

ORIGINAL

SIDE ONE

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

Operator: License # 04782

Name: Ensign Operating Company

Address 621 17th St., #1800

City/State/Zip Denver, CO 80293

Purchaser: Spot Sales

Operator Contact Person: J. C. Simmons

Phone (303) 293-9999

Contractor: Name: H-40 Drilling Inc.

License: 30692

Wellsite Geologist: Duane E. Moredock

Designate Type of Completion
 New Well Re-Entry Workover

Oil SWD Temp. Abs.

Gas Inj Delayed Comp.

Dry Other (Core, Water Supply, etc.)

If OWO: old well info as follows:
Operator: _____

Well Name: _____

Comp. Date _____ Old Total Depth _____

Drilling Method:
 Mud Rotary Air Rotary Cable

3/29/91 4/9/91 5/8/91-SI-WOPL

Spud Date Date Reached TD Completion Date

API NO. 15- 175-21,178-00-00

County Seward

C NW NE Sec. 10 Twp. 34S Rge. 33 East West

4620 Ft. North from Southeast Corner of Section

1980 Ft. West from Southeast Corner of Section
(NOTE: Locate well in section plat below.)

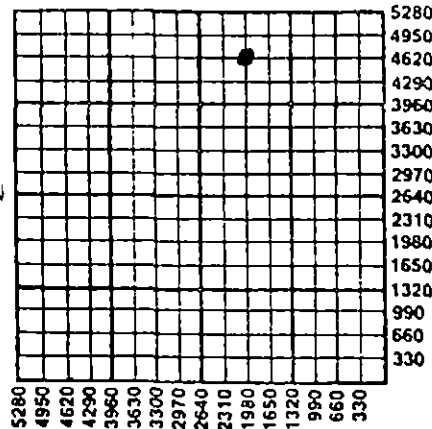
Lease Name Swan Well # 1-10

Field Name Evalyn-Condit

Producing Formation Chester

Elevation: Ground 2862' KB 2872'

Total Depth 6500' PBTD 6440'



Amount of Surface Pipe Set and Cemented at 1635 Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set _____ Feet

If Alternate II completion, cement circulated from _____

feet depth to _____ w/ _____ sx cnt.

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 Connie Smith

Title Sr. Engineering Technician Date 5/29/91

Subscribed and sworn to before me this 29th day of May, 19 91.

Notary Public Janet Campbell

Date Commission Expires 9-30-94

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)

SIDE TWO

Operator Name Ensign Operating Co. Lease Name Swan Well # 1-10

Sec. 10 Twp. 34S Rge. 33 East West
 County Seward

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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Attach Additional Sheets.) Samples Sent to Geological Survey <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Electric Log Run <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Submit Copy.) See attached	Formation Description <input type="checkbox"/> Log <input type="checkbox"/> Sample Name _____ Top _____ Bottom _____ See attached
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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
Conductor		20"		40'		4 yds	Grout
Surface	12 1/2"	8-5/8"	24	1635	HLC	625	2% CaCl₂
					Class "C"	150	2% CaCl₂
Production	7-7/8"	4 1/2"	10.5	6484	Class "H"	325	.25% CBL, .1% Halad, 322 & 3%

Shots Per Foot	PERFORATION RECORD Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record (Amount and Kind of Material Used)	Depth
4 JSPF	6392-6394	850 gals w/15% Fe-HCl, 1% Morfld II, .2% HAI-60	6314-6356
1 JSPF	6314-6356		
1 JSPF	5964-6139	900 gals w/15% Fe-HCl, 1% Morfld II & .1% HAI-60	5964-6139

TUBING RECORD	Size 2-3/8"	Set At 5948'	Packer At _____	Liner Run <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Date of First Production 5/6/91 - SI-WOPL	Producing Method <input checked="" type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (Explain)
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Estimated Production Per 24 Hours	Oil 0	Bbls. 0	Gas 800	Mcf 800	Water 0	Bbls. 0	Gas-Oil Ratio	Gravity
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Disposition of Gas: Vented Sold Used on Lease (If vented, submit ACO-18.)

