

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

API NO. 15- 051-24835-00-00 ORIGINAL  
County Ellis  
- SE - SE - SE Sec. 31 Twp. 13S Rge. 19W E W

Operator: License # 30606  
Name: Murfin Drilling Co., Inc.  
Address 250 N. Water, Suite 300  
City/State/Zip Wichita, KS 67202

330 Feet from S/N (circle one) Line of Section  
330 Feet from E/W (circle one) Line of Section

Footages Calculated from Nearest Outside Section Corner:  
NE, SE, NW or SW (circle one)

Purchaser: NCRA  
Operator Contact Person: Larry M. Jack  
Phone ( ) 267-3241

Lease Name Riedel Well # 15  
Field Name Irvin

Producing Formation ARB

Contractor: Name: Murfin Drilling Co., Inc.  
License: 30606

Elevation: Ground 2285 KB 2290  
Total Depth 4020 PBD 3988

Amount of Surface Pipe Set and Cemented at 311 Feet

Wellsite Geologist: Curtis Covey

Multiple Stage Cementing Collar Used? - X Yes No

If yes, show depth set 1607 Feet

Designate Type of Completion  
 New Well  Re-Entry  Workover

If Alternate II completion, cement circulated from 1607

Oil  SWD  S10W  Temp. Abd.  
 Gas  ENHR  SIGW  
 Dry  Other (Core, WSW, Expl., Cathodic, etc)

feet depth to surface w/ 340 sx cmt.

Drilling Fluid Management Plan *pl 2 8-9-93*  
(Data must be collected from the Reserve Pit)

If Workover/Re-Entry: old well info as follows:

Chloride content 34000 ppm Fluid volume 2500 bbls

Dewatering method used evaporation

Location of fluid disposal if hauled offsite:

Operator: \_\_\_\_\_  
Well Name: \_\_\_\_\_  
Comp. Date \_\_\_\_\_ Old Total Depth \_\_\_\_\_  
 Deepening  Re-perf.  Conv. to Inj/SWD  
 Plug Back  PBD  
 Commingled  Docket No. \_\_\_\_\_  
 Dual Completion  Docket No. \_\_\_\_\_  
 Other (SWD or Inj?)  Docket No. \_\_\_\_\_  
5/25/93 6/3/93 7/15/93  
Spud Date Date Reached TD Completion Date

Operator Name \_\_\_\_\_

Lease Name \_\_\_\_\_

Quarter Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S Rng. \_\_\_\_\_ E/W

County \_\_\_\_\_ Docket No. \_\_\_\_\_

RELEASED  
09-06-94  
SEP 6 1994

FROM CONFIDENTIAL

INSTRUCTIONS: An original and two copies of this form shall be filed with the Kansas Corporation Commission, 200 Colorado Derby Building, Wichita, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 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 geologist well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. 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 By: *Larry M. Jack*  
Title Larry M. Jack, Production Manager Date 7/26/93  
Subscribed and sworn to before me this 26 day of July 19 93.  
Notary Public *Kerran Redington*  
Kerran Redington  
Date Commission Expires 2/6/94

RECEIVED  
STATE CORPORATION COMMISSION  
K.C.C. OFFICE USE ONLY  
Letter of Confidentiality Attached  
JUL 29 Wireline Log Received  
07-28-93 Geologist Report Received  
KANSAS CONSERVATION DIVISION  
KGS  
Distribution  
SWD/Rep NGPA  
Plug Other  
(Specify)  
KERRAN REDINGTON  
NOTARY PUBLIC  
STATE OF KANSAS  
MY APPL. EXP. 2/6/94

Operator Name Murfin Drilling Co., Inc. Lease Name Riedel Well # 15  
 Sec. 31 Twp. 13S Rge. 19W County Ellis  
 East  
 West

**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 (Attach Additional Sheets.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datums	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	see attached		
Electric Log Run (Submit Copy.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
List All E.Logs Run:				

See attached.

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> 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	12 1/4	8 5/8	24#	311	60/40	165	2%gel, 3% CC
Production	7 7/8	5 1/2	15.5#	4017	Class A	150	10% salt, 3/4%
					Lite	290	FL 62
					Class A	50	

ADDITIONAL CEMENTING/SQUEEZE RECORD					
Purpose:	Depth Top Bottom	Type of Cement	#Sacks Used	Type and Percent Additives	
<input type="checkbox"/> Perforate					
<input type="checkbox"/> Protect Casing					
<input type="checkbox"/> Plug Back TD					
<input type="checkbox"/> Plug Off Zone					

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record (Amount and Kind of Material Used)	Depth
4	3899-3901'	750 gal. 15% DSFE	3899-3901
4	3887-3889'		& 3887-3889

<b>TUBING RECORD</b>	Size <u>2 7/8</u>	Set At <u>3951</u>	Packer At	Liner Run <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or Inj. <u>7/16/93</u>	Producing Method <input type="checkbox"/> Flowing <input checked="" type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (Explain)
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Estimated Production Per 24 Hours	Oil Bbls. <u>23</u>	Gas Mcf <u>---</u>	Water Bbls. <u>49</u>	Gas-Oil Ratio	Gravity
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Disposition of Gas:	<input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease (If vented, submit ACO-18.)	METHOD OF COMPLETION	<input type="checkbox"/> Open Hole <input checked="" type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled	Production Interval	<u>as above</u>
		<input type="checkbox"/> Other (Specify) _____			

Curtis E. Covey  
PETROLEUM GEOLOGIST

ORIGINAL

AAPG  
GSA  
SPE

AIPG  
CSPG  
SPWLA

KCC

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15051-24835-00-00

CONFIDENTIAL

4 June 1993

Murfin Drilling Company  
250 North Water, Suite 300  
Wichita, Kansas 67202

RELEASED

Re: Riedel #15  
Se Se Se 31-T13S-R19W  
Ellis County, Kansas

6-991

FROM CONFIDENTIAL

Gentlemen,

The following manuscript letter and enclosed geologist's log are a summary of the referenced well.

RECOMMENDATION

A recommendation is made to the operator that the well be considered commercial and production casing be set.

Major shows were encountered in the Lansing "J" (3,757'-60') and the Arbuckle (3,886'-92', 3,899'-3,901' and 3,907'-10'). Secondary zones of interest were encountered in the Lansing "B" (3,607'-11'), the Lansing "I" (3,733'-36'), the Arbuckle (3,912'-14') and Arbuckle (3,916'-24'). Minor shows were encountered in the Topeka Limestone (3,281'-83'), the Toronto Limestone (3,555'-56'), the Lansing "C" (3,623'-24'), the Lansing "F" (3,651'-53'), Lansing "L" (3,804'06'), the Lansing "K" (3,789'-91') and the Arbuckle (3,948'-50' & 3,972'-74').

GEOLOGICAL DATA

Formation Tops*:	Anhydrite . . . . .	1,570'	(+720')
	Neva Limestone . . . . .	2,753'	(-463')
	Topeka Limestone . . . . .	3,281'	(-991')
	Heebner Shale . . . . .	3,533'	(-1,243')
	Lansing Group . . . . .	3,576'	(-1,286')
	B/Kansas City Group . . . . .	3,820'	(-1,530')
	Arbuckle . . . . .	3,886'	(-1,596')

\* Log measured from Kelly Bushing; 5 feet above Permanent Datum.

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Sample examination used in conjunction with electric logs' calculations suggest the information as noted below.

MAJOR SHOW(S)

1. Lansing "J" Limestone . . . . . Limestone -- Tan. Singular. Oolitic/oolitic. Coloids are fine sized. Some Re-XLN. Matrix is opaque to transparent. Fair/Good visible porosity. Fair/Good odor. Spotted/Uniform dull yellow fluorescence. After crushing, free gas & some medium/dark brown oil. Spotted/uniform light brown stain. Positive cut/residual. Positive acid/residual.  
(3,757'-60')  
 $\phi_{xp} = 23\%$ ,  $R_t = 145$ ,  
 $R_w = 0.05$  ohms &  
 $S_w = 8\%$ . (Archies)  
Good/excellent permeability as suggested by mudcake & DST #2.
2. Arbuckle Dolostone . . . . . Dolostone -- Gray. Singular. Fine/medium Sub & Euhedral XTALS. Fair/Good visible porosity. Good odor. Good uniform yellow fluorescence. On own & after crushing, free gas and light/medium brown oil. Uniform light brown stain. Strong positive cut/residual. Strong positive acid/residual.  
(3,886'-92')  
 $\phi_{xp} = 14\%$ ,  $R_t = 80 - 100$ ,  
 $R_w = 0.05$  ohms &  
 $S_w = 16\% - 18\%$ . (Archies)  
Good/excellent permeability as suggested by mudcake & DST #4.
3. Arbuckle Dolostone . . . . . Dolostone -- Clear/Tan/Light Gray/Black. Mottled/singular. Fine/Medium XTALS. Calcareous. Highly sandy. Sand is SA/SR, F/M grain size. Glassy/frosted luster, Moderate sphericity. Friable. Fair/Good visible porosity. Fair/Good odor. Spotted/uniform yellow fluorescence. After crushing, free medium brown oil & rare minute gas bubbles. Spotted light brown stain. Positive cut/residual. Positive acid/residual.  
(3,907'-10')  
 $\phi_{xp} = 20\%$ ,  $R_t = 13$ ,  
 $R_w = 0.05$  ohms &  
 $S_w = 31\%$ . (Archies)  
Good/excellent permeability as suggested by mudcake & DST #5.  
1 pc: Black. gilsonitic.

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MINOR SHOW(S) - SECONDARY ZONE(S) OF INTEREST

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1. Lansing "B" Limestone . . . . . Limestone -- Tan. Singular. Micro-XLN.  
(3,607'-11') Xln & particle porosity. Fossil fragments. Trace friable. Trace visible porosity (pinpoint).  
 $\phi_{xp} = 21\%$ ,  $R_t = 37$ ,  
 $R_w = 0.05$  ohms,  $m = 2.6$ ,  
 $S_w = 28\%$ . (Archies)  
Fair permeability as suggested by mudcake & DST #1.  
Good odor. Uniform dull yellow fluorescence. After crushing, some free very light brown oil & gas. Spotted/uniform light brown stain. Positive cut/residual. Positive acid/residual.
2. Lansing "I" Limestone . . . . . Limestone -- White/some Tan. Singular.  
(3,733'-36') Micro-/XF-XLN. Xln porosity. Some particle porosity. Fossil fragments. Generally firm. Some chert - white/gray. trace tripolitic. inclusions. Opaque to transparent. Fair visible porosity.  
 $\phi_{xp} = 17\%$ ,  $R_t = 15 - 22$ ,  
 $R_w = 0.05$  ohms &  
 $S_w = 28\% - 34\%$ . (Archies)  
Fair permeability as suggested by mudcake.  
Faint odor. Spotted dull yellow fluorescence. After crushing, some free gas bubbles clinging to rx chip. Spotted light brown stain on ls/chert. Some asphalt flecks/carboniferous flecks. Positive cut/residual. Positive acid/residual.
3. Arbuckle Dolostone . . . . . Dolostone -- Clear/light gray.  
(3,916-24') Singular/Mottled. Fine subhedral XTALS with sutured contacts. Firm/trace friable. Trace/Fair/trace Good visible porosity.  
 $\phi_{xp} = 10\% - 11\%$ ,  $R_t = 14 - 44$ ,  
 $R_w = 0.05$  ohms &  
 $S_w = 34\% - 44\%$ . (Archies)  
Good/excellent permeability as suggested by mudcake & DST #6  
Strong odor. Uniform/spotted yel fluorescence. After crushing, free gas & medium brown oil. Spotted/uniform light brown stain. Positive cut/residual. Positive acid/residual.

MINOR SHOW(S)

1. Topeka Limestone . . . . . Limestone -- Tan/trace Light Brown. mostly  
(3,281'-83') Singular. Micro-/XF-XLN. XLN porosity. Some Re-XLN. Fossil Fragments. Firm/some friable. Fair/trace Good visible porosity.  
 $\phi_{xp} = 9\frac{1}{2}\%$ ,  $R_t = 20$ ,  
 $R_w = 0.05$  ohms &  
 $S_w = 54\%$ . (Archies)  
Slight permeability as suggested by mudcake.  
No odor. No fluorescence. No free gas/oil. Spotted light brown stain. Negative cur/residual. Negative acid/residual.

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MINOR SHOW(S) Cont'd.

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2. Toronto Limestone . . . . . Limestone -- Tan/White. Singular/Mottled.  
(3,555'-56') Micro-/XF-XLN. Re-XLN. Firm. Fair/Good  
pinpoint visible porosity.  
 $\phi_{xp} = 12\%$ ,  $R_t = 24$ ,  
 $R_w = 0.05$  ohms &  
 $S_w = 38\%$ . (Archies)  
Slight permeability as  
suggested by mudcake &  
DST #1. Faint odor. Spotted dull yellow flour-  
esence. After crushing, free dark brown  
oil & gas. Spotted light brown stain.  
Positive cut/residual. Positive acid/  
residual.
3. Lansing "C" Limestone . . . . . Limestone -- Tan. Singular. XF-XLN. XLN  
(3,623'-24') porosity. Sucrosic. Trace visible  
porosity.  
 $\phi_{xp} = 10\%$ ,  $R_t = 60$ ,  
 $R_w = 0.05$  ohms &  
 $S_w = 29\%$ . (Archies)  
Slight permeability as  
suggested by mudcake. Faint odor. Spotted yellow flouresence.  
After crushing, free gas bubbles cling-  
ing to rx chip. No free oil Spotted  
Light brown stain. Positive cut/residual.  
Positive acid/residual.
4. Lansing "F" Limestone . . . . . Limestone -- White/Light Gray coloids.  
(3,651'-53') Clear/Gray matrix. Opaque to Transparent.  
Partly friable. Re-XLN. Coloids are  
fine/medium sized. Fair/Good visible  
porosity.  
 $\phi_{xp} = 12\%$ ,  $R_t = 45$ ,  
 $R_w = 0.05$  ohms &  
 $S_w = 28\%$ . (Archies)  
Slight permeability as  
suggested by mudcake. No odor/flouresence/free oil or gas.  
Asphaltic. Weak cut/residual. Weak acid/  
residual.
5. Lansing "K" Limestone . . . . . Limestone -- Tan. Crypto-xln. Xln & vein  
(3,789'-91') porosity. Trace visible porosity.  
 $\phi_{xp} = 15\%$ ,  $R_t = 80$ ,  
 $R_w = 0.05$  ohms &  
 $S_w = 17\%$ . (Archies)  
Slight permeability as  
suggested by mudcake. Faint odor. Spotted dull yellow flour-  
esence. Tar on vein porosity/vug. Spot-  
ted medium brown stain. Weak positive  
cut/residual. Weak Acid/residual.

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MINOR SHOW(S) Cont'd.

15:051-24835-0000

6. Lansing "L" Limestone . . . . . Limestone -- Tan. Singular. Micro-XLN.  
(3,804'-06') Xln porosity. Trace chalky. Partly Fri-  
able. Trace/Fair visible porosity  
 $\phi_{xp} = 12\%$ ,  $R_t = 21$ , Weak odor. Spotted dull yellow floures-  
 $R_w = 0.05$  ohms & ence. After crushing, minute gas bubbles  
 $S_w = 41\%$ . (Archies) clinging to rx chip. Dark brown oil in  
porosity. Spotted dark brown stain.  
Slight permeability as Positive cut/residual. Positive acid/  
suggested by lack of mudcake. residual.
7. Arbuckle Dolostone . . . . . Dolostone -- Tan/trace Light Gray.  
(3,946'-50') Singular. Calcareous. Micro-/XF-XLN.  
Xln & vuggy porosity. Firm. Fair/Good  
visible porosity.  
 $\phi_{xp} = 11\% - 20\%$ ,  $R_t = 14 - 34$ , Faint odor. Spotted yellow flouresence.  
 $R_w = 0.05$  ohms & Trace free dark brown oil. Spotted  
 $S_w = 45\% - 54\%$ . (Archies) dark brown oil. Positive cut/residual.  
Good/excellent permeability as Positive acid/residual.  
suggested by mudcake.
8. Arbuckle Dolostone . . . . . Dolostone -- Tan/Light Gray/trace Clear.  
(3,972-74') Mottled/Singular. XF/F-xln with sub-  
hedral XTALS. Xln & vuggy porosity.  
Chert- clear/light gray. partly  
tripolitic. Inclusions. Opaque to  
Transparent.  
Fair/Good vuggy porosity.  
Fair odor. Spotted yellow flouresence.  
After crushing, rare free dark brown oil.  
Oil blebs in porosity. Spotted medium  
brown stain. Positive cut/residual.  
Positive acid/residual.

