ANSCHUTZ
EXPLORATION CORPORATION
2400 ANACONDA TOWER • 555 SEVENTEENTH STREET • DENVER, COLORADO 80202 • 303-298-1000 • FAX 303-298-8881

RECEIVED
JUL 23 1998
DIV. OF OIL, GAS & MINING

July 22, 1998

Utah Division of Oil, Gas and Mining
1594 N. Temple, Suite 1210
Salt Lake City, UT 84114
Attn: Mr. Mike Hebertson

Re: APD Anschutz Ranch Deep #4-26 Well
Rule #R649-3-11

Ladies & Gentlemen:

In accordance with Rule #R649-3-11 of the Oil and Gas Conservation General Rules, the following is our reason for the direction drilling of the referenced well as requested in the referenced APD:

The Anschutz Ranch Deep #4-26 well will be drilled directionally, as set forth in the Application for Permit to Drill which was recently submitted, to allow the well-bore to be positioned at the structural crest of the specific target formations. This in turn will provide for the most economic and effective recovery of hydrocarbons.

We respectively request your approval for this directional drilling without notice or hearing, as The Anschutz Corporation has obtained the written consent to the proposed directional drilling program from the owners of oil and gas within a radius of 460 feet from all points along the intended well bore.

Sincerely,

ANSCHUTZ EXPLORATION CORPORATION

Pamela S. Kalstrom
Sr. Landman, CPL-ESA

PSK/hdb

PERMITCO
PETROLEUM PERMITTING COMPANY

14421 Weld County Rd.10 • Ft. Lupton, Colorado 80621 • (303) 857-9999 • FAX (303) 857-0577 • E-MAIL Permitco 1@aol.com

RECEIVED
JUL 22 1998
DIV. OF OIL, GAS & MINING

July 21, 1998

OVERNIGHT DELIVERY

Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, UT 84114-5801
Attn: Mike Hebertson

Re: The Anschutz Corporation
Anschutz Ranch Deep #4-26
1623' FNL and 1328' FWL
Sec. 26, T4N - R8E
Summit County, Utah

Dear Mike,

As per our telephone conversation, enclosed please find three copies of the Application for Permit to Drill on the above mentioned well along with one copy of the drilling program which includes the BOP Diagram and direction drilling information.

This matter has been set for hearing on July 29th and we would appreciate your cooperation in scheduling an onsite inspection on July 28th. To avoid confusion, representative of Anschutz will meet you in the lobby of the Dunmar Motel and Restaurant in Evanston, Wyoming at 9:30 a.m. If this is acceptable, please notify Pam Kalstrom at Anschutz, 303/299-1219 at your earliest convenience.

Topographic maps of the location and access road will be forwarded to you directly via overnight mail by The Anschutz Corporation. If you have any questions regarding the enclosed material, please don't hesitate to contact me.

Sincerely,

PERMITCO INC.

Lisa L. Smith

Lisa L. Smith
Consultant for:
THE ANSCHUTZ CORPORATION

Enc.
cc: The Anschutz Corporation - Denver, CO

Form OGC-1a

(Other instructions on reverse side)

Confidential - Tight Hole

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. Lease Designation and Serial No.: Fee

6. If Indian, Allottee or Tribe Name: N/A

7. Unit Agreement Name: N/A

8. Farm or Lease Name: Anschutz Ranch Deep

9. Well No.: #4-26

10. Field and Pool, or Wildcat: Wildcat

11. Sec., T., R., M., OR Blk. and Survey or Area: Sec. 26, T4N - R~~8~~7E

1a. Type of Work: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. Type of Well: Oil Well [ ] Gas Well [X] Other Directional Single Zone [X] Multiple Zone [ ]

2. Name of Operator: THE ANSCHUTZ CORPORATION 303/298-1000 555 17th Street, Suite 2400 Denver, CO 80202

3. Address of Operator: PERMITCO INC. - Agent 303/452-8888 14421 Weld County Road 10 Fort Lupton, CO 80621

4. Location of Well (Report location clearly and in accordance with any State requirements.*)
At surface: 1623' FNL and 1328' FWL (Surface Location) SENW
At proposed prod. zone: 850' FSL and 1150' FEL (Btm. Hole Location)

CONFIDENTIAL

14. Distance in miles and direction from nearest town or post office*: 2 miles west of Evanston, Wyoming:

12. County or Parrish: Summit 13. State: Utah

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. line, if any): 850' (btm. hole)

16. No. of acres in lease: 320

17. No. of acres assigned to this well: 40

18. Distance from proposed location * to nearest well, drilling, completed, or applied for, on this lease, ft.: none

19. Propsed depth: 16,100' (TVD)

20. Rotary or cable tools: Rotary

21. Elevations (Show whether DF, RT, GR, etc.): 7316.6'

22. Approx. date work will start*: Upon approval of this application

23. PROPOSED CASING AND CEMENTING PROGRAM

Size of Hole	Size of Casing	Weight per Foot	Setting Depth	Quantity of Cement
17-1/2	13-3/8"	50.54#	1,500'	1220 sx Class "G"Lite
12-1/4"	9-5/8"	47.0#	8,200'	1410 sx Class "G"
8-3/4"	7-5/8"	33.7#	13,500'	350 sx Class "G"
6-1/2"	5"	18#	16,100'	350 sx Class "G"

The Anschutz Corporation proposes to drill a well to a depth of 16,100' to test the Phosphoria/Weber, Mission Canyon, and Bighorn formations. If productive, casing will be run and the well completed. If dry, the well will be plugged and abandoned as per State of Utah requirements.

See Drilling Program attached.

All operations will be covered under Anschutz' Utah Statewide Bond No. 104253

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JUL 22 1998
DIV. OF OIL, GAS & MINING

CC: 3 - Division of Oil, Gas & Mining - SLC, UT
3 - The Anschutz Corporation - Denver, CO

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM : If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. Signed: Lisa L Smith Title: Consultant for: The Anschutz Corp. Date: 07/21/98

(This space for Federal or State office use)

Permit No. 43-043-30320 Approval Date

Approved by Title Date

Conditions of approval, if any:

*See Instructions On Reverse Side

Intermediate	Type and Amount
9-5/8"	± 565 sks 50/50 Class G/Poz cement lead ± 845 sks Class G tail Proposed TOC ± 4000'

Production	Type and Amount
7-5/8"	± 350 sks Class G + silica flour Proposed TOC ± 10000'

Liner	Type and Amount
5"	± 350 sks Class G + silica flour Proposed cement to liner top

Note: Actual volumes to be calculated from caliper log.

6. Drilling Fluids

The proposed circulating mediums to be employed in drilling are as follows:

Interval	Mud Type	Mud Wt.	Visc.	F/L
0-1500'	Spud Mud	8.4-9.0	40-60	N/C
1500-5000'	LSND	8.6-9.1	40-60	<10 cc's
5000-8200'	Saturated Salt	10.0-10.5	40-60	<10 cc's
8200-T.D.	LSND	9.0-9.5	36-45	<10 cc's

7. Testing, Logging and Coring

The anticipated type and amount of testing, logging and coring are as follows:

a. Drill stem tests may be run in the Twin Creek and Nugget formations at approximately 6400' and 7100', respectively.

b. The logging program will consist of the following:

DIL-SP-GR	Surface to T.D.
BHC Sonic-GR	Surface to T.D.
Structural Dipmeter	8200' to T.D.
Dipole Sonic-GR	8200' to T.D.
High Resolution LDT-APS	8200' to T.D.
Formation MicroImager-GR	Selected Intervals

c. No cores are anticipated.

8. Anticipated Pressures and H_2S

The maximum anticipated bottom hole pressure is 7250 psi. The Hydrogen Sulfide concentration found in the Phosphoria and Weber formations is estimated to be 15%.

9. Water Source

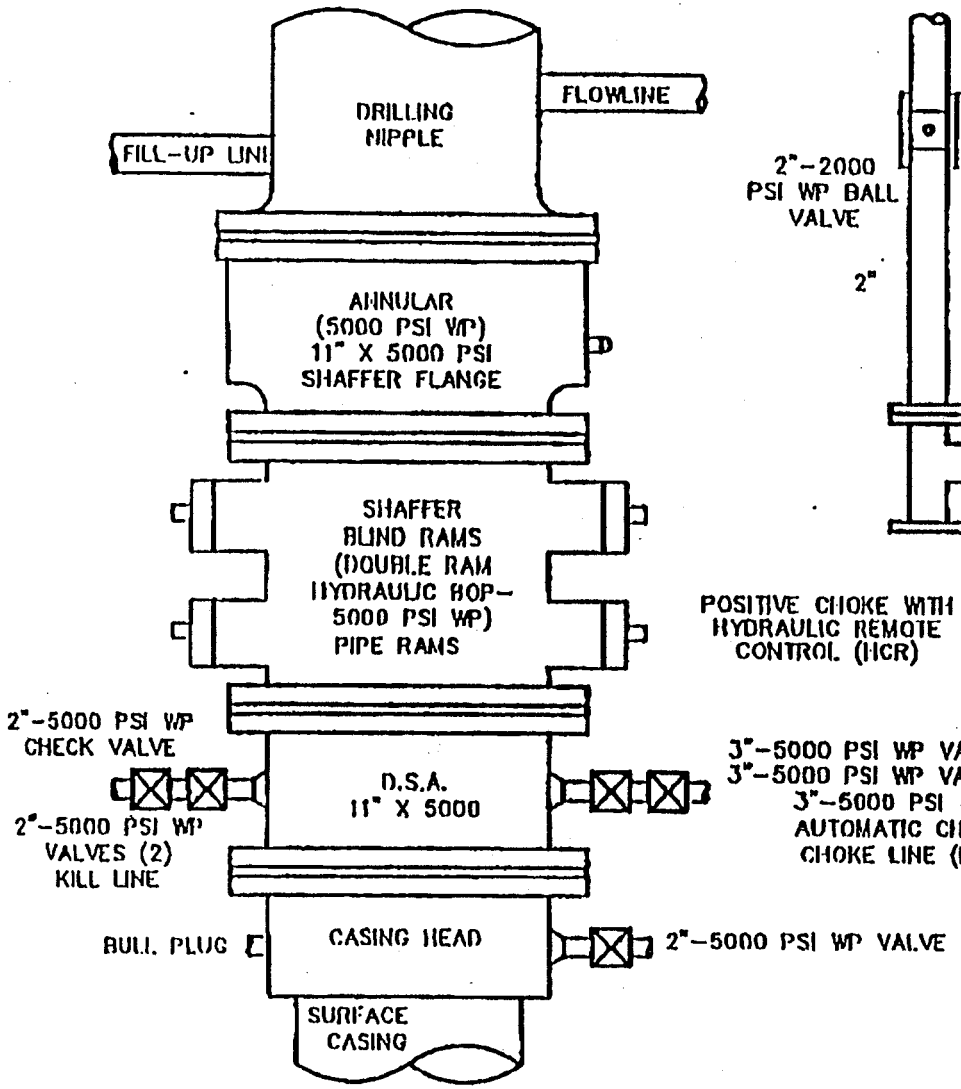
A water well will be drilled on location. All appropriate water permits will be filed with the Utah Division of Water Resources.

10. Other Information

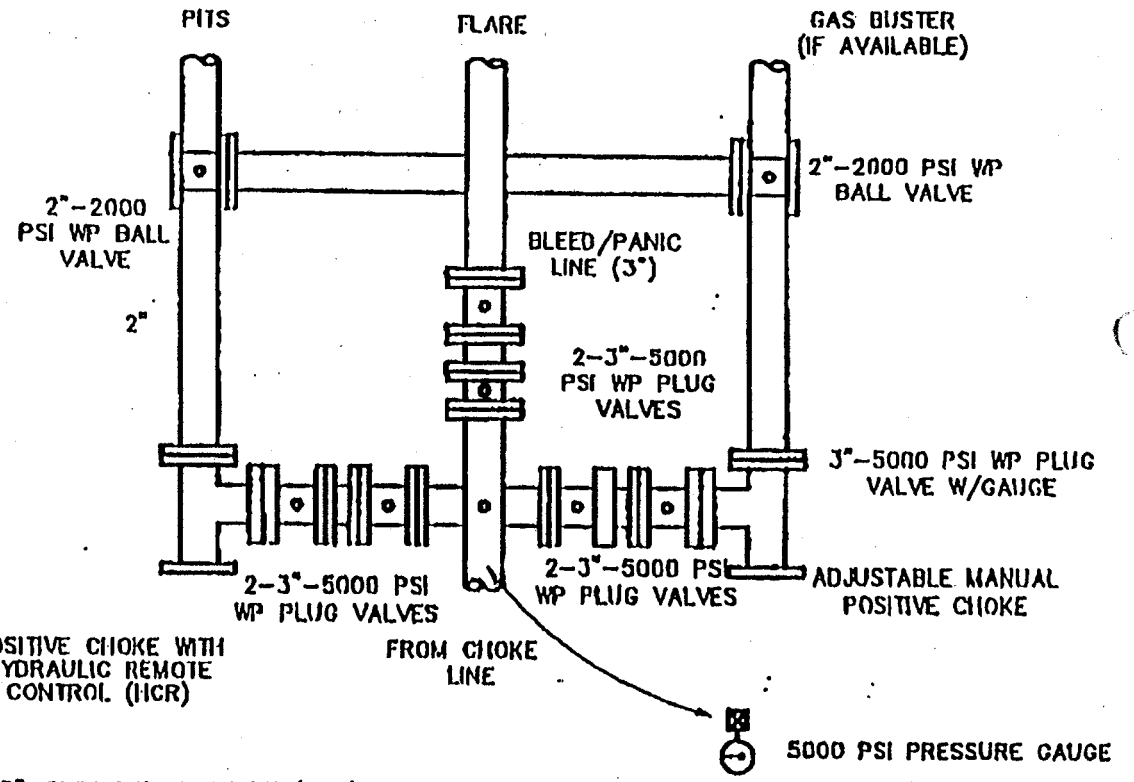
a. Drilling is planned to commence immediately upon approval of this application.

b. It is anticipated that the drilling of this well will take approximately 150 days.

BOP SCHEMATIC
5000 PSI WORKING PRESSURE



PLAN VIEW CHOKE MANIFOLD



THE HYDRAULIC CLOSING UNIT WILL BE LOCATED MORE THAN 30' FROM THE WELLHEAD. CHOKE AND BLEED/PANIC LINES WILL GO TO THE PIT AND FLARE. ALL CONNECTIONS IN CHOKE LINES AND MANIFOLD WILL BE FLANGED OR WELDED. ALL FLANGES SHOULD BE RING JOINT GASKET TYPE. ALL TURNS IN LINES SHALL BE CONSTRUCTED USING TARGETING 90° TEES OR ELLS. ALL LINES SHALL BE ANCHORED.

LOG & TICKET ORDER

Anschutz Exploration Corporation
Attention: ~~Larry Holcomb~~ Greg Johnston
1221 Lamar, Suite 1100
Houston, Texas 77010
713/750-0230

(April Colbert 7500236)

Please keep each order separate
- [x] 1" Electric Logs
- [ ] Porosity Logs

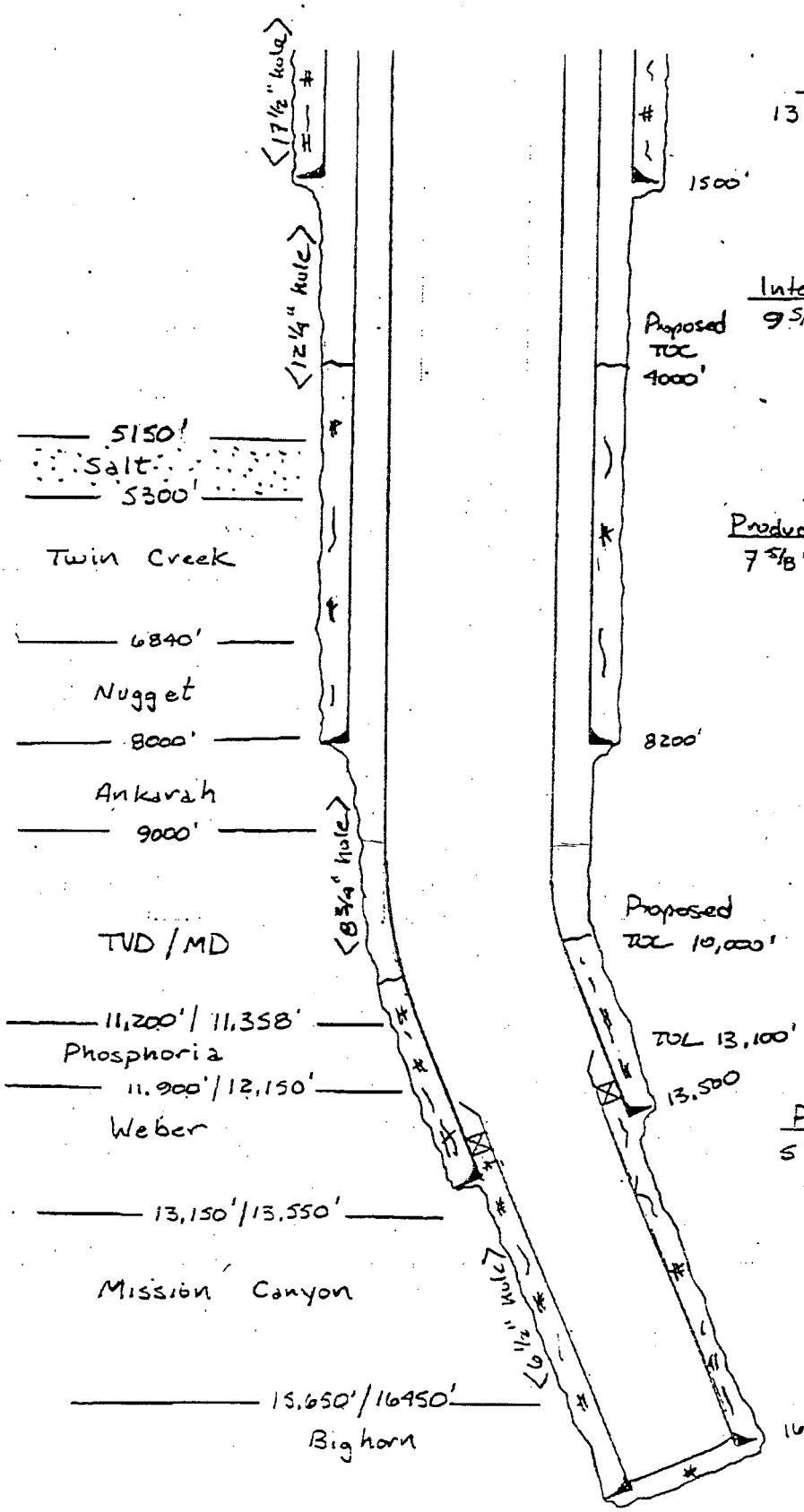
- [ ] Borrow
- [ ] Call when ready
- [x] Purchase
- [x] Deliver

- [x] Scout Tickets
- [ ] Call when ready
- [x] Deliver
- [ ] Mail

County	Operator	Well Name	Total Depth
Harris	Scurlock Oil.	Goodrich #2.	9360.
	Eddy Ref. Co-	W. Brady Unit 1	9934.
	Sonora Petr.	Scurlock Trust 1	8730
	TXO	Butera 1	8872.
	ACCO	Fischer Unit 1	8800.
	Levinson Partners Corp.	Lodge Lumber Co. Unit 1 -	
	HPC, INC 42-201-30960	VAN VORST 1	8810.
	ACCO	CITY OF HOUSTON 1	8488
	ACCO.	COLLINS GAS UNIT 3	8409
	Pan Am.	Moody GU. 2	8800
	Pan Am.	Wilson. 1	8610

22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS
AMPAD

ANSCHUTZ RANCH DEEP 4-26
Summit County, Utah



Surface Casing
13 3/8", 54.50#, J55

Intermediate Casing
9 5/8", 47#, L80

Production Casing
7 5/8", 39# & 33.7#, L80

Directional Plan
KOP ~ 9444' md
3° / 100 build
29° hold

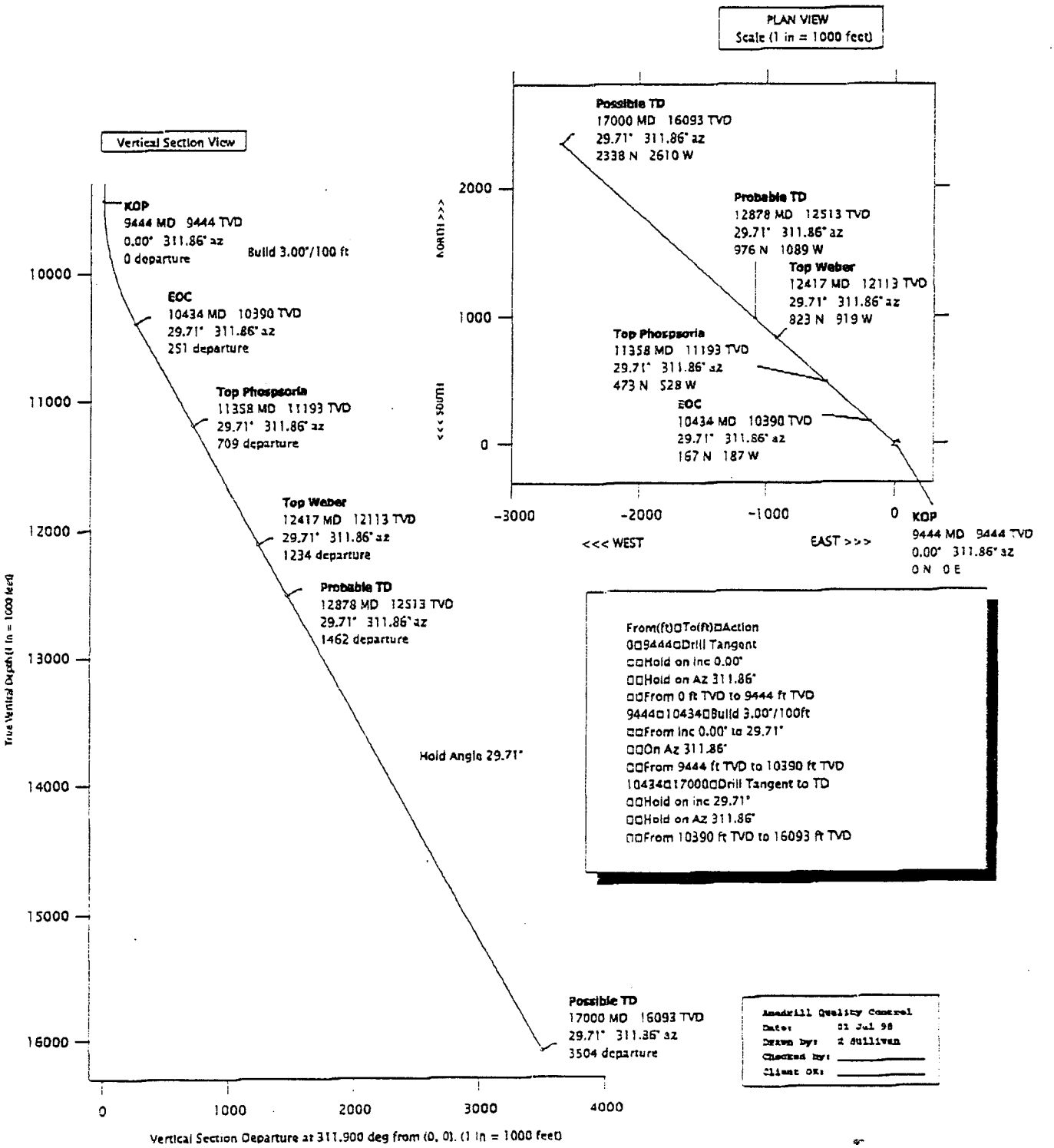
Baker CMC LNR HGR
& ZXP LNR TOP PKR
(set @ ~ 13,000')

Production Liner
5", 18#, L80

JPO
7/98

Schlumberger
Anadrill

WELL	FIELD	STRUCTURE
Anschutz Ranch Deep 4-26	UT, Summit County	Anschutz



Schlumberger

Proposed Well Profile

Client	: Anschutz	Survey Computation Method	: Minimum Curvature
Field	: UT, Summit County	DLS Computation Method	: Lubinski
Structure	: Anschutz	Vertical Section Azimuth	: 311.900°
Well	: Anschutz Ranch Deep 4-26	Vertical Section Origin	: N 0.000 ft, E 0.000 ft
Borehole	: New Borehole	TVD Reference	:
API #	:	Magnetic Declination	: 13.745°
Date	: July 01, 1998	Total Field Strength	: 54109.896 nT
l Convergence Angle	: 0.26374219°	Dip	: 66.865°
Scale Factor	: 0.99995893	Declination Date	: June 29, 1998
		Magnetic Declination Model	: BGS
Location	: N 41 6 0.000, W 111 6 0.000	North Reference	: True North
	: N 3572554.482 ftUS, E 1750602.356 ftUS	Coordinate Reference To	: Well Head
Coordinate System	: NAD83 Utah State Planes, Northern Zone, US Feet		

Station ID	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	VSec (ft)	N/-S (ft)	E/-W (ft)	Closure (ft)	at Azim (°)	DLS (°/100ft)	TF (°)
	0.00	0.00	311.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-48.1MTF
Base Salt / Casing Point	5400.00	0.00	311.9	5400.00	0.00	0.00	0.00	0.00	0.00	0.00	-48.1MTF
K	9444.00	0.00	311.9	9444.00	0.00	0.00	0.00	0.00	0.00	0.00	-48.1MTF
	9500.00	1.68	311.9	9499.99	0.82	0.55	- 0.61	0.82	311.86	3.00	-48.1MTF
	9600.00	4.68	311.9	9599.83	6.37	4.25	- 4.74	6.37	311.86	3.00	-48.1MTF
	9700.00	7.68	311.9	9699.23	17.13	11.43	- 12.76	17.13	311.86	3.00	0.0
	9800.00	10.68	311.9	9797.94	33.08	22.07	- 24.64	33.08	311.86	3.00	0.0
	9900.00	13.68	311.9	9895.68	54.18	36.15	- 40.35	54.18	311.86	3.00	0.0
	10000.00	16.68	311.9	9992.18	80.36	53.62	- 59.86	80.36	311.86	3.00	0.0
	10100.00	19.68	311.9	10087.18	111.56	74.44	- 83.09	111.56	311.86	3.00	0.0
	10200.00	22.68	311.9	10180.41	147.68	98.54	- 110.00	147.68	311.86	3.00	0.0

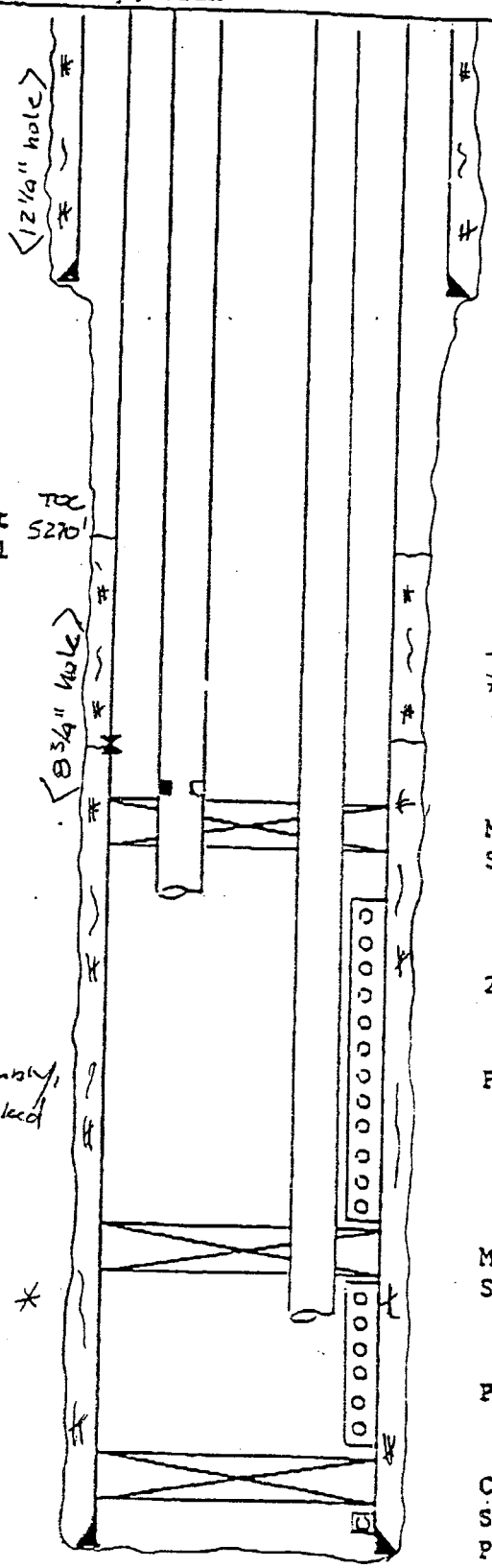
Station ID	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	VSec (ft)	N/-S (ft)	E/-W (ft)	Closure (ft)	at Azim (°)	DLS (°/100ft)	TF (°)
	10300.00	25.68	311.9	10271.63	188.64	125.87	- 140.51	188.64	311.86	3.00	0.0
	10400.00	28.68	311.9	10360.57	234.31	156.35	- 174.52	234.31	311.86	3.00	0.0
EOC	10434.20	29.71	311.9	10390.43	250.99	167.47	- 186.95	250.99	311.86	3.00	0.0
Top Phospsoria	11358.20	29.71	311.9	11193.00	708.88	473.00	- 528.00	708.88	311.86	0.00	0.0
Top Weber	12417.40	29.71	311.9	12113.00	1233.77	823.23	- 918.95	1233.77	311.86	0.00	0.0
Probable TD	12877.92	29.71	311.9	12513.00	1461.98	975.50	- 1088.93	1461.98	311.86	0.00	0.0
Possible TD	16999.59	29.71	311.9	16093.00	3504.46	2338.34	- 2610.25	3504.46	311.86	0.00	0.0

Wellbore Diagram

Island Ranching #2

Section 26, T4N, R7E Summit County, Utah

7322' KB 7306' GL



SURFACE CASING
9 5/8", 32.3#, H40, ST&C
cmt'd w/ 900 sks 50/50 POZ + 500 sks 'G', 500 sks to surface

2 3/8" tubing, 4.7#/ft J-55, CS Hydril

Twin Creek 5420'

"R" Nipple, 1.81" I.D. SA 6026'

* 10-2-79 Stuck DST Assembly, spotted cmt plug, sidetracked @ 6914'

Nugget 7020'

2 7/8" tubing, 6.5#/ft J-55, CS Hydril

PRODUCTION CASING
7", 26 & 23#, S95 & K55
26# S95 (5395' - 5855')
DV tool @ 5963'

Model J Dual Packer SA 6033'

2 7/8" tubing, 8.7#, EUE

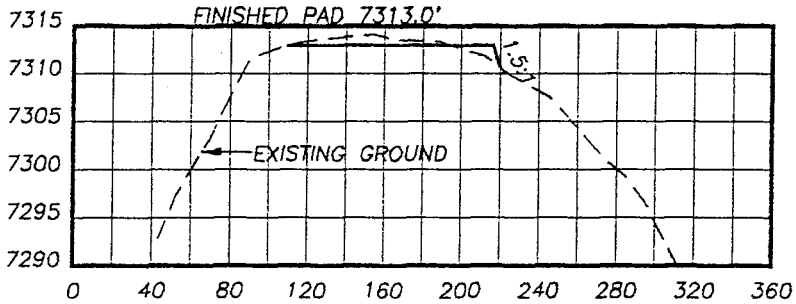
Perfs: 6164' - 6942'

Model D Packer SA 6980'

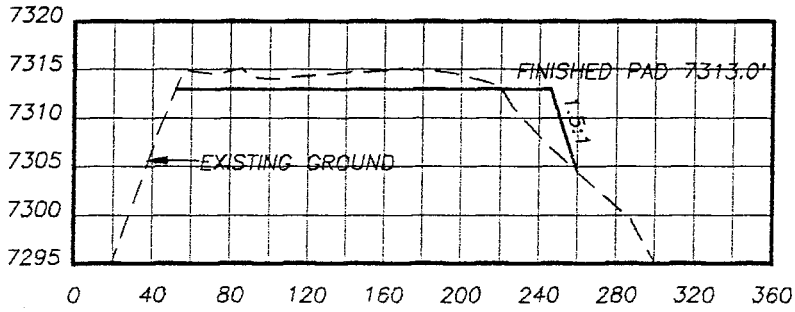
Perfs: 7036' - 7250'

Cement Retainer SA 7280'
Perfs: 7300' - 7310'
7" casing, 26#/ft, 23#/ft K-55

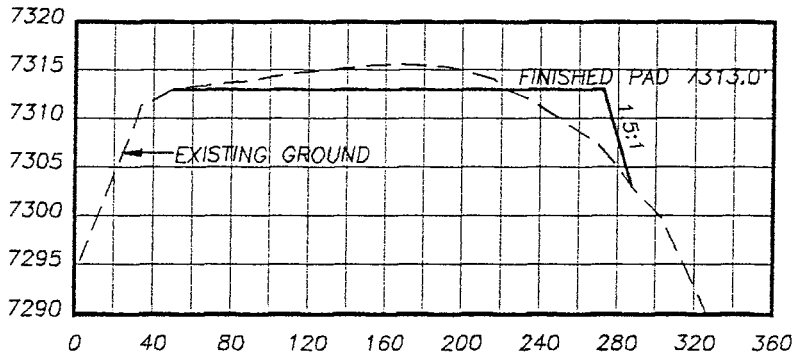
SECTION A



SECTION B



SECTION C



HORIZ. SCALE: 1" = 100' VERT. SCALE: 1" = 20'

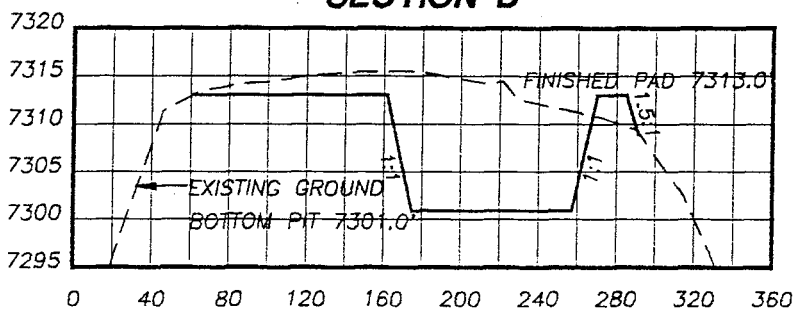
MAP to ACCOMPANY

APPLICATION for PERMIT to DRILL
ANSCHUTZ EXPLORATION
ANSCHUTZ RANCH DEEP 4-26 WELL
1623' FNL 1328' FWL
SECTION 26, T4N, R7E, SLB&M
SUMMIT COUNTY, UTAH

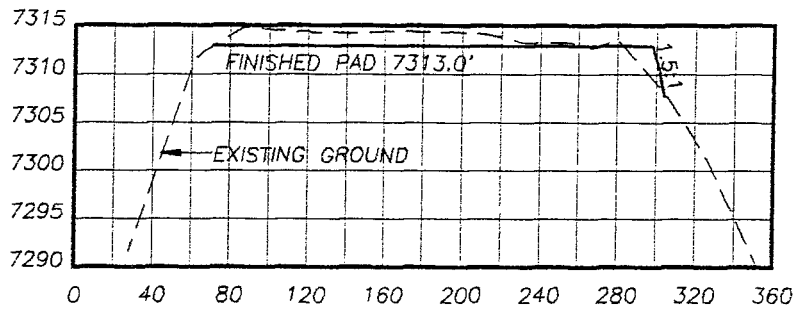
UINTA ENGINEERING & SURVEYING, INC.
808 MAIN STREET
EVANSTON, WYOMING 82930
(307) 789-3602

DATE: 05/11/98 JOB #: 98-19-02
DISK #: WELL10 FILE: 98-19-02
DRAWN BY: Travis Martinez

SECTION D



SECTION E



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APPLICATION for PERMIT to DRILL
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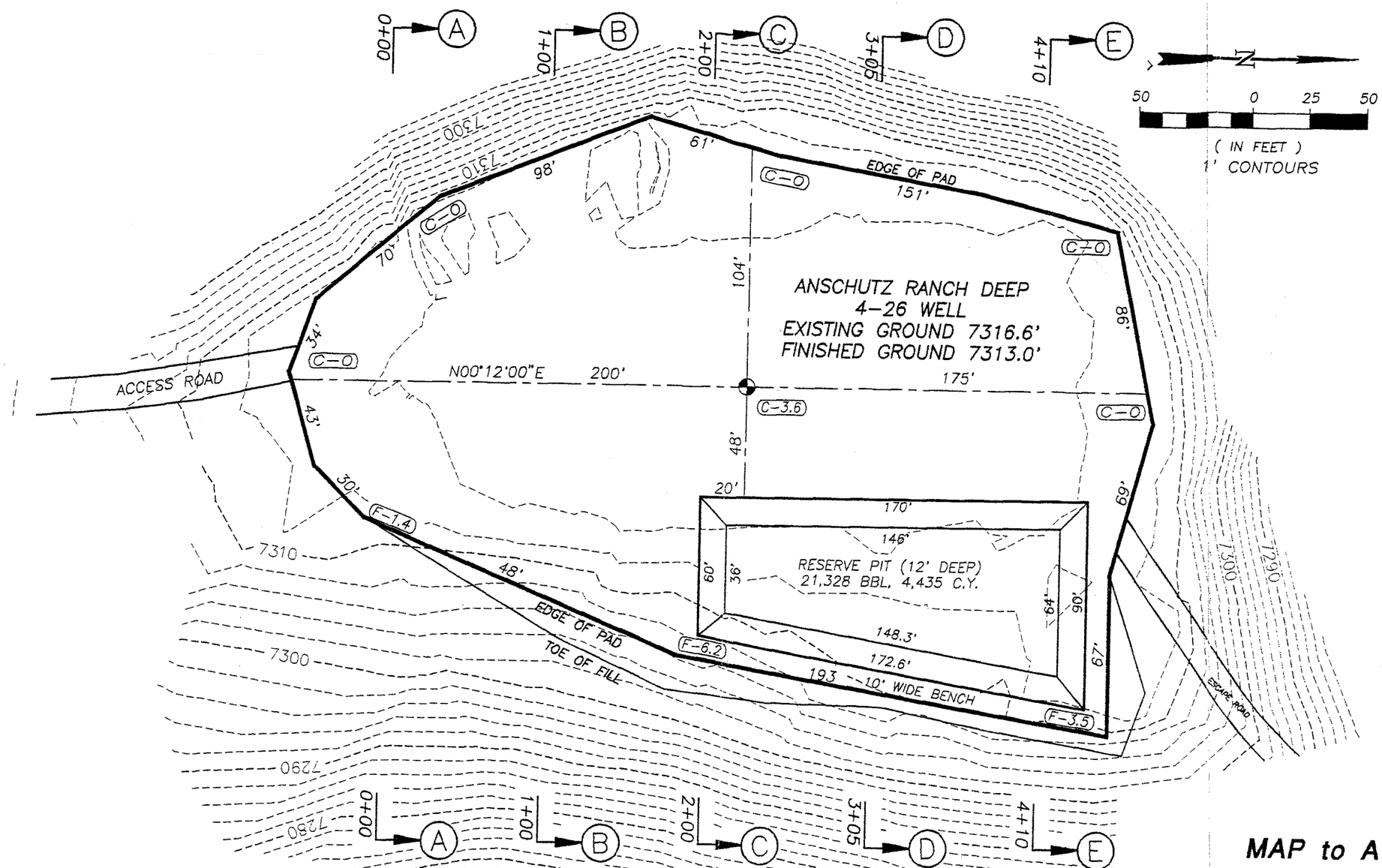

RECEIVED
JUL 22 1998
DIV. OF OIL, GAS & MINING

BASIS OF ELEVATION

ELEVATIONS BASED ON USGS TRIANGULATION STATION "PORCUPINE" ELEVATION 9195'

FINISHED PAD ELEVATION TO BE 7313.0

WELL PAD QUANTITIES

EXCAVATION = 2,900 C.Y. (PITS AND TOPSOIL NOT INCLUDED)
EMBANKMENT = 1,350 C.Y.

SPOIL = 1,550 C.Y.

RESERVE PIT = 4,435 C.Y. (12' DEEP W/ 1:1 SIDE SLOPES)

TOPSOIL = 1,317 C.Y. (CALCULATED AT 6" DEEP)

ALL CUT SLOPES ARE 1.5:1 (UNLESS OTHERWISE NOTED)
ALL FILL SLOPES ARE 1.5:1 (UNLESS OTHERWISE NOTED)

MAP to ACCOMPANY
APPLICATION for PERMIT to DRILL
ANSCHUTZ EXPLORATION
ANSCHUTZ RANCH DEEP 4-26 WELL
1623' FNL 1328' FWL
SECTION 26, T4N, R7E, SLB&M
SUMMIT COUNTY, UTAH

UINTA ENGINEERING & SURVEYING, INC.
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EVANSTON, WYOMING 82930
(307) 789-3602

DATE: 05/11/98 JOB #: 98-19-02
DISK #: WELL10 FILE: 98-19-02
DRAWN BY: Travis Martinez

ANSCHUTZ
EXPLORATION CORPORATION
2400 ANACONDA TOWER • 555 SEVENTEENTH STREET • DENVER, COLORADO 80202 • 303-298-1000 • FAX 303-298-8881

RECEIVED
JUL 22 1998
DIV. OF OIL, GAS & MINING

July 21, 1998

Mike Hebertson
1594 W. North Temple
Suite 1210
Salt Lake City, Utah 84114

RE: APD Anschutz Ranch Deep #4-26 Well

Dear Mr. Hebertson:

Per your conversation with Lisa Smith of PermitCo, enclosed please find a copy of a plat reflecting the access road to the referenced well, as well as a Topo map of the area.

Sincerely,

ANSCHUTZ EXPLORATION CORPORATION

Pamela S. Kalstrom (303) 857-9999
Sr. Landman, CPL-ESA

PSK/hdb

Enclosures

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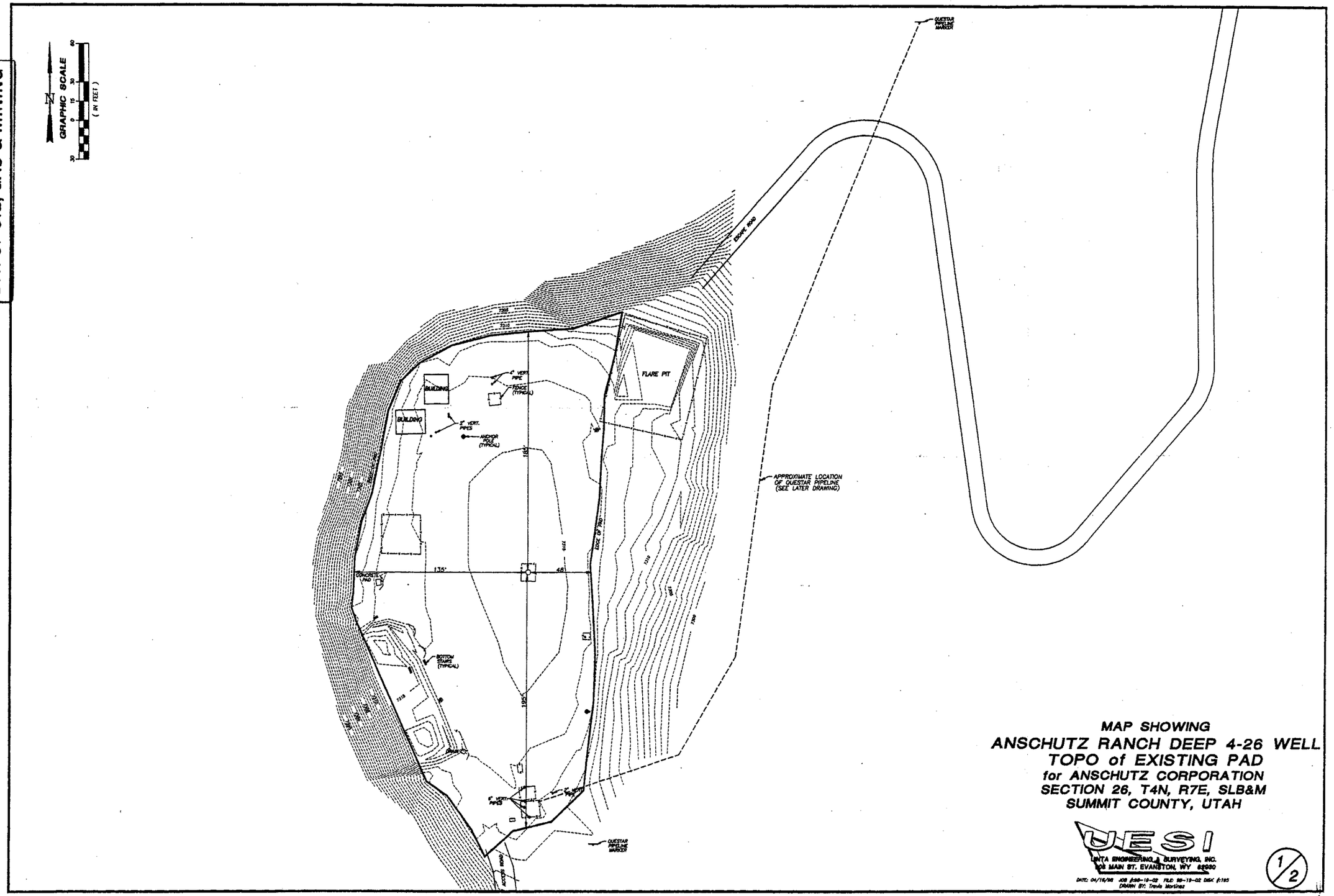
DIV. OF OIL, GAS & MINING

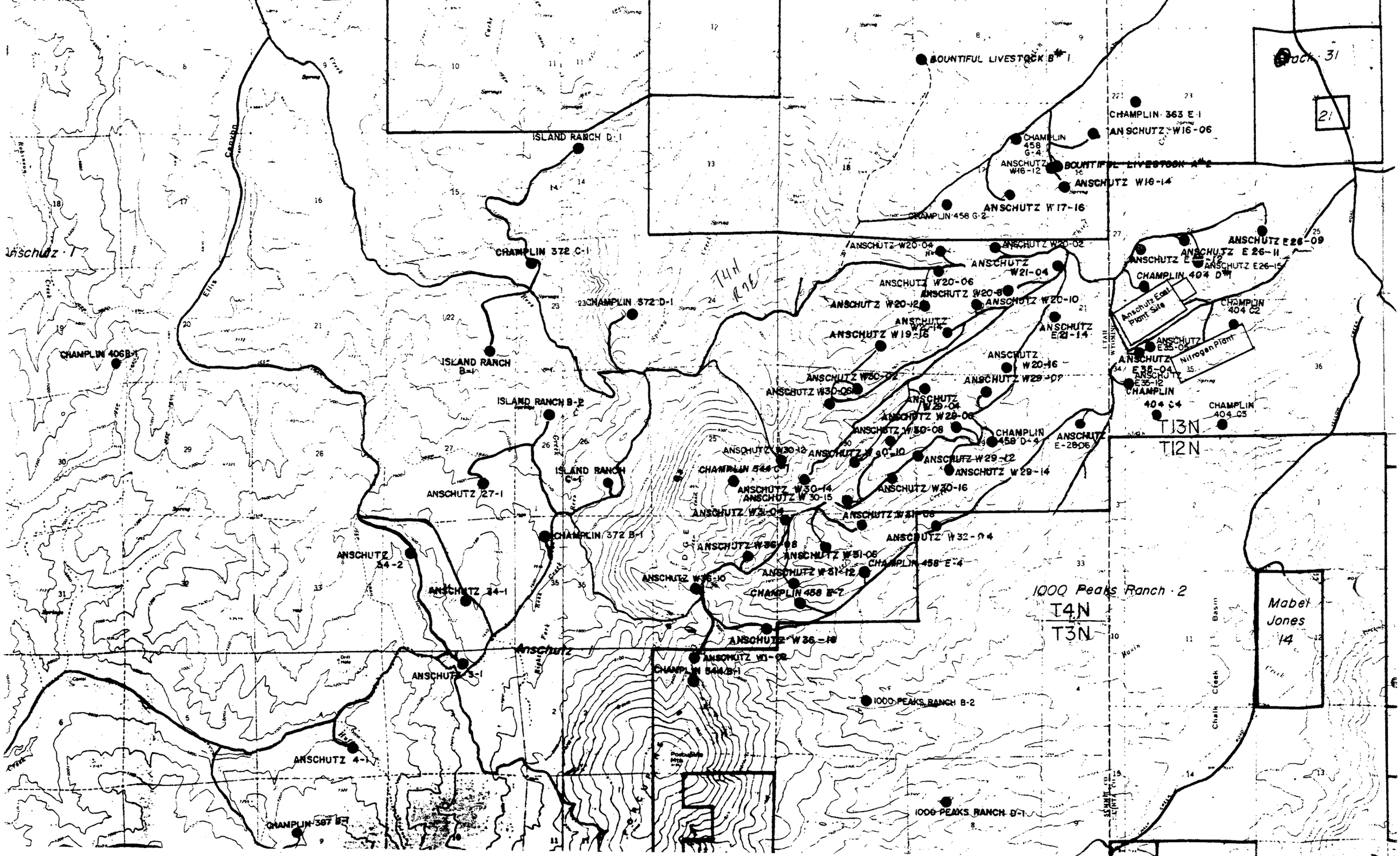


MAP SHOWING
ANSCHUTZ RANCH DEEP 4-26 WELL
TOPO of EXISTING PAD
for ANSCHUTZ CORPORATION
SECTION 26, T4N, R7E, SLB&M
SUMMIT COUNTY, UTAH

UESI
UINTA ENGINEERING & SURVEYING, INC.
108 MAIN ST. EVANSTON, WY 82930

DATE: 04/16/98 JOB #98-19-02 FILE: 98-19-02 DISK #195
DRAWN BY: Travis Martinez

1/2



BOUNTIFUL LIVESTOCK B#1
CHAMPLIN 363 E-1
ANSCHUTZ W16-06
CHAMPLIN 458 G-4
ANSCHUTZ W16-12
BOUNTIFUL LIVESTOCK A#2
ANSCHUTZ W16-14
ANSCHUTZ W17-16
CHAMPLIN 458 G-2
ISLAND RANCH D-1
CHAMPLIN 372 C-1
CHAMPLIN 372 D-1
ANSCHUTZ W20-04
ANSCHUTZ W20-02
ANSCHUTZ W21-04
ANSCHUTZ W20-06
ANSCHUTZ W20-8
ANSCHUTZ W20-10
ANSCHUTZ W20-12
ANSCHUTZ W20-14
ANSCHUTZ W19-16
ANSCHUTZ E21-14
ANSCHUTZ E26-09
ANSCHUTZ E26-11
ANSCHUTZ E26-15
CHAMPLIN 404 D#1
Anschutz East Plant Site
CHAMPLIN 404 C2
ANSCHUTZ E35-05
ANSCHUTZ E35-04
ANSCHUTZ E35-12
Nitrogen Plant
CHAMPLIN 404 C4
CHAMPLIN 404 C3
ANSCHUTZ W20-16
ANSCHUTZ W29-02
ANSCHUTZ W30-02
ANSCHUTZ W30-06
ANSCHUTZ W29-04
ANSCHUTZ W29-06
ANSCHUTZ W30-08
CHAMPLIN 458 D-4
ANSCHUTZ E-28-06
ANSCHUTZ W30-12
ANSCHUTZ W30-10
ANSCHUTZ W29-12
ANSCHUTZ W29-14
CHAMPLIN 544 C-1
ANSCHUTZ W30-14
ANSCHUTZ W30-15
ANSCHUTZ W30-16
ANSCHUTZ W31-04
ANSCHUTZ W31-08
ANSCHUTZ W32-04
ANSCHUTZ W36-08
ANSCHUTZ W31-06
CHAMPLIN 458 E-4
ANSCHUTZ W31-12
ANSCHUTZ W36-10
CHAMPLIN 458 E-7
ANSCHUTZ W36-18
ANSCHUTZ W1-02
CHAMPLIN 544 B-1
1000 PEAKS RANCH B-2
1000 PEAKS RANCH D-1
CHAMPLIN 406 B-1
ISLAND RANCH B-1
ISLAND RANCH B-2
ISLAND RANCH C-1
ANSCHUTZ 27-1
CHAMPLIN 372 B-1
ANSCHUTZ 34-2
ANSCHUTZ 34-1
ANSCHUTZ 3-1
ANSCHUTZ 4-1
CHAMPLIN 387 B-1
Anschutz 1
Anschutz
Ellis Canyon
T4N R7E
T13N
T12N
T4N
T3N
1000 Peaks Ranch 2
Mabel Jones 14
Chalk Creek Basin
21

WORKSHEET
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 07/22/98

API NO. ASSIGNED: 43-043-30320

WELL NAME: ANSCHUTZ RANCH DEEP 4-26
OPERATOR: THE ANSCHUTZ CORPORATION (N0060)
CONTACT: Lise Smith (303) ~~452-8888~~ 857-9999

PROPOSED LOCATION:
SENW 26 - T04N - R07E
SURFACE: 1623-FNL-1328-FWL
BOTTOM: 0850-FSL-1150-FEL
SUMMIT COUNTY
ANSCHUTZ RANCH FIELD (500)

LEASE TYPE: FEE
LEASE NUMBER:
SURFACE OWNER: Fee

PROPOSED FORMATION: WEBR

INSPECT LOCATION BY: 08/06/98		
TECH REVIEW	Initials	Date
Engineering		
Geology		
Surface		

RECEIVED AND/OR REVIEWED:

✓ Plat
✓ Bond: Federal[] State[] Fee[✓]
(No. 10-42-53)
N Potash (Y/N)
N Oil Shale (Y/N) *190-5(B)
✓ Water Permit
(No. Water Well to be Drilled)
N RDCC Review (Y/N)
(Date:)
Y St/Fee Surf Agreement (Y/N)

LOCATION AND SITING:

✓ R649-2-3. Unit Anschutz Ranch Paleozoic
___ R649-3-2. General
___ R649-3-3. Exception
✓ ~~Drilling Unit~~
Board Cause No: ~~183-12~~
Date: ~~12-7-84~~

COMMENTS: *Need Presite (Conducted 7-28-98)
*Hearing scheduled 7-29-98 to Vacate 183-12 & Establish "Anschutz Ranch Paleozoic Unit".
Docket No. 98-013, Cause No. 183-13 (Board Approved)

STIPULATIONS: (1) STATEMENT OF BASIS

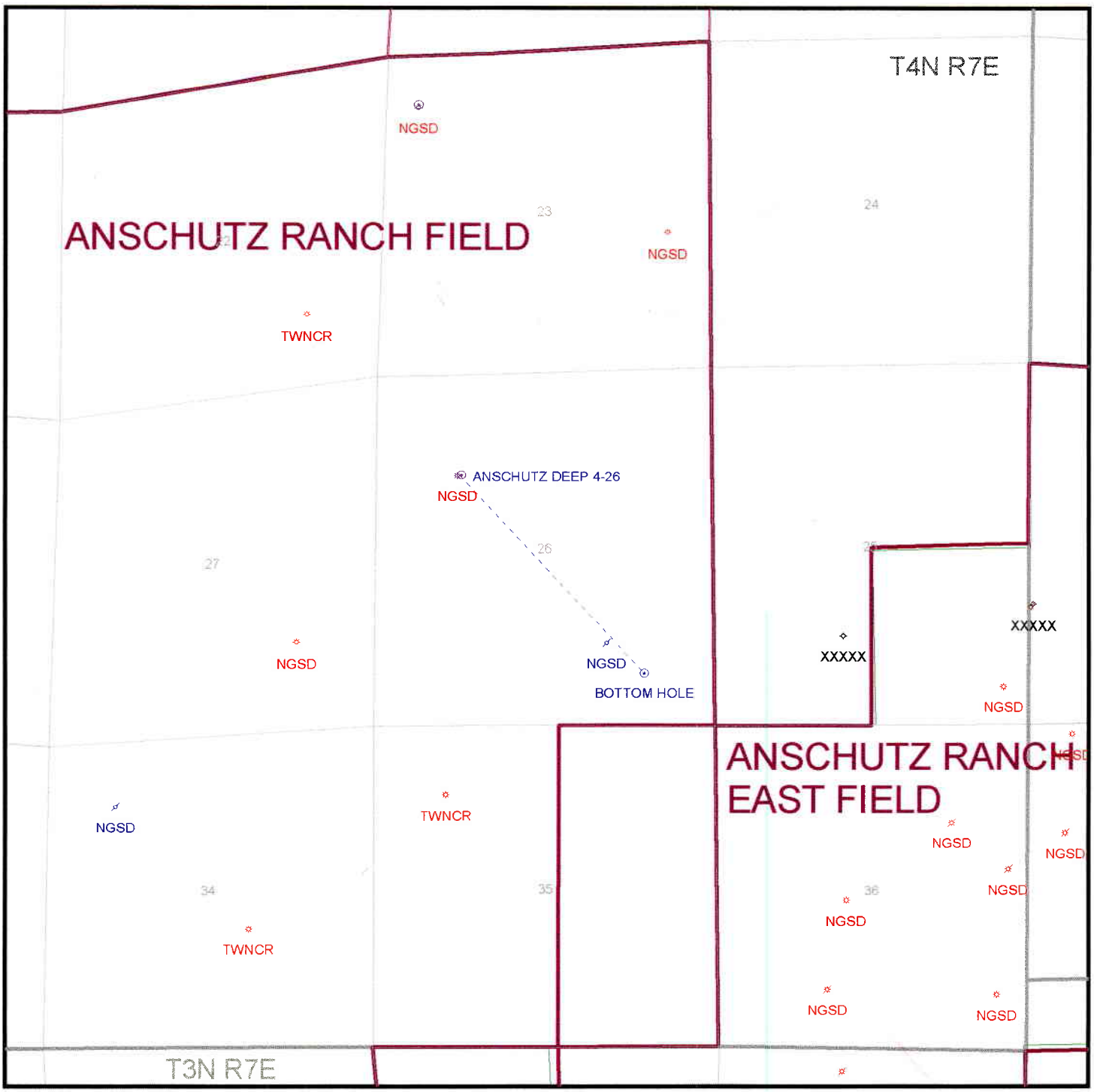
DIVISION OF OIL, GAS & MINING

OPERATOR: THE ANSCHUTZ CORP. (N0060)

FIELD: ANSCHUTZ RANCH (500)

SEC. 26, TWP 4N, RNG 7E

COUNTY: SIMMIT CAUSE No. 183-13 ANSCHUTZ PALEOZOIC UNIT



DATE PREPARED:
23-JULY-1998

ANSCHUTZ
EXPLORATION CORPORATION
2400 ANACONDA TOWER • 555 SEVENTEENTH STREET • DENVER, COLORADO 80202 • 303-298-1000 • FAX 303-298-8881

RECEIVED
JUL 23 1998
DIV. OF OIL, GAS & MINING

July 22, 1998

Utah Division of Oil, Gas and Mining
1594 N. Temple, Suite 1210
Salt Lake City, UT 84114
Attn: Mr. Mike Hebertson

Re: APD Anschutz Ranch Deep #4-26 Well
Rule #R649-3-11

Ladies & Gentlemen:

In accordance with Rule #R649-3-11 of the Oil and Gas Conservation General Rules, the following is our reason for the direction drilling of the referenced well as requested in the referenced APD:

The Anschutz Ranch Deep #4-26 well will be drilled directionally, as set forth in the Application for Permit to Drill which was recently submitted, to allow the well-bore to be positioned at the structural crest of the specific target formations. This in turn will provide for the most economic and effective recovery of hydrocarbons.

We respectively request your approval for this directional drilling without notice or hearing, as The Anschutz Corporation has obtained the written consent to the proposed directional drilling program from the owners of oil and gas within a radius of 460 feet from all points along the intended well bore.

Sincerely,

ANSCHUTZ EXPLORATION CORPORATION

Pamela S. Kalstrom
Sr. Landman, CPL-ESA

PSK/hdb

ANSCHUTZ
EXPLORATION CORPORATION
1221 LAMAR • SUITE 1100 • HOUSTON, TEXAS 77010 • 713-651-0281 • FAX 713-750-0257

July 23, 1998

RECEIVED
JUL 27 1998
DIV. OF OIL, GAS & MINING

State of Utah
Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801

Attn.: Mike Hebertson

RE: Anschutz Ranch Deep 4-26
Summit County, Utah

Dear Mr. Hebertson:

Please find the enclosed corrected well plan exhibits for the Anschutz Ranch Deep 4-26 Application for Permit to Drill. The header on the original exhibits listed an incorrect well location.

I've also enclosed a BOP diagram which was not submitted with the original application.

Please call me if you have questions or need additional information.

Sincerely,

Anschutz Exploration Corporation

James Oursland

James Oursland
Engineering Mgr.

JPO:misc\ARD426.doc
Enclosures

Application for Permit to Drill
The Anschutz Corporation
Anschutz Ranch Deep 4-26
1623' FNL and 1328' FWL
Sec. 26, T4N – R7E
Summit County, Utah

CONFIDENTIAL – TIGHT HOLE

DRILLING PROGRAM

RECEIVED
JUL 27 1998
DIV. OF OIL, GAS & MINING

3. Well Control Equipment & Testing Procedures

Anschutz's minimum specifications for pressure control equipment are as follows:
Ram Type: Hydraulic double, 5000 psi w.p.

Anschutz will comply with all requirements pertaining to well control as listed in the Rule R649-3-7 of the Utah Division of Oil, Gas & Mining.

The size and rating of the BOP stack is shown on the attached diagram.

4. Casing Program

The proposed casing program will be as follows:

Purpose	Depth (MD)	Hole Size	O.D.	Weight	Grade	Type
Surface	0-1500'	17-1/2"	13-3/8"	54.50#	J55	BTC
Intermed.	0-8200'	12-1/4"	9-5/8"	47.0#	L80	Vam Ace
Product.	0-3500'	8-3/4"	7-5/8"	39.0#	L80	SLH
Product.	3500-13500'	8-3/4"	7-5/8"	33.7#	L80	SLH
Liner	13100-T.D.	6-1/2"	5"	18.0#	L80	SLH

Casing design subject to revision based on geologic conditions encountered.

5. Cement Program

13-3/8" Surface	Type and Amount
0-1500'	± 625 sx Prem Lite lead slurry
	± 595 sx Class G tail slurry
	100 sk Class G topout
	Proposed TOC – Surface

Application for Permit to Drill
The Anschutz Corporation
Anschutz Ranch Deep 4-26
1623' FNL and 1328' FWL
Sec. 26, T4N – R7E
Summit County, Utah

CONFIDENTIAL – TIGHT HOLE

DRILLING PROGRAM

RECEIVED
JUL 27 1998
DIV. OF OIL, GAS & MINING

1. Estimated Tops/Geologic Markers

The estimated tops of important geologic markers are as follows:

Formation	TVD	MD	Subsea
Wasatch	Surface		
Evanston	3,200'	3,200'	+4,120'
Gannet	3,520'	3,520'	+3,800'
Salt	5,150'	5,150'	+3,240'
Twin Creek	5,300'	5,300'	+2,020'
Nugget	6,840'	6,840'	+ 480'
Ankarah	8,000'	8,000'	- 680'
Thaynes	9,000'	9,000'	- 1,680'
Woodside	10,450'	10,500'	- 3,130'
Dinwoody	11,000'	11,100'	- 3,680'
Phosphoria	11,200'	11,350'	- 3,880'
Weber	11,900'	12,150'	- 4,580'
Mission Canyon	13,150'	13,550'	- 5,830'
Lodgepole	14,100'	14,850'	- 6,780'
Darby	14,900'	15,600'	- 7,580'
Bighorn	15,650'	16,450'	- 8,330'
TD	16,100'	16,900'	- 8,780'

2. Estimated Depths and Names of Anticipated Water, Oil, Gas or Other Minerals Bearing Formations.

Substance	Formation	Depth
Gas/Condensate	Twin Creek	5,300'-6,840'
Gas/Condensate	Nugget	6,840'-8,000'
Sour Gas/Condensate	Phosphoria/Weber	11,950'-13,160'

Form OGC-1a

(Other instructions on reverse side)

Confidential - Tight Hole

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. Type of Well: Oil Well [ ] Gas Well [X] Other Directional Single Zone [X] Multiple Zone [ ]

2. Name of Operator: THE ANSCHUTZ CORPORATION 303/298-1000 555 17th Street, Suite 2400 Denver, CO 80202

3. Address of Operator: PERMITCO INC. - Agent 303/452-8888 14421 Weld County Road 10 Fort Lupton, CO 80621

4. Location of Well (Report location clearly and in accordance with any State requirements.*)
At surface: 1623' FNL and 1328' FWL (Surface Location) SENW
At proposed prod. zone: 850' FSL and 1150' FEL (Btm. Hole Location)

5. Lease Designation and Serial No.: Fee

6. If Indian, Allottee or Tribe Name: N/A

7. Unit Agreement Name: N/A

8. Farm or Lease Name: Anschutz Ranch Deep

9. Well No.: #4-26

10. Field and Pool, or Widlcat: Wildcat

11. Sec., T., R., M., OR Blk. and Survey or Area: Sec. 26, T4N - R7E

14. Distance in miles and direction from nearest town or post office*: 2 miles west of Evanston, Wyoming:

CONFIDENTIAL

12. County or Parrish: Summit

13. State: Utah

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. line, if any): 850' (btm. hole)

16. No. of acres in lease: 320

17. No. of acres assigned to this well: 40

18. Distance from proposed location * to nearest well, drilling, completed, or applied for, on this lease, ft.: none

19. Propsed depth: 16,100' (TVD)

20. Rotary or cable tools: Rotary

21. Elevations (Show whether DF, RT, GR, etc.): 7316.6'

22. Approx. date work will start*: Upon approval of this application

23. PROPOSED CASING AND CEMENTING PROGRAM

Size of Hole	Size of Casing	Weight per Foot	Setting Depth	Quantity of Cement
17-1/2	13-3/8"	50.54#	1,500'	1220 sx Class "G"Lite
12-1/4"	9-5/8"	47.0#	8,200'	1410 sx Class "G"
8-3/4"	7-5/8"	33.7#	13,500'	350 sx Class "G"
6-1/2"	5"	18#	16,100'	350 sx Class "G"

The Anschutz Corporation proposes to drill a well to a depth of 16,100' to test the Phosphoria/Weber, Mission Canyon, and Bighorn formations. If productive, casing will be run and the well completed. If dry, the well will be plugged and abandoned as per State of Utah requirements.

See Drilling Program attached.

All operations will be covered under Anschutz' Utah Statewide Bond No. 104253

RECEIVED
JUL 28 1998
DIV. OF OIL, GAS & MINING

CC: 3 - Division of Oil, Gas & Mining - SLC, UT
3 - The Anschutz Corporation - Denver, CO

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM : If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

Signed: [signature] Title: Consultant for: The Anschutz Corp. Date: 07/21/98

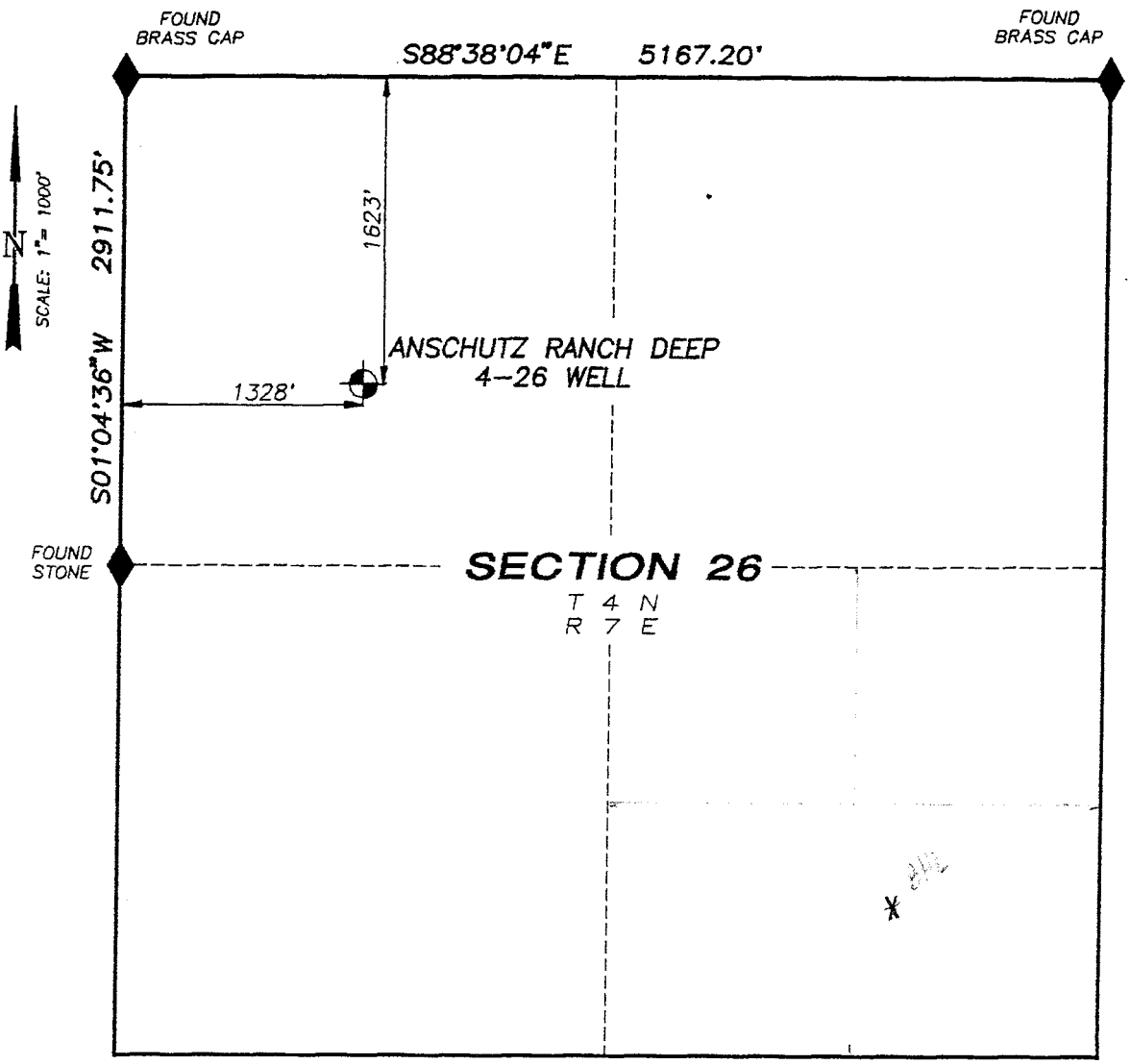
(This space for Federal or State office use)

Permit No. 43-043-30320 Approval Date

Approved by: [signature] Title: BRADLEY G. HILL RECLAMATION SPECIALIST III Date: 8/10/98

Conditions of approval, if any:

*See Instructions On Reverse Side



LOCATION MAP

SURVEYED UNDER MY SUPERVISION
IN APRIL 1998

LICENSED LAND SURVEYOR
5/11/98
No. 278046
STANTON G. TAGGART
STATE OF UTAH

MAP to ACCOMPANY
APPLICATION for PERMIT to DRILL
ANSCHUTZ EXPLORATION
ANSCHUTZ RANCH DEEP 4-26 WELL
1623' FNL 1328' FWL
SECTION 26, T4N, R7E, SLB&M
SUMMIT COUNTY, UTAH

UINTA ENGINEERING & SURVEYING, INC.
808 MAIN STREET
EVANSTON, WYOMING 82930
(307) 789-3602

DATE: 05/11/98 JOB #: 98-19-02
DISK #: WELL10 FILE: 98-19-02
DRAWN BY: Travis Martinez

DIVISION OF OIL, GAS AND MINING
APPLICATION FOR PERMIT TO DRILL
STATEMENT OF BASIS

Operator Name: Anschutz Corporation
Name & Number: Anschutz Ranch Deep #4-26
API Number: 43-043-30320
Location: 1/4,1/4 SE NW Sec. 26 T. 4 N R. 7 E

Geology/Ground Water:
The surface casing proposed for this well will be sufficient to provide protection to the near surface waters found in this area. It is an area of recharge to local aquifers and is a watershed area for the Weber River Drainage, by way of Reese Creek through Echo Canyon. Reese Creek has active water flow all year round and is within 1/4 mile of this location. Major concerns for the Silt entering Reese Creek were expressed by the surface owner, and the operator agreed to keep ample undisturbed ground between the location and the creek to catch silt before it enters the creek.

Reviewer: K. Michael Hebertson
Date: 28-July-1998

Surface:
This well is to be placed on an existing pad, and to temporarily abandon the Nugget well on this location. The pad will be expanded by cutting two feet of material off the top of the existing pad and opening the pit on the Southeast corner of the pad. The pit will be in cut material, but the outer wall will be only 10 feet thick at the top, and a possible escape road may be cut into the hill below the pit. The escape road is a major concern for the landowner as the visual impact and possible increase in the amount of silt coming into Reese Creek will degrade the operation of the ranch. Several options for the escape road were discussed, however all of them have major problems with grade, stability, and drainage crossings. Anschutz promised a reasonable solution to the problem before drilling the well. At the presite an H2S plan was presented and the escape road as staked was reviewed. A brief discussion of the proposed spacing order was discussed to assure that placement of the well is within the parameters of the spacing request. The nature of the drilling fluids to be used was reviewed and taken into consideration on the pit assessment form. Water will probably be piped from a spring about a mile to the Southwest of the location.

Reviewer: K. Michael Hebertson
Date: 28-July-1998

Engineering:

BOP, Mud, Casing and Cement programs are adequate based on information submitted.

Reviewer: Robert J. Krueger
Date: 8/3/98

Conditions of Approval/Application for Permit to Drill:

1. The pit will be lined with a synthetic liner of at least 12 MILS.
2. The existing Nugget well will be temporarily abandoned during drilling.
3. A berm will be placed around the top edge of the pad to prevent runoff while drilling.
4) Sundry notices and/or well completion reports shall include a well "as-built" diagram showing well completion details including casing and liner size, grade, weight and setting depth; and, cement density, grade, yield, additives, and placement depths.

State of Utah
On-Site Evaluation
Division of Oil, Gas and Mining

OPERATOR: Anschutz Corporation
WELL NAME & NUMBER: Anschutz Ranch Deep #4-26
API NUMBER: 43-043-30320
LEASE: Fee **FIELD/UNIT:** Anschutz Ranch
LOCATION: 1/4,1/4 SE NW **Sec:** 26 **TWP:** 4N **RNG:** 7E 1623 **FNL** 1328 **FWL**
LEGAL WELL SITING: See cause No. 183-13 Anschutz Ranch Paleozoic Unit
GPS COORD (UTM): Existing location
SURFACE OWNER: Castle Rock Land and Livestock Co.
PARTICIPANTS:

K. Michael Hebertson DOGM, Miles Williams, Pam Kalstrom, Larry Williams, Bill Miller, Dan Gallagher Anschutz, Gordon Lindley, John Rich Lindley Construction, David Allen Castle Rock L&L, Cloey Wall Uintah Engineering

REGIONAL/LOCAL SETTING & TOPOGRAPHY:

Overthrust Belt, on the North flank of the Uintah Mountains and the East falnk of the Wasatch Mountains, dominated by moderately steep hills and moderate to deeply incised secondary drainages that are well established. The drainage patern is generally to the North and East toward Echo Canyon and I80 located about 6 miles North of this site.

SURFACE USE PLAN:

CURRENT SURFACE USE: This is an established well pad, located within the confines of an active cattle ranch. Wildlife is prevalent in the area and will benifit from the reseeding of the location once drilling is completed.

PROPOSED SURFACE DISTURBANCE: This area is already a well pad, however the pad will be expanded to accommodate the rig, and another 2 acres will be involved in the new portion. The actual increase in the size Of the pad will be accomplished by blading off two feet of the current location.

LOCATION OF EXISTING WELLS WITHIN A 1 MILE RADIUS: One well in Section 27 a Nugget completion, one well in section 22 a Twin Creek Completion 1 well in section 23 a Nugget completion, 1 well in sedtion 35 a Twin Creek completion, one well in section 26, a water injection well.

LOCATION OF PRODUCTION FACILITIES AND PIPELINES: Pipelines and other facilities are already in place.

SOURCE OF CONSTRUCTION MATERIAL: Spoil from the expansion of the existing pad. A gravel cap will be placed on the pad with material obtained from the Anschutz Ranch Field gravel pit.

ANCILLARY FACILITIES: None will be needed that do not already exist.

WASTE MANAGEMENT PLAN:

All trash garbage and refuse will be placed in wire mesh containers and transported to an approved land fill. All human waste will be contained in portable septic tank or chemical toilet type facilities. Drill cuttings will be contained in the reserve pit and all drainage from the location will be toward the reserve pit.

ENVIRONMENTAL PARAMETERS:

AFFECTED FLOOD PLAINS AND/OR WETLANDS: None, However the location is about 1/4 mile from Rees Creek on a high promintory above the creek, the top of which has been leveled to form a pad for the previous well. The main consern for the area is to reduce siltation in Rees Creek.

FLORA/FAUNA: Deer, Elk, Moose, Cougar, Eagles, Hawks, Other indigenous bird species, Aspen, Pine, varieties of grasses, Sage Brush, Rabbit Brush other intermontain flora and fauna.

SOIL TYPE AND CHARACTERISTICS: Mostly clay with very little sand, lots of small rocks to larger pit run type gravel and head sized rocks. The pad is covered with a 8-10 gravel cap.

SURFACE FORMATION & CHARACTERISTICS: Wasatch Formation Clay with numerous rocks light gray to medium brown in color. Minor sand and Topsoil. Moderate to Poor Permeability.

EROSION/SEDIMENTATION/STABILITY: Location is stable and shows little erosion, cut and fill slopes show good stability with little or no erosion. Some sedimentation will occur at the toe of the cut and fill slopes. However the location is in an area of land slides that could become an issue later on if the location is not well drained.

PALEONTOLOGICAL POTENTIAL: None observed

RESERVE PIT:

CHARACTERISTICS: 170 X 90 X 12 Feet deep located on the Northeast side of the location is cut material. The drilling fluids will be salt saturated at sometime duirng the drilling process and drill cutings will be of such a nature that they will need to be contained in the pit and kept out of the invironment. The pit will be lined with a synthetic liner.

LINER REQUIREMENTS (Site Ranking Form attached): See attached

SURFACE RESTORATION/RECLAMATION PLAN:

The restoration for this site will be as agreed to in the executed Agreement.

SURFACE AGREEMENT: Has been executed and will cover the restoration.

CULTURAL RESOURCES/ARCHAEOLOGY: None

OTHER OBSERVATIONS/COMMENTS:

This location is in a known area of H2S production and will require an H2S plan to be in effect. That plan was supplied at the time of the inspection. However the secondary escape route has become an issue with the surface owner. The issue was not resolved at the onsite due to visual impact concerns expressed at that time. None of the options proposed at that time were acceptable and it was promised that an agreement would be reached prior to approval of the permit.

ATTACHMENTS:

Photos were taken of this site and will be placed on file.

K. Michael Hebertson	28-July-1998 11:00 AM
DOGM REPRESENTATIVE	**DATE/TIME**

Evaluation Ranking Criteria and Ranking Score For Reserve and Onsite Pit Liner Requirements

Site-Specific Factors	Ranking	Site Ranking
Distance to Groundwater (feet)		
>200	0	
100 to 200	5	
75 to 100	10	
25 to 75	15	
<25 or recharge area	20	
Distance to Surf. Water (feet)		
>1000	0	
300 to 1000	2	
200 to 300	10	
100 to 200	15	
< 100	20	10
Distance to Nearest Municipal Well (feet)		
>5280	0	
1320 to 5280	5	
500 to 1320	10	
<500	15	
Distance to Other Wells (feet)		
>1320	0	
300 to 1320	10	
<300	20	
Native Soil Type		
Low permeability	0	
Mod. permeability	10	
High permeability	20	10
Fluid Type		
Air/mist	0	
Fresh Water	5	
TDS >5000 and <10000	15	
TDS >10000 or Oil Base	20	
Mud Fluid containing high levels of hazardous constituents		20
Drill Cuttings		
Normal Rock	0	
Salt or detrimental	10	10
Annual Precipitation (inches)		
<10	0	
10 to 20	5	
>20	10	10
Affected Populations		
<10	0	
10 to 30	6	
30 to 50	8	
>50	10	
Presence of Nearby Utility Conduits		
Not Present	0	
Unknown	10	
Present	15	10
Final Score (Level II Sensitivity)		70

THE ANSCHUTZ CORPORATION

2400 ANACONDA TOWER · 555 SEVENTEENTH STREET · DENVER, COLORADO 80202 · 303-298-1000 · FAX 303-298-8881

RECEIVED
JUL 30 1998
DIV OF OIL, GAS & MINING

July 30, 1998

Michael Hebertson
Utah Division of Oil, Gas and Mining
1594 W. North Temple, #1210
P. O. Box 145801
Salt Lake City, UT 84114-5801
Hand Delivered

RE: Anschutz Ranch Deep 4-26 Well
Section 26, Township 4 North, Range 7 East
Summit County, Utah
Surface Agreement Affidavit

It is hereby certified that an appropriate surface use agreement has been established with and approved by the surface landowners of the well site for the above-captioned well.

Sincerely,

Miles A. Williams
Executive Vice President

Division of Oil, Gas and Mining
PHONE CONVERSATION DOCUMENTATION FORM

Route original/copy to:

☒ Well File _____ ☐ Suspense (Return Date) _____ (To-Initials) _____ ☐ Other _____

(Loc.) Sec 2C Twp 4N Rng. 7E
(API No.) 43-043-30320

1. Date of Phone Call: 8-3-98 Time: 12 PM

2. DOGM Employee (name) RJK (☒ Initiated Call)
Talked to:
Name Jim Ourland (☐ Initiated Call) - Phone No. (713) 651-0281
of (Company/Organization) Anschutz Exp. Corp.

3. Topic of Conversation: APD - Casing + Cement Specs.

4. Highlights of Conversation: Casing Design: Anschutz used a casing design subconsultant to make recommendations on the casing and thread to be used for the well due to the deviated hole. They need to use a flush type thread (SCH) to place in the hole on this well below ≈9500'. Jim to fax his cement calcs. to me which include the yeild #'s (attached 2 pages)

ANSCHUTZ EXPLORATION CORPORATION
1221 Lamar, Ste. 1100
Houston, Texas 77010

Fax Cover Sheet

DATE:	August 3, 1998		
TO:	**BOB KRUEGER** **UTAH DIV O&G**	FAX:	(801)538-5340 **(801)359-3940**
FROM:	Jim Oursland AEC	**FAX:**	(713)750-0210 (713)750-0257
RE:	Anschutz Deep 4-26 Cement Calculations		

Number of pages including cover sheet: 2

Message

Bob-

Here are the cement calculations we discussed this morning.

Please call me if you have any questions.

Thanks

Jim

JFO:faxutah.doc

Anschutz Ranch Deep 4-26
Cementing Calculations

Surface Casing (13 3/8" x 17 1/2")

Class G (100% excess) $\frac{(500')(0.6946)(2)}{1.17 \text{ ft}^3/\text{sk}} = 595$ sks

Prem Lite (100% excess) $\frac{(1000')(0.6946)(2)}{2.23 \text{ ft}^3/\text{sk}} = 622$ sks

Intermediate Casing (9 5/8" x 12 1/4")

Class 'G' (40% excess) $\frac{(2200')(0.3132)(1.4)}{1.14} = 845$ sks

Prem Lite (40% excess) $\frac{(2000')(0.3132)(1.40)}{1.55} = 565$ sks

Production Casing (7 5/8" x 8 3/4")

Class 'G' (35% excess) + silica $\frac{(3500')(.1005)(1.35)}{1.52} = 312$ sks

(Round up - 350 sks)

Production Liner

Class 'G' (35% excess) + silica $\frac{(3800')(0.0941)(1.35)}{1.52} = 318$ sks

(Round up - 350 sks)

All OK
RSK
8-3-98

JPO
7/98

22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS
AMPAD

07/23/98 D E T A I L W E L L D A T A menu: opt 00

```
api num:    4304330110      prod zone: TWNCR       sec   twnshp    range   qr-qr
entity:     10956 : ISLAND RANCHING 2               26   4.0  N    7.0  E   SENW
well name:  ISLAND RANCHING 2
operator:   N0060 : ANSCHUTZ CORPORATION, THE            meridian: S
field:      500   : ANSCHUTZ RANCH
confidential flag:    confidential expires:              alt addr flag:
            * * * application to drill, deepen, or plug back * * *
lease number:   FEE                  lease type: 4       well type:     GW
surface loc:    1675 FNL 1327 FWL    unit name:
prod zone loc:  1675 FNL 1327 FWL    depth:      7550    proposed zone: NGSD
elevation:      7317' GR             apd date:   790810  auth code:  183-1
* * completion information * *       date recd:          la/pa date:
spud date:      790816               compl date: 800422  total depth: 7520'
producing intervals: 6164-6942'
bottom hole:    1647 FNL 0954 FWL    first prod: 791114  well status:   SGW
24hr oil: 168    24hr gas: 10505     24hr water: 48      gas/oil ratio: 62530
      * * well comments:             directionl: D       api gravity:   66.00
 800509 W/O;SEE NGSD:860418 CUMS ADJ:860521 CUM ADJ:881214 ENTITY FR 4543:
 DUAL COMPL (2 TUBING STRINGS) DO NOT TAZ:980325 FR N0050 EFF 11-1-97:

opt: 21 api: 4304330110 zone: WSTC  date(yymm): 9700 enty       acct: N1130
```

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

1594 West North Temple, Suite 1210
PO Box 145801
Salt Lake City, Utah 84114-5801
801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

Michael O. Leavitt
Governor

Lowell P. Braxton
Division Director

August 10, 1998

The Anschutz Corporation
555 17th Street, Suite 2400
Denver, Colorado 80202

Re: Anschutz Ranch Deep 4-26 Well, 1623' FNL, 1328' FWL, SE NW, Sec. 26, T. 4 N., R. 7 E., Summit County, Utah

Gentlemen:

Pursuant to the provisions and requirements of Utah Code Ann. 40-6-1 et seq., Utah Administrative Code R649-3-1 et seq., and the attached Conditions of Approval, approval to drill the referenced well is granted.

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date. The API identification number assigned to this well is 43-043-30320.

Sincerely,

Mil Hunt

for John R. Baza
Associate Director

lwp
Enclosures
cc: Summit County Assessor
Bureau of Land Management, State Office

Operator: The Anschutz Corporation

Well Name & Number: Anschutz Ranch Deep 4-26

API Number: 43-043-30320

Lease: Fee

Location: SE NW **Sec.** 26 **T.** 4 N. **R.** 7 E.

Conditions of Approval

1. General
   Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for Permit to Drill.

2. Notification Requirements
   Notify the Division within 24 hours prior to spudding the well. Contact Jim Thompson at (801)538-5336.

   Notify the Division prior to commencing operations to plug and abandon the well. Contact Dan Jarvis at (801) 538-5338 or Robert Krueger at (801) 538-5274.

3. Reporting Requirements
   All required reports, forms and submittals shall be promptly filed with the Division, including but not limited to the Entity Action Form (Form 6), Report of Water Encountered During Drilling (Form 7), Weekly Progress Reports for drilling and completion operations, and Sundry Notices and Reports on Wells requesting approval of change of plans or other operational actions.

4. Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis (copy attached).

ANSCHUTZ
EXPLORATION CORPORATION
555 SEVENTEENTH STREET • SUITE 2400 • DENVER, COLORADO 80202 • 303-298-1000 • FAX 303-298-8881

RECEIVED
AUG 10 1998
DIV. OF OIL, GAS & MINING

August 7, 1998

Michael Hebertson
Utah Division of Oil, Gas and Mining
1594 W. North Temple, #1210
P.O. Box 145801
Salt Lake City, UT 84114-5801

Re: Application of Permit to Drill
Anschutz Ranch Deep #4-26 Well
Township 4 North, Range 7 East
Sec. 26: NW
Salt Lake City, Utah

Dear Mr. Hebertson:

With regard to our Application for Permit to Drill the referenced well attached please find revised Map's prepared by Uinta Engineering & Surveying, Inc., reflecting the Escape Road for the Anschutz Ranch Deep #4-26 Well.

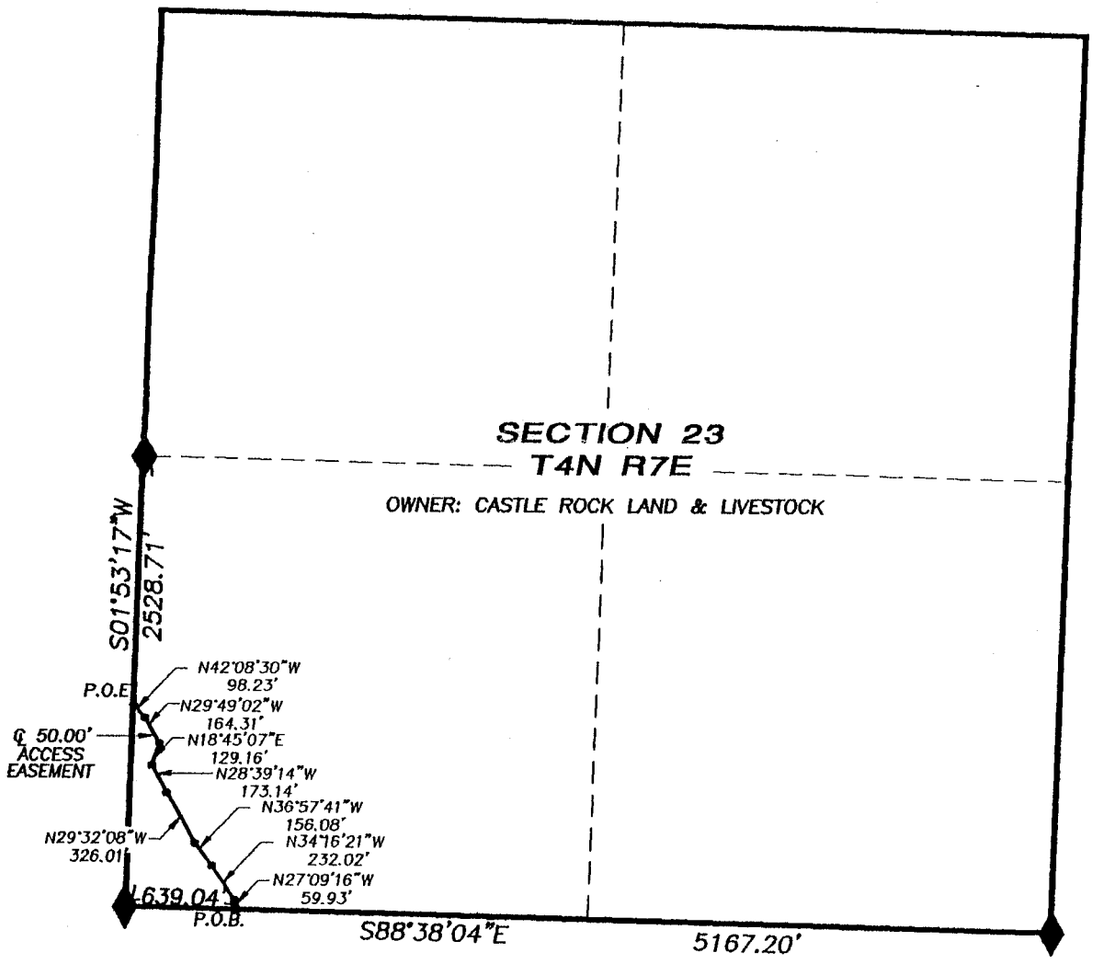
Sincerely,

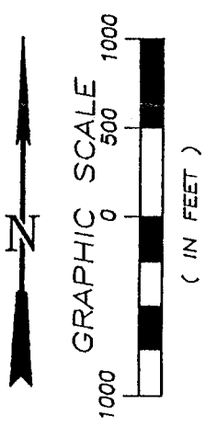
ANSCHUTZ EXPLORATION CORPORATION

Pamela S. Kalstrom
Sr. Landman, CPL-ESA

PSK/hdb

Attachment





LEGAL DESCRIPTION

AN ACCESS EASEMENT LOCATED IN THE SW1/4 OF THE SW1/4 OF SECTION 23, TOWNSHIP 4 NORTH, RANGE 7 EAST OF THE SALT LAKE BASE AND MERIDIAN, SUMMIT COUNTY, UTAH, BEING 50.00 FEET WIDE, 25.00 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 23, THENCE S 88°38'04" E, 639.04' FEET ALONG THE SOUTH LINE THEREOF TO THE POINT OF BEGINNING;

THENCE N 27°09'16" W, 59.93 FEET;
THENCE N 34°16'21" W, 232.02 FEET;
THENCE N 36°57'41" W, 156.08 FEET;
THENCE N 29°32'08" W, 326.01 FEET;
THENCE N 28°39'14" W, 173.14 FEET;
THENCE N 18°45'07" E, 129.16 FEET;
THENCE N 29°49'02" W, 164.31 FEET;

THENCE N 42°08'30" W, 98.23 FEET TO THE POINT OF ENDING OF SAID EASEMENT, SAID POINT LYING ON THE WEST LINE OF SAID SECTION, N 01°53'17" E, 1128.44 FEET FROM THE SOUTHWEST CORNER THEREOF.

SAID EASEMENT BEING 1338.88 FEET OR 81.144 RODS, MORE OR LESS, IN LENGTH.

CERTIFICATE OF SURVEYOR

STATE of WYOMING)
COUNTY of UINTA) ss

I, STANTON G. TAGGART, OF UINTA ENGINEERING AND SURVEYING, INC. HEREBY STATE THAT I AM BY OCCUPATION A PROFESSIONAL LAND SURVEYOR EMPLOYED BY ANSCHUTZ EXPLORATION TO MAKE THE SURVEY OF THE EASEMENT DESCRIBED AND SHOWN ON THIS PLAT; THAT THE SURVEY OF SAID WORKS WAS MADE UNDER MY SUPERVISION AND UNDER MY AUTHORITY AND THAT SUCH SURVEY IS ACCURATELY REPRESENTED ON THIS MAP.

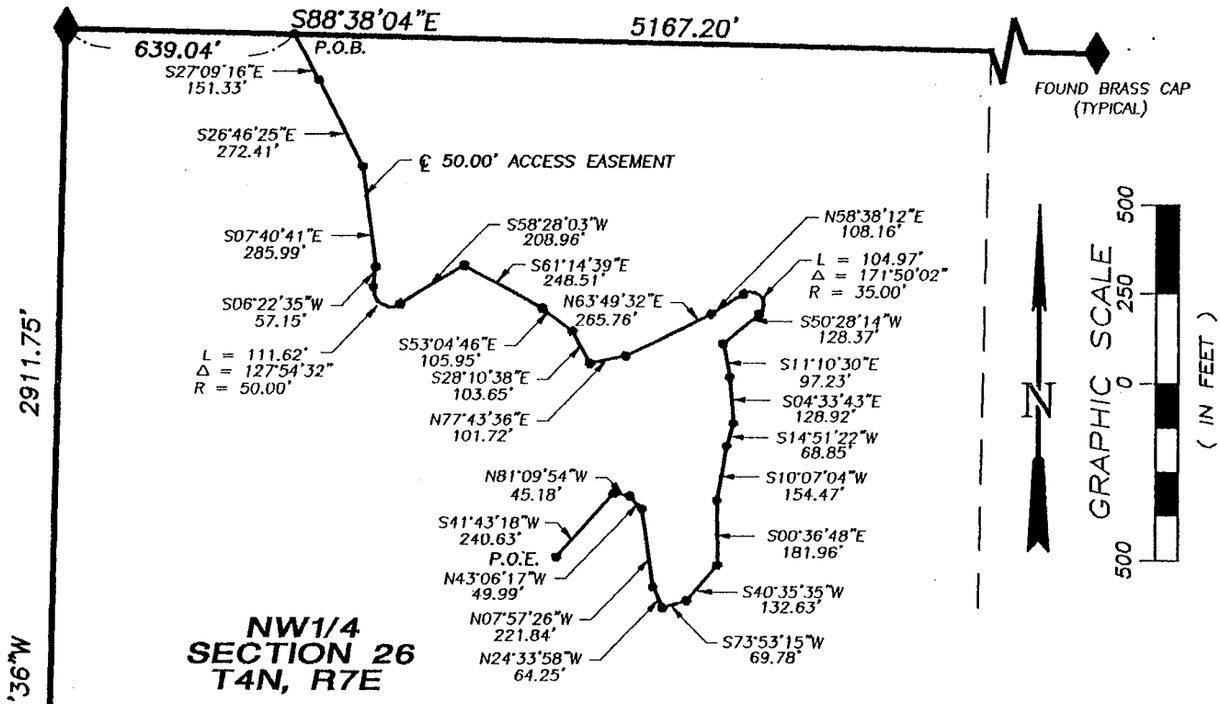
LICENSED LAND SURVEYOR
8/3/98
No. 278046
STANTON G. TAGGART
STATE OF UTAH

Map Showing
ESCAPE ROAD
ANSCHUTZ EXPLORATION
ANSCHUTZ RANCH DEEP
4-26 WELL
SW1/4 SW1/4 of SECTION 23
T4N, R7E, S.L.B.M.
SUMMIT COUNTY, UTAH

UINTA ENGINEERING & SURVEYING, INC.
808 MAIN STREET
EVANSTON, WYOMING 82930
(307) 789-3602

DATE: 08/03/98 JOB #: 98-19-02
DISK #: 193 FILE: 19-02SEC
DRAWN BY: Jeff Henderson

ANY CHANGE, ADDITION OR DELETION OF ANY PART OF THIS DESCRIPTION WILL ACT TO VOID ANY WARRANTY OR RESPONSIBILITY, EXPRESS OR IMPLIED, THAT I MAY HAVE TOWARDS THE SUBJECT PROPERTY.



NW1/4
SECTION 26
T4N, R7E

OWNER: CASTLE ROCK LAND & LIVESTOCK

LEGAL DESCRIPTION

AN ACCESS EASEMENT LOCATED IN THE NW1/4 OF SECTION 26, TOWNSHIP 4 NORTH, RANGE 7 EAST OF THE SALT LAKE BASE AND MERIDIAN, SUMMIT COUNTY, UTAH, BEING 50.00 FEET WIDE, 25.00 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE:

COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 26, THENCE S 88°38'04" E, 639.04 FEET ALONG THE NORTH LINE THEREOF TO THE POINT OF BEGINNING;

THENCE S 27°09'16" E, 151.33 FEET; THENCE S 26°46'25" E, 272.41 FEET;

THENCE S 07°40'41" E, 285.99 FEET; THENCE S 06°22'35" W, 57.15 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE TO THE NORTH AND HAVING A RADIUS OF 50.00 FEET;

THENCE SOUTHERLY 111.62 FEET ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 127°54'32", THE LONG CHORD OF WHICH BEARS S 57°34'41" E, 89.85 FEET; THENCE N 58°28'03" E, 208.96 FEET;

THENCE S 61°14'39" E, 248.51 FEET; THENCE S 53°04'46" W, 105.95 FEET;

THENCE S 28°10'38" E, 103.65 FEET; THENCE N 77°43'36" E, 101.72 FEET;

THENCE N 63°49'32" E, 265.76 FEET; THENCE N 58°38'12" E, 108.16 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE TO THE SOUTHWEST AND HAVING A RADIUS OF 35.00 FEET;

THENCE NORTHERLY 104.97 FEET ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 171°50'02", THE LONG CHORD OF WHICH BEARS S 35°26'47" E, 69.82 FEET;

THENCE S 50°28'14" W, 128.37 FEET; THENCE S 11°10'30" E, 97.23 FEET;
THENCE S 04°33'43" E, 128.92 FEET; THENCE S 14°51'22" W, 68.85 FEET;
THENCE S 10°07'04" W, 154.47 FEET; THENCE S 00°36'48" E, 181.96 FEET;
THENCE S 40°35'35" W, 132.63 FEET; THENCE S 73°53'15" W, 69.78 FEET;
THENCE N 24°33'58" W, 64.25 FEET; THENCE N 07°57'26" W, 221.84 FEET;
THENCE N 43°06'17" W, 49.99 FEET; THENCE N 81°09'54" W, 45.18 FEET;
THENCE S 41°43'18" W, 240.63 FEET TO THE POINT OF ENDING OF SAID EASEMENT, SAID POINT LYING ON THE NORTHERLY EDGE OF THE ANSCHUTZ EXPLORATION ANSCHUTZ RANCH DEEP 4-26 WELL SITE.

SAID EASEMENT BEING 3710.28 FEET OR 224.865 RODS, MORE OR LESS, IN LENGTH.

CERTIFICATE OF SURVEYOR

STATE of WYOMING)
COUNTY of UINTA) ss

I, STANTON G. TAGGART, OF UINTA ENGINEERING AND SURVEYING, INC. HEREBY STATE THAT I AM BY OCCUPATION A PROFESSIONAL LAND SURVEYOR EMPLOYED BY ANSCHUTZ EXPLORATION TO MAKE THE SURVEY OF THE EASEMENT DESCRIBED AND SHOWN ON THIS PLAT; THAT THE SURVEY OF SAID WORKS WAS MADE UNDER MY SUPERVISION AND UNDER MY AUTHORITY AND THAT SUCH SURVEY IS ACCURATELY REPRESENTED ON THIS MAP.

LICENSED LAND SURVEYOR
8/3/98
No. 278046
STANTON G. TAGGART
STATE OF UTAH

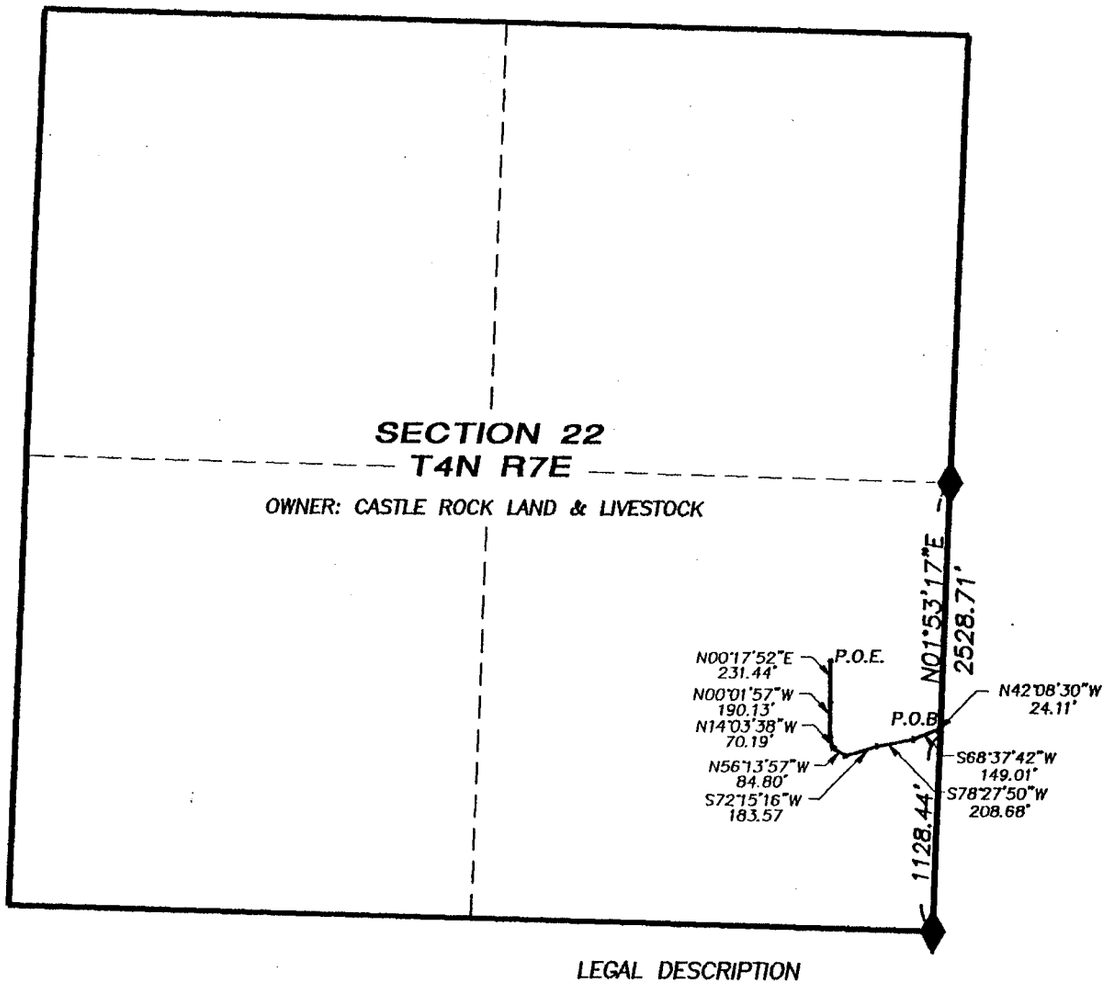
Map Showing

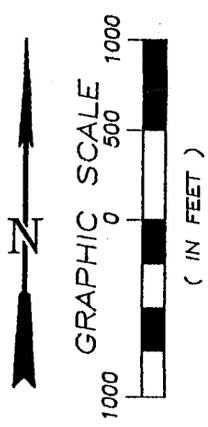
ESCAPE ROAD
ANSCHUTZ EXPLORATION
ANSCHUTZ RANCH DEEP
4-26 WELL
NW1/4 SECTION 26
T4N R7E S.L.B.M
SUMMIT COUNTY, UTAH

UINTA ENGINEERING & SURVEYING, INC.
808 MAIN STREET
EVANSTON, WYOMING 82930
(307) 789-3602

DATE: 08/03/98 JOB #: 98-19-02
DISK #: 197 FILE: 19-02SEC
DRAWN BY: Jeff Henderson

ANY CHANGE, ADDITION OR DELETION OF ANY PART OF THIS DESCRIPTION WILL ACT TO VOID ANY WARRANTY OR RESPONSIBILITY, EXPRESS OR IMPLIED, THAT I MAY HAVE TOWARDS THE SUBJECT PROPERTY.





LEGAL DESCRIPTION

AN ACCESS EASEMENT LOCATED IN THE E1/2 OF THE SE1/4 OF SECTION 22, TOWNSHIP 4 NORTH, RANGE 7 EAST OF THE SALT LAKE BASE AND MERIDIAN, SUMMIT COUNTY, UTAH, BEING 50.00 FEET WIDE, 25.00 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 22, THENCE N 01°53'17" E, 1128.44 FEET ALONG THE EAST LINE THEREOF TO THE POINT OF BEGINNING;

THENCE N 42°08'30" W, 24.11 FEET;
THENCE S 68°37'42" W, 149.01 FEET;
THENCE S 78°27'50" W, 208.68 FEET;
THENCE S 72°15'16" W, 183.57 FEET;
THENCE N 56°13'57" W, 84.80 FEET;
THENCE N 14°03'38" W, 70.19 FEET;
THENCE N 00°01'57" W, 190.13 FEET;
THENCE N 00°17'52" E, 231.44 FEET TO THE POINT OF ENDING OF SAID EASEMENT, SAID POINT LYING ON AN EXISTING IMPROVED ROAD.

SAID EASEMENT BEING 1141.93 FEET OR 69.208 RODS, MORE OR LESS, IN LENGTH.

CERTIFICATE OF SURVEYOR

STATE of WYOMING)
COUNTY of UINTA) ss

I, STANTON G. TAGGART, OF UINTA ENGINEERING AND SURVEYING, INC. HEREBY STATE THAT I AM BY OCCUPATION A PROFESSIONAL LAND SURVEYOR EMPLOYED BY ANSCHUTZ EXPLORATION TO MAKE THE SURVEY OF THE EASEMENT DESCRIBED AND SHOWN ON THIS PLAT; THAT THE SURVEY OF SAID WORKS WAS MADE UNDER MY SUPERVISION AND UNDER MY AUTHORITY AND THAT SUCH SURVEY IS ACCURATELY REPRESENTED ON THIS MAP.

LICENSED LAND SURVEYOR
8/3/98
No. 278046
STANTON G. TAGGART
STATE OF UTAH

Map Showing
ESCAPE ROAD
ANSCHUTZ EXPLORATION
ANSCHUTZ RANCH DEEP 4-26 WELL
E1/2 SE1/4 of SECTION 22
T4N, R7E, S.L.B.M.
SUMMIT COUNTY, UTAH

UINTA ENGINEERING & SURVEYING, INC.
808 MAIN STREET
EVANSTON, WYOMING 82930
(307) 789-3602

DATE: 08/03/98 JOB #: 98-19-02
DISK #: 193 FILE: 19-02SEC
DRAWN BY: Jeff Henderson

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ANSCHUTZ
EXPLORATION CORPORATION
1221 LAMAR • SUITE 1100 • HOUSTON, TEXAS 77010 • 713-651-0281 • FAX 713-750-0257

August 26, 1998

RECEIVED
AUG 27 1998
DIV. OF OIL, GAS & MINING

State of Utah
Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801

Attn.: Mike Hebertson

RE: Anschutz Ranch Deep 4-26
Summit County, Utah

Dear Mr. Hebertson:

Please find the enclosed Sundry Notice for the Anschutz Ranch Deep 4-26. This notice correctly shows the proposed bottomhole location of the well in Section 22 of Township 4 North, Range 7 East.

I apologize for any confusion this may have created. Please call me if you have questions or need additional information.

Sincerely,

Anschutz Exploration Corporation

James Oursland
Engineering Mgr.

JPO:misc\ARD426.doc
Enclosures

FORM 9

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

5. Lease Designation and Serial Number: Fee

6. If Indian, Allottee or Tribe Name: N/A

7. Unit Agreement Name: N/A

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells. Use APPLICATION FOR PERMIT TO DRILL OR DEEPEN form for such proposals.

8. Well Name and Number: Anschutz Ranch Deep 4-26

1. Type of Well: OIL ☐ GAS ☒ OTHER:

9. API Well Number: 43-043-30320

2. Name of Operator: The Anschutz Corporation

10. Field and Pool, or Wildcat: Wildcat

3. Address and Telephone Number: 555 17th Street, Suite 2400
Denver, Colorado 80202

4. Location of Well
Footages: Surface location: 1623' FNL &1328' FWL, Sec. 26, T4N, R7E
Proposed BHL: 850' FSL and 1150' FEL, Sec. 22, T4N, R7E
QQ, Sec., T., R., M.:
County: Summit
State: Utah

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENT
(Submit in Duplicate)

- ☐ Abandon
- ☐ Repair Casing
- ☐ Change of Plans
- ☐ Convert to Injection
- ☐ Fracture Treat or Acidize
- ☐ Multiple Completion
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Recomplete
- ☐ Perforate
- ☐ Vent or Flare
- ☐ Water Shut-Off
- ☒ Other Correct proposed bottomhole location

Approximate date work will start September 1, 1998

SUBSEQUENT REPORT
(Submit Original Form Only)

- ☐ Abandon *
- ☐ Repair Casing
- ☐ Change of Plans
- ☐ Convert to Injection
- ☐ Fracture Treat or Acidize
- ☐ Other
- ☐ New Construction
- ☐ Pull or Alter Casing
- ☐ Perforate
- ☐ Vent or Flare
- ☐ Water Shut-Off

Date of work completion

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION REPORT AND LOG form.

* Must be accompanied by a cement verification report.

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

RECEIVED
AUG 27 1998
DIV. OF OIL, GAS & MINING

13.
Name & Signature: James Oursland
Title: Engineering Manager
Date: 8/26/98

(This space for State use only)

(5/94)

(See Instructions on Reverse Side)

DIVISION OF OIL, GAS AND MINING

CONFIDENTIAL

SPUDDING INFORMATION

Name of Company: ANSCHUTZ CORP

Well Name: ANSCHUTZ RANCH DEEP 4-26

Api No. 43-043-30320 Lease Type: FEE

Section 26 Township 4N Range 7E County SUMMIT

Drilling Contractor SST RIG # 88

SPUDDED:

Date 8/30/98

Time 2:00 AM

How ROTARY

Drilling will commence

Reported by BOBBY COOPER

Telephone # 1-307-679-2312

Date: 9/1/98 Signed: JLT

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING
DRILLING INSPECTION FORM

OPERATOR: ANSCHUTZ CORP. COMPANY REP: BOBBY COOPER

WELL NAME: ANSCHUTZ RANCH DEEP 4-26 API NO: 43-043-30320

QTR/QTR: SE/NW SECTION: 26 TWP: 4N RANGE: 7E

CONTRACTOR: SST RIG NUMBER: 88

INSPECTOR: J. THOMPSON TIME: 11:45 AM-1:00 AM DATE: 9/1-2/98

TYPE OF WELL: OIL: _____ GAS: X WIW: _____

SPUD DATE: DRY: _____ ROTARY: 8/30/98 PROJECTED T.D.: 16,000'

OPERATIONS AT TIME OF VISIT: Just completed drilling surface hole, coming out of hole standing back collars and laying down reamers.

WELL SIGN: N MUD WEIGHT: _____ LBS/GAL BOPE: _____

BLOOIE LINE: Y FLARE PIT: Y H2S POTENTIAL: Y

ENVIRONMENTAL:

RESERVE PIT: Y FENCED: _____ LINED: Y PLASTIC: Y

RUBBER: _____ BENTONITE: _____ SANITATION: _____

WATER ENCOUNTERED DURING DRILLING: _____

DEPTH: _____

BOPE TEST RECORDED IN THE RIG DAILY TOUR BOOK: N/A

REMARKS: While drilling surface hole, hit lost circulation zone @ 460'. Pumped 70 bbls (8 sx) multi seal and 10 sx of cedar fiber to seal zone. TD surface hole @ 1515'.

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING
CEMENTING OPERATIONS

OPERATOR: ANSCHUTZ CORP. API NO: 43-043-30320

WELL NAME: ANSCHUTZ RANCH DEEP 4-26 LEASE: FEE

QTR/QTR: SE/NW SECTION: 26 TOWNSHIP: 4N RANGE: 7E

PLUGGING COMPANY NAME: _____

COMPANY REPRESENTATIVE: BOBBY COOPER

DOGM INSPECTOR: J. THOMPSON DATE: 9/1-2/98

TYPE OF WELL: OIL: ____ GAS: X WIW: ____

CASING INFORMATION:

SURFACE CASING: X OTHER: _____

SIZE: 13 5/8" GRADE: 54# K55 HOLE SIZE: 17 1/2 DEPTH: 1515.32'

PIPE CENTRALIZED: YES: X NO: ____ CEMENTING CO. BJ Services

CEMENTING STAGES: 1 STAGE TOOL @: _____

SLURRY INFORMATION:

1. LEAD See attached BJ report of operations.
2. SLURRY: _____
3. TAIL: _____
4. SLURRY: _____
5. SLURRY: _____

---

6. CEMENT TO SURFACE: YES: X NO: ____ LOST RETURNS: YES: ____ NO: X
7. 1" INFORMATION: CLASS: N/A ADDITIVES: _____
8. CEMENT WEIGHT: ____ CEMENT TO SURFACE: ____ LENGTH OF 1": ____ FT.

ADDITIONAL COMMENTS: Got good returns to surface. Cement fell +-1' in 30 minutes. Will WOC 4 hrs, cut off, rig up 5000# BOPES and test. Will send test results to DOGM.

CEMENT JOB REPORT

Page 1 of 1

CUSTOMER	DATE	F.R. #	SERV. SUPV.
Anschutz	9-1-98	2249116 88	Joel D. Martin

LEASE & WELL NAME-OCSG	LOCATION	COUNTY-PARISH-BLOCK
Ranch Deep 4-26	26 T4N R7E	Summit & Ut

DISTRICT	DRILLING CONTRACTOR RIG #	TYPE OF JOB
Rock Springs	SST 88	13 3/8 Surface

SIZE & TYPE OF PLUGS		LIST-CSG-HARDWARE
TOP	13 3/8 Rubber	Customer supplied
BTM		

MATERIALS FURNISHED BY BJ	SLURRY WGT PPG	SLURRY YLD FT³	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER
20 bbls Mud Clean I	8.3				20	20
611 sx Prem Lite 2% CaCl2 1/4#/sx cello-flake	12	2.27	12.97	5:30	247	188.6
626 sx G 2% CaCl2 1/4#/sx cello-flake	15.5	1.17	5.00	2:30	130	74.5
Available Mix Water 400 Bbl. Available Displ. Fluid 50 Bbl.			TOTAL		397	283.1

HOLE SIZE	HOLE % EXCESS	HOLE DEPTH	TBG-CSG-D.P. SIZE	TBG-CSG-D.P. WGT.	TBG-CSG-D.P. TYPE	TBG-CSG-D.P. DEPTH	TBG-CSG-D.P. SIZE	TBG-CSG-D.P. WGT.	TBG-CSG-D.P. TYPE	TBG-CSG-D.P. DEPTH	COLLAR DEPTHS SHOE	COLLAR DEPTHS FLOAT	COLLAR DEPTHS STAGE
17 1/2	100	1515 ~~1543~~	13 3/8	54.5	K55	1510 ~~1545~~					1510 ~~1545~~	1465 ~~1504~~	

LAST CASING SIZE	LAST CASING WGT	LAST CASING TYPE	LAST CASING DEPTH	PKR-CMT RET-BR PL-LINER BRAND & TYPE	PKR-CMT RET-BR PL-LINER DEPTH	PERF. DEPTH TOP	PERF. DEPTH BTM	TOP CONN SIZE	TOP CONN THREAD	WELL FLUID TYPE	WELL FLUID WGT.
								13 3/8	Buttress	Mud	9 ~~8.4~~

CAL. DISPL. VOL.-Bbl. TBG.	CSG.	CSG.	TOTAL	CAL. PSI BUMP PLUG	CAL. MAX PSI TO REV.	OP. MAX SQ. PSI	MAX TBG PSI RATED	MAX TBG PSI OP.	MAX CSG PSI RATED	MAX CSG PSI OP.	DISPL. FLUID TYPE	DISPL. FLUID WGT.	WATER SOURCE
		226 ~~232~~	226 ~~232~~						2,730	2154	H2O	8.34	Mg

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING:

PRESSURE/RATE DETAIL TIME HR: MIN.	PRESSURE-PSI PIPE	PRESSURE-PSI ANNULUS	RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	EXPLANATION
						SAFETY MEETING: BJ CREW ☒ CO. REP. ☐
						TEST LINES 3000 PSI
						CIRCULATING WELL-RIG ☒ BJ ☐
2200						On Location
1915						Stab head
2028	3000				H2O	Pressure test lines
2034	450		6		H2O	Start Mud Clean I
2037	1230		9	0	Cement	Start Lead Cement 12 ppg
2105	600		5	247	Cement	Start tail Cement 15.8 ppg
2131				130		Drop Plug
2133	466		4		H2O	Start Displacement
2140	1200 ~~925~~		9		Mud	Start Mud Displacement
2149	800		9	118	Mud	Cement to pit
2155	[illegible]		6.5	92	H2O	Slow Rate swap back to H2O
2159	460		[illegible]	6	H2O	Slow Rate to Bump Plug
[illegible]	1202			10		Bump Plug Float held

BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	Bbl. CMT RETURNS/ REVERSED	TOTAL Bbl. PUMPED	PSI LEFT ON CSG	SPOT TOP CEMENT	SERV. SUPV.
Y N	460	Y N	185	623	0	NO	[signature]

1552 (6/96)

DIVISION OF OIL, GAS AND MINING

ENTITY ACTION FORM - FORM 6

OPERATOR ANSCHUTZ EXPLORATION CORPORATION

ADDRESS 555 17th St., Ste. 2400
Denver, CO 80202

OPERATOR ACCT. NO. N0060

ACTION CODE	CURRENT ENTITY NO.	NEW ENTITY NO.	API NUMBER	WELL NAME	WELL LOCATION QQ	SC	TP	RG	COUNTY	SPUD DATE	EFFECTIVE DATE
A	99999	12453	43-043-30320	Anschutz Ranch Deep 4-26	SENW	26	4N	7E	Summit	8/30/98	

WELL 1 COMMENTS:
New well, spud 8/30/98. entity added 9.10.98. KDR

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WELL 2 COMMENTS:

WELL 3 COMMENTS:

WELL 4 COMMENTS:

WELL 5 COMMENTS:

ACTION CODES (See instructions on back of form)
- A - Establish new entity for new well (single well only)
- B - Add new well to existing entity (group or unit well)
- C - Re-assign well from one existing entity to another existing entity
- D - Re-assign well from one existing entity to a new entity
- E - Other (explain in comments section)

NOTE: Use COMMENT section to explain why each Action Code was selected.

(3/89)

RECEIVED
SEP 07 1998
DIV. OF OIL, GAS & MINING

Susan M. Bulano
Signature

Operations Tech. 9/3/98
Title Date

Phone No. (303) 298-1000

ANSCHUTZ
EXPLORATION CORPORATION
555 SEVENTEENTH STREET • SUITE 2400 • DENVER, COLORADO 80202 • 303-298-1000 • FAX 303-298-8881

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September 23, 1998

Via Federal Express

State of Utah
Dept. of Natural Resources
Division of Oil, Gas and Mining
1594 W. North Temple, Suite 1210
Salt Lake City, UT 84114-5801
Attn: Mr. John R. Baza, Associate Director

RE: Anschutz Ranch Deep #4-26
SENW Section 26, T4N, R7E
Summit County, Utah
API No. 43-043-30320
H2S Contingency Plan – Page 14, Drilling Rig & Safety Equipment Locations

Dear Mr. Baza:

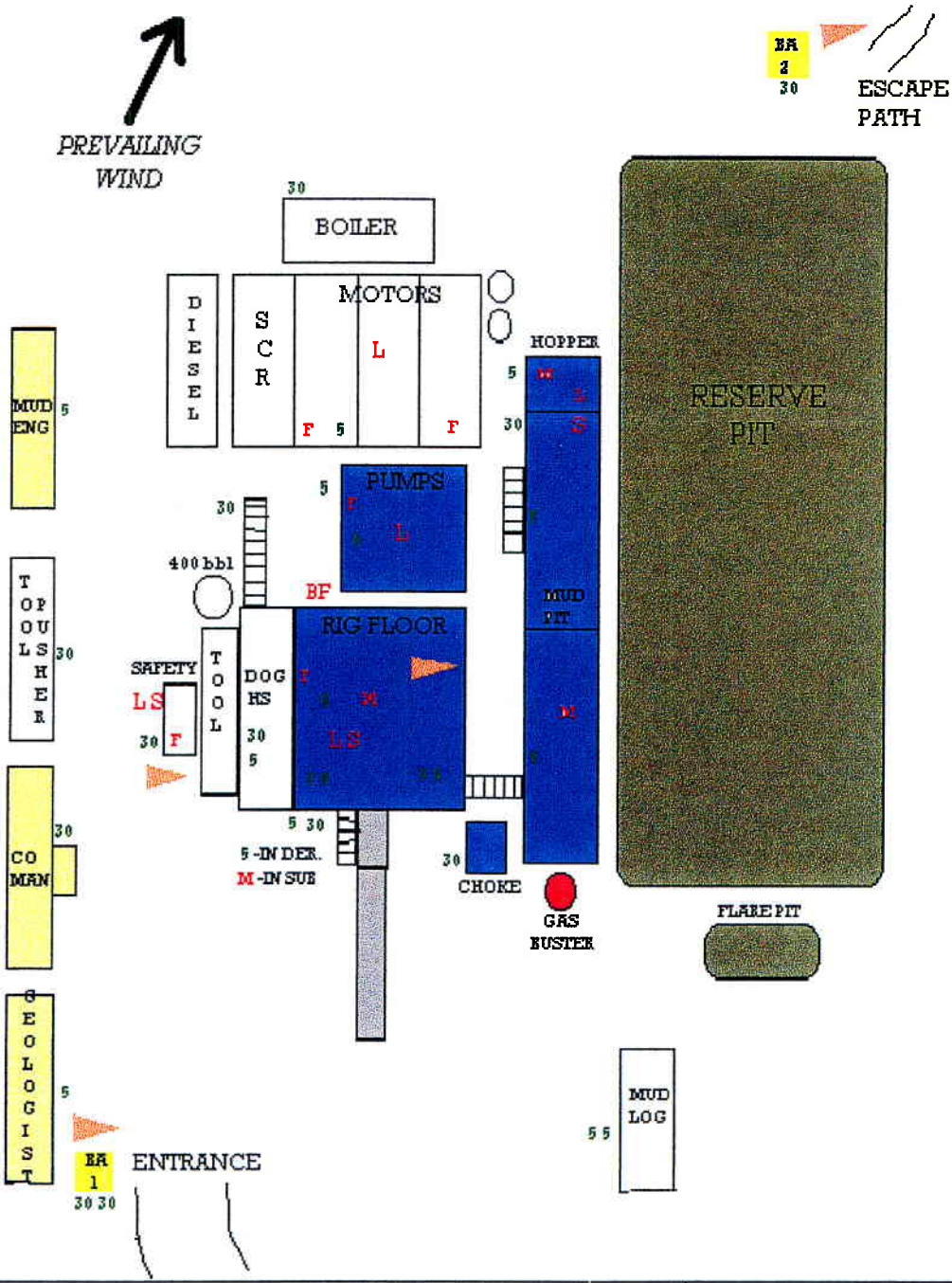
Enclosed are (2) copies of the referenced page to be inserted into the (2) copies of the H2S Contingency Plan for the ARD #4-26 well which were previously submitted to your office.

