

RELEASED

ORIGINAL KCC JUL 17

SIDE ONE

AUG 02 1993

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

API NO. 15- 119-20,833-00-00
County Meade
Appx. 50' East
W NE NE Sec. 15 Twp. 34S Rge 28 X West

Operator: License # 30444
Name: Charter Production Company
Address 400 Kress Energy Center
224 East Douglas
City/State/Zip Wichita, KS 67202

4620 ✓ Ft. North from Southeast Corner of Section
710 ✓ Ft. West from Southeast Corner of Section
(NOTE: Locate well in section plat below.)

Purchaser:
Operator Contact Person: Robert C. Spurlock
Phone (316) 264-2808

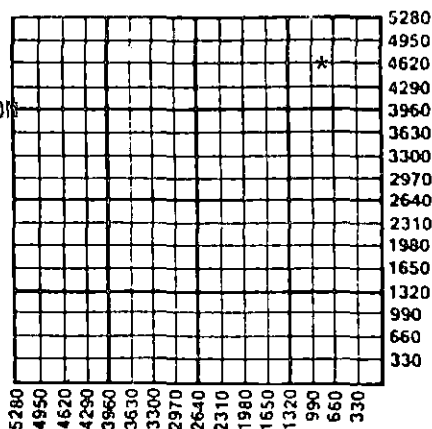
Lease Name Enns "A" ✓ Well # 1
Field Name Wildcat

Contractor: Name: Eagle Drilling
License: 5380
Wellsite Geologist: Doug Davis

Producing Formation Council Grove
Elevation: Ground 2403 KB 2416
Total Depth 6466 PBDT 3152

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

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JUL 18 1991
CONSERVATION DIVISION
Wichita, Kansas



If ~~UNO~~ old well info as follows:
Operator:
Well Name:
Comp. Date Old Total Depth

Amount of Surface Pipe Set and Cemented at 628 Feet

Drilling Method:
 Mud Rotary Air Rotary Cable
5/9/91 5/24/91 5/31/91
Spud Date Date Reached TD Completion Date

Multiple Stage Cementing Collar Used? Yes No
If yes, show depth ⁴³ Feet
If Alternate II completion, cement circulated from _____
feet depth to _____ w/ _____ sx cmt.

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. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells. Any recompletion, workover or conversion of a well requires filing of ACO-2 within 120 days from commencement date of such work.

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 Robert Spurlock
Title President Date 7-17-91
Subscribed and sworn to before me this 17th day of July 19 91.
Notary Debra Raggio
Date 7/17/91

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

PI

4119170

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SIDE TWO

Operator Name Charter Production Company Lease Name Enns "A" Well # 1

Sec. 15 Twp. 34S Rge. 28 East West
County Meade

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
(Attach Additional Sheets.)
Samples Sent to Geological Survey Yes No
Cores Taken Yes No
Electric Log Run Yes No
(Submit Copy.)

Formation Description
 Log Sample
Name Top Bottom

SEE ATTACHED SHEET - PLEASE KEEP CONFIDENTIAL.

CASING RECORD New 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 (used)		8-5/8	28#	628	3% cc	230	
						100	Class "A" 3%
							2% gel
Prod (used)		5-1/2	15.5#	3454	60/40 Poz	125	10% Salt*

PERFORATION RECORD		Acid, Fracture, Shot, Cement Squeeze Record	
Shots Per Foot	Specify Footage of Each Interval Perforated	(Amount and Kind of Material Used)	Depth
4	3168 - 70'		
4	3098 - 3100		

TUBING RECORD Size 2-2/8 Set At 3111 Packer At N/A Liner Run Yes No

Date of First Production WOPL Producing Method Flowing Pumping Gas Lift Other (Explain)
Estimated Production Per 24 Hours
Oil Bbls. Gas Mcf Water Bbls. Gas-Oil Ratio Gravity
200

Disposition of Gas Vented Sold Used on Lease (If vented, submit ACO-18.)
METHOD OF COMPLETION Open Hole Perforation Dually Completed Commingled
 Other (Specify)

* 10% salt; 10# sx gilsonite
.6% Halad 322 and 420 gals
Super Flush

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Charter Production Company
#1 Enns "A"
App. 50' W of NE NE
Section 15-34S-28W
Meade County, Knasas
ACO-1
Page 2

AUG 0 2 1993

FROM CONFIDENTIAL

PLEASE KEEP ALL INFORMATION CONFIDENTIAL.

DRILL STEM TESTS:

DST #1 from 3091' to 3114'.

Open 30", SI 60", Open 45", SI 90"

During first opening gas to surface in 8"; gauging first opening 117 MCF increased to 258 MCF. During second opening began with 400 MCF increased to 497 MCF.

IHP 1582# FHP 1552#
IFP 72-14# FFP 135-166#
ISIP 899# FSIP 889#

DST #2 from 4834' - 4860'

Open 30", SI 30", Open 30", SI 30"

Recovered 180' mud. No show.

IHP 2423# FHP 2383#
IFP 93-104# FFP 124-145#
ISIP 1471# FSIP 1371#

DST #3 from 5240'-5276'

Open 30", SI 60", Open 60", SI 90"

Fair blow building to strong in 4". Gas to surface at the end of second SIP and burned.

Recovered 630' total fluid as follows:

210' gassy mud
420' gassy oil cut mud

IHP 2632# FHP 2553#
IFP 93-155# FFP 207-301#
ISIP 0 FSIP 1722#

DST #4 5320'-5338'

Open 30", SI 60". Open 60", SI 120"

Fair blow increasing to strong in 1". Gas to surface in 60" on second opening.

Recovered 750' total fluid as follows:

210' gassy oil cut muddy water
540' gassy salt water

IHP 2632# FHP 2602#
IFP 104-182# FFP 259-363#
ISIP 1722# FSIP 1722#

DST #5 from 6129' - 6194'

Open 30", SI 30", Open 30", SI 45"

Recovered 60' drilling mud with scum of oil.

IHP 3108# FHP 3058#
IFP 72-72# FFP 83-83#
ISIP 135# FSIP 135#

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CONSERVATION DIVISION
Wichita, Kansas

Charter Production Company
#1 Enns "A"
App. 50' W of NE NE
Section 15-34S-28W
Meade County, Kansas
ACO-1
Page 2 (cont'd)

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SAMPLE TOPS:

Formation Tops

Chase 2618' (-202)
Kridler 2658' (-242)
Wreford 2948' (-532)
Council Grove 2995' (-579)
Heebner Shale 4423' (-2007)
Toronto Limestone 4445' (2029)
Lansing 4578' (-2162)
T/KC 4887' (-2471)
Stark 5078' (-2662)
Swope 5097' (-2681)
Marmaton 5271' (-2855)
Novinger 5331' (-2915)
Oswego 5396' (-2980)
Cherokee 5430' (-3014)
Morrow 5786' (-3370)
1st Morrow 5811' (-3395)
2nd Morrow 5821' (-3405)
Miss. Chester "D" 5853' (-3437)
Miss. Chester "C" 6028' (-3612)
Miss. Chester "B" 6065' (-3649)
Miss. Chester "A" 6144' (-3728)
Chester Sandstone 6183' (-3767)
St. Genevieve 6229' (-3813)
St. Louis 6306' (-3890)
TD 6470' (-4054)

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Wichita, Kansas

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CONSERVATION D
Wichita, Kansas

CHARTER PRODUCTION COMPANY

1 ENNS "A"

APR 15-119-20833

4620' FSL; 710' FEL

SECTION 15

T34S-R28W

MEADE COUNTY

KANSAS

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FROM CONFIDENTIAL

MAY 27, 1991

DOUGLAS V. DAVIS JR.
PETROLEUM GEOLOGIST
1962 JOANN
WICHITA, KANSAS
67203
316-943-8393

WELL DATA

Operator- Charter Production Company #30444
 Well- # 1 Enns "A"
 Location- 4620' FSL; 710' FEL. 15-T34S-R28W Meade Co., Ks.
 Elevation- 2416' KB; 2403' GL
 Contractor- Eagle Drilling Co.
 Tool Pusher- K. O. Steinert
 Geologist- D. V. Davis
 Spud- 5-09-91
 Surface Casing- 16 Joints of 8-5/8" @ 628'
 Commenced- 5-10-91
 Bit Size- 7-7/8" Reed HP 52J 635'-5276'; RR 5276'-6466'
 Completed- 5-24-91
 RTD/LTD- 6466'/6470'
 Mud- Mud-Co, Inc. Eng. Scott Selzer
 Testing- Trilobite Testing Co. Tester- Rod Steinbrink
 Logging- Halliburton Logging Services Eng. Bob Johnson
 Gas Detector- GeoDynamic Logging Co.
 Samples- K.G.S. Well Sample Library, Wichita
 Status- 5½" 84 Joints

CHRONOLOGICAL DATA

5-09-91 0000' Moved on; Spud; Set Surface Casing
 5-10-91 0635' Drilled out plug; Drilled ahead
 5-11-91 2250' Drilling ahead; geologist on location
 5-12-91 3030' CFS @ 3062'; Lost circulation; CFS @ 3114'; DST #1;
 5-13-91 3315' Drill ahead; Lost circulation @ 3383'; Displaced mud @ 3805'
 5-14-91 4015' " "
 5-15-91 4602' CFS @ 4860'; DST #2
 5-16-91 4860' CFS @ 4900; CFS @ 5082
 5-17-91 5238' CFS 2 5276'; DST #3; CFS @ 5338'
 5-18-94 5468' DST #3; Drill ahead
 5-19-91 5468' Lost Circulation @ 5510'; Drill ahead

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5-20-91 5763' CFS @ 5851'; Drill ahead
 5-21-91 ~~6019~~": CFS @ 6194'; DST #5
 5-22-91 6194' Drilling ahead
 5-23-91 6442' CFS @ 6466'; Log
 5-24-91 6466' Run 84 Joints 5- $\frac{1}{2}$ " Production casing

HOLE DEVIATIONS

635' - 1/4°
 2426' - 1/8°
 3114' - 1/8°
 4715' - 3/4°
 4860' - 3/4°
 5338' - 3/4°
 6194' - 3/4°
 6466' - 1/2°

TESTS

- 1) 3091-3114' Council Grove 30"-60"-45"-90"
 Strong blow of bottom bucket 30"; GTS/8"
 GA- 117 to 258 MCF 1st; 400.5 to 497.5 MCF 2nd
 Rec- 460' Water Chlorides 38,000 ppm
 IHP 1582# FHP 1552#
 IFP 72-114# FFP 135-166#
 ISIP 899# FSIP 889# BHT 93°F
- 2) 4834-4860' Wyandotte Limestone 30"-30"-30"-30"
 Weak blow died/27"
 Rec- 180' Mud
 IHP 2423# FHP 2383#
 93-104# FFP 124-145#
 ISIP 1471# FSIP 1371# BHT 110°F
- 3) 5240-5276' Marmaton 30"-60"-60"-90"
 Strong blow/4"; GTS/ end FSI
 Rec- 210' GM (15% G; 85% M)
 180' GOCM (65% G; 5% O; 30% M)
 60' GOCM (58% G; 2% O; 40% M)
 180' GOCM (50% G; 10% O; 40% M)
 IHP 2632# FHP 2553#
 IFP 93-155# FFP 207-301#
 ISIP HYdrostatic FSIP 1722# BHT 116°

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- 4) 5320-5338' Novinger Zone 30"-60"-60"-120"
 Strong blow/1"; GTS/ end FF
 Rec- 90' GOCWM (73% G; 2% O; 10% W; 15% M)
 60' " (79% G; 1% O; 10% W; 10% M)
 60' GOCMW (70% G; 5% O; 15% W; 10% M)
 540' GW
 IHP 2632# FFH 2602#
 IFP 104-187# FFP 259-363#
 ISIP 1722# FSIP 1722# BHT 122°F
- 5) 6129-6194 Chester Sandstone 30"-30"-30"-45"
 Blow died/25"
 Rec- 60' Mud w/ scum oil @ top
 IHP 3108# FHP 3058#
 IFP 72-72# FFP 83-83#
 ISIP 135# FSIP 135# BHT 124°F

GEOLOGICAL COMMENTS

There were no shows observed in the Permian Chase Group. Whereas, in the Council Grove Group there were gas detector shows. This group log top was chosen at 2995' (-579). This would be 9 feet high to the Charter #1-14 Davis (1/2 mile east, 1/4 mile south); and 5 feet low to the Mesa #1-15 Meierdirks (1/2 mile west, 1/2 mile south). We circulated for samples at 3062', equivalent to the producing zone of the Davis, but lost circulation. Thus, we drilled ahead, we were running 3 feet high to the #1-14 Davis.

