



KANSAS CORPORATION COMMISSION 1076866
OIL & GAS CONSERVATION DIVISION

Form ACO-1
June 2009

Form Must Be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 5455
Name: Crawford Oil & Gas Co LLC
Address 1: PO BOX 1366
Address 2: 1780 JASON DR
City: EL DORADO State: KS Zip: 67042 + _____
Contact Person: Larry Dale Crawford
Phone: (316) 377-3373
CONTRACTOR: License # 33575
Name: WW Drilling, LLC
Wellsite Geologist: Larry Friend
Purchaser: None

Designate Type of Completion:

- New Well Re-Entry Workover
- Oil WSW SWD SIOW
 Gas D&A ENHR SIGW
 OG GSW Temp. Abd.
 CM (Coal Bed Methane)
 Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____
Well Name: _____
Original Comp. Date: _____ Original Total Depth: _____
 Deepening Re-perf. Conv. to ENHR Conv. to SWD
 Conv. to GSW
 Plug Back: _____ Plug Back Total Depth _____
 Commingled Permit #: _____
 Dual Completion Permit #: _____
 SWD Permit #: _____
 ENHR Permit #: _____
 GSW Permit #: _____
10/25/2011 10/30/2011 10/30/2011
Spud Date or Date Reached TD Completion Date or
Recompletion Date Recompletion Date

API No. 15 - 15-137-20588-00-00
Spot Description: _____
SW NW NE SE Sec. 32 Twp. 2 S. R. 23 East West
2265 Feet from North / South Line of Section
1168 Feet from East / West Line of Section
Footages Calculated from Nearest Outside Section Corner:
 NE NW SE SW
County: Norton
Lease Name: Sprigg Well #: 1-32
Field Name: Hen Northwest
Producing Formation: none
Elevation: Ground: 2347 Kelly Bushing: 2352
Total Depth: 3639 Plug Back Total Depth: _____
Amount of Surface Pipe Set and Cemented at: 219 Feet
Multiple Stage Cementing Collar Used? Yes No
If yes, show depth set: _____ Feet
If Alternate II completion, cement circulated from: _____
feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: 26000 ppm Fluid volume: 750 bbls
Dewatering method used: Evaporated
Location of fluid disposal if hauled offsite: _____
Operator Name: _____
Lease Name: _____ License #: _____
Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West
County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that 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.

Submitted Electronically

KCC Office Use ONLY

- Letter of Confidentiality Received
Date: _____
 Confidential Release Date: _____
 Wireline Log Received
 Geologist Report Received
 UIC Distribution
ALT I II III Approved by: Deanna Garrison Date: 03/26/2012



1076866

Operator Name: Crawford Oil & Gas Co LLC Lease Name: Sprigg Well #: 1-32
 Sec. 32 Twp. 2 S. R. 23 East West County: Norton

INSTRUCTIONS: Show important tops and base of formations penetrated. Detail all cores. Report all final copies of drill stems 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 test, along with final chart(s). Attach extra sheet if more space is needed. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Electric Log Submitted Electronically <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(If no, Submit Copy)</i> List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input checked="" type="checkbox"/> Sample <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:60%;">Name</td> <td style="width:20%;">Top</td> <td style="width:20%;">Datum</td> </tr> <tr> <td>Stone Corral</td> <td>1920</td> <td>+432</td> </tr> <tr> <td>Base S.C.</td> <td>1951</td> <td>+401</td> </tr> <tr> <td>Heebner</td> <td>3359</td> <td>-1007</td> </tr> <tr> <td>Lansing</td> <td>3403</td> <td>-1051</td> </tr> <tr> <td>BKC</td> <td>3579</td> <td>-1227</td> </tr> <tr> <td>Arbuckle</td> <td>3613</td> <td>-1261</td> </tr> <tr> <td>Granite</td> <td>3635</td> <td>-1283</td> </tr> </table>	Name	Top	Datum	Stone Corral	1920	+432	Base S.C.	1951	+401	Heebner	3359	-1007	Lansing	3403	-1051	BKC	3579	-1227	Arbuckle	3613	-1261	Granite	3635	-1283
Name	Top	Datum																							
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Granite	3635	-1283																							

CASING RECORD <input checked="" 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	12.25	8.625	23	219	common	165	3%cc & 2% gel

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
___ Perforate				
___ Protect Casing	-			
___ Plug Back TD				
___ Plug Off Zone	-			

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD: Size: _____ Set At: _____ Packer At: _____		Liner Run: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Date of First, Resumed Production, SWD or ENHR. _____		Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____	
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls. Gas-Oil Ratio Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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CONSOLIDATED
Oil Well Services, LLC

TICKET NUMBER 33670
LOCATION Oakley KS
FOREMAN Fuzz

PO Box 884, Chanute, KS 66720
620-431-9210 or 800-467-8676

FIELD TICKET & TREATMENT REPORT
CEMENT

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
10-25-11		Spring 1-32	32	2	2-3	Norton
CUSTOMER Crawford Oil & Gas Company LLC			TRUCK # DRIVER TRUCK # DRIVER			
MAILING ADDRESS			463	Jack G		
CITY STATE ZIP CODE			439	Tom D		

JOB TYPE Surface HOLE SIZE 17 1/4" HOLE DEPTH 221' CASING SIZE & WEIGHT 2 3/8"
CASING DEPTH 220' DRILL PIPE _____ TUBING _____ OTHER _____
SLURRY WEIGHT 14.7 SLURRY VOL 1.36 WATER gal/Wrk 6.5 CEMENT LEFT in CASING 15'
DISPLACEMENT 13.0 DISPLACEMENT PSI _____ MIX PSI _____ RATE _____

REMARKS: Safety meeting on w-w #6 Rig up + circulate
Mix 1650s class A 3 bags 2' pack. Displace 13 bags
and shut in. Cement did circulate approx 4 Bbls to bit

Thanks Fuzz
+ crew

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
54015	1	PUMP CHARGE	1025 ⁰⁰	1025 ⁰⁰
5406	65 miles	MILEAGE	5 ⁰⁰	325 ⁰⁰
5407A	7.76 Ton	Ton mileage delivery	1 ⁰⁰	776 ⁰⁰
11045	165 sks	Class 'A' cement	16 ⁰⁰	2772 ⁰⁰
1102	465 #	Calcium Chloride	184	390 ⁰⁰
1118B	310 #	Bentonite (red)	24	744 ⁰⁰
		sub total		5383 ⁰⁰
		less 10% discount		538 ⁰⁰
				4845 ⁰⁰
			SALES TAX	
			ESTIMATED	
			TOTAL	

AUTHORIZATION Maub Bysse TITLE Pusher DATE _____

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form



CONSOLIDATED
Oil Well Services, LLC

TICKET NUMBER 33687
LOCATION Oakley
FOREMAN Rally Goba

PO Box 884, Chanute, KS 66720
620-431-9210 or 800-467-8676

FIELD TICKET & TREATMENT REPORT
CEMENT

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
10-30-11	2157	Spring 1-32	32	2	23	Norton
CUSTOMER Crawford Oil 695			TRUCK #	DRIVER	TRUCK #	DRIVER
MAILING ADDRESS			399	Calvin H		
CITY			566	Calvin D		
STATE						
ZIP CODE						

JOB TYPE PTA HOLE SIZE 7 1/4 HOLE DEPTH 3639 CASING SIZE & WEIGHT _____
 CASING DEPTH _____ DRILL PIPE _____ TUBING _____ OTHER _____
 SLURRY WEIGHT _____ SLURRY VOL _____ WATER gal/wk _____ CEMENT LEFT in CASING _____
 DISPLACEMENT _____ DISPLACEMENT PSI _____ MIX PSI _____ RATE _____

REMARKS: safety meeting, Rigged up on Wx drilling rig # 10,
mixed cement plugs and displaced down, Rigged down to left
location.

25 SKS @ 3450
25 SKS @ 1930
10 SKS @ 1250
40 SKS @ 270
10 SKS @ 40
30 SKS RH

Thank You
Rally Goba

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
5405N	1	PUMP CHARGE	1250 ⁰⁰	1250 ⁰⁰
54106	65 mi.	MILEAGE	5 ⁰⁰	325 ⁰⁰
5407A	9.89	Ton mileage delivery	105 ⁰⁰	1015 ⁰⁰
11045	230 SKS	160 140 Puz	14 ³⁰	3300 ⁰⁰
1118B	791 #	Bentonite	24	189 ⁰⁰
1107	57 1/2 #	F10-seal	2 ⁰⁰	115 ⁰⁰
				6271 ⁰⁰
		Field Studies		623 ⁰⁰
				5640 ⁰⁰
		SALES TAX		
		ESTIMATED		
		TOTAL		

Form 2737

AUTHORIZATION [Signature] TITLE _____ DATE 10-30-11

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form.

