

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

API NO. 15- 033-20986 0000

ORIGINAL

County Comanche County, Kansas

C - NE - NE - Sec. 17 Twp. 33 Rge. 19 XX ^E _W

4620 Feet from (S)N (circle one) Line of Section

560 Feet from (E)W (circle one) Line of Section

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

Lease Name Lindsay Well # 1

Field Name Wildcat

Producing Formation NONE

Elevation: Ground 1950' KB 1958'

Total Depth 6100' PBTD 6100'

Amount of Surface Pipe Set and Cemented at 982 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 cmt.

Drilling Fluid Management Plan PAA, 2-18-99 U.C.
(Data must be collected from the Reserve Pit)

Chloride content 18000 ppm Fluid volume 500 bbls

Dewatering method used _____

Location of fluid disposal if hauled offsite: _____

Operator Name KBW Oil & Gas

Lease Name Harmon Dis. License No. 5993

11 Quarter Sec. 11 Twp. 33 S Rng. 20 W E/W

County Comanche Docket No. CD98329

Operator: License # 5428

Name: Graves Drilling Co., Inc.

Address P.O. Box 8250

City/State/Zip Wichita, Kansas 67208

Purchaser: _____

Operator Contact Person: Fredrick W. Stump

Phone (316, 687-2777

Contractor: Name: Duke Drilling Co., Inc.

License: 5929

Wellsite Geologist: John Hastings

Designate Type of Completion

 New Well Re-Entry Workover

 Oil SWD SOW Temp. Abd.

 Gas ENHR SIGW

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

If Workover:

Operator: _____

Well Name: _____

Comp. Date _____ Old Total Depth _____

 Deepening Re-perf. Conv. to Inj/SWD

 Plug Back PBTD /

 Comingled Docket No. _____

 Dual Completion Docket No. _____

 Other (SWD or Inj?) Docket No. _____

12-18-98 01-06-99 01-07-99
Spud Date Date Reached TD Completion Date

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 [Signature]

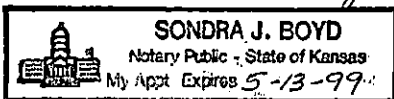
Title Admin Assistant Date 2/11/99

Subscribed and sworn to before me this 11th day of February, 19 99.

Notary Public [Signature]

Date Commission Expires May 13, 1999

K.C.C. OFFICE USE ONLY		
F	<u> </u>	Letter of Confidentiality Attached
C	<u> / </u>	Wireline Log Received
C	<u> / </u>	Geologist Report Received
Distribution		
<u> / </u>	KCC	<u> </u> SWD/Rep <u> </u> NGPA
<u> </u>	KGS	<u> </u> Plug <u> </u> Other
(Specify)		



Operator **Graves Drilling Co., Inc.**

Lease Name **Lindsay**

Well # **1**

Sec. **17** Twp. **33** Rge. **19**

East

County **Comanche County, Kansas**

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 Yes No
(Attach Additional Sheets.)

Samples Sent to Geological Survey Yes No

Cores Taken Yes No

Electric Log Run Yes No
(Submit Copy.)

List All E.Logs Run:

DI, CND, ML, SL

Log Formation (Top), Depth and Datum Sample

Name	Formation (Top)	Depth	Datum	Sample
ETD			6098	-4146
RTD			6100	-4148
Miss.			5215	-3263
Cherokee	514	1438		
Tarkio	3516	-1584	3512	-1580
Elgin Sd	4119	-2167		
Heebner	4267	-2315	4266	-2314
Lansing	4456	-2504	4450	-2498
Drum Ls.	4692	-2740		
Stark Shale	4798	-2846	4794	-2842
Swope	4811	-2859		
Marmaton	4971	-3019	4966	-3014
Pawnee	5070	-3118	5061	-3109
Congl.	5198	-3246	5202	-3250
Viola	5968	-4016	6006	-4054

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	17-1/2"	13-3/8"	48#	224'	40/60 Poz	250	3%cc 2%gel
Surface	12-1/4"	8-5/8"	24#	982'	MidCon	300	3%cc
				1"	60/40 Poz	100	3%cc 2%gel

ADDITIONAL CEMENTING/SQUEEZE RECORD

Purpose:	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				

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

TUBING RECORD Size _____ Set At _____ Packer At _____ Liner Run Yes No

Date of First, Resumed Production, S/D or Inj. N/A Producing Method Flowing Pumping Gas Lift Other (Explain)

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
	<u>N/A</u>				

Disposition of Gas:

METHOD OF COMPLETION

Production Interval

Vented Sold Used on Lease
(If vented, submit ACO-18.)

Open Hole Perf. Dually Comp. Commingled
 Other (Specify) _____

INVOICE



HALLIBURTON ENERGY SERVICES
A Division of Halliburton Company

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

ORIGINAL

INVOICE NO.	DATE
460177	12/19/1998

WELL LEASE NO./PROJECT		WELL/PROJECT LOCATION		STATE	OWNER
INDSAY 1		COMANCHE		KS	SAME
SERVICE LOCATION	CONTRACTOR	JOB PURPOSE			TICKET DATE
PRATT	DUKE DRILLING #2	SHOWN BELOW			12/19/1998
DOCT. NO.	CUSTOMER AGENT	VENDOR NO.	CUSTOMER P.O. NUMBER	SHIPPED VIA	FILE NO.
37790	R G MILLER			COMPANY TRUCK	49525

GRAVES DRILLING CO INC
800 TALLGRASS EXECUTIVE PARK
8100 E. 22ND STREET
WICHITA, KS 67226

DIRECT CORRESPONDENCE TO:
P O BOX 963
PRATT KS 67124
316-672-5593

REFERENCE NO.	DESCRIPTION	QUANTITY	UM	UNIT PRICE	AMOUNT
DRILLING AREA - MID CONTINENT					
JOB PURPOSE - CEMENT CONDUCTOR CASING					
000-117	MILEAGE CEMENTING ROUND TRIP	150	MI	3.65	547.50
		1	UNT		
000-119	MILEAGE FOR CREW	150	MI	2.15	322.50
		1	UNT		
001-016	CEMENTING CASING	225	FT	1,630.00	1,630.00
		1	UNT		
030-503	TOP WOODEN PLUG	13	3/8 IN	160.00	160.00
		1	EA		
504-136	CEMENT - 40/60 POZMIX STANDARD	250	SK	8.71	2,177.50
509-406	ANHYDROUS CALCIUM CHLORIDE	6	SK	46.90	281.40
500-207	BULK SERVICE CHARGE	262	CFT	1.66	434.92
500-306	MILEAGE CMTG MAT DEL OR RETURN	817.12	TMI	1.25	1,021.40

JOB PURPOSE SUBTOTAL

6,575.22

INVOICE SUBTOTAL

6,575.22

DISCOUNT-(BID)

2,889.20-

INVOICE BID AMOUNT

3,686.02

*- KANSAS STATE SALES TAX

125.81

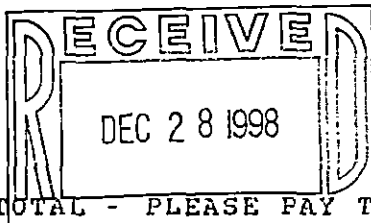
*- PRATT COUNTY SALES TAX

25.67

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CONSERVATION DIVISION
Wichita Kansas



INVOICE TOTAL - PLEASE PAY THIS AMOUNT

5304 112045

\$3,837.50

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 of 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.



DALLAS, TX 75395-1044
Corporate FIN 73-0271280

HALLIBURTON ENERGY SERVICES
A Division of Halliburton Company

ORIGINAL

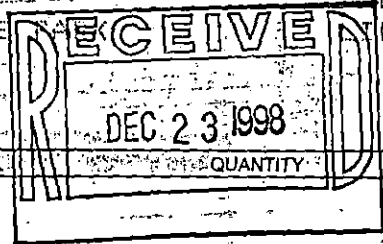
INVOICE NO. DATE

382325 12/20/1998

WELL LEASE NO./PROJECT	WELL/PROJECT LOCATION	STATE	OWNER
Y 1	COMANCHE	KS	SAME
SERVICE LOCATION	CONTRACTOR	JOB PURPOSE	TICKET DATE
	DUKE DRILLING	SHOWN BELOW	12/20/1998
CUSTOMER AGENT	VENDOR NO.	CUSTOMER P.O. NUMBER	SHIPPED VIA FILE NO.
BOB MILLER			COMPANY TRUCK 49524

DIRECT CORRESPONDENCE TO:

GRAVES DRILLING CO INC
800 TALLGRASS EXECUTIVE CENTER
8100 E. 22ND STREET
WICHITA, KS 67224



LINE NO.	DESCRIPTION	QUANTITY	UM	UNIT PRICE	AMOUNT
7	AREA - MID CONTINENT				
	ROSE - CEMENT SURFACE CASING				
	MILEAGE CEMENTING ROUND TRIP	150 MI		3.65	547.50
		1 UNT			
	DISCOUNT-(BID)	35.0 %			191.62-
	MILEAGE FOR CREW	150 MI		2.15	N/C
		1 UNT			
	CEMENTING CASING	989 FT		1,630.00	1,630.00
		1 UNT			
	DISCOUNT-(BID)	65.0 %			1,059.50-
	COMPUPAC SYSTEM W/HALLIBURTON	1 JDB		760.00	N/C
		1 DAY			
	INSERT FLOAT VALVE - 8-5/8" BPD	1 EA		207.00	207.00
	DISCOUNT-(BID)	35.0 %			72.45-
	FILL-UP UNIT 7" - 8-5/8"	1 EA		81.00	81.00
	DISCOUNT-(BID)	35.0 %			28.35-
	CENTRALIZER - 8-5/8 X 12-1/4	3 EA		71.40	214.20
	DISCOUNT-(BID)	35.0 %			74.97-
	BASKET-CMT-8 5/8 CSG X 21"-SLP	2 EA		146.00	292.00
	DISCOUNT-(BID)	35.0 %			102.20-
	CEMENTING PLUG SW, PLASTIC TOP	1 EA		143.00	143.00

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CONSERVATION DIVISION
Wichita Kansas

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HALLIBURTON ENERGY SERVICES
A Division of Halliburton Company

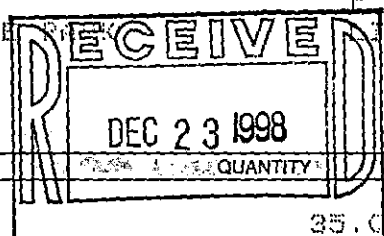
ORIGINAL

WELL LEASE NO./PROJECT		WELL/PROJECT LOCATION		STATE	OWNER
1		CUMANCHE		KS	STATE
SERVICE LOCATION	CONTRACTOR	JOB PURPOSE		TICKET DATE	
	DUKE DRILLING	SHOWN BELOW		12/20/1998	
CUSTOMER AGENT	VENDOR NO.	CUSTOMER P.O. NUMBER	SHIPPED VIA	FILE NO.	
BOB MILLER			COMPANY TRUCK	49524	

DIRECT CORRESPONDENCE TO:

GRAVES DRILLING CO INC
800 TALLGRASS EXECUTIVE CENTER
8100 E. 22ND STREET
WICHITA, KS 67226

P O BOX 1598
WICHITA, KS 67901



REFERENCE NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	DISCOUNT-(BID)	35.0 %			50.05-
200	PIPE 1"	160 FT		1.50	240.00
	DISCOUNT-(BID)	35.0 %			84.00-
018	CEMENTING CASING - ADD HRS	2 HR		376.00	N/C
		1 UNT			
018	CEMENTING CASING - ADD HRS	2 HR		376.00	752.00
		1 UNT			
	DISCOUNT-(BID)	35.0 %			263.20-
4-200	MIDDON-2 STANDARD CEMENT	300 SK		14.17	4,251.00 *
	DISCOUNT-(BID)	35.0 %			1,487.65-
7-210	FLOCELE	75 LB		2.09	156.75 *
	DISCOUNT-(BID)	35.0 %			54.86-
08-291	GILSONITE BULK	1500 LB		.59	870.00 *
	DISCOUNT-(BID)	35.0 %			304.50-
09-406	ANHYDROUS CALCIUM CHLORIDE	9 SK		46.90	422.10 *
	DISCOUNT-(BID)	35.0 %			147.73-
00-207	BULK SERVICE CHARGE	369 CFT		1.66	610.88 *
	DISCOUNT-(BID)	35.0 %			213.80-
00-306	MILEAGE CHRG MAT DEL OR RETURN	1184.25 TMI		1.25	1,480.31 *
	DISCOUNT-(BID)	35.0 %			518.10-
04-136	CEMENT - 40/60 POZMIX STANDARD	100 SK		8.71	871.00 *
	DISCOUNT-(BID)	35.0 %			304.65-
00-959	CALCIUM CHLORIDE	2.5 SK		46.90	117.25

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ORDER NO. 10900

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CONSERVATION DIVISION
Wichita, Kansas

PAGE: 1

INVOICE

HALLIBURTON ENERGY SERVICES

A Division of Halliburton Company

INVOICE NO.

382325

12/20/1998

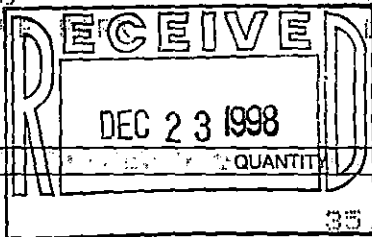
ORIGINAL

WELL LEASE NO./PROJECT		WELL/PROJECT LOCATION		STATE	OWNER
MDSAY 1		COMANCHE		KS	SAME
SERVICE LOCATION		CONTRACTOR	JOB PURPOSE		TICKET DATE
BERAL		DUKE DRILLING	SHOWN BELOW		12/20/1998
CT. NO.	CUSTOMER AGENT	VENDOR NO.	CUSTOMER P.O. NUMBER	SHIPPED VIA	FILE NO.
87290	BOB MILLER			COMPANY TRUCK	49524

DIRECT CORRESPONDENCE TO:

GRAVES DRILLING CO INC
 800 TALLGRASS EXECUTIVE
 8100 E. 22ND STREET
 WICHITA, KS 67226

P O BOX 1598
 LIBERAL KS 67901



REFERENCE NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	DISCOUNT-(BID)	35.0 %			41.03-
500-207	BULK SERVICE CHARGE	210 CFT		1.66	348.60
	DISCOUNT-(BID)	35.0 %			122.01-
500-306	MILEAGE CMTG MAT DEL OR RETURN	638.47 TMI		1.25	794.34
	DISCOUNT-(BID)	35.0 %			278.01-
500-225	CEMENTING MATERIALS RETURNED	20 %		174.30	174.30
	DISCOUNT-(BID)	35.0 %			61.00-
500-306	MILEAGE CMTG MAT DEL OR RETURN	317.737 TMI		1.25	397.17
	DISCOUNT-(BID)	35.0 %			139.00-
JOB PURPOSE SUBTOTAL					14,600.40
INVOICE SUBTOTAL					14,600.40
DISCOUNT-(BID)					5,599.08-
INVOICE BID AMOUNT					9,001.32
* - KANSAS STATE SALES TAX					358.50
* - LIBERAL CITY SALES TAX					79.17
* - SEWARD COUNTY SALES TAX					109.75
INVOICE TOTAL - PLEASE PAY THIS AMOUNT					9,548.74

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CONSERVATION DIVISION
 Wichita, Kansas

Cement Buy. Corp
 5304 112045

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 of 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.

ORDER NO. 10900

PAGE 1

Well Name: Lindsay #1	API Code: 033-209860000	Ref Well:
Location: C NE NE 17/33S/19W	Lease Name: LINDSAY	Location:
County / State: Comanche, KS	Field:	County:
GL Level: 1944	Contractor: DUKE DRILLING CO.	GL Level:
KB Level: 1952	Operator:	KB Level:

Current Date: **14-Jan-99**

Page 1 of 2

Formation Tops

Formation Name	Current Well Top	Subsea Datum	Elec Top	Elec Top SubSea Daum	Comments
ETD			6098	-4146	
RTD			6100	-4148	
Miss.			5215	-3263	
Cherokee	514	1438			
Tarkio	3516	-1564	3512	-1560	
Elgin Sd	4119	-2167			
Heebner	4267	-2315	4266	-2314	
Lansing	4456	-2504	4450	-2498	
Drum Ls.	4692	-2740			
Stark Shale	4798	-2846	4794	-2842	
Swope	4811	-2859			
Marmation	4971	-3019	4966	-3014	
Pawnee	5070	-3118	5061	-3109	
Congl.	5198	-3246	5202	-3250	74 units gas
Viola	5968	-4016	6006	-4054	No Por, No Sho

Daily Drilling Details Report

Date	Start Depth	Daily Remarks
12/15/98		Please be advised that we have not moved a rig onto the Lindsay #1 in Sec. 17-33S-19W, Comanche Co. Kansas. There is a problem in the title search that may take several days to clear up. We will advise you as soon as we can when the well will start.
12/18/98		Move in Rotary Tools. Spud @ 1:30PM.. See casing detail Cement did circ.
12/19/98		Lost Circ. @ 746'. Reamed 7 7/8" hole to 12 1/4" from 225' to 746'. Drilled to 983'.
12/20/98		See Casing Detail. Plug down @ 5:45 AM. 12-20-98
12/21/98		1" (Surface casing) from 162' to top w 100 sx 60/40 Pozmix, 2% gel, 3% cc. Plug down @ 10:45 AM. Will drill to 2400' and will shut down until next Monday.
12/29/98		Resume Drilling at 10:40 AM. on 12-28-98. Depth at 7:00 AM. 2945 on the 29th.
12/30/98		Drilling ahead @ 3575'
12/31/98		Drilling ahead @ 4241'.
1/1/99		Drilling @ 4748'.
1/2/99		Drilling @ 5164'
1/3/99		Drilling @ 5227' See detail for DST Results
1/4/99		Drilling @ 5346'
1/5/99		Drilling @ 5700'
1/6/99		Drilling @ 5968'
1/7/99		Logging @ 6100' & prepared to Plug and Abandon.
1/8/99		TD 6100' Plugging details: 60/40 Pozmix, 6% gel 50sx @ 1010', 30 sx @ 450', 10sx @ 40', 15sx Rat Hole, 10sx Mouse Hole. Plug down 5:15 P.M.

