# ORIGINAL

# KANSAS CORPORATION COMMISSION OIL & GAS CONSERVATION DIVISION

Form ACO-1 October 2008 Form Must Be Typed

# WELL COMPLETION FORM WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License #	API No. 15 - 073-24109-00-00
Name: Three Rivers Exploration LLC	Spot Description:
Address 1: 538 Road 20	NE_SE_NW_SW Sec. 15 Twp. 23 S. R. 10 Fast West
Address 2:	Feet from North / South Line of Section
City: Olpe State: KS Zip: 66865 +	4184 Feet from 🕡 East / 🗌 West Line of Section
Contact Person: David Farthing	Footages Calculated from Nearest Outside Section Corner:
600 407 0716	□ne □nw ☑se □sw
Phone: ( 020 ) 437-2710 RECEIVED CONTRACTOR: License # 33217	County: Greenwood
Name: Three Rivers Exploration LLC FEB 2 5 2010	Lease Name: Waddell Well #: 1A
Wellsite Geologist: David B Griffin	Field Name: Seeley Wick
Purchaser: Sunoco KCC WICHITA	Producing Formation: Cattleman
Designate Type of Completion:	Elevation: Ground: 1315 Kelly Bushing: 1320
✓ New Well Re-Entry Workover	Total Depth: 2224 Plug Back Total Depth: 2224
✓ Oil SWD SIOW	Amount of Surface Pipe Set and Cemented at: 200 Feet
Gas ENHR SIGW	Multiple Stage Cementing Collar Used? Yes Vo
CM (Coal Bed Methane) Temp. Abd.	If yes, show depth set:Feet
Dry Other	If Alternate II completion, cement circulated from: NA
(Core, WSW, Expl., Cathodic, etc.)	feet depth to: w/sx cmt.
If Workover/Re-entry: Old Well Info as follows:  Operator: NA	- M. M. TAIN 11-70.16)
Well Name:	Drilling Fluid Management Plan (Data must be collected from the Reserve Ht)  (Data must be collected from the Reserve Ht)
Original Comp. Date: Original Total Depth:	Chloride content: 500 ppm Fluid volume: 200 bbls
Deepening Re-perf Conv. to Enhr Conv. to SWD	Dewatering method used: dehydration
Plug Back:Plug Back Total Depth	Location of fluid disposal if hauled offsite:
Commingled Docket No.:	·
Dual Completion	Operator Name: NA
Dual Completion	Lease Name: License No.:
1-18-09 1-22-09 2-5-09	Quarter Sec TwpS. R
Spud Date or Date Reached TD Completion Date or Recompletion Date  Recompletion Date	County: Docket No.:
INSTRUCTIONS: An original and two copies of this form shall be filed with Kansas 67202, within 120 days of the spud date, recompletion, workover or copies of side two of this form will be held confidential for a period of 12 months if requility in excess of 12 months). One copy of all wireline logs and geologist we BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 for	onversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information uested in writing and submitted with the form (see rule 82-3-107 for confiden-II report shall be attached with this form. ALL CEMENTING TICKETS MUST
All requirements of the statutes, rules and regulations premulgeted to regulate the are complete and correct to the best of my knowledge.	ne oil and gas industry have been fully complied with and the statements herein
Signature: A Kourd Toouty	KCC Office Use ONLY
Title: Operator Date:	Letter of Confidentiality Received
Subscribed and sworn to before me this 4th daylor Hopenhap	If Denied, Yes Date:
JANICE A.	ISCH   \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
My Appt. Expires D) - D	te of Kalisas
Notary Public: (fance a sin	UIC Distribution NOV 1 0 2009
Date Commission Expires: 01-09-13	0104 1 0 2008