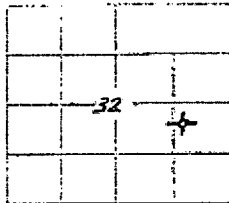
STANDARD INDUSTRIAL OIL COMPANY
DRILLING TIME AND SAMPLE LOG

COMPANY CRAWFORD OIL & GAS CO., LLC
 LEASE SPRIGG 1-32
 FIELD _____
 LOCATION 2265' FSL + 1168' FEL
 SEC 32 TWP 2 50. RGE 23W.
 COUNTY NORTON STATE KS
 CONTRACTOR W.W. DRILLING, RIG #6
 SPUD 10/25/11 COMP 10/30/11
 RTO 3639 LTD NONE
 MUD UP CHEMICAL TYPE MUD _____

ELEVATIONS
 MS 2352
 DF _____
 GL 2347
 Measurements Are All
 From KB
 CASING
 SURFACE 8 7/8" @ 219'
 PRODUCTION NONE
 ELECTRICAL SURVEYS
NONE

SAMPLES SAVED FROM 3100 TO TD
 DRILLING TIME KEPT FROM 3000 TO TD
 SAMPLES EXAMINED FROM 3100 TO TD
 GEOLOGICAL SUPERVISION FROM 3250 TO TD
 GEOLOGIST ON WELL LARRY P. FRIEND

FORMATION TOPS	LOG	SAMPLES
STONE CORRAL		1920 (+432)
BASE S.C.		1951 (+400)
HEBNER		3359 (-1007)
LANSING		3403 (-1051)
S.K.C.		3579 (-1227)
ARBUEKLE		3613 (-1261)
GRANITE		3635 (-1283)



REMARKS DUE TO POOR ZONE DEVELOPMENT IN THE LKS AND NEGATIVE DST RESULTS IT WAS DECIDED TO PLUG AND ABANDON THIS WELL

Larry P. Friend

LEGEND

- Zone 1
- Zone 2
- Zone 3
- Zone 4
- Zone 5
- Zone 6
- Zone 7
- Zone 8
- Zone 9
- Zone 10
- Zone 11
- Zone 12
- Zone 13
- Zone 14
- Zone 15
- Zone 16
- Zone 17
- Zone 18
- Zone 19
- Zone 20
- Zone 21
- Zone 22
- Zone 23
- Zone 24
- Zone 25
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- Zone 91
- Zone 92
- Zone 93
- Zone 94
- Zone 95
- Zone 96
- Zone 97
- Zone 98
- Zone 99
- Zone 100

SCALE 1" = 100'

DEPTH	DRILLING TIME IN MINUTES PER FOOT	REMARKS
1900		
1920 (+432)		STONE CORRAL
1951 (+400)		
3359 (-1007)		
3403 (-1051)		
3579 (-1227)		
3613 (-1261)		
3635 (-1283)		
		7:00 AM DEPTHS:
		10/25: 5 PM
		10/26: 1000'
		10/27: 2774'
		10/28: 3450'
		10/29: 3560'
		10/30: 3639' - RELEASED
		RIG @ 9:15 AM

1.700
1950
3000
3050
3100
3150

STONE CORRAL
1920 (4432)

BASE
1951 (4401)

7:00 AM DEPTHS:
10/25: 5040
10/26: 1000'
10/27: 2774'
10/28: 3450'
10/29: 3560'
10/30: 3639' - RELEASED
RIG @ 9:15 PM.

DEV. SURVEYS:
1/4° @ 220'
1/4° @ 3450'

20: LS GRAY-TAN, FINE, SOME DL, GLAUCONITIC, PR. FR. XLN. P. NS.

40: SOME LS. TAN, GLAUCON. W/ FR. PASS. CRT. - V. BR. P. NS.

60: LS BRN, V. FINE, SILT. PASS. DSE, FR. CHERT, TAN, NS.

80: LS BRN, FINE, SOME SILTY, FR. P. NS.

100: MOSTLY LS. BRN, V. FINE, DSE, NS.

3200

3250

3300

3350

3400

HEEDNER SH.
3359 (-1067)

LANSING
3403 (-1051)

100: MOSTLY LS. BRN, VEXUL,
DSE, NS.

70: LS. TAN-BRN V.F. FILN
SILTY DSE; SA. INT. LS.
GRN, RED; NS.

40: MAROON SHALE + SA.
FINT. LOW SILTSTN.

60: LS. TAN CHERTY HARD
AND GRN CHALKY LS.; NS.

70: B. BRN FILN APPEARS
SILTY DSE; SA. INT. LS.
TAN, V. FOSS.; INT. GR. INTER-
FOS. P.; NS.

80: TH. LS. TAN, V. FOSS. W/FR
XLN - PPT. P.; NS.

90: LS. TAN FILN, SIL. FOSS.,
FR. XLN. P.; NS.

SHALE BLK. CARB. AND LS.
GRY, SILTY.

LS. BRN, V. FOSS. PR. FR. XLN
SHALE, V. COLORED, SIL.
SILTY; NS.

70: LS. TAN FILN, V. FOSS. =
MICRO-OLITIC. W/FR. GR. XLN.
P.; NS.

LS. TAN-BRN, SIL. FOSS. TO
MICRO-OLITIC. W/FR. XLN. IN
SOME SHALE, MAROON, BRN,
NS.

LS. GRN-TAN FILN, FOSS. =
MICRO-OLITIC. W/FR. TR. GR.
XLN - INTER-OLITIC. P.; NS.

LS. TAN-BRN FILN, SIL. FOSS.
FR. V. INT. TR. SOME SIL.
CHALKY; NS.

SHALE, BLK, CARB.
LS. GRN-BRN, FILN W/FR.
NS. P.; NS.

SOFT GRN LAY SHALE +
GRY LAY SILTSTN.

LS. GRN, OLITIC. SIL. CHALKY,
W/FR. INT. GR. - PPT. P.
TR. FR. SFTY BRN. STN. USSED,
NO. ADOK.

LS. TAN-BRN V.F. FILN, SIL. FOSS.
DSE. FR. LS. V. DOG. SIL. CHALKY
W/FR. INT. GR. P. SFTY BRN
STN. USSED + G.; NO. ADOK.

SHALE GRY GRN MAROON-TR.
GRY BRN. INT. GR. TAN LAY.
SILTSTN.

LS. TAN V. GRN. PR. V. STILL CP.

DST #1
3413-3450
TIMES: 30-30-30-30
IF: NO BLOW
FF: NO BLOW FLUSHED TOOL
NO HELP.
REC: 5' D.M. NS.
IFP: 20-29 #

3400
3450
3500
3550
3600

LANISING

3403 (-1051)

D

H

K

BKC

3579 (-1227)

ARBUCKLE

3613 (-1261)

GRANITE

3635 (-1283)

RTD 3639 (-1287)

NO LOG



NO ADDK.

LS TAN-BRN V. FINE, SLI, FINE, DSE, LS V. DO, SLI, CALKY, M. Y. INTER. DO, SPT, STA, VSSFO + G., NO ADDK.

SHALE, GRAY, MAROON, TR. GRAY, SILTY, SST. TAN, LAY. SILTSTN.

LS TAN, V. DO, PR. D. STILL, CP, P. DO, LS, AS, M. Y. PR. P. X. VSSFO + G.

TR. LT. GRAY, V. DO, W. INTER. DO, RESIDUE, VSSG, NO ADDK.

LS TAN, V. DO, PR. D. STILL, CP, P. DO, LS, AS, M. Y. PR. P. X. VSSFO + G.

SHALE, MAROON, GRAY.

TR. LS, TAN, V. DO, FINE, SOME, V. DO, M. Y. PR. P. X. VSSFO + G.

CHERT, BRN, SHARP, LS, BRN, V. FINE, DSE, NO.