MINOR SHOW(S) SPACE FOR NOTES:

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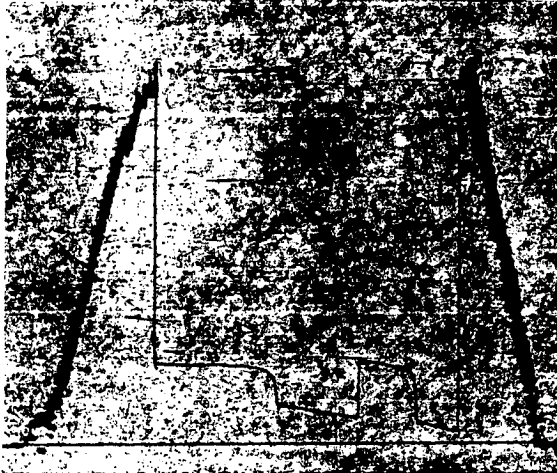
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15-051-24835-00-00

DRILL STEM TEST(S)

1. Lansing "A" & "B" Limestone . . . Driller's Depth: 3,520'-3,614'  
Logger's Depth: 3,516'-3,610'



Recovery: 270' Watery Mud (20%W, 80%M)

IFP: 59# - 118# / 30"

ISIP: 403# / 45"

FFP: 127# - 196# / 60"

FSIP: 403# / 90"

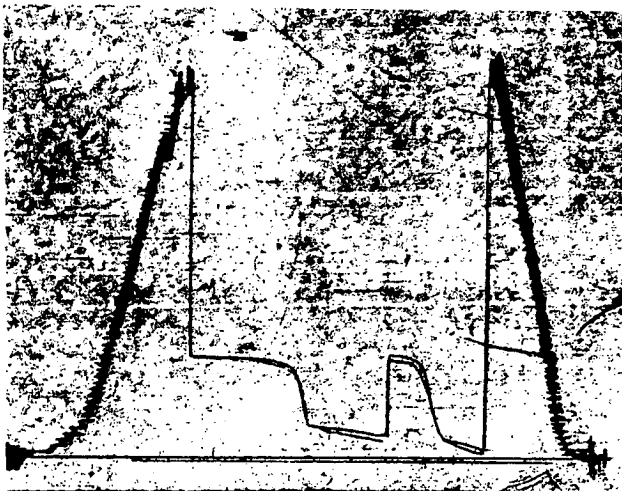
MH: 1,936# - 1,826# Temp: 108°F

R<sub>w</sub> = 0.17 ohms @ 80°F. Cl<sup>-</sup> (40M) Recovery  
Cl<sup>-</sup> (41M) System

1OP: Weak building to 5".

2OP: Weak building to 1".

2. Lansing "H", "I" & "J" . . . . . Driller's Depth: 3,720'-3,772'  
Logger's Depth: 3,718'-3,770'



Recovery: 504' Gas in pipe

62' Gassy Mud (20%G, 80%M)

180' Sl Oil Cut Gassy Mud  
(20%G, 3%O, 77%M)

60' Gassy frothy Mud cut Oil  
(50%G, 40% O, 10%M)

60' Gassy frothy Mud cut Oil  
(40%G, 50% O, 10% M)

IFP: 49# - 98# / 30"

ISIP: 521# / 45"

FFP: 118# - 157# / 60"

FSIP: 521# / 90"

MH: 2,046# - 1,966# Temp: 111°F

Cl<sup>-</sup> (36M) System

1OP: weak building to strong blow  
off the bottom of the bucket in  
30".

2OP: Weak building to strong blow  
off the bottom of the bucket in  
15".

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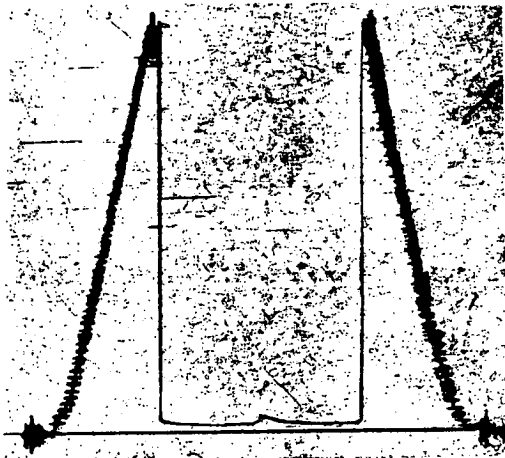
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DRILL STEM TEST(S) Cont'd.

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3. Lansing "K" & "L" Limestone . . .

Driller's Depth: <sup>15,057-29835-00-00</sup> 3,778' - 3,824'  
Logger's Depth: 3,776' - 3,822'



Recovery: 15' Drilling Mud.

IFP: 29# - 29# / 30"  
ISIP: 68# / 45"  
FFP: 20# - 29# / 30"  
FSIP: 39# / 45"

MH: 2,076# - 2,026# Temp: 111°F

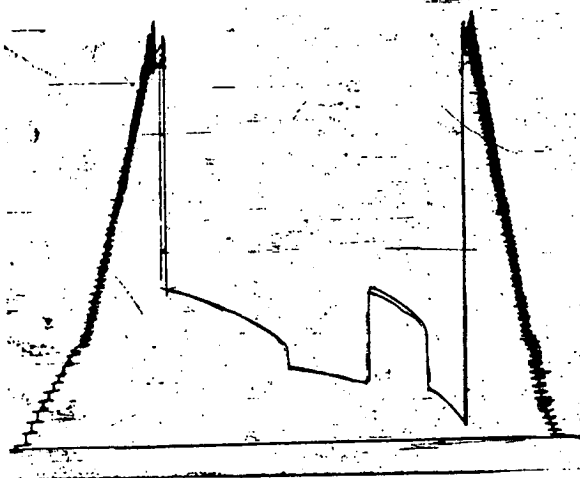
Cl<sup>-</sup> (37M) System

1OP: Weak blow dead in 15".

1OP: No blow.

4. Arbuckle . . . . .

Driller's Depth: 3,870' - 3,907'  
Logger's Depth: 3,867' - 3,904'



Recovery: 541' Clean Gassy Oil  
372' Mud cut Gassy Oil  
(30%G, 60%O, 10%M)  
186' Mud cut Gassy Oil  
(10%G, 80%O, 10%M)  
440' Gas in pipe.

IFP: 78# - 255# / 30"  
ISIP: 778# / 45"  
FFP: 295# - 374# / 60"  
FSIP: 788# / 90"

MH: 2,117# - 2,056# Temp: 120°F

Cl<sup>-</sup> (35M) System

1OP: Strong off the bottom of the  
bucket in 5".

2OP: Strong off the bottom of the  
bucket in 6".

After blow on ISIP for 8".

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Murfin Drilling Company  
RIEDEL #15  
SE SE 31-T13S-R19W  
Ellis County, Kansas

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DRILLING EVENTS

15-051-24835-0000

No notable drilling events were encountered during the drilling of the Riedel #15.

LOST CIRCULATION ZONE(S)

There were no lost circulation zone(s) encountered during the drilling of the Riedel #15.

PLUGGING

The Riedel #15 had production casing set through the Arbuckle.

WELL DATA

Spudded: 25 May 1993

Completed: 3 June 1993

Contractor: Murfin Drilling Company -- Rig #3.

Depth: Rotary - 4,020' & Logger's - 4,018'.

API Number: 15-051-24,835.

Elevation: 2,290'KB, 2,288'DF & 2,285'GL

Hole Deviation:  $\frac{1}{4}^{\circ}$  @ 311',  $\frac{3}{4}^{\circ}$  @ 1,950',  $\frac{1}{2}^{\circ}$  @ 3,614',  $\frac{1}{2}^{\circ}$  @ 3,772',  $\frac{1}{2}^{\circ}$  @ 3,824',  $\frac{1}{2}^{\circ}$  @ 3,904' and  $\frac{1}{2}^{\circ}$  @ 4,020' (RTD).

Geological Supervision: 2,000' - RTD by Curtis Covey.

Surveys:

Electric Log: Mercury Perforating and Logging.

Gas Detector: None.

Tester: Trilobite Testing. Cores: None.

Casing: Conductor - N/A.

Surface - Murray Casing Crew.

Intermediate - N/A.

Production - Murray Casing Crew.

Cement: Conductor - N/A.

Surface - Allied Cementing

Intermediate - N/A.

Production - Allied Cementing

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Murfin Drilling Company  
RIEDEL #15  
SE SE SE 31-T13S-R19W  
Ellis County, Kansas

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CASING

15.051.24835.00.06

Conductor: N/A.

Surface: 8-5/8", Used, Set @ 311'. 165 sx 60/40 POZMIX (3% CC + 2% Gel).

Intermediate: N/A.

Production: 5½", Used, Set @ 4,017'. 150 sx Class A (10% Salt + 3/4 FL62).

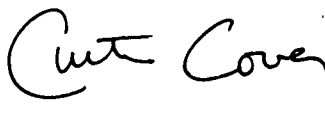
DISCLAIMER

The service rendered on the Riedel #15 was done without the biasing influence, intentional or unintentional, from any employee or representative of Murfin Drilling Company. In this review, I am an independent petroleum geologist and subsequently, not an employee of the referenced company. I will not receive any financial benefit from the positive completion of the well.

The enclosed geologist's log is considered an integral part of this report and is not intended to be separated from the same.

The recommendations made hereon shall not be construed as absolute and are made without assumption of liability and are statements of observation/research/training or opinion only.

Respectfully submitted,



Curtis Covey

CEC:fyd

cc:file

ENCL: GEOLOGIST LOG  
SAMPLE CHIP TRAYS (3)  
Drilling Time Sheets  
Drilling Fluid Reports  
Straight Hole Targets  
Oil/Water Test Recovery Samples



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# TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

CONFIDENTIAL

## Drill-Stem Test Data

ORIGINAL

Well Name RIEDEL #15 Test No. 1 Date 5/29/93  
 Company MURFIN DRILLING CO INC Zone LKC A-B  
 Address 250 N WATER SWT #300 WICHITA KS 67202 Elevation 2290  
 Co. Rep./Geo. CURTIS COVEY Cont. MURFIN #3 Est. Ft. of Pay 3  
 Location: Sec. 31 Twp. 13S Rge. 19W Co. ELLIS State KS

15.051.24835.00.00

Interval Tested 3520-3614  
 Anchor Length 94  
 Top Packer Depth 3515  
 Bottom Packer Depth 3520  
 Total Depth 3614

Drill Pipe Size 4.5" XH  
 Wt. Pipe I.D. - 2.7 Ft. Run 478  
 Drill Collar - 2.25 Ft. Run 322  
 Mud Wt. 9.5 lb/Gal.  
 Viscosity 38 Filtrate 8.4

Tool Open @ 2:10 PM Initial Blow WEAK-BUILDING TO 5" FAIR BLOW  
 Final Blow WEAK-BUILDING TO 1"

Recovery - Total Feet 270 Flush Tool? NO

Rec. 270 Feet of WATERY MUD 20%WATER/80%MUD  
 Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
 Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
 Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
 Rec. \_\_\_\_\_ Feet of \_\_\_\_\_

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BHT 108 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity \_\_\_\_\_ °API  
 RW 0.17 @ 80 °F Chlorides 40,000 ppm Recovery Chlorides 41,000 ppm System

(A) Initial Hydrostatic Mud 1925.3 PSI AK1 Recorder No. 13754 Range 4000  
 (B) First Initial Flow Pressure 54.2 PSI @ (depth) 3524 w / Clock No. 27567  
 (C) First Final Flow Pressure 102.6 PSI AK1 Recorder No. 7437 Range 4200  
 (D) Initial Shut-in Pressure 415.6 PSI @ (depth) 3610 w / Clock No. 8376  
 (E) Second Initial Flow Pressure 136.2 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_  
 (F) Second Final Flow Pressure 185.2 PSI @ (depth) \_\_\_\_\_ w / Clock No. \_\_\_\_\_  
 (G) Final Shut-in Pressure 419.2 PSI Initial Opening 30 Final Flow 60  
 (H) Final Hydrostatic Mud 1834.2 PSI Initial Shut-in 45 Final Shut-in 90

Our Representative DAN BANGLE

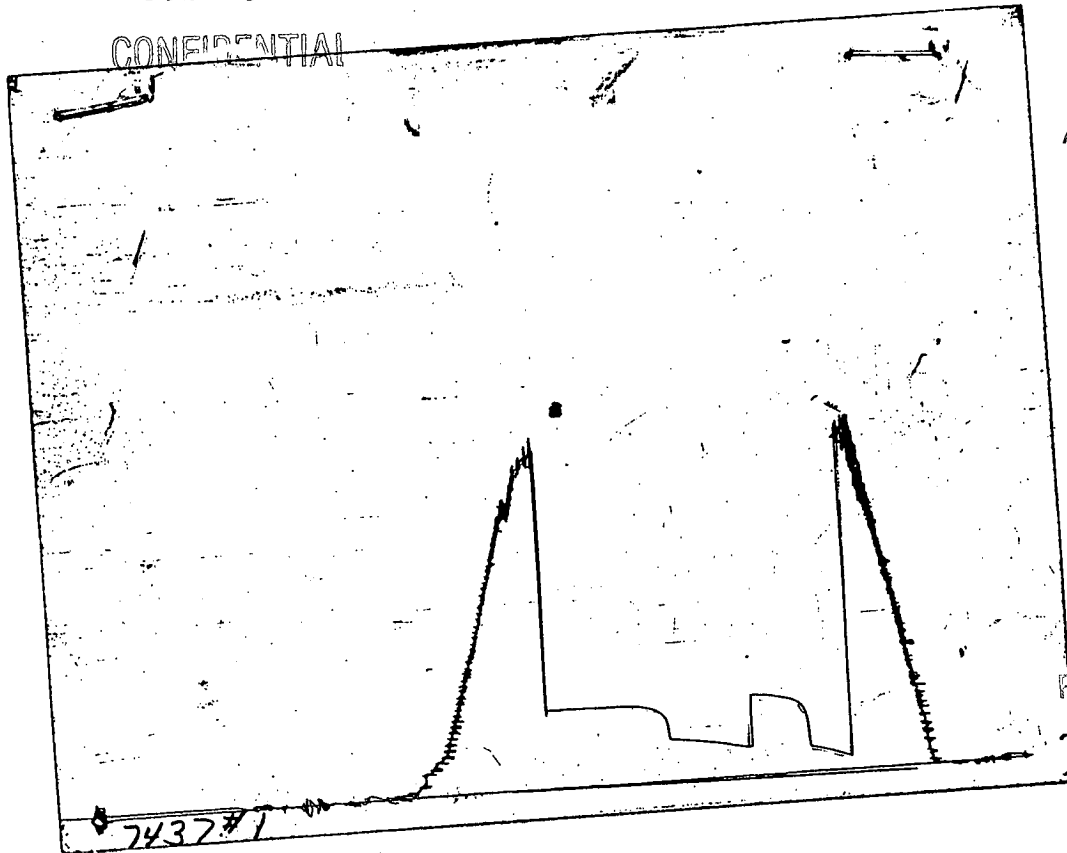
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CHART PAGE

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15-051-24835-0000

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This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	1936	1925.3
(B) FIRST INITIAL FLOW PRESSURE	59	54.2
(C) FIRST FINAL FLOW PRESSURE	118	102.6
(D) INITIAL CLOSED-IN PRESSURE	403	415.6
(E) SECOND INITIAL FLOW PRESSURE	127	136.2
(F) SECOND FINAL FLOW PRESSURE	196	185.2
(G) FINAL CLOSED-IN PRESSURE	403	419.2
(H) FINAL HYDROSTATIC MUD	1826	1834.2

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JUL 26 ORIGINAL

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## Test Ticket

No 5682

15-051-24835-00-00

Well Name & No. Riedel #15 Test No. 1 Date 5-29-93  
 Company Murfin Drilg. Co. Inc. Zone Tested A-B h.k.c.  
 Address 250 N. WTR, Wichita, Ks. 67202 Elevation 2290 K.B.  
 Co. Rep./Geo. Kurtis Covey cont. Murfin #3 Est. Ft. of Pay \_\_\_\_\_  
 Location: Sec. 31 Twp. 13 Rge. 19 Co. Ellis State Ks.  
 No. of Copies \_\_\_\_\_ Distribution Sheet \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Turnkey \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Evaluation \_\_\_\_\_