We circulated for samples at 3114' where there was a 40 unit show (14 units background) on the gas detector. Samples, from 3095' to 3104', were white to light grey, finely crystalline limestone, with fair inter-crystalline porosity. There were no shows observed (see the results of DST #1).

The Heebner ~~Sale~~ log top was chosen at 4423' (-2001), 15 feet high to the Davis and 16 feet low to the Mesa well.

There was a 52 unit show (18 units background) on the gas detector at 4838', located in the Wyandotte Limestone. Samples, from 4836' to 4846', were cream to tan to light brown, finely crystalline limestone, with poor to fair inter-crystalline and solution pinpoint porosities. There were no shows observed in samples (see the results of DST #2).

The T/KC log top was chosen at 4887' (-2471). This would be 21 feet high to the Davis and 15 feet low to the Meierdirks. There were no shows observed in the samples or by the detector.

The Marmaton Group log top was 21 feet high to the Davis and 27 feet low to the Meierdirks. Samples, from 5266 to 5274, were light grey to white, finely crystalline, fossiliferous, ~~pellatal~~, dolomitic limestone, with poor inter-crystalline porosity. There was a fair fluorescence and

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solvent cut (see the results fo DST #3).

The Novinger log top was 18 feet high to the Davis and 17 feet low to the Meierdirks. Samples, from 5339 to 5346, were tan to light brown, finely crystalline, oolitic, fossiliferous limestone, with fair inter-crystalline and oomoldic porosities. There was a light brown staining and a poor show of free oil and gas. The detector had a 277 unit show with 140 units of background (see the results of DST #4).

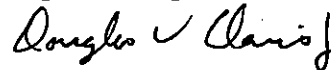
The Morrow Sandstone log top was 5 feet low to the Meierdirks and 31 feet high to the Davis. Samples were well sorted, subangular to subrounded, clear quartz, very fine grained sandstone and siltstone, with poor inter-granular porosity. There was a 62 unit show (30 units of background), but no shows observed in the samples. It was decided not to test , but review the log.

The Mississippian Chester D zone log top was 3 feet low to the Meierdirks and 30 feet high to the Davis. There were no observed shows either in samples or by the detector.

The Mississippian Chester Sandstone log top was chosen at 6183 (-3767). This would be 47 feet high to the Kennedy & Mitchell #1-94 Davis (3/4 mile east, 1/2 mile north). Samples, from 6191 to 6197, werewell sorted, subangular to subrounded very fine-grained clear quartz sandstone and siltstone. There was a fair show of free oil and a 20 unit show on the gas detector. See the results of DST #5.

The St. Louis log top was chosen at 6306 (-3890). There were no porosities in this zone. It was recommended the production casing be run , so as to further evaluate the Council Grove formations.

Respectfully submitted,



Douglas V. Davis
Petroleum Geologist

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FROM CONFIDENTIAL

MUD-CO INC.

100 South Market, Suite 203, Wichita, KS 67202, 316-264-2814

DRILLING MUD REPORT

REPORT NO. 1

DATE 5/09/91	19	DEPTH -0-		
API WELL NO.	STATE	COUNTY	WELL	S/T

OPERATOR Charter	CONTRACTOR Eagle	RIG NO. 1
ADDRESS Rig	ADDRESS Rig	SPUD DATE 5/09/91
REPORT FOR MR. Davis	REPORT FOR MR. Steinert	SECTION, TOWNSHIP, RANGE 15-34-28W

WELL NAME AND NO. #1-15 Enns	FIELD OR BLOCK NO.	COUNTY Meade	STATE Kansas
---------------------------------	--------------------	-----------------	-----------------

OPERATION	CASING	MUD VOLUME (BBL)	CIRCULATION DATA
PRESENT ACTIVITY Spudding	SURFACE 8 5/8 IN. at 000 FT.	HOLE -0- PITS -0-	PUMP SIZE X IN. 5 X 14
BIT SIZE (IN.) 12 1/4	INTERMEDIATE IN. at FT.	TOTAL CIRCULATING VOLUME -0-	ANNULAR VEL. (FT./MIN.) OPPOSITE DP
DRILL PIPE SIZE TYPE 4 1/2	PRODUCTION OR LINER IN. at FT.	IN STORAGE -0-	PUMP MAKE MODEL BBL/STROKE STROKE/MIN .096 62
DRILL COLLAR LENGTH SIZE 6 1/4	MUD TYPE Premix & Lime		OPPOSITE COLLAR CIRCULATING PRESSURE PSI BOTTOMS UP (MIN.) SYSTEM TOTAL (MIN.)

Sample from <input type="checkbox"/> Flowline <input type="checkbox"/> Pit Flowline Temperature	MUD PROPERTIES	DAILY COST 429.14	CUMULATIVE COST 429.14
----------------------------------------------------------------------------------------------------	----------------	----------------------	---------------------------

Time Sample Taken am pm	2:00
Depth (ft)	-0-
Weight <input type="checkbox"/> (ppg) <input type="checkbox"/> (lb/cu ft)	
Mud Gradient (psi/ft)	
Funnel Viscosity (sec/qt) API at °F	
Plastic Viscosity cp at °F	
Yield Point (lb/100 sq ft)	
Gel Strength (lb/100 sq ft) 10 sec/10 min	/ / /
pH <input type="checkbox"/> Strip <input type="checkbox"/> Meter	
Filtrate API (ml/30 min)	
Cake Thickness 32nd in API <input type="checkbox"/> HP-HT <input type="checkbox"/>	
Alkalinity, Mud (P _m)	
Alkalinity, Filtrate (P _f /M _f)	/ / /
Salt <input type="checkbox"/> ppm <input type="checkbox"/> gpg Chloride <input type="checkbox"/> ppm <input type="checkbox"/> gpg	3000
Calcium <input type="checkbox"/> ppm <input type="checkbox"/> Gyp (ppb)	220
Sand Content (% by Vol)	
Solids Content (% by Vol)	
Oil Content (% by Vol)	
Water Content (% by Vol)	
L.C.M. #/bbl	
Preservative #/bbl	

MUD PROPERTIES SPECIFICATIONS		
WEIGHT 9.4-9.8	VISCOSITY 36-40	FILTRATE NC
BY AUTHORITY <input type="checkbox"/> OPERATOR'S WRITTEN <input type="checkbox"/> DRILLING CONTRACTOR <input type="checkbox"/> OPERATOR'S REPRESENTATIVE <input type="checkbox"/> OTHER		

Suggest: MATERIALS RECOMMENDED

- Control wt 9.4-9.8 #/gal w/ water.
- Vis 36-40 sec/qt w/ premix.
120 bbl F/water Roll 1 hr & add
1 sx Soda ash only as needed.
25-30 sx Prem Gel
- Add lime as needed to flush hole & help maintain Vis.
- 2-6 #/bbl LCM.
- Trip slowly & Keep hole full.
Cir hole clean prior to csg.

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DATE	MUD ON HAND/USED	
362	30	Premium Gel
		Salt Clay
		Starch
2	4	Lime
40	24	C/S Hulls
25		Soda Ash
	40	Caustic Soda
	20	C.L.S. Super Lig
		Preservative
	6	Drispac MPC
	12	Mud Seal DD
	4	Multi Seal P10

THE RECOMMENDATIONS MADE HEREON SHALL NOT BE CONSTRUED AS AUTHORIZING THE INFRINGEMENT OF ANY VALID PATENT, AND ARE MADE WITHOUT ASSUMPTION OF ANY LIABILITY BY MUD-CO., INC. OR ITS AGENTS, AND ARE STATEMENTS OF OPINION ONLY.

REPRESENTATIVE Scott Selzer	HOME ADDRESS Dodge City	TELEPHONE 227-7615
Great Bend Answering Service 316/793-7957	WAREHOUSE LOCATION Pratt	TELEPHONE 672-2957

MUD-CO INC.

100 South Market, Suite 203, Wichita, KS 67202, 316-264-2814

DRILLING MUD REPORT

REPORT NO. 2

DATE	5/10/91	19	DEPTH	635'
API WELL NO.		STATE	COUNTY	WELL
				S/T

OPERATOR Charter	CONTRACTOR Eagle	RIG NO. 1
ADDRESS Rig	ADDRESS Rig	SPUD DATE 5/09/91
REPORT FOR MR. Davis	REPORT FOR MR. Steinert	SECTION, TOWNSHIP, RANGE 15-34-28w
WELL NAME AND NO. #1-15 Enns	FIELD OR BLOCK NO.	COUNTY Meade
		STATE Kansas

OPERATION PRESENT ACTIVITY Tripping	CASING SURFACE 8 5/8 IN. at 627 FT.	MUD VOLUME (BBL) HOLE 51 PITS 350	CIRCULATION DATA PUMP SIZE X IN. 5 X 14
BIT SIZE (IN.) 7 7/8	INTERMEDIATE IN. at FT.	TOTAL CIRCULATING VOLUME 401	ANNULAR VEL. (FT./MIN.) OPPOSITE DP
DRILL PIPE SIZE 4 1/2	PRODUCTION OR LINER IN. at FT.	IN STORAGE	PUMP MAKE MODEL
DRILL COLLAR SIZE 6 1/4	MUD TYPE Native		BBL/STROKE STROKE/MIN .096 62
			CIRCULATING PRESSURE PSI
			BOTTOMS UP (MIN.) 8+
			SYSTEM TOTAL (MIN.) 67+

