

STATE CORPORATION COMMISSION OF KANSAS
OIL & GAS CONSERVATION DIVISION
WELL COMPLETION OR RECOMPLETION FORM
ACO-1 WELL HISTORY
DESCRIPTION OF WELL AND LEASE

Operator: License # 8000
Name PanCanadian Petroleum Company
Address P.O. Box 929
City/State/Zip Denver, CO 80201

Purchaser.....

Operator Contact Person J.D. Keisling
Phone (303) 825-8371

Contractor: License # 6033
Name Murfin Drilling Company

Wellsite Geologist J.E. Holdeman
Phone (303) 825-8371

Designate Type of Completion
 New Well Re-Entry Workover
 Oil SWD Temp Abd
 Gas Inj Delayed Comp.
 Dry Other (Core, Water Supply etc.)

If OWNED: old well info as follows:
Operator
Well Name N/A
Comp. Date Old Total Depth.....

WELL HISTORY

Drilling Method:
 Mud Rotary Air Rotary Cable
11/23/86 11/28/86 P&A'd 11-28-86
Spud Date Date Reached TD Completion Date
3920' N/A
Total Depth PBDT

Amount of Surface Pipe Set and Cemented at 304 feet
Multiple Stage Cementing Collar Used? Yes No
If yes, show depth set.....feet
If alternate 2 completion, cement circulated
from.....feet depth to.....w/.....SX cmt
Cement Company Name
Invoice #

API NO. 15-065-22336-00-00
County Graham
C... NW... SW... Sec 17... Twp 6... Rge 22... East
 West
1980..... Ft North from Southeast Corner of Section
4620..... Ft West from Southeast Corner of Section
(Note: Locate well in section plat below)

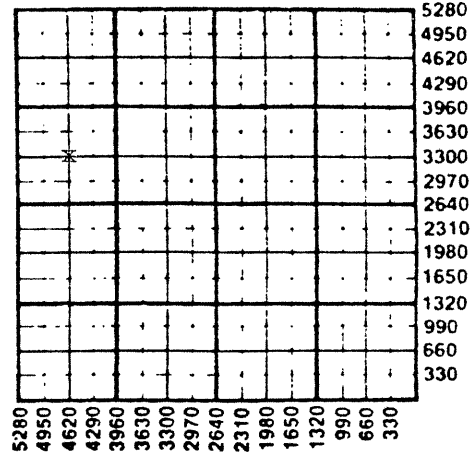
Lease Name Bethell 13-17 Well # 6

Field Name Pen

Producing Formation N/A

Elevation: Ground 2369 KB 2374

Section Plat



WATER SUPPLY INFORMATION

Disposition of Produced Water: Disposal
Docket # N/A Repressuring

Questions on this portion of the ACO-1 call:
Water Resources Board (913) 296-3717

Source of Water:
Division of Water Resources Permit # T86-5824

Groundwater 4260 Ft North from Southeast Corner
(Well) 4260 Ft West from Southeast Corner of
Sec 20 Twp 6 Rge 22 East West

Surface Water.....Ft North from Southeast Corner
(Stream, pond etc).....Ft West from Southeast Corner
Sec Twp Rge East West

Other (explain).....
(purchased from city, R.W.D. #)

INSTRUCTIONS: This form shall be completed in triplicate and filed with the Kansas Corporation Commission, 200 Colorado Derby Building, Wichita, Kansas 67202, within 120 days of the spud date of any well. Rule 82-3-130, 82-3-107 and 82-3-106 apply. Information on side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form. See rule 82-3-107 for confidentiality in excess of 12 months. One copy of all wireline logs and drillers time log shall be attached with this form. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells.

All requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Signature M.C. Miller

Title Coordinator Reservoir Engineering U.S. Date 12/30/86

Subscribed and sworn to before me this 30th day of December 1986

Notary Public Ken G. Peters

Date Commission Expires My Commission expires June 19, 1990

K.C.C. OFFICE USE ONLY
 Letter of Confidentiality Attached
 Wireline Log Received
 Drillers Timelog Received
Distribution
 KCC SWD/Rep NGPA
 KGS Plug Other
(Specify)

STATE CORPORATION COMMISSION
1027 Form ACO-1 (5-86)
CONSERVATION DIVISION
Wichita, Kansas
1-1-87

Sec. 17 Twp 6 Rge 22

Operator Name PanCanadian Petroleum Company Lease Name Bethell 13-17 Well # 6

Sec. 17 Twp. 6 Rge. 22 East West County Graham

WELL LOG

INSTRUCTIONS: Show important tops and base of formations penetrated. Detail all cores. Report all drill stem tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface during test. Attach extra sheet if more space is needed. Attach copy of log.

