

SIDE ONE

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

Operator: License # 5447
Name Cities Service Oil & Gas Corp
Address 3545 NW 58th Street
Oklahoma City, Oklahoma
City/State/Zip 73112

Purchaser Northern Natural Pipeline

Operator Contact Person Raymond Hui
Phone (405) 949-4268

Contractor: License #
Name Wakefield Drilling Company

Wellsite Geologist Harvey Vick
Phone (405) 949-4400

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

If OWNED: old well info as follows:
Operator Cities Service Oil & Gas Corp
Well Name Crandall B. #4
Comp. Date 1-23-85 Old Total Depth 3064'

WELL HISTORY

Drilling Method:
X Mud Rotary Air Rotary Cable
9-17-84 9-24-84 11-23-87
Spud Date Date Reached TD Completion Date
3064' 2656'
Total Depth PBTD 13-3/8" at 1720'
8-5/8" at 2399'
Amount of Surface Pipe Set and Cemented at feet
Multiple Stage Cementing Collar Used? Yes X No
If yes, show depth set feet
If alternate 2 completion, cement circulated
from feet depth to w/ SX cmt
Cement Company Name
Invoice #

API NO. 15-129-20722-R-01
County Morton
SW NE NE Sec. 9 Twp. 34S Rge. 40 East X West
4030 Ft North from Southeast Corner of Section
1250 Ft West from Southeast Corner of Section
(Note: Locate well in section plat below)

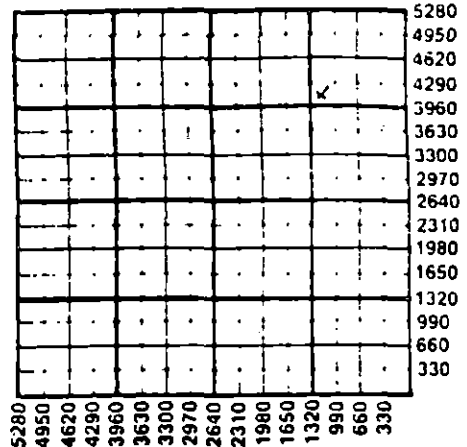
Lease Name Crandall B. Well # 4

Field Name Kansas Hugoton Gas (Chase)

Producing Formation Chase

Elevation: Ground 3348' KB 3355'

Section Plat



WATER SUPPLY INFORMATION

Disposition of Produced Water: Disposal
Docket # Repressuring

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

Source of Water:
Division of Water Resources Permit # T84-640

X Groundwater 4055 Ft North from Southeast Corner
(Well) 1325 Ft West from Southeast Corner of
Sec 9 Twp 34 Rge 40 East X West

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

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

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

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

Signature Del G. Oliver
Title Special Projects Manager Date 12-3-87

Subscribed and sworn to before me this 3 day of December 1987
Notary Public Cheryl Fuller
Date Commission Expires January 8, 1990

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

12-14-87

Form ACO-1 (5-86)

CONSERVATION DIVISION
Wichita, Kansas

Operator Name **Cities Service Oil & Gas Corp** Lease Name **Crandall B** Well # **4**

Sec. **9** Twp. **34S** Rge. **40** East West County **Morton**

WELL LOG

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

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

Formation Description Log Sample

Core #1 at 2404-64' (60'); Core #2 at 2464-2524' (60');
 Core #3 at 2524-84' (60'); Core #4 at 2584-2644' (60');
 Core #5 at 2644-2704' (60'); Core #6 at 2704-64' (60')

 DST from 2662-67'; DST from 2648-53';
 DST from 2640-45'; DST from 2625-30';
 DST from 2550-64'; DST from 2544-49';
 DST from 2530-35'; DST from 2520-25';
 DST from 2508-13'; DST from 2498-2503';
 DST from 2489-2494'; DST from 2481-86';

Name	Top	Bottom
Sand	0	100
Sand & Clay	100	465
Red Bed	465	630
Red Bed & Gyp	630	1210
Glonetta	1210	1410
Gyp & Red Bed	1410	1565
Red Bed & Gyp	1565	1674
Anhy.	1674	1696
Shale & Red Bed	1696	1835
Red Bed & Shale	1835	2000
Shale & Lime	2000	2265
Lime & Shale	2265	2400
Anhy.	2400	2404
Corings	2404	2764
Lime & Shale	2764	3064

Ran DIL/SFL w/GR CNL-FDC w/GR and caliper. TOC at 2240' KB.

TD 3064
PBDT 2656

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
Conductor pipe		20"		34'	Red-MIX	4-1/2 yds	
Surface	17-1/2"	13-3/8"	48#	720' KB	CL H	800	3% CaCl 4-1/4#Flo
Intermediate	12-1/4"	8-5/8"	24#	2399'	CL H	450	6% total gel; 3% CaC
Production	7-7/8"	5-1/2"	14#	3063'	50/50 Poz	200	18% salt; 1/4#Flo
PERFORATION RECORD				Acid, Fracture, Shot, Cement Squeeze Record (Amount and Kind of Material Used)			
Shots Per Foot	Specify Footage of Each Interval Perforated					Depth	
4	Fort Riley 2666-2680' (squeezed)			5000 gals. 2% KCLW		2456-2630'	
	Chase 2456-2514'; 2520-2540'						
	2542-2546'; 2548-2568'; 2572-2590'						
	2594-2630'						
TUBING RECORD				Liner Run <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Date of First Production		Producing Method					
10-22-87		<input type="checkbox"/> Flowing <input checked="" 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
39 bbls		418 MCF	39 bbls	CFPB			

METHOD OF COMPLETION

Production Interval

Disposition of gas: Vented Open Hole Perforation
 Sold Other (Specify) 2456-2630
 Used on Lease Dually Completed
 Commingled



CITIES SERVICE OIL AND GAS CORPORATION
3545 N.W. 58TH ST. OKLAHOMA CITY, OK 73112

(405) 949-4400

December 11, 1987

15-129-20722-00-01

Kansas State Corporation Commission
Conservation Division
200 Colorado Derby Building
Wichita, Kansas 67202

RE: Recompletion - Crandall B #4
NE/4 Section 9-34S-40W
Morton County, Kansas

Gentlemen:

Please find enclosed Form ACO-1 for the Crandall B #4 well which has been recompleted in the Chase formation. Please advise if additional information is required.

Sincerely yours,

Raymond Hui
Accounting Control Analyst
Oklahoma City District

RH/mw

Attachment

DEC 4 4 1987

CONSERVATION DIVISION
Wichita, Kansas