Feel free to contact me at (303) 299-1344 with any questions.

ANSCHUTZ EXPLORATION CORPORATION

Susan M. Balano
Operations Technician

SMB
Enclosures



LEGEND		
30 =30-MIN SCBA 5=5-MIN SKA-PAK L =WARNING LIGHT S =WARNING SIREN M =MONITOR SENSOR HEAD	N	F =FIRE EXTINGUISHER BF =BUG FAN =SAFE BRIEFING AREA =WINDSOCK

ANSCHUTZ #4-26 WELL SITE

SST DRLG. RIG #88

43-043-30320

DOUBLE JACK TESTING & SERVICES, INC.
Phone (307) 789-9213

B.O.P. TEST REPORT

B.O.P. TEST PERFORMED ON (DATE) 10-1-98

OIL COMPANY Anschutz corp

WELL NAME & NUMBER Anschutz Ranch Deep 4-26

SECTION 26

TOWNSHIP 4N

RANGE 7E

COUNTY & STATE Summit ut

DRILLING CONTRACTOR SST 88

OIL COMPANY SITE REPRESENTATIVE Bob Capper

RIG TOOL PUSHER Morris Terry

TESTED OUT OF Evanston

NOTIFIED PRIOR TO TEST —

COPIES OF THIS TEST REPORT SENT TO: BLM S.L.C.
ST of ut.

ORIGINAL CHART & TEST REPORT ON FILE AT:

DOUBLE JACK TESTING & SERVICES, INC.
P O BOX 2097
EVANSTON, WY 82930

TESTED BY: Darren Merrick

RECEIVED
OCT 08 1998
DIV. OF OIL, GAS & MINING

Double Jack Testing & Services Inc.

FIELD TICKET
№ 15433

Accounting Office: P.O. Box 516 Shoshoni, WY 82649 • (307) 876-9390

Field Operations:
Shoshoni, WY (307) 876-2308
Rock Springs, WY (307) 382-4020
Evanston, WY (307) 789-9213
Big Piney, WY (307) 276-5265
Vernal, UT (801) 781-0448

DATE 10-1-98
☑ OPERATOR Anschutz
☐ CONTRACTOR SST 88
WELL NAME Anschutz Ranch Deep 4-26

COUNTY	STATE	SECTION	TOWNSHIP	RANGE
Summit	UT	26	4N	7E

Items Tested:

	LOW TEST PSI	TIME HELD MINUTES	HIGHTEST PSI	TIME HELD MINUTES
Top Pipe Rams	250	5	5000	10
Bottom Pipe Rams				
Blind Rams	250	5	5000	10
Annular B.O.P.	250	5	2500	10
Choke Manifold	250	5	5000	10
Choke Line	250	5	5000	10
Kill Line	250	5	5000	10
Super Choke	250	5	5000	10
Upper Kelly	250	5	5000	10
Lower Kelly	250	5	5000	10
Floor Valve	250	5	5000	10
Dart Valve	250	5	5000	10
Casing				

Closing Unit PSI 3000
Closing Time of Rams 4 sec
Closing Time of Annular 18 sec
Closed Casing Head Valve yes
Set Wear Sleeve yes

COMMENTS

ADDITIONAL TESTS & COMMENTS

BLM SLC.
state of ut
Anschutz Bob Copper
SST

TEST PLUG 12" C-22
RET. TOOL on loc.
TOP SUB. 4½ IF
KELLY SUB.
X-OVER SUB.

RATES

UNIT RATES	7 HR set up charge	800.00
ADDITIONAL	2 Row nipple up @ 150 per Row	300.00
MILEAGE	40 miles @ 1.00 per mile	40.00
~~METHANOL~~	2 HR Labor @ 25.00 per HR	50.00
OTHER	2 BX 160 Ring gaskets @ 64.00 per	128.00

SUBTOTAL 1318.00
TAX
TOTAL

PURCHASE ORDER #

Darren Merrick
TESTED BY

B J Cop
COMPANY REPRESENTATIVE

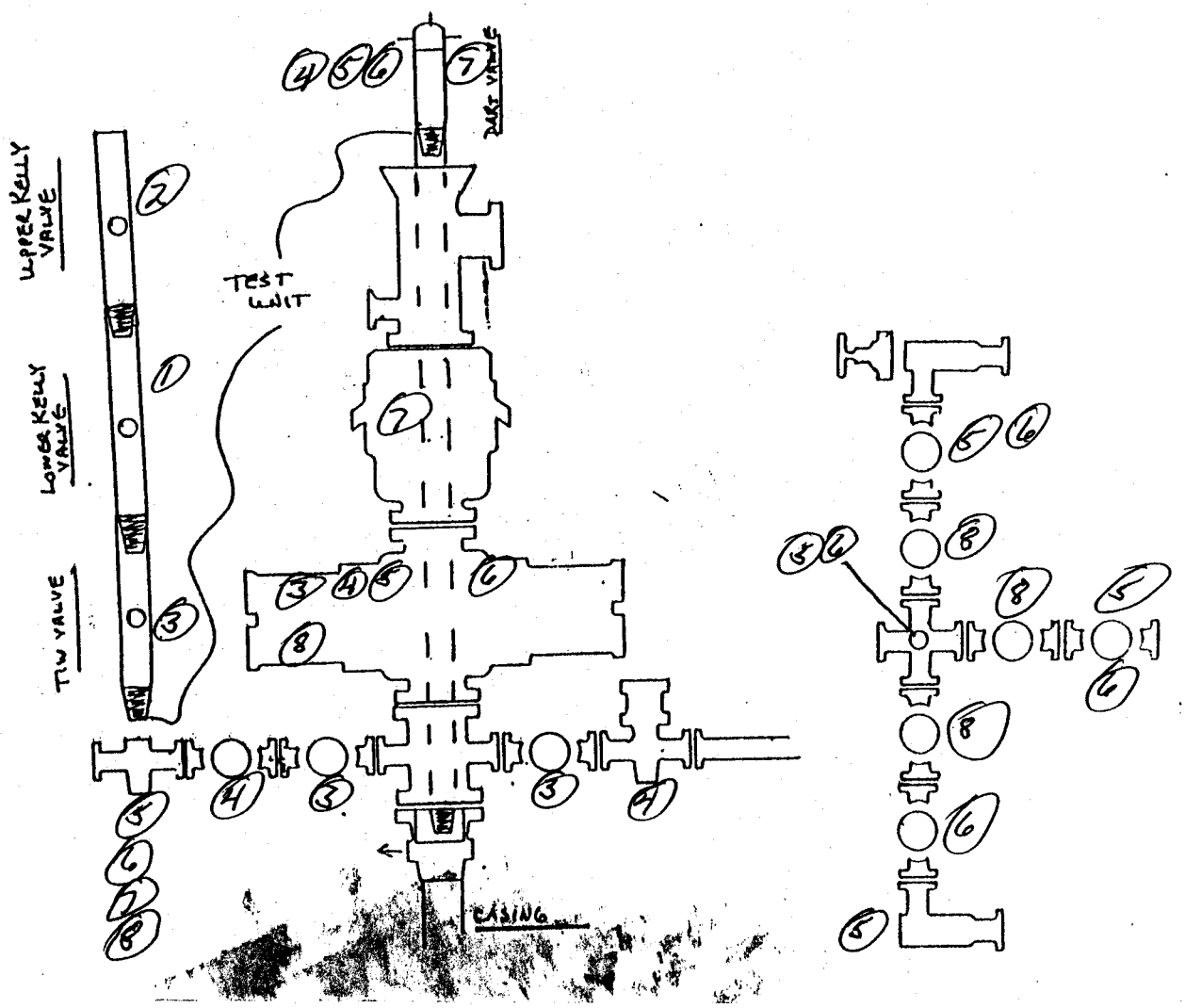
127 Thank you!
DOUBLE JACK TESTING UNIT NUMBER

NOTICE TO ALL CUSTOMERS

If this account shall not be paid when due and it is placed with an attorney for collection, or if suit be instituted for collection, the undersigned agree(s) to pay in either case, reasonable expense of collection including attorney's fees and court cost in compliance with TRUTH IN LENDING AND THE UNIFORM CONSUMER CREDIT CODE, the following information disclosure, under the terms of our regular accounts, all amounts for service due and payable within THIRTY (30) DAYS from the receipt of an invoice for such services. A LATE CHARGE will be assessed when accounts are not paid when due. THE LATE CHARGE is computed by a "periodic rate" 1-3/4% PER MONTH which is an ANNUAL PERCENTAGE RATE OF 21% to the previous balance in the account on the billing date. No further credit can be extended on unpaid delinquent accounts until the delinquent account is paid in full. The contractor will not be held liable for damages caused by acts of God, or unforeseen circumstances that could not be reasonably anticipated in performing the work done as set forth above.

COMPANY	LEASE & WELL NAME	TEST DATE	RIG# & NAME
Anschutz	Anschutz Ranch Deep 4-24	10-1-98	SST 88

TEST #	TIME	ITEMS TESTED
1	11:50	11:50-12:55 250 psi 11:55-12:05 5000 psi Lower Kelly
2	12:10	12:10-12:15 250 psi 12:15-12:25 5000 psi upper Kelly
3	12:50	12:50-12:55 250 psi 12:55-1:05 5000 psi Pipe Rams
		Inside Kill, HCR, safety valve
4	1:10	1:10-1:15 250 psi 1:15-1:25 5000 psi Pipe Rams
		outside choke & Kill line valves Dart valve
5	1:30	1:30-1:35 250 psi 1:35-1:45 5000 psi Pipe Rams Dart valve
		outside manifold valves super choke check valve
6	1:50	1:50-1:55 250 psi 1:55-2:05 5000 psi Pipe Rams
		Dart valve outside manifold valves check valve
7	2:15	2:15-2:20 250 psi 2:20-2:30 2500 psi Hydril
8	2:20	2:20-2:25 250 psi 2:25-2:35 5000 psi Blind Rams
		check valve Inside manifold valves



6 AM
NOON
6 PM
MIDNIGHT
PRINTED IN U.S.A.
TESTED BY:
DOUBLE JACK TESTING & SERVICES, INC.
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CASPER (307) 265-3678
SHOSHONI (307) 876-2308
VERNAL (801) 781-0448
MICHIGAN (517) 773-4800
GC GC-15430

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THIS REPORT
WAS NOT BOUND.

T. M. McCoy

RECEIVED
NOV 27 1998
DIV. OF OIL, GAS & MINING

ANSCHUTZ EXPLORATION CORPORATION

ANSCHUTZ RANCH DEEP #4-26

SE NW SEC 26 T4N R7E

SUMMIT COUNTY, UTAH

WELLSITE GEOLOGIST'S REPORT

43-043-30320

TIGHT HOLE

CONFIDENTIAL

T. M. McCOY & CO., INC.
CONSULTING GEOLOGISTS

SKYLINE RANCH • P.O. BOX 608 • WILSON, WYOMING 83014 • 307 733-4332

MICROFILMED

ANSCHUTZ EXPLORATION CORPORATION

ANSCHUTZ RANCH DEEP #4-26

SE NW SEC 26 T4N R7E

SUMMIT COUNTY, UTAH

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SUMMARY

Anschutz Exploration Corporation will run 7" casing at the Anschutz Ranch Deep #4-26 to 13503' TD for production of sour gas from the Pennsylvanian Weber Sandstone and from the Permian Phosphoria Formation. Evaluation included 1-ft computerized drilling time and excellent samples as well as computerized hot-wire total gas and manually logged FID chromatography from a 2-man mud logging unit. Schlumberger ran induction, laterolog, neutron, density, sonic, FMS formation micro-scanner and FMI fullbore micro-imager, dipmeter, and directional logs. There were no cores or DSTs.

Prospect

The principal deeper-pool objectives were the Phosphoria and Weber at Anschutz Ranch field, part of the western trend of Paleozoic sour gas production of the Utah-Wyoming thrust belt. The Amoco Production Company Island Ranching #2, a 1979 Twin Creek Limestone and Nugget Sandstone producer, was drilled from the same pad as the Anschutz Ranch Deep #4-26. The Anschutz Corporation Anschutz Ranch #34-2, NW NW SEC 34 T4N R7E, lies 1 1/2 miles to the southwest and was used for correlation below the Nugget.

Drilling, Logging, and Well Control

13 3/8" surface casing was set in the Wasatch at 1511'. The 240-ft thick Preuss Salt was drilled without difficulty with salt-saturated mud. Mud losses in the Nugget ranged up to 1300 B/24 hrs and were controlled either with LCM sweeps or by carrying LCM and bypassing the shakers. Salt-saturated mud was maintained to 9194' where 9 5/8" intermediate casing was set through the Preuss Salt, Twin Creek Limestone, Nugget Sandstone, Ankareh Red Beds, and into the top of the Thaynes Limestone. This casing point contributed to the remarkably good hole conditions. Mud losses in the Thaynes, Phosphoria, and Weber were controlled with LCM sweeps; acid-soluble LCM was used in the Phosphoria and in the Weber.

Stabilization and normal weight on bit let the hole drift smoothly NW across the steep southeast flank of the structure. Hole deviation increased from 7 deg at intermediate casing point to approximately 30 deg at 11939'. The well was then directionally drilled along the same course to the NW with a 1.5 deg motor and MWD tools, reaching 55 deg deviation at TD. Bottom hole location is 2400 ft to the NW, azimuth 301.5 deg.

H2S was controlled by zinc scavenger and maintaining high pH. No H2S was detected from the mud during drilling. 7 ppm H2S was reported once from trip gas but the handheld electronic detector that was lowered to the bell nipple was likely affected by the moist "steamy" conditions.

Logging was prolonged due to tool failures, new software, and the necessity to run TLC tools on drill pipe in the bottom 1000 ft where hole deviation is 48 to 55 deg. This downtime led to the well flowing 75 to 100 B before the second to last FMI run. The well was shut in as the loggers rigged down.

The choked well was circulated with a coiled tubing unit at the base of intermediate casing. 10 to 30-ft+ flares were common. Flared gas is estimated to have reached rates of 2 – 4 MMCFPD before mud was circulated. The flare was mainly orange (dominantly sweet due to uphole sources and/or mud treatment). A partly blue flare preceded the first brief H2S alarm. Coiled tubing was then run to TD and the well circulated again. Here the flame was partly blue more often, preceding again two brief H2S alarms. H2S reached a maximum of 50,000 ppm at the shaker. During subsequent circulation, condensate was observed breaking out of the mud in the tanks. No water-cut was detected, even though fluid level had dropped substantially during initial shut-in.

SUMMARY

Well Surveys

Schlumberger wireline services calculated a directional survey. Log TVD tops and subsea elevations are interpolated from this survey. In addition, this report includes a composite survey comprising: 1) rig surveys from 9650' – 11855' and 2) Schlumberger Anadrill MWD surveys from 11855' – 13503' TD.

Structure

Field data from the Anschutz Ranch Deep #4-26 agree quite well with the structural cross section prepared for this test. The main refinement is that the crest of the structure lies farther to the NW than originally mapped.

The major thrust fault cut by the well lies in the Preuss Salt where the Gannett and Preuss override Twin Creek Limestone. A minor fault at 12060' in the Phosphoria is shown by repeated section and by the dipmeter.

The well penetrates the steep southeast limb of the anticline. Dip to the SE increases gradually downhole: 8 deg in the upper Twin Creek; 20 deg in the upper Thaynes; 30 deg at the top of the Woodside; 40 to 55+ deg in the lower Woodside and upper Phosphoria; and maximum 70+ deg in the middle Phosphoria at 12050'. SE dip continues, decreasing to 40 to 50 deg at the top of the Weber at 12362'. Thereafter, high-quality dip plots are much less frequent but clusters at 13100' *suggest* the crest has been crossed: dips are 25 deg to the NW. Final processing of the FMI should clarify this indication.

The increasingly steep dips were anticipated from hole deviation during conventional drilling and from increases in apparent thickness shown by samples.

Compared to the Anschutz Ranch #34-2, which is assumed to be relatively straight to the top of the Weber, the Anschutz Ranch Deep #4-26 is 436 ft high at the top of the Phosphoria and 487 ft high at the top of the Weber (Schlumberger wireline survey). Structural datum at 13503' TD is –5479' (Anadrill MWD survey).

Twin Creek Limestone

Minor to moderate gas shows and some slight sample shows were found in the Watton Canyon Member (88 units at best), in the Rich Member (30 units at best), and in the Gypsum Spring Member (96 units at best). Gas shows were associated with trace sample evidence of open fractures and slight to good drilling breaks.

Nugget Sandstone

Nugget sandstone yielded fair to slight sample shows uphole, an extended 400-ft thick gas show interval (100 to 1236 units at best), fair to good drilling breaks, and slight to good visible porosity. Hole deviation at the Nugget is minimal and the wellbore of the Anschutz Ranch Deep #4-26 is still close to the old producer.

SUMMARY

Ankareh Red Beds

Sandstone 8440' – 8462' displayed solid black bitumen-filled porosity, some open fair porosity, and 481 units total gas. At one time, this sandstone was oil-filled, with its trap still intact.

Thaynes Limestone

Seven gas shows (236 units at best) were recorded. Sample evidence of open fractures is rare. Fair to good drilling breaks and the correlation of gas shows with density correction increases, however, do suggest some potential in fractures. Final processing of the FMI should better define the fracture potential of the Thaynes.

Woodside Red Beds

Sandstone and siltstone at 11000' – 11010' rig depth are markedly lighter colored and appear bleached. No porosity is visible. Fast drilling correlates with the density correction increase at 10991' and indicates fractures. Total gas show of 18 – 867 – 84 units increased subsequent connection and downtime gas peaks.

Phosphoria Formation

Best show is at the top: 614 units from dolomite and silicified dolomite displaying some slight intercrystalline and vug porosity and a good fast drilling break. Three additional gas shows ranged from 135 to 59 units. Minor sucrosic chips and rare faces lined with euhedral crystals indicate some open fractures. Fast drilling in hard rock that correlates to density correction increases suggests more fracturing than do samples.

Weber Sandstone

Maximum gas while drilling was 7658 units from within the Weber anhydrite section at 12406' rig depth, approximately 12396' log depth. There is no good drilling break, sample, or field-log evidence of fractures.

Twenty-one additional gas shows throughout the Weber (commonly 100 to 400 units, at best 1805 units) were associated with fair to excellent drilling breaks. From 12400' – 13200' visible porosity is slight (less than 6%); from 13200' – 13503' TD *some* visible porosity is fair to good (6% - 12% to 12% - 18%) and appears secondary. Good correlation of fast drilling and gas shows with log porosity and the *abundance* of hard tight rock in samples indicates the Weber is highly fractured with associated secondary matrix porosity best developed below 13200', particularly 13275' – 13360' log depth. Strong gas production is expected.

T. M. McCoy

T. M. McCoy, Consulting Geologist
22 November 1998

WELL DATA

OPERATOR:	Anschutz Exploration Corporation
WELL NAME:	Anschutz Ranch Deep #4-26
LOCATION:	1623' FNL & 1328' FWL SE NW Section 26 T4N R7E Summit County, Utah
BOTTOM HOLE LOCATION:	1290' N & 2014' W of base of surface casing at 13471' Schlumberger TD
ELEVATIONS:	7317' GL 7313' Graded 7335' KB
API NUMBER:	43-043-30320
FIELD:	Anschutz Ranch
ROAD DIRECTIONS:	From underpass at exit 3 from I-80 in Evanston, S 17.4 miles on pavement. Segments include Overthrust Road, virtually unmarked Yellow Creek Road, Uinta County Road 151, unmarked Summit County Utah road, and Uinta County Road 153. At entrance to Anschutz Ranch facilities, go straight 0.6 mile on gravel road. Right 0.5 mile, passing above Amoco plant still on right. Left 0.5 mile. Right 2.3 miles on Road 4; at top of hill go straight 1.4 miles more. Left 1.5 miles. At IR #2 & Tidewater sign, right 0.8 mile to location.
SURFACE CASING:	13 3/8" 54.5# K-55 set at 1511' KB.
INTERMEDIATE CASING:	9 5/8" 53.5# L-80 and 47# L-80 set at 9194' KB.
SPUD DATE:	30 August 1998 2:00 AM
DRILLING COMPLETED:	13 November 1998 7:00 AM
MAXIMUM TEMPERATURE:	206 deg F
TOTAL DEPTH:	13503' Driller 13471' Schlumberger did not tag bottom with TLC tools.
LAST FORMATION PENETRATED:	Pennsylvanian Weber Ss.
WELL STATUS:	7 5/8" 39# L-80 and 7" 32# L-80 casing is to be run for production of sour gas from the Phosphoria and Weber.
OPERATOR REPRESENTATIVES:	Hal Koerner – Engineering Dan Gallagher – Drilling/Operations Dave Dlouhy – Geology Lorraine Druyff – Petrography Monte Fryt – Log Analysis

FORMATION TOPS

Formation	Log Top	TVD	Datum
KB			7335
TERTIARY			
Wasatch Group	0	0	7335
TERTIARY/UPPER CRETACEOUS			
Evanston Fm?	2996 ?	2995 ?	4340 ?
LOWER CRETACEOUS/JURASSIC			
Gannett Group	3436	3435	3900
JURASSIC			
Preuss Salt	5184	5181	2154
Twin Creek Ls.	5422	5419	1916
Watton Canyon Mbr.	6164	6159	1176
Boundary Ridge Mbr.	6529	6523	812
Rich Mbr.	6578	6572	763
Slide Rock Mbr.	6856	6849	486
Gypsum Spring Mbr.	6948	6941	394
JURASSIC/TRIASSIC			
Nugget Ss.	7024	7017	318
TRIASSIC			
Ankareh Red Beds	8148	8140	-805
Thaynes Ls.	9171	9158	-1823
Woodside Red Beds	10577	10533	-3198
Dinwoody Fm	11388	11263	-3928
PERMIAN			
Phosphoria	11691	11532	-4197
Fault	12060	11851	-4516
PENNSYLVANIAN			
Weber Anhydrite	12362	12089	-4754
Weber Ss.	12436	12143	-4808
Intermediate Casing Driller	9194		
Intermediate Casing Logger	9185	9172	-1837
TD Driller	13503		
SLM Driller	13509		
TD Logger: did not tag bottom with TLC tools	13471	12787	-5452

LITHOLOGY AND SHOWS

The following descriptions are interpretive and are tied to drilling time at points of good correlation. Mud loggers collected lagged 20-ft to 30-ft samples from 1515' to 3150' and 10-ft samples to TD. Sample quality was very good.

Grain size was determined by use of the American Stratigraphic Company comparator. Colors of dry cuttings were determined from the Rock-Color Chart distributed by the Geological Society of America. 10% HCl was used in acid reaction tests.

Cut tests for hydrocarbons were performed with trichloroethylene. Significant shows are marked in the left margin; lesser indications of hydrocarbons are contained in sample descriptions. Samples were examined for fluorescence with a Corvascope and a conventional UV box.

WASATCH FM.

Surface Casing:	13 3/8" set at 1511' KB.
1515' - 1580'	**Shale/Mudstone**; pale reddish brown to light brown (10 R 6/4 to 5 YR 6/4); recovered as muddy paste; sandy. No sample show. Total gas 65 – 5 units.
1580' – 1600'	**Sandstone**; overall medium light gray; individual grains are clear, very light gray to dark gray and black, trace pale yellowish brown; freshly angular to subround; mostly medium to coarse grained, minor very coarse grains and granules; moderately sorted; recovered as loose sand comprising quartz, feldspar, chert, abundant dark probable volcanic lithics, and trace quartzite. No sample show. Total gas 5 – 8 units.
1600' – 1660'	**Shale/Mudstone**; pale reddish brown to light brown; recovered as muddy paste; sandy. No sample show. Total gas 3 – 7 units.
1660' – 1720'	**Sandstone**; overall medium light gray; individual grains are clear, very light gray to some dark gray and black, trace pale yellowish brown and rare reddish orange; freshly angular to subround, minor round; fine to very coarse grained, minor granules; moderately to poorly sorted; recovered as loose sand comprising quartz, feldspar, chert, dark volcanic lithics, and trace quartzite. No sample show. Total gas 3 – 20 units.
1720' – 1800'	60% - 40% **Sandstone**; coated with pale reddish brown to light brown mud from shale—likely medium light gray overall when fresh; recovered as loose fine to very coarse grains and minor granules; angular to subround, trace round; moderately to poorly sorted; quartz, feldspar, chert, substantial dark volcanic lithics, trace weathered quartzite. 40% - 60% **Shale/Mudstone**; pale reddish brown to light brown; recovered as muddy paste; sandy. No sample show. Total gas 14 – 1 units.
1800' – 1820'	80% **Shale/Mudstone**; pale reddish brown to light brown; recovered as muddy paste; sandy. 20% **Sand**; loose very fine to very coarse clear and very light gray to lesser dark gray and black grains. Trace **Limestone**; pinkish gray (buff) to light brownish gray; cryptocrystalline, earthy; argillaceous; firm; no porosity visible. No sample show. Total gas 1 – 7 units.

LITHOLOGY AND SHOWS

1820' – 1980'	At top, 5% **Sandstone**; light gray; very fine to lower medium grained clusters; subangular, subround; moderately sorted; firm; very calcareous; gray and minor black lithics; mostly no porosity visible. 95% - 100% **Sandstone**; overall light to medium light gray; loose fine to coarse grains, some very coarse grains and granules particularly downhole; freshly angular to subround; moderately to some poorly sorted, overall coarsens downward; fast drilling break, much at 0.4 min/ft or faster. No sample show. Total gas 1 – 14 units.
1980' – 2130'	Uphole, 20% - Trace **Mudstone**; grayish orange (10 YR 7/4); firm; sandy; very calcareous; subblocky. Grades to Trace **Limestone**; grayish orange; earthy; firm; silty, argillaceous; no porosity visible. 80% - 100% **Sandstone**; tinted grayish orange uphole, becoming light to medium light gray downhole; loose fine to coarse grains, some very coarse grains, granules and fragments of pebbles increase toward base—overall coarsens downward becoming **conglomeratic**; quartz, probable feldspar, substantial light to dark gray and yellowish orange chert and dark volcanic lithics, trace quartzite; granules and pebble fragments show pitted and weathered surfaces; pinch samples are calcareous throughout; cleans downhole; fast drilling break downhole at 0.3 to 0.5 min/ft. No sample show. Total gas 5 – 11 units.
2130' – 2160'	70% **Shale/Mudstone**; pale reddish brown; recovered as muddy paste. 30% **Sand**; loose fine to coarse grains covered with pale reddish brown mud. No sample show. Total gas 7 – 11 units.
2160' – 2370'	100% **Shale/Mudstone**; pale reddish brown to light brown; sandy; calcareous; recovered as muddy paste. No sample show. Total gas 2 – 14 units.
2370' – 2430'	100% - 80% **Sandstone**; medium light gray, downhole grains are partly coated with light brown mud; mostly loose medium to very coarse grains, some granules and fragments of pebbles indicate **conglomeratic** base; freshly angular to subround; moderately well to poorly sorted; sand grains comprise quartz, probable feldspar, substantial yellowish orange to pale yellowish brown and rare reddish orange chert, many dark gray to black volcanic lithics, and trace quartzite; fast drilling at 1.5 to 0.3 min/ft. 0% - 20% **Mudstone**; light brown. No sample show. Total gas 1 – 5 units.
2430' – 2460'	80% **Sandstone**; tinted light brown; loose fine to coarse grains; resistant lithics as above. 20% **Mudstone**; light brown; recovered as muddy paste. No sample show. Total gas 1 – 3 units.
2460' – 2550'	90% - 60% **Shale/Mudstone**; uphole moderate yellowish brown, becoming pale reddish brown; mostly recovered as muddy paste, some firm calcareous chips. 10% - 40% **Sand**; loose fine to very coarse grains; dispersed lithics in shale/mudstone; drilling time indicates one coarsening downward sand 2447' – 2471' that drilled at 0.3 min/ft at best. No sample show. Total gas 2 – 5 units.
2550' – 2700'	90% - 60% **Shale/Mudstone**; light brown to pale reddish brown; recovered as muddy paste and minor firm calcareous chips; part sandy. 10% - 40% **Sand**; loose fine to coarse grains, some very coarse grains; mostly dispersed lithics in shale/mudstone; several thin sandstones indicated by fast drilling breaks. Trace **Limestone**; moderate yellowish brown; earthy; firm; slightly argillaceous; no porosity visible. No sample show. Total gas 3 – 7 units.

LITHOLOGY AND SHOWS

2700' – 2730'	20% **Limestone**; light brownish gray, some tinted pale red; earthy; firm; argillaceous; no porosity visible. 30% **Sand**; loose fine to coarse grains; angular to subround; coated with light brown mud from shale/mudstone. 50% **Shale/Mudstone**; light brown to pale reddish brown; recovered as muddy paste and some firm calcareous subblocky chips. No sample show. Total gas 6 – 12 units.
2730' – 2760'	80% **Sandstone**; light to medium light gray; some very fine grained clusters, mostly fine to medium grained; angular to subround; moderately well sorted; firm to some medium hard clusters, recovered mostly as loose sand; very calcareous clusters; some dark gray to black lithics; no porosity visible in clusters; slight drilling break. 10% **Limestone**; light brownish gray; earthy; slightly to very argillaceous; no porosity visible. 10% **Shale/Mudstone**; light brown. No sample show. Total gas 2 – 10 units.
2760' – 2820'	20% - 30% **Limestone**; light brownish gray, some tinted pale red; cryptocrystalline; earthy; firm; argillaceous; no porosity visible. 70% - 60% **Shale/Mudstone**; light brown, moderate yellowish brown, and pale reddish brown to some grayish red; recovered as muddy paste and some firm chips; calcareous, chips commonly disintegrate to powder in acid; subblocky. 10% **Sand**; loose fine to coarse grains coated with light brown mud. No sample show. Total gas 2 – 3 units.
2820' – 2880'	70% **Sandstone**; recovered as loose fine to coarse grains uphole and mostly medium to very coarse grains and minor granules downhole; most grains are coated with light brown muddy paste; light gray, grayish orange to yellowish brown, rare reddish orange, and dark gray to black lithics include chert and volcanic fragments; freshly angular to subround; moderately to poorly sorted; coarsens downward. 30% **Shale/Mudstone**; light brown muddy paste. No sample show. Total gas 2 – 3 units.
2880' – 2940'	30% - 50% **Limestone**; grayish orange pink to pale red, minor light brownish gray; cryptocrystalline; earthy; firm; moderately to very argillaceous, in acid chips leave reddish brown powdery residue; several chips contain dispersed fine to coarse angular to subround lithics; no porosity visible. Grades to 30% - 40% **Shale/Mudstone**; pale reddish brown, light brown; recovered as paste and soft to firm chips; very calcareous; subblocky, some platy. 40% - 10% **Sand**; loose fine to coarse grains; freshly angular to subround. No sample show. Total gas 2 – 4 units.
2940' – 3000'	90% - 70% **Conglomeratic Sandstone/Conglomerate**; overall brownish gray; individual fragments are very light to dark gray, black, grayish orange, pinkish gray to pale red, reddish orange and rare greenish gray; fine sand to granules and fragments of pebbles; poorly sorted; loose resistant lithics include quartzitic sandstone, chert, dark volcanics, and trace silicified dolomite; outer surfaces of some pebble fragments are pitted and weathered; microfracture fill evident in some lithics; apparent basal conglomerate of Wasatch. 10% - 30% **Shale/Mudstone**; pale reddish brown to light brown; firm chips, some pulverized to paste. No sample show. Total gas 2 – 4 units.
Remark:	Mill tooth bit was thoroughly dulled in conglomerate and ceased drilling well in shale/mudstone. Tripped for new mill tooth bit Security S33S at 2988'.

LITHOLOGY AND SHOWS

EVANSTON FM?	LOG TOP: 2996'? TVD: 2995'? DATUM: +4340'
Remark:	Recovery of diagnostic carbonaceous shales and dirty sandstones is low. Samples do change overall color, however, from pale reddish brown of Wasatch to gray.
3000' – 3172'	Variable 70% - 30% **Sandstone/Conglomeratic Sandstone**; recovered mostly as loose fine to coarse sand and lesser very coarse sand to pebble fragments; some very fine to medium grained clusters; angular to subround; moderately well to moderately sorted clusters, overall poorly sorted; firm calcareous clusters; numerous gray, black, and grayish orange to yellowish brown resistant lithics include chert, quartzitic sandstone, and apparent volcanics; trace pyritic; no to slight porosity visible in clusters but fast drilling breaks to 0.3 min/ft. 30% - 70% **Siltstone**; light to medium gray; argillaceous, some sandy; much is recovered as pulverized muddy paste, some firm to medium hard chips; slightly calcareous; subblocky; and **Shale**; medium gray to minor dark gray; partly silty and very fine grained sandy; muddy paste and some firm chips; non- to moderately calcareous; trace carbonaceous; subblocky. No sample show. Total gas 1 – 30 units.
Remark:	Mill tooth bit was dulled in conglomeratic sandstone and ceased drilling well immediately after fast drilling break. Tripped for new carbide insert bit Smith F10TC at 3172'.
3172' – 3230'	40% - 20% **Shale** and lesser **Siltstone**; light to some medium dark gray; subordinate pale reddish brown and yellowish brown streaks or cavings; silty and partly sandy shale; argillaceous and commonly sandy siltstone; firm chips, some soft rounded masses; slightly to moderately calcareous; trace carbonaceous partings; subblocky. 60% - 80% **Sand**; loose varicolored fine to very coarse sand and minor granules; quartz and resistant lithics including quartzitic sandstone, chert, and dark volcanics. No sample show. Total gas 1 – 2 units.
3230' – 3410'	80% - 100% **Sandstone/Conglomerate**; mostly varicolored resistant lithics; loose fine to very coarse sand and substantial granules and broken pebbles; freshly angular to some rounded; some pebble fragments exhibit weathered, stained, and pitted surfaces; moderate to mostly poor sorting inferred; individual grains and fragments are clear, very light to dark gray, yellowish orange to trace moderate orange pink and grayish pink, yellowish brown to dark brownish gray, trace greenish gray, and minor black; siliceous lithics comprise quartzitic sandstone, quartzite, chert, and some inferred silicified carbonate exhibiting vugs in part; microfractures in some chert; overall fast drilling to 0.4 min/ft with thin slow or hard streaks. 20% - 0% **Shale** and **Siltstone**; light to medium gray; commonly very to fine grained sandy; firm; slightly to moderately calcareous. No sample show. Total gas 1 – 5 units.
3410' – 3430'	10% - Trace **Shale**; black, brownish black; smooth; carbonaceous to coaly; subblocky, rare glazed *slickensides*. Trace **Coal**; black; subvitreous. 20% - 10% **Sandstone**; very light gray, white; upper very fine to fine grained; well sorted; firm; non- to some moderately calcareous; clean; fair partly vuggy (secondary) porosity. 10% **Shale** and **Siltstone**; light to medium gray; silty and partly sandy shale; argillaceous and commonly sandy siltstone. Trace **Pyrite**. 60% - 80% **Sandstone/Conglomerate**; loose varicolored resistant lithics as above. No sample show. Total gas 1 – 3 units.

LITHOLOGY AND SHOWS

GANNETT GROUP LOG TOP: 3436' TVD: 3435' DATUM: +3900'

3430' – 3450'	20% - 70% **Shale**; medium dark gray tinted grayish red purple, grayish red, some dark reddish brown, trace greenish gray redox mottling; smooth and subwaxy in part, some silty; firm; non- to slightly calcareous where tinted grayish red purple, flakes apart in acid; moderately calcareous where dark reddish brown, forms powdery residue in acid; several *slickensides*, stained reddish brown in part; platy, subblocky. Trace **Limestone**; pale red; cryptocrystalline; medium hard; slightly argillaceous; rounded surfaces suggest small clasts or nodules rather than bedded carbonate; no porosity visible. 80% - 20% **Sandstone/Conglomerate**; loose varicolored lithics; likely caving. No sample show. Total gas 1 – 3 units.
3450' – 3460'	30% **Sandstone**; very light gray; upper very fine to fine grained; subangular, subround; well sorted; firm; calcareous; no to some fair porosity visible. 50% **Siltstone**; grayish red, tinted pale reddish brown to dark reddish brown (10 R 5/3 to 10 R 3/3); argillaceous; part sandy; firm, medium hard; calcareous; subblocky. 20% **Shale**; medium dark gray tinted grayish red purple, some grayish red. No sample show. Total gas 2 – 3 units.
3460' – 3500'	80% - 100% **Sandstone**; very light gray; uphole some upper very fine to fine grained clusters and loose sand, downhole mostly medium to some lower coarse loose sand; subangular, subround; moderately well sorted; minor clusters are firm and calcareous; slightly faster drilling, improving downhole to 0.8 min/ft at best. Trace **Coal**. Trace **Shale**; black; coaly. 20% - 0% **Shale** and lesser **Siltstone**; grayish red, medium dark gray tinted grayish red purple, reddish brown. No sample show. Total gas 2 – 3 units.
3500' – 3520'	95% **Sandstone**; very light gray; very fine to medium grained clusters and loose fine to coarse sand; subangular, subround; moderately well sorted; firm; calcareous; trace greenish gray clayey grains; mostly no porosity visible in clusters. 5% **Shale**; grayish red, some tinted grayish red purple, trace greenish gray and reddish brown. No sample show. Total gas 2 units.
3520' – 3540'	40% **Shale** and **Siltstone**; medium to medium dark gray, some tinted grayish red purple, light to moderate brown, some grayish red to reddish brown; varies from smooth, partly subwaxy, and partly sandy shale to argillaceous and partly sandy siltstone; non- to moderately calcareous; platy, subblocky; slower drilling. 60% **Sand**; loose fine to very coarse sand; freshly angular to subround; moderately sorted; quartz and varicolored resistant lithics perhaps dispersed in fine clastics. No sample show. Total gas 2 units.
3540' – 3560'	100% **Sandstone**; very light gray, faintly tinted grayish orange in part; upper very fine to lower coarse grained; angular to subround; moderately well sorted clusters and much loose sand; slightly to moderately calcareous; minor grayish orange and moderate orange pink stained quartz and chert; no to slight porosity visible. No sample show. Total gas 2 units.
3560' – 3600'	40% - 60% **Shale** and lesser **Siltstone**; grayish red, minor medium dark gray tinted grayish red purple; some smooth, mostly silty and partly sandy; firm; calcareous; platy, subblocky. 60% - 40% **Sandstone**; very light gray, minor pale red; very fine to medium grained small clusters and loose fine to very coarse grained quartz sand and lithics; angular to subround; well to poorly sorted; non- to moderately calcareous;

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pale red is commonly argillaceous; no to minor fair porosity visible; fast drilling break 3576' – 3585' to 1 min/ft suggests porosity. No sample show. Total gas 1 – 2 units.

3600' – 3670' — 60% - 80% **Shale** and lesser **Siltstone**; grayish red to nearly dark reddish brown (5 R 4/3 to 10 R 3/3), some faintly grayish red purple, trace greenish gray redox mottling; firm, some medium hard; calcareous; moderately smooth to silty and sandy shale; argillaceous to sandy siltstone; subblocky, some platy. 40% - 20% **Sandstone**; pale brown (5 YR 6/2) very fine grained clusters and very light gray upper very fine to medium grained loose sand and clusters; firm; calcareous; pale brown is commonly silty and partly argillaceous, very light gray is quite clean; mostly no porosity visible. Trace **Limestone**; pale red, light brownish gray; cryptocrystalline; firm, medium hard; slightly argillaceous; no porosity visible. No sample show. Total gas 1 – 2 units.

3670' – 3680' — 80% **Sandstone**; very light gray; very fine to medium grained clusters and lesser fine to coarse grained loose sand; angular to subround; moderately well sorted; firm; calcareous; mostly no porosity visible. 10% **Limestone**; pinkish gray (buff) to light brownish gray, trace pale red; cryptocrystalline; firm, medium hard; quite clean; no porosity visible. 10% **Shale**; grayish red, faintly grayish red purple, trace moderate brown. No sample show. Total gas 2 units.

3680' – 3780' — Interbedded. 20% - 60% **Sandstone**; very light gray, some pale red approaching pale brown; very fine to fine grained clusters and loose fine to coarse grained sand; subangular, subround; well to moderately sorted; firm clusters; calcareous where red, some very light gray is noncalcareous; no porosity visible. 10% - Trace **Limestone**; pale red, pinkish gray to light brownish gray; cryptocrystalline; firm, medium hard; quite clean to slightly argillaceous; no porosity visible. 70% - 40% **Shale** and **Siltstone**; grayish red, some tinted grayish red purple, some nearly dark reddish brown; slightly to moderately calcareous; platy, subblocky. No sample show. Total gas 2 – 3 units.

3780' – 3790' — 95% **Sandstone**; very light gray; upper very fine to fine grained clusters and loose fine to lower coarse grained sand; subangular, subround; moderately well sorted; firm; calcareous; mostly no porosity visible. 5% **Shale** and lesser **Siltstone**. No sample show. Total gas 1 unit.

3790' – 3840' — 50% - 70% **Shale**; grayish red—tinted dark reddish brown in part (5 R 3/2 to 10 R 3/3), medium dark gray tinted grayish red purple, trace greenish gray redox streaks and patches; smooth to silty, minor part sandy; firm; slightly to moderately calcareous; platy, subblocky; rare calcite fracture fill; and lesser **Siltstone**; pale red to grayish red; argillaceous, some very fine grained sandy; firm; calcareous; subblocky. 50% - 30% **Sandstone**; very light gray, some pale red; very fine and fine to some medium grained where very light gray, very fine grained where pale red and silty; firm clusters and loose grains; slightly to moderately calcareous; mostly no porosity visible. Trace **Limestone**; pinkish gray (buff) to pale red; cryptocrystalline; firm, medium hard; slightly argillaceous; some surfaces suggest nodules or rounded clasts rather than bedded carbonate; no porosity visible. No sample show. Total gas 1 – 2 units.

3840' – 3860' — 90% - 50% **Sandstone**; very light gray, becoming medium light gray downhole; mostly fine to medium grained loose sand uphole, fine to very coarse grained

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clusters downhole; angular to subround; firm to medium hard calcareous clusters downhole; medium to dark gray lithics conspicuous downhole; no porosity visible. 10% - 50% **Shale** and lesser **Siltstone**; grayish red, minor part greenish gray to medium gray, some faintly grayish red purple. No sample show. Total gas 2 units.

3860' – 3910' — 60% - 40% **Sandstone**; very light to some light gray, minor pale red; some very fine grained clusters in part, mostly loose fine to medium grained sand and clusters; subangular, subround; moderately well sorted; firm; calcareous; mostly no porosity visible. 40% - 60% **Shale** and lesser **Siltstone**. Trace **Limestone**; pale red, pinkish gray (buff) to light brownish gray; cryptocrystalline; firm, medium hard; slightly argillaceous; no porosity visible. No sample show. Total gas 1 – 2 units.

3910' – 3950' — 70% **Shale**; grayish red, some tinted dark reddish brown, part faintly grayish red purple, minor streaks and patches of greenish gray to medium gray; smooth to silty; minor part contains dispersed very fine to fine grained sand; firm; slightly to moderately calcareous; platy, subblocky; and lesser **Siltstone**; pale red to grayish red; argillaceous, some very fine grained sandy; firm; calcareous; subblocky. 30% **Sandstone**; very light to light gray, some pale red to grayish red; very fine to medium grained clusters and loose sand; subangular, subround; moderately well sorted; firm; calcareous; mostly no porosity visible. Trace **Limestone**; pinkish gray (buff) to pale red; cryptocrystalline; firm, medium hard; slightly argillaceous; no porosity visible. No sample show. Total gas 1 – 2 units.

Remark: — Good sample quality.

3950' – 4050' — 70% - 90% **Shale** and lesser **Siltstone**: **Shale**; grayish red, some tinted dark reddish brown (5 R 3/2 to 10 R 3/3), some faintly grayish red purple, minor part mottled medium to medium dark gray and greenish gray; smooth and some subwaxy with minor floating sand grains in part; some silty particularly where tinted dark reddish brown; firm; non- and slightly calcareous where smooth, some moderately calcareous where silty and tinted dark reddish brown; platy, subblocky. **Siltstone**; grayish red, some tinted pale reddish brown (10 R 4/2 to 10 R 5/3); argillaceous, part also very fine grained sandy; firm; calcareous; subblocky. 30% - 10% **Sandstone**; very light to light gray, pale red; very fine and fine grained to some medium grained where light gray; subangular, subround; well to moderately well sorted; firm; calcareous; mostly no porosity visible. Trace **Limestone**; pale red, trace light brownish gray; cryptocrystalline; firm, medium hard; slightly argillaceous; no porosity visible. Trace **Calcite**; clear to white; probable *fracture fill*. No sample show. Total gas 1 – 2 units.

4050' – 4090' — 40% - 20% **Sandstone**; very light to light gray, some tinted pale red; very fine to medium grained clusters and loose fine to medium sand; subangular, subround; well to moderately well sorted; firm; calcareous; mostly no porosity visible; no substantial drilling breaks. Trace – 5% **Limestone**; increased light brownish gray, pale red; cryptocrystalline; firm, medium hard; slightly argillaceous; no porosity visible. 60% - 75% **Shale** and lesser **Siltstone**; grayish red, some grayish red purple, minor gray and greenish gray mottling. Trace – 2% **Calcite**; white, some clear; striations common; loose chips and rare thin facing, *fracture fill*. One **Fossil**; whorled sphere; 1.5 mm. No sample show. Total gas 1 – 3 units.

4090' – 4130' — 50% - 30% **Sandstone**; mostly loose fine to medium and some coarse grained sand, minor very fine grained clusters; subangular, subround; moderately sorted; no

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substantial drilling break. 5% - Trace **Limestone**; light brownish gray, pale red. 45% - 65% **Shale** and lesser **Siltstone**; grayish red, some tinted dark reddish brown, some medium to medium dark gray and minor greenish gray redox mottling. Trace – 2% **Calcite**; white, trace clear; some striated; up to 2 mm; probable *fracture fill*. No sample show. Total gas 1 – 3 units.

4130' – 4180'

70% decreasing to 40% **Sandstone**; very light to light gray; mostly loose fine and medium and minor lower coarse grained sand, some very fine to fine grained clusters; firm, calcareous clusters; mostly no porosity visible. Trace – 5% **Limestone**; light brownish gray, pale red; cryptocrystalline; firm, medium hard; no porosity visible. Trace – 2% **Calcite**; white; few chips to 2.5 mm, most are smaller sand-size; probable *fracture fill*. 30% - 55% **Shale** and lesser **Siltstone**. No sample show. Total gas 1 – 3 units.

4180' – 4250'

70% to occasionally 90% **Shale** and lesser **Siltstone**: **Shale**; grayish red, some tinted dark reddish brown, some medium to medium dark gray grading to grayish red purple, minor greenish gray redox mottling; smooth and some subwaxy, part silty; firm; non- to slightly calcareous, some moderately calcareous where silty; platy, subblocky. 30% - 5% **Sand**; mostly loose fine to medium grains; subangular and subround, few rounded; minor very fine to fine grained firm calcareous clusters that exhibit no visible porosity. Trace **Limestone**; light brownish gray, pale red; cryptocrystalline; firm, medium hard; slightly argillaceous; no porosity visible. Trace – 2% **Calcite**; white, some clear; up to 4 mm; loose chips, occasional attached facing on shale; *fracture fill*. No sample show. Total gas 2 – 5 units.

Remark:

Larger cuttings result from samples being caught in can in possum belly.

4250' – 4380'

90% - 100% **Shale** and subordinate **Siltstone**: **Shale**; grayish red, tinted dark reddish brown in part, little is faintly grayish red purple, some is mottled medium to medium dark gray or rarely greenish gray; smooth, some is subwaxy and contains floating very fine to fine grained sand in part, some is silty and sandy; firm, some medium hard; slightly to some moderately calcareous; platy, subblocky. **Siltstone**; grayish red, commonly tinted pale reddish brown; argillaceous, some very fine grained sandy; firm, medium hard; calcareous; subblocky. Trace – 5% **Limestone**; pale red, light brownish gray, hues mixed in part; cryptocrystalline; medium hard; slightly argillaceous; no porosity visible. Trace – 5% **Sandstone**; minor light gray clusters, mostly loose fine to medium grained subangular to subround sand. Trace **Calcite**; white, little clear; *fracture fill* up to 5 mm; some facing shale. No sample show. Total gas 1 – 3 units.

4380' – 4400'

20% **Sandstone**; pale red to grayish orange pink; mostly fine grained; subangular, subround; moderately well sorted; firm, medium hard; calcareous; no porosity visible. 80% **Shale** and lesser **Siltstone**; dominantly grayish red, some tinted reddish brown. Trace **Limestone**; pale red, light brownish gray. Rare **Calcite**; white *fracture fill*. No sample show. Total gas 1 unit.

4400' – 4450'

40% - 10% **Sandstone**; pale red to grayish pink, some very light to light gray; very fine to lower medium grained; subangular, subround; moderately well sorted; firm, some medium hard; moderately to some very calcareous; mostly no porosity visible. 60% - 90% **Shale** and lesser **Siltstone**: **Shale**; grayish to dark grayish red, some tinted dark reddish brown, minor part faintly grayish red purple; smooth and some subwaxy, part silty; firm; non- to slightly calcareous; platy, subblocky. **Siltstone**;

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pale red to grayish red, commonly tinted pale reddish brown; argillaceous, commonly sandy; firm, medium hard; calcareous; subblocky. Trace **Limestone**; pale red, light brownish gray; cryptocrystalline; medium hard; slightly argillaceous; no porosity visible. Trace **Calcite**; white, rarely clear; *fracture fill*. No sample show. Total gas 1 unit.

4450' – 4490'

40% - 10% **Sandstone**; pale red to grayish orange pink, minor light gray; very fine to mostly fine grained, minor medium grains in part; subangular, subround; moderately well sorted; firm, medium hard; calcareous; mostly no porosity visible. 55% - 90% **Shale** and lesser **Siltstone**: **Shale**; grayish red, some tinted dark reddish brown, trace gray and greenish gray mottling, minor part tinted grayish red purple. **Siltstone**; pale red to grayish red, commonly tinted reddish brown. 5% - Trace **Limestone**; pale red, light brownish gray; cryptocrystalline; medium hard; slightly argillaceous; no porosity visible. Trace – 2% **Calcite**; white; up to 4 mm loose chips, trace cutting siltstone; *fracture fill*. No sample show. Total gas 1 – 2 units.

4490' – 4530'

85% - 90% **Shale** and lesser **Siltstone**: **Shale**; grayish red, some tinted dark reddish brown, minor medium to medium dark gray and trace faintly grayish red purple; smooth to silty and very fine grained sandy; firm, some medium hard; non- to some moderately calcareous; platy, subblocky. **Siltstone**: pale red to grayish red. 5% - Trace **Limestone**; light brownish gray, pale red; cryptocrystalline; medium hard; quite clean, slightly argillaceous; no porosity visible. Trace **Calcite**; white *fracture fill*. Trace – 10% **Sandstone**. No sample show. Total gas 2 units.

4530' – 4600'

95% - 100% **Shale** and minor **Siltstone**: **Shale**; increased medium dark gray (at 4530') and dark grayish red purple (at 4560'), also grayish red partly tinted dark reddish brown; smooth and commonly subwaxy where gray or red purple, grayish red is partly silty; rare floating coarse grains of clastic or nodular limestone; firm; slightly calcareous where gray, some moderately calcareous where grayish red and silty; platy, subblocky, irregular. Minor **Siltstone**; grayish red. 5% - Trace **Limestone**; light brownish gray, some pale red to grayish red. Trace **Calcite**; white; *fracture fill*. No sample show. Total gas 1 – 3 units.

4600' – 4630'

30% **Sandstone**; pale red, light gray; some very fine, mostly fine to medium grained, some coarse grains in part; subangular to some round; moderately well to moderately sorted; firm, trace hard where glassy broken quartz grains are numerous; calcareous; argillaceous to moderately clean; trace chert grains; mostly no porosity visible. 5% **Limestone**; light brownish gray to brownish gray, some pale red; cryptocrystalline; medium hard; clean to slightly argillaceous; no porosity visible. 65% **Shale** and lesser **Siltstone**: **Shale**; grayish red, lesser medium dark gray to faintly grayish red purple; silty to some smooth and subwaxy. **Siltstone**; grayish red, partly tinted reddish brown. Trace **Calcite**; white; rarely contacting subwaxy gray shale exhibiting probable *slickensides*. No sample show. Total gas 1 – 3 units.

4630' – 4670'

20% **Limestone**; light brownish gray to brownish gray, some pale red; cryptocrystalline; medium hard; clean to slightly argillaceous; no porosity visible. 80% **Shale** and minor **Siltstone**: **Shale**; medium dark gray, some faintly grayish red purple, some grayish red; smooth and partly subwaxy, little is silty; firm; slightly to some moderately calcareous; platy, subblocky, irregular. Trace **Calcite**; white; *fracture fill*. No sample show. Total gas 1 unit.

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4670' – 4720'	90% - 75% **Shale** and minor **Siltstone**: **Shale**; increased grayish red, some medium to medium dark gray and minor part faintly grayish red purple; smooth to some silty and sandy; firm, some medium hard; slightly to moderately calcareous; platy, subblocky; slightly to some moderately calcareous; *trace microsucrosic dolomitized faces imply open fractures.* 10% - 5% **Limestone/Dolomite**; light brownish gray to pale red and grayish red; *some microsucrosic and dolomitized*; medium hard; no porosity visible but *possible open fractures.* Trace – 20% **Sandstone**; light gray; recovered mostly as loose fine to lower coarse grained sand and very small clusters; subangular to some round. Trace – 2% **Calcite**; white; up to 7 mm in length. No sample show. Total gas 1 unit.
4720' – 4730'	20% **Sandstone**; medium light gray; upper very fine to fine grained; much is quartzitic and hard, some calcareous and medium hard; no porosity visible; numerous chips with thin facing of **calcite** *fracture fill.* 5% **Limestone**. 75% **Shale**; grayish red, lesser medium dark gray and grayish red purple. No sample show. Total gas 1 unit.
4730' – 4780'	95% - 98% **Shale**; dark grayish red, tinted dark reddish brown in part, minor medium dark gray that is subwaxy; smooth to silty, some very fine grained sandy; firm, medium hard; slightly calcareous; subblocky. 5% - Trace **Limestone**; light brownish to brownish gray, minor pale red to grayish red. 5% - Trace **Sandstone**; medium light gray, pale red; part quartzitic as above. Trace – 2% **Calcite**; white; *fracture fill.* No sample show. Total gas 1 – 3 units.
4780' – 4820'	95% - 98% **Shale**; increased medium dark gray and grayish red purple, some grayish red; gray and grayish red purple are subwaxy; firm; non- to slightly calcareous; platy, subblocky, irregular. 5% - Trace **Limestone**; light brownish to brownish gray and pale red to grayish red—hues mixed in part; cryptocrystalline; medium hard; clean to slightly argillaceous; no porosity visible. Trace – 2% **Calcite**; white; *fracture fill.* No sample show. Total gas 1 – 3 units.
4820' – 4840'	30% **Sandstone**; medium light gray to light brownish gray and pale red; very fine to fine grained; moderately well sorted; firm, minor part hard and quartzitic; non- to slightly calcareous; moderately clean to argillaceous and silty; mostly no porosity visible. 70% **Shale**; grayish red, some medium dark gray and grayish red purple. Trace **Limestone**. Trace **Calcite**; white; *fracture fill.* No sample show. Total gas 2 units.
4840' – 4860'	100% **Shale**; grayish to dark grayish red, some medium dark gray that is subwaxy, trace grayish red purple; smooth, some silty to very fine grained sandy; firm; slightly calcareous; mostly subblocky. Trace **Limestone**; pale red to grayish red, light brownish gray; cryptocrystalline; medium hard; no porosity visible. Trace **Sandstone**. Trace **Calcite**; white; *fracture fill.* No sample show. Total gas 2 units.
4860' – 4900'	30% - 20% **Sandstone**; medium light gray, commonly tinted grayish red purple to pale red; some very fine to fine grained clusters, uphole loose fine to minor medium grained sand; firm, some quite hard and quartzitic; non- to some moderately calcareous; no to some slight porosity visible. 70% - 80% **Shale** and lesser **Siltstone**: **Shale**; grayish red, some medium dark gray, minor part tinted grayish red purple. Trace **Limestone**. Trace **Calcite**; white; *fracture fill.* No sample show. Total gas 2 units.

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4900' – 4960'	95% - 85% **Shale**; dark reddish brown and lesser dark grayish red, minor medium dark gray; smooth, some silty; firm; slightly calcareous; mostly subblocky. 5% **Limestone**; pale reddish brown, some grayish red to pale red; cryptocrystalline; medium hard; slightly argillaceous; no porosity visible. Trace – 2% **Calcite**; white; *fracture fill.* 0% - 8% **Conglomerate?**; some fragments stained yellowish orange; inferred broken pebbles of quartzitic sand, chert, and limestone. No sample show. Total gas 1 – 3 units.
4960' – 5020'	20% - Trace **Sandstone**; pale red; very fine to some medium grained; subangular to subround; moderately well sorted; firm, some medium hard; non- to slightly calcareous; some glassy broken quartz grains; silty and argillaceous in part where very fine grained; no to some fair porosity. 10% - 5% **Conglomerate/Pebble Fragments**; yellowish orange, yellowish brown, pale reddish brown; resistant lithics including chert, quartzitic sandstone, and limestone. 5% - Trace **Limestone**; pale reddish brown, light brownish gray, pale red; cryptocrystalline; medium hard; no porosity visible. 65% - 95% **Shale**; dark reddish brown, dark grayish red, minor medium dark gray to little tinted grayish red purple; smooth to silty and very fine grained sandy; firm; slightly calcareous; some platy, mostly subblocky; grades to minor argillaceous **siltstone**. Trace **Calcite**; white; *fracture fill*. No sample show. Total gas 1 – 2 units.
Remark:	Ran salt-saturated mud starting at 5020'.
5020' – 5060'	20% - 30% **Sandstone**; light to medium gray, pale red; very fine to medium grained, minor coarse grains and inferred pebble fragments in part; subangular, subround; moderately well to some inferred poorly sorted; firm, medium hard; non- to moderately calcareous; loose sand common uphole, mostly no porosity visible in clusters. 5% **Limestone**; light brownish to brownish gray, pale red; cryptocrystalline; medium hard; no porosity visible. 75% - 65% **Shale** and lesser **Siltstone**: **Shale**; dark reddish brown to grayish red, minor medium dark gray and some faintly grayish red purple; smooth—little is subwaxy—to silty and sandy; firm; slightly calcareous; mostly subblocky. **Siltstone**; grayish red, tinted reddish brown; argillaceous, part sandy. Trace **Calcite**; white; *fracture fill.* No sample show. Total gas 1 – 4 units.
Remark:	Tripped at 5071' for replacement of blown vibrating hose.
5060' – 5110'	100% - 85% **Shale** and lesser **Siltstone**; grayish red, part tinted dark reddish brown, some medium dark gray and minor part faintly grayish red purple; much is silty, some sandy, part is smooth and subwaxy; firm; non- to some moderately calcareous; platy, subblocky. **Siltstone**; pale reddish brown; argillaceous, some very fine grained sandy; firm; slightly to moderately calcareous; subblocky. Trace – 10% **Sandstone**; light gray, minor pale red to grayish red; mostly loose fine to some medium grained sand and lesser very fine to fine grained clusters; no porosity visible. Trace – 5% **Limestone**; light brownish to brownish gray, pale red to grayish red; cryptocrystalline; medium hard; clean to slightly argillaceous; some rounded surfaces suggest nodules or clasts rather than beds of limestone; no porosity visible. Trace **Calcite**; white; *fracture fill.* No sample show. Total gas 1 – 2 units.
5110' – 5130'	**Shale** and lesser **Siltstone**; increase in pale reddish brown to some moderate reddish brown; firm, some moderately soft; slightly to moderately calcareous—some decrepitates in acid to reddish orange powder; some platy, mostly subblocky. No sample show. Total gas 1 – 2 units.

LITHOLOGY AND SHOWS

5130' – 5142'

40% **Sandstone**; light gray; mostly loose fine to medium sand, minor very fine to medium grained clusters; subangular, subround; moderately well sorted; fast drilling break at 1.2 to 2.1 min/ft. 60% **Shale** and lesser **Siltstone**. No sample show. Total gas 1 unit.

PREUSS SALT — LOG TOP: 5184' TVD: 5181' DATUM: +2154'

5142' – 5432'

Salt; inferred from penetration rate and correlation with offset well; virtually no recovery of rig bulk salt, of sack salt, or of Preuss salt itself; fast drilling to 0.4 min/ft at top, then controlled drilling at 2 – 3 min/ft. Trace – 30% **Siltstone** and minor **Shale**; moderate brown (5 YR 4/4 to 5 YR 3/4) siltstone and grayish brown (5 YR 3/2) shale; moderately soft, some firm; moderately to some slightly calcareous—chips commonly decrepitate in acid to powdery residue; argillaceous and partly very fine grained sandy siltstone; moderately smooth to silty shale; subblocky, part rounded; coating and patchy fill in diagnostic bright reddish orange silica/chalcedony shows this is an insoluble component in Preuss salt.

Beginning at 5230': Diagnostic rare chips increasing to 2% **Silica/Chalcedony**; trace moderate orange pink to mostly bright reddish orange; scrapes steel from tweezers; associated with clear to white silica—rarely banded—and drusy masses of micro- to very fine crystalline quartz exhibiting some euhedral faces; larger chips are commonly vuggy; some chips are partly coated with or filled with brown siltstone. No sample show. Total gas 1 – 3 units.

TWIN CREEK LS. — LOG TOP: 5422' TVD: 5419' DATUM: +1916'

5432' – 5450'

20% **Limestone**; light brownish gray; fine grained; oolitic; firm; quite clean; no porosity visible. 10% **Sandstone**; light gray; very fine grained; well sorted; firm; calcareous; trace dark gray to black grains; no porosity visible. 70% **Cavings**; grayish red to reddish brown shale and subordinate siltstone. No sample show. Total gas 2 units.

5450' – 5630'

20% - 50% **Sandstone**; light to some medium light gray; very fine grained; well sorted; firm, some medium hard; calcareous—most chips remain intact in acid; rare glauconite; slightly peppered; no porosity visible. 10% to occasionally 40% **Siltstone**; light to medium light gray; slightly argillaceous, commonly very fine grained sandy; firm, some medium hard; calcareous—chips remain intact in acid; subblocky; more siltstone is found where sandstone is less prevalent. Trace – 10% **Shale**; medium to medium dark gray; smooth, some silty laminae in part; firm; calcareous—chips commonly decrepitate in acid to powder and flakes; platy, subblocky. Trace – 5% **Limestone**; light brownish to minor brownish gray; fine to some lower medium grained; dark ooliths set in lighter colored matrix; well sorted; firm, trace medium hard; quite clean, insoluble residue consists of minor quartz and chert grains; no porosity visible. 60% - 20% **Cavings**; mostly grayish red and some

LITHOLOGY AND SHOWS

reddish brown shale and siltstone from Gannet, minor brown siltstone and trace bright red orange silica/chalcedony from Preuss Salt; less cavings downhole. No sample show. Total gas 1 – 5 units.

5630' – 5860' Gradational. 80% - 90% **Limy Shale** and lesser **Shaly Limestone**; medium dark gray, some tinted brownish gray, minor lighter colored chalky chips may be artifact of drilling; firm, some medium hard; very calcareous shale and argillaceous limestone—most chips decrepitate in acid leaving abundant powdery insoluble residue; some platy, mostly subblocky, little blocky. 10% **Siltstone**; medium light to medium gray; free chips and some laminae in limy shale and shaly limestone; subblocky. 10% - Trace **Sandstone**; light to some medium light gray; very fine grained; calcareous; no porosity visible. Trace **Calcite**; white; *fracture fill* commonly attached to or cutting across shale. No sample show. Total gas 3 – 4 units.

Remark: Worked tight hole on connection at 5869'. Cavings of grayish red and reddish brown shale and siltstone from Gannet are minimal in last 200 ft. Only trace cavings of insoluble component (bright reddish orange silica/chalcedony and brown siltstone) from Preuss Salt are found in samples. Volume across shaker has been normal and no large shale flakes are found in samples. Worked out 4 joints and reamed back to bottom.

5860' – 5960' Gradational. 70% - 90% **Limy Shale** and lesser **Shaly Limestone**; medium dark gray; minor light colored chalky chips are partly artifact of drilling, some are from pinkish gray (buff) chalky laminae contacting shale; firm, some medium hard; very calcareous shale and argillaceous limestone leave abundant powdery insoluble residue in acid; some platy, mostly subblocky. 10% - Trace **Siltstone**; medium light gray; some laminated; subblocky. Trace **Calcite**; white; minor free chips, some attached or cutting across chips, *fracture fill*. 20% - 10% **Cavings**; mostly reddish shale and siltstone. No sample show. Total gas 1 – 2 units.

Remark: Tripped for new bit Hughes GT-09 at 5931'. Old bit was not badly worn. Sample 5920' – 5930' circulated after trip. Trip gas 6 units.

5960' – 6000' 40% - 20% **Siltstone**; light to medium light gray; argillaceous, some appears faintly waxy and may be bentonitic; part very fine grained sandy; moderately soft to some medium hard; calcareous; trace biotite; subblocky. 50% - 80% **Limy Shale** and lesser **Shaly Limestone**; medium dark gray, some medium gray; earthy; firm, some medium hard; very calcareous shale and argillaceous limestone, leaves abundant powdery residue in acid with only a few fragile chips retaining shape of cuttings; platy, mostly subblocky. Trace **Limestone**; light gray; chalky; firm; argillaceous; no porosity visible. Trace – 1% **Calcite**; white; loose chips and *microfracture fill*. 10% - Trace **Cavings**; mostly reddish siltstone and lesser shale. No sample show. Total gas 1 unit.

6000' – 6020' 90% **Limy Shale** and lesser **Shaly Limestone**; medium dark gray. 10% **Siltstone**; light to medium light gray. Trace **Calcite**; white; *microfracture and fracture fill*. No sample show. Total gas 1 unit.

6020' – 6090' 20% - 80% **Siltstone** and minor **Sandstone**: light to some medium light gray; part very fine grained sandy siltstone and silty very fine grained sandstone; firm to medium hard; calcareous; slightly peppered; rare probable glauconite; some biotite; part appears bentonitic; subblocky; no porosity visible. 80% - 20% **Limy Shale** and

LITHOLOGY AND SHOWS

Shaly Limestone; medium dark gray, some faintly brownish gray. Trace **Bentonite**; light greenish gray; waxy; largely nonfluorescent. Trace **Calcite**; white; *microfracture fill*. No sample show. Total gas 1 – 2 units.

6090' – 6130'

80% - 90% **Limy Shale** and minor **Shaly Limestone**; medium dark gray, some tinted brownish gray; cryptocrystalline, mostly earthy textured; firm to medium hard; leaves abundant argillaceous insoluble residue in acid; platy, mostly subblocky, some blocky. 20% - 10% **Siltstone**; light to medium light gray. No sample show. Trace **Calcite**; white; *microfracture fill*. Total gas 2 units.

6130' – 6170'

30% - 80% **Siltstone**; light to some medium light gray; some very fine grained sandy; calcareous, most chips remain intact in acid; some argillaceous; subblocky. 70% - 20% **Limy Shale** and minor **Shaly Limestone**; medium dark gray. Trace **Calcite**; white; *microfracture fill; open fracture indicated by calcite crystals coating one face of one chip*. Virtually no sample show. Total gas 2 – 8 units.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	2	100%	0%	0%	0%	0%	5.4	6144'
Maximum	8	92%	8%	0%	0%	05	4.7	6152'
After	5	92%	8%	0%	0%	0%	6.5	6160'

WATTON CANYON MBR.

LOG TOP: 6164' TVD: 6159' DATUM: +1176'

6170' – 6200'

40% - 80% **Limy Shale** and lesser **Shaly Limestone**; medium dark gray, some tinted brownish gray; cryptocrystalline, earthy textured; medium hard, some firm; very calcareous, most chips decrepitate to abundant argillaceous powder in acid; platy to some blocky, no porosity visible. 60% - 20% **Siltstone**; light gray. Trace **Calcite**; white, few chips faintly pink orange; trace very fine crystalline masses; *microfracture fill and rare loose calcite fracture fill*. Total gas 2 – 16 units.

Slight sample show:

No stain. At 10X, faint spotty to pinpoint yellowish gold fluorescence yields slow weak nonstreaming cut fluorescence that dries to virtually no fluorescent halo but is concentrated on surfaces of chips—fluorescence is brighter on chips than before solvent is applied. Under white light, no cut or oil ring.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	5	91%	9%	0%	0%	05	4.7	6196'
Maximum	16	89%	10%	2%	0%	0%	4.6	6200'
After	5	89%	11%	0%	0%	0%	3.9	6230'

LITHOLOGY AND SHOWS

6200' – 6270'

70% - 90% **Limy Shale** and **Shaly Limestone**; medium dark gray; cryptocrystalline, earthy texture; increasingly medium hard; very calcareous shale grading to lesser argillaceous limestone; chips decrepitate in acid leaving abundant powdery insoluble residue; faster drilling averaging 2.5 min/ft correlates to gas increases. Trace **Calcite**; white; *microfracture fill and few loose chips.* 30% - 10% **Siltstone**; light gray. Virtually no sample show. Total gas 3 – 30 units.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	8	91%	9%	0%	0%	0%	3.5	6232'
During	26	87%	11%	2%	0%	0%	3.7	6236'
Maximum	30	85%	15%	0%	0%	0%	2.3	6258'
After	6	82%	18%	0%	0%	0%	8.2	6268'

6270' – 6300'

60% - 40% **Siltstone**; light gray; calcareous; subblocky. 40% - 60% **Limy Shale** and lesser **Shaly Limestone**; medium dark gray; cryptocrystalline, earthy texture; no porosity visible; faster drilling to 0.9 min/ft correlates to gas increase. Trace **Calcite**; white; *microfracture fill and rare loose chips; one 2 mm long piece of fracture lining is covered on one side with medium sand-size euhedral calcite crystals indicating open fracture.* Total gas 3 – 40 units.

Slight sample show:

No stain. At 10X, faint spotty to pinpoint yellowish gold fluorescence yields slow weak nonstreaming cut fluorescence that dries to virtually no fluorescent halo but is concentrated on surfaces of chips.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	3	88%	12%	0%	0%	0%	5.3	6278'
Maximum	40	84%	12%	4%	0%	0%	1.0	6284'
After	9	84%	13%	3%	0%	0%	2.2	6288'

6300' – 6350'

99% - 100% **Shaly Limestone** and minor **Limy Shale**; medium dark to some medium and medium light gray, tinted brownish gray to light brownish gray in part; cryptocrystalline, earthy; medium hard, some firm; becomes less argillaceous downhole; no porosity visible, few thin drilling breaks to 1.3 min/ft at best. Trace – 1% **Calcite**; white; *microfracture fill and loose chips, several faces lined with fine to medium sand-size crystals of calcite indicating open fractures.* Virtually no sample show. Total gas 49 – 3 units.

6350' – 6363'

98% **Limestone**; medium dark gray to lesser medium and medium light gray, part tinted brownish to light brownish gray; cryptocrystalline, part earthy; medium hard, some firm; moderately to slightly argillaceous; no porosity visible but fast drilling at 0.4 to 1.3 min/ft suggests *fracture porosity.* 2% **Calcite**; white, some clear; *microfracture fill and loose chips to 3 mm, several masses of euhedral dogstooth crystals indicate open fractures.* Virtually no sample show.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	7	80%	13%	7%	0%	0%	4.0	6348'
Maximum	88	71%	13%	7%	3%	5%	1.0	6356'
After	9	87%	13%	0%	0%	0%	4.4	6365'

LITHOLOGY AND SHOWS

6363' – 6490'

98% - 100% **Limestone**; medium dark gray to brownish gray and increasing medium to some light gray; cryptocrystalline, part earthy, lighter colors are always chalky; medium hard, some firm where chalky; moderately to slightly argillaceous, insoluble residue is powdery and contains thin silty/argillaceous plates and fragile laminae; no porosity visible; some fair drilling breaks at 1.8 to 3 min/ft uphole, more uniform drilling below 6400'. 2% decreasing to Trace **Calcite**; white; *microfracture fill and some loose cleavage blocks, rare euhedral crystal faces suggest decreasing open fractures.* Virtually no sample show. Total gas 15 – 3 units.

6490' – 6540'

100% - 90% **Limestone**; medium dark gray to brownish gray and some medium to light gray and light brownish gray; uphole, some medium to fine grained oolitic, mostly cryptocrystalline, part earthy, chalky; some hard, mostly medium hard to firm; slightly to some moderately argillaceous; no porosity visible. 0% - 10% **Siltstone**; medium light gray; calcareous; subblocky. Trace **Calcite**; white; *mostly microfracture fill, one 4 mm chip coated with medium to coarse sand-size calcite crystals.* No to slight sample show. Total gas 12 – 3 units.

Slight sample show:

Toward base, dull goldish yellow spotty fluorescence is visible with Corvascope at 10X. Slow weak nonstreaming cut fluorescence dries to virtually no fluorescent halo but fluorescence is concentrated on chips and is brighter following application of solvent.

BOUNDARY RIDGE MBR.

LOG TOP: 6529' TVD: 6523' DATUM: +812'

Remark:

Top of Boundary Ridge as picked from logs at increased gamma begins with gray siltstone and shale; reddish siltstone begins 10 – 20 ft deeper.

6540' – 6550'

Fine cuttings. 30% **Siltstone**; medium to medium light gray; commonly argillaceous, some appears bentonitic, part very fine grained sandy; firm to medium hard; calcareous; biotite in part; platy to blocky; grades to minor argillaceous and silty very fine grained **sandstone**. Trace **Shale**; medium dark to medium gray, brownish to light brownish gray; smooth and partly subwaxy to silty, very fine grained sandy; moderately soft, firm; slightly to moderately calcareous; platy. 70% **Limestone**; likely late circulated cuttings from overlying Watton Canyon Mbr. Slight sample show as above. Total gas 2 – 4 units.

6550' – 6560'

60% **Rig Salt**; clear; rounded; first sample in well in which rig salt has been circulated to surface. 10% **Siltstone**; gray, minor reddish. 30% **Limestone**; medium dark gray to brownish gray; cryptocrystalline; likely late circulated cuttings from Watton Canyon Mbr. No sample show. Total gas 4 – 2 units.

6560' – 6580'

20% - 95% **Siltstone**; grayish red; commonly argillaceous, some very fine grained sandy; firm, some rounded and moderately soft; slightly to moderately dolomitic; coarse platy, subblocky. No sample show. Total gas 1 – 3 units.

LITHOLOGY AND SHOWS

Remark: Good sample quality; change to red siltstone is visible in sample trays from across office. Tripped at 6589' for new bit Hughes GT-18 and to check for cause of pump pressure fluctuation. Trip gas 10 units.

6580' – 6590' Good sample quality in first sample after trip. 95% **Siltstone**; grayish red to some pale reddish brown; argillaceous, some very fine grained sandy; firm, some rounded and moderately soft; slightly dolomitic; coarse platy, subblocky. 5% **Limestone**; medium to medium dark gray; argillaceous. No sample show. Total gas 2 – 4 units.

RICH MBR. LOG TOP: 6578' TVD: 6572' DATUM: +763'

6590' – 6600' Questionable quality of second sample after trip. 2% **Limestone**; overall light brownish gray—dark brownish gray ooliths set in nearly white microcrystalline matrix; fine and medium to some lower coarse grained ooliths; moderately well sorted; firm, some medium hard; partly dolomitized; no porosity visible. 58% **Limestone**; medium dark gray to some light gray, tinted brownish gray to some light brownish gray in part; cryptocrystalline, some chalky; medium hard, some firm; slightly to moderately argillaceous; no porosity visible. Trace **Calcite**; white; *microfracture fill and some loose chips.* 40% **Siltstone**; grayish red, some pale reddish brown. No sample show. Total gas 4 – 6 units.

6600' – 6630' 90% - 100% **Limestone**; dark brownish and brownish gray to lesser light brownish gray; faintly to some conspicuously oolitic, fine to coarse grained, minor cryptocrystalline and partly chalky; medium hard, some firm; slightly argillaceous; forms trace bubbly brownish gray film in acid; trace brownish black partings that appear organic rich; no porosity visible. 10% - Trace **Siltstone**; grayish red, pale reddish brown. Trace **Calcite**; white; *microfracture fill, minor loose chips.* No sample show. Total gas 4 – 16 units.

6630' – 6800' Interbedded, gradational. 100% **Shaly Limestone** and lesser **Limy Shale**; dark to medium dark gray and minor medium to medium light gray, part tinted brownish gray to light brownish gray; cryptocrystalline, chalky where light colored; medium hard, some firm; most chips decrepitate in acid to argillaceous flakes and powdery residue, some retain shape of cuttings but are fragile; forms slight brown film that floats on acid; no porosity visible; faster drilling at 2 min/ft correlates to gas increase to 30 units. Trace **Calcite**; white; *mostly microfracture fill.* Virtually no sample show. Total gas mostly 8 – 2 units; 10 to 30 units at 6632' – 6652' is likely from fractures.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	8	90%	10%	0%	0%	0%	3.4	6628'
Maximum	30	84%	14%	2%	0%	0%	3.5	6646'
After	8	89%	11%	0%	0%	0%	4.3	6652'

Remark: Continued good sample quality.

LITHOLOGY AND SHOWS

6800' – 6865'	100% **Shaly Limestone** grading downhole to **Limy Shale**; dark to some medium dark gray and minor medium light gray, little is tinted brownish gray; mostly cryptocrystalline; medium hard, some firm; uphole most chips decrepitate in acid to argillaceous flakes and powder, toward base most chips retain shape of cuttings in acid but are fragile to firm; no porosity visible. Trace **Calcite**; white; *microfracture fill, rare loose chips*. Virtually no sample show. Total gas 2 – 4 units.
Remark:	Tripped at 6876' for hole in crossover above jars. Inspected BHA. Reran Hughes GT-18. Trip gas 15 units.

SLIDE ROCK MBR. LOG TOP: 6856' TVD: 6849' DATUM: +486'

Remark:	Top of Slide Rock Mbr. of Twin Creek Limestone may have been obscured by wall spraying and subsequent two trips for holes in drill string.
6865' – 6900'	100% **Limestone** and **Limy Shale**; dark and medium dark gray to minor medium light gray, part tinted brownish to light brownish gray; cryptocrystalline, little is chalky where lighter colored, trace medium grained oolitic; medium hard, some firm; varies from some quite clean limestone to calcareous shale (possible cavings sprayed from wall) that remains intact in acid or flakes apart; no porosity visible. Trace **Calcite**; white; *microfracture fill*. Virtually no sample show. Total gas 3 – 4 units.
Remark:	Tripped for hole in wobble joint at 6901'. Trip gas 21 units.
6900' – 6930'	100% **Limestone** and minor **Limy Shale**; dark and medium dark gray to minor medium light gray, commonly tinted brownish to light brownish gray; cryptocrystalline, little is chalky where lighter colored; mostly medium hard; slightly to some very argillaceous; no porosity visible. Trace **Calcite**; white; *microfracture fill and few loose chips to 2 mm*. Virtually no sample show. Total gas 2 – 5 units.
6930' – 6950'	100% **Limestone**; dark and medium dark gray to some medium light gray, grades to dark brownish to light brownish gray; cryptocrystalline, some chalky where lighter colored, and medium to lower coarse grained oolitic (darker colored ooliths set in lighter colored matrix); medium hard, some firm; slightly to some very argillaceous; mostly no porosity visible. Trace **Calcite**; white; *microfracture fill and minor loose chips*. Virtually no sample show. Total gas 2 – 3 units.

LITHOLOGY AND SHOWS

GYPSUM SPRING MBR. LOG TOP: 6948' TVD: 6941' DATUM: +394'

6950' – 6970'

20% - 50% **Shale**; grayish red (10 Y 3/2), some tinted dark reddish brown, trace greenish gray; slightly dolomitic; smooth to silty, greenish gray is subwaxy and contacts grayish red in part; platy to blocky. Trace – 2% **Anhydrite**; white, some clear; soft rounded masses and some firm micro- to very fine crystalline chips. 70% - 48% **Limestone**; likely from Slide Rock Mbr. No sample show. Total gas 1 – 2 units.

6970' – 7000'

70% - 90% **Shale** and lesser **Siltstone**; grayish red to reddish brown; smooth to silty shale and argillaceous siltstone; some soft rounded and pulverized masses to firm and medium hard fresh cuttings; slightly dolomitic; some patchy white microcrystalline anhydrite; soft rounded masses may also be anhydritic; platy, subblocky, some blocky. 2% **Anhydrite**; white; soft rounded masses and trace firm microcrystalline chips. 30% - 10% **Limestone**; most is likely from Slide Rock Mbr., trace pale red is new. Trace **Dolomite**; pale red to light brownish gray; cryptocrystalline; no porosity visible. Trace **Calcite**; white. No sample show. Total gas 2 – 10 units at base.

7000' – 7020'

60% - Trace **Shale** and lesser **Siltstone**; grayish red, some reddish brown. 20% - 80% **Dolomite**; light brownish gray to pale and dark yellowish brown; crypto- to increasingly very fine crystalline, medium hard, some firm; part appears anhydritic; trace dark gray partings; staining shows minor patchy calcite in part; no to some slight intercrystalline porosity. 2% **Anhydrite**; white. 18% **Limestone**; most is likely from Slide Rock Mbr. Trace **Calcite**; white; *microfracture fill*, staining shows some patchy calcite in/on dolomite.

Trace sample show: No fluorescence or definite hydrocarbon stain. Slow weak nonstreaming cut fluorescence dries to faint fluorescent yellow halos.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	5	90%	10%	0%	0%	0%	5.5	6996'
Maximum	96	88%	9%	3%	0%	0%	3.3	7000'
After	9	100%	0%	0%	0%	0%	5.6	7010'

LITHOLOGY AND SHOWS

NUGGET SS. LOG TOP: 7024' TVD: 7017' DATUM: +318'

7020' – 7040'

40% - 70% **Sandstone**; white, some slightly stained pale yellowish brown; some very fine grained at top, mostly fine to medium grained with minor dispersed coarse grains; subround to some round, trace well rounded; well to moderately well sorted; firm to some medium hard clusters, numerous loose grains; slightly to noncalcareous; clean; rare round black grains; no to some good porosity visible; fair but erratic drilling break to 2 min/ft at best, average 4 min/ft.

Fair sample show:

10% - 40% of sandstone exhibits faint spotty pale yellowish brown oil stain restricted to pores and near grain contacts. Virtually no fluorescence from fresh wet and warm air-dried chips. Fast non- to slightly streaming yellow cut fluorescence dries to weak to fair yellow fluorescent halos. When solvent is applied chips fluoresce moderate to bright yellow and intergranular pale yellowish brown stain is highlighted. Under white light, no cut or oil ring. Chips do not float on acid and larger bubbles released in acid are rare.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	7	100%	0%	0%	0%	0%	5.7	7018'
Maximum	430	80%	15%	4%	0.4%	0.5%	2 – 4.9	7034'
During	280	79%	16%	4%	0.3%	0.4%	4.7	7038'

7040' – 7100'

70% - 90% **Sandstone**; white, some slightly stained pale yellowish brown; mostly fine to medium grained with some dispersed coarse grains; subround to round, trace well rounded; well to moderately well sorted; firm to some medium hard clusters, numerous loose grains; mostly silica cement, slightly calcareous to some noncalcareous; clean; rare intergranular pyrite associated with black patches; slight to good porosity visible; 3 – 6 min/ft, average 4 min/ft.

Fair/slight sample show:

30% - 60% of sandstone exhibits subtle spotty pale yellowish brown oil stain restricted to pores and near grain contacts. Neither fresh wet nor warm air-dried chips fluoresce until solvent is applied. Fast non- to some slightly streaming yellow cut fluorescence dries to fair to weak yellow fluorescent halos. Few chips exhibiting most yellowish brown oil stain yield yellowish gold cut fluorescence. Under white light, no cut or oil ring. Chips do not float on acid and form few large bubbles.

Hot-wire/FID Gas:	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
During	225	79%	16%	3%	1%	1%	5.2	7052'
During	609	79%	15%	5%	1%	1%	5.9	7072'
During	876	75%	17%	5%	1%	1%	3.8	7076'
During	258	79%	15%	5%	1%	1%	4.8	7088'
During	99	80%	15%	4%	1%	1%	3.6	7096'

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7100' – 7203'

80% - 100% **Sandstone**; overall tinted very pale orange (10 YR 8/2); some upper very fine to mostly fine and lower medium grained, decreased upper medium to coarse grains; subround to some round; well to moderately well sorted; firm to friable; abundant loose grains below 7130' correspond to slightly faster drilling averaging 3.5 min/ft; mostly silica cement, staining shows no to minor calcite cement; clean; slight to good porosity visible. Trace **Rock Flour**; white; tests negative for anhydrite; many chips appear bit-marked, some may be from movement along fractures.

Slight sample show:

Yellowish brown hydrocarbon stain is increasingly spotty and subtle but may impart overall color tint. Virtually no fluorescence from fresh wet or dried chips until solvent is applied. Solvent causes some chips to fluoresce and makes yellowish brown intergranular stain more evident. Fast non- to rare slightly streaming cut fluorescence dries to faint yellow fluorescent halos. Under white light, no cut or oil ring.

Hot-wire/FID Gas:	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
During	393	77%	21%	2%	Tr	Tr	4.2	7180'
During	573	84%	14%	3%	Tr	Tr	3.1	7190'
During	1152	83%	15%	2%	Tr	Tr	2.8	7200'

7203' – 7270'

Temporarily reduced sample quality. 50% - 70% **Sandstone**; overall tinted very pale orange; mostly fine to lower medium grained and minor upper medium to coarse grains; subround to some round; well to moderately well sorted, some chips are bimodal and indicate aeolian lag; firm clusters and reduced loose grains may result in part from samples caught in bucket in possum belly while shaker screens were pulled to carry LCM; mostly silica cement, staining shows no to trace calcite cement; trace apparent micropyrite in patches of chips that are neutral medium to dark gray; slight to good porosity visible.

Slight sample show:

Minor yellowish brown hydrocarbon stain is spotty and commonly subtle but may impart overall color tint. No fluorescence until solvent is applied. Solvent causes some chips to fluoresce and makes yellowish brown intergranular stain more evident. Fast non- to rare slightly streaming cut fluorescence dries to faint yellow fluorescent halos. Under white light, no cut or oil ring.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Maximum	1236	82%	14%	3%	0.1%	0.6	2.5	7214'
During	414	85%	10%	4%	0.2%	0.8%	3.2	7218'

Remark: Lost 300 B in 2 hrs. Pulled 1 stand at 7236'; mixed and pumped LCM.

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7270' – 7300'

90% **Sandstone**; overall tinted very pale orange; mostly fine to medium grained with subordinate lower coarse grains, some upper very fine grained clusters downhole; subround to some round; well to moderately well sorted; abundant loose sand uphole, firm clusters increase downhole; non- to slightly calcareous, mostly silica cemented; rare completely tight clusters are neutral very light gray to white; fair to some good porosity in clusters.

Trace sample show:

Hydrocarbon stain is becoming indefinite but may be reflected in overall color tint. No fluorescence. Fast to moderately fast bluish yellow cut fluorescence dries to very faint fluorescent halos or is concentrated upon chips. Under white light, no cut or oil ring.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
During	300	82%	14%	3%	1%	1%	5.4	7286'
During	786	79%	17%	3%	1%	1%	4.0	7300'

7300' – 7450'

100% **Sandstone**; tinted very pale orange; loose fine to medium grained sand with some lower coarse grains, subordinate upper very fine to lower medium grained clusters with dispersed coarse grains in part; subround, some round; firm to some medium hard clusters; well to moderately well sorted; non- to slightly dolomitic, virtually no calcite indicated by Alizarin Red staining; trace intergranular pyrite in some chips; slight to good porosity visible.

Trace sample show:

Virtually no hydrocarbon stain. No fluorescence until solvent is applied, then some chips faintly fluoresce bluish yellow. Moderately fast but weak and nonstreaming bluish yellow cut fluorescence dries to faint fluorescent halos and is concentrated upon chips. Under white light, no cut or oil ring. Rare patchy black to dark gray intergranular stain is associated with apparent intergranular micropyrite.

Hot-wire/FID Gas:	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
During	380	80%	15%	4%	1%	1%	4.4	7310'
During	196	79%	15%	4%	0.5%	0.4%	7.4	7322'
During	435	83%	12%	4%	0.1%	0.7%	6.1	7408'
After	84	82%	12%	5%	Tr	0.6%	4.5	7434'

Remark:

Tripped for new bit Security S86F at 7456'. Old bit Hughes GT-18 was thoroughly worn. Reamed 7360' – 7456'. Trip gas 46 units.

7450' – 7530'

60% - 90% **Sandstone**; very pale orange, trace patches medium to dark gray and black; some upper very fine to mostly fine to medium grained, minor dispersed lower coarse grains; subround, some round; well to moderately well sorted; firm to medium hard clusters and lesser loose sand; mostly silica cement, slightly dolomitic; clean; trace gray patches are associated with apparent micropyrite and dark gray to black intergranular stain; slight to fair to some good porosity visible. Trace – 10% **Rock Flour/Gouge**; white, some gray streaks; soft to firm; curved surfaces suggest much may be artifact of drilling, rare chips show naturally occurring identical opaque white fracture fill cutting across chips of sandstone; fracture fill tests negative for substantial carbonate and anhydrite. 40% - 0% **Cavings**.

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Trace sample show:	No definite hydrocarbon stain. No fluorescence. Moderately fast to slow, nonstreaming weak bluish yellow cut fluorescence dries to faint fluorescent halos and is concentrated on upper surfaces of chips. Under white light, no cut or oil ring.
Hot-wire gas:	60 – 4 units.
7530' – 7550'	60% **Rock Flour/Gouge**; white, some gray to black streaks; soft to firm; many chips shows curved surfaces marked by bit or reamers—much may be artifact of drilling; at least some is naturally occurring as shown by white fill cutting across chips of sandstone; tests negative for anhydrite or for substantial carbonate; some chips show gradation from "hammered" sandstone with remnant sand grains on one side to completely powdered rock on the opposite and commonly curved side; increase in samples corresponds to slower drilling. 40% **Sandstone**; very pale orange; as above. No stain or fluorescence; trace cut fluorescence dries to faint yellow fluorescent halos. Total gas 3 – 8 units.
Remark:	Tripped at 7557' for new bit Smith F37. Old bit Security S86F was slightly under-gauge; the only significant wear was rounded gauge. Trip gas 18 units.
7550' – 7560'	Single poor sample following trip. 30% **Sandstone**. 70% **Cavings**. Trace cut fluorescence. Total gas 6 – 9 units.
7560' – 7640'	90% - 60% **Sandstone**; tinted very pale orange to some very light gray; some upper very fine to mostly fine and medium grained with minor dispersed lower coarse grains; subround, some round; well to moderately well sorted; abundant loose sand in part (some from slowest drilling); firm to medium hard clusters; mostly silica cement, minor glassy broken quartz grains, slightly dolomitic; clean; trace medium to dark gray patches associated with micropyrite; slight to fair porosity visible in clusters. 10% - 40% **Rock Flour/Gouge**; white, minor gray to black streaks; generally increasing in intervals of slower drilling. No stain or fluorescence. Trace cut fluorescence is moderately slow weak nonstreaming bluish yellow and dries to very weak fluorescent halos. Downhole, virtually no show. Total gas 4 – 6 units.
Remark:	Tripped at 7642' for new bit Security M89TF. Old bit Smith F37 was somewhat undergauge; the significant wear was again rounded gauge. Trip gas 11 units.
7640' – 7660'	Two poor samples following trip, then good quality. 20% - 30% **Sandstone**. 80% - 70% **Cavings**. Virtually no sample show. Total gas 5 – 1 units.
7660' – 7830'	90% - 100% **Sandstone**; tinted very pale orange to some very light gray; some very fine grained clusters, mostly fine to medium grained loose sand and subordinate clusters, some dispersed lower coarse grains; subround, some round; well to moderately well sorted; firm, some medium hard; silica and minor dolomite cement, tests negative for anhydrite; minor glassy broken quartz grains; clean; trace patchy micropyrite; slight to some fair porosity visible. 10% - Trace **Rock Flour/Gouge**; white, trace gray streaks; soft to firm; moderate increases were recovered from intervals of slowest drilling. No sample show. Total gas 1 – 8 units.
Remark:	Lost 500 – 600 B 7802' – 7840'. Pulled 1 stand; built volume and mixed LCM.

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7830' – 7940'	95% - 100% **Sandstone**; tinted very pale orange to some very light gray, below 7870' trace moderate orange pink to pale red (10 R 7/3); mostly fine to lower medium grained with minor dispersed coarse grains in part; downhole becomes mostly upper very fine to fine grained; subround, some round; mostly well sorted; medium hard; silica cement—increased glassy broken quartz grains, much is slightly dolomitic; trace orange grains; trace micropyrite; some loose sand where samples were caught from shaker screen, clusters are dominant where samples are caught from possum belly; no to slight porosity visible. Trace – 5% **Rock Flour/Gouge**; white. No sample show. Total gas 6 – 2 units.
7940' – 7960'	100% **Sandstone**; increase in moderate orange pink to pale red, also very pale orange to some very light gray; mostly upper very fine to fine grained; well sorted; medium hard; siliceous, slightly dolomitic; trace orange grains and increase in black grains where moderate orange pink to pale red; mostly no porosity visible. No sample show. Total gas 1 – 7 units.
Remarks:	Lost 800 B by 7951'. Pulled 3 stands; built volume and mixed LCM.
7960' – 8030'	100% **Sandstone**; moderate orange pink to pale red, some very pale orange to increasing very light gray; upper very fine to fine grained; well sorted; moderately hard, some hard; siliceous, increased glassy broken quartz grains; slightly dolomitic; trace micropyrite; trace orange grains, black grains more common where orange pink to pale red; mostly no porosity visible. Trace **Rock Flour/Gouge**; white. No sample show. Total gas 3 - 11 units.
Remarks:	Tripped for new bit Reed HP61A at 7987'. Trip gas 29 units. Good sample quality.
8030' – 8130'	100% **Sandstone**; very light gray to white, moderate orange pink and pale red decreases to trace downhole; upper very fine to lower fine grained; well sorted; medium hard to hard; siliceous, glassy broken quartz grains common, some quartzitic; slightly dolomitic; trace micropyrite; no to some slight porosity visible; trace opaque white siliceous *fracture fill* that scrapes steel from tweezers grades to trace white **rock flour/gouge**. No sample show. Total gas 3 – 10 units.
Remark:	Tripped for new bit Smith F37 at 8141'. Trip gas 18 units.
8130' – 8140'	98% **Sandstone**; very light gray to white, trace light greenish gray; upper very fine to fine grained; well sorted; medium hard to hard; silica and minor dolomite cement; trace micropyrite; no to some slight porosity visible. 2% **Red Beds**; possible cavings circulated after trip. No sample show. Total gas 4 – 5 units.

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ANKAREH RED BEDS LOG TOP: 8148' TVD: 8140' DATUM: -805'

Remark: Top of Ankareh red beds is questionable due to possible cavings of red shale and siltstone from the Gannett (preceding trips demonstrate significant cavings in first two samples following trip).

8140' – 8160' 40% - 60% **Red Beds**: **Shale** and **Siltstone**; grayish red to some reddish brown, trace greenish gray streaks and patches; smooth to silty shale and argillaceous and partly very fine grained sandy siltstone; firm, some medium hard; non- to some moderately calcareous/dolomitic; platy, subblocky. 60% - 40% **Sandstone**; very light gray to white, some tinted light greenish gray, increase in moderate orange pink downhole; very fine to some lower fine grained; medium hard to hard; silica and minor dolomite cement, part quartzitic; mostly no porosity visible. No sample show. Total gas 2 – 5 units.

8160' – 8175' 70% - 90% **Sandstone**; pinkish gray (buff) to very light gray, minor part tinted light greenish gray; upper very fine grained; well sorted; firm to some medium hard; slightly dolomitic; trace dark gray to black grains in part; no to slight porosity visible; slight drilling break at 4 – 6 min/ft. 30% decreasing to 10% **Red Beds**. No sample show. Total gas 5 – 7 units.

8175' – 8180' 90% **Sandstone**; pinkish gray (buff) to very light gray, some tinted light greenish gray, trace moderate orange pink; upper very fine grained; medium hard to hard; silica and minor dolomite cement, some quartzitic; trace micropyrite; mostly no porosity visible. 10% **Red Beds**. No sample show. Total gas 3 – 5 units.

8180' – 8190' 15% **Shale**; greenish gray; soft to firm; smooth, some silty to very fine grained sandy; slightly to moderately dolomitic; platy, subblocky. 10% **Red Beds**. 75% **Sandstone**; pinkish gray (buff), some tinted light greenish gray; upper very fine grained; well sorted; firm to hard; silica and minor dolomite cement, part quartzitic; mostly no porosity visible. No sample show. Total gas 3 – 4 units.

8190' – 8210' 60% increasing to 80% **Red Beds**: **Shale** and lesser **Siltstone**; dark grayish red to grayish red (5 R 3/2 to 5 R 4/2), some tinted dark reddish brown (10 R 3/3), some tinted grayish red purple (5 RP 4/1), trace greenish gray reduction streaks; smooth to silty shale and argillaceous and partly very fine grained sandy siltstone; some is pulverized to soft masses, fresh chips are firm to some medium hard; non- to slightly dolomitic; platy to subblocky. 40% - 20% **Sandstone**; pinkish gray (buff) to very light gray; very fine grained; mostly no porosity visible. No sample show. Total gas 3 – 6 units.

8210' – 8222' 90% **Red Beds**; grayish red to reddish brown, less is tinted grayish red purple, trace greenish gray reduction streaks. 10% **Sandstone**; pinkish gray (buff) to very light gray, minor part tinted light greenish gray; very fine grained; medium hard to hard; mostly no porosity visible. No sample show. Total gas 1 – 5 units.

Remark: Tripped for new bit Reed HP53A at 8231'. Trip gas 23 units.

8222' – 8250' 60% - 30% **Sandstone**; very light gray, some tinted light greenish gray, minor pale red; very fine grained; well sorted; medium hard to hard, some quartzitic; silica and minor dolomite cement; trace micropyrite; mostly no porosity visible but likely correlates to faster drilling at 4.5 – 8 min/ft. 40% - 70% **Red Beds** and minor

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cavings from Gannett and trace from Preuss Salt. No sample show. Total gas 4 – 8 units.

8250' – 8270' — 95% - 100% **Red Beds**; grayish red to pale reddish brown, trace greenish gray reduction streaks; smooth to silty shale; argillaceous to partly sandy siltstone; medium hard to some firm; slightly to moderately calcareous; sub-blocky, some platy; rare filled *microfractures;* few chips mineral fluorescence. 5% - Trace **Sandstone**. No sample show. Total gas 4 – 7 units.

8270' – 8290' — 100% **Red Beds**: 20% - 40% **Sandstone**; grayish red; very fine to fine grained; moderately well sorted; argillaceous; medium hard to hard; partly silicified—some glassy broken quartz grains, dolomitic; some dispersed very fine to fine sand-size white dolomite crystals; no porosity visible. 80% - 60% **Shale** and **Siltstone**; dominantly grayish red, some tinted pale to dark reddish brown; medium hard, some firm; subblocky, some platy; trace white dolomite-filled *microfractures*. No sample show. Total gas 4 – 6 units.

8290' – 8310' — 100% **Red Beds**: Increased **Shale**; grayish red to dark reddish brown, minor greenish gray reduction streaks and patches; much is smooth; firm to medium hard; non- to slightly dolomitic; platy, subblocky. Decreased **Siltstone** and **Sandstone**; grayish red. No sample show. Total gas 4 – 8 units.

8310' – 8320' — 100% **Red Beds**; increased greenish gray reduction streaks in all rock types: 30% **Sandstone**; grayish red to minor pale red; very fine to fine grained; argillaceous; medium hard to hard; mixed silica and dolomite cement; some glassy broken quartz grains and dispersed very fine to fine sand-size clear to white dolomite crystals; no porosity visible; minor *microfracture fill*. 70% **Shale** and **Siltstone**; firm to hard; slightly to moderately dolomitic—some dispersed euhedral very fine to fine sand-size dolomite crystals; part siliceous; minor white *microfracture fill*. Trace **Dolomite**; grayish red to pale red, greenish gray; cryptocrystalline; hard; largely silicified; no porosity visible. No sample show. Total gas 6 – 8 units.

8320' – 8350' — 100% **Red Beds**: **Shale** and lesser **Siltstone**; grayish red, some tinted dark reddish brown, trace greenish gray reductions streaks; smooth to silty shale; argillaceous siltstone; minor sandy streaks; medium hard, some firm; slightly dolomitic; subblocky, some blocky; trace white dolomite-filled *microfractures*. No sample show. Total gas 6 – 10 units.

8350' – 8390' — 100% - 80% **Red Beds**: **Shale** and lesser **Siltstone**; grayish red, some dark reddish brown, rare greenish gray reduction streaks; medium hard, some firm; slightly dolomitic; mostly subblocky; trace white *dolomitic microfracture fill*. Trace – 20% **Sandstone**; pinkish gray (buff); very fine grained; well sorted; medium hard; silica and minor dolomite cement; no porosity visible. No sample show. Total gas 5 – 14 units.

Remark: — Temporarily reduced sample quality when LCM was shaken out at 8370' – 8390'.

8390' – 8420' — 100% **Red Beds**: **Shale** and subordinate **Siltstone**; grayish red, increased pale to dark reddish brown particularly where chips appear "hammered" and artificially soft; light greenish gray reduction streaks increase downhole; smooth to silty shale; argillaceous siltstone with some sandy streaks; soft to firm to some medium hard;

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non- to slightly dolomitic; samples are more difficult to wash clean; some platy, mostly subblocky. No show. Total gas 12 – 4 units.

8420' – 8440'

50% **Sandstone**; medium light to light gray, some tinted light brownish gray; very fine to lower fine grained; moderately well sorted; much is soft and appears "hammered", balance is slightly friable to firm; silica and minor dolomite cement; much is clayey; samples are tacky and chips clump together; no porosity visible. 50% **Red Beds**. No sample show. Total gas 8 – 46 units. Please see gas composition below.

8440' – 8462'

40% - 80% **Sandstone**; light brownish gray and light gray to very light gray; fine to lower coarse grained—coarsens and cleans downward; subangular, subround; moderately to well sorted; firm to hard; silica cement, glassy broken quartz grains increase downhole, clay and minor dolomite cement diminish downhole; trace micropyrite; no to some fair porosity visible, scattered good secondary porosity; fair drilling break averages 3.7 min/ft.

Slight sample show:

Varies from no definite hydrocarbon stain uphole to substantial black solid vitreous conchoidal-fracturing bitumen lining or completely filling most primary porosity. 20% (most of clean sandstone) displays dull goldish yellow uniform fluorescence and rare bright yellow spotty fluorescence. Moderately fast nonstreaming to rare slightly streaming yellow cut fluorescence dries to rather weak yellow fluorescent halos. Under white light, no cut but trace microfragments of bitumen float up to surface of acid.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	8	92%	6%	2%	0%	0%	9.0	8420'
During	46	87%	11%	2%	0%	0%	8.2	8434'
During	197	88%	9%	2%	0%	1%	2.9	8448'
Maximum	481	84%	13%	3%	0%	0.5%	7.1	8451'
After (120 min)	20	100%	0%	0%	0%	0%	13.6	8461'

Remark:

Lost 450 B by 8462'. Mixed and pumped LCM sweeps and rebuilt volume. Tripped for new bit Hughes ATJ44C at 8462'. Trip gas 46 units.

8462' – 8476'

Temporarily reduced sample quality following trip. 70% **Red Beds**; grayish red, some tinted reddish brown, some greenish gray to medium and medium light gray streaks or beds; smooth to silty shale and lesser argillaceous and partly sandy siltstone; medium hard; slightly to moderately calcareous/dolomitic; subblocky, some blocky. 30% **Sandstone**; light to very light gray, some tinted light brownish gray; probable cavings from overlying sandstone—identical lithology, weak sample show, and no drilling break. No new show.

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8476' – 8496'

20% - 60% **Sandstone**; pale yellowish brown to light brownish gray; very fine to fine grained, some medium grains in part; subangular, subround; well to moderately sorted; medium hard, hard; silica and minor dolomite cement, no calcite detected by staining with Alizarin Red; trace micropyrite; rare angular lithics; no to minor slight porosity visible; somewhat faster drilling at 12 to 5.5 min/ft; drilling time suggests coarsening/cleaning downward. 80% - 40% **Red Beds**: **Shale** and lesser **Siltstone**; grayish red, some tinted reddish brown, some greenish gray to medium and medium light gray.

Trace sample show: No definite hydrocarbon stain. No fluorescence. Moderately slow nonstreaming bluish yellow cut fluorescence dries to weak yellow fluorescent halos. Under white light, no cut or oil ring.

Hot-wire Gas: Slight increase from 5 to 26 units.

8496' – 8530'

70% - 50% **Shale** and lesser **Siltstone**; dark grayish red, part mottled and tinted reddish brown, trace tinted grayish red purple, some greenish gray to light greenish gray reduction streaks; smooth to some silty and sandy shale; argillaceous and commonly sandy siltstone; firm to medium hard—some pulverized to soft reddish brown masses; non- to slightly calcareous/dolomitic; some platy, mostly subblocky. 30% - 50% **Sandstone**; overall grayish red, microscopically streaks are pale red to dark grayish red, grayish red purple, greenish gray, and pinkish gray (buff); very fine to fine grained; subangular, subround; well to moderately well sorted; medium hard to hard; siliceous, some slightly calcareous/dolomitic; some glassy broken quartz grains; some moderately clean to much that is silty and argillaceous; mostly no porosity visible. Trace **Limestone**; pale red; cryptocrystalline; slightly argillaceous; possible nodules or clasts rather than bedded strata; no porosity visible. Few chips **Calcite**; white *fracture fill*. Virtually no sample show. Total gas 5 – 40 units.

8530' – 8560'

50% - 70% **Sandstone**; grayish red, some tinted grayish red purple, light brownish gray to some brownish gray; very fine to very coarse grained; subangular, subround; well to some poorly sorted—part may be conglomeratic; medium hard, hard; silica and argillaceous cement, virtually no carbonate cement; glassy broken quartz grains common; some moderately clean to much that is argillaceous and silty; trace chert grains; trace micropyrite; no to some slight porosity visible. 50% - 30% **Red Beds**.

Slight sample show: Minor black stain. No to rare dull goldish yellow spotty fluorescence. Moderately slow nonstreaming yellow cut fluorescence dries to weak to fair yellow fluorescent halos with fluorescence also concentrated on upper surfaces of chips. Under white light, no cut; dries to no to weak brown oil ring.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	20	89%	11%	0%	0%	0%	8.9	8547'
Maximum	106	89%	11%	0%	0%	0%	5.4	8554'
After	17	89%	11%	0%	0%	0%	9.8	8561'

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8560' – 8600'	90% - 80% **Sandstone**; tinted pale red to grayish red, some light brownish gray; very fine to medium grained; subangular, subround; well to moderately sorted; medium hard to hard; silica and some argillaceous cement, virtually no carbonate cement; moderately clean to argillaceous and silty; glassy broken quartz grains common; mostly no porosity visible but thin drilling break to 5 min/ft at 8578'. 10% - 20% **Red Beds**: **Shale** and lesser **Siltstone**.
Trace sample show:	Minor spotty possible black hydrocarbon stain is difficult to distinguish from apparent hematite staining. Virtually no fluorescence. Moderately slow nonstreaming cut fluorescence dries to faint yellow fluorescent halo. Single black hydrocarbon filled microfracture fluoresces yellow after solvent is applied and yields faint slow streaming yellow cut fluorescence. Under white light, no cut or oil ring.
Hot-wire gas:	26 – 8 units.
8600' – 8605'	40% **Red Beds**; dark grayish red to some dark reddish brown, pale reddish brown chips and masses appear artificially soft, trace grayish red with white spots; smooth shale, silty sandy shale, and argillaceous and commonly sandy siltstone; firm, medium hard; non- to some moderately calcareous; subblocky. 60% **Sandstone**; variably tinted pale red, grayish red, and pale reddish brown; very fine to medium grained; subangular, subround; moderately well to moderately sorted; medium hard, some hard; non- to slightly calcareous; moderately clean to argillaceous and silty; trace possible mica; mostly no porosity visible. Virtually no sample show. Total gas 8 – 10 units.
Remark:	Tripped for new bit #15 Security M89TF at 8605'. Trip gas 35 units.
8605' – 8620'	30% - 20% **Sandstone**; light gray, some tinted grayish red purple to grayish red; mostly fine to medium grained, some dispersed coarse to very coarse grains; subangular, subround; well to some poorly sorted; medium hard to hard; non- to slightly calcareous/dolomitic; mostly no porosity visible. 70% - 80% **Red Beds**: **Siltstone**; pale to moderate reddish brown; argillaceous, some very fine grained sandy; firm to moderately soft; calcareous—many chips decrepitate in acid to muddy powder; subblocky; and minor **Shale**; dark grayish red to dark reddish brown; smooth, some silty; firm; slightly calcareous; coarse platy, subblocky. No sample show. Total gas 2 – 7 units.
8620' – 8650'	100% **Red Beds**: 90% **Siltstone**; pale to moderate reddish brown (10 R 5/4 to 10 R 4/5); argillaceous, some very fine grained sandy; firm, some moderately soft; calcareous—part decrepitates in acid to muddy powder; trace mica; subblocky. 10% **Shale**; dark grayish red (10 R 3/2); smooth; firm; slightly calcareous; coarse platy, subblocky. Trace **Sandstone**. No sample show. Total gas 4 – 7 units.
Remark:	Good sample quality. Tripped for new bit #16 Hughes ATJ33C at 8665'. Trip gas 42 units.
8650' – 8690'	100% **Red Beds**: 90% - 70% **Siltstone**; pale to moderate reddish brown uphole, increasingly grayish red downhole, trace greenish gray reduction streaks; argillaceous, part very fine grained sandy; moderately soft (probable artifact of drilling) to firm and medium hard; calcareous—part decrepitates in HCl to muddy

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powder; trace mica; subblocky. 10% - 30% **Shale**; grayish to dark grayish red, part tinted reddish brown, trace greenish gray reduction streaks; smooth to some silty and very fine grained sandy; firm, medium hard; slightly calcareous; coarse platy, subblocky. Trace **Sandstone**; moderate reddish orange; very fine grained; grades to siltstone; no porosity visible. Trace **Sandstone**; light to medium light gray, part tinted grayish red and grayish red purple; very fine to medium grained; cavings or thin beds within red beds; no porosity visible. Rare **Calcite**; white; *microfracture fill*. Total gas 4 – 7 units.

Remark: Lost circulation at 8703'. Lost 1300 B total. Pumped LCM sweeps and rebuilt salt-mud in 9 hrs.

8690' – 8800' 100% **Red Beds**: 70% **Siltstone**; grayish red, part tinted reddish brown, trace greenish gray reduction streaks; argillaceous, some also very fine grained sandy; medium hard, some firm, minor soft chips are likely artifact of drilling; slightly to moderately calcareous/dolomitic; slightly anhydritic cement and rare patches of white microcrystalline anhydrite; some micromicaceous partings; subblocky. 30% - 20% **Shale**; dark grayish red to grayish red, some tinted dark reddish brown, trace greenish gray reduction streaks; smooth to silty and very fine grained sandy; firm, medium hard; slightly calcareous; some micromicaceous partings; coarse platy, subblocky. Trace – 10% **Sandstone**; pale reddish brown to moderate reddish orange (10 R 5/4 to 10 R 6/5); very fine to some fine grained; subangular, subround; well sorted; medium hard; slightly to moderately calcareous; slightly anhydritic; trace black grains; no porosity visible. At base, Trace **Calcite**; white; *microfracture fill* cutting shale and siltstone. No sample show. Total gas 3 – 7 units.

8800' – 8820' 100% **Red Beds**: 60% **Siltstone**; grayish red, part tinted reddish brown, trace greenish gray reduction streaks, trace very light to medium dark gray; argillaceous, some very fine grained sandy; subblocky. 20% **Shale**; dark grayish red to grayish red, some tinted dark reddish brown. 20% **Sandstone**; pale reddish brown to moderate reddish orange, trace very light to medium dark gray; very fine to some lower fine grained; anhydritic; moderately calcareous/dolomitic; part silty and argillaceous, some moderately clean; mostly no porosity visible.

Trace sample show: Possible black hydrocarbon stain where gray. No fluorescence. Moderately slow nonstreaming cut fluorescence dries to faint yellow fluorescent halos. Under white light, no cut or oil ring.

Hot-wire gas: 7 – 18 units; C1 and C2.

8820' – 8890' 60% - 50% **Siltstone**; grayish red to pale reddish brown, subordinate but increasing light to dark gray; commonly argillaceous, some moderately clean, part very fine grained sandy; firm to medium hard; moderately to slightly calcareous/dolomitic; anhydritic; some micromicaceous partings; subblocky. 20% - 10% **Shale**; dark grayish red to grayish red, some tinted dark reddish brown; smooth to some silty and very fine grained sandy; firm, medium hard; slightly calcareous/dolomitic; some micromicaceous partings; coarse platy, subblocky. 20% - 40% **Sandstone**; pale reddish brown to minor moderate reddish orange, increased very light to dark gray;

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very fine to some fine grained; subangular, subround; well sorted; firm, moderately hard; slightly to moderately calcareous/dolomitic; anhydritic; argillaceous and silty to moderately clean; mostly no porosity visible but thin faster drilling streaks to 2.5 min/ft at best particularly in 8830' – 8860' interval.

Slight sample shows: Patchy to uniform black probable hydrocarbon stain in gray siltstone and sandstone. No fluorescence. Moderately slow to moderately fast non- to slightly streaming bluish yellow cut fluorescence dries to faint to fair yellow fluorescent halos. Under white light, no cut or oil rings.

Hot-wire gas: Total gas 6 – 18 units (some associated with attempted carbide lag checks).

Remark: Overall slight increase in grain size is associated with apparent black hydrocarbon staining and cut fluorescence in both siltstone and sandstone. Overall red bed sequence appears to have been partially "bleached" and hydrocarbon-stained.

8890' – 8920' 30% - 20% **Sandstone**; pale reddish brown, minor light to dark gray; as above. 50% - 60% **Siltstone**; pale reddish brown, grayish red, decreasing light to dark gray. 20% **Shale**; dark grayish red, trace greenish gray reduction streaks.

Slight to trace shows: Mostly patchy black probable hydrocarbon stain in gray siltstone and sandstone. No fluorescence. Moderately slow to moderately fast non- to slightly streaming cut fluorescence dries to fair to faint yellow fluorescent halos. Under white light, no cut or oil rings.

Hot-wire gas: Total gas 16 – 6 units.

8920' – 8966' 40% - 20% **Sandstone**; pale reddish brown to grayish orange pink, some tinted moderate orange pink; very fine to some fine grained; subangular, subround, minor round upper fine grains; well to moderately well sorted; medium hard, some hard; moderately to slightly calcareous/dolomitic; anhydritic; moderately clean to silty and argillaceous; rare to minor black grains; mostly no porosity visible. 40% - 70% **Siltstone**; pale reddish brown, some tinted moderate brown, trace light to medium dark gray; commonly argillaceous, some very fine grained sandy; moderately hard, some hard; moderately calcareous/dolomitic; some micromicaceous partings; slightly anhydritic; rare white patches of microcrystalline anhydrite; subblocky, blocky. 20% - 10% **Shale**; dark grayish red to grayish red, some tinted grayish brown; smooth to silty and very fine grained sandy; firm; slightly calcareous/dolomitic; coarse platy to blocky. Trace **Calcite/Dolomite**; white *microfracture fill*; staining in Alizarin Red shows mixed carbonate composition. Virtually no sample show. Total gas 7 – 11 units.

Remark: Tripped for new bit #17 Reed EHP53A at 8971'. Trip gas 32 units.

8966' – 9000' 100% **Red Beds**: 70% - 80% **Siltstone**; pale reddish brown, part tinted or mottled moderate brown; commonly argillaceous, much is also very fine grained sandy; some firm, mostly medium hard to some hard; moderately to slightly calcareous/dolomitic; anhydritic; some micromicaceous shaly partings; rare white

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patches of microcrystalline anhydrite; subblocky, minor part rounded. 20% - 10% **Sandstone**; pale reddish brown (10 R 5/3) to some grayish orange pink (5 YR 7/2); very fine to some fine grained; well sorted; medium hard; moderately to slightly calcareous/dolomitic; anhydritic; trace black grains; mostly no porosity visible. 10% **Shale**; dark grayish red to grayish red, commonly tinted grayish brown, rare greenish gray reduction streaks; smooth to silty and very fine grained sandy; firm, medium hard; slightly calcareous/dolomitic; part micromicaceous; coarse platy, subblocky; several probable *slickensides*. No sample show. Total gas 3 – 5 units.

9000' – 9130' 100% **Red Beds**: 80% - 90% **Siltstone**; pale reddish brown, tinted or mottled moderate brown where more shaly; commonly argillaceous, some very fine grained sandy; firm to medium hard; slightly calcareous or dolomitic; anhydritic; some micromicaceous shaly partings; rare white patches of microcrystalline anhydrite; subblocky, some rounded. 10% - Trace **Sandstone**; pale reddish brown, trace grayish orange pink; very fine grained; well sorted; medium hard; slightly calcareous or dolomitic; anhydritic; trace black grains; mostly no porosity visible. 10% **Shale**; dark grayish red to grayish red, commonly tinted grayish brown; silty and very fine grained sandy, some smooth; firm, medium hard; slightly calcareous/dolomitic; part micromicaceous; coarse platy, subblocky. Rare **Anhydrite**; white; *microfracture fill*. No sample show. Total gas 3 - 8 units.

9130' – 9140' 100% **Red Beds**: 90% **Siltstone**. 10% **Shale**. Trace **Dolomite**; light brownish gray, some grayish red; cryptocrystalline; medium hard; argillaceous, part silty; no porosity visible. No sample show. Total gas 6 – 7 units.

9140' – 9180' 100% **Red Beds**: 90% - 80% **Siltstone**; pale reddish brown, tinted or mottled moderate brown where more shaly; commonly argillaceous; some very fine grained sandy; firm to medium hard, some rock flour and rounded chips that appear artificially soft; dolomitic; anhydritic; trace white patches of microcrystalline anhydrite; some dark grayish red micromicaceous partings; subblocky, part rounded. 10% **Shale**; dark grayish red to grayish red, commonly tinted grayish brown; smooth to silty and very fine grained sandy; firm, medium hard; slightly dolomitic; some micromicaceous; coarse platy, subblocky. Trace **Anhydrite**; white; *microfracture fill*. No sample show. Total gas 5 – 8 units.

THAYNES LS. LOG TOP: 9171' TVD: 9158' DATUM: -1823'

9180' – 9197' 70% **Siltstone/Sandstone**; very light and light gray to some medium gray, some grayish pink to pale red, downhole some faintly light olive gray to olive gray; coarse silt to lower very fine grained sand; dolomitic, chips remain intact in acid and are firm to medium hard following dissolution of carbonate, 5% to occasionally 25% carbonate; quartz grains are best seen by dissolving dolomite cement, washing chips in acetone, and then viewing dry at 40X; minor black to blackish red silt- to fine sand-size spots and masses—probable hematite; medium hard to some hard; subblocky, blocky. Trace **Dolomite**; light gray, light brownish gray, some tinted grayish red and greenish gray; cryptocrystalline; slightly argillaceous, very silty, partly silicified; medium hard; no porosity visible; trace black-stained *microfractures*. 30% **Cavings**; red beds. Total gas 6 – 10 units.

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Trace sample show:	Trace dolomite displays dull yellow fluorescence that appears to be mainly mineral fluorescence but yields moderately slow nonstreaming cut fluorescence that dries to faint yellow fluorescent halos.
Remarks:	Circulated samples at 9197'. Good sample quality; change to overall gray of Thaynes is evident in sample trays viewed across office. Rotary torque increased in the uppermost Thaynes, as also noted at the Anschutz AL&L #4-30 at Cave Creek and at the Anschutz AL&L #14-33 at Yellow Creek.
Intermediate casing:	9 5/8" set at 9194' KB. Trip gas 704 units. Drilled out with mill tooth bit.
9197' – 9200'	90% **Cement**; black inclusions do not yield cut fluorescence or cuts under white light. 5% **Siltstone/Sandstone**; very light gray to some medium gray; coarse silt to lower very fine grained sand; dolomitic, chips remain intact in acid; 5% to 25% carbonate content; medium hard; platy, subblocky. 5% **Cavings**; red beds.
Trace sample show:	Several chips are stained black along fracture faces. No fluorescence. Moderately fast slightly streaming yellow cut fluorescence from stained fracture faces; dries to weak yellow fluorescent halos. Under white light, no cut or oil ring.
Remark:	Tripped at 9203' for new carbide insert bit #19 Reed EHP61A. Trip gas 1200 units.
9200' – 9210'	70% **Cement**. 30% **Siltstone/Sandstone**; very light to some medium gray; coarse silt and lower very fine grained sand; dolomitic. No sample show. Total gas 1200 – 30 units, under influence of trip gas.
9210' – 9240'	100% **Siltstone/Sandstone**; very light to some medium gray; coarse silt and lower very fine grained sand; small cuttings are firm; dolomitic; chips remain intact in acid and vary from fragile to firm after dissolution of cement and minor carbonate grains; 5% - 25% carbonate content; platy. Trace **Shale**; medium dark gray, tinted dark greenish gray; smooth, commonly subwaxy; firm; nondolomitic; platy, subblocky; possible *slickensides*. No sample show. Total gas 65 – 10 units.
9240' – 9250'	90% **Siltstone**; very light to some medium gray; coarse silt and lower very fine grained sand; small cuttings, firm; dolomitic; chips remain intact in acid; quite clean; platy. 10% **Shale**; medium dark gray, tinted dark greenish gray in part; smooth, subwaxy; firm; nondolomitic; platy, subblocky; some possible *slickensides*. Trace **Dolomite**; light to medium light gray; cryptocrystalline; faint fine to medium grained oolitic texture in part; firm; slightly argillaceous and silty; no porosity visible. No sample show. Total gas 11 – 8 units.
9250' – 9260'	100% **Siltstone**; grayish orange pink (5 YR 8/2), some very light to medium gray; coarse silt; very fine grained sandy; firm, medium hard; dolomitic; slightly anhydritic; platy, subblocky. No sample show. Total gas 8 – 12 units.
9260' – 9279'	100% **Siltstone**; very light to medium dark gray; coarse silt; very fine grained sandy streaks; firm, medium hard; dolomitic; quite clean, some argillaceous streaks; trace

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micropyrite; platy, subblocky. Trace **Shale**; medium dark gray; smooth; firm; nondolomitic; platy, subblocky. No sample show. Total gas 10 – 30 units.

Remark: Tripped at 9279' for new bit #20 Security M84FD. Old bit was cored out. Trip gas 140 units.

9279' – 9340' 100% **Siltstone**; light and medium light gray, part tinted pinkish gray (buff), minor medium gray; very fine grained sandy; firm, medium hard; dolomitic; trace micropyrite; rare patches of green mineralization; platy, subblocky. Total gas 4 – 12 units.