METHOD OF COMPLETION

Open Hole Perforation Dually Completed Commingled

Other (Specify) _____

Production Interval _____

ORIGINAL



P.O. BOX 951046
DALLAS, TX 75395-1046

INVOICE

HALLIBURTON SERVICES

ORIGINAL

A Halliburton Company

INVOICE NO.	DATE
093525	03/29/1991

WELL LEASE NO./PLANT NAME		WELL/PLANT LOCATION		STATE	WELL/PLANT OWNER	
WAN 1-10		SEWARD		KS	SAME	
SERVICE LOCATION		CONTRACTOR		JOB PURPOSE		TICKET DATE
LIBERAL		H 30 DRLG.		CEMENT SURFACE CASING		03/29/1991
ACCT. NO.	CUSTOMER AGENT	VENDOR NO.	CUSTOMER P.O. NUMBER	SHIPPED VIA	FILE NO.	
73943	B. J. MCGRIFF			COMPANY TRUCK	13147	

ENSIGN OPERATING COMPANY
1515 AIR PARK AVENUE
P.O. BOX 2161
LIBERAL, KS 67905-2161

DIRECT CORRESPONDENCE TO:
FIRST OKLAHOMA TOWER
210 WEST PARK AVENUE
SUITE 2050
OKLAHOMA CITY, OK 73102-5601

PRICE REF. NO.	DESCRIPTION	QUANTITY	U/M	UNIT PRICE	AMOUNT
PRICING AREA - MID CONTINENT					
000-117	MILEAGE	7	MI	2.35	16.45
		1	UNT		
000-118	MILEAGE SURCHARGE-CEMENT-LAND	7	MI	.40	2.80
		1	UNT		
001-016	CEMENTING CASING	1635	FT	945.00	945.00
		1	UNT		
030-018	CEMENTING PLUG SW, PLASTIC TOP	8 5/8	IN	130.00	130.00
		1	EA		
16A	CASING SHOE - 8 5/8" 8RD THD.	1	EA	161.00	161.00
830.2171					
24A	INSERT FLOAT VALVE - 8 5/8" 8RD	1	EA	171.00	171.00
815.19502					
27	FILL-UP UNIT 7"- 8 5/8"	1	EA	30.00	30.00
815.19414					
40	CENTRALIZER 8-5/8" MODEL S-4	2	EA	62.00	124.00
807.93059					
66	FASGRIP LIMIT CLAMP 8 5/8"	1	EA	13.75	13.75
807.64056					
350	HALLIBURTON WELD-A	1	LB	11.50	11.50
890.10802					
504-050	PREMIUM PLUS CEMENT	150	SK	7.08	1,062.00
504-120	HALL. LIGHT -PREMIUM PLUS	625	SK	6.29	3,931.25
507-210	FLOCELE	156	LB	1.30	202.80
509-406	ANHYDROUS CALCIUM CHLORIDE	14	SK	26.25	367.50
500-307	MILEAGE SURCHARGE-CEMENT MAT.	1058.703	TMI	.10	105.87
500-207	BULK SERVICE CHARGE	813	CFT	1.10	894.30
500-306	MILEAGE CMTG MAT DEL OR RETURN	1058.703	TMI	.75	794.03

RECEIVED
MAY 21 1991
STATE CORPORATION COMMISSION
CONSERVATION DIVISION
Wichita, Kansas

INVOICE SUBTOTAL

8,963.25

***** CONTINUED ON NEXT PAGE *****

FORM 1900-R4

BY THE 10TH OF THE FOLLOWING MONTH AFTER DATE OF INVOICE. UPON RECEIPT OF CUSTOMER'S ACCOUNT BY THE LAST DAY OF THE MONTH OF THE INVOICE IS DATED. CUSTOMER AGREES TO PAY INTEREST AT THE RATE OF 12% PER ANNUM CONTRACT RATE APPLICABLE BUT NEVER LESS THAN THE FEDERAL RESERVE DISCOUNT RATE. CUSTOMER TO EMPLOY AN ATTORNEY TO REPRESENT HIMSELF IN ALL MATTERS RELATING TO THIS CONTRACT AND TO PAY ALL COSTS AND

