Form OGC-1a

(Other instructions on reverse side)

Confidential - Tight Hole

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

5. Lease Designation and Serial No.

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

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

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 [ ]

7. Unit Agreement Name: N/A

8. Farm or Lease Name: AL&L

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

9. Well No.: #14-33

3. Address of Operator: PERMITCO INC. - Agent 303/452-8888 13585 Jackson Drive Denver, CO 80241

10. Field and Pool, or Widlcat: Wildcat

4. Location of Well (Report location clearly and in accordance with any State requirements.*)

At surface: ~~532'~~ 592' FSL and ~~786'~~ 748' FEL (Surface Location)

At proposed prod. zone: 100' FSL and 460' FEL (Btm. Hole Location)

11. Sec., T., R., M., OR Blk. and Survey or Area: Sec. 33, T6N - R8E

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): 100' (btm. hole)

16. No. of acres in lease: 726.91

17. No. of acres assigned to this well: 726.91

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

19. Propsed depth: 13,821' (TVD)

20. Rotary or cable tools: Rotary

21. Elevations (Show whether DF, RT, GR, etc.): 7147.0'

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
26"	20"	106#	1,500'	2950 sx Class "A"
17-1/2"	13-3/8"	68, 72 & 81.4#	5,900'	1770 sx Class "G"
12-1/4"	9-5/8"	47#	12,000'	1860 sx Class "E"
8-1/2"	7"	32#	13,821'	400 sx Class "E"

The Anschutz Corporation proposes to drill a well to a depth of 13,821' to test the Phosphoria/Weber 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

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

CONFIDENTIAL - TIGHT HOLE

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: 06/24/96

(This space for Federal or State office use)

Permit No. 43-043-30315

Approval Date

Approved by: [signature]

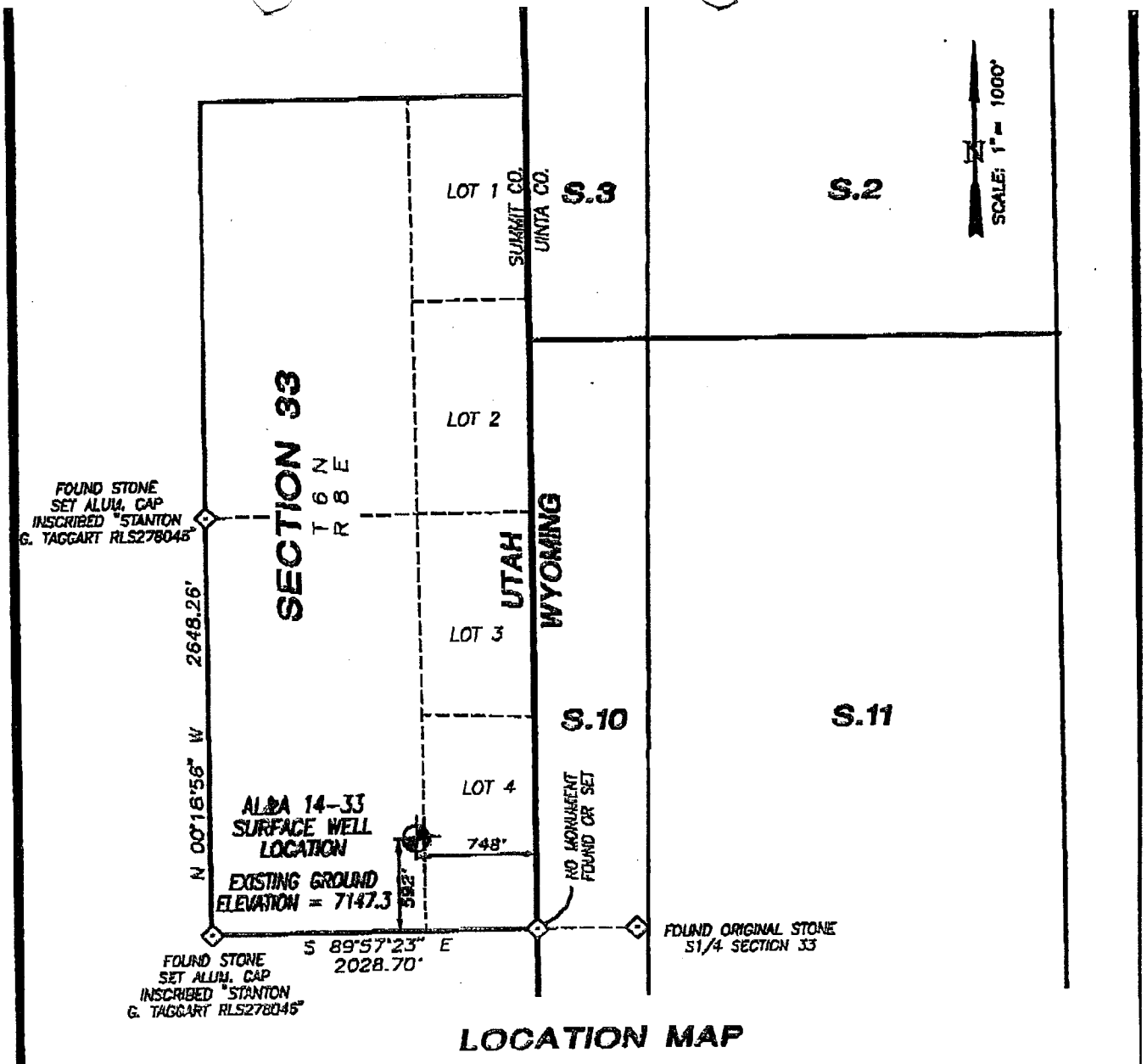
Title: Petroleum Engineer

Date: 8/29/96

Conditions of approval, if any:

Cement behind 13 3/8 will have to be brought to the top of the Frontier formation either by stage tool or volume. The Frontier must be covered by cement.