Sample from <input type="checkbox"/> Flowline <input type="checkbox"/> Pit Flowline Temperature °F	MUD PROPERTIES	DAILY COST 599.64	CUMULATIVE COST 1028.78
Time Sample Taken gm pm 5:55	Depth (ft) 635	To 4300'	MUD PROPERTIES SPECIFICATIONS
Weight <input type="checkbox"/> (ppg) <input type="checkbox"/> (lb/cu ft)		WEIGHT 9.0-9.2	VISCOSITY As Needed
Mud Gradient (psi/ft)		FILTRATE NC	
Funnel Viscosity (sec/qt) API at °F		BY AUTHORITY <input type="checkbox"/> OPERATOR'S WRITTEN <input type="checkbox"/> DRILLING CONTRACTOR	
Plastic Viscosity cp at °F		<input type="checkbox"/> OPERATOR'S REPRESENTATIVE <input type="checkbox"/> OTHER	
Yield Point (lb/100 sq ft)		Suggest: MATERIALS RECOMMENDED	
Gel Strength (lb/100 sq ft) 10 sec/10 min	/ / /	(1) Drill w/ native mud & F/water, jet often.	
pH <input type="checkbox"/> Strip <input type="checkbox"/> Meter		(2) Flush hole as needed due to tight hole.	
Filtrate API (ml/30 min)		120 bbl F/water Roll & add only	
Cake Thickness 32nd in API <input type="checkbox"/> HP-HT <input type="checkbox"/>		1/2 sx Soda ash as needed.	
Alkalinity, Mud (P _m)		20-30 sx Prem Gel	
Alkalinity, Filtrate (P _f /M _f)	/ / /	(3) LCM only if needed.	
Salt <input type="checkbox"/> ppm Chloride <input type="checkbox"/> ppm		(4) P-10L: Add 1 gal in drill pipe each 90'-150'	
Calcium <input type="checkbox"/> ppm <input type="checkbox"/> Gyp (ppb)		(5) Fill frac tank w/ this premix to displace by 4300'.	
Sand Content (% by Vol)		120 bbl F/water	
Solids Content (% by Vol)		1 sx Soda ash	
Oil Content (% by Vol)		1 sx Caustic	
Water Content (% by Vol)		1 sx Lignite	
L.C.M. #/bbl		Gel for a 36 Vis	
Preservative #/bbl			

DATE	MUD ON HAND/USED
321	41 Premium Gel
	40 Caustic Soda
	19 1 C.L.S. Super Lig
	6 Preservative
0	2 Starch
	6 Lime
18	22 C/S Hulls
25	3 1 Soda Ash
	MPC
	DD
	P10

- (6) For shallow DST cir hole clean & spot a thick tank of chem mud from step #5 in hole.
- (7) Trip slowly & Keep hole full.

Thanks

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REPRESENTATIVE Scott Selzer	HOME ADDRESS Dodge City	TELEPHONE 227-7615
Great Bend Answering Service 316/793-7957	WAREHOUSE LOCATION Pratt	TELEPHONE 672-2957

MUD-CO INC.

100 South Market, Suite 203, Wichita, KS 67202, 316-264-2814

DRILLING MUD REPORT

REPORT NO. _____

DATE 8/17/91 19 DEPTH 2060'

API WELL NO. STATE COUNTY WELL S/T

RELEASED

OPERATOR <u>Charter</u> ADDRESS <u>AUG 0 2 1993</u>		CONTRACTOR <u>KCO</u> ADDRESS <u>JUL 1 7</u>		RIG NO. <u>1</u> SPUD DATE <u>5/09/91</u>
Rig <u>Davis</u> REPORT FOR MR. FROM CONFIDENTIAL		Rig <u>Stainert</u> REPORT FOR MR. CONFIDENTIAL		SECTION TOWNSHIP RANGE <u>15-34-28w</u>

WELL NAME AND NO. #1-15 Enns FIELD OR BLOCK NO. _____ COUNTY Meade STATE Kansas

OPERATION		CASING		MUD VOLUME (BBL)		CIRCULATION DATA			
PRESENT ACTIVITY <u>Drilling</u>		SURFACE <u>8 5/8 at 627 FT.</u>		HOLE <u>102</u> PITS <u>350</u>		PUMP SIZE X IN. <u>5</u> X <u>14</u>		ANNULAR VEL. (FT./MIN.) OPPOSITE DP _____	
BIT SIZE (IN.) NO. <u>7 7/8</u>		INTERMEDIATE IN. at _____ FT.		TOTAL CIRCULATING VOLUME <u>542</u>		PUMP MAKE _____		OPPOSITE COLLAR _____	
DRILL PIPE SIZE TYPE <u>4 1/2</u>		PRODUCTION OR LINER IN. at _____ FT.		IN STORAGE <u>620</u>		MODEL <u>.096</u> STROKE/MIN <u>62</u>		CIRCULATING PRESSURE PSI _____	
DRILL COLLAR SIZE <u>6 1/4</u>		MUD TYPE <u>Premix</u>				BBL./MIN. <u>6.0</u>		BOTTOMS UP (MIN.) <u>32+</u> SYSTEM TOTAL (MIN.) <u>90+</u>	

Sample from Flowline Pst Flowline Temperature: _____ °F

MUD PROPERTIES DAILY COST 2238.70 CUMULATIVE COST 3267.48

Time Sample Taken	Depth (ft)	Weight	Mud Gradient	Funnel Viscosity	Plastic Viscosity	Yield Point	Gel Strength	pH	Filtrate API	Cake Thickness	Alkalinity	Alkalinity Filtrate	Salt	Calcium	Sand Content	Solids Content	Oil Content	Water Content	L.C.M.	Preservative
<u>am pm</u>	<u>255</u>	<u>2960</u>	<u>9.6</u>	<u>400</u>	<u>30</u>		<u>/ / /</u>	<u>pH Strip Meter</u>		<u>32nd in API HP-HT</u>		<u>/ / /</u>	<u>ppm Chloride ppm</u>	<u>ppm Gyp (ppb)</u>	<u>% by Vol</u>	<u>% by Vol</u>	<u>% by Vol</u>	<u>% by Vol</u>	<u>#/bbl</u>	<u>#/bbl</u>

MUD PROPERTIES SPECIFICATIONS		
WEIGHT <u>9.2-9.4</u>	VISCOSITY <u>31-32</u>	FILTRATE <u>NC</u>
BY AUTHORITY <input type="checkbox"/> OPERATOR'S WRITTEN <input type="checkbox"/> DRILLING CONTRACTOR <input type="checkbox"/> OPERATOR'S REPRESENTATIVE <input type="checkbox"/> OTHER		

- Suggest: MATERIALS RECOMMENDED
- (1) Control wt 9.2-9.4 #/gal w/ water.
 - (2) Vis 31-32 sec/qt w/ premix.
120 bbl F/water Roll 1 hr & add 1 tank/tour over 1 cir.
1 sz Soda ash
20-30 sz Prem Gel
 - (3) LCM only as needed.
 - (4) Displace at 3800'. Have frac & premix tank full of this premix.
120 bbl F/water Note: Rin a 40 bbl water flush ahead of displacement mud.
2 sz Soda ash
2 sz Caustic
2 sz Lignite
Gel for a 36 Vis
 - (5) Vis 36-40 sec/qt w/ premix from step #2.
 - (6) For shallow DST cir hole clean & spot a thick tank of premix from step #4 in hole.
 - (7) Trip slowly & Keep hole full.

Thanks

DATE _____ MUD ON HAND/USED

<u>96</u>	<u>225</u>	Premium Gel	<u>35</u>	<u>5</u>	Caustic Soda
		Salt Clay	<u>14</u>	<u>5</u>	C.L.S. Super Lig
		Starch			Preservative
		Lime	<u>6</u>		Drispac MPC
<u>15</u>	<u>3</u>	C/S Hulls	<u>12</u>		Mud Seal DD
<u>19</u>	<u>6</u>	Soda Ash	<u>12</u>		Multi Seat P10

THE RECOMMENDATIONS MADE HEREON SHALL NOT BE CONSTRUED AS AUTHORIZING THE INFRINGEMENT OF ANY VALID PATENT, AND ARE MADE WITHOUT ASSUMPTION OF ANY LIABILITY BY MUD-CO., INC. OR ITS AGENTS, AND ARE STATEMENTS OF OPINION ONLY.

REPRESENTATIVE <u>Scott Selzer</u>	HOME ADDRESS <u>Dodge City</u>	TELEPHONE <u>227-7615</u>
Great Bend Answering Service 316/793-7957	WAREHOUSE LOCATION <u>Pratt</u>	TELEPHONE <u>672-2957</u>

MUD-CO INC.

100 South Market, Suite 203, Wichita, KS 67202, 316-264-2814

DRILLING MUD REPORT

REPORT NO. _____

DATE 7/18/91 19 91 DEPTH 3383'

API WELL NO.	STATE	COUNTY	WELL	S/T

OPERATOR Charter ADDRESS Rig REPORT FOR MR.		CONTRACTOR Eagle ADDRESS Rig REPORT FOR MR.		RIG NO. 1 SPUD DATE 5/09/91 SECTION, TOWNSHIP, RANGE 15-34-28w	
Davis WELL NAME AND NO. #1-15 Enns		Steinert FIELD OR BLOCK NO.		Meade COUNTY Kansas STATE	

OPERATION PRESENT ACTIVITY Drilling BIT SIZE (IN.) NO. 7 7/8 DRILL PIPE SIZE TYPE 4 1/2 DRILL COLLAR LENGTH SIZE 6 1/4		CASING SURFACE 8 5/8 at 627 FT. INTERMEDIATE IN. at FT. PRODUCTION OR LINER IN. at FT. MUD TYPE Premix		MUD VOLUME (BBL) HOLE PITS TOTAL CIRCULATING VOLUME 100 IN STORAGE 678 500		CIRCULATION DATA PUMP SIZE X IN. 5 14 PUMP MAKE MODEL BBL/STROKE STROKE/MIN .096 62 BBL/MIN. 6.0 ANNULAR VEL. (FT./MIN.) OPPOSITE DP OPPOSITE COLLAR CIRCULATING PRESSURE PSI BOTTOMS UP (MIN.) SYSTEM TOTAL (MIN.) 143 113	
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Sample from <input checked="" type="checkbox"/> Flowline <input type="checkbox"/> Pit Flowline Temperature °F			MUD PROPERTIES			DAILY COST 1562.31			CUMULATIVE COST 4070.70		
Time Sample Taken am pm 11:30			Depth (ft) 3470			Weight <input checked="" type="checkbox"/> (ppg) <input type="checkbox"/> (lb/cu ft) 9.2			Mud Gradient (psi/ft) 1.70		
Funnel Viscosity (sec/qt) API at °F 32			Plastic Viscosity cp at °F			Yield Point (lb/100 sq ft)			Gel Strength (lb/100 sq ft) 10 sec/10 min / / /		
pH <input type="checkbox"/> Strip <input type="checkbox"/> Meter			Filtrate API (ml/30 min)			Cake Thickness 32nd in API <input type="checkbox"/> HP-HT <input type="checkbox"/>			Alkalinity, Mud (P _m)		
Alkalinity, Filtrate (P _f /M _f)			Salt <input type="checkbox"/> ppm <input type="checkbox"/> gpg Chloride <input type="checkbox"/> ppm <input type="checkbox"/> gpg 40,000			Calcium <input type="checkbox"/> ppm <input type="checkbox"/> Gyp (ppb)			Sand Content (% by Vol)		
Solids Content (% by Vol)			Oil Content (% by Vol)			Water Content (% by Vol)			L.C.M. #/bbl 1		
Preservative #/bbl			Lost 45 bbl at 3062' & 80 bbl at 3383'			MUD PROPERTIES SPECIFICATIONS			WEIGHT 9.0-9.2 VISCOSITY 31-32 FILTRATE NC		
BY AUTHORITY <input type="checkbox"/> OPERATOR'S WRITTEN <input type="checkbox"/> DRILLING CONTRACTOR <input type="checkbox"/> OPERATOR'S REPRESENTATIVE <input type="checkbox"/> OTHER			Suggest:			MATERIALS RECOMMENDED			(1) Control wt 9.0-9.2 #/gal w /water. (2) Vis 31-32 sec/qt w/ premix. 120 bbl F/water Roll 1 hr & add 1/2 ex Soda ash only as needed. 20-30 ex Prem Gel (3) LCM: As needed. (4) Displace at 3800' w/ this premix. 120 bbl F/water Note: Run a 40 bbl 2 ex Soda ash water flush ahead of 2 ex Caustic displacement mud. 2 ex Lignite Gel for a 36 Vis (5) Vis 36-40 sec/qt w/ premix from step #2. (6) Trip slowly & Keep hole full.		