Interval Tested 3520 - 3614 Drill Pipe Size 4.5 XH  
 Anchor Length 94 Top Choke — 1" \_\_\_\_\_ Bottom Choke — 3/4" \_\_\_\_\_  
 Top Packer Depth 3515 Hole Size — 7 7/8" \_\_\_\_\_ Rubber Size — 6 3/4" \_\_\_\_\_  
 Bottom Packer Depth 3520 Wt. Pipe I.D. — 2.7 Ft. Run 478'  
 Total Depth 3614 Drill Collar — 2.25 Ft. Run 382' 322'  
 Mud Wt. 9.5 lb/gal. Viscosity 38 Filtrate 8.4  
 Pool Open @ 2:10 p.m. Initial Blow Weak-building to 5" fair blow

Final Blow Weak-building to 1" RELEASED

Recovery — Total Feet 270 Feet of Gas In Pipe SEP 6 1994 Flush Tool? \_\_\_\_\_  
 Sec. 270 Feet Of WTRY Mud FROM CONFIDENTIAL %gas \_\_\_\_\_ %oil \_\_\_\_\_ %water 20 %mud 80  
 Rec. \_\_\_\_\_ Feet Of \_\_\_\_\_ %gas \_\_\_\_\_ %oil \_\_\_\_\_ %water \_\_\_\_\_ %mud \_\_\_\_\_  
 Rec. \_\_\_\_\_ Feet Of \_\_\_\_\_ %gas \_\_\_\_\_ %oil \_\_\_\_\_ %water \_\_\_\_\_ %mud \_\_\_\_\_  
 Rec. \_\_\_\_\_ Feet Of \_\_\_\_\_ %gas \_\_\_\_\_ %oil \_\_\_\_\_ %water \_\_\_\_\_ %mud \_\_\_\_\_  
 Rec. \_\_\_\_\_ Feet Of \_\_\_\_\_ %gas \_\_\_\_\_ %oil \_\_\_\_\_ %water \_\_\_\_\_ %mud \_\_\_\_\_

HT 108 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity \_\_\_\_\_ °API  
 RW .17 @ 80 °F Chlorides 40,000 ppm Recovery Chlorides 41,000 ppm System

(A) Initial Hydrostatic Mud 1826 PSI AK1 Recorder No. 13754 Range 4000  
 (B) First Initial Flow Pressure 59 PSI @ (depth) 3524 w/Clock No. 27567  
 (C) First Final Flow Pressure 118 PSI AK1 Recorder No. 7437 Range 4200  
 (D) Initial Shut-In Pressure 403 PSI @ (depth) 3610 w/Clock No. 8376  
 (E) Second Initial Flow Pressure 127 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_  
 (F) Second Final Flow Pressure 196 PSI @ (depth) \_\_\_\_\_ w/Clock No. \_\_\_\_\_  
 (G) Final Shut-In Pressure 403 PSI Initial Opening 30 Test \_\_\_\_\_  
 (H) Final Hydrostatic Mud 1826 PSI Initial Shut-In 45 Jars \_\_\_\_\_

TRILLOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Final Flow 60 Safety Joint \_\_\_\_\_  
 Final Shut-In 90 Straddle \_\_\_\_\_  
 Circ. Sub \_\_\_\_\_  
 Sampler \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Other \_\_\_\_\_

Approved By [Signature]  
 Our Representative Dan Ransefer

# TRILOBITE TESTING, L.L.C. KCC

ORIGINAL

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JUL 26

## Drill-Stem Test Data

CONFIDENTIAL

Well Name RIEDEL #15 Test No. 2 Date 5/30/93  
 Company MURFIN DRILLING CO INC Zone H-I-J  
 Address 250 N WATER SWT #300 WICHITA KS 67202 Elevation 2290  
 Co. Rep./Geo. CURTIS COVEY Cont. MURFIN #3 Est. Ft. of Pay 3  
 Location: Sec. 31 Twp. 13S Rge. 19W Co. ELLIS State KS  
15-051-24835-00-00

Interval Tested 3720-3772 Drill Pipe Size 4.5" XH  
 Annular Length 52 Wt. Pipe I.D. - 2.7 Ft. Run 478  
 Top Packer Depth 3715 Drill Collar - 2.25 Ft. Run 270  
 Bottom Packer Depth 3720 Mud Wt. 9.6 lb/Gal.  
 Total Depth 3772 Viscosity 42 Filtrate 8

Tool Open @ 10:15 PM Initial Blow WEAK - BUILDING TO STRONG - BOTTOM OF BUCKET IN 30 MIN  
 Final Blow WEAK - BUILDING TO STRONG - BOTTOM OF BUCKET IN 15 MINUTES

Recovery - Total Feet 362 Flush Tool? NO **RELEASED**  
 Rec. 504 Feet of GAS IN PIPE **SFD 6 1994**  
 Rec. 62 Feet of GASSY MUD 20%GAS/80%MUD  
 Rec. 180 Feet of SLIGHTLY OIL CUT GASSY MUD 20%GAS/3%OIL/77%MUD **FROM CONFIDENTIAL**  
 Rec. 60 Feet of GASSY FROTHY MUD CUT OIL 50%GAS/40%OIL/10%MUD  
 Rec. 60 Feet of GASSY FROTHY MUD CUT OIL 40%GAS/50%OIL/10%MUD

BHT 111 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity 32 °API  
 RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm Recovery Chlorides 36000 ppm System

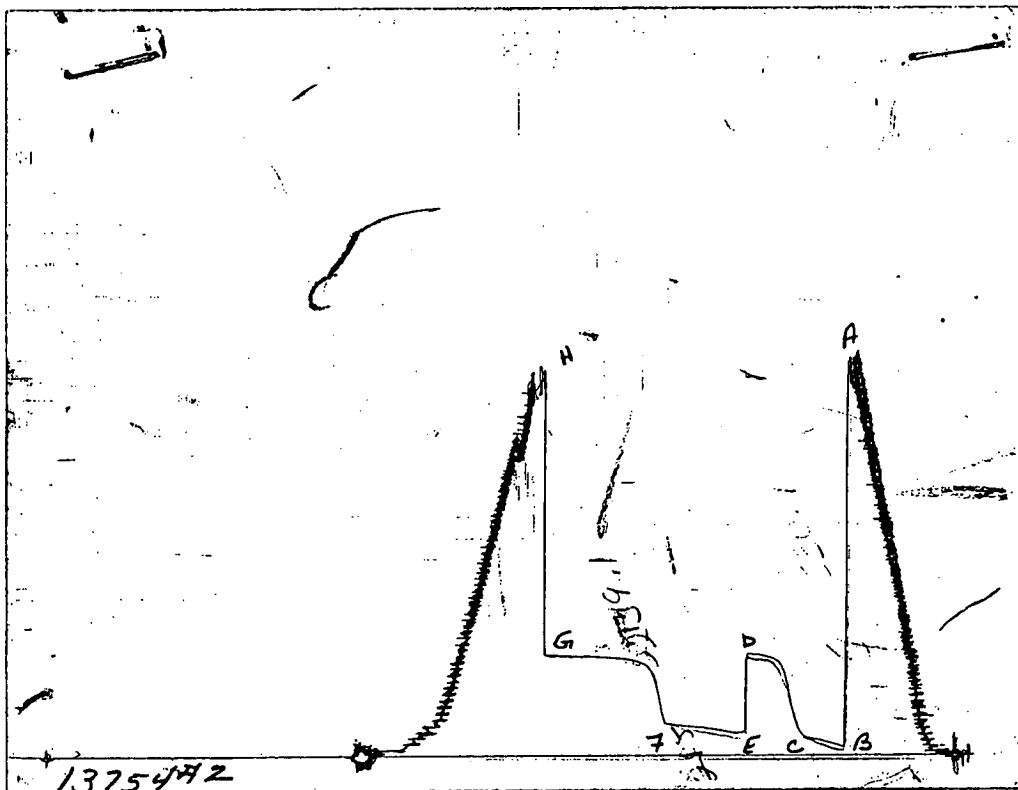
(A) Initial Hydrostatic Mud 2049.3 PSI AK1 Recorder No. 13754 Range 4000  
 (B) First Initial Flow Pressure 44.2 PSI @ (depth) 3724 w/ Clock No. 27567  
 (C) First Final Flow Pressure 95.4 PSI AK1 Recorder No. 7437 Range 4200  
 (D) Initial Shut-in Pressure 521.7 PSI @ (depth) 3768 w/ Clock No. 8376  
 (E) Second Initial Flow Pressure 118.1 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_  
 (F) Second Final Flow Pressure 163.3 PSI @ (depth) \_\_\_\_\_ w/ Clock No. \_\_\_\_\_  
 (G) Final Shut-in Pressure 515.8 PSI Initial Opening 30 Final Flow 60  
 (H) Final Hydrostatic Mud 1967.2 PSI Initial Shut-in 45 Final Shut-in 90

Representative DAN BANGLE



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This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2046	2049.3
(B) FIRST INITIAL FLOW PRESSURE	49	44.2
(C) FIRST FINAL FLOW PRESSURE	98	95.4
(D) INITIAL CLOSED-IN PRESSURE	521	521.7
(E) SECOND INITIAL FLOW PRESSURE	118	118.1
(F) SECOND FINAL FLOW PRESSURE	157	163.3
(G) FINAL CLOSED-IN PRESSURE	521	515.8
(H) FINAL HYDROSTATIC MUD	1966	1967.2

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JUL 2 6

COMPUTER OIL EVALUATION BY TRILOBITE TESTING, L.L.C.  
MURFIN DRILLING CO INC

CONFIDENTIAL

RIEDEL #15

DST 2

31 13S 19W

ELLIS KS

15:05:24835:00:00

\*\*\*\*\*

ELEVATION:	2290	KB	EST. PAY	3	FT
DATUM:	-1435		ZONE TESTED:	H-I-J	
TEST INTERVAL:	3720-3772		TIME INTERVALS:	30-45-60-90	
RECORDER DEPTH:	3724		VISCOSITY:	8.86	CP
BOTTOM HOLE TEMP:	111		HOLE SIZE:	7.875	IN

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\*\*\*\*\* FROM CONFIDENTIAL \*\*\*\*\*

CUBIC FEET OF GAS IN PIPE:	24			
TOTAL FEET OF RECOVERY:	362.00	CORRECTED PIPE FILLUP:	435.467	
TOTAL BARRELS OF RECOVERY:	1.96	CORR. BARRELS OF RECOVERY:	2.475	BBL
BARRELS IN DRILL PIPE:	0.00	API GRAVITY:	32	
BARRELS IN WEIGHT PIPE:	0.64	FLUID GRADIENT:	0.375	
BARRELS IN DRILL COLLARS:	1.32			
GAS OIL RATIO:	12.46	CU.FT/BBL		
BUBBLE POINT PRESSURE:	116			
UNCORRECTED INITIAL PRODUCTION:			31.43	BBL
INITIAL PRODUCTION CORRECTED TO FINAL FLOW PRESSURE:			39.60	BBL/DAY
INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:			14.772	

\*\*\*\*\*

INITIAL SLOPE	129.58839	PSI/CYCL	FINAL SLOPE	75.5038518	PSI/CYCLE
INITIAL P*	553.81	PSI	FINAL P*	538.528924	PSI

\*\*\*\*\*

TRANSMISSIBILITY	85.29	(MD.-FT./CP.)
PERMEABILITY	251.87	(MD.)
INDICATED FLOW CAPACITY	755.61	(MD.FT)
PRODUCTIVITY INDEX	0.10	(BARREL/DAY/PSI)
DAMAGE RATIO	0.91	
RADIUS OF INVESTIGATION	150.56	(FT,)
POTENTIOMETRIC SURFACE	-185.15	(FT.)
DRAWDOWN FACTOR	2.759	(%)

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INITIAL FLOW

RECORDER #13754

DST # 2

TIME(MIN)	PRESSURE	<>	PRESSURE
3	44.2		44.2
6	50.1		5.9
9	58.1		8.0
12	62.9		4.8
15	68.9		6.0
18	73.8		4.9
21	78.7		4.9
24	82.6		3.9
27	85.6		3.0
30	89.5		3.9
33	95.4		5.9

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FINAL FLOW

RECORDER #13754

DST # 2

TIME(MIN)	PRESSURE	<>	PRESSURE
3	118.1		118.1
6	118.1		0.0
9	118.1		0.0
12	124.1		6.0
15	127.9		3.8
18	130.9		3.0
21	134.8		3.9
24	137.7		2.9
27	140.7		3.0
30	143.7		3.0
33	145.6		1.9
36	146.6		1.0
39	148.6		2.0
42	150.5		1.9
45	151.5		1.0
48	154.5		3.0
51	156.4		1.9
54	157.4		1.0
57	160.4		3.0
60	163.3		2.9

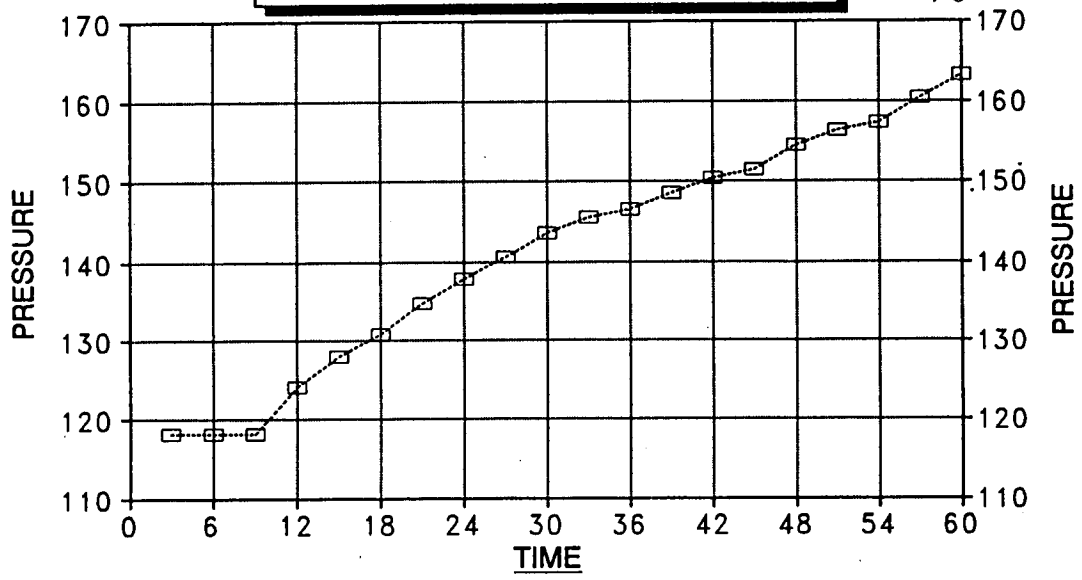
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**DELTA T DELTA P**  
FINAL FLOW / DST #2

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15:05:24835.00:00



---□--- RIEDEL #15

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INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:

14.772

RIEDEL #15  
INITIAL

DST #2  
SHUTIN  
30 INITIAL FLOW TIME

SLOPE 129.6 PSI/CYCLE  
P\* 553.81 PSI

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TIME(MIN)	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
3	152.5	1.041	152.5	11
6	208.6	0.778	56.1	6
9	292.3	0.637	83.7	4
12	395.6	0.544	103.3	4
15	455.7	0.477	60.1	3
18	484.2	0.426	28.5	3
21	496.1	0.385	11.9	2
24	502.9	0.352	6.8	2
27	508.9	0.325	6.0	2
X 30	514.8	0.301	5.9	2
33	518.7	0.281	3.9	2
36	519.7	0.263	1.0	2
X 39	521.7	0.248	2.0	2

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6 1994

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RIEDEL #15  
FINAL

DST #2  
SHUTIN  
90 TOTAL FLOW TIME

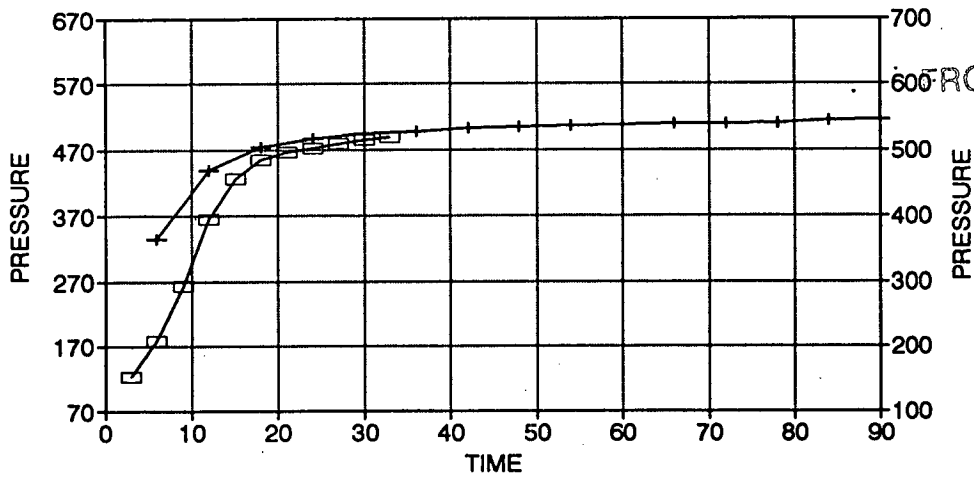
SLOPE 75.5 PSI/CYCLE  
P\* 538.5 PSI

15-051-24835-00-000

TIME(MIN)	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
6	334.6	1.204	334.6	16
12	438.9	0.929	104.3	9
18	473.4	0.778	34.5	6
24	487.2	0.677	13.8	5
30	494.1	0.602	6.9	4
36	498.1	0.544	4.0	4
42	502.1	0.497	4.0	3
X 48	503.9	0.459	1.8	3
54	505.9	0.426	2.0	3
60	507.9	0.398	2.0	3
66	509.9	0.374	2.0	2
72	509.9	0.352	0.0	2
78	510.8	0.333	0.9	2
84	513.8	0.316	3.0	2
X 90	515.8	0.301	2.0	2