#### Side Two

Operator Name: Thr	ee Rivers Explora	ion LLC	Lease I	Name: _\	Vaddell		Well #: _1A	
	23 S. R. 10		County	Gree	nwood			
time tool open and cl recovery, and flow ra	osed, flowing and shu	nd base of formations partin pressures, whether est, along with final chareport.	shut-in press	sure rea	ched static level,	hydrostatic pre	ssures, bottom	hole temperature, fluid
Drill Stem Tests Take		☐ Yes ☑ No			og Formatio	n (Top), Depth	and Datum	✓ Sample
Samples Sent to Geo	,	☐ Yes ☑ No		Nam Cher	ie okee Group		Top 1943	Datum -628
Cores Taken Electric Log Run (Submit Copy)		Yes No Yes No			ore LS Cattleman SS		2032 2114	-717 -799
List All E. Logs Run:				Total	Depth		2224	-909
gamma ray r	neutron							
		CASIN Report all strings se	G RECORD		ew Vused	ion, etc.		
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weig Lbs./	ght	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
surface casing	12 1/4	8 5/8	23		200	class A	105	3% calcium chloride; 2% gel
longstring	7 7/8	5 1/2	15.50		2195	thick set	100	500# kol-seal
		ADDITION	AL CENSENITIN	MG / SOI	JEEZE RECORD			
Purpose:	Depth	Type of Cement	#Sacks		LEZE KEGOKO		d Percent Additives	\$
Perforate Protect Casing Plug Back TD	Top Bottom							
Plug Off Zone								
Shots Per Foot		ON RECORD - Bridge Pli Footage of Each Interval P				cture, Shot, Cem	ent Squeeze Reco	rd Depth
2	2093 to 2103	oologe of Look miorial				RECEIV		
						FFR 25	R	ECEIVED
						FEB 25	ZUIU N(	OV 1.0 2009
					K	CC WICH	IIΤΛ	
					<u> </u>		KC	CWICHITA
TUBING RECORD: 2	Size:	Set At: 2090	Packer Al	l:	Liner Run:	Yes 🗸	No	
Date of First, Resumed 06/27/09	Production, SWD or En	hr. Producing Me	ethod:	Flowin	g 🗸 Pumpi	ng 🔲 Gas	Lift Oth	ner (Explain)
Estimated Production Per 24 Hours	Oil 5	Bbls. Gas	Mcf	Wat	er B	bls.	Gas-Oil Ratio	Gravity 39
				00.45			20021127	ON INTERVAL
DISPOSITI	ION OF GAS:  d	Open Hole	METHOD OF  ✓ Perf.		_	mmingled	PRODUCTI <b>VA</b>	ON INTERVAL:
	ubmit ACO-18.)	Other (Specify)				igicu		



grd 2-9-9

#### REMIT TO

Consolidated Oil Well Services, LLC Dept. 970 P.O. Box 4346 Houston, TX 77210-4346 Main Office P.O. Box 884 Chanute, KS 66720 620/431-9210 • 1-800/467-8676 FAX 620/431-0012

			1				
INVOICE						Invoice #	
		======================================					age 1
538 OLP	REE RIVERS ROAD 20 PE KS 668	S EXPLORAT	ION		WADDELL A-1 20763 01-20-09		
				======			
Part Num	nber		iption "A" CEMENT	(SALE)	105.00	Unit Price 12.7000	
1102					300.00		
1118A					200.00		
1107			EAL (25#)	•		1.9700	49.25
De	escription	า			Hours	Unit Price	Total
	N. BULK					296.00	
		P (SURFACE) MILEAGE (O			1.00 15.00	680.00 3.45	
							ECEIVED IV 1 0 2009
						KCC	WICHITA
====== Parts:		75 Freight		 .00 Tax:		55 AR	2758.05
Labor:		00 Misc:		.00 Total			
Sublt:	. 6	00 Supplie:	5:	.00 Chang	ge: . (	90	

BARTLESVILLE, OK 918/338-0808

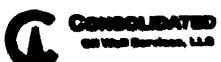
Signed\_

ELDORADO, KS 316/322-7022 EUREKA, Ks 620/583-7664 GILLETTE, WY 307/686-4914

McALESTER, OK 918/426-7667 Оттаwа, Ks 785/242-4044 THAYER, KS 620/839-5269

Date\_

WORLAND, WY 307/347-4577





LOCATION EUTCKA

FOREMAN RUSSELL MCC.