DATE	MUD ON HAND/USED	
7/6	144	Premium Gel 58 2
4		Salt Clay PHPA 27 2
50		Starch MBL 2
		Lime 14
194	45	C/S Hulls 18
19	5	Soda Ash 1
		Caustic Soda
		C.L.S. Super Lig.
		Preservative
		Drispac MPC
		Mud Seal DD
		Multi Seal P10

RECEIVED
 STATE COMMISSION
 JUL 18 1991
 CONSERVATION DIVISION
 Wichita, Kansas
 Thanks

THE RECOMMENDATIONS MADE HEREON SHALL NOT BE CONSTRUED AS AUTHORIZING THE INFRINGEMENT OF ANY VALID PATENT, AND ARE MADE WITHOUT ASSUMPTION OF ANY LIABILITY BY MUD-CO., INC. OR ITS AGENTS, AND ARE STATEMENTS OF OPINION ONLY.

REPRESENTATIVE Scott Selzer Great Bend Answering Service 316/793-7957	HOME ADDRESS Dodge City	TELEPHONE 227-7615
	WAREHOUSE LOCATION Pratt	TELEPHONE 672-2957

MUD-CO INC.

100 South Market, Suite 203, Wichita, KS 67202, 316-264-2814

DRILLING MUD REPORT

REPORT NO. 5

DATE 5/14/91 19 DEPTH 3021'

API WELL NO.	STATE	COUNTY	WELL	S/T

OPERATOR <u>Chantor</u> ADDRESS <u>Rig</u> REPORT FOR MR. <u>Davis</u> WELL NAME AND NO. <u>#1-15 Enns</u>		RELEASED AUG 0 2 1993		CONTRACTOR <u>Engle</u> ADDRESS <u>Rig</u> REPORT FOR MR. <u>Steinert</u>		RIG NO. <u>1</u> SPUD DATE <u>5/09/91</u> SECTION, TOWNSHIP, RANGE <u>15-34-28W</u>	
FROM CONFIDENTIAL		WELD OR BLOCK NO.		COUNTY <u>Meade</u>		STATE <u>Kansas</u>	

OPERATION		CASING		MUD VOLUME (BBL)		CIRCULATION DATA			
PRESENT ACTIVITY <u>Drilling</u>		SURFACE <u>8 5/8" at 627 FT.</u>		HOLE PITS <u>314 400</u>		PUMP SIZE X IN. <u>5 14</u>		ANNULAR VEL. (FT./MIN.) OPPOSITE DP	
BIT SIZE (IN.) NO. <u>7 7/8</u>		INTERMEDIATE IN. at FT.		TOTAL CIRCULATING VOLUME <u>714</u>		PUMP MAKE		OPPOSITE COLLAR	
DRILL PIPE SIZE TYPE <u>4 1/2</u>		PRODUCTION OR LINER IN. at FT.		IN STORAGE		MODEL <u>.096 62</u>		CIRCULATING PRESSURE PSI	
DRILL COLLAR LENGTH SIZE <u>6 1/4</u>		MUD TYPE <u>Chem & Chem</u>				BBL/STROKE <u>6.0</u>		STROKE/MIN <u>52+</u>	
						BBL/MIN. <u>6.0</u>		SYSTEM TOTAL (MIN.) <u>119+</u>	

Sample from <input checked="" type="checkbox"/> Flowline <input type="checkbox"/> Pit		MUD PROPERTIES	
Flowline Temperature °F			
Time Sample Taken	am pm		
Depth (ft)	<u>4:10</u>		
Weight <input checked="" type="checkbox"/> (ppg) <input type="checkbox"/> (lb/cu ft)	<u>3021</u>		
Mud Gradient (psi/ft)	<u>8.8</u>		
Funnel Viscosity (sec/qt) API at °F	<u>45.7</u>		
Plastic Viscosity cp at °F	<u>48 - 13</u>		
Yield Point (lb/100 sq ft)	<u>10</u>		
Gel Strength (lb/100 sq ft) 10 sec/10 min	<u>14</u>		
pH <input type="checkbox"/> Strip <input checked="" type="checkbox"/> Meter	<u>18 - 20</u>		
Filtrate API (ml/30 min)	<u>10.5</u>		
Cake Thickness 32nd in API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>	<u>14.4</u>		
Alkalinity, Mud (P _m)	<u>1</u>		
Alkalinity, Filtrate (P _f /M _f)	<u>6</u>		
Salt <input type="checkbox"/> ppm <input checked="" type="checkbox"/> Chloride <input type="checkbox"/> ppm	<u>8000</u>		
Calcium <input checked="" type="checkbox"/> ppm <input type="checkbox"/> Gyp (ppb)	<u>40</u>		
Sand Content (% by Vol)			
Solids Content (% by Vol)	<u>3.1</u>		
Oil Content (% by Vol)			
Water Content (% by Vol)			
L.C.M. #/bbl			
Preservative #/bbl			

DAILY COST <u>1300.64</u>	CUMULATIVE COST <u>6220.43</u>	
MUD PROPERTIES SPECIFICATIONS		
WEIGHT <u>8.8-9.0</u>	VISCOSITY <u>40-45</u>	FILTRATE <u>12-15cc</u>
BY AUTHORITY <input type="checkbox"/> OPERATOR'S WRITTEN <input type="checkbox"/> DRILLING CONTRACTOR <input type="checkbox"/> OPERATOR'S REPRESENTATIVE <input type="checkbox"/> OTHER		

- Suggest: MATERIALS RECOMMENDED
- (1) Control wt 8.8-9.0 #/gal w/ water.
 - (2) Vis 40-45 sec/qt w/ premix.
120 bbl F/water Roll 1 hr & add
1 sx Soda ash only as needed.
Thicken w/ Prem Gel
 - (3) Tourly
Caustic: 3 sx over 4-6 hrs.
Lignite: 1 sx over 2 hrs.
Drilling Detergent: 1 can over 2 hrs.
 - (4) LCM: Only if needed.
 - (5) At 4300' add 1 sx Caustic, 3 sx Lignite, 3 Monpac to premix in step #2. Jet & add over 2 hrs.
 - (6) Trip slowly & Keep hole full.
Cir hole clean prior to DST.
Vis 45 for DST.
Add Lignite as needed due to high Vis.
Break cir on trips in hole w/ bit.

DATE _____ MUD ON HAND/USED

80	96	Premium Gel	54	4	Caustic Soda
4		Salt Clay FHPA	23	4	C.L.S. Super Lig
50		Starch MBL	3		Preservative
		Lime 13	13	1	Drispac MPC
170	24	C/S Hulls	17		Mud Seal DD
11	8	Soda Ash	1		Multi Seal P10

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REPRESENTATIVE <u>Scott Selzer</u>	HOME ADDRESS <u>Dodge City</u>	TELEPHONE <u>227-7615</u>
Great Bend Answering Service 316/793-7957	WAREHOUSE LOCATION <u>Pratt</u>	TELEPHONE <u>672-2957</u>

MUD-CO INC.

100 South Market, Suite 203, Wichita, KS 67202, 316-264-2814

DRILLING MUD REPORT

REPORT NO. _____

DATE 5/15/93 19 DEPTH 7701

API WELL NO.	STATE	COUNTY	WELL	S/T

RELEASED

OPERATOR Charter ADDRESS Rig REPORT FOR MR. Davis WELL NAME AND NO. #1-15 Enns	CONTRACTOR Eagle ADDRESS Rig REPORT FOR MR. Steinert WELL NAME AND NO. #1-15 Enns	RIG NO. 1 SPUD DATE 5/09/91 SECTION, TOWNSHIP, RANGE 15-34-28W
------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------

FIELD OR BLOCK NO. _____ COUNTY Meade STATE Kansas

OPERATION PRESENT ACTIVITY	CASING SURFACE	MUD VOLUME (BBL)	CIRCULATION DATA
BIT SIZE (IN.) NO. <u>7 7/8</u>	8 5/16 IN. at <u>627</u> FT.	HOLE PITS <u>378</u>	PUMP SIZE X IN. <u>5</u> X <u>14</u>
DRILL PIPE SIZE TYPE <u>4 1/2</u>	INTERMEDIATE IN. at _____ FT.	TOTAL CIRCULATING VOLUME <u>800</u>	PUMP MAKE _____
DRILL COLLAR SIZE <u>6 1/4</u>	PRODUCTION OR LINER IN. at _____ FT.	IN STORAGE <u>778</u>	MODEL _____
			BBL/STROKE STROKE/MIN. <u>.096</u> <u>62</u>
			BBL./MIN. <u>6.0</u>
			CIRCULATING PRESSURE PSI _____
			BOTTOMS UP (MIN.) <u>62</u>
			SYSTEM TOTAL (MIN.) <u>120</u>

Sample from Flowline Pit Flowline Temperature _____ °F

MUD PROPERTIES DAILY COST 1487.06 CUMULATIVE COST 7667.89

Time Sample Taken _____ am pm	Depth (ft) <u>11.4 ft</u>	Weight <input checked="" type="checkbox"/> (ppg) <input type="checkbox"/> (lb/cu ft)	Mud Gradient (psi/ft) <u>9.3</u>
Funnel Viscosity (sec/qt) API at _____ °F	<u>47</u>	Plastic Viscosity cp at _____ °F	<u>12</u>
Yield Point (lb/100 sq ft)	<u>22</u>	Gel Strength (lb/100 sq ft) 10 sec/10 min	<u>26</u> <u>37</u>
pH <input type="checkbox"/> Strip <input checked="" type="checkbox"/> Meter	<u>11.3</u>	Filtrate API (ml/30 min)	<u>15.2</u>
Cake Thickness 32nd in API <input type="checkbox"/> HP-HT <input type="checkbox"/>	<u>1</u>	Alkalinity, Mud (P _m)	<u>1.3</u>
Alkalinity, Filtrate (P _f /M _f)	<u>11.500</u>	Salt <input type="checkbox"/> ppm <input checked="" type="checkbox"/> Chloride <input type="checkbox"/> ppm	<u>40</u>
Calcium <input type="checkbox"/> ppm <input type="checkbox"/> Gyp (ppb)	<u>6.5</u>	Sand Content (% by Vol)	<u>93.5</u>
Solids Content (% by Vol)	<u>0</u>	Water Content (% by Vol)	<u>0</u>
L.C.M. #/bbl	<u>0</u>	Preservative #/bbl	<u>0</u>

MUD PROPERTIES SPECIFICATIONS

WEIGHT <u>9.0</u>	VISCOSITY <u>45-48</u>	FILTRATE <u>10-12cc</u>
-------------------	------------------------	-------------------------

BY AUTHORITY OPERATOR'S WRITTEN DRILLING CONTRACTOR OPERATOR'S REPRESENTATIVE OTHER

- Suggest: MATERIALS RECOMMENDED**
- (1) Control wt 9.0 #/gal w/ water.
 - (2) Vis 45-48 sec/qt w/ premix.
120 bbl F/water Roll 1 hr & add
1 ex Soda ash only as needed.
Thicken w/ Prem Gel
 - (3) Tourly
Caustic: 2 ex over 2-4 hrs.
Lignite: 1 ex over 2 hrs. (Add 2 ex if needed to keep Vis in proper range.)
Drilling Detergent: 1 can/tour over 2 hrs.
 - (4) LCM: Only if needed. Possible loss cir from 4800'-5200' if wt exceeds 9.0 #/gal.
 - (5) Daylites jet good & add 1 tank of this premix over 2 hrs.
120 bbl F/water Roll 1 hr prior to
1 ex Soda ash adding. Mix Monpac
2 ex Caustic 20 min/ex.
3 ex Monpac
3 ex Lignite
Prem Gel as needed
 - (6) Trip slowly & keep hole full.