### RIEDEL #15/DST #2 DELTA T DELTA P

RELEASED  
SEP 6 1994

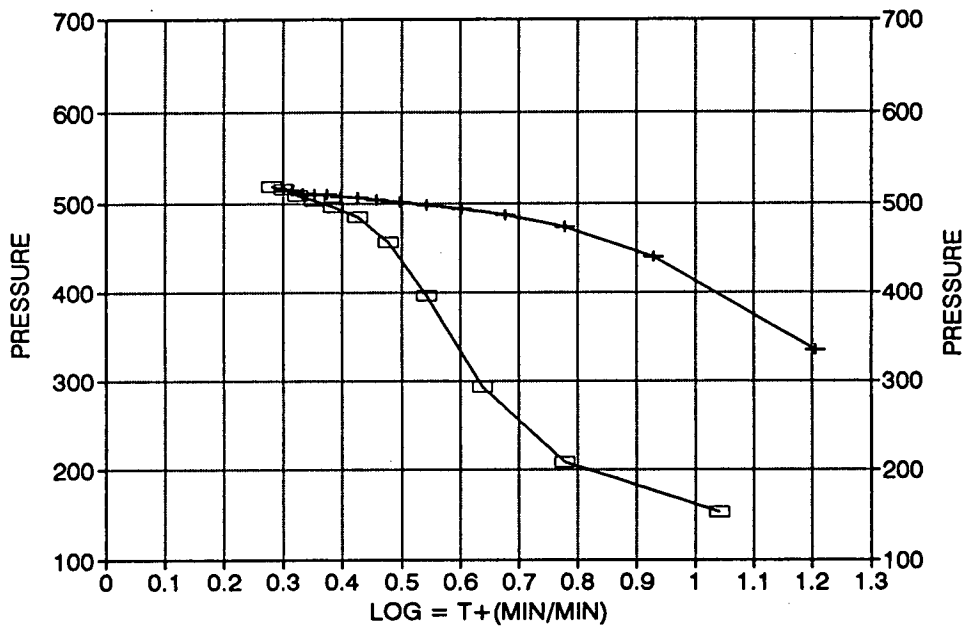


FROM CONFIDENTIAL

15-051-24835-00-00

□ INITIAL    + FINAL

### HORNER PLOT



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CALCULATED RECOVERY ANALYSIS

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15-051-24835-00-00

DST 2 TICKET # 5683

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
DRILL 1	118	100	118		0		0		0
PIPE 2			0		0		0		0
3			0		0		0		0
4			0		0		0		0
5			0		0		0		0
6			0		0		0		0
WEIGHT 1	386	100	386		0		0		0
PIPE 2	62	20	12.4		0		80		49.6
3	30	20	6	3	0.9		77		23.1
4			0		0				0
DRILL 1	150	20	30	3	4.5		77		115.5
COLLAR 2	60	50	30	40	24		10		6
3	60	40	24	50	30		10		6
4			0		0				0
5			0		0				0
TOTAL	866		606.4		59.4		0		200.2

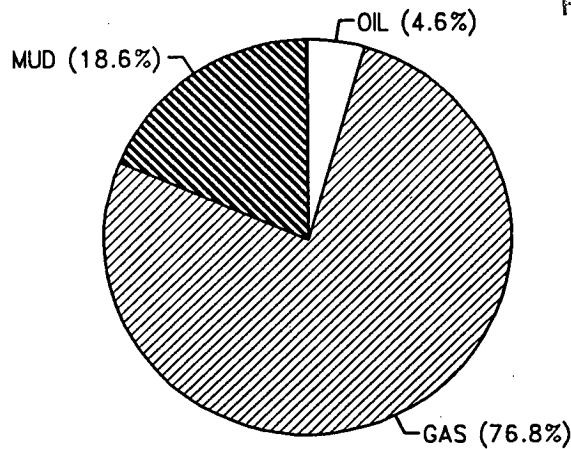
HRS OPEN BBL/DAY

BBL OIL=	0.292365	*	1.5	4.67784
BBL WATER=	0	*		0
BBL MUD=	1.190535			
BBL GAS =	4.91952			

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# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

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JUL 26

ORIGINAL

## Test Ticket

CONFIDENTIAL

No. 5683

15-051-24835-00-00

Well Name & No. Riedel #15 Test No. 2 Date 5-30-93  
 Company Murfin Delg. Co. Inc. Zone Tested H-I-J h.k.c.  
 Address \_\_\_\_\_ Elevation 2290 K.B.  
 Co. Rep./Geo. Kurtis Covey Cont. Murfin #3 Est. Ft. of Pay 3  
 Location: Sec. 31 Twp. 13 Rge. 19 Co. Ellis State Ks.  
 No. of Copies 15 Distribution Sheet \_\_\_\_\_ Yes \_\_\_\_\_ No Turnkey \_\_\_\_\_ Yes \_\_\_\_\_ No  Evaluation

Interval Tested 3720-3772 Drill Pipe Size 4.5 XH  
 Anchor Length 52 Top Choke — 1" \_\_\_\_\_ Bottom Choke — 1/4" \_\_\_\_\_  
 Top Packer Depth 3715 Hole Size — 77/8" \_\_\_\_\_ Rubber Size — 63/4" \_\_\_\_\_  
 Bottom Packer Depth 3720 Wt. Pipe I.D. — 2.7 Ft. Run 478  
 Total Depth 3772 Drill Collar — 2.25 Ft. Run 270  
 Mud Wt. 9.6 lb/gal. Viscosity 42 Filtrate 8

Hole Open @ 10:15 p.m. Initial Blow Weak - building to strong - B.O.B in 30 min.  
 Final Blow Weak - building to strong - B.O.B. in 15 min.

Recovery — Total Feet	Feet of Gas in Pipe	Flush Tool?
<u>362</u>	<u>504</u>	_____
62	Feet Of <u>Gsy Mud</u>	20% gas %oil %water 80% mud
180	Feet Of <u>SIT/40C Gsym</u>	20% gas 3 %oil %water 77 %mud
60	Feet Of <u>Gsy frothy MCO</u>	50% gas 40% oil %water 10 %mud
60	Feet Of <u>Gsy frothy MCO</u>	40% gas 50% oil %water 10 %mud
_____	Feet Of _____	% gas %oil %water %mud

WT 111 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity 32 °API  
 RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm Recovery Chlorides 36,000 ppm System

Initial Hydrostatic Mud 2046 PSI Ak1 Recorder No. 19254 Range 4000  
 (B) First Initial Flow Pressure 49 PSI @ (depth) 3724 w/Clock No. 27567  
 (C) First Final Flow Pressure 98 PSI AK1 Recorder No. 7437 Range 4200  
 Initial Shut-In Pressure 521 PSI @ (depth) 3768 w/Clock No. 8376  
 (E) Second Initial Flow Pressure 118 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_  
 Second Final Flow Pressure 157 PSI @ (depth) \_\_\_\_\_ w/Clock No. \_\_\_\_\_  
 (G) Final Shut-In Pressure 521 PSI Initial Opening 30 Test \_\_\_\_\_  
 (H) Final Hydrostatic Mud 1966 PSI Initial Shut-in 45 Jars \_\_\_\_\_

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Final Flow 60 Safety Joint \_\_\_\_\_  
 Final Shut-in 90 Straddle RELEASED  
 Circ. Sub \_\_\_\_\_  
 Sampler SEP 6 1994

Approved By [Signature]  
 Representative Dan Banoff

Extra Packer \_\_\_\_\_  
 Other \_\_\_\_\_  
 TOTAL PRICE \$ \_\_\_\_\_



ORIGINAL

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JUL 26

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# TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Drill-Stem Test Data

Well Name RIEDEL #15 Test No. 3 Date 5/31/93  
 Company MURFIN DRILLING CO INC Zone LKC K-L  
 Address 250 N WATER SWT #300 WICHITA KS 67202 Elevation 2290  
 Co. Rep./Geo. CURTIS COVEY Cont. MURFIN #3 Est. Ft. of Pay 3  
 Location: Sec. 31 Twp. 13S Rge. 19W Co. ELLIS State KS  
15-051-24835-0000

Interval Tested <u>3778-3824</u>	Drill Pipe Size <u>4.5" XH</u>
Anchor Length <u>46</u>	Wt. Pipe I.D. - 2.7 Ft. Run <u>478</u>
Top Packer Depth <u>3773</u>	Drill Collar - 2.25 Ft. Run <u>270</u>
Bottom Packer Depth <u>3778</u>	Mud Wt. <u>9.7</u> lb/Gal.
Total Depth <u>3824</u>	Viscosity <u>42</u> Filtrate <u>7.2</u>

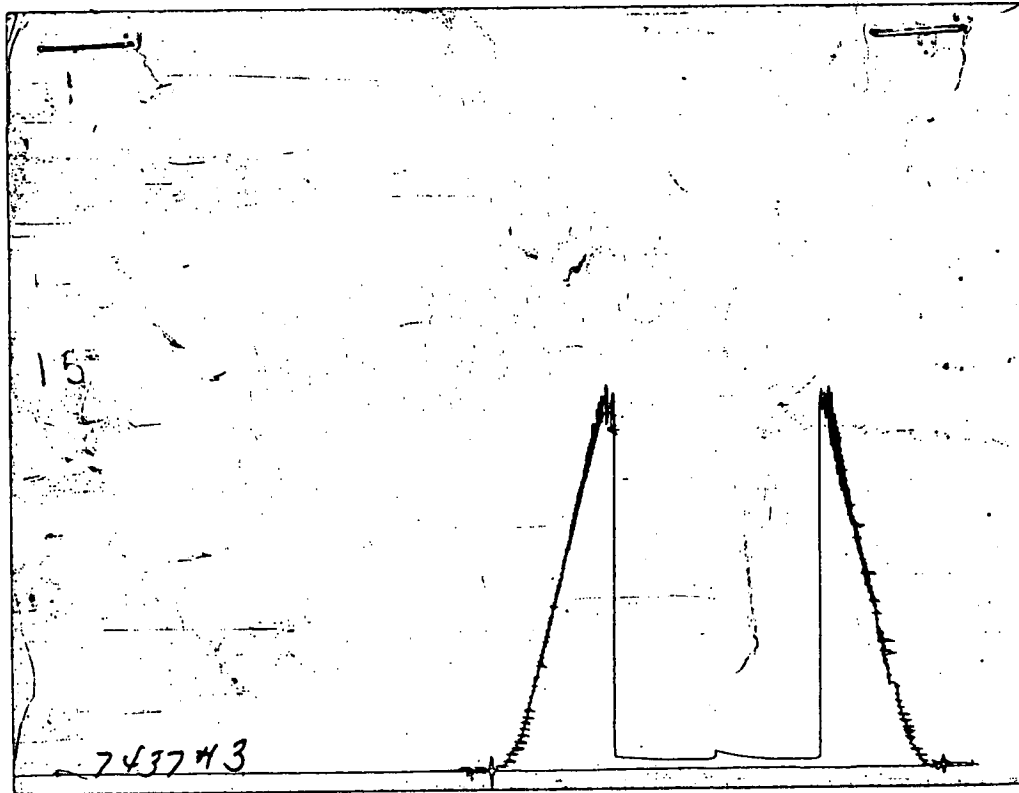
Tool Open @ 4:00 PM Initial Blow WEAK-DIED IN 15 MINUTES  
 Final Blow NO BLOW

Recovery - Total Feet 15 Flush Tool? NO  
 Rec. 15 Feet of DRILLING MUD RELEASED  
 Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
 Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
 Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
 Rec. \_\_\_\_\_ Feet of \_\_\_\_\_ FROM CONFIDENTIAL

BHT 111 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity \_\_\_\_\_ °API  
 RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm Recovery Chlorides 37,000 ppm System

(A) Initial Hydrostatic Mud 2085.1 PSI AK1 Recorder No. 13754 Range 4000  
 (B) First Initial Flow Pressure 39.4 PSI @ (depth) 3782 w / Clock No. 27567  
 (C) First Final Flow Pressure 34.8 PSI AK1 Recorder No. 7437 Range 4200  
 (D) Initial Shut-in Pressure 54.2 PSI @ (depth) 3820 w / Clock No. 8376  
 (E) Second Initial Flow Pressure 16.8 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_  
 (F) Second Final Flow Pressure 34.7 PSI @ (depth) \_\_\_\_\_ w / Clock No. \_\_\_\_\_  
 (G) Final Shut-in Pressure 51.9 PSI Initial Opening 30 Final Flow 30  
 (H) Final Hydrostatic Mud 2014.2 PSI Initial Shut-in 45 Final Shut-in 45

Company Representative DAN BANGLE



15-051-24835-00-00

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FROM CONFIDENTIAL

This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2076	2085.1
(B) FIRST INITIAL FLOW PRESSURE	29	39.4
(C) FIRST FINAL FLOW PRESSURE	29	34.8
(D) INITIAL CLOSED-IN PRESSURE	68	54.2
(E) SECOND INITIAL FLOW PRESSURE	29	16.8
(F) SECOND FINAL FLOW PRESSURE	29	34.7
(G) FINAL CLOSED-IN PRESSURE	39	51.9
(H) FINAL HYDROSTATIC MUD	2026	2014.2

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

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JUL 2 3

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## Test Ticket

No 5684

15-051-24835-00-00

Well Name & No. Riedel #15 Test No. 3 Date 5-21-93  
 Company Murfin Drilg. Co. Inc. Zone Tested K-L L.K.C.  
 Address \_\_\_\_\_ Elevation 2290 K.B.  
 Co. Rep./Geo. Curtis Covey cont. Murfin #3 Est. Ft. of Pay \_\_\_\_\_  
 Location: Sec. 31 Twp. 13 Rge. 19 Co. Ellis State Ks.  
 No. of Copies \_\_\_\_\_ Distribution Sheet \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Turnkey \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Evaluation \_\_\_\_\_

Interval Tested 3778-3824 Drill Pipe Size 4.5 XH  
 Anchor Length 46 Top Choke — 1" \_\_\_\_\_ Bottom Choke — 3/4" \_\_\_\_\_  
 Top Packer Depth 3773 Hole Size — 7 7/8" \_\_\_\_\_ Rubber Size — 6 3/4" \_\_\_\_\_  
 Bottom Packer Depth 3728 Wt. Pipe I.D. — 2.7 Ft. Run 478  
 Total Depth 3824 Drill Collar — 2.25 Ft. Run 270  
 Mud Wt. 9.7 lb/gal. Viscosity 42 Filtrate 7.2  
 Tool Open @ 4:00 p.m. Initial Blow Weak - Died in 15 min. RELEASED

Final Blow No blow. SEP 6 1994

Recovery — Total Feet	Feet of Gas in Pipe	Flush Tool?			
<u>15</u>		% gas	% oil	% water	% mud
ec. <u>15</u> Feet Of <u>D.m.</u>				<u>100</u>	
Rec. _____ Feet Of _____		% gas	% oil	% water	% mud
ec. _____ Feet Of _____		% gas	% oil	% water	% mud
ec. _____ Feet Of _____		% gas	% oil	% water	% mud
Rec. _____ Feet Of _____		% gas	% oil	% water	% mud

HT 111 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity \_\_\_\_\_ °API  
 RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm Recovery Chlorides 37,000 ppm System