Drill Stem Tests Taken Yes No
 Samples Sent to Geological Survey Yes No
 Cores Taken Yes No

DST #1: 3773-3738' 15-30-30-30
 IFP 105/105 wk blo 1/4" died in 15 min
 FFP 84/127 no blo flushed tool
 ISIP 127 FSIP 127 IHP 1937 FHP 1812
 BHT 115°F Rec'd: 5' mud

DST #2: 3803-3770' 15-45-30-30
 IFP 105/105 wk blo
 FFP 105/105 no blo
 ISIP 116 FSIP 95 IHP 1937 FHP 1802
 BHT 115°F Rec'd: 5' mud

DST #3: 3866-3844' 10-45-60-90
 IFP 42/42 wk blo bldg to 3" in 10 min
 FFP 42/52 wk blo bldg to 1" in 60 min
 ISIP 987 FSIP 904 IHP 1989 FHP 1958
 BHT 115°F Rec'd: 60' M, 20' MCW

Formation Description
 Log Sample

Name	Top	Bottom
Stone Corral Anhydrite	2036	
Topeka	3404	
Heebner	3566	
Toronto	3592	
Lansing-Kansas City	3608	
Conglomerate	3853	

RELEASED
 FEB 11 1988
 2-11-88
 FROM CONFIDENTIAL

CASING RECORD New Used
 Report all strings set-conductor, surface, intermediate, production, etc.

Purpose of String	Size Hole Drilled	Size Casing Set (in O.D.)	Weight Lbs/Ft.	Setting Depth	Type of Cement	#Sacks Used	Type and Percent Additives
Surface csg	12 1/2"	8-5/8"	24	304	common	205	2% gel 3% CaCl ₂

PERFORATION RECORD

Shots Per Foot	Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record (Amount and Kind of Material Used)	Depth
.....
.....
.....
.....

TUBING RECORD

Size	Set At	Packer at	Liner Run
			<input type="checkbox"/> Yes <input type="checkbox"/> No

Date of First Production _____ Producing Method Flowing Pumping Gas Lift Other (explain).....

Estimated Production Per 24 Hours	Oil Bbls	Gas MCF	Water Bbls	Gas-Oil Ratio	Gravity

METHOD OF COMPLETION

Disposition of gas: Vented Sold Used on Lease

Open Hole Perforation Other (Specify)

Dually Completed Commingled

Production Interval

CHENEY TESTING CO.

DRILL STEM TEST REPORT

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^{PT}	= Potentiometric Surface (Fresh Water*)	Feet
Q	= Average Adjusted Production Rate During Test	bbls/day
Q¹	= Theoretical Production w/Damage Removed	bbls/day
Q^g	= Measured Gas Production Rate	MCF/D
R	= Corrected Recovery	bbls
r^w	= Radius of Well Bore	Feet
t	= Flow Time	Minutes
t^o	= 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.

15-065-22336-00-00

CHENEY TESTING COMPANY, INC.

P. O. Box 367

HILL CITY, KANSAS 67642

DRILL-STEM TEST DATA

Company	Pan Canadian Petroleum	Test No.	1
Well Name & Number	Bethell # 13-17-6	Zone Tested	"I-J" L.K.C.
Company Address	Box 929 Denver, Colo. 80201	Date	11-27-86
Company Rep.	Tom Rubis	Tester	Dan Bangle
Contractor	Murfin Drlg. Rig #8	Elevation	2370 K.B.
Location: Sec. 17 Twp. 6S Rge. 22W Co.Graham State KS.		Est. Feet of Pay	

Recorder No. 7456 Type AK-1 Range 4150 PSI

Recorder Depth 3763 Clock # 30420

(A) Initial Hydrostatic Mud 1937 PSI

(B) First Initial Flow Pressure 105 PSI

(C) First Final Flow Pressure 105 PSI

(D) Initial Shut-in Pressure 127 PSI

(E) Second Initial Flow Pressure 84 PSI

(F) Second Final Flow Pressure 127 PSI

(G) Final Shut-in Pressure 127 PSI

(H) Final Hydrostatic Mud 1812 PSI

Temperature 115

Mud Weight 9.6 Viscosity 40

Fluid Loss 9.6 chl. 2,000 P.P.M.

Interval Tested 3738-3773

Anchor Length 35

Top Packer Depth 3733

Bottom Packer Depth 3738

Total Depth 3773

Drill Pipe Size 4 1/2" X.H.

Wt. Pipe I. D. 2.7 Ft. Run 539

Recovery-Total Feet 5'

Recovered 5 Feet Of Drilling Mud (no show)

Recovered _____ Feet Of _____

Recovered _____ Feet Of _____

Recovered _____ Feet Of _____

Recovered _____ Feet Of _____

Recovered _____ Feet Of _____

Extra Equipment _____

Recorder No. 11091 Type AK-1 Range 4200 PSI

Recorder Depth 3768 Clock # 25719

Tool Open Before I.S.I. 15 Mins.

Initial Shut-in 30 Mins.

Flow Period 30 Mins.

Final Shut-in 30 Mins.

Top Choke Size 1" Hole Size 7 7/8"

Bottom Choke Size 3/4" Rubber Size 6 3/4"

Tool Open @ 6:25 P.M.

Blow Remarks I.F. Weak Blow

F.F. No Blow. Flushed tool.

D.C. I.D. 2.25 FT. Run 30"

Price of Job \$350.00

CHENEY TESTING CO., INC.