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CONSERVATION DIVISION
Wichita, Kansas

DRILL STEM TEST RESULTS

DST	Date	Formation	Int Start	Int End	ISIP	FSIP	IFP	FFP	Time Interval
1	1/3/99	Congl	5174	5221	417	387	25-25	20-37	30-60-30-60

COPY

Well Name: **Lindsay #1** API Code: 033-209660000 Ref Well :
 Location : C NE NE 17/33S/19W Lease Name: **LINDSAY** Location:
 County / State : Comanche, KS Field: County:
 GL Level : 1944 Contractor: DUKE DRILLING CO. GL Level :
 KB Level : 1952 Operator: KB Level :

Current Date : 14-Jan-99

Page 2 of 2

1st Open: Pre flow strong blow 2nd Open: Final flow strong blow Recovery: 35' M, 1060' GIP, Temp. 117

2 1/3/99 Mississippi 5319 5345 1758 1738 31-45 48-88 30-60-60-90

1st Open: 2nd Open: Recovery: 2600' GIP (182 Total Fluid) 1' Clean Oil, 121' GSY OCM(20% G, 20% O, 6% W, 54% M) 60' O & MCGSY W (22% G, 13% O, 45% w, 20% M) Temp 127

Casing History

Size	Weight	Grade	Brand	Type	Condition	Set Depth	Footage
8 5/8"	24	23 jts		Surface	new	982	975
Cement Description: 300sx Midcon, 3%cc, 1/4# flo seal, 5# gilsonite.							
13 3/8"	48#	5 jts		Conductor	new	224	214
Cement Description: 250 sx 60/40 poz, 2%gel, 3%cc							

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CONSERVATION DIVISION
 Wichita, Kansas

15-033-20986

ORIGINAL

Well Name: Lindsay #1
Company: Graves Drilling Co. Inc.
Location: 17-33s-19w
Comanche County Kansas
Date: 1-8-99

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FEB 12 1999

CONSERVATION DIVISION
Wichita, Kansas

TRILOBITE TESTING L.L.C.

OPERATOR : Graves Drlg.Co.Inc.

DATE 01-02-99

WELL NAME: Lindsay #1

KB 1952.00 ft

TICKET NO: 11577

DST #1

LOCATION : 17-33s-9w Comanche co KS

GR 1944.00 ft

FORMATION: Miss.

INTERVAL : 5174.00 To 5221.00 ft

TD 5221.00 ft

TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 30 Rec.	10248	10248	2342			PF Fr. 2048 to 2118 hr
SI 60 Range(Psi)	4400.0	4400.0	4995.0	0.0	0.0	IS Fr. 2118 to 2218 hr
SF 30 Clock(hrs)	12 hr	12 hr	batt.			SF Fr. 2218 to 2248 hr
FS 60 Depth(ft)	5218.0	5218.0	5184.0	0.0	0.0	FS Fr. 2248 to 2348 hr

	Field	1	2	3	4	
A. Init Hydro	2591.0	2585.0	2580.0	0.0	0.0	T STARTED 1829 hr
B. First Flow	57.0	53.0	25.0	0.0	0.0	T ON BOTM 2040 hr
B1. Final Flow	57.0	53.0	25.0	0.0	0.0	T OPEN 2048 hr
C. In Shut-in	449.0	434.0	417.0	0.0	0.0	T PULLED 2348 hr
D. Init Flow	66.0	64.0	20.0	0.0	0.0	T OUT 0148 hr
E. Final Flow	66.0	64.0	37.0	0.0	0.0	
F. Fl Shut-in	406.0	412.0	389.0	0.0	0.0	TOOL DATA-----
G. Final Hydro	2569.0	2560.0	2551.0	0.0	0.0	Tool Wt. 2100.00 lbs
Inside/Outside	0	0	I	T		Wt Set On Packer 20000.00 lbs
						Wt Pulled Loose 66000.00 lbs
						Initial Str Wt 57000.00 lbs
						Unseated Str Wt 57000.00 lbs
						Bot Choke 0.75 in
						Hole Size 7.88 in
						D Col. ID 2.25 in
						D. Pipe ID 3.80 in
						D.C. Length 0.00 ft
						D.P. Length 5179.00 ft

RECOVERY

Tot Fluid 35.00 ft of 0.00 ft in DC and 35.00 ft in DP
 1080.00 ft of Gas in pipe.
 35.00 ft of Drlg. mud.
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of Rw n.c. ohms @ degrees F.
 0.00 ft of EST.FT. of PAY----- 10
 SALINITY 5000.00 P.P.M. A.P.I. Gravity 0.00

MUD DATA-----

Mud Type Chemical
 Weight 9.20 lb
 Vis. 50.00 S/
 W.L. 8.60 in
 F.C. 0.20 in
 Mud Drop N

BLOW DESCRIPTION

Initial Flow:
 Strong blow - bottom of bucket in
 15 seconds

Initial Shutin:
 No blow

Final Flow:
 Strong blow - bottom of bucket
 immediatley

Final Shutin:
 No blow

SAMPLES: None
 SENT TO: Caraway/Liberal

Amt. of fill 0.00 ft
 Btm. H. Temp. 117.00 F
 Hole Condition Good
 % Porosity 10.00
 Packer Size 6.75 in
 No. of Packers 2
 Cushion Amt. 0.00 N
 Cushion Type None
 Reversed Out N
 Tool Chased N
 Tester Gary Pevoteaux
 Co. Rep. John Hastings
 Contr. Duke Drlg.
 Rig # 2
 Unit #
 Pump T. LCM 1#/bl

Test Successful: Y

*** TOOL DIAGRAM *** CONVENTIONAL

WELL NAME: Lindsay #1

LOCATION : Sec.17 Twp.33s Rg.19w Ks

TICKET No. 11577 D.S.T. No. 1 DATE 01-02-99

TOTAL TOOL TO BOTTOM OF TOP PACKERS 27

INTERVAL TOOL

TOTAL PACKERS AND ANCHOR 47

TOTAL TOOL 74

DRILL COLLAR ANCHOR IN INTERVAL

C. ANCHOR STND.Stands Single Total

P. ANCHOR STND.Stands Single Total

TOTAL ASSEMBLY 74

C. ABOVE TOOLS.Stands Single Total

P. ABOVE TOOLS.Stands83 Single 1 Total 5179

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 5253

TOTAL DEPTH 5221

TOTAL DRILL PIPE ABOVE K.B. 32

MARKS:
Comments:

FLUID SAMPLER DATA (not run)

S-----
L----- ML.
D----- ML.
PER----- ML.
IER-----
PRESSURE----- PSI
----- ohms @ deg. F.
CORRIDES----- ppm.
ACTIVITY-----n/a deg.API

P.O. SUB	
C.O. SUB @ top of tool	5147
S.I. TOOL Sterling	5153
Sampler (no)	
HMV Sterling	5158
JARS Bowen	5163
SAFETY JOINT Bowen	5165
PACKER Top	5169
PACKER Btm.	5174
DEPTH 5174	
STUBB 1 ft.	5175
ANCHOR	
4' perfs to	5179
Alpine rec. @	5184
T.C. DEPTH	
37' perfs to	5216
AK-1 rec. @	5218
BULLNOSE 5 ft. perforated	5221
T.D.	

TEST HISTORY

11577 DST#1 LINDSAY #1 GRAVES DR LG. CO. INC.

Flag Points

t (Min.) P (PSig)

A:	0.00	2580.77
B:	0.00	24.50
C:	29.00	24.58
D:	60.50	416.78
E:	0.00	20.30
F:	30.75	36.75
G:	60.75	386.98
Q:	0.00	2550.56

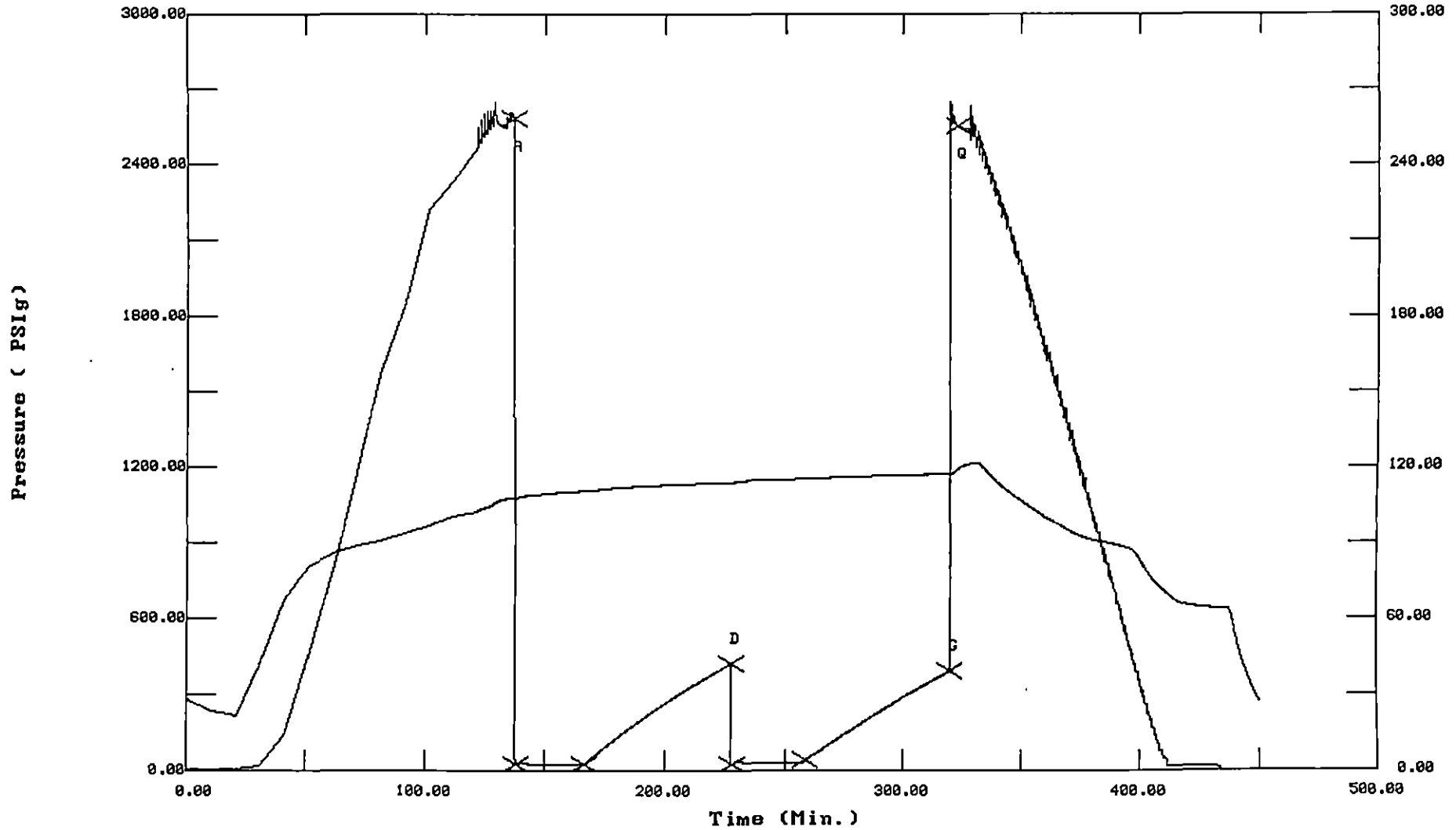
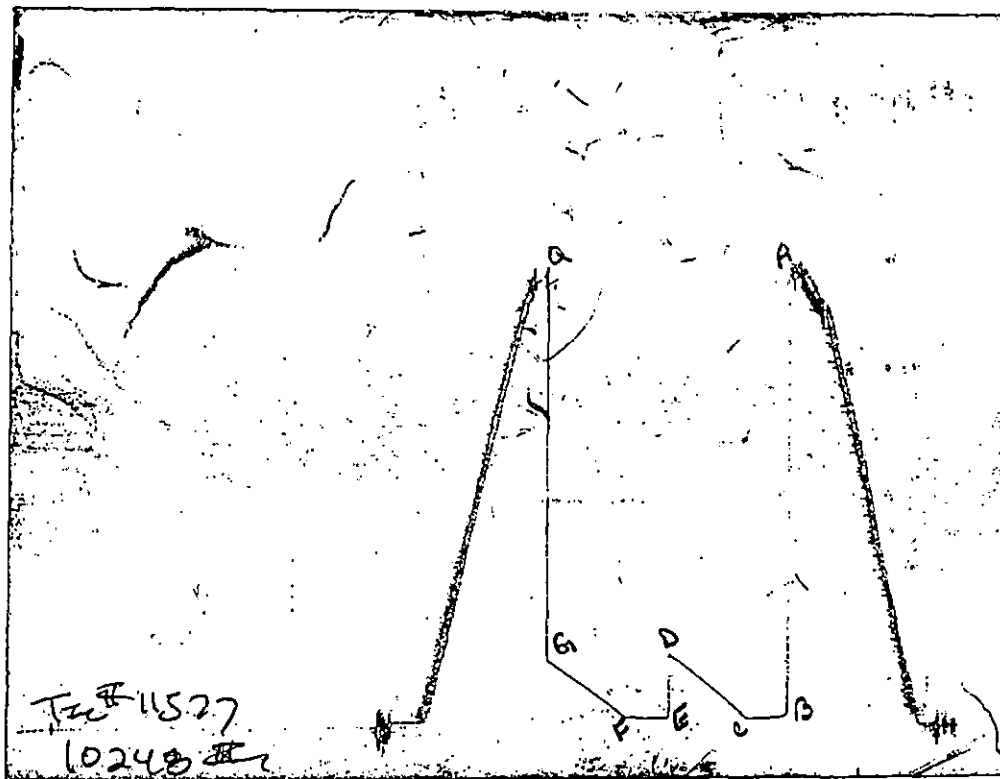


CHART PAGE



This is a photocopy of the actual AK-1 recorder chart

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

	Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
***** Initial Hydro.	136.75	2580.8	0.0	107.40		
***** Start Flow 1	0.00	24.5	0.0	107.45		
	0.25	24.1	-0.4	107.45		
	0.50	23.8	-0.7	107.48		
	0.75	24.2	-0.3	107.53		
	1.00	24.2	-0.3	107.59		
	1.25	24.3	-0.2	107.65		
	1.50	24.5	0.0	107.71		
	1.75	24.5	0.0	107.78		
	2.00	24.7	0.2	107.85		
	2.25	24.8	0.3	107.91		
	2.50	24.8	0.3	107.98		
	2.75	24.7	0.2	108.03		
	3.00	24.7	0.2	108.08		
	3.25	24.7	0.2	108.13		
	3.50	24.7	0.2	108.17		
	3.75	24.7	0.2	108.20		
	4.00	24.7	0.2	108.24		
	4.25	24.8	0.3	108.27		
	4.50	24.8	0.3	108.30		
	4.75	24.8	0.3	108.33		
	5.00	24.8	0.3	108.36		
	5.25	24.6	0.1	108.38		
	5.50	24.6	0.1	108.40		
	5.75	24.6	0.1	108.43		
	6.00	24.5	0.0	108.45		
	6.25	24.4	-0.1	108.46		
	6.50	24.4	-0.1	108.47		
	6.75	24.5	0.0	108.49		
	7.00	24.5	0.0	108.51		
	7.25	24.5	0.0	108.53		
	7.50	24.3	-0.2	108.53		
	7.75	24.3	-0.2	108.56		
	8.00	24.2	-0.3	108.57		
	8.25	24.2	-0.3	108.59		
	8.50	24.2	-0.3	108.60		
	8.75	24.1	-0.4	108.62		
	9.00	24.1	-0.4	108.63		
	9.25	24.1	-0.4	108.65		
	9.50	24.1	-0.4	108.67		
	9.75	24.1	-0.4	108.69		
	10.00	24.1	-0.4	108.72		
	10.25	24.0	-0.5	108.75		
	10.50	24.0	-0.5	108.78		
	10.75	24.0	-0.5	108.81		
	11.00	24.0	-0.5	108.84		
	11.25	24.2	-0.3	108.88		
	11.50	24.2	-0.3	108.91		
	11.75	24.2	-0.3	108.94		
	12.00	24.2	-0.3	108.98		
	12.25	24.2	-0.3	109.00		