TR. LT. GRAY, STICKY, CLAY, TR. LS, TAN, V. DO, FINE, SOME, V. DO, M. Y. PR. P. X. VSSFO + G.

TR. LS, TAN, V. DO, FINE, SOME, V. DO, M. Y. PR. P. X. VSSFO + G.

LS, BRN, V. DO, DSE, TR. SOME, SILTY, CALKY, NS.

SHALE, MAROON, GRAY, STICKY.

FLOOD, LS, TAN, V. DO, FINE, SOME, V. DO, M. Y. PR. P. X. VSSFO + G.

LS, GRAY, TAN, V. DO, FINE, SOME, V. DO, M. Y. PR. P. X. VSSFO + G.

LS, TAN, V. DO, FINE, SOME, V. DO, M. Y. PR. P. X. VSSFO + G.

SHALE, MAROON, GRAY, TR. COAL, BRN, SILTY, SILTSTN.

LS, V. DO, W. FINE, M. Y. PR. P. X. VSSFO + G.

MAROON, SAND, GRAY, SILTY, SILTSTN.

AS, BRN.

B-21: TAN, DO, SST, M. Y. PR. P. X. VSSFO + G.

SOFT, CRAY, LT. GRAY, SILTY, CLAY, TR. LT. GRAY, DO, SST, SILTY, CALKY, TR. M. Y. PR. P. X. VSSFO + G.

TAN, LT. GRAY, GLAUCONITIC, SILTY, CALKY, TR. M. Y. PR. P. X. VSSFO + G.

RED, GRANITE, TITE, NS.

DST #1
3413-3450
TIMES: 30-30-30-30
IF: NO BLOW
FF: NO BLOW FLUSHED TOOL
NO HELP.
REC: 5' DM NS.
IFP: 20-29 #
FFP: 24-29 #
SIP: 224-182 #
TEMP: 87° (?)

PIPE STRAP @ 3450:
2.20' SHORT TO BOARD.

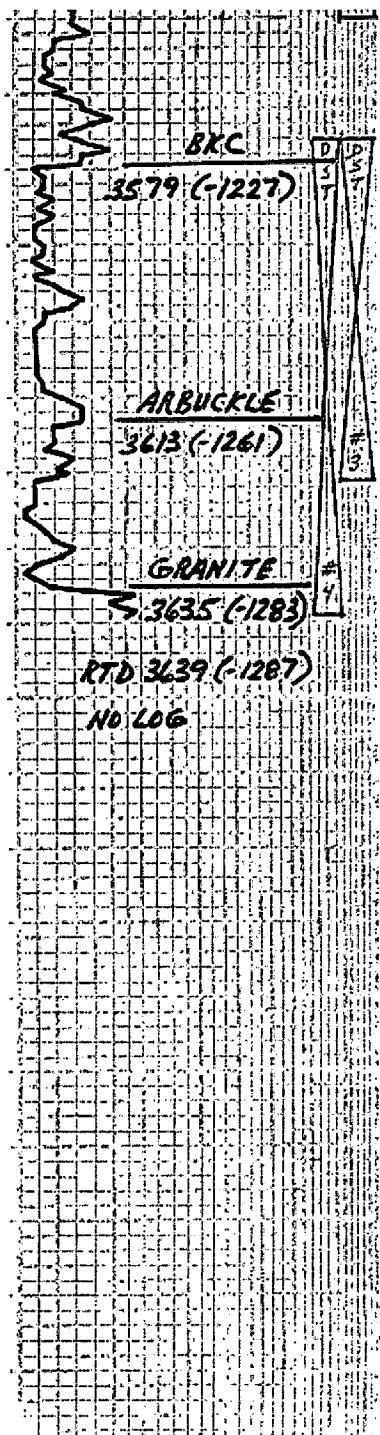
MUD @ 3450:
VIS: 49
WT: 9.0
FRT: 4.8
CHLOR: 1400
LCM: 1 #
PH: 10.5
VP: 20

DST #2
3486-3560
TIMES: 30-45-45-60
IF: BLOW BUILT 1/8" TO 3/4"
FF: NO BLOW, FLUSHED
TOOL @ 20" - REC. SURFACE
BLOW THAT REMAINED.
REC: 10' D/LG. MUD W/
SPOTS OIL IN TOOL.
IFP: 20-23 #
FFP: 24-31 #
SIP: 509-575 #
TEMP: 89°

DST #3
3576-3621
TIMES: 30-45-30-45
IF: SURF. BLOW BUILT TO 1/8"
FF: NO BLOW FLUSHED TOOL,
NO HELP.
REC: 10' OCM (10% OIL).
IFP: 22-26 #
FFP: 26-33 #
SIP: 199-162 #
TEMP: 89° F.

DST #4
3576-3639
TIMES: 30-45-30-60
IF: BLOW OFF BTM 5 1/2"
FF: BLOW OFF BTM 10"
NO RETURN BLOW.
NO. OF 'TAN FLUID:

3600



SHALE, MAROON, GRAY, TR. COAL, BRN. SIL. LAM. SILTSTN.

LS. V. CO. W/ FINE MD. GELITES PR. FA. XLM. SOME MAROON SHALE STAINING; TR. LS. AS ABV. R/OIL. SHALE.

MAROON SHALE, GRAY, SILTY SH, TR. ORG. CONTENT.

AS ABV.

18-21: TAN DOL. SST. W/ FINE SD. GELS IN MD. XLM. DOL. TO SIL. SDY. OR. NON-SDY. DOL. MD. CSE. XLM. W/ TR. LITE. PR. XLM. V. CO. MD. BTR. W/ V. GLAUCONITE + SIL. FINE. TR. GLAUC. FILL IN. STR. RE. FINE SPACE. PR. PR. IN. SP. OIL. STR. ASSOC. W/ FINE. TR. FINE. FINE. BLEEDING. SSG. GOOD. ADM.

21-26: SOFT. GR. LT. GR. SILTY. CLAY. FINE. LT. GR. DOL. SST. SIL. CLAY. TITE. W/ SFG. + SPT. STN. ALSO. SOME. GLAUCONITE. DOL. SST. TR. SDY. DOL. AS ABV. W/ PR. TR. MD. + FINE. FINE. BTR. CSE. MD. RITE. CO. BTR.

26-35: TAN. LT. GR. GLAUCONITE. SIL. FINE. DOL. SST. TR. SIL. SDY. DOL. IN. MD. GR. B. SD. + FINE. CSE. XLM. DOL. PR. FINE. PR. XLM. + INTER. GR. + SCAT. BLK. FINE. OIL. STN. S-FINE. SIL. FINE. DOL. ALSO. TAN. PINK. GRANITE. SOME. W/ SCAT. OIL. NEED. OIL. STN. S-FINE. FINE. FINE. CUT. - TAN. AMT. CSE. LOOSE. BTR. BTR.

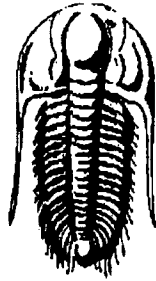
35-39: RED. GRANITE. TITE. NS.

3576 - 3621
 TIMES: 30-45-30-45
 IF: SURF. BLOW BUILT TO 18"
 FF: NO BLOW FLUSHED TOOL,
 NO HELP.
 REC: 10' OCM (10% OIL).
 IFF: 22-26 #
 FFP: 26-33 #
 SIP: 199-162 #
 TEMP: 89° F.

DST #4
 3576 - 3639
 TIMES: 30-45-30-60
 IF: BLOW OFF BTM 5 1/2"
 FF: BLOW OFF BTM 10"
 NO RETURN BLOW.
 REC: 850' TOTAL FLUID:
 40' WCM (40% W)
 350' MW (70% W)
 455' MW (90% W)
 5' HVY. MUD, NS.
 CHLOR: 13,000 PPM
 SYSTEM: 1,300 PPM
 RW: 59 @ 60° F.
 IFF: 43-211 #
 FFP: 218-334 #
 SIP: 778-772 #
 TEMP: 92° F.