DATE _____ MUD ON HAND/USED

275	29	Premium Gel	43	11	Caustic Soda
4		Salt Clay PHPA	17	6	C.L.S. Super Lig
		Starch	3		Preservative
		Lime	10	3	Drispac MPC
170		C/S Hulls	13	4	Mud Seal DD
11		Soda Ash	50		Multi Seal MBL

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REPRESENTATIVE Scott Selzer Great Bend Answering Service 316/793-7957	HOME ADDRESS Dodge City	TELEPHONE 227-7615
WAREHOUSE LOCATION Pratt	TELEPHONE 672-2957	

MUD-CO INC.

100 South Market, Suite 200, Kansas City, MO 64101, 316-264-2814

DRILLING MUD REPORT

REPORT NO. _____

DATE 5/16/91 19 88 DEPTH 4860

API WELL NO.	STATE	COUNTY	WELL	S/T

RELEASED

OPERATOR _____ CONTRACTOR **KCO** RIG NO. _____

ADDRESS LOT 1 ADDRESS _____ SPUD DATE _____

REPORT FOR MR. **FROM CONFIDENTIAL** REPORT FOR MR. JUL 17 SECTION, TOWNSHIP, RANGE 5, 00, 03

WELL NAME AND NO. _____ FIELD OR BLOCK NO. _____ COUNTY MEAD STATE 15-34-28W
#1-15, Enns Meade Kansas

PRESENT ACTIVITY		CASING SURFACE	MUD VOLUME (BBL)	CIRCULATION DATA	
BIT SIZE (IN.)	NO.	8 5/8 IN. at 627 FT.	HOLE PITS	PUMP SIZE X IN.	ANNULAR VEL. (FT./MIN.)
DRILL PIPE SIZE	TYPE	INTERMEDIATE	TOTAL CIRCULATING VOLUME	PUMP MAKE	OPPOSITE DP
DRILL COLLAR SIZE	LENGTH	PRODUCTION OR LINER	IN STORAGE	MODEL	OPPOSITE COLLAR
6 1/4			788	BBL/STROKE STROKE/MIN	CIRCULATING PRESSURE PSI
		MUD TYPE		BBL./MIN.	BOTTOMS UP (MIN.)
		<u>Chem & Monpac</u>		6.0	SYSTEM TOTAL (MIN.)

Sample from Flowline Pit Flowline Temperature _____ °F

MUD PROPERTIES DAILY COST 1260.45 CUMULATIVE COST 8927.94

Time Sample Taken	am	pm	MUD PROPERTIES		
Depth (ft)			4105		
Weight <input checked="" type="checkbox"/> (ppg) <input type="checkbox"/> (lb/cu ft)			4860		
Mud Gradient (psi/ft)			9.2		
Funnel Viscosity (sec/qt) API at _____ °F			47		
Plastic Viscosity cp at _____ °F			14		
Yield Point (lb/100 sq ft)			13		
Gel Strength (lb/100 sq ft) 10 sec/10 min			16	21	1
pH <input type="checkbox"/> Strip <input type="checkbox"/> Meter			10.5		
Filtrate API (ml/30 min)			9.6		
Cake Thickness 32nd in API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>			1		
Alkalinity, Mud (P _m)					
Alkalinity, Filtrate (P _f /M _f)			8	1	1
Salt <input type="checkbox"/> ppm <input checked="" type="checkbox"/> Chloride <input checked="" type="checkbox"/> ppm			10,000		
Calcium <input checked="" type="checkbox"/> ppm <input type="checkbox"/> Gyp (ppb)			40		
Sand Content (% by Vol)					
Solids Content (% by Vol)			5.8		
Oil Content (% by Vol)					
Water Content (% by Vol)			94.2		
L.C.M. #/bbl			tr		
Preservative #/bbl					

MUD PROPERTIES SPECIFICATIONS		
WEIGHT	VISCOSITY	FILTRATE
9.0	45-48	10-12cc
BY AUTHORITY <input type="checkbox"/> OPERATOR'S WRITTEN <input type="checkbox"/> DRILLING CONTRACTOR <input type="checkbox"/> OPERATOR'S REPRESENTATIVE <input type="checkbox"/> OTHER		

- Suggest: MATERIALS RECOMMENDED
- (1) Control wt 9.0 #/gal w/ water.
 - (2) Vis 45-48 sec/qt w/ premix.
120 bbl F/water Roll 1 hr & add
1 sx Soda ash only as needed.
Thicken w/ Prem Gel
 - (3) Tourly
Caustic: 2 sx over 3-4 hrs.
Lignite: 1 sx over 2 hrs. (Add 2 sx if needed to keep Vis in proper range.)
Drilling Detergent: 1 can over 2 hrs.
 - (4) LCM: Only if needed. Possible lose cir 4800 '-5200' if wt exceeds 9.0 #/gal.
 - (5) Trip slowly & Keep hole full.
Cir hole clean prior to DST.
Break cir on trips in hole w/ bit.

DATE _____ MUD ON HAND/USED

250	25	Premium Gel	40	3	Caustic Soda	
4		Salt Clay PHPA	14	3	C.L.S. Super Lig	
		Starch	3		Preservative	
		Lime	7	3	Drispac	MPC
158		C/S Hulls	12	1	Mud Seal	DD
11		Soda Ash	50		Multi Seal	MBL

Thanks

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REPRESENTATIVE	Scott Selzer	HOME ADDRESS	Dodge City	TELEPHONE	227-7615
Great Bend Answering Service 316/793-7957		WAREHOUSE LOCATION	Pratt	TELEPHONE	672-2957

MUD-CO INC.

100 South Market, Suite 203, Wichita, KS 67202, 316-264-2814

DRILLING MUD REPORT

REPORT NO. _____

DATE 7/17/98 19 98 DEPTH 5108'

API WELL NO.	STATE	COUNTY	WELL	S/T

OPERATOR RELEASED Charter	CONTRACTOR RCJ Earle	RIG NO. 1
ADDRESS Rig	ADDRESS Rig	SPUD DATE 5/09/91
REPORT FOR MR. Davis	REPORT FOR MR. Steinert	SECTION, TOWNSHIP, RANGE 15-34-28w

WELL NAME AND NO. **#1-15 Enns** FROM CONFIDENTIAL

FIELD OR BLOCK NO. _____ COUNTY **Moede** STATE **Kansas**

OPERATION		CASING		MUD VOLUME (BBL)		CIRCULATION DATA	
PRESENT ACTIVITY Drilling		SURFACE 8 5/8 at 627 FT.		HOLE PITS 416 400		PUMP SIZE X IN. 5 14	
BIT SIZE (IN.) 7 7/8	NO.	INTERMEDIATE		TOTAL CIRCULATING VOLUME 816		ANNULAR VEL. (FT./MIN.) OPPOSITE DP	
DRILL PIPE SIZE 4 1/2	TYPE	PRODUCTION OR LINER		IN STORAGE		PUMP MAKE OPPOSITE COLLAR	
DRILL COLLAR SIZE 6 1/4	LENGTH	IN. at FT.		BBL/STROKE STROKE/MIN .096 62		CIRCULATING PRESSURE PSI	
MUD TYPE Chem & Monpac		BBL/MIN. 6.0		TOTAL (MIN.) 136+		BOTTOMS UP (MIN.) 69+	

Sample from Flowline Pit Flowline Temperature _____ °F

DAILY COST **1106.75** CUMULATIVE COST **10,341.60**

MUD PROPERTIES		MUD PROPERTIES SPECIFICATIONS	
Time Sample Taken	am pm	WEIGHT	VISCOSITY
Depth (ft)	4:40	9.0	45-48
Weight <input type="checkbox"/> (ppg) <input type="checkbox"/> (lb/cu ft)	5198	FILTRATE 10-12cc	
Mud Gradient (psi/ft)	9.1	BY AUTHORITY <input type="checkbox"/> OPERATOR'S WRITTEN <input type="checkbox"/> DRILLING CONTRACTOR	
Funnel Viscosity (sec/qt) API at _____ °F	473	<input type="checkbox"/> OPERATOR'S REPRESENTATIVE <input type="checkbox"/> OTHER.	
Plastic Viscosity cp at _____ °F	47	Suggest: MATERIALS RECOMMENDED	
Yield Point (lb/100 sq ft)	13	(1) Control wt 9.0 #/gal w/ water.	
Gel Strength (lb/100 sq ft) 10 sec/10 min	12	(2) Vis 45-48 sec/qt w/ premix.	
pH <input type="checkbox"/> Strip <input checked="" type="checkbox"/> Meter	12.2	120 bbl F/water Roll 1 hr & add	
Filtrate API (ml/30 min)	108	1 ex Soda ash only as needed.	
Cake Thickness 32nd in API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>	9.6	Thicken w/ Prem Gel	
Alkalinity, Mud (P _m)	1	(3) <u>Tourly</u>	
Alkalinity, Filtrate (P _f /M _f)	1.0	Caustic: 2 ex over 3-4 hrs.	
Salt <input type="checkbox"/> ppm <input checked="" type="checkbox"/> Chloride <input type="checkbox"/> ppm	11,000	Lignite: 1 ex over 2 hrs. (Add 2 ex if needed to keep Vis in proper range)	
Calcium <input checked="" type="checkbox"/> ppm <input type="checkbox"/> Gyp (ppb)	20	Drilling Detergent: 1 can over 2 hrs.	
Sand Content (% by Vol)	5.1	(4) <u>Monpac</u> : As needed to keep WTL 10-12cc. Mix 1-2 ex w/ premix or pit mud & add over 2 hrs if needed to keep WTL in range.	
Solids Content (% by Vol)	94.9	(5) <u>LCM</u> : Only if needed. At 5800' Raise LCM to 5 #/bbl. (Add approx 50 ex Hulls & 35 ex Multi Blend.) (Add 1 Gal X-CIDE in premix or at flowline prior to adding LCM.)	
Oil Content (% by Vol)	0	(6) Trip slowly & Keep hole full. Cir hole clean prior to DST. Break cir on trips in hole w/ bit.	
Water Content (% by Vol)	0		
L.C.M. #/bbl	0		
Preservative #/bbl	0		

DATE _____ MUD ON HAND/USED

155	95	Premium Gel	34	6	Caustic Soda	
4		Salt Clay PHPA	11	3	C.L.S. Super Lig	
		Starch	3		Preservative	
		Lime	7		Drispac	MPC
153		C/S Hulls	9	3	Mud Seal	DD
11		Soda Ash	60		Multi Seal	MBL

THE RECOMMENDATIONS MADE HEREON SHALL NOT BE CONSTRUED AS AUTHORIZING THE INFRINGEMENT OF ANY VALID PATENT, AND ARE MADE WITHOUT ASSUMPTION OF ANY LIABILITY BY MUD-CO., INC. OR ITS AGENTS, AND ARE STATEMENTS OF OPINION ONLY.