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

## FIELD TICKET & TREATMENT REPORT

	or 800-467-8676			CEMEN		701411101110	RANGE	COUNTY
DATE	CUSTOMER#		NAME & NUM	BER	SECTION	TOWNSHIP	KANGE	CALIGN 1 -
-20-09	1993	WADDE!	A-1	T				Control 1
INTOMED		8)			TRUCK#	DRIVER	TRUCK#	DRIVER
ALLING ADDR	Sinaris Ex	TIGINITION		CO. Tools	485	Alan		
	21			1.00.1	441	John		managed on the second
ITY	001)	STATE	ZIP CODE	1				and the state of t
DIPE		Ks	66865	ا			ــــــــــــــــــــــــــــــــــــــ	Marketonia del Carlo Carlo II del Carlo Del Ca
OB TYPE Su	TACE	HOLE SIZE	1274	HOLE DEPT	<u> </u>	_ CASING SIZE & V		<u>used</u>
ASING DEPTH	201	DRILL PIPE		_TUBING			OTHER	•
LURRY WEIGH	н <u> 15 <sup>р</sup></u>	SLURRY VOL_			sk	CEMENT LEFT IN		
HSPLACEMEN	T_11 1/2	DISPLACEMEN		•		_		2 <b>5 h</b>
LEMARKS: 5	Afety Me	eting, Pig	up to	8 78	CASING	Break circu	Vu M San	
abl wat	er mix	os ski	Regular	<del>cement</del>	36 CAC	22 Gel	ement Re	ET WAY
DisPlace	8218 CV	sing will	·5 KHD	tresh w	MAC J	Bbl Good C		
TO Suct	FACE. Job	Complet	k Close	CASING	LiN			
		- V: 1						
		Thanks						
		14 USECO	7					madematika di si tira kitasi da sa awala di da
								name and a total or in the comment
ACCOUNT	QUANIT	Y or UNITS	D	ESCRIPTION	of SERVICES or	PRODUCT	UNIT PRICE	TOTAL
CODE	QUANIT	y or UNITS			of SERVICES or	PRODUCT		TOTAL
5447 2		/	PUMP CHAR		of SERVICES or	PRODUCT	UNIT PRICE 4.80.00	
CODE		y or UNITS / .5			of SERVICES or	PRODUCT	680.00	660,00
540F 540P		/	PUMP CHAR MILEAGE		of SERVICES or	PRODUCT	680.00	680,00 S/. 75
5406 5406 5406	105	/ .5	PUMP CHAR	GE	of SERVICES or	PRODUCT	688.60 3.45	680.00 5/. 75
CODE 540/5 540/6 1/04/5	105	<i>! .5</i>	PUMP CHAR MILEAGE	GE CAGIZ		PRODUCT	45 3.45	660,00
CODE 5406 1104 < 1108 A	105 300	/ .5 #	PUMP CHAR MILEAGE  SK's 3 % 2 %	GE (AGIZ GEL		PRODUCT	(2.70 .71	60,00 5/. 75 1.383.50 243.00
CODE 540/5 540/6 1104/5	105	/ .5 #	PUMP CHAR MILEAGE	GE (AGIZ GEL		PRODUCT	12.70 .71	680.00 51.75 1.383.50 243.00 32.00