P. O. BOX 367

HILL CITY, KANSAS 67642

FLUID SAMPLER DATA

Ticket No.	12242	Date	11-27-86
Company Name	Pan Canadian Petroleum		
Lease	Bethell #13-17-6	Test No.	1
County	Graham County, KS.	Sec. 17	Twp. 6S Rge. 22W

SAMPLER RECOVERY

Gas _____ ML
Oil _____ ML
Mud _____ 2000 _____ ML
Water _____ ML
Other _____ ML
Pressure _____ 250 _____ P.S.I.
Total _____ 2000 _____ ML

PIT MUD ANALYSIS

Chlorides _____ 2,000 _____ ppm
Resistivity _____ .054 _____ ohms @ _____ 75 _____ °F
Viscosity _____ 40 _____
Wt. _____ 9.6 _____
Filtrate _____ 9.6 _____ cc
Other _____ $\frac{1}{2}$ #L.M.C. _____

SAMPLER ANALYSIS

Resistivity _____ .162 _____ ohms @ _____ 75 _____ °F
Chlorides _____ 2,000 _____ ppm
Gravity _____ - _____ Corrected @ 60°F

PIPE RECOVERY

TOP:

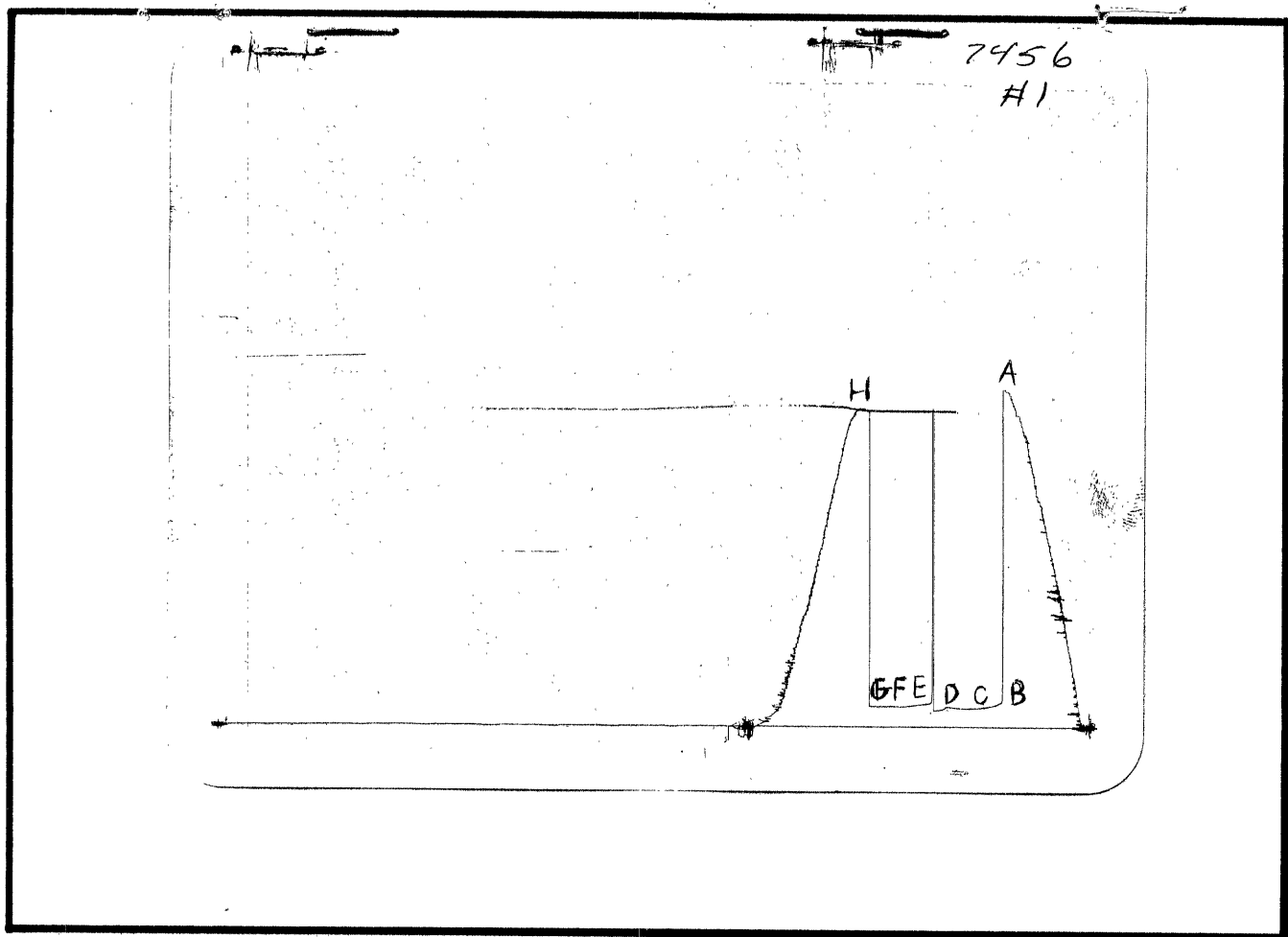
Resistivity _____ .054 _____ ohms @ _____ 75 _____ °F
Chlorides _____ 2,000 _____ ppm

MIDDLE:

Resistivity _____ ohms @ _____ °F
Chlorides _____ ppm

BOTTOM:

Resistivity _____ ohms @ _____ °F
Chlorides _____ ppm



This is an actual photograph of recorder chart.