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99 TIME: 18:30:05

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
12.50	24.2	-0.3	109.03		
12.75	24.2	-0.3	109.06		
13.00	24.2	-0.3	109.09		
13.25	24.2	-0.3	109.11		
13.50	24.2	-0.3	109.13		
13.75	24.2	-0.3	109.16		
14.00	24.2	-0.3	109.18		
14.25	24.2	-0.3	109.20		
14.50	24.3	-0.2	109.23		
14.75	24.3	-0.2	109.25		
15.00	24.2	-0.3	109.27		
15.25	24.3	-0.2	109.29		
15.50	24.3	-0.2	109.31		
15.75	24.3	-0.2	109.33		
16.00	24.3	-0.2	109.35		
16.25	24.3	-0.2	109.37		
16.50	24.3	-0.2	109.39		
16.75	24.3	-0.2	109.41		
17.00	24.3	-0.2	109.43		
17.25	24.4	-0.1	109.44		
17.50	24.4	-0.1	109.46		
17.75	24.4	-0.1	109.48		
18.00	24.4	-0.1	109.49		
18.25	24.4	-0.1	109.51		
18.50	24.4	-0.1	109.53		
18.75	24.4	-0.1	109.54		
19.00	24.4	-0.1	109.57		
19.25	24.3	-0.2	109.58		
19.50	24.3	-0.2	109.60		
19.75	24.3	-0.2	109.61		
20.00	24.3	-0.2	109.63		
20.25	24.5	0.0	109.65		
20.50	24.5	0.0	109.66		
20.75	24.5	0.0	109.68		
21.00	24.5	0.0	109.70		
21.25	24.5	0.0	109.71		
21.50	24.5	0.0	109.72		
21.75	24.5	0.0	109.74		
22.00	24.5	0.0	109.75		
22.25	24.5	0.0	109.77		
22.50	24.5	0.0	109.78		
22.75	24.5	0.0	109.80		
23.00	24.5	0.0	109.81		
23.25	24.5	0.0	109.83		
23.50	24.4	-0.1	109.85		
23.75	24.4	-0.1	109.86		
24.00	24.4	-0.1	109.88		
24.25	24.4	-0.1	109.88		
24.50	24.4	-0.1	109.91		
24.75	24.6	0.1	109.92		
25.00	24.6	0.1	109.94		

ALPINE SUBSURFACE ELECTRODES PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
	25.25	24.6	0.1	109.95		
	25.50	24.6	0.1	109.97		
	25.75	24.6	0.1	109.98		
	26.00	24.6	0.1	109.99		
	26.25	24.6	0.1	110.01		
	26.50	24.6	0.1	110.02		
	26.75	24.6	0.1	110.05		
	27.00	24.6	0.1	110.06		
	27.25	24.6	0.1	110.07		
	27.50	24.6	0.1	110.09		
	27.75	24.6	0.1	110.10		
	28.00	24.6	0.1	110.12		
	28.25	24.6	0.1	110.13		
	28.50	24.6	0.1	110.16		
	28.75	24.6	0.1	110.17		
***** End Flow 1	29.00	24.6	0.1	110.18		
***** Start Shutin 1	0.00	24.6	0.0	110.18	0.0000	0.001
	0.25	26.3	1.8	110.20	117.0000	0.001
	0.50	28.5	3.9	110.21	59.0000	0.001
	0.75	30.7	6.1	110.23	39.6667	0.001
	1.00	32.8	8.2	110.24	30.0000	0.001
	1.25	34.9	10.3	110.27	24.2000	0.001
	1.50	36.9	12.3	110.28	20.3333	0.001
	1.75	38.9	14.4	110.30	17.5714	0.002
	2.00	40.9	16.3	110.32	15.5000	0.002
	2.25	43.0	18.4	110.33	13.8889	0.002
	2.50	44.9	20.3	110.35	12.6000	0.002
	2.75	46.8	22.2	110.37	11.5455	0.002
	3.00	48.8	24.2	110.39	10.6667	0.002
	3.25	50.8	26.2	110.41	9.9231	0.003
	3.50	52.7	28.1	110.43	9.2857	0.003
	3.75	54.6	30.0	110.45	8.7333	0.003
	4.00	56.6	32.0	110.47	8.2500	0.003
	4.25	58.6	34.0	110.49	7.8235	0.003
	4.50	60.5	35.9	110.51	7.4444	0.004
	4.75	62.3	37.8	110.54	7.1053	0.004
	5.00	64.3	39.7	110.56	6.8000	0.004
	5.25	66.2	41.6	110.58	6.5238	0.004
	5.50	68.1	43.6	110.61	6.2727	0.005
	5.75	70.0	45.4	110.63	6.0435	0.005
	6.00	71.9	47.3	110.66	5.8333	0.005
	6.25	73.8	49.2	110.70	5.6400	0.005
	6.50	75.7	51.1	110.72	5.4615	0.006
	6.75	77.5	53.0	110.75	5.2963	0.006
	7.00	79.5	54.9	110.78	5.1429	0.006
	7.25	81.4	56.8	110.80	5.0000	0.007
	7.50	83.2	58.7	110.83	4.8667	0.007
	7.75	85.2	60.6	110.86	4.7419	0.007
	8.00	87.0	62.4	110.90	4.6250	0.008
	8.25	88.9	64.3	110.91	4.5152	0.008
	8.50	90.8	66.2	110.95	4.4118	0.008

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99 TIME: 18:00:05

Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
8.75	92.7	68.1	110.98	4.3143	0.009
9.00	94.5	69.9	111.01	4.2222	0.009
9.25	96.3	71.8	111.04	4.1351	0.009
9.50	98.2	73.6	111.07	4.0526	0.01
9.75	100.0	75.5	111.09	3.9744	0.010
10.00	101.9	77.3	111.12	3.9000	0.010
10.25	103.6	79.1	111.15	3.8293	0.011
10.50	105.5	80.9	111.18	3.7619	0.011
10.75	107.4	82.8	111.20	3.6977	0.012
11.00	109.2	84.6	111.22	3.6364	0.012
11.25	111.0	86.4	111.25	3.5778	0.012
11.50	112.8	88.2	111.28	3.5217	0.013
11.75	114.6	90.1	111.30	3.4681	0.013
12.00	116.5	91.9	111.31	3.4167	0.014
12.25	118.2	93.7	111.34	3.3673	0.014
12.50	120.1	95.5	111.36	3.3200	0.014
12.75	121.9	97.4	111.38	3.2745	0.015
13.00	123.8	99.2	111.40	3.2308	0.015
13.25	125.5	101.0	111.43	3.1887	0.016
13.50	127.4	102.8	111.44	3.1481	0.016
13.75	129.1	104.5	111.45	3.1091	0.017
14.00	130.9	106.3	111.47	3.0714	0.017
14.25	132.8	108.2	111.50	3.0351	0.018
14.50	134.5	109.9	111.52	3.0000	0.018
14.75	136.2	111.6	111.53	2.9661	0.019
15.00	138.1	113.5	111.55	2.9333	0.019
15.25	139.8	115.2	111.56	2.9016	0.020
15.50	141.5	116.9	111.59	2.8710	0.020
15.75	143.3	118.7	111.59	2.8413	0.021
16.00	145.1	120.5	111.61	2.8125	0.021
16.25	146.8	122.2	111.63	2.7846	0.022
16.50	148.6	124.0	111.65	2.7576	0.022
16.75	150.3	125.7	111.67	2.7313	0.023
17.00	152.1	127.5	111.68	2.7059	0.023
17.25	153.8	129.2	111.69	2.6812	0.024
17.50	155.6	131.0	111.70	2.6571	0.024
17.75	157.4	132.8	111.73	2.6338	0.025
18.00	159.0	134.5	111.74	2.6111	0.025
18.25	160.8	136.2	111.75	2.5890	0.026
18.50	162.5	137.9	111.77	2.5676	0.026
18.75	164.2	139.7	111.78	2.5467	0.027
19.00	166.0	141.4	111.79	2.5263	0.028
19.25	167.8	143.2	111.81	2.5065	0.028
19.50	169.4	144.9	111.82	2.4872	0.029
19.75	171.2	146.6	111.84	2.4684	0.029
20.00	172.9	148.3	111.85	2.4500	0.030
20.25	174.6	150.0	111.87	2.4321	0.030
20.50	176.3	151.7	111.88	2.4146	0.031
20.75	178.0	153.4	111.90	2.3976	0.032
21.00	179.7	155.1	111.91	2.3810	0.032
21.25	181.4	156.8	111.92	2.3647	0.033

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
21.50	183.1	158.5	111.94	2.3488	0.034
21.75	184.8	160.2	111.94	2.3333	0.034
22.00	186.5	161.9	111.97	2.3182	0.035
22.25	188.2	163.6	111.98	2.3034	0.035
22.50	189.8	165.3	111.99	2.2889	0.036
22.75	191.5	166.9	112.00	2.2747	0.037
23.00	193.1	168.5	112.02	2.2609	0.037
23.25	194.9	170.3	112.03	2.2473	0.038
23.50	196.6	172.0	112.06	2.2340	0.039
23.75	198.2	173.6	112.06	2.2211	0.039
24.00	200.0	175.4	112.06	2.2083	0.040
24.25	201.6	177.0	112.07	2.1959	0.041
24.50	203.3	178.7	112.07	2.1837	0.041
24.75	204.9	180.3	112.09	2.1717	0.042
25.00	206.5	182.0	112.09	2.1600	0.043
25.25	208.2	183.6	112.11	2.1485	0.043
25.50	209.8	185.2	112.12	2.1373	0.044
25.75	211.5	186.9	112.14	2.1262	0.045
26.00	213.1	188.5	112.15	2.1154	0.045
26.25	214.8	190.2	112.16	2.1048	0.046
26.50	216.4	191.8	112.18	2.0943	0.047
26.75	218.1	193.5	112.19	2.0841	0.048
27.00	219.7	195.1	112.20	2.0741	0.048
27.25	221.4	196.8	112.22	2.0642	0.049
27.50	223.1	198.5	112.22	2.0545	0.050
27.75	224.7	200.1	112.24	2.0450	0.050
28.00	226.3	201.7	112.25	2.0357	0.051
28.25	227.9	203.4	112.26	2.0265	0.052
28.50	229.5	205.0	112.27	2.0175	0.053
28.75	231.1	206.5	112.29	2.0087	0.053
29.00	232.7	208.1	112.29	2.0000	0.054
29.25	234.4	209.8	112.30	1.9915	0.055
29.50	235.9	211.3	112.31	1.9831	0.056
29.75	237.5	212.9	112.32	1.9748	0.056
30.00	239.1	214.5	112.35	1.9667	0.057
30.25	240.8	216.2	112.35	1.9587	0.058
30.50	242.4	217.8	112.36	1.9508	0.059
30.75	244.0	219.4	112.38	1.9431	0.060
31.00	245.6	221.0	112.39	1.9355	0.060
31.25	247.2	222.6	112.40	1.9280	0.061
31.50	248.8	224.2	112.40	1.9206	0.062
31.75	250.3	225.8	112.42	1.9134	0.063
32.00	251.9	227.4	112.44	1.9062	0.063
32.25	253.5	228.9	112.44	1.8992	0.064
32.50	255.1	230.5	112.45	1.8923	0.065
32.75	256.6	232.1	112.46	1.8855	0.066
33.00	258.3	233.7	112.47	1.8788	0.067
33.25	259.8	235.2	112.48	1.8722	0.068
33.50	261.3	236.8	112.50	1.8657	0.068
33.75	262.9	238.4	112.49	1.8593	0.069
34.00	264.5	239.9	112.52	1.8529	0.070

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSI σ	delta P PSI g	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
34.25	266.1	241.5	112.53	1.8467	0.071
34.50	267.7	243.1	112.54	1.8406	0.072
34.75	269.2	244.6	112.55	1.8345	0.072
35.00	270.8	246.2	112.56	1.8286	0.073
35.25	272.3	247.7	112.57	1.8227	0.074
35.50	273.8	249.3	112.59	1.8169	0.075
35.75	275.4	250.8	112.59	1.8112	0.076
36.00	277.0	252.4	112.60	1.8056	0.077
36.25	278.5	254.0	112.62	1.8000	0.078
36.50	280.1	255.5	112.63	1.7945	0.078
36.75	281.6	257.0	112.64	1.7891	0.079
37.00	283.2	258.6	112.66	1.7838	0.080
37.25	284.7	260.1	112.67	1.7785	0.081
37.50	286.2	261.6	112.68	1.7733	0.082
37.75	287.7	263.1	112.68	1.7682	0.083
38.00	289.3	264.7	112.69	1.7632	0.084
38.25	290.9	266.3	112.70	1.7582	0.085
38.50	292.3	267.7	112.72	1.7532	0.085
38.75	293.9	269.3	112.73	1.7484	0.086
39.00	295.3	270.8	112.74	1.7436	0.087
39.25	296.8	272.3	112.74	1.7389	0.088
39.50	298.4	273.8	112.76	1.7342	0.089
39.75	299.9	275.3	112.77	1.7296	0.090
40.00	301.5	276.9	112.78	1.7250	0.091
40.25	303.0	278.4	112.78	1.7205	0.092
40.50	304.5	279.9	112.80	1.7160	0.093
40.75	306.0	281.4	112.80	1.7117	0.094
41.00	307.6	283.0	112.82	1.7073	0.095
41.25	309.0	284.4	112.82	1.7030	0.095
41.50	310.5	285.9	112.83	1.6988	0.096
41.75	312.0	287.4	112.84	1.6946	0.097
42.00	313.5	288.9	112.86	1.6905	0.098
42.25	315.0	290.4	112.87	1.6864	0.099
42.50	316.4	291.8	112.87	1.6824	0.100
42.75	317.9	293.3	112.89	1.6784	0.101
43.00	319.4	294.8	112.91	1.6744	0.102
43.25	320.9	296.3	112.91	1.6705	0.103
43.50	322.4	297.8	112.91	1.6667	0.104
43.75	323.9	299.3	112.93	1.6629	0.105
44.00	325.3	300.7	112.94	1.6591	0.106
44.25	326.8	302.2	112.95	1.6554	0.107
44.50	328.3	303.7	112.96	1.6517	0.108
44.75	329.7	305.2	112.96	1.6480	0.109
45.00	331.3	306.7	112.98	1.6444	0.110
45.25	332.7	308.1	112.98	1.6409	0.111
45.50	334.2	309.6	112.99	1.6374	0.112
45.75	333.7	309.1	113.01	1.6339	0.111
46.00	335.1	310.5	113.02	1.6304	0.112
46.25	336.6	312.0	113.02	1.6270	0.113
46.50	338.1	313.5	113.04	1.6237	0.114
46.75	339.6	315.0	113.04	1.6203	0.115