CODE 5 4 0 4 5 4 0 6 11 0 4 11 9 8 11 0 7	105 300 200 25	/ .5 #	PUMP CHAR MILEAGE  SKS 3 % 2 % Floce	GE Caulz Gel	L ParlsK		12.70 .71	680.00 51.75 1.383.50 243.00 32.00
1104 S 540P 1104 S	105 300	/ .5 #	PUMP CHAR MILEAGE  SKS 3 % 2 % Floce	GE (AGIZ GEL	L ParlsK		12.70 .71	60,00 5/- 75 1.383.50 213.00 32.00 49.25
CODE 5406 1104 S 1104 S 1101	105 300 200 25	/ .5 #	PUMP CHAR MILEAGE  SKS 3 % 2 % Floce	GE Caulz Gel	L Parlsk	RECEIVED	12.70 .71	60,00 5/- 75 1.383.50 213.00 32.00 49.25
CODE 5406 1104 5 1108 1107	105 300 200 25	/ .5 #	PUMP CHAR MILEAGE  SKS 3 % 2 % Floce	GE Caulz Gel	L Parlsk		12.70 .71	60,00 5/- 75 1.383.50 213.00 32.00 49.25
CODE 5406 1104 S 1104 S 1101	105 300 200 25	/ .5 #	PUMP CHAR MILEAGE  SKS 3 % 2 % Floce	GE Caulz Gel	L Perlsk	RECEIVED NOV 1 0 2009	13.70 .71 .11 .15 .197	60,00 5/- 75 1.383.50 213.00 32.00 49.25
CODE 5406 1104 5 1108 1107	105 300 200 25	/ .5 #	PUMP CHAR MILEAGE  SKS 3 % 2 % Floce	GE Caulz Gel	L Perlsk	RECEIVED	13.70 .71 .11 .15 .197	60,00 5/- 75 1.383.50 213.00 32.00 49.25
CODE 5406 1104 5 1108 1107	105 300 200 25	/ .5 #	PUMP CHAR MILEAGE  SKS 3 % 2 % Floce	GE Caulz Gel	L Perlsk	RECEIVED NOV 1 0 2009	13.70 .71 .11 .15 .197	60,00 5/- 75 1.383.50 213.00 32.00 49.25
CODE 5406 1104 S 1104 S 1101	105 300 200 25	/ .5 #	PUMP CHAR MILEAGE  SKS 3 % 2 % Floce	GE Caulz Gel	L Perlsk	RECEIVED NOV 1 0 2009	13.70 .71 .11 .15 .197	60,00 5/- 75 1.383.50 213.00 32.00 49.25
CODE 5406 1104 5 1108 1107	105 300 200 25	/ .5 #	PUMP CHAR MILEAGE  SKS 3 % 2 % Floce	GE Caulz Gel	L Perlsk	RECEIVED NOV 1 0 2009	13.70 .71 .11 .15 .197	243.00 32.00 49.25
CODE 5406 1104 S 1104 S 1101	105 300 200 25	/ .5 #	PUMP CHAR MILEAGE  SKS 3 % 2 % Floce	GE Caulz Gel	L Perlsk	RECEIVED NOV 1 0 2009	12.70 .71 .11 .14 1.97	245.00 245.00 32.00 49.25 294.00
CODE 5406 1104 5 1108 1107	105 300 200 25	/ .5 #	PUMP CHAR MILEAGE  SKS 3 % 2 % Floce	GE  (ACIZ  GEI  YY  M:\see	L Perlsk	RECEIVED NOV 1 0 2009	13.70 .71 .11 .15 .197	243.00 32.00 49.25