~~See Instructions On Reverse Side~~



LOCATION MAP

SURVEYED UNDER MY SUPERVISION
IN JULY 1996

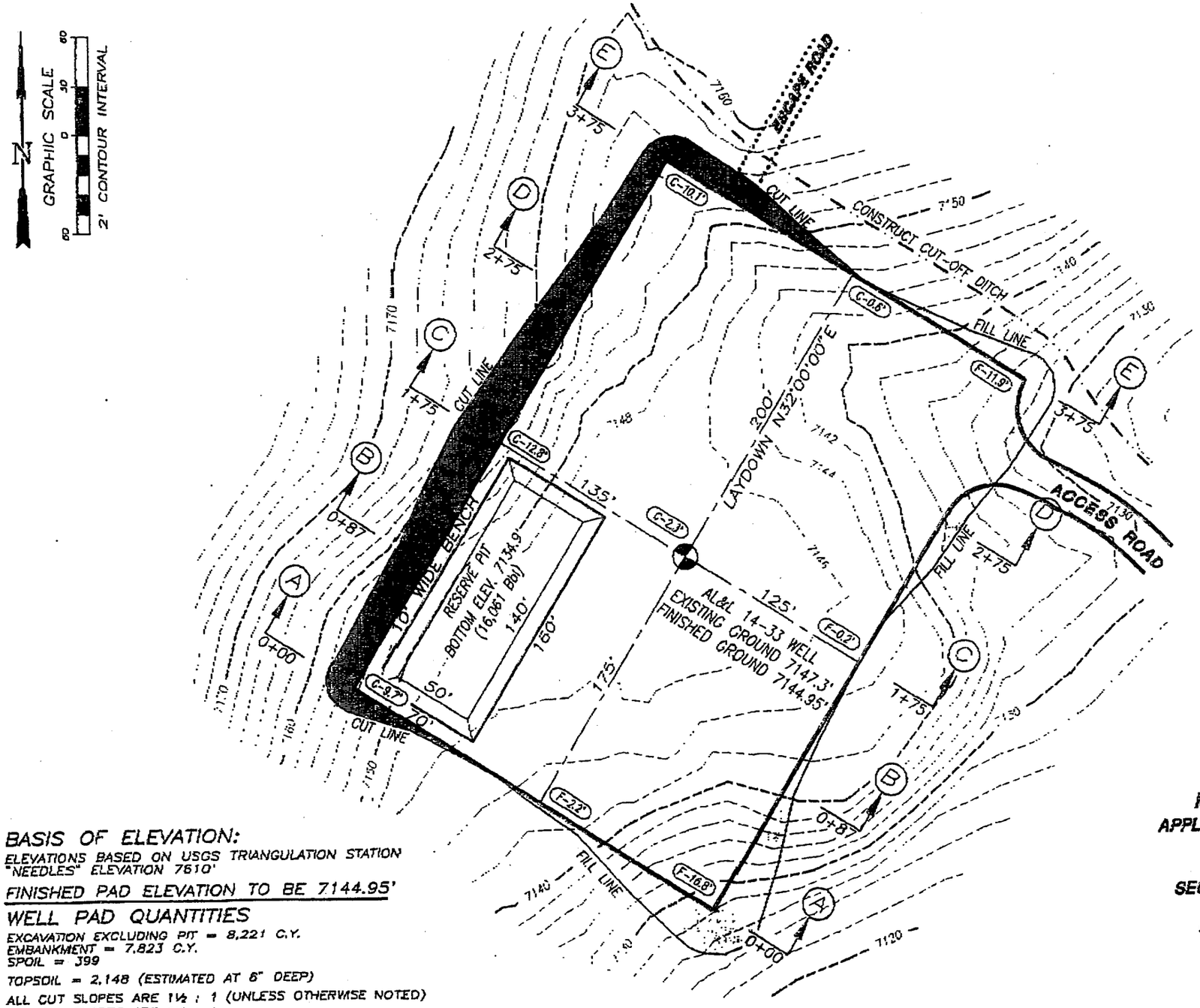
LICENSED LAND SURVEYOR
7/12/96
No. 278046
STANTON G. TAGGART
STATE OF UTAH

MAP to ACCOMPANY
APPLICATION for PERMIT to DRILL
AL&L 14-33 WELL
592' FSL 748' FEL
SECTION 33, T6N, R8E, SLB&M
SUMMIT COUNTY, UTAH

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

DATE: 07/10/96 JOB # 05-10-02
DISK # 11d-B FILE: 05-10-02

DRAWN BY: Brent Sanders SHEET 1 OF 5



BASIS OF ELEVATION:

ELEVATIONS BASED ON USGS TRIANGULATION STATION "NEEDLES" ELEVATION 7610'

FINISHED PAD ELEVATION TO BE 7144.95'

WELL PAD QUANTITIES

EXCAVATION EXCLUDING PIT = 8,221 C.Y.
EMBANKMENT = 7,823 C.Y.
SPOIL = 399

TOPSOIL = 2,148 (ESTIMATED AT 6" DEEP)

ALL CUT SLOPES ARE 1½ : 1 (UNLESS OTHERWISE NOTED)
ALL FILL SLOPES ARE 1½ : 1

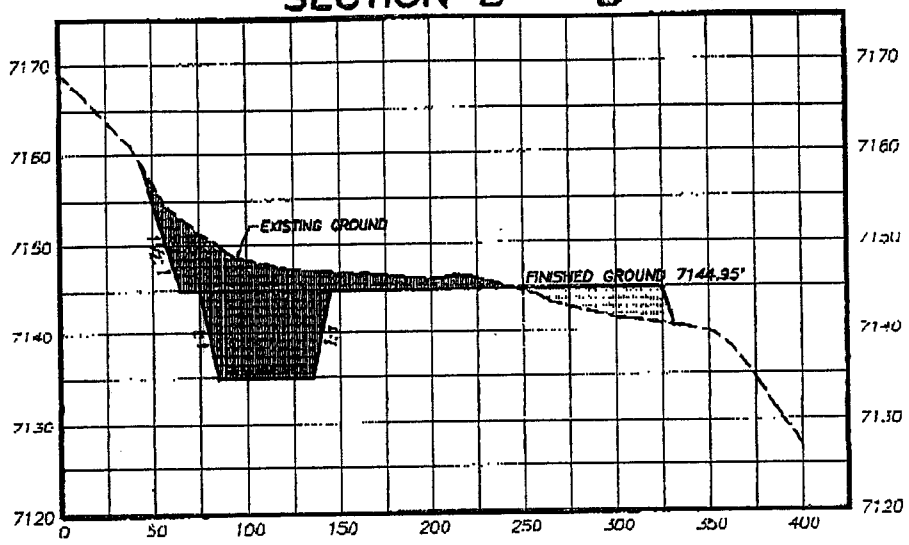
MAP to ACCOMPANY
APPLICATION for PERMIT to DRILL
AL&L 14-33 WELL
592' FSL 748' FEL
SECTION 33, T6N, R8E, SLB&M
SUMMIT COUNTY, UTAH

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

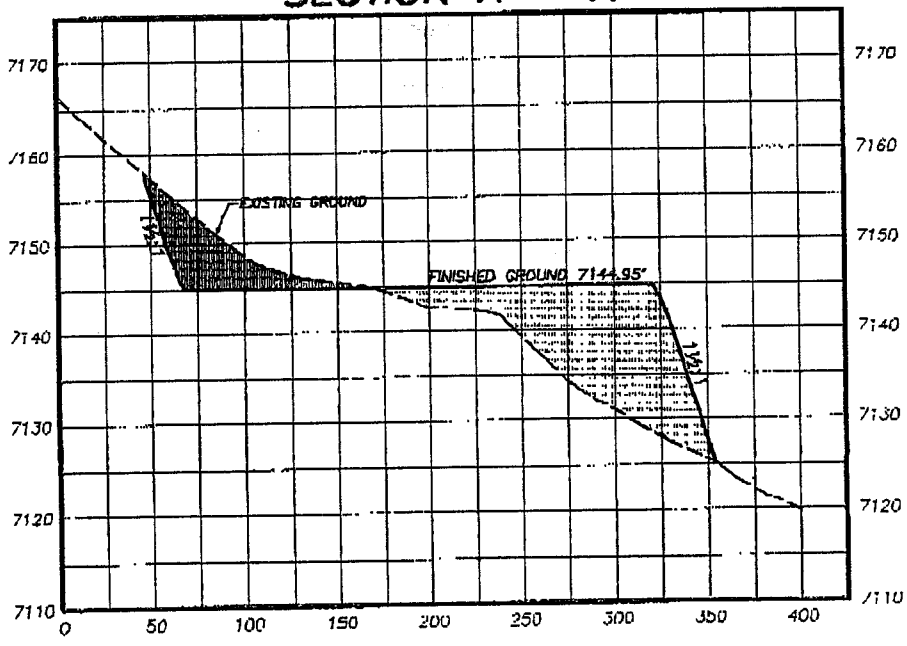
DATE 07/16/93 JOB # 93-19-02
DISK # 114-3 FILE 93-19-02

DRAWN BY: Brent Sanders SHEET 2 OF 3

SECTION B – B



SECTION A – A



MAP to ACCOMPANY
APPLICATION for PERMIT to DRILL
AL&L 14-33 WELL
592' FSL 748' FEL
SECTION 33, T6N, R8E, SLB&M
SUMMIT COUNTY, UTAH