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

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Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
47.00	341.0	316.4	113.05	1.6170	0.116
47.25	342.4	317.8	113.06	1.6138	0.117
47.50	343.9	319.3	113.07	1.6105	0.118
47.75	345.3	320.7	113.08	1.6073	0.119
48.00	346.8	322.2	113.10	1.6042	0.120
48.25	348.2	323.6	113.10	1.6010	0.121
48.50	349.6	325.1	113.11	1.5979	0.122
48.75	351.1	326.5	113.12	1.5949	0.123
49.00	352.6	328.0	113.14	1.5918	0.124
49.25	353.9	329.3	113.14	1.5888	0.125
49.50	355.3	330.8	113.15	1.5859	0.126
49.75	356.9	332.3	113.16	1.5829	0.127
50.00	358.3	333.7	113.17	1.5800	0.128
50.25	359.7	335.1	113.18	1.5771	0.129
50.50	361.1	336.6	113.19	1.5743	0.130
50.75	362.6	338.0	113.20	1.5714	0.131
51.00	364.0	339.4	113.20	1.5686	0.132
51.25	365.4	340.8	113.22	1.5659	0.134
51.50	366.8	342.3	113.23	1.5631	0.135
51.75	368.2	343.6	113.24	1.5604	0.136
52.00	369.7	345.1	113.25	1.5577	0.137
52.25	371.0	346.5	113.26	1.5550	0.138
52.50	372.5	347.9	113.26	1.5524	0.139
52.75	373.9	349.3	113.27	1.5498	0.140
53.00	375.3	350.7	113.28	1.5472	0.141
53.25	376.7	352.2	113.29	1.5446	0.142
53.50	378.1	353.5	113.30	1.5421	0.143
53.75	379.5	354.9	113.31	1.5395	0.144
54.00	380.9	356.4	113.32	1.5370	0.145
54.25	382.3	357.7	113.33	1.5346	0.146
54.50	383.8	359.2	113.34	1.5321	0.147
54.75	385.2	360.6	113.34	1.5297	0.148
55.00	386.5	361.9	113.35	1.5273	0.149
55.25	388.0	363.4	113.37	1.5249	0.151
55.50	389.4	364.8	113.38	1.5225	0.152
55.75	390.8	366.2	113.38	1.5202	0.153
56.00	392.1	367.5	113.40	1.5179	0.154
56.25	393.4	368.9	113.41	1.5156	0.155
56.50	394.9	370.3	113.41	1.5133	0.156
56.75	396.2	371.6	113.42	1.5110	0.157
57.00	397.6	373.1	113.44	1.5088	0.158
57.25	399.0	374.4	113.44	1.5066	0.159
57.50	400.4	375.8	113.45	1.5043	0.160
57.75	401.8	377.3	113.46	1.5022	0.161
58.00	403.2	378.6	113.47	1.5000	0.163
58.25	404.5	379.9	113.47	1.4979	0.164
58.50	405.9	381.3	113.49	1.4957	0.165
58.75	407.3	382.7	113.49	1.4936	0.166
59.00	408.6	384.1	113.50	1.4915	0.167
59.25	410.1	385.5	113.52	1.4895	0.168
59.50	411.4	386.8	113.52	1.4874	0.169

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99 TIME: 18:30:05

	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
	59.75	412.7	388.2	113.53	1.4854	0.170
	60.00	414.1	389.5	113.54	1.4833	0.171
	60.25	415.5	390.9	113.55	1.4813	0.173
***** End Shut-in 1	60.50	416.8	392.2	113.55	1.4793	0.174
***** Start Flow 2	0.00	20.3	0.0	113.57		
	0.25	21.5	1.2	113.57		
	0.50	24.2	3.9	113.58		
	0.75	26.8	6.5	113.59		
	1.00	29.0	8.7	113.63		
	1.25	31.0	10.7	113.65		
	1.50	32.0	11.7	113.69		
	1.75	32.7	12.4	113.74		
	2.00	32.9	12.6	113.78		
	2.25	32.8	12.5	113.82		
	2.50	32.6	12.3	113.86		
	2.75	32.3	12.0	113.89		
	3.00	32.1	11.7	113.93		
	3.25	31.7	11.4	113.97		
	3.50	31.5	11.2	114.00		
	3.75	31.4	11.1	114.04		
	4.00	31.1	10.8	114.06		
	4.25	30.9	10.6	114.09		
	4.50	30.8	10.5	114.11		
	4.75	30.6	10.3	114.14		
	5.00	30.5	10.2	114.16		
	5.25	30.4	10.1	114.17		
	5.50	30.2	9.9	114.20		
	5.75	30.1	9.8	114.22		
	6.00	30.1	9.8	114.24		
	6.25	30.0	9.7	114.25		
	6.50	29.9	9.6	114.26		
	6.75	29.9	9.6	114.27		
	7.00	29.8	9.5	114.28		
	7.25	29.7	9.4	114.30		
	7.50	29.6	9.3	114.30		
	7.75	29.5	9.2	114.31		
	8.00	29.5	9.2	114.33		
	8.25	29.4	9.1	114.33		
	8.50	29.4	9.1	114.34		
	8.75	29.4	9.1	114.35		
	9.00	29.3	9.0	114.35		
	9.25	29.3	9.0	114.36		
	9.50	29.2	8.9	114.37		
	9.75	29.1	8.8	114.38		
	10.00	29.1	8.8	114.39		
	10.25	29.0	8.7	114.39		
	10.50	28.9	8.6	114.39		
	10.75	28.9	8.6	114.40		
	11.00	28.8	8.5	114.41		
	11.25	28.7	8.4	114.41		
	11.50	28.7	8.4	114.42		

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
11.75	28.6	8.3	114.42		
12.00	28.4	8.1	114.43		
12.25	28.4	8.1	114.43		
12.50	28.3	8.0	114.44		
12.75	28.3	8.0	114.44		
13.00	28.2	7.9	114.45		
13.25	28.1	7.8	114.46		
13.50	28.1	7.8	114.46		
13.75	28.1	7.8	114.47		
14.00	28.0	7.7	114.47		
14.25	28.0	7.7	114.48		
14.50	27.9	7.6	114.48		
14.75	27.9	7.6	114.49		
15.00	27.9	7.6	114.50		
15.25	27.9	7.6	114.50		
15.50	27.9	7.6	114.51		
15.75	27.9	7.6	114.51		
16.00	27.8	7.5	114.52		
16.25	27.8	7.5	114.53		
16.50	27.8	7.5	114.53		
16.75	27.8	7.5	114.54		
17.00	27.8	7.5	114.55		
17.25	27.7	7.4	114.56		
17.50	27.7	7.4	114.56		
17.75	27.7	7.4	114.57		
18.00	27.6	7.3	114.57		
18.25	27.6	7.3	114.58		
18.50	27.6	7.3	114.59		
18.75	27.6	7.3	114.59		
19.00	27.5	7.2	114.60		
19.25	27.5	7.2	114.61		
19.50	27.5	7.2	114.62		
19.75	27.5	7.2	114.62		
20.00	27.5	7.2	114.63		
20.25	27.5	7.2	114.64		
20.50	27.5	7.2	114.64		
20.75	27.5	7.2	114.65		
21.00	27.4	7.1	114.66		
21.25	27.4	7.1	114.66		
21.50	27.4	7.1	114.68		
21.75	27.5	7.2	114.68		
22.00	27.5	7.2	114.69		
22.25	27.5	7.2	114.70		
22.50	27.4	7.0	114.70		
22.75	27.4	7.0	114.71		
23.00	27.4	7.0	114.72		
23.25	27.4	7.0	114.72		
23.50	27.4	7.0	114.74		
23.75	27.4	7.0	114.74		
24.00	27.4	7.0	114.75		
24.25	27.4	7.0	114.76		

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

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	Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
	24.50	27.4	7.0	114.77		
	24.75	27.4	7.0	114.77		
	25.00	27.4	7.0	114.78		
	25.25	27.4	7.0	114.79		
	25.50	27.4	7.0	114.80		
	25.75	27.3	7.0	114.80		
	26.00	27.3	7.0	114.82		
	26.25	27.3	7.0	114.83		
	26.50	27.3	7.0	114.84		
	26.75	27.3	7.0	114.84		
	27.00	27.3	7.0	114.85		
	27.25	27.2	6.9	114.85		
	27.50	27.2	6.9	114.86		
	27.75	27.2	6.9	114.88		
	28.00	27.2	6.9	114.88		
	28.25	27.2	6.9	114.89		
	28.50	27.2	6.9	114.90		
	28.75	27.3	7.0	114.90		
	29.00	27.3	7.0	114.92		
	29.25	27.3	7.0	114.92		
	29.50	28.0	7.7	114.94		
	29.75	29.8	9.5	114.95		
	30.00	31.6	11.3	114.95		
	30.25	33.4	13.1	114.96		
	30.50	35.1	14.8	114.97		
***** End Flow 2	30.75	36.8	16.4	114.98		
***** Start Shutin 2	0.00	36.8	0.0	114.98	0.0000	0.001
	0.25	38.4	1.7	114.99	240.0000	0.001
	0.50	40.1	3.4	114.99	120.5000	0.002
	0.75	41.7	5.0	115.01	80.6667	0.002
	1.00	43.4	6.6	115.02	60.7500	0.002
	1.25	45.0	8.2	115.03	48.8000	0.002
	1.50	46.6	9.8	115.04	40.8333	0.002
	1.75	48.2	11.4	115.05	35.1429	0.002
	2.00	49.8	13.1	115.07	30.8750	0.002
	2.25	51.4	14.7	115.08	27.5556	0.003
	2.50	53.1	16.4	115.09	24.9000	0.003
	2.75	54.7	18.0	115.10	22.7273	0.003
	3.00	56.4	19.6	115.11	20.9167	0.003
	3.25	57.9	21.1	115.12	19.3846	0.003
	3.50	59.5	22.7	115.14	18.0714	0.004
	3.75	61.1	24.3	115.15	16.9333	0.004
	4.00	62.7	25.9	115.16	15.9375	0.004
	4.25	64.4	27.6	115.17	15.0588	0.004
	4.50	65.9	29.1	115.19	14.2778	0.004
	4.75	67.5	30.7	115.19	13.5789	0.005
	5.00	69.1	32.3	115.20	12.9500	0.005
	5.25	70.7	33.9	115.21	12.3810	0.005
	5.50	72.3	35.5	115.23	11.8636	0.005
	5.75	73.8	37.1	115.23	11.3913	0.005
	6.00	75.4	38.7	115.25	10.9583	0.006

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

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Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
6.25	77.0	40.2	115.26	10.5600	0.006
6.50	78.6	41.9	115.28	10.1923	0.006
6.75	80.1	43.4	115.28	9.8519	0.006
7.00	81.7	45.0	115.30	9.5357	0.007
7.25	83.3	46.6	115.31	9.2414	0.007
7.50	84.8	48.1	115.31	8.9667	0.007
7.75	86.5	49.8	115.32	8.7097	0.007
8.00	88.0	51.3	115.33	8.4688	0.008
8.25	89.6	52.9	115.34	8.2424	0.008
8.50	91.2	54.5	115.36	8.0294	0.008
8.75	92.7	56.0	115.36	7.8286	0.009
9.00	94.4	57.7	115.38	7.6389	0.009
9.25	95.9	59.2	115.38	7.4595	0.009
9.50	97.5	60.8	115.40	7.2895	0.01
9.75	99.1	62.4	115.40	7.1282	0.01
10.00	100.6	63.9	115.41	6.9750	0.010
10.25	102.2	65.5	115.46	6.8293	0.010
10.50	103.8	67.1	115.44	6.6905	0.011
10.75	105.4	68.7	115.45	6.5581	0.011
11.00	106.9	70.2	115.46	6.4318	0.011
11.25	108.5	71.8	115.47	6.3111	0.012
11.50	110.0	73.3	115.48	6.1957	0.012
11.75	111.6	74.9	115.49	6.0851	0.012
12.00	113.1	76.4	115.50	5.9792	0.013
12.25	114.8	78.1	115.50	5.8776	0.013
12.50	116.3	79.6	115.52	5.7800	0.014
12.75	117.8	81.1	115.52	5.6863	0.014
13.00	119.4	82.7	115.54	5.5962	0.014
13.25	120.9	84.2	115.54	5.5094	0.015
13.50	122.4	85.7	115.56	5.4259	0.015
13.75	124.0	87.3	115.56	5.3455	0.015
14.00	125.5	88.8	115.58	5.2679	0.016
14.25	127.1	90.4	115.59	5.1930	0.016
14.50	128.7	91.9	115.59	5.1207	0.017
14.75	130.2	93.5	115.59	5.0508	0.017
15.00	131.8	95.0	115.61	4.9833	0.017
15.25	133.3	96.5	115.63	4.9180	0.018
15.50	134.9	98.1	115.63	4.8548	0.018
15.75	136.4	99.6	115.63	4.7937	0.019
16.00	137.9	101.1	115.65	4.7344	0.019
16.25	139.4	102.6	115.66	4.6769	0.019
16.50	140.9	104.2	115.67	4.6212	0.020
16.75	142.6	105.8	115.68	4.5672	0.020
17.00	144.0	107.3	115.68	4.5147	0.021
17.25	145.5	108.8	115.69	4.4638	0.021
17.50	147.1	110.4	115.70	4.4143	0.022
17.75	148.6	111.9	115.71	4.3662	0.022
18.00	150.1	113.4	115.72	4.3194	0.023
18.25	151.6	114.9	115.73	4.2740	0.023
18.50	153.2	116.4	115.73	4.2297	0.023
18.75	154.7	117.9	115.75	4.1867	0.024

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
19.00	156.2	119.4	115.76	4.1447	0.024
19.25	157.8	121.0	115.76	4.1039	0.025
19.50	159.3	122.5	115.77	4.0641	0.025
19.75	160.8	124.0	115.78	4.0253	0.026
20.00	162.2	125.5	115.79	3.9875	0.026
20.25	163.7	127.0	115.80	3.9506	0.027
20.50	165.2	128.5	115.80	3.9146	0.027
20.75	166.8	130.0	115.81	3.8795	0.028
21.00	168.2	131.4	115.82	3.8452	0.028
21.25	169.8	133.0	115.83	3.8118	0.029
21.50	171.2	134.5	115.84	3.7791	0.029
21.75	172.7	136.0	115.84	3.7471	0.030
22.00	174.2	137.5	115.85	3.7159	0.030
22.25	175.7	139.0	115.86	3.6854	0.031
22.50	177.3	140.6	115.86	3.6556	0.031
22.75	178.8	142.0	115.88	3.6264	0.032
23.00	180.4	143.6	115.88	3.5978	0.033
23.25	181.8	145.0	115.90	3.5699	0.033
23.50	183.3	146.5	115.90	3.5426	0.034
23.75	184.8	148.0	115.91	3.5158	0.034
24.00	186.3	149.6	115.91	3.4896	0.035
24.25	187.7	150.9	115.93	3.4639	0.035
24.50	189.2	152.4	115.93	3.4388	0.036
24.75	190.7	153.9	115.94	3.4141	0.036
25.00	192.1	155.4	115.94	3.3900	0.037
25.25	193.6	156.9	115.95	3.3663	0.037
25.50	195.0	158.3	115.96	3.3431	0.038
25.75	196.6	159.8	115.97	3.3204	0.039
26.00	198.0	161.2	115.98	3.2981	0.039
26.25	199.5	162.7	115.98	3.2762	0.040
26.50	200.9	164.2	115.99	3.2547	0.040
26.75	202.4	165.7	115.99	3.2336	0.041
27.00	203.9	167.2	116.00	3.2130	0.042
27.25	205.4	168.6	116.01	3.1927	0.042
27.50	206.9	170.1	116.02	3.1727	0.043
27.75	208.3	171.5	116.02	3.1532	0.043
28.00	209.7	173.0	116.04	3.1339	0.044
28.25	211.2	174.4	116.04	3.1150	0.045
28.50	212.7	175.9	116.05	3.0965	0.045
28.75	214.1	177.3	116.06	3.0783	0.046
29.00	215.5	178.8	116.06	3.0603	0.046
29.25	217.0	180.3	116.07	3.0427	0.047
29.50	218.4	181.6	116.08	3.0254	0.048
29.75	219.9	183.1	116.09	3.0084	0.048
30.00	221.4	184.6	116.10	2.9917	0.049
30.25	222.7	186.0	116.10	2.9752	0.050
30.50	224.2	187.4	116.11	2.9590	0.050
30.75	225.6	188.8	116.11	2.9431	0.051
31.00	226.9	190.2	116.12	2.9274	0.051
31.25	228.4	191.7	116.13	2.9120	0.052
31.50	229.9	193.1	116.14	2.8968	0.053