MUD @ 3639':
 VIS: 55
 WT: 9.3
 FLT: 6.4
 CHLOR: 1,900
 LCM: 3 #
 PH: 9.5
 YP: 23

DEPTH	DRILLING TIME (minutes/foot)	SAMPLE DESCRIPTIONS	REMARKS
	Rate of Penetration (inches/minute)		
COMPANY <u>CRAWFORD OIL & GAS CO., LLC</u> LEASE <u>SPRING 1-32</u> ELEVATION: <u>2352 KB</u> LOCATION <u>2265 FSL 1168 FEL SEC 32 T1P 250. N10. 23W</u> COUNTY <u>NORTON</u> STATE <u>KS</u>			



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Prepared For: **Crawford Oil & Gas Co. LLC**

PO Box 1366
El Dorado, KS 67042

ATTN: Larry Friend

Sprigg #1-32

32-2s-23w Norton,KS

Start Date: 2011.10.28 @ 12:17:00

End Date: 2011.10.28 @ 17:37:15

Job Ticket #: 43726 DST #: 1

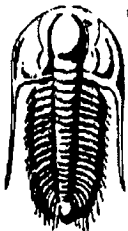
Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.03.20 @ 16:12:53

Crawford Oil & Gas Co. LLC 32-2s-23w Norton,KS Sprigg #1-32 DST # 1 LKC "D" 2011.10.28



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Crawford Oil & Gas Co. LLC

32-2s-23w Norton, KS

PO Box 1366
El Dorado, KS 67042

Sprigg #1-32

Job Ticket: 43726

DST#: 1

ATTN: Larry Friend

Test Start: 2011.10.28 @ 12:17:00

GENERAL INFORMATION:

Formation: **LKC "D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:11:00

Time Test Ended: 17:37:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 43

Interval: **3413.00 ft (KB) To 3450.00 ft (KB) (TVD)**

Total Depth: 3450.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2352.00 ft (KB)

2347.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 6799

Inside

Press@RunDepth: 29.50 psig @ 3414.00 ft (KB)

Start Date: 2011.10.28

End Date:

2011.10.28

Start Time: 12:17:05

End Time:

17:37:14

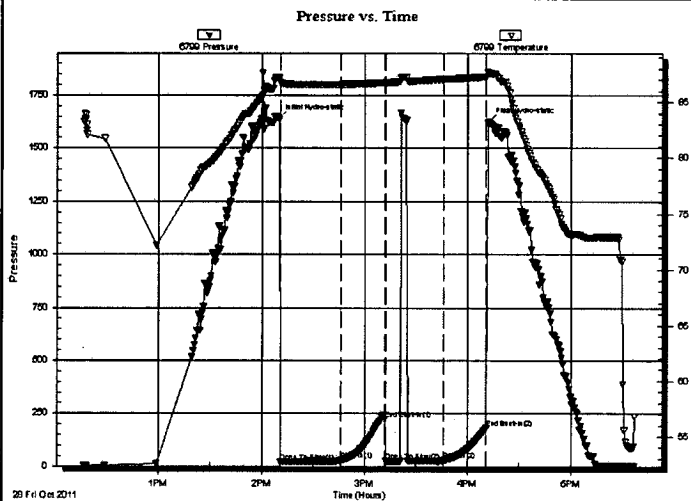
Capacity: 8000.00 psig

Last Calib.: 2011.10.28

Time On Btm: 2011.10.28 @ 14:09:30

Time Off Btm: 2011.10.28 @ 16:12:30

TEST COMMENT: IF- No Blow
IS- No Return
FF- No Blow . Flushed tool at 10 min. No Blow .
FS- No Return



PRESSURE SUMMARY

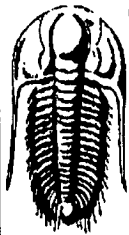
Time (Mn.)	Pressure (psig)	Temp (deg F)	Annotation
0	1640.18	87.19	Initial Hydro-static
2	20.85	86.78	Open To Flow (1)
37	29.83	86.61	Shut-In(1)
63	224.43	86.76	End Shut-In(1)
63	24.66	86.77	Open To Flow (2)
97	29.50	87.08	Shut-In(2)
122	182.51	87.30	End Shut-In(2)
123	1623.81	87.67	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud 100M	0.02

Gas Rates

Choke (Inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Crawford Oil & Gas Co. LLC

32-2s-23w Norton, KS

PO Box 1366
El Dorado, KS 67042

Sprigg #1-32

Job Ticket: 43726

DST#: 1

ATTN: Larry Friend

Test Start: 2011.10.28 @ 12:17:00

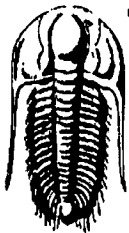
Tool Information

Drill Pipe:	Length: 3273.00 ft	Diameter: 3.80 inches	Volume: 45.91 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 58000.00 lb
		Total Volume: 46.51 bbl		Tool Chased ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3413.00 ft			Final 38000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	37.00 ft			
Tool Length:	66.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3385.00	
Shut In Tool	5.00			3390.00	
Hydraulic tool	5.00			3395.00	
Jars	5.00			3400.00	
Safety Joint	3.00			3403.00	
Packer	5.00			3408.00	29.00 Bottom Of Top Packer
Packer	5.00			3413.00	
Stubb	1.00			3414.00	
Recorder	0.00	8648	Inside	3414.00	
Recorder	0.00	6799	Inside	3414.00	
Perforations	31.00			3445.00	
Bullnose	5.00			3450.00	37.00 Bottom Packers & Anchor

Total Tool Length: 66.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Crawford Oil & Gas Co. LLC

32-2s-23w Norton,KS

PO Box 1366
El Dorado, KS 67042

Sprigg #1-32

Job Ticket: 43726

DST#: 1

ATTN: Larry Friend

Test Start: 2011.10.28 @ 12:17:00

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 49.00 sec/qt	Cushion Volume: bbl		
Water Loss: 4.79 in ³	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 1400.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud 100M	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