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

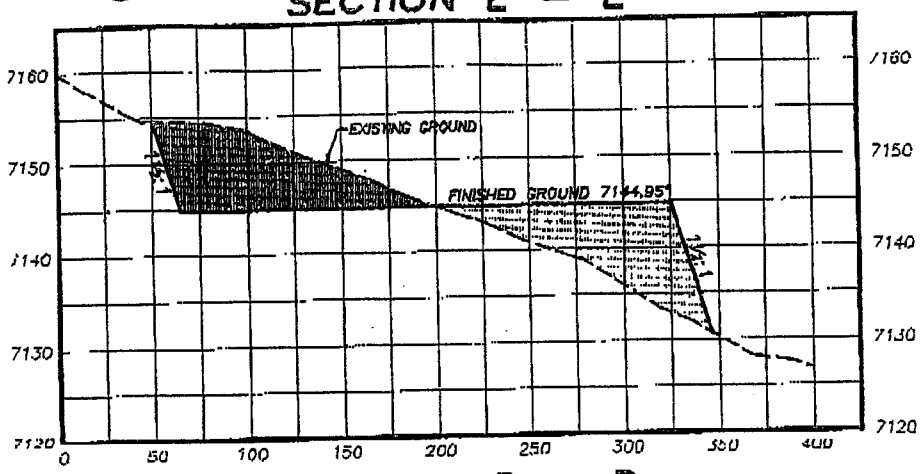
DATE: 07/10/96 JOB #: 95-19-02
DISK #: 116-8 FILE: 95-19-02

DRAWN BY: Brent Sandora SHEET 3 OF 5

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 30'

ALL CUT SLOPES ARE 1½ : 1 (UNLESS OTHERWISE NOTED)
ALL FILL SLOPES ARE 1½ : 1

SECTION E - E



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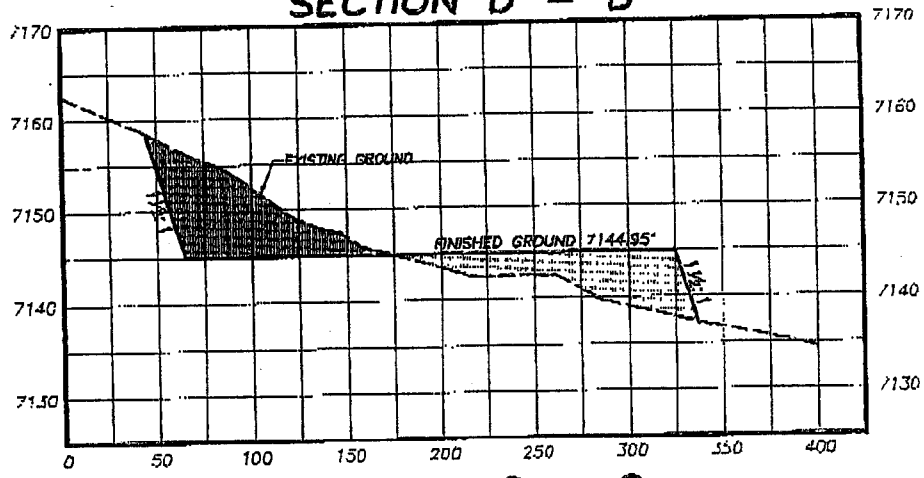
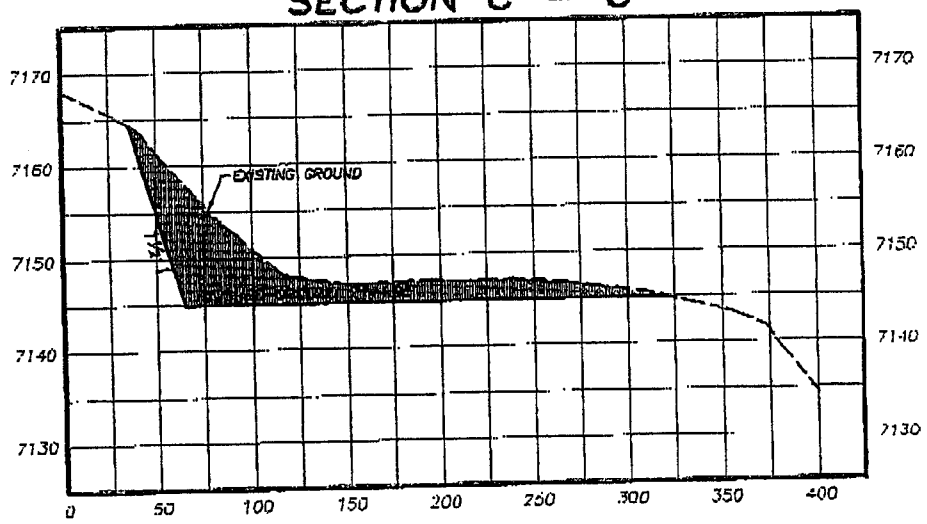


SECTION C - C



MAP to ACCOMPANY
APPLICATION for PERMIT to DRILL
AL&L 14-33 WELL
592' FSL 748' FEL
SECTION 33, T6N, R8E, SLB&M
SUMMIT COUNTY, UTAH

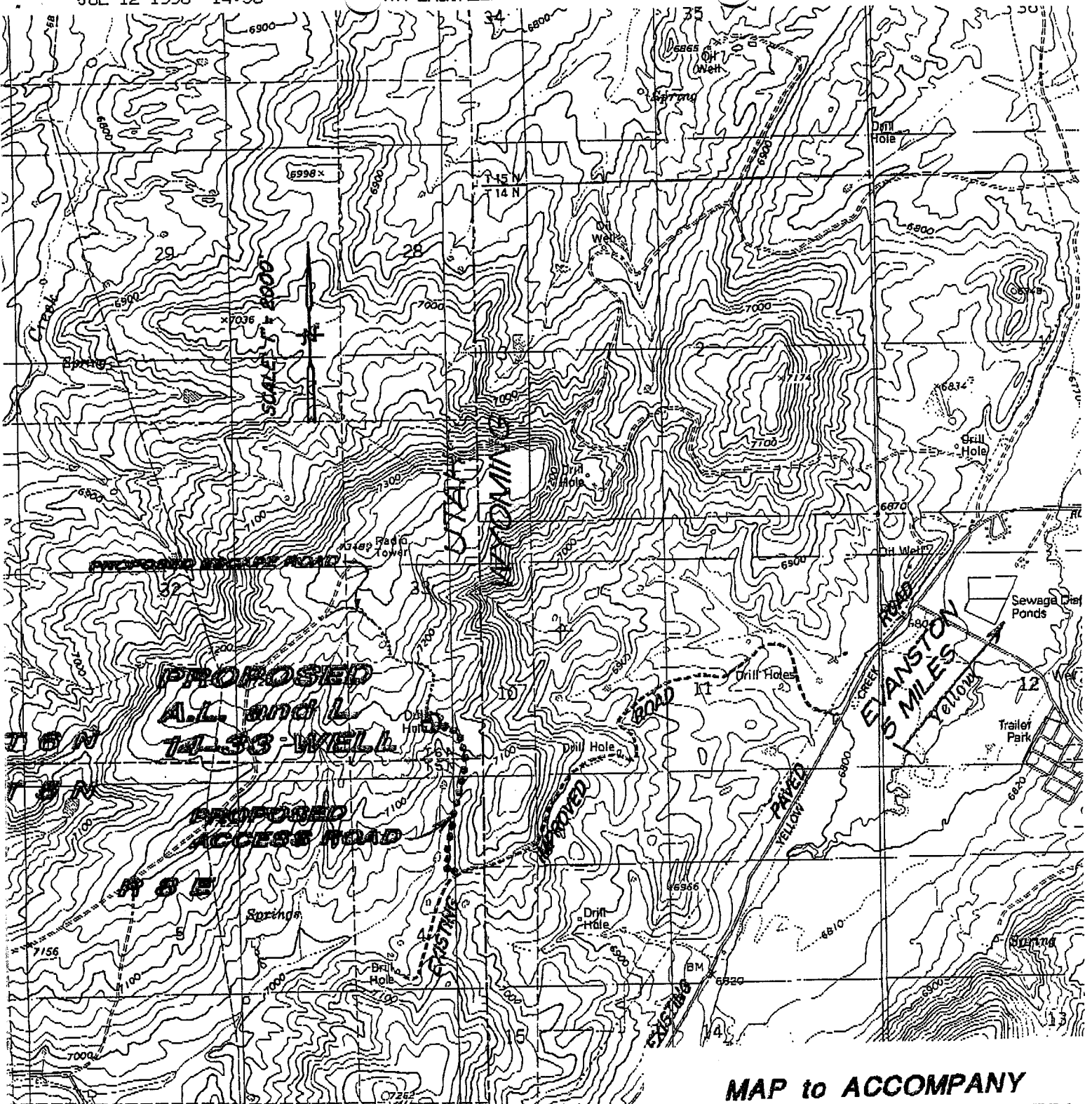
UINTA ENGINEERING & SURVEYING, INC.
808 MAIN STREET
EVANSTON, WYOMING 82930
(307) 789-3602