(A) Initial Hydrostatic Mud 2076 PSI AK1 Recorder No. 13754 Range 4000  
 (B) First Initial Flow Pressure 29 PSI @ (depth) 3782 w/Clock No. 27567  
 (C) First Final Flow Pressure 29 PSI AK1 Recorder No. 7437 Range 4200  
 (D) Initial Shut-in Pressure 68 PSI @ (depth) 3820 w/Clock No. 8376  
 (E) Second Initial Flow Pressure 29 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_  
 (F) Second Final Flow Pressure 29 PSI @ (depth) \_\_\_\_\_ w/Clock No. \_\_\_\_\_  
 (G) Final Shut-in Pressure 39 PSI Initial Opening 30 Test \_\_\_\_\_  
 (H) Final Hydrostatic Mud 2026 PSI Initial Shut-in 45 Jars \_\_\_\_\_

TRILOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Final Flow 30 Safety Joint \_\_\_\_\_  
 Final Shut-in 45 Straddle \_\_\_\_\_  
 Circ. Sub \_\_\_\_\_  
 Sampler \_\_\_\_\_

Approved By \_\_\_\_\_  
 Our Representative Dan Bonafe Extra Packer \_\_\_\_\_  
 Other \_\_\_\_\_

# TRILOBITE TESTING, L.L.C.

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## Drill-Stem Test Data

KCC

JUL 2 5

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Well Name RIEDEL #15 Test No. 4 Date 6/1/93  
 Company MURFIN DRILLING CO INC Zone ARBUCKLE  
 Address 250 N WATER SWT #300 WICHITA KS 67202 Elevation 2290  
 Co. Rep./Geo. CURTIS COVEY Cont. MURFIN #3 Est. Ft. of Pay 4  
 Location: Sec. 31 Twp. 13S Rge. 19W Co. ELLIS State KS  
15-051-24835-00-00

Interval Tested 3870-3907 Drill Pipe Size 4.5" XH  
 Anchor Length 37 Wt. Pipe I.D. - 2.7 Ft. Run 478  
 Top Packer Depth 3865 Drill Collar - 2.25 Ft. Run 270  
 Bottom Packer Depth 3870 Mud Wt. 9.8 lb./Gal.  
 Total Depth 3907 Viscosity 45 Filtrate 8

Tool Open @ 12:01 PM Initial Blow STRONG-BOTTOM OF BUCKET IN 5 MINUTES  
 Final Blow STRONG-BOTTOM OF BUCKET IN 6 MINUTES

Recovery - Total Feet 1099 Flush Tool? NO

Rec. 449 Feet of GAS IN PIPE  
 Rec. 541 Feet of CLEAN GASSY OIL  
 Rec. 372 Feet of MUD CUT GASSY OIL 30%GAS/60%OIL/10%MUD  
 Rec. 186 Feet of MUD CUT GASSY OIL 10%GAS/80%OIL/10%MUD  
 Rec. \_\_\_\_\_ Feet of \_\_\_\_\_

RELEASED

SEP 6 1994

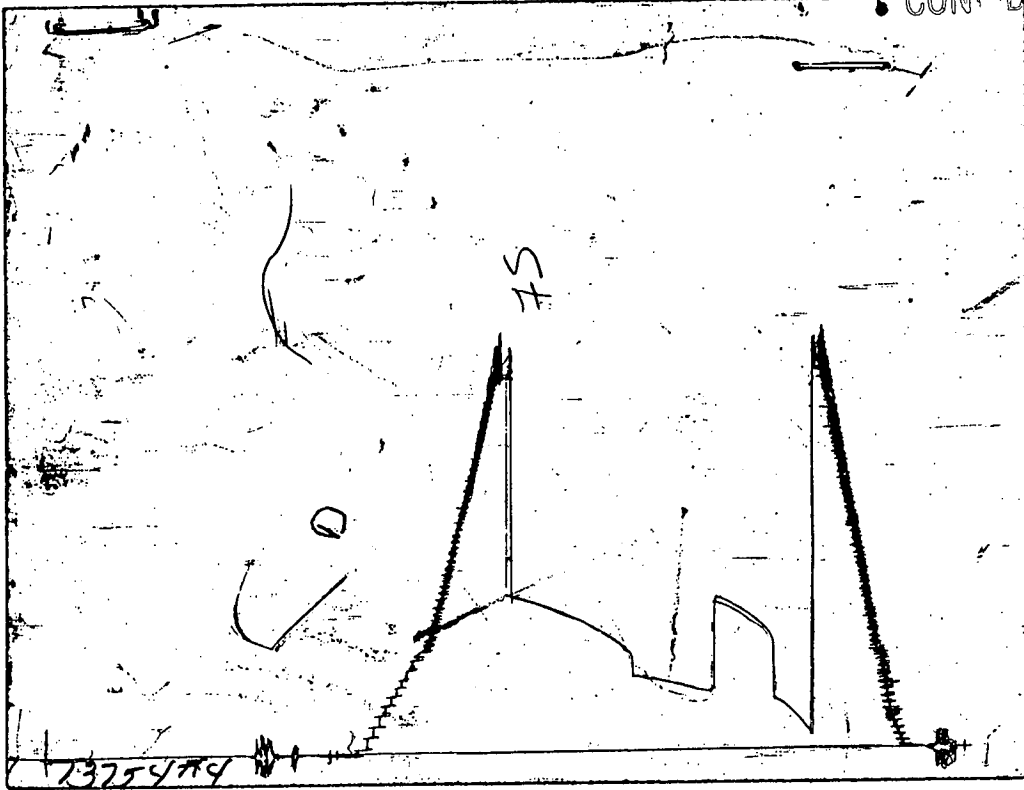
FROM CONFIDENTIAL

BHT 120 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity 35 °API  
 Recovery \_\_\_\_\_ ppm Chlorides \_\_\_\_\_ ppm System Chlorides 35000

(A) Initial Hydrostatic Mud 2126.8 PSI AK1 Recorder No. 13754 Range 4000  
 (B) First Initial Flow Pressure 100.3 PSI @ (depth) 3874 w / Clock No. 27567  
 (C) First Final Flow Pressure 267.7 PSI AK1 Recorder No. 7437 Range 4200  
 (D) Initial Shut-in Pressure 793.4 PSI @ (depth) 3903 w / Clock No. 8376  
 (E) Second Initial Flow Pressure 311.0 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_  
 (F) Second Final Flow Pressure 388.7 PSI @ (depth) \_\_\_\_\_ w / Clock No. \_\_\_\_\_  
 (G) Final Shut-in Pressure 799.4 PSI Initial Opening 30 Final Flow 60  
 (H) Final Hydrostatic Mud 2063.8 PSI Initial Shut-in 45 Final Shut-in 90

Our Representative DAN BANGLE

CONFIDENTIAL



15-051-24835-00-00

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FROM CONFIDENTIAL

This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2117	2126.8
(B) FIRST INITIAL FLOW PRESSURE	78	100.3
(C) FIRST FINAL FLOW PRESSURE	255	267.7
(D) INITIAL CLOSED-IN PRESSURE	778	793.4
(E) SECOND INITIAL FLOW PRESSURE	295	311
(F) SECOND FINAL FLOW PRESSURE	374	388.7
(G) FINAL CLOSED-IN PRESSURE	788	799.4
(H) FINAL HYDROSTATIC MUD	2056	2063.8

KCC  
JUL 26 ORIGINAL

COMPUTER OIL EVALUATION BY TRILOBITE TESTING, L.L.C. ~~CONFIDENTIAL~~

MURFIN DRILLING CO INC

RIEDEL #15

DST 4

31 13S 19W

ELLIS KS

15-051-27835-00:00

RELEASED

ELEVATION: 2290 KB EST. PAY 4 FT  
DATUM: -1585 ZONE TESTED: ARBUCKLE  
TEST INTERVAL: 3870-3907 TIME INTERVALS: 30-45-60-90  
RECORDER DEPTH: 3874 VISCOSITY: 6.73 CP  
BOTTOM HOLE TEMP: 120 HOLE SIZE: 7.875 IN

CUBIC FEET OF GAS IN PIPE: 36  
TOTAL FEET OF RECOVERY: 1099.00 CORRECTED PIPE FILLUP: 1056.250  
TOTAL BARRELS OF RECOVERY: 9.66 CORR. BARRELS OF RECOVERY: 8.619 BBL  
BARRELS IN DRILL PIPE: 4.99 API GRAVITY: 35  
BARRELS IN WEIGHT PIPE: 3.35 FLUID GRADIENT: 0.368  
BARRELS IN DRILL COLLARS: 1.32  
GAS OIL RATIO: 3.71 CU.FT/BBL  
BUBBLE POINT PRESSURE: 38  
UNCORRECTED INITIAL PRODUCTION: 154.52 BBL  
INITIAL PRODUCTION CORRECTED TO FINAL FLOW PRESSURE: 137.91 BBL/DAY  
INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE: 76.231

INITIAL SLOPE 584.7 PSI/CYCL FINAL SLOPE 439 PSI/CYCLE  
INITIAL P\* 923.12 PSI FINAL P\* 925.5 PSI

TRANSMISSIBILITY 51.08 (MD.-FT./CP.)  
PERMEABILITY 85.89 (MD.)  
INDICATED FLOW CAPACITY 343.57 (MD.FT)  
PRODUCTIVITY INDEX 0.06 (BARREL/DAY/PSI)  
DAMAGE RATIO 0.22  
RADIUS OF INVESTIGATION 87.92 (FT.)  
POTENTIOMETRIC SURFACE 562.23 (FT.)  
DRAWDOWN FACTOR -0.258 (%)  
THEORETICAL POTENTIAL FROM FINAL FLOW PRESSURE 0.00  
THEORETICAL POTENTIAL FROM PSEUDO STEADY FLOW STATE 0.00

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ORIGINAL

JUL 2 6

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INITIAL FLOW

RECORDER #13754

DST # 4

TIME(MIN)	PRESSURE	<>	PRESSURE
3	100.3		100.3
6	126.9		26.6
9	150.5		23.6
12	170.2		19.7
15	191.9		21.7
18	210.6		18.7
21	229.3		18.7
24	242.1		12.8
27	256.8		14.7
30	267.7		10.9

15-051-24835-00-00

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6 1994

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FINAL FLOW

RECORDER #13754

DST # 4

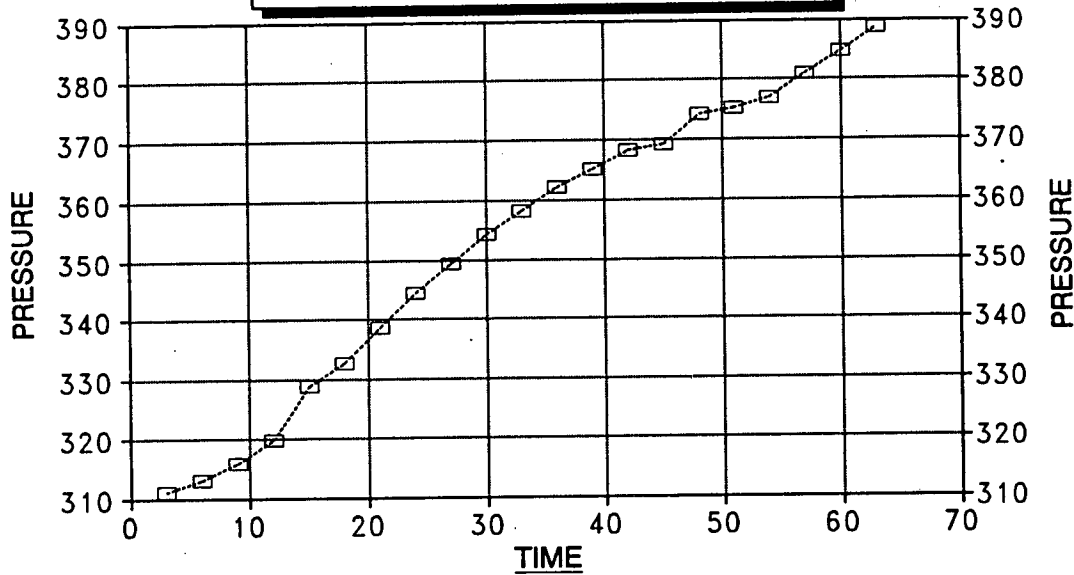
TIME(MIN)	PRESSURE	<>	PRESSURE
3	311.0		311.0
6	312.9		1.9
9	315.9		3.0
12	319.8		3.9
15	328.7		8.9
18	332.6		3.9
21	338.5		5.9
24	344.4		5.9
27	349.4		5.0
30	354.3		4.9
33	358.2		3.9
36	362.2		4.0
39	365.1		2.9
42	368.1		3.0
45	369.1		1.0
48	374.1		5.0
51	375.1		1.0
54	376.9		1.8
57	376.9		0.0
60	384.8		7.9
63	388.7		3.9

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**DELTA T DELTA P**  
FINAL FLOW / DST #4

15-051-24835-00-00



---□--- RIEDEL #15

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INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:

176(231) CONFIDENTIAL



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JUL 2 6

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RIEDEL #15  
INITIAL

DST #4  
SHUTIN

-----15-051-24735-00-00-----

30 INITIAL FLOW TIME

SLOPE  
P\*

PSI/CYCLE  
PSI

TIME(MIN)	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
3	593.8	1.041	593.8	11
6	622.5	0.778	28.7	6
9	643.2	0.637	20.7	4
12	659.1	0.544	15.9	4
15	676.8	0.477	17.7	3
18	692.6	0.426	15.8	3
21	710.4	0.385	17.8	2
24	721.3	0.352	10.9	2
27	735.1	0.325	13.8	2
30	747.1	0.301	12.0	2
33	758.8	0.281	11.7	2
36	769.7	0.263	10.9	2
39	779.6	0.248	9.9	2
42	787.5	0.234	7.9	2
45	793.4	0.222	5.9	2

RELEASED

SFP 6 1994

FROM CONFIDENTIAL

RIEDEL #15  
FINAL

DST #4  
SHUTIN

90 TOTAL FLOW TIME

SLOPE  
P\*

PSI/CYCLE  
PSI

TIME(MIN)	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
6	516.8	1.204	516.8	16
12	554.3	0.929	37.5	9
18	583.9	0.778	29.6	6
24	608.6	0.677	24.7	5
30	632.3	0.602	23.7	4
36	649.1	0.544	16.8	4
42	670.9	0.497	21.8	3
48	688.7	0.459	17.8	3
54	709.4	0.426	20.7	3
60	727.2	0.398	17.8	3
66	743.1	0.374	15.9	2
72	754.9	0.352	11.8	2
78	766.7	0.333	11.8	2
84	781.6	0.316	14.9	2
90	790.5	0.301	8.9	2
96	799.4	0.287	8.9	2

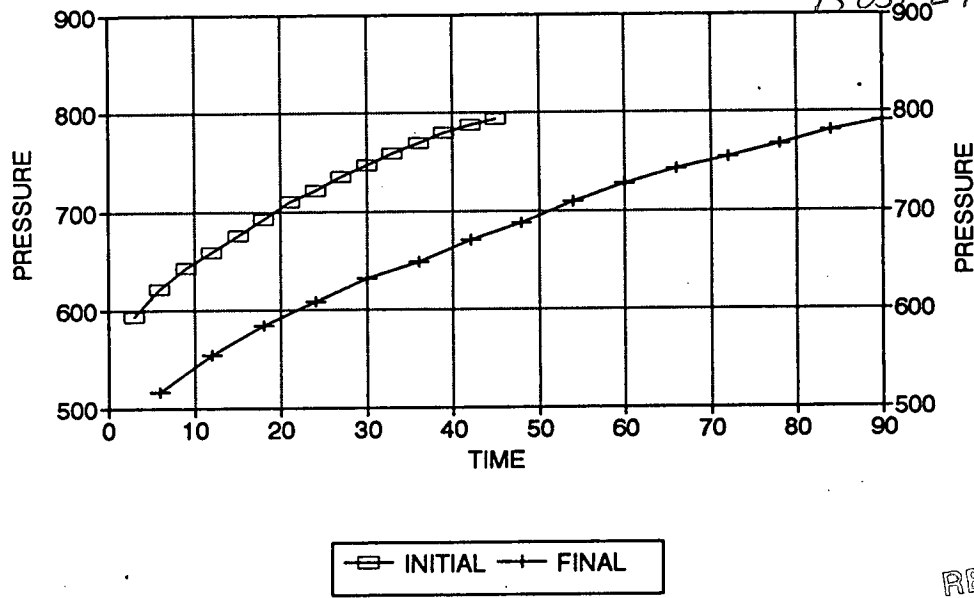
JUL 2 6

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ORIGINAL

### RIEDEL #15 DELTA T DELTA P

15-051-24835-00-00

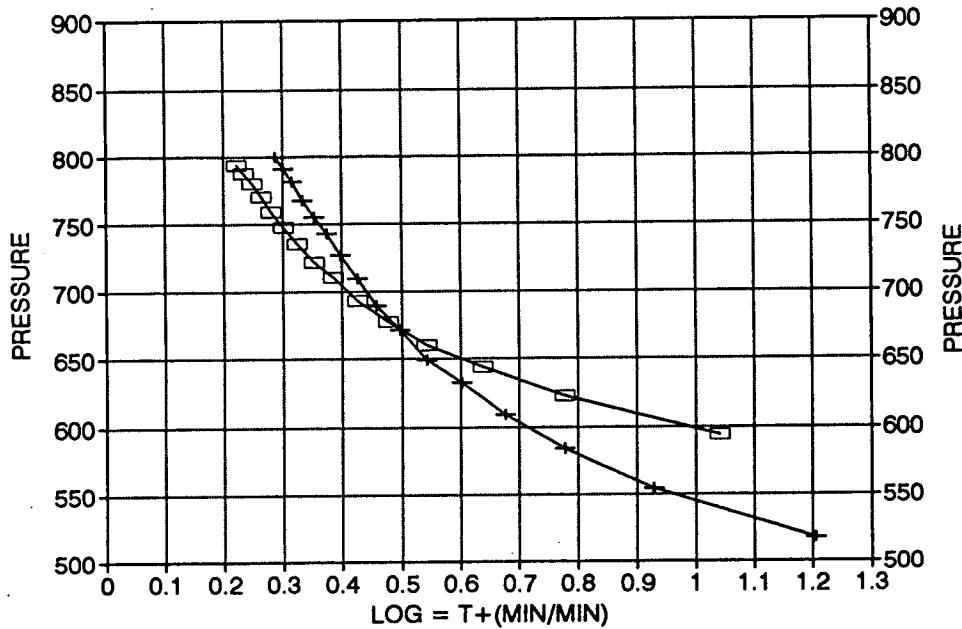


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SEP 6 1994

### HORNER PLOT

FROM CONFIDENTIAL



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JUL 26 ORIGINAL

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CALCULATED RECOVERY ANALYSIS