POINT	PRESSURE		
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud	1937		PSI
(B) First Initial Flow Pressure	105		PSI
(C) First Final Flow Pressure	105		PSI
(D) Initial Closed-in Pressure	127		PSI
(E) Second Initial Flow Pressure	84		PSI
(F) Second Final Flow Pressure	127		PSI
(G) Final Closed-in Pressure	127		PSI
(H) Final Hydrostatic Mud	1812		PSI

COMPANY PAN CANADIAN PETROLEUM LEASE AND WELL NO. BETHELL #13-17-6 SEC. 17 TWP. 6S RGE. 22W TEST NO. 1 DATE 11-27-86

CHENEY TESTING CO.

DRILL STEM TEST REPORT

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^{DT}	= Potentiometric Surface (Fresh Water*)	Feet
Q	= Average Adjusted Production Rate During Test	bbls/day
Q¹	= Theoretical Production w/Damage Removed	bbls/day
Q^g	= Measured Gas Production Rate	MCF/D
R	= Corrected Recovery	bbls
r^w	= Radius of Well Bore	Feet
t	= Flow Time	Minutes
t^o	= 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.

15-065-22336-00-00

CHENEY TESTING COMPANY, INC.

P. O. Box 367

HILL CITY, KANSAS 67642

DRILL-STEM TEST DATA

Company	PanCanadian Petroleum	Test No.	2
Well Name & Number	Bethell #13-17-6	Zone Tested	"K-L" L.K.C.
Company Address	Box 929 Denver, Co. 80201	Date	11-28-86
Company Rep.	Tom Rubis	Tester	Dan Bangle
Contractor	Murfin Drlg. Rig #8	Elevation	2370 K.B.
Location: Sec. 17 Twp. 6S Rge. 22W Co. Graham State KS.		Est. Feet of Pay	

Recorder No. 7456 Type AK-1 Range 4150 PSI

Recorder No. 11091 Type AK-1 Range 4200 PSI

Recorder Depth 3795 Clock # 30420

Recorder Depth 3799 Clock # 25719

(A) Initial Hydrostatic Mud 1937 PSI

Tool Open Before I.S.I. 15 Mins.

(B) First Initial Flow Pressure 105 PSI

Initial Shut-in 45 Mins.

(C) First Final Flow Pressure 105 PSI

Flow Period 30 Mins.

(D) Initial Shut-in Pressure 116 PSI

Final Shut-in 30 Mins.

(E) Second Initial Flow Pressure 105 PSI

Top Choke Size 1" Hole Size 7 7/8"

(F) Second Final Flow Pressure 105 PSI

Bottom Choke Size 3/4" Rubber Size 6 3/4"

(G) Final Shut-in Pressure 95 PSI

Tool Open @ 6:07 A.M.

(H) Final Hydrostatic Mud 1802 PSI

Blow Remarks I.F. WEAK 1/2" DECREASING BLOW.

Temperature 115

F.F. NO BLOW.

Mud Weight 9.7 Viscosity 47

Fluid Loss 9.2 chl. 2,000 P.P.M.

Interval Tested 3768-3803

Anchor Length 35'

Top Packer Depth 3763

Bottom Packer Depth 3768

Total Depth 3803

Drill Pipe Size 4 1/2" F.H.

Wt. Pipe I. D. 2.7 Ft. Run 539

Recovery-Total Feet 5

Recovered 5 Feet Of Drilling Mud (no show)

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Extra Equipment Price of Job \$350.00

CHENEY TESTING CO., INC.

P. O. BOX 367

HILL CITY, KANSAS 67642

FLUID SAMPLER DATA

Ticket No.	12243	Date	11-28-86
Company Name	PanCanadian Petroleum		
Lease	Bethell #13-17-6	Test No.	2
County	Graham CO., KS.	Sec. 17	Twp. 6S Rge. 22W

SAMPLER RECOVERY

Gas _____ ML
Oil _____ ML
Mud _____ 1950 ML
Water _____ ML
Other _____ ML
Pressure _____ 115 P.S.I.
Total _____ 1950 ML

PIT MUD ANALYSIS

Chlorides _____ 2,000 ppm
Resistivity _____ .054 ohms @ _____ 75 °F
Viscosity _____ 40
Wt. _____ 9.6
Filtrate _____ 9.6 cc
Other _____ ½# L.C.M.