DATE: 07/10/96 JOB #: 95-19-02
DISK #: 116-3 FILE: 95-19-02

DRAWN BY: Brent Sanders SHEET 4 OF 5

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

ALL CUT SLOPES ARE 1½ : 1 (UNLESS OTHERWISE NOTED)
ALL FILL SLOPES ARE 1½ : 1

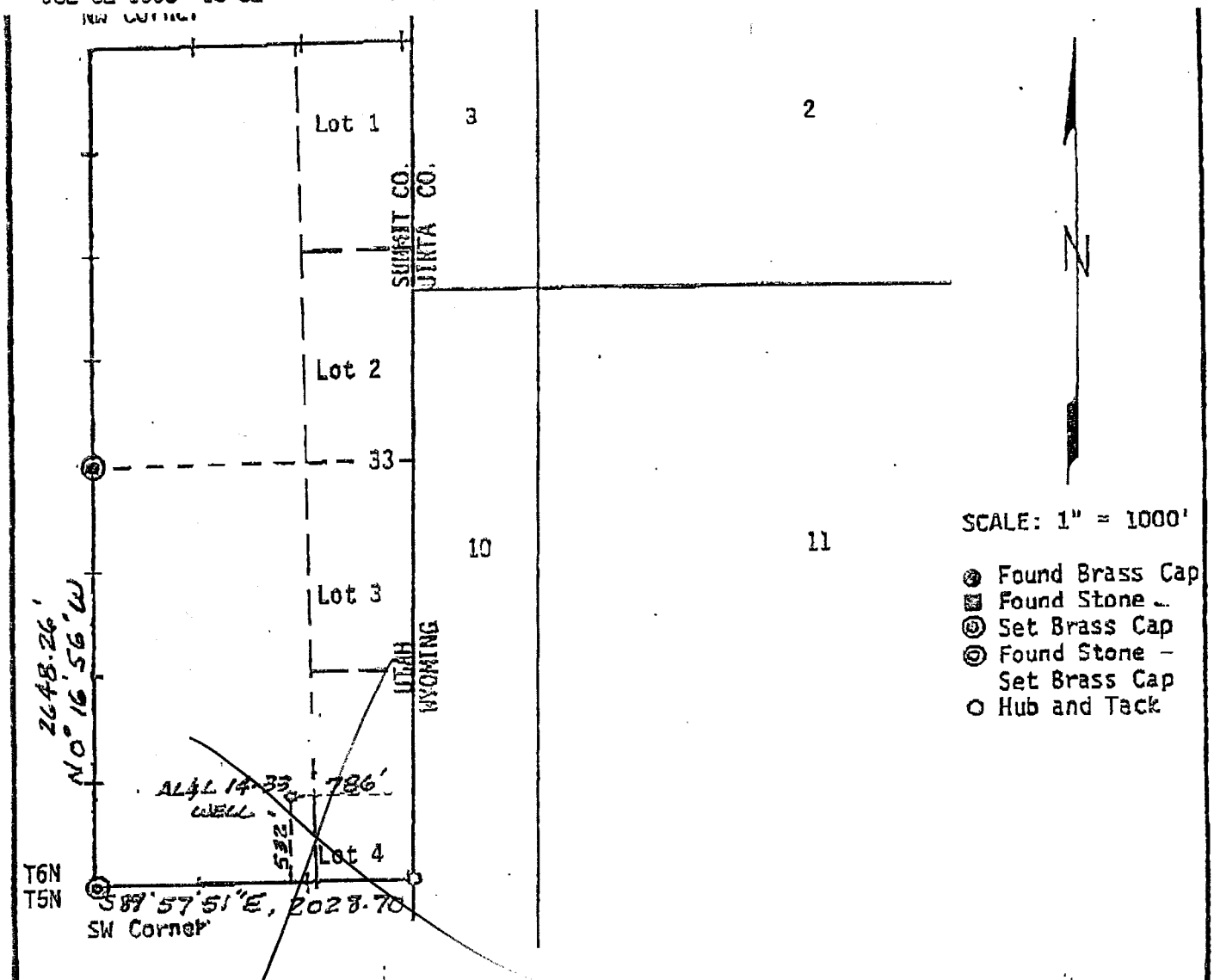


MAP to ACCOMPANY
APPLICATION for PERMIT to DRILL
AL&L 14-33 WELL
592' FSL 748' FEL
SECTION 33, T6N, R8E, SLB&M
SUMMIT COUNTY, UTAH

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

DATE: 07/10/96 JOB #: 95-19-02
DISK #: 116-B FILE: 95-19-02

SHEET 5 OF 5



I, Stanton G. Taggart of Evanston, Wyoming certify that in accordance with a request from Dan Gallagher of Denver, Colorado for Anschutz Corporation I made a survey on the 10th day of June, 1996 for Location and Elevation of the AL&L 14-33 Well as shown on the above map, the wellsite is in the SW 1/4 of Section 33, Township 6 North, Range 8 East of the Salt Lake B & M, Summit County, State of Utah, Elevation is 7147.0 Feet at dry hole marker Datum U.S.G.S. Triangulation Station "Needles" Elevation 7610'.