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
31.75	231.4	194.6	116.14	2.8819	0.054
32.00	232.7	196.0	116.16	2.8672	0.054
32.25	234.2	197.4	116.16	2.8527	0.055
32.50	235.6	198.8	116.17	2.8385	0.055
32.75	237.0	200.3	116.17	2.8244	0.056
33.00	238.5	201.8	116.17	2.8106	0.057
33.25	239.9	203.1	116.18	2.7970	0.058
33.50	241.2	204.4	116.19	2.7836	0.058
33.75	242.7	206.0	116.20	2.7704	0.059
34.00	244.1	207.4	116.20	2.7574	0.060
34.25	245.6	208.8	116.21	2.7445	0.060
34.50	247.0	210.2	116.22	2.7319	0.061
34.75	248.4	211.7	116.23	2.7194	0.062
35.00	249.8	213.0	116.23	2.7071	0.062
35.25	251.2	214.4	116.24	2.6950	0.063
35.50	252.6	215.9	116.24	2.6831	0.064
35.75	254.0	217.2	116.25	2.6713	0.064
36.00	255.5	218.7	116.26	2.6597	0.065
36.25	256.8	220.1	116.26	2.6483	0.066
36.50	258.2	221.5	116.28	2.6370	0.067
36.75	259.7	222.9	116.28	2.6259	0.067
37.00	260.9	224.2	116.29	2.6149	0.068
37.25	262.3	225.6	116.29	2.6040	0.069
37.50	263.7	226.9	116.30	2.5933	0.070
37.75	265.2	228.5	116.31	2.5828	0.070
38.00	266.5	229.8	116.32	2.5724	0.071
38.25	268.0	231.2	116.32	2.5621	0.072
38.50	269.4	232.6	116.33	2.5519	0.073
38.75	270.7	234.0	116.33	2.5419	0.073
39.00	272.2	235.4	116.35	2.5321	0.074
39.25	273.5	236.8	116.34	2.5223	0.075
39.50	274.9	238.1	116.35	2.5127	0.076
39.75	276.3	239.5	116.36	2.5031	0.076
40.00	277.7	241.0	116.37	2.4937	0.077
40.25	279.0	242.2	116.37	2.4845	0.078
40.50	280.3	243.6	116.38	2.4753	0.079
40.75	281.7	245.0	116.38	2.4663	0.079
41.00	283.2	246.4	116.39	2.4573	0.080
41.25	284.4	247.7	116.40	2.4485	0.081
41.50	285.8	249.1	116.41	2.4398	0.082
41.75	287.2	250.4	116.41	2.4311	0.082
42.00	288.5	251.8	116.42	2.4226	0.083
42.25	289.9	253.1	116.42	2.4142	0.084
42.50	291.3	254.6	116.43	2.4059	0.085
42.75	292.6	255.9	116.43	2.3977	0.086
43.00	294.1	257.3	116.45	2.3895	0.086
43.25	295.4	258.7	116.45	2.3815	0.087
43.50	296.8	260.1	116.46	2.3736	0.088
43.75	298.1	261.4	116.47	2.3657	0.089
44.00	299.4	262.7	116.47	2.3580	0.090
44.25	300.9	264.1	116.48	2.3503	0.091

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
44.50	302.1	265.4	116.49	2.3427	0.091
44.75	303.6	266.8	116.49	2.3352	0.092
45.00	304.9	268.1	116.49	2.3278	0.093
45.25	306.2	269.5	116.50	2.3204	0.094
45.50	307.6	270.8	116.51	2.3132	0.095
45.75	308.8	272.1	116.51	2.3060	0.095
46.00	310.3	273.5	116.53	2.2989	0.096
46.25	311.5	274.8	116.53	2.2919	0.097
46.50	313.0	276.2	116.54	2.2849	0.098
46.75	314.2	277.5	116.54	2.2781	0.099
47.00	315.6	278.8	116.55	2.2713	0.10
47.25	316.9	280.2	116.55	2.2646	0.100
47.50	318.2	281.5	116.56	2.2579	0.101
47.75	319.6	282.8	116.56	2.2513	0.102
48.00	320.9	284.2	116.57	2.2448	0.103
48.25	322.3	285.5	116.57	2.2383	0.104
48.50	323.6	286.9	116.59	2.2320	0.105
48.75	324.9	288.1	116.59	2.2256	0.106
49.00	326.2	289.5	116.60	2.2194	0.106
49.25	327.6	290.8	116.60	2.2132	0.107
49.50	328.9	292.2	116.60	2.2071	0.108
49.75	330.2	293.5	116.61	2.2010	0.109
50.00	331.6	294.8	116.63	2.1950	0.110
50.25	332.8	296.1	116.62	2.1891	0.111
50.50	334.2	297.4	116.63	2.1832	0.112
50.75	335.5	298.8	116.64	2.1773	0.113
51.00	336.9	300.1	116.65	2.1716	0.113
51.25	338.1	301.4	116.59	2.1659	0.114
51.50	339.4	302.6	116.66	2.1602	0.115
51.75	340.7	304.0	116.66	2.1546	0.116
52.00	342.1	305.3	116.67	2.1490	0.117
52.25	343.4	306.7	116.67	2.1435	0.118
52.50	344.7	307.9	116.67	2.1381	0.119
52.75	345.9	309.2	116.68	2.1327	0.120
53.00	347.3	310.5	116.69	2.1274	0.121
53.25	348.6	311.9	116.70	2.1221	0.122
53.50	349.9	313.1	116.71	2.1168	0.122
53.75	351.1	314.4	116.71	2.1116	0.123
54.00	352.5	315.7	116.72	2.1065	0.124
54.25	353.8	317.1	116.73	2.1014	0.125
54.50	355.1	318.3	116.73	2.0963	0.126
54.75	356.3	319.6	116.74	2.0913	0.127
55.00	357.7	320.9	116.74	2.0864	0.128
55.25	359.0	322.2	116.75	2.0814	0.129
55.50	360.2	323.5	116.75	2.0766	0.130
55.75	361.6	324.8	116.76	2.0717	0.131
56.00	362.7	326.0	116.77	2.0670	0.132
56.25	364.1	327.3	116.77	2.0622	0.133
56.50	365.3	328.6	116.77	2.0575	0.133
56.75	366.6	329.8	116.78	2.0529	0.134
57.00	367.9	331.2	116.79	2.0482	0.135

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99 TIME: 18:30:05

	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
	57.25	369.2	332.4	116.79	2.0437	0.136
	57.50	370.4	333.7	116.80	2.0391	0.137
	57.75	371.7	335.0	116.81	2.0346	0.138
	58.00	373.1	336.3	116.81	2.0302	0.139
	58.25	374.3	337.6	116.82	2.0258	0.140
	58.50	375.6	338.8	116.83	2.0214	0.141
	58.75	376.8	340.1	116.83	2.0170	0.142
	59.00	378.2	341.4	116.84	2.0127	0.143
	59.25	379.4	342.7	116.84	2.0084	0.144
	59.50	380.7	343.9	116.86	2.0042	0.145
	59.75	381.9	345.2	116.86	2.0000	0.146
	60.00	383.2	346.5	116.86	1.9958	0.147
	60.25	384.5	347.7	116.87	1.9917	0.148
	60.50	385.7	349.0	116.87	1.9876	0.149
***** End Shut-in 2	60.75	387.0	350.2	116.89	1.9835	0.150
***** Final Hydro.	323.00	2550.6	0.0	118.77		

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No. 11577

Well Name & No. <u>LINDSAY #1</u>	Test No. <u>1</u>	Date <u>1-2-99</u>
Company <u>GRAVES DRUG CO. INC.</u>	Zone Tested <u>MISS</u>	
Address <u>P.O. Box #250, Wichita KS. 67208</u>	Elevation <u>1952</u> KB <u>1944</u> GL	
Co. Rep / Geo. <u>JOHN HASTINGS cont.</u>	<u>DUKE DRUG #2</u>	Est. Ft. of Pay <u>10</u> Por. <u>10</u> %
Location: Sec. <u>17</u> Twp. <u>33S</u> Rge. <u>19W</u>	Co. <u>COMANCHE</u> State <u>KS.</u>	
No. of Copies <u>5</u> Distribution Sheet (Y, N) <u>N</u>	Turnkey (Y, N) <u>-</u>	Evaluation (Y, N) <u>-</u>

Interval Tested <u>5174 - 5221'</u>	Initial Str. Wt./Lbs. <u>57,000</u>	Unseated Str. Wt./Lbs. <u>57,000</u>
Anchor Length <u>47'</u>	Wt. Set Lbs. <u>20,000</u>	Wt. Pulled Loose/Lbs. <u>66,000</u>
Top Packer Depth <u>5169'</u>	Tool Weight <u>2100</u> #	
Bottom Packer Depth <u>5174'</u>	Hole Size — 7 7/8" <input checked="" type="checkbox"/>	Rubber Size — 6 3/4" <input checked="" type="checkbox"/>
Total Depth <u>5221'</u>	Wt. Pipe Run <u>NONE</u>	Drill Collar Run <u>NONE</u>
Mud Wt. <u>9.2</u> LCM <u>1</u> # Vis. <u>50</u> WL <u>B.6cc.</u>	Drill Pipe Size <u>4 1/2" X 1/2"</u>	Ft. Run <u>5179'</u>
Blow Description <u>IF: Strong below. Btm. of bucket in 15 sec.</u>		
<u>ISI: No. below.</u>		
<u>FF: Strong below. Btm. of bucket immediately.</u>		
<u>FSI: No. below.</u>		

Recovery — Total Feet <u>35</u> <u>Enviro GIP 1080</u>	Ft. in DC <u>—</u>	Ft. in DP <u>35'</u>		
Rec. <u>35</u> Feet Of <u>Dreg. Mud.</u>	%gas	%oil	%water	%mud
Rec. _____ Feet Of _____	%gas	%oil	%water	%mud
Rec. _____ Feet Of _____	%gas	%oil	%water	%mud
Rec. _____ Feet Of _____	%gas	%oil	%water	%mud
BHT <u>117</u> °F Gravity <u>N/A</u>	°API D@ <u>—</u>	°F Corrected Gravity <u>N/A</u>	°API	
RW <u>N/C</u> @ <u>—</u> °F Chlorides <u>5,000</u> ppm Recovery	Chlorides <u>5,000</u> ppm System			

	AK-1	Alpine	PSI	Recorder No.	T-On Location
(A) Initial Hydrostatic Mud	<u>2591</u>	<u>2580</u>		<u>2342</u>	<u>1710</u>
(B) First Initial Flow Pressure	<u>57</u>	<u>25</u>		<u>5184</u>	<u>1829</u>
(C) First Final Flow Pressure	<u>57</u>	<u>25</u>		<u>10248</u>	<u>2048</u>
(D) Initial Shut-In Pressure	<u>449</u>	<u>417</u>		<u>5218</u>	<u>2348</u>
(E) Second Initial Flow Pressure	<u>66</u>	<u>20</u>		<u>—</u>	<u>0148</u>
(F) Second Final Flow Pressure	<u>66</u>	<u>37</u>		<u>—</u>	<u>0300</u>
(G) Final Shut-in Pressure	<u>406</u>	<u>387</u>		<u>30</u>	<u>800</u>
(Q) Final Hydrostatic Mud	<u>2569</u>	<u>2551</u>		<u>60</u>	<u>200</u>
				<u>30</u>	<u>50</u>
				<u>60</u>	

TRILOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LEFT OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Approved By [Signature]
 Our Representative [Signature]

Extra Packer _____
 Elec. Rec. 150 ⁰⁶
 Mileage _____
 Other _____
 TOTAL PRICE \$ 1200 ⁰⁰

TRILOBITE TESTING L.L.C.

OPERATOR : Graves Drlg.Co.Inc.

DATE 01-03-99

WELL NAME: Lindsay #1

KB 1952.00 ft

TICKET NO: 11578 DST #2

LOCATION : 17-33s-19w Comanche co KS

GR 1944.00 ft

FORMATION: Miss.

INTERVAL : 5319.00 To 5345.00 ft

TD 5345.00 ft

TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins		Field	1	2	3	4	TIME DATA-----
PF 30	Rec.	10248	10248	2342			PF Fr. 2040 to 2110 hr
SI 60	Range(Psi)	4400.0	4400.0	4995.0	0.0	0.0	IS Fr. 2110 to 2210 hr
SF 60	Clock(hrs)	12 hr	12 hr	batt.			SF Fr. 2210 to 2310 hr
FS 90	Depth(ft)	5342.0	5342.0	5325.0	0.0	0.0	FS Fr. 2310 to 0040 hr

	Field	1	2	3	4	
A. Init Hydro	2647.0	2621.0	2615.0	0.0	0.0	T STARTED 1814 hr
B. First Flow	9.0	17.0	31.0	0.0	0.0	T ON BOTM 2030 hr
B1. Final Flow	16.0	28.0	45.0	0.0	0.0	T OPEN 2040 hr
C. In Shut-in	1740.0	1733.0	1758.0	0.0	0.0	T PULLED 0042 hr
D. Init Flow	25.0	50.0	48.0	0.0	0.0	T OUT 0250 hr
E. Final Flow	57.0	83.0	88.0	0.0	0.0	
F. Fl Shut-in	1712.0	1430.0	1730.0	0.0	0.0	TOOL DATA-----
G. Final Hydro	2602.0	2594.0	2595.0	0.0	0.0	Tool Wt. 2100.00 lbs
Inside/Outside	O	O	I	T		Wt Set On Packer 20000.00 lbs
						Wt Pulled Loose 66000.00 lbs
						Initial Str Wt 58000.00 lbs
						Unseated Str Wt 58000.00 lbs
						Bot Choke 0.75 in
						Hole Size 7.88 in
						D Col. ID 2.25 in
						D. Pipe ID 3.80 in
						D.C. Length 0.00 ft
						D.P. Length 5305.00 ft

RECOVERY

Tot Fluid 182.00 ft of 0.00 ft in DC and 182.00 ft in DP
 2600.00 ft of Gas in pipe.
 1.00 ft of Clean oil.
 121.00 ft of Gas Oil Cut Mud
 0.00 ft of 20%gas 20%oil 60%water 54%mud
 60.00 ft of Oil & mud cut gassy water
 0.00 ft of 13%oil 20%mud 22%gas 45%water
 0.00 ft of Rw 1.31 ohms @ 31 degrees F.
 0.00 ft of EST.FT. of PAY----- 8

SALINITY 14600.00 P.P.M. A.P.I. Gravity 39.00

MUD DATA-----

Mud Type Chemical
 Weight 9.10 lb/c
 Vis. 48.00 S/L
 W.L. 8.00 in3
 F.C. 0.20 in

Mud Drop N

Amt. of fill 0.00 ft
 Btm. H. Temp. 127.00 F
 Hole Condition Good
 % Porosity 10.00
 Packer Size 6.75 in
 No. of Packers 2
 Cushion Amt. 0.00 N
 Cushion Type None
 Reversed Out N

Tool Chased N
 Tester Gary Pevoteaux
 Co. Rep. John Hastings
 Contr. Duke Drlg.
 Rig # 2
 Unit #
 Pump T. LCM 6#/bl

BLOW DESCRIPTION

Initial Flow:

Fair to strong blow - bottom of bucket in 12 minutes

Initial Shutin:

No blow

Final Flow:

Strong blow - bottom of bucket immediatley

Final Shutin:

Weak blow (1/2 - 3/4")

SAMPLES: None

SENT TO:Caraway/Liberal

Test Successful: Y

*** TOOL DIAGRAM *** CONVENTIONAL

~~_____~~ : Lindsay #1
~~_____~~ : 17-33s-19w Comanche co KS
~~_____~~ 11578 D.S.T. No. 2 DATE 01-03-99
~~_____~~ TO BOTTOM OF TOP PACKERS 27
~~_____~~ TOOL
~~_____~~ PACKERS AND ANCHOR 26
~~_____~~ 53
~~_____~~ ANCHOR IN INTERVAL
~~_____~~ OR STND.Stands Single Total
~~_____~~ OR STND.Stands Single Total
~~_____~~ MBLY 53
~~_____~~ TOOLS.Stands Single Total
~~_____~~ TOOLS.Stands85 Single 1 Total 5305
~~_____~~ COLLARS DRILL PIPE & TOOLS .. 5358
~~_____~~ 5345
~~_____~~ PIPE ABOVE K.B. 13

FLUID SAMPLER DATA (not run)

 ----- ML.
 ----- ML.
 ----- ML.

 ----- PSI
 ----- ohms @ deg. F.
 ----- ppm.
 -----n/a deg.API

P.O. SUB		
C.O. SUB @ top of tool		5292
S.I. TOOL Sterling		5298
Sampler (no)		
HMV Sterling		5303
JARS Bowen		5308
SAFETY JOINT Bowen		5310
PACKER Top		5314
PACKER Btm.		5319
DEPTH 5319		
STUBB 1 ft.		5320
ANCHOR perfs		
Alpine rec. @		5325
T.C. DEPTH		
20' perfs to		5340
AK-1 rec. @		5342
BULLNOSE 5 ft. perforated		5345
T.D.		