Rare/slight sample shows: Few chips increasing to 5% black stained fracture faces, microfractures, and possible bedding planes. Some fractures are filled with 0.5 mm thick black, vitreous, conchoidal-fracturing bitumen. Mostly no fluorescence. Downhole, trace dull to moderate yellow fluorescence from part of stained surfaces and from rare carbonate fracture fill. Fast moderate to strong streaming yellow cut fluorescence from stained surfaces. As solvent evaporates, cut fluorescence fades from bright yellow rings to weak yellow halos or virtually no fluorescence. Under white light, no to fair brown partly streaming cuts and faint to strong brown "oil" rings visible to unaided eye.

9340' – 9350' 30% **Dolomite**; very light to medium light gray, minor grayish orange pink; cryptocrystalline, some microcrystalline and slightly sucrosic; quite clean to silty; firm, medium hard; thin platy to subblocky; no porosity visible. 70% **Siltstone**; light to medium gray; dolomitic. Total gas 6 – 4 units.

Trace sample show: Mostly no stain. 2% of dolomite exhibits spotty to uniform dull to moderately bright yellow fluorescence that appears to be mostly mineral fluorescence. Moderately fast non- to slightly streaming yellow cut fluorescence from brighter yellow patchy fluorescence and from fluorescent microfractures dries to weak yellow fluorescent halos. Under white light, no cut or oil ring.

9350' – 9360' 90% **Siltstone**; grayish red, some pale red, minor neutral gray; argillaceous to some quite clean; firm; dolomitic; platy, some subblocky. 10% **Shale**; grayish red to dark grayish red; silty, some smooth; firm; slightly dolomitic; micromicaceous; mostly platy. No sample show. Total gas 5 – 3 units.

9360' – 9390' 80% - 90% **Siltstone**; mixed light to medium gray and grayish red; quite clean to some argillaceous; firm, some medium hard; dolomitic; platy, subblocky. 10% - Trace **Shale**; grayish red to dark grayish red. 10% **Dolomite**; light to medium light gray, light brownish gray; cryptocrystalline; faint fine grained oolitic texture where light brownish gray; quite clean to silty; firm; platy, no porosity visible. No sample show. Total gas 3 – 9 units.

9390' – 9430' 100% - 90% **Siltstone**; light to some medium gray, some tinted pinkish gray to light brownish gray; some lower very grained sandy; moderately clean, some argillaceous; dolomitic; platy, some subblocky. Trace **Shale**; medium dark gray. 0% - 10%

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Limestone; light gray, mottled medium dark gray; chalky, much appears smeared and some may be mixed with calcite fracture fill; firm; slightly argillaceous; no porosity visible. At base, Trace **Calcite**; white; fracture fill. Mostly no sample show; trace yellow cut fluorescence from minor black stained streaks and patches. Total gas 9 – 5 units, 18 units at 9406'.

9430' – 9450'

98% - 100% **Siltstone**; medium dark to some light gray, downhole minor light brownish gray; part very fine grained sandy; dolomitic; medium hard; subblocky, blocky. 2% - Trace **Calcite** and lesser **Anhydrite**; white to clear; loose and attached *fracture fill*; mixed-mineral fracture fill was confirmed by staining calcite in Alizarin Red and by acicular crystals formed from anhydrite placed in warm acid.

Trace sample show: No definite hydrocarbon stain. Minute black specks are released in acid from siltstone but cut fluorescence is extremely weak. Minor spotty yellow fluorescence on calcite fracture fill yields moderately fast non- to slightly streaming yellow cut fluorescence. Under white light, no cut or oil ring.

Hot-wire gas: 6 – 30 – 6 units.

Remark: Sharp increase in rotary torque at 9441'; picked up and worked bit back to bottom. Fractured.

9450' – 9480'

100% **Siltstone**; light to medium gray, minor pale yellowish brown to light brownish gray; firm, some medium hard; dolomitic; platy, some subblocky. No sample show. Total gas peaks of 30 and 38 units at 9452' and 9456' respectively; then 4 – 12 units.

9480' – 9500'

10% - 20% **Dolomite**; light brownish to brownish gray, mottled white, brown, and gray; faint fine grained oolitic texture; firm; slightly silty and argillaceous; no porosity visible. 90% - 80% **Siltstone**; light to medium gray, some pale yellowish brown; dolomitic; some is micromicaceous; platy, some subblocky. No sample show.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	7	94%	6%	0%	0%	0%	6.7	9492'
Maximum	236	9%	8%	2%	1%	0%	4.9	9496'
After	7	85%	15%	0%	0%	0%	9.7	9500'

9500' – 9510'

100% **Siltstone**; light to medium gray, some tinted light brownish gray; part very fine grained sandy; firm, little is medium hard; increased dispersed biotite and muscovite; effervescence and staining in Alizarin Red show mixed calcite and subordinate dolomite cement; platy, some subblocky. No sample show. Total gas 6 – 8 units.

9510' – 9540'

20% - 70% **Shale**; grayish brown to dusky brown (5 YR 3/2 to 5 YR 2/2), some tinted dark grayish red; smooth, part silty; firm; slightly dolomitic; part

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micromicaceous; platy, some subblocky. 80% - 30% **Siltstone**; light to medium gray and pinkish gray to light brownish gray; grayish red increases downhole; moderately clean to very argillaceous; commonly micaceous; firm; calcareous to dolomitic; platy, some subblocky. No sample show. Total gas 5 – 9 units.

Remark: Very good sample quality is shown by sharp lithologic and color changes.

9540' – 9550' 98% **Siltstone**; light to medium gray; some very fine grained sandy; firm, medium hard; calcareous; platy, some subblocky. 2% **Shale**; grayish brown to dusky brown. No sample show. Total gas 5 – 12 units, connection gas 22 units.

9550' – 9570' 10% - 80% **Shale**; dusky brown, some tinted dark grayish red; smooth, some silty; firm; non- to slightly calcareous/dolomitic; micromicaceous; platy, some subblocky. 80% - 20% **Siltstone**; light to medium gray, some tinted light brownish gray to pale yellowish brown; firm, some medium hard; calcareous; platy, some subblocky. 10% - Trace **Limestone** and minor **Dolomite**; light to medium light gray, light brownish gray, part mottled medium dark gray; faint fine grained oolitic texture in part; firm; slightly argillaceous; no porosity visible. No sample show. Total gas 5 – 11 units.

9570' – 9600' 30% - Trace **Shale**; dusky brown, some tinted dark grayish red; smooth to silty; firm; non- to slightly calcareous/dolomitic; micromicaceous; platy, some subblocky. 20% - Trace **Limestone**; light gray, part tinted light brownish gray, some medium dark mottling; faint fine to medium grained oolitic texture in part, commonly chalky; firm; slightly argillaceous; platy, no porosity visible. 50% - 100% **Siltstone**; light to some medium gray; firm, some medium hard; calcareous, staining shows some is dolomitic; platy, some subblocky. No sample show. Total gas 5 – 7 units; connection gas 55 units.

9600' – 9630' 100% **Siltstone**; light to medium dark gray; part argillaceous, some lower very fine grained sandy; firm, some medium hard; calcareous; platy, some subblocky. Trace **Shale**; medium dark gray, some faintly dark greenish gray; smooth and partly subwaxy to silty; firm; non- to slightly calcareous; platy, few possible *slickensides*. Trace **Limestone**. Trace **Calcite**; white; *fracture fill.* No sample show.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	6	93.1%	6.9%	0.0%	0.0%	0.0%	13.0	9604'
Maximum	125	89.1%	9.1%	1.7%	0.2%	0.0%	3.7	9610'
After	8	90.5%	8.0%	1.5%	0.0%	0.0%	12.3	9620'

9630' – 9635' 70% **Shale**; medium dark gray—some tinted greenish gray—and dark grayish red; some appears pulverized to light gray rounded soft masses; smooth and some subwaxy; firm; non- to slightly calcareous/dolomitic; part micromicaceous; platy; slow drilling to 28 min/ft. 30% **Siltstone**. No sample show. Total gas 11 units.

Remark: Tripped at 9635' for new bit #21 Hughes ATJ44C. Trip gas 856 units.

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9635' – 9660'	100% **Siltstone**; light to medium dark gray; part argillaceous; firm to medium hard; calcareous; chips remain intact in acid, 10% to rarely 30% carbonate content; platy, subblocky. No sample show. Total gas 11 – 6 units.
9660' – 9730'	80% - 70% **Siltstone**; light to medium dark gray; moderately clean to argillaceous; firm to moderately hard; very to moderately calcareous; 10% - occasionally 50% carbonate content; platy, subblocky. 20% **Limestone**; light to medium light gray; very silty, some argillaceous, grades to calcareous siltstone; firm to some medium hard; no porosity visible. 0% - 10% **Shale**; medium dark gray, tinted brownish gray; silty; firm; calcareous; platy. Trace – 2% **Chert**; light to medium gray, some light brownish gray; hard; siliceous streaks within siltstone. No sample show. Total gas 5 – 14 units.
9730' – 9770'	50% – 90% **Limestone**; very light gray, pinkish gray (buff) to light brownish gray and some brownish gray; crypto- to microcrystalline, much is chalky; commonly mottled medium dark with probable pellets; moderately clean to silty and argillaceous; some light to medium gray and brownish gray cherty patches; firm, medium hard, some hard; no porosity visible. At top, 20% **Shale**; medium dark gray, part tinted brownish gray; firm; calcareous; platy. 30% - 10% **Siltstone**; light to medium dark gray; calcareous; moderately clean to argillaceous; platy, subblocky. No sample show. Total gas 12 – 30 – 8 units.
9770' – 9790'	100% **Limestone**; very light gray to light brownish gray, overall lighter colored than overlying limestone; much is chalky, commonly mottled medium dark gray with probable pellets and shale clasts; fine to coarse clastic texture in part, grains vary from rounded to subangular; firm; moderately clean, some silty and argillaceous insoluble residue; no porosity visible. No sample show. Total gas 12 – 7 units.
9790' – 9810'	70% **Limestone**; some very light gray, increased light brownish gray to medium dark gray tinted brownish gray, overall darker; crypto- to microcrystalline, some chalky; commonly mottled medium light to dark brownish gray with probable pellets and shale clasts; increased silt and argillaceous insoluble residue; minor cherty patches; no porosity visible. Grades to 30% **Siltstone**; medium light gray to brownish gray; very calcareous; argillaceous. No sample show. Total gas 7 – 12 units.
9810' – 9840'	100% **Limestone**; very light gray to pinkish gray (buff) and light brownish gray, overall lighter colored; crypto- to microcrystalline, commonly chalky; much is mottled medium dark gray; probable pellets and rounded to subangular carbonate grains; firm, some medium hard; moderately clean, decreased silt and argillaceous HCl-insoluble residue; trace cherty; no porosity visible. No sample show. Total gas 10 – 5 units.
9840' – 9850'	90% **Limestone**; very light gray to pinkish gray (buff) and light brownish gray, minor brownish gray. 10% **Chert**; light brownish gray; free chips and cherty streaks cutting across limestone; hard, sharp. No sample show. Total gas 5 – 7 units.
9850' – 9880'	100% **Limestone**; some very light gray to pinkish gray (buff), light brownish gray and some brownish gray, trace tinted pink; crypto- to microcrystalline, part chalky; part is mottled medium dark gray to dark brownish gray with probable pellets and some shale clasts; some fine to very coarse carbonate grains; trace cherty; no porosity visible. No sample show. Total gas 5 – 9 units.

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9880' – 9910'	80% - 90% **Limestone**; pinkish gray (buff) to light brownish gray and brownish gray; crypto- to microcrystalline, commonly chalky where lighter colored; fine to very coarse grained clastic texture in part including probable fossil fragments and pellets; firm to medium hard; increased silt and argillaceous insoluble residue associated with dark brownish gray streaks that appear organic rich; trace cherty; no porosity visible. 20% - 10% **Siltstone** and **Shale**; dark brownish gray; argillaceous siltstone and silty shale; calcareous; coarse platy, subblocky. No sample show. Total gas 4 – 11 units.
9910' – 9940'	70% - 90% **Siltstone**; light to medium dark gray, some dark brownish gray streaks; moderately clean to argillaceous; firm, increasingly medium hard; calcareous; subblocky. 30% - 10% **Limestone**; pinkish gray (buff) to light brownish gray and minor brownish gray, part mottled medium dark with fossil fragments and pellets. Trace **Calcite**; white; *fracture fill.* No sample show. Total gas 5 – 8 units; brief peaks to 95 and 22 units at 9934' and 9938'.
9940' – 10000'	40% - 20% **Limestone**; pinkish gray (buff) to light brownish gray and some brownish gray, part mottled medium dark gray; crypto- to microcrystalline, commonly chalky where light colored; fine to coarse grained clastic texture in part; probable fossil fragments and pellets common; moderately clean to silty and argillaceous; some dark brownish gray streaks appear organic rich; firm to medium hard; no porosity visible. 60% - 80% **Siltstone**; light to medium dark gray; moderately clean to argillaceous; calcareous; subblocky. Trace **Calcite**; white; *fracture fill.* No sample show. Total gas 4 – 10 units.
Remark:	Some white to light colored chips (smeared fracture fill and lightest colored limestone) are stained pink by mud thinner additive.
10000' – 10010'	40% **Shale**; medium dark gray, some tinted dark greenish gray; smooth; firm; non- to slightly calcareous; platy. 40% **Siltstone**; light to medium dark gray. 20% **Limestone**; pinkish gray (buff) to light brownish gray and lesser brownish gray. No sample show. Total gas 8 – 18 units.
10010' – 10020'	60% **Siltstone**; pale red to grayish red, much is tinted reddish brown; commonly argillaceous; firm; slightly calcareous/dolomitic; subblocky. 30% **Siltstone**; light to medium dark gray. 10% **Limestone**. No sample show. Total gas 10 – 6 units.
10020' – 10030'	40% **Dolomite**; pink (stained by mud thinner) to pinkish gray and light brownish gray; part is chalky, some faintly fine grained; firm; moderately clean; no porosity visible but faster drilling to 2.1 min/ft. 60% **Siltstone**; medium light to medium gray; moderately clean and partly very fine grained sandy; some argillaceous; staining in Alizarin Red shows mostly dolomite and minor calcite cement; medium hard but may also correlate to faster drilling; subblocky. No sample show. Total gas 7 – 16 units.
10030' – 10060'	90% - 95% **Siltstone**; some light gray, mostly medium light to medium gray, minor medium dark gray; moderately clean and partly very fine grained sandy; some argillaceous; staining in Alizarin Red and reaction in acid shows mixed dolomite and calcite cement; part is silicified, cherty; firm to hard; subblocky to some blocky and sharp irregular; probable *fractures in fast drilling* at 10036 – 10040'. 10% - 5% **Chert**; very light to medium gray; much is likely silicified siltstone. No sample show. Total gas 8 – 30 units.

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10060' – 10070'	90% **Siltstone**; light to some medium dark gray. 10% **Shale**; dark grayish red, dark reddish brown; smooth to silty; firm; some micromicaceous; platy, subblocky. No sample show. Total gas 9 – 12 units.
10070' – 10110'	100% - 80% **Siltstone**; some light gray, mostly medium light to medium gray, some medium dark gray; moderately clean, some argillaceous; partly dolomitic uphole, entirely calcareous downhole; mostly medium hard; subblocky. Trace – 20% **Limestone**; pinkish gray (buff) to light brownish gray and minor brownish gray; part is mottled medium dark gray; crypto- to microcrystalline; partly chalky where lighter colored; some dark brownish gray argillaceous and apparently organic streaks; no porosity visible. No sample show. Total gas 6 – 12 units.
10110' – 10180'	80% - 100% **Siltstone**; pale to moderate reddish brown (10 R 5/4 to 10 R 4/5), little gray at top; moderately to slightly argillaceous; firm, medium hard; dolomitic; slightly anhydritic; subblocky. 20% - Trace **Shale**; dark grayish red to very dusky red, minor medium dark gray; smooth, slightly silty; firm; non- to slightly dolomitic; part micromicaceous; coarse platy, subblocky. Trace **Anhydrite**; white, clear; *fracture fill*; sample show. Total gas mostly 4 – 12 units.
10180' – 10190'	100% **Siltstone**; medium light to medium dark gray and light brownish to brownish gray, some pale to moderate reddish brown as above; firm to some hard; dolomitic, some appears partly silicified; minor gray shaly streaks; subblocky, blocky. No sample show. Total gas 7 – 28 units.
10190' – 10200'	100% **Siltstone**; pinkish gray (buff to pale yellowish brown), lesser light to medium gray; medium hard and hard, some firm; slightly to moderately dolomitic; platy to subblocky; bottom 3 ft drilled fast at 1.5 to 0.5 min/ft.
Trace sample show:	5% of siltstone exhibits black pinpoint staining that is likely solid hydrocarbons. Staining is evident only in neutral gray chips, not in pinkish gray to pale yellowish brown chips (possible bleaching associated with hydrocarbons). Virtually no fluorescence. Moderately fast slightly streaming yellow cut fluorescence dries to rather weak yellow fluorescent halos. Under white light, no cut or oil ring.
Hot-wire gas:	Total gas 24 – 45 units. Please see table below.
10200' – 10210'	100% **Siltstone**; medium light to medium gray, minor light gray; moderately clean; medium hard, some firm; dolomitic; subblocky; continued fast drilling at 1 to 2 min/ft in top 5 ft.
Trace sample show:	2% exhibits black pinpoint staining that is likely solid hydrocarbons. Trace spotty moderately bright yellow fluorescence visible at 10X; fluorescence in few chips occurs along *possible microfracture faces*. Moderately fast slightly steaming yellow cut fluorescence from fluorescent chips and from nonfluorescent black stained chips dries to weak yellow fluorescent halos. Under white light, no cut or oil ring.

LITHOLOGY AND SHOWS

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	37	89.4%	8.3%	2.3%	0.0%	0.0%	5.4	10192'
Maximum	67	91.0%	7.7%	1.4%	0.0%	0.0%	1.0	10204'
After	16	91.0%	8.3%	0.8%	0.0%	0.0%	5.2	10212'

Remark: Continued very good sample quality.

10210' – 10220' 95% **Siltstone**; medium light to medium dark gray; moderately clean to some argillaceous; medium hard; dolomitic; trace pyritic; subblocky. 5% **Shale**; medium dark gray, part faintly dark greenish gray; smooth; some micromicaceous; coarse platy, subblocky. Virtually no sample show. Total gas 12 – 18 units.

10220' – 10240' 30% - 80% **Limestone**; pinkish gray (buff) to light brownish gray, minor gray mottling; crypto- to microcrystalline; much is chalky; firm; quite clean; no porosity visible. 10% - Trace **Shale**; medium dark gray, some faintly dark greenish gray. 60% - 20% **Siltstone**; gray. No sample show. Total gas 12 – 25 units.

10240' – 10260' 60% - 100% **Limestone**; pinkish gray to light brownish gray, some light gray; crypto- to microcrystalline; much is chalky; firm; clean, some silty and argillaceous; no porosity visible but slightly faster drilling at 3 to 5 min/ft. 20% - 0% **Shale**; medium dark gray, some faintly dark greenish gray; smooth; firm; noncalcareous; some micromicaceous; platy, subblocky. 20% - 0% **Siltstone**; gray.

Trace sample show: Virtually no black stain. Trace spotty yellow fluorescence yields slight yellow fluorescent halos.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	21	89.7%	8.1%	2.2%	0.0%	0.0%	4.0	10246'
Maximum	135	91.3%	6.8%	1.9%	0.0%	0.0%	3.7	10252'
After	27	90.2%	8.7%	1.0%	0.0%	0.0%	3.5	10254'

10260' – 10270' 60% **Siltstone** and **Shale**; medium to medium dark gray; smooth to silty shale and argillaceous siltstone; firm to medium hard; slightly to moderately calcareous; coarse platy, subblocky, blocky. 40% **Limestone**; pinkish gray to some light brownish gray; most is chalky. Virtually no sample show. Total gas 40 – 12 units.

10270' – 10280' 70% **Limestone**; pinkish gray (buff) to some medium light gray; light colored crypto- to microcrystalline matrix with abundant dark yellowish brown to dark gray probable fine to medium grained pellets and some possible rounded shale clasts; firm, little is medium hard; slightly argillaceous; mostly no porosity visible. 20% **Siltstone**; medium dark to dark gray, some tinted brownish gray; argillaceous; firm, some medium hard; slightly to moderately calcareous; subblocky. Grades to 10% **Shale**; dark gray, some tinted dark brownish gray; silty, some smooth; firm; slightly calcareous; minor streaks appear organic rich. Total gas 14 – 55 units.

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Trace sample show: Mostly no fluorescence. Both limestone and shale yield moderately slow mostly nonstreaming bluish yellow cut fluorescence that dries to weak yellow fluorescent halos.

10280' – 10320' 40% - 20% **Limestone**; medium dark gray to lesser light gray and pinkish gray; abundant dark gray to dark brownish gray fine to medium grained pellets; medium hard, some firm; increasingly argillaceous, little is clean where light colored; mostly no porosity visible. 50% - 80% **Siltstone**; medium dark gray to some light gray downhole; argillaceous, some moderately clean and lower very fine grained sandy downhole; medium hard, some firm; calcareous; subblocky. 10% - Trace **Shale**; medium dark to dark gray, some tinted dark brownish gray, trace tinted dark greenish gray; silty, some smooth; firm; slightly to some noncalcareous; platy, subblocky. No sample show. Total gas 25 – 5 units.

Remark: Tripped at 10326' for new bit #22 Smith F47. Picked up Monel drill collar for directional surveys. Trip gas 2500 units: 49% C1, 20% C2, 16% C3, 16% C4s.

10320' – 10390' 70% - 90% **Siltstone**; medium light to medium dark gray; moderately clean to argillaceous; medium hard, some firm; dolomitic, increasingly calcareous downhole; subblocky. 30% - 10% **Limestone**; pinkish gray (buff) to light brownish gray, some brownish gray to medium dark gray; chalky where lighter colored, cryptocrystalline where darker; some pelletal; firm, medium hard; slightly to some moderately argillaceous; no porosity visible. Trace **Calcite**; white, pinkish gray; *fracture fill*. No sample show. Total gas 10 – 25 units; 219 units from downtime for survey combined with probable show at 10380'.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	17	90.1%	7.0%	2.9%	0.0%	0.0%	3.0	10378'
Maximum	219	84.7%	13.0%	2.4%	0.0%	0.0%	1.5	10382'
After	15	91.5%	8.5%	0.0%	0.0%	0.0%	4.6	10394'

10390' – 10450' Variable 50% - 20% **Limestone**; pinkish gray to light brownish gray, some brownish gray to medium dark gray; chalky to cryptocrystalline; some mottled medium dark gray with pellets and probable fossil fragments; firm to medium hard; quite clean to argillaceous; no porosity visible except *rare intercrystalline porosity in fracture fill*. 50% - 80% **Siltstone**; medium light to medium dark gray, minor light gray in part; moderately clean to argillaceous; medium hard, some firm; calcareous; subblocky. Trace **Calcite** and **Dolomite**; white, some pinkish gray (some pink staining due to mud thinner in system); Alizarin Red shows mixed mineral *fracture fill*. No sample show. Total gas 5 – 15 units, 61 units from probable fractures at 10430'.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	18	85.1%	10.4%	4.6%	0.0%	0.0%	3.1	10428'
Maximum	61	86.4%	10.2%	3.4%	0.0%	0.0%	2.7	10432'
After	11	88.9%	11.1%	0.0%	0.0%	0.0%	4.4	10438'

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10450' – 10480'

40% - 80% **Limestone**; pinkish gray to light brownish gray; chalky where lightest colored, cryptocrystalline where darker; some fine to medium grained pellets and carbonate clasts uphole, firm to medium hard; much is moderately clean; no porosity visible. 60% - 20% **Siltstone**; medium light to medium dark gray. No sample show. Total gas 7 – 26 units.

10480' – 10500'

95% - 70% **Siltstone**; some light gray, mostly medium to medium dark gray; moderately clean, some argillaceous; medium hard; appears partly dolomitic as well as calcareous—some minute black specks are released in acid—5% to occasionally 40% carbonate content; some lower very fine grained sandy; subblocky, some sharp irregular. 5% increasing to 30% **Limestone**; pinkish gray to some light brownish gray; much is chalky. Trace **Calcite**; white, pinkish gray; *fracture fill.*

Trace sample show:

Trace black apparently solid hydrocarbon stain. No fluorescence. Moderately slow nonstreaming bluish cut fluorescence dries to faint bluish yellow fluorescent halo. Gas show is likely from fractured partly dolomitic siltstone:

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	17	91.5%	8.5%	0.0%	0.0%	0.0%	4.9	10476'
Maximum	118	82.2%	13.0%	3.9%	0.0%	0.9%	2.8	10480'
During	61	85.7%	11.0%	3.3%	0.0%	0.0%	1.2	10487'
After	22	89.9%	10.1%	0.0%	0.0%	0.0%	3.1	10496'

10500' – 10530'

70% - 50% **Limestone**; pinkish gray (buff, some stained pink from mud thinner—freshly broken chips are nearly white inside), some light brownish gray; much is firm and chalky, some cryptocrystalline and medium hard; minor fine to medium grained texture in part; quite clean, some argillaceous; likely interbedded with siltstone. 30% - 50% **Siltstone**; some light gray, mostly medium to medium dark gray; moderately clean, some dark gray and slightly organic-appearing shaly partings; calcareous; subblocky. No sample show. Total gas 9 – 30 units.

10530' – 10580'

80% - 70% **Siltstone**; some light gray, mostly medium to medium dark gray; moderately clean, some streaks argillaceous; medium hard; calcareous; some micromicaceous partings; subblocky. 20% - 30% **Limestone**; pinkish gray (buff) to light brownish gray; chalky and firm where light colored, some cryptocrystalline and medium hard; trace medium dark gray mottling; quite clean to silty; no porosity visible. Trace **Calcite** and **Dolomite**; white; staining in Alizarin Red shows mixed mineral *fracture fill.* No sample show. Total gas 4 – 35 units.

10580' – 10590'

20% **Limestone**; pinkish gray (buff) to light brownish gray. 30% **Dolomite**; pale yellowish brown, medium gray, brownish gray; cryptocrystalline, some fine to medium grained pelletal; moderately clean; no porosity visible. 20% **Siltstone**; gray. 10% **Shale**; medium dark gray, some tinted greenish gray; smooth; firm; slightly calcareous/dolomitic; coarse platy, subblocky. 20% **Red Beds**. No sample show. Total gas 7 – 9 units.

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WOODSIDE RED BEDS	LOG TOP: 10577' TVD: 10533' DATUM: -3198'
Remark:	Excellent sample quality is shown by sharp change to Woodside Red Beds.
10590' – 10720'	90% - 100% **Red Beds**: 80% - 90% to occasionally 50% **Siltstone**; pale red to grayish red uphole, then dominantly pale reddish brown, trace pinkish gray to light brownish gray; argillaceous, some moderately clean streaks where lighter colored; firm, some medium hard, minor soft rounded chips that decrepitate in acid; slightly dolomitic; slightly anhydritic; some micromicaceous partings; subblocky. 20% - 10% to occasionally 50% **Shale**; grayish to dark grayish red, some tinted dark reddish brown; smooth, some silty; firm; non- to slightly dolomitic; part micromicaceous; platy, subblocky. Trace **Anhydrite**; white, clear; firm micro- to very fine crystalline chips and possible fracture fill; few soft rounded masses. No sample show.
Hot-wire gas:	Total gas 7 – 21 units background. Brief increase at 10680' from 1-ft drilling break at 3 min/ft: 123 units; 91% C1, 8% C2, 1% C3, 0% C4s.
10720' – 10730'	100% **Siltstone**; pale red to grayish red—part tinted reddish brown—trace pinkish gray to very pale orange; moderately clean to argillaceous; slightly to moderately dolomitic; some micromicaceous; platy, subblocky. Trace **Anhydrite**; white; microcrystalline; *microfracture fill.* No sample show. Total gas 14 – 35 units.
10730' – 10740'	70% **Siltstone**; pinkish gray (buff) to pale yellowish brown; moderately clean; dolomitic; firm, medium hard; platy, subblocky. 30% **Siltstone**; grayish red to reddish brown; moderately clean to argillaceous; slightly to moderately dolomitic; some micromicaceous; platy, subblocky. No sample show. Total gas 7 – 25 units.
Remark:	Sharp color changes show continuing excellent sample quality.
10740' – 10780'	100% - 90% **Siltstone**; grayish red to reddish brown (10 R 5/3 to 10 R 4/3); moderately clean to argillaceous; firm, some medium hard; dolomitic, minor part decrepitates quickly in acid with slight effervescence; slightly anhydritic; micromicaceous; coarse platy, subblocky. 0% - 10% **Shale**; grayish red; smooth; firm; slightly dolomitic; some micromicaceous; platy, subblocky. No sample show. Total gas 5 – 20 units; 55 units from downtime for survey.
Remark:	Tripped at 10784' for new bit #23 Hughes ATJ44C. Installed rotating head and H2S safety equipment. Trip gas 161 units; 89% C1, 11% C2.
10780' – 10800'	80% **Red Beds**: **Siltstone**; pale reddish brown to grayish red. 20% **Siltstone**; medium dark gray (possibly caving after trip), mostly light gray downhole. No sample show. Total gas 10 – 2 units.
10800' – 10810'	100% **Red Beds**: **Siltstone**; pale reddish brown to grayish red (10 R 5/4 to 10 R 3/3); commonly argillaceous; firm, some medium hard; dolomitic; slightly anhydritic; coarse platy, subblocky. Trace **Shale**; grayish red to dark grayish red; smooth, some silty; firm; non- to slightly dolomitic; some micromicaceous; coarse platy,

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subblocky. Trace **Anhydrite**; white, clear; microcrystalline, some loose spar and *microfracture fill*. No sample show. Total gas 2 – 5 units.

10810' – 10820' — 100% **Red Beds**: 70% **Siltstone**; pale reddish brown; very fine grained sandy; firm; dolomitic; anhydritic; moderately clean, trace black grains; subblocky, blocky small cuttings. Grades to 30% **Sandstone**; pale red to moderate orange pink (10 R 6/3); lower very fine grained; silty; dolomitic; anhydritic; firm to slightly friable small cuttings; no porosity visible. No sample show. Total gas 5 – 10 units.

Remark: The slightly lighter colored sample described above correlates to 11458' – 11472' at the Anschutz Ranch #34-2 where neutron-density separation decreases and gamma cleans slightly.

10820' – 10960' — 100% **Red Beds**: 30% to occasionally 50% **Shale**; grayish red to dark grayish red (10 R 4/2 to 10 R 3/2), part tinted dark reddish brown particularly when viewed parallel to bedding; smooth to silty; firm; non- to slightly dolomitic; some micromicaceous; platy to subblocky. 70% - 50% **Siltstone**; pale reddish brown to some grayish red (10 R 5/4 to 10 R 4/3); commonly argillaceous; firm, some medium hard; dolomitic; anhydritic cement and trace white patches of microcrystalline **anhydrite**; some micromicaceous; subblocky. Trace **Anhydrite**; white, clear. No sample show. Total gas 5 – 12 units, brief slight increases downhole to 20 – 40 units.

Remark: Tripped at 10972' into intermediate casing for swivel repair.

10960' – 11000' — 40% - 20% **Shale**; grayish red to dark grayish red, some tinted dark reddish brown; smooth to silty; firm; non- to slightly dolomitic; part micromicaceous; some cut by microcrystalline white anhydrite; platy, subblocky, trace splintery. 60% - 40% **Siltstone**; pale reddish brown to some grayish red; commonly argillaceous, some lower very fine grained sandy; firm, some medium hard; dolomitic; anhydritic; coarse platy, subblocky. Trace – 20% **Sandstone**; pale red, pale reddish brown; lower very fine grained; silty; firm, some medium hard; dolomitic; anhydritic; trace minute black grains; no porosity visible. Trace **Anhydrite**; white to clear; some microcrystalline patches in siltstone; some small chips of loose spar. No sample show. Total gas 6 – 15 units; connection gas 40 units and survey downtime gas 115 units.

11000' – 11020' — Markedly lighter colored sample at 11000' – 11010'. 30% - 20% **Sandstone**; pinkish gray (buff) to grayish orange pink, moderate orange pink, and pale reddish brown—may be "bleached" in association with hydrocarbons; lower very fine grained; commonly silty; firm, some medium hard; slightly to moderately dolomitic; appears partly anhydritic; trace black grains; no porosity visible; probable fractures account for faster drilling to 1.5 min/ft at best in 11007' – 11012' interval. Grades to 50% **Siltstone**; pinkish gray, grayish orange pink, moderate orange pink, pale reddish brown to some grayish red; some argillaceous, part very fine grained sandy; dolomitic; anhydritic; some micaceous; coarse platy, subblocky. 20% - 30% **Shale**; partly medium gray uphole, mostly grayish to dark grayish red and dark reddish brown downhole; smooth, some silty; firm; non- to slightly dolomitic; platy, subblocky. Trace **Anhydrite**; clear, white; attached *fracture fill*. Virtually no stain. No fluorescence and virtually no cut fluorescence. Please see gas table below.

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Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	18	100.0%	0.0%	0.0%	0.0%	0.0%	7.5	11002'
During	80	91.8%	6.3%	1.8%	0.0%	0.0%	1.3	11008'
Maximum	867	58.1%	27.1%	11.4%	0.0%	3.4%	3.4	11012'
After	84	94.3%	5.7%	0.0%	0.0%	0.0%	6.4	11022'

Remark: Connection gas peaks of 870, 451, and 744 units on first three connections following gas show. Chromatography of connection gas peaks is very similar to that of initial gas show. No H2S detected.

11020' – 11100' 100% **Red Beds**: 10% - 20% **Sandstone**; pale red to pale reddish brown; lower very fine grained; commonly silty; firm, some medium hard; dolomitic; anhydritic; no porosity visible. 40% - 70% **Siltstone**; pale reddish brown, some grayish red; commonly argillaceous; part very fine grained sandy; firm, some medium hard; dolomitic; anhydritic; some micromicaceous; platy, subblocky. 20% - 40% **Shale**; grayish red to dark grayish red, some dark reddish brown; smooth, some silty; firm; non- to slightly dolomitic; some micromicaceous partings; platy, subblocky. Trace – 1% **Anhydrite**; white, clear; microcrystalline patches in siltstone and some probable *microfracture fill*; steady drilling at 5 to 7 min/ft. No sample show. Total gas 100 units falling to mainly 10 – 20 units. Connection gas peaks of 870, 451, and 744 units from gas show at 11007' – 11012'.

11100' – 11290' 100% **Red Beds**: 70% - 40% **Siltstone**; pale reddish brown to nearly grayish red; commonly argillaceous, uphole some is very fine grained sandy; firm, some medium hard; dolomitic; slightly anhydritic; subblocky. 30% - 60% **Shale**; grayish red to dark grayish red, some tinted dark reddish brown; smooth to silty; firm; non- to slightly dolomitic; some micromicaceous; platy, subblocky. Trace – 1% **Anhydrite**; white, clear; micro- to some very fine crystalline loose small chips, attached *fracture fill*, *microfracture fill* cutting across siltstone and shale, and some patches within siltstone. No sample show. Total gas background 5 – 20 units.

Remarks: Downtime gas of 2500 units following survey at 11129' and connection gas peaks of 134 to 448 units are likely from gas show from *fractures* at 11007' – 11012'.

No H2S has been detected. Mud logger checked calibration on H2S detector in logging unit at approximately 11280'. Began running H2S scavenger (zinc oxide) at approximately 11130'.

11290' – 11350' 90% - 100% **Red Beds**: 80% **Shale**; grayish red to dark grayish red, some tinted dark reddish brown; smooth to silty; firm; non- to slightly dolomitic; some micromicaceous; platy, subblocky. 20% **Siltstone**; pale reddish brown to grayish red; argillaceous; firm; slightly to moderately dolomitic; slightly anhydritic; platy, subblocky. Trace – 2% **Anhydrite**; white, clear; micro- to very fine crystalline small chips; rare soft rounded masses; patches within siltstone and probable *fracture fill*. Trace – 10% **Gray Beds**: **Shale** and **Siltstone**; medium light to medium dark gray, some greenish gray; cavings or minor interbeds. No sample show. Total gas 5 – 16 units, several brief peaks to 30 – 110 units. Downtime gas from survey at 11316' was 1595 units.

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11350' – 11360'	70% **Red Beds**. 30% **Gray Beds**: **Shale**; medium light to medium dark gray, some greenish gray to light olive gray; much is smooth, some subwaxy; firm; non- to slightly dolomitic; platy, subblocky; trace cut by microcrystalline **anhydrite** *microfracture fill*. Minor **Siltstone**; medium light to medium dark gray; slightly to moderately dolomitic; platy, subblocky. No sample show. Total gas 10 – 25 units.
11360' – 11370'	98% **Red Beds**: **Shale**; grayish red to dark grayish red and minor **Siltstone**; pale reddish brown to grayish red. 2% **Anhydrite**; white, clear; micro- to very fine crystalline small loose chips and attached probable *fracture fill*. No sample show. Total gas 10 – 12 units.
11370' – 11390'	80% - 90% **Red Beds**: **Shale**; grayish red to dark grayish red and minor **Siltstone**; pale reddish brown to grayish red. 18% - 8% **Gray Beds**: **Shale**, **Siltstone**, and some **Limestone**; brownish gray; cryptocrystalline; larger chips—possible cavings. 2% **Anhydrite**; white, clear; micro- to very fine crystalline. No show. Total gas 5 – 12 units. Connection gas 108 units.
11390' – 11400'	85% **Red Beds**. 13% **Gray Beds**; **Shale**, **Siltstone**, minor **Limestone**. Trace **Shale**; greenish gray; slightly translucent. 2% **Anhydrite**; white, clear; micro- to very fine crystalline; loose and attached probable *fracture fill*. No sample show. Total gas 10 – 48 units.

DINWOODY FM. LOG TOP: 11388' TVD: 11263' DATUM: -3928'

Remark:	Sharp increase in gray beds marks top of Dinwoody Fm. Minor gray beds in overlying 50 ft comprise some cavings and gray strata that were deposited within Woodside Red Beds or, perhaps, sliced from Dinwoody during thrusting.
11400' – 11430'	60% - 90% **Gray Beds**: **Shale**; some light gray, mostly medium light to medium dark gray—all commonly tinted greenish gray to some light olive gray; smooth, silty; firm; non- to slightly dolomitic; platy, subblocky, trace splintery. Lesser **Siltstone**; light to medium gray, part tinted greenish gray to some light olive gray; commonly argillaceous; firm, medium hard; slightly to moderately dolomitic; trace micropyrite; platy, subblocky. 40% - 10% **Red Beds**; cavings. No sample show. Total gas 9 – 55 units. Survey downtime gas 468 units.
11430' – 11450'	20% **Sandstone**; light to medium light gray; lower very fine grained; part silty and argillaceous, some moderately clean; firm, medium hard; dolomitic; rare green grains or mineralization; no porosity visible. 50% - 70% **Siltstone**; some light gray, mostly medium light to medium gray; some lower very fine grained sandy, some argillaceous; dolomitic; platy, subblocky. 30% - 10% **Shale**; medium to medium dark gray. No sample show. Total gas 12 – 28 units. Connection gas 111 units.
11450' – 11460'	60% **Siltstone**; mostly medium light to medium gray. 20% **Shale**; medium to medium dark gray, some tinted greenish gray to minor light olive gray; smooth to silty; firm; non- to slightly dolomitic; platy, subblocky. 10% **Sandstone**; light to medium light gray; lower very fine grained; dolomitic; no porosity visible. 10% **Dolomite**; light brownish gray to brownish gray, some pale to dark yellowish brown;

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cryptocrystalline, some microcrystalline; firm, medium hard; moderately clean, some brownish gray argillaceous insoluble residue; no porosity visible. No sample show. Total gas 18 – 180 units.

11460' – 11480' 70% - 60% **Siltstone**; medium light to medium gray; commonly argillaceous, some lower very fine grained sandy; firm, some medium hard; dolomitic; anhydritic; platy, subblocky. 20% - 40% **Shale**; medium light to medium dark gray; smooth to silty; firm, some medium hard; slightly dolomitic; platy, subblocky. 10% - Trace **Sandstone**; light to medium light gray; lower very fine grained; firm small chips; dolomitic; anhydritic; rare dark green grains or mineralization; no porosity visible. No sample show. Total gas 35 – 8 units; connection gas 114 units.

Remark: Tripped at 11485' for new bit #24 Smith F47. Trip gas 405 units. Lost 200 B during trip.

11480' – 11490' Single sample of fair quality following trip. 50% **Gray Beds**: **Siltstone** and **Shale**. 50% **Red Beds**. No sample show. Total gas 8 – 14 units.

11490' – 11500' 60% **Siltstone**; medium light to medium gray; commonly argillaceous; firm, medium hard; dolomitic; anhydritic; platy, subblocky. 40% **Shale**; some medium light gray, mostly medium gray, minor medium dark gray; smooth to silty; firm, some medium hard; non- to slightly dolomitic; trace micropyrite along some faces; platy, subblocky, trace splintery. Trace **Sandstone**; light gray; lower very fine grained; silty; firm; dolomitic; anhydritic; no porosity visible. No sample show. Total gas 18 – 10 units.

11500' – 11520' 60% **Siltstone**; medium light to medium gray; commonly argillaceous, some lower very fine grained sandy; firm, medium hard; dolomitic; anhydritic; platy, subblocky. 40% **Shale**; medium to medium dark gray, some greenish gray to light olive gray, minor light brownish gray; smooth to silty; firm; non- to slightly dolomitic; platy, subblocky, trace splintery. Trace **Sandstone**; light gray; lower very fine grained; firm; dolomitic; anhydritic; rare green grains or mineralization. Trace **Anhydrite**; white, clear; small loose chips and probable *fracture fill*. No sample show. Total gas 10 – 16 units; connection gas 132 units.

11520' – 11540' 40% - 20% **Siltstone**; minor light gray, mostly medium light to medium gray; argillaceous; dolomitic. 50% - 40% **Shale**; minor medium light gray, mostly medium to medium dark gray, some light brownish gray and greenish gray to light olive gray. 10% - 40% **Red Beds**: **Siltstone** and **Shale**; reddish brown to grayish red; some chips are rounded and appear tumbled; increase in white microcrystalline **anhydrite** microfracture fill; probable cavings and late circulated cuttings. Trace **Anhydrite**; clear to white; microcrystalline. No sample show. Total gas 14 – 16 units.

11540' – 11560' 60% - 40% **Shale**; light olive gray, some light brownish gray, medium to some medium dark gray—hues mixed in part; smooth, some silty; firm; non to moderately dolomitic; trace dark gray streaks and inclusions that appear argillaceous but may be stained by sulfide—rare micropyrite along partly anhydritic apparent microfractures. 40% - 60% **Siltstone**; light to medium gray, commonly tinted light olive gray to light brownish gray; microcrystalline to very fine crystalline texture in part due to mixed **dolomite** and **anhydrite**; firm; trace micropyrite; some dark gray apparently argillaceous inclusions—some are rounded and appear peletal. Trace **Anhydrite** and lesser **Dolomite**; white to clear; micro- to some very fine crystalline; probable

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fracture fill, some may be diagenetic. No fluorescence. Slow weak nonstreaming bluish cut fluorescence from chips containing dark gray apparently argillaceous inclusions and streaks--dries to faint bluish yellow fluorescent halos. Under white light, no cut or oil ring. Total gas 20 – 6 units.

11560' – 11580' — 60% - 80% **Dolomite**; overall light brownish gray to brownish gray; individual ooliths are commonly pale to dark yellowish brown; some cryptocrystalline, increasingly oolitic downhole; some fine to mostly medium to lower coarse sand-size ooliths; moderately to well sorted; ooliths are partly set in white microcrystalline matrix that comprises anhydrite, some silica, and probably dolomite; firm to medium hard; moderate to slight HCl-insoluble residue is brownish gray to gray and silty to argillaceous; some silty and shaly streaks; mostly no porosity visible. Virtually no fluorescence. Slow weak nonstreaming cut fluorescence particularly from chips with irregular black stain. Under white light, no cut or oil ring. 40% - 20% **Shale** and **Siltstone**; gray and light brownish to brownish gray. Total gas 30 – 7 units; connection gas 95 units.

11580' – 11610' — 90% - 100% **Siltstone**; some medium light gray, mostly medium dark to some dark gray; commonly lower very fine grained sandy, slightly argillaceous; micro- to very fine crystalline appearance in part results from dispersed dolomite; medium hard, some hard—steel is scraped from probe; dolomitic, chips remain intact in acid but are fragile to firm—10% to occasionally 40% carbonate; forms trace brownish gray film in acid; anhydritic; subblocky, some blocky and sharp irregular; part is cut by anhydrite microfracture fill/lining; 2-ft fast break to 2.6 min/ft at best at 11588' – 11590'. 10% - 0% **Dolomite**; light brownish to brownish gray; oolitic. Trace **Shale**; medium dark gray. Trace **Anhydrite**; white to clear; micro- to very fine crystalline faces and streaks; few larger chips of spar; *probable fracture fill*. No fluorescence. Slow weak nonstreaming cut fluorescence dries to faint fluorescent halos. Under white light, no cut or oil ring. Total gas 6 – 12 units; peaks of 70 and 100 units at 11584' and 11594'. Downtime gas from surveys: 80 units.

11610' – 11620' — 100% **Siltstone**; increase in medium dark to dark gray; micro- to very fine crystalline appearance results from dispersed dolomite crystals; medium hard to hard—some scrapes steel from probe; dolomitic—chips remain intact in acid and are firm to medium hard—5% to occasionally 30% dolomite content; forms slight brownish gray film in acid; anhydritic; subblocky to sharp irregular; rare chips are vuggy and lined with minute euhedral crystals indicating growth in open fractures; 4-ft fast drilling break to 1.1 min/ft at best at 11613' – 11617'. Virtually no sample show. Total gas 7 – 50 units.

Remark: — Sharp increase in rotary torque during fast drilling break at 11613' – 11617'.

11620' – 11660' — 100% – 60% **Siltstone**; some medium light gray, mostly medium to medium dark gray, some dark gray; partly argillaceous; medium hard, some hard; dolomitic; anhydritic; trace micropyrite; subblocky, some sharp irregular; several 1 to 3-ft fast drilling breaks to 3.9 min/ft at best. Trace – 40% **Shale**; medium dark gray; smooth, some silty; firm, some medium hard; most is slightly dolomitic; platy, subblocky. Trace **Anhydrite** and **Dolomite**; white to clear; chips of *mixed-mineral fracture fill* to 2 mm. Virtually no sample show. Total gas 4 – 30 units.

11660' – 11680' — 20% - 30% **Dolomite**; medium to medium dark gray, part tinted brownish gray, minor medium light gray; cryptocrystalline; argillaceous; no porosity visible. 20%

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Siltstone; medium to medium dark gray; dolomitic; commonly argillaceous; trace micropyrite; platy, subblocky. 60% - 50% **Shale**; medium to medium dark gray; smooth, some silty; firm; slightly to moderately dolomitic; trace micropyrite; platy, some subblocky. No sample show. Total gas 55 – 10 units.

11680' – 11700'

70% **Shale**; medium to medium dark gray; commonly smooth; firm; slightly dolomitic; trace micropyrite; platy, some subblocky. 10% **Dolomite**; medium to medium dark gray; cryptocrystalline, earthy; firm; argillaceous; no porosity visible. 20% **Siltstone**; medium to medium dark gray; commonly argillaceous; dolomitic; platy, subblocky. No sample show. Total gas 8 – 25 units.

Remark:

Lower Dinwoody shows a 55% increase in apparent thickness compared to the log thickness at Anschutz Ranch #34-2 (144 ft compared to 93 ft).

PHOSPHORIA

LOG TOP: 11691' TVD: 11532' DATUM: -4197'

Remark:

Overall samples become lighter colored than lower 100 ft of Dinwoody.

11700' – 11720'

60% - 80% **Dolomite** and **Silicified Dolomite**; some light to medium light gray and light brownish gray; much medium gray to brownish gray, decreasing medium dark gray; some pale to dark yellowish brown; crypto- to microcrystalline, some faces of chips are microsucrosic; medium hard to hard; slight argillaceous insoluble residue where nonsilicified—parts remain largely intact in acid where silicified; no to some slight intercrystalline and trace vug porosity. 20% **Siltstone**; medium to medium dark gray; dolomitic; subblocky. 20% - Trace **Shale**; medium dark to some dark gray. Trace **Sandstone**; very light to medium gray; fine to medium grained; siliceous to dolomitic; no porosity visible; may represent unconformity. No sample show.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	12	96.0%	4.0%	0.0%	0.0%	0.0%	5.6	11702'
During	199	72.6%	21.3%	6.1%	0.0%	0.0%	1.2	11706'
Maximum	614	67.0%	24.5%	8.5%	0.0%	0.0%	1.8	11710'
After	18	88.5%	11.5%	0.0%	0.0%	0.0%	3.5	11724'

11720' – 11730'

Lighter colored overall. 90% **Dolomite**; some nearly white to light gray and light brownish gray, also medium light to medium gray and some brownish gray; microcrystalline and some sucrosic to cryptocrystalline; quite clean; trace micro- to very fine crystalline pyrite and slight argillaceous HCl insoluble residue; firm to hard; mostly no porosity visible; trace dark *microfractures*; gradually slower drilling. Few **Fossil Fragments**; dark gray; tapering column clusters. 10% **Shale**; medium dark gray may be caving, trace brownish black apparently organic-rich partings. No sample show. Total gas 190 – 15 units.

11730' – 11740'

30% **Dolomite**; decreased light gray and light brownish gray, increased medium to medium dark gray; crypto- to microcrystalline; firm to medium hard; silty and partly argillaceous; forms slight brownish gray film in acid; mostly no porosity visible.

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Grades to 70% **Siltstone**; medium to medium dark gray; medium hard; moderately to very dolomitic—20% to 50% carbonate content; some dark gray argillaceous streaks and partings; platy, subblocky. No sample show. Total gas 15 – 12 units.

11740' – 11760'

10% - Trace **Chert**; light brownish to brownish gray with minor neutral medium gray streaks; hard, sharp. 70% - 90% **Siltstone**; some medium light to mostly medium to medium dark and some dark gray; dolomitic—10% to 30% carbonate content—chips remain intact in acid; moderately clean to very argillaceous; trace micropyrite; subblocky. Grades to 20% - Trace **Dolomite**; much medium to medium dark gray, some dark gray; microcrystalline; medium hard; silty and argillaceous; no porosity visible. Trace sample show downhole. Total gas 15 – 4 units.

Trace sample show:

No stain. 5 chips of light colored dolomite display uniform to spotty bright yellow fluorescence that yields moderately fast slightly streaming cut fluorescence that dries to fair yellow fluorescent halo.

11760' – 11770'

20% **Dolomite**; medium light gray, some tinted light brownish gray; microcrystalline; firm, medium hard; calcitic; slightly silty; mostly no porosity visible. 80% **Siltstone**; some medium light gray, mostly medium to medium dark and some dark gray; firm to medium hard; dolomitic—chips remain intact in acid but vary from firm to fragile following acidization—20% to occasionally 50% carbonate content; platy, subblocky. No sample show. Total gas 6 – 12 units.

11770' – 11780'

80% **Dolomite**; medium gray—faintly mottled white and commonly tinted light brownish gray—to lesser brownish gray; microcrystalline, faint very fine to fine grained texture in part; firm, medium hard; moderate silt and brownish gray argillaceous HCl-insoluble residue; no to some slight intercrystalline porosity visible where slightly sucrosic. Grades to 20% **Siltstone**; medium gray to brownish gray; very dolomitic—chips remain intact in acid but are fragile following acidization. Rare **Fossil Fragments**; dark gray; probable cross sections of columnar forms; several are silicified. No sample show. Please see gas show in table below.

11780' – 11800'

70% - 100% **Dolomite**; light brownish gray; cryptocrystalline—part lithographic; medium hard, hard; some is siliceous and scrapes steel from probe; minor brown spots and specks in part; trace dark stained *microfractures*; no porosity visible except rare intercrystalline porosity on fracture faces lined with minute euhedral crystals that indicate open *fractures*. No sample show. Please see gas table below.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	7	100.0%	0.0%	0.0%	0.0%	0.0%	4.6	11772'
Maximum	135	80.9%	14.4%	4.7%	0.0%	0.0%	2.2	11774'
During	104	86.7%	10.8%	2.5%	0.0%	0.0%	1.3	11782'
After	82	86.5%	13.5%	0.0%	0.0%	0.0%	2.2	11784'

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11800' – 11830'

80% -100% **Siltstone**; some light gray to mostly medium to medium dark gray, some dark gray mottling downhole; slightly argillaceous, minor shaly streaks; some lower very fine grained sandy; firm, medium hard; dolomitic, 5% to 15% carbonate content; trace micropyrite; platy, subblocky. 20% - Trace **Dolomite**; light brownish to some brownish gray; cryptocrystalline; part siliceous; no porosity visible. Trace **Chert/Silica**; white; *fracture fill*. Trace **Chert**; light brownish to brownish gray, some medium light gray streaks; hard, sharp. No sample show. Total gas 2 – 11 units.

Remark:

Phosphatic odor from samples dried under heat lamp was first noted at 11810'.

11830' – 11850'

30% - 70% **Dolomite**; some pinkish gray (buff) to light brownish and brownish gray; crypto- to microcrystalline; medium hard, some hard; slight to moderate brownish gray argillaceous insoluble residue; some siliceous, cherty; trace dark gray to black stained faces; no porosity visible. 70% - 30% **Siltstone**; medium light to medium dark gray; dolomitic; some argillaceous; platy, subblocky. Trace – 2% **Chert**; white, light to medium gray, and light brownish to brownish gray; hard, sharp. No sample show. Total gas 7 – 30 units.

11850' – 11860'

98% **Dolomite**; some pinkish gray (buff), mostly light brownish gray, some brownish gray; crypto- to some microcrystalline; some firm, mostly medium hard; no porosity visible. 2% **Sandstone**; very light to medium gray; very fine to fine grained; well sorted; medium hard, hard—quartzitic appearance and glassy broken quartz grains common; slightly to moderately dolomitic; trace dark gray and brown grains; trace pyrite; no porosity visible. No sample show. Total gas 30 – 9 units.

11860' – 11870'

50% **Sandstone**; light brownish to brownish gray; very fine to some lower fine grained; well sorted; medium hard to hard; siliceous—glassy broken quartz grains common; dolomitic, chips remain intact in acid except for minor part that grades to sandy **dolomite**; numerous undetermined brown grains; trace pyrite; no porosity visible. 50% **Chert**; light to medium gray, light brownish gray, hues mixed in part; numerous minute brown spots and blades; hard, sharp; slightly dolomitic; faster drilling, likely *fractured*. No sample show. Total gas 25 – 59 units.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	25	90.4%	8.2%	1.3%	0.0%	0.0%	6.1	11860'
Maximum	59	89.7%	8.9%	1.5%	0.0%	0.0%	2.8	11868'
During	48	87.9%	10.4%	1.7%	0.0%	0.0%	2.1	11880'
After	15	92.8%	7.2%	0.0%	0.0%	0.0%	3.0	11888'

11870' – 11900'

80% - 90% **Chert**; light brownish gray and light to medium gray, some medium dark gray and brownish gray downhole, hues mixed in part; hard, sharp; slightly dolomitic; trace pyrite; numerous minute brown spots and blades conspicuous where light colored. 20% - 10% **Sandstone**; light brownish to brownish gray; very fine to some lower fine grained; medium hard to hard; siliceous, glassy broken quartz grains common; dolomitic; brown grains common; minor dark gray to brownish gray argillaceous streaks; no porosity visible. No sample show. Total gas 15 – 75 units. Please see gas tables above and below.

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Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	15	92.8%	7.2%	0.0%	0.0%	0.0%	3.0	11888'
During	47	89.5%	8.8%	1.7%	0.0%	0.0%	2.2	11894'
During	62	89.0%	9.8%	1.2%	0.0%	0.0%	1.5	11902'
Maximum	94	84.8%	10.7%	3.1%	1.4%	0.0%	0.6	11908'
After	15	89.5%	10.5%	0.0%	0.0%	0.0%	8.5	11936'

11900' – 11910'

85% **Chert**; minor light gray, some medium gray to much dark gray, grayish black, and dark brownish gray; hard, sharp; slightly dolomitic; some clear to opaque white and very light *silica-filled microfractures*; faster drilling corresponds to probable *fractures* in hard rock; some faces are lined with minute undetermined euhedral crystals indicating *open fractures*. 10% **Siltstone**; brownish gray, dark brownish gray; part argillaceous; medium hard, hard; dolomitic, some siliceous; subblocky. 5% **Shale**; grayish black to brownish black; medium hard; slightly dolomitic, appears partly siliceous; subblocky. No sample show. Total gas 60 – 94 units.

Remark:

Maximum gas is likely both from show and from connection.

11910' – 11939'

70% - 20% **Chert**; grayish black; hard, sharp chips easily scrape steel from probe; smooth to some silty-textured; non- to slightly dolomitic; some cut by clear to opaque white and very light gray silica *fracture fill*; minor faces are lined with minute undetermined euhedral crystal faces that indicate *open fractures*; fast drilling break gradually slows downhole. Grades to 30% - 80% **Shale**; grayish black to some brownish black; silty-textured; hard, medium hard; part siliceous—chips both scrape steel from probe and are scratched by probe; slightly dolomitic, chips remain moderately hard to hard in acid; trace probable micropyrite; subblocky, blocky, some sharp irregular; may be phosphatic but no tests have been run. No sample show. Total gas 36 falling to 11 units.

Remarks:

Good SLM; no correction. Ran dipmeter and directional survey at 11939'. Please note that log depth is 13 ft shallow to rig depth at TD and is 14 ft shallow to rig depth at top of Phosphoria.

NOTE:

Tripped in after logs. Trip gas 470 units; no H2S detected. Tripped at 11939' to begin directional work with bent motor & MWD tools. Lost 500 B. Trip gas 1990 units; no H2S detected.

11939' – 11960'

80% - 40% **Shale**; grayish black; silty texture; medium hard, some hard; siliceous and slightly dolomitic; clear and light to dark gray cherty patches and streaks; some glassy broken quartz grains; subblocky. 20% - 60% **Dolomite**; light to dark brownish gray, part mottled; crypto- to microcrystalline; part sandy—some glassy broken quartz grains; some cherty inclusions and streaks; minor dark gray to grayish black round inclusions may be phosphate; no to some slight vug porosity lined in part with minute euhedral crystals. Trace **Chert**; grayish black, light gray; hard; sharp irregular chips. No sample show. Total gas 12 – 160 units—higher gas may be recycled trip gas.

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11960' – 11980'	95% - 65% **Siltstone**; medium dark gray to some dark gray—commonly tinted brownish gray, trace grayish black shaly streaks uphole; moderately clean to argillaceous; parts very fine to fine grained sandy; siliceous—scrapes steel from probe; slightly to moderately dolomitic—chips remain intact in acid; platy to sharp irregular. 3% - 33% **Sandstone**; light brownish gray, medium light gray to medium dark gray; very fine to fine grained; hard; siliceous—abundant glassy broken quartz grains; slightly to moderately dolomitic; no porosity visible. 2% **Chert**; very light gray to dark gray, some light bluish gray; part translucent; hard, sharp loose chips and minor microfracture fill. No sample show. Total gas 48 – 6 units.
11980' – 11990'	95% **Siltstone**; medium dark to dark gray and dark brownish gray; argillaceous; siliceous—most chips scrape steel from probe; slightly to moderately dolomitic—chips remain intact in acid but are weakened by dissolution of carbonate; silt content is best seen following dissolution of carbonate; platy to sharp irregular. 5% **Chert**; very light gray to light brownish gray and pale yellowish brown; part translucent; hard, sharp irregular chips. No sample show. Total gas 6 – 25 units.
11990' – 12010'	55% - 35% **Siltstone**; medium dark to dark gray, part tinted dark brownish gray; argillaceous; siliceous; dolomitic; hard; subblocky, blocky, and sharp irregular. 40% - 60% **Shale**; grayish black; silty; slightly to some moderately dolomitic; firm to moderately hard—sample wash water became brownish black due to increased fines; some is pulverized to masses of rock flour; platy, subblocky. 5% **Chert**; very light to light gray, light brownish gray; part translucent; hard, sharp. No sample show. Total gas 6 – 11 units.
12010' – 12047'	100% **Shale** grading to **Siltstone**; grayish black; silty shale and argillaceous siltstone; firm, increasingly medium hard downhole; uphole part is pulverized to rounded masses of rock flour; slightly dolomitic; may be organic and phosphate-rich but no diagnostic tests have been made; platy to subblocky. No sample show. Total gas 5 – 60 units.
Remark:	Tripped at 12049' for new bit #26 Reed HP63. Decreased number of drill collars to 6 to make BHA more flexible. Trip gas 58 units before shaker was bypassed due to mud bubbling over drilling nipple.
12047' – 12070'	100% - 98% **Shale** and minor **Siltstone**; grayish black; silty shale and argillaceous siltstone; medium hard; partly siliceous and slightly dolomitic—chips scrape some steel from probe as well as being scratched by probe; platy to subblocky. Trace – 2% **Chert/Silica** and **Dolomite/Calcite**; very light to light gray and commonly translucent chert/silica; white micro- to fine crystalline carbonate; *fracture fill*; some chips show black shale contacting mixed chert/silica and carbonate—some associated with trace micro- to very fine crystalline pyrite. No sample show. Total gas 7 – 38 units.
12070' – 12100'	60% - 90% **Shale** and lesser **Siltstone**; grayish black; silty shale and argillaceous siltstone; medium hard, some hard; partly siliceous and slightly dolomitic—chips scrape steel from probe and are scratched by probe; platy, some subblocky and sharp irregular. 40% - 10% **Chert/Silica**, **Dolomite/Calcite**, and minor **Anhydrite**; clear, very light to light gray chert/silica; white micro- to fine crystalline carbonate and anhydrite; *fracture fill*; staining and reaction in acid confirms mixed carbonate; minor anhydrite confirmed by acicular selenite crystals formed from anhydrite in

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acid; trace micropyrite associated with fracture fill; overall slower drilling—few streaks to 30+ min/ft. No sample show. Total gas 20 – 4 units.

Remark: Carbonate and anhydrite fracture fill is commonly stained pink by mud thinner additive.

12100' – 12120' 80% - 100% **Shale** and minor **Siltstone**; grayish black; silty shale and argillaceous siltstone; medium hard; moderately to slightly siliceous; slightly dolomitic; platy, some subblocky to irregular; more uniform drilling at 6 min/ft average corresponds to decreased fracture fill. 20% - Trace **Chert/Silica** and **Dolomite/Calcite**; clear, very light to light gray chert/silica; white (artificially pink-stained) carbonate; *fracture fill*; some chips show progression of black shale, trace micropyrite, chert/silica, and then carbonate. No sample show. Total gas 8 – 16 units.

12120' – 12140' 100% **Shale** and minor **Siltstone**; grayish black; silty shale and argillaceous siltstone; medium hard; slightly siliceous; slightly dolomitic; platy, some subblocky. Trace **Chert/Silica** and **Dolomite/Calcite**; *mixed mineral fracture fill*. No sample show. Total gas 10 – 30 units.

12140' – 12160' 98% **Shale** and minor **Siltstone**; grayish black. 2% **Chert/Silica** and **Dolomite/Calcite**; *mixed mineral fracture fill*; trace pyrite. No sample show. Total gas 14 – 75 units.

12160' – 12170' 98% **Shale** and minor **Siltstone**; grayish black; silty shale and argillaceous siltstone; medium hard, some hard; slightly siliceous; slightly dolomitic; glassy broken quartz very fine to fine sand grains in minor part; platy, some subblocky; *abundant slickensides; rare euhedral microcrystals indicate growth in open fractures*. 2% **Chert/Silica** and **Calcite**; *fracture fill*; numerous filled microfractures and small loose chips. No sample show.

Slight gas show: Total gas 28 – 160 units; probable show associated with connection gas.

Remark: Possible fault is indicated by abundant slickensides.

12170' – 12180' 50% **Shale**; grayish black to medium dark gray; silty to much very fine grained sandy; medium hard to hard; slightly to very siliceous—numerous glassy broken quartz grains in part; slightly dolomitic; platy to sharp irregular. Grades to 20% **Siltstone** and **Sandstone**; medium to dark gray; argillaceous and partly sandy siltstone; argillaceous sandstone; medium hard to hard; siliceous—glassy broken quartz grains common; slightly dolomitic; no porosity visible. 10% **Calcite** and subordinate **Chert**; white calcite; clear to light gray chert/silica; *fracture fill*. 20% **Dolomite**; medium light to medium dark gray, minor part tinted brownish gray; moderately clean; no porosity visible. No sample show. Total gas 42 – 30 units.

12180' – 12210' 60% - 100% **Dolomite**; light brownish to brownish gray and medium light to medium dark gray, some pinkish gray (buff) downhole where cleanest; crypto- to microcrystalline; faint fine to coarse grained texture in part may result from fracturing and recementation; quite clean, minor brownish gray argillaceous HCl-

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insoluble residue; mostly no to trace intercrystalline porosity that is commonly black-stained but that yields virtually no cut fluorescence. 35% - Trace **Shale**, **Siltstone**, and **Sandstone**; grayish black to medium dark gray; gradational: silty and partly sandy shale, argillaceous and partly sandy siltstone, and argillaceous, silty, siliceous sandstone; glassy broken quartz grains common; slightly dolomitic; no porosity visible. 5% **Chert/Silica** and **Calcite**; clear to light gray chert/silica; white calcite; *fracture fill.* No sample show. Total gas 35 – 9 units.

12210' – 12270' — 100% - 80% **Dolomite**; minor medium gray, mostly medium dark to dark gray—parts tinted brownish gray; micro- to some very fine crystalline; medium hard; increasingly argillaceous—moderate to abundant brownish gray clayey and slightly silty HCl insoluble residue; much appears very shaly but few chips remain intact in acid; subblocky to mostly thin platy downhole; no porosity visible. Grades to Trace – 20% **Shale**; dark gray to grayish black; dolomitic; platy. Trace – 2% **Chert/Silica** and **Calcite/Dolomite**; clear to light gray chert/silica; white to pinkish gray carbonate; staining in Alizarin Red shows mixed mineral *fracture fill*. No sample show. Total gas 38 – 7 units.

12270' – 12300' — 80% - 100% **Shale** and minor **Siltstone**; dark gray to grayish black, much medium dark gray downhole; silty and some very fine grained sandy shale; argillaceous and partly very fine grained sandy siltstone; firm to medium hard, some hard; dolomitic; streaks siliceous as shown by glassy broken quartz sand grains; subblocky, platy. 20% - Trace **Dolomite**; dark gray, some brownish gray; very argillaceous; platy; no porosity visible. Trace – 2% **Chert/Silica** and **Calcite/Dolomite**; loose chips and *microfracture fill* cutting across and attached to shale. No sample show. Total gas 32 – 6 units; connection gas 100 units.

12300' – 12320' — 50% - 40% **Dolomite**; light brownish to dark brownish gray; microcrystalline; much is silty to very fine grained sandy; medium hard, some hard where siliceous; mostly no porosity visible. 50% - 30% **Siltstone** and **Sandstone**; light brownish to dark brownish gray; carbonate appearance but chips remain intact in acid; slightly to very dolomitic; no porosity visible. Trace – 20% **Sandstone**; very light to medium light gray; very fine to fine grained, trace floating rounded medium grains; firm to hard; dolomitic, anhydritic, some siliceous where hard; mostly no porosity visible. Trace – 10% **Shale**; grayish black, some brownish black; silty; dolomitic; platy, some subblocky. No sample show. Total gas mostly 40 – 6 units.

12320' – 12340' — 70% **Dolomite**; light brownish to brownish gray; crypto- to microcrystalline; medium hard; moderately clean to silty and argillaceous; some very fine to fine grained sandy; slightly anhydritic; no porosity visible. 30% **Siltstone** and **Sandstone**; light brownish to brownish gray; carbonate appearance but chips remain intact in acid; moderately to very dolomitic; slightly anhydritic; no porosity visible. No sample show. Total gas 20 – 7 units.

Remark: — Tripped at 12351' for new bit #27 Smith F57OD. Replaced downhole motor. Trip gas 303 units, then shaker was bypassed. Sample 12340' – 12351' circulated after trip.

12340' – 12350' — 50% **Dolomite**; light brownish to brownish gray; crypto- to microcrystalline; some very fine to fine grained sandy; medium hard; no porosity visible. 10% **Sandstone**; very light to medium gray, light brownish gray; very fine to fine grained, trace loose and floating medium rounded quartz grains; firm to medium hard; slightly to very

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dolomitic; no porosity visible. 40% **Shale**; grayish black; silty; slightly dolomitic; platy, subblocky; possible cavings. No sample show. Total gas 8 – 25 units.

12350' – 12390'

80% - 70% **Dolomite**; light brownish to brownish gray; crypto- to some very fine crystalline; moderately clean to silty and argillaceous; parts very fine to fine grained sandy; no to some slight intercrystalline and small vug porosity which is commonly black stained but does not fluoresce or yield cut fluorescence. 10% - 30% **Sandstone**; very light to medium gray, light brownish gray; very fine to fine grained with minor medium to lower coarse dispersed and loose grains; mostly subround, medium to coarse grains are round and frosted; firm and medium hard, some hard; slightly to very dolomitic; some siliceous and quartzitic; no porosity visible. 10% - 0% **Shale**; grayish black; probable cavings. No sample show. Total gas 20 – 2 units.

WEBER ANHYDRITE LOG TOP: 12362' TVD: 12089' DATUM: -4754'

12390' – 12400'

70% **Sandstone**; very light to medium light gray, some tinted pinkish gray (buff); very fine to fine grained with some dispersed medium to lower coarse grains; coarser grains are round and frosted; moderately well to moderately sorted; firm to hard clusters; substantial loose sand; non- to slightly dolomitic, anhydritic, minor part quartzitic; trace pyrite; mostly no porosity visible. 2% **Anhydrite** or **Rock Flour**; white, exterior stained pinkish gray by mud; soft rounded masses; chips decrepitate in acid with virtually no effervescence; forms acicular crystals from warm acid. 28% **Dolomite**; light to dark brownish gray; microcrystalline; parts sandy; mostly no porosity visible. No sample show. Total gas 2 – 9 units.

12400' – 12410'

90% **Sandstone**; white, very light to medium light gray, some pale yellowish brown to grayish orange pink; very fine to fine grained with dispersed medium to upper coarse round to well rounded and frosted grains in part; firm to hard clusters and substantial loose sand; non- to moderately dolomitic; anhydritic; virtually no porosity visible in clusters and no good drilling break. 10% **Dolomite**; brownish to dark brownish gray. Trace **Anhydrite** or **Rock Flour**; white, stained pinkish gray by mud; soft rounded masses. No sample show.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	11	88.6%	8.7%	2.7%	0.0%	0.0%	7.2	12402'
Maximum	7658	72.7%	18.3%	6.0%	1.3%	1.6%	5.3	12406'
After	112	91.1%	8.9%	0.0%	0.0%	0.0%	9	12410'

12410' – 12420'

20% **Anhydrite** or **Rock Flour**; white, much is stained pinkish gray by mud; soft rounded masses; chips decrepitate in acid with virtually no effervescence and form substantial acicular crystals. 60% **Sandstone**; very light to light gray, pinkish gray; very fine to fine grained clusters and loose fine to medium grained sand; firm to hard; dolomitic and anhydritic, some siliceous and quartzitic; mostly no porosity

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visible. 20% **Dolomite**; light to medium light gray, brownish gray; no porosity visible. Total gas 112 – 40 units.

Slight sample show: Trace dark brown stain. 2% spotty medium bright yellow fluorescence. Moderately fast nonstreaming cut fluorescence from pinch samples dries to weak yellow fluorescent halos. Under white light, no cut or oil ring.

12420' – 12450' 98% - 100% **Sandstone**; pinkish gray (buff) to light brownish gray, minor brownish gray downhole; very fine to fine grained small clusters with some dispersed medium to lower coarse grains; medium and coarse grains are commonly round and frosted; much loose fine to medium and some lower coarse sand; slightly friable to firm clusters, little is hard and siliceous; slightly dolomitic; anhydritic; dispersed brownish gray apparent clay in part; mostly no porosity visible. 2% - Trace **Anhydrite** and **Rock Flour**; white, some stained pinkish gray by mud; some firm microcrystalline chips as well as soft round masses. Total gas 50 – 15 units.

Slight sample shows: Mostly no stain. 5% - 30% spotty to pinpoint moderately bright yellow fluorescence when viewed at 10X. Moderately fast nonstreaming cut fluorescence dries to fair to weak yellow fluorescent halos. Under white light, no cut or oil ring.

12450' – 12460' 99% **Sandstone**; very light to light gray; very fine to fine grained, some dispersed and loose medium grains; firm to medium hard and hard; slightly to moderately dolomitic and possibly anhydritic to siliceous and quartzitic; mostly no open porosity visible. 1% **Anhydrite**; white; mostly firm microcrystalline chips. Total gas 15 – 30 units.

Trace bitumen: Trace is stained by black solid vitreous and conchoidal-fracturing bitumen. Virtually no fluorescence or cut fluorescence.

Remarks: Sample contains 30% yellowish brown finely ground walnut hulls mixed as LCM. Sharp unpleasant odor from wet samples was due to "slickum" added to aid slides.

Anhydrite from 12390' – 12460' is also indicated by increase in calcium: 20 ppm on preceding day to 320 ppm at 12425' which then increased to approximately 640 ppm by 12480'.

WEBER SS. LOG TOP: 12436' TVD: 12143' DATUM: -4808'

12460' – 12500' 80% - 100% **Sandstone**; very light to light gray, some medium gray and minor brownish gray downhole; very fine to medium grained; well to some moderately sorted; much is hard and quartzitic—abundant glassy broken quartz grains; clean, some dispersed dark brownish gray clay downhole; non- to slightly dolomitic; no porosity visible but thin fast breaks suggests *fractured hard rock*. Variable 20% - Trace **Dolomite**; pinkish gray to light brownish gray, some nearly white downhole;

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very fine crystalline to minor cryptocrystalline; clean to some sandy; firm to hard; mostly no porosity visible. 2% - Trace **Chert**; very light to medium gray, light brownish gray; hard, sharp; some chips cut by dark-stained *microfractures*. Rare black solid-stained chips—virtually no sample show. Total gas 15 – 190 units.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	30	89.2%	9.3%	1.5%	0.0%	0.0%	4.9	12482'
During	168	89.8%	7.1%	3.1%	0.0%	0.0%	2.4	12492'
Maximum	190	88.7%	8.3%	3.0%	0.0%	0.0%	5.7	12494'
After	10	91.8%	8.2%	0.0%	0.0%	0.0%	5.0	12500'

12500' – 12540'

Interbedded. 60% - 80% **Sandstone**; white to light gray, some tinted light brownish and brownish gray; some very fine to mostly fine to medium grained; well to moderately sorted; medium hard to much hard; non- to some moderately dolomitic, much is siliceous and quartzitic; glassy broken quartz grains common; clean, some dispersed brownish gray clay; no porosity visible. 40% - 10% **Dolomite**; white to very light gray, pinkish gray and light brownish to minor brownish gray; micro- to fine crystalline; clean, some dispersed brownish gray clay; some sandy; no to slight intercrystalline porosity visible. Trace – 10% **Chert**; light brownish gray, light gray; hard, sharp; rare micropyrite; some dark-stained *microfractures*. No sample show. Total gas 9 – 180 units; please see gas table below.

12540' – 12560'

100% **Sandstone**; very light to light gray and light brownish to minor brownish gray; mostly fine to medium grained; moderately well sorted; medium hard to hard; slightly dolomitic; siliceous, much is quartzitic with numerous glassy broken quartz grains; some clean, dispersed brownish gray clay common, trace dark brownish gray argillaceous partings; trace pyrite; mostly no porosity visible; *few faces lined with euhedral crystals indicate open fractures.* Virtually no sample show. Total gas 130 – 40 units.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	13	86.5%	13.5%	0.0%	0.0%	0.0%	4.5	12524'
Maximum	180	88.8%	8.4%	2.8%	0.0%	0.0%	2.6	12536'
After	41	90.0%	8.4%	1.6%	0.0%	0.0%	10.3	12546'

12560' – 12590'

100% **Sandstone**; very light to light gray, some tinted light brownish gray; very fine and fine grained, some medium grained; hard, some medium hard; non- to slightly dolomitic; siliceous—numerous glassy broken quartz grains; decreased dispersed brownish gray clay; mostly no porosity visible; rare faceted quartz grains and few intergranular pores. No sample show. Total gas 22 – 229 units.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	61	90.0%	10.0%	0.0%	0.0%	0.0%	11.6	12562'
Maximum	229	88.4%	8.8%	2.9%	0.0%	0.0%	6.9	12570'
During	154	91.2%	7.7%	1.1%	0.0%	0.0%	4.0	12578'
After	97	87.9%	10.4%	1.7%	0.0%	0.0%	6.4	12590'

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12590' – 12640'

100% **Sandstone**; light to medium light gray, part tinted light brownish gray; upper very fine to lower medium grained; moderately well sorted; hard; siliceous—numerous glassy broken quartz grains; much is quartzitic—increasingly difficult to distinguish individual grains; quite clean; some dispersed brownish gray clay toward base and minor dark brownish gray argillite grains; mostly no porosity visible. No sample show. Total gas 40 – 190 units.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	97	87.9%	10.4%	1.7%	0.0%	0.0%	6.4	12590'
During	177	89.6%	8.4%	1.9%	0.0%	0.0%	2.5	12594'
Maximum	186	88.7%	9.7%	1.6%	0.0%	0.0%	3.2	12608'
After	42	88.9%	11.1%	0.0%	0.0%	0.0%	7.6	12620'

Remark: Increased torque on motor; pulled off bottom 11 times while drilling from 12590' – 12640'. *Probable fractures.*

12640' – 12650'

98% **Sandstone**; very light to light gray, some stained brownish gray; very fine to medium grained; overall firm to some hard; dolomitic to siliceous; spot sample at peak of gas show recovered increased hard quartzitic chips; trace pyrite; virtually no porosity visible; rare faceted quartz grains. 2% **Dolomite**; very light to light gray; micro- to very fine crystalline; very fine to fine grained sandy; firm; trace pyrite; thin platy chips; mostly no porosity visible. No sample show.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	49	97.0%	3.0%	0.0%	0.0%	0.0%	7.5	12644'
Maximum	1805	67.4%	24.0%	8.6%	0.0%	0.0%	7.8	12646'
After	57	93.5%	6.5%	0.0%	0.0%	0.0%	8.3	12648'

Remark: Pulled off bottom 3 times.

12650' – 12680'

10% - 30% **Dolomite**; very light to light gray; micro- to very fine crystalline; very fine to some fine grained sandy; firm; trace pyrite; thin platy chips; mostly no porosity visible. Trace **Anhydrite**; white soft masses and firm microcrystalline chips. 90% - 70% **Sandstone**; very light to medium light gray, some tinted brownish gray; very fine to medium grained; firm to medium hard where dolomitic; hard where siliceous (12660' – 12670' is the most siliceous and least dolomitic); trace brownish black stain does not cut and commonly appears argillaceous; trace pyrite; virtually no porosity visible. No sample show. Total gas 95 – 25 units.

12680' – 12710'

100% **Sandstone**; very light to light gray, becomes entirely light brownish gray downhole; very fine and fine to some medium grained; medium hard to hard; moderately dolomitic and partly siliceous uphole, increasingly siliceous and slightly dolomitic downhole; numerous glassy broken quartz grains downhole; some dispersed apparent brownish gray clay; virtually no porosity visible. No sample show. Total gas 25 – 164 units; please see gas table below.

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Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	40	89.3%	8.7%	2.0%	0.0%	0.0%	4.5	12692'
Maximum	164	89.9%	7.9%	2.3%	0.0%	0.0%	2.7	12702'
After	50	89.5%	10.5%	0.0%	0.0%	0.0%	5.0	12710'

12710' – 12720'

100% **Sandstone**; white to light gray, some tinted light brownish gray; upper very fine to fine grained, some medium grains, rare round loose coarse grains; moderately well sorted; medium hard to hard; slightly to some moderately dolomitic, dominantly siliceous; numerous glassy broken quartz grains; no porosity visible. No sample show. Trace **Chert**; very light to medium light gray. Total gas 50 – 80 units.

Remark:

Glassy sand-size beads and minute glassy fibers are from LCM.

12720' – 12760'

100% **Sandstone**; very light to light gray, much is tinted light brownish gray to pale yellowish brown; very fine to fine grained, minor medium grains; slightly to nondolomitic; siliceous, much is quartzitic; minor dispersed brownish gray apparent clay becomes partly brownish black downhole; virtually no porosity visible, slightly faster drilling downhole corresponds to increased total gas; rare *minute euhedral crystals indicate some open fractures*. No sample show. Total gas 60 – 250 units.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	90	90.9%	9.1%	0.0%	0.0%	0.0%	9.9	12730'
During	196	89.7%	8.5%	1.8%	0.0%	0.0%	3.2	12738'
Maximum	250	89.4%	8.4%	2.2%	0.0%	0.0%	2.4	12754'
After	33	88.2%	11.8%	0.0%	0.0%	0.0%	8.2	12758'

12760' – 12810'

98% - 100% **Sandstone**; very light to light gray, increasingly tinted light brownish gray to pale yellowish brown downhole; mostly very fine to fine grained where grain size can be discerned; moderately to slightly dolomitic; increasingly siliceous and quartzitic downhole; minor dispersed brownish gray apparent clay; virtually no porosity visible; rare faceted grains evident at 40X. 2% - Trace **Shale**; brownish black; commonly sandy; may correlate to thin streaks of increased gamma shown on offset logs. No sample show. Total gas 35 – 130 units.

12810' – 12844'

100% **Sandstone**; light brownish gray to nearly pale yellowish brown; very fine to fine grained; well sorted; increasingly small but hard cuttings; slightly dolomitic; siliceous, quartzitic—abundant glassy broken quartz grains, boundaries of grains commonly indistinct; minor dispersed brownish gray apparent clay; virtually no porosity visible. No sample show. Total gas 22 – 97 units.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	43	83.3%	13.0%	3.7%	0.0%	0.0%	5.1	12822'
Maximum	97	87.5%	10.9%	1.6%	0.0%	0.0%	2.5	12828'
After	27	87.9%	12.1%	0.0%	0.0%	0.0%	6.0	12832'

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Remarks: Tripped at 12844' for new bit #28 Smith F67ODPS. 170 units trip gas was affected by shaker bypass. Mud bubbled over bell nipple. H2S safety hand measured 7 ppm H2S by lowering handheld electronic detector to bell nipple—steamy conditions may have affected reading. No H2S was recorded by mud loggers or by other sensors.

12844' – 12860' Reduced sample quality for first sample following trip: 100% **Sandstone**; very light to medium light gray, becomes uniformly light brownish gray to pale yellowish brown downhole; very fine to fine grained; slightly to nondolomitic; quartzitic—numerous glassy broken quartz grains; minor dispersed brownish gray apparent clay, minor streaks of dark brownish gray to brownish black; trace pyrite; no porosity visible but fast drilling break to 0.9 min/ft at 12850'. Trace **Chert**; light gray; some dark stained *microfractures*. No sample show. Total gas 30 – 170 units; possible show gas combined with trip gas.

12860' – 12870' 98% **Sandstone**; some white to very light gray, mostly light brownish gray to pale yellowish brown; very fine to fine grained; mostly nondolomitic; quartzitic; minor dispersed brownish gray clay; trace pyrite; no porosity visible. 2% **Chert**; light gray, light brownish gray; dark stained *microfractures*. No sample show. Total gas 26 – 4 units.

12870' – 12880' 30% **Chert**; light gray, light brownish gray; hard, sharp; dark stained *microfractures common*. 20% **Dolomite**; white to very light gray; very fine crystalline; very fine to fine grained sandy; firm to medium hard; platy; virtually no porosity visible. 50% **Sandstone**; white to light gray, light brownish gray; very fine to fine grained; some firm, mostly medium hard to hard; dolomitic to siliceous and quartzitic; trace pyrite; no porosity visible. No sample show. Total gas 4 – 65 units.

12880' – 12900' 100% **Sandstone**; white to very light gray; very fine to fine grained, some possible medium grains—but may be areas of quartz overgrowth; well sorted; very small sand-size chips appear medium hard to hard; very clean, quartzose; siliceous and quartzitic, some slightly dolomitic; trace pyrite; virtually no porosity visible but fast drilling in part to 0.9 min/ft at best. No sample show. Total gas 30 – 283 – 7 units.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	52	87.3%	9.9%	2.8%	0.0%	0.0%	6.3	12882'
Maximum	283	84.9%	11.7%	3.4%	0.0%	0.0%	1.4	12888'
After	10	90.6%	9.4%	0.0%	0.0%	0.0%	7.4	12896'

12900' – 12930' 100% **Sandstone**; some white to very light gray uphole, dominantly light brownish gray; very fine to fine grained; well sorted; medium hard to hard; some slightly dolomitic; mostly siliceous and quartzitic; trace dispersed brownish gray apparent clay; trace pyrite; virtually no porosity visible. No sample show.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	18	90.1%	9.9%	0.0%	0.0%	0.0%	6.0	12900'
During	150	87.5%	9.1%	3.5%	0.0%	0.0%	4.4	12904'
Maximum	375	83.9%	13.1%	3.0%	0.0%	0.0%	1.0	12908'
After	87	92.3%	7.7%	0.0%	0.0%	0.0%	7.1	12916'

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12930' – 12950'

100% **Sandstone**; light brownish gray, some very light gray increasing downhole; very fine and apparently some fine grained; well sorted; hard to medium hard; slightly to some moderately dolomitic; siliceous, numerous glassy broken quartz grains; minor dispersed brownish gray apparent clay; trace pyrite; no porosity visible. No sample show. Total gas 160 – 22 units.

12950' – 12960'

100% **Sandstone**; light brownish gray; very fine to some fine grained; well sorted; medium hard; slightly to moderately dolomitic; also siliceous, numerous glassy broken quartz grains; slight to some moderate amounts of brownish gray to black argillaceous material/stain; mostly no porosity visible. No fluorescence or cut fluorescence. Total gas 40 – 140 units; please see gas table below.

12960' – 12970'

98% **Sandstone**; very light to light gray, light brownish gray; very fine to fine grained; hard to medium hard; thoroughly siliceous to some moderately dolomitic—occasional fine to medium sand-size rhombs set in sandstone matrix; glassy broken quartz grains common; no visible to trace slight secondary porosity which is partly lined with silt-size crystals; faster drilling to 1.4 min/ft at best suggests nonvisible porosity. Moderate dark brownish gray and black stain and/or argillaceous material in part. No fluorescence and virtually no cut fluorescence from pinch sample. 2% **Dolomite**; light gray; fine to medium crystalline; medium hard; clean to sandy; rare euhedral crystals with fair intercrystalline porosity, remainder is densely crystalline. Total gas 140 – 190 – 18 units.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	42	89.4%	9.3%	1.3%	0.0%	0.0%	6.8	12950'
Maximum	190	87.8%	10.2%	2.0%	0.0%	0.0%	1.5	12964'
After	18	96.3%	3.7%	0.0%	0.0%	0.0%	2.4	12970'

12970' – 12990'

100% **Sandstone**; very light to light gray; very fine to fine grained; well sorted; medium hard, hard; slightly to some moderately dolomitic; siliceous, numerous glassy broken quartz grains; parts quartzitic; trace minute brown and black flecks; trace pyrite; no to rare slight secondary porosity visible. Trace black stain; no fluorescence or cut fluorescence. Total gas 18 – 187 units.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	36	94.1%	5.9%	0.0%	0.0%	0.0%	2.3	12974'
Maximum	187	88.0%	9.8%	2.2%	0.0%	0.0%	3.3	12986'
After	70	89.0%	8.5%	2.5%	0.0%	0.0%	5.1	12990'

12990' – 13000'

90% **Sandstone**; some white to light gray, much light brownish gray; very fine to some fine grained; well sorted; medium hard to hard; varies from siliceous and quartzitic to some moderately dolomitic; brownish gray apparent dispersed clay is associated with most siliceous chips, less so with moderately dolomitic chips; trace pyrite; mostly no porosity visible but fast break at base of interval to 1.3 min/ft. 10% **Shale**; dark brownish gray, brownish black, parts cut by and mottled with opaque white chert; medium hard to hard; much is silicified—scrapes steel from probe;

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dispersed glassy broken quartz grains in part; may be relatively organic with possible hot gamma. No sample show. Total gas 70 – 110 units; please see gas table below.

13000' – 13070'

100% **Sandstone**; light gray; very fine to some lower fine grained; well sorted; medium hard to hard; crystalline and quartzitic appearance results from dolomite and silica cement; chips remain intact in acid but vary from medium hard to fragile following dissolution of carbonate cement—5% to 40% dolomite cement; virtually no dispersed brownish gray clay; mostly no to rare chips exhibiting *euhedral crystals indicating open fractures*. No sample show.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	69	91.5%	8.5%	0.0%	0.0%	0.0%	4.3	12996'
Maximum	198	88.1%	10.0%	1.9%	0.0%	0.0%	1.4	13002'
After	45	88.0%	9.8%	2.2%	0.0%	0.0%	3.0	13010'

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	36	86.3%	11.9%	1.7%	0.0%	0.0%	3.5	13012'
During	106	87.3%	9.9%	2.8%	0.0%	0.0%	1.2	13030'
Maximum	128	92.0%	8.0%	0.0%	0.0%	0.0%	2.9	13052'
After	27	92.8%	7.2%	0.0%	0.0%	0.0%	2.9	13056'

Remark: Lost 150 B quickly during fast drilling—possible flushing of fractures by mud loss averaging 20 to 30 BPH.

13070' – 13090'

90% - 95% **Sandstone**; light gray; very fine to some lower fine grained; well sorted; medium hard to hard; crystalline and quartzitic; appears more siliceous but carbonate cement ranges from 5% to 30%; remains clean; mostly no porosity visible, rare chips exhibit *euhedral crystals indicating open fractures*; faster drilling to 0.4 min/ft at best. 10% **Chert**; white to light gray; hard, sharp; trace pyrite. No sample show.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	16	94.1%	5.9%	0.0%	0.0%	0.0%	6.3	13062'
Maximum	99	87.8%	9.2%	3.0%	0.0%	0.0%	1.7	13072'
After	10	90.6%	9.4%	0.0%	0.0%	0.0%	10	13080'

Remark: Mud loss increased to 30 to 40 BPH.

13090' – 13120'

95% **Sandstone**; some very light to mostly light gray; very fine to some fine grains; well sorted; medium hard to hard; much is siliceous and quartzitic but some chips contain up to 30% dolomite cement; trace pyrite; mostly no porosity visible, *rare euhedral crystals lining open fractures*. 5% **Chert**; very light gray; part translucent. No sample show.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	20	92.5%	7.5%	0.0%	0.0%	0.0%	8.6	13092'
During	144	89.9%	8.6%	1.5%	0.0%	0.0%	2.6	13098'
Maximum	178	89.0%	8.9%	2.1%	0.0%	0.0%	1.6	13110'
After	40	92.8%	7.2%	0.0%	0.0%	0.0%	5.6	13120'

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Remark: Please note white marble LCM mud additive which exhibits dolomitic reaction in acid, patchy staining in Alizarin Red, and scrapes steel from probe.

13120' – 13160' Trace – 40% **Dolomite**; very light to light gray, some light brownish gray; microcrystalline, trace cryptocrystalline; quite clean, some silty to very fine grained sandy insoluble residue; platy; mostly no porosity visible. Trace – 10% **Chert**; very light to light brownish gray. 100% - 50% **Sandstone**; very light to light gray; very fine grained; well sorted; medium hard, some hard; most is moderately dolomitic—5% to 20% carbonate content; parts siliceous with glassy broken quartz grains; mostly no to trace intergranular porosity visible. No sample show. Please see gas table below.

13160' – 13200' 100% **Sandstone**; very light to light gray, some tinted light brownish gray; very fine to some lower fine grained; hard; siliceous, quartzitic, numerous glassy broken quartz grains; slightly dolomitic; minor dispersed brownish gray to brownish black apparently argillaceous coating/stain on some grains; trace pyrite; mostly no porosity visible. No sample show.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	26	92.6%	7.4%	0.0%	0.0%	0.0%	4.1	13146'
During	144	87.2%	9.6%	3.2%	0.0%	0.0%	1.9	13158'
Maximum	292	84.5%	12.7%	2.7%	0.0%	0.0%	2.6	13180'
After	47	89.0%	8.5%	2.5%	0.0%	0.0%	7.3	13192'

13200' – 13240' 100% **Sandstone**; very light to some light gray; very fine to some fine grained; well sorted; hard; siliceous, quartzitic, numerous glassy broken quartz grains and chips in which grain boundaries are indistinct; slightly dolomitic; quite clean; trace pyrite; mostly no to minor fair secondary porosity visible—some small vugs lined with minute crystals. Trace **Dolomite**; light to dark brownish gray; crypto- to microcrystalline; no porosity visible. No sample show.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	23	89.6%	9.3%	1.1%	0.0%	0.0%	5.6	13212'
Maximum	276	84.5%	12.0%	3.5%	0.0%	0.0%	2.2	13224'
After	29	94.1%	5.9%	0.0%	0.0%	0.0%	4.4	13238'

13240' – 13260' 40% - 80% **Sandstone**; pinkish gray (buff) to minor light brownish gray; very fine grained; firm to medium hard; calcareous—stains in Alizarin Red—chips remain intact in acid; no porosity visible. 60% - 20% **Sandstone**; very light to light gray; very fine to some fine grained; siliceous, much is quartzitic; slightly dolomitic; mostly no porosity visible. No sample show. Total gas mainly 30 – 9 units.

13260' – 13270' 90% **Sandstone**; pinkish gray (buff); very fine grained; firm to medium hard; calcareous; platy; no porosity visible. 10% **Sandstone**; very light gray; very fine to some fine grained; hard; siliceous, commonly quartzitic; clean, slightly dolomitic;

LITHOLOGY AND SHOWS

trace secondary porosity and *rare drusy crystals*; probable lithology for start of gas show. No sample show. Total gas 100 – 239 units; please see gas table below.

13270' – 13330'

100% **Sandstone**; nearly white to light gray, some tinted light brownish gray; very fine to fine grained, trace lower medium grains; medium hard, some hard; slightly to moderately dolomitic (minor part that is calcareous is likely caving); much is siliceous and some quartzitic; part sucrosic; clean, only trace dispersed brownish gray clay in part; trace pyrite; no to *some fair to good secondary porosity visible*— some pores are fine sand-size and are lined with minute crystals; trace *probable fracture faces are lined with euhedral crystals*. No sample show.

Remark:

Best visible porosity is in samples 13300' – 13330' and correlates with fast drilling break to 0.8 min/ft at best. Torque increased in fastest drilling and weight on bit was *decreased* temporarily to 12K to 20K from normal 30K.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	11	88.2%	9.2%	2.6%	0.0%	0.0%	10.5	13256'
During	239	83.7%	13.4%	2.9%	0.0%	0.0%	4.2	13266'
During	491	80.6%	14.0%	5.4%	0.0%	0.0%	2.2	13296'
Maximum	745	77.9%	16.9%	5.2%	0.0%	0.0%	1.1	13322'
After	200	86.9%	10.1%	2.9%	0.0%	0.0%	3.8	13338'

13330' – 13370'

100% **Sandstone**; increase in light to medium light gray, some tinted light brownish gray, decreased very light gray to white; very fine to fine grained; well sorted; medium hard to hard; slightly to moderately dolomitic; part siliceous, quartzitic; glassy broken quartz grains common; trace pyrite; no to *some slight to fair secondary porosity; rare probable fracture faces lined with micro- to very fine euhedral crystals*. No sample show. Total gas 450 – 100 units.

13370' – 13400'

100% **Sandstone**; medium light gray to very light gray (particularly at gas show), some light brownish gray; very fine to fine grained; well sorted; medium hard to hard; moderately to slightly dolomitic; also silica cement, parts quartzitic, becomes partly calcareous toward base; clean to minor dispersed brownish gray apparent clay; mostly no to some slight porosity that appears sucrosic and secondary; fair drilling break to 2.8 min/ft at best. No sample show.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	15	86.5%	13.5%	0.0%	0.0%	0.0%	7.3	13382'
Maximum	354	83.4%	12.0%	4.6%	0.0%	0.0%	3.4	13388'
After	16	89.0%	9.2%	1.8%	0.0%	0.0%	13	13394'

13400' – 13440'

100% **Sandstone**; pinkish gray (buff) to light brownish gray; very fine to fine grained, rare subround to round dispersed medium grains; well to some moderately sorted; firm to medium hard; calcareous, staining and reaction in acid indicates some dolomite cement as well; mostly no porosity visible; overall slower drilling at 4 to 10

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min/ft. Trace **Limestone**; light brownish to brownish gray; cryptocrystalline; dense, no porosity visible. No sample show. Total gas 20 – 100 units.

13440' – 13470'

100% **Sandstone**; increase in very light gray, much is still tinted pinkish gray (buff) to light brownish gray; very fine to fine grained, trace medium grains; well to some moderately sorted; firm to medium hard; calcareous to dolomitic—chips exhibiting better porosity show little staining in Alizarin Red; trace cherty; no to some fair to good porosity visible—largely appears secondary and commonly is sucrosic; fair to good drilling break to 1.7 min/ft at best, average 2.5 through better drilling. Trace **Chert**; white; opaque; sandy. No sample show. Total gas 40 to 383 units.

Hot-wire/FID Gas	Total	C1	C2	C3	IC4	NC4	Min/Ft	Rig Depth
Before	40	88.5%	10.0%	1.4%	0.0%	0.0%	4.4	13446'
During	244	84.5%	12.0%	3.5%	0.0%	0.0%	3.8	13450'
Maximum	383	83.4%	12.0%	4.6%	0.0%	0.0%	2.4	13464'
After	27	89.4%	9.3%	1.3%	0.0%	0.0%	7.7	13476'

13470' – 13503' TD

100% **Sandstone**; some very light gray to increasingly light and medium light gray; very fine to lower fine grained; well sorted; some firm uphole, increasingly medium hard to hard; some dolomitic uphole, mixed calcite and silica cement downhole—part is quartzitic; trace pyrite; trace cherty; some fair apparently secondary porosity uphole, mostly no porosity visible downhole. No sample show. Total gas 195 units at 13474', then 12 to 20 units background.

Remarks:

Bit #29 Smith F67ODPS was 1" undergauge. Reran bit #23 Hughes ATJ44C and reamed to bottom. Trip gas 214 units; no H2S detected.

SERVICES

CONTRACTOR: Toolpushers:	SST Energy Rig #88 Morris Brown Oak Sanford Troy Brown	Casper, WY (307) 235-3529 (800) 962-7160
Drillers:	Troy Brown Randy Linder Jerry Undem Doug Shymanski	
SUPERVISION:	Bobby L. Cooper	Vernal, UT (435) 789-9455
DIRECTIONAL DRILLING:	Schlumberger Anadrill Walley Whitney Dave Pope	Casper, WY (307) 472-3113
MWD:	John Robb	
MUD:	Newpark Drilling Fluids, Inc Terry Sanders & Estes Ward	Denver, CO (303) 623-2205
MUD LOGGING:	NorAm Wellsite Services Jeff Buchowiski Ben Knudsen Scott Olson Tony Baeten	Billings, MT (406) 652-3922
WELLSITE GEOLOGY:	T. M. McCoy & Co., Inc. Tim McCoy	Wilson, WY (307) 733-4332
H2S SAFETY:	Inter-Mountain Safety Co. Scott Hawkins Thomas "Lanny" Bergen Dan Van Syoc Ross Humbracht Mike Gottfried	Evanston, WY (307) 789-3882
LOGS:	Schlumberger Marvin Jost – run 1 Marvin Jost & Allyn Blanton-Hooks – run 2 Marvin Jost, Allyn Blanton-Hooks, Maury Dumba – run 3 Ben Valerio – run 3 TLC operator Marvin Jost & Allyn Blanton-Hooks – run 4 Lorin Lee – run 4 TLC operator	Evanston, WY (307) 789-2638

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
0	8/24	70	0			Break derrick and load out trucks.
0	8/25	70	0			Load out trucks.
0	8/26	70	0			Rig up.
0	8/27	70	0			Rig up.
0	8/28	70	0			Rig up.
0	8/29	70	0			Rig up.
0	8/30	70	0	20:00	2.0	Rig up.
				22:00	2.0	Cut and weld conductor.
				0:00	2.0	Nipple up flow line.
				2:00	2.0	Pick up BHA.
				4:30	2.5	Drill 70' - 116'. Spud 17 1/2" hole 2:00 AM 8/30/98.
				6:00	1.5	Replace swivel packing and tighten kelly hose union half.
				6:30	0.5	Drill 116' - 164'.
				7:00	0.5	Survey: 122'--0 deg.
				8:30	1.5	Drill 164' - 286'.
				9:00	0.5	Survey: 244'--0 deg.
				12:30	3.5	Drill 286' - 460'. Lost returns.
				13:00	0.5	Mix and pump LCM.
				14:00	1.0	Drill 460' - 530'.
				14:30	0.5	Survey: 488'--1/4 deg.
				18:00	3.5	Drill 530' - 690'.
1	8/31	690	620	19:00	1.0	Drill 690' - 740'.
				21:00	2.0	Work on motor #2.
				22:30	1.5	Drill 740' - 799'.
				23:00	0.5	Survey: 757'--3/4 deg.
				5:00	6.0	Drill 799' - 1017'.
				5:30	0.5	Survey: 975'--1/2 deg.
				6:00	0.5	Drill 1017' - 1035'.
				6:30	0.5	Service rig.
				13:30	7.0	Drill 1035' - 1264'.
				14:00	0.5	Survey: 1222'--misrun.
				16:30	2.5	Drill 1264' - 1327'.
				17:00	0.5	Survey: 1285'--1 1/2 deg.
				18:00	1.0	Drill 1327' - 1352'.
2	9/1	1352	662	22:30	4.5	Drill 1352' - 1418'.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				23:00	0.5	Service rig.
				1:30	2.5	Drill 1418' - 1450'.
				2:00	0.5	Survey: 1408'--3/4 deg.
				6:30	4.5	Drill 1450' - 1515'.
				7:00	0.5	Circulate sweep.
				7:30	0.5	Survey: 1500'--3/4 deg.
				11:00	3.5	Trip hole for casing. SLM = 1515.32'.
				12:00	1.0	Circulate.
				13:30	1.5	Trip out. Lay down 3-pt reamers, bit sub, & bit.
				18:00	4.5	Rig up and run casing.
3	9/2	1515	163	19:30	1.5	Run casing. 13 3/8" 54.5# K55 set at 1511' KB.
				20:30	1.0	Rig up cementers. Circulate.
				22:00	1.5	Cement. Bump plug at 22:00 hrs.
				2:00	4.0	Wait on cement.
				6:00	4.0	Cut off and weld on head.
				6:30	0.5	Weld head and test.
				14:30	8.0	Nipple up.
				18:00	3.5	Test manifold, kelly, valves, and stack.
4	9/3	1515	0	3:00	9.0	Test.
				3:30	0.5	Install wear bushing.
				4:30	1.0	Cut and slip 184 ft of drilling line.
				5:30	1.0	Pick up bit, shock, 3-pt reamer, and IBS.
				6:30	1.0	Trip in with new bit #2 Varel L117.
				9:30	3.0	Drill plug and cement to 1485'.
				10:00	0.5	Circulate and test casing 15 min at 1900 psi.
				15:00	5.0	Drill cement and shoe. Drill formation 1515' - 1821'.
				15:30	0.5	Survey: 1779'--2 deg.
				18:00	2.5	Drill 1821' - 2012'.
5	9/4	2012	497	18:30	0.5	Drill 2012' - 2036'.
				19:00	0.5	Survey: 1994'--2 1/4 deg.
				0:30	5.5	Drill 2036' - 2254'.
				1:00	0.5	Survey: 2212'--1 3/4 deg.
				8:30	7.5	Drill 2254' - 2508'.
				9:00	0.5	Survey: 2463'--2 deg.
				18:00	9.0	Drill 2508' - 2735'.
6	9/5	2735	723	19:00	1.0	Drill 2735' - 2754'.
				19:30	0.5	Survey: 2712'--2 deg.
				3:30	8.0	Drill 2754' - 2942'.
				4:00	0.5	Survey: 2900'--1 3/4 deg.
				5:30	1.5	Drill 2942' - 2988'.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				6:00	0.5	Circulate and mix slug.
				13:00	7.0	Trip out tight. Pump out and lay down 11 joints.
				14:30	1.5	Pick up jars and replace IBS with 2nd 3-pt reamer.
				16:30	2.0	Trip in with new bit #3 Security S33S at 2988'.
				17:30	1.0	Ream 100 ft to bottom.
				18:00	0.5	Drill 2988' - 2993'.
7	9/6	2993	258	2:00	8.0	Drill 2993' - 3167'.
				2:30	0.5	Survey: 3125'--3 deg.
				3:00	0.5	Drill 3167' - 3172'.
				3:30	0.5	Circulate. Mix and pump slug.
				5:30	2.0	Trip out.
				6:00	0.5	Change bits and check 3-pt reamers.
				8:00	2.0	Trip in with new bit #4 Smith F10TC at 3172'.
				16:30	8.5	Drill 3172' - 3416'.
				17:00	0.5	Survey: 3375'--2 1/2 deg.
				18:00	1.0	Drill 3416' - 3439'.
8	9/7	3439	446	5:30	11.5	Drill 3439' - 3664'.
				6:00	0.5	Survey: 3622'--2 1/4 deg.
				14:30	8.5	Drill 3664' - 3789'.
				15:00	0.5	Service rig.
				18:00	3.0	Drill 3789' - 3830'.
9	9/8	3830	391	22:00	4.0	Drill 3830' - 3881'.
				22:30	0.5	Survey: 3871'--2 3/4 deg.
				15:30	17.0	Drill 3881' - 4129'.
				16:00	0.5	Survey: 4115'--2 deg.
				18:00	2.0	Drill 4129' - 4155'.
10	9/9	4155	325	11:00	17.0	Drill 4155' - 4376'.
				11:30	0.5	Survey: 4364'--2 1/4 deg.
				18:00	6.5	Drill 4376' - 4469'.
11	9/10	4469	314	1:00	7.0	Drill 4469' - 4564'.
				1:30	0.5	Pump pill. Drop survey: 4553'--2 3/4 deg.
				4:00	2.5	Trip out. Change bit.
				4:30	0.5	Check BOP.
				6:30	2.0	Trip in with new bit #5 Reed EHP43H at 4564'.
				7:30	1.0	Weld 6" valve on mud tank for mud cleaner.
				8:30	1.0	Trip in.
				9:00	0.5	Service rig.
				17:30	8.5	Drill 4564' - 4813'.
				18:00	0.5	Survey: 4771'--2 1/2 deg.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
12	9/11	4813	344	0:00	6.0	Drill 4813'- 5020'.
				18:00	18.0	Circulate. Switch to salt saturated mud.
13	9/12	5020	207	19:30	1.5	Circulate. Switch to salt saturated mud.
				21:30	2.0	Drill 5020' - 5071'.
				0:30	3.0	Trip out. Unplug bit.
				2:00	1.5	Replace blown vibrating hose.
				5:00	3.0	Trip in.
				6:00	1.0	Wash and ream 90 ft to bottom.
				10:30	4.5	Drill 5071' - 5185'.
				11:00	0.5	Survey: 5143'--2 deg.
				18:00	7.0	Drill 5185' - 5318'.
14	9/13	5318	298	19:30	1.5	Drill 5318' - 5371'.
				20:00	0.5	Service rig. Check BOP.
				23:00	3.0	Drill 5371' - 5434'.
				23:30	0.5	Survey: 5392'--2 deg.
				11:30	12.0	Drill 5434' - 5620'.
				12:00	0.5	Service rig. Check BOP.
				18:00	6.0	Drill 5620' - 5718'.
15	9/14	5718	400	4:30	10.5	Drill 5718' - 5869'.
				6:00	1.5	Tight hole. Work 4 joints out of hole.
				7:30	1.5	Ream 4 joints back to bottom.
				11:30	4.0	Drill 5869' - 5931'; still tight.
				12:00	0.5	Circulate.
				12:30	0.5	Pump pill. Drop survey.
				17:00	4.5	Trip out. SLM--no correction.
				18:00	1.0	Pick up bit and lay down 2 reamers.
16	9/15	5931	213	21:00	3.0	Trip in with new bit #6 Hughes GT-09 at 5931'.
				23:00	2.0	Drill 5931' - 5962'.
				23:30	0.5	Survey: 5920'--4 1/2 deg.
				0:00	0.5	Service rig.
				18:00	18.0	Drill 5962' - 6200'.
17	9/16	6200	269	19:00	1.0	Drill 6200' - 6214'.
				19:30	0.5	Survey: 6172'--4 1/4 deg.
				16:30	21.0	Drill 6214' - 6520'.
				17:00	0.5	Replace gasket on standpipe union.
				17:30	0.5	Drill 6520' - 6524'.
				18:00	0.5	Survey: 6482'--4 1/4 deg.
18	9/17	6524	324	0:30	6.5	Drill 6524' - 6589'.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				4:30	4.0	Pump flag. Trip out looking for hole.
				6:00	1.5	Change shock sub and bit. Check BOP.
				8:30	2.5	Trip in with new bit #7 Hughes GT-18 at 6589'.
				9:00	0.5	Wash 90 ft to bottom.
				18:00	9.0	Drill 6589' - 6700'.
19	9/18	6700	176	0:00	6.0	Drill 6700' - 6770'.
				1:00	1.0	Survey: 6728'--4 1/4 deg.
				10:30	9.5	Drill 6770' - 6876'.
				18:00	7.5	Trip out. Inspect BHA. Lay down cracked cross-overs, 6 3/4" drill collar, jars, and (4) 8" drill collars.
20	9/19	6876	176	20:30	2.5	Inspect BHA.
				22:30	2.0	Pick up 9" drill collar, (3) 8" drill collars, and 3-pt.
				23:30	1.0	Slip and cut 107 ft drilling line.
				1:30	2.0	Pick up (10) 6 1/2" drill collars and jars.
				3:30	2.0	Trip in and rerun Hughes GT-18.
				4:00	0.5	Ream 30 ft to bottom.
				8:00	4.0	Drill 6876' - 6901'.
				12:30	4.5	Trip for hole in wobble joint.
				13:00	0.5	Wash 30 ft to bottom.
				18:00	5.0	Drill 6901' - 6960'.
21	9/20	6960	84	22:00	4.0	Drill 6960' - 6991'.
				22:30	0.5	Survey: 6949'--2 3/4 deg.
				23:00	0.5	Service rig.
				16:30	17.5	Drill 6991' - 7238'.
				18:00	1.5	Lost 300 B. Pull 1 stand; mix and pump LCM.
22	9/21	7238	278	19:00	1.0	Spot LCM pill.
				1:00	6.0	Drill 7238' - 7302'.
				1:30	0.5	Survey: 7260'--3 3/4 deg.
				2:00	0.5	Service rig.
				14:30	12.5	Drill 7302' - 7456'.
				15:30	1.0	Spot LCM pill. Mix and pump slug.
				18:00	2.5	Trip out.
23	9/22	7456	218	18:30	0.5	Trip out.
				19:00	0.5	Check BOP.
				19:30	0.5	Replace shock sub and bottom 3-pt reamer.
				23:00	3.5	Trip in with new bit #8 Security S86F at 7456'.
				1:30	2.5	Ream 7360' - 7456'.
				8:30	7.0	Drill 7456' - 7517'.
				12:30	4.0	Lost 200 B. Pull 2 stands. Mix and spot LCM.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				18:00	5.5	Drill 7517' - 7551'.
24	9/23	7551	95	18:30	0.5	Drill 7551' - 7557'.
				19:00	0.5	Survey: 7515'--3 1/2 deg.
				20:00	1.0	Circulate and pump LCM pill.
				23:00	3.0	Trip out. One jet was plugged with rock.
				23:30	0.5	Check BOP.
				3:00	3.5	Trip in with new bit #9 Smith F37 at 7557'.
				4:00	1.0	Ream 7526' - 7557'.
				8:00	4.0	Drill 7557' - 7589'.
				8:30	0.5	Service rig.
				18:00	9.5	Drill 7589' - 7642'.
25	9/24	7642	91	21:00	3.0	Trip out.
				21:30	0.5	Check BOP.
				0:30	3.0	Trip in with new bit #10 Security M89TF at 7642'.
				1:00	0.5	Ream 7621' - 7642'.
				6:30	5.5	Drill 7642' - 7682'.
				7:00	0.5	Service rig.
				18:00	11.0	Drill 7682' - 7774'.
26	9/25	7774	132	2:30	8.5	Drill 7774' - 7840'.
				4:30	2.0	Lost 600 B at 7802' - 7840'. Pull 1 stand; build volume and pump LCM.
				8:30	4.0	Drill 7840' - 7869'.
				9:00	0.5	Service rig.
				18:00	9.0	Drill 7869' - 7931'.
27	9/26	7931	157	20:30	2.5	Drill 7931' - 7951'.
				4:00	7.5	Lost 800 B. Pull 3 stands & build volume.
				13:00	9.0	Drill 7951' - 7987'.
				13:30	0.5	Pump pill. Drop survey: 7962'--3 3/4 deg.
				16:30	3.0	Trip out.
				17:00	0.5	Service rig. Check BOP.
				18:00	1.0	Trip in with new bit #11 Reed HP61A at 7987'.
28	9/27	7987	56	19:00	1.0	Cut 12 wraps of drilling line.
				21:00	2.0	Trip in. No fill.
				8:00	11.0	Drill 7987' - 8088'.
				8:30	0.5	Service rig.
				16:30	8.0	Drill 8088' - 8141'.
				17:00	0.5	Pump pill. Drop survey: 8077'--3 3/4 deg.
				18:00	1.0	Trip out.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
29	9/28	8141	154	20:00	2.0	Trip out. SLM; no correction.
				20:30	0.5	Service rig. Check BOP.
				0:30	4.0	Trip in with new bit #12 Smith F37 at 8141'.
				9:00	8.5	Drill 8141' - 8182'.
				9:30	0.5	Service rig. Check BOP.
				18:00	8.5	Drill 8182' - 8215'.
30	9/29	8215	74	20:30	2.5	Drill 8215' - 8231'.
				21:00	0.5	Circulate. Spot LCM. Mix and pump slug.
				0:30	3.5	Trip out.
				4:00	3.5	Trip in with new bit #13 Reed HP53A at 8231'.
				12:30	8.5	Drill 8231' - 8275'.
				13:00	0.5	Service rig.
				18:00	5.0	Drill 8275' - 8301'.
31	9/30	8301	86	13:00	19.0	Drill 8301' - 8401'.
				13:30	0.5	Survey: 8390'--5 deg.
				14:00	0.5	Service rig.
				18:00	4.0	Drill 8401' - 8423'.
32	10/1	8423	122	22:00	4.0	Drill 8423' - 8462'.
				23:30	1.5	Lost circulation. Mixed and pumped LCM sweeps with 450 B loss.
				2:00	2.5	Circulate and build volume with salt mud. Mix and pump slug.
				5:30	3.5	Trip out.
				6:00	0.5	Pull and inspect wear bushing.
				9:00	3.0	Break stack. Pull spool. Retrieve wear ring.
				9:30	0.5	Cut out wear ring.
				11:00	1.5	Wait for wear ring. Nipple up.
				15:30	4.5	Test BOP.
				18:00	2.5	Trip in new bit #14 Hughes ATJ44C.
33	10/2	8462	39	19:30	1.5	Trip in.
				20:30	1.0	Wash and ream 30 ft to bottom.
				10:30	14.0	Drill 8462' - 8527'.
				11:00	0.5	Survey: 8516'--5 1/4 deg.
				11:30	0.5	Service rig.
				18:00	6.5	Drill 8527' - 8569'.
34	10/3	8569	107	4:00	10.0	Drill 8569' - 8605'.
				4:30	0.5	Circulate. Mix and pump slug.
				8:30	4.0	Trip out.
				10:00	1.5	Replace shock sub and bottom 3-pt reamer.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				11:00	1.0	Slip and cut 120 ft of drilling line.
				12:30	1.5	Wait on tong head.
				16:00	3.5	Trip in new bit #15 Security M89TF at 8605'.
				18:00	2.0	Drill 8605' - 8610'.
35	10/4	8610	41	11:30	17.5	Drill 8610' - 8665'.
				15:30	4.0	Trip out.
				16:00	0.5	Replace top 3-pt reamer.
				18:00	2.0	Trip in new bit #16 Hughes ATJ33C at 8665'.
36	10/5	8665	55	19:00	1.0	Trip in.
				19:30	0.5	Wash and ream 30 ft to bottom.
				4:30	9.0	Drill 8665' - 8703'.
				5:00	0.5	Lost circulation. Mix and pump LCM sweeps.
				5:30	0.5	Trip out 3 stands.
				13:30	8.0	Rebuild salt-mud volume. Lost 1300 B total.
				18:00	4.5	Drill 8703' - 8729'.
37	10/6	8729	64	9:30	15.5	Drill 8729' - 8802'.
				10:30	1.0	Survey: 8760'--5 1/2 deg.
				18:00	7.5	Drill 8802' - 8857'.
38	10/7	8857	128	19:00	1.0	Drill 8857' - 8864'.
				19:30	0.5	Service rig.
				9:30	14.0	Drill 8864' - 8926'. Two jets, then 1, plugged.
				10:00	0.5	Service rig. Check BOP.
				18:00	8.0	Drill 8926' - 8957'.
39	10/8	8957	100	18:30	0.5	Survey: 8915'--6 1/2 deg.
				0:00	5.5	Drill 8957' - 8971'.
				0:30	0.5	Pump pill. Drop survey: 8957'--6 deg.
				3:00	2.5	Trip out. Tight 8150' - 8056'.
				9:30	6.5	Trip out. Inspect BHA. Lay down (1) 6 1/2" drill collar, (4) 8" drill collars, and (2) 9" drill collars.
				13:00	3.5	Pick up (5) 9" drill collars, (5) 8" drill collars, and (1) 6 1/2" drill collar.
				17:00	4.0	Trip in new bit #17 Reed EHP53A at 8971'.
				17:30	0.5	Lay down and ream 4 joints to bottom.
				18:00	0.5	Drill 8971' - 8971', breaking in bit.
40	10/9	8971	14	7:30	13.5	Drill 8971' - 9022'.
				8:00	0.5	Service rig. Check BOP.
				18:00	10.0	Drill 9022' - 9064'.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
41	10/10	9064	93	6:00	12.0	Drill 9064' - 9111'.
				6:30	0.5	Service rig.
				18:00	11.5	Drill 9111' - 9160'.
42	10/11	9160	96	4:00	10.0	Drill 9160' - 9197'.
				6:00	2.0	Circulate samples.
				7:30	1.5	Short trip 20 stands. No fill.
				10:30	3.0	Circulate.
				11:00	0.5	Pump pill. Drop survey: 9152'--7 deg.
				15:00	4.0	Trip out.
				15:30	0.5	Service rig. Check BOP.
				18:00	2.5	Rig up Schlumberger. Run #1: stacked neutron-density (Platform Express), sonic, and dual laterlog. Run #2: dipmeter and directional survey.
43	10/12	9197	37	9:00	15.0	Log.
				13:00	4.0	Trip in.
				16:00	3.0	Circulate.
				18:00	2.0	Pump pill. Trip out.
44	10/13	9197	0	19:30	1.5	Trip out.
				22:00	2.5	Lay down 8" and 9" drill collars. Rig up lay down machine.
				22:30	0.5	Pull wear ring.
				18:00	19.5	Rig up and run 9 5/8" intermediate casing.
45	10/14	9197	0	23:00	5.0	Fill and circulate casing.
				2:30	3.5	Cement casing, first stage.
				7:00	4.5	Wait on cement.
				11:30	4.5	Circulate casing.
				14:00	2.5	Cement casing, second stage.
				18:00	4.0	Nipple down BOP.
46	10/15	9197	0	0:00	6.0	Nipple down BOP. Set slips. Cut off casing. Nipple up BOP.
				2:30	2.5	Rig up and run temperature log for cement top.
				6:30	4.0	Test BOP.
				7:00	0.5	Install wear bushing.
				8:00	1.0	Test casing. Stack leaked.
				10:30	2.5	Change out upper ram block seals.
				11:30	1.0	Retest blind rams.
				13:30	2.0	Test casing to 4800 psi.
				14:00	0.5	Reinstall wear bushing.
				15:00	1.0	Cut 100 ft of drilling line.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				18:00	3.0	Trip in retip 8 1/2" Hughes J2 milltooth bit #18.
47	10/16	9197	0	19:30	1.5	Trip in.
				20:00	0.5	Drill cement and stage plug.
				21:00	1.0	Change swivel packing.
				22:00	1.0	Drill cement.
				0:30	2.5	Trip in.
				3:30	3.0	Drill cement and float collar. Test casing at 900 psi.
				5:00	1.5	Drill 8 1/2" hole 9197' - 9203'.
				9:30	4.5	Trip out. SLM.
				13:30	4.0	Strap and pick up additional drill collars.
				18:00	4.5	Trip in with new bit #19 Reed EHP61A at 9203'.
48	10/17	9203	6	19:00	1.0	Wash junk off bottom and work pipe.
				9:00	14.0	Drill 9203' - 9279'.
				11:00	2.0	Work pipe and wash bottom. Pump pill.
				14:30	3.5	Trip out.
				18:00	3.5	Trip in with new bit #20 Security M84FD at 9279'. Bit #19 was cored out.
49	10/18	9279	76	19:00	1.0	Trip in.
				20:00	1.0	Wash and square-off bottom.
				2:30	6.5	Drill 9279' - 9328'.
				3:00	0.5	Service rig.
				16:00	13.0	Drill 9328' - 9451'.
				17:00	1.0	Survey: 9409'--6 1/4 deg.
				18:00	1.0	Drill 9451' - 9458'.
50	10/19	9458	179	3:00	9.0	Drill 9458' - 9542'.
				3:30	0.5	Service rig.
				16:00	12.5	Drill 9542' - 9635'.
				17:00	1.0	Survey: 9593'--7 deg.
				18:00	1.0	Pump slug. Trip out.
51	10/20	9635	177	20:30	2.5	Trip out.
				21:00	0.5	Service rig. Check BOP.
				0:30	3.5	Trip in with new bit #21 Hughes ATJ44C at 9635'.
				1:00	0.5	Ream 10 ft to bottom.
				7:00	6.0	Drill 9635' - 9704'.
				7:30	0.5	Service rig. Check BOP.
				18:00	10.5	Drill 9704' - 9832'.
52	10/21	9832	197	8:30	14.5	Drill 9832' - 9982'.
				9:00	0.5	Service rig. Check BOP.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				18:00	9.0	Drill 9982' - 10080'.
53	10/22	10080	248	20:30	2.5	Drill 10080' - 10104'.
				21:00	0.5	Service rig.
				11:00	14.0	Drill 10104' - 10259'.
				12:00	1.0	Survey: misrun.
				14:30	2.5	Drill 10259' - 10291'.
				15:00	0.5	Survey: misrun.
				18:00	3.0	Drill 10291' - 10320'.
54	10/23	10320	240	19:00	1.0	Survey: 10268'--14 1/2 deg.
				20:00	1.0	Drill 10320' - 10326'.
				0:30	4.5	Pump pill. Lay down shock sub, junk basket, and 3-pt reamers.
				5:30	5.0	Pick up new bit #22 Smith F47 at 10326', shock sub, Monel, and replace 3-pt reamers. Trip in; SLM.
				9:00	3.5	Trip in and run surveys. Survey: 9650'--10 3/4 deg, azimuth 298.75 deg. Survey: 9930'--11 1/4 deg, azimuth 303.75 deg. Survey: 10210'--14 1/2 deg, azimuth 306.75 deg. Survey: 10268'-- 14 3/4 deg, azimuth 308.75 deg.
				14:00	5.0	Drill 10326' - 10380'.
				15:00	1.0	Survey: 10358'--15 1/4 deg, azimuth 305.75 deg.
				18:00	3.0	Drill 10380' - 10425'.
55	10/24	10425	105	22:00	4.0	Drill 10425' - 10472'.
				23:00	1.0	Survey: 10450'--15 3/4 deg, azimuth 307.75 deg.
				6:30	7.5	Drill 10472' - 10566'.
				7:00	0.5	Survey: 10544'--16 deg, azimuth 304.75 deg.
				13:30	6.5	Drill 10566' - 10628'.
				14:00	0.5	Service rig.
				18:00	4.0	Drill 10628' - 10664'.
56	10/25	10664	239	2:30	8.5	Drill 10664' - 10752'.
				4:30	2.0	Survey: 10730'--20+ deg on 20-deg chart, azimuth 308.75 deg.
				8:00	3.5	Drill 10752' - 10784'.
				9:00	1.0	Survey: misrun.
				9:30	0.5	Mix and spot LCM pill. Pump slug.
				14:30	5.0	Trip out. Lay down bottom 3-pt reamer.
				18:00	3.5	Nipple down flow nipple. Nipple up rotating head.
57	10/26	10784	120	21:00	3.0	Nipple up rotating head.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				23:00	2.0	Trip in with new bit #23 Hughes ATJ44C at 10784'. Picked up 3-pt reamer.
				0:00	1.0	Cut 112 ft of drilling line.
				3:30	3.5	Trip in.
				7:00	3.5	Drill 10784' - 10814'.
				8:30	1.5	Survey: 10764'--20 deg, azimuth 306.75 estimated.
				10:30	2.0	Drill 10814' - 10825'.
				11:00	0.5	Service rig.
				16:30	5.5	Drill 10825' - 10878'.
				17:30	1.0	Survey: 10856'--22 deg, azimuth 305.75 deg.
				18:00	0.5	Drill 10878' - 10882'.
58	10/27	10882	98	4:00	10.0	Drill 10882' - 10972'.
				5:00	1.0	Survey: misrun.
				6:00	1.0	Pump slug. Trip out into intermediate casing.
				10:00	4.0	Replace swivel.
				10:30	0.5	Trip in.
				12:00	1.5	Survey: misrun.
				15:30	3.5	Drill 10972' - 11003'.
				16:30	1.0	Survey: 10951'--24 1/2 deg, azimuth 306.75
				18:00	1.5	Drill 11003' - 11017'.
59	10/28	11017	135	6:00	12.0	Drill 11017' - 11129'.
				7:00	1.0	Survey: 11107'--26 deg, azimuth 302.75 deg.
				18:00	11.0	Drill 11129' - 11217'.
60	10/29	11217	200	6:00	12.0	Drill 11217' - 11316'.
				7:00	1.0	Survey: 11294'--33 1/4 deg, azimuth 301.75 deg.
				18:00	11.0	Drill 11316' - 11397'.
61	10/30	11397	180	20:00	2.0	Drill 11397' - 11410'.
				21:00	1.0	Survey: 11388'--31 1/2 deg, azimuth 302.75 deg.
				6:00	9.0	Drill 11410' - 11485'.
				6:30	0.5	Pump pill and pull 2 stands.
				7:30	1.0	Resurvey: 11294'--32 deg, azimuth 302.75 deg.
				10:30	3.0	Trip out.
				16:00	5.5	Inspect BHA.
				17:00	1.0	Pick up BHA. Check BOP.
				18:00	1.0	Trip in with new bit #24 Smith F47 at 11485'.
62	10/31	11485	88	23:00	5.0	Trip in.
				3:00	4.0	Drill 11485' - 11503'.
				4:00	1.0	Survey: 11482'--27 1/2 deg, azimuth 296.75 deg.
				15:00	11.0	Drill 11503' - 11567'.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				15:30	0.5	Service rig.
				18:00	2.5	Drill 11567' - 11585'.
63	11/1	11585	100	19:30	1.5	Drill 11585' - 11598'.
				21:30	2.0	Survey: 11576'--24 1/2 deg, azimuth 295.75 deg.
				8:00	10.5	Drill 11598' - 11691'.
				9:00	1.0	Survey: 11669'--26 1/2 deg, azimuth 297.25 deg.
				18:00	9.0	Drill 11691' - 11784'.
64	11/2	11784	199	19:30	1.5	Circulate samples.
				20:30	1.0	Survey: 11762'--29 deg, azimuth 297.75 deg.
				7:00	10.5	Drill 11784' - 11877'.
				8:00	1.0	Survey: 11855'--29 1/2 deg, azimuth 298.75 deg.
				10:30	2.5	Drill 11877' - 11939'.
				12:00	1.5	Circulate samples. Pump pill.
				18:00	6.0	Trip out. SLM=0.19+ ft; no correction.
65	11/3	11939	155	2:30	8.5	Rig up Schlumberger. Log FMS dipmeter and directional survey. Tool stuck at 9680'; worked free.
				7:00	4.5	Trip in with new bit #25 Security M89TFD at 11939'.
				11:00	4.0	Circulate.
				15:00	4.0	Pump pill. Trip out.
				18:00	3.0	Lay down 7 drill collars, jars, (2) 3-pts, and shock. Pick up 1.5 deg bent motor and cross-over.
66	11/4	11939	0	19:00	1.0	Pick up BHA including MWD.
				23:30	4.5	Trip in. Fill pipe.
				1:00	1.5	Wash and ream to bottom.
				2:30	1.5	Drill 11939' - 11954' (slide).
				5:30	3.0	Drill 11954' - 11974' (rotate).
				6:30	1.0	Drill 11974' - 11984' (slide).
				7:00	0.5	Survey: 11944'--29.47 deg, azimuth 299.59 deg.
				14:30	7.5	Drill 11984' - 12016' (rotate).
				18:00	3.5	Drill 12016' - 12027' (slide).
67	11/5	12027	88	22:30	4.5	Drill 12027' - 12047' (rotate).
				0:00	1.5	Drill 12047' - 12049' (slide).
				0:30	0.5	Circulate. Mix and pump pill. Blow kelly.
				4:00	3.5	Trip out.
				5:30	1.5	Lay down (5) 6 1/2" drill collars and jars.
				6:00	0.5	Trip out. Check BOP.
				6:30	0.5	Service rig.
				7:00	0.5	Trip in with new bit #26 Reed HP63 at 12049'.
				8:00	1.0	Cut 111 ft of drilling line.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				12:30	4.5	Trip in. Pick up 5 joints of E drill pipe.
				13:00	0.5	Pick up 9 joints of G pipe. Find bottom and orient.
				14:30	1.5	Drill 12049' - 12059' (slide).
				16:30	2.0	Drill 12059' - 12074' (rotate).
				17:00	0.5	Survey: 12034'--32.5 deg, azimuth 298.4 deg.
				18:00	1.0	Drill 12074' - 12080' (slide).
68	11/6	12080	53	19:00	1.0	Drill 12080' - 12084' (slide).
				1:00	6.0	Drill 12084' - 12105' (rotate).
				3:00	2.0	Drill 12105' - 12112' (slide).
				6:00	3.0	Drill 12112' - 12136' (rotate).
				8:30	2.5	Drill 12136' - 12146' (slide).
				12:00	3.5	Drill 12146' - 12167' (rotate).
				13:00	1.0	Drill 12167' - 12175' (slide).
				14:30	1.5	Drill 12175' - 12198' (rotate).
				15:00	0.5	Service rig.
				16:00	1.0	Drill 12198' - 12208' (slide).
				18:00	2.0	Drill 12208' - 12228' (rotate).
69	11/7	12228	148	19:00	1.0	Drill 12228' - 12236' (slide).
				21:30	2.5	Drill 12236' - 12259' (rotate).
				22:30	1.0	Drill 12259' - 12267' (slide).
				1:30	3.0	Drill 12267' - 12290' (rotate).
				3:00	1.5	Drill 12290' - 12299' (slide).
				4:30	1.5	Drill 12299' - 12320' (rotate).
				5:30	1.0	Drill 12320' - 12331' (slide).
				8:30	3.0	Drill 12331' - 12351' (rotate).
				9:00	0.5	Survey: 12311'--44.4deg, azimuth 298.4 deg.
				13:30	4.5	Trip out.
				14:30	1.0	Change downhole motor.
				15:00	0.5	Service rig. Check BOP.
				18:00	3.0	Trip in with new bit #27 Smith F57OD at 12351'.
70	11/8	12351	123	20:00	2.0	Trip in.
				21:00	1.0	Drill 12351' - 12361' (slide).
				23:00	2.0	Drill 12361' - 12382' (rotate).
				0:30	1.5	Drill 12382' - 12392' (slide).
				3:00	2.5	Drill 12392' - 12412' (rotate).
				4:30	1.5	Drill 12412' - 12422' (slide).
				7:00	2.5	Drill 12422' - 12443' (rotate).
				8:00	1.0	Drill 12443' - 12453' (slide).
				10:30	2.5	Drill 12453' - 12473' (rotate).
				12:00	1.5	Drill 12473' - 12483' (slide).
				14:30	2.5	Drill 12483' - 12505' (rotate).