Reference point

Reference point

Reference point

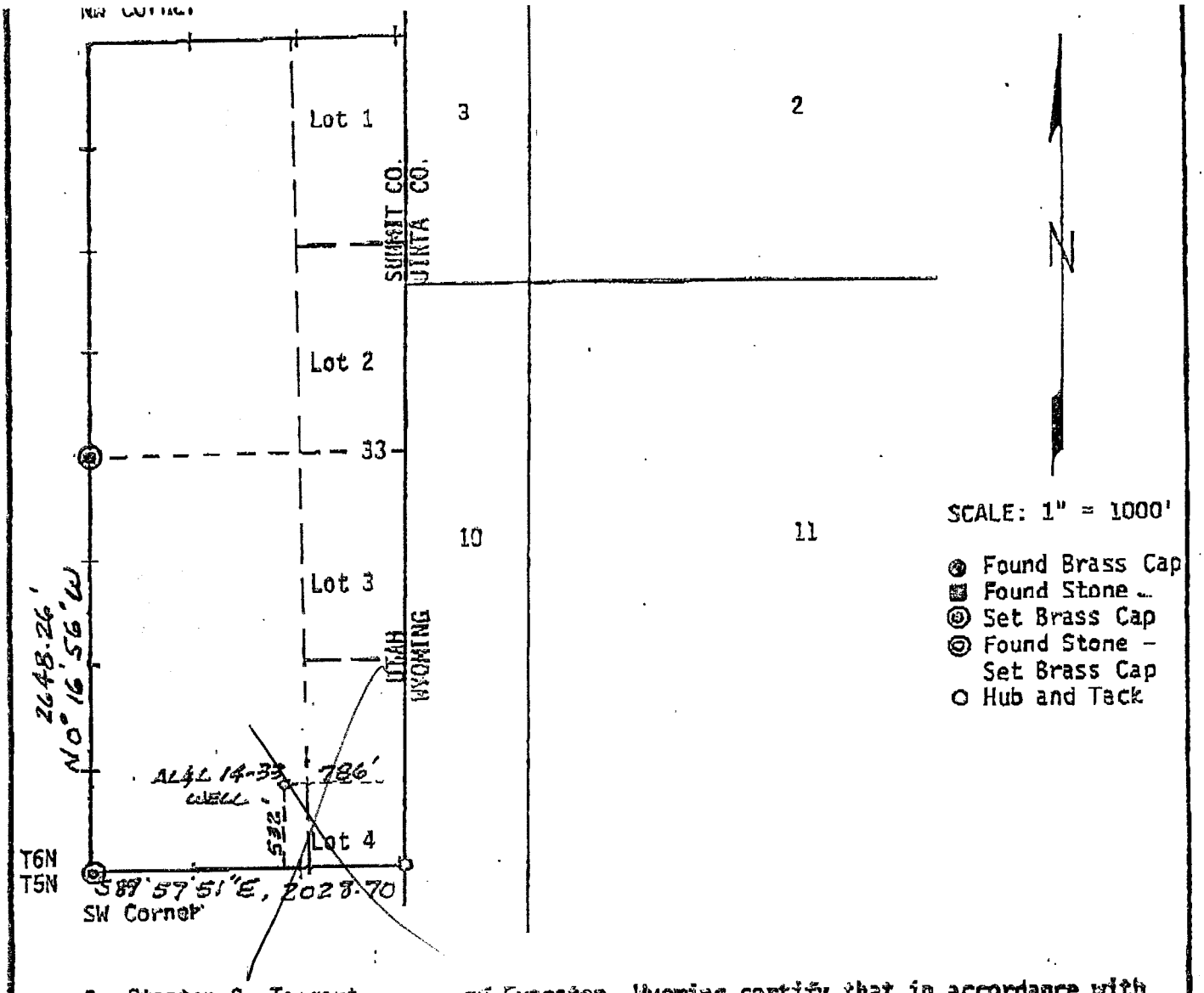
Reference point

LICENSED LAND SURVEYOR
6/13/96
No. 276646
STANTON G. TAGGART
STATE OF UTAH

R.L.S. NO.

DATE: June 13, 1996 REVISED 7/2/96
CORRECTED TOWNSHIP

UINTA ENGINEERING & SURVEYING, INC.
808 MAIN STREET, EVANSTON, WYOMING



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Reference point

Reference point

Reference point

Reference point

LICENSED LAND SURVEYOR
6/13/96
No. 278040
STANTON G. TAGGART
STATE OF UTAH

R.L.S. NO.

DATE: June 13, 1996 REVISED 7/2/96
CORRECTED TOWNSHIP

UINTA ENGINEERING & SURVEYING, INC.
808 MAIN STREET, EVANSTON, WYOMING

CONFIDENTIAL - TIGHT HOLE

AL&L #14-33
532' FSL and 786' FEL (Surface Location)
100' FSL and 460' FEL (Btm. Hole Location)
Section 33, T6N - R8E
Summit County, Utah

Prepared For:

THE ANSCHUTZ CORPORATION

By:

PERMITCO INC.
13585 Jackson Drive
Denver, Colorado 80241
303/452-8888

CONFIDENTIAL - TIGHT HOLE

Copies Sent To:

3 - Division of Oil, Gas & Mining - SLC, UT
3 - The Anschutz Corporation - Denver, CO
1 - Larry Williams - SLC, UT

Permitco

Permitco Incorporated
A Petroleum Permitting Company

The proposed wellsite is located on Fee Surface/Fee Minerals and will be directionally drilled. An application for directional drilling will be filed with the division under separate cover.

1. Estimated Tops/Geologic Markers

The estimated tops of important geologic markers are as follows:

Formation	True Vertical Depth	Measured Depth
Tertiary	Surface	
Cretaceous	1,778'	1,778'
Preuss	4,344'	4,344'
Preuss Salt	5,381'	5,381'
Twin Creek	5,851	5,851'
Leeds Creek	6,371'	6,371'
Watton Canyon	6,579'	6,579'
Boundary Ridge	6,909	6,909'
Rich	6,959'	6,959'
Slide Rock	7,308'	7,308'
Gypsum Springs	7,321'	7,321'
Nugget	7,448'	7,448'
Ankarah	8,598'	8,598'
Thaynes	9,649'	9,649'
Woodside	11,018'	11,018'
Phosphoria	12,020'	12,020'
Weber	12,524'	12,526'
Amsden	13,694'	13,772'
T.D.	13,821'	13,909'

drilled. An application for directional drilling will be filed with the division under separate cover.

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Weber	12,524'	12,526'
Amsden	13,694'	13,772'
T.D.	13,821'	13,909'

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

Substance	Formation	Depth
Sour Gas/Condensate	Phosphoria/Weber	12,020-13,694'

3. Well Control Equipment & Testing Procedures

Anschutz's minimum specifications for pressure control equipment are as follows:
Ram Type: 11" Hydraulic double, 5000 psi w.p.

Anschutz will comply will 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	Hole Size	O.D.	Weight	Grade	Type
Surface	0-1500'	26"	20"	106.5#	J-55	Weld
Intermed.	0-2600'	17-1/2"	13-3/8"	68#	N-80	ST&C
Intermed.	2600-4100'	17-1/2"	13-3/8"	72#	N-80	ST&C
Intermed.	4100-5600'	17-1/2"	13-3/8"	72#	S-95	ST&C
Intermed.	5600-5900'	17-1/2'	13-3/8"	81.4#	S-95	Butr.
Intermed.	0-8000'	12-1/4"	9-5/8"	47#	L-80	LT&C
Intermed.	8000-11900'	12-1/4"	9-5/8"	47#	HCL-80	LT&C
Liner	11700-T.D.	8-1/2"	7"	32#	S-80	LT&C

Casing design subject to revision based on geologic conditions encountered.

5. Cement Program

Surface	Type and Amount
0-1500'	± 2950 sx Class A or sufficient to circulate to surface.

Intermediate	Type and Amount
13-3/8"	1770 sx Class "G" 50/50 Poz cement. Top of cement @ approx. 3300'.

Intermediate	Type and Amount
9-5/8"	1860 sx Class E 50/50 Poz cement. Top of cement @ approx. 5400'.

Liner	Type and Amount
7"	400 sx Class E cement. Top of cement @ approx. 11,500'.

