

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

API NO. 15- 095-20951-0001

County Kingman

NW - NW - NW - NW Sec. 32 Twp. 27S Rge. 10 X E

Operator: License # 32119 ORIGINAL

100 Feet from S (circle one) Line of Section

100 Feet from E (circle one) Line of Section

Name: Northern Natural Gas

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

Address P.O. Box 178

Lease Name Wetherall Well # 32-11

City/State/Zip Cunningham, KS 67035

Field Name Cunningham

Purchaser: Storage Well

~~Reservoir~~ Formation Viola/Simpson

Operator Contact Person: Dan Dobbins

Elevation: Ground 1681 KB 1690

Phone (316) 257-5146

Total Depth 4435 PBDT 4423

Contractor: Name: Pratt Well Service

Amount of Surface Pipe Set and Cemented at 1455 Feet

License: 5893

Multiple Stage Cementing Collar Used? X Yes No

Wellsize Geologist: None

If yes, show depth set 2205 Feet

Designate Type of Completion

If Alternate II completion, cement circulated from

 New Well Re-Entry X Workover

feet depth to W/ sx cmt.

 Oil SWD SLOW Temp. Abd.

 Gas ENHR SIGW

 Dry X Other (Core, WSW, Expl., Cathodic, etc)

Gas Storage

Drilling Fluid Management Plan REWORK DR 11-25-97
(Data must be collected from the Reserve Pit)

If Workover:

Chloride content 14,000 ppm Fluid volume 220 bbls

Operator: Northern Natural Gas

Dewatering method used N/A

Well Name: Wetherall 32-11

Location of fluid disposal if hauled offsite:

Comp. Date 4-26-80 Old Total Depth 4375

XXX RAN LINER

X Deepening XXX Re-perf. Conv. to Inj/SWD

 Plug Back PBDT

XXX Commingled Docket No.

 Dual Completion Docket No.

 Other (SWD or Inj?) Docket No.

Operator Name Geary Mud Disposal

Lease Name Gray License No. 284168

8-9-97 8-13-97 8-27-97

 Quarter Sec. 15 Twp. 14N Rng. 7W

 Date OF START Date Reached TO Completion Date OF WORKOVER

County Garfield Docket No. 284168

INSTRUCTIONS: An original and two copies of this form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, 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 Dan Dobbins

Title Sr. Reservoir Analyst Date 11-19-97

Subscribed and sworn to before me this 19th day of November, 19 97.

Notary Public James Elliott

Date Commission Expires January 25, 1999

K.C.C. OFFICE USE ONLY

F Letter of Confidentiality Attached

C Wireline Log Received

C Geologist Report Received

Distribution

 KCC SWD/Rep NGPA

 KGS Plug Other

(Specify)

RECEIVED
KANSAS CORPORATION COMMISSION
Form ACO-1 (7-91)

NOTARY PUBLIC - State of Kansas
1-25-99

NOV 21 1997

CONSERVATION DIVISION
WICHITA, KS

SIDE TWO

Operator Name Northern Natural Gas Lease Name Wetherall Well # 32-11
 Sec. 32 Twp. 27S Rge. 10 East County Kingman
 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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Viola	4286	-2596
Electric Log Run (Submit Copy.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Simpson	4375	-2685

List All E.Logs Run: Cement Bond
 Dual Induction Laterolog
 Compensated Density Dual Spaced Neutron

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	17 1/2"	13 3/8"	48	91	Common	150	1/4# Flocele 3% CC
Surface	12 1/4"	8 5/8"	24	1455	Reg Poz	650	1/4# Flocele 3% CC
Production	7 7/8"	5 1/2"	15.5	4375	Howco Lite	925	18% Salt 10# Gilsonite .5 of 1% Halad 9

ADDITIONAL CEMENTING/SQUEEZE RECORD				
Purpose: Set Liner	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	4313-4433	Standard	25	5# Gil., 18% Salt .25 Flocele .5% Galseal

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	4288-4308		
4	4376-4386		
4	4393-4406		

TUBING RECORD		Size 2.375"	Set At 4343	Packer At 4310	Liner Run <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Date of First, Resumed Production, SWD or Inf. Storage Well - Observation		Producing Method <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input checked="" type="checkbox"/> None Other (Explain)			
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

Disposition of Gas: Vented Sold Used on Lease (If vented, submit ACO-18.)

METHOD OF COMPLETION: Open Hole Perf. Dually Comp. Commingled Other (Specify) _____

Production Interval: 4288'-4308'
4376'-4386'
4393'-4406'



Natural gas. Electricity.
Endless possibilities.™

September 26, 1997

Jim Hemmen
Kansas Corporation Commission
130 South Market #2078
Wichita, KS 67202-3802

RECEIVED
KANSAS CORP COM
1997 SEP 29 1:52

RE: Schematic for Liners at Cunningham

Please find enclosed a schematic for a typical completion in the Cunningham Storage field on our deepening project. If you need more information please call me at 316-257-5146 or 316-298-5111.