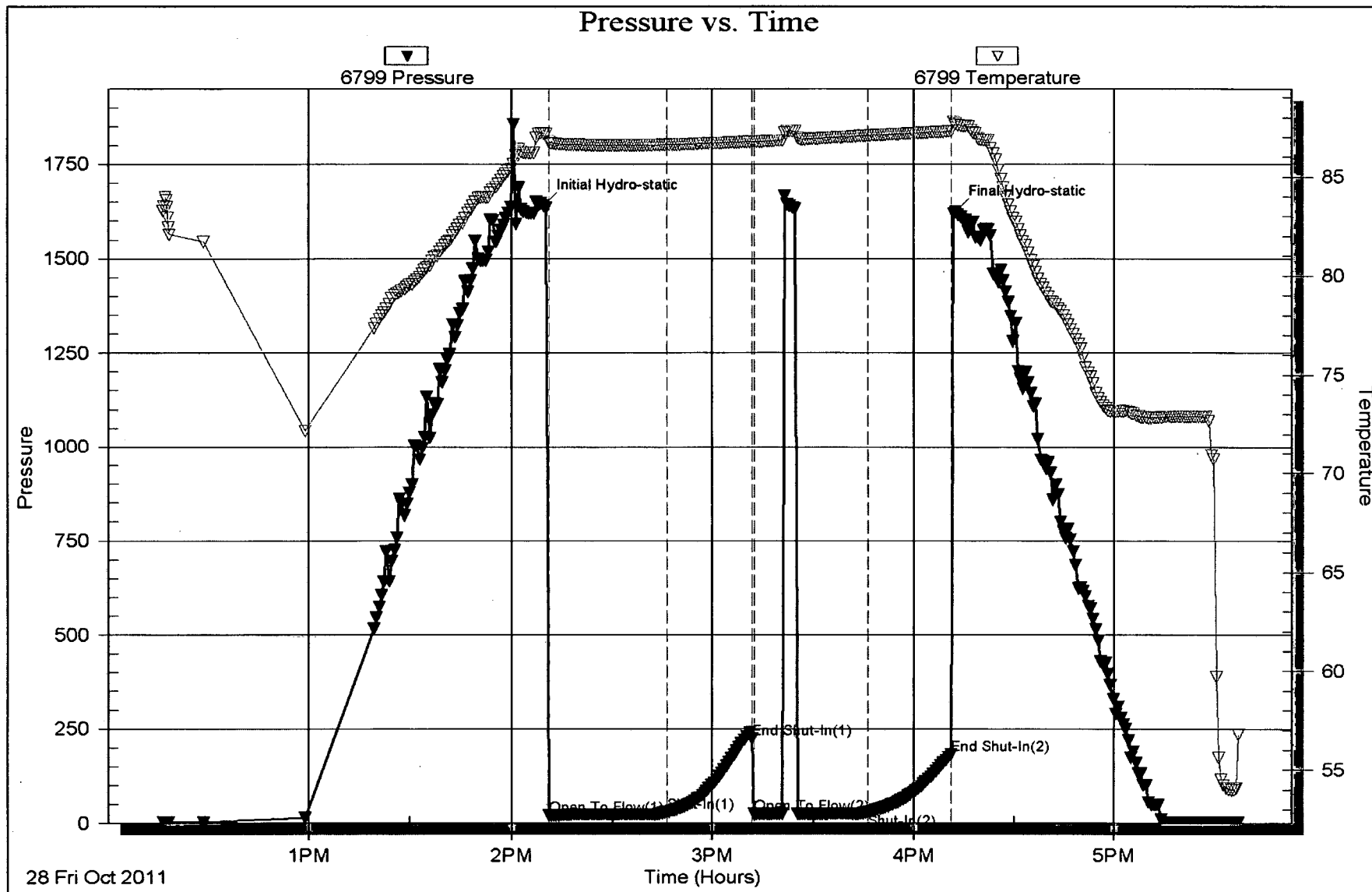
Num Gas Bombs: 0

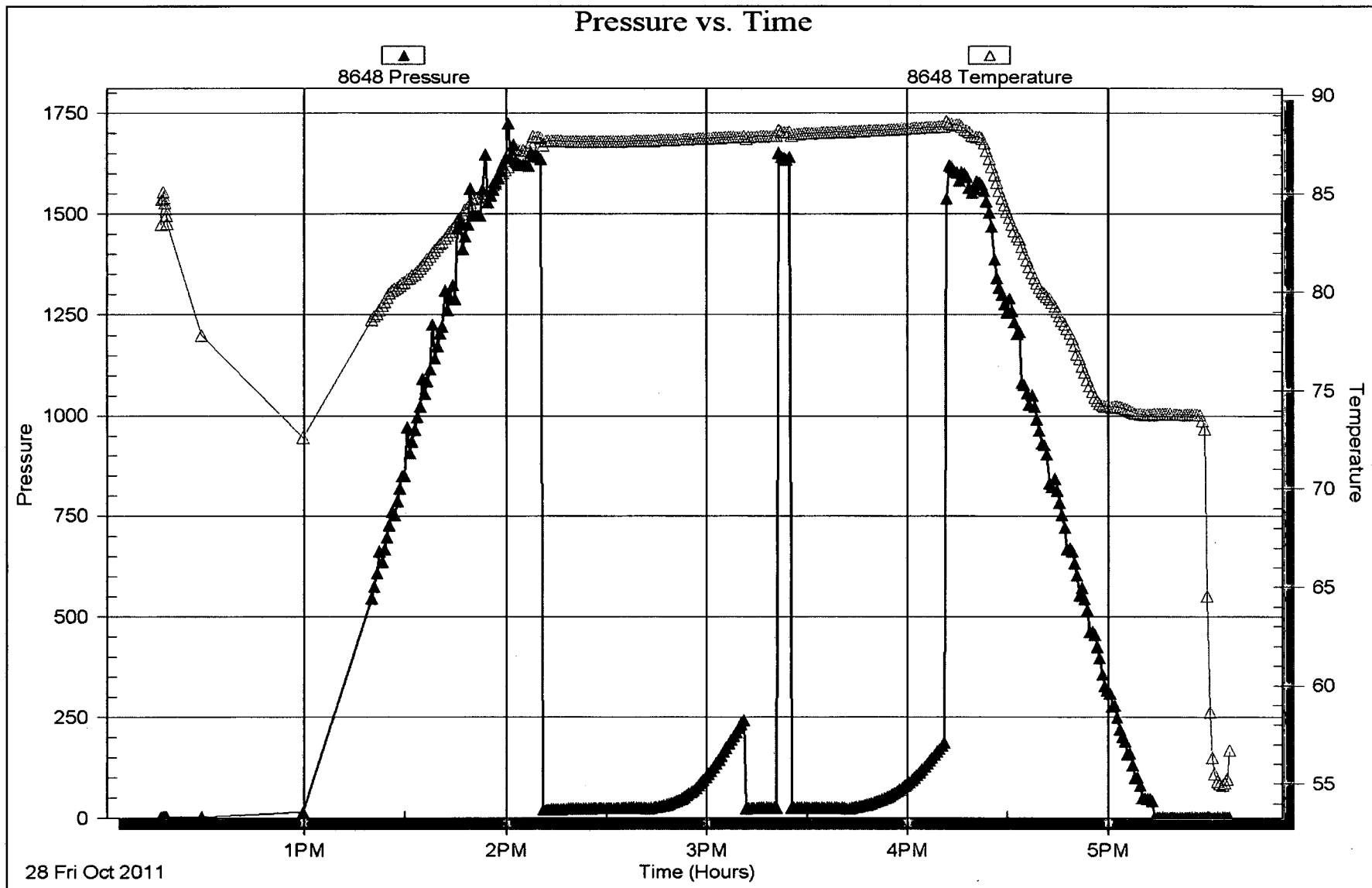
Serial #:

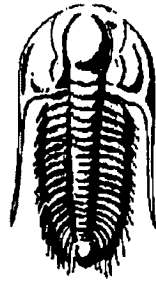
Laboratory Name:

Laboratory Location:

Recovery Comments:







**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Prepared For: **Crawford Oil & Gas Co. LLC**

PO Box 1366
El Dorado, KS 67042

ATTN: Larry Friend

Sprigg #1-32

32-2s-23w Norton,KS

Start Date: 2011.10.29 @ 02:33:00

End Date: 2011.10.29 @ 08:47:45

Job Ticket #: 43727 DST #: 2

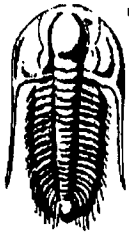
Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.03.20 @ 16:11:57

Crawford Oil & Gas Co. LLC 32-2s-23w Norton,KS Sprigg #1-32 DST # 2 LKC "H.K." 2011.10.29



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Crawford Oil & Gas Co. LLC

32-2s-23w Norton, KS

PO Box 1366
El Dorado, KS 67042

Sprigg #1-32

Job Ticket: 43727

DST#: 2

ATTN: Larry Friend

Test Start: 2011.10.29 @ 02:33:00

GENERAL INFORMATION:

Formation: **LKC "H-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:19:30

Time Test Ended: 08:47:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 43

Interval: **3486.00 ft (KB) To 3560.00 ft (KB) (TVD)**

Total Depth: 3560.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2352.00 ft (KB)

2347.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 6799

Inside

Press@RunDepth: 31.75 psig @ 3487.00 ft (KB)

Start Date: 2011.10.29

End Date:

2011.10.29

Start Time: 02:33:05

End Time:

08:47:44

Capacity: 8000.00 psig

Last Calib.: 2011.10.29

Time On Btm: 2011.10.29 @ 04:18:45

Time Off Btm: 2011.10.29 @ 07:21:00

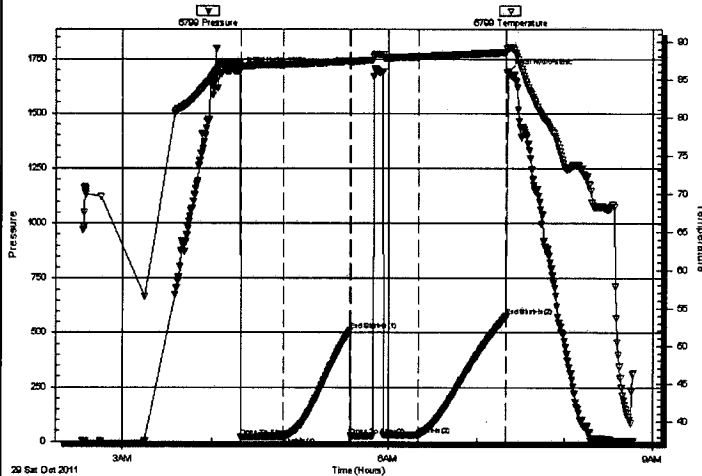
TEST COMMENT: IF- 1/8" Blow built to 3/4"