TEST HISTORY

11578 DST#2 LINDSAY #1 GRAVES DRLG.CO.INC.

Flag Points
t(Min.) P(PSig)

A:	0.00	2615.01
B:	0.00	30.63
C:	28.25	45.31
D:	60.00	1758.28
E:	0.00	47.58
F:	59.50	87.86
G:	93.25	1738.05
Q:	0.00	2595.04

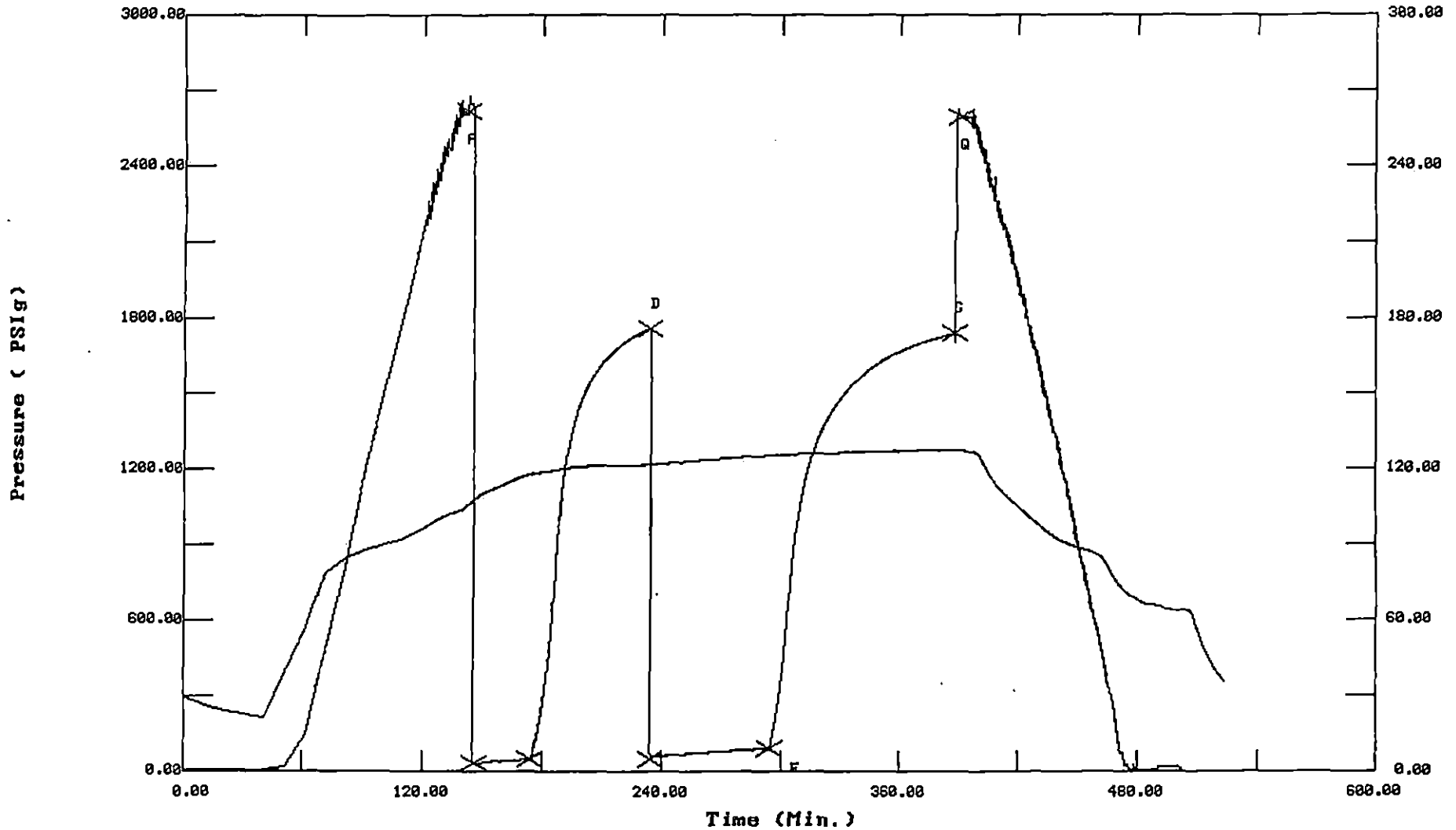
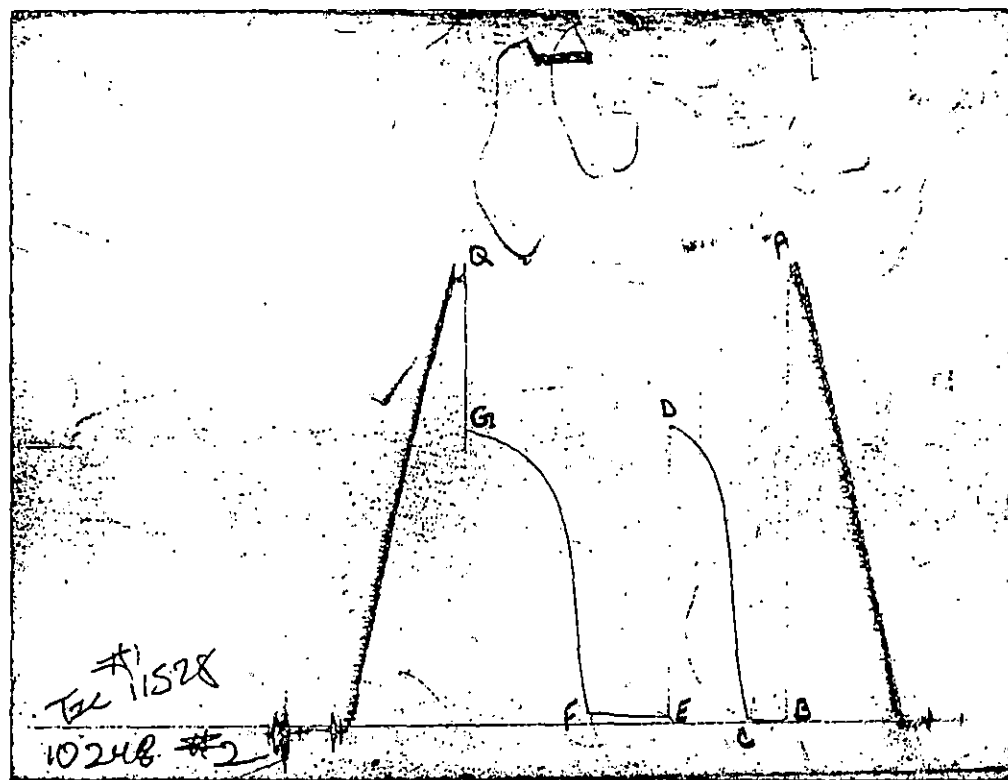


CHART PAGE



This is a photocopy of the actual AK-1 recorder chart

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
***** Initial Hydro.	136.75	2580.8	0.0	107.40		
***** Start Flow 1	0.00	24.5	0.0	107.45		
	0.25	24.1	-0.4	107.45		
	0.50	23.8	-0.7	107.48		
	0.75	24.2	-0.3	107.53		
	1.00	24.2	-0.3	107.59		
	1.25	24.3	-0.2	107.65		
	1.50	24.5	0.0	107.71		
	1.75	24.5	0.0	107.78		
	2.00	24.7	0.2	107.85		
	2.25	24.8	0.3	107.91		
	2.50	24.8	0.3	107.98		
	2.75	24.7	0.2	108.03		
	3.00	24.7	0.2	108.08		
	3.25	24.7	0.2	108.13		
	3.50	24.7	0.2	108.17		
	3.75	24.7	0.2	108.20		
	4.00	24.7	0.2	108.24		
	4.25	24.8	0.3	108.27		
	4.50	24.8	0.3	108.30		
	4.75	24.8	0.3	108.33		
	5.00	24.8	0.3	108.36		
	5.25	24.6	-0.1	108.38		
	5.50	24.6	0.1	108.40		
	5.75	24.6	0.1	108.43		
	6.00	24.5	0.0	108.45		
	6.25	24.4	-0.1	108.46		
	6.50	24.4	-0.1	108.47		
	6.75	24.5	0.0	108.49		
	7.00	24.5	0.0	108.51		
	7.25	24.5	0.0	108.53		
	7.50	24.3	-0.2	108.53		
	7.75	24.3	-0.2	108.56		
	8.00	24.2	-0.3	108.57		
	8.25	24.2	-0.3	108.59		
	8.50	24.2	-0.3	108.60		
	8.75	24.1	-0.4	108.62		
	9.00	24.1	-0.4	108.63		
	9.25	24.1	-0.4	108.65		
	9.50	24.1	-0.4	108.67		
	9.75	24.1	-0.4	108.69		
	10.00	24.1	-0.4	108.72		
	10.25	24.0	-0.5	108.75		
	10.50	24.0	-0.5	108.78		
	10.75	24.0	-0.5	108.81		
	11.00	24.0	-0.5	108.84		
	11.25	24.2	-0.3	108.88		
	11.50	24.2	-0.3	108.91		
	11.75	24.2	-0.3	108.94		
	12.00	24.2	-0.3	108.98		
	12.25	24.2	-0.3	109.00		

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

EST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

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Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
12.50	24.2	-0.3	109.03		
12.75	24.2	-0.3	109.06		
13.00	24.2	-0.3	109.09		
13.25	24.2	-0.3	109.11		
13.50	24.2	-0.3	109.13		
13.75	24.2	-0.3	109.16		
14.00	24.2	-0.3	109.18		
14.25	24.2	-0.3	109.20		
14.50	24.3	-0.2	109.23		
14.75	24.3	-0.2	109.25		
15.00	24.2	-0.3	109.27		
15.25	24.3	-0.2	109.29		
15.50	24.3	-0.2	109.31		
15.75	24.3	-0.2	109.33		
16.00	24.3	-0.2	109.35		
16.25	24.3	-0.2	109.37		
16.50	24.3	-0.2	109.39		
16.75	24.3	-0.2	109.41		
17.00	24.3	-0.2	109.43		
17.25	24.4	-0.1	109.44		
17.50	24.4	-0.1	109.46		
17.75	24.4	-0.1	109.48		
18.00	24.4	-0.1	109.49		
18.25	24.4	-0.1	109.51		
18.50	24.4	-0.1	109.53		
18.75	24.4	-0.1	109.54		
19.00	24.4	-0.1	109.57		
19.25	24.3	-0.2	109.58		
19.50	24.3	-0.2	109.60		
19.75	24.3	-0.2	109.61		
20.00	24.3	-0.2	109.63		
20.25	24.5	0.0	109.65		
20.50	24.5	0.0	109.66		
20.75	24.5	0.0	109.68		
21.00	24.5	0.0	109.70		
21.25	24.5	0.0	109.71		
21.50	24.5	0.0	109.72		
21.75	24.5	0.0	109.74		
22.00	24.5	0.0	109.75		
22.25	24.5	0.0	109.77		
22.50	24.5	0.0	109.78		
22.75	24.5	0.0	109.80		
23.00	24.5	0.0	109.81		
23.25	24.5	0.0	109.83		
23.50	24.4	-0.1	109.85		
23.75	24.4	-0.1	109.86		
24.00	24.4	-0.1	109.88		
24.25	24.4	-0.1	109.88		
24.50	24.4	-0.1	109.91		
24.75	24.6	0.1	109.92		
25.00	24.6	0.1	109.94		

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

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	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
	25.25	24.6	0.1	109.95		
	25.50	24.6	0.1	109.97		
	25.75	24.6	0.1	109.98		
	26.00	24.6	0.1	109.99		
	26.25	24.6	0.1	110.01		
	26.50	24.6	0.1	110.02		
	26.75	24.6	0.1	110.05		
	27.00	24.6	0.1	110.06		
	27.25	24.6	0.1	110.07		
	27.50	24.6	0.1	110.09		
	27.75	24.6	0.1	110.10		
	28.00	24.6	0.1	110.12		
	28.25	24.6	0.1	110.13		
	28.50	24.6	0.1	110.16		
	28.75	24.6	0.1	110.17		
***** End Flow 1	29.00	24.6	0.1	110.18		
***** Start Shutin 1	0.00	24.6	0.0	110.18	0.0000	0.001
	0.25	26.3	1.8	110.20	117.0000	0.001
	0.50	28.5	3.9	110.21	59.0000	0.001
	0.75	30.7	6.1	110.23	39.6667	0.001
	1.00	32.8	8.2	110.24	30.0000	0.001
	1.25	34.9	10.3	110.27	24.2000	0.001
	1.50	36.9	12.3	110.28	20.3333	0.001
	1.75	38.9	14.4	110.30	17.5714	0.002
	2.00	40.9	16.3	110.32	15.5000	0.002
	2.25	43.0	18.4	110.33	13.8889	0.002
	2.50	44.9	20.3	110.35	12.6000	0.002
	2.75	46.8	22.2	110.37	11.5455	0.002
	3.00	48.8	24.2	110.39	10.6667	0.002
	3.25	50.8	26.2	110.41	9.9231	0.003
	3.50	52.7	28.1	110.43	9.2857	0.003
	3.75	54.6	30.0	110.45	8.7333	0.003
	4.00	56.6	32.0	110.47	8.2500	0.003
	4.25	58.6	34.0	110.49	7.8235	0.003
	4.50	60.5	35.9	110.51	7.4444	0.004
	4.75	62.3	37.8	110.54	7.1053	0.004
	5.00	64.3	39.7	110.56	6.8000	0.004
	5.25	66.2	41.6	110.58	6.5238	0.004
	5.50	68.1	43.6	110.61	6.2727	0.005
	5.75	70.0	45.4	110.63	6.0435	0.005
	6.00	71.9	47.3	110.66	5.8333	0.005
	6.25	73.8	49.2	110.70	5.6400	0.005
	6.50	75.7	51.1	110.72	5.4615	0.006
	6.75	77.5	53.0	110.75	5.2963	0.006
	7.00	79.5	54.9	110.78	5.1429	0.006
	7.25	81.4	56.8	110.80	5.0000	0.007
	7.50	83.2	58.7	110.83	4.8667	0.007
	7.75	85.2	60.6	110.86	4.7419	0.007
	8.00	87.0	62.4	110.90	4.6250	0.008
	8.25	88.9	64.3	110.91	4.5152	0.008
	8.50	90.8	66.2	110.95	4.4118	0.008

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

EST: 11577 DST#1 LINDSAY #1 GRAVES DR LG.CO.INC.

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Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
8.75	92.7	68.1	110.98	4.3143	0.009
9.00	94.5	69.9	111.01	4.2222	0.009
9.25	96.3	71.8	111.04	4.1351	0.009
9.50	98.2	73.6	111.07	4.0526	0.01
9.75	100.0	75.5	111.09	3.9744	0.010
10.00	101.9	77.3	111.12	3.9000	0.010
10.25	103.6	79.1	111.15	3.8293	0.011
10.50	105.5	80.9	111.18	3.7619	0.011
10.75	107.4	82.8	111.20	3.6977	0.012
11.00	109.2	84.6	111.22	3.6364	0.012
11.25	111.0	86.4	111.25	3.5778	0.012
11.50	112.8	88.2	111.28	3.5217	0.013
11.75	114.6	90.1	111.30	3.4681	0.013
12.00	116.5	91.9	111.31	3.4167	0.014
12.25	118.2	93.7	111.34	3.3673	0.014
12.50	120.1	95.5	111.36	3.3200	0.014
12.75	121.9	97.4	111.38	3.2745	0.015
13.00	123.8	99.2	111.40	3.2308	0.015
13.25	125.5	101.0	111.43	3.1887	0.016
13.50	127.4	102.8	111.44	3.1481	0.016
13.75	129.1	104.5	111.45	3.1091	0.017
14.00	130.9	106.3	111.47	3.0714	0.017
14.25	132.8	108.2	111.50	3.0351	0.018
14.50	134.5	109.9	111.52	3.0000	0.018
14.75	136.2	111.6	111.53	2.9661	0.019
15.00	138.1	113.5	111.55	2.9333	0.019
15.25	139.8	115.2	111.56	2.9016	0.020
15.50	141.5	116.9	111.59	2.8710	0.020
15.75	143.3	118.7	111.59	2.8413	0.021
16.00	145.1	120.5	111.61	2.8125	0.021
16.25	146.8	122.2	111.63	2.7846	0.022
16.50	148.6	124.0	111.65	2.7576	0.022
16.75	150.3	125.7	111.67	2.7313	0.023
17.00	152.1	127.5	111.68	2.7059	0.023
17.25	153.8	129.2	111.69	2.6812	0.024
17.50	155.6	131.0	111.70	2.6571	0.024
17.75	157.4	132.8	111.73	2.6338	0.025
18.00	159.0	134.5	111.74	2.6111	0.025
18.25	160.8	136.2	111.75	2.5890	0.026
18.50	162.5	137.9	111.77	2.5676	0.026
18.75	164.2	139.7	111.78	2.5467	0.027
19.00	166.0	141.4	111.79	2.5263	0.028
19.25	167.8	143.2	111.81	2.5065	0.028
19.50	169.4	144.9	111.82	2.4872	0.029
19.75	171.2	146.6	111.84	2.4684	0.029
20.00	172.9	148.3	111.85	2.4500	0.030
20.25	174.6	150.0	111.87	2.4321	0.030
20.50	176.3	151.7	111.88	2.4146	0.031
20.75	178.0	153.4	111.90	2.3976	0.032
21.00	179.7	155.1	111.91	2.3810	0.032
21.25	181.4	156.8	111.92	2.3647	0.033

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TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