SAMPLER ANALYSIS

Resistivity _____ .154 ohms @ _____ 75 °F
Chlorides _____ 2100 ppm
Gravity _____ Corrected @ 60°F

PIPE RECOVERY

TOP:

Resistivity _____ .054 ohms @ _____ 75 °F
Chlorides _____ 2100 ppm

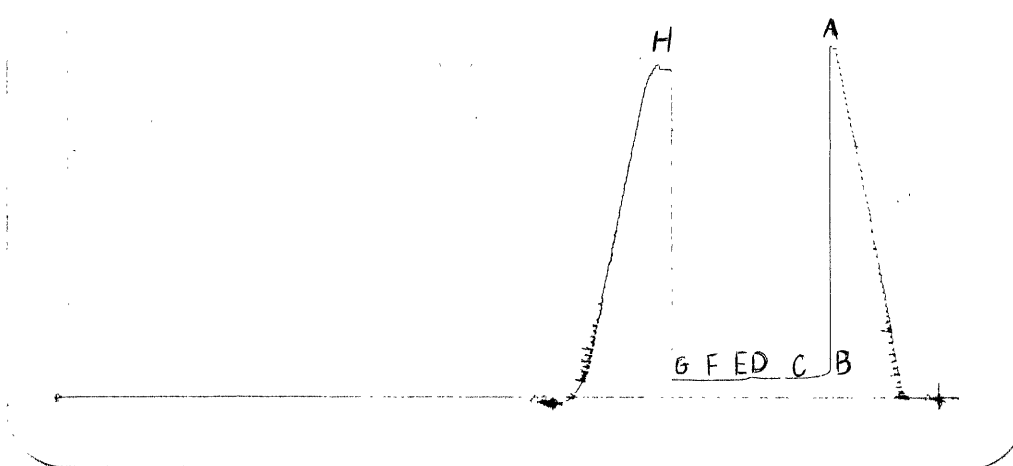
MIDDLE:

Resistivity _____ ohms @ _____ °F
Chlorides _____ ppm

BOTTOM:

Resistivity _____ ohms @ _____ °F
Chlorides _____ ppm

7456
#2



This is an actual photograph of recorder chart.

POINT	PRESSURE	
	Field Reading	Office Reading
(A) Initial Hydrostatic Mud	1937	PSI
(B) First Initial Flow Pressure	105	PSI
(C) First Final Flow Pressure	105	PSI
(D) Initial Closed-in Pressure	116	PSI
(E) Second Initial Flow Pressure	105	PSI
(F) Second Final Flow Pressure	105	PSI
(G) Final Closed-in Pressure	95	PSI
(H) Final Hydrostatic Mud	1802	PSI

COMPANY PAN CANADIAN PETROLEUM LEASE AND WELL NO. BETHELL #13-17-6 SEC. 17 TWP. 6S RGE. 22W TEST NO. 2 DATE 11-28-86

CHENEY TESTING CO.

DRILL STEM TEST REPORT

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
Q^g	= Measured Gas Production Rate	MCF/D
R	= Corrected Recovery	bbls
r^w	= Radius of Well Bore	Feet
t	= Flow Time	Minutes
t^o	= 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.

15-065-22336-00-00

CHENEY TESTING COMPANY, INC.

P. O. Box 367

HILL CITY, KANSAS 67642

DRILL-STEM TEST DATA

Company	Pan Canadian Petroleum	Test No.	1
Well Name & Number	Bethell # 13-17-6	Zone Tested	"I-J" L.K.C.
Company Address	Box 929 Denver, Colo. 80201	Date	11-27-86
Company Rep.	Tom Rubis	Tester	Dan Bangle
Contractor	Murfin Drlg. Rig #8	Elevation	2370 K.B.
Location: Sec. 17 Twp. 6S Rge. 22W Co.Graham State KS.		Est. Feet of Pay	

Recorder No. 7456 Type AK-1 Range 4150 PSI

Recorder Depth 3763 Clock # 30420

(A) Initial Hydrostatic Mud 1937 PSI

(B) First Initial Flow Pressure 105 PSI

(C) First Final Flow Pressure 105 PSI

(D) Initial Shut-in Pressure 127 PSI

(E) Second Initial Flow Pressure 84 PSI

(F) Second Final Flow Pressure 127 PSI

(G) Final Shut-in Pressure 127 PSI

(H) Final Hydrostatic Mud 1812 PSI

Temperature 115

Mud Weight 9.6 Viscosity 40

Fluid Loss 9.6 chl. 2,000 P.P.M.

Interval Tested 3738-3773

Anchor Length 35

Top Packer Depth 3733

Bottom Packer Depth 3738

Total Depth 3773

Drill Pipe Size 4 1/2" X.H.

Wt. Pipe I. D. 2.7 Ft. Run 539

Recovery-Total Feet 5'

Recovered 5 Feet Of Drilling Mud (no show)

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Extra Equipment

Recorder No. 11091 Type AK-1 Range 4200 PSI

Recorder Depth 3768 Clock # 25719

Tool Open Before I.S.I. 15 Mins.

Initial Shut-in 30 Mins.

Flow Period 30 Mins.

Final Shut-in 30 Mins.