IS- No Return

FF- No Blow. Flushed tool at 20 min. Surface blow did not build or die

FS- No Return

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1694.91	87.14	Initial Hydro-static
1	20.74	86.79	Open To Flow (1)
30	23.43	86.96	Shut-In(1)
75	509.81	87.42	End Shut-In(1)
76	24.84	87.37	Open To Flow (2)
122	31.75	87.99	Shut-In(2)
182	575.97	88.56	End Shut-In(2)
183	1685.59	89.09	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	Show of oil spots in tool	0.00
10.00	Mud 100M	0.05

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Crawford Oil & Gas Co. LLC

32-2s-23w Norton, KS

PO Box 1366
El Dorado, KS 67042

Sprigg #1-32

Job Ticket: 43727

DST#: 2

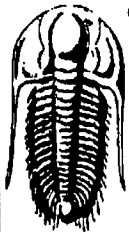
ATTN: Larry Friend

Test Start: 2011.10.29 @ 02:33:00

Tool Information

Drill Pipe:	Length: 3371.00 ft	Diameter: 3.80 inches	Volume: 47.29 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 43000.00 lb
			<u>Total Volume: 47.89 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3486.00 ft			Final 38000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	74.00 ft			
Tool Length:	98.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3463.00	
Shut In Tool	5.00			3468.00	
Hydraulic tool	5.00			3473.00	
Safety Joint	3.00			3476.00	
Packer	5.00			3481.00	24.00 Bottom Of Top Packer
Packer	5.00			3486.00	
Stubb	1.00			3487.00	
Recorder	0.00	8648	Inside	3487.00	
Recorder	0.00	6799	Inside	3487.00	
Perforations	35.00			3522.00	
Drill Pipe	31.00			3553.00	
Perforations	2.00			3555.00	
Bullnose	5.00			3560.00	74.00 Bottom Packers & Anchor
Total Tool Length:		98.00			



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Crawford Oil & Gas Co. LLC

32-2s-23w Norton,KS

PO Box 1366
El Dorado, KS 67042

Sprigg #1-32

Job Ticket: 43727

DST#: 2

ATTN: Larry Friend

Test Start: 2011.10.29 @ 02:33:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbl

Water Loss: 4.79 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1400.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	Show of oil spots in tool	0.000
10.00	Mud 100M	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

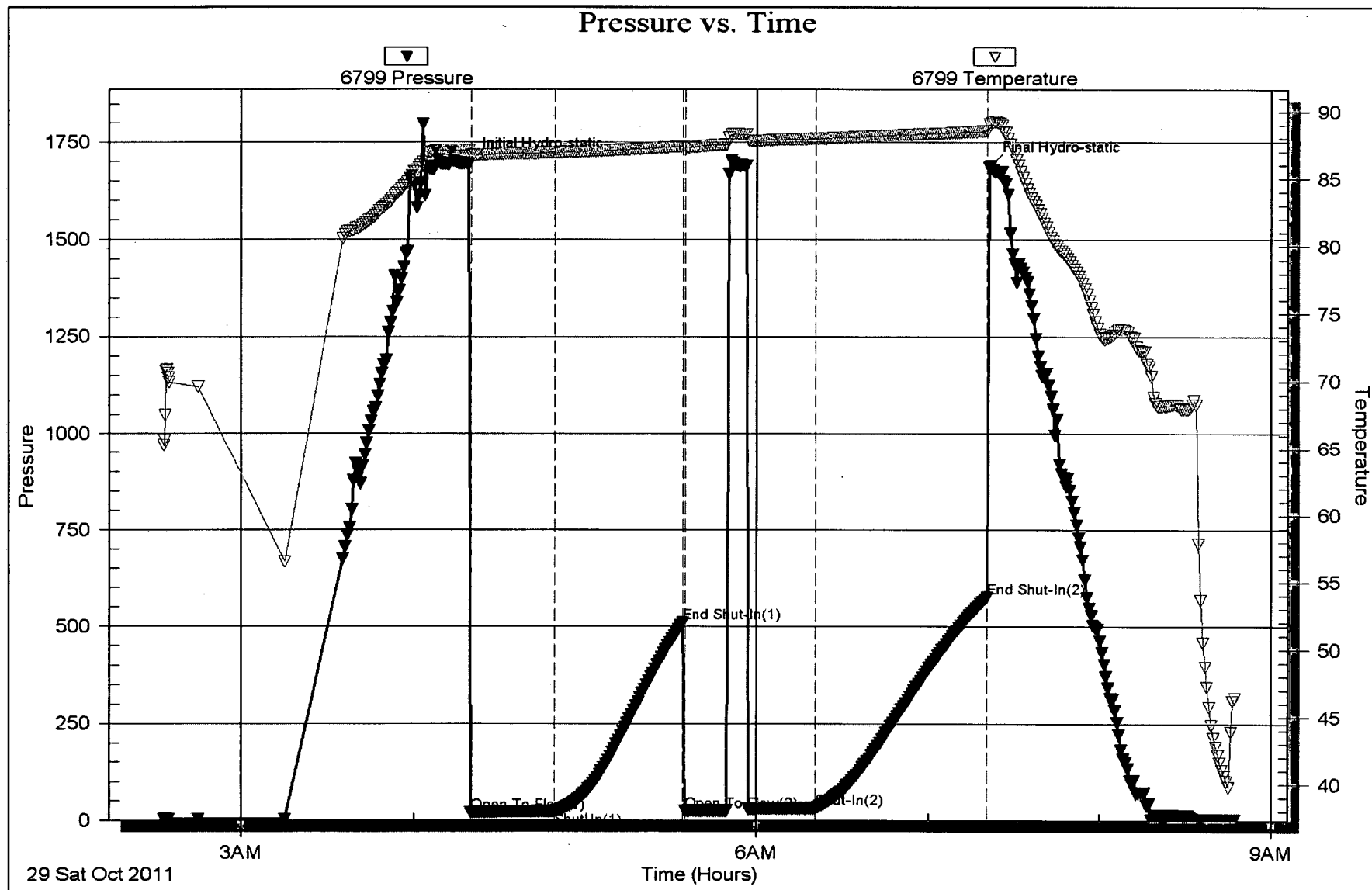
Num Gas Bombs: 0

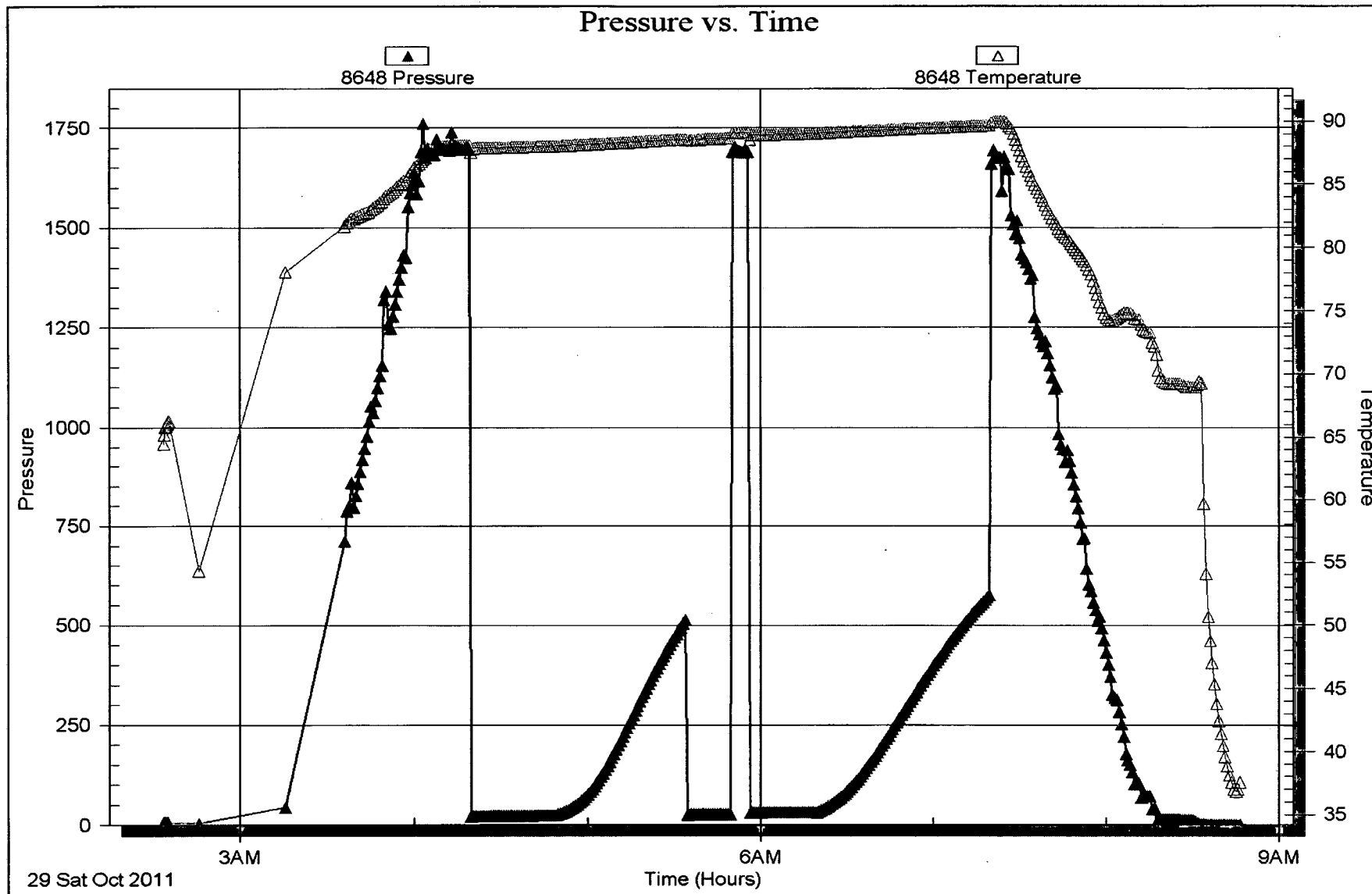
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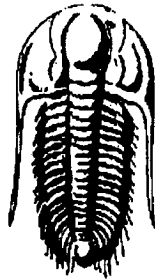
Laboratory Name:

Laboratory Location:

Recovery Comments:







**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Prepared For: **Crawford Oil & Gas Co. LLC**

PO Box 1366
El Dorado, KS 67042

ATTN: Larry Friend

Sprigg #1-32

32-2s-23w Norton,KS

Start Date: 2011.10.29 @ 15:57:00

End Date: 2011.10.29 @ 22:18:30

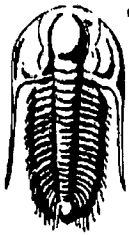
Job Ticket #: 43728 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.03.20 @ 16:11:04



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Crawford Oil & Gas Co. LLC

32-2s-23w Norton, KS

PO Box 1366
El Dorado, KS 67042

Sprigg #1-32

Job Ticket: 43728

DST#: 3

ATTN: Larry Friend

Test Start: 2011.10.29 @ 15:57:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:08:15

Time Test Ended: 22:18:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 43

Interval: **3576.00 ft (KB) To 3621.00 ft (KB) (TVD)**

Total Depth: 3621.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2352.00 ft (KB)

2347.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 6799

Inside

Press@RunDepth: 33.36 psig @ 3577.00 ft (KB)

Start Date: 2011.10.29

End Date:

2011.10.29

Start Time: 15:57:05

End Time:

22:18:29

Capacity: 8000.00 psig

Last Calib.: 2011.10.29

Time On Btrn: 2011.10.29 @ 18:07:30

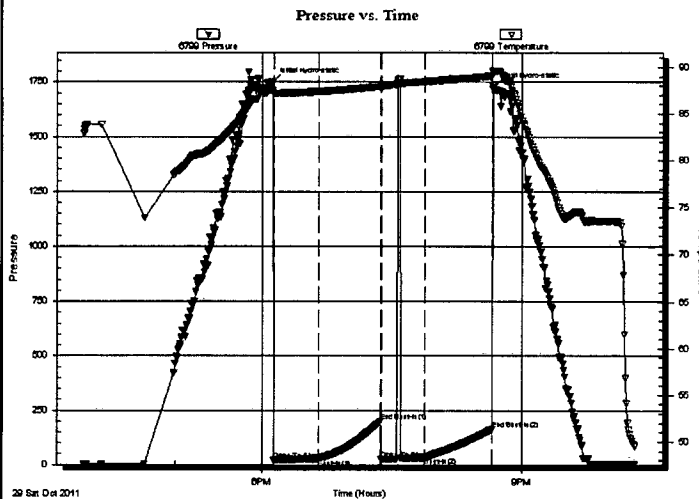
Time Off Btrn: 2011.10.29 @ 20:40:15

TEST COMMENT: IF- Surface blow built to 1/8"

IS- No Return

FF- No Blow . Flushed tool at 10 min. No Blow

FS- No Return



PRESSURE SUMMARY

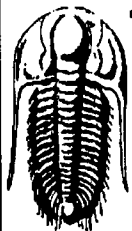
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1752.46	87.52	Initial Hydro-static
1	22.25	87.16	Open To Flow (1)
32	26.98	87.38	Shut-In(1)
75	199.45	87.94	End Shut-In(1)
75	26.54	87.94	Open To Flow (2)
105	33.36	88.45	Shut-In(2)
152	162.29	89.03	End Shut-In(2)
153	1729.14	89.57	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OCM 90M 10o	0.05
0.00	Show of free oil in tool	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Crawford Oil & Gas Co. LLC

32-2s-23w Norton, KS

PO Box 1366
El Dorado, KS 67042

Sprigg #1-32

Job Ticket: 43728

DST#: 3

ATTN: Larry Friend

Test Start: 2011.10.29 @ 15:57:00

Tool Information

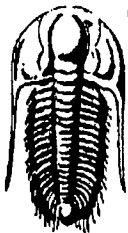
Drill Pipe:	Length: 3461.00 ft	Diameter: 3.80 inches	Volume: 48.55 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 58000.00 lb
			<u>Total Volume: 49.15 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 40000.00 lb
Depth to Top Packer:	3576.00 ft			Final 40000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	45.00 ft			
Tool Length:	69.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Change Over Sub	1.00			3553.00	
Shut In Tool	5.00			3558.00	
Hydraulic tool	5.00			3563.00	
Safety Joint	3.00			3566.00	
Packer	5.00			3571.00	24.00 Bottom Of Top Packer
Packer	5.00			3576.00	
Stubb	1.00			3577.00	
Recorder	0.00	8648	Inside	3577.00	
Recorder	0.00	6799	Inside	3577.00	
Perforations	39.00			3616.00	
Bullnose	5.00			3621.00	45.00 Bottom Packers & Anchor

Total Tool Length: 69.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Crawford Oil & Gas Co. LLC

32-2s-23w Norton,KS

PO Box 1366
El Dorado, KS 67042

Sprigg #1-32

Job Ticket: 43728

DST#: 3

ATTN: Larry Friend

Test Start: 2011.10.29 @ 15:57:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 4.79 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1300.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	OCM 90M 10o	0.049
0.00	Show of free oil in tool	0.000