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				16:00	1.5	Drill 12505' - 12515' (slide).
				17:00	1.0	Drill 12515' - 12535' (rotate).
				17:30	0.5	Service rig.
				18:00	0.5	Drill 12535' - 12537' (slide).
71	11/9	12537	186	19:00	1.0	Drill 12537' - 12547' (slide).
				21:30	2.5	Drill 12547' - 12565' (rotate).
				22:30	1.0	Drill 12565' - 12575' (slide).
				0:30	2.0	Drill 12575' - 12597' (rotate).
				2:00	1.5	Drill 12597' - 12609' (slide).
				4:00	2.0	Drill 12609' - 12627' (rotate).
				5:30	1.5	Drill 12627' - 12639' (slide).
				7:30	2.0	Drill 12639' - 12657' (rotate).
				8:00	0.5	Service rig. Check BOP.
				9:30	1.5	Drill 12657' - 12667' (slide).
				18:00	8.5	Drill 12667' - 12747' (rotate).
72	11/10	12747	210	2:00	8.0	Drill 12747' - 12842' (rotate).
				2:30	0.5	Service rig.
				3:00	0.5	Drill 12842' - 12844' (rotate).
				4:00	1.0	Spot LCM pill. Pump slug.
				9:30	5.5	Trip out.
				10:00	0.5	Work on BHA. Check MWD.
				14:00	4.0	Wait on welder. Repair rotary table lock.
				18:00	4.0	Trip in with new bit #28 Smith F67ODPS at 12844'.
73	11/11	12844	97	19:30	1.5	Trip in.
				20:30	1.0	Ream 70 ft to bottom.
				21:00	0.5	Drill 12844' - 12855' (rotate).
				21:30	0.5	Circulate trip gas--mud bubbled over bell nipple.
				18:00	20.5	Drill 12855' - 13125' (rotate).
74	11/12	13125	281	2:30	8.5	Drill 13125' - 13215' (rotate).
				3:00	0.5	Service rig.
				18:00	15.0	Drill 13215' - 13395' (rotate).
75	11/13	13395	270	7:00	13.0	Drill 13395' - 13503' (rotate).
				9:00	2.0	Circulate sweeps. Pump pill. Blow kelly.
				14:00	5.0	Trip out.
				15:00	1.0	Lay down directional tools.
				18:00	3.0	Pick up BHA. Trip in with rerun bit #23 Hughes ATJ44C.
76	11/14	13503	108	20:00	2.0	Trip in and load out directional tools.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				23:00	3.0	Ream 120 ft to bottom.
				2:00	3.0	Circulate.
				3:00	1.0	Spot LCM pill.
				3:30	0.5	Pump barite pill. Blow kelly.
				9:00	5.5	Trip out for logs. SLM: board 13503'; strap 13509'.
				12:00	3.0	Rig up Schlumberger. Wait for Schlumberger to bring Grant head adapter. Attempt to install hole finder on FMI tool--no good.
				18:00	6.0	Log FMI conventionally; tools stopped at approximately 12600' where hole deviation = 49 deg. FMI failed at 9700'.
77	11/15	13503	0	22:00	4.0	Log Platform Express: dual laterolog, neutron, density, and sonic in one run. Tools stopped at approximately 12500' where hole deviation = 48 deg.
				1:00	3.0	Wait on Schlumberger. Repair FMI--no good.
				18:00	17.0	Log Platform Express: dual laterolog, neutron, density, and sonic on TLC tools (drill pipe conveyance) with wireline sidedoor near base of intermediate casing at 9194'.
78	11/16	13503	0	21:30	3.5	Lay down side entry sub and trip out.
				1:00	3.5	Pick up FMI.
				2:00	1.0	Cut 135 ft of drilling line.
				4:30	2.5	Trip in.
				6:00	1.5	Pick up side entry sub and wet connect.
				16:00	10.0	Log FMI on TLC tools (drill pipe conveyance). Caliper would not open until 11600'. Recorded directional survey. Logged FMI 9700' - 9400'.
				18:00	2.0	Trip out.
79	11/17	13503	0	19:30	1.5	Trip out. Well flowed 75 - 100 B. Shut in.
				6:00	10.5	Nipple down rotating head. Nipple up for coiled tubing. SICP: 310 psi at 6:00; 410 psi at 24:00; 700 psi at 3:00; 850 psi at 5:00.
				11:30	5.5	Rig up injection head. SICP: 850 psi at 6:00; 1000 psi at 7:00; 1020 psi at 8:30; 1100 psi at 9:00; 1150 psi at 10:00; 1200 psi at 11:00.
				14:00	2.5	Run in with coiled tubing.
				18:00	4.0	Choke well.
80	11/18	13503	0	6:00	12.0	Choke well.
				12:00	6.0	Choke well. Circulate through coiled tubing with full open choke at 9200'.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				14:00	2.0	Run in with coiled tubing to 13500'.
				18:00	4.0	Circulate through coiled tubing on open choke.
81	11/19	13503	0	6:00	12.0	Choke well.
				13:30	7.5	Circulate through choke and condition mud.
				15:30	2.0	Pull coiled tubing.
				18:00	2.5	Rig down injection head and adapter spools on top of Hydril.
82	11/20	13503	0	19:30	1.5	Nipple up rotating head.
				22:30	3.0	Check for flow. Reset pipe baskets, etc.
				5:30	7.0	Trip in, checking for flow.
				13:30	8.0	Circulate and condition mud. Mix and pump LCM.
				18:00	4.5	Trip out.
83	11/21	13503	0	19:00	1.0	Trip out.
				21:00	2.0	Rig up Schlumberger TLC tools (on drill pipe).
				0:30	3.5	Trip in with FMI log to 9200'.
				1:30	1.0	Pick up side entry sub and make wet connection.
				5:00	3.5	Trip in to 12700'. Lost telemetry.
				7:30	2.5	Trip out with FMI.
				8:30	1.0	Pull wireline out.
				11:30	3.0	Trip out with FMI.
				14:30	3.0	Trouble shoot tools. Electronic cartridge in FMI had shorted out.
				18:00	3.5	Trip in with new FMI on TLC tools (on drill pipe).
84	11/22	13503	0	18:30	0.5	Make wet connection.
				21:00	2.5	Trip in with FMI.
				2:00	5.0	Log out.
				3:30	1.5	Disconnect. Rig down side entry.
				7:00	3.5	Trip out with FMI.
				7:30	0.5	Rig down Schlumberger.
				13:30	6.0	Trip in.
				18:00	4.5	Circulate. Wait on orders.

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BIT RECORD

Run	Bit	Size	Make	Type	Depth	Ft	Hrs	Ft/Hr	Noz. 32nds	WOB	RPM		Pump	Pump	Cutting Struc.				Brng	Gage	Other	Reason
					Out	Cut					Table	Motor	Press	SPM	I	O	Dull	Loc	Seals	16ths	Char	Pulled
1	1	17 1/2	Hughes	G-3	1515	1445	43.50	33.2	open	8-45	85-120	N/A	1100-1400	120+120	3	3	N	A	E	4		TD
2	2	12 1/4	Varel	L117	2988	1473	35.50	41.5	12-13-14-14	40-45	120	N/A	1400-1650	86+86	8	8	N	A	F	20		TQ
3	3	12 1/4	Security	S33S	3172	184	9.00	20.4	12-13-14-14	20-40	120	N/A	1800	85+85	8	8	N	A	E	6		
4	4	12 1/4	Smith	F10TC	4564	1392	86.00	16.2	12-12-12-13	20-50	90-70	N/A	1925-2200	75+75			BT	A	E	2		TQ
5	5	12 1/4	Reed	EHP43H	5931	1367	65.00	21.0	13-13-13	45	90	N/A	2400-2500	70+70	3	3	BT	2,3	E	1	NO	HP
6	6	12 1/4	Hughes	GT-09	6589	658	49.00	13.4	14-14-14	40-45	90-80	N/A	2500	75+75	3	3	BT	A	E	I	SD	PP
7	7	12 1/4	Hughes	GT-18	7456	867	73.50	11.8	14-14-14	40-50	80-60	N/A	2500-2000	61+61	8	8	BT	A	E	12		
8	8	12 1/4	Security	S86F	7557	101	13.00	7.8	14-14-15	45	60	N/A	2500	64+64	2	2	RG	N	E	I		PP
9	9	12 1/4	Smith	F37	7642	85	13.50	6.3	14-14-15	45	60	N/A	2500	62+62	2	2	RG	N	E			TQ
10	10	12 1/4	Security	M89TF	7987	345	49.50	7.0	14-14-14	50	65	N/A	2500	62+62	3	3	RG	N	E	2	BT	PR
11	11	12 1/4	Reed	HP61A	8141	154	19.00	8.1	15-15-15	50-55	65	N/A	2500	67+67	3	3	FC	A	E	I	NO	PR
12	12	12 1/4	Smith	F37	8231	90	19.50	4.6	15-15-15	50-60	65-60	N/A	2500	65+65	2	2	N	A	E	1	NO	PR
13	13	12 1/4	Reed	HP53A	8462	231	40.50	5.7	15-15-15	50-60	60	N/A	2500	65+65	3	3	BT	A	E	1	NO	TQ
14	14	12 1/4	Hughes	ATJ44C	8605	143	30.50	4.7	15-15-15	60	60	N/A	2200	60+60	2	2	BT	A	E	I	NO	PR
15	15	12 1/4	Security	M89TF	8665	60	19.50	3.1	16-16-16	60	60	N/A	2100	64+64	1	1	N	A	E	I	NO	PR
16	16	12 1/4	Hughes	ATJ33C	8971	306	65.00	4.7	16-16-16	55	65	N/A	2100	64+64	4	4		A	E	1	NO	PR
17	17	12 1/4	Reed	EHP53A	9197	226	57.50	3.9	18-18-18	55	65	N/A	2200	65+65	7	5	BT	A	E	1	NO	TD
18	18	8 1/2	Hughes	J2	9203	6	1.50	4.0														
19	19	8 1/2	Reed	EHP61A	9279	76	14.00	5.4	14-14-0	45-50	60-65	N/A	1500	85	8	3	CR	A	E	I	NO	PR
20	20	8 1/2	Security	M84FD	9635	356	42.00	8.5	12-12-12	50	65	N/A	2100	100	5	5	BT	A	E	I	NO	PR
21	21	8 1/2	Hughes	ATJ44C	10326	691	63.00	11.0	11-11-11	45	60	N/A	2300-2400	90-85	3	3	FC	A	E	2	NO	BHA
22	22	8 1/2	Smith	F47	10784	458	42.00	10.9	10-10-10	45-40	60-65	N/A	2100	75	2	2	FC	A	E	I	NO	BHA
23	23	8 1/2	Hughes	ATJ44C	11485	701	83.50	8.4	10-10-10	40	60	N/A	2100	75	2	2	FC	A	E	I	NO	BHA
24	24	8 1/2	Smith	F47	11939	454	53.00	8.6	10-10-10	45-35	55-65	N/A	2100	75	2	2	FC	A	E	1	NO	LOG
25	25	8 1/2	Security	M89TFD	12049	110	23.00	4.8	18-18-18	30-80	0-30	91	1500	85	7	7	FC	A	F	2	NO	PR
26	26	8 1/2	Reed	HP63	12351	302	42.50	7.1	18-18-18	30-80	0-30	96	1300-1600	90	7	7	FC	1,3	F	1	SD	PR
27	27	8 1/2	Smith	F57OD	12844	493	53.50	9.2	18-18-18	25-70	0-30	96	1500	90	7	7	FC	A	E	2	SD	PR
28	28	8 1/2	Smith	F67ODPS	13503	659	57.50	11.5	18-18-18	30	30	80-96	1400-1500	75-90	6	6	FC	A	F	16	SD	PR

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MUD RECORD

Date	Depth	Wt	Vis	PV	YP	Gels	FL	Cake	Sol	Oil	H2O	Sd	pH	Pf	Mf	Cl	Ca	LCM	Remarks
8/30	116	8.4	27	----	----	----	----	----	Tr	0	99.9	----	7.0	Tr	0.20	300	80	----	
8/31	988	8.9	35	7	10	5/11	16.8	2	3.8	0	96.2	Tr	8.0	0.05	0.25	300	0	----	
9/1	1502	8.9	34	5	11	10/21	22.0	2	3.8	0	96.2	Tr	8.0	Tr	0.30	300	10	----	
9/2	1515	8.8	32	3	4	2/5	22.0	2	3.0	0	97.0	Tr	8.0	0.05	0.20	300	0	----	
9/3	1515	8.8	34	5	6	3/7	24.0	2	3.0	0	97.0	0	8.5	1.00	0.20	300	0	----	
9/4	2367	9.0	37	13	11	4/10	8.4	2	4.5	0	95.5	Tr	9.5	0.25	0.50	300	20	----	
9/5	2968	9.0	38	11	13	4/9	8.4	2	4.8	0	95.2	0	9.0	0.15	0.60	300	0	----	
9/6	3172	9.0	33	4	7	2/2	10.2	2	4.8	0	95.2	Tr	9.0	0.05	0.60	300	0	----	
9/7	3718	9.0	34	6	8	2/6	9.2	2	4.8	0	95.2	Tr	9.0	0.15	0.60	300	0	----	
9/8	3972	9.0	34	6	8	2/2	8.6	1	4.9	0	95.1	Tr	9.5	0.15	0.60	400	10	----	
9/9	4296	9.0	36	8	7	2/4	9.2	1	4.9	0	95.1	Tr	9.0	0.07	0.50	300	0	----	
9/10	4564	9.0	36	8	8	2/3	8.8	1	5.0	0	95.0	Tr	9.0	0.15	0.50	300	0	----	
9/11	5020	8.7	44	9	11	10/8	9.8	2	2.5	0	97.5	0	10.5	0.23	0.60	7000	80	----	Began salt up at 5020'.
9/12	5071	10.1	33	6	6	1/8	9.6	1	1.5	0	98.5	Tr	11.0	1.00	2.0	190000	80	----	
9/13	5516	10.0	37	11	7	2/6	7.2	1	2.6	0	97.4	Tr	11.5	2.20	3.00	185000	60	----	
9/14	5868	10.5	37	12	8	2/8	7.8	1	4.7	0	95.3	Tr	11.0	1.10	2.40	180000	60	----	
9/15	6030	10.6	38	12	10	2/8	7.0	1	5.0	0	95.0	Tr	11.0	1.60	2.50	187000	40	----	
9/16	6342	10.5	34	10	6	2/5	7.8	1	4.5	0	95.5	Tr	10.0	0.30	0.70	184000	40	----	
9/17	6592	10.5	34	7	6	1/2	8.8	1	4.7	0	95.3	Tr	10.0	0.30	0.60	180000	40	----	
9/18	6812	10.5	36	8	9	1/2	9.8	1	4.5	0	95.5	Tr	10.5	0.15	0.40	182000	40	----	
9/19	6882	10.5	38	11	10	1/2	8.8	2	4.5	0	95.5	Tr	10.0	0.20	0.50	180000	80	----	
9/20	7052	10.5	36	10	8	1/2	7.6	2	3.8	0	96.2	Tr	10.5	0.15	0.45	185000	120	----	
9/21	7330	10.4	37	10	7	2/4	10.0	2	3.8	0	96.2	Tr	10.0	0.10	0.40	184000	120	Pills	Lost 300 B.
9/22	7477	10.4	38	12	8	2/5	8.8	2	3.0	0	97.0	Tr	10.5	0.20	0.50	184000	120	Pills	Lost 60 B on trip.
9/23	7561	10.4	38	8	8	2/5	7.6	1	3.1	0	96.9	0.25	10.5	0.15	0.45	182000	120	Pills	50% returns at 7535'.

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MUD RECORD

Date	Depth	Wt	Vis	PV	YP	Gels	FL	Cake	Sol	Oil	H2O	Sd	pH	Pf	Mf	Cl	Ca	LCM	Remarks
9/24	7650	10.4	35	6	6	1/3	7.6	1	4.0	0	96.0	1/8	10.5	0.25	0.60	184000	40	Pills	Lost 7 – 20 BPH.
9/25	7840	10.1	35	6	5	1/2	7.8	1	1.7	0	98.3	Tr	10.0	0.21	0.50	183000	40	Pills	Lost 600 B at 7802' – 7842'.
9/26	7953	10.3	43	8	7	1/7	7.2	1	3.2	0	96.8	Tr	10.0	0.28	0.51	180000	40	Pills	Lost returns at 7951'. Bypass.
9/27	8043	10.3	43	8	8	2/10	7.0	1	3.2	0	96.8	1/8	10.0	0.23	0.60	180000	40	Pills	Lost 300 B. Bypass shakers.
9/28	8152	10.4	50	9	8	2/9	6.8	1	3.5	0	96.5	1/4	10.0	0.10	0.40	182000	60	Pills	Bypass shakers.
9/29	8234	10.6	35	10	6	1/10	6.6	1	4.6	0	95.4	1/8	10.3	0.18	0.60	182000	144	Pills	Bypass shakers.
9/30	8353	10.6	36	10	5	2/12	6.2	1	5.2	0	94.8	1/4	10.4	0.20	0.59	183000	100	Pills	Bypass shakers.
10/1	8462	10.2	52	18	21	6/10	6.0	1	2.2	0	97.8	Tr	8.0	0.05	0.30	181000	280	Pills	Shake out LCM. Lost 450 B.
10/2	8500	10.4	43	10	9	7/14	6.6	1	3.9	0	96.1	1/4	9.0	0.20	1.00	183000	0	5 ppb	
10/3	8605	10.5	39	8	10	5/12	6.8	1	4.7	0	95.3	1/4	9.5	0.20	0.70	185000	0	7%	Bypass shakers.
10/4	8642	10.5	38	8	10	3/10	7.0	1	4.6	0	95.4	1/8	9.5	0.15	0.70	187000	0	5.5%	Lost 4 BPH.
10/5	8703	10.6	44	15	11	7/11	6.8	2	5.2	0	94.8	1/8	8.5	0.10	0.60	185000	120	14.0%	Lost 1300 B at 8703'.
10/6	8774	10.5	37	7	9	5/14	7.0	2	4.3	0	95.7	1/8	9.5	0.15	0.90	189000	40	12.0%	
10/7	8904	10.5	38	8	9	5/12	8.6	2	4.2	0	95.8	1/8	9.5	0.10	0.80	190000	280	11.0%	
10/8	8971	10.5	38	9	7	2/8	9.2	2	4.1	0	95.9	1/4	10.5	0.20	0.80	191000	20	11.0%	
10/9	9012	10.6	37	7	8	2/7	6.6	1	5.0	0	95.0	1/4	10.5	0.20	0.80	189000	20	9.5%	
10/10	9106	10.6	37	7	8	2/4	6.8	1	5.0	0	95.0	1/8	10.5	0.20	0.80	189000	80	11.8%	Bypass shakers. LCM pills.
10/11	9197	10.7	39	9	8	2/6	6.4	1	5.6	0	94.4	1/4	10.0	0.10	0.80	188000	280	15.0%	
10/12	9197	10.7	38	13	9	1/3	6.0	1	6.0	0	94.0	1/8	10.0	0.10	0.80	188000	280	15.0%	Lost 38 B logging.
10/13	9197	10.7	41	12	10	1/9	5.2	1	5.8	0	94.2	1/8	10.0	0.10	0.60	186000	300	15.0%	Run 9 5/8" casing.
10/14	9197	10.7	42	10	9	1/8	5.4	1	5.8	0	94.2	1/8	10.0	0.10	0.55	186000	280	15.0%	9 5/8" casing set at 9194'.
10/15	9197	No check; cleaning mud tanks.																	
10/16	9197	8.4	26	----	----	----	----	----	----	----	----	----	10.5	0.30	3.60	1700	120	----	
10/17	9250	8.5	39	9	7	2/7	10.4	1	1.1	0	98.9	Tr	9.0	0.04	0.40	3300	80	----	LSND mud.
10/18	9336	8.5	46	10	10	5/10	10.6	1	1.2	0	98.8	Tr	10.5	0.36	0.61	2900	120	----	

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MUD RECORD

Date	Depth	Wt	Vis	PV	YP	Gels	FL	Cake	Sol	Oil	H2O	Sd	pH	Pf	Mf	Cl	Ca	LCM	Remarks
10/19	9550	8.6	41	11	6	1/5	9.2	1	1.9	0	98.1	Tr	10.5	0.25	0.70	3000	80	----	
10/20	9668	8.6	52	15	10	2/8	8.0	1	1.9	0	98.1	Tr	10.5	0.60	1.20	3000	40	----	
10/21	9938	8.7	44	12	8	1/5	8.0	1	1.5	0	98.5	Tr	10.0	0.40	0.80	13000	60	Pills	Losses started at 9650'.
10/22	10174	8.7	39	8	7	1/2	8.0	1	1.5	0	98.5	Tr	9.0	0.15	0.60	22000	60	Pills	
10/23	10326	8.7	41	9	11	2/2	7.6	1	1.5	0	98.5	1/2	9.2	0.15	0.80	24000	80	----	Lost 250 B.
10/24	10551	8.6	40	9	9	2/3	7.6	1	1.2	0	98.8	0	9.7	0.18	0.60	18000	40	Pills	Lost 5 – 6 BPH.
10/25	10757	8.6	38	7	7	1/1	7.6	1	1.2	0	98.8	Tr	10.2	0.30	0.70	19000	160	Pills	Lost 4 – 6 BPH.
10/26	10787	8.7	39	9	9	1/1	7.4	1	1.5	0	98.5	Tr	10.2	0.25	0.60	19000	210	Pills	Lost 30 – 40 B on trip.
10/27	10970	8.7	38	7	7	1/1	7.4	1	1.4	0	98.6	Tr	10.5	0.30	0.70	20000	320	----	
10/28	11118	8.7	37	9	7	1/1	7.6	1	1.6	0	98.4	Tr	10.5	0.20	0.70	22000	320	Pills	Lost 80 B trip. Seepage 15 BPH.
10/29	11275	8.8	38	8	8	1/1	7.8	1	2.0	0	98.0	Tr	10.5	0.20	0.50	21000	400	Pills	Start zinc oxide H2S scavenger.
10/30	11473	8.8	37	8	6	1/1	8.6	1	2.2	0	97.8	Tr	10.5	0.20	0.45	22000	600	Pills	
10/31	11504	8.8	42	13	14	5/12	8.8	1	2.0	0	98.0	Tr	10.5	0.40	0.80	20500	500	Pills	Lost 200 B on trip.
11/1	11656	8.8	42	13	7	1/5	8.8	1	1.9	0	98.1	Tr	10.5	0.28	0.52	22000	268	Pills	Lost 5 BPH.
11/2	11837	8.8	44	13	14	2/5	9.4	1	2.0	0	97.9	Tr	10.5	0.35	0.70	24000	240	Pills	Start "cultured marble" LCM.
11/3	11937	8.9	45	15	11	2/4	9.0	1	2.5	0	97.5	Tr	10.5	0.18	0.40	24000	360	----	Log dipmeter & directional
11/4	11964	8.8	47	15	15	2/7	8.4	1	2.3	0	97.7	Tr	10.5	0.45	0.60	21000	60	Pills	Lost 500 B. Directional drilling.
11/5	12049	8.8	42	13	9	2/3	8.0	1	2.2	0	97.8	Tr	10.5	0.60	0.90	23000	60	Pills	
11/6	12124	8.8	40	11	10	1/2	7.8	1	1.9	0	98.1	Tr	10.0	0.40	1.10	24000	20	Pills	Lost 228 B.
11/7	12318	8.8	41	11	11	1/2	8	1	2.2	0	97.8	Tr	10.5	0.40	0.90	24000	20	Pills	Lost 64 B.
11/8	12425	8.8	44	15	12	2/4	8.8	1	1.9	0	98.1	Tr	10.0	0.30	0.60	24000	320	Pills	Lost 257 B, 10-20 BPH in breaks.
11/9	12637	8.8	41	10	10	1/2	9.0	1	1.7	0	98.3	Tr	10.0	0.30	0.60	24000	140	Pills	Lost 518 B, 10-35 BPH.
11/10	12844	8.8	39	9	9	1/1	9.6	1	2.2	0	97.8	Tr	10.5	0.40	0.80	24000	40	Pills	Lost 380 B, 7-40 BPH in breaks.
11/11	12935	8.8	41	10	10	1/2	9.4	1	2.3	0	97.7	Tr	10.5	0.50	1.00	21000	20	Pills	Lost 270 B, 16 BPH drilling.
11/12	13246	8.6	38	9	8	1/4	10.4	1	1.4	0	98.6	Tr	10.5	0.60	1.30	13000	20	Pills	Lost 1340 B, 40-140 BPH breaks.

Anschutz Exploration Corporation
Anschutz Ranch Deep #4-26

MUD RECORD

Date	Depth	Wt	Vis	PV	YP	Gels	FL	Cake	Sol	Oil	H2O	Sd	pH	Pf	Mf	Cl	Ca	LCM	Remarks
11/13	13487	8.5	48	15	10	3/9	10.0	1	0.4	0	99.6	Tr	10.5	0.60	1.00	13000	60	Pills	Lost 604 B, 25 BPH.
11/14	13503	8.8	45	14	11	1/5	10.0	1	2.1	0	97.9	Tr	10.5	0.50	1.00	14000	40	Pills	Lost 164 B total, 150 B on trip.
11/15	13503	8.8	46	15	10	1/4	10.0	1	2.1	0	97.9	Tr	10.5	0.40	0.80	14000	40	----	Logging.
11/16	13503	8.8	53	17	17	3/6	10.0	1	2.1	0	97.9	Tr	10.2	0.40	0.70	14000	40	----	Logging.
11/17	13503	8.8	52	16	18	3/9	9.8	1	2.5	0	97.5	Tr	11.0	0.70	1.20	14000	25	----	Well started flowing.
11/18	13503	8.8	43	12	13	2/9	9.0	1	2.5	0	97.5	Tr	11.5	0.80	1.30	13000	10	Pills	Lost 300 B. 8.8 wt in; 6.8 wt out.
11/19	13503	8.9	47	20	18	2/9	7.4	1	3.3	0	96.7	Tr	12.7	3.10	3.90	12000	10	Pills	Lost 218 B. 8.9 wt in; 7.2 wt out.
11/20	13503	9.0	41	14	12	2/3	7.4	1	3.6	0	96.4	Tr	12.5	4.00	6.00	10000	10	10%	Lost 300 B. 5% H2S at shaker.
11/21	13503	9.1	45	15	10	1/2	8.0	1	4.0	0	96.0	1/8	11.5	2.00	3.60	10000	10	14%	Lost 402 B. Logging.
11/22	13503	9.0	40	9	8	1/2	8.4	1	3.0	0	97.0	1/8	11.5	2.20	3.70	6000	10	10%	Lost 138 B. Finished logging.

ABBREVIATIONS & UNITS

Weight (Wt)	lbs/gal
Viscosity (Vis)	sec/qt
Plastic Viscosity (PV)	centipoise
Yield Point (YP)	lbs/100 sq ft
Gel Strengths (Gels)	lbs/100 sq ft (10 sec / 10 min)
Filtrate (FL)	ml/30 min
Cake	32nds inch
Solids (Sol)	% by volume
Oil	% by volume
H2O	% by volume
Sand (Sd)	% by volume
pH	
Filtrate Alkalinity (Pf)	ml of N/50 H2SO4
Filtrate Alkalinity (Mf)	ml of N/50 H2SO4
Chlorides (Cl)	mg/l
Hardness as Calcium (Ca)	mg/l
LCM	% by volume

DEVIATIONS

Depth	Degree	Direction
122	0	
244	0	
488	1/4	
757	3/4	
975	1/2	
1285	1 1/2	
1408	3/4	
1500	3/4	
1779	2 ----	
1994	2 1/4	
2212	1 3/4	
2463	2 ----	
2712	2 ----	
2900	1 3/4	
3125	3 ----	
3375	2 1/2	
3622	2 1/4	
3871	2 3/4	
4115	2 ----	
4364	2 1/4	
4553	2 3/4	
4771	2 1/2	
5143	2 ----	
5392	2 ----	
5920	4 1/2	
6172	4 1/4	
6482	4 1/4	
6728	4 1/4	
6949	2 3/4	
7260	3 3/4	
7515	3 1/2	
7962	3 3/4	
8077	3 3/4	
8390	5 ----	
8516	5 1/4	
8760	5 1/2	
8915	6 1/2	
8957	6 ----	
9152	7 ----	
9409	6 1/4	
9593	7 ----	
9650	10.75	298.75
9930	11.25	303.75
10210	14.50	306.75
10268	14.75	308.75
10358	15.25	305.75
10450	15.75	307.75
10544	16.00	304.75
10764	20.00	306.75
10856	22.00	305.75
10951	24.50	306.75
11107	26.00	302.75
11294	32.00	302.25
11388	31.50	302.75
11482	27.50	296.75
11576	24.50	295.75
11669	26.50	297.25
11762	29.00	297.75
11855	29.50	298.75
11882	28.90	300.70
11913	29.00	299.90
11944	29.50	299.60
11976	30.30	299.30
12007	31.20	298.30
12034	32.20	298.40
12065	33.80	298.40
12096	34.80	298.90
12127	35.60	299.20
12158	36.40	299.30
12188	37.40	299.10
12219	38.30	299.10
12250	39.10	299.20
12280	39.80	298.80
12311	40.40	298.40
12342	41.20	297.00
12372	42.20	297.10
12403	43.30	297.20
12433	44.30	296.70
12465	45.40	297.10
12495	46.40	296.30
12525	47.60	296.60
12557	48.50	296.60
12587	49.00	297.10
12617	49.40	298.00
12648	50.30	299.20
12679	51.40	300.00
12709	51.20	301.00
12741	51.20	301.40
12772	51.40	302.50
12802	51.40	303.20

Rig surveys through 11855'. Schlumberger Anadrill MWD surveys from 11882' to TD.

DEVIATIONS

Depth	Degree	Direction
12834	51.40	304.00
12866	51.30	304.00
12895	51.60	304.80
12926	51.30	305.30
12957	51.50	306.00
12989	51.30	306.80
13020	51.50	307.70
13051	51.30	307.10
13082	51.50	308.30
13113	52.00	308.30
13143	52.50	309.00
13175	53.10	309.10
13206	53.20	308.80
13237	53.50	308.80
13269	54.10	309.00
13300	53.80	308.30
13332	53.80	309.30
13362	53.90	309.00
13394	54.20	309.00
13425	54.50	309.00
13455	54.80	309.80

Depth	Degree	Direction

Anschutz Exploration Corporation
Anschutz Ranch Deep #4-26

WELL SURVEY

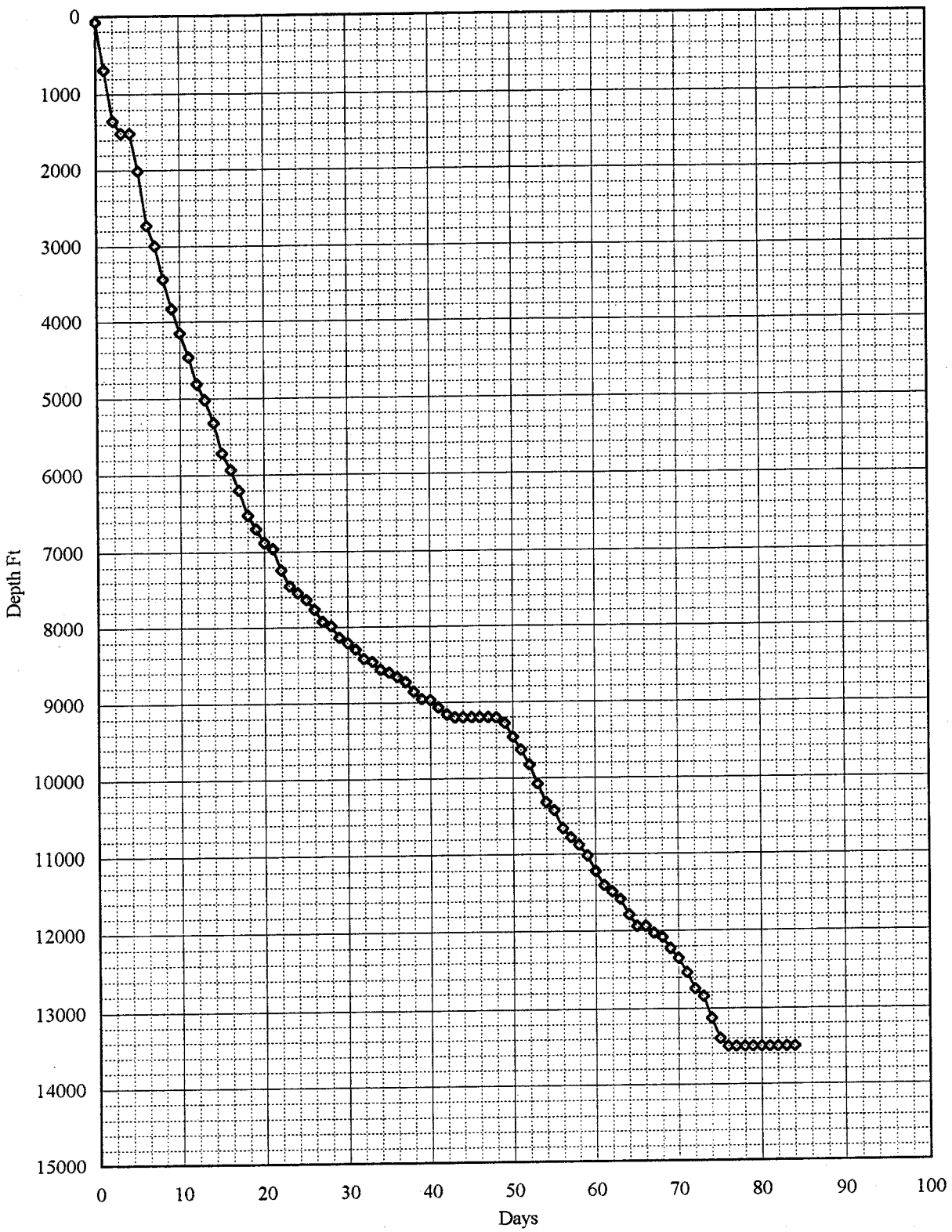
MD	INC	AZ	TVD	DATUM	N+/S-	E+/W-	DLS
RIG SURVEYS TIED TO SCHLUMBERGER WIRELINE SURVEY AT 9186'							
9186	6.80	299.00	9173.00	-1838	174.00	-365.00	
9650	10.75	298.75	9631.48	-2296	208.15	-426.99	0.9
9930	11.25	303.75	9906.34	-2571	235.88	-472.59	0.4
10210	14.50	306.75	10179.27	-2844	272.04	-523.40	1.2
10268	14.75	308.75	10235.39	-2900	281.00	-534.98	1.0
10358	15.25	305.75	10322.32	-2987	295.09	-553.52	1.0
10450	15.75	307.75	10410.98	-3076	309.80	-573.22	0.8
10544	16.00	304.75	10501.39	-3166	325.00	-593.95	0.9
10764	20.00	306.75	10710.58	-3376	364.81	-649.03	1.8
10856	22.00	305.75	10796.47	-3461	384.29	-675.62	2.2
10951	24.50	306.75	10883.75	-3549	406.48	-705.85	2.7
11107	26.00	302.75	11024.85	-3690	444.33	-760.53	1.5
11294	32.00	302.25	11188.33	-3853	492.99	-836.98	3.2
11388	31.50	302.75	11268.26	-3933	519.57	-878.70	0.6
11482	27.50	296.75	11350.08	-4015	542.63	-918.76	5.3
11576	24.50	295.75	11434.55	-4100	560.87	-955.70	3.2
11669	26.50	297.25	11518.49	-4183	578.75	-991.52	2.3
11762	29.00	297.75	11600.79	-4266	598.75	-1029.92	2.7
11855	29.50	298.75	11682.00	-4347	620.26	-1069.95	0.8
ANADRILL MWD SURVEYS TIED TO RIG SURVEYS AT 11855'							
11882	28.90	300.70	11705.57	-4371	626.79	-1081.38	4.2
11913	29.00	299.90	11732.70	-4398	634.36	-1094.34	1.3
11944	29.50	299.60	11759.74	-4425	641.88	-1107.49	1.7
11976	30.30	299.30	11787.48	-4452	649.72	-1121.38	2.5
12007	31.20	298.30	11814.13	-4479	657.35	-1135.27	3.3
12034	32.20	298.40	11837.10	-4502	664.09	-1147.76	3.7
12065	33.80	298.40	11863.09	-4528	672.12	-1162.61	5.2
12096	34.80	298.90	11888.70	-4554	680.50	-1177.94	3.4
12127	35.60	299.20	11914.03	-4579	689.18	-1193.56	2.6
12158	36.40	299.30	11939.11	-4604	698.08	-1209.46	2.6
12188	37.40	299.10	11963.10	-4628	706.87	-1225.18	3.4
12219	38.30	299.10	11987.58	-4653	716.12	-1241.80	2.9
12250	39.10	299.20	12011.78	-4677	725.56	-1258.73	2.6
12280	39.80	298.80	12034.94	-4700	734.80	-1275.40	2.5
12311	40.40	298.40	12058.65	-4724	744.36	-1292.93	2.1
12342	41.20	297.00	12082.12	-4747	753.77	-1310.87	3.9
12372	42.20	297.10	12104.52	-4770	762.85	-1328.64	3.3
12403	43.30	297.20	12127.28	-4792	772.45	-1347.36	3.6

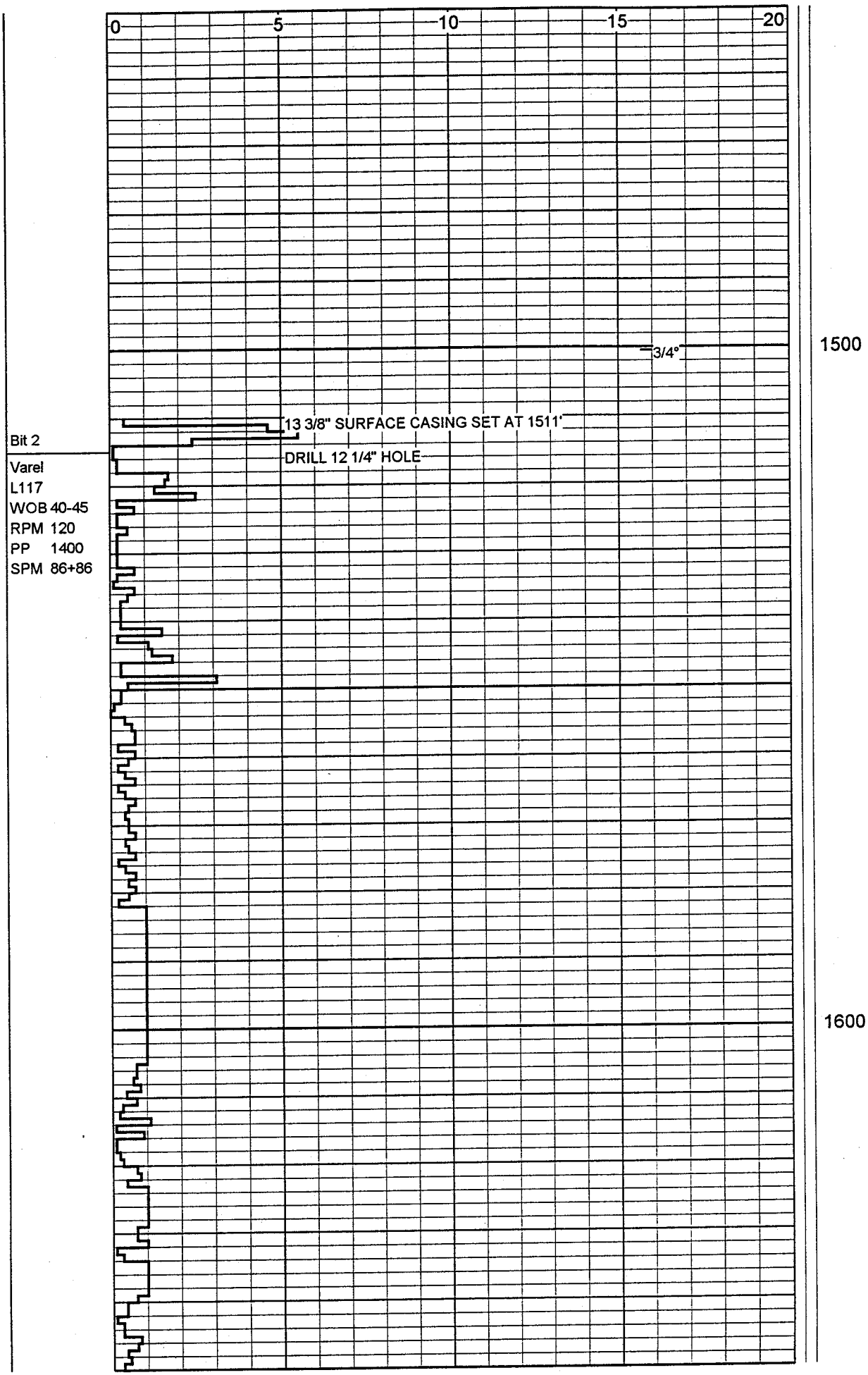
WELL SURVEY

MD	INC	AZ	TVD	DATUM	N+/S-	E+/W-	DLS
12433	44.30	296.70	12148.94	-4814	781.86	-1365.87	3.5
12465	45.40	297.10	12171.62	-4837	792.07	-1386.00	3.5
12495	46.40	296.30	12192.50	-4857	801.75	-1405.24	3.8
12525	47.60	296.60	12212.96	-4878	811.52	-1424.89	4.1
12557	48.50	296.60	12234.35	-4899	822.18	-1446.17	2.8
12587	49.00	297.10	12254.13	-4919	832.36	-1466.29	2.1
12617	49.40	298.00	12273.73	-4939	842.87	-1486.42	2.6
12648	50.30	299.20	12293.72	-4959	854.21	-1507.23	4.1
12679	51.40	300.00	12313.29	-4978	866.09	-1528.13	4.1
12709	51.20	301.00	12332.05	-4997	877.97	-1548.30	2.7
12741	51.20	301.40	12352.10	-5017	890.89	-1569.63	1.0
12772	51.40	302.50	12371.49	-5036	903.69	-1590.16	2.8
12802	51.40	303.20	12390.20	-5055	916.41	-1609.86	1.8
12834	51.40	304.00	12410.17	-5075	930.25	-1630.69	2.0
12866	51.30	304.00	12430.15	-5095	944.22	-1651.41	0.3
12895	51.60	304.80	12448.23	-5113	957.04	-1670.12	2.4
12926	51.30	305.30	12467.54	-5133	970.96	-1689.97	1.6
12957	51.50	306.00	12486.88	-5152	985.08	-1709.65	1.9
12989	51.30	306.80	12506.85	-5172	999.92	-1729.78	2.1
13020	51.50	307.70	12526.19	-5191	1014.58	-1749.07	2.4
13051	51.30	307.10	12545.53	-5211	1029.30	-1768.31	1.6
13082	51.50	308.30	12564.87	-5230	1044.12	-1787.48	3.1
13113	52.00	308.30	12584.06	-5249	1059.20	-1806.59	1.6
13143	52.50	309.00	12602.43	-5267	1074.02	-1825.11	2.5
13175	53.10	309.10	12621.78	-5287	1090.08	-1844.90	1.9
13206	53.20	308.80	12640.37	-5305	1105.67	-1864.20	0.8
13237	53.50	308.80	12658.87	-5324	1121.26	-1883.58	1.0
13269	54.10	309.00	12677.77	-5343	1137.47	-1903.68	1.9
13300	53.80	308.30	12696.01	-5361	1153.12	-1923.25	2.1
13332	53.80	309.30	12714.91	-5380	1169.31	-1943.37	2.5
13362	53.90	309.00	12732.61	-5398	1184.60	-1962.16	0.9
13394	54.20	309.00	12751.40	-5416	1200.90	-1982.29	0.9
13425	54.50	309.00	12769.47	-5434	1216.75	-2001.87	1.0
13455	54.80	309.80	12786.82	-5452	1232.29	-2020.78	2.4
		PROJECTION TO 13503' TOTAL DEPTH					
13503	54.80	309.90	12814.49	-5479	1257.42	-2050.89	0.2

Anschutz Exploration Corporation
Anschutz Ranch Deep #4-26

DRILLING CURVE

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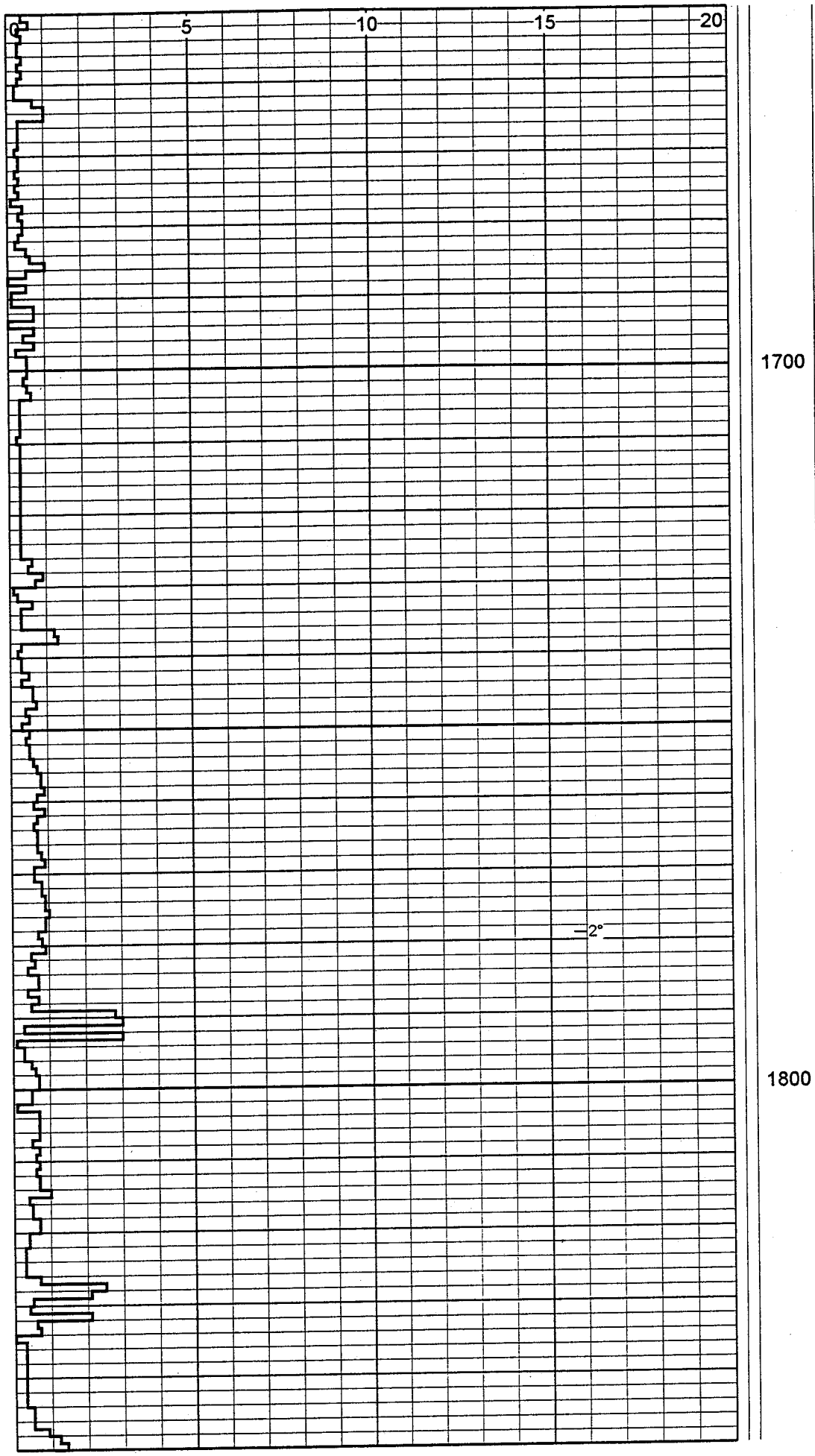
5
10
15
20
1500
1600
3/4°
13 3/8" SURFACE CASING SET AT 1511'
DRILL 12 1/4" HOLE
Bit 2
Varel
L117
WOB 40-45
RPM 120
PP 1400
SPM 86+86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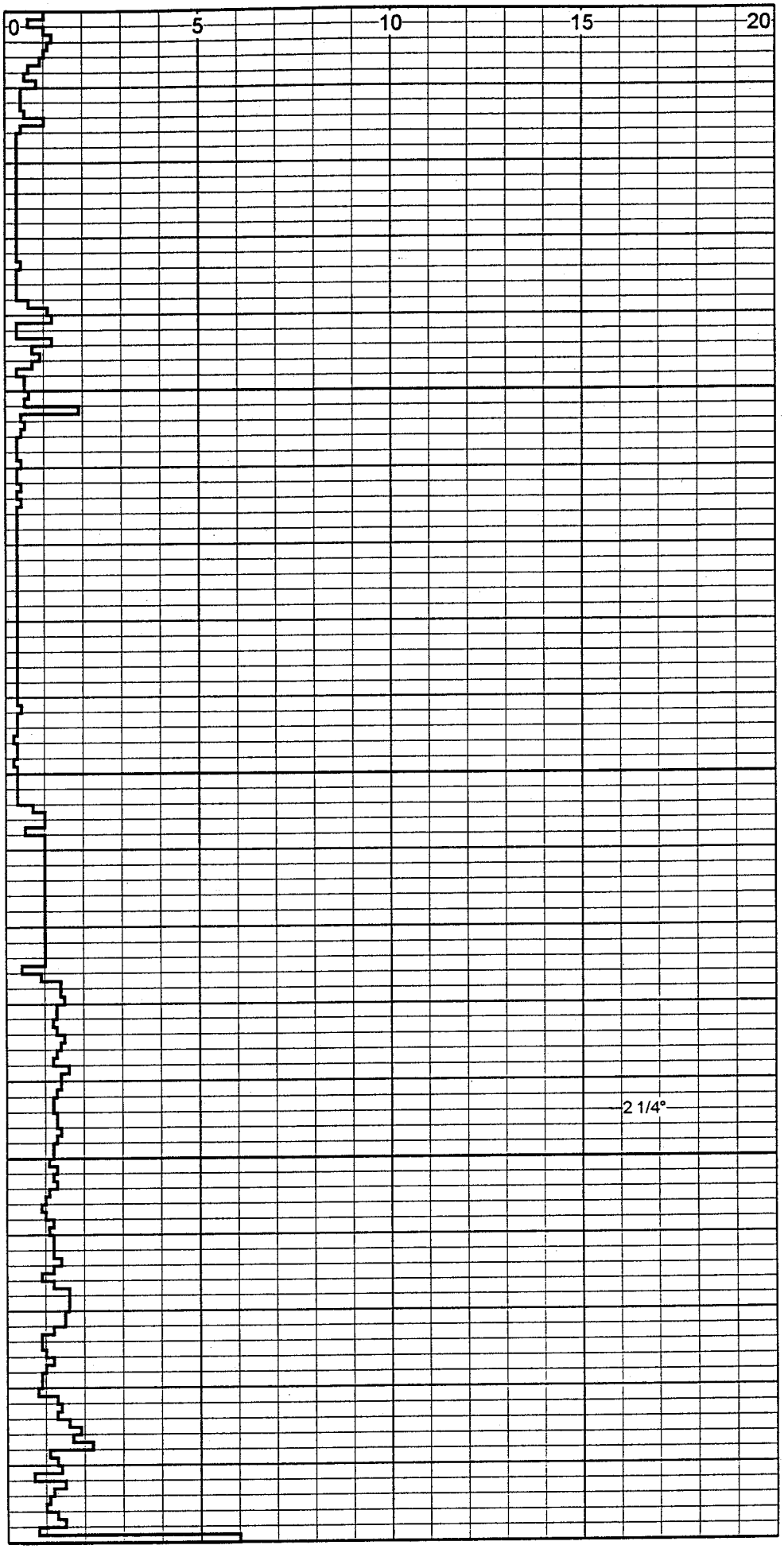
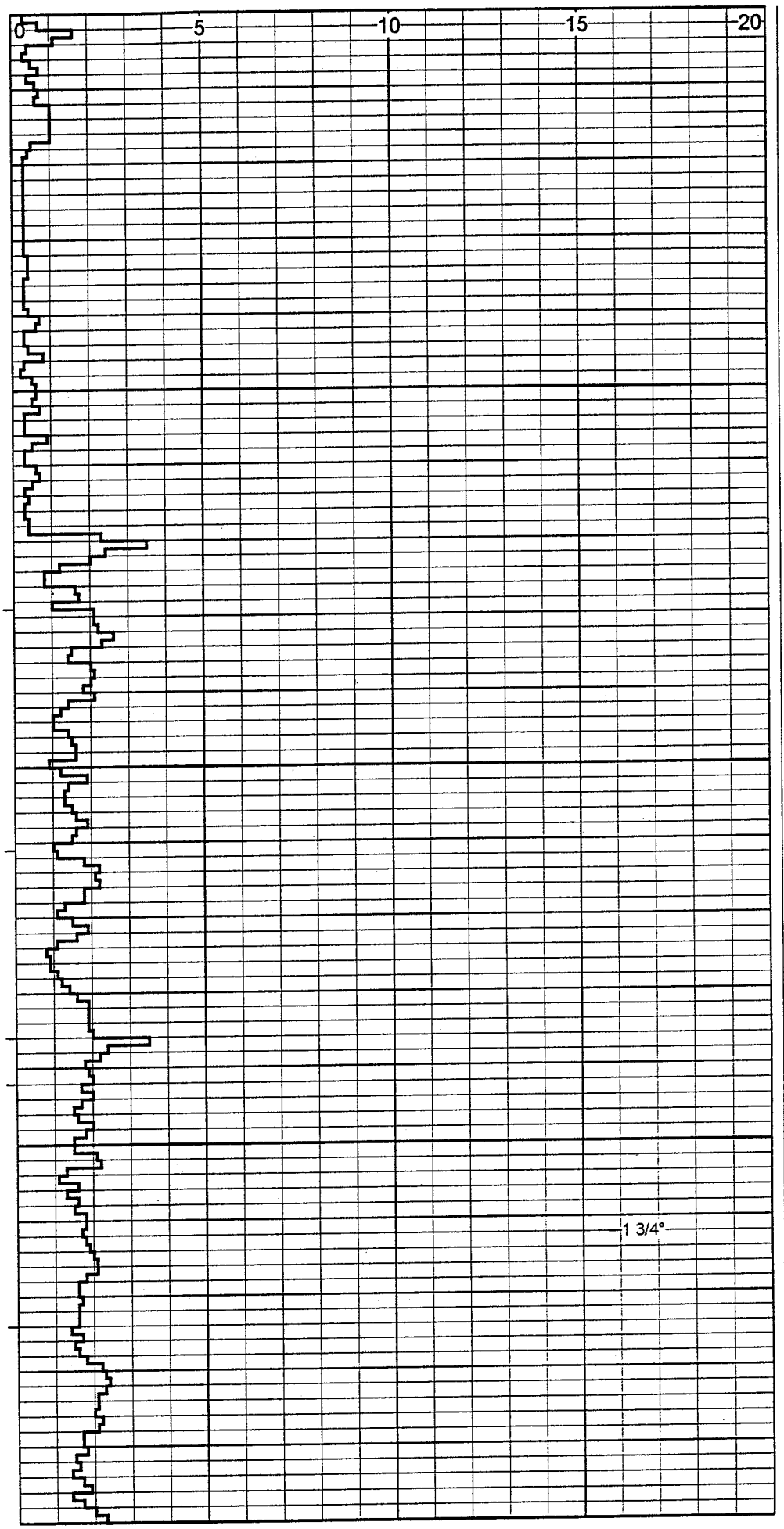
10
15
20
2°
1700
1800



WOB 40
RPM 120
PP 1650
SPM 85+85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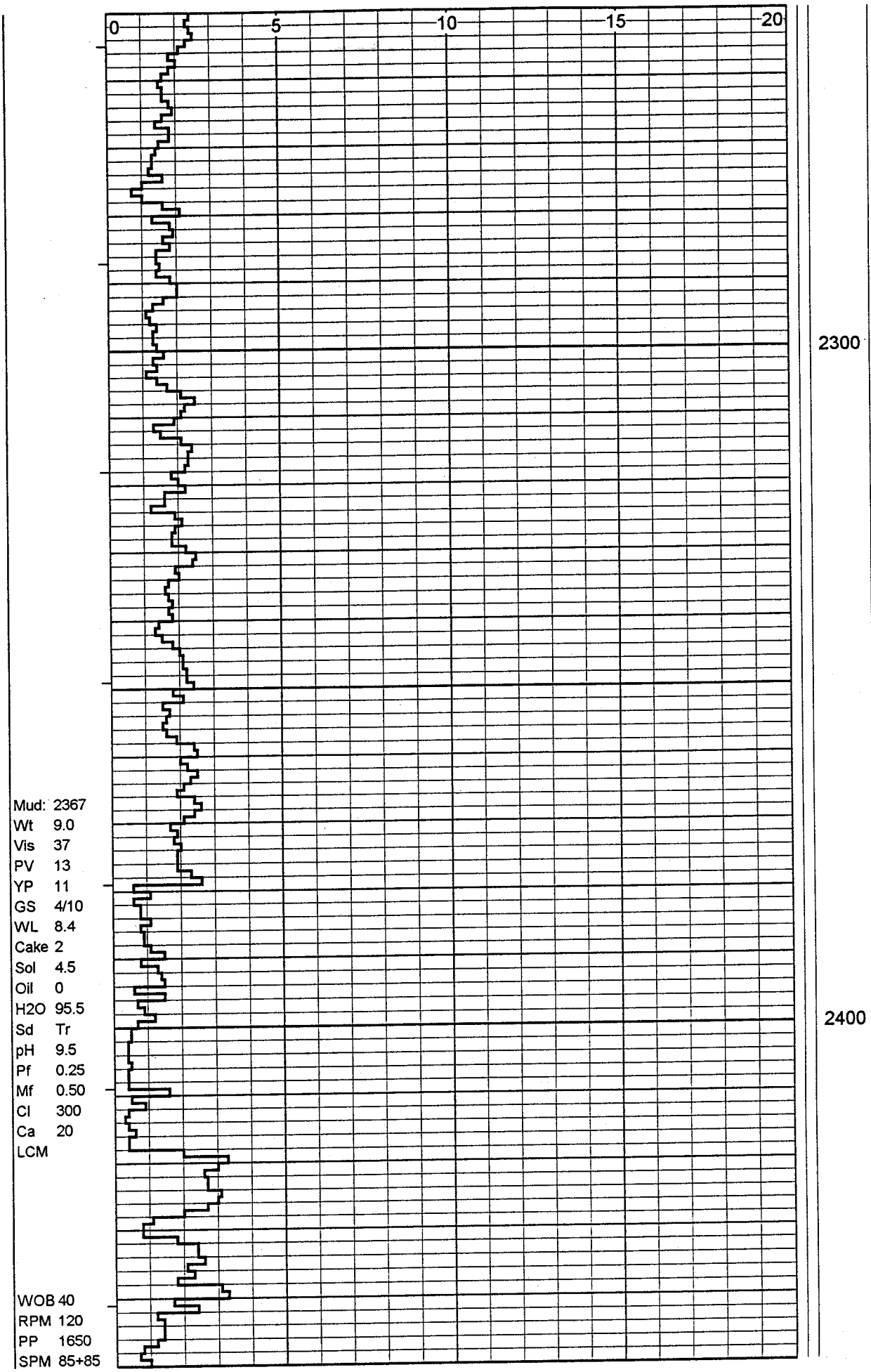
5
10
15
20
2100
2200
1 3/4°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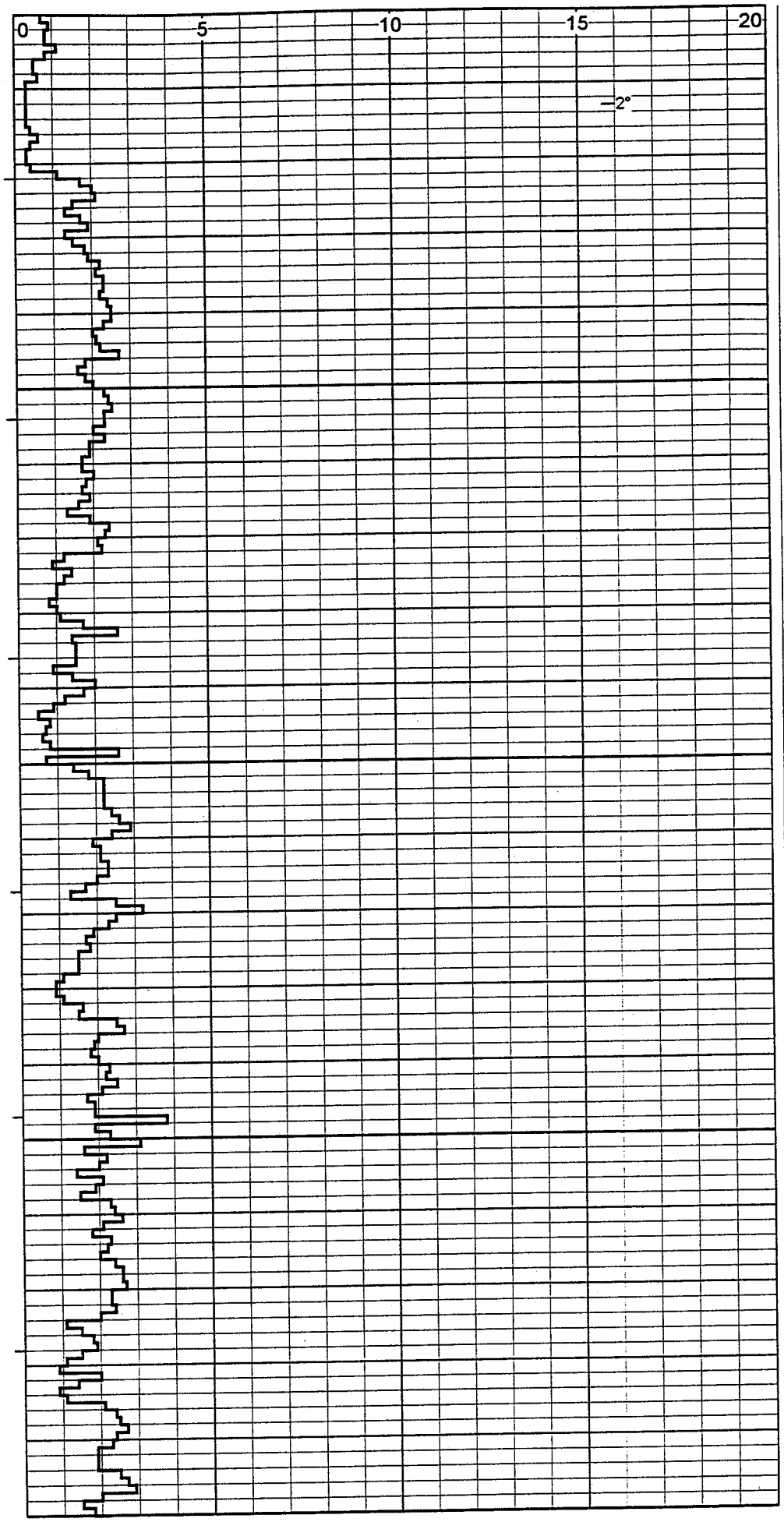
5
10
15
20
2300
2400
Mud: 2367
Wt 9.0
Vis 37
PV 13
YP 11
GS 4/10
WL 8.4
Cake 2
Sol 4.5
Oil 0
H2O 95.5
Sd Tr
pH 9.5
Pf 0.25
Mf 0.50
Cl 300
Ca 20
LCM
WOB 40
RPM 120
PP 1650
SPM 85+85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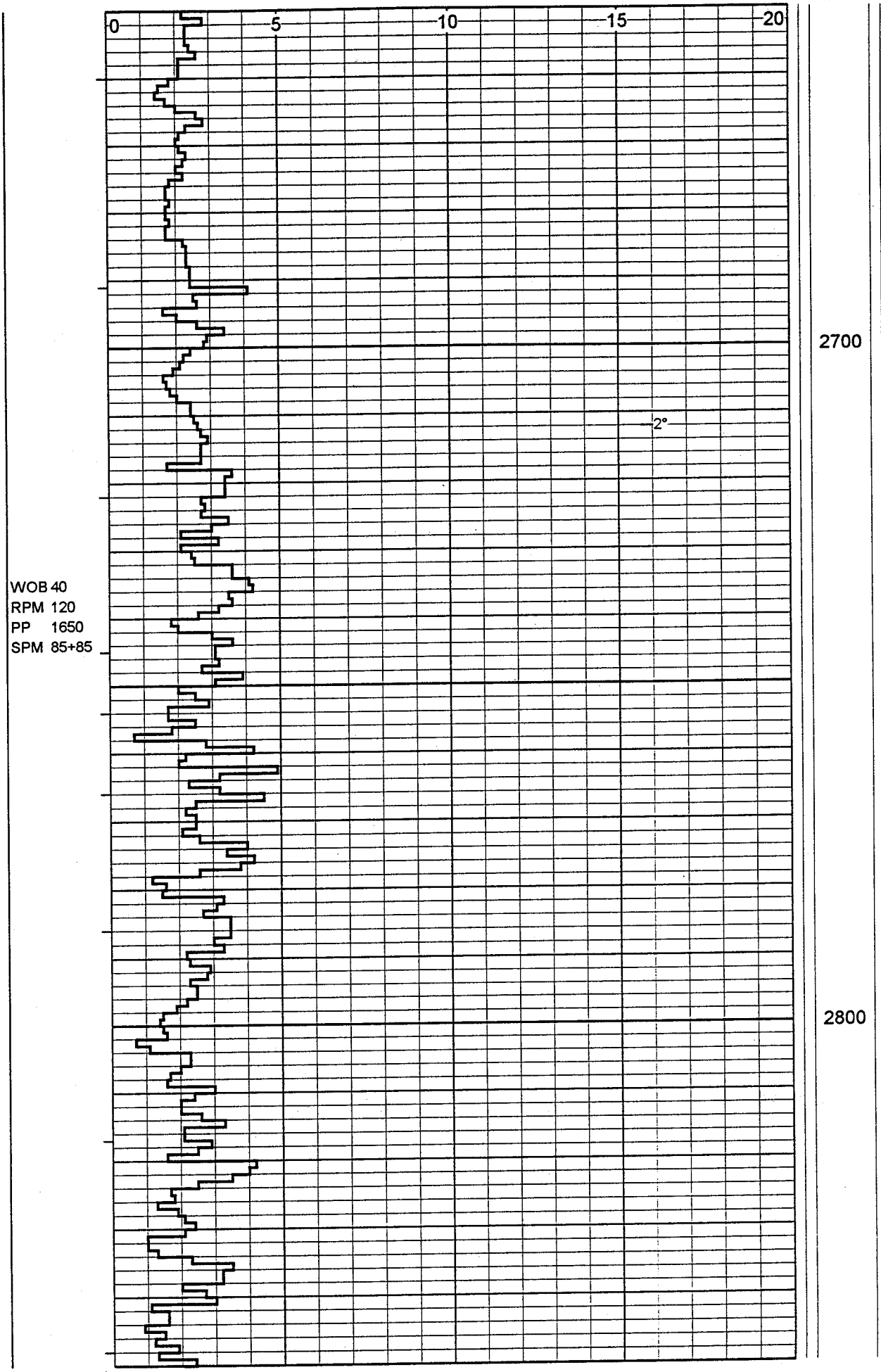
5
10
15
20
2°
2500
2600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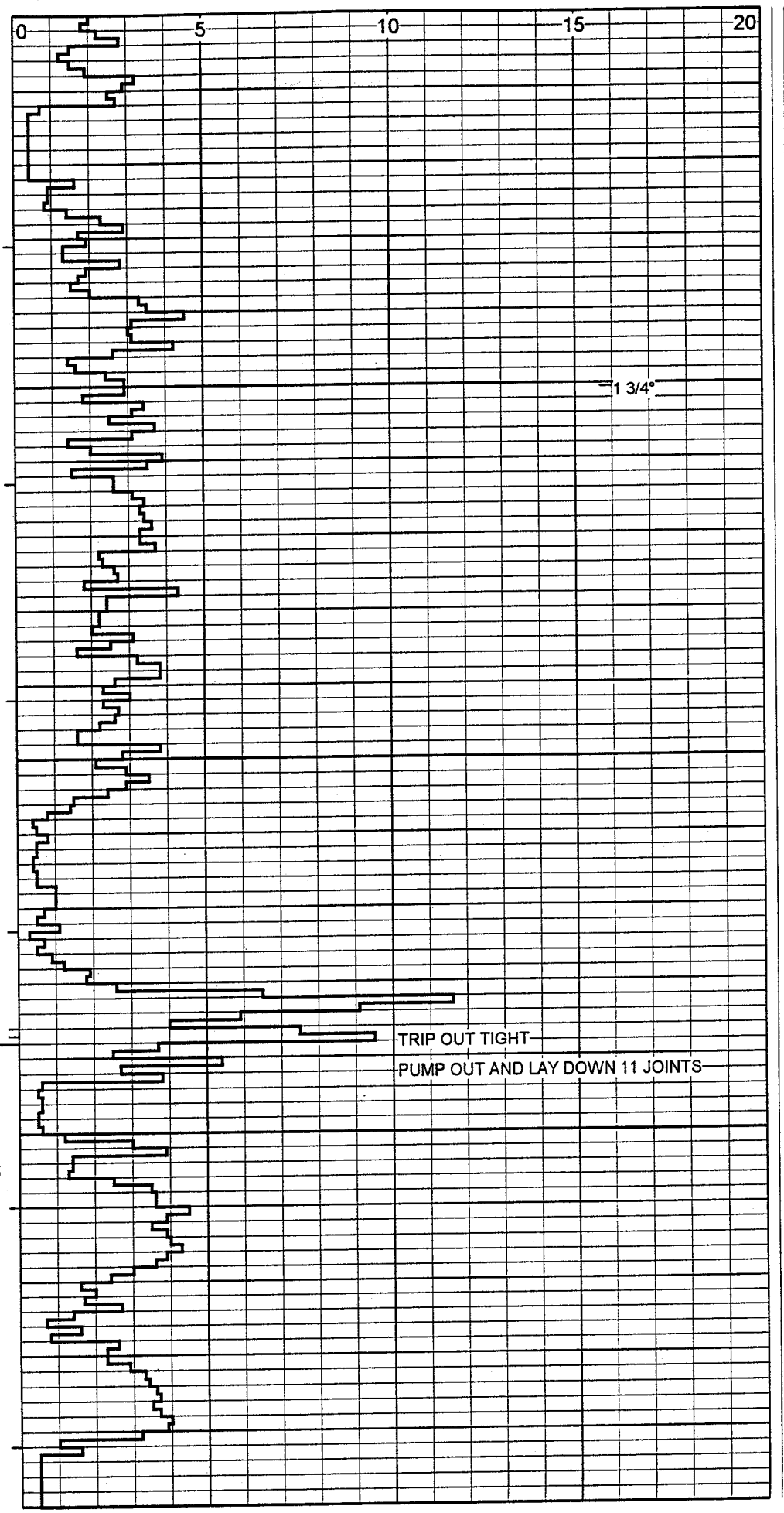
5
10
15
20
2°
WOB 40
RPM 120
PP 1650
SPM 85+85
2700
2800



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Wt 9.0
Vis 38
PV 11
YP 13
GS 4/9
WL 8.4
Cake 2
Sol 4.8
Oil 0
H2O 95.2
Sd 0
pH 9.0
Pf 0.15
Mf 0.60
Cl 300
Ca 0
LCM

Bit 3

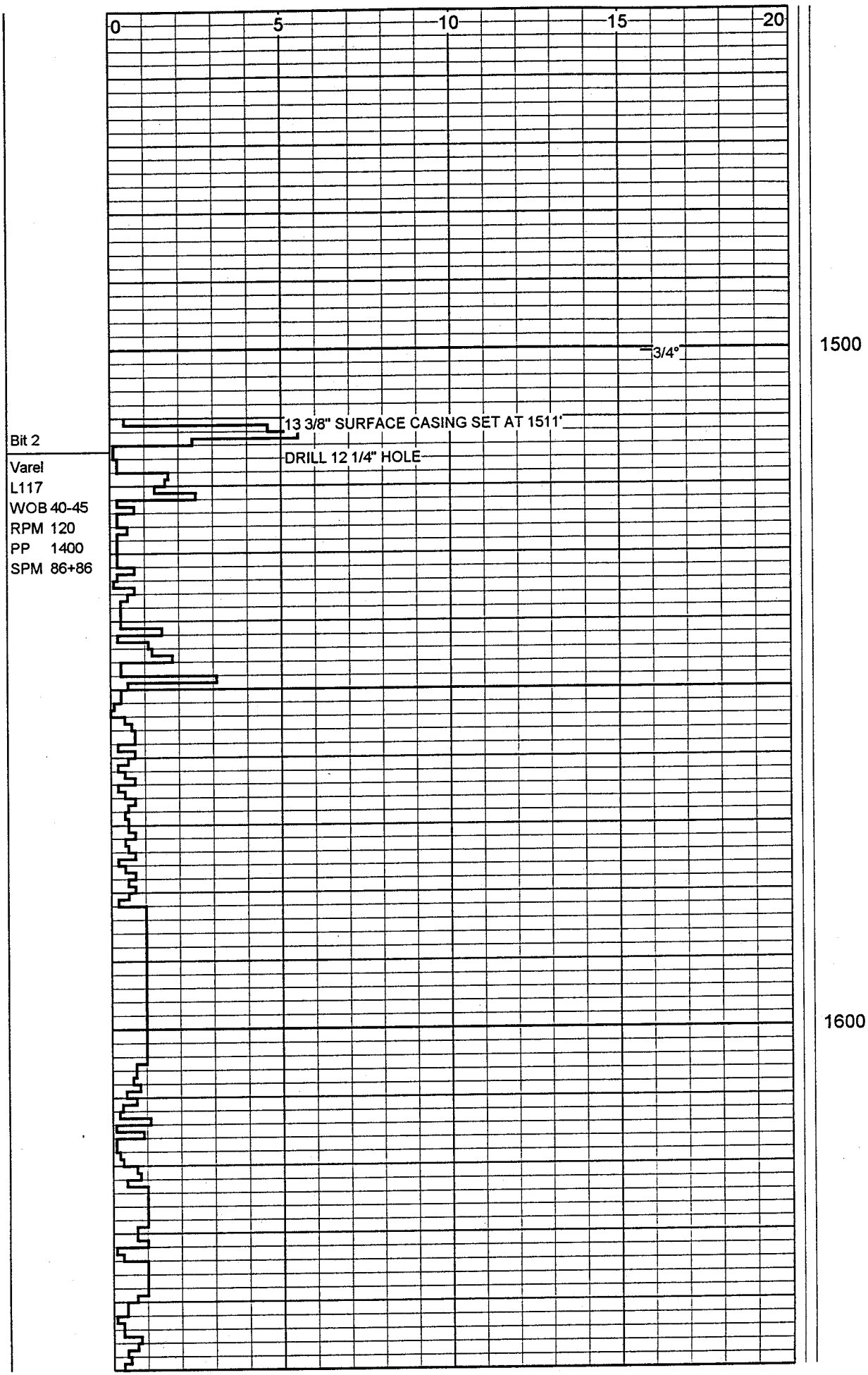
Security
S33S
WOB 40
RPM 120
PP 1800
SPM 85+85

3003

Evanston Fm

2900

3000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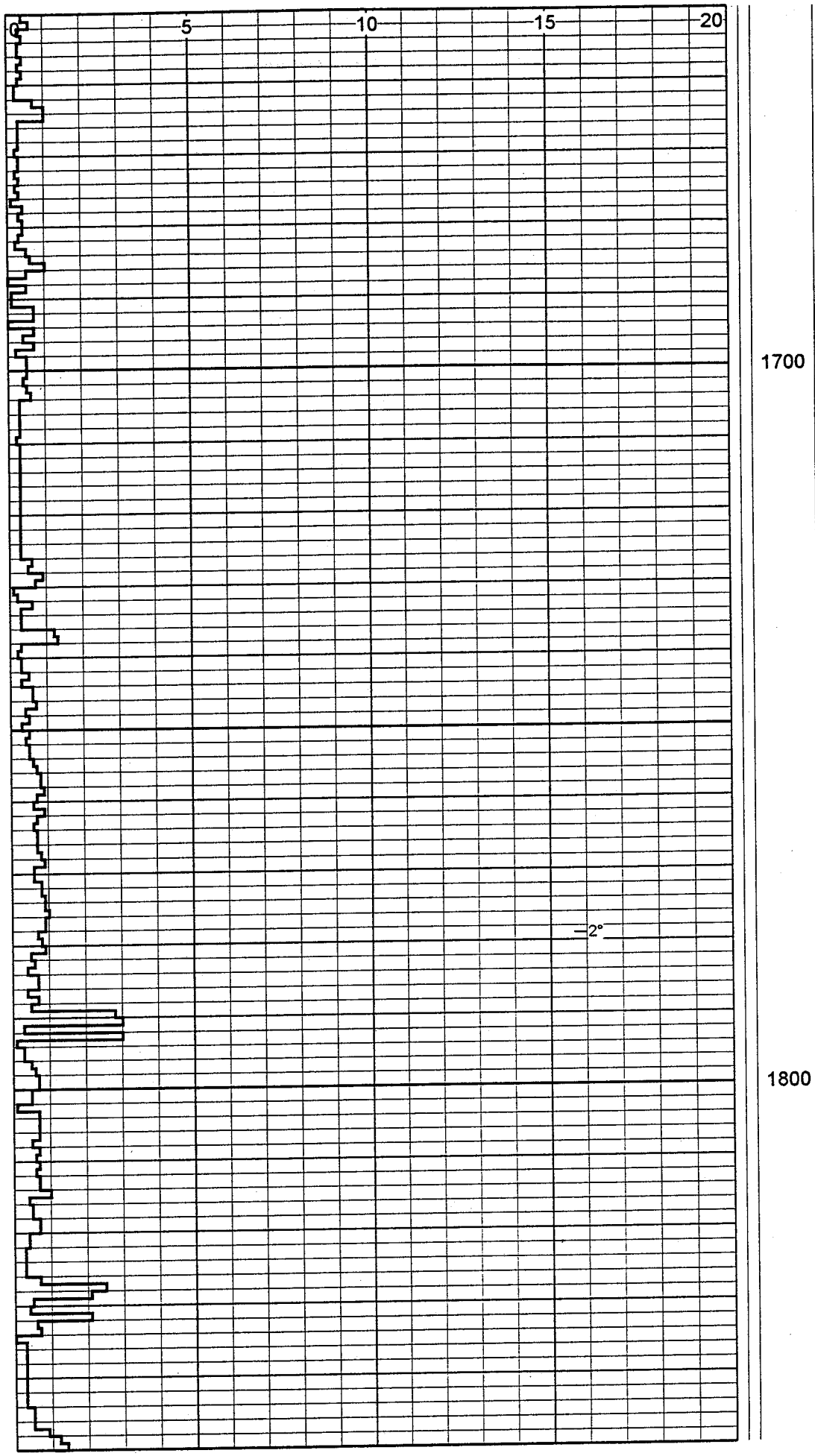
5
10
15
20
1500
1600
3/4°
13 3/8" SURFACE CASING SET AT 1511'
DRILL 12 1/4" HOLE
Bit 2
Varel
L117
WOB 40-45
RPM 120
PP 1400
SPM 86+86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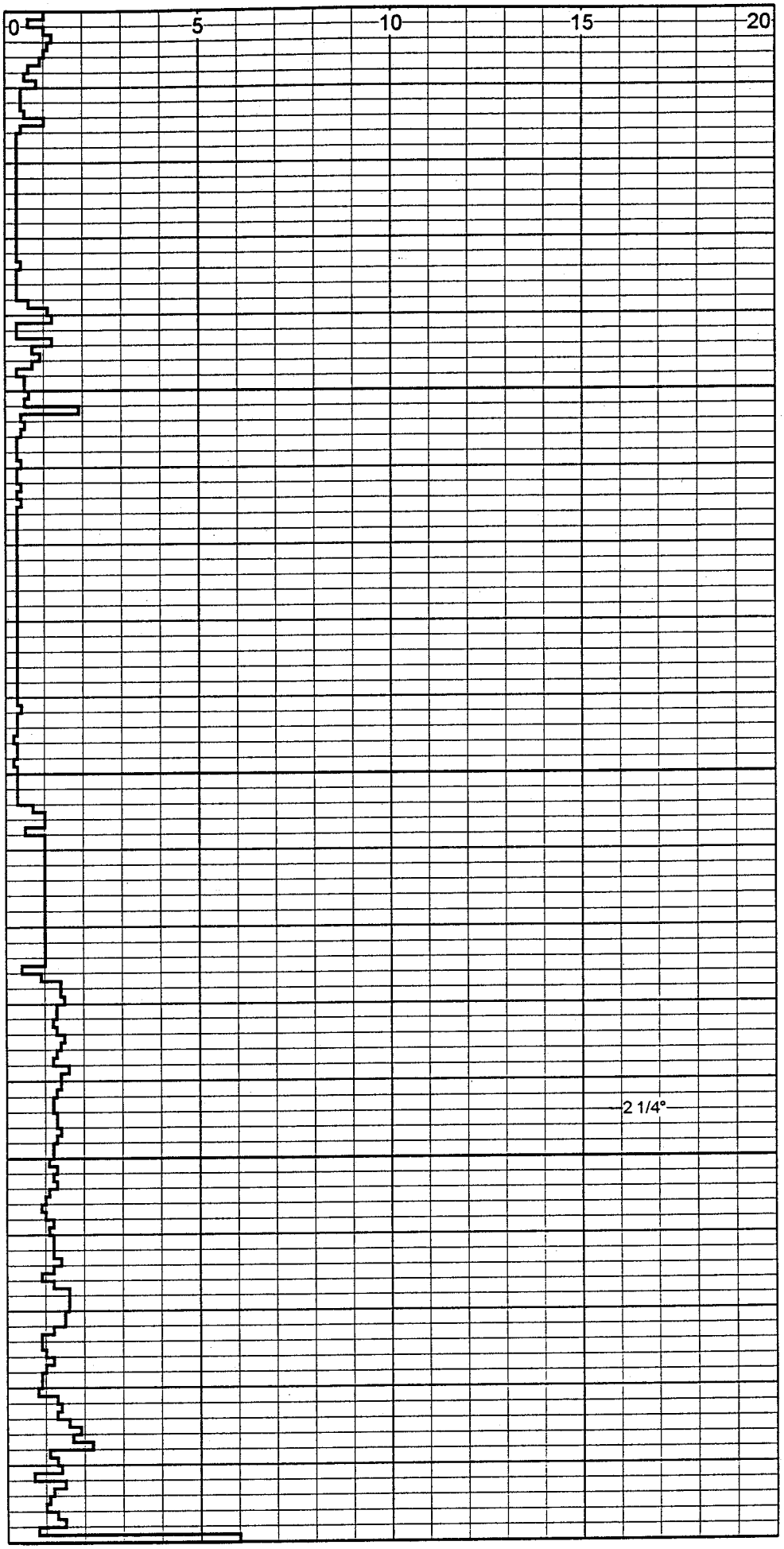
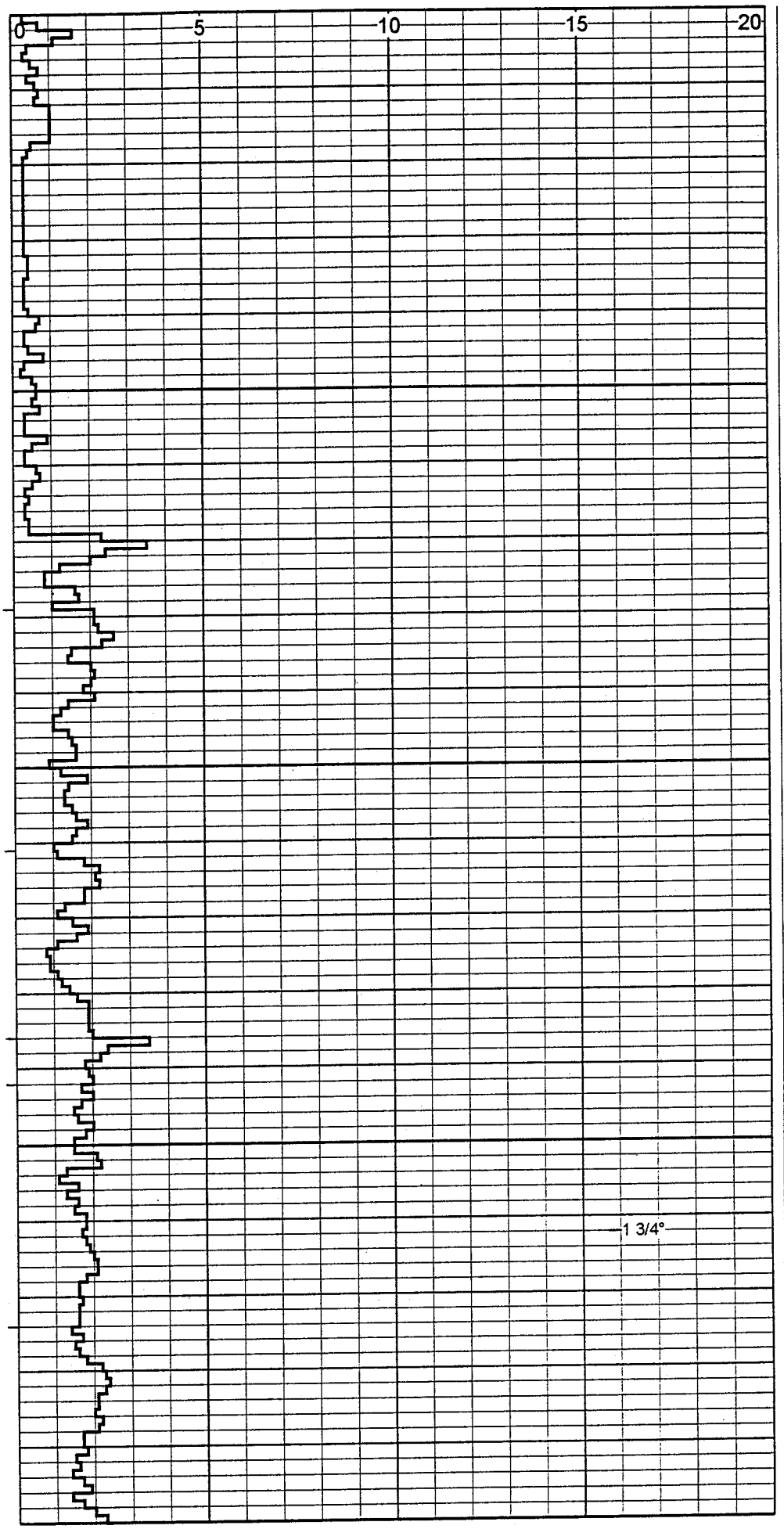
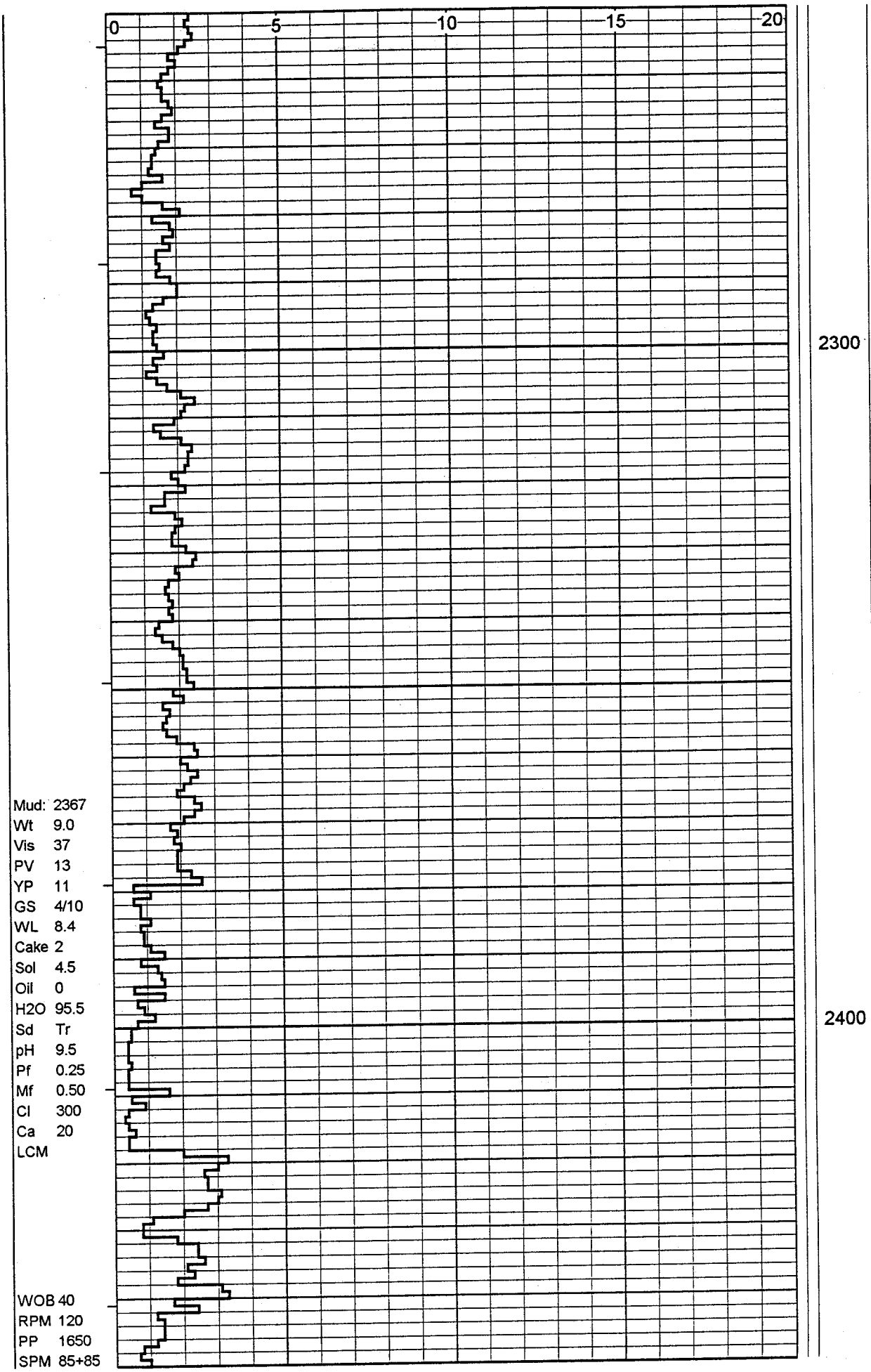
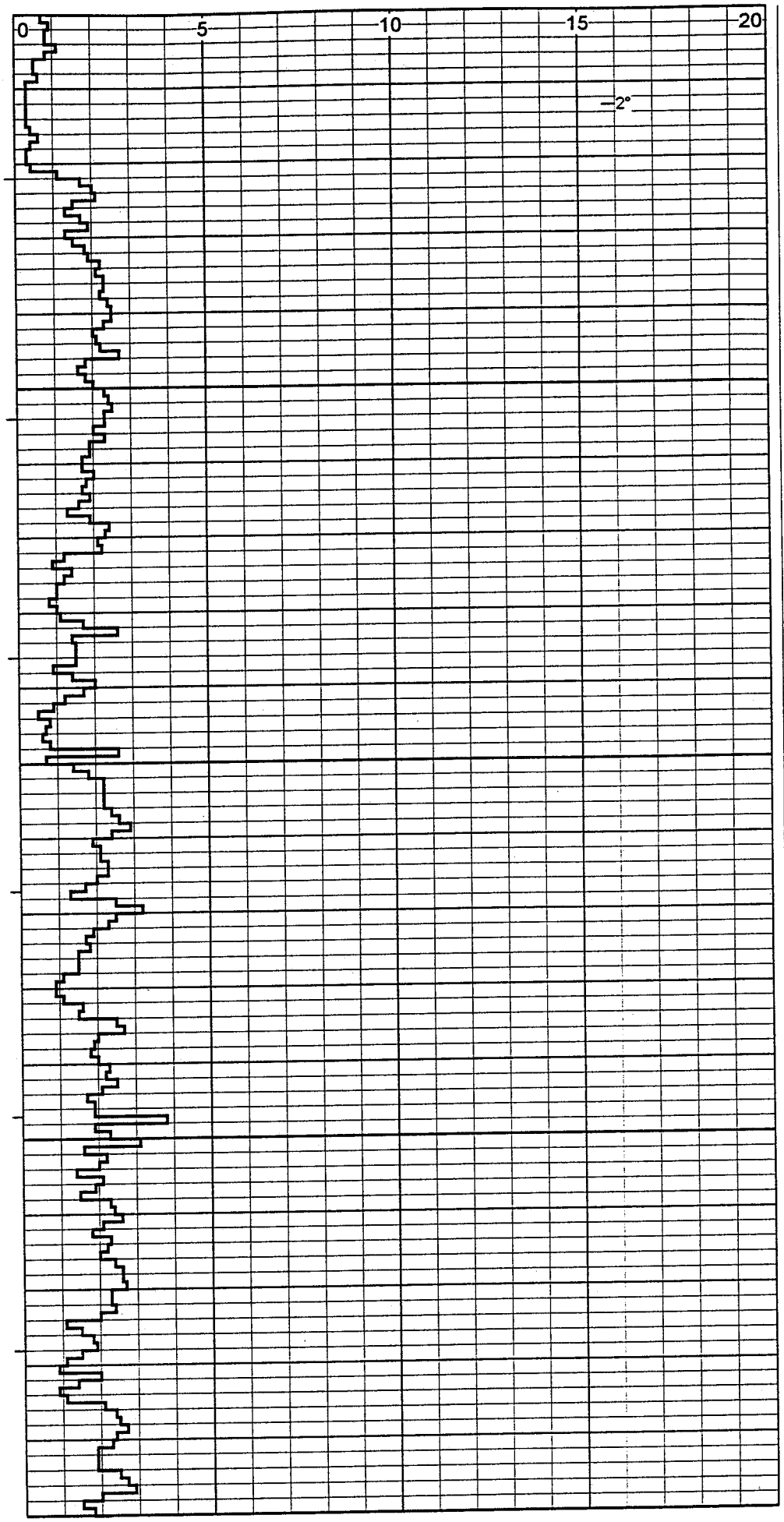
10
15
20
2°
1700
1800

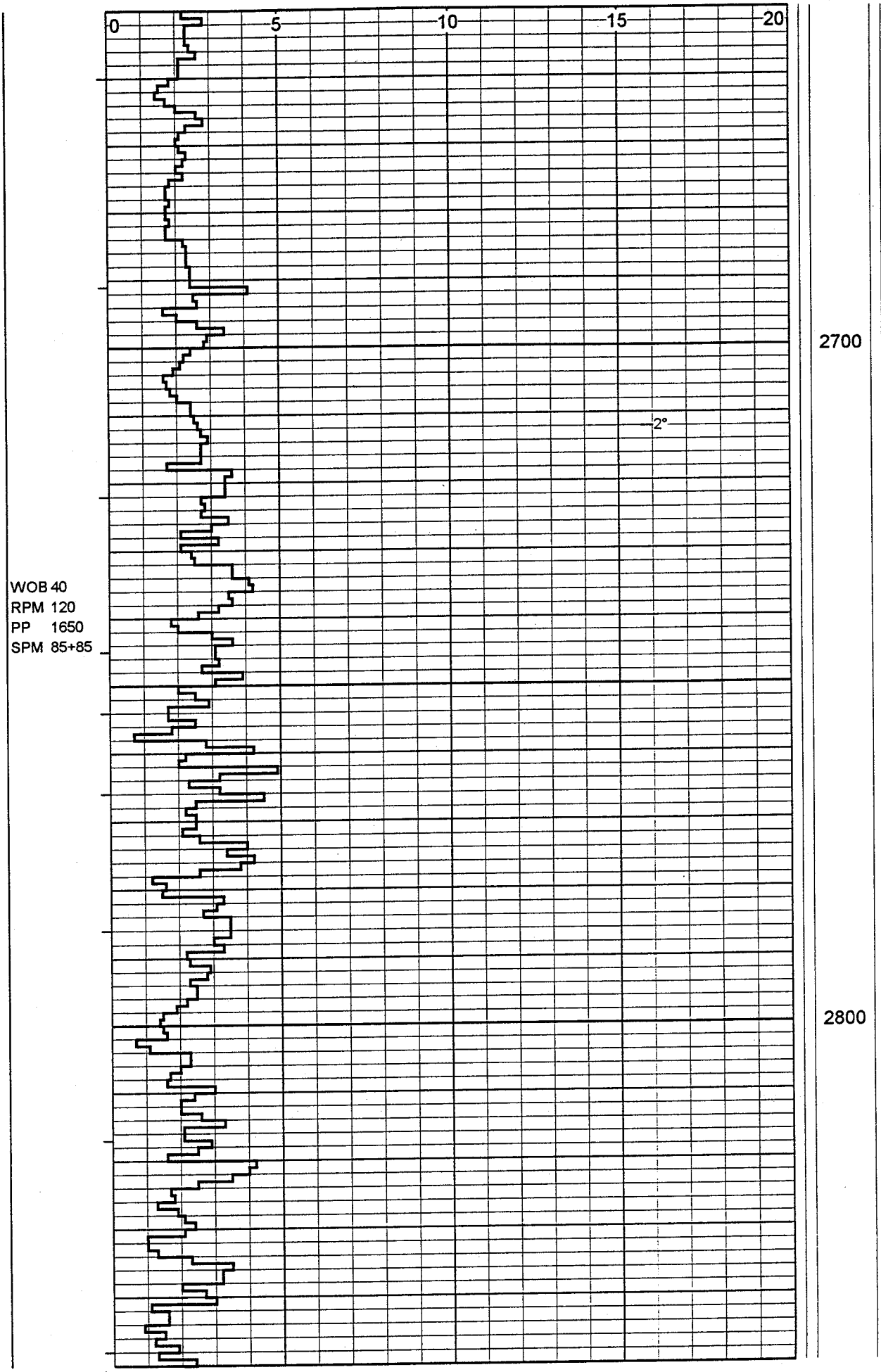


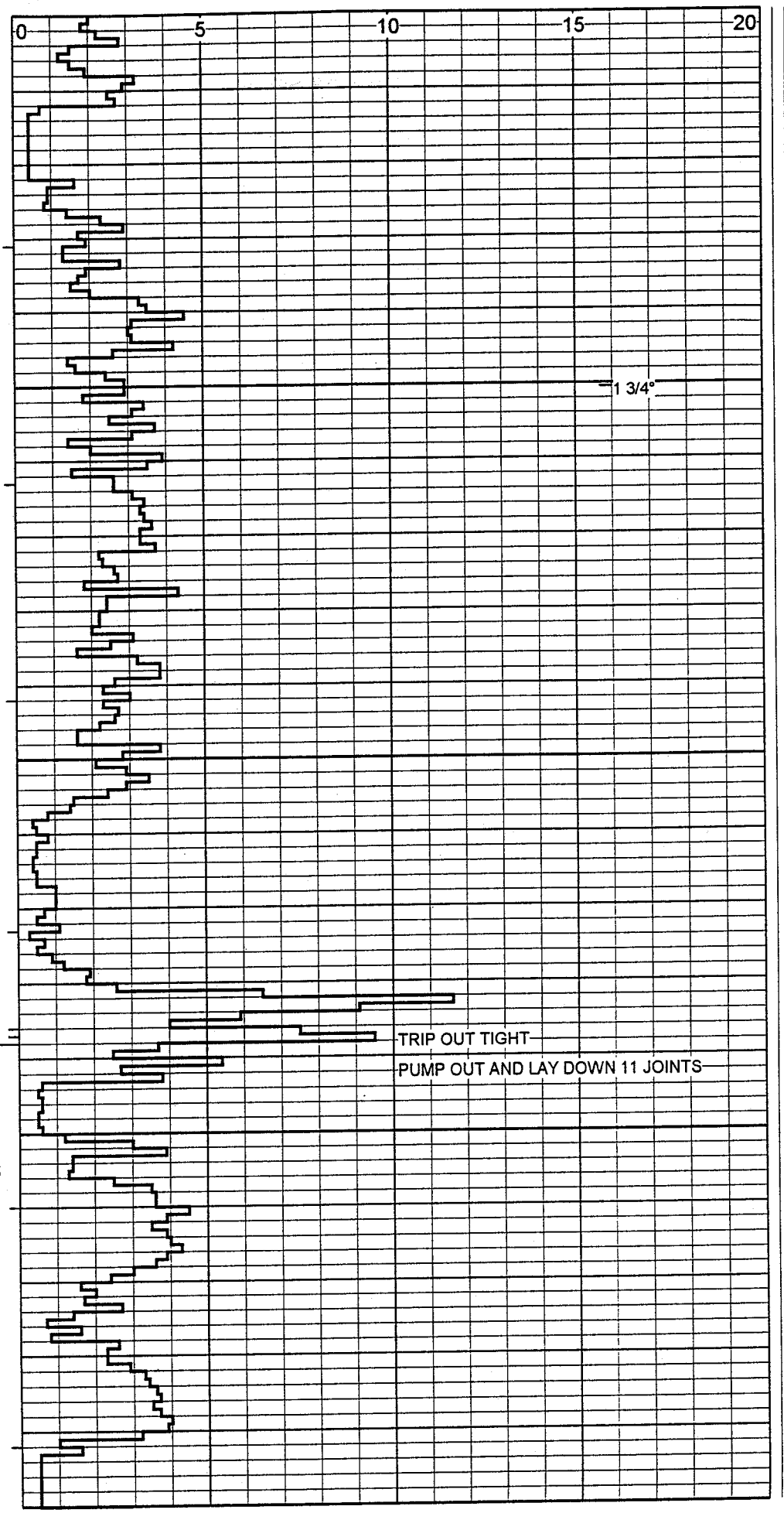
WOB 40
RPM 120
PP 1650
SPM 85+85


0
5
10
15
20
2100
2200
1 3/4°


0
5
10
15
20
2300
2400
Mud: 2367
Wt 9.0
Vis 37
PV 13
YP 11
GS 4/10
WL 8.4
Cake 2
Sol 4.5
Oil 0
H2O 95.5
Sd Tr
pH 9.5
Pf 0.25
Mf 0.50
Cl 300
Ca 20
LCM
WOB 40
RPM 120
PP 1650
SPM 85+85


0
5
10
15
20
2°
2500
2600


0
5
10
15
20
2°
WOB 40
RPM 120
PP 1650
SPM 85+85
2700
2800



Mud: 2968
Wt 9.0
Vis 38
PV 11
YP 13
GS 4/9
WL 8.4
Cake 2
Sol 4.8
Oil 0
H2O 95.2
Sd 0
pH 9.0
Pf 0.15
Mf 0.60
Cl 300
Ca 0
LCM

Bit 3

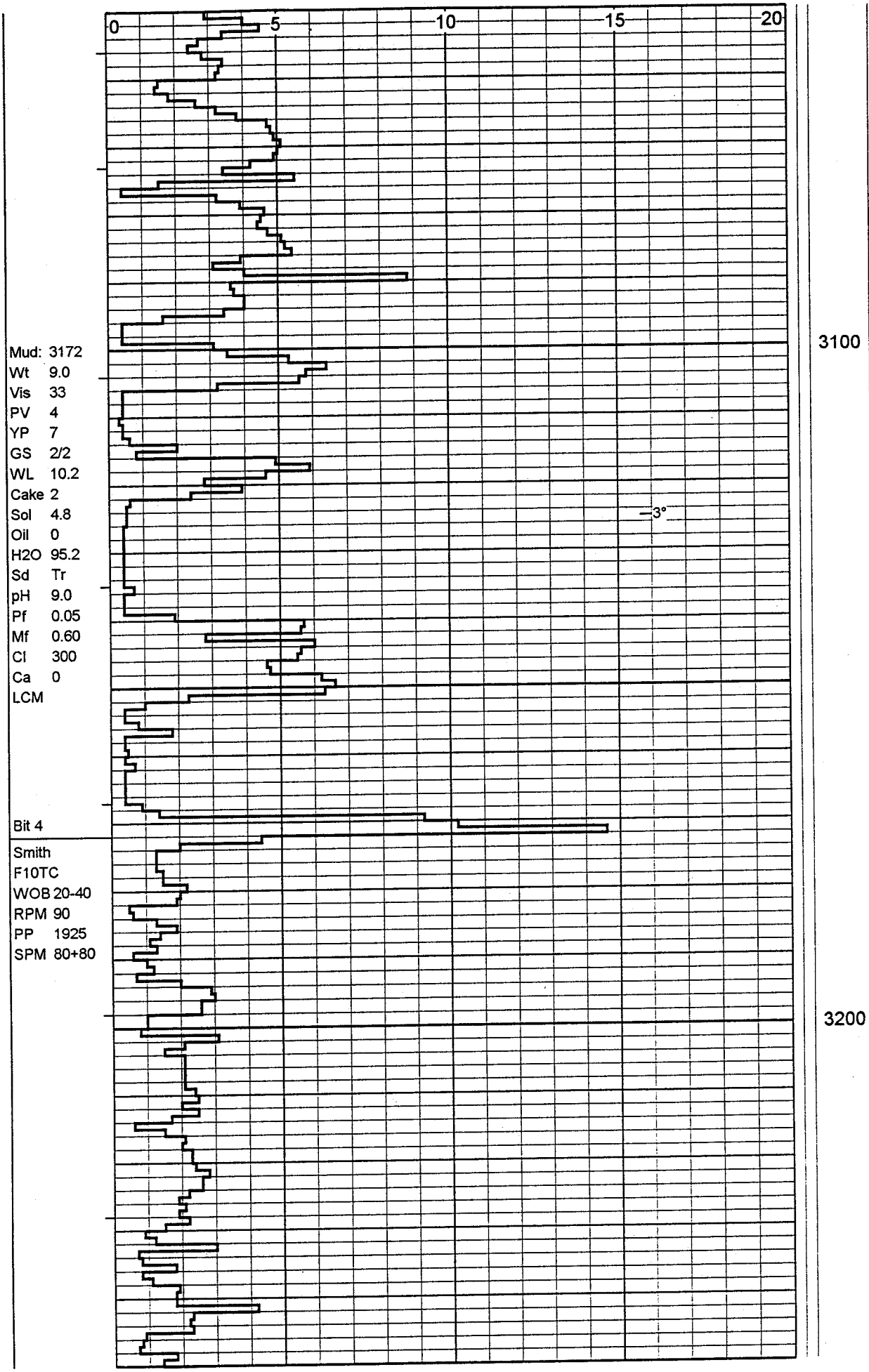
Security
S33S
WOB 40
RPM 120
PP 1800
SPM 85+85

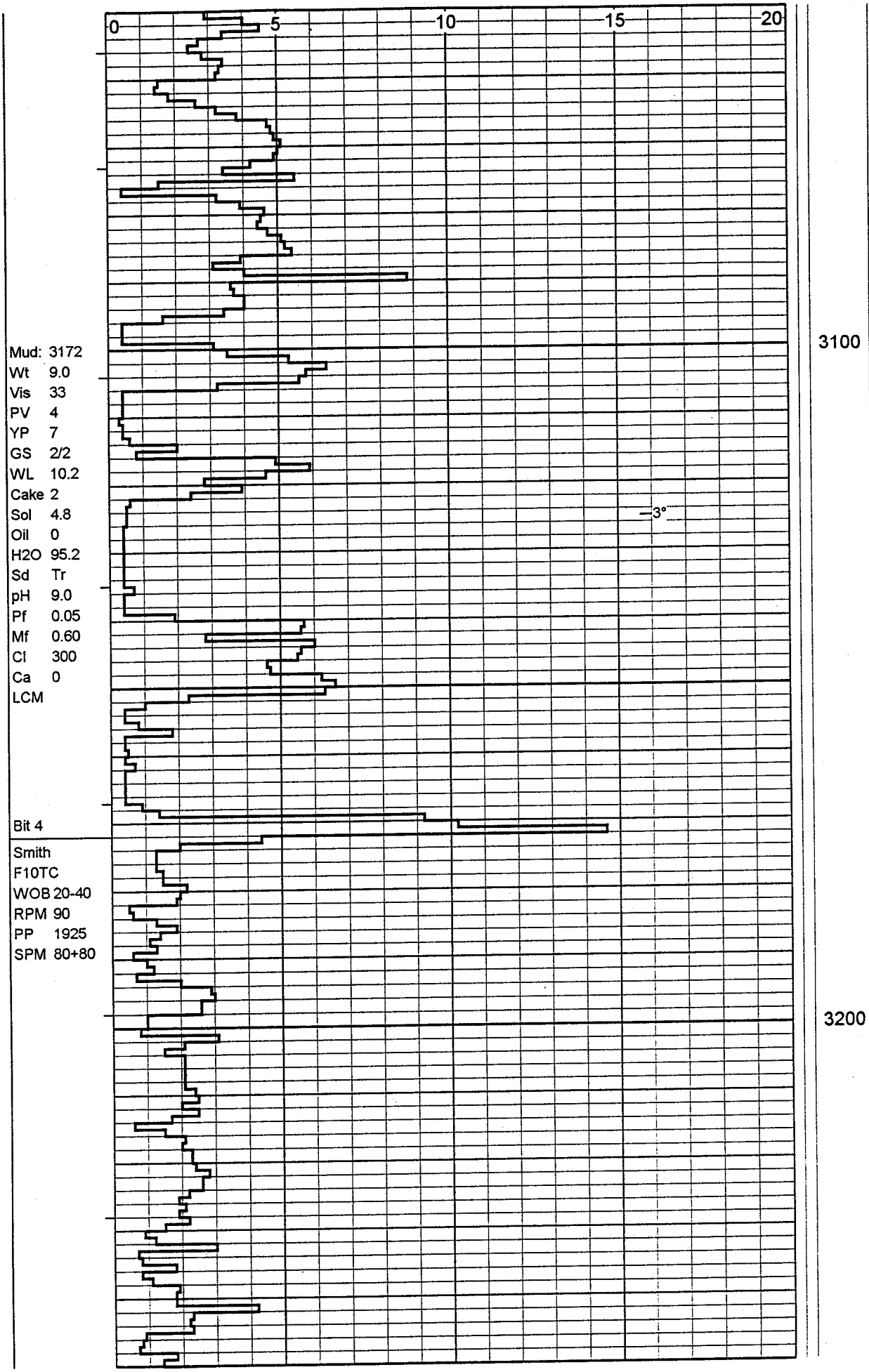
3003

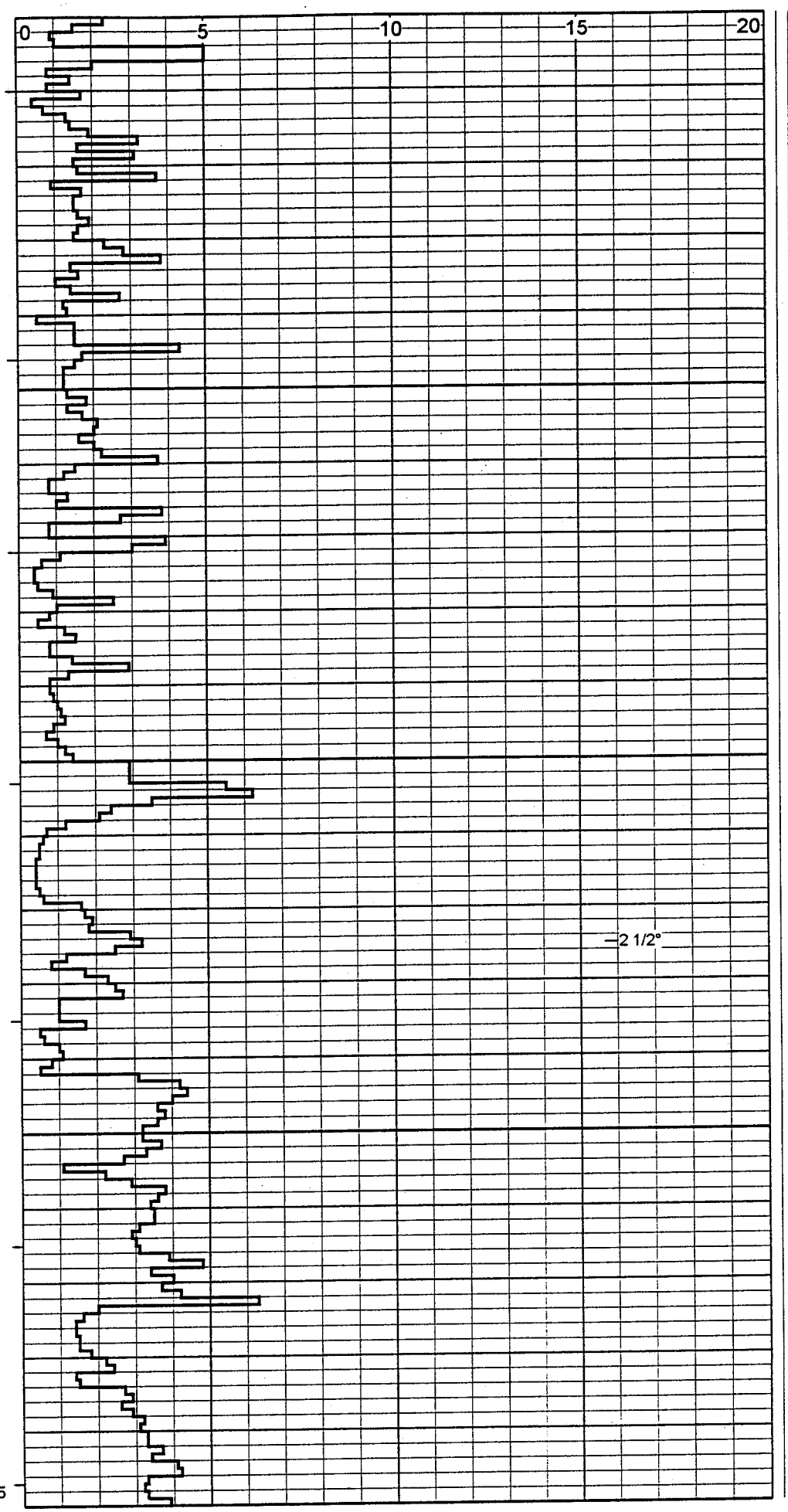
Evanston Fm

2900

3000


0
5
10
15
20
3100
3200
3°
Mud: 3172
Wt 9.0
Vis 33
PV 4
YP 7
GS 2/2
WL 10.2
Cake 2
Sol 4.8
Oil 0
H2O 95.2
Sd Tr
pH 9.0
Pf 0.05
Mf 0.60
Cl 300
Ca 0
LCM
Bit 4
Smith
F10TC
WOB 20-40
RPM 90
PP 1925
SPM 80+80