Top Choke Size 1" Hole Size 7 7/8"

Bottom Choke Size 3/4" Rubber Size 6 3/4"

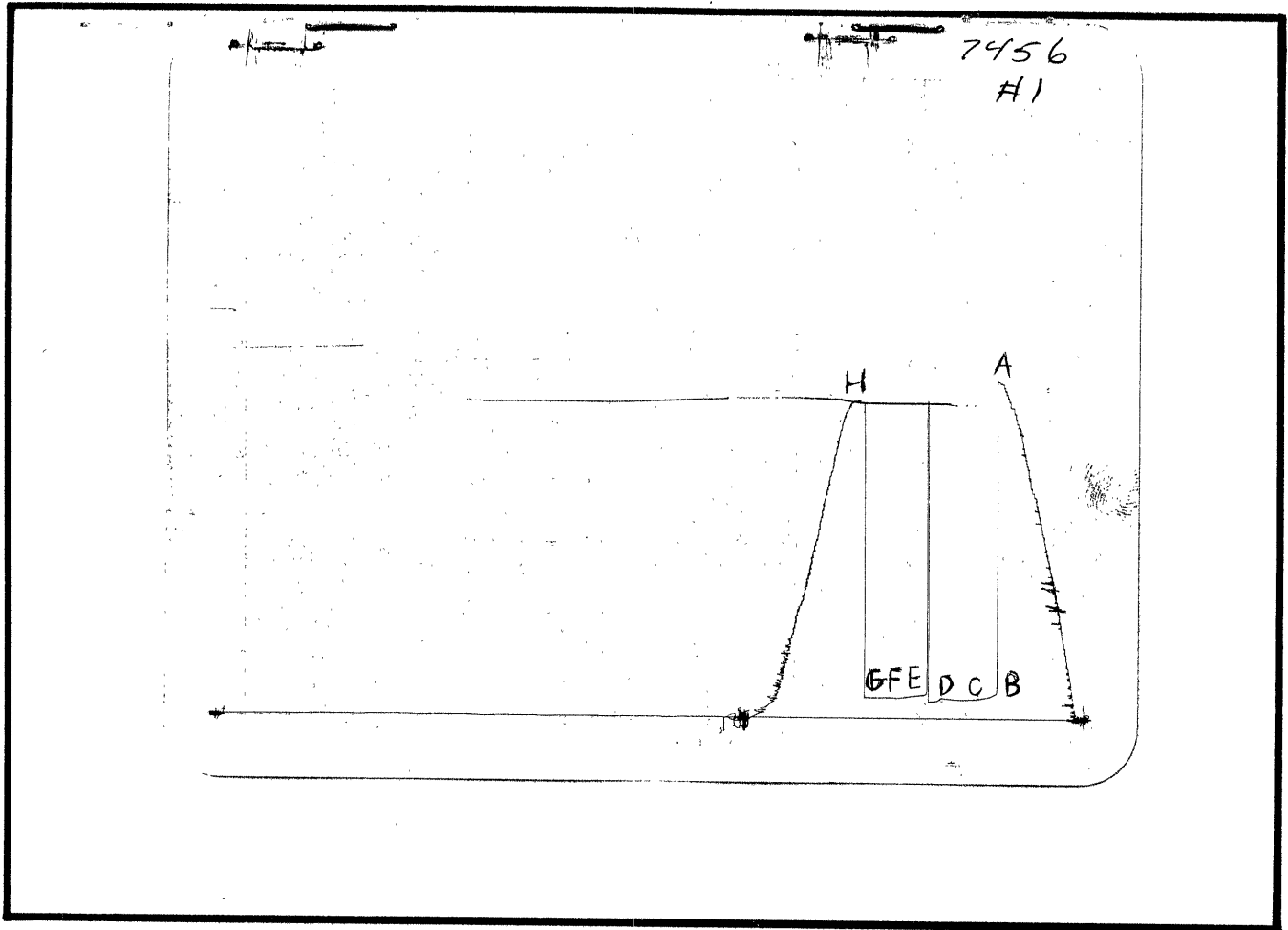
Tool Open @ 6:25 P.M.

Blow Remarks I.F. Weak Blow

F.F. No Blow. Flushed tool.

D.C. I.D. 2.25 FT. Run 30"

Price of Job \$350.00



This is an actual photograph of recorder chart.

POINT	PRESSURE	
	Field Reading	Office Reading
(A) Initial Hydrostatic Mud	1937	PSI
(B) First Initial Flow Pressure	105	PSI
(C) First Final Flow Pressure	105	PSI
(D) Initial Closed-in Pressure	127	PSI
(E) Second Initial Flow Pressure	84	PSI
(F) Second Final Flow Pressure	127	PSI
(G) Final Closed-in Pressure	127	PSI
(H) Final Hydrostatic Mud	1812	PSI

CHENEY TESTING CO., INC.