ORIGINAL

P.O. BOX 951046
DALLAS, TX 75395-1046

INVOICE

HALLIBURTON SERVICES

A Halliburton Company

ORIGINAL
111800

INVOICE NO.	DATE
093525	03/29/1991

WELL LEASE NO./PLANT NAME		WELL/PLANT LOCATION		STATE	WELL/PLANT OWNER	
SWAN 1-10		SEWARD		KS	SAME	
SERVICE LOCATION		CONTRACTOR	JOB PURPOSE		TICKET DATE	
LIBERAL		H 30 DRLG.	CEMENT SURFACE CASING		03/29/1991	
ACCT. NO.	CUSTOMER AGENT	VENDOR NO.	CUSTOMER P.O. NUMBER	SHIPPED VIA	FILE NO.	
73943	B. J. MCGRIFF			COMPANY TRUCK	13147	

ENSIGN OPERATING COMPANY
1515 AIR PARK AVENUE
P.O. BOX 2161
LIBERAL, KS 67905-2161

DIRECT CORRESPONDENCE TO:
FIRST OKLAHOMA TOWER
210 WEST PARK AVENUE
SUITE 2050
OKLAHOMA CITY, OK 73102-5601

PAID
MAY 16 1991

PRICE REF. NO.	DESCRIPTION	QUANTITY	U/M	UNIT PRICE	AMOUNT
	DISCOUNT-(BID)				1,792.64-
	INVOICE BID AMOUNT				7,170.61
	*-KANSAS STATE SALES TAX				268.38
	*-SEWARD COUNTY SALES TAX				63.14
	<i>955.120</i> <i>ew</i>				
	73943 <i>91D002</i>				
	<i>Swan 1-10</i>				
	<i>Recker</i>				
	INVOICE TOTAL - PLEASE PAY THIS AMOUNT =====>				\$7,502.13

RECEIVED
APR 25 1991
ACCOUNTING

RECEIVED
STATE COMMISSION
MAY 21 1991
CONSERVATION DIVISION
Wichita, Kansas

7070
[Signature]

TERMS: TO PAY IN NET BY THE 10TH OF THE FOLLOWING MONTH AFTER DATE OF INVOICE UPON RECEIPT OF PAYMENT OF CUSTOMER'S ACCOUNT BY THE LAST DAY OF THE MONTH WHICH THE INVOICE IS DATED. CUSTOMER AGREES TO PAY INTEREST AT THE HIGHEST LAWFUL CONTRACT RATE APPLICABLE BUT NEVER EXCEEDING 18% PER ANNUM. CUSTOMER AGREES TO EMPLOY AN ATTORNEY TO ENFORCE THIS AGREEMENT AND TO COLLECT COSTS AND

ORIGINAL



REMIT TO:
P.O. BOX 951046
DALLAS, TX 75395-1046

INVOICE

HALLIBURTON SERVICES ORIGINAL

A Halliburton Company

INVOICE NO.	DATE
094000	04/10/1991

WELL LEASE NO./PLANT NAME		WELL/PLANT LOCATION		STATE	WELL/PLANT OWNER
WAWAN 1-10		SEWARD		KS	SAME
SERVICE LOCATION	CONTRACTOR	JOB PURPOSE			TICKET DATE
LIBERAL	H-30 DRLG. RIG 1	CEMENT PRODUCTION CASING			04/10/1991
ACCT. NO.	CUSTOMER AGENT	VENDOR NO.	CUSTOMER P.O. NUMBER	SHIPPED VIA	FILE NO.
73943	TERRY MAXWELL			COMPANY TRUCK	13851