### **REMIT TO**

Consolidated Oil Well Services, LLC Dept. 970 P.O. Box 4346 Houston, TX 77210-4346

MAIN OFFICE P.O. Box 884 Chanute, KS 66720 620/431-9210 • 1-800/467-8676 FAX 620/431-0012

Invoice Date: 01/27/2009 Terms: Page	1 
THREE RIVERS EXPLORATION WADDELL 1-A	
538 ROAD 20 20779	
OLPE KS 66865 01-23-09	
( ) -	

Number	Description	Qty	Unit Price	Total
	THICK SET CEMENT	100.00	16.0000	1600.00
	KOL SEAL (50# BAG)	500.00	.3900	195.00
	CITY WATER	3000.00	.0140	42.00
	5 1/2" RUBBER PLUG	1.00	58.0000	58.00
	FLOAT SHOE FLAPPER 5 1/2	1.00	267.0000	267.00
	CEMENT BASKET 5 1/2"	1.00	206.0000	206.00
	CENTRALIZER 5 1/2"	3.00	44.0000	132.00
Description		Hours	Unit Price	Total
•	TRUCK (CEMENT)	3.00	94.00	282.00
CEMENT PUMP	•	1.00	870.00	870.00
EQUIPMENT MILE	AGE (ONE WAY)	15.00	3.45	51.75
•	•	1.00	296.00	296.00
	Description 80 BBL VACUUM CEMENT PUMP EQUIPMENT MILE	THICK SET CEMENT KOL SEAL (50# BAG) CITY WATER 5 1/2" RUBBER PLUG FLOAT SHOE FLAPPER 5 1/2 CEMENT BASKET 5 1/2" CENTRALIZER 5 1/2"  Description 80 BBL VACUUM TRUCK (CEMENT)	THICK SET CEMENT 100.00 KOL SEAL (50# BAG) 500.00 CITY WATER 3000.00 5 1/2" RUBBER PLUG 1.00 FLOAT SHOE FLAPPER 5 1/2 1.00 CEMENT BASKET 5 1/2" 1.00 CENTRALIZER 5 1/2" 3.00  Description Hours 80 BBL VACUUM TRUCK (CEMENT) 3.00 CEMENT PUMP 1.00 EQUIPMENT MILEAGE (ONE WAY) 15.00	THICK SET CEMENT  KOL SEAL (50# BAG)  CITY WATER  500.00  51/2" RUBBER PLUG  FLOAT SHOE FLAPPER 5 1/2  CEMENT BASKET 5 1/2"  Description  Description  BOBL VACUUM TRUCK (CEMENT)  CEMENT PUMP  EQUIPMENT MILEAGE (ONE WAY)  TOO 100.00  100.0

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THAYER, Ks 620/839-5269

WORLAND, WY 307/347-4577

				NOV 1 0	2009
				KCC WIC	HITA
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2500.00	Freight:	.00	Tax:	157.51 AR	4157.26
.00	Misc:	.00	Total:	4157.26	
.00	Supplies:	.00	Change:	.00	
======			=======		=========
				Date	
:	.00	======================================	.00 Misc: .00	.00 Misc: .00 Total:	### CC WIC 2500.00 Freight: .00 Tax: 157.51 AR .00 Misc: .00 Total: 4157.26

GILLETTE, WY 307/686-4914

EUREKA, Ks 620/583-7664

ELDORADO, KS 316/322-7022

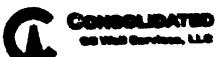
BARTLESVILLE, OK

918/338-0808

McALESTER, OK 918/426-7667

OTTAWA, KS

785/242-4044





20779 TICKET NUMBER LOCATION EUREKA FOREMAN KEVIN MCCOY

PO Box 884, Chanute, KS 68720 620-431-9210 or 800-467-8676

## FIELD TICKET & TREATMENT REPORT

CEMENT COUNTY RANGE SECTION TOWNSHIP WELL NAME & NUMBER **CUSTOMER#** DATE 235 1QE 15 1-A WAddeLL 1-23-09 CUSTOMER THE DRIVER TRUCKS TRUCK# THREE RIVERS EXPLORATION LLC Co. Justin 445 MAILING ADDRESS Tools Chris 515 RD 20 ZIP CODE STATE lım 437 CITY 66865 Ks OLpe CASING SIZE & WEIGHT HOLE DEPTH 2225 HOLE SIZE JOB TYPE LONGSTRING CASING DEPTH 2243 DRILL PIPE WATER gal/sk 8.° CEMENT LEFT in CASING O SLURRY WEIGHT 13.6 # SLURRY VOL 30 BbL PSI 1000 Bump Plug RATE DISPLACEMENT PSI 600 DISPLACEMENT 55 BOL REMARKS: SAFETY MEETING: RIG UP to 51/2 CASING. BROOK CIRCULATION W/ 15 BAL FO Mixed 100 SKS THICK SET CEMENT W/ 5 + KOL-SEAL /SK@ 13.6 WASH out Pump & Lines. Release Plug. Displace w/ 55 Bbl fresh water PRESSURE 600 ASI. Bump Plug to 1000 ASI. Note: AFter Bumpmy Plug to OFF to 250 psi. Repressur Plug to 1000 psi. Pressur inst to 250 PSI. Release Messur, No flow BACK. Shut CASING IN @ O ASI. Good Commissions & All times while Cementing. Job Complete. Rig down. Note: Going to Passer Check Casing @ Later Date after Cement Has Set to Check FOR CASING LEAK.