REPRESENTATIVE Scott Selzer	HOME ADDRESS Dodge City	TELEPHONE 221-7615
Great Bond Answering Service 316/793-7957	WAREHOUSE LOCATION Pratt	TELEPHONE 672-2957



100 South Market, Suite 203, Wichita, KS 67202, 316-264-2814

DRILLING MUD REPORT

REPORT NO. 9

DATE 5/18/91 19 DEPTH 5338'

API WELL NO.	STATE	COUNTY	WELL	S/T

OPERATOR Charter	RELEASED	CONTRACTOR Eagle	RIG NO. 1
ADDRESS Rig		ADDRESS Rig	SPUD DATE 5/09/91
REPORT FOR MR. Davis	AUG 0 2 1993	REPORT FOR MR. Steinert	SECTION, TOWNSHIP, RANGE 15-34-28W

WELL NAME AND NO. #1-15 Enns	FIELD OR BLOCK NO. FROM CONFIDENTIAL	COUNTY Meade	STATE Kansas
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OPERATION		CASING		MUD VOLUME (BBL)		CIRCULATION DATA			
PRESENT ACTIVITY DST #4		SURFACE 8 5/8" at 627 FT.		HOLE 427 PITS 400		PUMP SIZE X IN. 5 14		ANNULAR VEL. (FT./MIN.) OPPOSITE DP	
BIT SIZE (IN.) 7 7/8	NO.	INTERMEDIATE IN. at FT.		TOTAL CIRCULATING VOLUME 827		PUMP MAKE MODEL		OPPOSITE COLLAR	
DRILL PIPE SIZE 4 1/2	TYPE	PRODUCTION OR LINER IN. at FT.		IN STORAGE		BBL/STROKE STROKE/MIN .096 62		CIRCULATING PRESSURE PSI	
DRILL COLLAR SIZE 6 1/4	LENGTH	MUD TYPE Chem & Monpac				BBL./MIN. 6.0		BOTTOMS UP (MIN.) SYSTEM TOTAL (MIN.) 71+ 138+	

Sample from <input type="checkbox"/> Flowline <input type="checkbox"/> Pit Flowline Temperature °F	MUD PROPERTIES	DAILY COST 734.10	CUMULATIVE COST 10,768.79
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Time Sample Taken am pm	1:00		
Depth (ft)	5338		
Weight <input type="checkbox"/> (ppg) <input type="checkbox"/> (lb/cu ft)	9.1		
Mud Gradient (psi/ft)	.473		
Funnel Viscosity (sec/qt) API at °F	42		
Plastic Viscosity cp at °F	13		
Yield Point (lb/100 sq ft)	14		
Gel Strength (lb/100 sq ft) 10 sec/10 min	16/25	/	/
pH <input type="checkbox"/> Strip <input checked="" type="checkbox"/> Meter	10.6		
Filtrate API (ml/30 min)	12.0		
Cake Thickness 32nd in API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>	1		
Alkalinity, Mud (P _m)			
Alkalinity, Filtrate (P _f /M _f)	1.0	/	/
Salt <input type="checkbox"/> ppm <input type="checkbox"/> Chloride <input type="checkbox"/> ppm	11,500		
Calcium <input type="checkbox"/> ppm <input type="checkbox"/> Gyp (ppb)	40		
Sand Content (% by Vol)			
Solids Content (% by Vol)	5.1		
Oil Content (% by Vol)			
Water Content (% by Vol)	94.9		
L.C.M. #/bbl	0		
Preservative #/bbl	Thanks		

MUD PROPERTIES SPECIFICATIONS		
WEIGHT 9.0	VISCOSITY 45-48	FILTRATE 10-12cc
BY AUTHORITY <input type="checkbox"/> OPERATOR'S WRITTEN <input type="checkbox"/> DRILLING CONTRACTOR <input type="checkbox"/> OPERATOR'S REPRESENTATIVE <input type="checkbox"/> OTHER		

- Suggest: MATERIALS RECOMMENDED
- (1) Control wt 9.0 #/gal w/ water.
 - (2) Vis 45-48 sec/qt w/ premix.
120 bbl F/water Roll 1 hr & add
1 sx Soda ash only as needed.
Thicken w/ Prem Gel
 - (3) **Tourly**
Caustic: 2 sx over 2-4 hrs.
Lignite: 1 sx over 2 hrs. (Add 2 sx if needed to keep Vis in proper range.)
Drilling Detergent: 1 can over 2 hrs.
 - (4) **Monpac**: Mix 1-2 sx w/ Pit Mud or Premix & add over 2 hrs if needed to keep WTL 10-12cc.
 - (5) **LCM**: Only if needed. At 5800' Raise LCM to 5 #/bbl. (Add approx 50 sx Hulls & 35 sx Multi Blend.) (Add 1 Gal X-CIDE in premix or at flowline prior to adding LCM.)
 - (6) Trip slowly & Keep hole full.
Cir hole clean prior to DST.
Break cir on trips in hole w/ bit.

DATE	MUD ON HAND/USED
155	Premium Gel
4	Salt Clay PHPA
	Starch
	Lime
149	C/S Hulls
11	Soda Ash
27	7 Caustic Soda
9	2 C.L.S. Super Lig
3	Preservative
6	1 Drispac MPC
6	3 Mud Seal DD
50	Multi Seal MBL

THE RECOMMENDATIONS MADE HEREON SHALL NOT BE CONSTRUED AS AUTHORIZING THE INFRINGEMENT OF ANY VALID PATENT, AND ARE MADE WITHOUT ASSUMPTION OF ANY LIABILITY BY MUD-CO., INC. OR ITS AGENTS, AND ARE STATEMENTS OF OPINION ONLY.

REPRESENTATIVE Scott Selzer	HOME ADDRESS Dodge City	TELEPHONE 227-7615
Great Bend Answering Service 316/793-7957	WAREHOUSE LOCATION Pratt	TELEPHONE 672-2957

MUD-CO INC.

100 South Market, Suite 203, Wichita, KS 67202, 316-264-2814

DRILLING MUD REPORT

REPORT NO. _____

DATE	7/19/91	19	DEPTH	5510'	
API WELL NO.		STATE	COUNTY	WELL	S/T

OPERATOR Charter ADDRESS Rig REPORT FOR MR. Davis WELL NAME AND NO. #1-15 Enns	RELEASED AUG 0 2 1993	CONTRACTOR Eagle ADDRESS KCO Rig REPORT FOR MR. Steinert WELL BLOCK NO. FROM CONFIDENTIAL	RIG NO. 1 SPUD DATE 5/09/91 SECTION, TOWNSHIP, RANGE 15-34-28w
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COUNTY	Meade	STATE	Kansas
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OPERATION PRESENT ACTIVITY	CASING SURFACE 8 5/8" at 627 FT.	MUD VOLUME (BBL) HOLE PITS TOTAL CIRCULATING VOLUME IN STORAGE	CIRCULATION DATA PUMP SIZE X IN. ANNULAR VEL. (FT./MIN.) OPPOSITE DP PUMP MAKE OPPOSITE COLLAR MODEL BBL/STROKE STROKE/MIN CIRCULATING PRESSURE PSI BOTTOMS UP (MIN.) SYSTEM TOTAL (MIN.)
BIT SIZE (IN.) NO. 7 7/8	INTERMEDIATE IN. at FT.	400	74
DRILL PIPE SIZE TYPE 4 1/2	PRODUCTION OR LINER IN. at FT.	842	142
DRILL COLLAR LENGTH SIZE 6 1/4	MUD TYPE Chem & Monpac		

Sample from <input type="checkbox"/> Flowline <input type="checkbox"/> Pit Flowline Temperature °F	MUD PROPERTIES	DAILY COST 672.35	CUMULATIVE COST 11,441.14
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Time Sample Taken	am pm		
Depth (ft)	5510		
Weight <input checked="" type="checkbox"/> (ppg) <input type="checkbox"/> (lb/cu ft)	9.0		
Mud Gradient (psi/ft)	4.68		
Funnel Viscosity (sec/qt) API at °F	40		
Plastic Viscosity cp at °F	14		
Yield Point (lb/100 sq ft)	5		
Gel Strength (lb/100 sq ft) 10 sec/10 min	6 13	/	/
pH <input type="checkbox"/> Strip <input checked="" type="checkbox"/> Meter	10.0		
Filtrate API (ml/30 min)	12.0		
Cake Thickness 32nd in API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>			
Alkalinity, Mud (P _m)			
Alkalinity, Filtrate (P _f /M _f)			
Salt <input type="checkbox"/> ppm <input checked="" type="checkbox"/> Chloride <input type="checkbox"/> ppm	5	/	/
Calcium <input type="checkbox"/> ppm <input type="checkbox"/> Gyp (ppb)	10,500		
Sand Content (% by Vol)	10		
Solids Content (% by Vol)	1.9		
Oil Content (% by Vol)			
Water Content (% by Vol)	95.1		
L.C.M. #/bbl	7		
Preservative #/bbl			

WEIGHT	9.0	VISCOSITY	45-48	FILTRATE	10-12cc
BY AUTHORITY <input type="checkbox"/> OPERATOR'S WRITTEN <input type="checkbox"/> DRILLING CONTRACTOR <input type="checkbox"/> OPERATOR'S REPRESENTATIVE <input type="checkbox"/> OTHER					

- MATERIALS RECOMMENDED**
- Suggest:**
- Control wt 9.0 #/gal w/ water.
 - Vic 45-48 sec/qt w/ premix.
120 bbl F/water Roll 1 hr & add
1 sx Soda ash only as needed.
Thicken w/ Prem Gel
 - Tourly**
Caustic: 3 sx over 3-4 hrs.
Lignite: 1-2 sx over 2 hrs.
Drilling Detergent: 1 can over 2 hrs.
 - Monpac:** As needed to keep WTL 10-12cc. (Mix w/ Pit Mud or Premix & add over 2 hrs.)
 - LCM:** As needed. **At 5800'** Raise to 5 #/bbl. (17 sx LCM will raise LCM 1 #/bbl in system) (Use 1/2 Hulls & 1/2 Multi Blend) (Add 2 Gal prior to LCM)
 - Trip slowly & Keep hole full. Cir hole clean prior to DST. Break cir on trips in hole w/ bit.
- Thanks

DATE	MUD ON HAND/USED
130 4	25 Premium Gel 7 Salt Clay 3 Starch 6 Lime 110 C/S Hulls 10 Soda Ash
	25 Caustic Soda 7 C.L.S. Super Lig 3 Preservative 6 Drispac MPC 5 Mud Seal DD 50 Multi Seal MBL

THE RECOMMENDATIONS MADE HEREON SHALL NOT BE CONSTRUED AS AUTHORIZING THE INFRINGEMENT OF ANY VALID PATENT, AND ARE MADE WITHOUT ASSUMPTION OF ANY LIABILITY BY MUD-CO., INC. OR ITS AGENTS, AND ARE STATEMENTS OF OPINION ONLY.