ENSIGN OPERATING COMPANY
1515 AIR PARK AVENUE
P.O. BOX 2161
LIBERAL, KS 67905-2161

DIRECT CORRESPONDENCE TO:
FIRST OKLAHOMA TOWER
210 WEST PARK AVENUE
SUITE 2050
OKLAHOMA CITY, OK 73102-5601

PRICE REF. NO.	DESCRIPTION	QUANTITY	U/M	UNIT PRICE	AMOUNT
000-117	PRICING AREA - MID CONTINENT MILEAGE	9	MI	2.60	23.40
001-016	CEMENTING CASING	6500	FT	1,605.00	1,605.00
030-016	CEMENTING PLUG SW ALUM TOP	4 1/2	IN	35.00	35.00
018-317	SUPER FLUSH	18	SK	87.00	1,566.00
218-738	CLAYFIX II	2	GAL	20.00	40.00
12A	GUIDE SHOE - 4 1/2" 8RD THD.	1	EA	89.00	89.00
825.201					
24A	INSERT FLOAT VALVE - 4 1/2" 8RD	1	EA	73.00	73.00
815.19101					
27	FILL-UP UNIT 4 1/2"-5"	1	EA	27.50	27.50
815.19111					
50	FLUIDMASTER CENTRALIZER 4 1/2"	7	EA	48.00	336.00
807.93504					
66	FASGRIP LIMIT CLAMP 4 1/2"	1	EA	9.60	9.60
807.64021					
504-043	PREMIUM CEMENT	325	SK	6.85	2,226.25
507-775	HALAD-322	214	LB	6.15	1,316.10
500-959	SPECIAL CHARGES	76	LB	21.50	1,634.00
508-002	POTASSIUM CHLORIDE	350	LB	.25	87.50
500-207	BULK SERVICE CHARGE	325	GET	1.15	373.75
500-306	MILEAGE CMTG MAT DEL OR RETURN	467	8.50	COMMISSION	374.28
INVOICE SUBTOTAL					9,816.38
DISCOUNT-(BID)					1,963.27-
INVOICE BID AMOUNT					7,853.11
*-KANSAS STATE SALES TAX					223.81
***** CONTINUED ON NEXT PAGE *****					

MAY 31 1991

CONSERVATION DIVISION
Wichita, Kansas

TERMS: DED PAYABLE NET BY THE 10TH OF THE FOLLOWING MONTH AFTER DATE OF INVOICE UPON
OWNER'S RECEIPT OF PAYMENT TO CUSTOMER'S ACCOUNT BY THE LAST DAY OF THE MONTH
IF THE CUSTOMER'S ACCOUNT IS NOT STATED, CUSTOMER AGREES TO PAY INVOICE
DATE OF INVOICE AND TO BE RESPONSIBLE FOR PAYING THE INVOICE TO THE
CREDIT OF THE COMPANY'S ACCOUNT.

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INVOICE

HALLIBURTON SERVICES ORIGINAL

P.O. BOX 951046
DALLAS, TX 75395-1046

A Halliburton Company

INVOICE NO. DATE

094000 04/10/1991

WELL LEASE NO./PLANT NAME		WELL/PLANT LOCATION		STATE	WELL/PLANT OWNER	
VAN 1-10		SEWARD		KS	SAME	
SERVICE LOCATION		CONTRACTOR		JOB PURPOSE		TICKET DATE
LIBERAL		H-30 DRLG. RIG 1		CEMENT PRODUCTION CASING		04/10/1991
QCT. NO.	CUSTOMER AGENT	VENDOR NO.	CUSTOMER P.O. NUMBER		SHIPPED VIA	FILE NO.
73943	TERRY MAXWELL				COMPANY TRUCK	13851

ENSIGN OPERATING COMPANY
1515 AIR PARK AVENUE
P.O. BOX 2161
LIBERAL, KS 67905-2161

DIRECT CORRESPONDENCE TO:
FIRST OKLAHOMA TOWER
210 WEST PARK AVENUE
SUITE 2050
OKLAHOMA CITY, OK 73102-5601

PRICE REF. NO.	DESCRIPTION	QUANTITY	U/M	UNIT PRICE	AMOUNT
	*-SEWARD COUNTY SALES TAX				52.65
	957.070 ^{EW} 910002				
	Swan 1-10 Parker				
INVOICE TOTAL - PLEASE PAY THIS AMOUNT =====>					\$8,129.57

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MAY 7 1991
CONSERVATION DIVISION
Wichita, Kansas

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APR 25 1991
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REMIT TO:
P.O. BOX 951046
DALLAS, TX 75395-1046

INVOICE

ORIGINAL HALLIBURTON SERVICES
A Halliburton Company

INVOICE NO.	DATE
093667	04/24/1991

WELL LEASE NO./PLANT NAME		WELL/PLANT LOCATION		STATE	WELL/PLANT OWNER	
SWAN 1-10		SEWARD		KS	SAME	
SERVICE LOCATION		CONTRACTOR	JOB PURPOSE		TICKET DATE	
LIBERAL		PATRICK WELL SER	RECEMENT		04/24/1991	
ACCT. NO.	CUSTOMER AGENT	VENDOR NO.	CUSTOMER P.O. NUMBER	SHIPPED VIA	FILE NO	
273943	B J MCGRIFF			COMPANY TRUCK	14458	