P. O. BOX 367

HILL CITY, KANSAS 67642

FLUID SAMPLER DATA

Ticket No.	12242	Date	11-27-86
Company Name	Pan Canadian Petroleum		
Lease	Bethell #13-17-6	Test No.	1
County	Graham County, KS.	Sec. 17 Twp. 6S Rge. 22W	

SAMPLER RECOVERY

Gas _____ ML
Oil _____ ML
Mud _____ 2000 _____ ML
Water _____ ML
Other _____ ML
Pressure _____ 250 _____ P.S.I.
Total _____ 2000 _____ ML

PIT MUD ANALYSIS

Chlorides _____ 2,000 _____ ppm
Resistivity _____ .054 _____ ohms @ _____ 75 _____ °F
Viscosity _____ 40 _____
Wt. _____ 9.6 _____
Filtrate _____ 9.6 _____ cc
Other _____ $\frac{1}{2}$ #L.M.C. _____

SAMPLER ANALYSIS

Resistivity _____ .162 _____ ohms @ _____ 75 _____ °F
Chlorides _____ 2,000 _____ ppm
Gravity _____ - _____ Corrected @ 60°F

PIPE RECOVERY

TOP:

Resistivity _____ .054 _____ ohms @ _____ 75 _____ °F
Chlorides _____ 2,000 _____ ppm

MIDDLE:

Resistivity _____ ohms @ _____ °F
Chlorides _____ ppm

BOTTOM:

Resistivity _____ ohms @ _____ °F
Chlorides _____ ppm

COMPANY IMM CANADIAN PETROLEUM LEASE AND WELL NO. BETHELL # 13-17-6 SEC. 17 TWP. 6S RGE. 22W TEST NO. 1 DATE 11 27 86

CHENEY TESTING CO.

DRILL STEM TEST REPORT

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
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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
Q^g	= Measured Gas Production Rate	MCF/D
R	= Corrected Recovery	bbls
r^w	= Radius of Well Bore	Feet
t	= Flow Time	Minutes
t^o	= 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.

15-065-22336-00-00

CHENEY TESTING COMPANY, INC.

P. O. Box 367 HILL CITY, KANSAS 67642

DRILL-STEM TEST DATA

Company	PanCanadian Petroleum	Test No.	2
Well Name & Number	Bethell #13-17-6	Zone Tested	"K-L" L.K.C.
Company Address	Box 929 Denver, Co. 80201	Date	11-28-86
Company Rep.	Tom Rubis	Tester	Dan Bangle
Contractor	Murfin Drlg. Rig #8	Elevation	2370 K.B.
Location: Sec. 17 Twp. 6S Rge. 22W Co. Graham State KS.		Est. Feet of Pay	

Recorder No. 7456 Type AK-1 Range 4150 PSI

Recorder No. 11091 Type AK-1 Range 4200 PSI

Recorder Depth 3795 Clock # 30420

Recorder Depth 3799 Clock # 25719

(A) Initial Hydrostatic Mud 1937 PSI

Tool Open Before I.S.I. 15 Mins.

(B) First Initial Flow Pressure 105 PSI

Initial Shut-in 45 Mins.

(C) First Final Flow Pressure 105 PSI

Flow Period 30 Mins.

(D) Initial Shut-in Pressure 116 PSI

Final Shut-in 30 Mins.

(E) Second Initial Flow Pressure 105 PSI

Top Choke Size 1" Hole Size 7 7/8"

(F) Second Final Flow Pressure 105 PSI

Bottom Choke Size 3/4" Rubber Size 6 3/4"

(G) Final Shut-in Pressure 95 PSI

Tool Open @ 6:07 A.M.

(H) Final Hydrostatic Mud 1802 PSI

Blow Remarks I.F. WEAK 1/4" DECREASING BLOW.

Temperature 115

F.F. NO BLOW.

Mud Weight 9.7 Viscosity 47

Fluid Loss 9.2 chl. 2,000 P.P.M.

Interval Tested 3768-3803

Anchor Length 35'

Top Packer Depth 3763

Bottom Packer Depth 3768

Total Depth 3803

Drill Pipe Size 4 1/2" F.H.

Wt. Pipe I. D. 2.7 Ft. Run 539

Recovery-Total Feet 5

Recovered 5 Feet Of Drilling Mud (no show)

Recovered _____ Feet Of _____

Recovered _____ Feet Of _____

Recovered _____ Feet Of _____

Recovered _____ Feet Of _____

Recovered _____ Feet Of _____

Extra Equipment _____ Price of Job \$350.00

CHENEY TESTING CO., INC.

P. O. BOX 367

HILL CITY, KANSAS 67642

FLUID SAMPLER DATA

Ticket No.	12243	Date	11-28-86
Company Name	PanCanadian Petroleum		
Lease	Bethell #13-17-6	Test No.	2
County	Graham CO., KS.	Sec. 17	Twp. 6S Rge. 22W

SAMPLER RECOVERY

Gas _____ ML
Oil _____ ML
Mud _____ 1950 ML
Water _____ ML
Other _____ ML
Pressure _____ 115 P.S.I.
Total _____ 1950 ML

PIT MUD ANALYSIS

Chlorides _____ 2,000 ppm
Resistivity _____ .054 ohms @ 75 °F
Viscosity _____ 40
Wt. _____ 9.6
Filtrate _____ 9.6 cc
Other _____ $\frac{1}{2}$ # L.C.M.