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Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
21.50	183.1	158.5	111.94	2.3488	0.034
21.75	184.8	160.2	111.94	2.3333	0.034
22.00	186.5	161.9	111.97	2.3182	0.035
22.25	188.2	163.6	111.98	2.3034	0.035
22.50	189.8	165.3	111.99	2.2889	0.036
22.75	191.5	166.9	112.00	2.2747	0.037
23.00	193.1	168.5	112.02	2.2609	0.037
23.25	194.9	170.3	112.03	2.2473	0.038
23.50	196.6	172.0	112.06	2.2340	0.039
23.75	198.2	173.6	112.06	2.2211	0.039
24.00	200.0	175.4	112.06	2.2083	0.040
24.25	201.6	177.0	112.07	2.1959	0.041
24.50	203.3	178.7	112.07	2.1837	0.041
24.75	204.9	180.3	112.09	2.1717	0.042
25.00	206.5	182.0	112.09	2.1600	0.043
25.25	208.2	183.6	112.11	2.1485	0.043
25.50	209.8	185.2	112.12	2.1373	0.044
25.75	211.5	186.9	112.14	2.1262	0.045
26.00	213.1	188.5	112.15	2.1154	0.045
26.25	214.8	190.2	112.16	2.1048	0.046
26.50	216.4	191.8	112.18	2.0943	0.047
26.75	218.1	193.5	112.19	2.0841	0.048
27.00	219.7	195.1	112.20	2.0741	0.048
27.25	221.4	196.8	112.22	2.0642	0.049
27.50	223.1	198.5	112.22	2.0545	0.050
27.75	224.7	200.1	112.24	2.0450	0.050
28.00	226.3	201.7	112.25	2.0357	0.051
28.25	227.9	203.4	112.26	2.0265	0.052
28.50	229.5	205.0	112.27	2.0175	0.053
28.75	231.1	206.5	112.29	2.0087	0.053
29.00	232.7	208.1	112.29	2.0000	0.054
29.25	234.4	209.8	112.30	1.9915	0.055
29.50	235.9	211.3	112.31	1.9831	0.056
29.75	237.5	212.9	112.32	1.9748	0.056
30.00	239.1	214.5	112.35	1.9667	0.057
30.25	240.8	216.2	112.35	1.9587	0.058
30.50	242.4	217.8	112.36	1.9508	0.059
30.75	244.0	219.4	112.38	1.9431	0.060
31.00	245.6	221.0	112.39	1.9355	0.060
31.25	247.2	222.6	112.40	1.9280	0.061
31.50	248.8	224.2	112.40	1.9206	0.062
31.75	250.3	225.8	112.42	1.9134	0.063
32.00	251.9	227.4	112.44	1.9062	0.063
32.25	253.5	228.9	112.44	1.8992	0.064
32.50	255.1	230.5	112.45	1.8923	0.065
32.75	256.6	232.1	112.46	1.8855	0.066
33.00	258.3	233.7	112.47	1.8788	0.067
33.25	259.8	235.2	112.48	1.8722	0.068
33.50	261.3	236.8	112.50	1.8657	0.068
33.75	262.9	238.4	112.49	1.8593	0.069
34.00	264.5	239.9	112.52	1.8529	0.070

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

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DATE: 01/02/99

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Time	Pressure PSI _g	delta P PSI _g	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
34.25	266.1	241.5	112.53	1.8467	0.071
34.50	267.7	243.1	112.54	1.8406	0.072
34.75	269.2	244.6	112.55	1.8345	0.072
35.00	270.8	246.2	112.56	1.8286	0.073
35.25	272.3	247.7	112.57	1.8227	0.074
35.50	273.8	249.3	112.59	1.8169	0.075
35.75	275.4	250.8	112.59	1.8112	0.076
36.00	277.0	252.4	112.60	1.8056	0.077
36.25	278.5	254.0	112.62	1.8000	0.078
36.50	280.1	255.5	112.63	1.7945	0.078
36.75	281.6	257.0	112.64	1.7891	0.079
37.00	283.2	258.6	112.66	1.7838	0.080
37.25	284.7	260.1	112.67	1.7785	0.081
37.50	286.2	261.6	112.68	1.7733	0.082
37.75	287.7	263.1	112.68	1.7682	0.083
38.00	289.3	264.7	112.69	1.7632	0.084
38.25	290.9	266.3	112.70	1.7582	0.085
38.50	292.3	267.7	112.72	1.7532	0.085
38.75	293.9	269.3	112.73	1.7484	0.086
39.00	295.3	270.8	112.74	1.7436	0.087
39.25	296.8	272.3	112.74	1.7389	0.088
39.50	298.4	273.8	112.76	1.7342	0.089
39.75	299.9	275.3	112.77	1.7296	0.090
40.00	301.5	276.9	112.78	1.7250	0.091
40.25	303.0	278.4	112.78	1.7205	0.092
40.50	304.5	279.9	112.80	1.7160	0.093
40.75	306.0	281.4	112.80	1.7117	0.094
41.00	307.6	283.0	112.82	1.7073	0.095
41.25	309.0	284.4	112.82	1.7030	0.095
41.50	310.5	285.9	112.83	1.6988	0.096
41.75	312.0	287.4	112.84	1.6946	0.097
42.00	313.5	288.9	112.86	1.6905	0.098
42.25	315.0	290.4	112.87	1.6864	0.099
42.50	316.4	291.8	112.87	1.6824	0.100
42.75	317.9	293.3	112.89	1.6784	0.101
43.00	319.4	294.8	112.91	1.6744	0.102
43.25	320.9	296.3	112.91	1.6705	0.103
43.50	322.4	297.8	112.91	1.6667	0.104
43.75	323.9	299.3	112.93	1.6629	0.105
44.00	325.3	300.7	112.94	1.6591	0.106
44.25	326.8	302.2	112.95	1.6554	0.107
44.50	328.3	303.7	112.96	1.6517	0.108
44.75	329.7	305.2	112.96	1.6480	0.109
45.00	331.3	306.7	112.98	1.6444	0.110
45.25	332.7	308.1	112.98	1.6409	0.111
45.50	334.2	309.6	112.99	1.6374	0.112
45.75	333.7	309.1	113.01	1.6339	0.111
46.00	335.1	310.5	113.02	1.6304	0.112
46.25	336.6	312.0	113.02	1.6270	0.113
46.50	338.1	313.5	113.04	1.6237	0.114
46.75	339.6	315.0	113.04	1.6203	0.115

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

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Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
47.00	341.0	316.4	113.05	1.6170	0.116
47.25	342.4	317.8	113.06	1.6138	0.117
47.50	343.9	319.3	113.07	1.6105	0.118
47.75	345.3	320.7	113.08	1.6073	0.119
48.00	346.8	322.2	113.10	1.6042	0.120
48.25	348.2	323.6	113.10	1.6010	0.121
48.50	349.6	325.1	113.11	1.5979	0.122
48.75	351.1	326.5	113.12	1.5949	0.123
49.00	352.6	328.0	113.14	1.5918	0.124
49.25	353.9	329.3	113.14	1.5888	0.125
49.50	355.3	330.8	113.15	1.5859	0.126
49.75	356.9	332.3	113.16	1.5829	0.127
50.00	358.3	333.7	113.17	1.5800	0.128
50.25	359.7	335.1	113.18	1.5771	0.129
50.50	361.1	336.6	113.19	1.5743	0.130
50.75	362.6	338.0	113.20	1.5714	0.131
51.00	364.0	339.4	113.20	1.5686	0.132
51.25	365.4	340.8	113.22	1.5659	0.134
51.50	366.8	342.3	113.23	1.5631	0.135
51.75	368.2	343.6	113.24	1.5604	0.136
52.00	369.7	345.1	113.25	1.5577	0.137
52.25	371.0	346.5	113.26	1.5550	0.138
52.50	372.5	347.9	113.26	1.5524	0.139
52.75	373.9	349.3	113.27	1.5498	0.140
53.00	375.3	350.7	113.28	1.5472	0.141
53.25	376.7	352.2	113.29	1.5446	0.142
53.50	378.1	353.5	113.30	1.5421	0.143
53.75	379.5	354.9	113.31	1.5395	0.144
54.00	380.9	356.4	113.32	1.5370	0.145
54.25	382.3	357.7	113.33	1.5346	0.146
54.50	383.8	359.2	113.34	1.5321	0.147
54.75	385.2	360.6	113.34	1.5297	0.148
55.00	386.5	361.9	113.35	1.5273	0.149
55.25	388.0	363.4	113.37	1.5249	0.151
55.50	389.4	364.8	113.38	1.5225	0.152
55.75	390.8	366.2	113.38	1.5202	0.153
56.00	392.1	367.5	113.40	1.5179	0.154
56.25	393.4	368.9	113.41	1.5156	0.155
56.50	394.9	370.3	113.41	1.5133	0.156
56.75	396.2	371.6	113.42	1.5110	0.157
57.00	397.6	373.1	113.44	1.5088	0.158
57.25	399.0	374.4	113.44	1.5066	0.159
57.50	400.4	375.8	113.45	1.5043	0.160
57.75	401.8	377.3	113.46	1.5022	0.161
58.00	403.2	378.6	113.47	1.5000	0.163
58.25	404.5	379.9	113.47	1.4979	0.164
58.50	405.9	381.3	113.49	1.4957	0.165
58.75	407.3	382.7	113.49	1.4936	0.166
59.00	408.6	384.1	113.50	1.4915	0.167
59.25	410.1	385.5	113.52	1.4895	0.168
59.50	411.4	386.8	113.52	1.4874	0.169

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

EST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

ATE: 01/02/99

TIME: 18:30:05

	Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
	59.75	412.7	388.2	113.53	1.4854	0.170
	60.00	414.1	389.5	113.54	1.4833	0.171
	60.25	415.5	390.9	113.55	1.4813	0.173
***** End Shut-in 1	60.50	416.8	392.2	113.55	1.4793	0.174
***** Start Flow 2	0.00	20.3	0.0	113.57		
	0.25	21.5	1.2	113.57		
	0.50	24.2	3.9	113.58		
	0.75	26.8	6.5	113.59		
	1.00	29.0	8.7	113.63		
	1.25	31.0	10.7	113.65		
	1.50	32.0	11.7	113.69		
	1.75	32.7	12.4	113.74		
	2.00	32.9	12.6	113.78		
	2.25	32.8	12.5	113.82		
	2.50	32.6	12.3	113.86		
	2.75	32.3	12.0	113.89		
	3.00	32.1	11.7	113.93		
	3.25	31.7	11.4	113.97		
	3.50	31.5	11.2	114.00		
	3.75	31.4	11.1	114.04		
	4.00	31.1	10.8	114.06		
	4.25	30.9	10.6	114.09		
	4.50	30.8	10.5	114.11		
	4.75	30.6	10.3	114.14		
	5.00	30.5	10.2	114.16		
	5.25	30.4	10.1	114.17		
	5.50	30.2	9.9	114.20		
	5.75	30.1	9.8	114.22		
	6.00	30.1	9.8	114.24		
	6.25	30.0	9.7	114.25		
	6.50	29.9	9.6	114.26		
	6.75	29.9	9.6	114.27		
	7.00	29.8	9.5	114.28		
	7.25	29.7	9.4	114.30		
	7.50	29.6	9.3	114.30		
	7.75	29.5	9.2	114.31		
	8.00	29.5	9.2	114.33		
	8.25	29.4	9.1	114.33		
	8.50	29.4	9.1	114.34		
	8.75	29.4	9.1	114.35		
	9.00	29.3	9.0	114.35		
	9.25	29.3	9.0	114.36		
	9.50	29.2	8.9	114.37		
	9.75	29.1	8.8	114.38		
	10.00	29.1	8.8	114.39		
	10.25	29.0	8.7	114.39		
	10.50	28.9	8.6	114.39		
	10.75	28.9	8.6	114.40		
	11.00	28.8	8.5	114.41		
	11.25	28.7	8.4	114.41		
	11.50	28.7	8.4	114.42		

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
11.75	28.6	8.3	114.42		
12.00	28.4	8.1	114.43		
12.25	28.4	8.1	114.43		
12.50	28.3	8.0	114.44		
12.75	28.3	8.0	114.44		
13.00	28.2	7.9	114.45		
13.25	28.1	7.8	114.46		
13.50	28.1	7.8	114.46		
13.75	28.1	7.8	114.47		
14.00	28.0	7.7	114.47		
14.25	28.0	7.7	114.48		
14.50	27.9	7.6	114.48		
14.75	27.9	7.6	114.49		
15.00	27.9	7.6	114.50		
15.25	27.9	7.6	114.50		
15.50	27.9	7.6	114.51		
15.75	27.9	7.6	114.51		
16.00	27.8	7.5	114.52		
16.25	27.8	7.5	114.53		
16.50	27.8	7.5	114.53		
16.75	27.8	7.5	114.54		
17.00	27.8	7.5	114.55		
17.25	27.7	7.4	114.56		
17.50	27.7	7.4	114.56		
17.75	27.7	7.4	114.57		
18.00	27.6	7.3	114.57		
18.25	27.6	7.3	114.58		
18.50	27.6	7.3	114.59		
18.75	27.6	7.3	114.59		
19.00	27.5	7.2	114.60		
19.25	27.5	7.2	114.61		
19.50	27.5	7.2	114.62		
19.75	27.5	7.2	114.62		
20.00	27.5	7.2	114.63		
20.25	27.5	7.2	114.64		
20.50	27.5	7.2	114.64		
20.75	27.5	7.2	114.65		
21.00	27.4	7.1	114.66		
21.25	27.4	7.1	114.66		
21.50	27.4	7.1	114.68		
21.75	27.5	7.2	114.68		
22.00	27.5	7.2	114.69		
22.25	27.5	7.2	114.70		
22.50	27.4	7.0	114.70		
22.75	27.4	7.0	114.71		
23.00	27.4	7.0	114.72		
23.25	27.4	7.0	114.72		
23.50	27.4	7.0	114.74		
23.75	27.4	7.0	114.74		
24.00	27.4	7.0	114.75		
24.25	27.4	7.0	114.76		

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
	24.50	27.4	7.0	114.77		
	24.75	27.4	7.0	114.77		
	25.00	27.4	7.0	114.78		
	25.25	27.4	7.0	114.79		
	25.50	27.4	7.0	114.80		
	25.75	27.3	7.0	114.80		
	26.00	27.3	7.0	114.82		
	26.25	27.3	7.0	114.83		
	26.50	27.3	7.0	114.84		
	26.75	27.3	7.0	114.84		
	27.00	27.3	7.0	114.85		
	27.25	27.2	6.9	114.85		
	27.50	27.2	6.9	114.86		
	27.75	27.2	6.9	114.88		
	28.00	27.2	6.9	114.88		
	28.25	27.2	6.9	114.89		
	28.50	27.2	6.9	114.90		
	28.75	27.3	7.0	114.90		
	29.00	27.3	7.0	114.92		
	29.25	27.3	7.0	114.92		
	29.50	28.0	7.7	114.94		
	29.75	29.8	9.5	114.95		
	30.00	31.6	11.3	114.95		
	30.25	33.4	13.1	114.96		
	30.50	35.1	14.8	114.97		
***** End Flow 2	30.75	36.8	16.4	114.98		
***** Start Shutin 2	0.00	36.8	0.0	114.98	0.0000	0.001
	0.25	38.4	1.7	114.99	240.0000	0.001
	0.50	40.1	3.4	114.99	120.5000	0.002
	0.75	41.7	5.0	115.01	80.6667	0.002
	1.00	43.4	6.6	115.02	60.7500	0.002
	1.25	45.0	8.2	115.03	48.8000	0.002
	1.50	46.6	9.8	115.04	40.8333	0.002
	1.75	48.2	11.4	115.05	35.1429	0.002
	2.00	49.8	13.1	115.07	30.8750	0.002
	2.25	51.4	14.7	115.08	27.5556	0.003
	2.50	53.1	16.4	115.09	24.9000	0.003
	2.75	54.7	18.0	115.10	22.7273	0.003
	3.00	56.4	19.6	115.11	20.9167	0.003
	3.25	57.9	21.1	115.12	19.3846	0.003
	3.50	59.5	22.7	115.14	18.0714	0.004
	3.75	61.1	24.3	115.15	16.9333	0.004
	4.00	62.7	25.9	115.16	15.9375	0.004
	4.25	64.4	27.6	115.17	15.0588	0.004
	4.50	65.9	29.1	115.19	14.2778	0.004
	4.75	67.5	30.7	115.19	13.5789	0.005
	5.00	69.1	32.3	115.20	12.9500	0.005
	5.25	70.7	33.9	115.21	12.3810	0.005
	5.50	72.3	35.5	115.23	11.8636	0.005
	5.75	73.8	37.1	115.23	11.3913	0.005
	6.00	75.4	38.7	115.25	10.9583	0.006