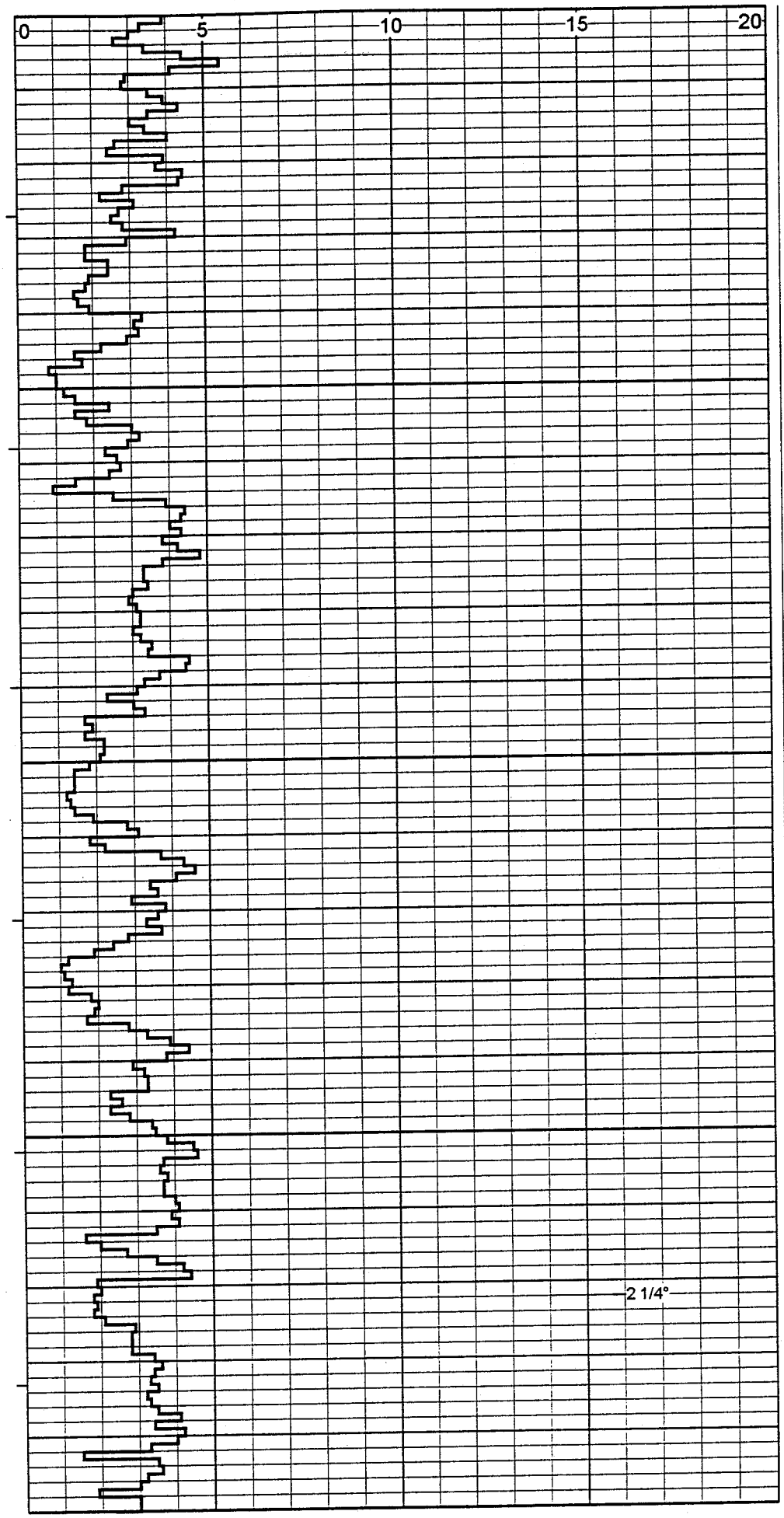

0
5
10
15
20
3100
3200
3°
Mud: 3172
Wt 9.0
Vis 33
PV 4
YP 7
GS 2/2
WL 10.2
Cake 2
Sol 4.8
Oil 0
H2O 95.2
Sd Tr
pH 9.0
Pf 0.05
Mf 0.60
Cl 300
Ca 0
LCM
Bit 4
Smith
F10TC
WOB 20-40
RPM 90
PP 1925
SPM 80+80

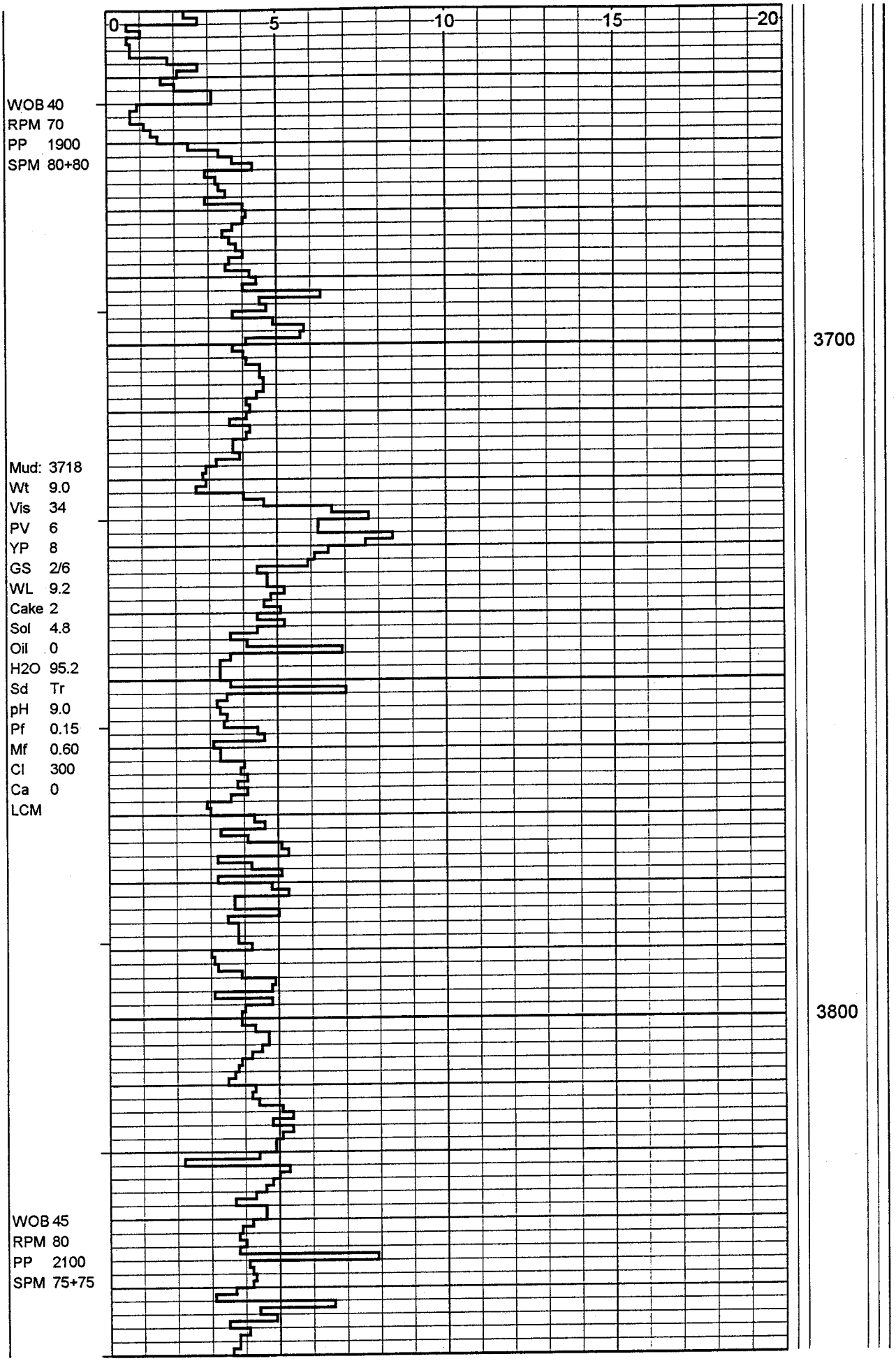


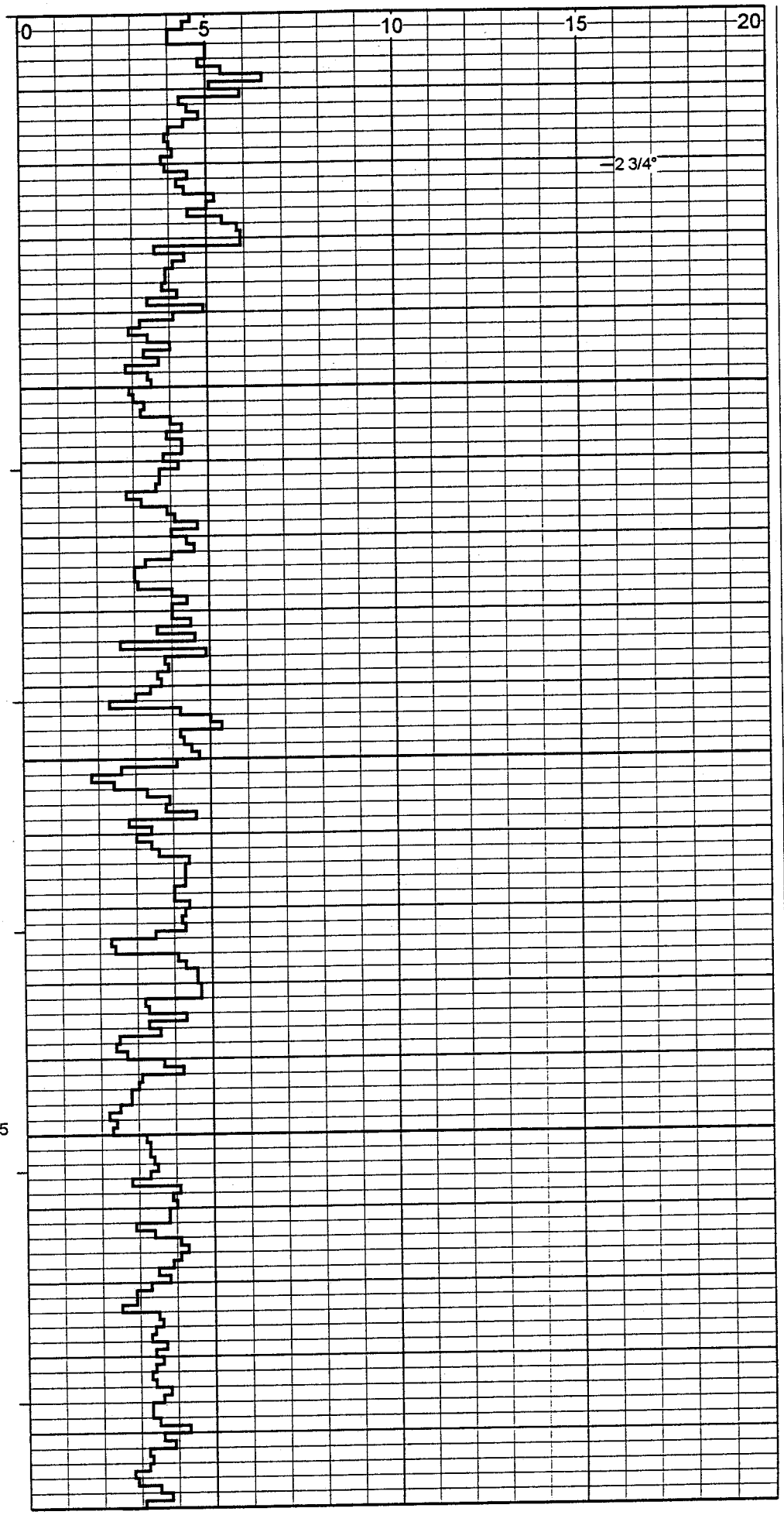
3442

Gannett Group

WOB 40
RPM 70
PP 1900
SPM 75+75

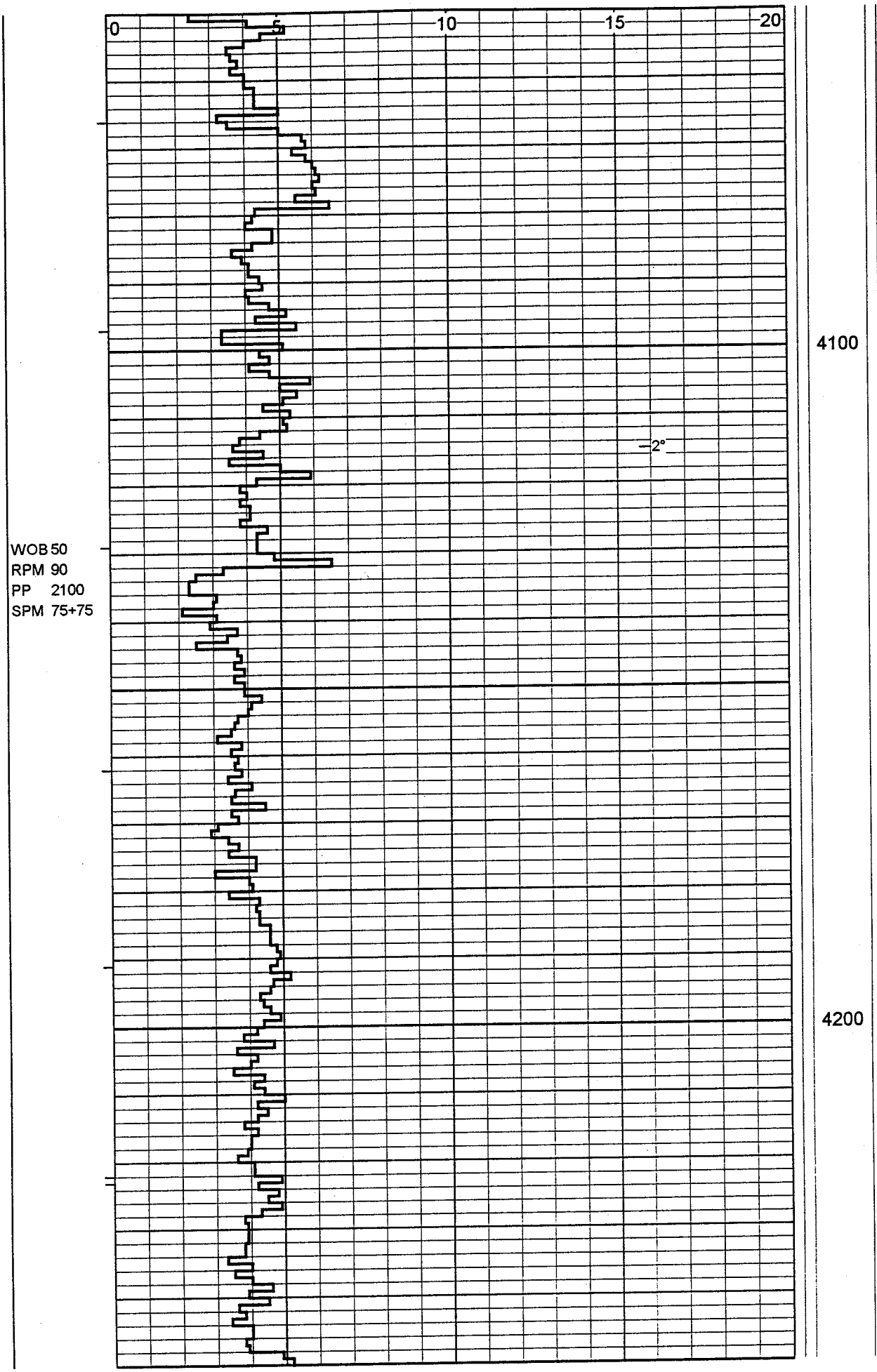

0
5
10
15
20
3500
3600
2 1/4°


0
5
10
15
20
WOB 40
RPM 70
PP 1900
SPM 80+80
3700
Mud: 3718
Wt 9.0
Vis 34
PV 6
YP 8
GS 2/6
WL 9.2
Cake 2
Sol 4.8
Oil 0
H2O 95.2
Sd Tr
pH 9.0
Pf 0.15
Mf 0.60
Cl 300
Ca 0
LCM
3800
WOB 45
RPM 80
PP 2100
SPM 75+75



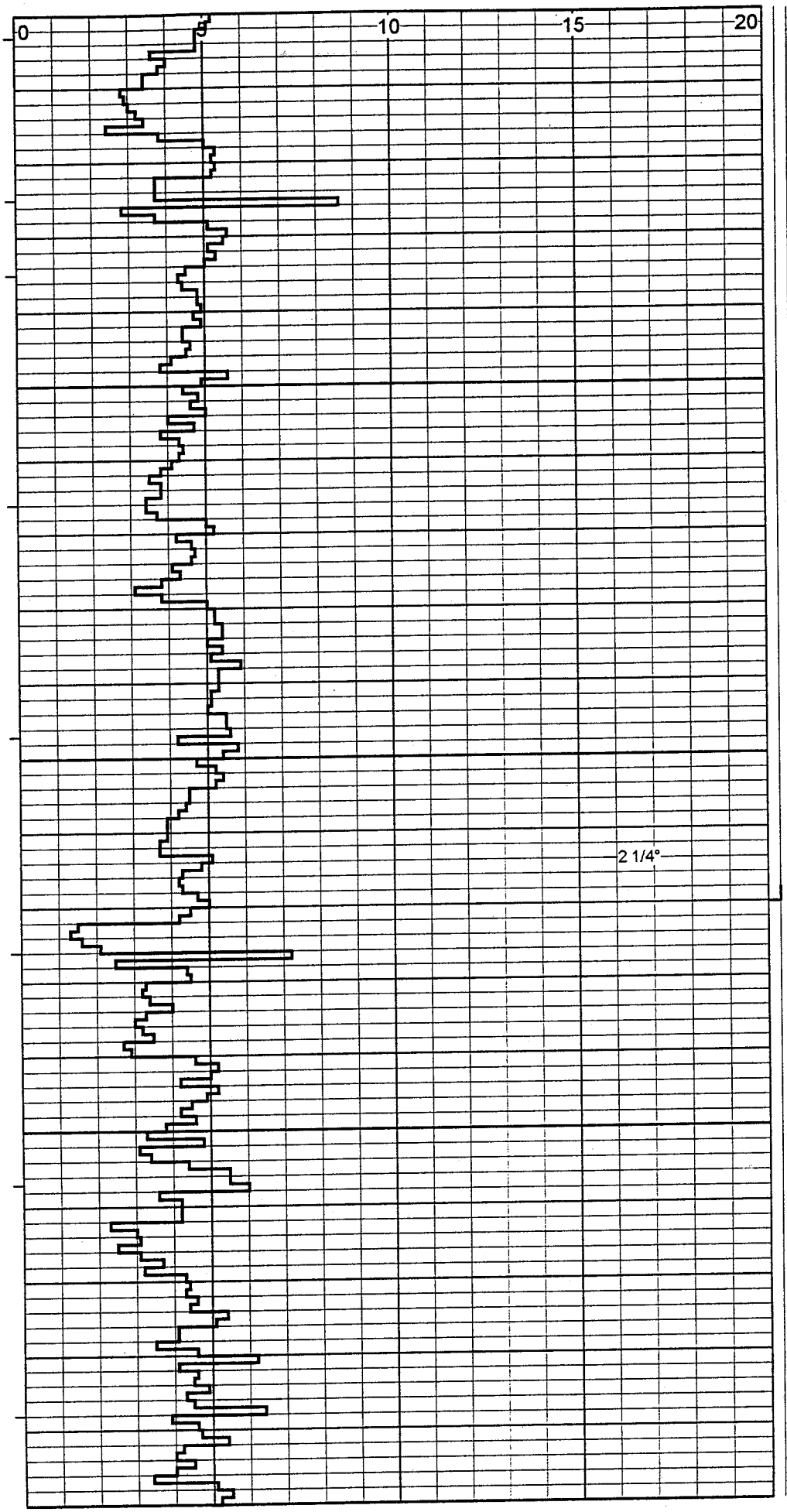
Mud: 3972
Wt 9.0
Vis 34
PV 6
YP 8
GS 2/2
WL 8.6
Cake 1
Sol 4.9
Oil 0
H2O 95.1
Sd Tr
pH 9.5
Pf 0.15
Mf 0.60
Cl 400
Ca 10
LCM

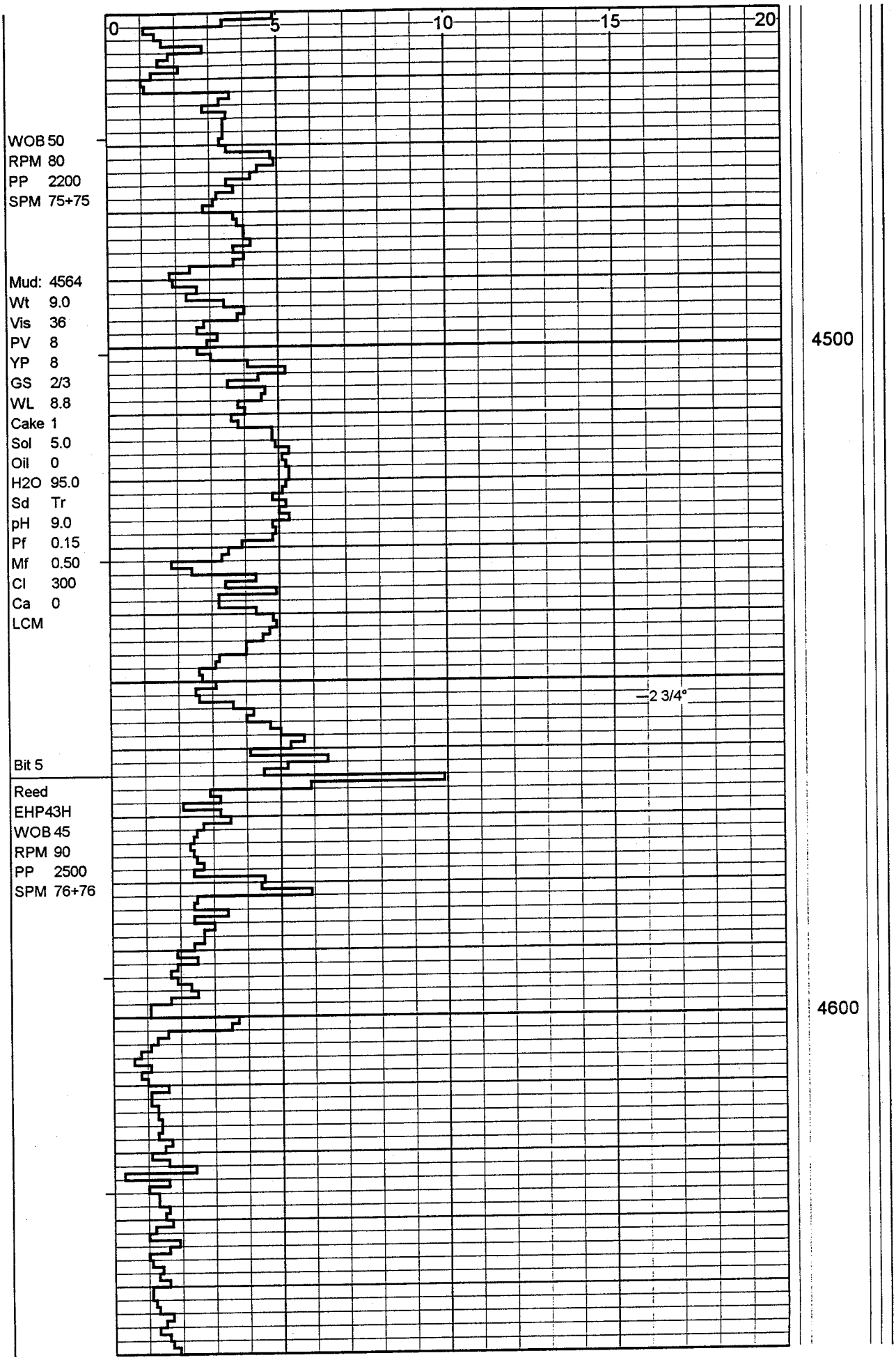
WOB 45
RPM 80
PP 2100
SPM 75+75

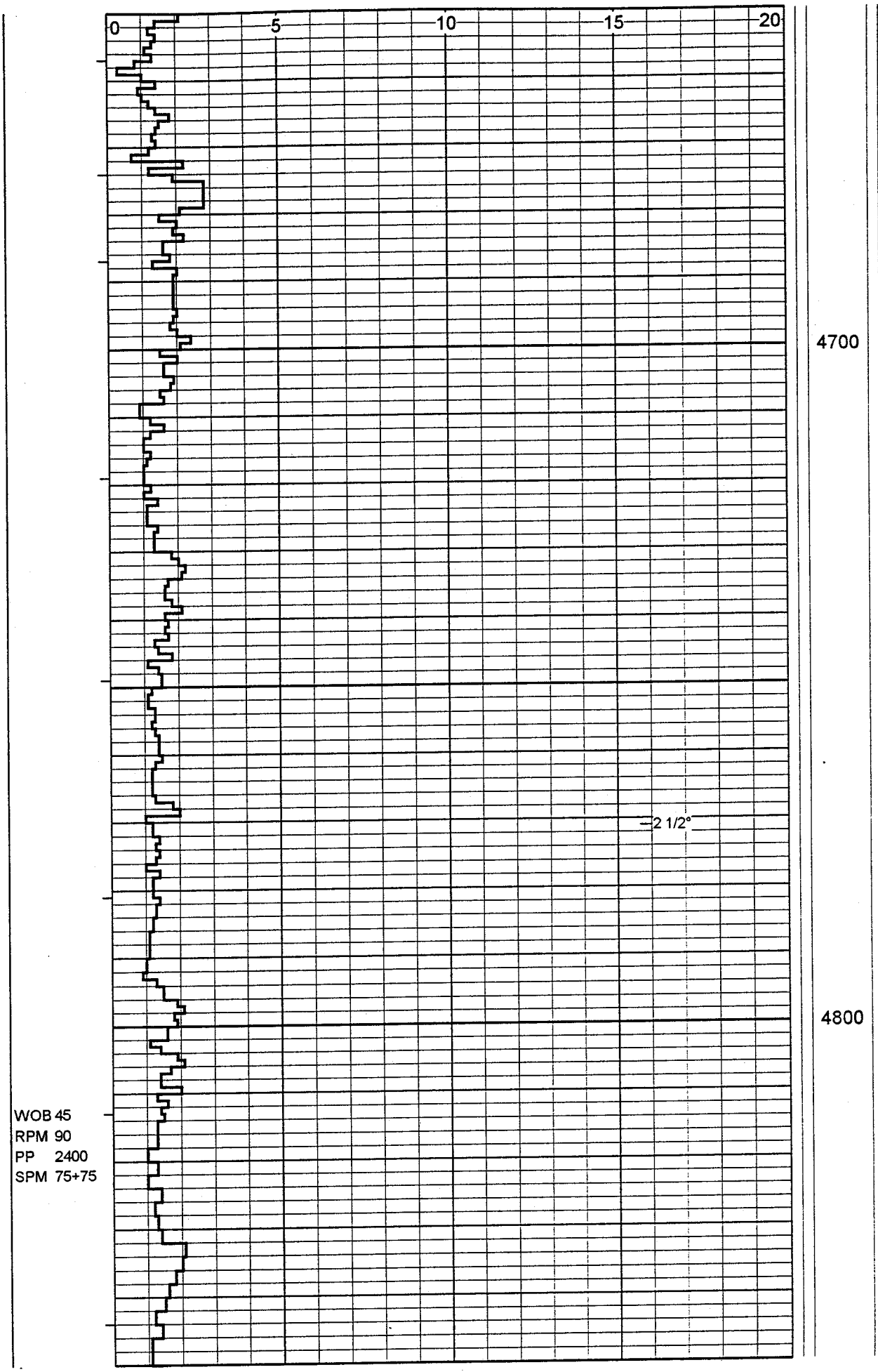

0
5
10
15
20
4100
2°
WOB 50
RPM 90
PP 2100
SPM 75+75
4200

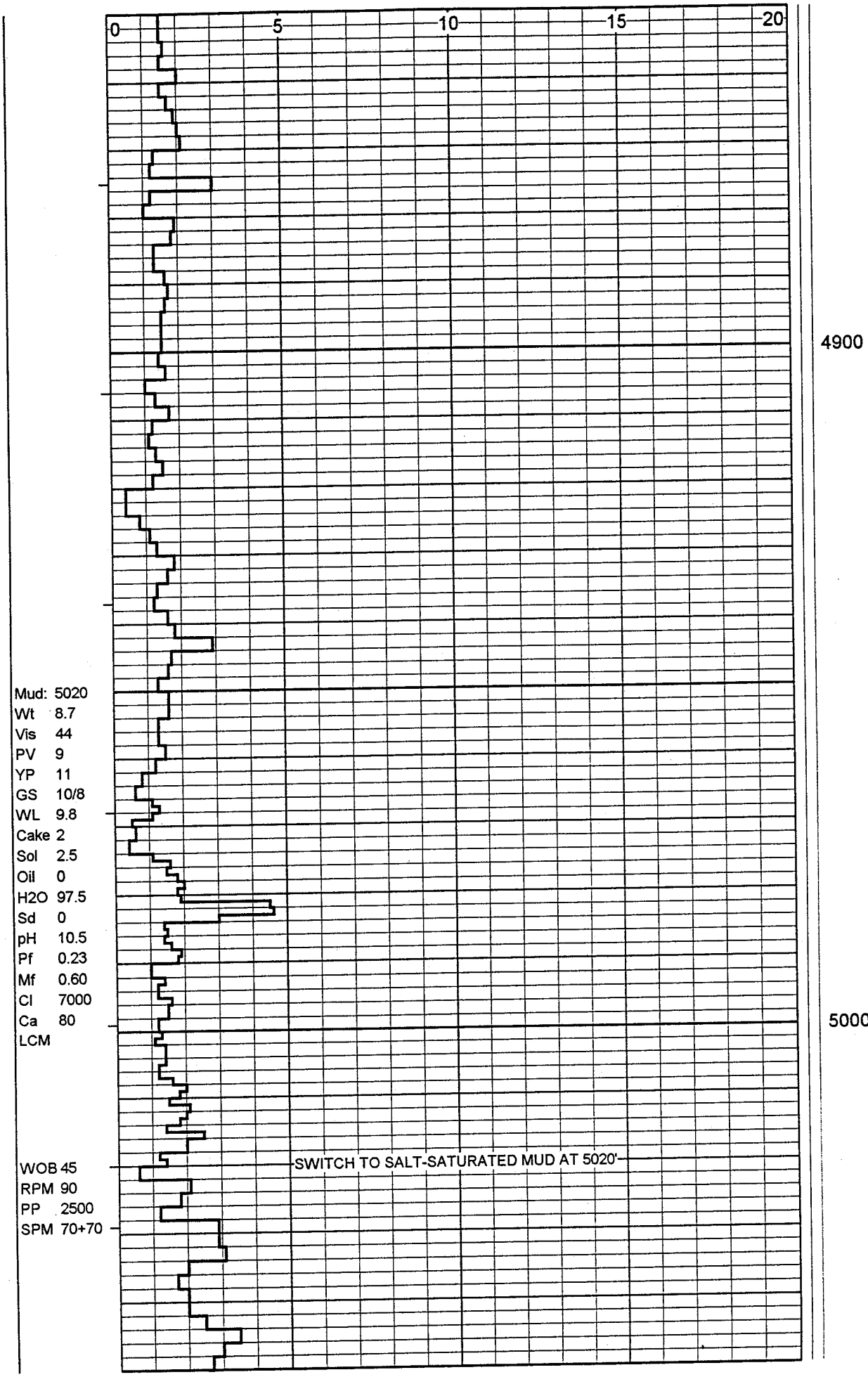
Mud: 4296
Wt 9.0
Vis 36
PV 8
YP 7
GS 2/4
WL 9.2
Cake 1
Sol 4.9
Oil 0
H2O 95.1
Sd Tr
pH 9.0
Pf 0.07
Mf 0.50
Cl 300
Ca 0
LCM

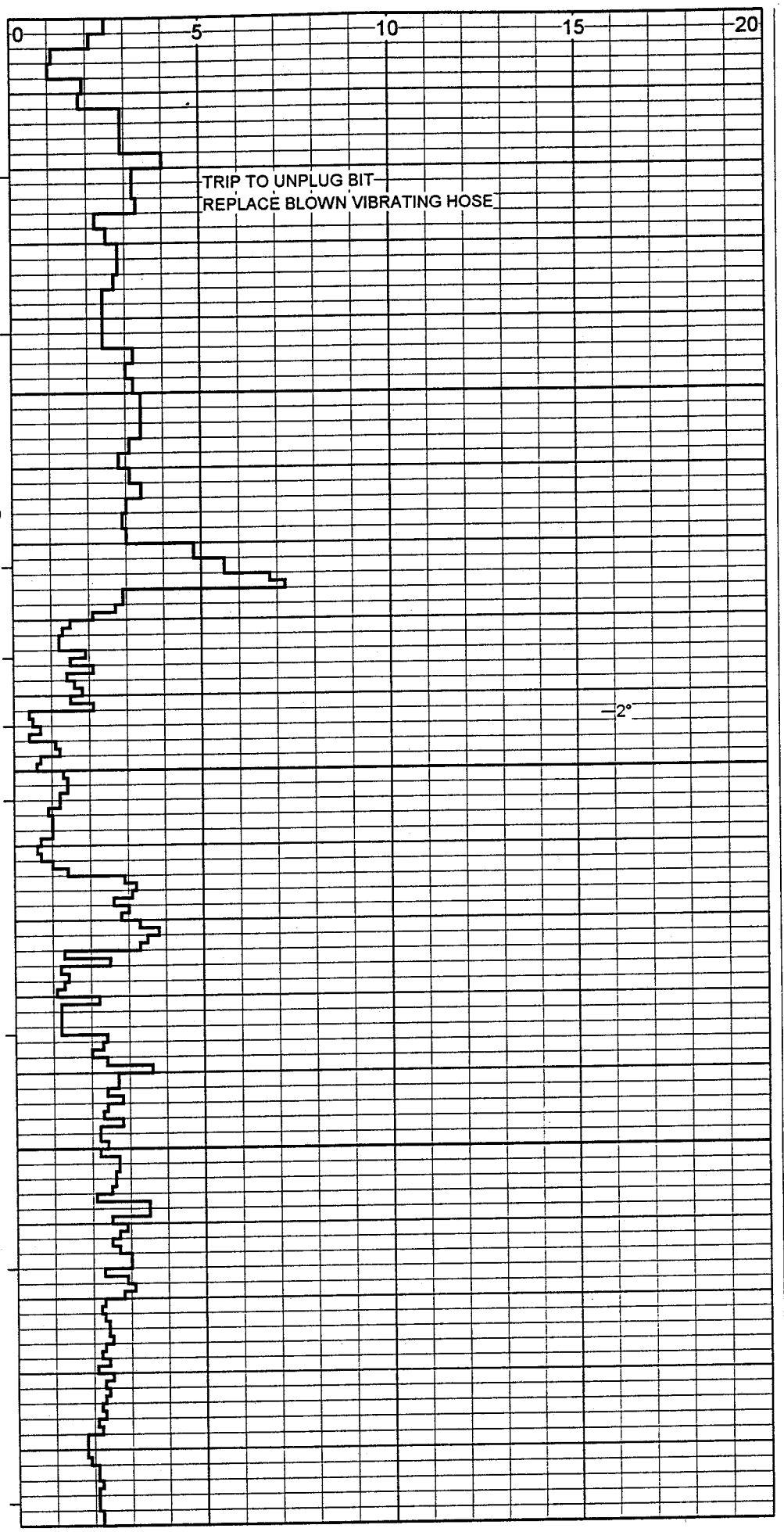
WOB 50
RPM 80-90
PP 2200
SPM 75+75




0
5
10
15
20
WOB 50
RPM 80
PP 2200
SPM 75+75
Mud: 4564
Wt 9.0
Vis 36
PV 8
YP 8
GS 2/3
WL 8.8
Cake 1
Sol 5.0
Oil 0
H2O 95.0
Sd Tr
pH 9.0
Pf 0.15
Mf 0.50
Cl 300
Ca 0
LCM
2 3/4°
Bit 5
Reed
EHP43H
WOB 45
RPM 90
PP 2500
SPM 76+76
4500
4600


0
5
10
15
20
4700
2 1/2°
4800
WOB 45
RPM 90
PP 2400
SPM 75+75

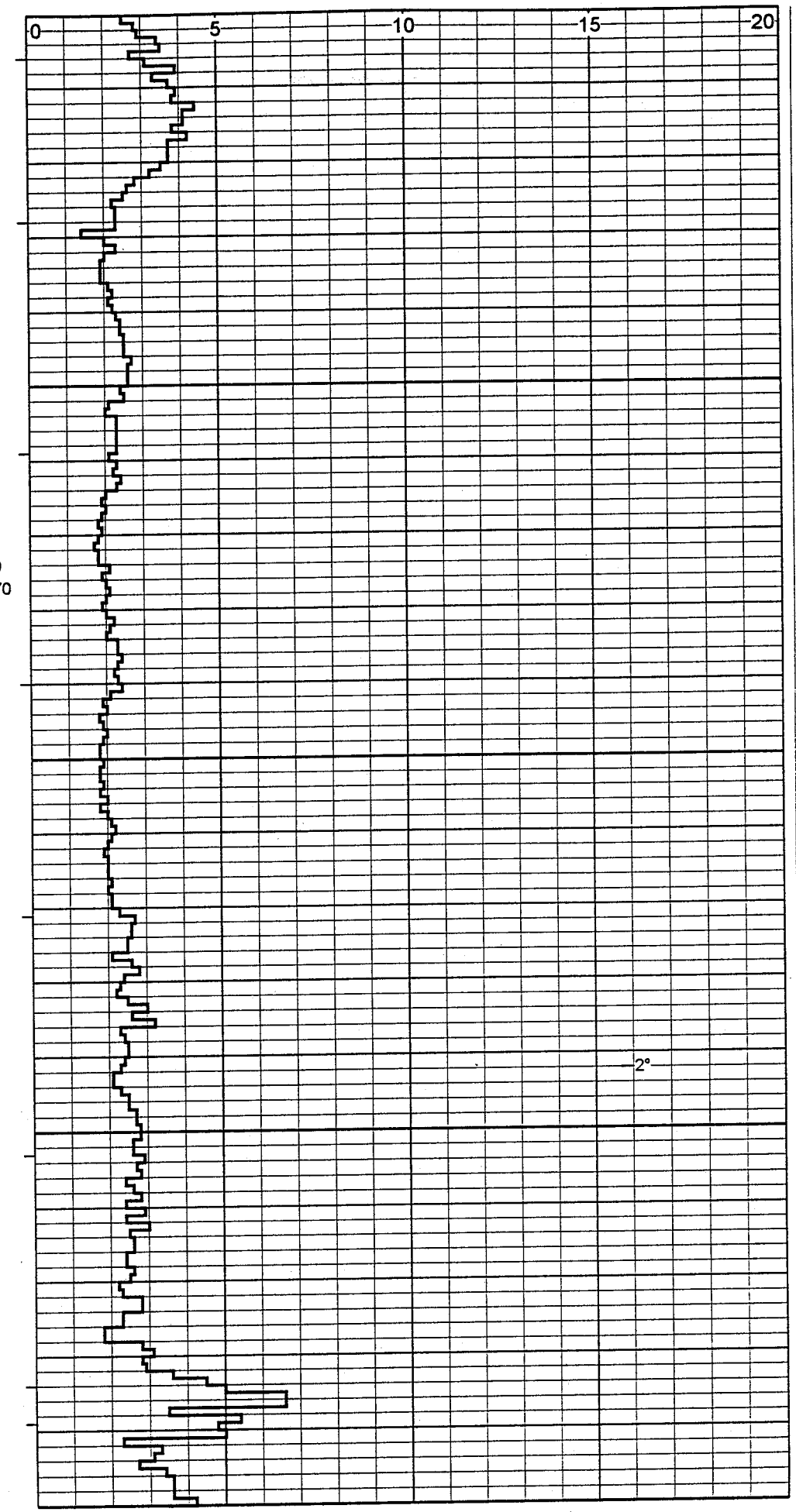

0
5
10
15
20
4900
5000
Mud: 5020
Wt 8.7
Vis 44
PV 9
YP 11
GS 10/8
WL 9.8
Cake 2
Sol 2.5
Oil 0
H2O 97.5
Sd 0
pH 10.5
Pf 0.23
Mf 0.60
Cl 7000
Ca 80
LCM
WOB 45
RPM 90
PP 2500
SPM 70+70
SWITCH TO SALT-SATURATED MUD AT 5020'



Mud: 5071
Wt 10.1
Vis 33
PV 6
YP 6
GS 1/8
WL 9.6
Cake 1
Sol 1.5
Oil 0
H2O 98.5
Sd Tr
pH 11.0
Pf 1.00
Mf 2.0
Cl 190000
Ca 80
LCM

5189

Preuss
Salt

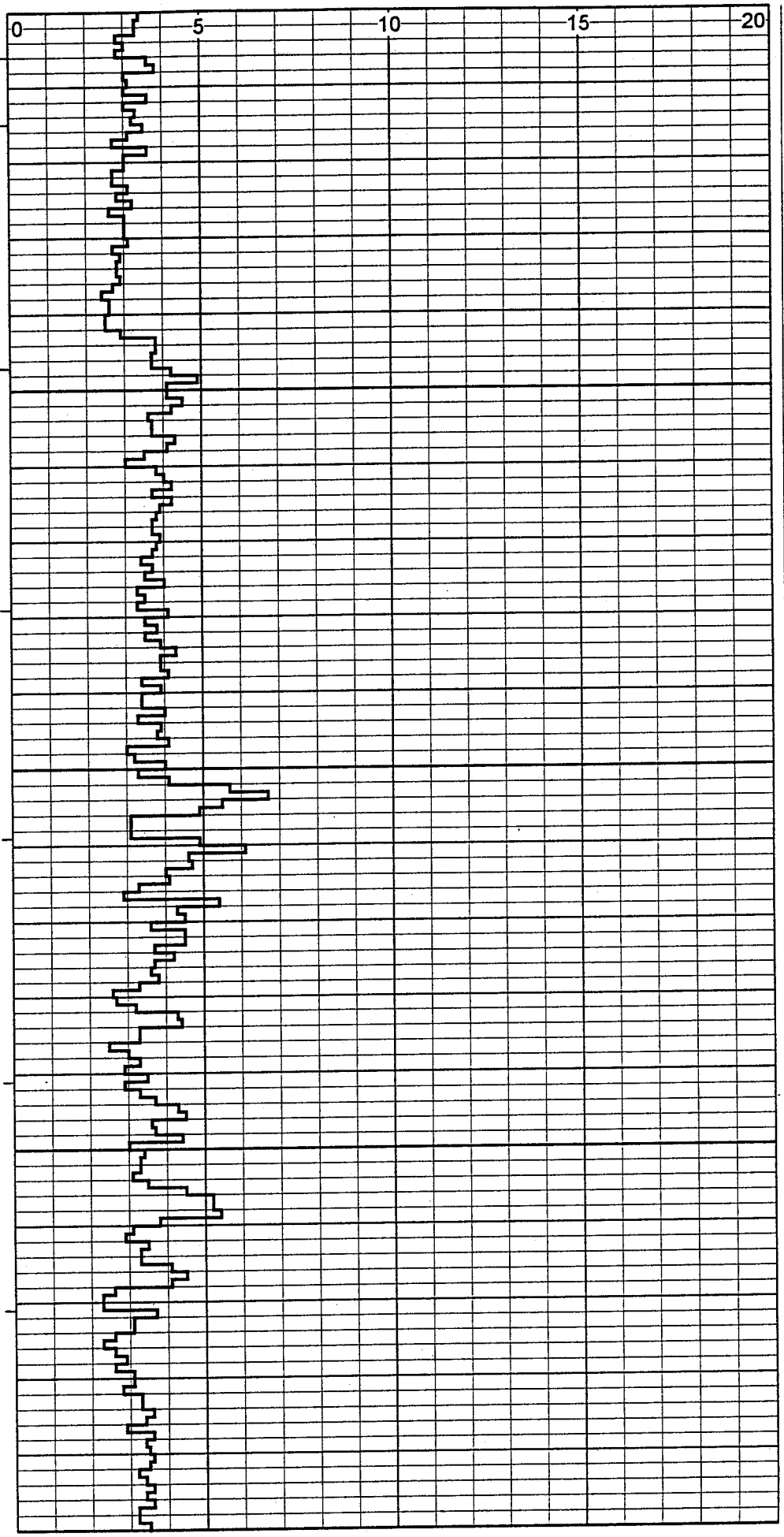


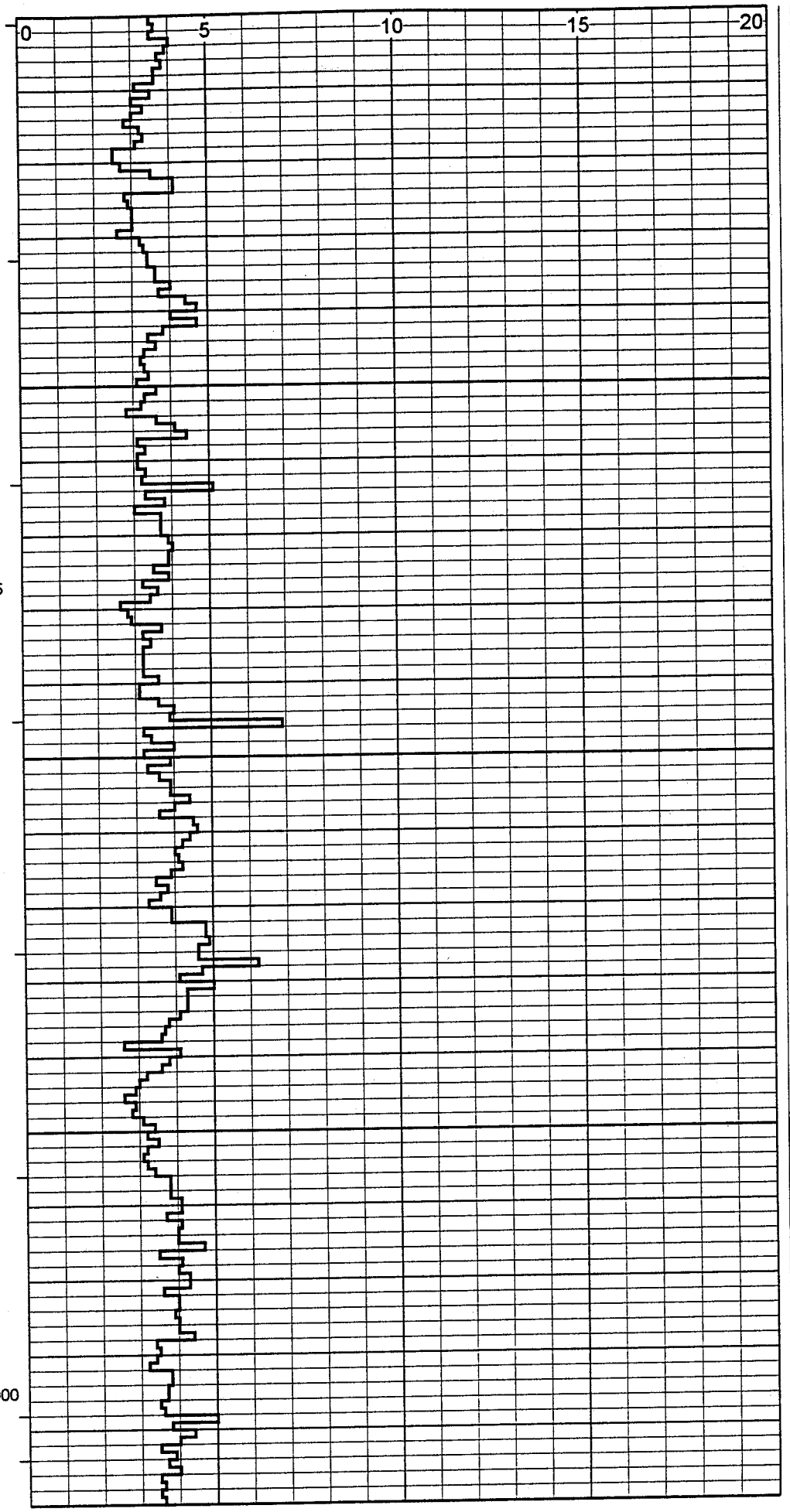
WOB 45
RPM 90
PP 2500
SPM 70+70

5432
Twin
Creek
Ls

Mud: 5516
Wt 10.0
Vis 37
PV 11
YP 7
GS 2/6
WL 7.2
Cake 1
Sol 2.6
Oil 0
H2O 97.4
Sd Tr
pH 11.5
Pf 2.20
Mf 3.00
Cl 185000
Ca 60
LCM

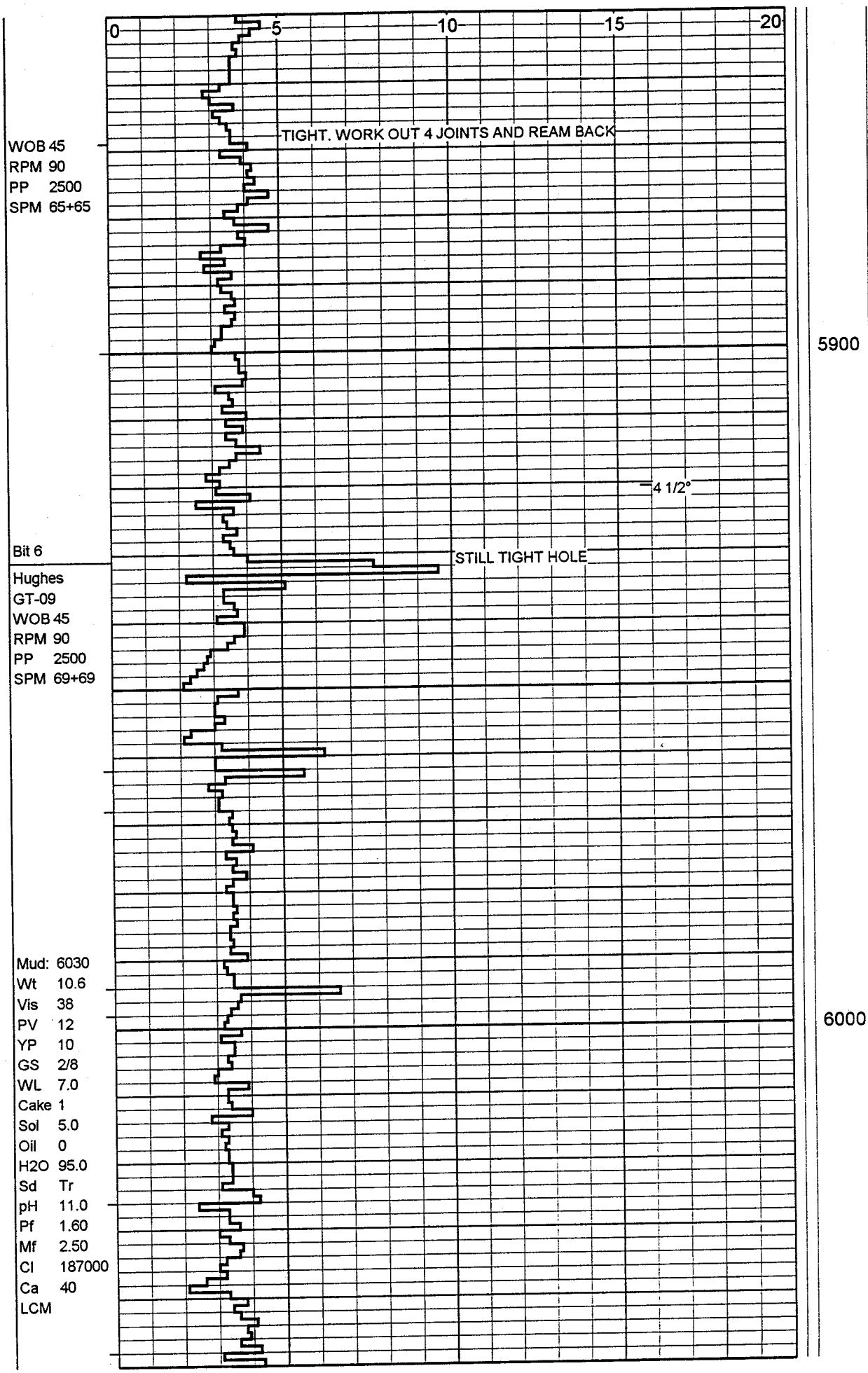
WOB 45
RPM 90
PP 2500
SPM 65+65

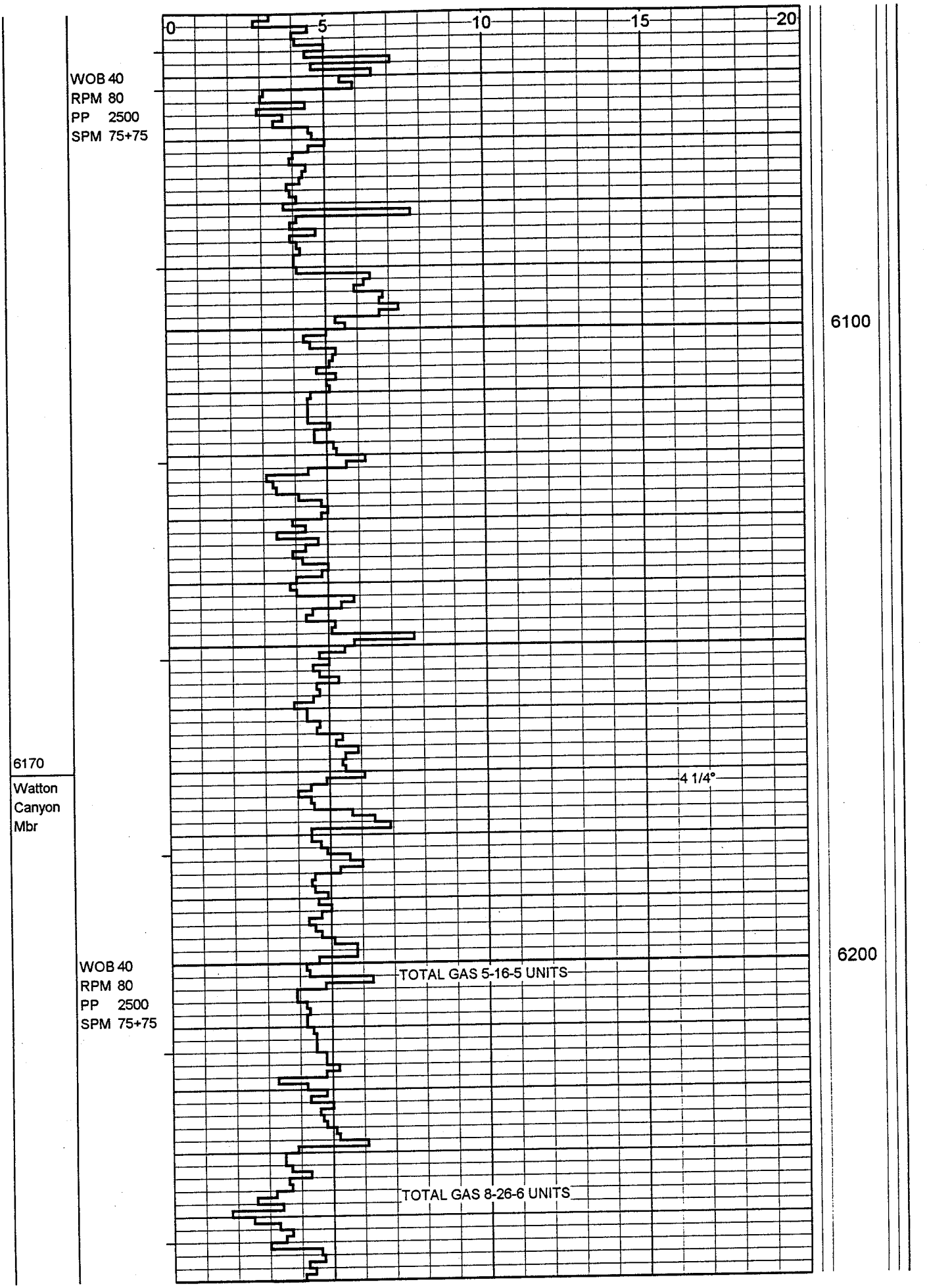


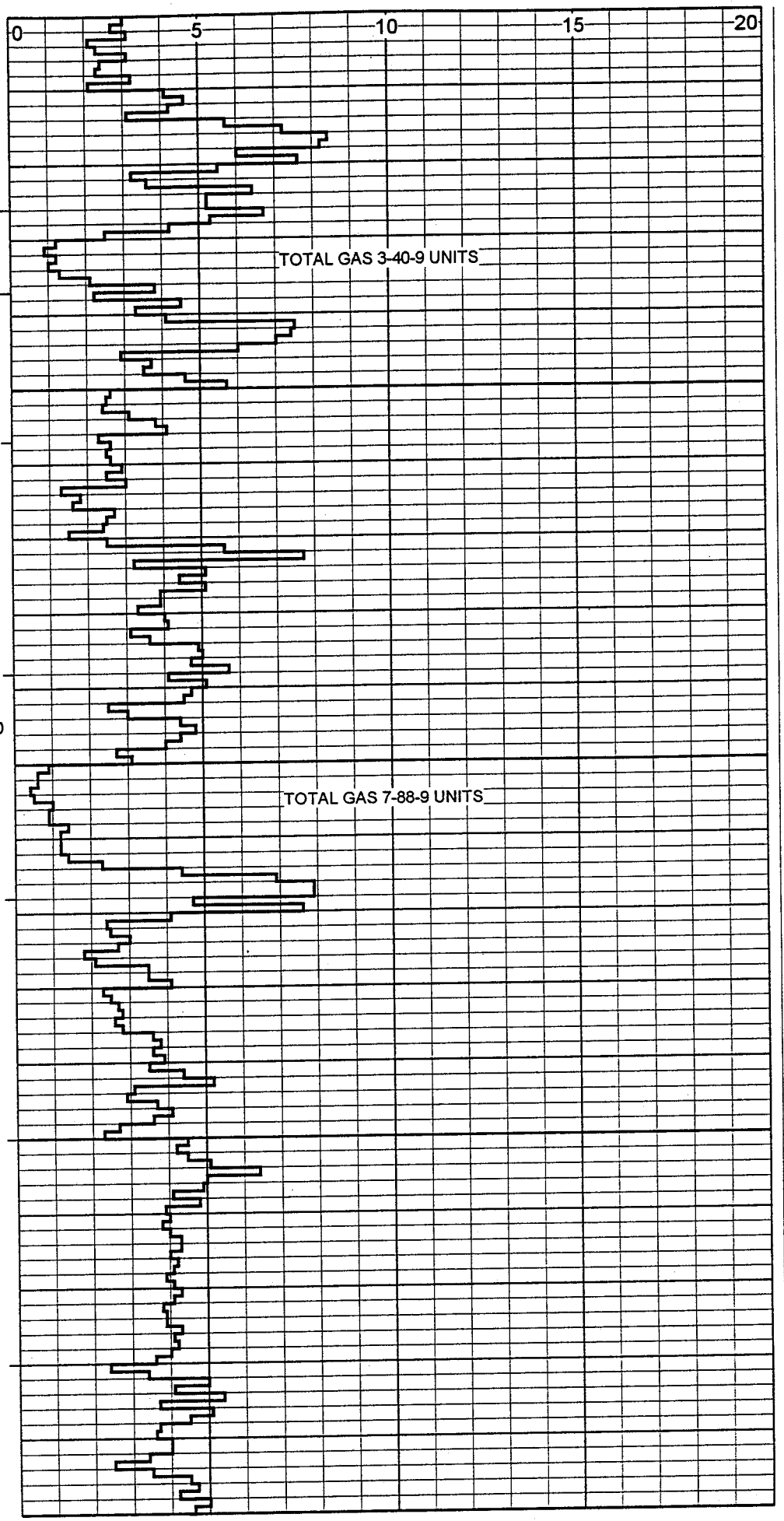


WOB 45
RPM 90
PP 2500
SPM 65+65

Mud: 5868
Wt 10.5
Vis 37
PV 12
YP 8
GS 2/8
WL 7.8
Cake 1
Sol 4.7
Oil 0
H2O 95.3
Sd Tr
pH 11.0
Pf 1.10
Mf 2.40
Cl 180000
Ca 60
LCM

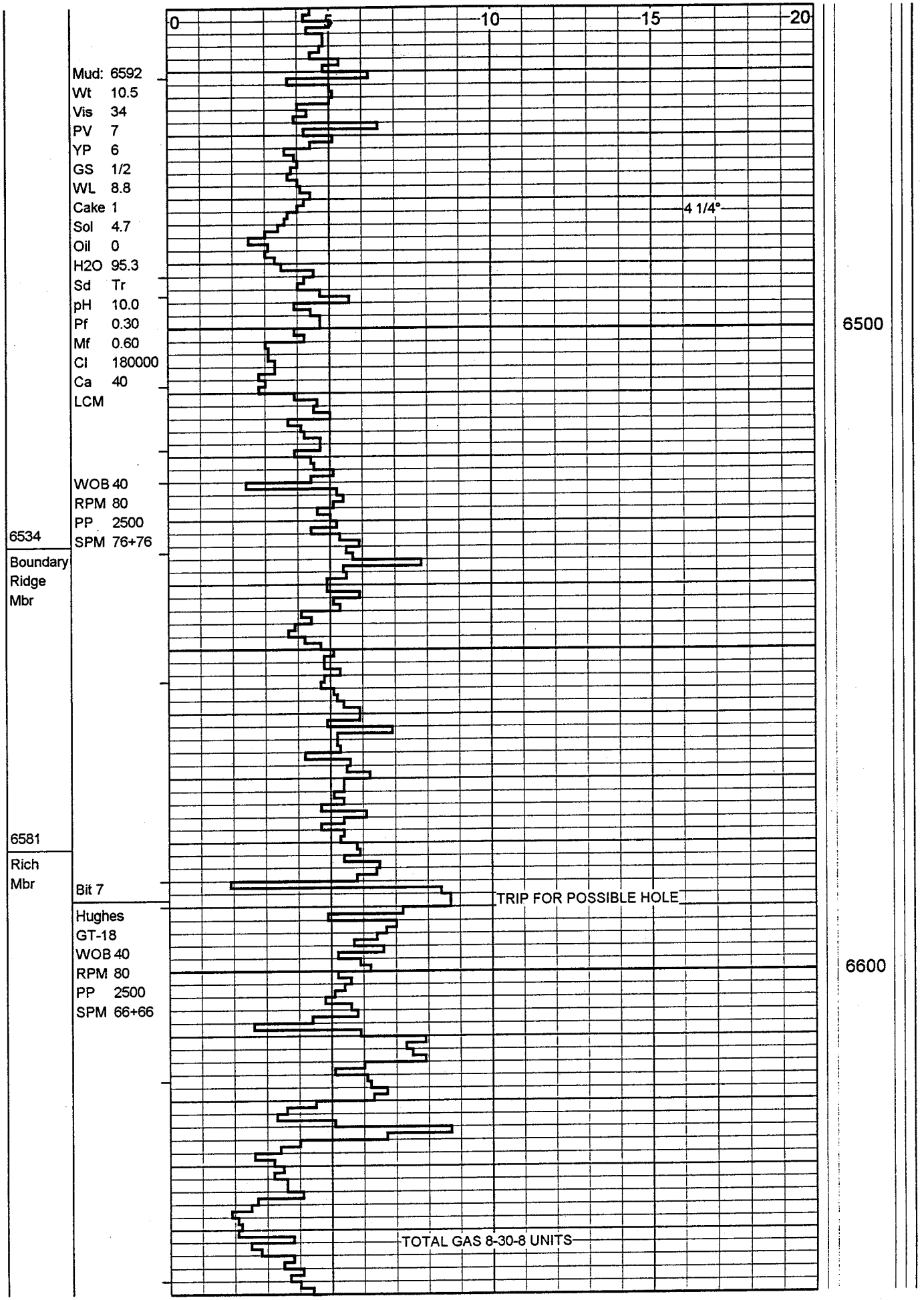

0
5
10
15
20
TIGHT. WORK OUT 4 JOINTS AND REAM BACK
WOB 45
RPM 90
PP 2500
SPM 65+65
5900
4 1/2°
Bit 6
STILL TIGHT HOLE
Hughes
GT-09
WOB 45
RPM 90
PP 2500
SPM 69+69
Mud: 6030
Wt 10.6
Vis 38
PV 12
YP 10
GS 2/8
WL 7.0
Cake 1
Sol 5.0
Oil 0
H2O 95.0
Sd Tr
pH 11.0
Pf 1.60
Mf 2.50
Cl 187000
Ca 40
LCM
6000

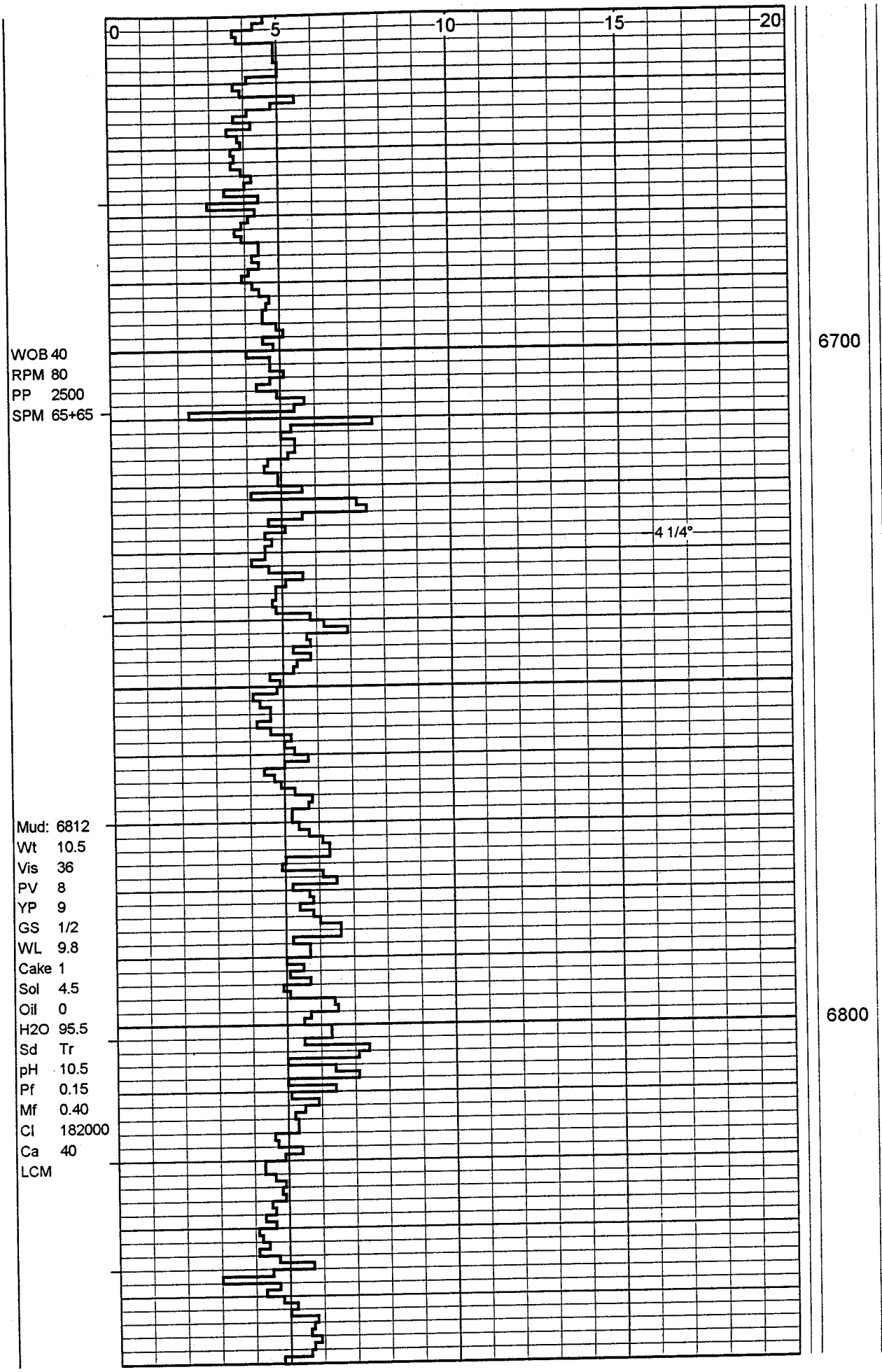

0
5
10
15
20
WOB 40
RPM 80
PP 2500
SPM 75+75
6100
6170
Watton
Canyon
Mbr
4 1/4°
6200
WOB 40
RPM 80
PP 2500
SPM 75+75
TOTAL GAS 5-16-5 UNITS
TOTAL GAS 8-26-6 UNITS

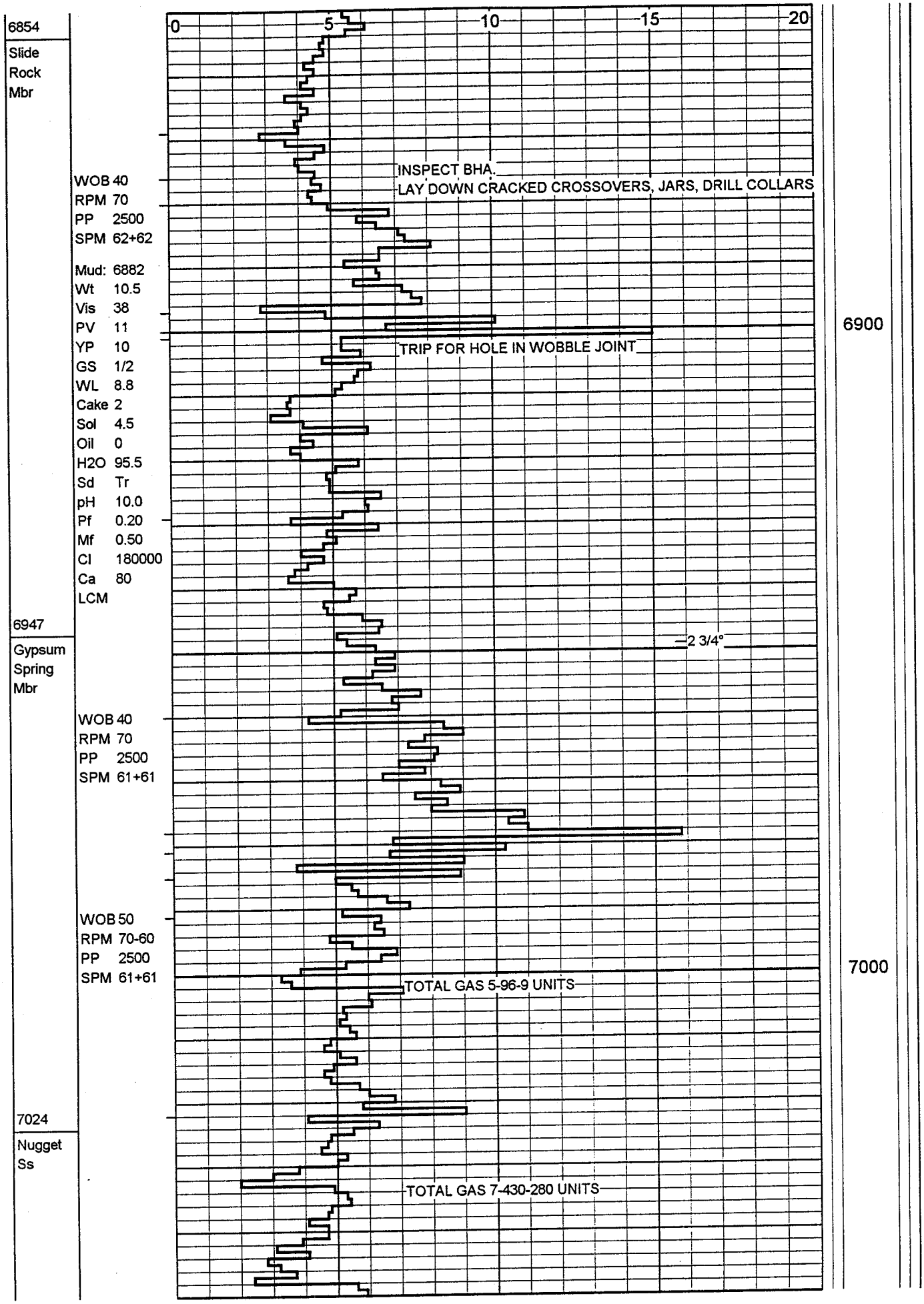


Mud: 6342
Wt 10.5
Vis 34
PV 10
YP 6
GS 2/5
WL 7.8
Cake 1
Sol 4.5
Oil 0
H2O 95.5
Sd Tr
pH 10.0
Pf 0.30
Mf 0.70
Cl 184000
Ca 40
LCM

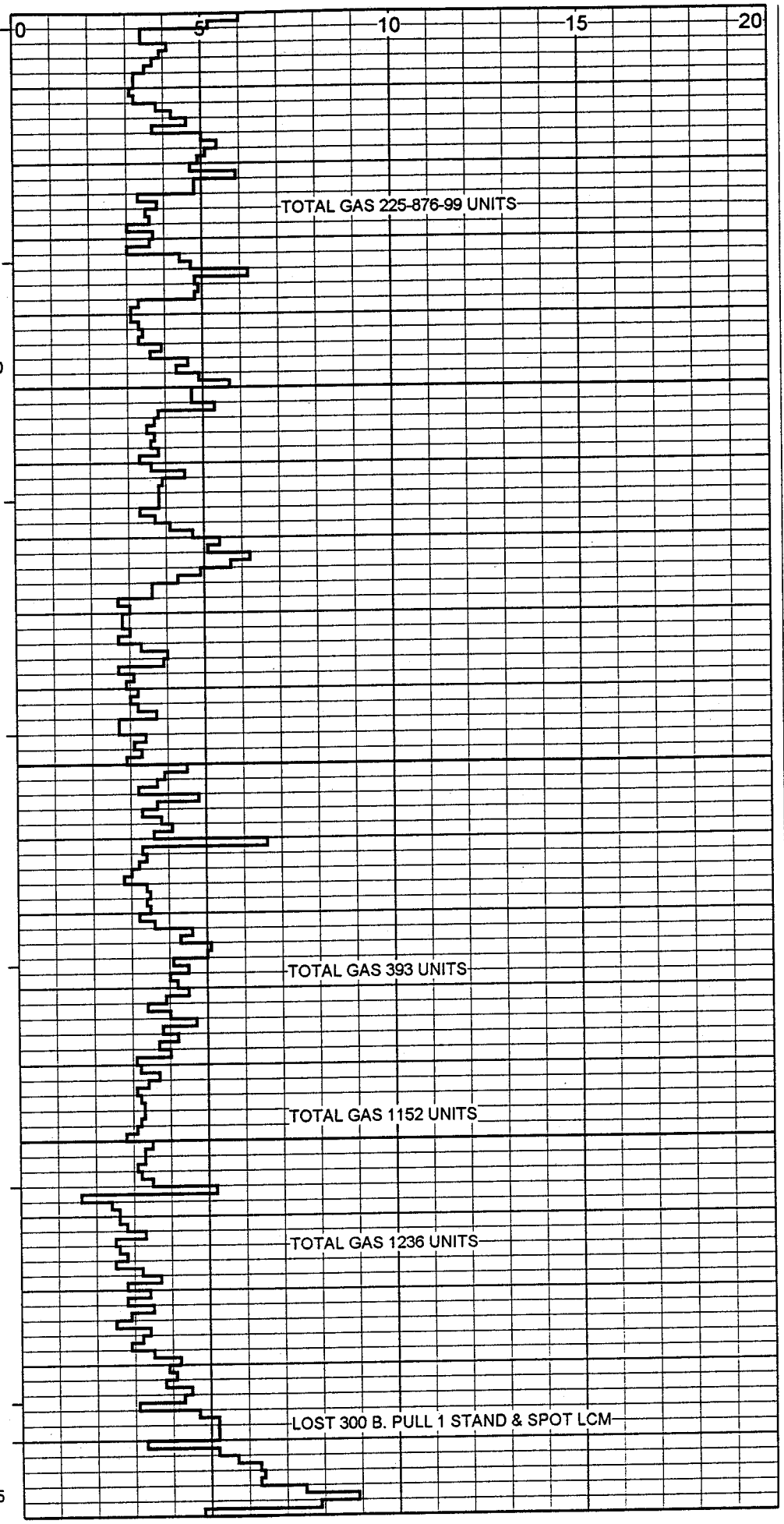
WOB 40
RPM 80
PP 2500
SPM 76+76


0
5
10
15
20
Mud: 6592
Wt 10.5
Vis 34
PV 7
YP 6
GS 1/2
WL 8.8
Cake 1
Sol 4.7
Oil 0
H2O 95.3
Sd Tr
pH 10.0
Pf 0.30
Mf 0.60
Cl 180000
Ca 40
LCM
WOB 40
RPM 80
PP 2500
SPM 76+76
4 1/4°
6500
6534
Boundary Ridge Mbr
6581
Rich Mbr
Bit 7
TRIP FOR POSSIBLE HOLE
Hughes
GT-18
WOB 40
RPM 80
PP 2500
SPM 66+66
6600
TOTAL GAS 8-30-8 UNITS

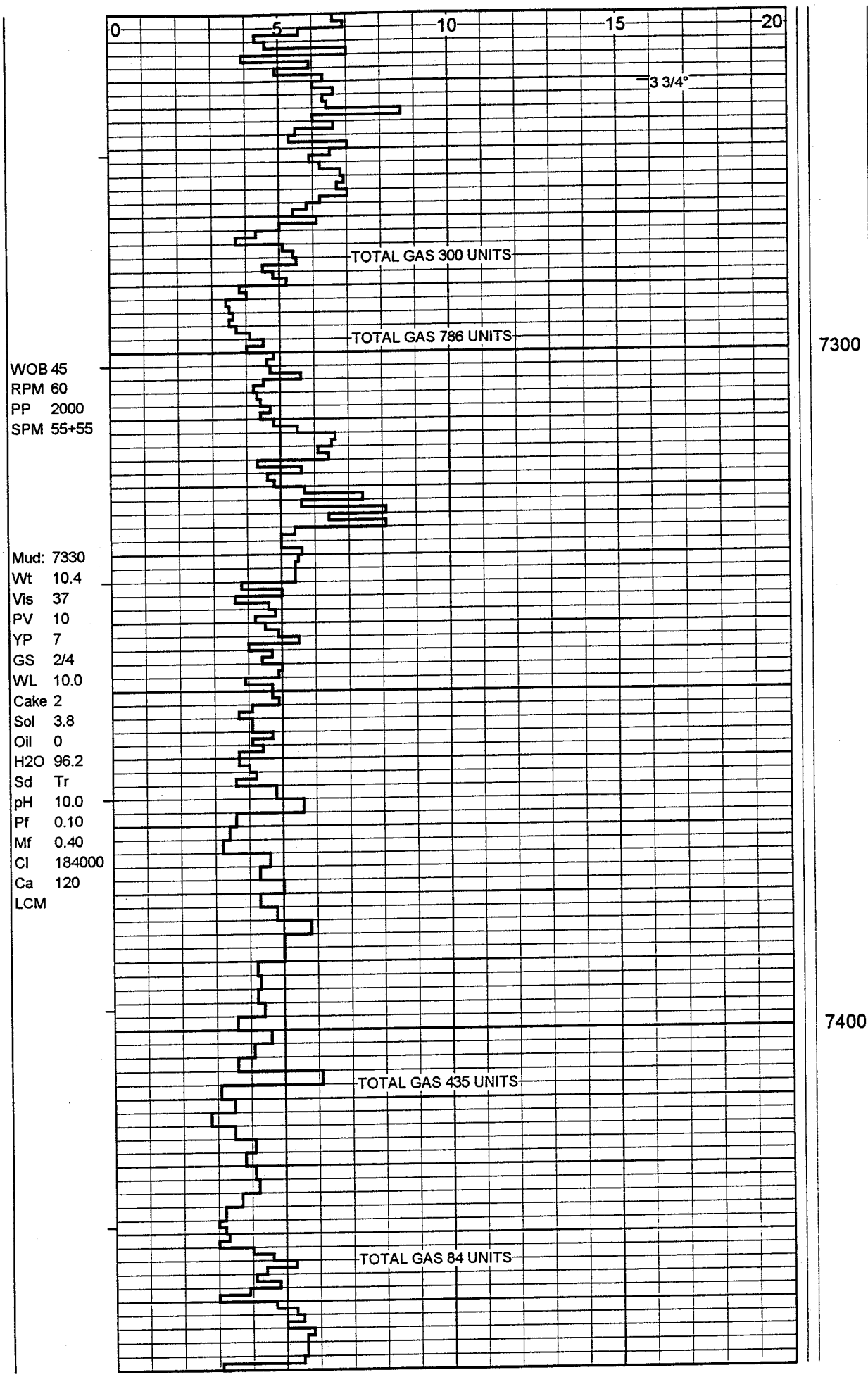

0
5
10
15
20
6700
6800
WOB 40
RPM 80
PP 2500
SPM 65+65
4 1/4°
Mud: 6812
Wt 10.5
Vis 36
PV 8
YP 9
GS 1/2
WL 9.8
Cake 1
Sol 4.5
Oil 0
H2O 95.5
Sd Tr
pH 10.5
Pf 0.15
Mf 0.40
Cl 182000
Ca 40
LCM

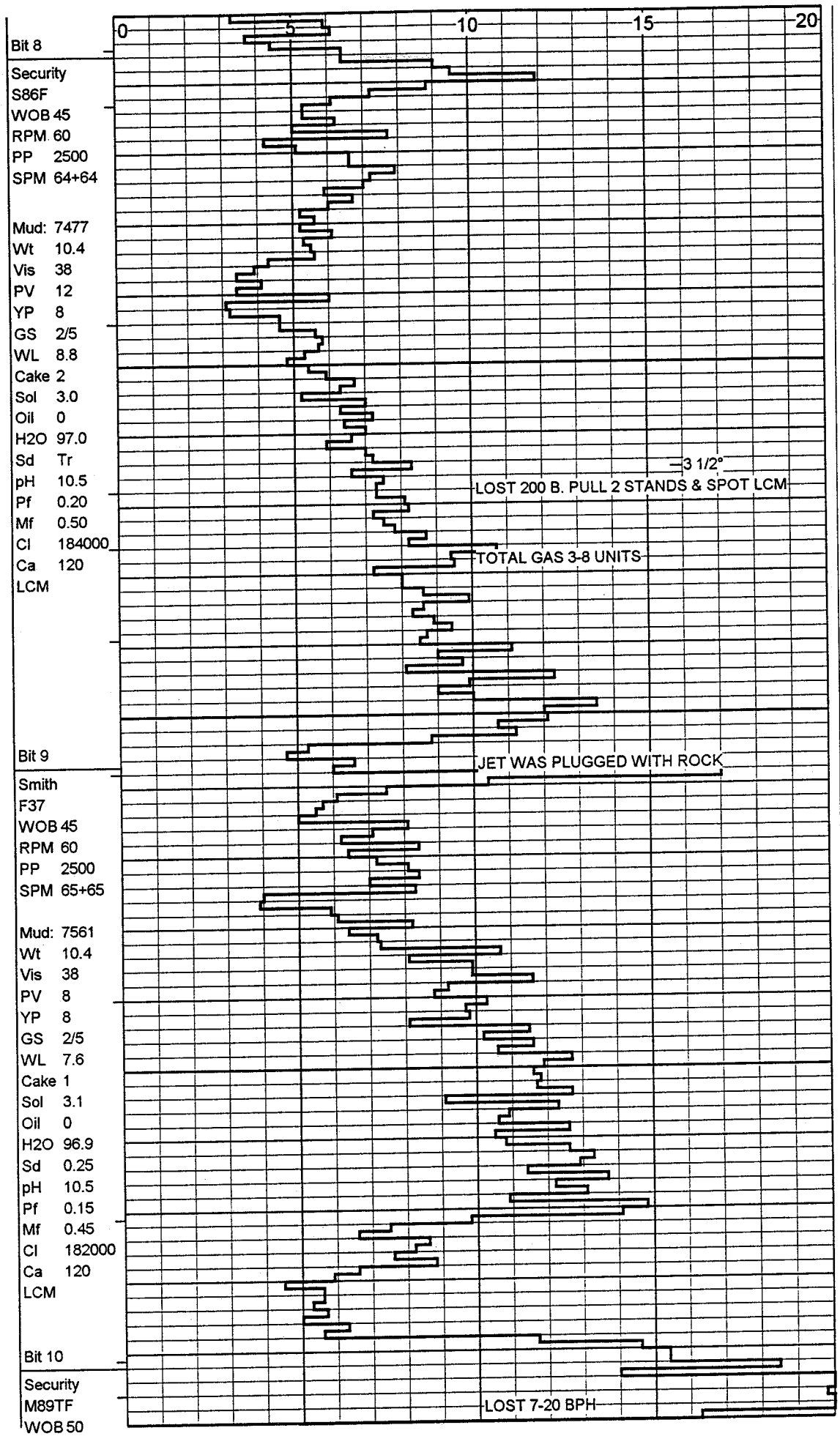

6854
Slide Rock Mbr
0
5
10
15
20
INSPECT BHA.
LAY DOWN CRACKED CROSSOVERS, JARS, DRILL COLLARS
WOB 40
RPM 70
PP 2500
SPM 62+62
Mud: 6882
Wt 10.5
Vis 38
PV 11
YP 10
GS 1/2
WL 8.8
Cake 2
Sol 4.5
Oil 0
H2O 95.5
Sd Tr
pH 10.0
Pf 0.20
Mf 0.50
Cl 180000
Ca 80
LCM
6900
TRIP FOR HOLE IN WOBBLE JOINT
6947
Gypsum Spring Mbr
2 3/4°
WOB 40
RPM 70
PP 2500
SPM 61+61
WOB 50
RPM 70-60
PP 2500
SPM 61+61
7000
TOTAL GAS 5-96-9 UNITS
7024
Nugget Ss
TOTAL GAS 7-430-280 UNITS

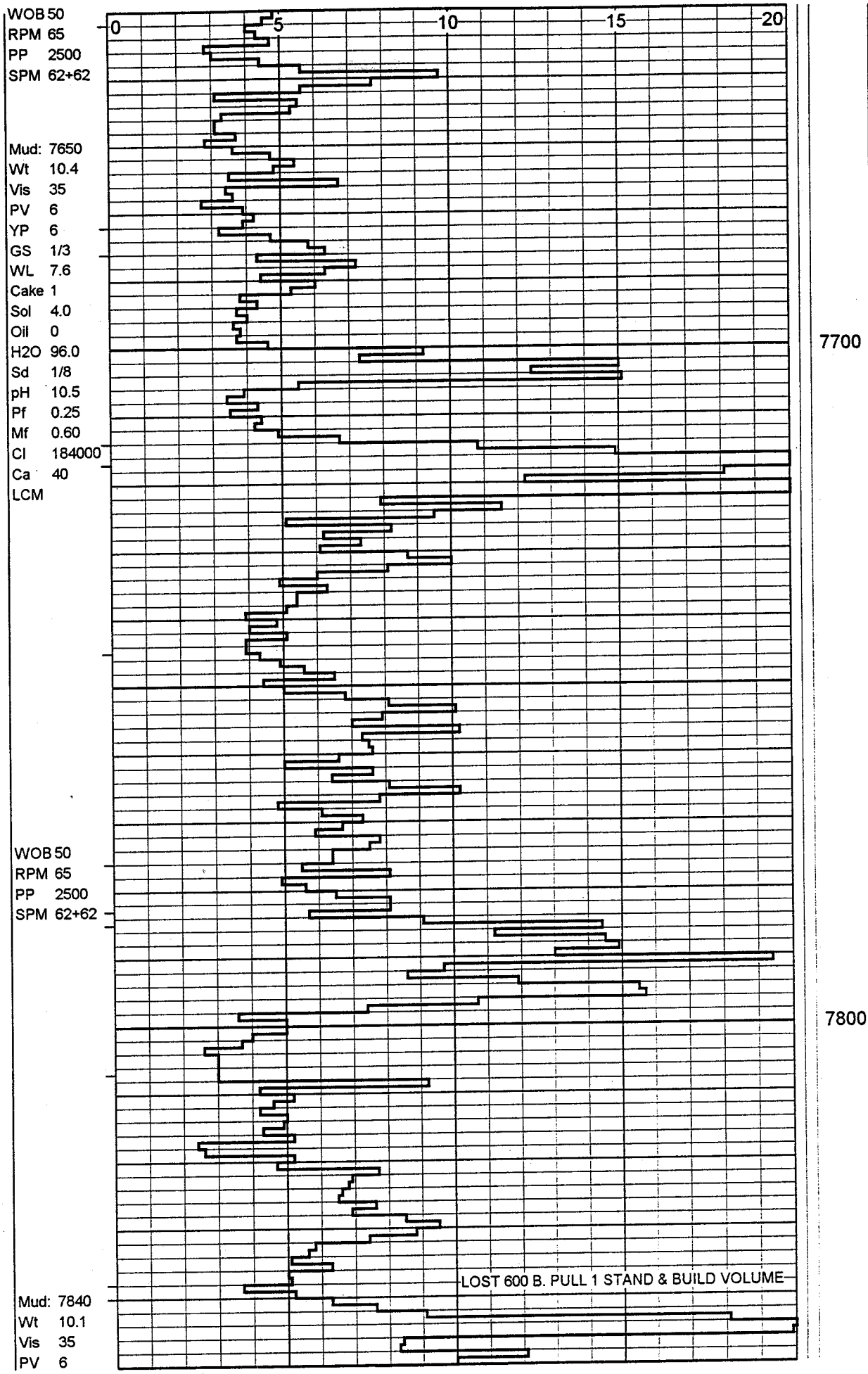
Mud: 7052
Wt 10.5
Vis 36
PV 10
YP 8
GS 1/2
WL 7.6
Cake 2
Sol 3.8
Oil 0
H2O 96.2
Sd Tr
pH 10.5
Pf 0.15
Mf 0.45
Cl 185000
Ca 120
LCM

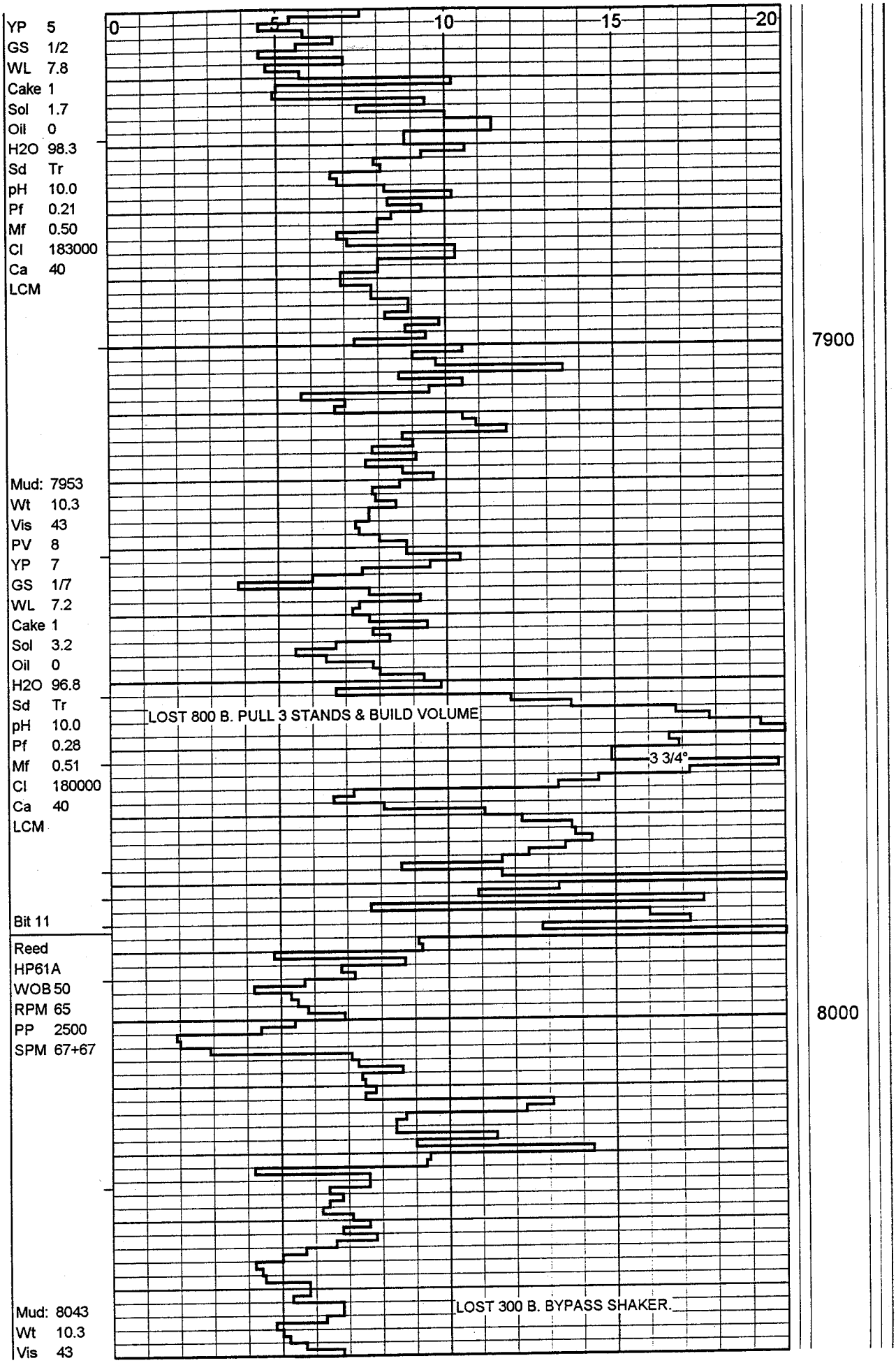


WOB 50
RPM 60
PP 2000
SPM 55+55


0
5
10
15
20
3 3/4°
TOTAL GAS 300 UNITS
TOTAL GAS 786 UNITS
7300
WOB 45
RPM 60
PP 2000
SPM 55+55
Mud: 7330
Wt 10.4
Vis 37
PV 10
YP 7
GS 2/4
WL 10.0
Cake 2
Sol 3.8
Oil 0
H2O 96.2
Sd Tr
pH 10.0
Pf 0.10
Mf 0.40
Cl 184000
Ca 120
LCM
7400
TOTAL GAS 435 UNITS
TOTAL GAS 84 UNITS


0
5
10
15
20
Bit 8
Security
S86F
WOB 45
RPM 60
PP 2500
SPM 64+64
Mud: 7477
Wt 10.4
Vis 38
PV 12
YP 8
GS 2/5
WL 8.8
Cake 2
Sol 3.0
Oil 0
H2O 97.0
Sd Tr
pH 10.5
Pf 0.20
Mf 0.50
Cl 184000
Ca 120
LCM
7500
3 1/2°
LOST 200 B. PULL 2 STANDS & SPOT LCM
TOTAL GAS 3-8 UNITS
Bit 9
JET WAS PLUGGED WITH ROCK
Smith
F37
WOB 45
RPM 60
PP 2500
SPM 65+65
Mud: 7561
Wt 10.4
Vis 38
PV 8
YP 8
GS 2/5
WL 7.6
Cake 1
Sol 3.1
Oil 0
H2O 96.9
Sd 0.25
pH 10.5
Pf 0.15
Mf 0.45
Cl 182000
Ca 120
LCM
7600
Bit 10
Security
M89TF
WOB 50
LOST 7-20 BPH


WOB 50
RPM 65
PP 2500
SPM 62+62
Mud: 7650
Wt 10.4
Vis 35
PV 6
YP 6
GS 1/3
WL 7.6
Cake 1
Sol 4.0
Oil 0
H2O 96.0
Sd 1/8
pH 10.5
Pf 0.25
Mf 0.60
Cl 184000
Ca 40
LCM
0
5
10
15
20
7700
WOB 50
RPM 65
PP 2500
SPM 62+62
7800
LOST 600 B. PULL 1 STAND & BUILD VOLUME
Mud: 7840
Wt 10.1
Vis 35
PV 6


YP 5
GS 1/2
WL 7.8
Cake 1
Sol 1.7
Oil 0
H2O 98.3
Sd Tr
pH 10.0
Pf 0.21
Mf 0.50
Cl 183000
Ca 40
LCM
Mud: 7953
Wt 10.3
Vis 43
PV 8
YP 7
GS 1/7
WL 7.2
Cake 1
Sol 3.2
Oil 0
H2O 96.8
Sd Tr
pH 10.0
Pf 0.28
Mf 0.51
Cl 180000
Ca 40
LCM
Bit 11
Reed
HP61A
WOB 50
RPM 65
PP 2500
SPM 67+67
Mud: 8043
Wt 10.3
Vis 43
0
5
10
15
20
7900
8000
LOST 800 B. PULL 3 STANDS & BUILD VOLUME
3 3/4°
LOST 300 B. BYPASS SHAKER.

PV 8
YP 8
GS 2/10
WL 7.0
Cake 1
Sol 3.2
Oil 0
H2O 96.8
Sd 1/8
pH 10.0
Pf 0.23
Mf 0.60
Cl 180000
Ca 40
LCM

Bit 12

Smith
F37
WOB 50
RPM 65
PP 2500
SPM 65+65

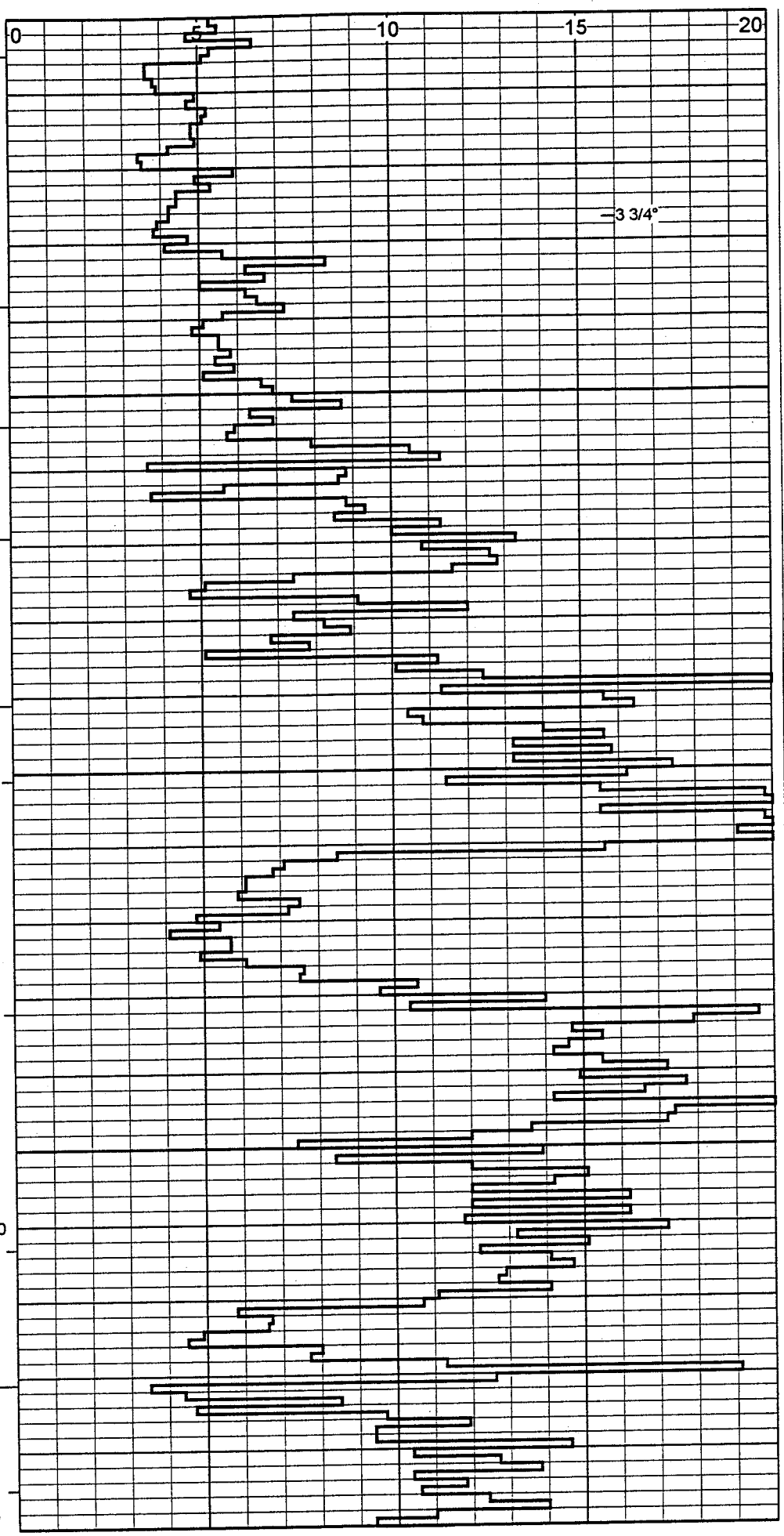
Mud: 8152
Wt 10.4
Vis 50
PV 9
YP 8
GS 2/9
WL 6.8
Cake 1
Sol 3.5
Oil 0
H2O 96.5
Sd 1/4
pH 10.0
Pf 0.10
Mf 0.40
Cl 182000
Ca 60
LCM

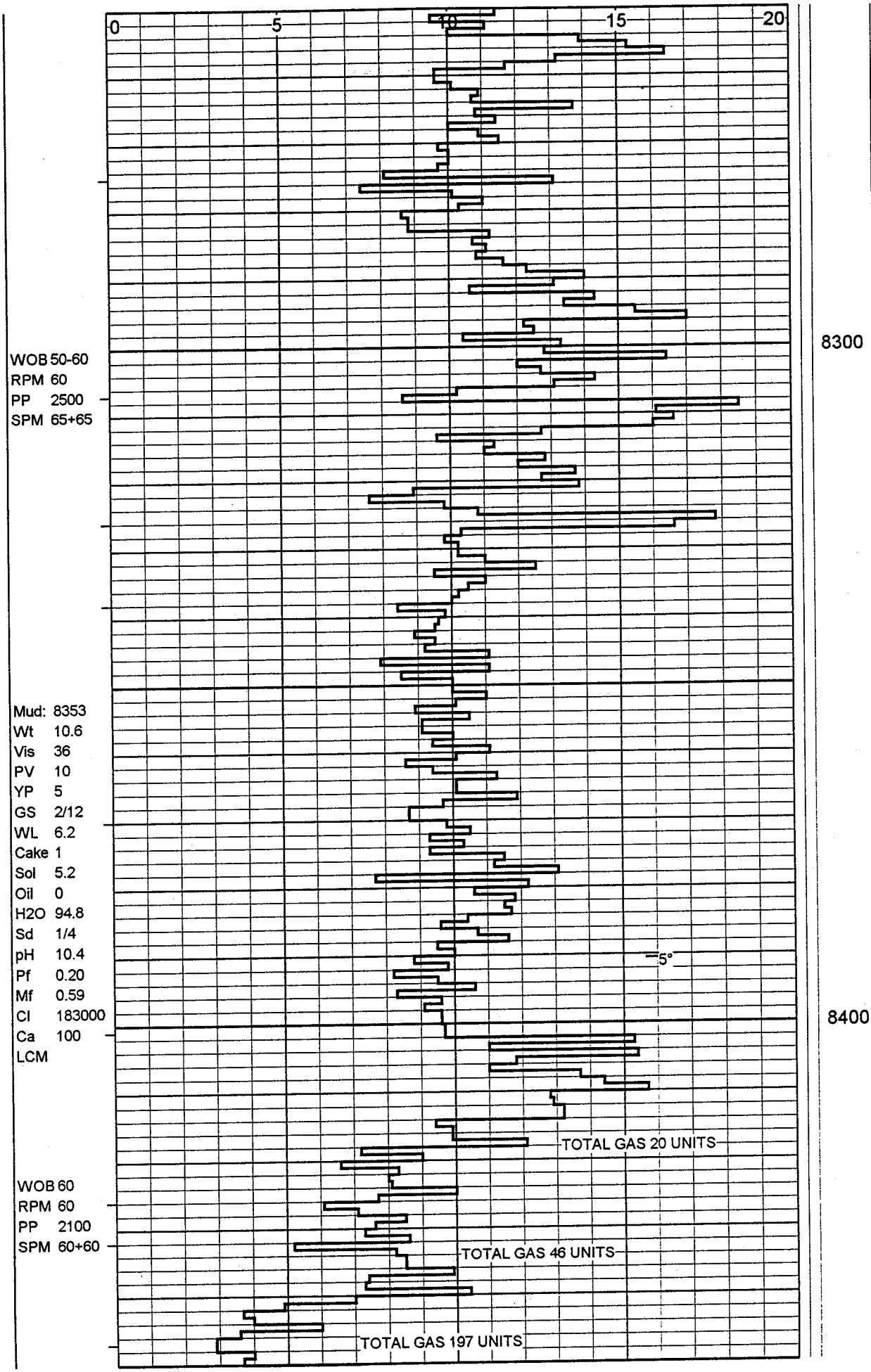
Bit 13

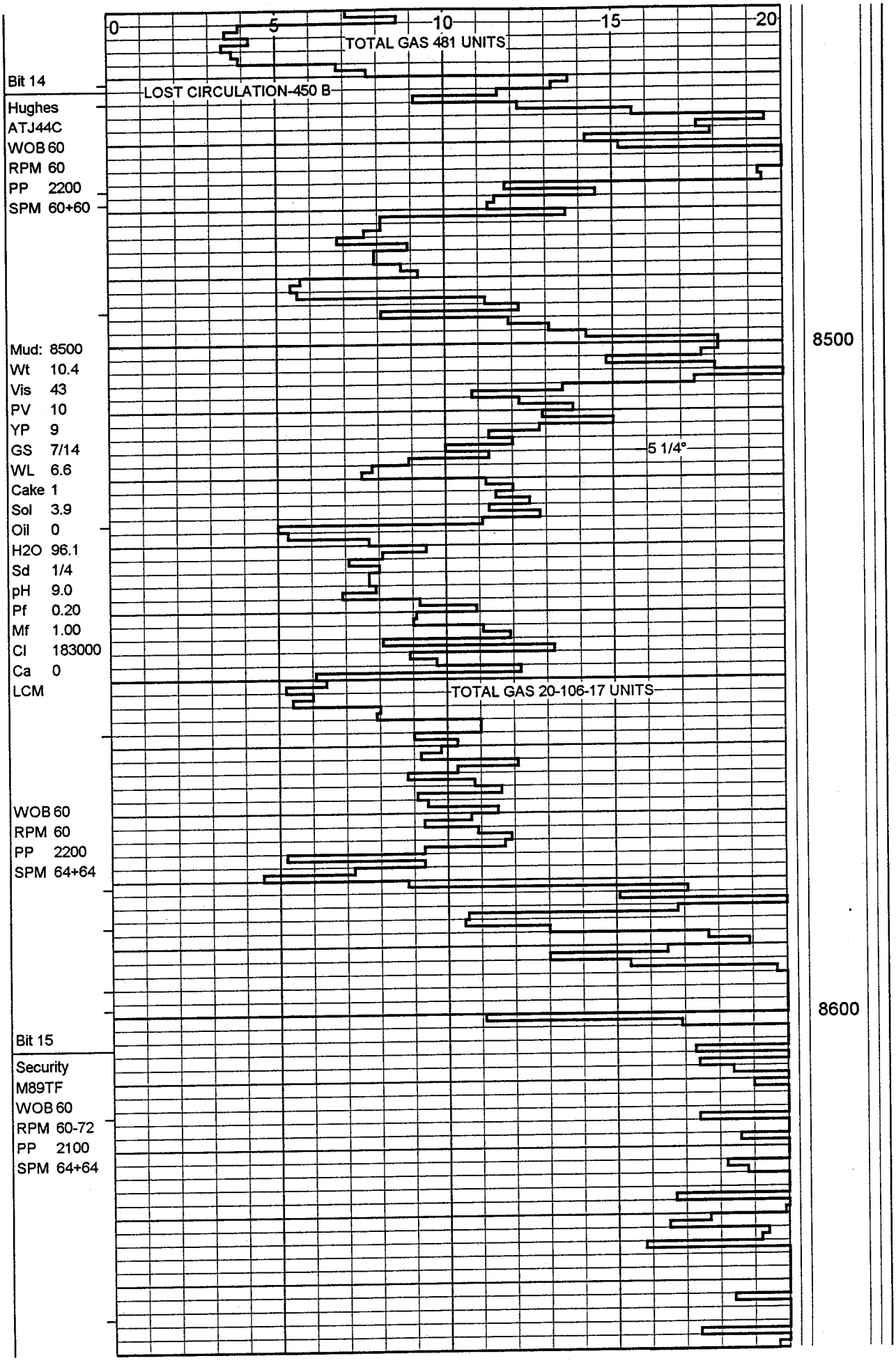
Reed
HP53A
WOB 50
RPM 60
PP 2500
SPM 65+65

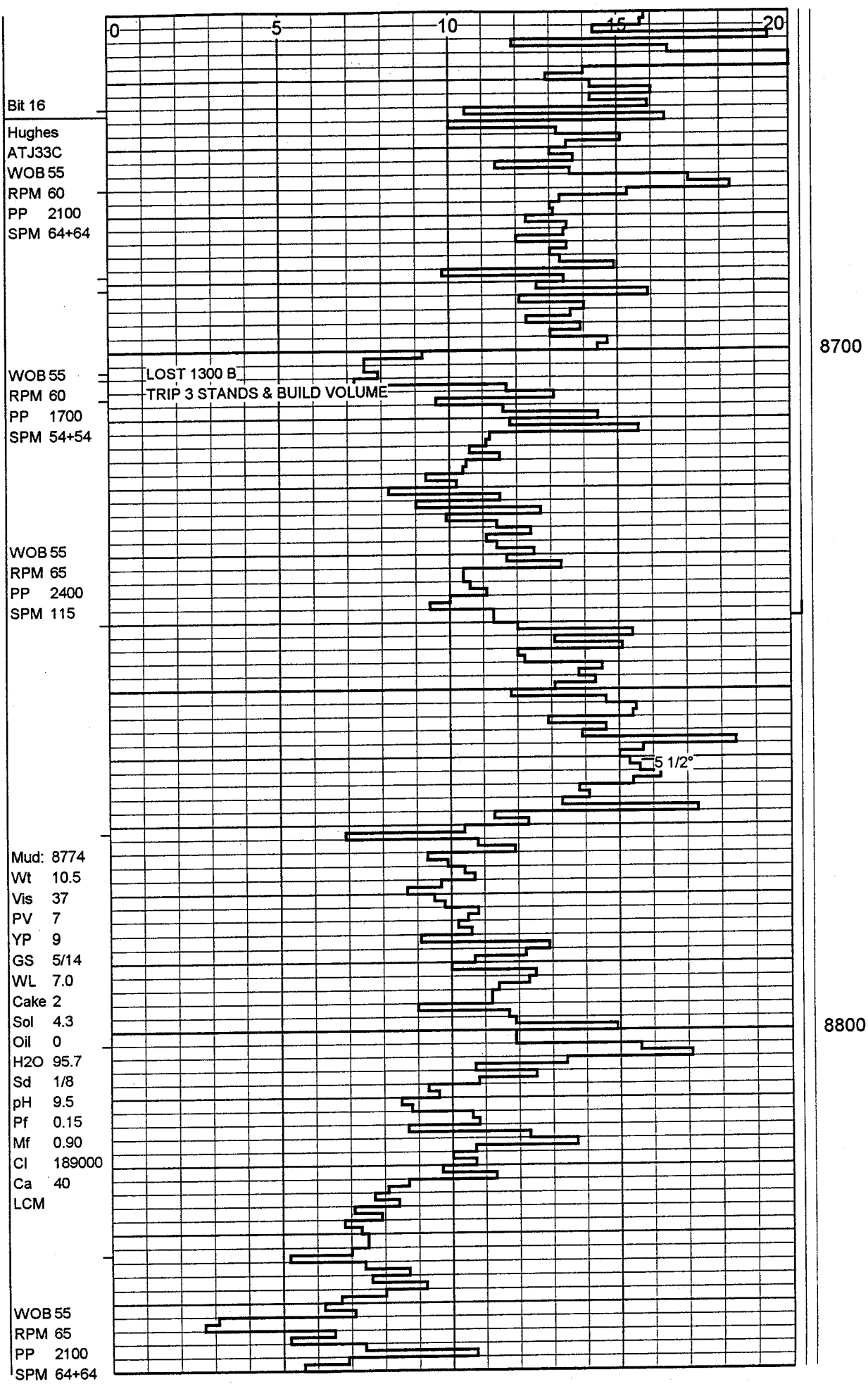
8148

Ankareh Red Beds




0
5
10
15
20
8300
8400
WOB 50-60
RPM 60
PP 2500
SPM 65+65
Mud: 8353
Wt 10.6
Vis 36
PV 10
YP 5
GS 2/12
WL 6.2
Cake 1
Sol 5.2
Oil 0
H2O 94.8
Sd 1/4
pH 10.4
Pf 0.20
Mf 0.59
Cl 183000
Ca 100
LCM
5°
TOTAL GAS 20 UNITS
WOB 60
RPM 60
PP 2100
SPM 60+60
TOTAL GAS 46 UNITS
TOTAL GAS 197 UNITS


0
5
10
15
20
TOTAL GAS 481 UNITS
Bit 14
LOST CIRCULATION-450 B
Hughes
ATJ44C
WOB 60
RPM 60
PP 2200
SPM 60+60
Mud: 8500
Wt 10.4
Vis 43
PV 10
YP 9
GS 7/14
WL 6.6
Cake 1
Sol 3.9
Oil 0
H2O 96.1
Sd 1/4
pH 9.0
Pf 0.20
Mf 1.00
Cl 183000
Ca 0
LCM
5 1/4°
8500
TOTAL GAS 20-106-17 UNITS
WOB 60
RPM 60
PP 2200
SPM 64+64
8600
Bit 15
Security
M89TF
WOB 60
RPM 60-72
PP 2100
SPM 64+64


0
5
10
15
20
Bit 16
Hughes
ATJ33C
WOB 55
RPM 60
PP 2100
SPM 64+64
8700
WOB 55
RPM 60
PP 1700
SPM 54+54
LOST 1300 B
TRIP 3 STANDS & BUILD VOLUME
WOB 55
RPM 65
PP 2400
SPM 115
5 1/2°
Mud: 8774
Wt 10.5
Vis 37
PV 7
YP 9
GS 5/14
WL 7.0
Cake 2
Sol 4.3
Oil 0
H2O 95.7
Sd 1/8
pH 9.5
Pf 0.15
Mf 0.90
Cl 189000
Ca 40
LCM
8800
WOB 55
RPM 65
PP 2100
SPM 64+64

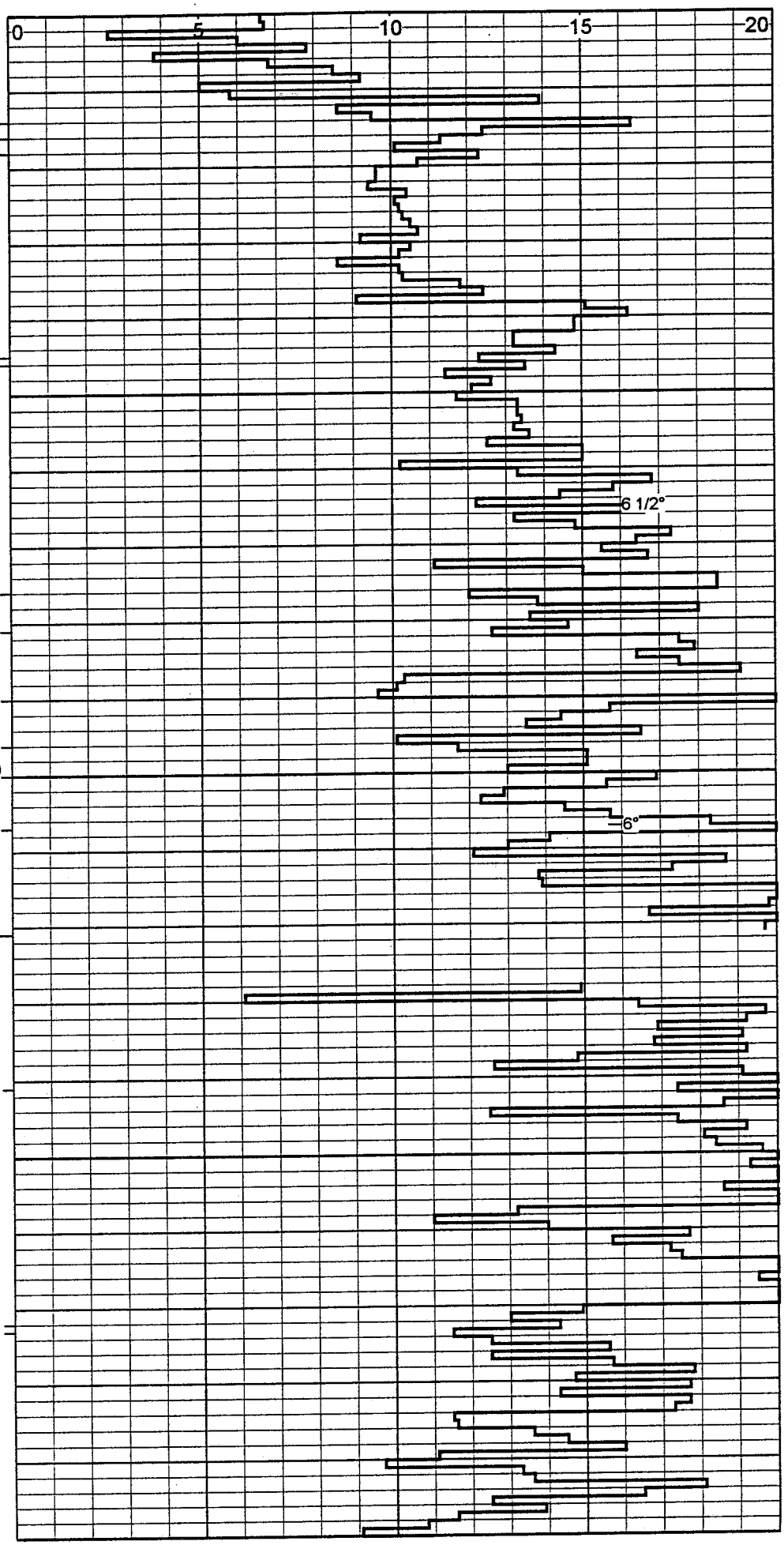
SPM 64+64

Mud: 8904
Wt 10.5
Vis 38
PV 8
YP 9
GS 5/12
WL 8.6
Cake 2
Sol 4.2
Oil 0
H2O 95.8
Sd 1/8
pH 9.5
Pf 0.10
Mf 0.80
Cl 190000
Ca 280
LCM

Bit 17

Reed
EHP53A
WOB 55
RPM 65
PP 2200
SPM 65+65

Mud: 9012
Wt 10.6
Vis 37
PV 7
YP 8
GS 2/7
WL 6.6
Cake 1
Sol 5.0
Oil 0
H2O 95.0
Sd 1/4
pH 10.5



8900

9000

Pf 0.20
Mf 0.80
Cl 189000
Ca 20
LCM 9.5%

WOB 55
RPM 65
PP 2100
SPM 65+65

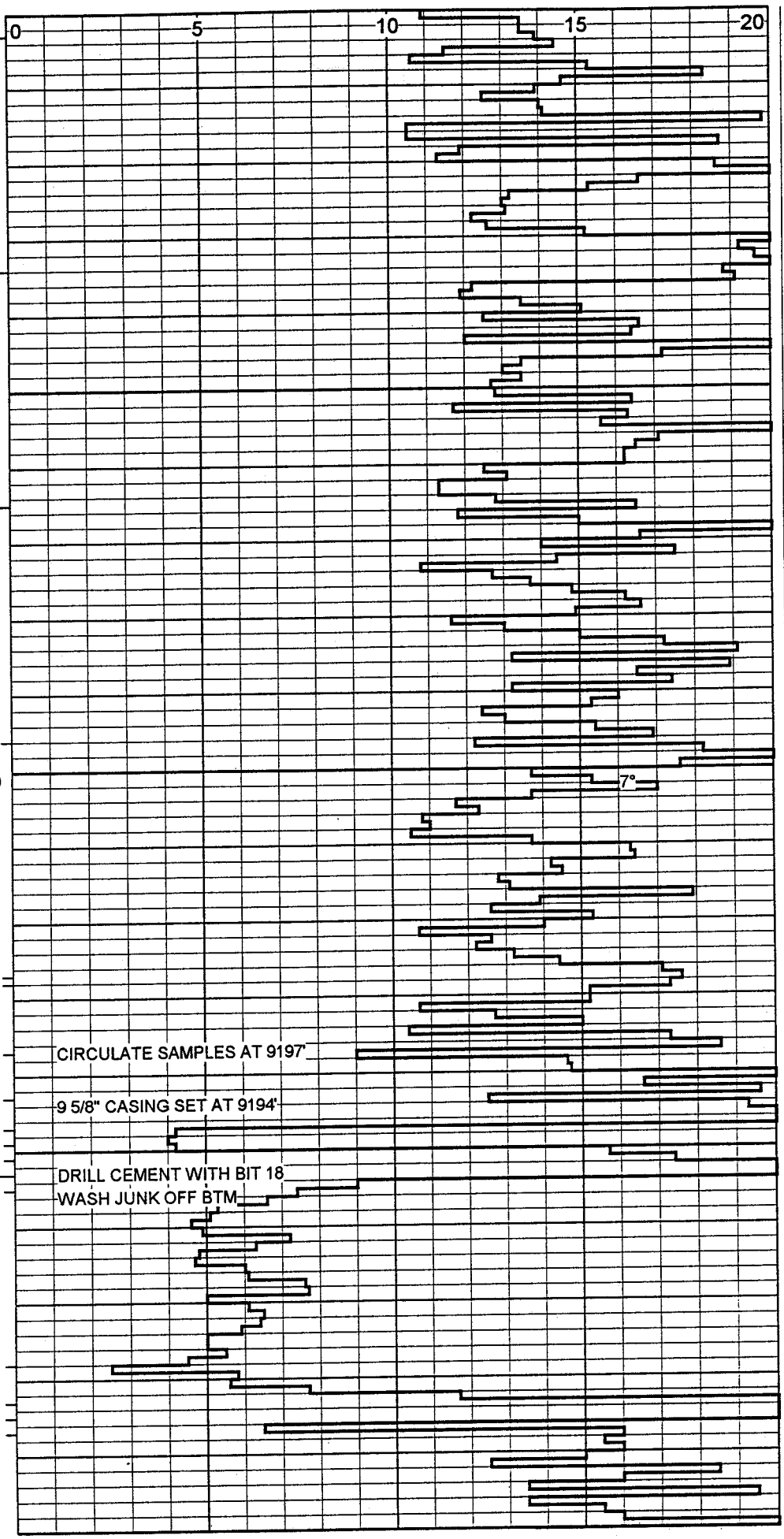
Mud: 9106
Wt 10.6
Vis 37
PV 7
YP 8
GS 2/4
WL 6.8
Cake 1
Sol 5.0
Oil 0
H2O 95.0
Sd 1/8
pH 10.5
Pf 0.20
Mf 0.80
Cl 189000
Ca 80
LCM 11.8%