ACCOUNT	QUANITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT FURDE	TOTAL
S40/	1	PUMP CHARGE	870-00	870.00
5406	15	MILEAGE	3.45	51.75
1104.0	100 exc	THICK Set Cement	16.00	1600.00
1126 A	100 sks 500 *	KOL-SEAL 5"/SK	.39 *	195.00
ENG	5.5 Tons	Ten Mikage BULK TRUCK	MIG	294.00
5407	3 HRS	80 BEL VAC TRUCK	94.00	282.00
5502 C	3000 9ALS	Crty water	14.00	42.00
7.03		RECEIVED		
4406	1	5 1/2 Top Rubber Plug	58.00	58,00
4158	1	51/2 FV Float shoe NOV 1 0 2009	262.00	267-00
4104	1	51/2 Coment BASKet	204	206.00
4130	3	512 × 743 Centralizers KCC WICHITA	1800	132.00
			Sub Total	
		THANK YOU 6.3%	SALES TAX	157.51
rvin 3737		998686	TOTAL	4157.20

TITLE OWNER /THERE RIVES EXPLORATION DATE AUTHORIZTION WHYESSED BY DAVE FARTHING

## Griffin Geological Resources, Inc.

David B. Griffin, RG, Owner

1502 W. 27<sup>th</sup> Terrace Lawrence, Kansas 66046 Ph. (785) 842-3665 Cell (785) 766-0099 Fax (785) 856-3935

January 28, 2009

## **Geological Wellsite Report**

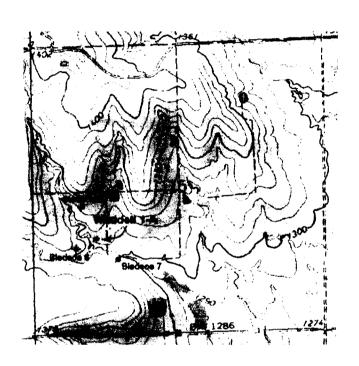
For:

Waddell 1-A NE SE NW SW/4 1,742' fsl, 4,184' fel Section 15, T23S – R10E Greenwood County, Kansas

GL Elev. 1315'

Operator: Three Rivers Exploration, LLC

538 Road 20 Olpe, KS 66865 License No.: 33217 Attn: Dave Farthing



The following report on the subject well includes detailed information and geological data based on microscopic examination of rotary drill cuttings from 1850' to a total depth of 2224' below ground level on January 22, 2009. A sample log with drilling time, sample cuttings description and geological tops are included with this report. Subsea corrected geological sample tops were based on a relative ground level datum elevation of 1315' above sea level.

### Well Information

**GPS lat/long Coord:** N38.04735, W-96.30031

**API No.:** 15-073-24109-00-00

Field: Hollis

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**Drilling Co.:** 

Three Rivers Exploration, LLC

538 Road 20

Olpe, Kansas, 66865

KS Operator License No.: 33217

KCC WICHITA

**Drilling Co. Owner:** 

Dave Farthing

Tool Pusher: Dave Farthing

**Cement Co.:** 

Consolidated Oil Well Service Co.

KS Operator License No.: 04996

Status:

 $4\frac{1}{2}$  Production casing set and cemented, waiting on completion.

**Rotary Total Depth:** 

2224', GL

**Surface Casing:** 

Hole drilled with 121/4" bit, set approx. 200'  $8\frac{5}{8}$ " casing

**Drilling Notes:** 

 $4\frac{1}{2}$ " drill pipe, One 3-blade PDC  $7\frac{7}{8}$ " button bit from 200' to TD at 2224'

**Mud Program:** 

Native fresh water mud to 1850', fresh water chemical gel mud from

1850' to TD, 35 vis, 8.8 wt, 3# LCM.