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

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Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
6.25	77.0	40.2	115.26	10.5600	0.006
6.50	78.6	41.9	115.28	10.1923	0.006
6.75	80.1	43.4	115.28	9.8519	0.006
7.00	81.7	45.0	115.30	9.5357	0.007
7.25	83.3	46.6	115.31	9.2414	0.007
7.50	84.8	48.1	115.31	8.9667	0.007
7.75	86.5	49.8	115.32	8.7097	0.007
8.00	88.0	51.3	115.33	8.4688	0.008
8.25	89.6	52.9	115.34	8.2424	0.008
8.50	91.2	54.5	115.36	8.0294	0.008
8.75	92.7	56.0	115.36	7.8286	0.009
9.00	94.4	57.7	115.38	7.6389	0.009
9.25	95.9	59.2	115.38	7.4595	0.009
9.50	97.5	60.8	115.40	7.2895	0.01
9.75	99.1	62.4	115.40	7.1282	0.01
10.00	100.6	63.9	115.41	6.9750	0.010
10.25	102.2	65.5	115.46	6.8293	0.010
10.50	103.8	67.1	115.44	6.6905	0.011
10.75	105.4	68.7	115.45	6.5581	0.011
11.00	106.9	70.2	115.46	6.4318	0.011
11.25	108.5	71.8	115.47	6.3111	0.012
11.50	110.0	73.3	115.48	6.1957	0.012
11.75	111.6	74.9	115.49	6.0851	0.012
12.00	113.1	76.4	115.50	5.9792	0.013
12.25	114.8	78.1	115.50	5.8776	0.013
12.50	116.3	79.6	115.52	5.7800	0.014
12.75	117.8	81.1	115.52	5.6863	0.014
13.00	119.4	82.7	115.54	5.5962	0.014
13.25	120.9	84.2	115.54	5.5094	0.015
13.50	122.4	85.7	115.56	5.4259	0.015
13.75	124.0	87.3	115.56	5.3455	0.015
14.00	125.5	88.8	115.58	5.2679	0.016
14.25	127.1	90.4	115.59	5.1930	0.016
14.50	128.7	91.9	115.59	5.1207	0.017
14.75	130.2	93.5	115.59	5.0508	0.017
15.00	131.8	95.0	115.61	4.9833	0.017
15.25	133.3	96.5	115.63	4.9180	0.018
15.50	134.9	98.1	115.63	4.8548	0.018
15.75	136.4	99.6	115.63	4.7937	0.019
16.00	137.9	101.1	115.65	4.7344	0.019
16.25	139.4	102.6	115.66	4.6769	0.019
16.50	140.9	104.2	115.67	4.6212	0.020
16.75	142.6	105.8	115.68	4.5672	0.020
17.00	144.0	107.3	115.68	4.5147	0.021
17.25	145.5	108.8	115.69	4.4638	0.021
17.50	147.1	110.4	115.70	4.4143	0.022
17.75	148.6	111.9	115.71	4.3662	0.022
18.00	150.1	113.4	115.72	4.3194	0.023
18.25	151.6	114.9	115.73	4.2740	0.023
18.50	153.2	116.4	115.73	4.2297	0.023
18.75	154.7	117.9	115.75	4.1867	0.024

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DR. & CO. INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
19.00	156.2	119.4	115.76	4.1447	0.024
19.25	157.8	121.0	115.76	4.1039	0.025
19.50	159.3	122.5	115.77	4.0641	0.025
19.75	160.8	124.0	115.78	4.0253	0.026
20.00	162.2	125.5	115.79	3.9875	0.026
20.25	163.7	127.0	115.80	3.9506	0.027
20.50	165.2	128.5	115.80	3.9146	0.027
20.75	166.8	130.0	115.81	3.8795	0.028
21.00	168.2	131.4	115.82	3.8452	0.028
21.25	169.8	133.0	115.83	3.8118	0.029
21.50	171.2	134.5	115.84	3.7791	0.029
21.75	172.7	136.0	115.84	3.7471	0.030
22.00	174.2	137.5	115.85	3.7159	0.030
22.25	175.7	139.0	115.86	3.6854	0.031
22.50	177.3	140.6	115.86	3.6556	0.031
22.75	178.8	142.0	115.88	3.6264	0.032
23.00	180.4	143.6	115.88	3.5978	0.033
23.25	181.8	145.0	115.90	3.5699	0.033
23.50	183.3	146.5	115.90	3.5426	0.034
23.75	184.8	148.0	115.91	3.5158	0.034
24.00	186.3	149.6	115.91	3.4896	0.035
24.25	187.7	150.9	115.93	3.4639	0.035
24.50	189.2	152.4	115.93	3.4388	0.036
24.75	190.7	153.9	115.94	3.4141	0.036
25.00	192.1	155.4	115.94	3.3900	0.037
25.25	193.6	156.9	115.95	3.3663	0.037
25.50	195.0	158.3	115.96	3.3431	0.038
25.75	196.6	159.8	115.97	3.3204	0.039
26.00	198.0	161.2	115.98	3.2981	0.039
26.25	199.5	162.7	115.98	3.2762	0.040
26.50	200.9	164.2	115.99	3.2547	0.040
26.75	202.4	165.7	115.99	3.2336	0.041
27.00	203.9	167.2	116.00	3.2130	0.042
27.25	205.4	168.6	116.01	3.1927	0.042
27.50	206.9	170.1	116.02	3.1727	0.043
27.75	208.3	171.5	116.02	3.1532	0.043
28.00	209.7	173.0	116.04	3.1339	0.044
28.25	211.2	174.4	116.04	3.1150	0.045
28.50	212.7	175.9	116.05	3.0965	0.045
28.75	214.1	177.3	116.06	3.0783	0.046
29.00	215.5	178.8	116.06	3.0603	0.046
29.25	217.0	180.3	116.07	3.0427	0.047
29.50	218.4	181.6	116.08	3.0254	0.048
29.75	219.9	183.1	116.09	3.0084	0.048
30.00	221.4	184.6	116.10	2.9917	0.049
30.25	222.7	186.0	116.10	2.9752	0.050
30.50	224.2	187.4	116.11	2.9590	0.050
30.75	225.6	188.8	116.11	2.9431	0.051
31.00	226.9	190.2	116.12	2.9274	0.051
31.25	228.4	191.7	116.13	2.9120	0.052
31.50	229.9	193.1	116.14	2.8968	0.053

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSig	delta P .PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
31.75	231.4	194.6	116.14	2.8819	0.054
32.00	232.7	196.0	116.16	2.8672	0.054
32.25	234.2	197.4	116.16	2.8527	0.055
32.50	235.6	198.8	116.17	2.8385	0.055
32.75	237.0	200.3	116.17	2.8244	0.056
33.00	238.5	201.8	116.17	2.8106	0.057
33.25	239.9	203.1	116.18	2.7970	0.058
33.50	241.2	204.4	116.19	2.7836	0.058
33.75	242.7	206.0	116.20	2.7704	0.059
34.00	244.1	207.4	116.20	2.7574	0.060
34.25	245.6	208.8	116.21	2.7445	0.060
34.50	247.0	210.2	116.22	2.7319	0.061
34.75	248.4	211.7	116.23	2.7194	0.062
35.00	249.8	213.0	116.23	2.7071	0.062
35.25	251.2	214.4	116.24	2.6950	0.063
35.50	252.6	215.9	116.24	2.6831	0.064
35.75	254.0	217.2	116.25	2.6713	0.064
36.00	255.5	218.7	116.26	2.6597	0.065
36.25	256.8	220.1	116.26	2.6483	0.066
36.50	258.2	221.5	116.28	2.6370	0.067
36.75	259.7	222.9	116.28	2.6259	0.067
37.00	260.9	224.2	116.29	2.6149	0.068
37.25	262.3	225.6	116.29	2.6040	0.069
37.50	263.7	226.9	116.30	2.5933	0.070
37.75	265.2	228.5	116.31	2.5828	0.070
38.00	266.5	229.8	116.32	2.5724	0.071
38.25	268.0	231.2	116.32	2.5621	0.072
38.50	269.4	232.6	116.33	2.5519	0.073
38.75	270.7	234.0	116.33	2.5419	0.073
39.00	272.2	235.4	116.35	2.5321	0.074
39.25	273.5	236.8	116.34	2.5223	0.075
39.50	274.9	238.1	116.35	2.5127	0.076
39.75	276.3	239.5	116.36	2.5031	0.076
40.00	277.7	241.0	116.37	2.4937	0.077
40.25	279.0	242.2	116.37	2.4845	0.078
40.50	280.3	243.6	116.38	2.4753	0.079
40.75	281.7	245.0	116.38	2.4663	0.079
41.00	283.2	246.4	116.39	2.4573	0.080
41.25	284.4	247.7	116.40	2.4485	0.081
41.50	285.8	249.1	116.41	2.4398	0.082
41.75	287.2	250.4	116.41	2.4311	0.082
42.00	288.5	251.8	116.42	2.4226	0.083
42.25	289.9	253.1	116.42	2.4142	0.084
42.50	291.3	254.6	116.43	2.4059	0.085
42.75	292.6	255.9	116.43	2.3977	0.086
43.00	294.1	257.3	116.45	2.3895	0.086
43.25	295.4	258.7	116.45	2.3815	0.087
43.50	296.8	260.1	116.46	2.3736	0.088
43.75	298.1	261.4	116.47	2.3657	0.089
44.00	299.4	262.7	116.47	2.3580	0.090
44.25	300.9	264.1	116.48	2.3503	0.091

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

Time	Pressure PSI _g	delta P PSI _g	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
44.50	302.1	265.4	116.49	2.3427	0.091
44.75	303.6	266.8	116.49	2.3352	0.092
45.00	304.9	268.1	116.49	2.3278	0.093
45.25	306.2	269.5	116.50	2.3204	0.094
45.50	307.6	270.8	116.51	2.3132	0.095
45.75	308.8	272.1	116.51	2.3060	0.095
46.00	310.3	273.5	116.53	2.2989	0.096
46.25	311.5	274.8	116.53	2.2919	0.097
46.50	313.0	276.2	116.54	2.2849	0.098
46.75	314.2	277.5	116.54	2.2781	0.099
47.00	315.6	278.8	116.55	2.2713	0.10
47.25	316.9	280.2	116.55	2.2646	0.100
47.50	318.2	281.5	116.56	2.2579	0.101
47.75	319.6	282.8	116.56	2.2513	0.102
48.00	320.9	284.2	116.57	2.2448	0.103
48.25	322.3	285.5	116.57	2.2383	0.104
48.50	323.6	286.9	116.59	2.2320	0.105
48.75	324.9	288.1	116.59	2.2256	0.106
49.00	326.2	289.5	116.60	2.2194	0.106
49.25	327.6	290.8	116.60	2.2132	0.107
49.50	328.9	292.2	116.60	2.2071	0.108
49.75	330.2	293.5	116.61	2.2010	0.109
50.00	331.6	294.8	116.63	2.1950	0.110
50.25	332.8	296.1	116.62	2.1891	0.111
50.50	334.2	297.4	116.63	2.1832	0.112
50.75	335.5	298.8	116.64	2.1773	0.113
51.00	336.9	300.1	116.65	2.1716	0.113
51.25	338.1	301.4	116.59	2.1659	0.114
51.50	339.4	302.6	116.66	2.1602	0.115
51.75	340.7	304.0	116.66	2.1546	0.116
52.00	342.1	305.3	116.67	2.1490	0.117
52.25	343.4	306.7	116.67	2.1435	0.118
52.50	344.7	307.9	116.67	2.1381	0.119
52.75	345.9	309.2	116.68	2.1327	0.120
53.00	347.3	310.5	116.69	2.1274	0.121
53.25	348.6	311.9	116.70	2.1221	0.122
53.50	349.9	313.1	116.71	2.1168	0.122
53.75	351.1	314.4	116.71	2.1116	0.123
54.00	352.5	315.7	116.72	2.1065	0.124
54.25	353.8	317.1	116.73	2.1014	0.125
54.50	355.1	318.3	116.73	2.0963	0.126
54.75	356.3	319.6	116.74	2.0913	0.127
55.00	357.7	320.9	116.74	2.0864	0.128
55.25	359.0	322.2	116.75	2.0814	0.129
55.50	360.2	323.5	116.75	2.0766	0.130
55.75	361.6	324.8	116.76	2.0717	0.131
56.00	362.7	326.0	116.77	2.0670	0.132
56.25	364.1	327.3	116.77	2.0622	0.133
56.50	365.3	328.6	116.77	2.0575	0.133
56.75	366.6	329.8	116.78	2.0529	0.134
57.00	367.9	331.2	116.79	2.0482	0.135

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 11577 DST#1 LINDSAY #1 GRAVES DRLG.CO.INC.

DATE: 01/02/99

TIME: 18:30:05

	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
	57.25	369.2	332.4	116.79	2.0437	0.136
	57.50	370.4	333.7	116.80	2.0391	0.137
	57.75	371.7	335.0	116.81	2.0346	0.138
	58.00	373.1	336.3	116.81	2.0302	0.139
	58.25	374.3	337.6	116.82	2.0258	0.140
	58.50	375.6	338.8	116.83	2.0214	0.141
	58.75	376.8	340.1	116.83	2.0170	0.142
	59.00	378.2	341.4	116.84	2.0127	0.143
	59.25	379.4	342.7	116.84	2.0084	0.144
	59.50	380.7	343.9	116.86	2.0042	0.145
	59.75	381.9	345.2	116.86	2.0000	0.146
	60.00	383.2	346.5	116.86	1.9958	0.147
	60.25	384.5	347.7	116.87	1.9917	0.148
	60.50	385.7	349.0	116.87	1.9876	0.149
***** End Shut-in 2	60.75	387.0	350.2	116.89	1.9835	0.150
***** Final Hydro.	323.00	2550.6	0.0	118.77		

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No. 11578

Well Name & No.	LINDSAY #1	Test No.	2	Date	1-3-99
Company	GRAVES DRUG CO INC	Zone Tested	Miss.		
Address	PO Box #250, WICHITA KS, 67208	Elevation	1952	KB	1944GL
Co. Rep / Geo.	JOHN HASTINGS Cont. DICK DRUG #5	Est. Ft. of Pay	2	Por.	10 %
Location: Sec.	17	Twp.	3.3 S	Rge.	19 W
		Co.	COMANCHE	State	KS.
No. of Copies	5	Distribution Sheet (Y, N)	N	Turnkey (Y, N)	-
		Evaluation (Y, N)			

Interval Tested	5319 - 5345'	Initial Str Wt./Lbs.	58,000	Unseated Str Wt./Lbs.	58,000
Anchor Length	26'	Wt. Set Lbs.	20,000	Wt. Pulled Loose/Lbs.	64,000
Top Packer Depth	5314'	Tool Weight	2100 #		
Bottom Packer Depth	5319'	Hole Size - 7 7/8"	<input checked="" type="checkbox"/>	Rubber Size - 6 3/4"	<input checked="" type="checkbox"/>
Total Depth	5345'	Wt. Pipe Run	None	Drill Collar Run	None
Mud Wt.	9.1 LCM G# Vis. 48 WL 8.0cc.	Drill Pipe Size	4 1/2" x H	Ft. Run	530.5'
Blow Description	IF: Fair to strong below. Btm. of bucket in 12 mins. ISI: No below. FF: Strong below. Btm. of bucket immediately. ESI: Weak below. (1/2 - 3/4")				

Recovery - Total Feet	182'	GIP	2600'	Ft. in DC	~	Ft. in DP	182'
Rec.	1	Feet Of	Clean Oil	%gas	%oil	%water	%mud
Rec.	121	Feet Of	GORM	20%	20%	6%	54%
Rec.	60	Feet Of	OPMC Gassy Water	22%	13%	45%	20%
Rec.		Feet Of	Clean oil (at top)	%gas	%oil	%water	%mud
Rec.		Feet Of	of dust	%gas	%oil	%water	%mud
BHT	127	°F Gravity	39.8	API D@	~	°F Corrected Gravity	39.8
RW	131	@	31	°F Chlorides	14,600	ppm Recovery	Chlorides 6,000 ppm System

	AK-1	Alpine	PSI	Recorder No.	T-On Location
(A) Initial Hydrostatic Mud	2447	2415	alp.	2342	17 45
(B) First Initial Flow Pressure	9	31	PSI	(depth) 5325'	T-Started 1814
(C) First Final Flow Pressure	16	45	PSI	Recorder No. 10248	T-Open 2040
(D) Initial Shut-In Pressure	1740	1758	PSI	(depth) 5342'	T-Pulled 0042
(E) Second Initial Flow Pressure	25	48	PSI	Recorder No. ~	T-Out 0250
(F) Second Final Flow Pressure	57	88	PSI	(depth) ~	T-Off Location 0425
(G) Final Shut-in Pressure	1712	1738	PSI	Initial Opening 30	Test <input checked="" type="checkbox"/> 800
(Q) Final Hydrostatic Mud	2602	2598	PSI	Initial Shut-in 60	Jars <input checked="" type="checkbox"/> 200
				Final Flow 60	Safety Joint <input checked="" type="checkbox"/> SC
				Final Shut-in 90	Straddle _____
					Circ. Sub _____
					Sampler _____
					Extra Packer _____
					Elec. Rec. <input checked="" type="checkbox"/> 150
					Mileage _____
					Other _____
					TOTAL PRICE \$ <input checked="" type="checkbox"/> 1200.00

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Approved By

Our Representative

[Signature]
[Signature]