DST 4

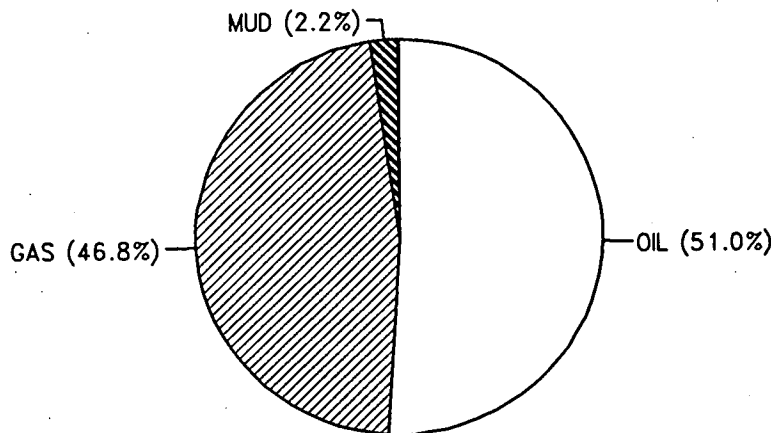
TICKET # 5685

15-051-24875-00-00

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
DRILL 1	449	100	449		0		0		0
PIPE 2	351	5	17.55	95	333.45		0		0
3			0		0		0		0
4			0		0		0		0
5			0		0		0		0
6			0		0		0		0
WEIGHT 1	190	5	9.5	95	180.5		0		0
PIPE 2	288	30	86.4	60	172.8		0	10	28.8
3			0		0		0		0
4			0		0		0		0
DRILL 1	84	30	25.2	60	50.4		0	10	8.4
COLLAR 2	186	10	18.6	80	148.8		0	10	18.6
3			0		0		0		0
4			0		0		0		0
5			0		0		0		0
TOTAL	1548		606.25		885.95		0		55.8

	BBL OIL=	BBL WATER=	BBL MUD=	BBL GAS =	HRS OPEN	BBL/DAY
	8.188847	0	0.35667	7.519823	1.5	131.02155
	*	*				0

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SEP 6 1994  
FROM CONFIDENTIAL



# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

ORIGINAL  
KCC

JUL 2 3

## Test Ticket

CONFIDENTIAL 5685

15.051-24835-00-00

Well Name & No. Riedel #15 Test No. 4 Date 6-1-93  
 Company Murfin Drilg. Co. Inc. Zone Tested Arbuckle  
 Address \_\_\_\_\_ Elevation 2290 K.B.  
 Co. Rep./Geo. Curtis Covey Cont. Murfin #3 Est. Ft. of Pay 4  
 Location: Sec. 31 Twp. 13 Rge. 19 Co. Ellis State Ks.  
 No. of Copies \_\_\_\_\_ Distribution Sheet \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Turnkey \_\_\_\_\_ Yes \_\_\_\_\_ No  Evaluation

Interval Tested 3870 - 3907 Drill Pipe Size 4.5 XH  
 Anchor Length 37 Top Choke — 1" \_\_\_\_\_ Bottom Choke — 1/4" \_\_\_\_\_  
 Top Packer Depth 3865 Hole Size — 7 7/8" \_\_\_\_\_ Rubber Size — 6 3/4" \_\_\_\_\_  
 Bottom Packer Depth 3870 Wt. Pipe I.D. — 2.7 Ft. Run 478  
 Total Depth 3907 Drill Collar — 2.25 Ft. Run 270  
 Mud Wt. 9.8 lb/gal. Viscosity 45 Filtrate 8

Tool Open @ 12:01 p.m. Initial Blow Strong - B.O.B. in 5 min.

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Final Blow Strong - B.O.B. in 6 min.

SEP 6 1994

Recovery — Total Feet 1099 Feet of Gas in Pipe 449 Flush Tool? \_\_\_\_\_

FROM CONFIDENTIAL

Rec.	Feet Of	%gas	%oil	%water	%mud
<u>541</u>	<u>C.G. Gyo</u>				
<u>372</u>	<u>M.C. Gyo</u>	<u>30%</u>	<u>60%</u>	<u>10%</u>	<u>10%</u>
<u>186</u>	<u>M.C. Gyo</u>	<u>10%</u>	<u>80%</u>	<u>10%</u>	<u>10%</u>
_____	_____	%gas	%oil	%water	%mud
_____	_____	%gas	%oil	%water	%mud

BHT 120 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity 35 °API

RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm Recovery Chlorides 35,000 ppm System

(A) Initial Hydrostatic Mud 2117 PSI AK1 Recorder No. 13754 Range 4000

(B) First Initial Flow Pressure 78 PSI @ (depth) 3874 w/Clock No. 27567

(C) First Final Flow Pressure 255 PSI AK1 Recorder No. 7437 Range 4200

(D) Initial Shut-In Pressure 778 PSI @ (depth) 3903 w/Clock No. 8376

(E) Second Initial Flow Pressure 295 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_

(F) Second Final Flow Pressure 374 PSI @ (depth) \_\_\_\_\_ w/Clock No. \_\_\_\_\_

(G) Final Shut-In Pressure 788 PSI Initial Opening 30 Test \_\_\_\_\_

(H) Final Hydrostatic Mud 2056 PSI Initial Shut-In 45 Jars \_\_\_\_\_

Final Flow 60 Safety Joint \_\_\_\_\_

Final Shut-in 90 Straddle \_\_\_\_\_

Circ. Sub \_\_\_\_\_

Sampler \_\_\_\_\_

Approved By \_\_\_\_\_ Extra Packer \_\_\_\_\_

Our Representative Dan Banfel Other \_\_\_\_\_

Printcraft Printers - Hays, KS TOTAL PRICE \$ \_\_\_\_\_

# TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Drill-Stem Test Data

KCC ORIGINAL

JUL 2 6

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Well Name RIEDEL #15 Test No. 5 Date 6/2/93  
 Company MURFIN DRILLING CO INC Zone ARBUCKLE  
 Address 250 N WATER SWT #300 WICHITA KS 67202 Elevation 2290  
 Co. Rep./Geo. CURTIS COVEY Cont. MURFIN #3 Est. Ft. of Pay 3  
 Location: Sec. 31 Twp. 13S Rge. 19W Co. ELLIS State KS  
15:051-24835-00:00

Interval Tested 3906-3917 Drill Pipe Size 4.5" XH  
 Anchor Length 11 Wt. Pipe I.D. - 2.7 Ft. Run 478  
 Top Packer Depth 3901 Drill Collar - 2.25 Ft. Run 270  
 Bottom Packer Depth 3906 Mud Wt. 9.8 lb/Gal.  
 Total Depth 3917 Viscosity 45 Filtrate 8

Tool Open @ 3:15 AM Initial Blow WEAK-BUILDING TO STRONG-- BOTTOM OF BUCKET IN 17  
MINUTES  
 Final Blow WEAK-BUILDING TO STRONG--BOTTOM OF BUCKET IN 25 MINUTES

Recovery - Total Feet 896 Flush Tool? NO

R 62 Feet of GAS IN PIPE  
 Rec. 90 Feet of MUD CUT GASSY OIL 10%GAS/80%OIL/10%MUD SEP 6 1994  
 R 372 Feet of MUD CUT GASSY OIL 10%GAS/60%OIL/30%MUD  
 R 310 Feet of WATER & MUD CUT GASSY OIL 10%GAS/60%OIL/20%H2O/10%MUD  
 Rec. 124 Feet of SLIGHTLY OIL CUT WATER 6%OIL/94%WATER

RELEASED

CONFIDENTIAL

BHT 122 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity 36 °API  
 RW 0.4 @ 80 °F Chlorides 27000 ppm Recovery Chlorides 35000 ppm System

(A) Initial Hydrostatic Mud 2174.6 PSI AK1 Recorder No. 13754 Range 4000

(B) First Initial Flow Pressure 55.1 PSI @ (depth) 3610 w / Clock No. 27567

(C) First Final Flow Pressure 164.3 PSI AK1 Recorder No. 7437 Range 4200

(D) Initial Shut-in Pressure 1159.9 PSI @ (depth) 3613 w / Clock No. 8376

(E) Second Initial Flow Pressure 203.7 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_

(F) Second Final Flow Pressure 349.4 PSI @ (depth) \_\_\_\_\_ w / Clock No. \_\_\_\_\_

(G) Final Shut-in Pressure 1164.9 PSI Initial Opening 30 Final Flow 60

(H) Final Hydrostatic Mud 2136.4 PSI Initial Shut-in 45 Final Shut-in 90

Representative DAN BANGLE

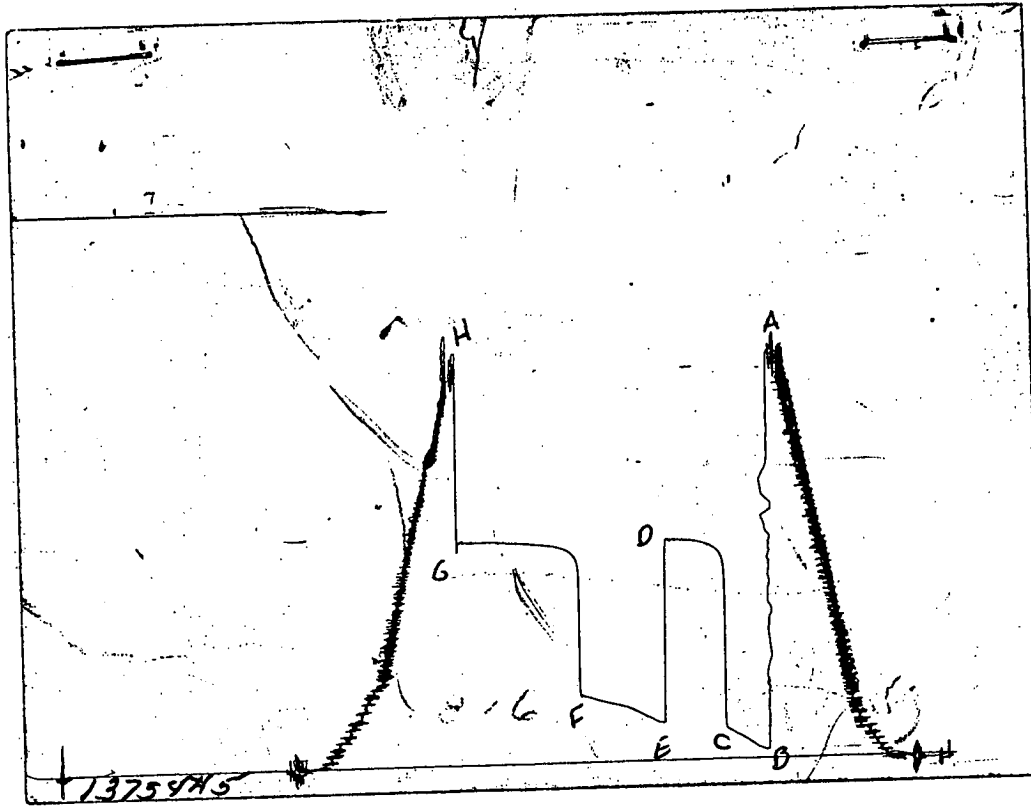
ORIGINAL

1.03

CHART PAGE

JUL 2 6

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15.051.24835.00.00

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This is an actual photograph of recorder chart

FROM CONFIDENTIAL

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2168	2174.6
(B) FIRST INITIAL FLOW PRESSURE	39	55.1
(C) FIRST FINAL FLOW PRESSURE	157	164.3
(D) INITIAL CLOSED-IN PRESSURE	1146	1159.9
(E) SECOND INITIAL FLOW PRESSURE	196	203.7
(F) SECOND FINAL FLOW PRESSURE	344	349.4
(G) FINAL CLOSED-IN PRESSURE	1156	1164.9
(H) FINAL HYDROSTATIC MUD	2127	2136.4

KCC  
 ORIGINAL JUL 2 8  
 CONFIDENTIAL

COMPUTER OIL EVALUATION BY TRILOBITE TESTING, L.L.C.  
 MURFIN DRILLING CO INC

RIEDEL #15 DST 5

31 13S 19W ELLIS KS

15.051.24835.0000

\*\*\*\*\*  
 ELEVATION: 2290 KB EST. PAY 3 FT  
 DATUM: -1321 ZONE TESTED: ARBUCKLE  
 TEST INTERVAL: 3906-3917 TIME INTERVALS: 30-45-60-90  
 RECORDER DEPTH: 3610 VISCOSITY: 7.64 CP  
 BOTTOM HOLE TEMP: 122 HOLE SIZE: 7.875 IN  
 \*\*\*\*\*

CUBIC FEET OF GAS IN PIPE: 5  
 TOTAL FEET OF RECOVERY: 896.00 CORRECTED PIPE FILLUP: 954.645  
 TOTAL BARRELS OF RECOVERY: 6.77 CORR. BARRELS OF RECOVERY: 8.619 BBL  
 BARRELS IN DRILL PIPE: 2.10 API GRAVITY: 36  
 BARRELS IN WEIGHT PIPE: 3.35 FLUID GRADIENT: 0.366  
 BARRELS IN DRILL COLLARS: 1.32  
 GAS OIL RATIO: 0.73 CU.FT/BBL  
 BUBBLE POINT PRESSURE: 9  
 UNCORRECTED INITIAL PRODUCTION: 108.33 BBL  
 INITIAL PRODUCTION CORRECTED TO FINAL FLOW PRESSURE: 137.91 BBL/DAY  
 INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE: 76.231  
 \*\*\*\*\*

INITIAL SLOPE 126.29253 PSI/CYCL FINAL SLOPE 23.1645157 PSI/CYCLE  
 INITIAL P\* 1187.92 PSI FINAL P\* 1171.55382 PSI  
 \*\*\*\*\*

TRANSMISSIBILITY 968.05 (MD.-FT./CP.)  
 PERMEABILITY 2464.27 (MD.)  
 INDICATED FLOW CAPACITY 7392.81 (MD.FT)  
 PRODUCTIVITY INDEX 1.09 (BARREL/DAY/PSI)  
 DAMAGE RATIO 6.50  
 RADIUS OF INVESTIGATION 470.94 (FT.)  
 POTENTIOMETRIC SURFACE 1396.83 (FT.)  
 DRAWDOWN FACTOR 1.378 (%)  
 THEORETICAL POTENTIAL FROM FINAL FLOW PRESSURE 895.74  
 THEORETICAL POTENTIAL FROM PSEUDO STEADY FLOW STATE 495.12