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
1500-4300'	LSND	8.6-9.1	40-60	<10 cc's
4300-5800'	Saturated Salt	10.0-10.5	40-60	<10 cc's
5800-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. No drill stem tests are anticipated.

b. The logging program will consist of the following:

DIL-SP-GR	Surface to T.D.
BHC Sonic-GR	Surface to 12,000'
Structural Dipmeter	5900'-T.D.
Dipole Sonic-GR	12,000' to T.D.
High Resolution LDT-APS	12,000' to T.D.
Formation MicroImager-GR	12,000' to T.D.

c. No cores are anticipated.

8. Anticipated Pressures and H_2S

a. The maximum anticipated bottom hole pressure is 6800 psi.

9. Water Source

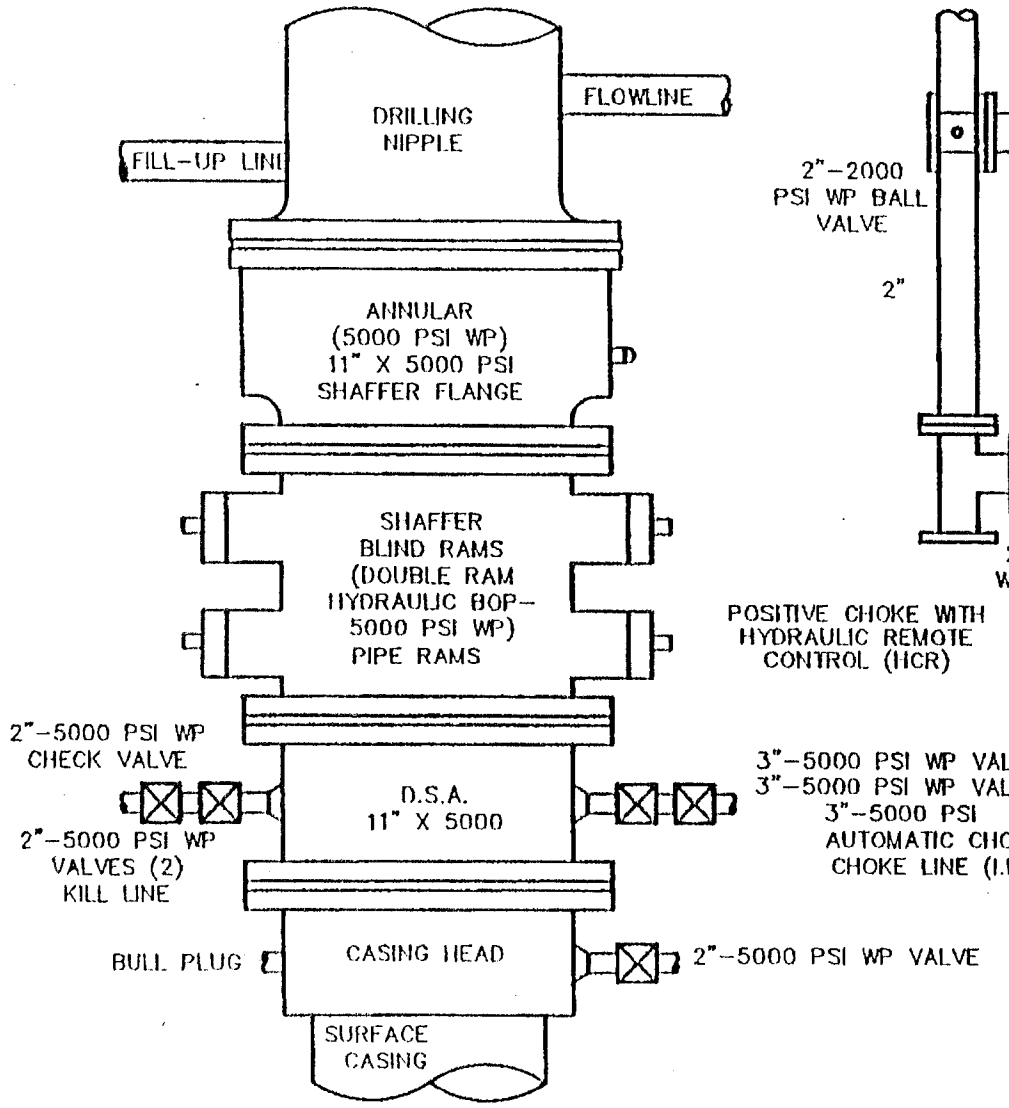
a. A water well will be drilled on location. All appropriate water permits will be filed with the Utah Division of Water Resources.

10. Other Information

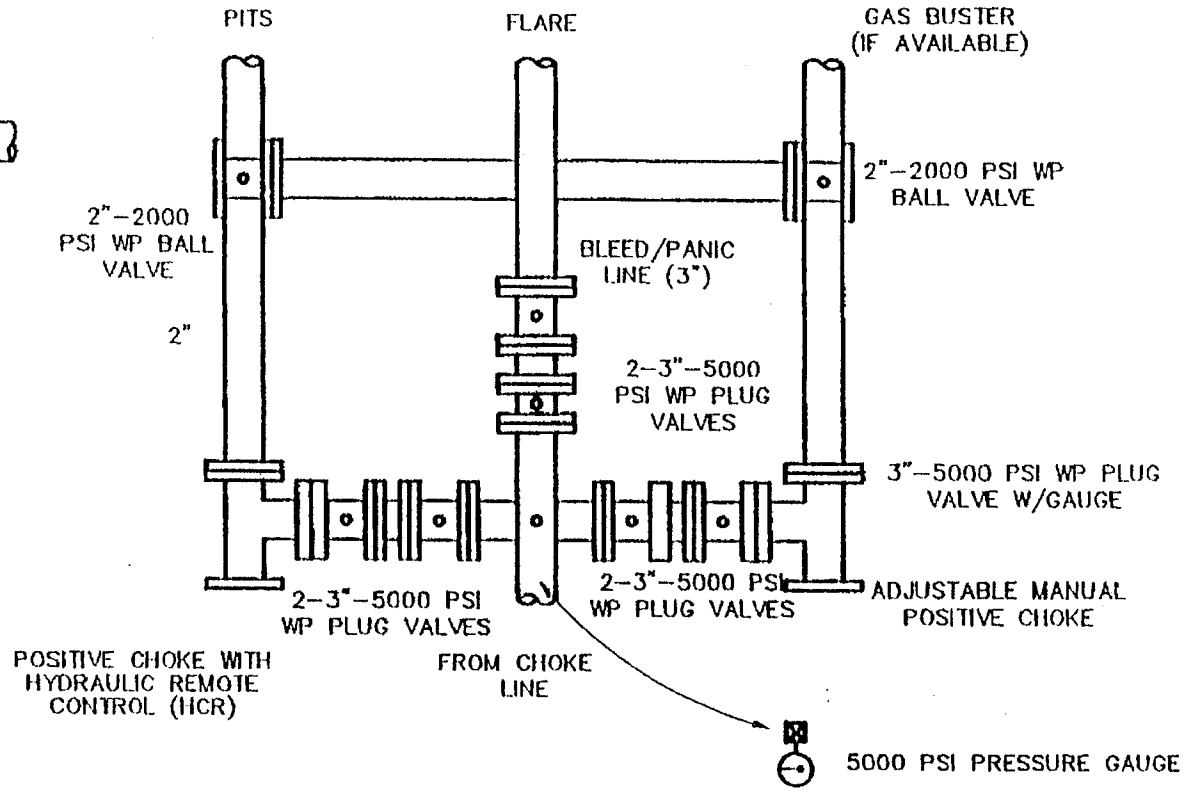
a. Drilling is planned to commence immediately upon approval of this application.

b. It is anticipated that the drilling of this well will take approximately 160 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.