Thanks,

A handwritten signature in cursive script that reads "Dan Dobbins".

Dan Dobbins
Sr. Reservoir Analyst

ORIGINAL



REMIT TO:
P.O. BOX 951046
DALLAS, TX 75395-1046
Corporate FIN 73-0271280

INVOICE

HALLIBURTON ENERGY SERVICES, INC.

INVOICE NO.	DATE
307893	08/14/1997

WELL LEASE NO./PROJECT	WELL/PROJECT LOCATION	STATE	OWNER
WETHERALL 32-11	KINGMAN	KS	SAME
SERVICE LOCATION	CONTRACTOR	JOB PURPOSE	TICKET DATE
PRATT	PRATT WELL SERVICE	SHOWN BELOW	08/14/1997
ACCT. NO.	CUSTOMER AGENT	VENDOR NO.	CUSTOMER P.O. NUMBER
634280	W A MERRICK		L 4420 7 008
			SHIPPED VIA
			COMPANY TRUCK
			FILE NO
			28666

ORIGINAL

NORTHERN NATURAL GAS CO
BOX 178
CUNNINGHAM, KS 67035

DIRECT CORRESPONDENCE TO:
1102 E. 8TH
HAYS KS 67601
913-625-3431

REFERENCE NO.	DESCRIPTION	QUANTITY	UM	UNIT PRICE	AMOUNT
PRICING AREA - MID CONTINENT					
JOB PURPOSE - CEMENT PRODUCTION LINER					
000-117	MILEAGE CEMENTING ROUND TRIP	36	MI	3.20	115.20
		1	UNT		
000-119	MILEAGE FOR CREW	36	MI	1.95	70.20
		1	UNT		
009-407	CEMENTING LINERS/SHORT CASING	4435	FT	2,019.00	2,019.00
009-019		1	UNT		
009-027	PLUGGING BK SPOT CEMENT OR MUD	4	HR	291.00	1,164.00
		1	UNT		
504-308	CEMENT - STANDARD	50	SK	10.83	541.50
508-291	GILSONITE BULK	125	LB	.50	62.50
509-968	SALT	300	LB	.17	51.00
507-775	HALAD-322	14	LB	7.70	107.80
507-970	D-AIR 1, POWDER	6	LB	3.65	21.90
509-406	ANHYDROUS CALCIUM CHLORIDE	1	SK	46.90	46.90
507-210	FLOCELE	6	LB	1.90	11.40
508-127	CAL SEAL 60	1	SK	28.00	28.00
500-207	BULK SERVICE CHARGE	61	CFT	1.55	94.55
500-306	MILEAGE CMTG MAT DEL OR RETURN	47.43	TMI	1.18	110.00MN
JOB PURPOSE SUBTOTAL					4,443.95
INVOICE SUBTOTAL					4,443.95
DISCOUNT- (BID)					
INVOICE BID AMOUNT					888.79-
					3,555.16
*- KANSAS STATE SALES TAX					171.47
*- PRATT COUNTY SALES TAX					34.99
Simpson Project 543828 L.F.					
INVOICE TOTAL - PLEASE PAY THIS AMOUNT =====>					\$3,761.62

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NOV 21 1997

CONSERVATION DIVISION
WICHITA, KS

TERMS: If Customer does not have an approved open account with Halliburton, all sums due are payable in cash at the time of performance of services or delivery of equipment, products or materials. If customer has an approved open account, invoices are payable on the twentieth day after date of invoice. Customer agrees to pay interest on any unpaid balance from the date payable until paid at the highest lawful contract rate applicable, but never to exceed 18% per annum. In the event Halliburton employs an attorney for collection of any account, Customer agrees to pay attorney fees of 20% of the unpaid account, plus all collection and court costs.



HALLIBURTON
ENERGY SERVICES

CHARGE TO: Northwestern Nat'l Gas Co
ADDRESS: 10000 North Central Expressway
CITY, STATE, ZIP CODE: Midland, TX 79701

CUSTOMER COPY
TICKET
No. **307899 - 3**
PAGE 2

SERVICE LOCATIONS: Perm KS
WELL/PROJECT NO.: 32-11
LEASE: West Valley
CONTRACTOR: PWS
RIG NAME/NO.: KAWARMA
STATE: KS
CITY/OFFSHORE LOCATION: Perm
DATE: 8/19/97
OWNER: Same

TICKET TYPE: NITROGEN
 SALES
 SERVICE JOB
 NO. NO.

WELL TYPE: OS
WELL CATEGORY: OS
JOB PURPOSE: OS

INVOICE INSTRUCTIONS: Land

JOB PURPOSE	PRICE REFERENCE	SECONDARY REFERENCE PART NUMBER	ACCOUNTING	DESCRIPTION	QTY	UNIT	PRICE	AMOUNT
	000119			MILEAGE	36	mi	3.20	115.20
	000119			MILEAGE	36	mi	1.95	70.20
	009-407	009-019		Perm Charge / TRK	445	ft	2.91	1294.95
	009-039			Add'l Frac's	1	TRK	1164	1164.00

ORIGINAL

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LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions.