REPRESENTATIVE Scott Salzer Great Bend Answering Service 316-793-7957	HOME ADDRESS Dodge City	TELEPHONE 227-7615
	WAREHOUSE LOCATION Pratt	TELEPHONE 672-2957

MUD-CO INC.

100 South Market, Suite 203, Wichita, KS 67202, 316-264-2814

DRILLING MUD REPORT

REPORT NO. 11

DATE 5-20-91 19 DEPTH 5851

API WELL NO. STATE COUNTY WELL S/T

OPERATOR: Charter
 ADDRESS: Rig
 REPORT FOR MR.: Davis

CONTRACTOR: Engle
 ADDRESS: Rig
 REPORT FOR MR.: Steinert

RIG NO.: 1
 SPUD DATE: 5/09/91
 SECTION, TOWNSHIP, RANGE: 15-34-28w

RELEASED
 AUG 0 2 1993

WELL NAME AND NO.: #1-15 Enns
 FIELD OR BLOCK NO.:
 COUNTY: FROM CONFIDENTIAL
 STATE: Kansas

OPERATION		CASING		MUD VOLUME (BBL)		CIRCULATION DATA			
PRESENT ACTIVITY Drilling		SURFACE 8 5/8" at 627 FT.		HOLE PITS 465 400		PUMP SIZE X IN. 5 14		ANNULAR VEL. (FT./MIN.) OPPOSITE DP.	
BIT SIZE (IN.) NO. 7 7/8		INTERMEDIATE IN. at FT.		TOTAL CIRCULATING VOLUME 868		PUMP MAKE		OPPOSITE COLLAR	
DRILL PIPE SIZE TYPE 4 1/2		PRODUCTION OR LINER IN. at FT.		IN STORAGE		MODEL		CIRCULATING PRESSURE PSI	
DRILL COLLAR LENGTH SIZE 6 1/4		MUD TYPE Chem & Mondac				BBL/STROKE STROKE/MIN .096 62		BOTTOMS UP (MIN.) 78+	
						BBL/MIN. 6.0		SYSTEM TOTAL (MIN.) 146+	

Sample from Flowline Pit
 Flowline Temperature °F

MUD PROPERTIES

DAILY COST: 2151.49
 CUMULATIVE COST: 13592.63

Time Sample Taken am pm	11:50		
Depth (ft)	5851		
Weight <input checked="" type="checkbox"/> (ppg) <input type="checkbox"/> (lb/cu ft)	9.1		
Mud Gradient (psi/ft)	473		
Funnel Viscosity (sec/qt) API at °F	55		
Plastic Viscosity cp at °F	14		
Yield Point (lb/100 sq ft)	21		
Gel Strength (lb/100 sq ft) 10 sec/10 min	14/29	1	1
pH <input type="checkbox"/> Strip <input checked="" type="checkbox"/> Meter	10.6		
Filtrate API (ml/30 min)	12.0		
Cake Thickness 32nd in API <input type="checkbox"/> HP-HT <input type="checkbox"/>	1		
Alkalinity, Mud (P _m)			
Alkalinity, Filtrate (P _f /M _f)	1.8	1	1
Salt <input type="checkbox"/> ppm <input checked="" type="checkbox"/> gpg Chloride <input type="checkbox"/> ppm <input checked="" type="checkbox"/> gpg	9000		
Calcium <input checked="" type="checkbox"/> ppm <input type="checkbox"/> Gyp (ppb)	40		
Sand Content (% by Vol)			
Solids Content (% by Vol)	5.2		
Oil Content (% by Vol)			
Water Content (% by Vol)	94.8		
L.C.M. #/bbl	3		
Preservative #/bbl			

MUD PROPERTIES SPECIFICATIONS

WEIGHT: 9.0
 VISCOSITY: 45-48
 FILTRATE: 10-12 cc

BY AUTHORITY OPERATOR'S WRITTEN DRILLING CONTRACTOR
 OPERATOR'S REPRESENTATIVE OTHER

MATERIALS RECOMMENDED

- CONTROL W. 9.0⁺/GAL W/WATER
- VIS 45-48 sec/GT W/WATER
 120 BBL F/WATER
 1 SK XPA ASH
 TRACKER W/FRAM G-2
 ROLL 1 HR 7 AM ONLY AS NS-150.
- TEURLY
 CAUSTIC 3 SK OVER 3-4 HOURS
 LIME: 1-2 SK OVER 3 HOURS
 PRELUB TO 2 HOURS. 1000 OVER 2 HOURS
- MONDAC: AS NS-150 TO KEEP WTL TO 1000
 MIX WITH MUD OR FRAMIX 1000
 OVER 3 HRS.
- LCM 5⁺/BBL WITH HULLS, 2000
 FLAKE, MULTI BLEND.
- TRIP SLOWLY & KEEP HOLE FULL.
 CIR. HOLE CLEAN PRIOR TO DST.
 BRK CR. ON TRIP IN HOLE
 WITH BIT.

DATE: 26787
 MUD ON HAND/USED

Premium Gel	40	10	Caustic Soda
Salt Clay MHA	15	2	C.L.S. Super Lig
Starch CLR	2	1	Preservative
Lime	11	1	Drispac mfc.
C/S Hulls	9	2	Mud Seal D.D.
Soda Ash	27	23	Multi Seal MBL.

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REPRESENTATIVE Scott Selzer Great Bend Answering Service 316/793-7957	HOME ADDRESS Dodge City	TELEPHONE 227-7615
	WAREHOUSE LOCATION Pratt	TELEPHONE 672-2957

MUD-GO INC.

100 South Market, Suite 203, Wichita, KS 67202, 316-264-2814

DRILLING MUD REPORT

REPORT NO. 12

DATE 5-21-91 19 DEPTH 6160

API WELL NO.	STATE	COUNTY	WELL	S/T

OPERATOR Charter RELEASED ADDRESS Rig REPORT FOR MR. AUG 0 2 1993 Well Name and No. #1-15 Enns		CONTRACTOR Eagle KOC ADDRESS Rig REPORT FOR MR. JUL 1 7 Well Name and No. Steinert		RIG NO. 1 SPUD DATE 5/09/91 SECTION, TOWNSHIP, RANGE 15-34-28W	
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FROM CONFIDENTIAL

FIELD OR BLOCK NO.		COUNTY <u>Wood</u>	STATE <u>Kansas</u>
OPERATION PRESENT ACTIVITY <u>DRILLING</u> BIT SIZE (IN.) NO. <u>7 7/8</u> DRILL PIPE SIZE TYPE <u>4 1/2</u> DRILL COLLAR SIZE LENGTH <u>6 1/4</u>		CASING SURFACE <u>8 5/8 IN. at 627 FT.</u> INTERMEDIATE IN. at FT. PRODUCTION OR LINER IN. at FT. MUD TYPE <u>Chem & Monpac</u>	
MUD VOLUME (BBL) HOLE PITS <u>440 400</u> TOTAL CIRCULATING VOLUME <u>892</u> IN STORAGE		CIRCULATION DATA PUMP SIZE X IN. <u>5 14</u> ANNULAR VEL. (FT./MIN.) OPPOSITE DP PUMP MAKE MODEL BBL/STROKE STROKE/MIN. <u>.096 62</u> CIRCULATING PRESSURE PSI BOTTOMS UP (MIN.) <u>22+</u> SYSTEM TOTAL (MIN.) <u>148+</u>	

Sample from <input type="checkbox"/> Flowline <input type="checkbox"/> Pit	Flowline Temperature	MUD PROPERTIES	DAILY COST <u>1324.46</u>	CUMULATIVE COST <u>14917.09</u>
Time Sample Taken <u>am pm</u>			MUD PROPERTIES SPECIFICATIONS WEIGHT <u>9.0</u> VISCOSITY <u>45-48</u> FILTRATE <u>110-120 cc</u> BY AUTHORITY <input type="checkbox"/> OPERATOR'S WRITTEN <input type="checkbox"/> DRILLING CONTRACTOR <input type="checkbox"/> OPERATOR'S REPRESENTATIVE <input type="checkbox"/> OTHER	
Depth (ft) <u>6160</u>	Weight <input checked="" type="checkbox"/> (ppg) <input type="checkbox"/> (lb/cu ft) <u>9.1</u>	Mud Gradient (psi/ft) <u>.473</u>	MATERIALS RECOMMENDED 1. CONTROL W/ 9.0 #/GAL L/FL MUD 2. VIS 45-48 SEC/GT L/FL MUD 120 BBL F/LINER 1.5% SODIUM TIME TO ADD WITH FENCE 3. TOURLEY CAUSTIC: 5 BX OVER 3 HRS. LIME: 1 BX OVER 2 HRS. DRILLING MUD CONTAIN 1 BOX OVER 2 HRS. 4. MONPAC (AS ORDERED TO MS. PLATE 11 12) MIX W/ST MUD OR PREMIX + ADD OVER 2 HRS. 5. LCM 5' TALL WITH SELLER'S FULLY, MUD IS FRESH. 6. TRIP SLOWLY TO MAKE FULL CAP. HOLD CLEAN PRIOR TO DST BREAK OFF. 2 TRIPS IN ALL WITH DST. THANKS	
Funnel Viscosity (sec/qt) API at <u>54-45</u>	Plastic Viscosity cp at <u>12</u>	Yield Point (lb/100 sq ft) <u>23</u>		
Gel Strength (lb/100 sq ft) 10 sec/10 min <u>15/29</u>	pH <input type="checkbox"/> Strip <input checked="" type="checkbox"/> Meter <u>10.6</u>	Filtrate API (ml/30 min) <u>12.0</u>		
Cake Thickness 32nd in API <input type="checkbox"/> HP-HT <input type="checkbox"/>	Alkalinity, Mud (P _m) <u>1</u>	Alkalinity, Filtrate (P _f /M _f) <u>11.3</u>		
Salt <input type="checkbox"/> ppm Chloride <input checked="" type="checkbox"/> ppm <u>10000</u>	Calcium <input type="checkbox"/> ppm <input type="checkbox"/> Gyp (ppb) <u>40</u>	Sand Content (% by Vol)		
Solids Content (% by Vol) <u>5.1</u>	Oil Content (% by Vol)	Water Content (% by Vol) <u>94.9</u>		
L.C.M. #/bbl	Preservative #/bbl			

DATE	MUD ON HAND/USED
232 35	Premium Gel 32 8
4	Salt Clay (1 PA) 14 1
30	Starch 2 1
	Lime 11 1
53 34	C/S Halls 6 3
12 1	Soda Ash 11 16
	Caustic Soda
	C.L.S. Super Lig
	Preservative
	Drispac M.P.C.
	Mud Seal D.D.
	Multi Seal T.B.L.