JELS, INC. VERNAL 84078 17891813 P.02

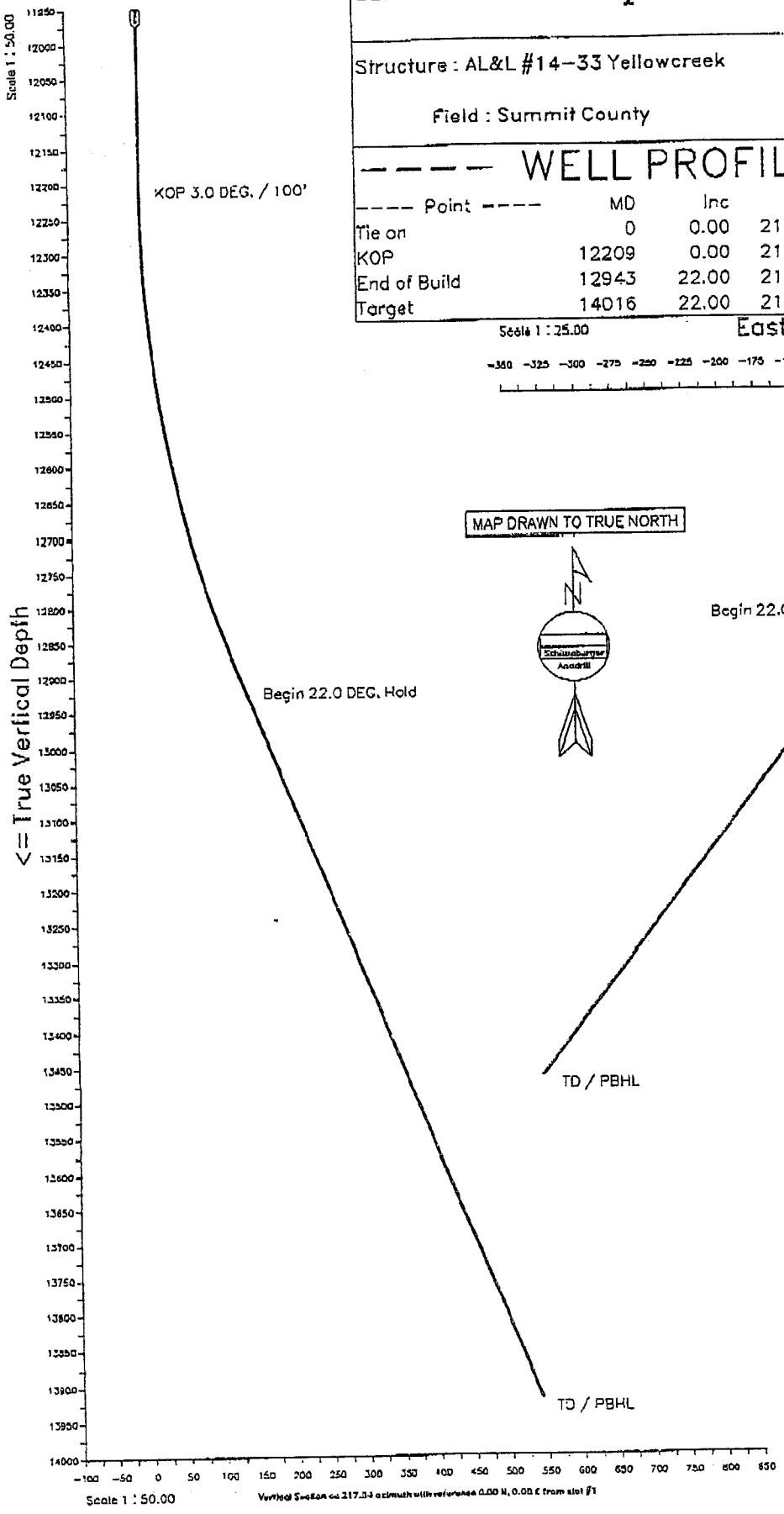
Anschutz Exploration Corporation

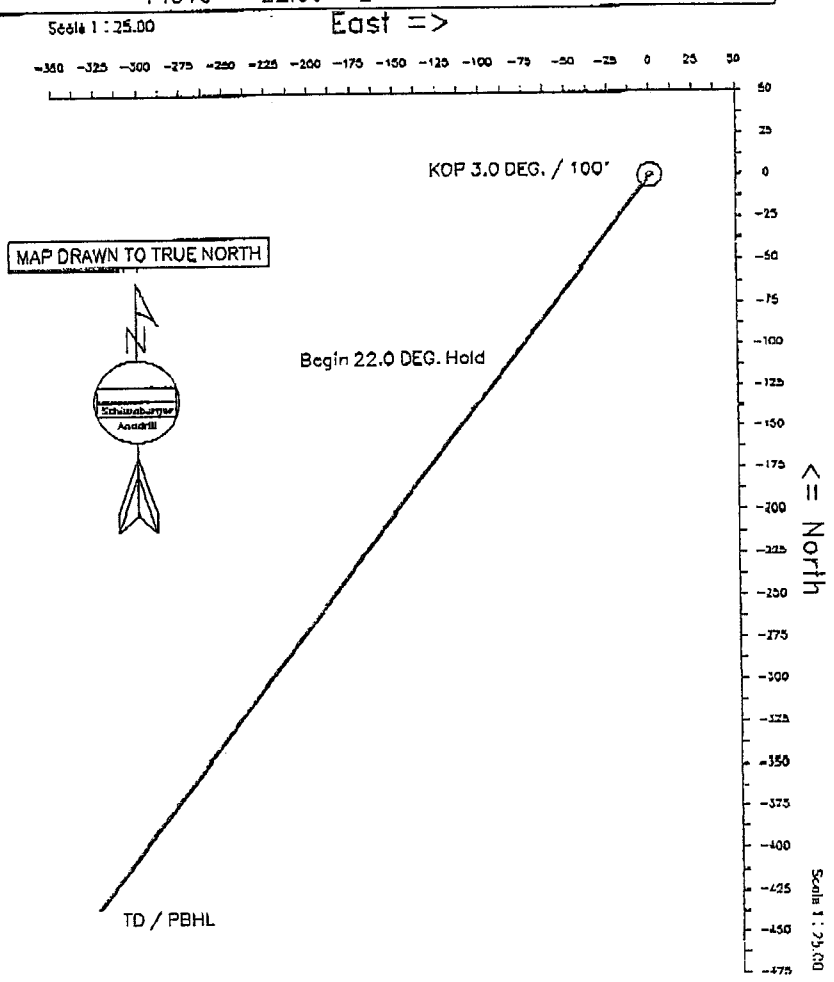
Structure : AL&L #14-33 Yellowcreek Well : #14-33

Field : Summit County Location : Utah

WELL PROFILE DATA

Point	MD	Inc	Dir	TVD	North	East
Tie on	0	0.00	217.04	0	0	0
KOP	12209	0.00	217.04	12209	0	0
End of Build	12943	22.00	217.04	12925	-111	-84
Target	14016	22.00	217.04	13920	-432	-326





Schlumberger
Anadrill

Created by : USL D.P.C. / Ken Sullivan
Date plotted : 17-Jun-96
Plot Reference is REV 0.
Coordinates are in feet reference slot #1.
True Vertical Depths are reference wellhead.