9180

Thaynes Ls

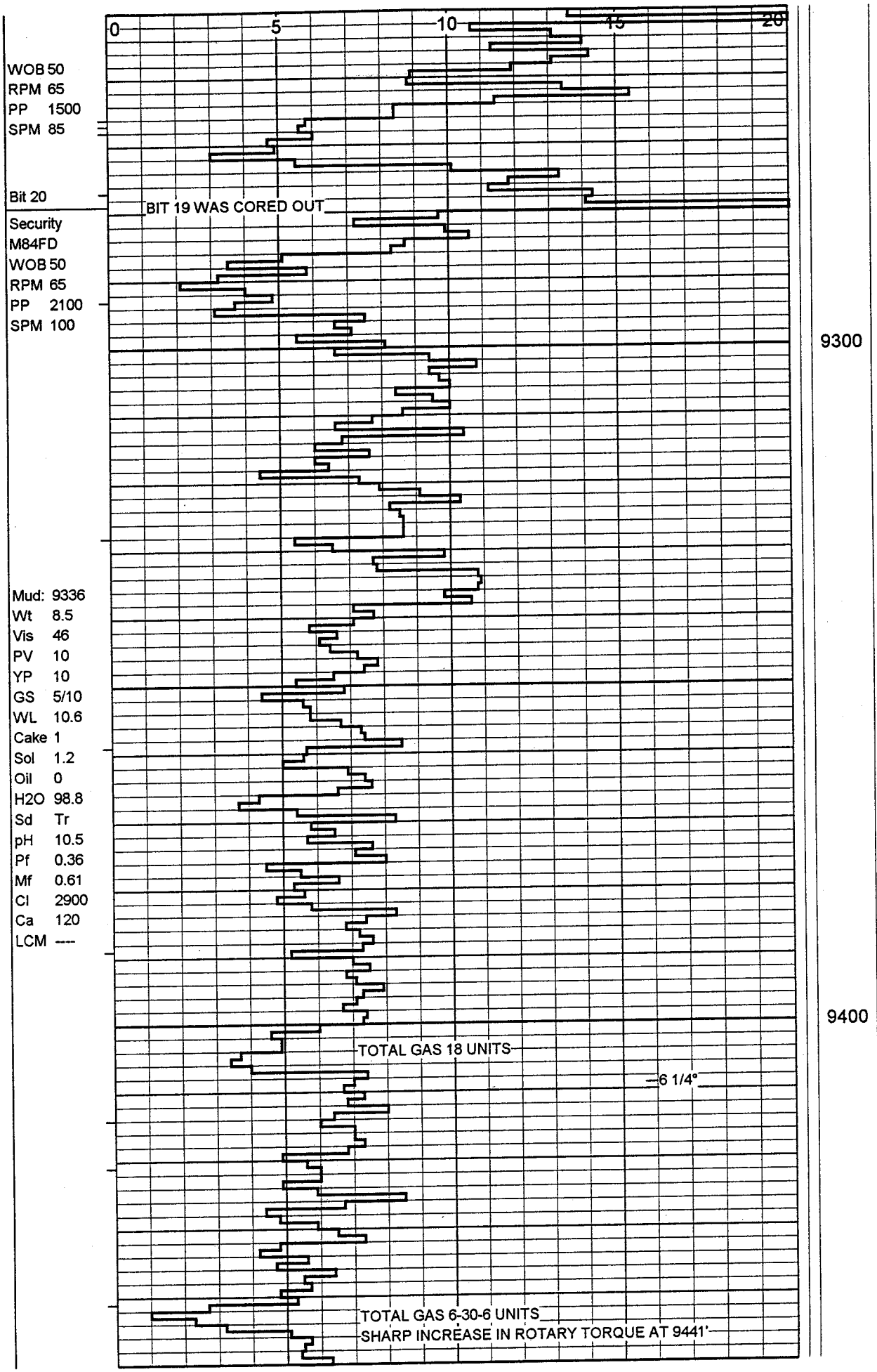
Bit 19

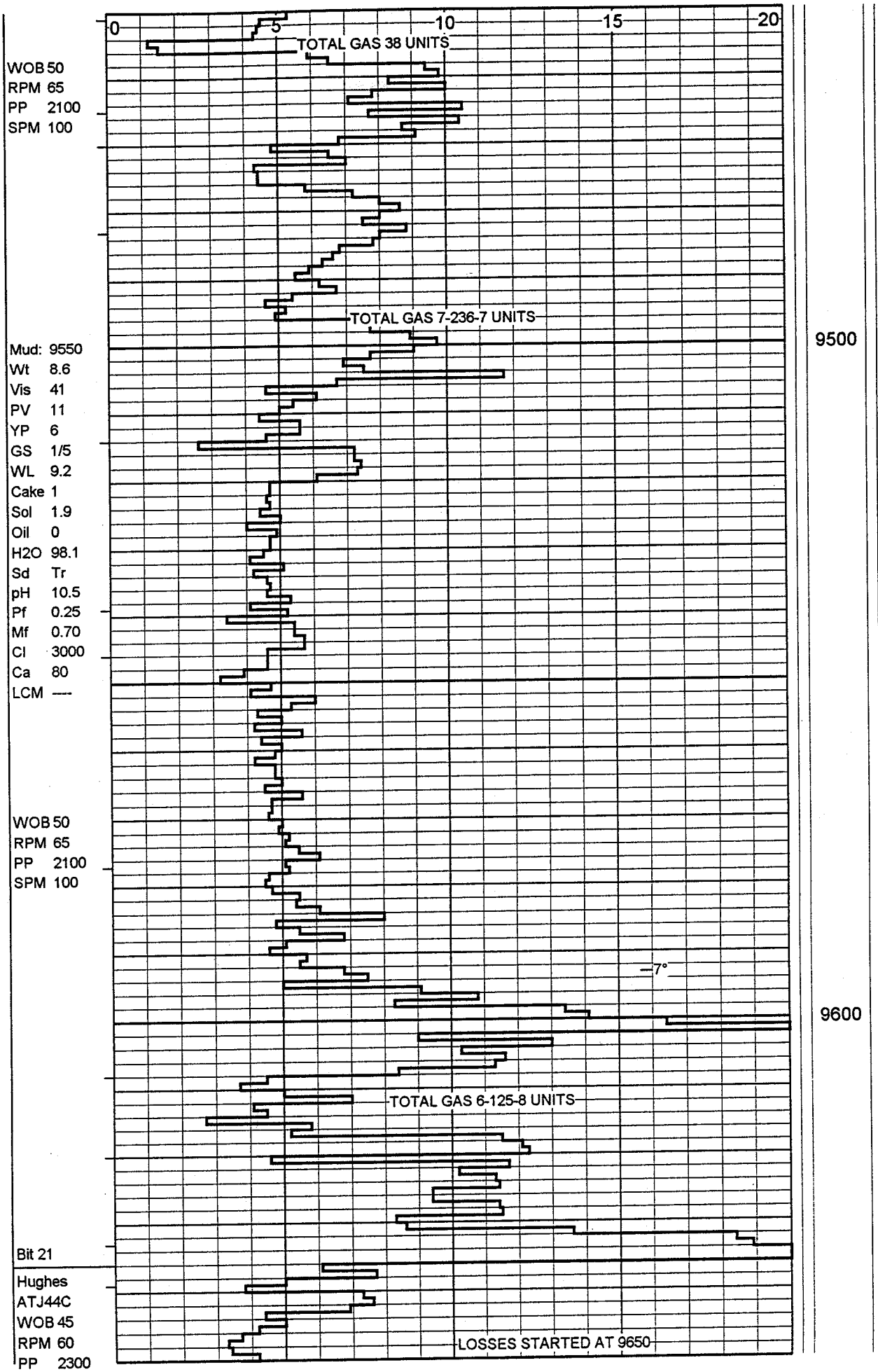
Reed
EHP61A
WOB 45
RPM 60
PP 1500
SPM 85



9100

9200


0
5
10
15
20
WOB 50
RPM 65
PP 1500
SPM 85
Bit 20
BIT 19 WAS CORED OUT
Security
M84FD
WOB 50
RPM 65
PP 2100
SPM 100
9300
Mud: 9336
Wt 8.5
Vis 46
PV 10
YP 10
GS 5/10
WL 10.6
Cake 1
Sol 1.2
Oil 0
H2O 98.8
Sd Tr
pH 10.5
Pf 0.36
Mf 0.61
Cl 2900
Ca 120
LCM ----
9400
TOTAL GAS 18 UNITS
6 1/4°
TOTAL GAS 6-30-6 UNITS
SHARP INCREASE IN ROTARY TORQUE AT 9441'

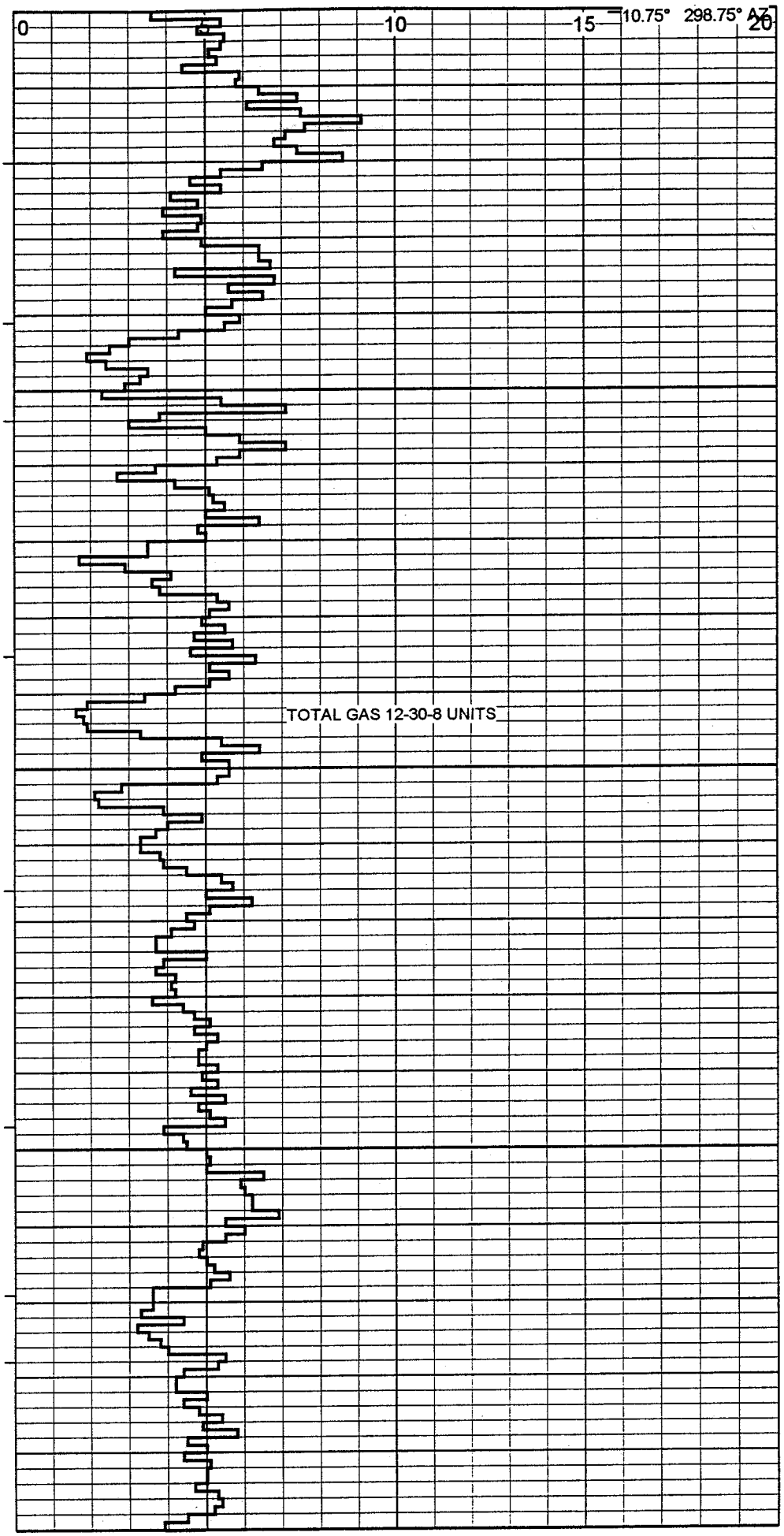

0
5
10
15
20
TOTAL GAS 38 UNITS
WOB 50
RPM 65
PP 2100
SPM 100
TOTAL GAS 7-236-7 UNITS
9500
Mud: 9550
Wt 8.6
Vis 41
PV 11
YP 6
GS 1/5
WL 9.2
Cake 1
Sol 1.9
Oil 0
H2O 98.1
Sd Tr
pH 10.5
Pf 0.25
Mf 0.70
Cl 3000
Ca 80
LCM ----
WOB 50
RPM 65
PP 2100
SPM 100
7°
9600
TOTAL GAS 6-125-8 UNITS
Bit 21
Hughes
ATJ44C
WOB 45
RPM 60
PP 2300
LOSSES STARTED AT 9650

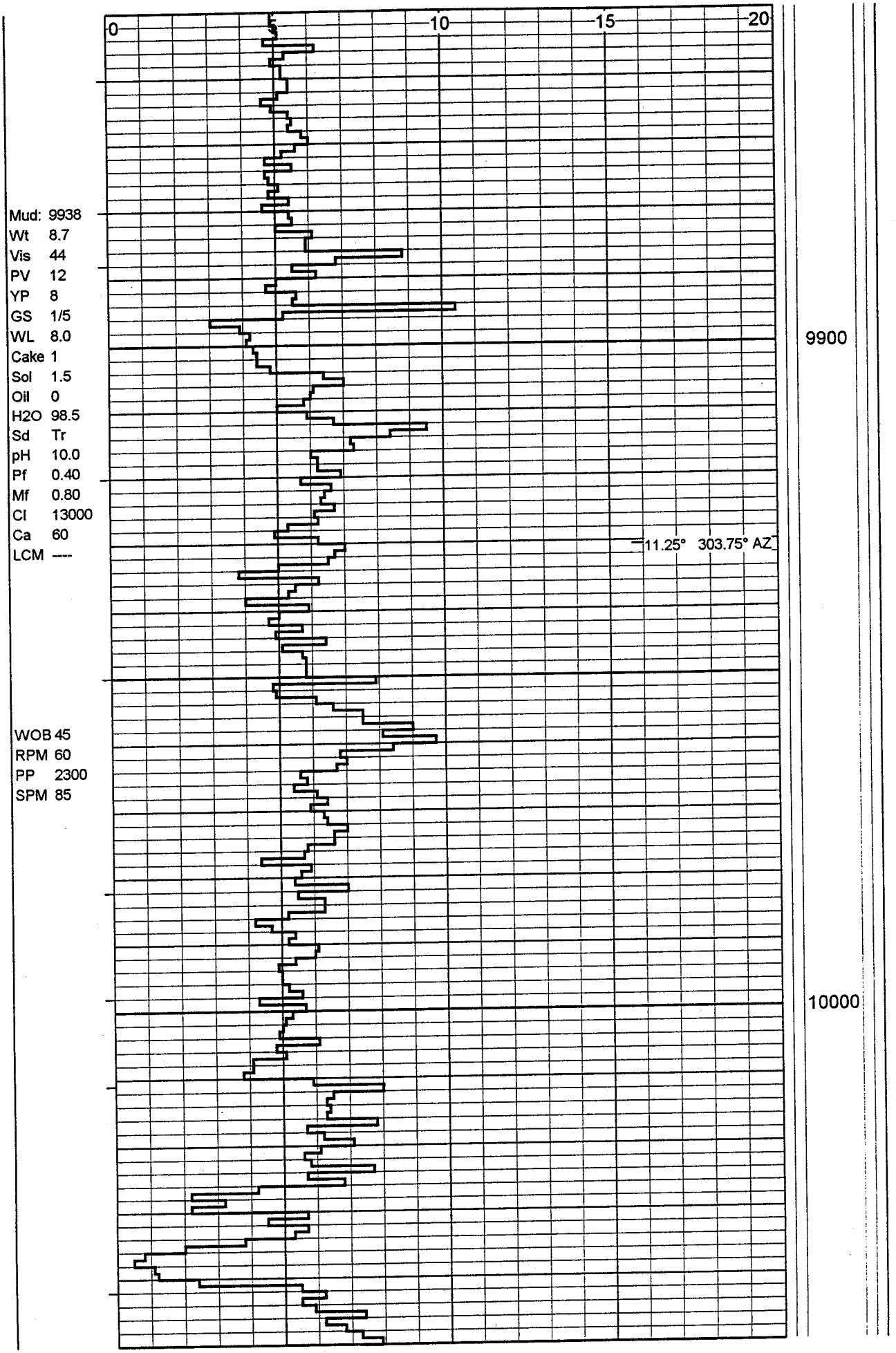
PP 2300
SPM 90

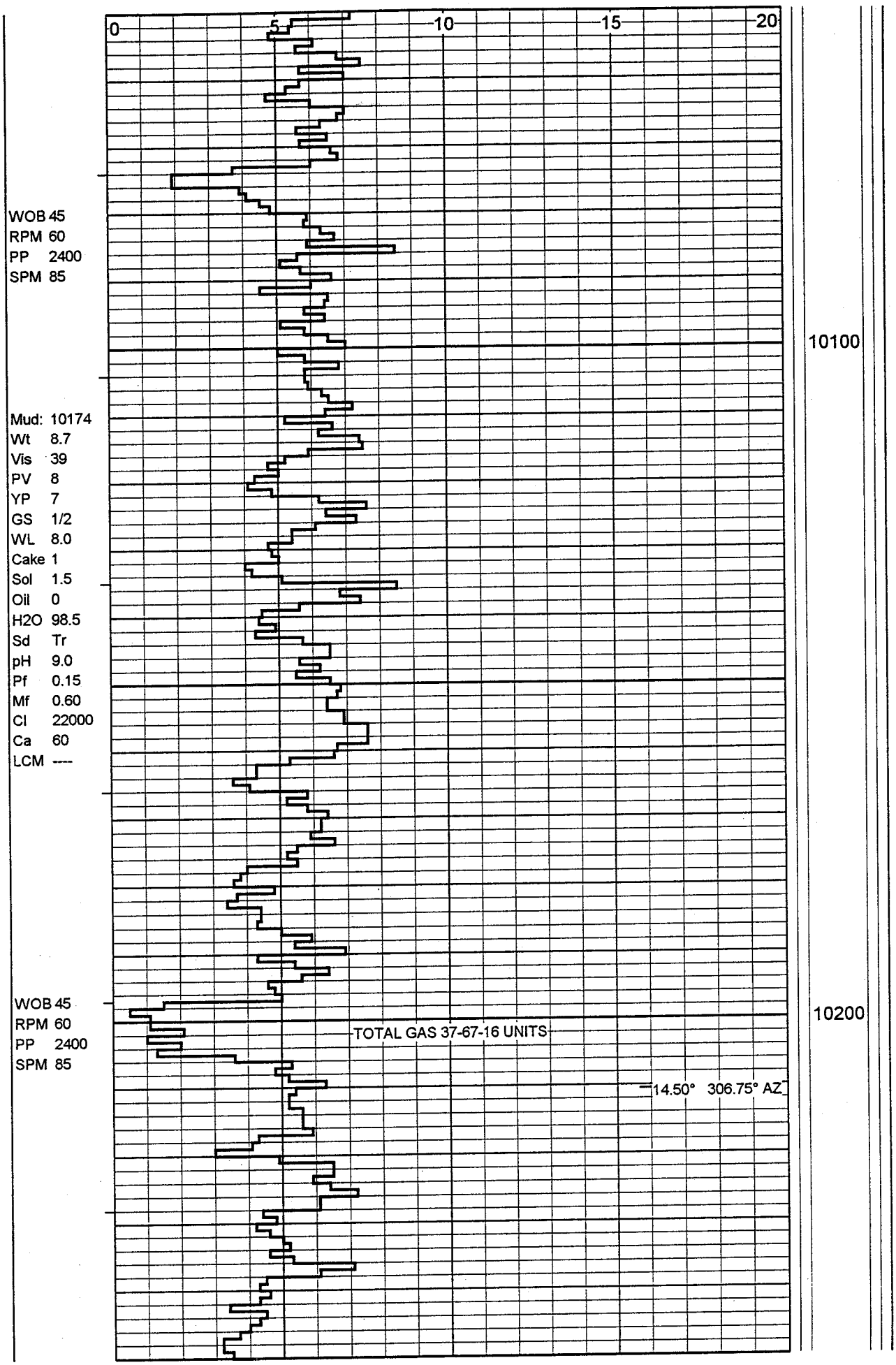
WOB 45
RPM 60
PP 2100
SPM 85

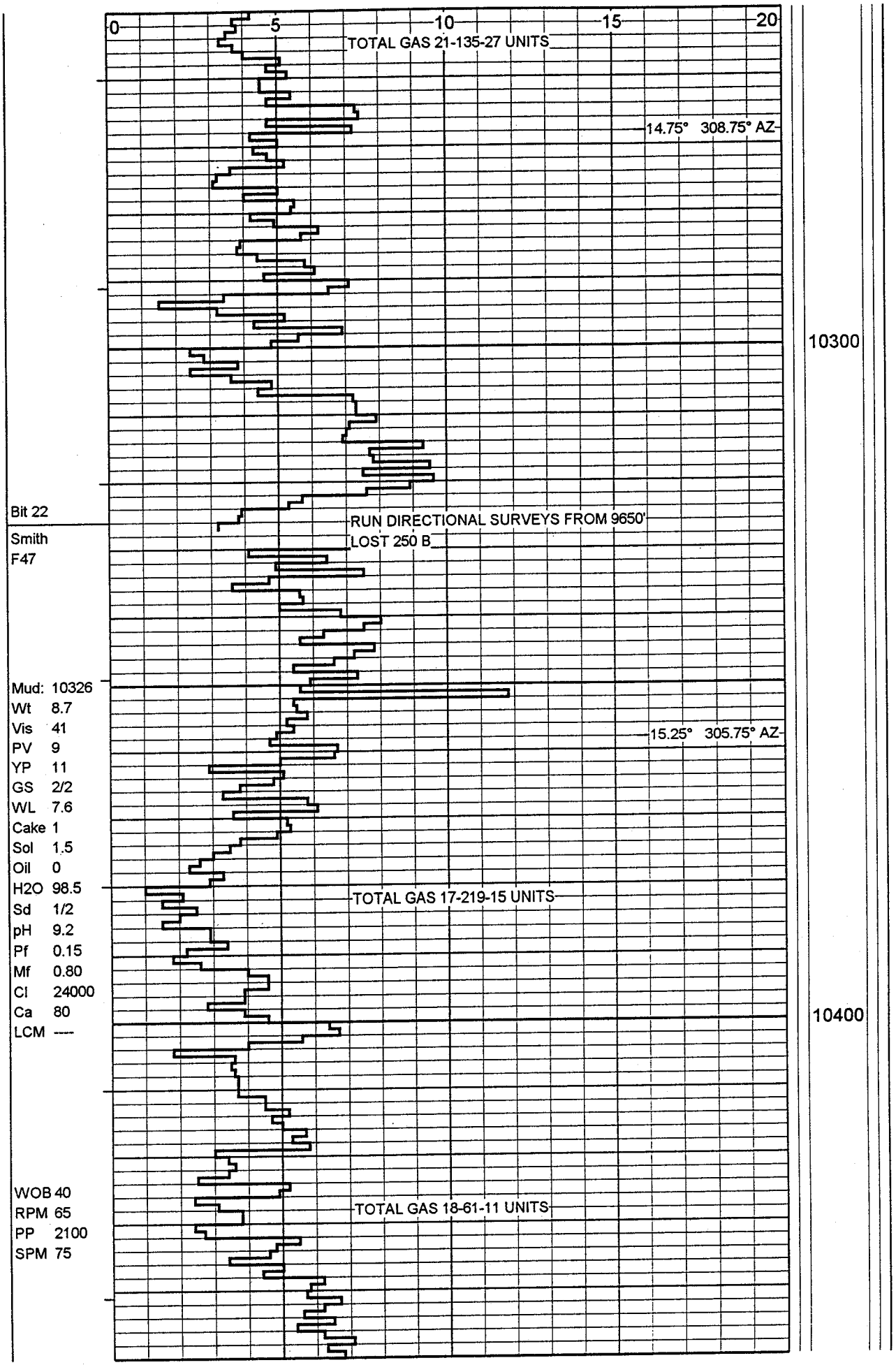
Mud: 9668
Wt 8.6
Vis 52
PV 15
YP 10
GS 2/8
WL 8.0
Cake 1
Sol 1.9
Oil 0
H2O 98.1
Sd Tr
pH 10.5
Pf 0.60
Mf 1.20
Cl 3000
Ca 40
LCM ----

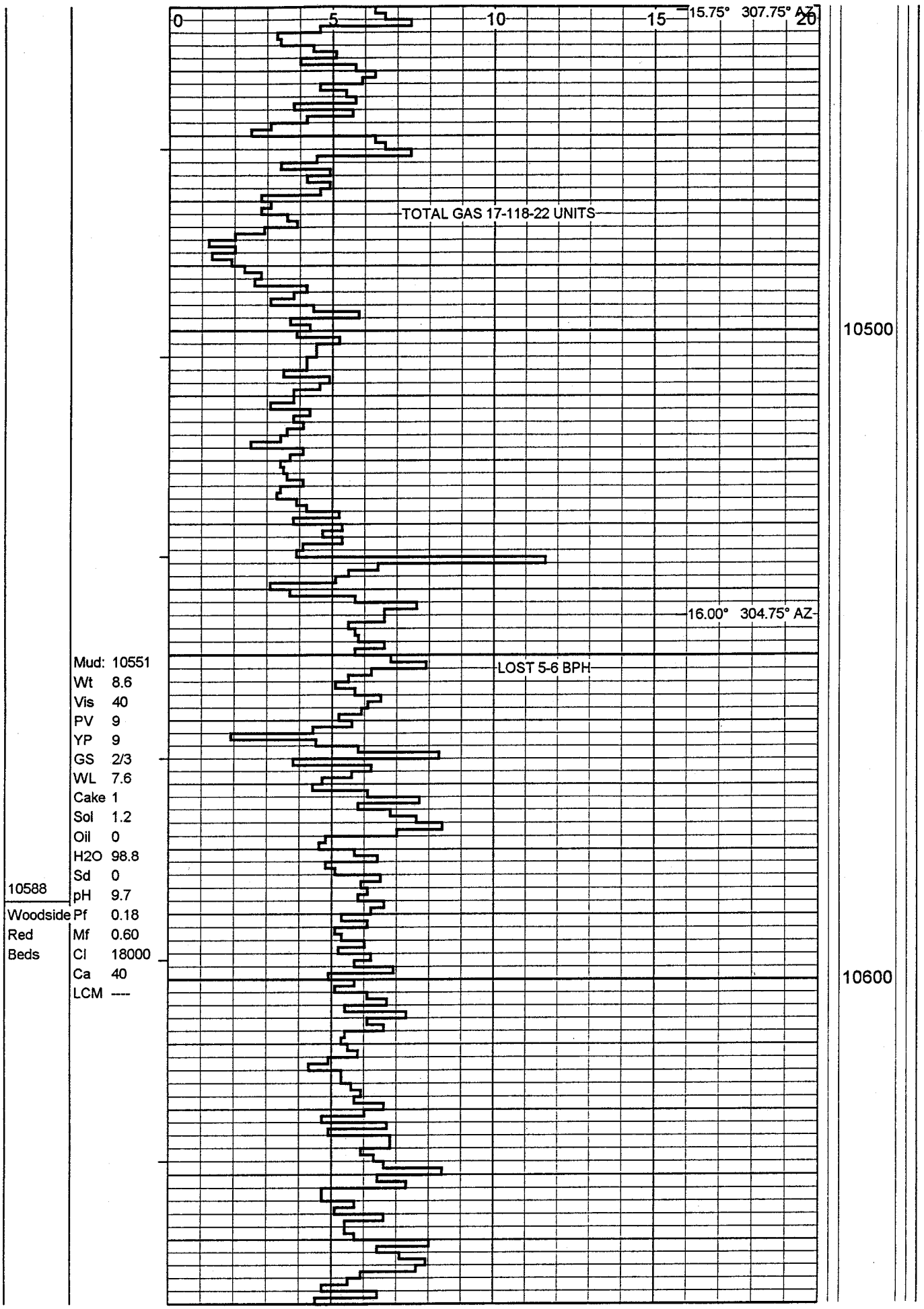
WOB 45
RPM 60
PP 2100
SPM 85



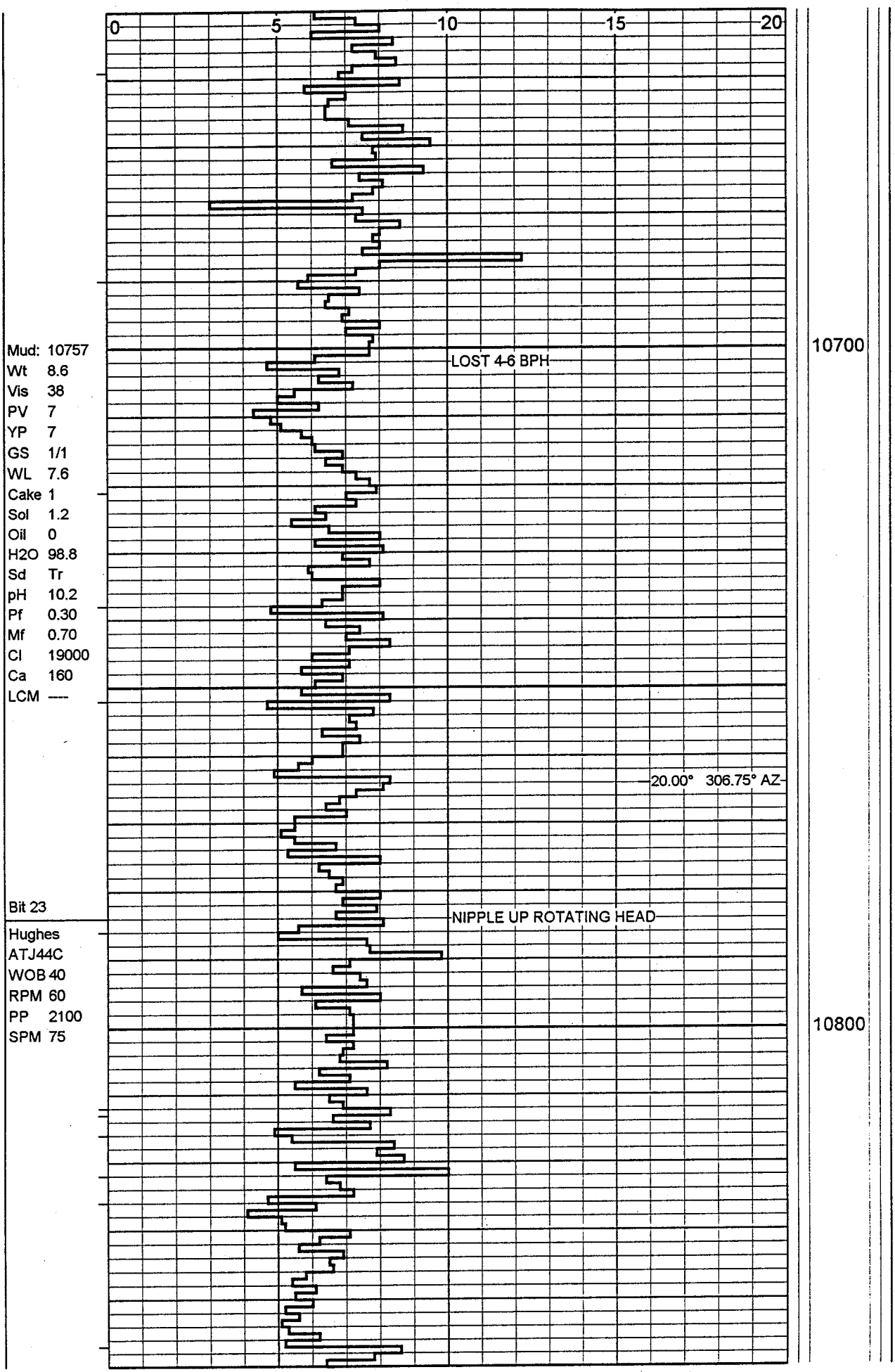

0
5
10
15
20
Mud: 9938
Wt 8.7
Vis 44
PV 12
YP 8
GS 1/5
WL 8.0
Cake 1
Sol 1.5
Oil 0
H2O 98.5
Sd Tr
pH 10.0
Pf 0.40
Mf 0.80
Cl 13000
Ca 60
LCM ----
11.25° 303.75° AZ
WOB 45
RPM 60
PP 2300
SPM 85
9900
10000

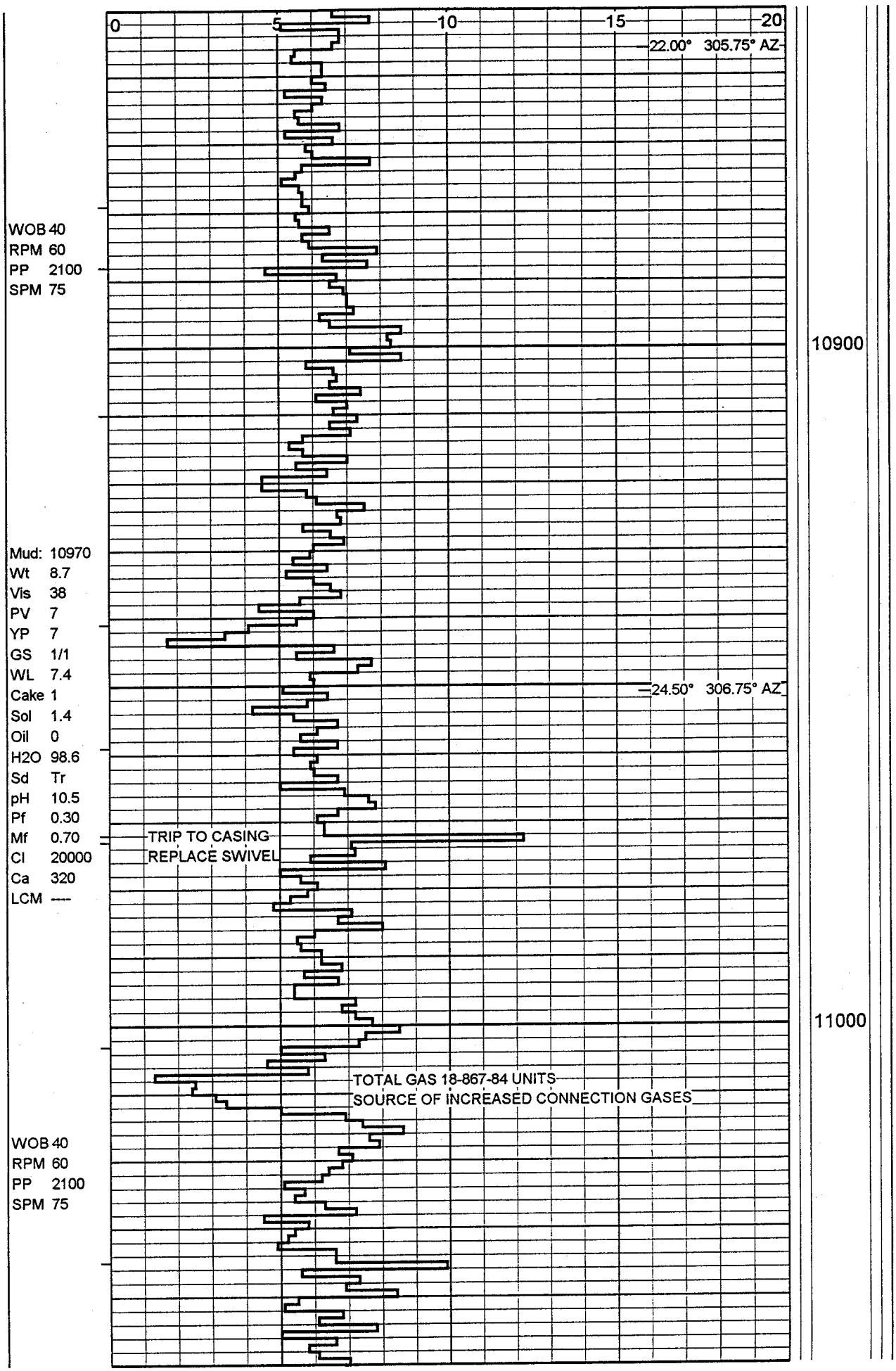

0
5
10
15
20
WOB 45
RPM 60
PP 2400
SPM 85
10100
Mud: 10174
Wt 8.7
Vis 39
PV 8
YP 7
GS 1/2
WL 8.0
Cake 1
Sol 1.5
Oil 0
H2O 98.5
Sd Tr
pH 9.0
Pf 0.15
Mf 0.60
Cl 22000
Ca 60
LCM ----
WOB 45
RPM 60
PP 2400
SPM 85
10200
TOTAL GAS 37-67-16 UNITS
14.50° 306.75° AZ

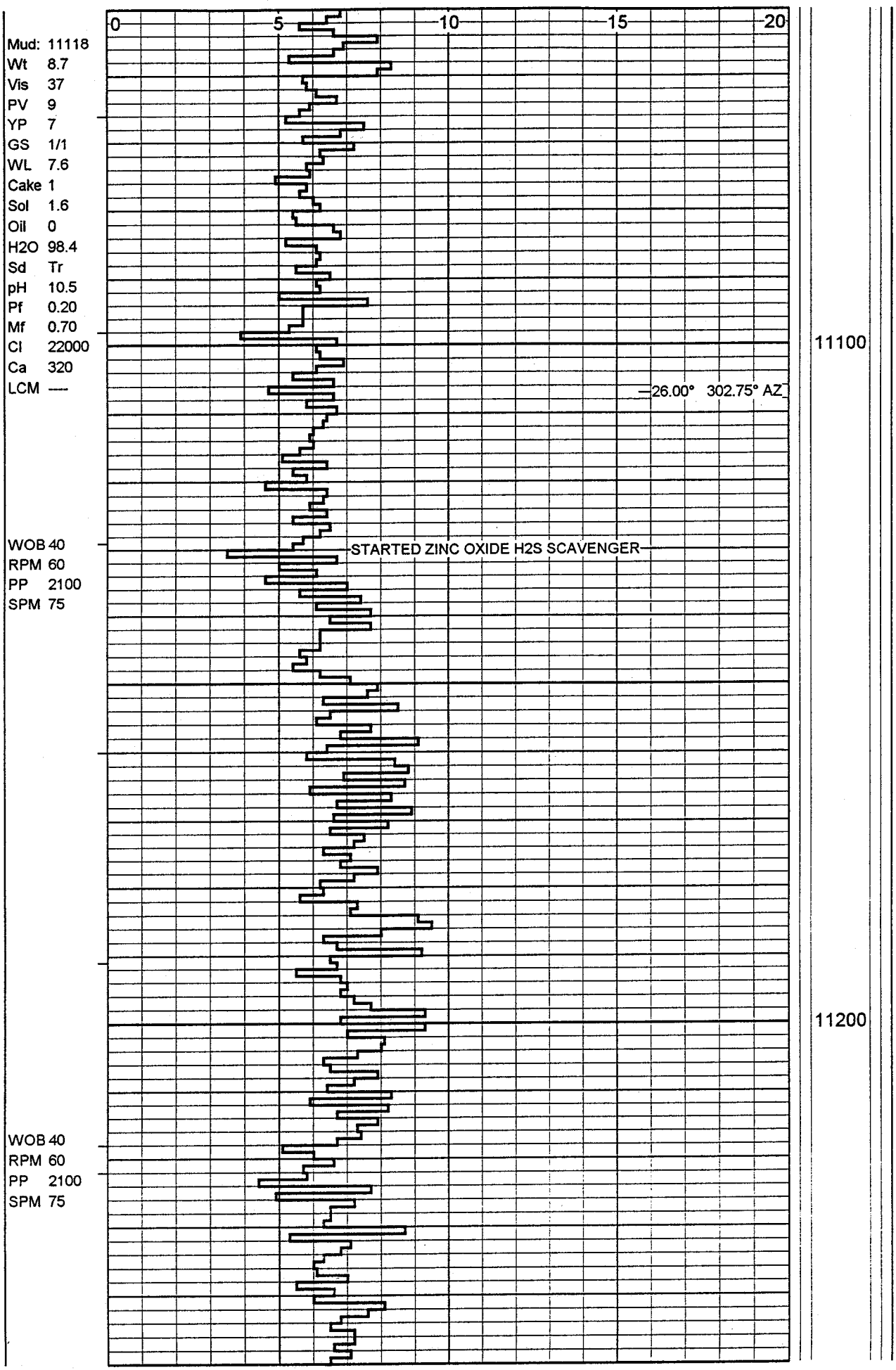

0
5
10
15
20
TOTAL GAS 21-135-27 UNITS
14.75° 308.75° AZ
10300
Bit 22
Smith
F47
RUN DIRECTIONAL SURVEYS FROM 9650'
LOST 250 B
Mud: 10326
Wt 8.7
Vis 41
PV 9
YP 11
GS 2/2
WL 7.6
Cake 1
Sol 1.5
Oil 0
H2O 98.5
Sd 1/2
pH 9.2
Pf 0.15
Mf 0.80
Cl 24000
Ca 80
LCM ----
15.25° 305.75° AZ
TOTAL GAS 17-219-15 UNITS
10400
WOB 40
RPM 65
PP 2100
SPM 75
TOTAL GAS 18-61-11 UNITS



Mud:	10551
Wt	8.6
Vis	40
PV	9
YP	9
GS	2/3
WL	7.6
Cake	1
Sol	1.2
Oil	0
H2O	98.8
Sd	0
pH	9.7
Pf	0.18
Mf	0.60
Cl	18000
Ca	40
LCM	----


0
5
10
15
20
Mud: 10757
Wt 8.6
Vis 38
PV 7
YP 7
GS 1/1
WL 7.6
Cake 1
Sol 1.2
Oil 0
H2O 98.8
Sd Tr
pH 10.2
Pf 0.30
Mf 0.70
Cl 19000
Ca 160
LCM ----
LOST 4-6 BPH
10700
20.00° 306.75° AZ
Bit 23
Hughes
ATJ44C
WOB 40
RPM 60
PP 2100
SPM 75
NIPPLE UP ROTATING HEAD
10800

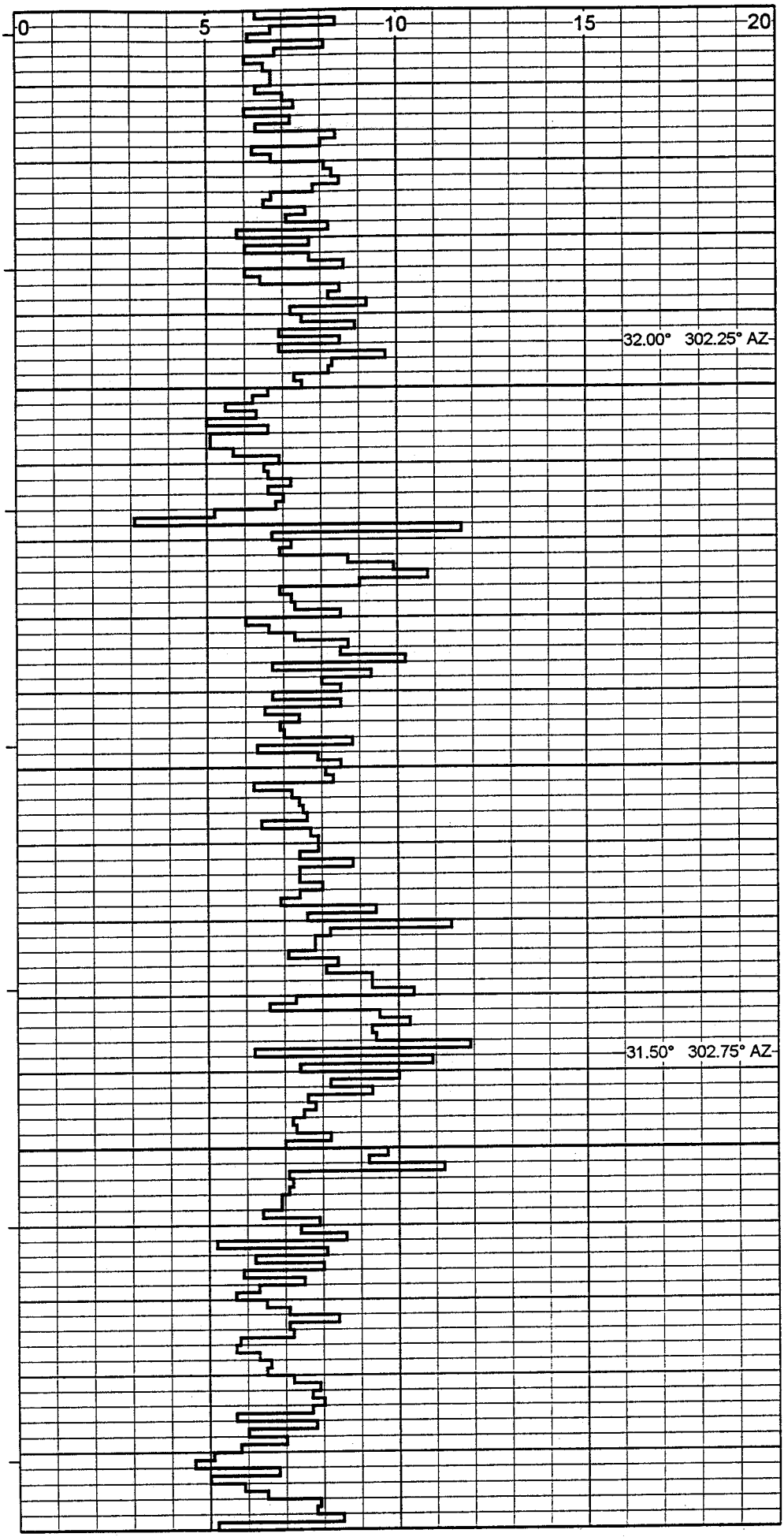

0
5
10
15
20
22.00° 305.75° AZ
WOB 40
RPM 60
PP 2100
SPM 75
10900
Mud: 10970
Wt 8.7
Vis 38
PV 7
YP 7
GS 1/1
WL 7.4
Cake 1
Sol 1.4
Oil 0
H2O 98.6
Sd Tr
pH 10.5
Pf 0.30
Mf 0.70
Cl 20000
Ca 320
LCM ----
24.50° 306.75° AZ
TRIP TO CASING
REPLACE SWIVEL
11000
TOTAL GAS 18-867-84 UNITS
SOURCE OF INCREASED CONNECTION GASES
WOB 40
RPM 60
PP 2100
SPM 75


0
5
10
15
20
Mud: 11118
Wt 8.7
Vis 37
PV 9
YP 7
GS 1/1
WL 7.6
Cake 1
Sol 1.6
Oil 0
H2O 98.4
Sd Tr
pH 10.5
Pf 0.20
Mf 0.70
Cl 22000
Ca 320
LCM ----
11100
26.00° 302.75° AZ
WOB 40
RPM 60
PP 2100
SPM 75
STARTED ZINC OXIDE H2S SCAVENGER
11200
WOB 40
RPM 60
PP 2100
SPM 75

Mud: 11275
Wt 8.8
Vis 38
PV 8
YP 8
GS 1/1
WL 7.8
Cake 1
Sol 2.0
Oil 0
H2O 98.0
Sd Tr
pH 10.5
Pf 0.20
Mf 0.50
Cl 21000
Ca 400
LCM ----

WOB 40
RPM 60
PP 2100
SPM 75

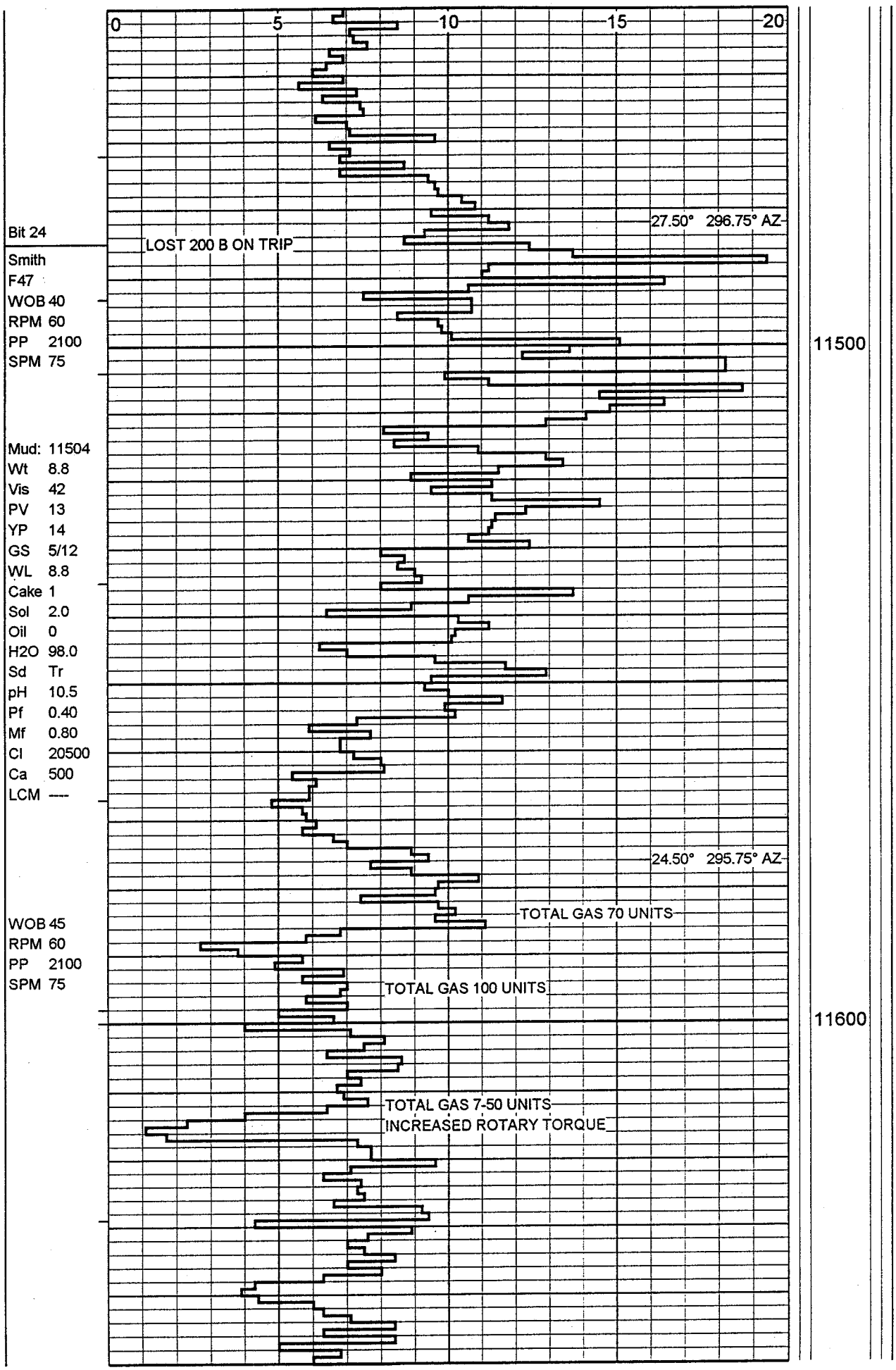
WOB 40
RPM 60
PP 2100
SPM 75

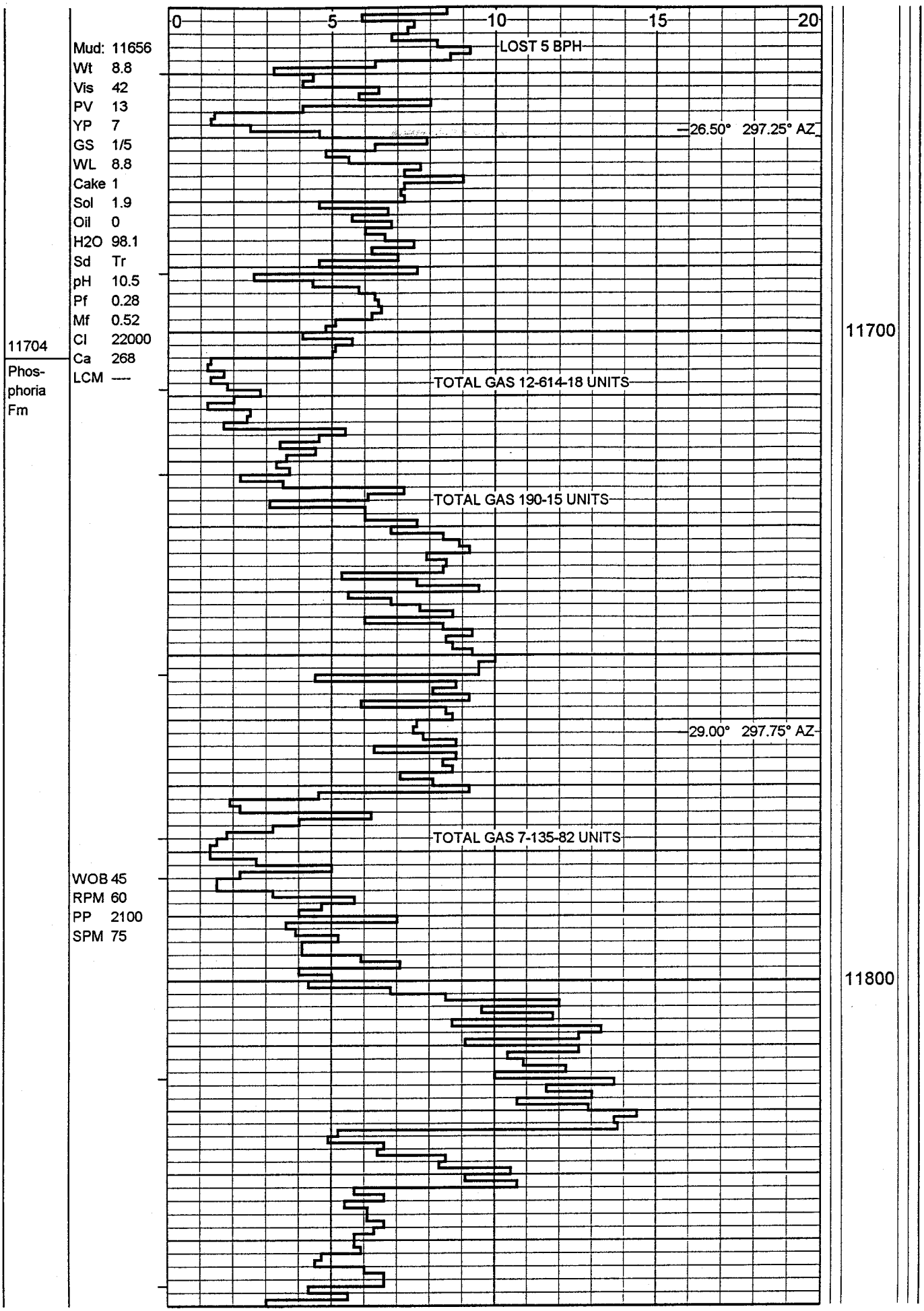


11300

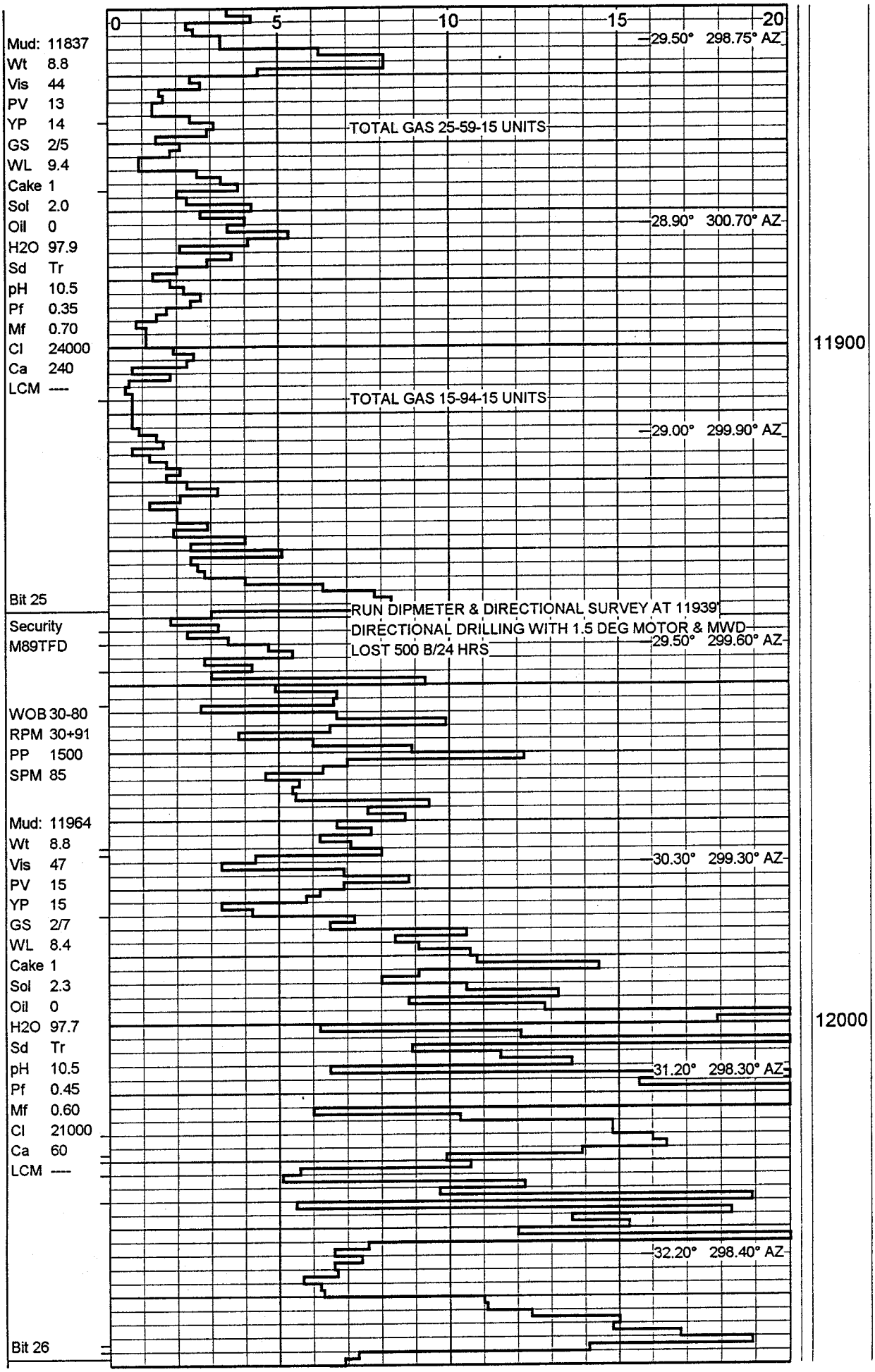
11400

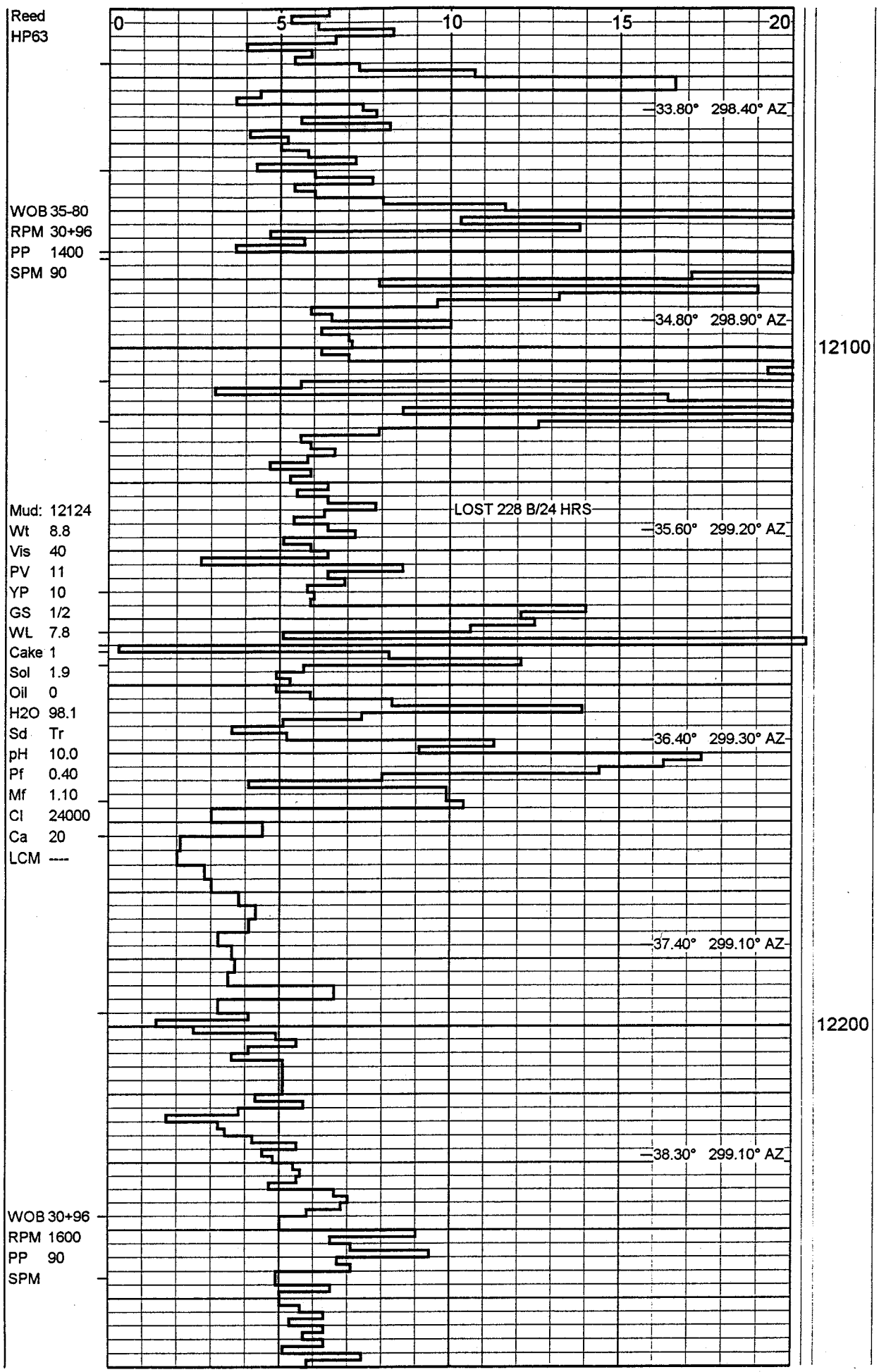
11400
Dinwoody Fm

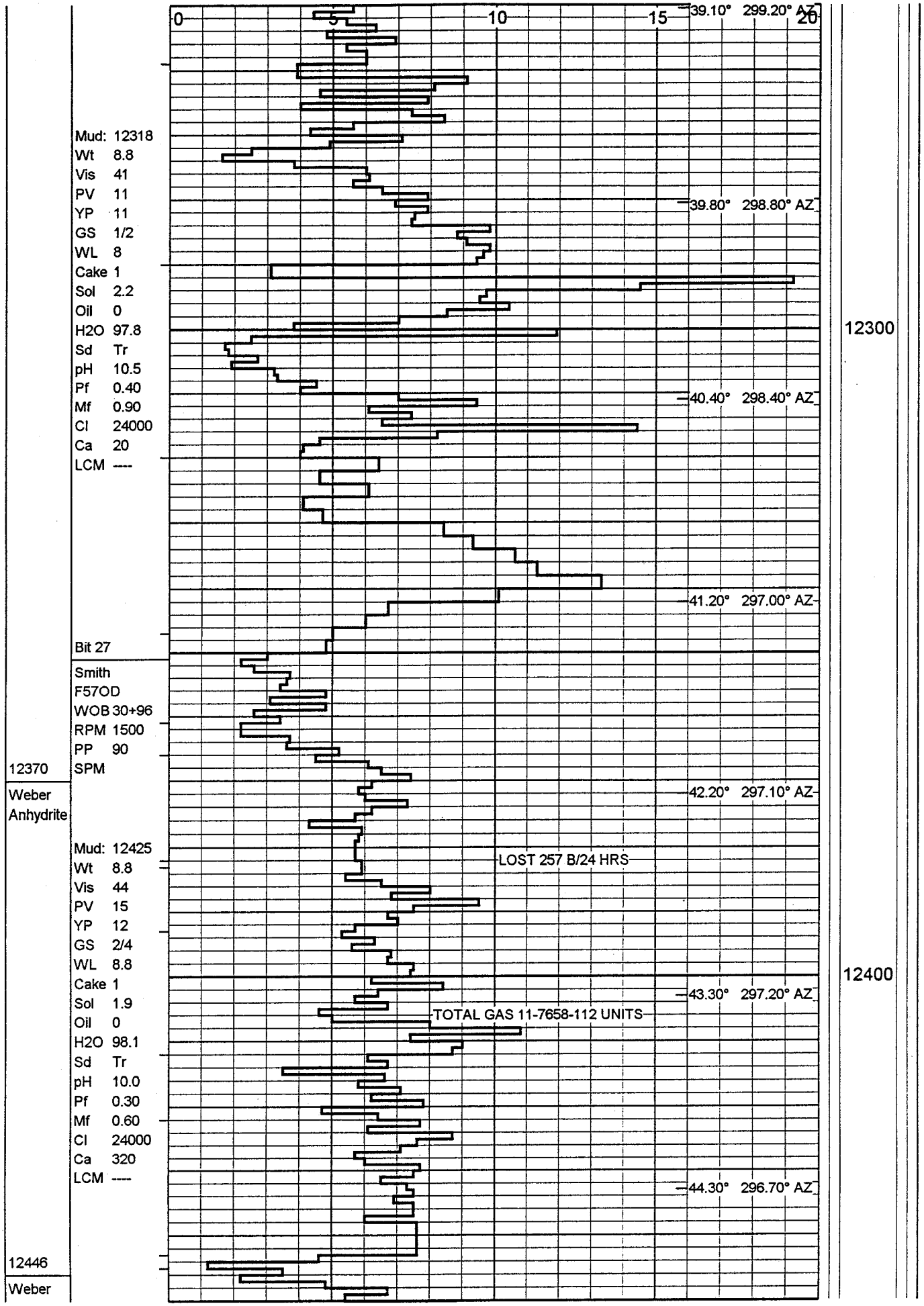

0
5
10
15
20
Bit 24
Smith
F47
WOB 40
RPM 60
PP 2100
SPM 75
Mud: 11504
Wt 8.8
Vis 42
PV 13
YP 14
GS 5/12
WL 8.8
Cake 1
Sol 2.0
Oil 0
H2O 98.0
Sd Tr
pH 10.5
Pf 0.40
Mf 0.80
Cl 20500
Ca 500
LCM ----
WOB 45
RPM 60
PP 2100
SPM 75
LOST 200 B ON TRIP
27.50° 296.75° AZ
24.50° 295.75° AZ
TOTAL GAS 70 UNITS
TOTAL GAS 100 UNITS
TOTAL GAS 7-50 UNITS
INCREASED ROTARY TORQUE
11500
11600

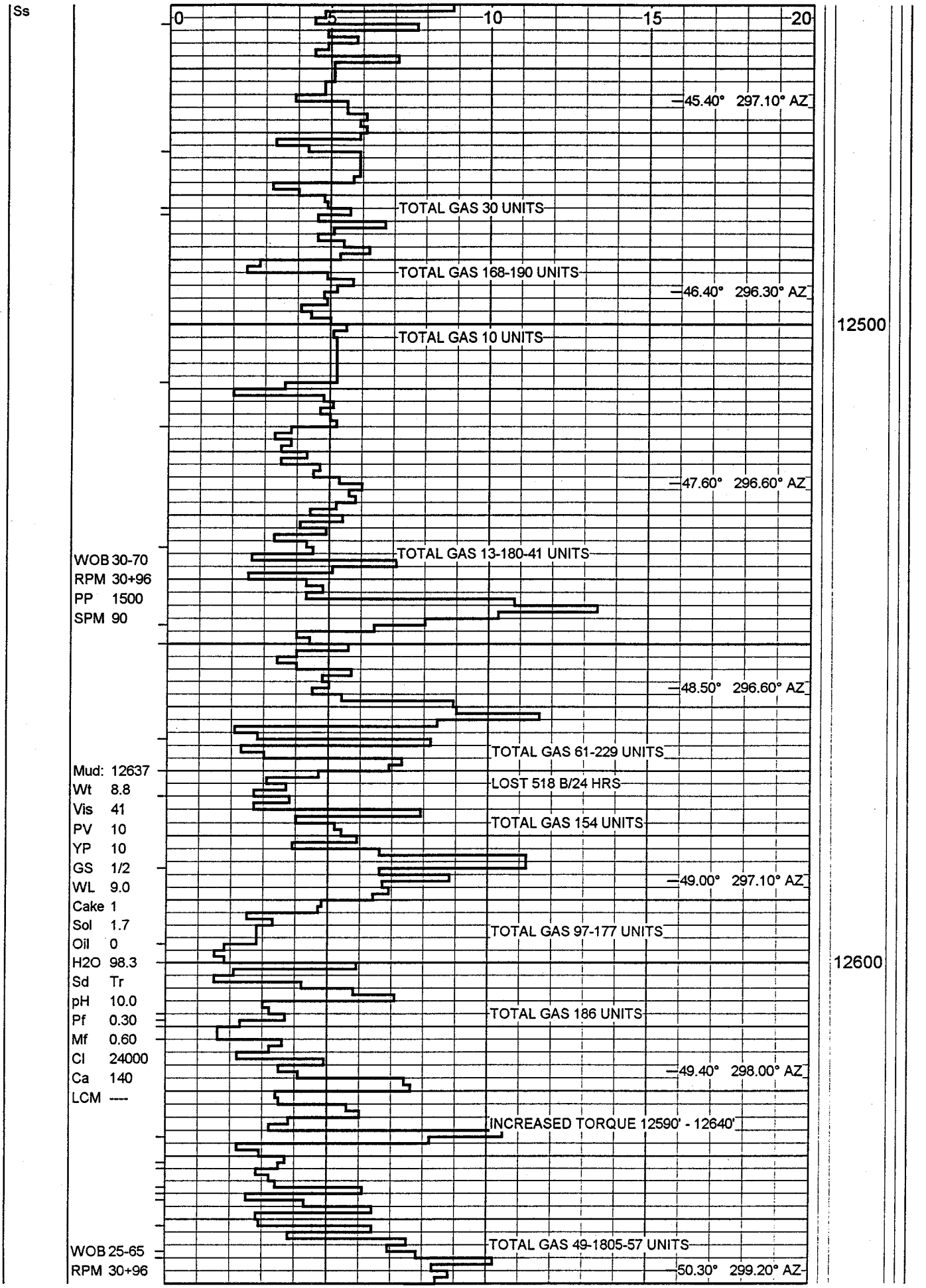


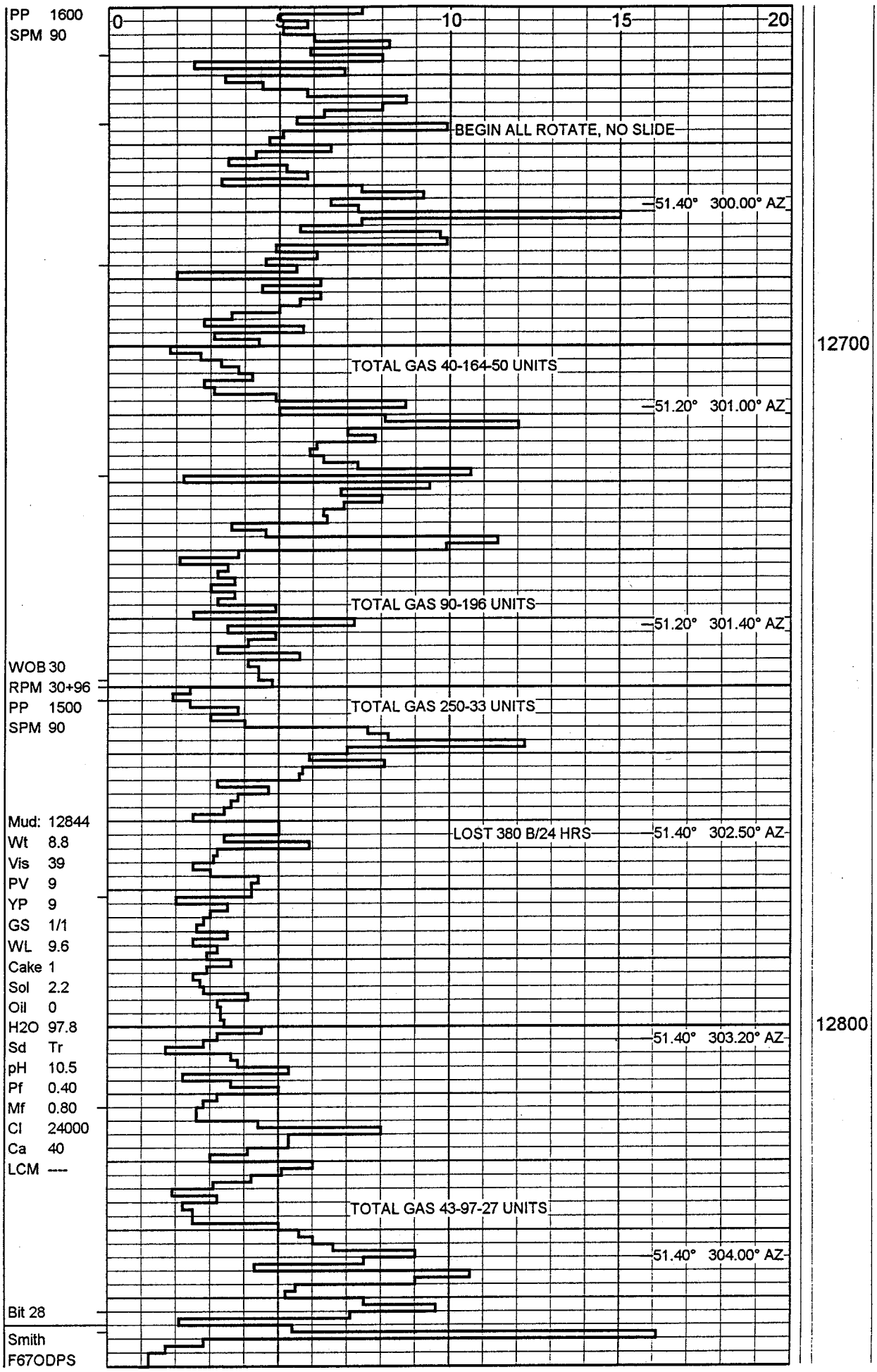
0
5
10
15
20
Mud: 11656
Wt 8.8
Vis 42
PV 13
YP 7
GS 1/5
WL 8.8
Cake 1
Sol 1.9
Oil 0
H2O 98.1
Sd Tr
pH 10.5
Pf 0.28
Mf 0.52
Cl 22000
Ca 268
LCM ----
11704
Phos-
phoria
Fm
LOST 5 BPH
26.50° 297.25° AZ
11700
TOTAL GAS 12-614-18 UNITS
TOTAL GAS 190-15 UNITS
29.00° 297.75° AZ
TOTAL GAS 7-135-82 UNITS
WOB 45
RPM 60
PP 2100
SPM 75
11800

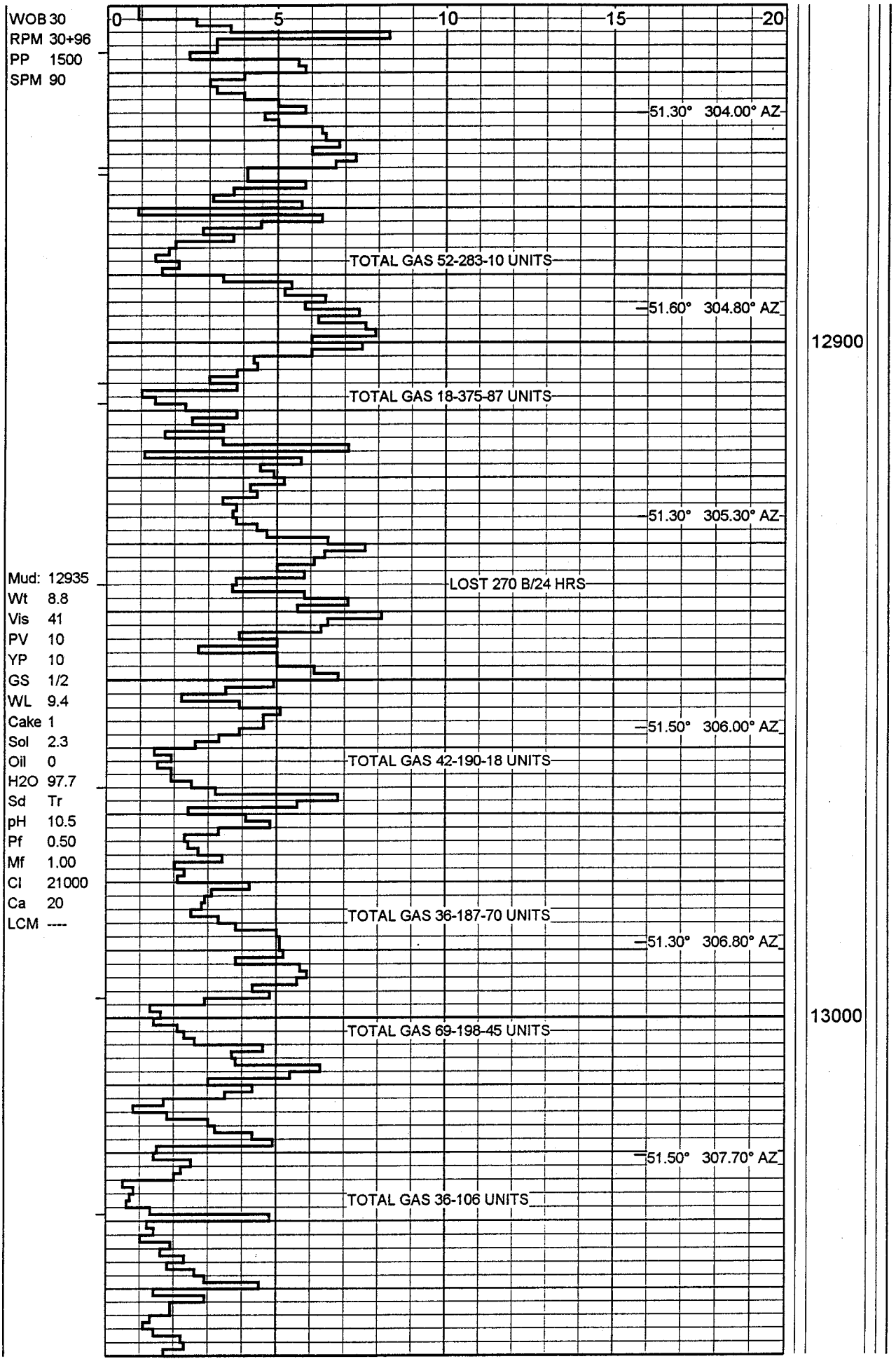

0
5
10
15
20
Mud: 11837
Wt 8.8
Vis 44
PV 13
YP 14
GS 2/5
WL 9.4
Cake 1
Sol 2.0
Oil 0
H2O 97.9
Sd Tr
pH 10.5
Pf 0.35
Mf 0.70
Cl 24000
Ca 240
LCM ----
29.50° 298.75° AZ
TOTAL GAS 25-59-15 UNITS
28.90° 300.70° AZ
11900
TOTAL GAS 15-94-15 UNITS
29.00° 299.90° AZ
Bit 25
RUN DIPMETER & DIRECTIONAL SURVEY AT 11939'
Security
M89TFD
DIRECTIONAL DRILLING WITH 1.5 DEG MOTOR & MWD
LOST 500 B/24 HRS
29.50° 299.60° AZ
WOB 30-80
RPM 30+91
PP 1500
SPM 85
Mud: 11964
Wt 8.8
Vis 47
PV 15
YP 15
GS 2/7
WL 8.4
Cake 1
Sol 2.3
Oil 0
H2O 97.7
Sd Tr
pH 10.5
Pf 0.45
Mf 0.60
Cl 21000
Ca 60
LCM ----
30.30° 299.30° AZ
12000
31.20° 298.30° AZ
32.20° 298.40° AZ
Bit 26

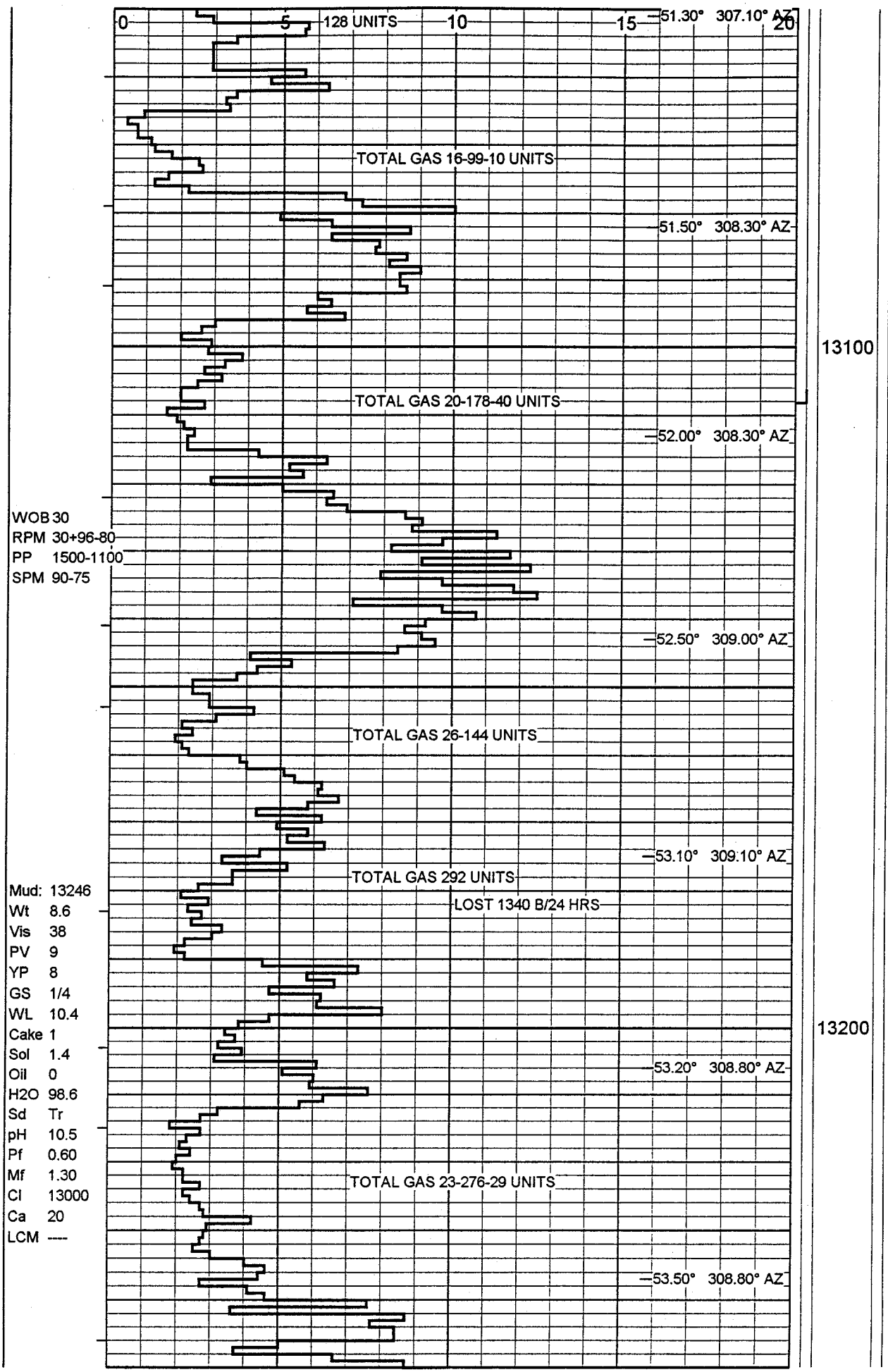

Reed
HP63
0
5
10
15
20
33.80° 298.40° AZ
WOB 35-80
RPM 30+96
PP 1400
SPM 90
34.80° 298.90° AZ
12100
Mud: 12124
Wt 8.8
Vis 40
PV 11
YP 10
GS 1/2
WL 7.8
Cake 1
Sol 1.9
Oil 0
H2O 98.1
Sd Tr
pH 10.0
Pf 0.40
Mf 1.10
Cl 24000
Ca 20
LCM ----
LOST 228 B/24 HRS
35.60° 299.20° AZ
36.40° 299.30° AZ
37.40° 299.10° AZ
12200
38.30° 299.10° AZ
WOB 30+96
RPM 1600
PP 90
SPM

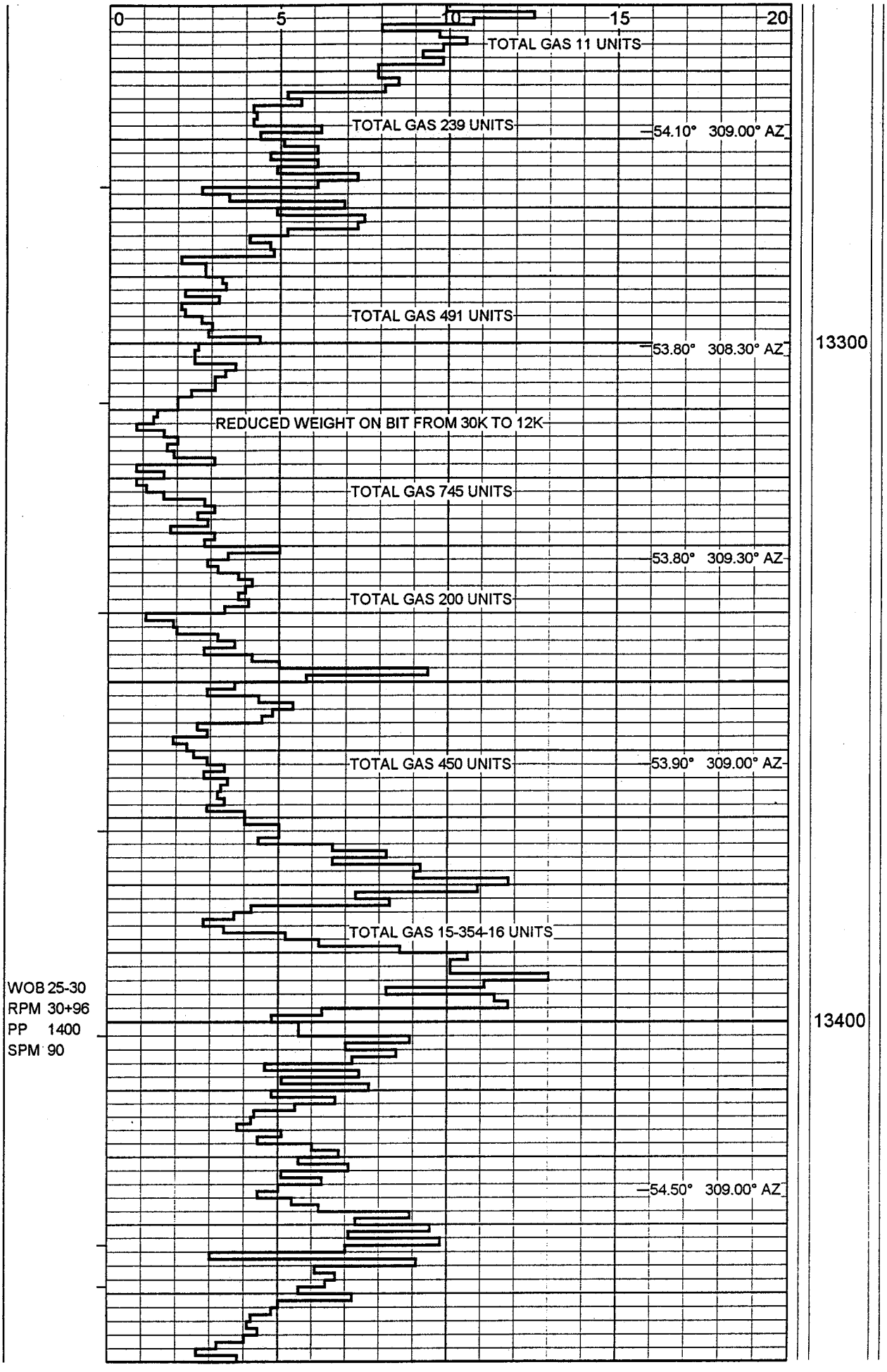

0
5
10
15
20
39.10° 299.20° AZ
39.80° 298.80° AZ
40.40° 298.40° AZ
41.20° 297.00° AZ
42.20° 297.10° AZ
43.30° 297.20° AZ
44.30° 296.70° AZ
12300
12400
Mud: 12318
Wt 8.8
Vis 41
PV 11
YP 11
GS 1/2
WL 8
Cake 1
Sol 2.2
Oil 0
H2O 97.8
Sd Tr
pH 10.5
Pf 0.40
Mf 0.90
Cl 24000
Ca 20
LCM ----
Bit 27
Smith
F57OD
WOB 30+96
RPM 1500
PP 90
SPM
12370
Weber
Anhydrite
Mud: 12425
Wt 8.8
Vis 44
PV 15
YP 12
GS 2/4
WL 8.8
Cake 1
Sol 1.9
Oil 0
H2O 98.1
Sd Tr
pH 10.0
Pf 0.30
Mf 0.60
Cl 24000
Ca 320
LCM ----
LOST 257 B/24 HRS
TOTAL GAS 11-7658-112 UNITS
12446
Weber

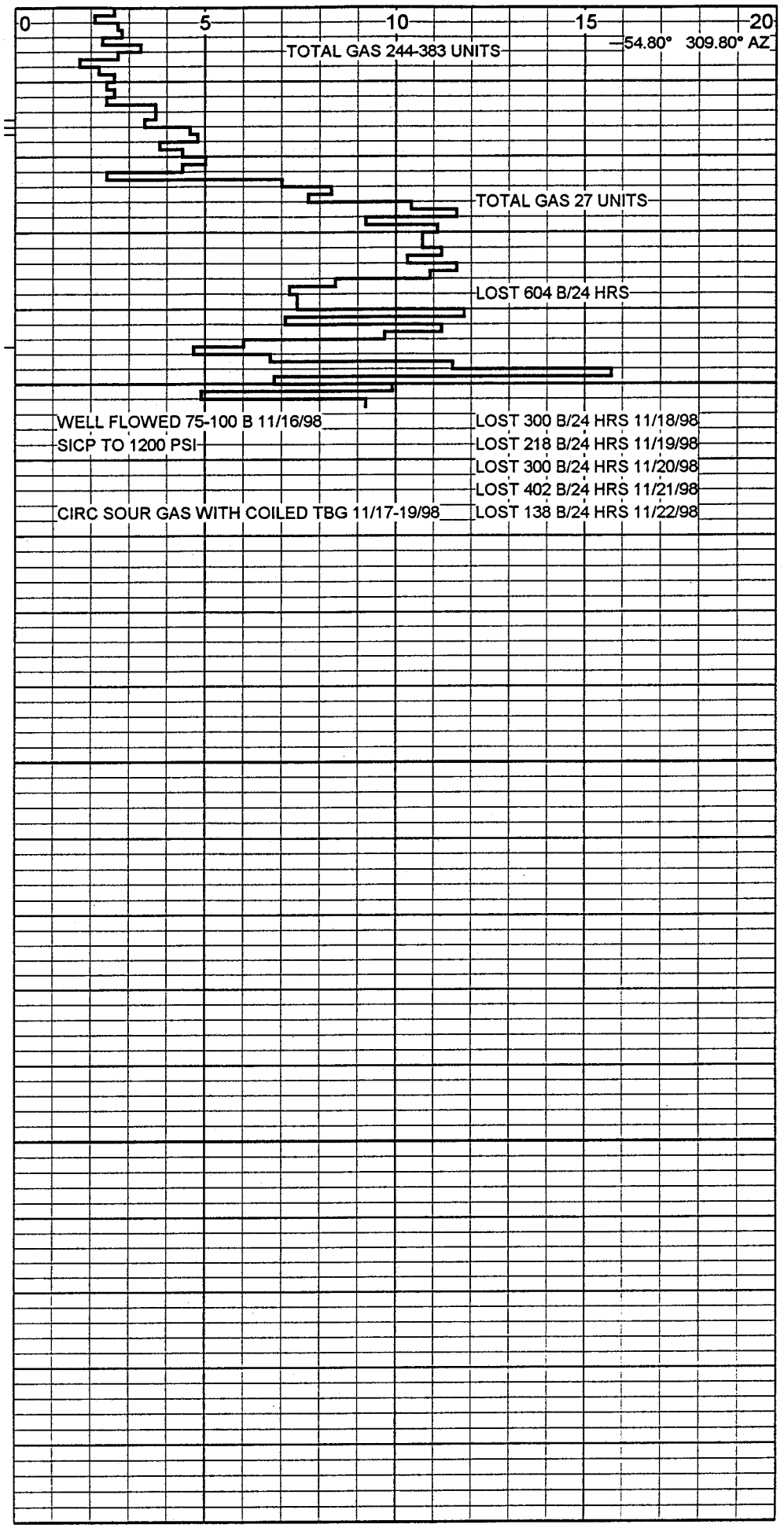

Ss
0
5
10
15
20
45.40° 297.10° AZ
TOTAL GAS 30 UNITS
TOTAL GAS 168-190 UNITS
46.40° 296.30° AZ
12500
TOTAL GAS 10 UNITS
47.60° 296.60° AZ
WOB 30-70
RPM 30+96
PP 1500
SPM 90
TOTAL GAS 13-180-41 UNITS
48.50° 296.60° AZ
TOTAL GAS 61-229 UNITS
Mud: 12637
Wt 8.8
Vis 41
PV 10
YP 10
GS 1/2
WL 9.0
Cake 1
Sol 1.7
Oil 0
H2O 98.3
Sd Tr
pH 10.0
Pf 0.30
Mf 0.60
Cl 24000
Ca 140
LCM ----
LOST 518 B/24 HRS
TOTAL GAS 154 UNITS
49.00° 297.10° AZ
TOTAL GAS 97-177 UNITS
12600
TOTAL GAS 186 UNITS
49.40° 298.00° AZ
INCREASED TORQUE 12590' - 12640'
TOTAL GAS 49-1805-57 UNITS
WOB 25-65
RPM 30+96
50.30° 299.20° AZ


PP 1600
SPM 90
0
5
10
15
20
BEGIN ALL ROTATE, NO SLIDE
51.40° 300.00° AZ
12700
TOTAL GAS 40-164-50 UNITS
51.20° 301.00° AZ
TOTAL GAS 90-196 UNITS
51.20° 301.40° AZ
WOB 30
RPM 30+96
PP 1500
SPM 90
TOTAL GAS 250-33 UNITS
Mud: 12844
Wt 8.8
Vis 39
PV 9
YP 9
GS 1/1
WL 9.6
Cake 1
Sol 2.2
Oil 0
H2O 97.8
Sd Tr
pH 10.5
Pf 0.40
Mf 0.80
Cl 24000
Ca 40
LCM ----
LOST 380 B/24 HRS
51.40° 302.50° AZ
51.40° 303.20° AZ
12800
TOTAL GAS 43-97-27 UNITS
51.40° 304.00° AZ
Bit 28
Smith
F67ODPS


WOB 30
RPM 30+96
PP 1500
SPM 90
0
5
10
15
20
51.30° 304.00° AZ
TOTAL GAS 52-283-10 UNITS
51.60° 304.80° AZ
12900
TOTAL GAS 18-375-87 UNITS
51.30° 305.30° AZ
Mud: 12935
Wt 8.8
Vis 41
PV 10
YP 10
GS 1/2
WL 9.4
Cake 1
Sol 2.3
Oil 0
H2O 97.7
Sd Tr
pH 10.5
Pf 0.50
Mf 1.00
Cl 21000
Ca 20
LCM ----
LOST 270 B/24 HRS
51.50° 306.00° AZ
TOTAL GAS 42-190-18 UNITS
TOTAL GAS 36-187-70 UNITS
51.30° 306.80° AZ
13000
TOTAL GAS 69-198-45 UNITS
51.50° 307.70° AZ
TOTAL GAS 36-106 UNITS


0
5
128 UNITS
10
15
51.30° 307.10° AZ
20
TOTAL GAS 16-99-10 UNITS
51.50° 308.30° AZ
13100
TOTAL GAS 20-178-40 UNITS
52.00° 308.30° AZ
WOB 30
RPM 30+96-80
PP 1500-1100
SPM 90-75
52.50° 309.00° AZ
TOTAL GAS 26-144 UNITS
53.10° 309.10° AZ
TOTAL GAS 292 UNITS
LOST 1340 B/24 HRS
Mud: 13246
Wt 8.6
Vis 38
PV 9
YP 8
GS 1/4
WL 10.4
Cake 1
Sol 1.4
Oil 0
H2O 98.6
Sd Tr
pH 10.5
Pf 0.60
Mf 1.30
Cl 13000
Ca 20
LCM ----
13200
53.20° 308.80° AZ
TOTAL GAS 23-276-29 UNITS
53.50° 308.80° AZ


0
5
10
15
20
TOTAL GAS 11 UNITS
TOTAL GAS 239 UNITS
54.10° 309.00° AZ
TOTAL GAS 491 UNITS
53.80° 308.30° AZ
13300
REDUCED WEIGHT ON BIT FROM 30K TO 12K
TOTAL GAS 745 UNITS
53.80° 309.30° AZ
TOTAL GAS 200 UNITS
TOTAL GAS 450 UNITS
53.90° 309.00° AZ
TOTAL GAS 15-354-16 UNITS
WOB 25-30
RPM 30+96
PP 1400
SPM 90
13400
54.50° 309.00° AZ



13503
Rig TD

Mud:	13487
Wt	8.5
Vis	48
PV	15
YP	10
GS	3/9
WL	10.0
Cake	1
Sol	0.4
Oil	0
H2O	99.6
Sd	Tr
pH	10.5
Pf	0.60
Mf	1.00
Cl	13000
Ca	60
LCM	----

DOUBLE JACK TESTING & SERVICES, INC.
Phone (307) 789-9213

RECEIVED
FEB 11 1999
DIV. OF OIL, GAS & MINING

B.O.P. TEST REPORT

B.O.P. TEST PERFORMED ON (DATE) 10-1-98

OIL COMPANY Anschutz corp

WELL NAME & NUMBER Anschutz Ranch Deep H-26 43043 30320

SECTION 26

CONFIDENTIAL

TOWNSHIP 4N

RANGE 7E

COUNTY & STATE Summit ut

DRILLING CONTRACTOR SST 88

OIL COMPANY SITE REPRESENTATIVE Bob Capper

RIG TOOL PUSHER Morris Terry

TESTED OUT OF Evanston

NOTIFIED PRIOR TO TEST —

COPIES OF THIS TEST REPORT SENT TO: BLM S.L.C.
ST of ut.

ORIGINAL CHART & TEST REPORT ON FILE AT:

DOUBLE JACK TESTING & SERVICES, INC.
P O BOX 2097
EVANSTON, WY 82930

TESTED BY: Darren Merrick

Double Jack Testing & Services Inc.

FIELD TICKET
№ 15433

Accounting Office: P.O. Box 516 Shoshoni, WY 82649 • (307) 876-9390

Field Operations: Shoshoni, WY (307) 876-2308
Rock Springs, WY (307) 382-4020
Evanston, WY (307) 789-9213
Big Piney, WY (307) 276-5265
Vernal, UT (801) 781-0448

DATE 10-1-98
☑ OPERATOR Anschutz
☐ CONTRACTOR SST 88
WELL NAME Anschutz Ranch Deep H-26

COUNTY	STATE	SECTION	TOWNSHIP	RANGE
summit	ut	26	4N	7E

Items Tested:

	LOW TEST PSI	TIME HELD MINUTES	HIGHTEST PSI	TIME HELD MINUTES
Top Pipe Rams	250	5	5000	10
Bottom Pipe Rams				
Blind Rams	250	5	5000	10
Annular B.O.P.	250	5	2500	10
Choke Manifold	250	5	5000	10
Choke Line	250	5	5000	10
Kill Line	250	5	5000	10
Super Choke	250	5	5000	10
Upper Kelly	250	5	5000	10
Lower Kelly	250	5	5000	10
Floor Valve	250	5	5000	10
Dart Valve	250	5	5000	10
Casing				

Closing Unit PSI 3000
Closing Time of Rams 4 sec
Closing Time of Annular 18 sec
Closed Casing Head Valve yes
Set Wear Sleeve yes

COMMENTS

ADDITIONAL TESTS & COMMENTS

BLM S.L.C.
state of ut
Anschutz Bob Copper
SST

TEST PLUG 12" C-22
RET. TOOL on Loc.
TOP SUB. 4½ IF
KELLY SUB.
X-OVER SUB.

RATES

UNIT RATES	7 HR set up charge	300.00
ADDITIONAL	2 Row nipple up @ 150 per Row	300.00
MILEAGE	40 miles @ 1.00 per mile	40.00
~~METHANOL~~	2 HR Labor @ 25.00 per HR	50.00
OTHER	2 BX 160 Ringe gaskets @ 64.00 per	128.00

SUBTOTAL 1318.00
TAX
TOTAL

PURCHASE ORDER #

Darren Mestrick
TESTED BY

B J Cop
COMPANY REPRESENTATIVE

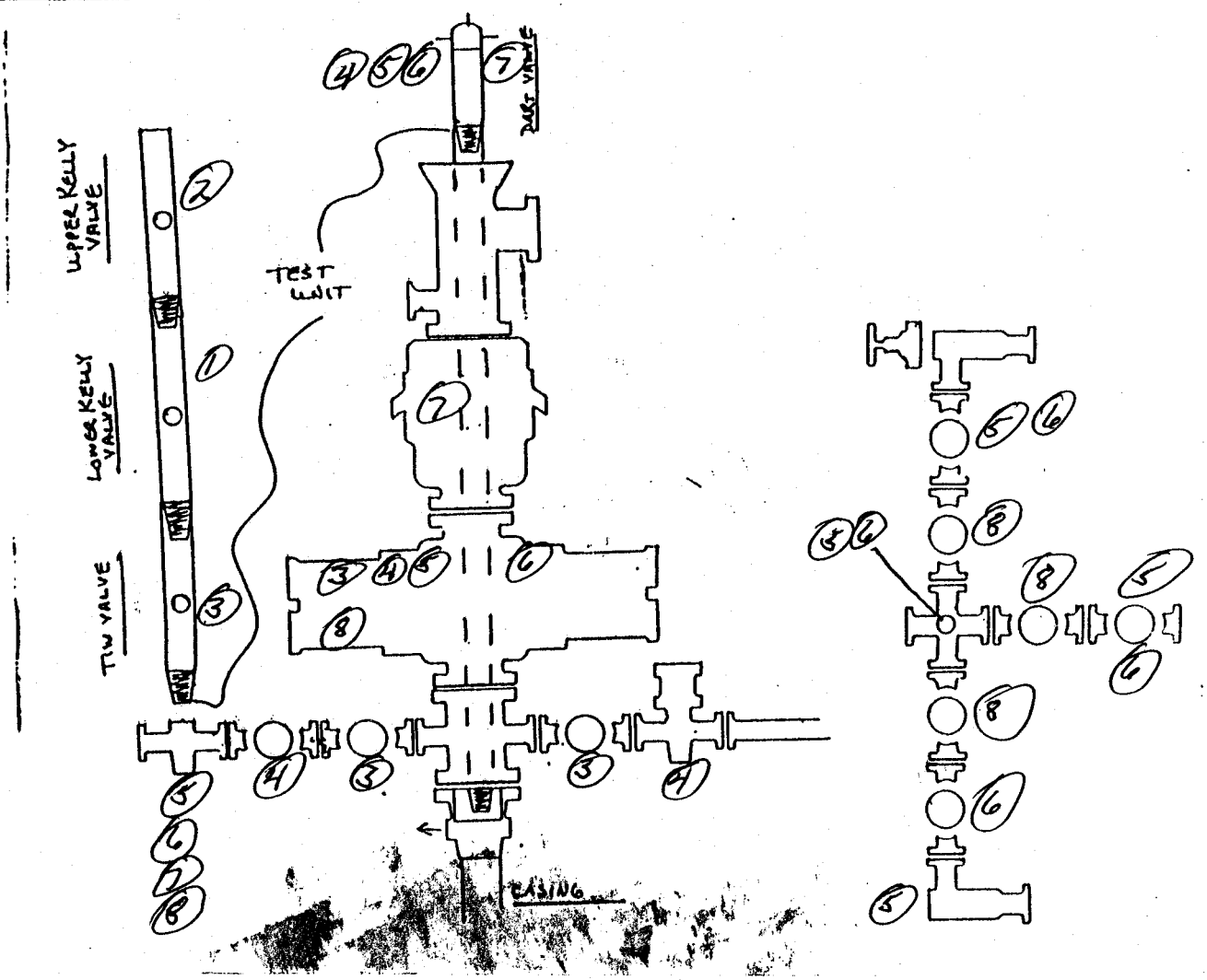
127 Thank you!
DOUBLE JACK TESTING UNIT NUMBER

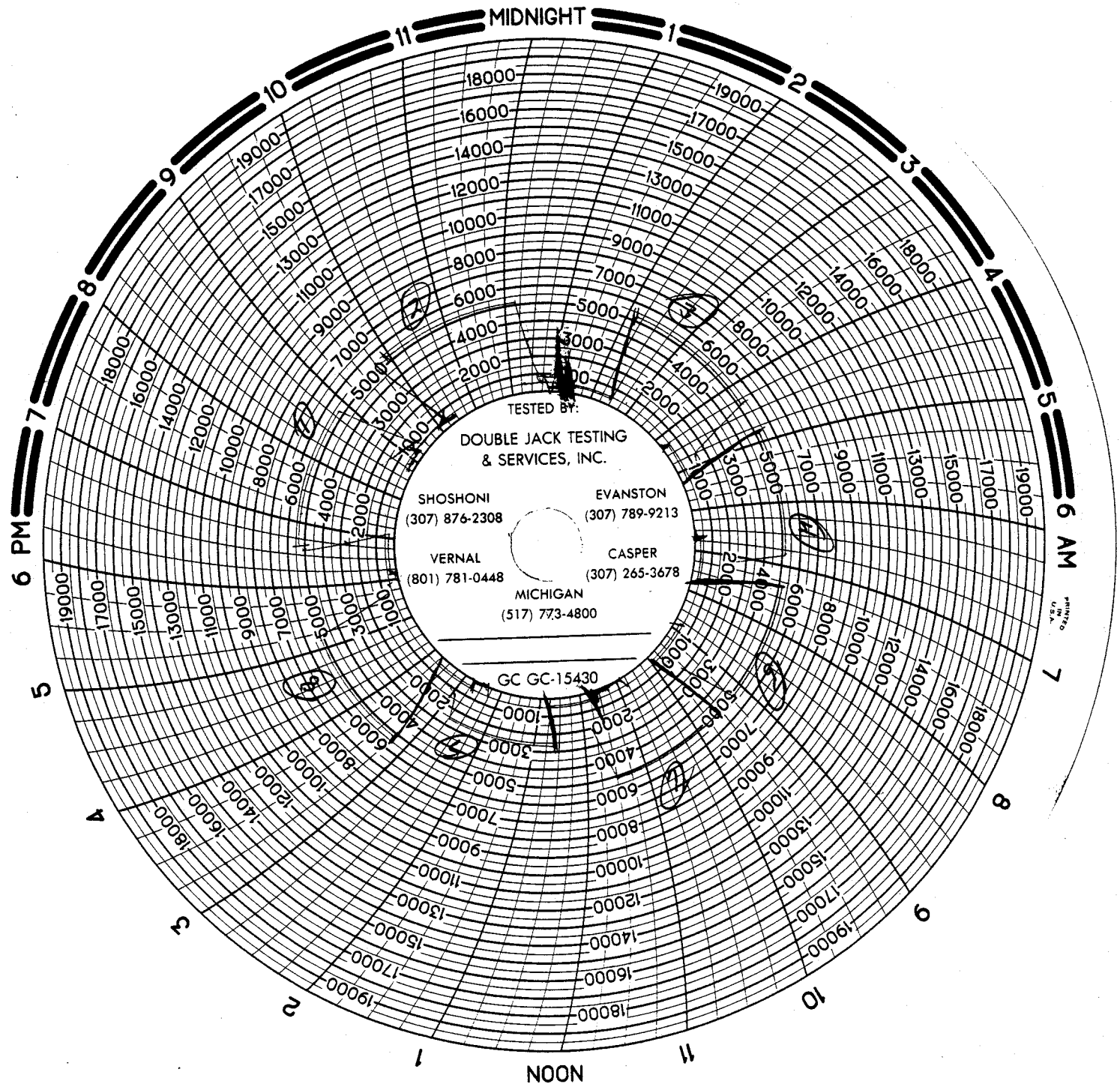
NOTICE TO ALL CUSTOMERS

If this account shall not be paid when due and it is placed with an attorney for collection, or if suit be instituted for collection, the undersigned agree(s) to pay in either case, reasonable expense of collection including attorney's fees and court cost in compliance with TRUTH IN LENDING AND THE UNIFORM CONSUMER CREDIT CODE, the following information disclosure, under the terms of our regular accounts, all amounts for service due and payable within THIRTY (30) DAYS from the receipt of an invoice for such services. A LATE CHARGE will be assessed when accounts are not paid when due. THE LATE CHARGE is computed by a "periodic rate" 1-3/4% PER MONTH which is an ANNUAL PERCENTAGE RATE OF 21% to the previous balance in the account on the billing date. No further credit can be extended on unpaid delinquent accounts until the delinquent account is paid in full. The contractor will not be held liable for damages caused by acts of God, or unforeseen circumstances that could not be reasonably anticipated in performing the work done as set forth above.

COMPANY	LEASE & WELL NAME	TEST DATE	RIG# & NAME
Anschutz	Anschutz Ranch Deep 4-24	10-1-98	SST 88

TEST #	TIME	ITEMS TESTED
1	11:50	11:50-12:05 250 psi 11:55-1205 5000 psi Lower Kelly
2	1210	12:10-1215 250 psi 12:15-1225 5000 psi upper Kelly
3	1250	12:50-12:55 250 psi 12:55-1:05 5000 psi Pipe Rams
		Inside Kill, HCR, safety valve
4	1:10	1:10-1:15 250 psi 1:15-1:25 5000 psi Pipe Rams
		outside choke & Kill line valves Dart valve
5	1:30	1:30-1:35 250 psi 1:35-1:45 5000 psi Pipe Rams Dart valve
		outside manifold valves super choke check valve
6	1:50	1:50-1:55 250 psi 1:55-2:05 5000 psi Pipe Rams
		Dart valve outside manifold valves check valve
7	2:15	2:15-2:20 250 psi 2:20-2:30 2500 psi Hydril
8	2:20	2:20-2:25 250 psi 2:25-2:35 5000 psi Blind Rams
		check valve Inside manifold valves




MIDNIGHT
6 AM
NOON
6 PM
TESTED BY:
DOUBLE JACK TESTING
& SERVICES, INC.
SHOSHONI
(307) 876-2308
EVANSTON
(307) 789-9213
VERNAL
(801) 781-0448
CASPER
(307) 265-3678
MICHIGAN
(517) 773-4800
GC GC-15430
PRINTED IN U.S.A.

RECEIVED
FEB 11 1999
DIV. OF OIL, GAS & MINING

DOUBLE JACK TESTING & SERVICES, INC.
PHONE (307) 382-4020

B.O.P. TEST REPORT

B.O.P. TEST PERFORMED ON (DATE) 10-15-98

OIL COMPANY Anschutz corp

WELL NAME & NUMBER Anschutz Ranch Deep 4-26

SECTION 26

TOWNSHIP 4N

RANGE 7E

COUNTY & STATE summit ut

DRILLING CONTRACTOR SST 88

OIL COMPANY SITE REPRESENTATIVE Bob Copper

RIG TOOL PUSHER Troy Brown

TESTED OUT OF Evanston Wy

NOTIFIED PRIOR TO TEST —

COPIES OF THIS TEST REPORT SENT TO: BLM SLC
ut state
ow loc

ORIGINAL CHART & TEST REPORT ON FILE AT:

DOUBLE JACK TESTING & SERVICES, INC.
P. O. BOX 910
GREEN RIVER, WY 82935

TESTED BY: Darren Merrick

Double Jack Testing & Services Inc.

FIELD TICKET
№ 15435

Accounting Office: P.O. Box 516 Shoshoni, WY 82649 • (307) 876-9390

Field Operations:
Shoshoni, WY (307) 876-2308
Rock Springs, WY (307) 382-4020
Evanston, WY (307) 789-9213
Big Piney, WY (307) 276-5265
Vernal, UT (801) 781-0448

DATE 10-15-98
☑ OPERATOR Anschutz corp
☐ CONTRACTOR SST 88
WELL NAME Anschutz Ranch Deep #4-26

COUNTY	STATE	SECTION	TOWNSHIP	RANGE
Summit	ut	26	4 N	7 E

Items Tested:

	LOW TEST PSI	TIME HELD MINUTES	HIGHTEST PSI	TIME HELD MINUTES
Top Pipe Rams	250	5	5000	10
Bottom Pipe Rams				
Blind Rams	250	5	5000	10
Annular B.O.P.	250	5	2500	10
Choke Manifold	250	5	5000	10
Choke Line	250	5	5000	10
Kill Line	250	5	5000	10
Super Choke	250	5	5000	10
Upper Kelly	250	5	5000	10
Lower Kelly	250	5	5000	10
Floor Valve	250	5	5000	10
Dart Valve	250	5	5000	10
Casing				

Closing Unit PSI 3000
Closing Time of Rams 4 sec
Closing Time of Annular 18 sec
Closed Casing Head Valve yes
Set Wear Sleeve yes

COMMENTS

ADDITIONAL TESTS & COMMENTS

Copy To
BLM SLC.
St of Utah
Anschutz Bobby Copper
SST Troy Brown

TEST PLUG 10" C-22
RET. TOOL ON loc
TOP SUB. 4 1/2 IF
KELLY SUB.
X-OVER SUB.

RATES

UNIT RATES 7 HR set up charge 12 AM - 7 AM 800.00
ADDITIONAL 7 HRS over set up charge @ 55.00 per HR. 7 AM - 2 PM 380.00
MILEAGE 50 miles @ 1.00 per mile 50.00
METHANOL 60 gal @ 2.00 per gal 120.00
OTHER

PURCHASE ORDER #

Darren Merrick
TESTED BY

127 Thank you
DOUBLE JACK TESTING UNIT NUMBER

COMPANY REPRESENTATIVE

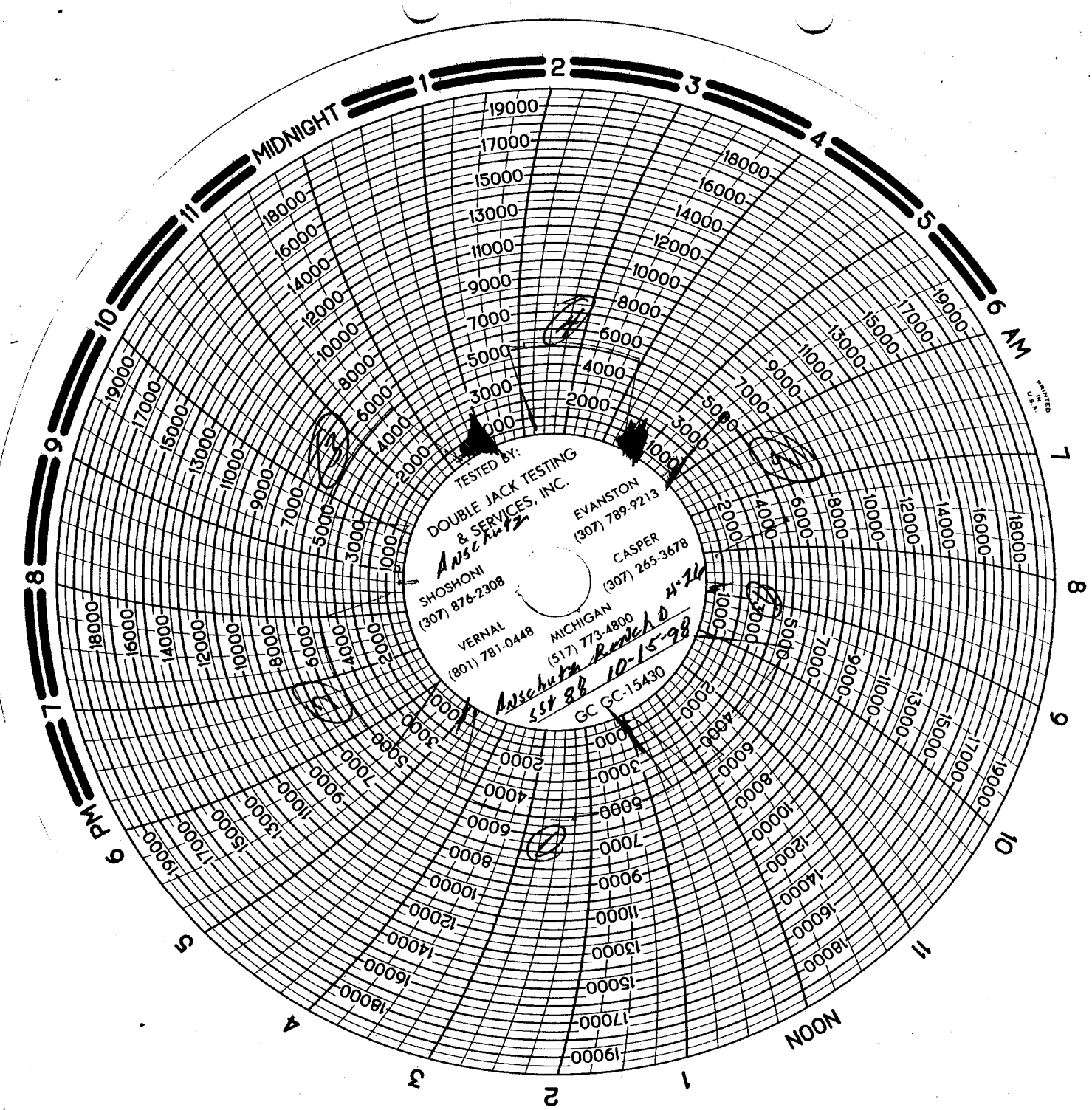
SUBTOTAL 1350.00
TAX
TOTAL

NOTICE TO ALL CUSTOMERS

If this account shall not be paid when due and it is placed with an attorney for collection, or if suit be instituted for collection, the undersigned agree(s) to pay in either case, reasonable expense of collection including attorney's fees and court cost in compliance with TRUTH IN LENDING AND THE UNIFORM CONSUMER CREDIT CODE, the following information disclosure, under the terms of our regular accounts, all amounts for service due and payable within THIRTY (30) DAYS from the receipt of an invoice for such services. A LATE CHARGE will be assessed when accounts are not paid when due. THE LATE CHARGE is computed by a "periodic rate" 1-3/4% PER MONTH which is an ANNUAL PERCENTAGE RATE OF 21% to the previous balance in the account on the billing date. No further credit can be extended on unpaid delinquent accounts until the delinquent account is paid in full. The contractor will not be held liable for damages caused by acts of God, or unforeseen circumstances that could not be reasonably anticipated in performing the work done as set forth above.

COMPANY	LEASE & WELL NAME	TEST DATE	RIG# & NAME
Anschutz	Anschutz Ranch Deep 4-2U	10-15-98	SST 88

TEST #	TIME	ITEMS TESTED
1	12:10A	HCR super choke outside manifold valves
2	1:05	HCR outside manifold valves
3	3:05	Lower Kelly
4	3:30	upper Kelly
5	4:30	Pipe Rams Inside choke & Kill Line valves safety valve
6	4:45	Pipe Rams, outside Kill, HCR, Dart valve
7	5:15	Hydril check valve Inside manifold valves Dart valve
8	5:45	Blind Rams check Inside manifold valves
9	1:00P	OSG change out Top seal on Blind Rams
10	1:45P	Blind Rams check outside manifold valves


MIDNIGHT
6 AM
NOON
6 PM
TESTED BY:
DOUBLE JACK TESTING
& SERVICES, INC.
Anschutz
SHOSHONI
(307) 876-2308
EVANSTON
(307) 789-9213
CASPER
(307) 265-3678
VERNAL
(801) 781-0448
MICHIGAN
(517) 773-4800
Anschutz Ranch D
SST 88 10-15-98
GC GC-15430
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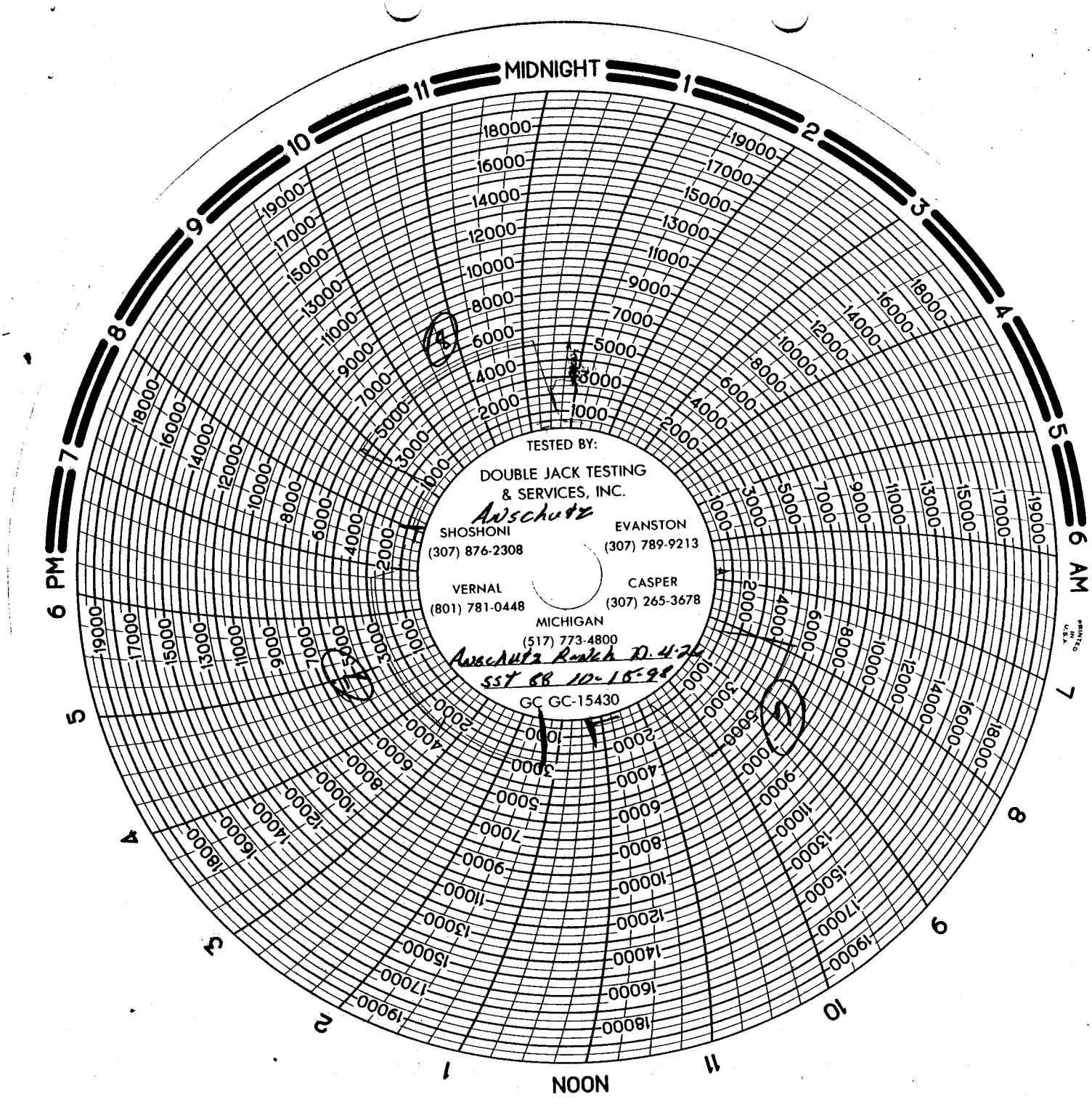
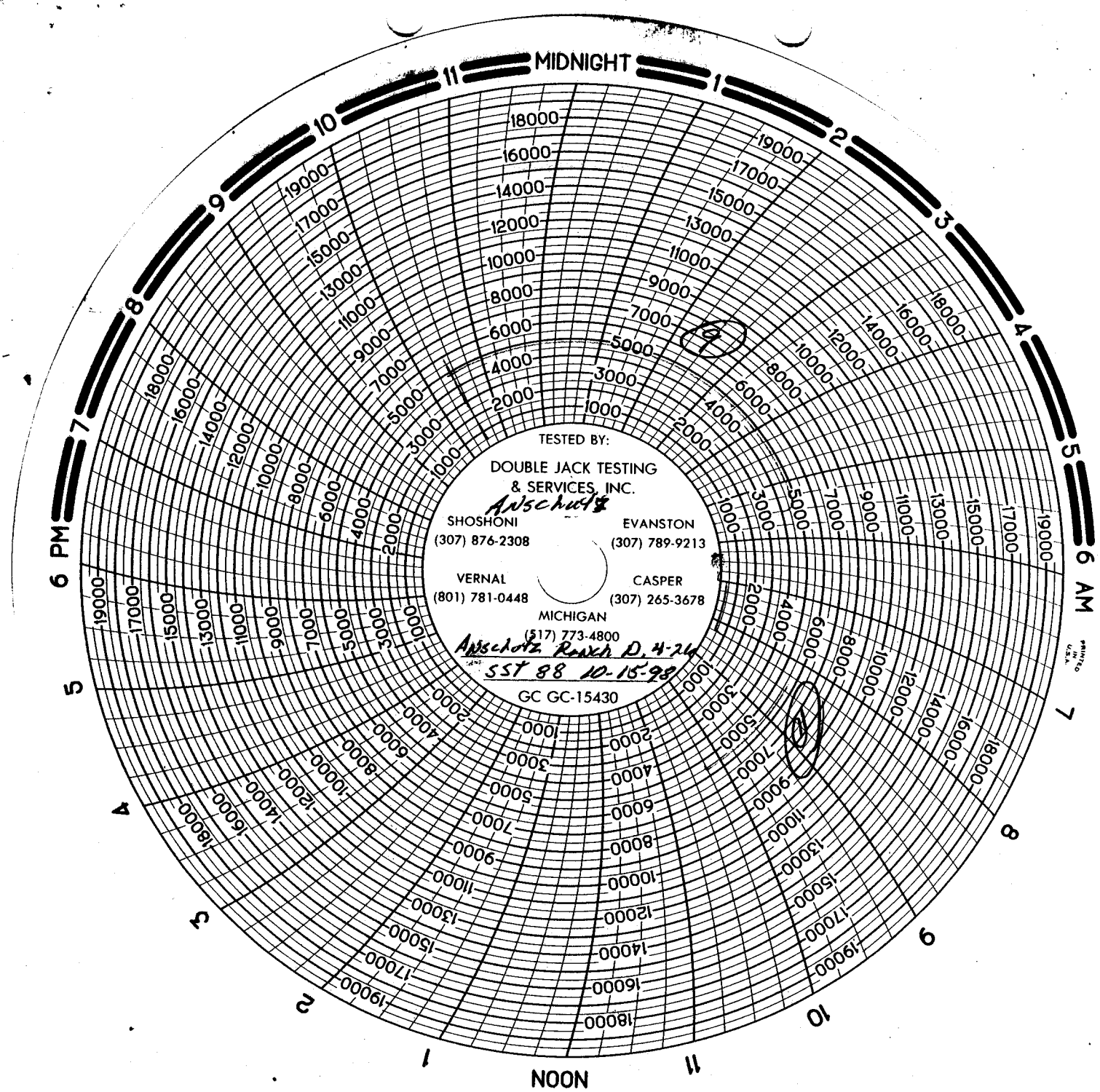

MIDNIGHT
NOON
6 AM
6 PM
TESTED BY:
DOUBLE JACK TESTING
& SERVICES, INC.
Anschutz
SHOSHONI
(307) 876-2308
EVANSTON
(307) 789-9213
VERNAL
(801) 781-0448
CASPER
(307) 265-3678
MICHIGAN
(517) 773-4800
Anschutz Ranch D. 4-24
SST 8B 10-15-98
GC GC-15430


MIDNIGHT
NOON
6 AM
6 PM
TESTED BY:
DOUBLE JACK TESTING
& SERVICES, INC.
Anschutz
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(307) 876-2308
EVANSTON
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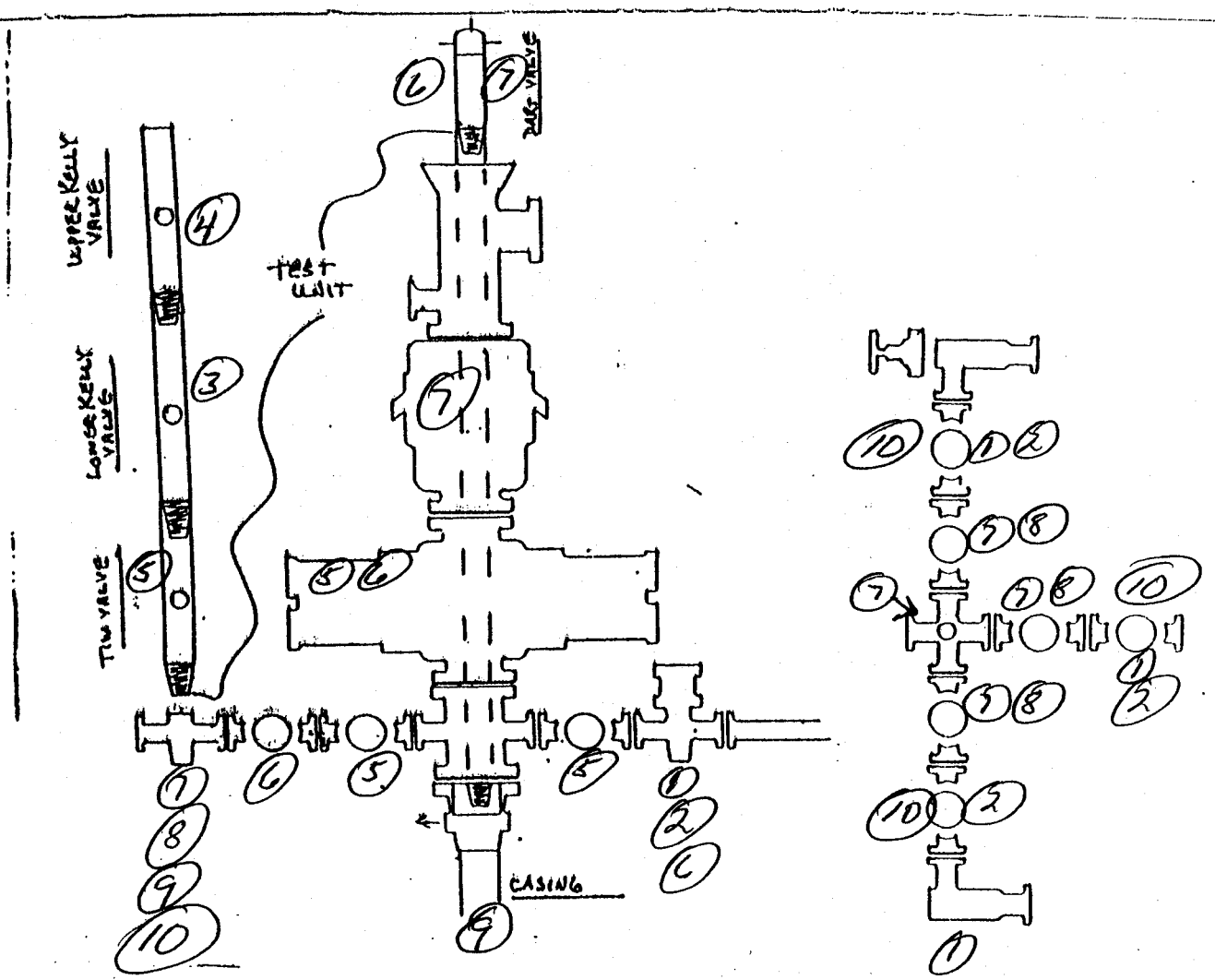
(801) 781-0448
CASPER
(307) 265-3678
MICHIGAN
(517) 773-4800
Anschutz Ranch D. 4-24
SST 88 10-15-98
GC GC-15430


UPPER KELLY VALVE
LOWER KELLY VALVE
TIW VALVE
TEST UNIT
PLUG VALVE
CASING

ANSCHUTZ
EXPLORATION CORPORATION
1221 LAMAR • SUITE 1100 • HOUSTON, TEXAS 77010 • 713-651-0281 • FAX 713-750-0257

December 10, 1999

State of Utah
Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, Utah 84114-5801

Attn: Carol Daniels

RE: Anschutz Ranch Deep 4-26
Wildcat Field
Summit County, Utah

Dear Ms Daniels:

Please find the enclosed Well Completion Report, Entity Action Form and test information for the above referenced well.

