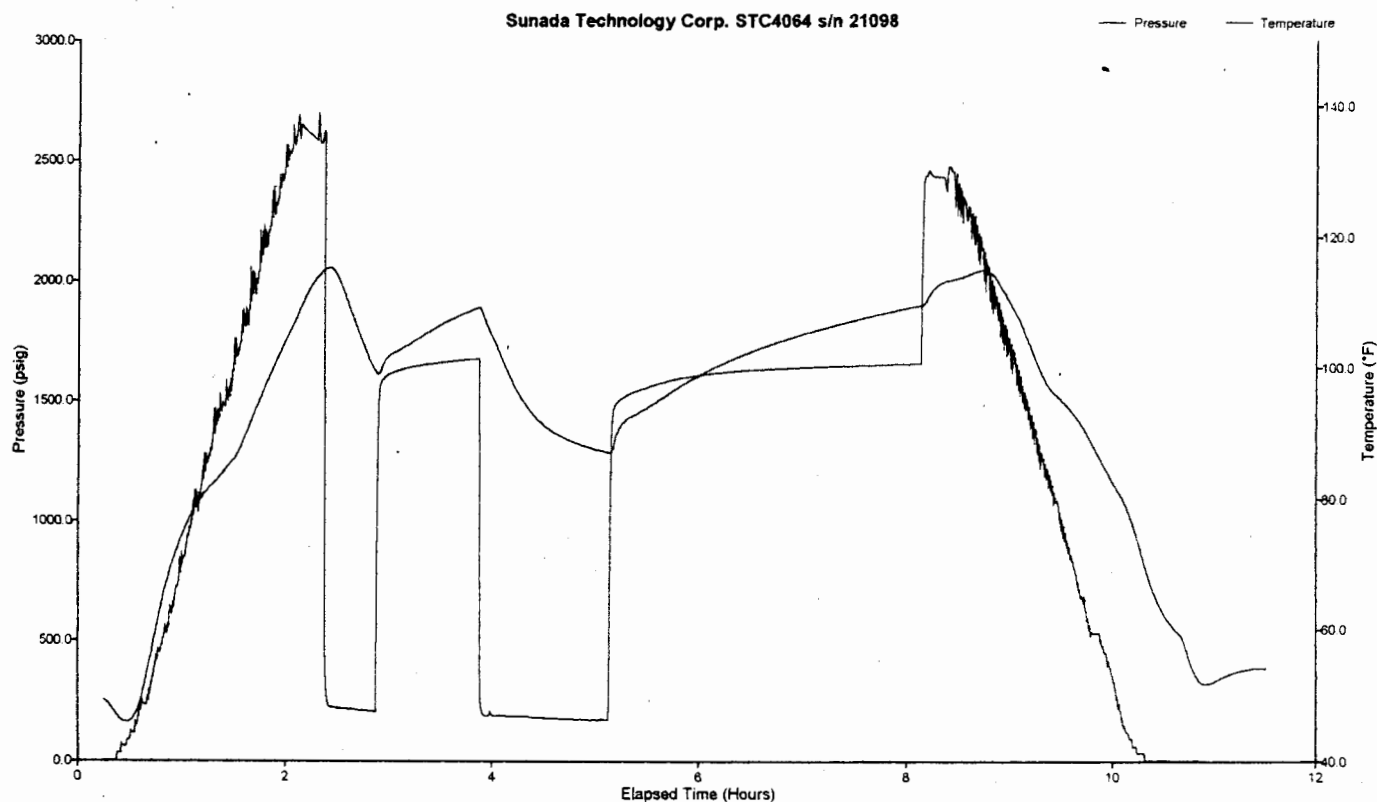


DST # 4 U. Inside 13386
Block 6913 Morrow

5380-5465-5575
LOC 5466



Well LSD: DST # 4 MORROW
 Well Name: PATTERSON 1-28 DST 4
 Company: LANDMARK ENERGY
 Battery on: Dec 29, 1998 at 20:10:00
 Notes: RECOVERED 71' DRILLING MUD, GAS STABLE @ 959,000 CFD



PRESSURE

POINT	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud	2584	2584	PSI
(B) First Initial Flow Pressure	231	231	PSI
(C) First Final Flow Pressure	205	205	PSI
(D) Initial Closed-in Pressure	1674	1674	PSI
(E) Second Initial Flow Pressure	187	187	PSI
(F) Second Final Flow Pressure	170	170	PSI
(G) Final Closed-in Pressure	1655	1655	PSI
(H) Final Hydrostatic Mud	2430	2430	PSI

NOMENCLATURE

b	== Approximate Radius of Investigation	Feet
b¹	== Approximate Radius of Investigation (Net Pay Zone h ¹)	Feet
D.R.	== Damage Ratio	—
EI	== Elevation	Feet
GD	== B.T. Gauge Depth (From Surface Reference)	Feet
h	== Interval Tested	Feet
h¹	== Net Pay Thickness	Feet
K	== Permeability	md
K¹	== Permeability (From Net Pay Zone h ¹)	md
m	== Slope Extrapolated Pressure Plot (Psi ² /cycle Gas)	psi/cycle
OF¹	== Maximum Indicated Flow Rate	MCF/D
OF²	== Minimum Indicated Flow Rate	MCF/D
OF³	== Theoretical Open Flow Potential with/Damage Removed Max.	MCF/D
OF⁴	== Theoretical Open Flow Potential with/Damage Removed Min.	MCF/D
P^S	== Extrapolated Static Pressure	Psig.
P^F	== Final Flow Pressure	Psig.
P^{OT}	== Potentiometric Surface (Fresh Water*)	Feet
Q	== Average Adjusted Production Rate During Test	bbls/day
Q¹	== Theoretical Production w/Damage Removed	bbls/day
Q⁹	== Measured Gas Production Rate	MCF/D
R	== Corrected Recovery	bbls
r^w	== Radius of Well Bore	Feet
t	== Flow Time	Minutes
t⁰	== Total Flow Time	Minutes
T	== Temperature Rankine	°R
Z	== Compressibility Factor	—
u	== Viscosity Gas or Liquid	CP
Log	== Common Log	

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given, Fresh Water Corrected to 100° F.