**Geological Supervision:** 

David Griffin, RG, of GGR, Inc., provided wellsite supervision on Jan.

22, 2009. Samples microscopically examined from 1850' to 2224'.

Logs, Gas Detection, Cores, DST's:

No open-hole logs, cores or drill stem tests were obtained for this well,

nor was gas detection in use.

**Geological Datums:** 

Three Rivers Exploration LLC Waddell 1-A NE SE NW SW/4 Sec. 15-T23S-R10E Geological Tops			Teichgraeber Oil Bledsoe 5 NW NE NW SW/4 Sec. 15-23S-R10E  Structural Comparison Wells  Teichgraeber Oil Bledsoe 6 SW SE NW SW/ Sec. 15-23S-R10					eber Oil oe 6 W SW/4
	Sample Tops GL Elev. 1315'		전 Tops		ı-Hole Log s KB Elev. 1334'	STRC CC	Open-Hole Log Tops KB Elev. 1332'	
Zones of Interest	Depth	Subsea	COMP	Depth	Subsea	COMP	Depth	Subsea
Kansas City Group	NA			1495	-161		1497	-165
Base Kansas City Group	NA			1679	-345		1684	-352
Marmaton Group	NA		Ì	1794	-460		1802	-470
Cherokee Group	1943	-628	-7	1955	-621	+4	1964	-632
Ardmore LS	2032	-717	-10	2041	-707	0	2049	-717
Cattleman SS Pay Zone	2089	-774	-11	2097	-763		absent	
Base Cattleman SS	2114	-799	-9	2124	-790		absent	
Penn Basal Conglomerate	DNP		ĺ	DNP			2305	-973
Mississippian LS	DNP			DNP			2310	-978
Total Depth	2224	-909		2235	-901	Ì	2335	-1003

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### Structural Comparisons:

Structural comparison of subsea geological log tops for Waddell 1-A indicates that the top of the Cattleman Sandston Pay Zone is 11' lower than in Bledsoe 5 lying approximately 660' to the northwest.

### **Description of Pay Zone**

Cattleman Sandstone: 2089' to 2114', GL

**2089'-2091'**, (2100' to 2105' sample), Top of Pay Zone, 15% sandstone, 10% gray with 5% brown, very fine to fine grained, fair to good porosity, good (first) odor, good show of light gravity oil bleeding from sample into bag, 15% bright golden yellow fluorescence, micaceous, carbonaceous; 85% shale, gray, silty, micaceous and carbonaceous.

**2091'-2093'**, (2105'-2107' sample), Good Pay Zone, 30% sandstone, light grayish-tan, very fine to fine grained, fair to mostly good porosity, sub-angular quartz, very good odor, very good oil saturations with minor gas bubbles, good to very good show of oil bleeding from sample and in bag, takes multiple rinses to remove oil for sample examination, 30% bright fluorescence, minor (<5%) heavy mineral, slight mica; 70% shale, gray, silty, mica, carb.

**2093'-2096'**, (2107'-2110' sample), Very Good Pay Zone, 40% sandstone, light grayish-tan, very fine to fine grained, good to very good porosity, sub-angular quartz, strong odor, very good oil saturations with minor gas bubbles, very good show of oil bleeding from sample into sample bag, takes multiple rinses to remove oil for sample examination, 40% bright fluorescence, minor (<5%) heavy mineral, slight mica; 60% shale, gray, silty, mica, carb.

**2096'-2099'**, (2110'-2113' sample), Very Good Pay Zone, 60% sandstone, light grayish-tan, very fine to fine grained, good to very good porosity, very good to excellent show of free oil and minor gas bubbles, 60% bright fluorescence; 40% shale, gray, silty, mica, carb.

**2099'-2108'**, (2113'-2116', 2116'-2119, 2119'-2122' samples), Very Good Pay Zone, 60% sandstone, very fine to fine with minor medium grains, very good to excellent show of free oil and minor gas bubbles, much oil in sample bags using fluorescence, 60% bright fluorescence; 40% shale, gray, silty, mica, carb.