RELEASED

SEP 6 1994

FROM CONFIDENTIAL

INITIAL FLOW

RECORDER #13754

DST # 5

KCC ORIGINAL

JUL 2 6

CONFIDENTIAL

TIME(MIN) PRESSURE <>PRESSURE

TIME(MIN)	PRESSURE	PRESSURE
3	55.1	55.1
6	58.1	3.0
9	58.1	0.0
12	62.9	4.8
15	67.9	5.0
18	82.6	14.7
21	94.4	11.8
24	107.2	12.8
27	120.1	12.9
30	131.8	11.7
33	139.7	7.9
36	152.5	12.8
39	164.3	11.8

15-057-24835-00-00

RELEASED

SFP 6 1994

FROM CONFIDENTIAL

FINAL FLOW

RECORDER #13754

DST # 5

TIME(MIN) PRESSURE <> PRESSURE

TIME(MIN)	PRESSURE	PRESSURE
3	203.7	203.7
6	206.6	2.9
9	214.5	7.9
12	225.3	10.8
15	235.2	9.9
18	245.1	9.9
21	252.9	7.8
24	263.7	10.8
27	275.5	11.8
30	282.4	6.9
33	289.3	6.9
36	294.2	4.9
39	299.2	5.0
42	302.1	2.9
45	309.1	7.0
48	313.9	4.8
51	324.8	10.9
54	330.7	5.9
57	337.6	6.9
60	343.5	5.9
63	349.4	5.9

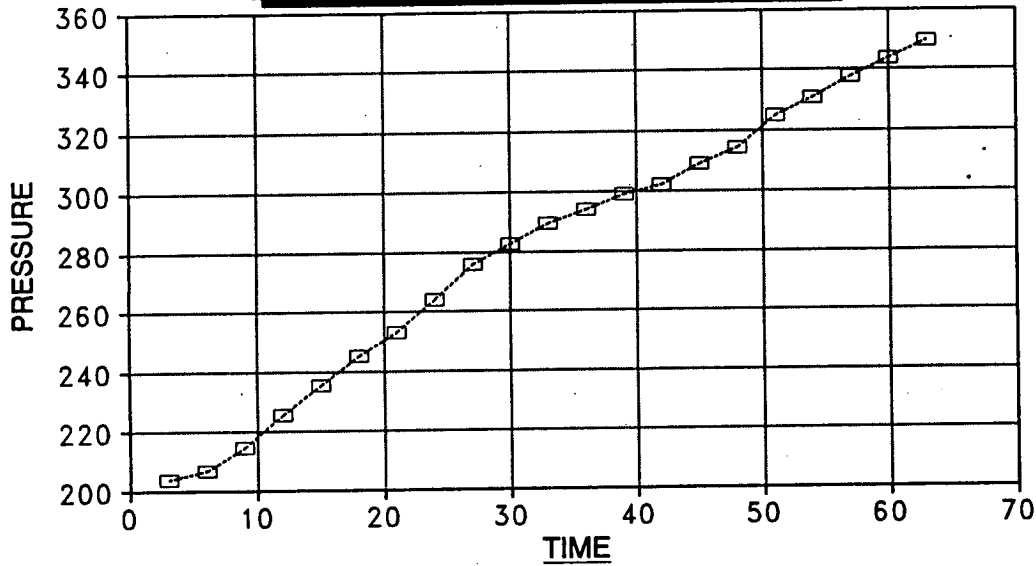


KCC

JUL 26 ORIGINAL  
CONFIDENTIAL

# DELTA T DELTA P

FINAL FLOW / DST #5



15.051.24835.00.00

--- RIEDEL #15

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FROM CONFIDENTIAL

INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:

62.033

ORIGINAL

KCC

RIEDEL #15  
INITIAL

DST #5  
SHUTIN  
30 INITIAL FLOW TIME

SLOPE 126.3 PSI/CYCLE  
P\* 1187.92 PSI

JUL 26

CONFIDENTIAL

15-051-24835-00-00

TIME(MIN)	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
3	271.6	1.041	271.6	11
6	1061.1	0.778	789.5	6
9	1096.9	0.637	35.8	4
12	1111.9	0.544	15.0	4
15	1122.9	0.477	11.0	3
18	1128.9	0.426	6.0	3
21	1137.9	0.385	9.0	2
24	1143.9	0.352	6.0	2
27	1148.9	0.325	5.0	2
X 30	1149.9	0.301	1.0	2
33	1150.9	0.281	1.0	2
36	1153.9	0.263	3.0	2
39	1157.9	0.248	4.0	2
42	1158.9	0.234	1.0	2
X 45	1159.9	0.222	1.0	2

RELEASED

SEP 6 1994

FROM CONFIDENTIAL

RIEDEL #15  
FINAL

DST #5  
SHUTIN  
90 TOTAL FLOW TIME

SLOPE 23.2 PSI/CYCLE  
P\* 1171.6 PSI

	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
6	1067.1	1.204	1067.1	16
12	1107.9	0.929	40.8	9
18	1123.9	0.778	16.0	6
24	1133.9	0.677	10.0	5
30	1138.9	0.602	5.0	4
36	1143.9	0.544	5.0	4
42	1147.9	0.497	4.0	3
48	1151.9	0.459	4.0	3
54	1155.9	0.426	4.0	3
60	1158.9	0.398	3.0	3
X 66	1162.9	0.374	4.0	2
72	1164.9	0.352	2.0	2
78	1164.9	0.333	0.0	2
84	1164.9	0.316	0.0	2
90	1164.9	0.301	0.0	2
X 96	1164.9	0.287	0.0	2

KCC

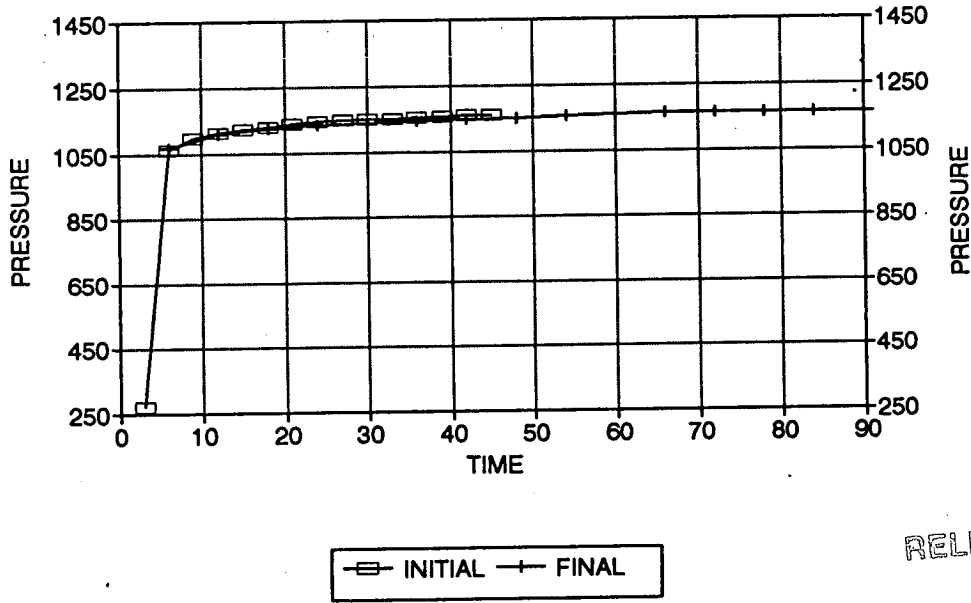
JUL 26

ORIGINAL

CONFIDENTIAL

# RIEDEL #15 DELTA T DELTA P

15.051.24835.00.00

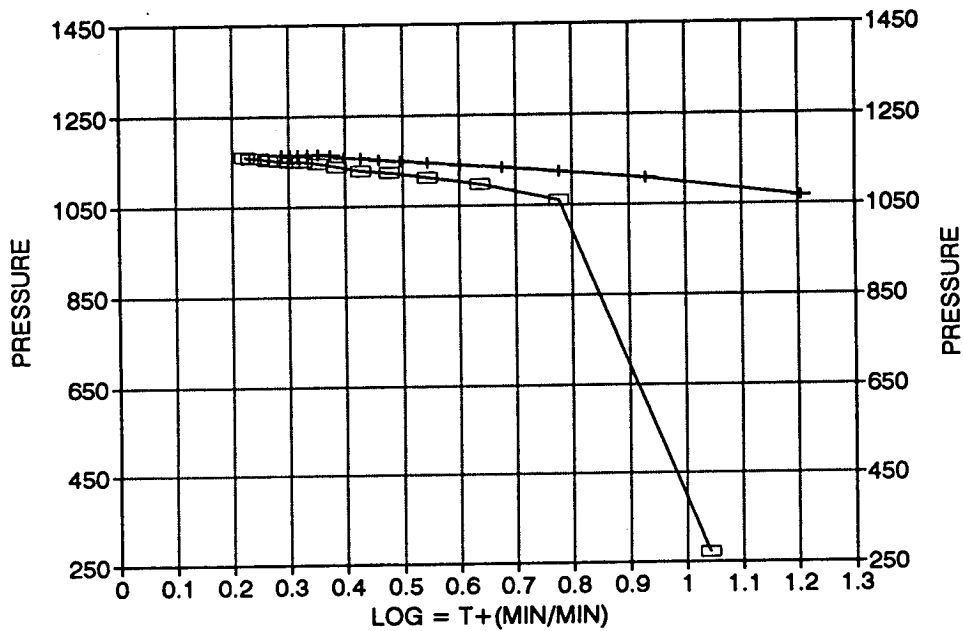


RELEASED

SEP 6 1994

FROM CONFIDENTIAL

# HORNER PLOT



JUL 26

ORIGINAL CONFIDENTIAL

CALCULATED RECOVERY ANALYSIS

DST 5

TICKET # 5686

15.057.24835.00.00

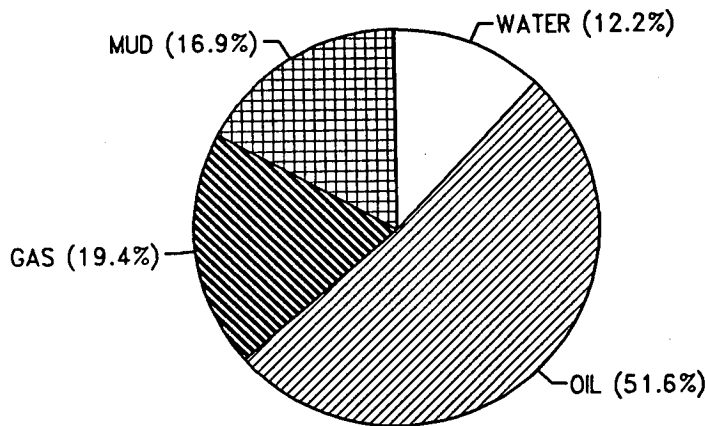
SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
DRILL 1	62	100	62	0	0	0	0	0	0
PIPE 2	90	10	9	80	72	0	10	9	
3	58	10	5.8	60	34.8	0	30	17.4	
4			0		0	0		0	
5			0		0	0		0	
6			0		0	0		0	
WEIGHT 1	314	10	31.4	60	188.4	0	30	94.2	
PIPE 2	164	10	16.4	60	98.4	20	32.8	10	16.4
3			0		0	0		0	
4			0		0	0		0	
DRILL 1	146	10	14.6	60	87.6	20	29.2	10	14.6
COLLAR 2	124		0	6	7.44	94	116.56		0
3			0		0	0		0	
4			0		0	0		0	
5			0		0	0		0	
<b>TOTAL</b>	<b>958</b>		<b>139.2</b>		<b>488.64</b>		<b>178.56</b>		<b>151.6</b>

	BBL OIL=	BBL WATER=	BBL MUD=	BBL GAS =	HRS OPEN	BBL/DAY
	3.9910416	0.9423664	1.309482	1.49809	1.5	63.856666
	*	*				15.077862

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FROM CONFIDENTIAL



ORIGINAL KCC

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

JUL 26

CONFIDENTIAL

Test Ticket

No 5686

15-051-24835-00-00

Well Name & No. Riedel #15 Test No. 5 Date 6-2-93  
 Company Murfin Drilg. Co. Inc. Zone Tested Arbuckle  
 Address \_\_\_\_\_ Elevation 2290 K.B.  
 Co. Rep./Geo. Curtis Covey Cont. Murfin #3 Est. Ft. of Pay 3  
 Location: Sec. 31 Twp. 13 Rge. 19 Co. Ellis State Ks.  
 No. of Copies \_\_\_\_\_ Distribution Sheet \_\_\_\_\_ Yes \_\_\_\_\_ No Turnkey \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Evaluation \_\_\_\_\_

Interval Tested 3906-3917 Drill Pipe Size 4.5XH  
 Anchor Length 11 Top Choke — 1" \_\_\_\_\_ Bottom Choke — 3/4" \_\_\_\_\_  
 Top Packer Depth 3901 Hole Size — 7 7/8" \_\_\_\_\_ Rubber Size — 6 3/4" \_\_\_\_\_  
 Bottom Packer Depth 3906 Wt. Pipe I.D. — 2.7 Ft. Run 478  
 Total Depth 3917 Drill Collar — 2.25 Ft. Run 270  
 Mud Wt. 9.8 lb/gal. Viscosity 45 Filtrate 8  
 Tool Open @ 3:15 a.m. Initial Blow Weak-building to strong B.O.B. in 17 min.  
 Final Blow Weak-building to strong B.O.B. in 25 min.

Recovery — Total Feet	Feet of Gas in Pipe	Flush Tool?
Rec. <u>90</u> Feet Of <u>MCG 2yo</u> <u>10</u> %gas <u>80</u> %oil %water <u>10</u> %mud		
Rec. <u>372</u> Feet Of <u>MCG 5yo</u> <u>10</u> %gas <u>60</u> %oil %water <u>30</u> %mud		
Rec. <u>310</u> Feet Of <u>WTA &amp; MCG 2yo</u> <u>10</u> %gas <u>60</u> %oil <u>20</u> %water <u>10</u> %mud		
Rec. <u>124</u> Feet Of <u>571y OCW</u> %gas <u>6</u> %oil <u>94</u> %water %mud		
Rec. _____ Feet Of _____ %gas _____ %oil _____ %water _____ %mud		

BHT 122 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity 36 °API  
 RW .40 @ 80 °F Chlorides 27,000 ppm Recovery Chlorides 35,000 ppm System  
 (A) Initial Hydrostatic Mud 2168 PSI Ak1 Recorder No. 13754 Range 4000  
 (B) First Initial Flow Pressure 39 PSI @ (depth) 3610 w/Clock No. 27567  
 (C) First Final Flow Pressure 157 PSI Ak1 Recorder No. 7437 Range 4200  
 (D) Initial Shut-in Pressure 1146 PSI @ (depth) 3613 w/Clock No. 8376  
 (E) Second Initial Flow Pressure 196 PSI Ak1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_  
 (F) Second Final Flow Pressure 344 PSI @ (depth) \_\_\_\_\_ w/Clock No. \_\_\_\_\_  
 (G) Final Shut-in Pressure 1156 PSI Initial Opening 36 Test \_\_\_\_\_  
 (H) Final Hydrostatic Mud 2127 PSI Initial Shut-in 45 Jars \_\_\_\_\_

TRILOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Approved By \_\_\_\_\_  
 Our Representative Dan Banfle

Final Flow 60 Safety Joint \_\_\_\_\_  
 Final Shut-in 80 Straddle SEP 6 1994

Circ. Sub \_\_\_\_\_  
 Sampler FROM CONFIDENTIAL

Extra Packer \_\_\_\_\_

Other \_\_\_\_\_

TOTAL PRICE \$

ORIGINAL

# TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

KCC

JUL 26

## Drill-Stem Test Data

CONFIDENTIAL  
6/2/93

Well Name RIEDEL #15 Test No. 6 Date 6/2/93  
 Company MURFIN DRILLING CO INC Zone ARBUCKLE  
 Address 250 N WATER SWT #300 WICHITA KS 67202 Elevation 2290  
 Co. Rep./Geo. CURTIS COVEY Cont. MURFIN #3 Est. Ft. of Pay \_\_\_\_\_  
 Location: Sec. 31 Twp. 13S Rge. 19W Co. ELLIS State KS  
15-051-24835-00-00

Interval Tested	<u>3916-3927</u>	Drill Pipe Size	<u>4.5" XH</u>
Anchor Length	<u>11</u>	Wt. Pipe I.D. - 2.7 Ft. Run	<u>478</u>
Top Packer Depth	<u>3911</u>	Drill Collar - 2.25 Ft. Run	<u>270</u>
Bottom Packer Depth	<u>3916</u>	Mud Wt.	<u>9.8</u> lb/Gal.
Total Depth	<u>3927</u>	Viscosity	<u>43</u> Filtrate <u>8.8</u>

Tool Open @ 5:35 PM Initial Blow WEAK-BUILDING TO BOTTOM OF BUCKET IN 7 MINUTES  
 Final Blow WEAK-BUILDING TO BOTTOM OF BUCKET IN 11 MINUTES