Call me if you have questions or need additional information. My Houston telephone number is (713) 750-0210.

Sincerely,

Anschutz Exploration Corporation

James Oursland/kp

James Oursland
Engineering Mgr.

RECEIVED
DEC 13 1999
DIVISION OF OIL, GAS & MINING

CONFIDENTIAL

Form 8
3/89

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. LEASE DESIGNATION AND SERIAL NO.: FEE

6. IF INDIAN, ALLOTEEE OR TRADE UNIT: N/A

7. UNIT AGREEMENT NAME: N/A

8. FARM OR LEASE NAME: ANSCHUTZ RANCH DEEP

9. WELL NO.: 4-26

10. FIELD AND POOL, OR WILDCAT: WILDCAT

11. SEC., T., R., OR BLOCK AND SURVEY OR AREA: Sec. 26, T 4N R 7E

1a. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] DRY [ ] OTHER [ ]

1b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEPEN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] OTHER [ ]

2. NAME OF OPERATOR: THE ANSCHUTZ CORPORATION

3. ADDRESS OF OPERATOR: 555 17th STREET, SUITE 2400, DENVER, COLORADO 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)
At surface: 1623' FNL and 1328' FWL Sec. 26, T4N, R7E
At top prod. interval, reported below: 447' FNL and 557' FEL Sec. 27, T4N, R7E
At total depth: 333' FNL and 689' FEL Sec. 27, T4N, R7E

CONFIDENTIAL PERIOD EXPIRED ON 1-10-2000

14. API NO.: 43-043-30320
DATE ISSUED: 08/10/1998

12. COUNTY: SUMMIT
13. STATE: UTAH

15. DATE SPUDDED	16. DATE TD REACHED	17. DATE COMPL. (Ready to Prod.)	18. ELEVATIONS (DF, RKB, RT, GR, etc.)*	19. ELEV. CASINGHEAD
08-30-1998	11-14-1998	12-10-1998	7,313' G.L.	7,335' K.B.

20. TOTAL DEPTH (Md & TVD)	21. PLUG BACK TD (MD & TVD)	22. IF MULTIPLE COMPL., HOW MANY	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
13,503' MD 12805 TVD Per Jim/CHD	13,496' MD 12801 TVD Per Jim/CHD	N/A	>>>--->	0 to 13,503'	N/A

24. PRODUCING INTERVAL (S), THIS COMPLETION, TOP, BOTTOM, NAME (MD & TVD)
13,260' to 13,489' MD WEBER
12,663' to 12,790' TVD WEBER

25. WAS DIRECTIONAL SURVEY MADE: YES

26. TYPE ELECTRIC AND OTHER LOGS RUN: AIT/LDT - CNL/DS/FML - GR; Hydrocarbon Log (10-14-98), Directional Survey (11-20-98, 11-30-98)

27. WAS WELL CORED: Yes [ ] No [X]
DRILL STEM TEST: Yes [ ] No [X]

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT. LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	54.5	1,512'	17-1/2"	611 sks lite & 626 sks G	0
9-5/8"	47, 53.5, 47	9,197'	12-1/4"	1,446 sks 'G'	0
7-5/8", 7-3/4", 7	39, 39, 32	13,503'	8-1/2"	335 sks 'G'	0

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT	SCREEN (MD)
N/A				

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-7/8"	12,424'	11,560', 12,390'

31. PERFORATION RECORD (Interval, size and number)

13,260-290' (60) 13,439-460' (60)
13,290-320' (60) 13,458-488' (60)
13,320-350' (60)
13,350-380' (58)

32. ACID, SHOT, FRAC., CEMENT SQUEEZE, Etc.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
13,430' - 489'	ACIDIZED w/6,000 gal 7-1/2% HCL

33. PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas, lift, pumping- size & type of pump)	WELL STATUS (prod or shut-in)
WELL SI WO P/L	FLOWING	SI

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N FOR TEST PERIOD	OIL - BBL	GAS - MCF	WATER - BBL	GAS-OIL RATIO
01-29-1999	6	18/64	>>>--->	40.0	1,790	3.30	44.8 M/Bbl

FLOW. TUBING PRESS	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL - BBL	GAS - MCF	WATER - BBL	OIL GRAVITY-API (Corr.)
3,363	140	>>>-->	160	7,160	13.2	80.4

34. DISPOSITION OF GAS (Sold, used for fuel, vented, ect.)
GAS TO BE GATHERED BY WGS.

Test Witnessed By:

35. LIST OF ATTACHMENTS
TEST INFORMATION, OPENHOLE LOGS PREVIOUSLY SENT.

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

SIGNED [signature] TITLE ENGINEERING MANAGER DATE 10-Dec-99

*See Instructions On Reverse Side

RECEIVED
DEC 13 1999
DIVISION OF OIL, GAS & MINING

CONFIDENTIAL

INSTRUCTIONS

This form should be completed with the Utah Oil and Gas Conservation General Rules. If not filed prior to this time, all logs, tests, and directional surveys as required by Utah Rules should be attached and submitted with this report.

ITEM 18: Indicate which elevation is used as reference for depth measurements given in other spaces on this form and on any attachments.

ITEM 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in ITEM 22, and in ITEM 24 show the producing interval, or intervals, top(s), bottoms(s) and name(s) for only the interval reported in ITEM 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

ITEM 29: "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

ITEM 33: Submit a separate completion report on this form for each interval to be separately produced (see instruction for ITEMS 22 and 24 above).

37. SUMMARY OF POROUS ZONES:
Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries.

Formation	Top	Bottom	Description, contents, etc.
Phosphoria	11,704'	12,390'	Gas Productive
Weber	12,390'		Gas Productive, the entire Weber interval was not drilled

38. GEOLOGIC MARKERS

Name	Top	
	Meas. Depth	True Vert. Depth
Nugget Ss.	7,022'	7,014'
Ankareh Red Beds	8,140'	8,151'
Thaynes Ls.	9,180'	9,167'
Dinwoody Fm.	11,400'	11,274'
Phosphoria	11,704'	11,550'
Weber Ss.	12,890'	12,109'

DIVISION OF OIL, GAS & MINING

APRD 4-26 Well Eval file
Test Data

CONFIDENTIAL

BAKER HUGHES

Baker Atlas

NORWARD ENERGY SERVICES

Customer: Anschutz Exploration Corp.
Wellname: Anschutz Ranch Deep
Well Location: Apr-26
Start Date: 21-Jan-99
Formation: Lower/Upper Weber

Meter #1 Norward Separator

File Name: ANSCH20.CSV .PAS
Supervisors: D. Garnier
Customer Reps: Jim Hill
Test Unit: 12, TK#28
Test Type: Clean Up

FINAL Copies
edited at
Norward Head Office

FieldNotes

Gas Meter 1

Meter Type:	Orifice Meter	
Meter Size:	3.860	in
Previous Gas Production:	0.000	MMCF
Tap Type:	Flange	
Tap Location:	Downstream	
Gas Gravity (G):	0.750	
CO_2:	2.00	%
H_2S:	12.00	%
N_2:	2.00	%
Critical Temperature (T_c):	414.18	R
Critical Pressure (P_c):	751.13	psi

Gas Meter 2

Meter Type:	Orifice Meter	
Meter Size:	6.092	in
Previous Gas Production:	0.000	MMCF
Tap Type:	Flange	
Tap Location:	Downstream	
Gas Gravity (G):	0.750	
CO_2:	2.00	%
H_2S:	12.00	%
N_2:	2.00	%
Critical Temperature (T_c):	414.18	R
Critical Pressure (P_c):	751.13	psi

Oil Meter1

Meter Type:	Produced Volume	
Measurement Type:	Incremental	
Previous Oil Production:	0.000	bbl
Previous Water Production:	0.000	bbl

FieldNotes

Water Meter1

Meter Type:	Produced Volume
Measurement type:	Incremental
Previous Water Production:	0.000 bbl

FieldNotes
Field Measurements

	Date yyyy/mm/d	Clock Time hh:mm:s	Pt psi(g)	Pc psi(g)	WHT °F	Orifice1 in	Static1 Pres psi(g)	Diff1 Pres in of H2O	Meter1 Temp °F	Orifice2 in	Static2 Pres psi(g)	Diff2 Pres in of H2O	Meter2 Temp °F	Tot Gas Rate MMCF/D	Cum. Gas MMCF	Oil Gain bbl	Oil Rate bbl/d	Cum. Oil bbl	GOR MMCF/bbl	H2O Gain bbl	H2O Rate bbl/d	Cum. H2O bbl
1	1999/01/21	07:00:00	NORWARD ARRIVE ON LOCATION. SCHLUMBERGER PERFORATING WELL.																			
2		11:00:00	FINISHED PERFORATING, RIGGING DOWN.																			
3		12:43:59				0.000	0.0	0.0	0.00	0.000	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00
4		12:45:00	2950	5																		
5		12:45:00	WELL PRESSURED UP WITH NITROGEN.																			
6		12:45:00	OPEN WELL UP ON 32/64" CHOKE.																			
7		13:00:00	610																			
8		13:15:00	200																			
9		13:15:00	OPEN CHOKE TO 64/64". CASING IS ON SLIGHT VACUUM.																			
10		13:30:00	0																			
11		14:00:00	0																			
12		14:30:00	0																			
13		14:30:00	SHUT IN WELL, MONITOR PRESSURE BUILDUPS. CASING NO LONGER ON VACUUM.																			
14		15:00:00	0	0																		
15		15:30:00	0	0																		
16		16:00:00	0	0																		
17		17:00:00	0	0																		
18	1999/01/21	17:00:00	SHUT IN WELL FOR THE NIGHT. SECURE EQUIPMENT.																			
19	1999/01/22	07:00:00	SAFETY MEETING. CHECK PRESSURES.																			
20		07:00:00	0	0																		
21		09:00:00	RIG UP PUMP TRUCK TO WELLHEAD.																			
22		10:00:00	PUMP ON WELL TO 5000LBS. UNABLE TO BREAK DOWN WELL. RIG DOWN PUMP TRUCK FROM WELLHEAD.																			
23	1999/01/22	15:00:00	SECURE EQUIPMENT.																			
24	1999/01/23	07:00:00	SAFETY MEETING. CHECK PRESSURES. SCHLUMBERGER RIGGING UP TO PERFORATE.																			
25		08:45:00	SCHLUMBERGER PRESSURE TEST TO 5000PSI. RUN IN TO PERFORATE																			
26		11:45:00	OUT OF HOLE WITH RUN #1.																			
27		12:10:00	RUN IN HOLE WITH #2 RUN.																			
28		14:00:00	OUT OF HOLE WITH RUN #2.																			
29		14:10:00	RIG UP PUMP TRUCK TO PUMP DOWN WELL.																			
30		15:30:00	FINISHED PUMPING PUMPED 7.14 BBLS. WELL ON VACUUM.																			
31		16:30:00	SECURE EQUIPMENT.																			
32	1999/01/24	07:00:00	SAFETY MEETING. CHECK PRESSURES. WELL ON VACUUM.																			
33		09:00:00	WELL ON VACUUM.																			
34		12:00:00	WELL ON VACUUM.																			
35		14:00:00	0	0																		
36		14:00:00	DOWELL ARRIVE ON LOCATION TO RIG UP FRAC TRUCKS.																			
37		16:00:00	0	0																		
38	1999/01/24	17:00:00	SECURE LOCATION.																			
39	1999/01/25	07:00:00	SAFETY MEETING. CHECK PRESSURE. DOWELL PREPARING FOR FRAC.																			
40		07:00:00	0	0																		
41		09:45:00	START PUMPING ACID.																			
42		10:15:00	FINISHED PUMPING. RIGGING DOWN.																			
43		12:28:59				0.000	0.0	0.0	0.00	0.000	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00
44		12:30:00	3637	490																		
45		12:30:00	OPEN WELL ON 64/64" CHOKE.																			
46		12:45:00	1610	500	60.0																	
47		12:53:00	FLUID TO SURFACE. pH = 0.0.																			
48		12:55:00	BURNABLE GAS TO SURFACE.																			

NORWARD ENERGY SERVICES

FieldNotes
Field Measurements

	Date yyyy/mm/d	Clock Time hh:mm:s	Pt psi(g)	Pc psi(g)	WHT °F	Orifice1 in	Static1 Pres psi(g)	Diff1 Pres in of H2O	Meter1 Temp °F	Orifice2 in	Static2 Pres psi(g)	Diff2 Pres in of H2O	Meter2 Temp °F	Tot Gas Rate MMCF/D	Cum. Gas MMCF	Oil Gain bbl	Oil Rate bbl/d	Cum. Oil bbl	GOR MMCF/bbl	H2O Gain bbl	H2O Rate bbl/d	Cum. H2O bbl
49	1999/01/25	13:00:00	1445	1000	64.0															43.00	1996.88	43.00
50		13:05:00	BLEED DOWN CASING DOWN TO 0PSI.																			
51		13:30:00	1947	40	67.0	2.500	0.0	0.0	0.00	3.250	50.0	210.0	86.0	7.24	0.31	0.00	0.00	0.00		0.00	0.00	43.00
52		13:35:00	DEBRIS IN FLOWLINE FROM WELL, ROCKING CHOKE & PUMPING METHONAL. CHOKE SET @ 16/64".																			
53		14:00:00	3250	150	68.0	2.500	0.0	0.0	0.00	3.250	20.0	40.0	80.0	2.28	0.41	0.00	0.00	0.00		17.00	816.00	60.00
54		14:30:00	3257	150	66.0	2.500	0.0	0.0	0.00		50.0	136.0	84.0	5.80	0.49							
55		15:00:00	3210	200	64.0	2.500	0.0	0.0	0.00	3.250	50.0	145.0	84.0	5.99	0.61	0.00	0.00	0.00		6.00	144.00	66.00
56		15:30:00	3138	280	64.0	2.500	0.0	0.0	0.00		50.0	200.0	85.0	7.07	0.75							
57		16:00:00	3257	280	60.0	2.500	0.0	0.0	0.00	3.250	45.0	180.0	85.0	6.43	0.89	0.00	0.00	0.00		6.00	144.00	72.00
58		16:30:00	3240	310	62.0	2.500	0.0	0.0	0.00		35.0	100.0	84.0	4.34	1.00							
59		16:30:00	H2S BY DRAGER = 12.5%.																			
60		17:00:00	3260	350	65.0	2.500	0.0	0.0	0.00	3.250	40.0	112.0	75.0	4.87	1.10	0.00	0.00	0.00		2.00	48.00	74.00
61		17:05:00	OPEN CHOKE TO 18/64" CHOKE.																			
62		17:30:00	3040	450	65.0	2.500	0.0	0.0	0.00		45.0	120.0	76.0	5.26	1.20							
63	1999/01/25	18:00:00	3200	460	60.0	2.500	0.0	0.0	0.00	3.250	10.0	46.0	74.0	2.06	1.28	0.00	0.00	0.00		5.00	120.00	79.00
64		18:15:00	SHUT IN WELL @ CHOKE. FLOWLINE PLUGGING UP. WAIT ON METHANOL TRUCK.																			
65		18:15:59				0.000	0.0	0.0	0.00	0.000	0.0	0.0	0.0	0.00	1.28	0.00	0.00	0.00		0.00	0.00	79.00
66		18:30:00	3420	450																		
67		19:00:00	3400	360																		
68		19:30:00	3400	290																		
69		20:00:00	3450	240																		
70		20:30:00	3450	200																		
71		21:00:00	3450	160																		
72		21:30:00	3450	130																		
73		21:30:00	PUMPING METHANOL DOWN FLOWLINE.																			
74		21:30:59				0.000	0.0	0.0	0.00	0.000	0.0	0.0	0.0	0.00	1.28	0.00	0.00	0.00		0.00	0.00	79.00
75		21:32:00	OPEN WELL ON 16/64" CHOKE.																			
76		22:00:00	3350	220	60.0	2.500	0.0	0.0	0.00	3.250	34.0	104.0	90.0	4.36	1.37	1.00	49.64	1.00	0.088	0.00	0.00	79.00
77		22:30:00	3330	290	60.0	2.500	0.0	0.0	0.00		34.0	104.0	88.0	4.37	1.46							
78		23:00:00	3300	340	60.0	2.500	0.0	0.0	0.00	3.250	34.0	104.0	90.0	4.36	1.55	1.00	24.00	2.00	0.182	2.00	48.00	81.00
79		23:30:00	3280	400	60.0	2.500	0.0	0.0	0.00		34.0	106.0	80.0	4.44	1.64							
80		23:50:00	SHUT IN WELL. WELL HYDRATING DOWN HOLE.																			
81		23:51:00				0.000	0.0	0.0	0.00	0.000	0.0	0.0	0.0	0.00	1.64	0.00	0.00	2.00		0.00	0.00	81.00
82	1999/01/26	00:00:00	0	0	0.0	2.500	0.0	0.0	0.00	3.250	0.0	0.0	0.0	0.00	1.64	1.00	159.85	3.00	0.000	2.00	319.70	83.00
83		00:01:00	OPEN WELL ON 18/64" CHOKE.																			
84		00:30:00	3095	455	63.0	2.500	0.0	0.0	0.00		40.0	158.0	72.0	5.83	1.76							
85		01:00:00	2950	530	61.0	2.500	0.0	0.0	0.00	3.250	45.0	160.0	72.0	6.13	1.89	3.00	72.00	6.00	0.085	6.00	144.00	89.00
86		01:02:00	SHUT IN WELL. WELL HYDRATING DOWN HOLE.																			
87		01:03:00				0.000	0.0	0.0	0.00	0.000	0.0	0.0	0.0	0.00	1.89	0.00	0.00	6.00		0.00	0.00	89.00
88		02:00:00	OPEN WELL ON 18/64" CHOKE.																			
89		02:30:00	3210	465	62.0	2.500	0.0	0.0	0.00		58.0	160.0	90.0	0.00	1.89							
90		03:00:00	3165	610	60.0	2.500	0.0	0.0	0.00	3.250	50.0	138.0	74.0	5.90	2.01	2.00	24.61	8.00	0.240	2.00	24.61	91.00
91		03:30:00	2500	710	64.0	2.500	0.0	0.0	0.00		30.0	80.0	68.0	3.73	2.11							
92		04:00:00	2150	650	64.0	2.500	0.0	0.0	0.00	3.250	25.0	80.0	84.0	3.46	2.18	1.00	24.00	9.00	0.144	2.00	48.00	93.00
93		04:30:00	3300	620	64.0	2.500	0.0	0.0	0.00		40.0	120.0	82.0	5.01	2.27							
94		05:00:00	3100	690	70.0	2.500	0.0	0.0	0.00	3.250	58.0	156.0	62.0	6.74	2.40	1.00	24.00	10.00	0.281	0.00	0.00	93.00
95		05:30:00	3200	740	70.0	2.500	0.0	0.0	0.00		55.0	136.0	56.0	6.19	2.53							
96	1999/01/26	06:00:00	3270	800	70.0	2.500	0.0	0.0	0.00	3.250	50.0	96.0	52.0	5.01	2.65	0.00	0.00	10.00		0.00	0.00	93.00

NORWARD ENERGY SERVICES

FieldNotes
Field Measurements

	Date yyyy/mm/d	Clock Time hh:mm:s	Pt psi(g)	Pc psi(g)	WHT °F	Orifice1 in	Static1 Pres psi(g)	Diff1 Pres in of H2O	Meter1 Temp °F	Orifice2 in	Static2 Pres psi(g)	Diff2 Pres in of H2O	Meter2 Temp °F	Tot Gas Rate MMCF/D	Cum. Gas MMCF	Oil Gain bbl	Oil Rate bbl/d	Cum. Oil bbl	GOR MMCF/bbl	H2O Gain bbl	H2O Rate bbl/d	Cum. H2O bbl
97	1999/01/26	06:30:00	2800	750	60.0	2.500	0.0	0.0	0.00		40.0	80.0	53.0	4.19	2.74							
98		07:00:00	1000	680	45.0	2.500	0.0	0.0	0.00	3.250	30.0	72.0	45.0	3.61	2.82	0.00	0.00	10.00		0.00	0.00	93.00
99		07:00:00	SHUT IN WELL. HYDRATING DOWN HOLE. PUMP METHONAL.																			
100		07:00:59				0.000	0.0	0.0	0.00	0.000	0.0	0.0	0.0	0.00	2.82	0.00	0.00	10.00			0.00	93.00
101		07:30:00	1050	560																		
102		08:00:00	3500	500																		
103		08:30:00	3510	450																		
104		09:00:00	3510	410																		
105		09:30:00	3510	390																		
106	1999/01/26	10:00:00	3510	380																		
107		11:00:00	3505	290																		
108		12:00:00	3500	230																		
109		13:00:00	3500	190																		
110		14:00:00	3505	180																		
111		14:28:59				0.000	0.0	0.0	0.00	0.000	0.0	0.0	0.0	0.00	2.82	0.00	0.00	10.00		0.00	0.00	93.00
112		14:30:00	3505	180																		
113		14:30:00	OPEN WELL ON 18/64" CHOKE. PUMPING METHONAL DOWN INJECTION MANDREL WITH HIGH VOLUME PUMP.																			
114		15:00:00	3275	250	60.0	0.000	0.0	0.0	0.00	3.250	45.0	225.0	40.0	7.55	2.99	0.00	0.00	10.00		0.00	0.00	93.00
115		15:30:00	3260	450	62.0	0.000	0.0	0.0	0.00		45.0	225.0	38.0	7.57	3.14							
116		16:00:00	3260	560	62.0	0.000	0.0	0.0	0.00	3.250	42.0	228.0	24.0	7.54	3.30	1.00	24.00	11.00	0.314	0.50	12.00	93.50
117		16:30:00	3240	660	62.0	0.000	0.0	0.0	0.00		43.0	227.0	22.0	7.61	3.46							
118		17:00:00	3255	720	62.0	0.000	0.0	0.0	0.00	3.250	43.0	220.0	19.0	7.51	3.62	4.50	108.00	15.50	0.070	0.50	12.00	94.00
119		17:30:00	3250	790	62.0	0.000	0.0	0.0	0.00		43.0	222.0	19.0	7.54	3.77							
120		18:00:00	3250	845	65.0	0.000	0.0	0.0	0.00	3.250	43.0	225.0	20.0	7.59	3.93	3.50	84.00	19.00	0.090	0.50	12.00	94.50
121		18:30:00	3250	900	68.0	0.000	0.0	0.0	0.00		42.0	225.0	22.0	7.51	4.09							
122		18:32:00	BLEED DOWN CASING TO 230 P.S.I.																			
123		19:00:00	3260	280	70.0	0.000	0.0	0.0	0.00	3.250	42.0	225.0	20.0	7.52	4.25	3.50	84.00	22.50	0.090	0.50	12.00	95.00
124		19:30:00	3260	330	70.0	0.000	0.0	0.0	0.00		42.0	228.0	20.0	7.58	4.40							
125		20:00:00	3280	360	72.0	0.000	0.0	0.0	0.00	3.250	42.0	228.0	20.0	7.58	4.56	7.00	168.00	29.50	0.045	2.00	48.00	97.00
126		20:30:00	3280	420	72.0	0.000	0.0	0.0	0.00		42.0	228.0	20.0	7.58	4.72							
127		21:00:00	3280	430	72.0	0.000	0.0	0.0	0.00	3.250	42.0	228.0	20.0	7.58	4.88	5.00	120.00	34.50	0.063	1.00	24.00	98.00
128		21:30:00	3280	450	72.0	0.000	0.0	0.0	0.00		43.0	228.0	20.0	7.64	5.03							
129		22:00:00	3280	500	72.0	0.000	0.0	0.0	0.00	3.250	43.0	228.0	20.0	7.64	5.19	3.50	84.00	38.00	0.091	0.50	12.00	98.50
130		22:30:00	3280	500	72.0	0.000	0.0	0.0	0.00		43.0	228.0	20.0	7.64	5.35							
131		22:31:00	INCREASED CHOKE TO 20/64".																			
132		23:00:00	3150	600	72.0	0.000	0.0	0.0	0.00	3.250	46.0	270.0	20.0	8.56	5.52	6.00	144.00	44.00	0.059	2.00	48.00	100.50
133		23:01:00	BLEED DOWN CASING TO 300 P.S.I.																			
134		23:30:00	3150	370	74.0	0.000	0.0	0.0	0.00		50.0	278.0	20.0	8.97	5.70							
135	1999/01/27	00:00:00	3150	400	74.0	0.000	0.0	0.0	0.00	3.250	50.0	278.0	20.0	8.97	5.89	3.50	84.00	47.50	0.107	0.50	12.00	101.00
136		00:30:00	3150	450	78.0	0.000	0.0	0.0	0.00		48.0	284.0	12.0	9.02	6.08							
137		01:00:00	3150	490	78.0	0.000	0.0	0.0	0.00	3.250	48.0	284.0	12.0	9.02	6.27	2.00	48.00	49.50	0.188	1.00	24.00	102.00
138		01:30:00	3150	520	79.0	0.000	0.0	0.0	0.00		48.0	284.0	13.0	9.01	6.45							
139		02:00:00	3150	580	79.0	0.000	0.0	0.0	0.00	3.250	49.0	285.0	13.0	9.09	6.64	3.50	84.00	53.00	0.108	1.50	36.00	103.50
140		02:30:00	3155	600	78.0	0.000	0.0	0.0	0.00		48.0	285.0	12.0	9.03	6.83							
141		03:00:00	3160	630	80.0	0.000	0.0	0.0	0.00	3.250	48.0	282.0	12.0	8.98	7.02	7.00	168.00	60.00	0.053	2.00	48.00	105.50
142		03:15:00	BLEED DOWN CASING TO 400 P.S.I.																			
143		03:30:00	3160	400	80.0	0.000	0.0	0.0	0.00		48.0	280.0	12.0	8.95	7.21							
144		04:00:00	3180	450	78.0	0.000	0.0	0.0	0.00	3.250	48.0	280.0	12.0	8.95	7.39	4.00	96.00	64.00	0.093	1.00	24.00	106.50

NORWARD ENERGY SERVICES

FieldNotes
Field Measurements

	Date yyyy/mm/d	Clock Time hh:mm:s	Pt psi(g)	Pc psi(g)	WHT °F	Orifice1 in	Static1 Pres psi(g)	Diff1 Pres in of H2O	Meter1 Temp °F	Orifice2 in	Static2 Pres psi(g)	Diff2 Pres in of H2O	Meter2 Temp °F	Tot Gas Rate MMCF/D	Cum. Gas MMCF	Oil Gain bbl	Oil Rate bbl/d	Cum. Oil bbl	GOR MMCF/bbl	H2O Gain bbl	H2O Rate bbl/d	Cum. H2O bbl
145	1999/01/27	04:30:00	3175	470	78.0	0.000	0.0	0.0	0.00		48.0	280.0	12.0	8.95	7.58							
146		05:00:00	3180	490	79.0	0.000	0.0	0.0	0.00	3.250	48.0	280.0	12.0	8.95	7.77	4.00	96.00	68.00	0.093	1.00	24.00	107.50
147		05:30:00	3175	510	78.0	0.000	0.0	0.0	0.00		48.0	286.0	12.0	9.05	7.95							
148	1999/01/27	06:00:00	3175	510	75.0	0.000	0.0	0.0	0.00	3.250	48.0	286.0	11.0	9.06	8.14	5.00	120.00	73.00	0.075	0.50	12.00	108.00
149		06:30:00	3175	525	78.0	0.000	0.0	0.0	0.00		48.0	285.0	11.0	9.04	8.33							
150		07:00:00	3175	550	78.0	0.000	0.0	0.0	0.00	3.250	48.0	285.0	11.0	9.04	8.52	5.50	132.00	78.50	0.069	0.50	12.00	108.50
151		07:00:00	SHUT IN WELL. SCHLUMBERGER WIRELINE RIGGING UP TO PERFORATE.																			
152		08:00:00	RUN IN WITH GAUGE RING.																			
153		11:00:00	OUT OF HOLE WITH GAUGE RING.																			
154		12:00:00	RUN IN WITH PERF GUN #1.																			
155	1999/01/27	15:30:00	OUT OF HOLE WITH GUN #1. RERUN GUNS.																			
156	1999/01/28	06:00:00	NORWARD ARRIVE ON LOCATION ATTEND SAFETY MEETING. SCHLUMBERGER RIGGING UP TO PERFORATE.																			
157		07:00:00	3460	0																		
158		07:40:00	RUN IN WITH PERF GUN #1.																			
159		11:50:00	OUT OF HOLE WITH PERF GUN #1. GUNS FIRED.																			
160		12:30:00	RUN BACK IN WITH PERF GUN #2.																			
161		15:30:00	OUT OF HOLE WITH PERF GUN #2. GUNS FIRED.																			
162	1999/01/28	16:00:00	SECURE LOCATION AND EQUIPMENT.																			
163	1999/01/29	06:00:00	NORWARD ARRIVE ON LOCATION ATTEND SAFETY MEETING. SCHLUMBERGER WIRELINE RIGGING UP TO PERFORATE.																			
164		07:00:00	SCHLUMBERGER RUN IN WITH PERF GUN # 3.																			
165		09:55:00	OUT OF HOLE WITH PERF GUN #3. GUNS FIRED.																			
166		10:20:00	RUN BACK IN HOLE WITH PERF GUN #4.																			
167		13:30:00	OUT OF HOLE WITH PERF GUN #4. SCHLUMBERGER DONE PERFORATING RIGGING DOWN.																			
168		13:58:59				0.000	0.0	0.0	0.00	0.000	0.0	0.0	0.0	0.00	8.52	0.00	0.00	78.50		0.00	0.00	108.50
169		14:00:00	3360	0																		
170		14:00:00	OPEN WELL TANK ON 20/64" CHOKE.																			
171		14:15:00	3300	0	64.0																	
172		14:30:00	3272	0	64.0	0.000	0.0	0.0	0.00	3.250	62.0	327.0	50.0	10.29	8.74							
173		14:30:00	H2S BY GASTEC= 12.0%.																			
174		14:45:00	3275	0	64.0																	
175		15:00:00	3280	0	62.0	0.000	0.0	0.0	0.00	3.250	66.0	325.0	40.0	10.63	8.96	7.00	165.22	85.50	0.064	0.50	11.80	109.00
176		15:05:00	SWITCH FLOW THROUGH TEST UNIT DECREASE CHOKE TO 18/64".																			
177		15:30:00	3365	0	64.0		450.0	60.0	50.00	3.250	0.0	0.0	0.0	0.00	8.96							
178		16:00:00	3365	0	65.0	2.500	740.0	37.0	58.00	3.250	0.0	0.0	0.0	7.20	9.11	4.50	108.00	90.00	0.067	0.50	12.00	109.50
179		16:30:00	3362	0	70.0		740.0	37.0	59.00					7.19	9.26							
180	1999/01/29	17:00:00	3362	0	70.0	2.500	740.0	37.0	60.00	3.250	0.0	0.0	0.0	7.18	9.41	10.90	261.60	100.90	0.027	1.00	24.00	110.50
181		17:30:00	3362	20	70.0		740.0	36.0	60.00					7.08	9.56							
182		18:00:00	3364	30	70.0	2.500	745.0	36.0	60.00	3.250	0.0	0.0	0.0	7.11	9.70	6.80	163.20	107.70	0.044	0.30	7.20	110.80
183		18:30:00	3363	42	66.0		745.0	36.0	58.00					7.13	9.85							
184		19:00:00	3362	52	68.0	2.500	745.0	36.0	56.00	3.250	0.0	0.0	0.0	7.16	10.00	8.10	194.40	115.80	0.037	0.10	2.40	110.90
185		19:30:00	3363	64	68.0		744.0	36.0	57.00					7.14	10.15							
186		20:00:00	3362	80	68.0	2.500	744.0	36.0	56.00	3.250	0.0	0.0	0.0	7.15	10.30	7.40	177.60	123.20	0.040	0.50	12.00	111.40
187		20:30:00	3364	98	70.0		745.0	36.0	57.00					7.15	10.45							
188		21:00:00	3362	118	70.0	2.500	745.0	36.0	58.00	3.250	0.0	0.0	0.0	7.13	10.60	7.00	168.00	130.20	0.042	1.40	33.60	112.80
189		21:30:00	3363	140	70.0		745.0	36.0	60.00					7.11	10.75							
190		21:45:00	WATER SAMPLE TAKEN. pH = 5.0.																			
191		22:00:00	3362	160	70.0	2.500	745.0	36.0	59.00	3.250	0.0	0.0	0.0	7.12	10.89	4.40	105.60	134.60	0.067	1.90	45.60	114.70
192		22:01:00	INCREASED CHOKE TO 20/64".																			

NORWARD ENERGY SERVICES

FieldNotes
Field Measurements

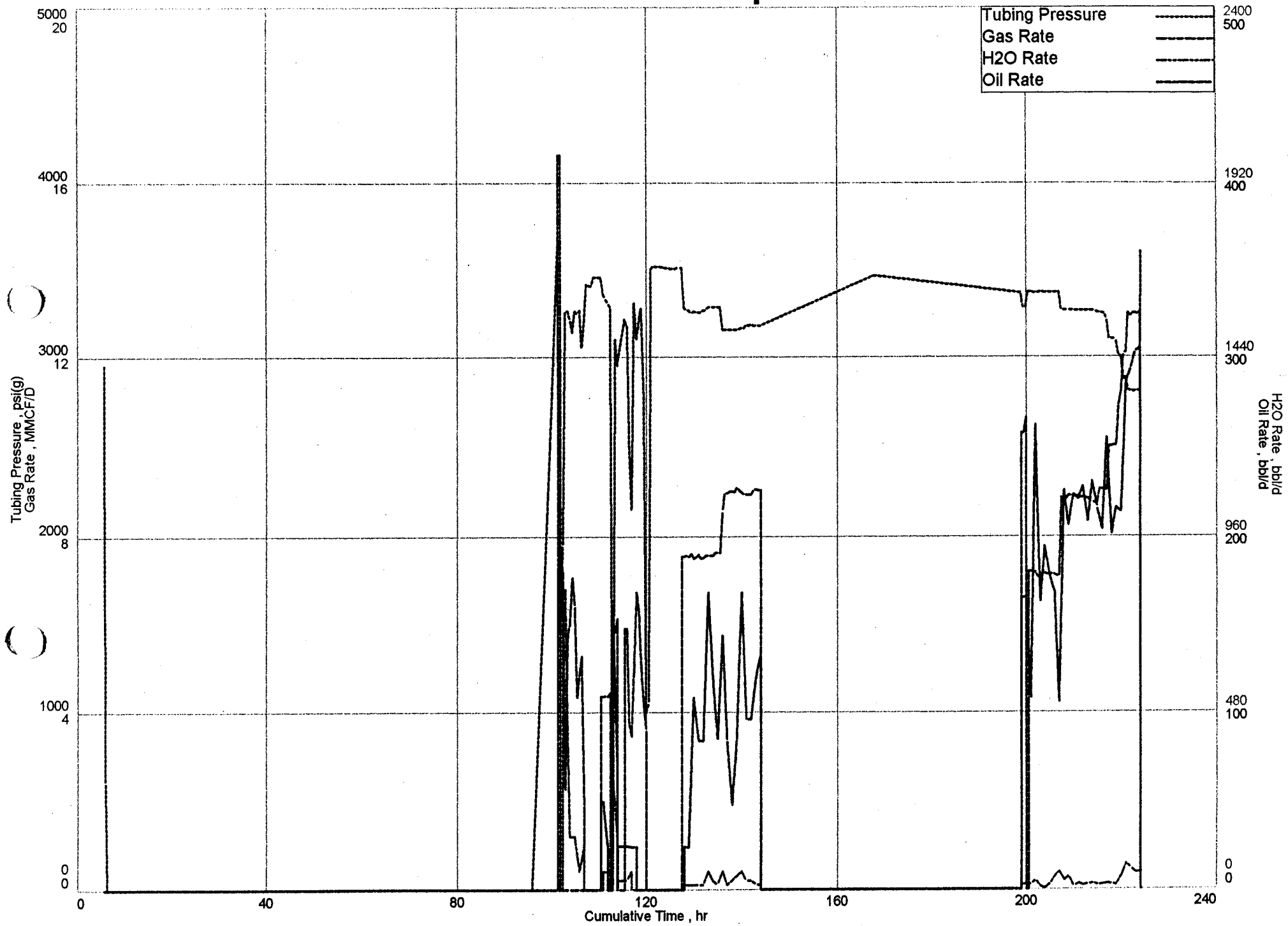
	Date yyyy/mm/d	Clock Time hh:mm:s	Pt psi(g)	Pc psi(g)	WHT °F	Orifice1 in	Static1 Pres psi(g)	Diff1 Pres in of H2O	Meter1 Temp °F	Orifice2 in	Static2 Pres psi(g)	Diff2 Pres in of H2O	Meter2 Temp °F	Tot Gas Rate MMCF/D	Cum. Gas MMCF	Oil Gain bbl	Oil Rate bbl/d	Cum. Oil bbl	GOR MMCF/bbl	H2O Gain bbl	H2O Rate bbl/d	Cum. H2O bbl
193	1999/01/29	22:30:00	3259	228	70.0		720.0	56.0	48.00					8.87	11.06							
194		23:00:00	3260	273	72.0	2.500	720.0	56.0	50.00	3.250	0.0	0.0	0.0	8.84	11.24	9.40	225.60	144.00	0.039	1.00	24.00	115.70
195		23:30:00	3260	320	73.0		720.0	56.0	50.00					8.84	11.43							
196	1999/01/30	00:00:00	3258	350	74.0	2.500	720.0	57.0	50.00	3.250	0.0	0.0	0.0	8.92	11.61	8.60	206.40	152.60	0.043	1.40	33.60	117.10
197		00:30:00	3260	398	74.0		720.0	57.0	51.00					8.90	11.80							
198		01:00:00	3259	428	73.0	2.500	720.0	57.0	51.00	3.250	0.0	0.0	0.0	8.90	11.99	9.30	223.20	161.90	0.040	0.30	7.20	117.40
199		01:30:00	3258	455	74.0		720.0	57.0	51.00					8.90	12.17							
200		02:00:00	3257	470	75.0	2.500	720.0	57.0	52.00	3.250	0.0	0.0	0.0	8.89	12.36	9.20	220.80	171.10	0.040	0.60	14.40	118.00
201		02:30:00	3258	508	76.0		720.0	57.0	53.00					8.87	12.54							
202		03:00:00	3258	532	76.0	2.500	720.0	57.0	53.00	3.250	0.0	0.0	0.0	8.87	12.73	9.50	228.00	180.60	0.039	0.40	9.60	118.40
203		03:30:00	3257	550	76.0		719.0	57.0	54.00					8.85	12.91							
204		04:00:00	3258	568	77.0	2.500	720.0	57.0	54.00	3.250	0.0	0.0	0.0	8.86	13.10	8.70	208.80	189.30	0.042	0.50	12.00	118.90
205		04:30:00	3258	590	76.0		720.0	56.0	54.00					8.78	13.28							
206	1999/01/30	05:00:00	3258	620	76.0	2.500	720.0	56.0	55.00	3.250	0.0	0.0	0.0	8.77	13.46	9.60	230.40	198.90	0.038	0.60	14.40	119.50
207		05:01:00	WATER SAMPLE TAKEN. pH = 5.0.																			
208		05:30:00	3255	620	78.0		720.0	56.0	56.00					8.75	13.64							
209		06:00:00	3250	630	78.0	2.500	720.0	56.0	56.00	3.250	0.0	0.0	0.0	8.75	13.83	9.00	216.00	207.90	0.041	0.40	9.60	119.90
210		06:01:00	INCREASED CHOKE TO 22/64".																			
211		06:30:00	3245	650	78.0		720.0	60.0	56.00					9.06	14.01							
212		07:00:00	3245	670	78.0	2.500	720.0	60.0	56.00	3.250	0.0	0.0	0.0	9.06	14.20	8.50	204.00	216.40	0.044	0.50	12.00	120.40
213		07:30:00	3240	700	78.0		720.0	60.0	57.00					9.04	14.39							
214		08:00:00	3210	710	78.0	2.500	720.0	60.0	57.00	3.250	0.0	0.0	0.0	9.04	14.58	10.60	254.40	227.00	0.036	0.60	14.40	121.00
215		08:10:00	INCREASE CHOKE TO 24/64".																			
216		08:30:00	3100	730	80.0		720.0	73.0	55.00					10.01	14.78							
217	1999/01/30	09:00:00	3100	780	82.0	2.500	720.0	73.0	55.00	3.250	0.0	0.0	0.0	10.01	14.98	8.40	201.60	235.40	0.050	0.50	12.00	121.50
218		09:30:00	3095	790	82.0		720.0	73.0	54.00					10.03	15.19							
219		10:00:00	3092	820	84.0	2.500	720.0	73.0	55.00	3.250	0.0	0.0	0.0	10.01	15.40	9.00	216.00	244.40	0.046	0.40	9.60	121.90
220		10:05:00	INCREASE CHOKE TO 26/64".																			
221		10:30:00	3010	850	85.0		720.0	88.0	58.00					10.93	15.62							
222		11:00:00	2992	900	85.0	2.500	720.0	92.0	56.00	3.250	0.0	0.0	0.0	11.22	15.85	8.90	213.60	253.30	0.053	1.50	36.00	123.40
223		11:05:00	INCREASE CHOKE TO 28/64". BLEED CASING DOWN TO 100PSI.																			
224		11:30:00	2870	130	85.0	2.500	720.0	106.0	56.00					12.04	16.09							
225		12:00:00	2880	180	88.0	2.500	720.0	107.0	56.00	3.250	0.0	0.0	0.0	12.10	16.34	11.90	285.60	265.20	0.042	2.80	67.20	126.20
226		12:05:00	INCREASE CHOKE TO 30/64".																			
227		12:30:00	2810	230	88.0		720.0	123.0	56.00					12.97	16.61							
228	1999/01/30	13:00:00	2805	260	88.0	2.500	720.0	122.0	56.00	3.250	0.0	0.0	0.0	12.92	16.88	12.20	292.80	277.40	0.044	2.30	55.20	128.50
229		13:30:00	2802	310	90.0		720.0	123.0	56.00					12.97	17.15							
230		14:00:00	2806	330	92.0	2.500	720.0	123.0	56.00	3.250	0.0	0.0	0.0	12.97	17.42	12.60	302.40	290.00	0.043	1.80	43.20	130.30
231		14:30:00	2807	350	92.0		720.0	123.0	57.00					12.95	17.69							
232		15:00:00	2807	360	92.0	2.500	720.0	124.0	57.00	3.250	0.0	0.0	0.0	13.00	17.96	12.70	304.80	302.70	0.043	1.90	45.60	132.20
233		15:05:00	SHUT IN WELL.																			
234		15:05:59				0.000	0.0	0.0	0.00	0.000	0.0	0.0	0.0	0.00	17.96	0.00	0.00	302.70			45.60	132.20
235	1999/01/30	15:15:00	3600	350																		
236		15:20:00	END OF TEST.																			

NORWARD ENERGY SERVICES

/04-26-W/
Start Test Date: 1999/01/21

Anschutz Ranch Deep 4 - 26

ANSCHUTZ RANCH DEEP
Formation: LOWER WEBER UPPER WEBER



NORWARD

Fast C:\Cindy\FAST32\aNSCH20.FLD 24-Feb-99 Ver 1.590

ANSCHUTZ
EXPLORATION CORPORATION
1221 LAMAR • SUITE 1100 • HOUSTON, TEXAS 77010 • 713-651-0281 • FAX 713-750-0257

December 10, 1999

State of Utah
Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, Utah 84114-5801

Attn: Carol Daniels

RE: Anschutz Ranch Deep 4-26
Wildcat Field
Summit County, Utah

Dear Ms Daniels:

Please find the enclosed Well Completion Report, Entity Action Form and test information for the above referenced well.

Call me if you have questions or need additional information. My Houston telephone number is (713) 750-0210.

Sincerely,

Anschutz Exploration Corporation

James Oursland/kp

James Oursland
Engineering Mgr.

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DEC 13 1999
DIVISION OF OIL, GAS & MINING

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER: FEE

SUNDRY NOTICES AND REPORTS ON WELLS

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT or CA AGREEMENT NAME:

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER _____

8. WELL NAME and NUMBER: Anschutz Ranch Deep 4-26

2. NAME OF OPERATOR: The Anschutz Corporation

9. API NUMBER: 4304330320

3. ADDRESS OF OPERATOR: 555 17th Street, Suite 2400 CITY Denver STATE CO ZIP 80202

PHONE NUMBER: (303) 298-1000

10. FIELD AND POOL, OR WILDCAT: Anschutz Ranch

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 1623' FNL and 1328' FWL

COUNTY: Summit

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SENW 26 T4N R7E

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☑ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start:	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
12/9/2005	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☐ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER: _____
	☐ CONVERT WELL TYPE	☑ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

The Anschutz Corporation proposes to recomplete the subject well uphole into the Thaynes formation. The details of this recompletion are detailed on the attached procedure and well sketch.

COPY SENT TO OPERATOR
Date: 12-13-05
Initials: CHD

NAME (PLEASE PRINT) James P. Oursland

TITLE Operations Manager

SIGNATURE James Oursland

DATE 12/8/2005

(This space for State use only)

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 12/12/05
BY: CHD

(See Instructions on Reverse Side)

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DIV. OF OIL, GAS & MINING

(5/2000)

DRAFT

ANSCHUTZ RANCH DEEP 4-26
ANSCHUTZ RANCH DEEP FIELD, SUMMIT CO., UTAH

Well Specifics

Production Casing:	0 to 3,431', 7 5/8", 39#, L80, SLIJ
	3,431' to 13,503', 7", 32.0#, L80, SLIJ
Tubing:	2 7/8", 7.7#, L80, Vam Ace, w/ WL re-entry Guide
	Minimum ID - 2.188" ("R" Nipples)
Packer(s):	Baker Model DB (Set @ 11,560')
	Baker Model DB Isolation Packer (Set @ 12,390')
Completion Intervals:	11,762-774' & 11,694-718'
PBTD:	12,390' (CIBP set in TPA of pkr)

Objective

Plugback and recomplete well uphole into the Thaynes formation.

Procedure

(Note: All depths relative to Schlumberger FMI log dated 11/18/98.

1. Make notifications. MIRU safety engineers. Set and test anchors. MIRU workover rig, pump and tank. Set BPV and test. ND tree, NU and test BOP' s.

2. MIRU sour service slickline. Open and lock out actuated master valve and SCSSV. Pull BPV. Pump tubing volume of freshwater to sweeten. Make gauge ring run to +/- 11,650' . POH. Test lubricator after each run. PU check valve plug. RIH with plug, correlate and set plug in R nipple at 11,609' . POH. RD slickline.

3. RU LD machine and contol line spooler. Sting out of Mod D packer and POH laying down tubing. Use hot oiler to keep well on vacuum. (Vam representative to be on location while handling Vam Ace tubing.)

4. MIRU sour service wireline. Pressure test lubricator to swab valve to 300 psi for 5 minutes and 5000 psi for 10 minutes. Make gauge ring run to 11,550' . POH. Test lubricator after each run. PU cement retainer, RIH, correlate and set at 11,520' . Fill casing and test retainer to 1000 psi. POH. RD wireline.

5. RU LD machine. PU stinger and 2 7/8" workstring. RIH and sting into cmt retainer. Test backside to 1000 psi.

6. RU cementer. Test lines. Establish injection rate down tubing. Squeeze 86 sacks below retainer. Sting out of retainer and spot 33 sacks (200') on top of retainer. POH standing back workstring. RD cementer. RD and release safety engineers.

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7. MIRU wireline service. RIH with casing gun and perforate squeeze perfs from 10,150-152′ , 4 JSPF for a total of 8 shots. POH. RD wireline.

8. PU sqz packer and RIH to +/- 9,950′ . Set sqz packer and test backside to 1000 psi. RU cementers. Test lines. Establish injection rate and sqz perfs with 50 sacks Cl G cement. RD cementers. Release sqz packer, reverse out and POH. Let cement set overnight.

9. PU bit and scraper. TIH and drillout squeeze cement. Test squeeze to 1000 psi. RU laydown machine. POH laying down workstring.

10. PU production packer and 2 7/8″ Vam Ace tubing. RIH, circulate packer fluid, set packer at +/- 10,050′ . Test backside to 1,000 psi. Swab well down to 2,000′ . MIRU flow testers.

11. MIRU wireline. Make gauge run to 10,350′ . PU perforating gun. **Perforate Thaynes objective: 10,185-210′ , and 10,250-300′** . RDMO wireline service.

12. Open well to flow. Swab, if necessary. RD and release WO rig and related equipment.

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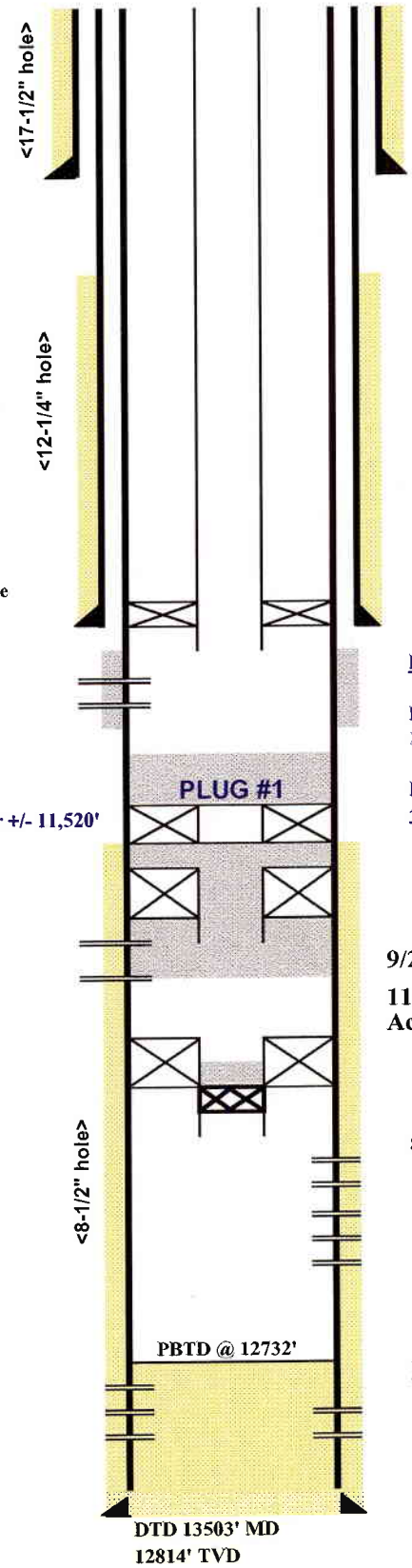
ANSCHUTZ EXPLORATION CORPORATION PROPOSED "PLUGBACK" WELLBORE SCHEMATIC	
SEC: 26-T4N-R7E	WELL NAME: Anschutz Ranch Deep 4-26 COUNTY, STATE: Summit, Utah
TD: 13503'	GROUND ELEVATION: 7313' KB ELEVATION: 7335'



Note: Production csg tested to 4500 psi on 12/2/98 w/8.4#/g mud in hole. Do not apply more than 4000 psi to backside. See csg failure analysis.

Surface Casing
13-3/8". 54.50#, K55, BTC
set @1512', cmt to surface

7-5/8" x 7" XO @ 3431'

DV Tool @ 5730'

Cement Calculations:
7" 32# L80 0.20255 ft3/ft capacity

(11,774-11,520)(.20255 ft3/ft) / 1.2 ft3/sk
= 43 sks, 100% excess = 86 sks

(11,520-11,320)(.20255 ft3/ft) / 1.2 ft3/sk
= 33 sks

Intermediate Casing
0 - 4487', 9-5/8", 47#, L80, Vam Ace
4487' - 6075', 9-5/8", 53.5#, L80, Vam Ace
6075' - 9197', 9-5/8", 47#, L80, Vam Ace

9197'

Proposed Block Squeeze (50 sks) 10,150-152'

Proposed Thaynes Production Perfs
10,185 -210' & 10,250 -300'

Proposed Plug #1 86 sks Cl "G" cmt below retainer & 33 sks (200') Cl "G" cmt above retainer

Proposed cmt retainer +/- 11,520'

Baker Model "D" Packer @ 11,560'
20' Sealbore Extension &
Tailpipe w/ (2) 'R' Nipples (2.188")
WLREG @ 11614'

TOC +/- 11350'
11/28/98 CBL

Tubing String

2-7/8", L-80, 7.7#, Vam Ace
(see tbg detail for specifics)
Tbg capacity .00524 bbls/ft

9/22/02 Perforated Upper Phosphoria
11,762-774' & 11,694-718'
Acidized and tested at 16.6 MMCFD

Baker Model "D" Packer @ 12,390'
w/ (2) R Nipples (2.188")
WLREG @ 12,424'

9/20/02 Set Owen CIBP in tailpipe assembly & capped w/ 10' cement

8/10/01 - Perf Weber w/ 2 spf:
12,524' - 34'
12,560' - 74'
12,586' - 602'
12,616' - 30'
12,688' - 98'
No Stimulation

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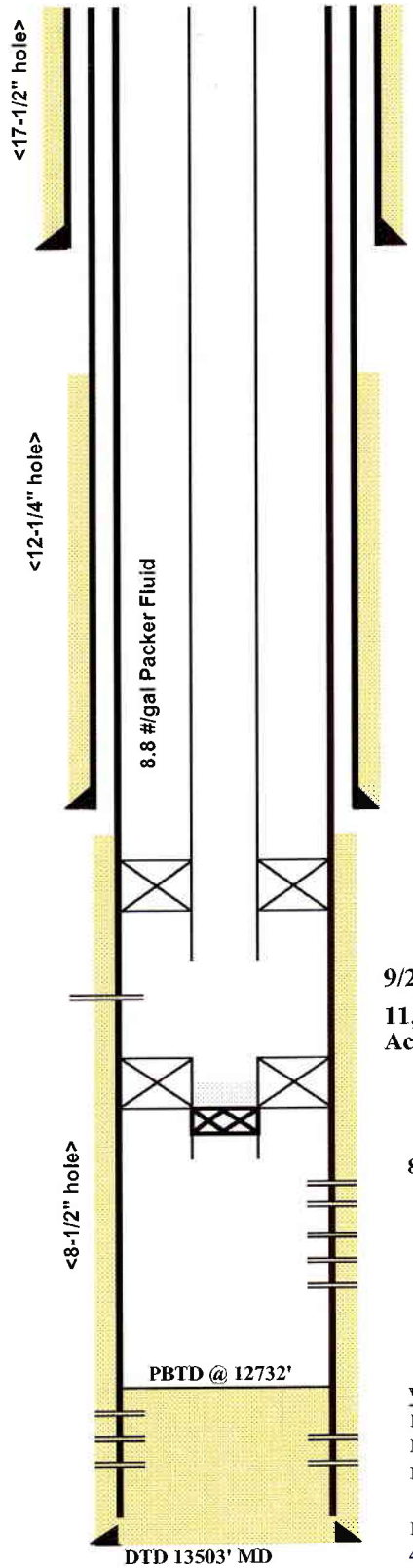
Weber Perforations
1/20-21/99: Perf 13430' - 489', 2 spf, 1-11/16" RTG
1/23/99:Re-Perf 13430' - 489', 2 spf, 1-11/16" EnerJet
1/25/99 Acidized Weber
- 13430' - 489', w/6000 gal 7-1/2% HCL & N2
1/27-29/99 13260' - 380', 2 spf, 1-11/16" EnerJet
4/24/01: Run PL. No prod from perfs 13430' - 488'.

Production Casing
0 - 3431', 7-5/8", 39#, L80, Vam SLIJ
3431' - 13503', 7", 32#, L80 Vam SLIJ
7" Capacity 0.03608 bbl/ft

DTD 13503' MD
12814' TVD

ANSCHUTZ EXPLORATION CORPORATION
CURRENT WELLBORE SCHEMATIC

SEC: 26-T4N-R7E	WELL NAME: Anschutz Ranch Deep 4-26 COUNTY, STATE: Summit, Utah
TD: 13503'	GROUND ELEVATION: 7313' KB ELEVATION: 7335'



Note: Production csg tested to 4500 psi on 12/2/98 w/8.4#/g mud in hole. Do not apply more than 4000 psi to backside. See csg failure analysis.

CAMCO SCSSV 128'
CAMCO INJ MANDREL 2974'

Surface Casing
13-3/8". 54.50#, K55, BTC
set @1512', cmt to surface

7-5/8" x 7" XO @ 3431'

DV Tool @ 5730'

Intermediate Casing
0 - 4487', 9-5/8", 47#, L80, Vam Ace
4487' - 6075', 9-5/8", 53.5#, L80, Vam Ace
6075' - 9197', 9-5/8", 47#, L80, Vam Ace

9197'

Baker Model "D" Packer @ 11,560'
20' Sealbore Extension &
Tailpipe w/ (2) 'R' Nipples (2.188")
WLREG @ 11614'

TOC +/- 11350'
11/28/98 CBL

Tubing String
2-7/8", L-80, 7.7#, Vam Ace
(see tbg detail for specifics)
Tbg capacity .00524 bbls/ft

9/22/02 Perforated Upper Phosphoria
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0 - 3431', 7-5/8", 39#, L80, Vam SLIJ
3431' - 13503', 7", 32#, L80 Vam SLIJ
7" Capacity 0.03608 bbl/ft

P.01

TRANSACTION REPORT

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GARY R. HERBERT
Lieutenant Governor

State of Utah
DEPARTMENT OF NATURAL RESOURCES
Division of Oil, Gas & Mining

MICHAEL R. STYLER
Executive Director

JOHN R. BAZA
Division Director

UTAH DIVISION OF OIL, GAS AND MINING
FACSIMILE COVER SHEET

DATE: 12-12-05

FAX#: 303-299-1228

ATTN: Jim Oursland

COMPANY: Anschutz

NUMBER OF PAGES (INCLUDING THIS ONE): 6

FROM: Lisha Cordova

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Lieutenant Governor

State of Utah
DEPARTMENT OF NATURAL RESOURCES
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well hrs

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER: FEE

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT or CA AGREEMENT NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER _____

8. WELL NAME and NUMBER: Anschutz Ranch Deep 4-26

2. NAME OF OPERATOR: The Anschutz Corporation

9. API NUMBER: 4304330320

3. ADDRESS OF OPERATOR: 555 17th Street, Suite 2400 CITY Denver STATE CO ZIP 80202 PHONE NUMBER: (303) 298-1000

10. FIELD AND POOL, OR WILDCAT: Anschutz Ranch

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 1623' FNL and 1328' FWL

COUNTY: Summit

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SENW 26 T4N R7E

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☑ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start: 12/9/2005	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☐ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER: _____
	☐ CONVERT WELL TYPE	☑ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

The Anschutz Corporation proposes to recomplete the subject well uphole into the Thaynes formation. The details of this recompletion are detailed on the attached procedure and well sketch.

This sundry revises a sundry submitted by Anschutz on 12/08/05 and approved by the Utah Division of Oil, Gas and Mining on 12/12/05. As is detailed in the attached procedure, the method of plugging back the current Phosphoria completion has not changed. The proposed Thaynes perf interval and squeeze method have been revised.

COPY SENT TO OPERATOR
Date: 12-19-05
Initials: CHD

NAME (PLEASE PRINT) James P. Oursland TITLE Operations Manager

SIGNATURE [signature] DATE 12/14/2005

(This space for State use only)

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 12/15/05
BY: [signature]

(See Instructions on Reverse Side)

(5/2000)

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DRAFT

ANSCHUTZ RANCH DEEP 4-26
ANSCHUTZ RANCH DEEP FIELD, SUMMIT CO., UTAH

Well Specifics

Production Casing:	0 to 3,431', 7 5/8", 39#, L80, SLIJ
	3,431' to 13,503', 7", 32.0#, L80, SLIJ
Tubing:	2 7/8", 7.7#, L80, Vam Ace, w/ WL re-entry Guide
	Minimum ID - 2.188" ("R" Nipples)
Packer(s):	Baker Model DB (Set @ 11,560')
	Baker Model DB Isolation Packer (Set @ 12,390')
Completion Intervals:	11,762-774' & 11,694-718'
PBTD:	12,390' (CIBP set in TPA of pkr)

Objective

Plugback and recomplete well uphole into the Thaynes formation.

Procedure

(Note: All depths relative to Schlumberger FMI log dated 11/18/98.

1. Make notifications. MIRU safety engineers. Set and test anchors. MIRU workover rig, pump and tank. Set BPV and test. ND tree, NU and test BOP' s.

2. MIRU sour service slickline. Open and lock out actuated master valve and SCSSV. Pull BPV. Pump tubing volume of freshwater to sweeten. Make gauge ring run to +/- 11,650' . POH. Test lubricator after each run. PU check valve plug. RIH with plug, correlate and set plug in R nipple at 11,609' . POH. RD slickline.

3. RU LD machine and contol line spooler. Sting out of Mod D packer and POH standing back tubing. Use hot oiler to keep well on vacuum. (Vam representative to be on location while handling Vam Ace tubing. If tubing is not fit to re-run, LD and contact Denver Engineering.)

4. MIRU sour service wireline. Pressure test lubricator to swab valve to 300 psi for 5 minutes and 5000 psi for 10 minutes. Make gauge ring run to 11,550' . POH. Test lubricator after each run. PU cement retainer, RIH, correlate and set at 11,520' . Fill casing and test retainer to 1000 psi. POH. RD wireline.

5. PU stinger and RIH with 2 7/8" Vam Ace tubing. RIH and sting into cmt retainer. Test backside to 1000 psi.

6. RU cementer. Test lines. Establish injection rate down tubing. Squeeze 86 sacks below retainer. Sting out of retainer and spot 33 sacks (200') on top of retainer. POH standing back workstring. RD cementer.

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7. MIRU wireline service. RIH with casing gun and perforate squeeze perfs from 10,380-382′ , 4 JSPF for a total of 8 shots. POH. Open 9 5/8″ x 7 5/8″ backside and attempt to circulate down casing and up backside. If circulation is established proceed to Step 8. If unable to establish circulation, RIH with CIBP and set at +/- 10,370′ . Pressure test casing to 1,000 psi. Proceed to Step #9.

8. PU cement retainer. RIH with cement retainer and set at +/- 10,350′ . PU stinger and RIH with 2 7/8″ Vam Ace tubing. RIH and sting into cmt retainer. Test backside to 1000 psi. RU cementer. Test lines. Establish injection rate and circulate 302 sks Cl G cement behind 7″ csg. Sting out of cement retainer, reverse out and POH. RD cementers.

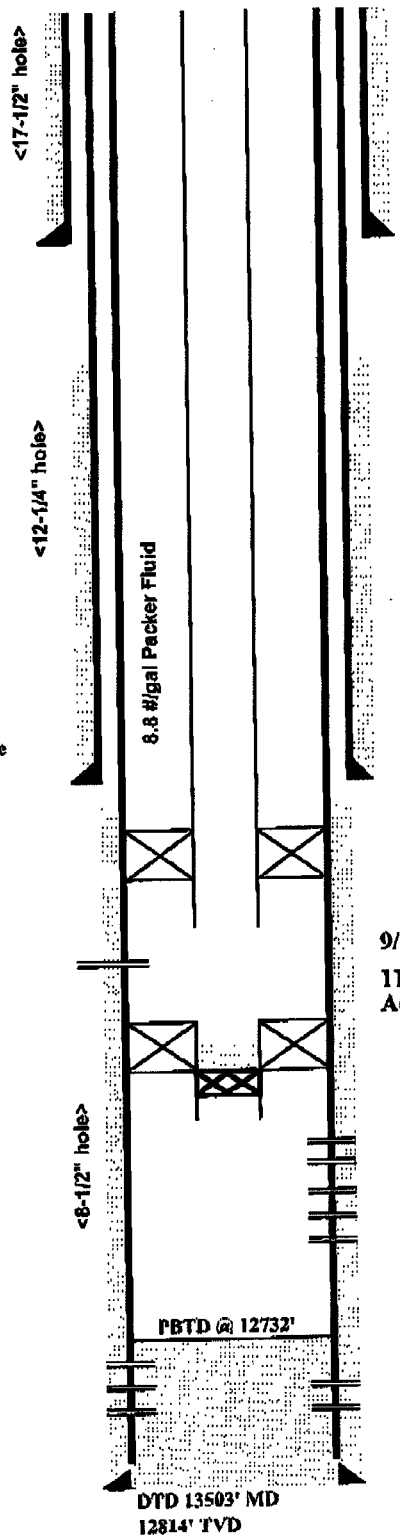
9. PU production packer and 2 7/8″ Vam Ace tubing. RIH, circulate packer fluid, set packer at +/- 10,050′ . Test backside to 1,000 psi. Swab well down to 2,000′ . MIRU flow testers.

10. MIRU wireline. NU and test lubricator. (Well to be perforated +/-1,000 psi underbalanced.) Make Gauge ring run to 10,320′ . **Make the 2 1/8″ perf gun runs necessary to perforate from 10,145′ - 10,312′ (167′), 1 JSPF. (Note: To take advantage of the underbalance condition present for the first gun run perforate the gun interval including the depth 10,250′ (potential sweet spot) first.)** RDMO wireline service.

11. Open well to flow. Swab, if necessary. RD and release WO rig and related equipment.

ANSCHUTZ EXPLORATION CORPORATION
CURRENT WELLBORE SCHEMATIC

SEC: 26-T4N-R7E	WELL NAME: Anschutz Ranch Deep 4-26 COUNTY, STATE: Summit, Utah
TD: 13503'	GROUND ELEVATION: 7313' KB ELEVATION: 7335'



Surface Casing
13-3/8", 54.50#, K55, BTC
set @1512', cmt to surface

7-5/8" x 7" XO @ 3431'

DV Tool @ 5730'

Intermediate Casing
0 - 4487', 9-5/8", 47#, L80, Vam Acc
4487' - 6075', 9-5/8", 53.5#, L80, Vam Acc
6075' - 9197', 9-5/8", 47#, L80, Vam Acc

Baker Model "D" Packer @ 11,560'
20' Sealbore Extension &
Tailpipe w/ (2) 'R' Nipples (2.188")
WLREG @ 11614'

Tubing String
2-7/8", L-80, 7.7#, Vam Acc
(see tbg detail for specifics)
Tbg capacity .00524 bbls/ft

Baker Model "D" Packer @ 12,390'
w/ (2) R Nipples (2.188")
WLREG @ 12,424'

9/20/02 Set Owen CIBP in tailpipe assembly & capped w/ 10' cement

Production Casing
0 - 3431', 7-5/8", 39#, L80, Vam SLIJ
3431' - 13503', 7", 32#, L80 Vam SLIJ
7" Capacity 0.03608 bbl/ft

Note: Production csg tested to 4500 psi on 12/2/98 w/8.4#/g mud in hole. Do not apply more than 4000 psi to backside. See csg failure analysis.

CAMCO SCSSV 128'
CAMCO INJ MANDREL 2974'

9197'

TOC +/- 11350'
11/28/98 CBL

9/22/02 Perforated Upper Phosphoria
11,762-774' & 11,694-718'
Acidized and tested at 16.6 MMCFD

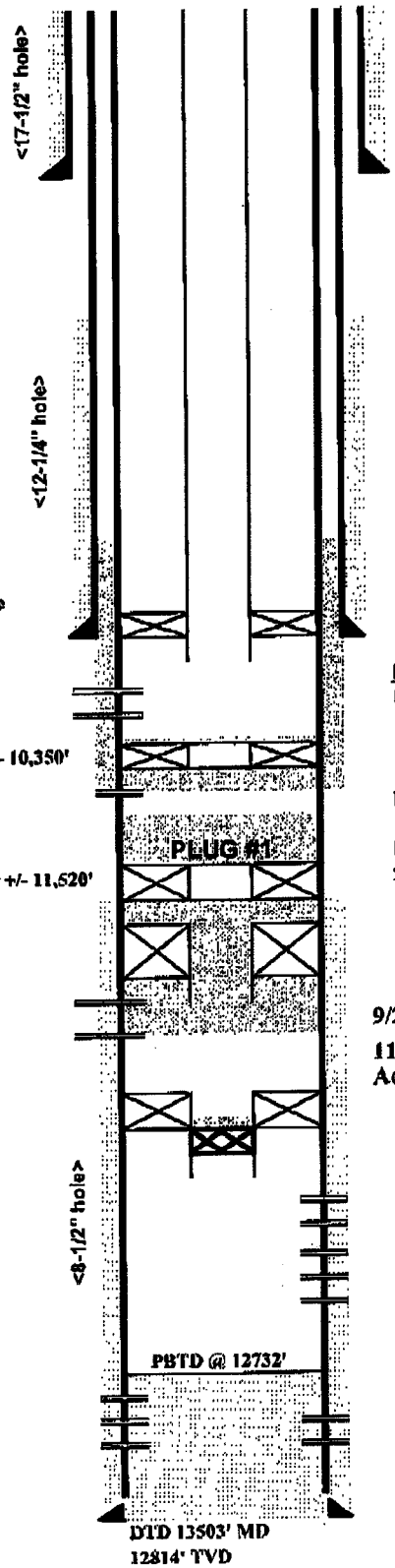
8/10/01 - Perf Weber w/ 2 spf:
12,524' - 54'
12,560' - 74'
12,586' - 602'
12,616' - 30'
12,688' - 98'
No Stimulation

Weber Perforations
1/20-21/99: Perf 13430' - 489', 2 spf, 1-11/16" RTG
1/23/99: Re-Perf 13430' - 489', 2 spf, 1-11/16" EnerJet
1/25/99 Acidized Weber
- 13430' - 489', w/6000 gal 7-1/2% HCL & N2
1/27-29/99 13260' - 380', 2 spf, 1-11/16" EnerJet
4/24/01: Run PL. No production from perfs 13430' - 488'.

S:\Common\AEC Operations\AEC Well Files\Active Wells\Utah\ARD 4-26\Engineering\ARD 4-26 Well Diagram.xls

ANSCHUTZ EXPLORATION CORPORATION
PROPOSED "PLUGBACK" WELLBORE SCHEMATIC

SEC: 26-T4N-R7E	WELL NAME: Anschutz Ranch Deep 4-26 COUNTY, STATE: Summit, Utah
TD: 13503'	GROUND ELEVATION: 7313' KB ELEVATION: 7335'



Surface Casing
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set @1512', cmt to surface

7-5/8" x 7" XO @ 3431'

DV Tool @ 5730'

Intermediate Casing
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4487' - 6075', 9-5/8", 53.5#, L80, Vam Ace
6075' - 9197', 9-5/8", 47#, L80, Vam Ace

Proposed cmt retainer +/- 10,350'

Proposed cmt retainer +/- 11,520'

Baker Model "D" Packer @ 11,560'
20' Sealbore Extension &
Tailpipe w/ (2) 'R' Nipples (2.188")
WLREG @ 11614'

Tubing String
2-7/8", L-80, 7.7#, Vam Ace
(see tbg detail for specifics)
Tbg capacity .00524 bbls/ft

Baker Model "D" Packer @ 12,390'
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WLREG @ 12,424'

9/20/02 Set Owen CIBP in tailpipe assembly & capped w/ 10' cement

Production Casing
0 - 3431', 7-5/8", 39#, L80, Vam SLLJ
3431' - 13503', 7", 32#, L80 Vam SLLJ
7" Capacity 0.03608 bbl/ft

Note: Production csg tested to 4500 psi on 12/2/98 w/8.4#/g mud in hole. Do not apply more than 4000 psi to backside. See csg failure analysis.

Cement Calculations:
7" 32# L80 0.20255 ft3/ft capacity
7"x9 5/8" (47#) 0.1438 ft3/ft annular volume

Plug #2
7"x8 1/2" ann vol (9200'-10,382') -260 ft3 (cal)

((500')(0.1438 ft3/ft) + (260 ft3)(1.1)
+ (30')(.20255ft3/ft)) / 1.2 ft3/sk
= 302 sks

Plug #1
(11,774-11,520)(.20255 ft3/ft) / 1.2 ft3/sk
= 43 sks, 100% excess = 86 sks

(11,520-11,320)(.20255 ft3/ft) / 1.2 ft3/sk
= 33 sks

9197'

Proposed Thaynes Production Perfs
10,145 - 10,312' (1 spf)

Proposed sqz perfs: 10,380-382' (4 spf)

Proposed Plug #1 86 sks Cl "G" cmt below ret & 33 sks (200') Cl "G" cmt above retainer

TOC +/- 11350'
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4/24/01: Run PL. No prod from perfs 13430' - 488'.

ANSCHUTZ EXPLORATION CORPORATION 555 17th Street, Suite 2400, Denver, Colorado 80202

ANSCHUTZ

Date: December 15, 2005

Number of pages including cover sheet: 6

TO: Dustin Doucet

Tel:

Fax: 801-359-3940

From: DeVon Pester

Tel: 303-299-1519

Fax: 303-299-1518

REMARKS: ☐ Urgent ☐ For your review ☐ Reply ASAP ☐ Please comment

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ANSCHUTZ EXPLORATION

ANSCHUTZ RANCH DEEP

4-26

API Well No.:

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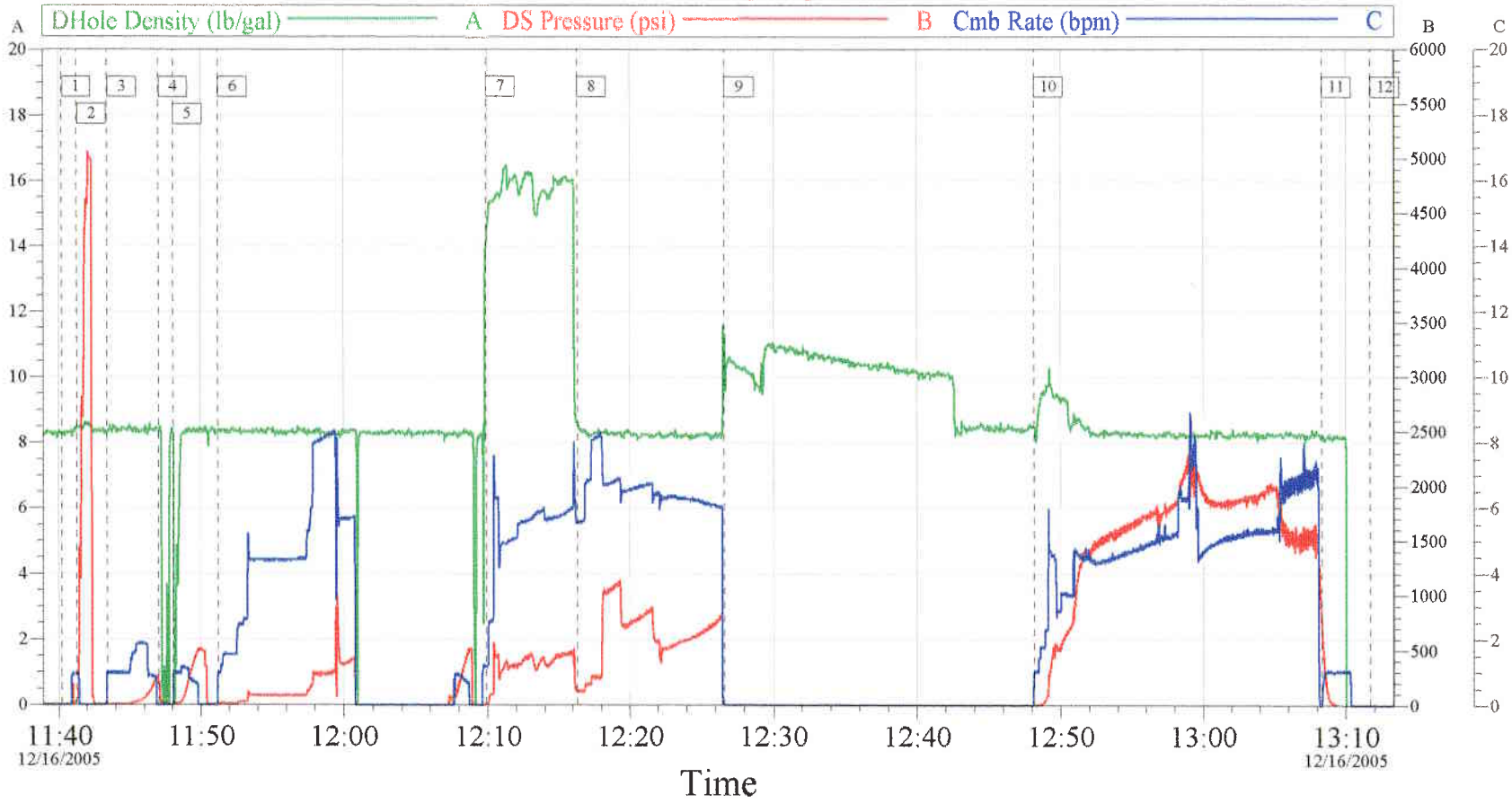
16-Dec-05
UINTA

SQUEEZE

Customer Representative:
JIM HILL 679-6902
Halliburton Operator:
BRIAN BROWNELL
Ticket No.:
4110283

HALLIBURTON

Halliburton Rock Spinrgs Cement



Event Log

1	Start Job	11:40:13	2	PRESSURE TEST	11:41:19	3	PRESSURE UP BACK SIDE	11:43:26
4	SHUT DOWN FIX LEAK	11:47:04	5	REPRESSURE BACKSIDE	11:48:05	6	INJECTION TEST	11:51:14
7	PUMP CEMENT	12:09:52	8	DISPLACE	12:16:18	9	SHUT DOWN	12:26:39
10	REVERSE OUT	12:48:08	11	SHUT DOWN	13:08:20	12	END JOB	13:11:42

Customer: ANSCHUTZ EXPLORATION Well Desc: RANCH DEEP 4-26	Job Date: 12-16-2005 Job Type: SQUEEZE	Ticket #: 4110283

HALLIBURTON
CemWin v1.7.2
16-Dec-05 13:41

Halliburton

Job Log

TICKET # 4110283		TICKET DATE 12/16/05	
REGION NORTH AMERICA LAND	NWA / COUNTRY WESTERN	BDA / STATE DENVER, CO	COUNTY UINTA
MBU ID / EMPL # 301514	H.E.S EMPLOYEE NAME BRIAN BROWNELL	PSL DEPARTMENT ZONAL ISOLATION	
LOCATION 55356 ROCK SPRINGS	COMPANY ANSCHUTZ EXPLORATION	CUSTOMER REP / PHONE JIM HILL 679-6902	
TICKET AMOUNT	WELL TYPE 02 GAS	API/UWI #	
WELL LOCATION WYO LAND	DEPARTMENT CEMENTING SERVICES 10003	JOB PURPOSE CODE	
LEASE / WELL # ANSCHUTZ RANCH DE — Well No. 4-26	SEC / TWP / RNG		

Chart No.	Time	Rate (BPM)	Volume (BBL)(GAL)	Pmps T	Pmps C	Press.(PSI) N_2	Press.(PSI) Fluid	Job Description / Remarks
2-16-2005	0300							CALLED OUT
2-16-2005	0900							ON LOCATION
	0910							SAFETY MEETING
	0920							SPOT EQUPIPMENT
	0930							RIG UP HES IRON
	1120							SAFETY MEETING WITH RIG CREW
	1140							START JOB
	1141	0.2	0.2				5000	PRESSURE TEST HES IRON
	1143	1.0	3.0				250	PRESSURE UP BACK SIDE
	1147							SHUT DOWN TO FIX LEAK IN SQUEEZE MANIFOLD
	1148	1.0	2.0				500	PRESSURE UP BACK SIDE AGAIN
	1151	5.5	40.0				450	GET INJECTION RATE
	1209	5.0	24.0				400	PUMP CEMENT AT 15.8PPG... 120 SACKS
	1216	6.0	53.0				600	DISPLACE CEMENT WITH FRESH WATER
	1226							SHUT DOWN AND STING OUT
	1230							PULL EIGHT JOINTS
	1248	6.0	60.0				2500	REVERSE TUBING VOLUME
	1308							SHUT DOWN
	1315							SAFETY MEETING
	1325							RIG DOWN HES IRON
	1410							SAFETY MEETING
	1420							RELEASED FROM LOCATION
								THANK YOU FROM BRIAN AND CREW

Halliburton

JOB SUMMARY

SAP #/TICKET #	4110283	TICKET DATE	12/16/05
REGION	NORTH AMERICA LAND	NWA / COUNTRY	WESTERN
BDA / STATE	DENVER, CO	COUNTY	UINTA
MBU ID / EMPL #	301514	H.E.S. EMPLOYEE NAME	BRIAN BROWNELL
PSL DEPARTMENT	ZONAL ISOLATION	LOCATION	55356 ROCK SPRINGS
COMPANY	ANSCHUTZ EXPLORATION	CUSTOMER REP / PHONE	JIM HILL 679-6902
TICKET AMOUNT		WELL TYPE	02 GAS
API/UWI #		WELL LOCATION	WYO LAND
DEPARTMENT	CEMENTING SERVICES 10003	SAP BOMB NUMBER	Description SQUEEZE
LEASE NAME	ANSCHUTZ RANCH DEEP	Well No.	4-26
SEC / TWP / RNG			

H.E.S. EMP NAME / EMP # / (EXPOSURE HOURS)	HRS		HRS		HRS		HRS
B. BROWNELL 301514		W. STEVENS		F. RUBIO		C.WILLOUGHBY 122286	

H.E.S. UNIT #S / (R / T MILES)	R / T MILES		R / T MILES		R / T MILES		R / T MILES
10547386	240	10744585 10228933 RCM	240	10789198 10744565	240		

Form. Name _____ Type: GAS
Form. Thickness _____ From _____ To _____
Packer Type DRILLABLE Set At 11,520
Bottom Hole Temp. _____ Pressure _____
Retainer Depth SEE JOB LOG Total Depth 12,732

	Called Out	On Location	Job Started	Job Completed
Date	12-16-2005	12-16-2005	12-16-2005	12-16-2005
Time	0300	0900	1140	1311

Tools and Accessories

Type and Size	Qty	Make
Float Collar		
Float Shoe		
Centralizers		
Bottom Plug		
Top Plug		
PDF Collar		
PDF Shoe		
Packer		
DV Tool		
Guide Shoe		
LIMIT CLAMP		
Weld-a		

Well Data

	New/Used	Weight	Size	Grade	From	To	Max. Allow
Casing	New/Used	7.7	2 7/8	L-80	11,520	SURFACE	
Casing	New/Used	32.0	7	L-80	3,431	SURFACE	
Casing	New/Used	54.5	13 3/8	K-55	1,512	SURFACE	
Liner							
Tubing							
Tubing							
Drill Pipe							
Drill Pipe							
Open Hole							Shots/Ft.
Perforations					11,762	11,774	
Perforations					11,694	11,718	
Perforations							

Materials And Tank Strap

Mud Type _____ Density _____ Lb/Gal
Disp. Fluid WATER Density 8.33 Lb/Gal

Plug #1 Set at _____ to _____ Ft _____ Sks
Plug #2 Set at _____ to _____ Ft _____ Sks
Plug #3 Set at _____ to _____ Ft _____ Sks
Plug #4 Set at _____ to _____ Ft _____ Sks
Plug #5 Set at _____ to _____ Ft _____ Sks
Plug #6 Set at _____ to _____ Ft _____ Sks
Plug #7 Set at _____ to _____ Ft _____ Sks
Plug #8 Set at _____ to _____ Ft _____ Sks

Beging Strap _____ EndStrap _____ Lead Cmt
Beging Strap _____ EndStrap _____ Lead Cmt
Beging Strap _____ EndStrap _____ Lead Cmt
Beging Strap _____ EndStrap _____ Lead Cmt
Beging Strap _____ EndStrap _____ Tail Cmt
Beging Strap _____ EndStrap _____ Tail Cmt

Hours On Location

Date	Hours
12-16-2005	5.00
Total	5.0

Operating Hours

Date	Hours
12-16-2005	1.50
Total	1.5

Operating hours(rig up-down pumping)

Date	Hours:Mins
12-16-2005	5
Total	5

Hydraulic Horsepower

Ordered 400 Avail. 400 Used 400

Average Rates in BPM

Treating 5 Disp. 6 Overall 5.5

Cement Left in Pipe

Feet Reason SHOE JOINT

Cement Data

Stage	Sacks	Cement	Bulk/Sks	Additives	W/Rq.	Yield	Lbs/Gal	BBLs
1	120	AG-300	Bulk/Sks	.3% CFR-3, .3% HALAD-344, .1% HR-5	5.02	1.15	15.80	24.6
								0.0
								0.0
								0.0
								0.0
								0.0

Circulating _____ Displacement _____ Preflush: Gal - BBl _____ Type: _____
Breakdown _____ Maximum _____ Circulate Hole Gal - BBl _____ Pad:Bbl -Gal _____
Lost Returns-YES _____ Lost Returns-NO NO Excess /ReturnGal BBl _____ Calc.Disp Bbl 53
Cmt Rtrn#Bbl 2 Actual TOC _____ Calc. TOC: _____ Actual Disp. 53
Average _____ Frac. Gradient _____ Treatment: Gal - BBl _____ Disp:Bbl-Gal BBL
Shut In: Instant _____ 15 Min. _____ 30 Min. _____ Cement Slurry: Gal - BBl 25
Total Volume Gal - BBl 78

Frac Ring #1	Frac Ring # 2	Frac Ring # 3	Frac Ring # 4

THE INFORMATION STATED HEREIN IS CORRECT
CUSTOMER REPRESENTATIVE JIM HILL 679-6902
SIGNATURE

OIL & GAS INFORMATION SYSTEM

FILE EDIT OIL GAS GAS PLANT REPORTS DB MAINTENANCE OPTIONS HELP DATA CONVERSION LOGS DATABASE QUERY

Well Data

WELL SEARCH | WELL DATA | WELL HISTORY | WELL ACTIVITY

WELL NAME: ANSCHUTZ RANCH DEEP 4-26 API NUMBER: 4304330320 WELL TYPE: GW WELL STATUS: P

OPERATOR: ANSCHUTZ CORPORATION, THE ACCOUNT: N0060 # OPERATOR APPROVED BY BLM / BIA ☐

DESIGNATED OPERATOR: ACCOUNT:

FIELD NAME: ANSCHUTZ RANCH FIELD NUMBER: 500 FIRST PRODUCTION: LA | PA DATE:

WELL LOCATION:

SURF LOCATION: 1623 FNL 1328 FWL

Q. S. T. R. M.: SENW 26 04.0 N 07.0 E S

COUNTY: SUMMIT

UTM Coordinates:

SURFACE - N: 4544791.00 BHL - N: 4545184

SURFACE - E: 489320.00 BHL - E: 490361

LATITUDE: 41.05619

LONGITUDE: -111.12710

CONFIDENTIAL FLAG ☐

CONFIDENTIAL DATE:

DIRECTIONAL | HORIZONTAL: D

HORIZONTAL LATERALS:

ORIGINAL FIELD TYPE: D

WILDCAT TAX FLAG ☐

CB-METHANE FLAG ☐

ELEVATION: 7317'

BOND NUMBER / TYPE: 965001810 5

LEASE NUMBER: FEE

MINERAL LEASE TYPE: 4

SURFACE OWNER TYPE: 4

INDIAN TRIBE:

C.A. NUMBER:

UNIT NAME:

CUMULATIVE PRODUCTION:

OIL: 134115

GAS: 18061992

WATER: 308338

WELL IMAGES | PRODUCTION GRAPH

COMMENTS: BHL SEC 22:980910 ENTITY ADDED:000110 CONF EXP:

Create New Rec | Save | Cancel Change | To History | To Activity | Print Recd | Export Recd

P V1 D V2 X

NUM

Start | Novell-delivered Applicati... | OIL & GAS INFORMAT... | Well Selection Criteria | 9:37 AM

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

5. LEASE DESIGNATION AND SERIAL NUMBER: FEE
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT or CA AGREEMENT NAME:

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER
8. WELL NAME and NUMBER: Anschutz Ranch Deep 4-26
2. NAME OF OPERATOR: The Anschutz Corporation
9. API NUMBER: 4304330320
3. ADDRESS OF OPERATOR: 555 17th Street, Suite 2400 CITY Denver STATE CO ZIP 80202
PHONE NUMBER: (303) 298-1000
10. FIELD AND POOL, OR WILDCAT: Anschutz Ranch
4. LOCATION OF WELL
FOOTAGES AT SURFACE: 1623' FNL and 1328' FWL
COUNTY: Summit
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SENW 26 T4N R7E
STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☑ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start:	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
12/9/2005	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☐ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER:
	☐ CONVERT WELL TYPE	☑ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

The Anschutz Corporation proposes to recomplete the subject well uphole into the Thaynes formation. The details of this recompletion are detailed on the attached procedure and well sketch.

This sundry revises a sundry submitted by Anschutz on 12/08/05 and approved by the Utah Division of Oil, Gas and Mining on 12/12/05. As is detailed in the attached procedure, the method of plugging back the current Phosphoria completion has not changed. The proposed Thaynes perf interval and squeeze method have been revised.

NAME (PLEASE PRINT) James P. Oursland
TITLE Operations Manager
SIGNATURE James Oursland
DATE 12/14/2005

(This space for State use only)

Fax Copy Approved 12/14/05 DKD

RECEIVED
DEC 16 2005
DIV. OF OIL, GAS & MINING

(5/2000)

(See Instructions on Reverse Side)

DRAFT

ANSCHUTZ RANCH DEEP 4-26
ANSCHUTZ RANCH DEEP FIELD, SUMMIT CO., UTAH

Well Specifics

Production Casing:	0 to 3,431', 7 5/8", 39#, L80, SLIJ
	3,431' to 13,503', 7", 32.0#, L80, SLIJ
Tubing:	2 7/8", 7.7#, L80, Vam Ace, w/ WL re-entry Guide
	Minimum ID - 2.188" ("R" Nipples)
Packer(s):	Baker Model DB (Set @ 11,560')
	Baker Model DB Isolation Packer (Set @ 12,390')
Completion Intervals:	11,762-774' & 11,694-718'
PBTD:	12,390' (CIBP set in TPA of pkr)

Objective

Plugback and recomplete well uphole into the Thaynes formation.

Procedure

(Note: All depths relative to Schlumberger FMI log dated 11/18/98.

1. Make notifications. MIRU safety engineers. Set and test anchors. MIRU workover rig, pump and tank. Set BPV and test. ND tree, NU and test BOP' s.

2. MIRU sour service slickline. Open and lock out actuated master valve and SCSSV. Pull BPV. Pump tubing volume of freshwater to sweeten. Make gauge ring run to +/- 11,650' . POH. Test lubricator after each run. PU check valve plug. RIH with plug, correlate and set plug in R nipple at 11,609' . POH. RD slickline.

3. RU LD machine and contol line spooler. Sting out of Mod D packer and POH standing back tubing. Use hot oiler to keep well on vacuum. (Vam representative to be on location while handling Vam Ace tubing. If tubing is not fit to re-run, LD and contact Denver Engineering.)

4. MIRU sour service wireline. Pressure test lubricator to swab valve to 300 psi for 5 minutes and 5000 psi for 10 minutes. Make gauge ring run to 11,550' . POH. Test lubricator after each run. PU cement retainer, RIH, correlate and set at 11,520' . Fill casing and test retainer to 1000 psi. POH. RD wireline.

5. PU stinger and RIH with 2 7/8" Vam Ace tubing. RIH and sting into cmt retainer. Test backside to 1000 psi.

6. RU cementer. Test lines. Establish injection rate down tubing. Squeeze 86 sacks below retainer. Sting out of retainer and spot 33 sacks (200') on top of retainer. POH standing back workstring. RD cementer.

7. MIRU wireline service. RIH with casing gun and perforate squeeze perfs from 10,380-382′ , 4 JSPF for a total of 8 shots. POH. Open 9 5/8″ x 7 5/8″ backside and attempt to circulate down casing and up backside. If circulation is established proceed to Step 8. If unable to establish circulation, RIH with CIBP and set at +/- 10,370′ . Pressure test casing to 1,000 psi. Proceed to Step #9.

8. PU cement retainer. RIH with cement retainer and set at +/- 10,350′ . PU stinger and RIH with 2 7/8″ Vam Ace tubing. RIH and sting into cmt retainer. Test backside to 1000 psi. RU cementer. Test lines. Establish injection rate and circulate 302 sks Cl G cement behind 7″ csg. Sting out of cement retainer, reverse out and POH. RD cementers.

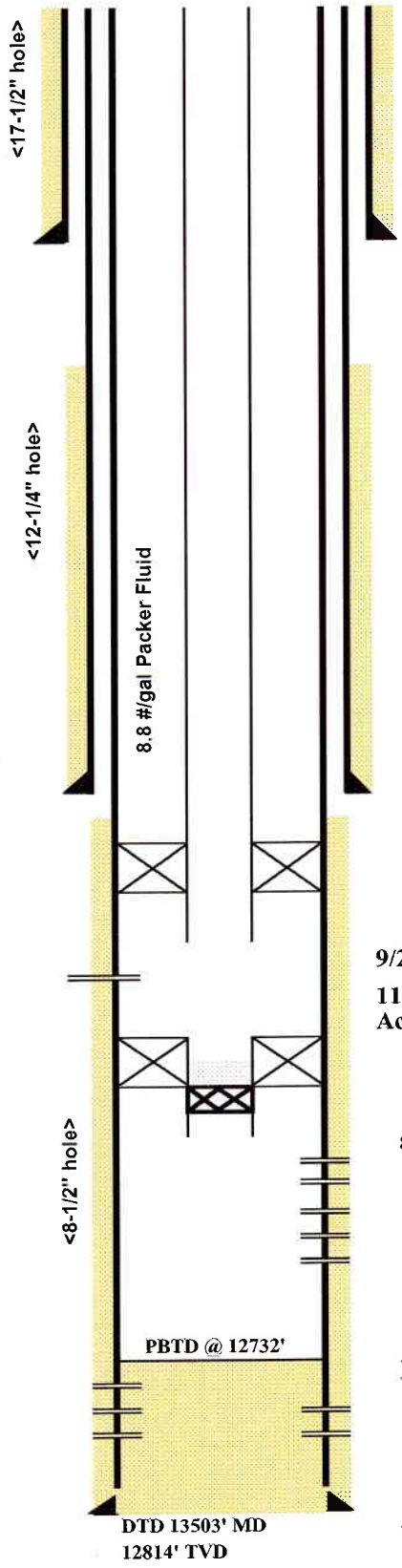
9. PU production packer and 2 7/8″ Vam Ace tubing. RIH, circulate packer fluid, set packer at +/- 10,050′ . Test backside to 1,000 psi. Swab well down to 2,000′ . MIRU flow testers.

10. MIRU wireline. NU and test lubricator. (Well to be perforated +/-1,000 psi underbalanced.) Make Gauge ring run to 10,320′ . **Make the 2 1/8″perf gun runs necessary to perforate from 10,145′ - 10,312′ (167′), 1 JSPF. (Note: To take advantage of the underbalance condition present for the first gun run perforate the gun interval including the depth 10,250′ (potential sweet spot) first.)** RDMO wireline service.

11. Open well to flow. Swab, if necessary. RD and release WO rig and related equipment.

ANSCHUTZ EXPLORATION CORPORATION
CURRENT WELLBORE SCHEMATIC

SEC: 26-T4N-R7E	WELL NAME: Anschutz Ranch Deep 4-26 COUNTY, STATE: Summit, Utah
TD: 13503'	GROUND ELEVATION: 7313' KB ELEVATION: 7335'



Surface Casing
13-3/8". 54.50#, K55, BTC
set @1512', cmt to surface

7-5/8" x 7" XO @ 3431'

DV Tool @ 5730'

Intermediate Casing
0 - 4487', 9-5/8", 47#, L80, Vam Ace
4487' - 6075', 9-5/8", 53.5#, L80, Vam Ace
6075' - 9197', 9-5/8", 47#, L80, Vam Ace

Baker Model "D" Packer @ 11,560'
20' Sealbore Extension &
Tailpipe w/ (2) 'R' Nipples (2.188")
WLREG @ 11614'

Tubing String
2-7/8", L-80, 7.7#, Vam Ace
(see tbg detail for specifics)
Tbg capacity .00524 bbls/ft

Baker Model "D" Packer @ 12,390'
w/ (2) R Nipples (2.188")
WLREG @ 12,424'

9/20/02 Set Owen CIBP in tailpipe assembly & capped w/ 10' cement

Production Casing
0 - 3431', 7-5/8", 39#, L80, Vam SLIJ
3431' - 13503', 7", 32#, L80 Vam SLIJ
7" Capacity 0.03608 bbl/ft

Note: Production csg tested to 4500 psi on 12/2/98 w/8.4#/g mud in hole. Do not apply more than 4000 psi to backside. See csg failure analysis.

CAMCO SCSSV 128'
CAMCO INJ MANDREL 2974'

9197'

TOC +/- 11350'
11/28/98 CBL

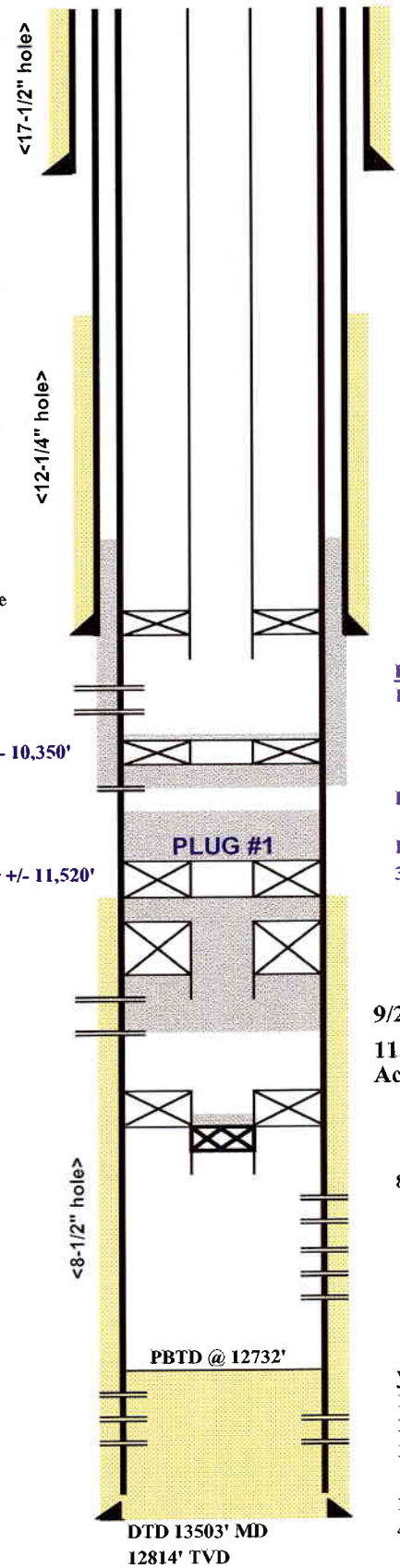
9/22/02 Perforated Upper Phosphoria
11,762-774' & 11,694-718'
Acidized and tested at 16.6 MMCFD

8/10/01 - Perf Weber w/ 2 spf:
12,524' - 34'
12,560' - 74'
12,586' - 602'
12,616' - 30'
12,688' - 98'
No Stimulation

Weber Perforations
1/20-21/99: Perf 13430' - 489', 2 spf, 1-11/16" RTG
1/23/99: Re-Perf 13430' - 489', 2 spf, 1-11/16" EnerJet
1/25/99 Acidized Weber
- 13430' - 489', w/6000 gal 7-1/2% HCL & N2
1/27-29/99 13260' - 380', 2 spf, 1-11/16" EnerJet
4/24/01: Run PL. No production from perfs 13430' - 488'.

ANSCHUTZ EXPLORATION CORPORATION
PROPOSED "PLUGBACK" WELLBORE SCHEMATIC

SEC: 26-T4N-R7E	WELL NAME: Anschutz Ranch Deep 4-26 COUNTY, STATE: Summit, Utah
TD: 13503'	GROUND ELEVATION: 7313' KB ELEVATION: 7335'



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set @1512', cmt to surface

7-5/8" x 7" XO @ 3431'

DV Tool @ 5730'

Intermediate Casing
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4487' - 6075', 9-5/8", 53.5#, L80, Vam Ace
6075' - 9197', 9-5/8", 47#, L80, Vam Ace

Proposed cmt retainer +/- 10,350'

Proposed cmt retainer +/- 11,520'

Baker Model "D" Packer @ 11,560'
20' Sealbore Extension &
Tailpipe w/ (2) 'R' Nipples (2.188")
WLREG @ 11614'

Tubing String
2-7/8", L-80, 7.7#, Vam Ace
(see tbg detail for specifics)
Tbg capacity .00524 bbls/ft

Baker Model "D" Packer @ 12,390'
w/ (2) R Nipples (2.188")
WLREG @ 12,424'

9/20/02 Set Owen CIBP in tailpipe assembly & capped w/ 10' cement

Production Casing
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3431' - 13503', 7", 32#, L80 Vam SLIJ
7" Capacity 0.03608 bbl/ft

Note: Production csg tested to 4500 psi on 12/2/98 w/8.4#/g mud in hole. Do not apply more than 4000 psi to backside. See csg failure analysis.

Cement Calculations:
7" 32# L80 0.20255 ft3/ft capacity
7"x9 5/8" (47#) 0.1438 ft3/ft annular volume

Plug #2
7"x8 1/2" ann vol (9200'-10,382') -260 ft3 (cal)

((500')(0.1438 ft3/ft) + (260 ft3)(1.1)
+ (30')(.20255ft3/ft)) / 1.2 ft3/sk
= 302 sks

Plug #1
(11,774-11,520)(.20255 ft3/ft) / 1.2 ft3/sk
= 43 sks, 100% excess = 86 sks

(11,520-11,320)(.20255 ft3/ft) / 1.2 ft3/sk
= 33 sks

9197'

Proposed Thaynes Production Perfs
10,145 - 10,312' (1 spf)

Proposed sqz perfs: 10,380-382' (4 spf)

Proposed Plug #1 86 sks Cl "G" cmt below ret &
33 sks (200') Cl "G" cmt above retainer

TOC +/- 11350'
11/28/98 CBL

9/22/02 Perforated Upper Phosphoria
11,762-774' & 11,694-718'
Acidized and tested at 16.6 MMCFD

8/10/01 - Perf Weber w/ 2 spf:
12,524' - 34'
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No Stimulation

Weber Perforations
1/20-21/99: Perf 13430' - 489', 2 spf, 1-11/16" RTG
1/23/99:Re-Perf 13430' - 489', 2 spf, 1-11/16" EnerJet
1/25/99 Acidized Weber
- 13430' - 489', w/6000 gal 7-1/2% HCL & N2
1/27-29/99 13260' - 380', 2 spf, 1-11/16" EnerJet
4/24/01: Run PL. No prod from perfs 13430' - 488'.

ANSCHUTZ
EXPLORATION CORPORATION
555 SEVENTEENTH STREET • SUITE 2400 • DENVER, COLORADO 80202 • 303-298-1000 • FAX 303-298-8881

January 4, 2006

Utah Division of Oil, Gas and Mining
1592 West North Temple, Suite 210
Box 145801
Salt Lake City, UT 84114-5801

RE: Subsequent Sundry - Recompletion
Anschutz Ranch Deep 4-26 (API 43-043-30320);

Gentlemen:

Attached please find the original Sundry Notice for recompleting the above mentioned well sites in Summit County.

Thank you for your cooperation in the handling of this matter.

Sincerely,

DeVon M. Pester
Operations Technician

/dp
Enclosure

RECEIVED
JAN 0 9 2006
DIV. OF OIL, GAS & MINING

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER: FEE

SUNDRY NOTICES AND REPORTS ON WELLS

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT or CA AGREEMENT NAME:

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER _____

8. WELL NAME and NUMBER: Anschutz Ranch Deep 4-26

2. NAME OF OPERATOR: The Anschutz Corporation

9. API NUMBER: 4304330320

3. ADDRESS OF OPERATOR: 555 17th Street, Suite 2400 CITY Denver STATE CO ZIP 80202

PHONE NUMBER: (303) 298-1000

10. FIELD AND POOL, OR WILDCAT: Anschutz Ranch

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 1623' FNL and 1328' FWL

COUNTY: Summit

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SENW 26 T4N R7E

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☐ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start: _____	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☐ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☑ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
12/27/2005	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER: _____
	☐ CONVERT WELL TYPE	☑ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

The Anschutz Corporation has plugged back the Phosphoria completion and attempted a completion uphole in the Thaynes. details of the recompletion are provided in the attached well sketch and morning reports.

NAME (PLEASE PRINT) Mohamed Elhage TITLE Petroleum Engineer

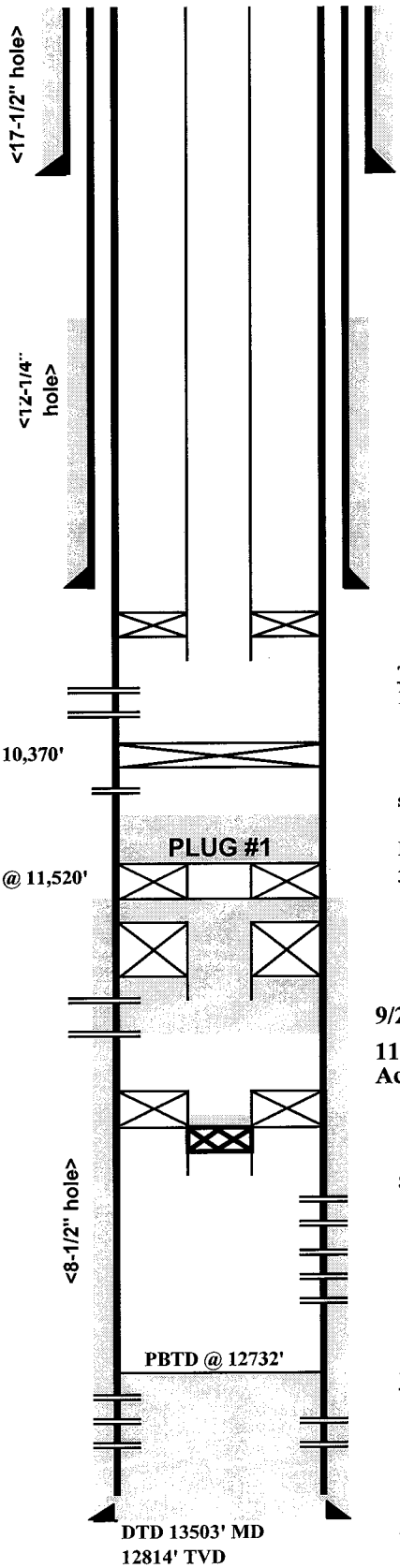
SIGNATURE _____ DATE 1/4/2006

(This space for State use only)

RECEIVED
JAN 09 2006
DIV. OF OIL, GAS & MINING

(5/2000) (See Instructions on Reverse Side)

ANSCHUTZ EXPLORATION CORPORATION 12/27/98 "PLUGBACK" WELLBORE SCHEMATIC	
SEC: 26-T4N-R7E	WELL NAME: Anschutz Ranch Deep 4-26 COUNTY, STATE: Summit, Utah
TD: 13503'	GROUND ELEVATION: 7313' KB ELEVATION: 7335'



Surface Casing
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set @1512', cmt to surface

7-5/8" x 7" XO @ 3431'

DV Tool @ 5730'

Intermediate Casing
0 - 4487', 9-5/8", 47#, L80, Vam Ace
4487' - 6075', 9-5/8", 53.5#, L80, Vam Ace
6075' - 9197', 9-5/8", 47#, L80, Vam Ace

CIBP @ 10,370'

CICR @ 11,520'

Baker Model "D" Packer @ 11,560'
20' Sealbore Extension &
Tailpipe w/ (2) 'R' Nipples (2.188")
WLREG @ 11614'

Tubing String
2-7/8", L-80, 7.7#, Vam Ace
(see tbg detail for specifics)
Tbg capacity .00524 bbls/ft

Baker Model "D" Packer @ 12,390'
w/ (2) R Nipples (2.188")
WLREG @ 12,424'

9/20/02 Set Owen CIBP in tailpipe assembly & capped w/ 10' cement

Production Casing
0 - 3431', 7-5/8", 39#, L80, Vam SLIJ
3431' - 13503', 7", 32#, L80 Vam SLIJ
7" Capacity 0.03608 bbl/ft

DTD 13503' MD
12814' TVD

Note: Production csg tested to 4500 psi on 12/2/98 w/8.4#/g mud in hole. Do not apply more than 4000 psi to backside. See csg failure analysis.

Cement Calculations:
7" 32# L80 0.20255 ft3/ft capacity
7"x9 5/8" (47#) 0.1438 ft3/ft annular volume

Plug #1
(11,774-11,520)(.20255 ft3/ft) / 1.2 ft3/sk
= 43 sks, 100% excess = 86 sks

(11,520-11,320)(.20255 ft3/ft) / 1.2 ft3/sk
= 33 sks

PLS Packer @ 10,320'

Thaynes Production Perfs
10,145 - 10,312' (1 spf)

sqz perfs: 10,380-82' (4 spf)

Plug #1 86 sks Cl "G" cmt below ret &
34 sks (200') Cl "G" cmt above retainer

TOC +/- 11350'
11/28/98 CBL

9/22/02 Perforated Upper Phosphoria
11,762-774' & 11,694-718'
Acidized and tested at 16.6 MMCFD

8/10/01 - Perf Weber w/ 2 spf:
12,524' - 34'
12,560' - 74'
12,586' - 602'
12,616' - 30'
12,688' - 98'
No Stimulation

Weber Perforations
1/20-21/99: Perf 13430' - 489', 2 spf, 1-11/16" RTG
1/23/99:Re-Perf 13430' - 489', 2 spf, 1-11/16" EnerJet
1/25/99 Acidized Weber
- 13430' - 489', w/6000 gal 7-1/2% HCL & N2
1/27-29/99 13260' - 380', 2 spf, 1-11/16" EnerJet
4/24/01: Run PL. No prod from perfs 13430' - 488'.

Anschutz Ranch Deep 4-26
Operator: AEC
1623' FNL and 1328' FWL
SENW Section 26, T4N, R7E
Summit County, Utah
Anschutz Ranch Deep Prospect
13,458-488', 13,430-460', 13,290-320', 13,260-290' Weber
TAC WI: 100%
TIGHT HOLE

12/07/05 Day 1. PO: MI workover rig. Plow roads & location, located buried lines. (*Jim Hill)*

12/08/05 Day 2. PO: MI workover rig. MI rig & support equipment, set BPV, set & test anchors.

12/09/05 Day 3 PO: Rigging up. MIRU rig & support equipment.

12/10/05 Day 4 PO: Rigging up.

12/11/05 Day 5 PO: NU BOP equipment. Rigup FMC. Pull BPV. RU slickline. Attempt to set pump thru plug. Could not get below 2770'. Finish rigging up.

12/12/05 Day 6 PO: Sting out. POOH. Rigup FMC. Check BPV. ND tree. NU BOP & test. Raise tbg board.

12/13/05 Day 7 PO: Finish POOH. Rigup FMC. Check well & pull BPV. POOH w / tbg, SSSV, injection mandrel & control lines.

12/14/05 Day 8 PO: Finish POOH. POOH w / tbg & seal assembly. Run gauge ring to 11560'. Set CICR @ 11520'.

12/15/05 Day 9 PO: Squeeze. Fill hole & test CICR. PU stinger. TIH.

12/16/05 Day 10 PO: Perf squeeze holes. Wait 2.5 hrs on Halliburton. Pump 120 sxs cement, 86 below CR, 34 on top. POOH.

12/17/05 Day 11 PO: Perf squeeze holes. Finish POOH. Shut down until 12-19-05.

12/19/05 Day 12 PO: Run production packer. Shoot squeeze holes @ 10380'-82'. Pump into @ 1.25 BPM @ 1000#. No returns. Set CIBP @ 10370'. Test to 1000#. LD 10 jts. Secure well. SDFN.

12/20/05 Day 13 PO: ND BOP. NU tree. Run Halliburton packer to 10320'. Circulate hole w / packer.

12/21/05 Day 14 PO: Perf Thaynes. Run 2.175" gage ring to 10,000'. Run production tbg. Land @ 10037.72'. ND BOP equipment. NU tree & test. Swab well down to 2000'.

12/22/05 Day 15 PO: Flow test well. Perforate Thaynes 10145' to 10312'.

12/23/05 Day 16 PO: Flow test well. SITP 0#. SFL @ 800'. Swab 98 bbls, EFL 1800'. SD for Holidays.

12/27/05 Day 17 PO: RD MO. SITP 0#. RU swab. Make 1 run. SFL @ 1800'. No gas. Rigging down.

DRAFT

ANSCHUTZ RANCH DEEP 4-26
ANSCHUTZ RANCH DEEP FIELD, SUMMIT CO., UTAH

Well Specifics

Production Casing:	0 to 3,431', 7 5/8", 39#, L80, SLIJ
	3,431' to 13,503', 7", 32.0#, L80, SLIJ
Tubing:	2 7/8", 7.7#, L80, Vam Ace)
Current Completion Interval:	Lwr Thaynes 10,145-312'
PBTD:	11,320' (200' of cmt on top of cmt retainer)

Objective

Plugback and recomplete well uphole into the Upper Thaynes formation.

Procedure

Note: All depths relative to Schlumberger USI log dated 12/04/98.

1. MIRU workover rig, pump and tank. Set BPV and test. ND tree, NU and test BOP' s.

2. Release PLS packer and POH standing back tubing.

3. MIRU wireline. Pressure test lubricator. Make gauge ring run to 10,120' . POH. Test lubricator after each run. PU CIBP, RIH, correlate and set at 10,100' . Fill casing and test retainer to 1,000 psi. POH. RD wireline.

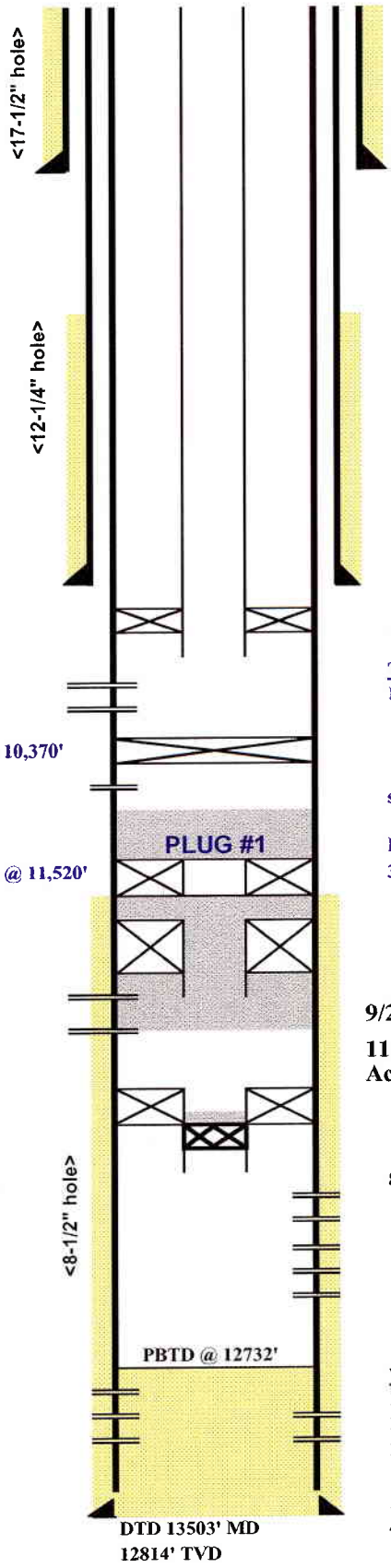
4. PU re-dressed packer and RIH with 2 7/8" Vam Ace tubing. Set packer at 9,470' . Test backside to 1,000 psi. Swab well down to +/- 2,500' .

5. MIRU wireline. NU and test lubricator. (Well to be perforated +/-1,000 psi underbalanced.) Make Gauge ring run to 9650' . **Perforate Upper Thaynes interval 9,598' to 9,628' , 4 JSPF, decentralized with 0 degree phasing using a 2 1/8" strip gun.** RDMO wireline service.

6. Open well to flow. Swab, if necessary. RD and release WO rig and related equipment.

ANSCHUTZ EXPLORATION CORPORATION
9/13/06 WELLBORE SCHEMATIC

SEC: 26-T4N-R7E	WELL NAME: Anschutz Ranch Deep 4-26 COUNTY, STATE: Summit, Utah
TD: 13503'	GROUND ELEVATION: 7313' KB ELEVATION: 7335'



Surface Casing
13-3/8". 54.50#, K55, BTC
set @1512', cmt to surface

7-5/8" x 7" XO @ 3431'

DV Tool @ 5730'

Intermediate Casing
0 - 4487', 9-5/8", 47#, L80, Vam Ace
4487' - 6075', 9-5/8", 53.5#, L80, Vam Ace
6075' - 9197', 9-5/8", 47#, L80, Vam Ace

CIBP @ 10,370'

CICR @ 11,520'

Baker Model "D" Packer @ 11,560'
20' Sealbore Extension &
Tailpipe w/ (2) 'R' Nipples (2.188")
WLREG @ 11614'

Tubing String
2-7/8", L-80, 7.7#, Vam Ace
(see tbg detail for specifics)
Tbg capacity .00524 bbls/ft

Baker Model "D" Packer @ 12,390'
w/ (2) R Nipples (2.188")
WLREG @ 12,424'

9/20/02 Set Owen CIBP in tailpipe assembly & capped w/ 10' cement

Production Casing
0 - 3431', 7-5/8", 39#, L80, Vam SLIJ
3431' - 13503', 7", 32#, L80 Vam SLIJ
7" Capacity 0.03608 bbl/ft

DTD 13503' MD
12814' TVD

Note: Production csg tested to 4500 psi on 12/2/98 w/8.4#/g mud in hole. Do not apply more than 4000 psi to backside. See csg failure analysis.

