



Operator Name ... Robert S. Harwell ... Lease Name ... Knabe ... Well # ... 4 ...

Sec. ... 31 ... Twp. ... 14 ... Rge. ... 22 ...  East  West County ... Johnson ...

WELL LOG

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

Drill Stem Tests Taken		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Formation Description					
Samples Sent to Geological Survey		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Log <input type="checkbox"/> Sample					
Cores Taken		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No							
						Name	Top	Bottom	
0	33	Clay	339	372	Shale	Hard Lime	662	670	
33	37	Lime	372	375	Lime	Shale	670	687	
37	95	Shale	375	384	Shale	Lime	687	699	
95	116	Lime	384	408	Lime	Shale	699	704	
116	124	Shale	408	412	Shale	Lime	704	708	
124	139	Lime	412	435	Lime	Shale	708	729	
139	142	Shale	435	438	Shale	Lime	729	734	
142	178	Lime	438	443	Lime	Shale	734	805	
178	188	Shale	443	446	Shale	Lime	805	807	
188	211	Lime	446	450	Lime	Shale	807	815	
211	230	Shale	450	453	Shale	Lime	815	816	
230	240	Lime	453	458	Lime	Shale	816	845	
240	254	shale	458	621	Shale	Lime	845	846	
254	276	Lime	621	627	Lime	Shale	846	870	
276	291	Shale	627	629	Shale	Lime	870	872	
291	300	Lime	629	631	Lime	Shale	872	896	
300	316	Shale	631	648	Shale	Lime	896	897	
316	329	Lime	648	655	Lime	Shale	897	925	
329	332	Shale	655	659	Shale				
332	339	Lime	659	662	Lime				

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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 casing	6 5/8	6 1/4		20	Portland	5	

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

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

Date of First Production	Producing Method				
	<input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (explain)...				
Estimated Production Per 24 Hours	Oil	Gas	Water	Gas-Oil Ratio	Gravity
	D&A				
	Bbls	MCF	Bbls	CFPB	

METHOD OF COMPLETION Production Interval

Disposition of gas:  Vented  Open Hole  Perforation  
 Sold  Other (Specify) .....  
 Used on Lease  Dually Completed .....  
 Conmingled .....

Case KNARE  
 Well # H 11-2-88  
 Elevation 15-091-22,031

1 2 3 4 5 6 7 8 9 10  
 HR 11:00 AM 11:10 AM 11:20 AM 11:30 AM 11:40 AM 11:50 AM 12:00 PM 12:10 PM 12:20 PM 12:30 PM

Drill Log

Thickness	Formation	Total Depth	Remarks	Thickness	Formation	Total Depth	Remarks
33	Clay	33		21	Shale	729	
4	Lime	37		5	Lime	774	
58	Shale	95		71	Shale	805	
21	Lime	116		2	Lime	807	
8	Shale	124		8	Shale	815	
10	Lime	134		1	Lime	816	
8	Shale	142		24	SHALE	840	
36	Lime	178		1	Lime	841	
16	Shale	194		24	Shale	865	
23	Lime	208		2	Lime	867	
19	Shale	230		24	Shale	891	
10	Lime	240		1	Lime	892	
14	Shale	254		28	SHALE	920	
22	Lime	276					
15	Shale	291					
9	Lime	300					
16	Shale	316					
13	Lime	329					
8	Shale	337					
17	Lime	354					
33	Shale	387					
8	Lime	395					
9	Shale	404					
24	Lime	428					
4	Shale	432					
23	Lime	455					
3	Shale	458					
5	Lime	463					
3	Shale	466					
11	Lime	477					
8	Shale	485					
5	Lime	490					
163	Shale	653					
6	Lime	659					
2	Shale	661					
4	Lime	665					
12	Shale	677					
6	Lime	683					
3	Shale	686					
7	Lime	693					
19	Shale	712					
4	Lime	716					
3	Shale	719					
8	Lime	727					
17	Shale	744					
12	Lime	756					
5	Shale	761					
4	Lime	765					

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CONSERVATION DIVISION  
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Very fine  
 Plugged  
 10 sacks at 920'  
 10 sacks at 500'  
 350' to Top

11-7-88  
 9:30 AM