ENSGN OPERATING COMPANY
1515 AIR PARK AVENUE
P.O. BOX 2161
LIBERAL, KS 67905-2161

DIRECT CORRESPONDENCE TO:
FIRST OKLAHOMA TOWER
210 WEST PARK AVENUE
SUITE 2050
OKLAHOMA CITY, OK 73102-5601

957.070

91D002

Cement Squeeze

PRICE REF. NO.	DESCRIPTION	QUANTITY	U/M	UNIT PRICE	AMOUNT
000-117	PRICING AREA - MID CONTINENT MILEAGE	7	MI	2.60	18.20
009-019	PLUGGING BK SPOT CEMENT OR MUD	6388	FT	1,670.00	1,670.00
218-703	LOSURF 300	5	GAL	24.50	122.50
218-738	CLAYFIX II	10	GAL	20.00	200.00
504-043	PREMIUM CEMENT	325	SK	6.85	2,226.25
500-959	SPECIAL CHARGES	76	LB	21.50	1,634.00
507-775	HALAD-322	214	LB	6.15	1,316.10
508-002	POTASSIUM CHLORIDE	400	LB	.25	100.00
500-207	BULK SERVICE CHARGE	325	CFT	1.15	373.75
500-306	MILEAGE CMTG MAT DEL OR RETURN	437.36	TMI	.80	349.89
INVOICE SUBTOTAL					8,010.69
DISCOUNT-(BID)					1,602.13-
INVOICE BID AMOUNT					6,408.56
*-- KANSAS STATE SALES TAX					261.41
*-- SEWARD COUNTY SALES TAX					61.51
INVOICE TOTAL - PLEASE PAY THIS AMOUNT					\$6,731.48

Squeeze

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STATE COMMISSION

MAY 21 1991

CONSERVATION DIVISION
Wichita, Kansas

RECEIVED

MAY 06 1991

ACCOUNTING

*Swan 1-10
Recker*

*7070
[Signature]*

TERMS INVOICES PAYABLE NET BY THE 20TH OF THE FOLLOWING MONTH AFTER DATE OF INVOICE UPON CUSTOMER'S DEFAULT IN PAYMENT OF CUSTOMER'S ACCOUNT BY THE LAST DAY OF THE MONTH FOLLOWING THE MONTH IN WHICH THE INVOICE IS DATED CUSTOMER AGREES TO PAY INTEREST THEREON, AFTER DEFAULT AT THE HIGHEST LAWFUL CONTRACT RATE APPLICABLE BUT NEVER TO EXCEED 18% PER ANNUM IN THE EVENT IT BECOMES NECESSARY TO EMPLOY AN ATTORNEY TO ENFORCE COLLECTION OF SAID ACCOUNT CUSTOMER AGREES TO PAY ALL COLLECTION COSTS AND

TRILOBITE TESTING COMPANY

P.O. Box 362 • Hays, Kansas 67601

ORIGINAL

Drill-Stem Test Data

Well Name SWAN #1-10 Test No. 1 Date 4/7/91
Company ENSIGN OPERATING CO Zone Tested CHESTER
Address 621 17th #1800 DENVER CO Elevation 2873 KB
Co. Rep./Geo. MR DUANE MOREDOCK Cont. H-40 DRLG Est. Ft. of Pay 94
Location: Sec. 9 Twp. 56 Rge. 6.8 Co. SEWARD State KS

Interval Tested 6034-6228 Drill Pipe Size 4.5 XH
Anchor Length 194 Wt. Pipe I.D. - 2.7 Ft. Run _____
Top Packer Depth 6029 Drill Collar - 2.25 Ft. Run 592
Bottom Packer Depth 6034
Total Depth 6228

Mud Wt. 9 lb / gal. Viscosity 56 Filtrate 6.8

Tool Open @ 4:27 PM Initial Blow STRONG BLOW OFF BOTTOM IN 1.5 MINUTES
GAS TO SURFACE IN 10 MINUTES