THE RECOMMENDATIONS MADE HEREON SHALL NOT BE CONSTRUED AS AUTHORIZING THE INFRINGEMENT OF ANY VALID PATENT, AND ARE MADE WITHOUT ASSUMPTION OF ANY LIABILITY BY MUD-CO., INC. OR ITS AGENTS, AND ARE STATEMENTS OF OPINION ONLY.

REPRESENTATIVE Scott Selzer	HOME ADDRESS Dodge City	TELEPHONE 277-7615
Great Bend Answering Service 316/793-7957	WAREHOUSE LOCATION Pratt	TELEPHONE 672-2957

MUD-CO INC.

100 South Market, Suite 203, Wichita, KS 67202, 316-264-2814

DRILLING MUD REPORT

REPORT NO. 15-01-200

DATE 5-22-91 19 DEPTH 6260

API WELL NO.	STATE	COUNTY	WELL	S/T

RELEASED

OPERATOR <u>CHARTER</u>	CONTRACTOR <u>KCC</u>	RIG NO. <u>1</u>
ADDRESS <u>NTC</u>	ADDRESS <u>NTC</u>	SPUD DATE <u>5-9-91</u>
REPORT FOR MR. <u>FROM CONFIDENTIAL</u>	REPORT FOR MR. <u>CONFIDENTIAL</u>	SECTION, TOWNSHIP, RANGE <u>15-01-200</u>

WELL NAME AND NO. <u>15-000</u>	FIELD OR BLOCK NO.	COUNTY <u>INDIAN</u>	STATE <u>KS.</u>
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OPERATION		CASING		MUD VOLUME (BBL)		CIRCULATION DATA	
PRESENT ACTIVITY <u>DRILLING</u>		SURFACE <u>8 7/8 IN. at 627</u> FT.		HOLE <u>501</u>	PITS <u>400</u>	PUMP SIZE X IN. <u>5 14</u>	ANNULAR VEL. (FT./MIN.) OPPOSITE DP
BIT SIZE (IN.) <u>7 7/8</u>	NO.	INTERMEDIATE IN. at FT.		TOTAL CIRCULATING VOLUME <u>901</u>		PUMP MAKE MODEL	OPPOSITE COLLAR
DRILL PIPE SIZE <u>4 1/2</u>	TYPE	PRODUCTION OR LINER IN. at FT.		IN STORAGE		BBL/STROKE STROKE/MIN <u>0.96 6.2</u>	CIRCULATING PRESSURE PSI
DRILL COLLAR SIZE <u>6 7/8</u>	LENGTH	MUD TYPE <u>CHEM MUD PAC</u>				BBL/MIN. <u>6.0</u>	BOTTOMS UP (MIN.) SYSTEM TOTAL (MIN.) <u>83+ 149+</u>

Sample from <input type="checkbox"/> Flowline <input type="checkbox"/> Pit Flowline Temperature °F	MUD PROPERTIES	DAILY COST <u>206.92</u>	CUMULATIVE COST <u>15124.01</u>
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Time Sample Taken am <u>pm</u>	1:35		
Depth (ft)	<u>6260</u>		
Weight <input checked="" type="checkbox"/> (ppg) <input type="checkbox"/> (lb/cu ft)	<u>9.1</u>		
Mud Gradient (psi/ft)	<u>4.73</u>		
Funnel Viscosity (sec/qt) API at °F	<u>50</u>		
Plastic Viscosity cp at °F	<u>12</u>		
Yield Point (lb/100 sq ft)	<u>27</u>		
Gel Strength (lb/100 sq ft) 10 sec/10 min	<u>2 1/28</u>	<u>1</u>	<u>1</u>
pH <input type="checkbox"/> Strip <input checked="" type="checkbox"/> Meter	<u>10.4</u>		
Filtrate API (ml/30 min)	<u>15.2</u>		
Cake Thickness 32nd in API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>	<u>1</u>		
Alkalinity, Mud (P _m)			
Alkalinity, Filtrate (P _f /M _f)	<u>1.9</u>	<u>1</u>	<u>1</u>
Salt <input type="checkbox"/> ppm <input checked="" type="checkbox"/> Chloride <input type="checkbox"/> ppm	<u>10000</u>		
Calcium <input checked="" type="checkbox"/> ppm <input type="checkbox"/> Gyp (ppb)	<u>40</u>		
Sand Content (% by Vol)			
Solids Content (% by Vol)	<u>4.9</u>		
Oil Content (% by Vol)			
Water Content (% by Vol)	<u>95.1</u>		
L.C.M. #/bbl			
Preservative #/bbl			

WEIGHT <u>9.0</u>	VISCOSITY <u>45-48</u>	FILTRATE <u>10-15 cc</u>
BY AUTHORITY <input type="checkbox"/> OPERATOR'S WRITTEN <input type="checkbox"/> DRILLING CONTRACTOR <input type="checkbox"/> OPERATOR'S REPRESENTATIVE <input type="checkbox"/> OTHER		

SUGGEST.

- CONTROL WT 9.0#/CAL L/W/WR
- VIS 45-48 SEC/QT W/PREMIX
100 BBL F/WATER
1 SA SOAP WASH
THICKEN W/PREMIX
- TOURLY
PAUSE 5 HR OVER 2 HRS
LICKER 1 2 SA OVER 2 HRS
DRILLING DEEPER 1 1/2 HRS 2 HRS
- MUD PAC AS NECESSARY WSP WTL 10-15 CC
MIX W/PST MUD OR PREMIX 1 ADD
CUR 2 HRS
- LCM 5th/BBL WITH HULLS CELL FLAKE
A D MULTIFERRO.
- TRIP SLOWLY / KEEP HOLE FULL
W/CR HOLE CLEAN PRIOR TO DST.
BREAK TR. ON TRIPS TO HOLE
WITH BIT

THANKS

DATE	MUD ON HAND/USED	
<u>232</u>	<u>29</u>	<u>3</u>
<u>4</u>	<u>13</u>	<u>1</u>
<u>30</u>	<u>2</u>	
	<u>11</u>	
<u>37</u>	<u>4</u>	<u>2</u>
<u>12</u>	<u>0</u>	<u>11</u>
Premium Gel	Caustic Soda	
Salt Clay CA	C.L.S. Super Lig	
Starch CLF	Preservative	
Lime	Dispac MDC	
C/S Hulls	Mud Seal D.D	
Soda Ash	Multi Seal M.F.L.	

THE RECOMMENDATIONS MADE HEREON SHALL NOT BE CONSTRUED AS AUTHORIZING THE INFRINGEMENT OF ANY VALID PATENT, AND ARE MADE WITHOUT ASSUMPTION OF ANY LIABILITY BY MUD-CO., INC. OR ITS AGENTS, AND ARE STATEMENTS OF OPINION ONLY.

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Great Bend Answering Service 316/793-7957	WAREHOUSE LOCATION <u>1 1/2 MI</u>	TELEPHONE <u>316-277-7957</u>

MUD-CO INC.

100 South Market, Suite 203, Wichita, KS 67202, 316-264-2814

DRILLING MUD REPORT REPORT NO. 14

DATE 5-23-91 DEPTH 6466

API WELL NO.	STATE	COUNTY	WELL	S/T

OPERATOR **CHARTER**

CONTRACTOR **ENGLS KCC**

RIG NO. **1**

ADDRESS **K16**

ADDRESS **K16**

SPUD DATE **5-9-91**

REPORT FOR MR. **DAVIS**

REPORT FOR MR. **ST-THERT**

SECTION, TOWNSHIP, RANGE **15-34-2X**

WELL NAME AND NO. **115 SULLS**

FIELD OR BLOCK NO.

COUNTY **WICHITA**

STATE **KS**

OPERATION	
PRESENT ACTIVITY	
BIT SIZE (IN.)	NO.
7 7/8	
DRILL PIPE SIZE	TYPE
4 1/2	
DRILL COLLAR SIZE	LENGTH
C 74	

CASING	
SURFACE	
1 3/8 IN. at	27 FT.
INTERMEDIATE	
IN. at	FT.
PRODUCTION OR LINER	
IN. at	FT.
MUD TYPE CLININ INCL PAC	

MUD VOLUME (BBL)	
HOLE	PITS
517	400
TOTAL CIRCULATING VOLUME 917	
IN STORAGE	

CIRCULATION DATA			
PUMP SIZE	X	IN.	ANNULAR VEL. (FT./MIN.)
5		14	OPPOSITE DP
PUMP MAKE			OPPOSITE COLLAR
MODEL			CIRCULATING PRESSURE PSI
BBL/STROKE	STROKE/MIN	BOTTOMS UP (MIN.) 46+	
.696	62	SYSTEM TOTAL (MIN.) 151+	
BBL/MIN. 6.0			

Sample from Flowline Pit Flowline Temperature °F

DAILY COST **1578.36** CUMULATIVE COST **16702.37**

Time Sample Taken		MUD PROPERTIES	
am	pm		
Depth (ft)		1:50	
Weight (ppg)		9.3	
Mud Gradient (psi/ft)		.483	
Funnel Viscosity (sec/qt) API at °F		51	
Plastic Viscosity cp at °F		17	
Yield Point (lb/100 sq ft)		15	
Gel Strength (lb/100 sq ft) 10 sec/10 min		16/28	
pH <input type="checkbox"/> Strip <input checked="" type="checkbox"/> Meter		10.4	
Filtrate API (ml/30 min)		10.4	
Cake Thickness 32nd in API <input checked="" type="checkbox"/> HP-HT <input type="checkbox"/>		1	
Alkalinity, Mud (P _m)		.	
Alkalinity, Filtrate (P _f /M _f)		.15	
Salt ppm Chloride ppm		9000	
Calcium ppm Gyp (ppb)		40	
Sand Content (% by Vol)			
Solids Content (% by Vol)		6.7	
Oil Content (% by Vol)			
Water Content (% by Vol)		93.3	
L.C.M. #/bbl		5	
Preservative #/bbl			

MUD PROPERTIES SPECIFICATIONS		
WEIGHT	VISCOSITY	FILTRATE
BY AUTHORITY <input type="checkbox"/> OPERATOR'S WRITTEN <input type="checkbox"/> DRILLING CONTRACTOR <input type="checkbox"/> OPERATOR'S REPRESENTATIVE <input type="checkbox"/> OTHER		

MATERIALS RECOMMENDED

SUCCESS

1. TRIP SLOWLY W. HOLE FULL. DR HOLE CLEAN BRICK TO DST. LINK CLR IN TRIPS TO HOLE 4/12T.

RELEASED

AUG 0 2 1993

FROM CONFIDENTIAL

THANKS

DATE		MUD ON HAND/USED	
198	34	Premium Gel	21 8
4		Salt Clay	9 4
30		Starch C/F	2
		Lime	9 2
33	40	C/S Hulls	2 2
12		Soda Ash	
		Caustic Soda	
		C.L.S. Super Lig	
		Preservative	
		Drispac MPC	
		Mud Seal	
		Multi Seal	

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REPRESENTATIVE SCOTT SLOPER	HOME ADDRESS 18162 CTAV	TELEPHONE 917-7015
Great Bend Answering Service 316/793-7957	WAREHOUSE LOCATION 18118	TELEPHONE 722-2157