**2108'-2111'**, (2122'-2125' sample), Very Good Pay Zone, 70% sandstone, fine to medium grained, good to very good porosity, thin tight streak, very good to excellent show of free oil and minor gas bubbles, much oil in sample bag, 50% bright and 20% medium fluorescence; 30% shale, gray, silty, mica, carb.

**2111'-2114'**, (2125'-2128' sample), Bottom of Pay Zone, 30% sandstone, fine to medium grained, fair to good porosity, decreasing show but still good amount of free oil, 30% fluorescence; 70% shale, gray, silty, mica, carb.

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Wellsite Geology Report
By David Griffin, RG

January 28, 2009

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### **Other Oil Show**

While drilling at 1815', free oil was noted in the drilling fluid in the sample return ditch. Samples were collected at quickly as possible for microscopic examination. Examination of the samples revealed only very few cuttings with a good oil show and bright fluorescence. These cuttings consisted of coarse calcite crystals and medium crystalline vugular limestone with very good porosity and a good show of free oil. By applying a sample lag of 12', the oil show came from at or above an approximate depth of 1803', which is likely from the Lenapah Limestone in the top of the Marmaton Group.

### Summary:

Cattleman sandstone was present from the interval 2089' to 2114', GL in Waddell 1-A. The interval contained approximately 30% to 70% sandstone with good to very good porosity and good to excellent shows of light gravity slightly gassy brown oil throughout that abundantly bled into the sample bags. The top of the Cattleman sandstone in Waddell 1-A was 11' lower than in Bledsoe 5, a Cattleman sandstone producer lying approximately 660' to the northwest. The sand is virtually the same thickness in both wells with no obvious oil-water contact in either well. There was no significant sandstone development of mention in the upper or lower Bartlesville sandstone zones in Waddell 1-A.

The scout card completion record for Bledsoe 5 is as follows: PF (CATT SD) 5/ 2096'-2112' SWB DWN, SO, RE-PF 4/ 2097-2112, AC FRAC 300G (MA) and 200# REDIFRAC, SWB LD, GSO, POP, IP 27 BO, 293 BWPD, 6/6/83. It is possible that Bledsoe 5 has been recompleted since this time; however that information is currently not available to the author if it exists.

The core analysis for this well showed the Cattleman SS had a high GOR (Gas Oil Ratio) from 2090' to 2108' and made perforation recommendations from 2108'-2121' in what was identified as commercial pay. Only 3 feet of the picked commercial pay was perforated, leaving 8 feet behind pipe (2112' to 2121'). The oil saturations in the picked commercial pay zone varied from 11.5% to 18.5% with a significant amount of pore space volume not accounted for. It is likely that the majority of the unaccounted pore volume was gas and/or oil that bled from the core prior to analysis. If this is the case, then the actual oil saturations could be roughly 10% to 20% higher.

The KGS reports that the Bledsoe lease produced 70,375 barrels of oil from 1982-2000 from as many as 7 wells.

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### **Recommendations:**

Based on the very good to excellent show of free oil throughout the Cattleman sandstone in Waddell 1-A, the operator set and cemented production casing. It is unclear if high water production can be avoided in the Cattleman sandstone producers of the Hollis field without a more detailed study. The scout card for Bledsoe 5 indicated that at least initially, the upper half of the pay zone was perforated. It remains a possibility that the well could have been better if more of the picked commercial pay zone had been perforated. Therefore, in the absence of an observable oil-water contact from sample examination, the heart of the pay zone should be perforated in Waddell 1-A (unless further well study shows otherwise). It is recommended that the Cattleman sandstone be perforated in Waddell 1-A from approximately 2092'-2109'. A cased-hole log should be evaluated for exact placement of the shots.

Respectfully Submitted,

David B. Griffin, RG, Owner

Griffin Geological Resources (GGR), Inc.

Attachments: Sample Log with Drilling Time

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