TYPE LOOK: Bulk TV # B-338301
SUB SURFACE SAFETY VALVE WAS: 1
PAGE TOTAL: 4443

DATE SIGNED: 8/19/97 TIME SIGNED: 1400
SPACERS: 2
DEPTH: 4443
TUBING SIZE: 2 7/8"
TUBING PRESSURE: 1075
WELL DEPTH: 1075

CUSTOMER OR CUSTOMER'S AGENT (PLEASE PRINT): David L Scott
CUSTOMER OR CUSTOMER'S AGENT (SIGNATURE): [Signature]
HALLIBURTON OPERATOR/ENGINEER: Bq495
HALLIBURTON APPROVAL: [Signature]



TICKET CONTINUATION CUSTOMER COPY

TICKET No. 307893

HALLIBURTON ENERGY SERVICES

CUSTOMER: Northern Natural Gas Co. WELL: Weatherall 32-11 DATE: 8-14-97 PAGE 2 OF 2

FORM 1911 R-10

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		U/M		UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
504-308	516.00261	1			Standard Cement	50	SK			10.83	541.50
508-291	516.00337	1			Gilsonite Bld 5#/SK	125	1/5K			50	62.50
509-968	516.00158	1			Satt Bld 18 90	300	1/65			17	51.00
507-775	516.00144	1			Halodt 322 Bld .6 90	14	1/5K			7.90	107.80
507-970	70.15764	1			D-Air 1 Bld .25 90	6	1/65			3.65	21.90
509-406	890.50812	1			Calcium Chloride Bld 1 90	1	SK			46.90	46.90
507-210	890.50071	1			Flocele Bld .25#/SK	6	1/5K			1.90	11.40
508-127	890.50131	1			Calseal Bld 5 90	1	SK			28.00	28.00
Loaded on TRK # 52530 - Front											
ORIGINAL											
RECEIVED						KANSAS CORPORATION COMMISSION					
NOV 21 1997						CONSERVATION DIVISION					
						WICHITA, KS					
500-207		1			SERVICE CHARGE	CUBIC FEET		61		1.55	94.55
500-306		1			MILEAGE CHARGE	TOTAL WEIGHT	LOADED MILES	TON MILES	Minimum Charge		110.00
						5270	18				

CONTINUATION TOTAL 1075.59

No. B 338301



JOB LOG 4239-5

TICKET # 307815	TICKET DATE 11/19/77
REGION North America	NWA/COUNTRY USA
MBU ID / EMP #	EMPLOYEE NAME
LOCATION	COMPANY
TICKET AMOUNT	WELL TYPE
WELL LOCATION	DEPARTMENT
LEASE / WELL #	SEC / TWP / RNG
BDA / STATE KS	COUNTY
PSL DEPARTMENT	CUSTOMER REP / PHONE
API / UWI #	JOB PURPOSE CODE

HES EMP NAME/EMP#/(EXPOSURE HOURS) HRS	HES EMP NAME/EMP#/(EXPOSURE HOURS) HRS	HES EMP NAME/EMP#/(EXPOSURE HOURS) HRS	HES EMP NAME/EMP#/(EXPOSURE HOURS) HRS
ORIGINAL			

CHART NO.	TIME	RATE (BPM)	VOLUME (GAL)	PUMPS		PRESS. (psi)		JOB DESCRIPTION / REMARKS
				T	C	Tbg	Csg	
#1	0500 0700							Called Out On Loc w/Trk's Pump 190 Bbl's Drlg mud Down Well
	1200							move over + Rig up on weatherall 32-11 T.I.H. w/ Dip. + liner w/ Hanger Liner on Bottom Circ w/Rig 45 min Liner In set position
	1533	3	18	✓		500		Rig up Howco Howco Down for 45 min Repairs made Pump 12% KCL preflush
	1541	3	3	✓		600		Fresh H2O Spacer
	1545	3	6.9	✓		250		Mix + pump 255k's Cmt @ 14.7 ppq
	1551	5	10					Close In + wash pump + line
	1552							Release Tbg Plug
	1553	2.0		✓		100		St Disp w/2% KCL H2O
	1558	2.0	13.4	✓		500		Lifting Cmt
	1601	2.0	19.4	✓		1200		Sheared Liner Plug Continue pumping
	1602	2.0	20.3	✓		2000		Liner Plug Down
	1603			✓				Release psi Float Held T.O.H w/Liner

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KANSAS CORPORATION COMMISSION
NOV 21 1997
CONSERVATION DIVISION
WICHITA KS

Good Circ During Job
Job Complete
Thank you
Scotty