Recovery - Total Feet 1142 Flush Tool? NO

Rec. <u>392</u>	Feet of	<u>SLIGHTLY OIL CUT WATER 4%OIL/96%WATER</u>
Rec. <u>360</u>	Feet of	<u>SLIGHTLY OIL CUT WATER 2%OIL/98%WATER</u>
Rec. <u>390</u>	Feet of	<u>SLIGHTLY OIL CUT WATER 1%OIL/99%WATER</u>
Rec. _____	Feet of	_____
Rec. _____	Feet of	_____

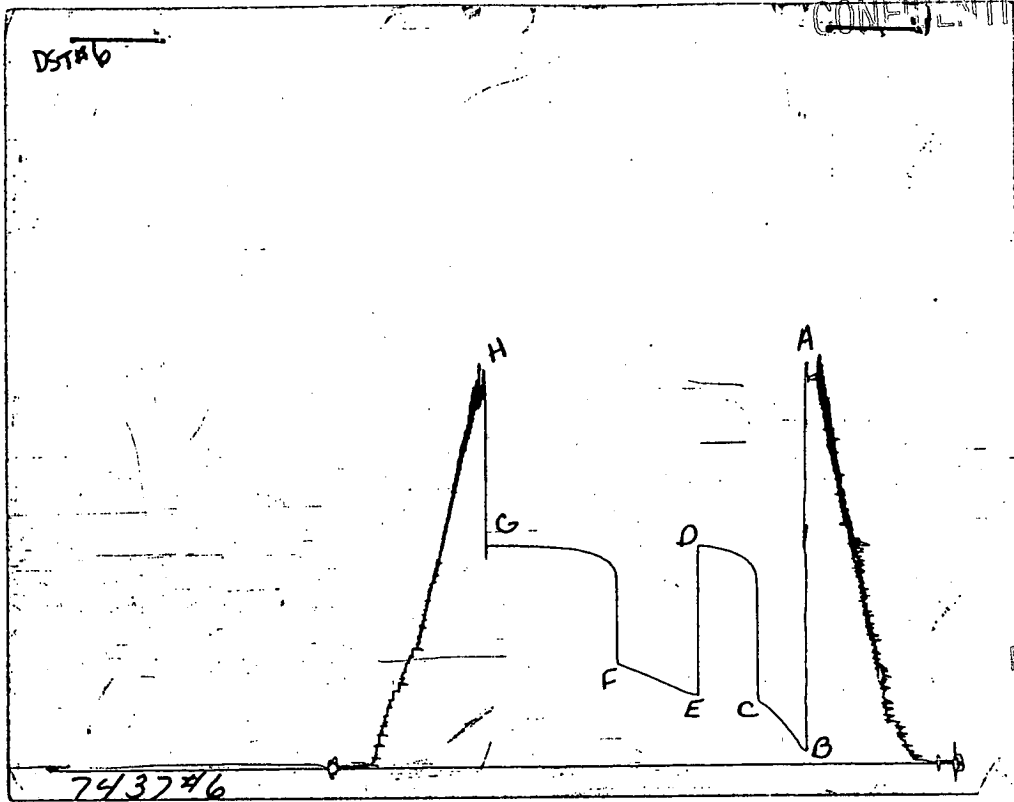
RELEASED  
SEP 6 1994

BHT 123 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity \_\_\_\_\_ °API  
 RW 0.4 @ 84 °F Chlorides 29000 ppm Recovery Chlorides 36000 ppm System

FROM CONFIDENTIAL

(A) Initial Hydrostatic Mud	<u>2135.8</u> PSI	AK1 Recorder No.	<u>13754</u>	Range	<u>4000</u>
(B) First Initial Flow Pressure	<u>34.9</u> PSI	@ (depth)	<u>3920</u>	w / Clock No.	<u>27567</u>
(C) First Final Flow Pressure	<u>315.9</u> PSI	AK1 Recorder No.	<u>7437</u>	Range	<u>4200</u>
(D) Initial Shut-in Pressure	<u>1149.5</u> PSI	@ (depth)	<u>3923</u>	w / Clock No.	<u>8376</u>
(E) Second Initial Flow Pressure	<u>359.4</u> PSI	AK1 Recorder No.	_____	Range	_____
(F) Second Final Flow Pressure	<u>498.2</u> PSI	@ (depth)	_____	w / Clock No.	_____
(G) Final Shut-in Pressure	<u>1169.2</u> PSI	Initial Opening	<u>30</u>	Final Flow	<u>60</u>
(H) Final Hydrostatic Mud	<u>2081.9</u> PSI	Initial Shut-in	<u>45</u>	Final Shut-in	<u>90</u>

Our Representative DAN BANGLE



15-051-24835-00-00

RELEASED  
SEP 6 1994  
FROM CONFIDENTIAL

This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2127	2135.8
(B) FIRST INITIAL FLOW PRESSURE	49	34.9
(C) FIRST FINAL FLOW PRESSURE	305	315.9
(D) INITIAL CLOSED-IN PRESSURE	1136	1149.5
(E) SECOND INITIAL FLOW PRESSURE	344	359.4
(F) SECOND FINAL FLOW PRESSURE	501	498.2
(G) FINAL CLOSED-IN PRESSURE	1156	1169.2
(H) FINAL HYDROSTATIC MUD	2087	2081.9

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

KCC

JUL 26 ORIGINAL

CONFIDENTIAL

No 5687

## Test Ticket

15.051.24835.00.00

Well Name & No. Riedel #15 Test No. 6 Date 6-2-93  
 Company Murfin Drilg Co. Inc. Zone Tested Arbuckle  
 Address \_\_\_\_\_ Elevation 2290 K.B  
 Co. Rep./Geo. Curtis Covey Cont. Murfin #3 Est. Ft. of Pay \_\_\_\_\_  
 Location: Sec. 31 Twp. 13 Rge. 19 Co. Ellis State Ks.  
 No. of Copies \_\_\_\_\_ Distribution Sheet \_\_\_\_\_ Yes \_\_\_\_\_ No Turnkey \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Evaluation \_\_\_\_\_

Interval Tested 3916-3927 Drill Pipe Size 4.5 XH  
 Anchor Length 11 Top Choke — 1" \_\_\_\_\_ Bottom Choke — 1/4" \_\_\_\_\_  
 Top Packer Depth 3911 Hole Size — 7 7/8" \_\_\_\_\_ Rubber Size — 6 3/4" \_\_\_\_\_  
 Bottom Packer Depth 3916 Wt. Pipe I.D. — 2.7 Ft. Run 478  
 Total Depth 3927 Drill Collar — 2.25 Ft. Run 270  
 Mud Wt. 9.8 lb/gal. Viscosity 43 Filtrate 8.8  
 Tool Open @ 5:35 p.m. Initial Blow Weak - building to B.O.B in 7 min.

Final Blow Weak - building to B.O.B in 11 min.

Recovery — Total Feet	Feet of Gas In Pipe	Flush Tool?
Rec. <u>392</u> Feet Of <u>Silty O.C. WTR.</u>	%gas <u>4</u> %oil <u>96</u> %water _____ %mud _____	
Rec. <u>360</u> Feet Of <u>Silty O.C. WTR.</u>	%gas <u>2</u> %oil <u>98</u> %water _____ %mud _____	
Rec. <u>390</u> Feet Of <u>Silty O.C. WTR.</u>	%gas <u>1</u> %oil <u>99</u> %water _____ %mud _____	
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____	
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____	

BHT 123 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity \_\_\_\_\_ °API  
 RW .40 @ 84 °F Chlorides 29,000 ppm Recovery Chlorides 36,000 ppm System  
 (A) Initial Hydrostatic Mud 2127 PSI AK1 Recorder No. 13754 Range 4000  
 (B) First Initial Flow Pressure 49 PSI @ (depth) 3920 w/Clock No. 27567  
 (C) First Final Flow Pressure 305 PSI AK1 Recorder No. 7437 Range 4200  
 (D) Initial Shut-In Pressure 1136 PSI @ (depth) 3923 w/Clock No. 8376  
 (E) Second Initial Flow Pressure 344 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_  
 (F) Second Final Flow Pressure 501 PSI @ (depth) \_\_\_\_\_ w/Clock No. \_\_\_\_\_  
 (G) Final Shut-In Pressure 1156 PSI Initial Opening 30 Test \_\_\_\_\_  
 (H) Final Hydrostatic Mud 2087 PSI Initial Shut-In 45 Jars \_\_\_\_\_

TRILOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Final Flow 60 Safety Joint \_\_\_\_\_  
 Final Shut-In 80 Straddle \_\_\_\_\_  
 Circ. Sub? 6 1994  
 Sampler \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Other \_\_\_\_\_

Approved By: [Signature]  
 Our Representative: [Signature]

FROM CONFIDENTIAL



Russell, Kansas

Phone Plainville 913-434-2812

861 Great Bend, Kansas

Phone Ness City 913-798-3843

# ALLIED CEMENTING CO., INC. 4292

Home Office P. O. Box 31 Russell, Kansas 67665

New

15:05 / 24835-00:00

Sec.	Wp.	Range	Called Out	On Location	Job Start	Finish
31	135	19W		6:00 PM	8:20 PM	8:45 PM
use	Well No.	Location	County	State		
Riedel	15	Golf Course Rd 6W	Ellis	Ks		

Contractor	Martin Doly Rig 3
Job	Surface
Well Size	12 1/4
Depth	8 1/2
Well Pipe	Depth
Shoe Joint	Depth
Material Left in Csg.	10' 13"
Displace	18 3/4 BBL

Owner	4W N.S.
To Allied Cementing Co., Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.	
Charge To	Martin Doly Co
Street	250 N Water Suite 300
City	Wichita
State	Kan 67202
The above was done to satisfaction and supervision of owner agent or contractor.	
Purchase Order No.	
<i>[Signature]</i>	
CEMENT	

### EQUIPMENT

Days	No.	Cementor	Dave
mptrk	153	Helper	Mark
mptrk		Cementor	
mptrk		Helper	
dktrk	218	Driver	Mike
lktrk		Driver	

Amount Ordered	165 <sup>60</sup> 40 3% cc 2% gel
Consisting of:	
Common	99 575 569.25
Poz. Mix	66 3.00 198.00
Gel.	3 7.00 NL
Chloride	5 25.00 125.00
Quickset	

EPH of Job	
ference:	
	Pump trk chg 430.00
	22 <sup>5</sup> per mile 15.75
	88 wooden plug 42.00
	Sub Total 487.75
	Tax
	Total

Handling	1.00 165.00
Mileage	2m .04 46.20
Sub Total	1103.45
Total	

marks: Cement Cir

Floating Equipment

RELEASED

SEP 6 1994

FROM CONFIDENTIAL

Great Bend, Kansas

ORIGINAL KCC  
NEW JUL 26

Phone Plainville 913-434-2812  
Phone Ness City 913-798-3843

**ALLIED CEMENTING CO., INC.**  
Home Office P. O. Box 31  
Russell, Kansas 67665

5521

15.051.24835.00.00

Date	6-3-99	Sec.	31	Twp.	13 <sup>S</sup>	Range	19 W	Called Out	5:30 PM	On Location	7:00 PM	Job Start	2:10 AM	Finish	3:00 AM
Lease	Riedel	Well No.	15	Location	Golf course Rd 6 W 1 N			County	ELLIS	State	KS				
Contractor	Murfin Drlg Rtg 3			Owner	Murfin Drlg Co										
Type Job	Long string			To Allied Cementing Co., Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.											
Hole Size	7 7/8		T.D.	40 20'											
Csg.	5 1/2 15.5M		Depth	40 18'											
Tbg. Size				Depth											
Drill Pipe				Depth											
Tool				Depth											
Cement Left in Csg.				Shoe Joint	2852'										
Press Max.				Minimum											
Meas Line	NO			Displace	95 Bbl										
Perf.															

**EQUIPMENT**

Bill Leitam

Hays Pumptrk	No. 277	Cementer	Dean Rundle
		Helper	
Pumptrk	No. 279	Cementer	
		Helper	Carl Battin
		Driver	Steve William
Bulktrk	No. 282		
Bulktrk		Driver	

**DEPTH of Job** 3989'

Reference:	Pump Trk chrg	980.00
	25 per mile 7 miles	15.75
	5 1/2 Rubber Plug	45.00
	Sub Total	1040.75
	Tax	
	Total	

Remarks: Ran 98 Joints 5 1/2 csg  
Port collar at 1607.92' of 59  
centralizer on 1, 2, 4, 6, 8, 10, 58  
& 60. Basket on bottom of top 58  
Port collar on top of 59

Charge To: Murfin Drlg Co

Street: 250 N Water #300

City: WICHITA State: Kan 67202

The above was done to satisfaction and supervision of owner agent or contractor.

Purchase Order No. *[Signature]*

X *[Signature]*

**CEMENT**

Amount Ordered	16 Ssk con 10% salt 7 3/4 190		
Consisting of	500 gal Mud Sweep 100 lb salt FL 62		
Common	165 Sks	5.75	948.75
Poz. Mix			
Gel. Salt Chloride	24 Sks	5.25	126.00
Quikrete Mud Sweep	500 gal	1.80	900.00
FL 62	116 lbs	5.20 a lb	603.20
		Sales Tax	
Handling	100		165.00
Mileage 7m	04		46.20
	RELEASED	Sub Total	2789.15
	SEP 6 1994	Total	

**Floating Equipment**

1	5 1/2" BASKET	A	127.00
1	5 1/2" Port collar		1785.00
8	5 1/2" Centralizer		448.00
1	8 1/2" Insert		189.00
1	5 1/2" Guide shoe		125.00
	<del>5 1/2" Rubber Plug</del>		
20	5' ROTATING SCATCHERS		760.00
		A	3434.00

Kansas  
Great Bend, Kansas

KCC

Phone Plainville 913-434-2812

Phone Ness City 913-798-3843

ORIGINAL JUL 26

CONFIDENTIAL

# ALLIED CEMENTING CO., INC.

5747

Home Office P. O. Box 31

Russell, Kansas 67665

*New*

15:05:24835:00:00

Date	6-8-93	Sec.	31	Twp.	13	Range	14 W	Called Out	8:00 AM	On Location	8:30 AM	Job Start	9:45 AM	Finish	10:45 AM
Lease	Riedel	Well No.	15	Location	7 W 2 W HAYS			County	Ellis	State	Kan				

Contractor	Co. Tools
Type Job	Port collar Top Stage
Hole Size	T.D.
Csg.	Depth
Tbg. Size	Depth
Drill Pipe	Depth
Tool	Depth
Cement Left in Csg.	Shoe Joint
Press Max.	Minimum
Meas Line	Displace
Perf.	

Owner  
To Allied Cementing Co., Inc.  
You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Charge To *MURFIN Drlg Co.*  
Street *250 N Water #300*  
City *Wichita* State *Kan 67202*  
The above was done to satisfaction and supervision of owner agent or contractor.

Purchase Order No.  
X *[Signature]*

**CEMENT**

Amount Ordered	<i>3000 lbs lite 50 lb Common</i>	
Consisting of	<i>Used 290 lbs lite 50 lb Common</i>	
Common	<i>50</i>	<i>287.50</i>
Poz. Mix	<i>290 lite</i>	<i>1372.50</i>
Gel.		
Chloride		
Quickset		
<i>BQ med sweep 50 gal</i>	<i>180</i>	<i>900.00</i>
Sales Tax		
Handling	<i>100</i>	<i>340.00</i>
Mileage <i>7 mi</i>	<i>.04</i>	<i>95.20</i>
Sub Total		<i>3000.20</i>
Total		

**EQUIPMENT**

<i>Hays</i>	No.	Cementer	<i>B Leikem</i>
Pumptrk <i>277</i>		Helper	
	No.	Cementer	
Pumptrk <i>280</i>		Helper	<i>C BATHIN</i>
		Driver	
Bulktrk <i>291</i>		Driver	<i>W Mcghshy</i>
Bulktrk <i>213</i>		Driver	<i>Jason</i>

**DEPTH of Job**

Reference:	<i>pump charge</i>	<i>525.00</i>
	<i>2.25 p/m 8 mi</i>	<i>15.75</i>
	Sub Total	<i>540.75</i>
	Tax	
	Total	

RELEASED  
SEP 6 1994

Floating Equipment FROM CONFIDENTIAL

Remarks: *Pump 500 gal mud sweep*  
*Port collar @ 1600 Cement up 90' follow up 50 lb Common*  
*Cement did Circulate close Tool photo 1000 PSI OK*  
*Ran 4 hrs wash clean.*

*Thanks*