Final Blow STRONG RETURN GAUGING 19"/WATER ON 1 1/4" ORIFICE=
191 MCF/DAY

Recovery — Total Feet 620 Flush Tool? NO

Rec. 620 Feet of SLIGHTLY GAS CUT MUD-5%GAS/95%MUD

Rec. _____ Feet of _____

Rec. _____ Feet of _____

Rec. _____ Feet of _____

Rec. _____ Feet of _____
BHT 127 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API

RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides _____ ppm System

(A) Initial Hydrostatic Mud 3140.8 PSI Ak1 Recorder No. 13309 Range 4700

(B) First Initial Flow Pressure 291.1 PSI @ (depth) 6198 w/Clock No. 27567

(C) First Final Flow Pressure 278.6 PSI AK1 Recorder No. 13339 Range 4025

(D) Initial Shut-In Pressure 1932.8 PSI @ (depth) 6223 w/Clock No. 30418

(E) Second Initial Flow Pressure 294.1 PSI AK1 Recorder No. _____ Range _____

(F) Second Final Flow Pressure 262 PSI @ (depth) _____ w/Clock No. _____

(G) Final Shut-In Pressure 1903.8 PSI Initial Opening 30 Final Flow 60

(H) Final Hydrostatic Mud 3105.1 PSI Initial Shut-In 60 Final Shut-In 120

Our Representative MR ROD STEINBRINK TOTAL PRICE \$ 1050

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STATE CORPORATION COMMISSION

MAY 27 1991

CONSERVATION DIVISION
Wichita, Kansas

ORIGINAL

FORMATION TOPS

	G.L. 2862' K.B. 2873'	Comparison Well No. 1-3 Wood SW NE SW 3 T34S R33W K.B. 2892' Surface +2880'	Drill Time & Samples	Bore Hole Geophysical Logs
Tertiary			Surface +2862'	Surface +2862'
Permian				
Guadalupian				
Taloga		532' +2360'	508' +2365'	500' +2373'
Leonardian				
Nippewalla Gr.				
Blaine		956' +1936'	962' +1911'	956' +1917'
Cedar Hill		1122' +1770'	1100' +1773'	1092' +1781'
Salt Plain		1232' +1660'	1236' +1637'	1232' +1641'
Sumner Gr.				
Stone Corral		1616' +1276'	1601' +1272'	1586' +1287'
Ninnescah		1694' +1198'	1666' +1207'	1662' +1211'
Wellington		2186' +706'	2170' +703'	2158' +715'
Wolfcampian				
Chase Gr.				
Herington		2664' +228'	2646' +227'	2636' +237'
Krider		2732' +160'	2714' +159'	2700' +173'
Winfield		2791' +101'	2781' +92'	2762' +111'
Towanda		2848' +44'	2826' +47'	2812' +61'
Fort Riley		2904' -12'	2886' -13'	2874' -1'
Wreford		3008' -116'	2991' -118'	2979' -106'
Council Grove Gr.		3120' -228'	3104' -231'	3090' -217'
Admire Gr.		3468' -576'	3456' -582'	3444' -571'
Pennsylvanian				
Virgilian				
Wabaunsee Gr.		3516' -624'	3508' -624'	3494' -621'
Douglas Gr.				
Heebner		4372' -1480'	4367' -1493'	4355' -1482'
Toronto		4390' -1498'	4387' -1513'	4374' -1501'
Missourian				
Lansing Gr.		4513' -1621'	4511' -1637'	4496' -1623'
Kansas City Gr.		4818' -1926'	4806' -1933'	4793' -1920'
Desmoinesian				
Marmaton Gr.		5296' -2404'	5312' -2439'	5290' -2417'
Cherokee Gr.		5440' -2548'	5447' -2574'	5432' -2559'
Atokian		5644' -2752'	5643' -2770'	5634' -2761'
Morrowian		5814' -2922'	5816' -2943'	5805' -2932'
Terra Rossa		6363' -3471'	6372' -3471'	6360' -3487'
Mississippian				
Meramecian				
Ste. Genevieve		6368' -3476'	6389' -3516'	6378' -3505'
Total Depth		6602' -3710'	6500' -3627'	6484' -3611'

RECEIVED
 TORONTO CORPORATION COMMISSION
 MAY 21 1991
 CONSERVATION DIVISION
 Wichita, Kansas