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34 sks (200') Cl "G" cmt above retainer

TOC +/- 11350'
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1/23/99:Re-Perf 13430' - 489', 2 spf, 1-11/16" EnerJet
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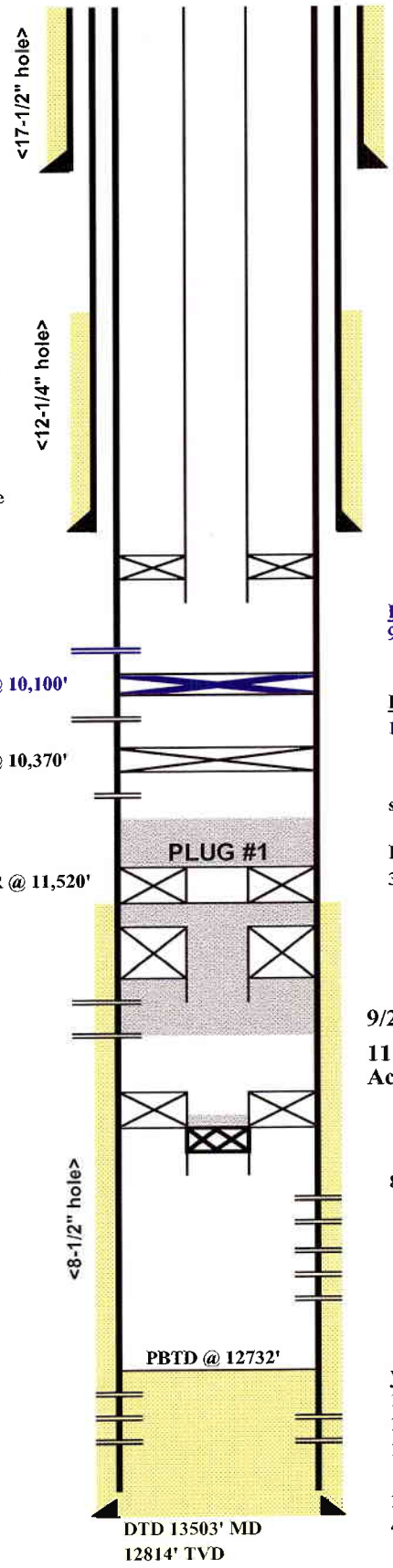
- 13430' - 489', w/6000 gal 7-1/2% HCL & N2
1/27-29/99 13260' - 380', 2 spf, 1-11/16" EnerJet
4/24/01: Run PL. No prod from perfs 13430' - 488'.

ANSCHUTZ EXPLORATION CORPORATION

3/13/06 "UPPER THAYNES REC" WELLBORE SCHEMATIC

SEC: 26-T4N-R7E	WELL NAME: Anschutz Ranch Deep 4-26 COUNTY, STATE: Summit, Utah
TD: 13503'	GROUND ELEVATION: 7313' KB ELEVATION: 7335'



Note: Production csg tested to 4500 psi on 12/2/98 w/8.4#/g mud in hole. Do not apply more than 4000 psi to backside. See csg failure analysis.

Cement Calculations:
7" 32# L80 0.20255 ft3/ft capacity
7"x9 5/8" (47#) 0.1438 ft3/ft annular volume

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13-3/8". 54.50#, K55, BTC
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7-5/8" x 7" XO @ 3431'

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Intermediate Casing
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4487' - 6075', 9-5/8", 53.5#, L80, Vam Ace
6075' - 9197', 9-5/8", 47#, L80, Vam Ace

PLS Packer @ +/- 9,470'

Proposed Upper Thaynes Production Perfs
9,598 - 9,628' (4 spf)

Proposed CIBP @ 10,100'

Lwr Thaynes Production Perfs
10,145 - 10,312' (1 spf)

CIBP @ 10,370'

sqz perfs: 10,380-82' (4 spf)

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Tubing String

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0 - 3431', 7-5/8", 39#, L80, Vam SLIJ
3431' - 13503', 7", 32#, L80 Vam SLIJ
7" Capacity 0.03608 bbl/ft

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER: FEE

SUNDRY NOTICES AND REPORTS ON WELLS

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT or CA AGREEMENT NAME:

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER _____

8. WELL NAME and NUMBER: Anschutz Ranch Deep 4-26

2. NAME OF OPERATOR: The Anschutz Corporation

9. API NUMBER: 4304330320

3. ADDRESS OF OPERATOR: 555 17th Street, Suite 2400 CITY Denver STATE CO ZIP 80202

PHONE NUMBER: (303) 298-1000

10. FIELD AND POOL, OR WILDCAT: Anschutz Ranch

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 1623' FNL and 1328' FWL

COUNTY: Summit

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SENW 26 T4N R7E

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☑ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start:	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
3/13/2006	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☐ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER: _____
	☐ CONVERT WELL TYPE	☑ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

The Anschutz Corporation proposes to recomplete the subject well uphole into the Upper Thaynes formation. The details of this recompletion are detailed on the attached procedure and well sketch.

COPY SENT TO OPERATOR
Date: 03-29-06
Initials: CHD

NAME (PLEASE PRINT) James P. Oursland

TITLE Operations Manager

SIGNATURE James Oursland

DATE 3/13/2006

(This space for State use only)

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 3/15/06
BY: [signature]
*verbal given 3/13/06

(See Instructions on Reverse Side)

(5/2000)

RECEIVED
MAR 14 2006
DIV. OF OIL, GAS & MINING

CONFIDENTIAL

Hydrogen Sulfide Contingency Plan

For

Anschutz Ranch Deep #4-26

Section 26, Township 4N, Range 7E

Summit County, Utah

Anschutz Exploration Corporation
555-17th Street, Suite 2400
Denver, Colorado

MICROFICHE

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- C. Rig Supervisor- Toolpusher
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Introduction

It is the policy of Anschutz Exploration Corporation to provide a safe and healthful work environment for all of its employees as well as contractors that may work on Anschutz leases. Anschutz Exploration Corporation makes a continued effort to comply with laws and regulations relative to worker safety and health, and to manage all operations in a manner to reduce risk.

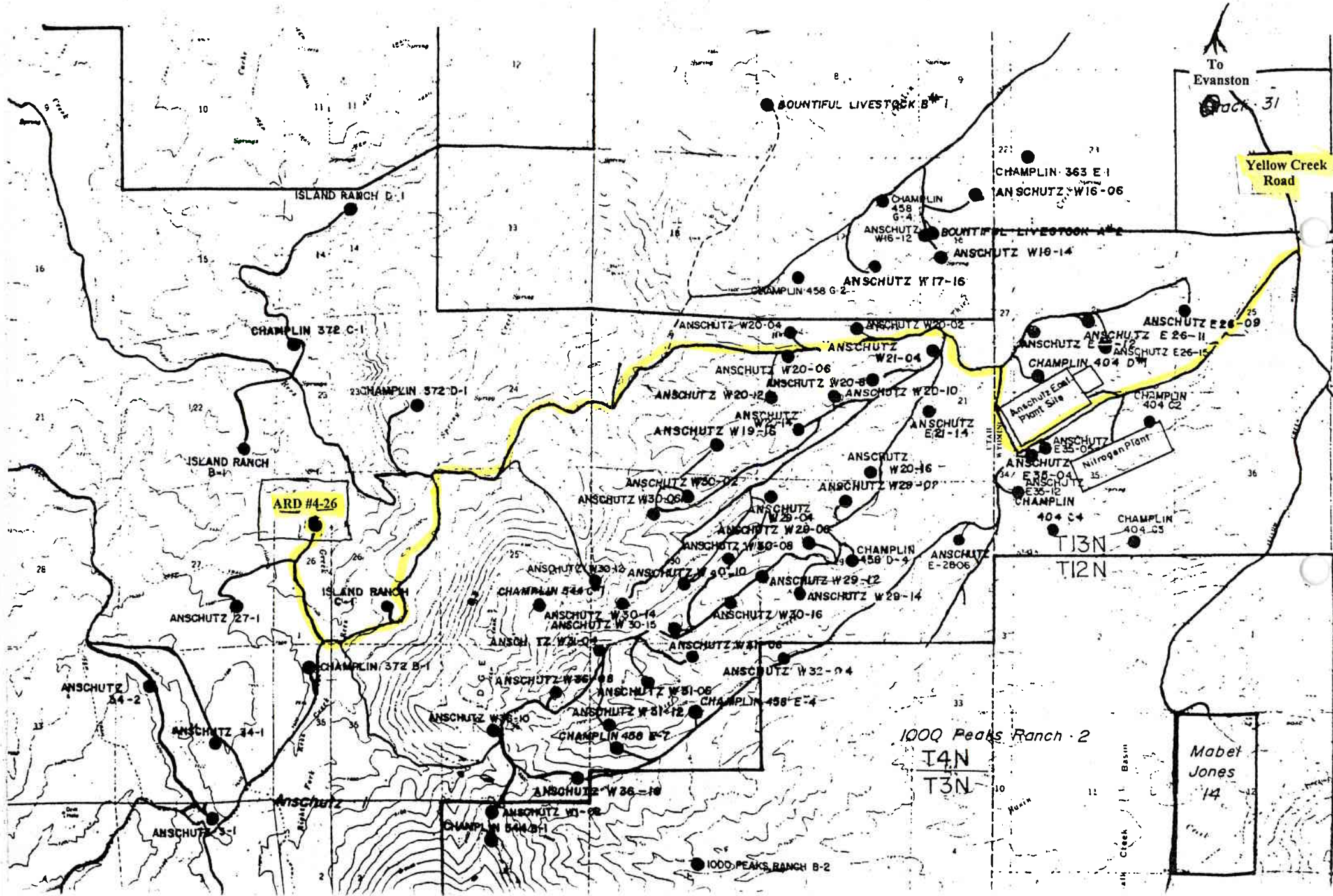
The following is a H2S contingency plan for the Anschutz ARD # 4-26 well. It is designed for personnel working on this project to follow in case of an accidental release of hydrogen sulfide during drilling and or completion operations. For the plan to be effective, all personnel must review and be familiar with onsite duties as well as the safety equipment involved.

The purpose of this plan is to act as a guideline for personnel working on the wellsite in the event of a sudden release of hydrogen sulfide. All personnel working on the wellsite as well as service personnel that may travel to location on an unscheduled basis must be familiar with this program. The cooperation and participation of all personnel involved with the drilling operation is necessary for this plan to be effective.

This plan shall incorporate the existing Emergency Response Plan of the Union Pacific Resources Wahsatch Gathering system as it pertains to the Public Safety in the event of any atmospheric release of H2S. It is imperative that the WGS Control Room be contacted as soon as possible in the event of any release so this plan can be implemented.

Directions to location:

Please see attached map


To Evanston
Yellow Creek Road
BOUNTIFUL LIVESTOCK B-1
CHAMPLIN 363 E-1
ANSCHUTZ W16-06
CHAMPLIN 458 G-4
ANSCHUTZ W16-12
BOUNTIFUL LIVESTOCK A-2
ANSCHUTZ W18-14
ANSCHUTZ W17-16
CHAMPLIN 458 G-2
ISLAND RANCH D-1
CHAMPLIN 372 C-1
CHAMPLIN 372 D-1
ANSCHUTZ W20-04
ANSCHUTZ W20-02
ANSCHUTZ W21-04
ANSCHUTZ W20-06
ANSCHUTZ W20-08
ANSCHUTZ W20-12
ANSCHUTZ W20-10
ANSCHUTZ W19-16
ANSCHUTZ E21-14
ANSCHUTZ E26-09
ANSCHUTZ E26-11
ANSCHUTZ E26-15
CHAMPLIN 404 D-4
Anschutz Coal Plant Site
CHAMPLIN 404 C2
Nitrogen Plant
ANSCHUTZ E35-02
ANSCHUTZ E35-04
ANSCHUTZ E35-12
CHAMPLIN 404 C4
CHAMPLIN 404 C5
ISLAND RANCH B-1
ARD #4-26
ANSCHUTZ W30-02
ANSCHUTZ W30-06
ANSCHUTZ W20-16
ANSCHUTZ W29-02
ANSCHUTZ W29-04
ANSCHUTZ W29-06
ANSCHUTZ W30-08
CHAMPLIN 458 D-4
ANSCHUTZ E-2806
T13N
T12N
ANSCHUTZ W30-12
ANSCHUTZ W30-10
ANSCHUTZ W29-12
ANSCHUTZ W29-14
ISLAND RANCH C-1
CHAMPLIN 544 C-1
ANSCHUTZ W30-14
ANSCHUTZ W30-15
ANSCHUTZ W30-16
ANSCHUTZ 27-1
ANSCHUTZ W31-04
ANSCHUTZ W31-06
CHAMPLIN 372 B-1
ANSCHUTZ W32-04
ANSCHUTZ W36-08
ANSCHUTZ W31-06
ANSCHUTZ W31-12
CHAMPLIN 458 E-4
ANSCHUTZ 34-2
ANSCHUTZ W36-10
ANSCHUTZ 34-1
CHAMPLIN 458 E-2
1000 Peaks Ranch 2
T4N
T3N
Mabel Jones 14
ANSCHUTZ W36-16
ANSCHUTZ W1-08
CHAMPLIN 544 B-1
ANSCHUTZ 3-1
1000 PEAKS RANCH B-2

I. Duties & Responsibilities

In order to assure proper execution of the contingency plan, it is essential that one person be responsible for and in complete charge of implementing the procedures outlined in this plan. The order of responsibility will be as follows:

1. Anschutz Exploration Corporation drilling representative on location - if unable to perform his/ her duties

2. Alternate Anschutz representative - if unable to perform his/ her duties

3. Rig Toolpusher/ Supervisor - if unable to perform his/ her duties

4. Safety consultant representative- if available

A. **All Personnel**

1. Always be alert for possible H2S alarms- both audible and visual.

2. Be familiar with location of Safe Briefing Areas (SBA) and protective breathing equipment.

3. Develop a "wind awareness". Be aware of prevailing wind direction as well as nearby uphill areas. should there be no wind.

4. Familiarize yourself with nearest escape routes for safe evacuation

5. Should H2S alarm sound, DON'T PANIC - Remain calm and follow instructions of person in charge.

6. If the H2S alarms sound:

a. Essential personnel shall don the appropriate respiratory protective equipment and follow company procedures. Essential personnel will continue to wear respiratory protective equipment until the area is deemed safe (H2S concentration less than 10 PPM)

b. Non-essential personnel shall evacuate to the appropriate safe briefing area using escape breathing systems. Wait there for further instructions from Anschutz drilling representative.

c. Initiate rescue protocol if necessary- following training procedures.

B. Drilling Foreman

1. The Anschutz drilling foreman will confirm that all personnel on location are trained in H2S safety and aware of above list of duties when the H2S plan becomes effective at 300 feet above the Dinwoody Formation.

2. The Anschutz foreman will ensure that all safety and emergency procedures are observed by all personnel.

3. The Anschutz foreman will make an effort to keep the number of personnel on location to a minimum and to ensure that only essential personnel are on location during critical operations.

4. Should any extreme danger condition exist, the Anschutz foreman will:

a. Assess the situation and advise all personnel by appropriate means of communication.

b. Be responsible for determing that the extreme danger condition is warranted and the red flag shall be posted at location entrance.

c. Go to safe briefing area and give clear instructions relative to hazard on location, and actions for personnel to follow.

d. Notify company and regulatory groups of current situation as outlined in company protocol. Notify WGS Control Room to activate WGS Emergency Response Plan.

e. Proceed to rig floor and supervise operations with rig supervisor. Take action to control and reduce the H2S hazard.

f. Ensure that essential personnel are properly protected with supplied air breathing equipment and that non-essential personnel are in a "poison gas free" area.

g. Be responsible for authorizing evacuation of persons/ residents in area surrounding the drilling location.

h. Commence any ignition procedures if ignition criteria are met.

C. Rig Supervisor- Toolpusher

1. If the Anschutz drilling foreman is unable to perform his/ her duties, and the alternate drilling foreman is also unable or unavailable to perform his duties, the drilling rig Toolpusher will assume command of wellsite operations and all responsibilities listed above for drilling foreman.

2. Ensure that all rig personnel are properly trained to work in H2S environment and fully understand purpose of H2S alarms, and actions to take when alarms activate.

Ensure that all crew personnel understand the buddy system, safe briefing areas, and individual duties as well as emergency evacuation procedures.

3. Should an extreme danger operational condition arise, the rig Toolpusher shall assist the Anschutz foreman by:

a. Proceeding to the rig floor and assist in supervising rig operations.
b. Ensure that only essential working personnel remain in hazardous areas.
c. Ensure that all crew members that remain in hazardous area, wear respiratory protective equipment until notified that area is "clear" of any toxic gases.
d. Assign rig crew member or other service representative to block entrance to location. No unauthorized personnel will be allowed entry to location.
e. Help to determine hazardous "danger zones" on location using portable detection equipment and position electric fans to move gas in any high concentration areas.

D. Safety Consultant

1. During normal operations (no H2S present), the safety consultant will be responsible for the following:

a. Ensure that all wellsite safety equipment is in place and operational.
b. Ensure that all wellsite personnel are familiar with location safety layout and operation of all safety equipment.
c. Assist the Anschutz foreman in performing weekly H2S drills for location personnel.

2. When an operational condition is classified as extreme danger, the safety consultant will be responsible for the following:

a. Account for all wellsite personnel
b. Assess any injuries and direct first aid measure.
c. Ensure that all safety and monitoring equipment is functioning properly and available.
d. Monitor the safety of wellsite personnel
e. Maintain a close communication with Anschutz foreman.
f. Be prepared to assist Anschutz foreman with support for rig crew or other personnel using breathing equipment.
g. Be prepared to assist Anschutz foreman with emergency procedures including possible well ignition.
h. Be prepared to assist with evacuation of any area residents or other personnel working in the immediate area.

E. Union Pacific Resources Co- Wahsatch Gathering System Office

1. The Union Pacific Resources Co- Wahsatch Gathering System operations control room will be notified of any release of H2S by the Anschutz Operations Superintendent as well as other Anschutz Exploration Co supervisory personnel. The Union Pacific Resources Co- Wahsatch Gathering System Operations Control room will be responsible for notifying and maintaining contact with the Uinta County Fire Protection Agency as outlined in their Emergency Response Plan for the Public Protection in the event of an H2S release. This plan incorporates a Memorandum of Understanding between Summit County, Utah and Uinta County, Wyoming, that the primary responder to any event pertaining to the Wahsatch Gathering System will be the Uinta County Fire Protection Agency.

2. The Anschutz drilling foreman will maintain communications with the UPRC-WGS control room to coordinate with any other assistance that might be required.

3. Travel to wellsite if appropriate

II. Drilling Rig Layout

A. Location

1. All respiratory protective equipment and H2S detection equipment will be rigged up 3 days or 500 feet prior to entering the first zone suspected to contain hydrogen sulfide. The rig crews and other service personnel will be trained at this time.

2. The drilling rig will be situated on location to allow for the prevailing winds to blow across the rig toward the circulation tanks or at right angles to the lines from the B.O.P.s to the circulation tanks.

3. The entrance to the location is designed so that it can be barricaded if a hydrogen sulfide emergency condition arises. An auxiliary exit route will be available so that in case of an emergency, a shift in wind direction would not prevent escape from the location.

4. A minimum of 2 safe briefing areas (SBA) shall be designated for assembly of personnel during emergency conditions. These will be located at least 150 ft. or as practical, from the wellbore and in such a location that at least one area will be upwind of the well at all times. Upon recognition of an emergency situation, all personnel will be trained to assemble at the designated briefing area for instructions.

5. Smoking areas will be established and "No Smoking" signs will be posted around the location.

6. Reliable 24 hour radio and telephone communications will be available at the drilling foremen's office.

7. A mud-gas separator will be rigged up and manifolded to the choke system.

8. All equipment that might come in to contact with hydrogen sulfide - drill pipe, drill stem test tools, blowout preventers, casing, choke system will meet Anschutz 's metallurgy requirements for H2S service.

9. The drilling rig will have a continuous electronic H2S detection system that automatically with activate visible and audible alarms if hydrogen sulfide is detected. The visible light will activate if 10 PPM H2S is present . The audible siren will activate if 15 PPM or higher concentration is present. There will be at least 4 H2S sensors in place on the drilling rig. They will be located to detect the presence of hydrogen sulfide in areas where it is most likely to come to surface. The sensor head locations

will be: 1) rig floor by driller's console, 2) substructure area near the bell nipple, 3) the shale shaker, 4) the mud mixing area. Additional sensors will be positioned at the discretion of the drilling foreman. At least 1 light and 1 siren will be placed on the rig to indicate the presence of hydrogen sulfide. The light and siren will be strategically placed to be visible to all personnel on the drill site. Additional alarm lights & sirens may be added to ensure that all personnel on the drill site are able to notice the alarms at any time.

10. The H2S detection equipment will be calibrated as recommended by the manufacturer. Calibration records will be maintained on location.

11. A least 4 windsocks will be placed around the drill site to ensure that wind direction can be readily determined by everyone on the drilling location. One windsock will be mounted on or near the rig floor to be readily visible to rig crews when tripping pipe.

12. All respiratory protective equipment will be NIOSH/ MSHA approved positive pressure type and maintained according to manufacturer's guidelines. All breathing air used for this equipment will be CGA type Grade D breathing air. Battery powered voice mikes will be available for communication when wearing masks.

13. Both 30 minute self-contained breathing apparatuses (SCBA) and workline units with escape cylinders will be available on location. There will be sufficient numbers of this supplied air breathing equipment on location to ensure that all personnel on location have 1 piece of equipment available to them. All respiratory protective equipment will use nose cups to prevent fogging in temperatures below 32 F. Spectacle kits will be available for personnel that require corrective lenses when working under mask.

14. Electric explosion- proof ventilating fans (bug blowers) will be available to provide air movement in enclosed areas where gas might accumulate.

15. H2S drills will be conducted at least weekly to ensure that all well site personnel are competent in emergency donning procedures. These drills will be recorded in the driller's log.

III. Safety Procedures

A. Training

All personnel who come onto the drilling location must be properly trained in hydrogen sulfide, nitrogen, and oxygen deficient atmospheres safety. The personnel shall carry documentation with them indicating that the training has occurred within the previous 12 months.

Training topics shall include at a minimum:

1. Hazards and characteristics of hydrogen sulfide, nitrogen, and oxygen deficient atmospheres and symptoms of exposure to these gases.

2. Proper use, care and limitations of respiratory protective equipment with hands on practice.

3. Use of both fixed and portable detection toxic gas equipment.

4. Work practices to reduce opportunities for toxic gas exposure as well as confined space procedures.

5. First aid for toxic gas exposure and resuscitation equipment.

6. The buddy system

7. Emergency evacuation procedures

8. A review of the contingency plan for the well.

B. Operating Conditions

A three color- flag warning system will be used to notify personnel approaching the drill site as to operating conditions on the wellsite. This system is in compliance with BLM O.O. # 6 and follows industry standards.

Green Flag - Potential Danger

Yellow Flag - Moderate Danger

Red Flag- Extreme Danger - Do Not approach if red flag is flying.

C. Evacuation Plan

There are no permanent residents within a 1 mile radius of the drill site. Anschutz Exploration Corporation and Union Pacific Resources CO have operations within this area and travel the roads in the immediate area.

According to the Union Pacific Resources Co - Wahsatch Gathering System Emergency Response Plan, any evacuation will be conducted under the direction of Jon Lunsford the Uinta County Fire Protection Agency Chief.

All regulatory agencies will be notified as soon as possible.

D. Emergency Rescue Procedures

Well site personnel should not attempt emergency rescues unless they have been properly trained. A trained person who discovers another person overcome by hydrogen sulfide should **not attempt to rescue without donning the proper breathing equipment.** When making an emergency rescue always use the following procedures:

1. Don rescue breathing equipment before attempting to rescue someone.

2. Remove the victim from the contaminated area to an area free of toxic gas by traveling upwind or cross wind. Be certain that you are in a safe area before removing your breathing equipment.

3. If the victim is not breathing, initiate mouth- to mouth resuscitation immediately. Follow CPR guidelines and replace mouth to mouth with a bag mask resuscitator if available.

4. Treat the victim for shock, keeping the victim warm and calm. Never leave the victim alone.

5. Any personnel who experience hydrogen sulfide exposure must be taken to a hospital for examination and their supervisor notified of the incident.

6. Their supervisor shall follow the company Emergency Preparedness plan .

IV. H2S Safety Equipment on Drilling Location

Item	Amount	Description
1.	1	safety trailer with a cascade system of 10-300 cu. ft bottles of compressed breathing air complete with high pressure regulators
2.	At least 1000 ft.	low pressure airline equipped with Hansen locking fittings. This airline will be rigged up with manifolds to supply breathing air to the rig floor, substructure, derrick, shale shaker area, and mud mixing areas. Three high pressure refill hoses will be attached to cascade systems for cylinder refill.
3.	Twelve (12)	Scott 30 minute self contained breathing apparatuses (SCBA).
4.	Twelve (12)	Scott airline units with emergency escape cylinders.
5.	One (1)	4- channel continuous electronic H2S monitor with audible and visual alarms. The set points for these alarms are 10 PPM for the low alarm and 15 PPM for the high alarm.
6.	Two (2)	Sensidyne portable hand operated pump type detection units with tubes for hydrogen sulfide and sulfur dioxide.
7.	One (1)	oxygen resuscitator with spare oxygen cylinder.
8.	One (1)	trauma first aid kit
9.	One (1)	stokes stretcher and one (1) KED.
10.	Four	wind socks
11.	At least one (1)	well condition sign with 3 flag system.
12.	Two (2)	Safe Briefing Area (SBA) signs
13.	One (1)	fire blanket

14.	One (1)	set air splints
15.	Two (2)	electric explosion proof fans
16.	One (1)	bullhorn and chalk board
17.	Three (3)	300 cu. ft. air bottles for the safe briefing area.
18.	Two (2)	30 # fire extinguishers
19.	Six (6)	battery powered voice mikes for communication when wearing air masks.
20.	One (1)	battery powered combustible gas meter

A drawing of the drilling location will be inserted in this page showing the actual placement of all safety equipment relative to the other equipment on the drill site. This drawing will be completed within 2 weeks of the drilling rig being in place and the location fully constructed to assure that all equipment, pits and roads are accurately located on the map.

V. Well Ignition Procedures

If it should become apparent that a uncontrolled release of hydrogen sulfide to the atmosphere may endanger the health and safety of the public or well site personnel, the Anschutz drilling foreman will make a decision to ignite the well. The following procedure should be followed before attempting to ignite the well.

A. Ignition equipment - The following equipment will be available an on-site for use by the ignition team.

1. 2 12 gauge flare guns with flare shells
2. 2 500 ft. Fire resistant retrieval ropes
3. 1 portable combustible gas meter
4. Self contained breathing apparatus (SCBA) for each member of the ignition team.
5. 1 backup vehicle with communication equipment

B. Ignition Procedures

1. The Anschutz drilling foreman will ensure that well site personnel are evacuated to a safe area upwind of the well bore prior to any ignition action.

2. The Anschutz foreman and a designated partner "buddy" backed up by well site safety personnel will comprise the ignition team. All team members will be wearing 30 minute SCBAs.

3. The backup crew will be positioned near a radio equipped vehicle at a safe distance from the sour gas release. They will standby to rescue the actual team igniting the well.

4. The partner of the ignition team will carry a combustible gas/ hydrogen sulfide meter to continuously monitor the area in which they are working and define the perimeter of the gas cloud.

5. The Anschutz foreman will carry the flare gun and shells.

6. The ignition team will determine the hazardous area and establish safe working perimeters. Once this is identified the team will proceed upwind of the leak and fire into the area with flare gun. If trouble is encountered in trying to light the leak, retry

to ignite by firing the flare shells at 45 and 90 angles to the gas source, but DO NOT approach closer to the leak.

7. After ignition, monitor for sulfur dioxide and work with the support group to restrict access to the contaminated area.

8. Notify the Union Pacific Resources Co- Wahsatch Gathering System Control Room of any flaring of H2S gas on location.

VI. Residents – Public in Roe

There is one residence approximately one mile from the well. Mr. Miles Williams, Executive Vice President of The Anschutz Corporation, owns the residence. There are no other residences within a one mile radius of this well. Amoco Production Co. and Anschutz operate wells within a 1 mile radius. Both of these companies could have personnel working in the area at any time of the day. Castle Rock L & L may have ranching personnel in the area at any time of the day. The Fawcett family operates a ranch 1-1/2 miles to the North of the wellsite and may have personnel in the area at any time of day.

Amoco Production Co.
Evanston, WY.....(307) 785-2100
Tom Zimmer – Head Foreman.....(Home).(307) 789-2101

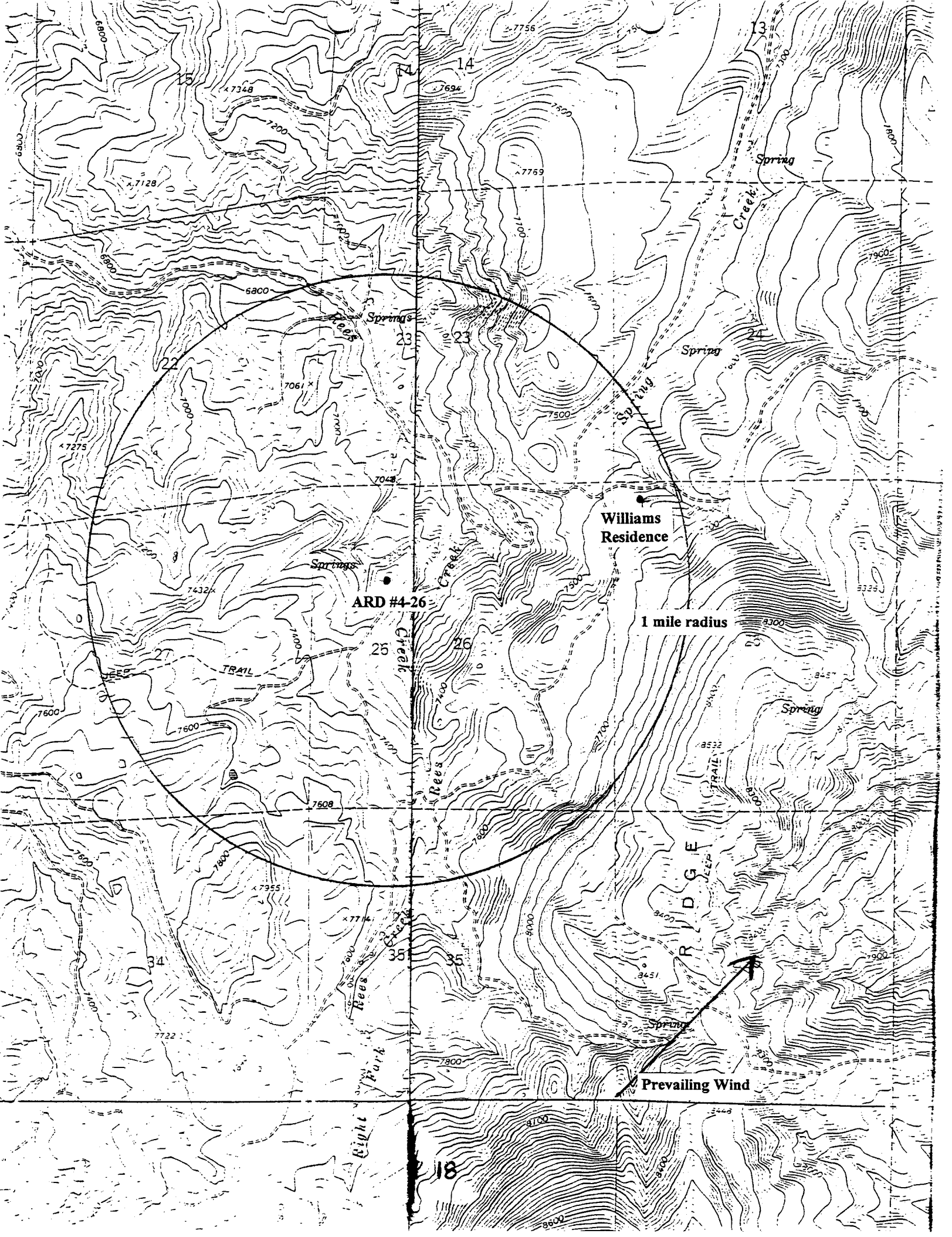
Union Pacific Resources CO.....(307) 789-1573
UPRC Emergency Phone to WGS Control Room.....(307) 789-9735

Fawcett Ranch.....(801) 773-2365

Castle Rock Land & Livestock
Jeff Young – Ranch Manager.....(Home) (801) 289-8414
(Mobil) (801) 541-0279

Castle Rock Land & Livestock Corporate Office.....(801) 328-1600
David Allen

Mr. Miles Williams.....(801) 277-0906



Williams Residence
ARD #4-26
1 mile radius
Prevailing Wind
Springs
Spring
Creek
Rees
Right Fork
TRAIL
RIDGE

VII. Emergency Phone Directory

Union Pacific Resources Co – Wasatch Gathering System (UPRC-WGS) is a partner in this well and will be the lead contact in providing emergency response services in conjunction with the **UPRC Emergency Response Plan.** The first emergency response call should be to the UPRC-WGS control room in Evanston, WY. At that point, UPRC will follow its emergency response plan protocol.

Union Pacific Resources CO- Wahsatch Gathering System.....(307) 789-1573
Pete Straub- Superintendent
WGS Emergency Phone to Control Room.....(307) 789-9735

A.Anschutz Exploration Corporation.....(303) 298-1000
555 17 Th. St. suite 2400
Denver, CO 80202

Title	Name		Phone
General Manager	Hal Koerner		(303) 299-1269
		Home	(303) 841-8151
		Page	(800) 759-8888
		PIN	195-8787
Drilling Superintendent	Haw Gallagher		(303) 299-1532
		Home	see pager
		Mobile	(303) 981-5609
		Pager	(800) 492-0694
Drilling	Dave Dlouhy		(303) 299-1228
		Home	(303) 797-0115

Engineering	Jim Oursland		(713) 750-0210
		Home	(281) 355-5654
		Page	(800) 759-8888
		PIN	198-3975
Anschutz Ranch East Pipeline Foreman	Stan Dolinar		(307) 783-2905
		Home	(307) 789-9048
		Mobile	(307) 799-8028
Field Supervision			
	Bob Griffin	Home	(801) 789-1564
		Mobile	(719) 881-1362
	Ken Clare	Home	(801) 789-8838
		Mobile	(801) 790-5192
Public Relations	Bill Miller		(303) 299-1330
		Home	(303) 797-8071
		Mobile	(303) 489-4851

B. Emergency Services Phone List

Uinta County, WY. has a 911 system. Should the well site have direct access to Wyoming telephone system, 911 would contact all emergency services.

1. IHC Memorial Hospital - Evanston, WY. .....(307) 789-3636
2. Ambulance Services - Uinta County, WY.....(307) 783-1000
3. Sheriff Department- Uinta County, WY.....(307) 783-1000
4. Highway Patrol - Wyoming.....800) 442-9090
5. Summit County Sheriffs Office.....(dispatch).....(801) 336-4461
6. Fire Department - Uinta County, WY. .....(307) 783-1000
7. Utah Division Oil & Gas- Salt Lake City, UT.....(801) 538-5340
8. Medical Helicopter - Air Med - Salt Lake City, UT.....(800) 453-0120

PROPERTIES OF GAS

If gas should be produced, it could be a mixture of Carbon Dioxide, Hydrogen Sulfide, and Methane.

TOXICITY OF VARIOUS GASES

Common Name	Chemical Formula	Specific Gravity of Air = 1	[1] Threshold Limit	[2] Hazardous Limit	[3] Lethal Concern
Hydrogen Cyanide	HCN	0.94	10 ppm	150 ppm/hr.	300 ppm
Hydrogen Sulfide	H_2S	1.18	10 ppm	250 ppm/hr.	600 ppm
Sulfur Dioxide	SO_2	2.21	5 ppm	–	1000 ppm
Chlorine	CL_2	2.45	1 ppm	4 ppm/hr.	1000 ppm
Carbon Monoxide	CO	0.97	50 ppm	400 ppm/hr.	1000 ppm
Carbon Dioxide	CO_2	1.52	5000 ppm	5%	10%
Methane	CH_4	0.55	90000 ppm	Combustible Above 5% in Air	–

[1] Threshold - Concentration at which it is believed that all workers may repeatedly be exposed, day after day, without adverse side effects.

[2] Hazardous - Concentration that may cause death.

[3] Lethal - Concentration that will cause death with short-term exposure.

HYDROGEN SULFIDE

GENERAL PROPERTIES

Hydrogen Sulfide itself is a colorless and transparent gas and is flammable. It is heavier than air and, hence, may accumulate in low places.

Although the slightest presence of H_2S in the air is normally detectable by its characteristic "rotten egg" odor, it is dangerous to rely on the odor as a means of detecting excessive concentrations because the sense of smell is rapidly lost, allowing lethal concentrations to be accumulated without warning. The following table indicates the poisonous nature of Hydrogen Sulfide, which is more toxic than Carbon Monoxide.

Common names: sour gas, acid gas, rotten egg gas, sulphur gas, sulphurated gas, sweet gas.*

PHYSICAL-CHEMICAL PROPERTIES

Chemical Formula	H_2S
1. Specific Gravity (air = 1.000) . .	1.193 (@ 77°F)
2. Color	None
3. Odor	Compare to rotten eggs
4. Odor Threshold	0.13 part of 1 ppm
5. Corrosivity	Reacts with metals, plastics, tissues and nerves.
6. Solubility in Water	4.0 to 1 in H_20 @ 32°F 2.6 to 1 in H_20 @ 68°F
7. Effects on Humans	Olfactory nerves, respiratory nerves, irritates sensitive membranes in eyes, nose, and throat.
8. Vapor Pressure	19.6 atmospheres at 25°C
9. Explosive Limits	4.3% to 46% by volume in air.

*H_2S is a sweet tasting gas, but often the word "tasting" is left out.

10. Ignition Temperature	18°F (burns with a pale flame).
11. Molecular Weight	34.08
12. Conversion Factors	1 mg/1 of air = 717 ppm (at 25°C and 760 mm HG). 1 ppm = 0.00139 mg/1 of air.
13. pH	3 in water
14. Conversion Factors	1 mg/1 of air = 717 ppm (at 25°C and 760 mm HG). 1 ppm = 0.00139 mg/1 of air.

INDUSTRIAL OCCURRENCES

Hydrogen Sulfide exposures occur in certain processes in the petroleum industry, chemical plants, chemical laboratories, sulfur and gypsum mines, viscose rayon and rubber industries, tanneries, and in the manufacture of some chemicals, dyes, and pigments. It may be encountered in excavations in swampy or filled ground. It is produced when sulfur-containing organic matter decomposes, and it can therefore be found in sewage or organic-waste treatment plants. A common sewer gas, it may find its way into utility manholes, particularly dangerous when encountered in tanks, vessels, and other enclosed spaces.

TOXIC PROPERTIES

Hydrogen Sulfide is an extremely toxic and irritating gas. Free Hydrogen Sulfide in the blood reduces its oxygen-carrying capacity, thereby depressing the nervous system. Sufficiently high concentrations cause blocking of the phrenic nerve, resulting in immediate collapse and death due to respiratory failure and asphyxiation.

Because Hydrogen Sulfide is oxidized quite rapidly to sulfates in the body, no permanent after effects occur in cases of recovery from acute exposures unless oxygen deprivation of the nervous system is prolonged. However, in cases of acute exposures, there is always the possibility that pulmonary edema may develop. It is also reported that symptoms such as nervousness, dry nonproductive coughing, nausea, headache, and insomnia, lasting up to about three days, have occurred after acute exposures to Hydrogen Sulfide.

At low concentrations the predominant effect of Hydrogen Sulfide is on the eyes and respiratory tract. Eye irritation, conjunctivitis, pain, lacrimation, keratitis, and photophobia may persist for several days. Respiratory tract symptoms include coughing, painful breathing, and pain in the nose and throat.

There is no evidence that repeated exposures to Hydrogen Sulfide result in accumulative or systemic poisoning. Effects such as eye irritation, respiratory tract irritation, slow pulse rate, lassitude, digestive disturbances, and cold sweats may occur, but these symptoms disappear in a relatively short time after removal from the exposure. Repeated exposures to Hydrogen Sulfide do not appear to cause any increase or decrease in susceptibility to this gas.

The paralytic effect of Hydrogen Sulfide on the olfactory nerve is probably the most significant property of the gas. This paralysis may create a false sense of security. A worker can be overcome after the typical rotten-egg odor has disappeared. Rather than the characteristic Hydrogen Sulfide odor, some victims of sudden acute overexposure have reported a brief, sickeningly sweet odor just prior to unconsciousness.

Subjective olfactory responses to various concentrations of Hydrogen Sulfide have been summarized as follows:

0.02 ppm:	No odor
0.13 ppm:	Minimal perceptible odor
0.77 ppm:	Faint, but readily perceptible odor
4.60 ppm:	Easily detectable, moderate odor
27.0 ppm:	Strong, unpleasant odor, but not intolerable.

Physiological responses to various concentrations of Hydrogen Sulfide have been reported as follows:

10 ppm:	Beginning eye irritation
50-100 ppm:	Slight conjunctivitis and respiratory tract irritation after 1 hour exposure.
100 ppm:	Coughing, eye irritation, loss of sense of smell after 2-15 minutes. Altered respiration, pain in the eyes, and drowsiness after 15-30 minutes, followed by throat irritation after 1 hour. Several hours' exposure results in gradual increase in severity of these symptoms and death may occur within the next 48 hours.
200-300 ppm:	Marked conjunctivitis and respiratory tract irritation after 1 hour of exposure.
500-700 ppm:	Loss of consciousness and possibly death in 30 minutes to 1 hour.

700-1000 ppm: Rapid unconsciousness, cessation of respiration, and death.

1000-2000 ppm: Unconsciousness at once, with early cessation of respiration and death in a few minutes. Death may occur even if individual is removed to fresh air at once.

ACCEPTABLE CONCENTRATIONS

Acceptable Eight-Hour Time-Weighted Average.

To avoid discomfort, the time-weighted average concentration of Hydrogen Sulfide shall not exceed 10 ppm.

Acceptable Ceiling Concentrations.

The acceptable concentration for protection of health for an eight-hour, five-day week shall be 20 ppm. Fluctuations are to occur below this concentration.

Acceptable Maximum For Peaks Above Acceptable Base Line For Continuous Exposure.

A single-peak concentration not exceeding 50 ppm for a maximum of 10 minutes is allowable provided that the daily time-weighted average is not exceeded.

H_2S EQUIVALENTS

Parts per Million	Percents	Grains per 100 cu. ft.
1	.0001	.055
10	.001	.55
18	.0018	1.0
100	.01	5.5
1000	.1	55.5
10000	1.0	555.5

Grains per 100 cu. ft. = % by volume Mole 636.4
1% by volume = 10,000 ppm

SULFUR DIOXIDE

Sulfur Dioxide (SO_2) is a colorless, transparent gas and is non-flammable.

Sulfur Dioxide is produced during the burning of H_2S. Although SO_2 is heavier than air, it will be picked up by a breeze and carried downwind at elevated temperatures. While Sulfur Dioxide is extremely irritating to the eyes and mucous membranes of the upper respiratory tract, it has exceptionally good warning powers in this respect.

CONCENTRATIONS		EFFECTS
$\%SO_2$	ppm	
.0005	5	Pungent odor-normally a person can detect SO_2 in this range.
.001	10	Safe for eight (8) hour exposure.
.0012	12	Throat irritation, coughing, constriction of the chest, tearing and smarting of the eyes.
.015	150	So irritating that it can only be endured for a few minutes.
.05	500	Causes a sense of suffocation, even with the first breath.

PHYSICAL PROPERTIES AND CHARACTERISTICS

Chemical Formula	SO_2
1. Specific Gravity	2.212
2. Color	None
3. Flammable	No
4. Odor	Characteristic, pungent, gives ample warning of its presence.

5. Corrosivity . . . . . Dry--not corrosive to ordinary metals. Wet--corrosive to most common metals.

6. Allowable Concentrations . . . . . 5 ppm (ACGIH)
5 ppm (OSHA)

7. Effects on Humans . . . . . Irritates eyes, throat and upper respiratory system.

TOXIC PROPERTIES

Sulfur Dioxide is an irritating gas in its vapor form and the odor is so intensely irritating that concentrations of 3 to 5 parts per million in the air are readily detectable by the normal person. In higher concentrations, the severely irritating effect of the gas makes it unlikely that any person would be able to remain in a Sulfur Dioxide contaminated atmosphere unless he were unconscious or trapped.

Sulfur Dioxide gas is intensely irritating to the eyes, throat, and upper respiratory system. Inhalation of this gas in concentrations of 8 to 12 parts per million in air causes throat irritation, coughing, constriction of the chest, tearing and smarting of the eyes. 150 parts per million is so extremely irritating that it can be endured only for a few minutes. 500 parts per million is so acutely irritating to the upper respiratory tract that it causes a sense of suffocation, even with the first breath.

Out of numerous reported exposures to Sulfur Dioxide, there are few references that would indicate pneumonia as an after effect.

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER: FEE

SUNDRY NOTICES AND REPORTS ON WELLS

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT or CA AGREEMENT NAME:

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER _____

8. WELL NAME and NUMBER: Anschutz Ranch Deep 4-26

2. NAME OF OPERATOR: The Anschutz Corporation

9. API NUMBER: 4304330320

3. ADDRESS OF OPERATOR: 555 17th Street, Suite 2400 CITY Denver STATE CO ZIP 80202

PHONE NUMBER: (303) 298-1000

10. FIELD AND POOL, OR WILDCAT: Anschutz Ranch

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 1623' FNL and 1328' FWL

COUNTY: Summit

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SENW 26 T4N R7E

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☐ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start:	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☐ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☑ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
3/17/2006	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER: _____
	☐ CONVERT WELL TYPE	☑ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

The Anschutz Corporation has recompleted the subject well uphole into the Upper Thaynes formation. A swab test proved the interval to be wet. The details of this recompletion are detailed on the attached completion summary report and well sketch.

NAME (PLEASE PRINT) Mohamed Elhage TITLE Petroleum Engineer

SIGNATURE _____ DATE 3/17/2006

(This space for State use only)

RECEIVED
MAR 3 0 2006
DIV. OF OIL, GAS & MINING

(5/2000) (See Instructions on Reverse Side)

Anschutz Ranch Deep 4-26
Operator: AEC

1623' FNL and 1328' FWL
SENW Section 26, T4N, R7E
Summit County, Utah
Anschutz Ranch Deep Prospect
13,458-488', 13,430-460', 13,290-320', 13,260-290' Weber
TAC WI: 100%
TIGHT HOLE

03/12/06 PO: Ready to pull tbg. Check well, SITP 0#, spot rig, raise derrick, RU work floor, rails & windwalls, RU air heater, test BOP, 500# low, 5000# high, RU tubing equipment, set catwalk & pipe racks, secure well, SDFN.

03/13/06 Day 2. PO: Back out lockdown pins. Release 'PLS' packer. Let element relax. Pull hanger & breakout. POOH LD 16 jots. Stand back 295 jts, flow coupling, nipple, flow coupling, 1 jt tubing, x-over & LD 'PLS' packer. Secure well, SDFN.

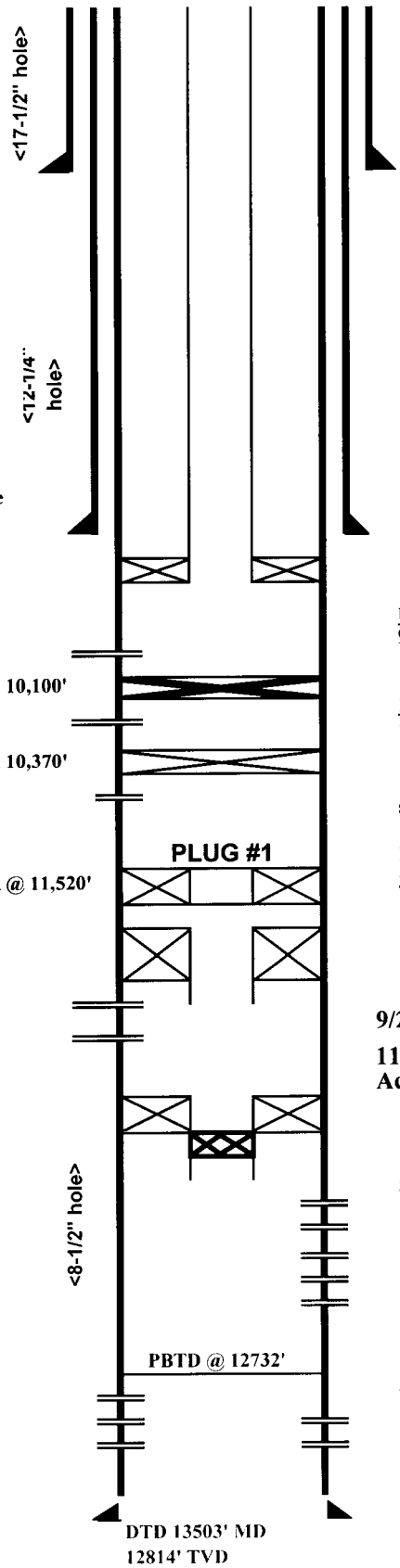
03/14/06 Day 3. PO: Safety meeting. Check well. SITP 0#. RU OWP. No clevis for top sheave. Wait on OWP 1 hr. RIH w / Halliburton CIBP. Set @ 10100'. POOH. RD OWP. Fill hole & test CIBP to 1000#. PU Halliburton 'PLS' packer, x-over, 1 jt tbg. TIH w / 147 stds 2-7/8" 7.7# L80 VAM tbg. (9483'). Drain up. Secure well. SDFN.

03/15/06 Day 4. PO: Safety meeting. Check well. SITP 0#. Land tbg. RD tbg equipment, windwalls & floor. ND BOP. Set Halliburton 'PLS' packer @ 9483.40' w / 8000# compress. NU & test tree. RU swab. SFL @ surface. Make 2 swab runs. EFL @ 2500'. RU OWP. Perforate upper Thyanes 9598' to 9628', 4SPF, 0 Degree phasing. 2-1/8" hollow steel carrier gun, gram shots, .00" entry hole. Slight blow after perforating. POOH. FL @ 1200' coming out of hole. RD & release OWP. RU swab. SFL @ surface'. Make 13 swab runs. EFL @ 3500'. Recovered 90 bbls. Drainup. Secure well. SDFN.

03/16/06 Day 5. PO: Safety meeting. Check well. SITP 75#. Blow well down to tank in 5 mins. RU swab. SFL @ 1300'. Make 11 swab runs. EFL @ 2700'. Recovered 78 bbls. Wtr. No gas or oil. RD swab. Rigging down. Secure well. SDFN.

03/17/06 Day 6. PO: RDMO. Finished rigging down, load out equipment. Move off. FINAL REPORT.

ANSCHUTZ EXPLORATION CORPORATION 3/17/06 "UPPER THAYNES REC" WELLBORE SCHEMATIC	
SEC: 26-T4N-R7E	WELL NAME: Anschutz Ranch Deep 4-26 COUNTY, STATE: Summit, Utah
TD: 13503'	GROUND ELEVATION: 7313' KB ELEVATION: 7335'



Surface Casing
13-3/8". 54.50#, K55, BTC
set @1512', cmt to surface

7-5/8" x 7" XO @ 3431'

DV Tool @ 5730'

Intermediate Casing
0 - 4487', 9-5/8", 47#, L80, Vam Ace
4487' - 6075', 9-5/8", 53.5#, L80, Vam Ace
6075' - 9197', 9-5/8", 47#, L80, Vam Ace

CIBP @ 10,100'

CIBP @ 10,370'

CICR @ 11,520'

Baker Model "D" Packer @ 11,560'
20' Sealbore Extension &
Tailpipe w/ (2) 'R' Nipples (2.188")
WLREG @ 11614'

Tubing String
2-7/8", L-80, 7.7#, Vam Ace
(see tbg detail for specifics)
Tbg capacity .00524 bbls/ft

Baker Model "D" Packer @ 12,390'
w/ (2) R Nipples (2.188")
WLREG @ 12,424'

9/20/02 Set Owen CIBP in tailpipe assembly & capped w/ 10' cement

Production Casing
0 - 3431', 7-5/8", 39#, L80, Vam SLIJ
3431' - 13503', 7", 32#, L80 Vam SLIJ
7" Capacity 0.03608 bbl/ft

DTD 13503' MD
12814' TVD

Note: Production csg tested to 4500 psi on 12/2/98 w/8.4#/g mud in hole. Do not apply more than 4000 psi to backside. See csg failure analysis.

Cement Calculations:
7" 32# L80 0.20255 ft3/ft capacity
7"x9 5/8" (47#) 0.1438 ft3/ft annular volume

9,483' of 2-7/8" 7.7# L80 VAM tubing
PLS Packer @ 9,483'

Upper Thaynes Production Perfs
9,598 - 9,628' (4 spf)

Lwr Thaynes Production Perfs
10,145 - 10,312' (1 spf)

sqz perfs: 10,380-82' (4 spf)

Plug #1 86 sks Cl "G" cmt below ret &
34 sks (200') Cl "G" cmt above retainer

TOC +/- 11350'
11/28/98 CBL

9/22/02 Perforated Upper Phosphoria
11,762-774' & 11,694-718'
Acidized and tested at 16.6 MMCFD

8/10/01 - Perf Weber w/ 2 spf:
12,524' - 34'
12,560' - 74'
12,586' - 602'
12,616' - 30'
12,688' - 98'
No Stimulation

Weber Perforations
1/20-21/99: Perf 13430' - 489', 2 spf, 1-11/16" RTG
1/23/99:Re-Perf 13430' - 489', 2 spf, 1-11/16" EnerJet
1/25/99 Acidized Weber
- 13430' - 489', w/6000 gal 7-1/2% HCL & N2
1/27-29/99 13260' - 380', 2 spf, 1-11/16" EnerJet
4/24/01: Run PL. No prod from perfs 13430' - 488'.

ANSCHUTZ
EXPLORATION CORPORATION
555 SEVENTEENTH STREET • SUITE 2400 • DENVER, COLORADO 80202 • 303-298-1000 • FAX 303-298-8881

March 27, 2006

Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, UT 84114-5801

RE: Subsequent Sundry - Recompletion
Anschutz Ranch Deep 4-26 (API 43-043-30320);

Gentlemen:

Attached please find the original Sundry Notice for recompleting the above mentioned well into the Upper Thaynes formation.

Thank you for your cooperation in the handling of this matter.

Sincerely,

DeVon M. Pester
Operations Technician

/dp
Enclosure

RECEIVED
MAR 3 0 2006
DIV. OF OIL, GAS & MINING

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER: FEE

SUNDRY NOTICES AND REPORTS ON WELLS

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT or CA AGREEMENT NAME:

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER

8. WELL NAME and NUMBER: Anschutz Ranch Deep 4-26

2. NAME OF OPERATOR: The Anschutz Corporation

9. API NUMBER: 4304330320

3. ADDRESS OF OPERATOR: 555 17th Street, Suite 2400 CITY Denver STATE CO ZIP 80202

PHONE NUMBER: (303) 298-1000

10. FIELD AND POOL, OR WILDCAT: Anschutz Ranch

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 1623' FNL and 1328' FWL

COUNTY: Summit

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SENW 26 T4N R7E

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☑ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start:	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
3/10/2006	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☐ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☑ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER:
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

The Anschutz Corporation requests permission to plug and abandon the Anschutz Ranch Deep 4-26 well according to the attached P&A well sketch and procedure.

RECEIVED
FEB 27 2007
DIV. OF OIL, GAS & MINING

NAME (PLEASE PRINT) James P. Oursland TITLE Operations Manager

SIGNATURE DATE 2/26/2006

(This space for State use only)

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 3/1/07
BY:
(See Instructions on Reverse Side)
* See Conditions of Approval (Attached)

COPY SENT TO OPERATOR
Date: 3-2-07
Initials: RM

(5/2000)

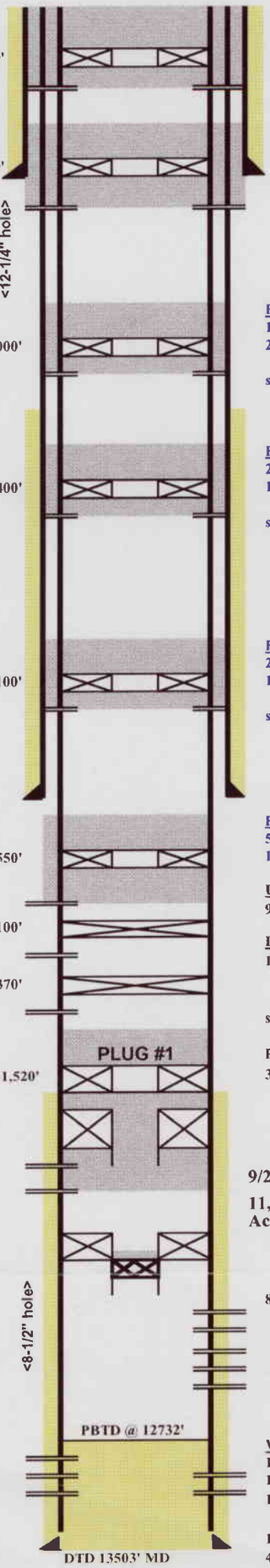
Anschutz Ranch Deep 4-26 P&A Procedure

1. Confirm P&A sundry notice has been approved. Notify state 24 hrs prior to commencing operations.
2. MI rig, pump, and tank.
3. ND capping assembly, NU BOPE, and test.
4. RU PU/LD machine.
5. Unseat Halliburton PLS packer and POOH with packer, laying down 2-7/8" 7.9# tubing.
6. RU wireline. PU CICR with wireline, RIH and set at +/-9,550'. POOH.
7. PU 2-7/8" 6.40# work string and RIH. Sting into CICR. Open 9-5/8" casing valve and attempt to gain circulation up 7' x 9-5/8" annulus, monitoring returns. Spot 54 sks Class "G" cement below CICR. Close casing valve and sting out of CICR. Spot 18 sks Class "G" cement above CICR. POOH.
8. PU 3-3/8" casing guns with wireline. RIH and shoot squeeze perfs from 7,130' – 7,132', 4 SPF, 90° phasing. POOH
9. PU CICR with wireline, RIH and set at +/- 7,100'. POOH.
10. RIH with 2-7/8" 6.40# work string. Sting into CICR. Open 9-5/8" casing valve and attempt to gain circulation up 7' x 9-5/8" annulus, monitoring returns. Spot 23 sks Class "G" cement below CICR. Close casing valve and sting out of CICR. Spot 18 sks Class "G" cement above CICR. POOH.
11. PU 3-3/8" casing guns with wireline. RIH and shoot squeeze perfs from 5,430' – 5,432', 4 SPF, 90° phasing. POOH
12. PU CICR with wireline, RIH and set at +/- 5,400'. POOH.
13. RIH with 2-7/8" 6.40# work string. Sting into CICR. Open 9-5/8" casing valve and attempt to gain circulation up 7' x 9-5/8" annulus, monitoring returns. Spot 21 sks Class "G" cement below CICR. Close casing valve and sting out of CICR. Spot 18 sks Class "G" cement above CICR. POOH.
14. PU 3-3/8" casing guns with wireline. RIH and shoot squeeze perfs from 3,030' – 3,032', 4 SPF, 90° phasing. POOH
15. PU CICR with wireline, RIH and set at +/- 3,000'. POOH.
16. RIH with 2-7/8" 6.40# work string. Sting into CICR. Open 9-5/8" casing valve and attempt to gain circulation up 7-5/8' x 9-5/8" annulus, monitoring returns. Spot 18 sks Class "G" cement below CICR. Close casing valve and sting out of CICR. Spot 21 sks Class "G" cement above CICR. POOH.
17. PU 3-3/8" casing guns with wireline. RIH and shoot squeeze perfs from 1,580' – 1,582', 4 SPF, 90° phasing. POOH
18. PU CICR with wireline, RIH and set at +/- 1,550'. POOH.
19. RIH with 2-7/8" 6.40# work string. Sting into CICR.
20. Open 9-5/8" casing valve and attempt to gain circulation up 7-5/8" x 9-5/8" annulus. Close casing valve. Open 13-3/8" casing valve and attempt to gain circulation up 9-5/8" x 13-3/8" annulus. Close casing valve. If circulation cannot be established, determine injection pressure. Report results to Denver engineering.
21. If circulation was established, spot 84 sks Class "G" cement below CICR (if no injection was possible, contact Utah Department of Oil and Gas for

instruction). Sting out of CICR and spot 21 sks Class "G" cement above CICR. POOH.

22. PU 3-3/8" casing guns with wireline. RIH and shoot squeeze perfs from 130' – 132', 4 SPF, 90° phasing. POOH
23. PU CICR with wireline, RIH and set at +/- 100'. POOH.
24. RIH with 2-7/8" 6.40# work string. Sting into CICR.
25. Open 9-5/8" casing valve and attempt to gain circulation up 7-5/8" x 9-5/8" annulus. Close casing valve. Open 13-3/8" casing valve and attempt to gain circulation up 9-5/8" x 13-3/8" annulus. If circulation cannot be established, determine injection pressure. Report results to Denver engineering.
26. If circulation was established, open both sets of casing valves and spot 60 sks Class "G" cement below CICR (if no injection was possible, contact Utah Department of Oil and Gas for instruction). Close casing valves. Sting out of CICR and spot 21 sks Class "G" cement above CICR. POOH. Use 1" string to top out annuli where possible.
27. Cut casing strings off 5' below ground level and weld dry hole marker per state specifications.

ANSCHUTZ EXPLORATION CORPORATION 3/17/06 "UPPER THAYNES REC" WELLBORE SCHEMATIC	
SEC: 26-T4N-R7E	WELL NAME: Anschutz Ranch Deep 4-26 COUNTY, STATE: Summit, Utah
TD: 13503'	GROUND ELEVATION: 7313' KB ELEVATION: 7335'



CICR @ 100'

Note: Production csg tested to 4500 psi on 12/2/98 w/8.4#/g mud in hole. Do not apply more than 4000 psi to backside. See csg failure analysis.

CICR @ 1,550'

Surface Casing
13-3/8". 54.50#, K55, BTC
set @1512', cmt to surface

CICR @ 3,000'

TOC @ 3,100'
7-5/8" x 7" XO @ 3431'

CICR @ 5,400'

DV Tool @ 5730'

CICR @ 7,100'

Intermediate Casing
0 - 4487', 9-5/8", 47#, L80, Vam Ace
4487' - 6075', 9-5/8", 53.5#, L80, Vam Ace
6075' - 9197', 9-5/8", 47#, L80, Vam Ace

CICR @ 9,550'

CIBP @ 10,100'

CIBP @ 10,370'

CICR @ 11,520'

Baker Model "D" Packer @ 11,560'
20' Sealbore Extension &
Tailpipe w/ (2) 'R' Nipples (2.188")
WLREG @ 11614'

Baker Model "D" Packer @ 12,390'
w/ (2) R Nipples (2.188")
WLREG @ 12,424'

9/20/02 Set Owen CIBP in tailpipe assembly & capped w/ 10' cement

Production Casing
0 - 3431', 7-5/8", 39#, L80, Vam SLIJ
3431' - 13503', 7", 32#, L80 Vam SLIJ
7" Capacity 0.03608 bbl/ft

Proposed Plug #7
60 sks Class "G" cmt below CICR
21 sks (100ft) Class "G" above CICR

sqz perfs: 130 - 132' (4 spf)

Proposed Plug #6
82 sks Class "G" cmt below CICR
21 sks (100ft) Class "G" above CICR

sqz perfs: 1,580 - 1,582' (4 spf)

Proposed Plug #5
18 sks Class "G" cmt below CICR
21 sks (100ft) Class "G" above CICR

sqz perfs: 3,030 - 3,032' (4 spf)

Proposed Plug #4
21 sks Class "G" cmt below CICR
18 sks (100ft) Class "G" above CICR

sqz perfs: 5,430 - 5,432' (4 spf)

Proposed Plug #3
23 sks Class "G" cmt below CICR
18 sks (100ft) Class "G" above CICR

sqz perfs: 7,130 - 7,132' (4 spf)

Proposed Plug #2
54 sks Class "G" cmt below CICR
18 sks (100ft) Class "G" above CICR

Upper Thaynes Production Perfs
9,598 - 9,628' (4 spf)

Lower Thaynes Production Perfs
10,145 - 10,312' (1 spf)

sqz perfs: 10,380-82' (4 spf)

Plug #1 86 sks Cl "G" cmt below ret &
34 sks (200') Cl "G" cmt above retainer

TOC +/- 11350'
11/28/98 CBL

9/22/02 Perforated Upper Phosphoria
11,762-774' & 11,694-718'
Acidized and tested at 16.6 MMCFD

8/10/01 - Perf Weber w/ 2 spf:
12,524' - 34'
12,560' - 74'
12,586' - 602'
12,616' - 30'
12,688' - 98'
No Stimulation

Weber Perforations
1/20-21/99: Perf 13430' - 489', 2 spf, 1-11/16" RTG
1/23/99:Re-Perf 13430' - 489', 2 spf, 1-11/16" EnerJet
1/25/99 Acidized Weber
- 13430' - 489', w/6000 gal 7-1/2% HCL & N2
1/27-29/99 13260' - 380', 2 spf, 1-11/16" EnerJet
4/24/01: Run PL. No prod from perfs 13430' - 488'.

State of Utah

Department of Natural Resources

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas & Mining

JOHN R. BAZA
Division Director

JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

CONDITIONS OF APPROVAL TO PLUG AND ABANDON WELL

Well Name and Number:	Anschutz Ranch Deep 4-26
API Number:	43-043-30320
Operator:	The Anschutz Corporation
Reference Document:	Original Sundry Notice dated February 26, 2007, received by DOGM on February 27, 2007

Approval Conditions:

1. Notify the Division at least 24 hours prior to conducting abandonment operations. Please call Dan Jarvis at 801-538-5338.
2. All balanced plugs shall be tagged to ensure the plugs are at the depths specified.
3. All intervals between plugs shall be filled with noncorrosive fluid.
4. Surface reclamation shall be done in accordance with R649-3-34 – Well Site Restoration. Evidence of compliance with this rule should be supplied to the Division upon completion of reclamation.
5. All requirements in the Oil and Gas Conservation General Rule R649-3-24 shall apply.
6. If there are any changes to the plugging procedure or wellbore configuration, notify Dustin Doucet at 801-538-5281 (ofc) or 801-733-0983 (home) prior to continuing with the procedure.
7. All other requirements for notice and reporting in the Oil and Gas Conservation General Rules shall apply.

Dustin K. Doucet
Petroleum Engineer

March 1, 2007
Date

1594 West North Temple, Suite 1210, PO Box 145801, Salt Lake City, UT 84114-5801
telephone (801) 538-5340 • facsimile (801) 359-3940 • TTY (801) 538-7458 • *www.ogm.utah.gov*

Wellbore Diagram

API Well No: 43-043-30320-00-00 **Permit No:** **Well Name/No:** ANSCHUTZ RANCH DEEP 4-26

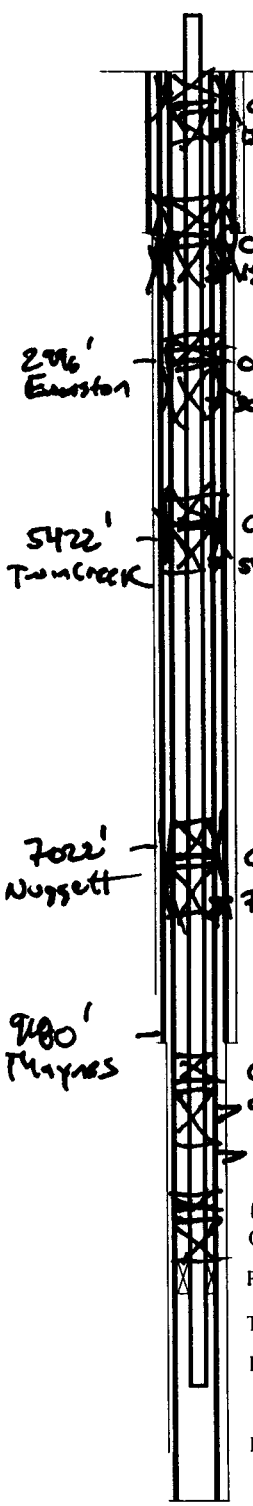
Company Name: ANSCHUTZ CORPORATION, THE

Location: Sec: 26 T: 4N R: 7E Spot: SENW

Coordinates: X: 489320 Y: 4544791

Field Name: ANSCHUTZ RANCH

County Name: SUMMIT



Cement from 1512 ft. to surface

Surface: 13.375 in. @ 1512 ft.

Hole: 17.5 in. @ 1512 ft.

Cement from 9197 ft.

Intermediate: 9.625 in. @ 9197 ft.

Hole: 12.25 in. @ 9197 ft.

Cement from 13503 ft.

Packer: @ 11560 ft.

Tubing: 2.875 in. @ 12424 ft.

Production: 7.625 in. @ 13503 ft.

Hole: 8.5 in. @ 13503 ft.

Plug 7 (Step 23-26)
Below inside = 6 SX
outside 1 130'(1.15)(10.648) = 10 SX
outside 2 (13 SX)(1.15)(2.757) = 136'
Above (21 SX)(1.15)(4.177) = 100'

Plug 6 (Steps 18-21)
Below - inside = 30'(1.15)(4.177) = 6 SX
outside 1 100'(1.15)(10.648) = 8 SX
outside 2 (6 SX)(1.15)(2.757) = 206'
inside (21 SX)(1.15)(4.177) = 100' o.k.

Plug 5 (Steps 14-16)
Below - inside = 6 SX
outside = 100' o.k.
Above 18 SX = 102' o.k.

Plug 4 (Steps 11-13)
Below - inside = 6 SX
outside (15 SX)(6.956)(1.15) = 120' o.k.
Above 18 SX = 102' o.k.

Plug 3 (Steps 8-10)
Below inside - 30'(1.15)(4.937) = 6 SX
outside (17 SX)(1.15)(6.956) = 136' o.k.
Above (18 SX)(1.15)(4.937) = 102'

Plug 2 (Steps 6-7)
Below (54 SX)(1.15)(4.937) = 306'
Above (18 SX)(1.15)(4.937) = 102' o.k.

Plug 1
Already Set

String Information

String	Bottom (ft sub)	Diameter (inches)	Weight (lb/ft)	Length (ft)
HOL1	1512	17.5		
SURF	1512	13.375	54.5	1512
HOL2	9197	12.25		
I1	9197	9.625	53.5	9197
I1	9197	9.625	47	9197
I1	9197	9.625	47	9197
HOL3	13503	8.5		
PROD	13503	7.625	39	13503
T1	12424	2.875		
PKR	11560			

Capacity (f/cf)

4.177
7" 4.937

9 5/8" x 7 5/8" → 10.648
13 3/8" x 9 5/8" → 2.757
9 5/8" x 7" → 6.956

Cement Information

String	BOC (ft sub)	TOC (ft sub)	Class	Sacks
I1	9197	3100'	G	1446
PROD	13503		G	335
SURF	1512	0	HC	611
SURF	1512	0	G	626

Perforation Information

Top (ft sub)	Bottom (ft sub)	Shts/Ft	No Shts	Dt Squeeze
9598	10312			
11694	11774			
12524	13489			

Formation Information

Formation	Depth
WSTC	0
EVAN	2996
PRES	5184
TWNCR	5422
WTCYN	6164
NGSD	7022
ANKH	8140
THYNS	9180
DNWD	11400
PSPR	11704
WEBR	12396

TD: **TVD:** **PBTD:**

INSPECTION FORM 7

STATE OF UTAH
DIVISION OF OIL GAS AND MINING
PLUGGING OPERATIONS

Well Name: Anschutz Ranch Deep 4-26 **API Number:** 43-043-30320

Qtr/Qtr: SENW **Section:** 26 **Township:** 4N **Range:** 7E **County:** Summit

Company Name: The Anschutz Corporation / Jim Hill, Consultant (307) 679-6902

Lease: State_____ Fee X_____ Federal_____ Indian_____

Inspector: Lisha Cordova, Petroleum Specialist **Date:** 3/10-3/12/07

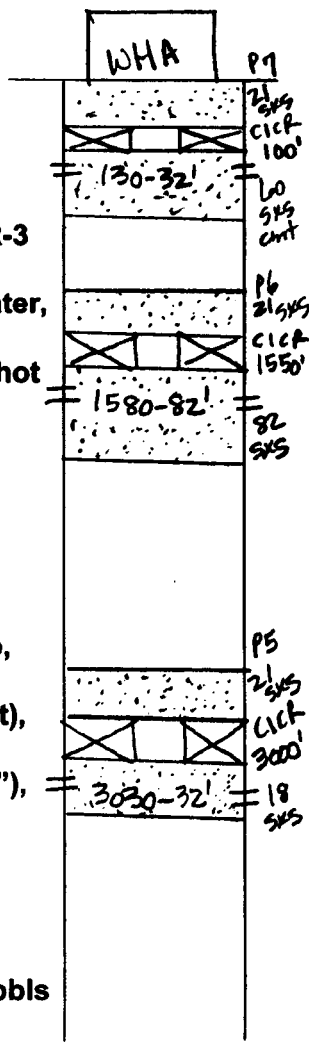
Surface Owner: Castle Rock Land & Livestock/Jeff Young Ranch Manager (435) 289-8414

Casing Tested: YES X NO_____ **Results:** OK

Cementing Company: Halliburton

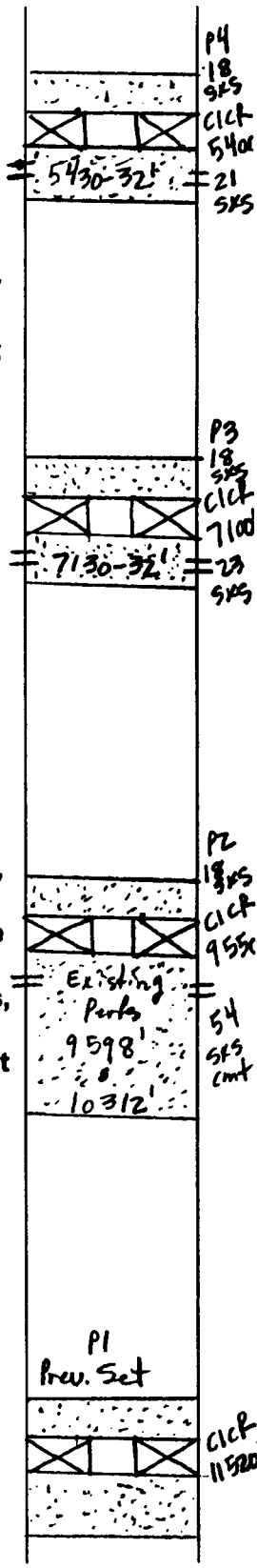
Other Contractor(s): Basic Energy Services/Rig #1519, Oil Well Perforators, Weatherford, Mountain States Water

Draw a wellbore diagram as plugged:



COMMENTS: Plug 1 previously set. (3/10/07) Plug 2; CICR (Weatherford, 7") set @9550'. Halliburton HU cementer, tested lines to 4000 psi, filled hole, est inj rate (3 bpm), mixed 72 sxs (14.7 bbls) Mountain G cmt (1.15 yld, 15.8#) w/additives (.2% CFR-3 & .1% Halad-344), pumped 54 sxs cmt below CICR & 18 sxs on top, disp 35.6 bbls water, disconnected cementer, TOOH w/tbg. (3/11/07) Plug 3; HU perf gun (8 shot), RIH & shot off @7130-7132', ROOH, disconnect perf gun & HU CICR (Weatherford, 7"), RIH & set @7100', ROOH, HU stinger, TIH w/tbg & stung into CICR. Halliburton HU cementer, tested lines to 3500 psi, est inj rate (4 bpm), mixed 41 sxs (8.4 bbls) Mountain G cmt (1.15 yld, 15.8#) w/additives (.1% CFR-3), pumped 23 sxs below CICR & 18 sxs on top, disp 37.5 bbls water, disconnect cementer. TOOH w/tbg. Plug 4; HU perf gun (8 shot), RIH & shot off @5430-5432', ROOH & disconnect perf gun. HU CICR (Weatherford, 7"), RIH & set @5400', ROOH, HU stinger, TIH w/tbg & stung into CICR. Halliburton HU cementer, tested lines, mixed 39 sxs (8 bbls) Mountain G cmt (1.15 yld, 15.8#) w/additives (.1% CFR-3), pumped 21 sxs cmt below CICR & 18 sxs on top, disp 27.6 bbls

water, TOOH w/tbg. (3/12/07) Plug 5; HU perf gun (8 shot), RIH & shot off @3030-3032', ROOH, disconnect perf gun. HU CICR (Weatherford, 7-5/8"), RIH & set @3000', ROOH, HU stinger, TIH w/tbg, filled hole, stung into CICR & filled backside (7-5/8"-9-5/8", unable to circ between 9-5/8"-13-3/8"), est inj rate (4 bpm), mixed 39 sxs (8 bbls) Mountain G cmt (1.15 yld, 15.8#) w/additives (.2% Halad-322), pumped 18 sxs cmt below CICR & 21 sxs on top, disp 13.7 bbls water, disconnect cementer. TOOH w/tbg. Plug 6; HU perf gun (8 shot, 4" PPG, .62" hole, 7.4" penetration), RIH & shot off @1580-1582', ROOH, disconnect perf gun & HU CICR (Weatherford, 7-5/8"), RIH & set @1550', ROOH, HU stinger, TIH w/tbg & stung into CICR, est circ on backsides (7-5/8"-9-5/8" & 9-5/8"-13-3/8"), est inj rate (4 bpm), mixed 103 sxs (21.1 bbls) Mountain G cmt (1.15 yld, 15.8#) w/additives (.2% Halad-322), pumped 82 sxs cmt below CICR & 21 sxs on top, disp 4.7 bbls water, disconnect cementer. TOOH w/tbg. Plug 7/surface plug; HU perf gun (8 shot, 4" PPG, .62" hole, 7.4" penetration), RIH & shot off @130-132', ROOH, disconnect perf gun, HU CICR (Weatherford, 7-5/8"), RIH & set @100', ROOH, HU stinger, TIH w/tbg, filled hole, stung into CICR & filled backsides (7-5/8"-9-5/8" & 9-5/8"-13-3/8"), est inj rate (2.5 bpm), mixed 81 sxs (16.6 bbls) Mountain G/Neat cmt (1.15 yld, 15.8#) w/no additives, pumped 60 sxs below CICR (cmt to surface from both annulus') & 21 sxs on top (no cmt returns), disconnect cementer. *Plug 7 completion ops to be performed at a later date; the cellar & wellhead will be removed, 7-5/8" csg (inside) will be filled w/cmt to surface, and a metal marker plate w/op & well info will be welded to top of csg & will be buried as per landowner request. Anschutz/Jim Hill Consultant, will notify DOGM when ops commence for witnessing. In addition, well site restoration shall be completed within 1 year of plugging ops (by 3/12/08) in accordance with R649-3-34.



*Copy of cement ticket attached.

ANSCHUTZ

ANSCHUTZ RANCH DEEP

4-26

API Well No.:
43-043-30320

10-Mar-07
SWEETWATER

RECEIVED
MAR 1 2 2007
DIV. OF OIL, GAS & MINING

PTA

Customer Representative:
JIM HILL
Halliburton Operator:
WAYNE MOUNT
Ticket No.:
4969211

HALLIBURTON

HALLIBURTON — JOB SUMMARY

SAP #/TICKET #	4969211	TICKET DATE	03/10/07
REGION	NORTH AMERICA LAND	NWA / COUNTRY	ROCKIES / USA
BDA / STATE	DENVER,CO	COUNTY	SWEETWATER
MBU ID / EMPL #	247118	H.E.S. EMPLOYEE NAME	WAYNE MOUNT
PSL DEPARTMENT	10003 CEMENTING SERVICES	LOCATION	10142 ROCK SPRINGS, WY
COMPANY	ANSCHUTZ	CUSTOMER REP / PHONE	JIM HILL
TICKET AMOUNT		WELL TYPE	GAS
API/UWI #	43-043-30320	WELL LOCATION	WYOMING
DEPARTMENT	CEMENTING SERVICES 10003	SAP BOMB NUMBER	7528
DESCRIPTION	PTA	LEASE NAME	ANSCHUTZ RANCH DEEP
WELL NO.	4-26	SEC / TWP / RNG	S26 - T4N - R7E

H.E.S. EMP NAME / EMP # / (EXPOSURE HOURS)	HRS		HRS		HRS		HRS
W. MOUNT		W. AILLS		B. CLEMONS		D. HEAPS	
J. KELLER		N. BURMAHL					

H.E.S. UNIT #S / (R / T MILES)	R / T MILES			R / T MILES			R / T MILES		R / T MILES
10417069	250	10741423	10744715	250	10624096	10322492	250		

Form. Name _____ Type: GAS
Form. Thickness _____ From _____ To _____
Packer Type _____ Set At _____
Bottom Hole Temp. _____ Pressure _____
Retainer Depth _____ Total Depth _____

	Called Out	On Location	Job Started	Job Completed
Date	3/10/07	3/10/07	3/10/07	3/12/07
Time	0200	1200	1321	1610

Tools and Accessories

Type and Size	Qty	Make
Float Collar		
Float Shoe		
Guide Shoe		
Centralizers		
Bottom Plug		
Top Plug		
PDF Collar		
PDF Shoe		
L Clamp		
DV Tool		
Guide Shoe		
Plug Set		
Weld-a		

Well Data

	New/Used	Weight	Size	Grade	From	To	Max. Allow
Conductor Casing							
Surface Casing							
Intermediate Casing							
Production Casing							
Liner							
Tubing	USED	6.5	2 7/8	P-10	0	9,550	
Tubing							
Drill Pipe							
Drill Pipe							
Open Hole							Shots/Ft.
Perforations							
Perforations							
Perforations							

Materials And Tank Strap

Mud Type H2O Density 8.33 Lb/Gal
Disp. Fluid H2O Density 8.33 Lb/Gal

Plug #1 Set at	9550.00	to		Ft	72 Sks
Plug #2 Set at	7100.00	to		Ft	41 Sks
Plug #3 Set at	5400.00	to		Ft	39 Sks
Plug #4 Set at	3000.00	to		Ft	39 Sks
Plug #5 Set at	1550.00	to		Ft	103 Sks
Plug #6 Set at	100.00	to		Ft	81 Sks
Plug #7 Set at		to		Ft	Sks
Plug #8 Set at		to		Ft	Sks

Beging Strap _____ EndStrap _____ Lead Cmt
Beging Strap _____ EndStrap _____ Lead Cmt
Beging Strap _____ EndStrap _____ Lead Cmt
Beging Strap _____ EndStrap _____ Lead Cmt
Beging Strap _____ EndStrap _____ Tail Cmt
Beging Strap _____ EndStrap _____ Tail Cmt

Hours On Location

Date	Hours
3/10	4.00
3/11	9.00
3/12	9.00
Total	22.0

Operating Hours (Pumping)

Date	Hours
3/10	1.00
3/11	2.00
3/12	2.00
Total	5.0

OPERATING TIME(RIG UP/RIG DOWN)

DATE	HRS. / MIN.
3/10	1
3/11	1
3/12	1
TOTAL	3

Hydraulic Horsepower
Ordered _____ Avail. _____ Used _____
Average Rates in BPM
Treating _____ Disp. _____ Overall _____
Cement Left in Pipe
Feet _____ Reason SHOE JOINT

Cement Data

Stage	Sacks	Cement	BULK	Additives	W/Rq.	Yield	Lbs/Gal	BBLs
1	72	MTN-G	BULK	.2% CFR-3, .1% HALAD-344	4.98	1.15	15.8	14.7
2	41	MTN-G	BULK	.1% CFR-3	4.98	1.15	15.8	8.4
3	39	MTN-G	BULK	.1% CFR-R	4.98	1.15	15.8	8.0
4	39	MTN-G	BULK	.2% HALAD-322	4.98	1.15	15.8	8.0
5	103	MTN-G	BULK	.2% HALAD-322	4.98	1.15	15.8	21.1
6	81	MTN-G	BULK	NEAT	4.98	1.15	15.8	16.6

Circulating		Displacement		Preflush:	Gal - BBl	20	Type: H2O
Breakdown		Maximum		Circulate Hole	Gal - BBl		Pad:Bbl -Gal
Lost Returns-YES		Lost Returns-NO	XXX	Excess /ReturnGal BBl			Calc.Disp Bbl
Cmt Rtrn#Bbl		Actual TOC		Calc. TOC:			Actual Disp.
Average		Frac. Gradient		Treatment:	Gal - BBl		Disp:Bbl-Gal BBL
Shut In: Instant		15 Min.	30 Min.	Cement Slurry:	Gal - BBl	77	
				Total Volume	Gal - BBl	97	

THE INFORMATION STATED HEREIN IS CORRECT
CUSTOMER REPRESENTATIVE JIM HILL
SIGNATURE

HALLIBURTON

Job Log

TICKET # 4969211		TICKET DATE 03/10/07	
REGION NORTH AMERICA LAND	NWA / COUNTRY ROCKIES / USA	BDA / STATE DENVER,CO	COUNTY SWEETWATER
MBU ID / EMPL # 247118	H.E.S EMPLOYEE NAME WAYNE MOUNT	PSL DEPARTMENT 10003 CEMENTING SERVICES	
LOCATION 10142 ROCK SPRINGS, WY	COMPANY ANSCHUTZ	CUSTOMER REP / PHONE JIM HILL	
TICKET AMOUNT	WELL TYPE GAS	API/UWI # 43-043-30320	
WELL LOCATION WYOMING	DEPARTMENT CEMENTING SERVICES 10003	JOB PURPOSE CODE 7528	
LEASE / WELL # ANSCHUTZ RANCH DEEP	Well No. 4-26	SEC / TWP / RNG S26 - T4N - R7E	

DATE	Time	Rate (BPM)	Volume (BBL)(GAL)	Pmps T	Pmps C	Press.(PSI)	Press.(PSI)	Job Description / Remarks
03/10/07	0200							CALL OUT TIME
	0330							SAFETY MEETING
	0345							LEAVE YARD
	0730							CHAIN UP EQUIPMENT
	0730							STUCK ON THE WAY INTO LOCATION
	1040							GRADER ARRIVES
	1200							ARRIVE ON LOCATION
	1205							SAFETY MEETING
	1210							SPOT EQUIPMENT / RIG UP
	1310							SAFETY MEETING WITH RIG CREW
	1321						4000	TEST LINES
	1323	2.6	15.0				700	ESTABLISH INJECTION RATE
	1330	2.0	2.0				300	STING OUT / FILL HOLE
	1336	3.0	14.7			800-	200	**MIX AND PUMP 72 SACKS MOUNTAIN G CEMENT**
								15.8 PPG 1.15 YIELD 4.97 YIELD
	1342	3.0	35.6				250	PUMP DISPLACEMENT
	1354							STING INTO RETAINER
	1354							CONTINUE PUMPING DISPLACEMENT
	1401							STING OUT OF RETAINER
	1410							RIG PULLS OUT OF HOLE
	1420							WASH UP / BLOW DOWN PUMP TRUCK
	0330							RELEASED FROM LOCATION
03/11/07	1000							ARRIVE ON LOCATION
	1140							SAFETY MEETING WITH RIG CREW
	1200						3500	TEST LINES
	1205	4.0	10.0				400	ESTABLISH INJECTION RATE
	1212	4.0	8.5				700	**MIX AND PUMP 41 SACKS MOUNTAIN G CEMENT**
								15.8 PPG 1.15 YIELD 4.97 YIELD
	1215	4.0	37.5				400	PUMP DISPLACEMENT
	1223							STING OUT OF RETAINER
	1230							RIG PULLS OUT OF HOLE
	1400							RIH WITH WIRELINE TO PERFORATE
	1500							RIH WITH RETAINER
	1727	2.0	10.0				150	FILL HOLE
	1733	4.0	8.0				500	**MIX AND PUMP 39 SACKS MOUNTAIN G CEMENT**
								15.8 PPG 1.15 YIELD 4.97 YIELD
	1736	4.0	27.6				300	PUMP DISPLACEMENT
	1743							STING OUT OF RETAINER
	1745							SHUT DOWN
	1800							WASH UP / BLOW DOWN PUMP TRUCK
	1900							RELEASED FROM LOCATION

DATE: 3/12/2007

CUSTOMER / Authorized Signatory_____

HALLIBURTON

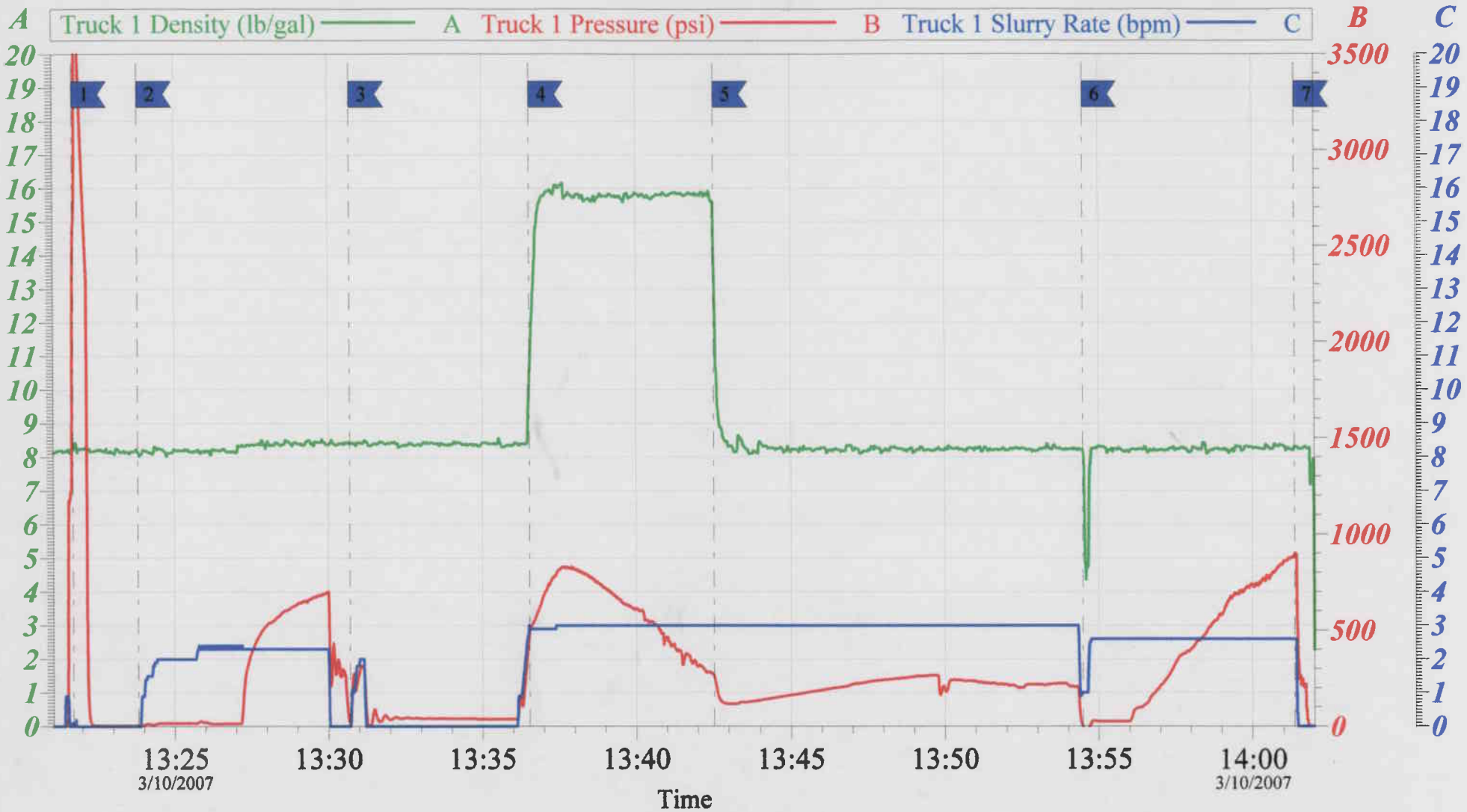
JOB LOG CONT.

Ticket Number	Company	Lease Name	Well No.	Date	
4969211	ANSCHUTZ	ANSCHUTZ RANCH DEEP	4-26	##	2

Date	Time	Rate (BPM)	Volume (BBL)(GAL)	Pmps T	Pmps C	Press.(PSI)		Job Description / Remarks
3/12/07	0900							ARRIVE ON LOCATION
	1020	3	6.0				150	FILL 7 5/8" CASING
	1026	3	3.0				100	STING IN / FILL 9 5/8" CASING
	1028	2	2.0				1100	PUMP BETWEEN 9 5/8 @ 13 3/8 CASINGS
	1029							CANNOT CIRCULATE
	1042	4	8.0				300	**MIX AND PUMP 39 SACKS MOUNTAIN G CEMENT**
								15.8 PPG 1.15 YIELD 4.97 YIELD
	1044	4	13.7				125	PUMP DISPLACEMENT
	1047							STING OUT OF RETAINER
	1048							SHUT DOWN
	1050							RIG PULLS OUT OF HOLE
	1200							RIH WITH WIRELINE TO PERFORATE
	1230							RIH WITH RETAINER
	1334	3	13.0					FILL 7 5/8" CASING
	1341	3	34.0					STING IN / FILL 9 5/8" AND 13 3/8CASING
	1400	4	21.0				400	**MIX AND PUMP 103 SACKS MOUNTAIN G CEMENT**
								15.8 PPG 1.15 YIELD 4.97 YIELD
	1405	4	4.7				300	PUMP DISPLACEMENT
	1406							STING OUT OF RETAINER
	1406							SHUT DOWN
	1410							RIG PULLS OUT OF HOLE
	1500							RIH WITH WIRELINE TO PERFORATE
	1530							RIH WITH RETAINER
	1550	2	10.0					FILL 7 5/8" CASING
	1556	2	15.0					STING IN / FILL 9 5/8" AND 13 3/8CASING
	1602	2.5	20.0				100	**MIX AND PUMP ~~103~~ SACKS MOUNTAIN G CEMENT**
								15.8 PPG 1.15 YIELD 4.97 YIELD
	1610							SHUT DOWN
	1615							SAFETY MEETING
	1630							RIG DOWN
	1740							RELEASED FROM LOCATION

81 sxs total
not 103
fc

PLUG #1



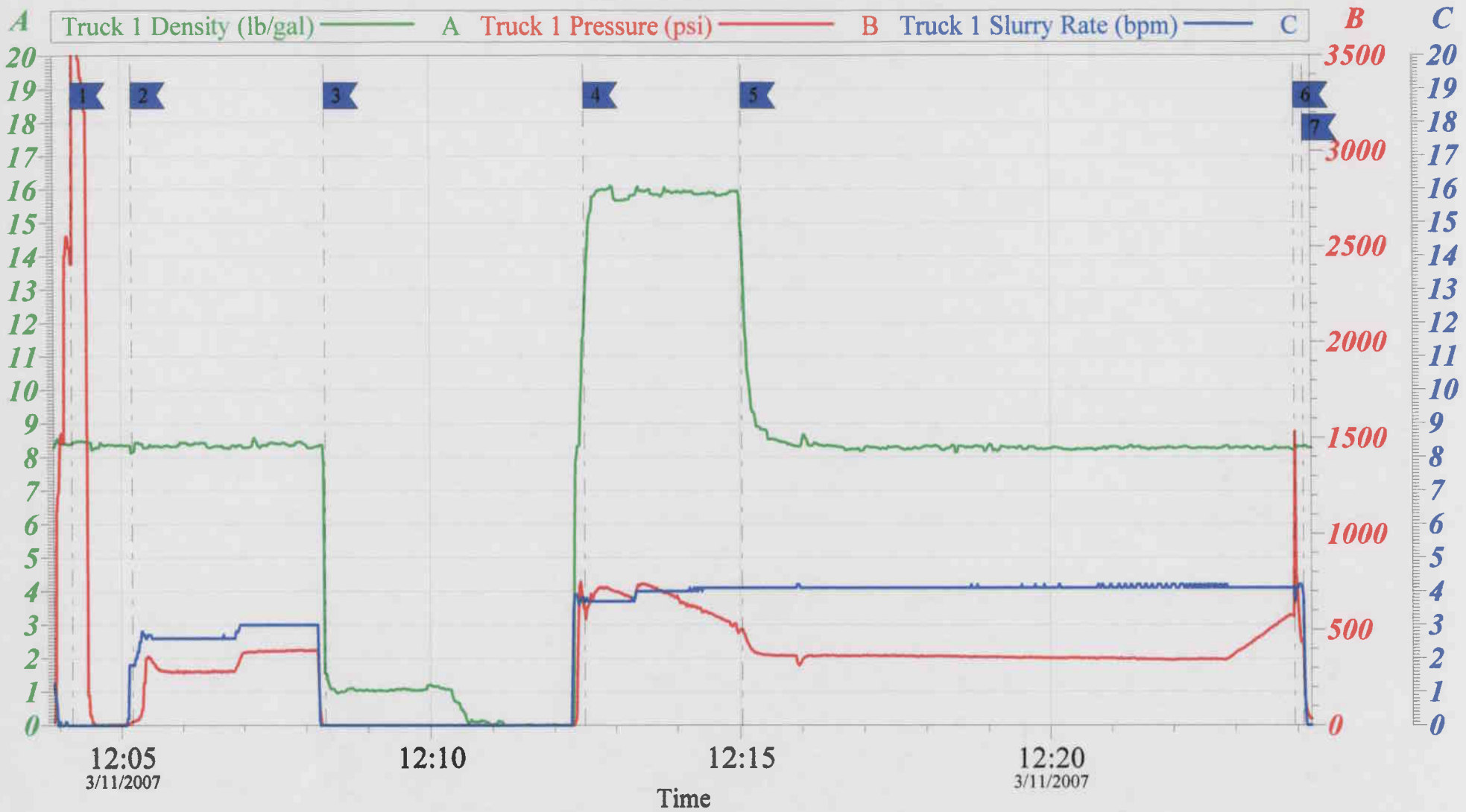
Local Event Log

TEST LINES	13:21:43	INJECTION TEST	13:23:49	STING OUT / FILL HOLE	13:30:42
PUMP CEMENT	13:36:32	PUMP DISPLACEMENT	13:42:31	STING INTO RETAINER	13:54:28
SHUT DOWN	14:01:21				

Customer: ANSCHUTZ	Job Date: 10-Mar-2007	Sales Order #: 4969211
Well Description: ANSCHUTZ RANCH DEEP 4-26	UWI: 49-043-30320	

HALLIBURTON
OptiCem v6.1.0
10-Mar-07 15:16

PLUG #2



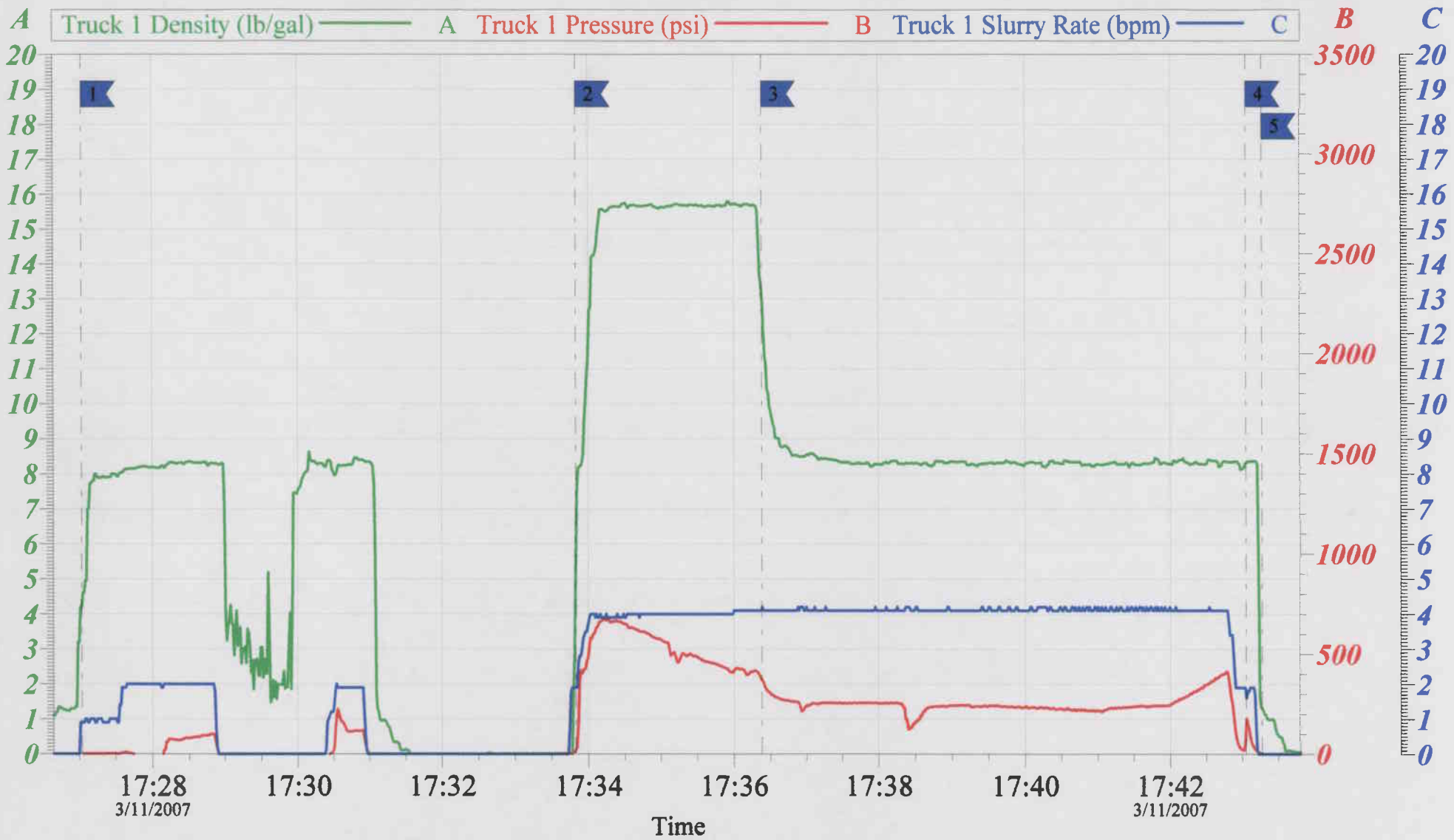
Local Event Log

TEST LINES	12:04:12	CIRCULATE WELL	12:05:11	SHUT DOWN TO MIX CEMENT	12:08:19
PUMP CEMENT	12:12:29	PUMP DISPLACEMENT	12:15:02	STING OUT OF RETAINER	12:23:57
SHUT DOWN	12:24:06				

Customer:	Job Date: 11-Mar-2007	Sales Order #: 4969211
Well Description:	UWI:	

HALLIBURTON
OptiCem v6.1.0
11-Mar-07 12:53

PLUG #3



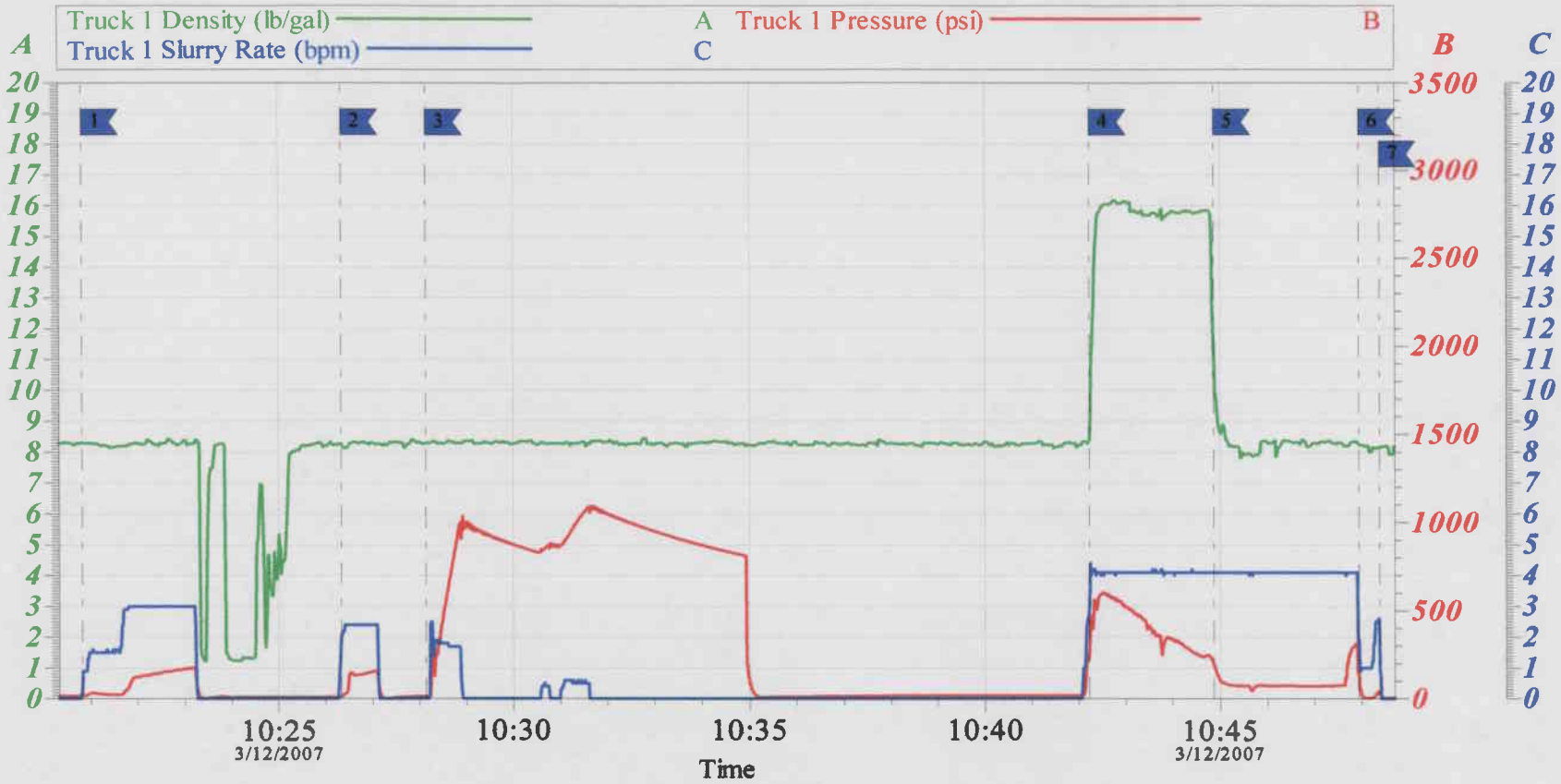
Local Event Log

FILL HOLE	17:27:02	PUMP CEMENT	17:33:50	PUMP DISPLACEMENT	17:36:23
STING OUT OF RETAINER	17:43:03	SHUT DOWN	17:43:16		

Customer:	Job Date: 11-Mar-2007	Sales Order #: 4969211
Well Description:	UWI:	

HALLIBURTON
OptiCem v6.1.0
11-Mar-07 18:24

PLUG #4



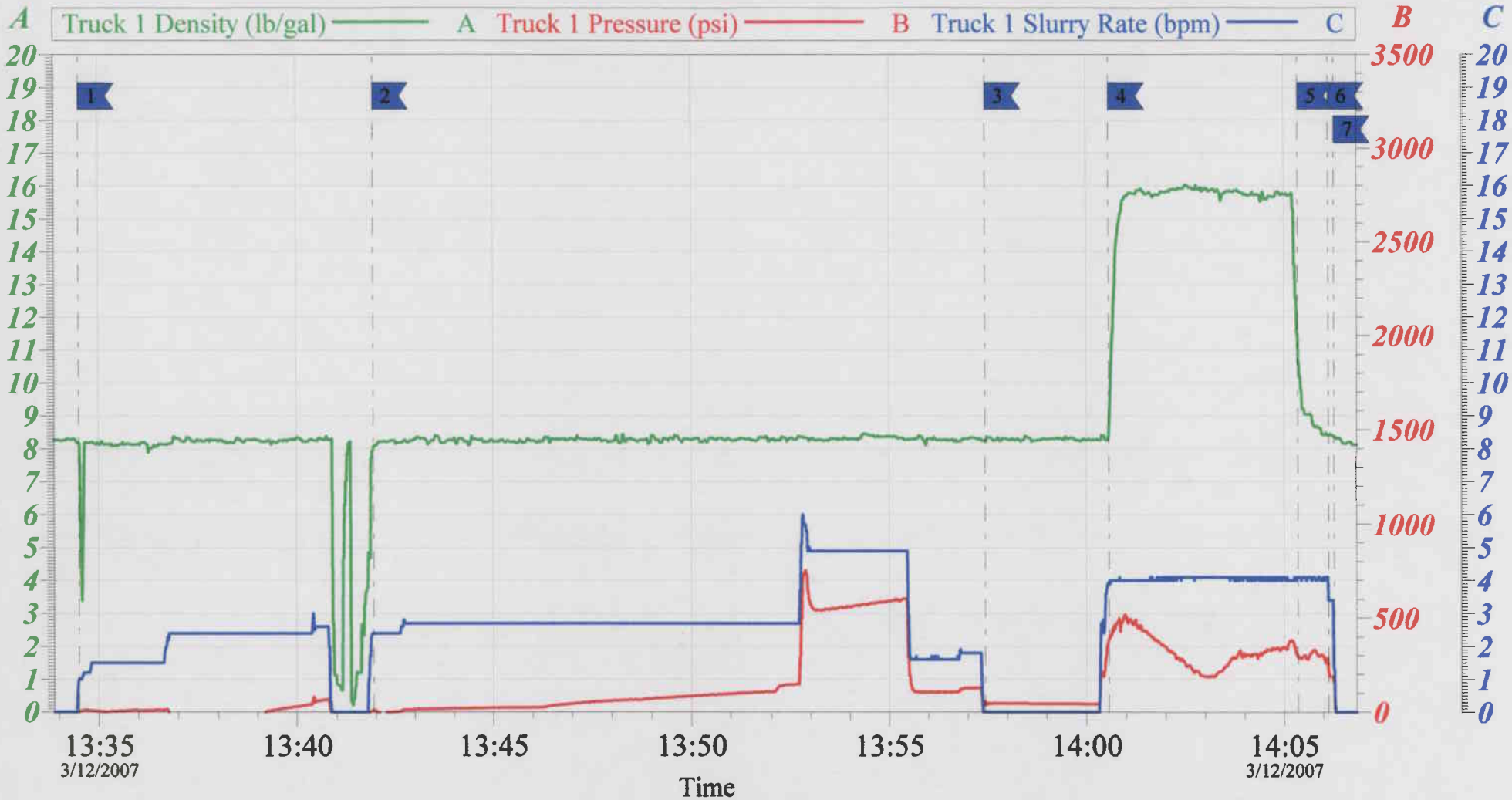
Local Event Log

FILL 7" CASING	10:20:49	STING IN / FILL 9 5/8" CASING	10:26:20	PUMP BETWEEN 9 5/8 @ 13 3/8	10:28:08
PUMP CEMENT	10:42:14	PUMP DISPLACEMENT	10:44:52	STING OUT	10:47:57
SHUT DOWN	10:48:23				

Customer: Well Description:	Job Date: 12-Mar-2007 UWI:	Sales Order #: 4969211

HALLIBURTON
OptiCem v6.1.0
12-Mar-07 11:18

PLUG #5



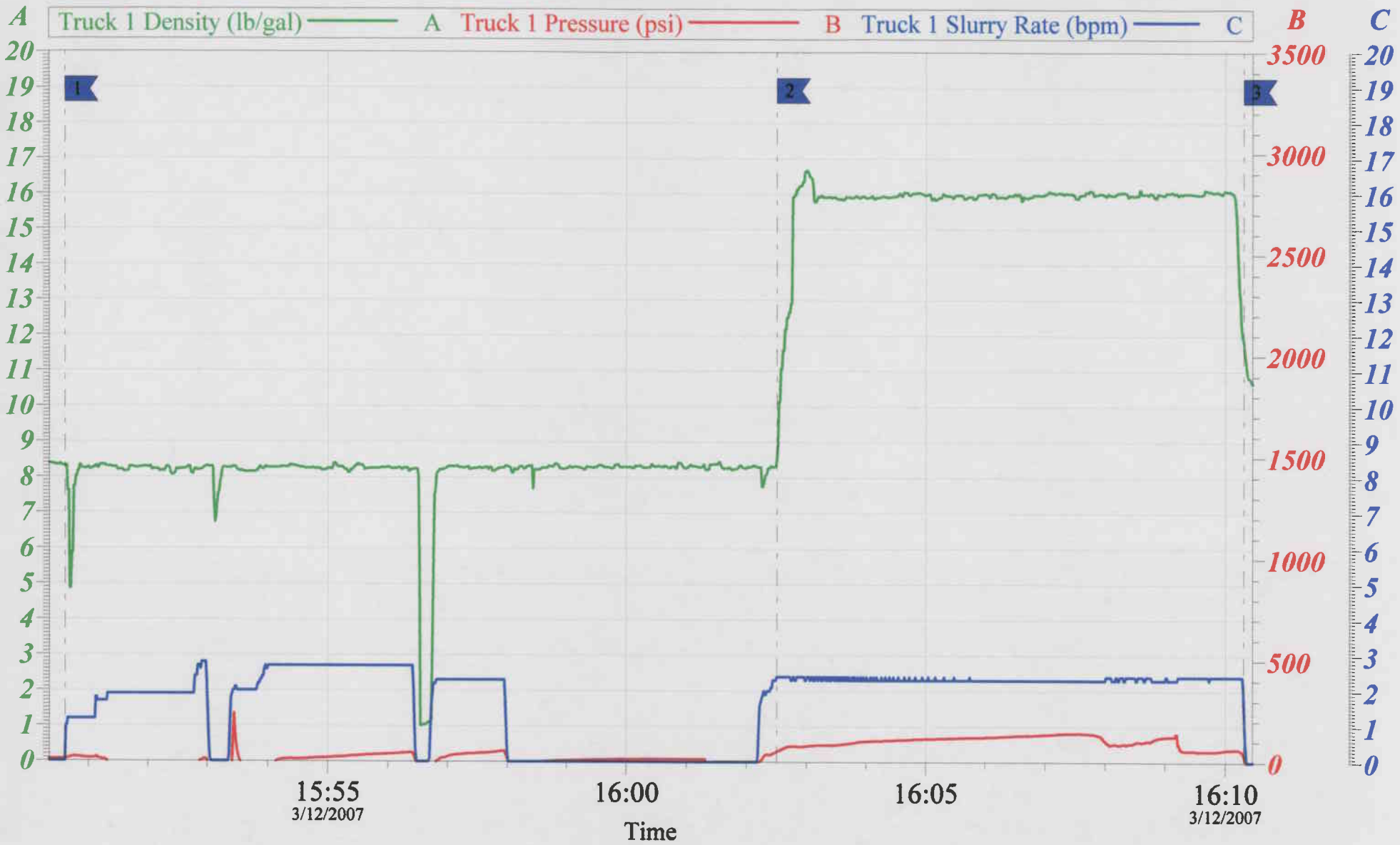
Local Event Log

1	FILL 7 5/8 " CASING	13:34:30	2	STING INTO RETAINER / FILL HOLE	13:41:57
	SHUT DOWN / MIX CEMENT	13:57:26		PUMP CEMENT	14:00:34
	PUMP DISPLACEMENT	14:05:21		STING OUT OF RETAINER	14:06:08
	SHUT DOWN	14:06:17			

Customer:	Job Date: 12-Mar-2007	Sales Order #: 4969211
Well Description:	UWI:	

HALLIBURTON
OptiCem v6.1.0
12-Mar-07 15:08

PLUG #6



Local Event Log

FILL HOLE	15:50:36	PUMP CEMENT	16:02:30	SHUT DOWN	16:10:19

Customer: Well Description:	Job Date: 12-Mar-2007 UWI:	Sales Order #: 4969211

HALLIBURTON
OptiCem v6.1.0
12-Mar-07 16:52

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

5. LEASE DESIGNATION AND SERIAL NUMBER: FEE
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT or CA AGREEMENT NAME:

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER _____
8. WELL NAME and NUMBER: Anschutz Ranch Deep 4-26

2. NAME OF OPERATOR: The Anschutz Corporation
9. API NUMBER: 4304330320

3. ADDRESS OF OPERATOR: 555 17th Street, Suite 2400 CITY Denver STATE CO ZIP 80202
PHONE NUMBER: (303) 298-1000
10. FIELD AND POOL, OR WILDCAT: Anschutz Ranch

4. LOCATION OF WELL
FOOTAGES AT SURFACE: 1623' FNL and 1328' FWL
COUNTY: Summit
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SENW 26 T4N R7E
STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☐ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start: _____	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☐ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☑ PLUG AND ABANDON	☐ VENT OR FLARE
☑ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion: 3/12/2007	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER: _____
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

The Anschutz Corporation has plugged and abandoned the above well as per the attached daily reports.

NAME (PLEASE PRINT) DeVon M. Pester
TITLE Operations Technician
SIGNATURE _____
DATE 6/14/2007

(This space for State use only)

RECEIVED
JUN 1 8 2007
DIV. OF OIL, GAS & MINING

(5/2000)

(See Instructions on Reverse Side)

02/15/07 Day 1. PO: Plow snow, test anchors. Plow snow, location ready for rig.

03/05/07 Day 2. PO: Clean out cellar. Plow snow, location ready for rig.

03/06/07 Day 3. PO: MI rig and support equipment, RU. MI Badger Daylighting, remove wellhead fence, clean cellar to below casing valves.

03/07/07 Day 4. PO: POOH LD 2-7/8" VAM tbg & packer. Move rig & support equipment from ARD 10-27ST to 4-26, spot rig & raise derrick, set tanks, pump, air heater, catwalk & pipe racks, haul 400 bbls water, move work string from ARD 10-27ST to location, ND treet, NU BOPE & test, 500# low, 2000# high, back out lockdown pins, PU on tbg, release PLS packer, LD anger, LD 5 jts, secure well, SDFN.

03/08/07 Day 5.PO: RIH w/ gauge ring & CR, PU tbg. POOL, LD 293 jts 2-7/8" Vam Ace tbg., 2-7/8" Vam Ace X 2-7/8" 8rd x-over & Halliburton PLD production packer, secure well, SDFN.

03/09/07 Day 6. PO: RU cementers, squeeze perfs. RU OWP, RIH w/ 5.750" gauge ring to 9570', POOH, RIH w/ 7" cement retainer, set at 9555', POOH, RD wireline, PU stinger & 300 jts 2-7/8" tbg, tag up & space out, pump 60 bbls to fill hole, sting into CR, establish injection rate, 2.5 BPM @ 1100#, drain up, secure well, SDFN.

03/10/07 Day 7. PO: Perf at 7130', set CR, squeeze. Squeeze perfs @ 9598-9628', spot cement, sting in, pump 72 sx class G cement, 54 sx below CR & 18 sx on top of CR, POOH, LD 77 jts, stand back 111 stds, secure sell, SDFN.

03/11/07 Day 8. PO: Perf at 3030', set CR, squeeze. RU OWP, RIH, shoot 8 squeeze holes at 7130' – 7132', break circulation up 9-5/8" csg, set CR at 7100', POOH, PU stinger, TIH, tag up & space out, pump 41 sx Class G cement, 23 sx below CR & 18 sx on top of CR, sting out, full returns while cementing, POOH, LD 53 jts 2-7/8" tbg, stand back 84 stands, RIH, shoot 8 squeeze holes @ 5430-5432', POOH, RIH & set CR at 5400', POOH, TIH w/ stinger, tag & space out, fill hole 7-5/8" & 9-5/8", sting in pump 39 sx Class G cement, 21 sx below CR, 18 sx on top of CR, POOH, LD 76 jts 2-7/8" tbg, stand back 47 stands, drain up, secure well, SDFN.

03/12/07 Day 9. RD rig & support equipment. RU wireline, shoot 8 holes @ 3030'-3032, set CR @ 3000', TIH w / stinger & 94 jts tbg, tag up & space out, fill 7-5/8" csg, sting in, fill 9-5/8" csg. & close valves, open 13-3/8" csg valve, attempt to circulate up 13-3/8" csg. 1000#, no circulation, open 9-5/8" valve, pump 39 sx class 'G' cement,. 18 sx below CR, 21 sx on top CR, POOH. LD 45 jts tbg, RU wireline, shoot 8 holes @ 1580'-1582', set CR @ 1550', PU stinger & TIH, tag up & space out, fill 7-5/8" csg, sting in, fill 9-5/8" csg. & close valves, open 13-3/8" csg valve, circulate up 13-3/8" csg, pump 105 sx class 'G' cement, 84 sx below CR, 21 sx on top CR, POOH, LD 48 jts, RU wireline, shoot 8 holes @ 130'-132', set CR @ 100', PU stinger & TIH, tag up & space out, pump 81 sx class 'G' cement, 60 sx below CR, circulate cement out 13-3/8" csg valve, close 13-3/8" csg valve, open 9-5/8" csg valve, circ cement out 9-5/8" csg valve, sting out, spot cement inside 7-5/8" csg, POOH, LD 3 jts, rigging down Halliburton. RD windwalls & floor. ND BOPE, SDFN.

03/13/07 Day 10. PO: Ready to move off. Load out 384 jts 2-7/8" tbg., clean tanks, drain water tanks, RD rig, ready to move, SD until 03/15/07.

ANSCHUTZ
EXPLORATION CORPORATION
555 SEVENTEENTH STREET • SUITE 2400 • DENVER, COLORADO 80202 • 303 298-1000 • FAX 303 298-8881

June 14, 2007

Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, UT 84114-5801

RE: Subsequent Sundry - Recompletion
Anschutz Ranch Deep 4-26 (API 43-043-30320);

Gentlemen:

Attached please find the original Subsequent Sundry Notice for plugging and abandoning the above mentioned well.

Thank you for your cooperation in the handling of this matter.

Sincerely,

DeVon M. Pester
Operations Technician

/dp
Enclosure

RECEIVED
JUN 1 8 2007
DIV. OF OIL, GAS & MINING

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER: FEE

SUNDRY NOTICES AND REPORTS ON WELLS

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT or CA AGREEMENT NAME:

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER _____

8. WELL NAME and NUMBER: Anschutz Ranch Deep 4-26

2. NAME OF OPERATOR: The Anschutz Corporation

9. API NUMBER: 4304330320

3. ADDRESS OF OPERATOR: 555 17th Street, Suite 2400 CITY Denver STATE CO ZIP 80202

PHONE NUMBER: (303) 298-1000

10. FIELD AND POOL, OR WILDCAT: Anschutz Ranch

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 1623' FNL and 1328' FWL

COUNTY: Summit

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SENW 26 T4N R7E

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☑ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start: 8/29/2007	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☐ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
Date of work completion:	☐ COMMINGLE PRODUCING FORMATIONS	☑ RECLAMATION OF WELL SITE	☐ OTHER: _____
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

The Anschutz Corporation proposes to reclaim the surface location of the Anschutz Ranch Deep 4-26. The location will be returned to its natural contours and reseeded. The well was plugged in March 2007.

NAME (PLEASE PRINT) James P. Oursland TITLE Operations Manager

SIGNATURE James P. Oursland DATE 8/29/2007

(This space for State use only)

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DIV. OF OIL, GAS & MINING

(5/2000) (See Instructions on Reverse Side)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

5. LEASE DESIGNATION AND SERIAL NUMBER: FEE

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT or CA AGREEMENT NAME:

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER

8. WELL NAME and NUMBER: Anschutz Ranch Deep 4-26

2. NAME OF OPERATOR: The Anschutz Corporation

9. API NUMBER: 4304330320

3. ADDRESS OF OPERATOR: 555 17th Street, Suite 2400 CITY Denver STATE CO ZIP 80202

PHONE NUMBER: (303) 298-1000

10. FIELD AND POOL, OR WILDCAT: Anschutz Ranch

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 1623' FNL and 1328' FWL

COUNTY: Summit

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SENW 26 T4N R7E

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☐ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start:	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☐ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☑ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
10/13/2007	☐ COMMINGLE PRODUCING FORMATIONS	☑ RECLAMATION OF WELL SITE	☑ OTHER: reseeding
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

In September of 2007, Anschutz Exploration Corporation reclaimed the Anschutz Ranch Deep 4-26 well location, re-contouring the pad and spreading topsoil. On October 13, 2007 the disturbed area was re-seeded with the seed mix listed below.

Tall Wheatgrass, VNS	26% (all percentages here are by weight)
Russian Wildrye, Bozoisky	22%
Crested Wheatgrass, Hycrest	42%
Alfalfa, Ladak	2%
Asinfoin, Eski	8%

This mix was selected by the surface owner, Castle Rock. The mixture was planted at 35 pounds to the acre.

NAME (PLEASE PRINT) James Oursland TITLE Operations Manager

SIGNATURE James Oursland DATE 4/23/2008

(This space for State use only)

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(5/2000) (See Instructions on Reverse Side)