SAMPLER ANALYSIS

Resistivity _____ .154 ohms @ 75 °F
Chlorides _____ 2100 ppm
Gravity _____ Corrected @ 60°F

PIPE RECOVERY

TOP:

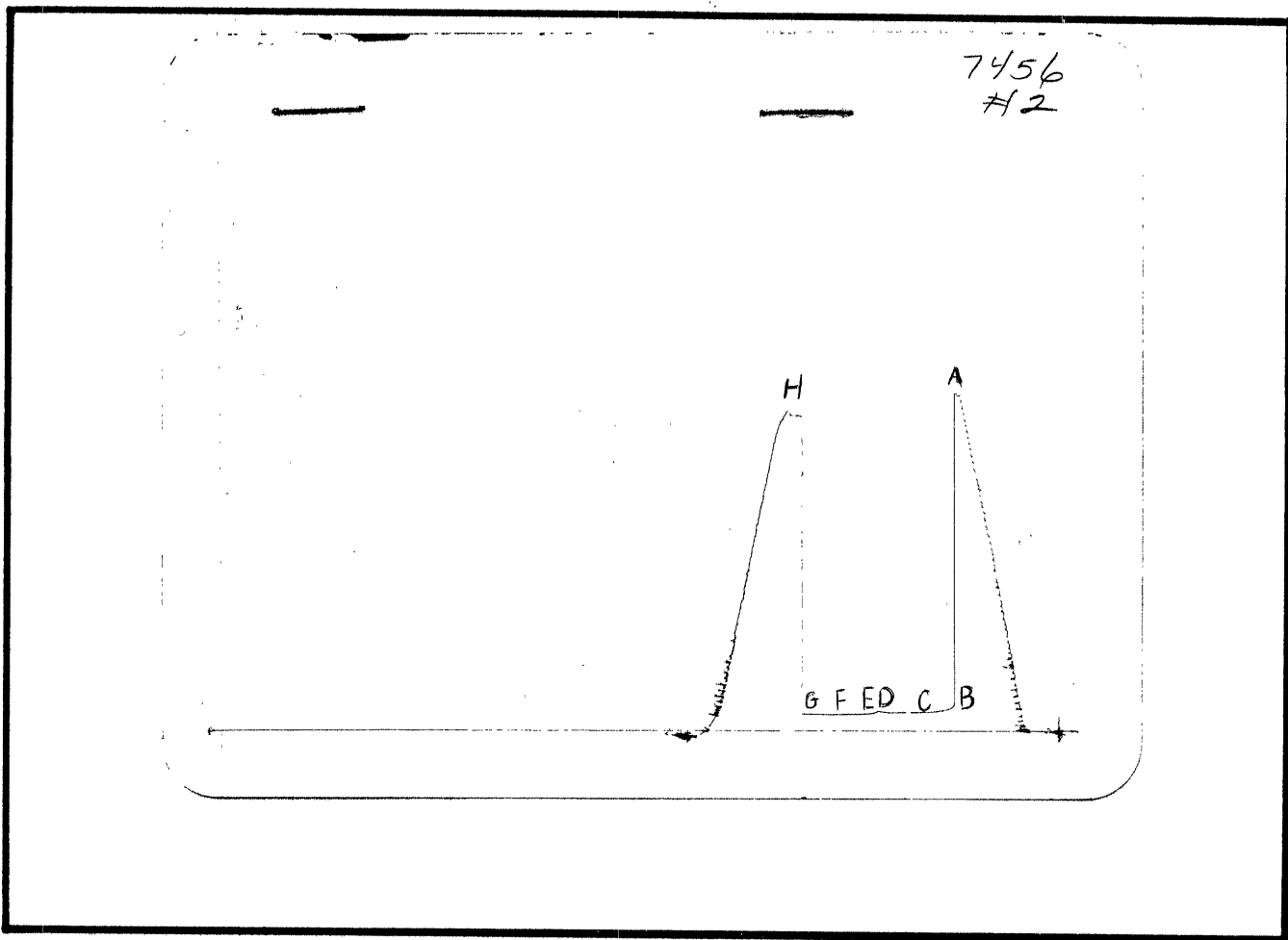
Resistivity _____ .054 ohms @ 75 °F
Chlorides _____ 2100 ppm

MIDDLE:

Resistivity _____ ohms @ _____ °F
Chlorides _____ ppm

BOTTOM:

Resistivity _____ ohms @ _____ °F
Chlorides _____ ppm



This is an actual photograph of recorder chart.

POINT	PRESSURE		
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud	1937		PSI
(B) First Initial Flow Pressure	105		PSI
(C) First Final Flow Pressure	105		PSI
(D) Initial Closed-in Pressure	116		PSI
(E) Second Initial Flow Pressure	105		PSI
(F) Second Final Flow Pressure	105		PSI
(G) Final Closed-in Pressure	95		PSI
(H) Final Hydrostatic Mud	1802		PSI