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

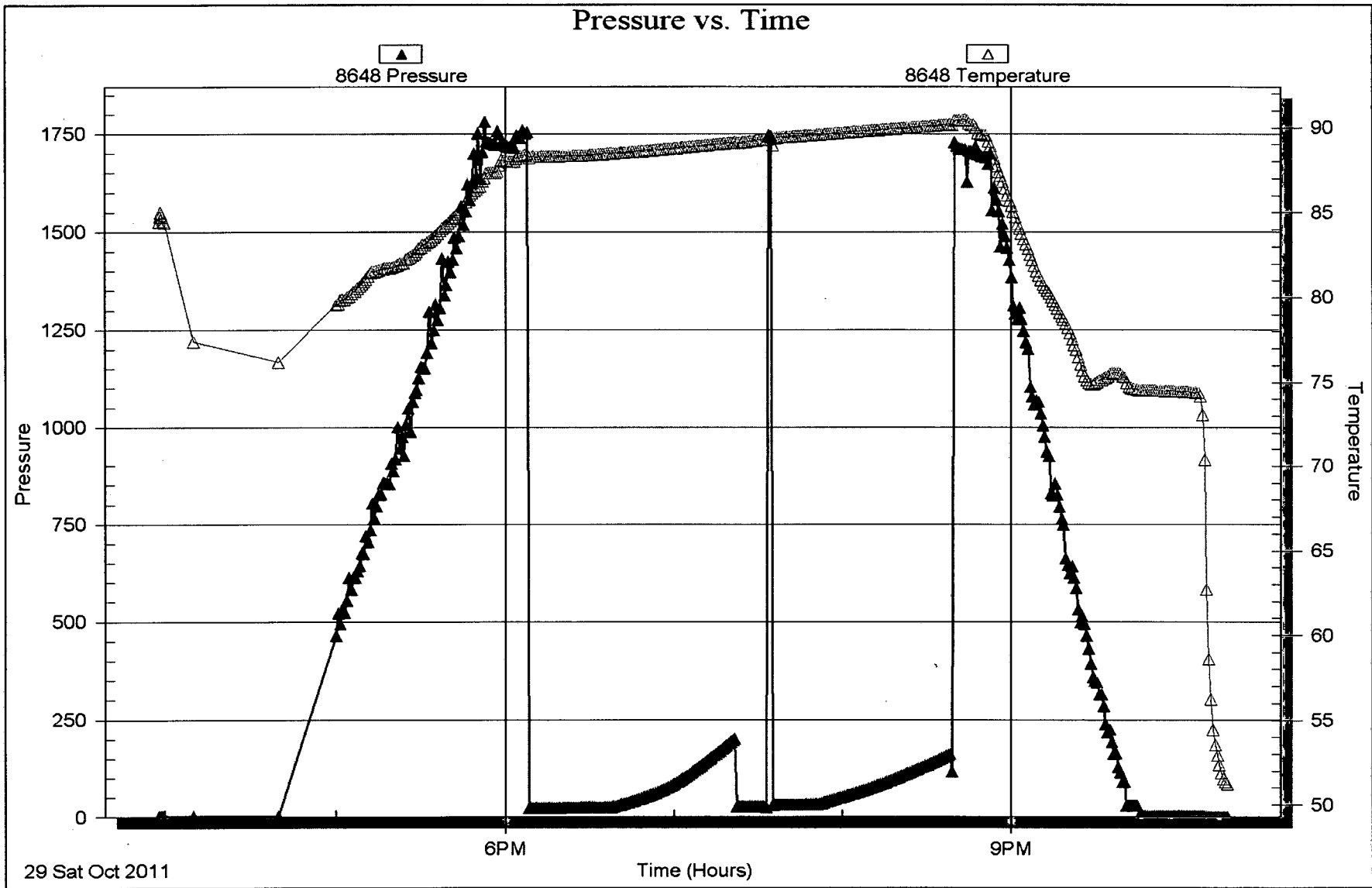
Num Gas Bombs: 0

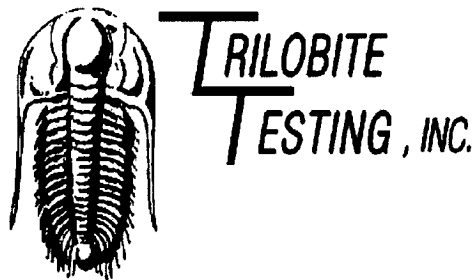
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





DRILL STEM TEST REPORT

Prepared For: **Crawford Oil & Gas Co. LLC**

PO Box 1366
El Dorado, KS 67042

ATTN: Larry Friend

Sprigg #1-32

32-2s-23w Norton,KS

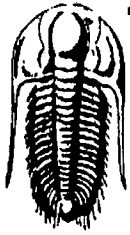
Start Date: 2011.10.30 @ 04:50:00

End Date: 2011.10.30 @ 11:35:15

Job Ticket #: 43729 DST #: 4

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.03.20 @ 16:09:10



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Crawford Oil & Gas Co. LLC

32-2s-23w Norton,KS

PO Box 1366
El Dorado, KS 67042

Sprigg #1-32

Job Ticket: 43729

DST#: 4

ATTN: Larry Friend

Test Start: 2011.10.30 @ 04:50:00

GENERAL INFORMATION:

Formation: **Arbuckle / Granite**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:06:30

Time Test Ended: 11:35:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 43

Interval: **3576.00 ft (KB) To 3639.00 ft (KB) (TVD)**

Total Depth: 3639.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2352.00 ft (KB)

2347.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 6799

Inside

Press@RunDepth: 334.86 psig @ 3577.00 ft (KB)

Start Date: 2011.10.30

End Date:

2011.10.30

Start Time: 04:50:05

End Time:

11:35:14

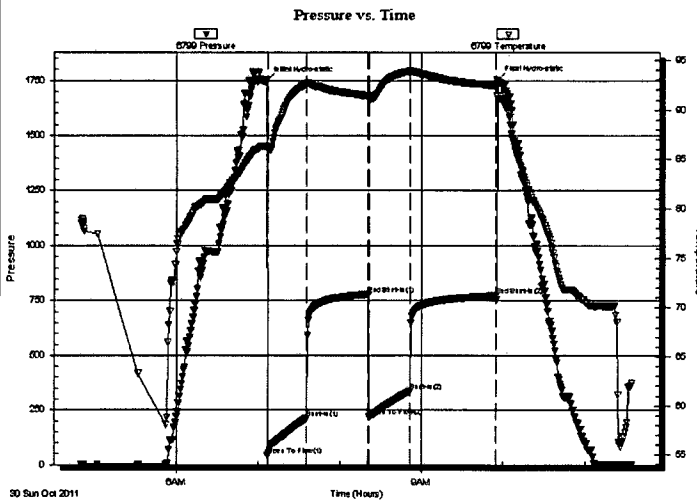
Capacity: 8000.00 psig

Last Calib.: 2011.10.30

Time On Btm: 2011.10.30 @ 07:05:45

Time Off Btm: 2011.10.30 @ 09:56:00

TEST COMMENT: IF- BoB in 5 1/2min.
IS- No Return
FF- BoB in 10 min.
FS- No Return



PRESSURE SUMMARY

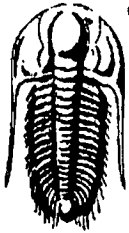
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1750.12	86.30	Initial Hydro-static
1	43.61	86.05	Open To Flow (1)
30	211.49	92.63	Shut-In(1)
75	778.09	91.41	End Shut-In(1)
76	218.67	91.27	Open To Flow (2)
106	334.86	93.85	Shut-In(2)
169	772.47	92.43	End Shut-In(2)
171	1753.17	91.39	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Heavy Mud	0.02
455.00	MW 10M90W	5.33
350.00	MW 30M70W	4.91
40.00	WM60M40W	0.56
0.00	Show of oil at first wet connection	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Crawford Oil & Gas Co. LLC

32-2s-23w Norton, KS

PO Box 1366
El Dorado, KS 67042

Sprigg #1-32

Job Ticket: 43729

DST#: 4

ATTN: Larry Friend

Test Start: 2011.10.30 @ 04:50:00

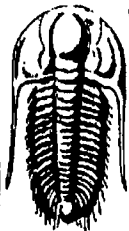
Tool Information

Drill Pipe:	Length: 3456.00 ft	Diameter: 3.80 inches	Volume: 48.48 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 57000.00 lb
		<u>Total Volume:</u>	49.08 bbl	Tool Chased ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3576.00 ft			Final 40000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	63.00 ft			
Tool Length:	87.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3553.00	
Shut In Tool	5.00			3558.00	
Hydraulic tool	5.00			3563.00	
Safety Joint	3.00			3566.00	
Packer	5.00			3571.00	24.00 Bottom Of Top Packer
Packer	5.00			3576.00	
Stubb	1.00			3577.00	
Recorder	0.00	8648	Inside	3577.00	
Recorder	0.00	6799	Inside	3577.00	
Perforations	26.00			3603.00	
Drill Pipe	31.00			3634.00	
Bullnose	5.00			3639.00	63.00 Bottom Packers & Anchor

Total Tool Length: 87.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Crawford Oil & Gas Co. LLC

32-2s-23w Norton, KS

PO Box 1366
El Dorado, KS 67042

Sprigg #1-32

Job Ticket: 43729

DST#: 4

ATTN: Larry Friend

Test Start: 2011.10.30 @ 04:50:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

13000 ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 4.79 in³

Gas Cushion Type:

Resistivity: 0.00 ohmm

Gas Cushion Pressure:

psig

Salinity: 1300.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
5.00	Heavy Mud	0.025
455.00	MW 10M90W	5.326
350.00	MW 30M70W	4.910
40.00	WM60M40W	0.561
0.00	Show of oil at first wet connection	0.000

Total Length: 850.00 ft Total Volume: 10.822 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .59@60deg=13000 ppm