--- Anadrill Schlumberger ---

Anschutz Exploration Corporation

Schlumberger Anadrill

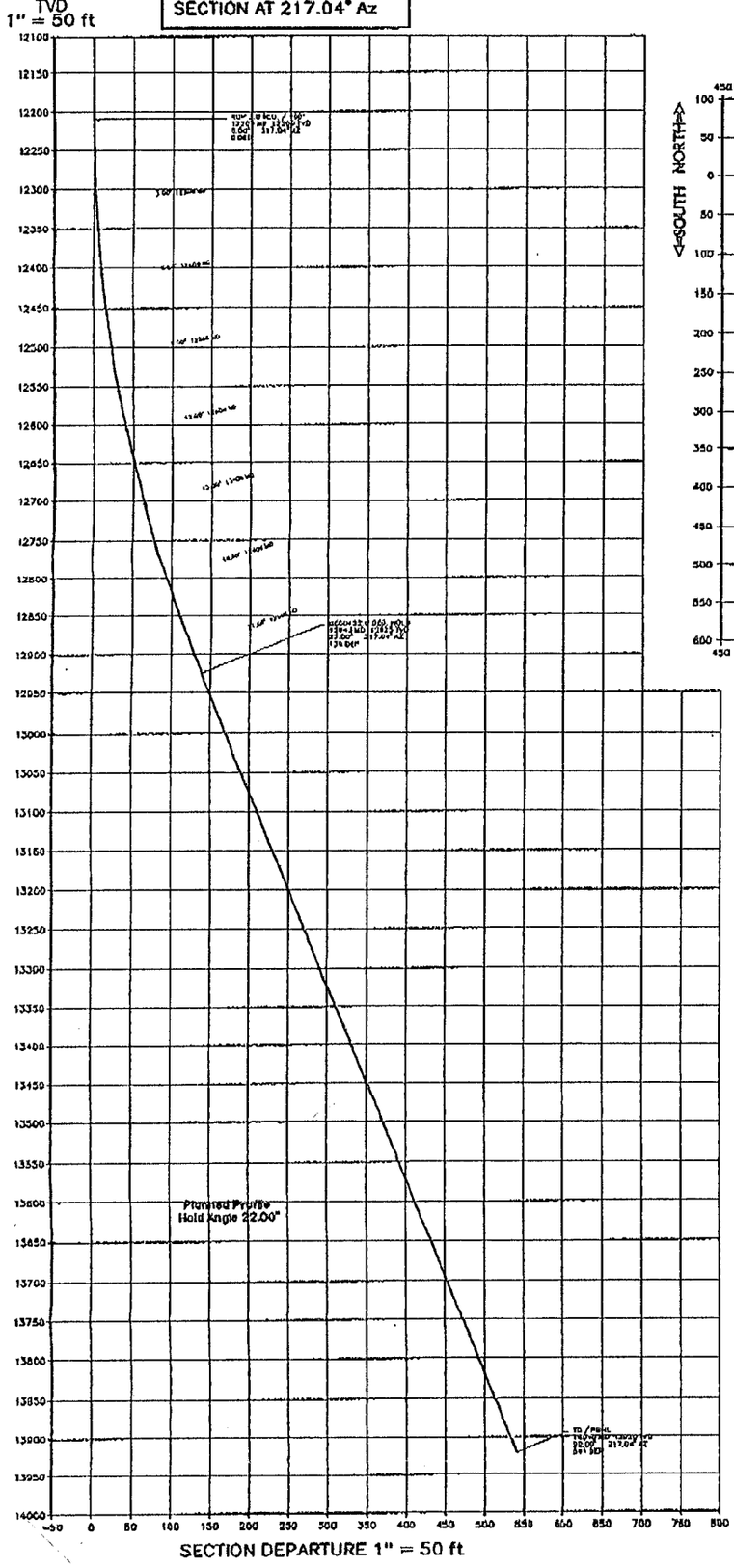
WELL	FIELD	RIG
AL&L #14-33 Yellowcreek	Summit County, Utah	Proposal

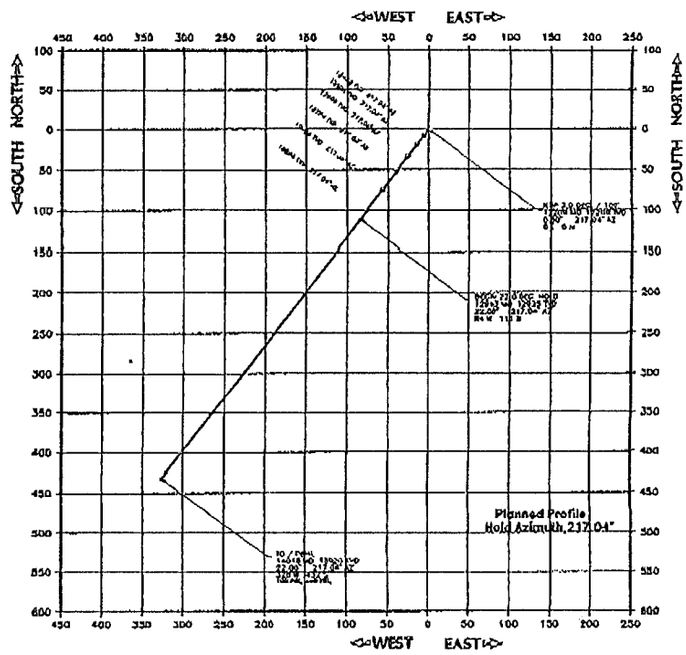
Surface Intersection

Magnetic Declination	Angle: 13.6736°E	PS: 54145.34	Lat: N40°51'0.00"	Grid Conv:	Legal: .T5N R6E Section 33
Model: IGRF	Dip: 66.6283°	Date: 18 Jun 96	Long: W111°00'0.00"	Scale Fact:	532 FSL 788 FEL

KB Elevation: 7720 Est | Drawn: 18-Jun-96 | Plan: REV 0

VERTICAL SECTION VIEW
SECTION AT 217.04° Az





PLAN VIEW
1" = 50 ft

MAP DRAWN TO TRUE NORTH

Magnetic to True North Correction 13.67° East
(Estimated)

FORMATION	TVD@SL
Woodside	11018
Phosphoria	12020
Weber	12524
Amsden	13694

DATE	TVD@VS	DIP	TARGET

Drawn by: Ken Sullivan
Checked by: Mike Croel
Client OK:

Anschutz Exploration Corporation
AL&L #14-33 Yellowcreek
slot #1
Summit County
Utah

P R O P O S A L L I S T I N G

Your ref : REV 0
Our ref : prop2554
Other ref :

Date printed : 17-Jun-96
Date created : 17-Jun-96
Last revised : 17-Jun-96

Field is centred on n40 51 0.000,w111 0 0.000,-111
Structure is centred on n40 51 0.000,w111 0 0.000,-111

AL&L #14-33 Yellowcreek #14-33 Your ref : REV 0
Summit County,Uta Last revised : 17-Ju 96

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	RECTANGULAR COORDINATES	Dogleg Deg/100Ft	Vert Sect	
0.00	0.00	217.04	0.00	0.00 N 0.00 E	0.00	0.00	
500.00	0.00	217.04	500.00	0.00 N 0.00 E	0.00	0.00	
1000.00	0.00	217.04	1000.00	0.00 N 0.00 E	0.00	0.00	
1500.00	0.00	217.04	1500.00	0.00 N 0.00 E	0.00	0.00	
2000.00	0.00	217.04	2000.00	0.00 N 0.00 E	0.00	0.00	
2500.00	0.00	217.04	2500.00	0.00 N 0.00 E	0.00	0.00	
3000.00	0.00	217.04	3000.00	0.00 N 0.00 E	0.00	0.00	
3500.00	0.00	217.04	3500.00	0.00 N 0.00 E	0.00	0.00	
4000.00	0.00	217.04	4000.00	0.00 N 0.00 E	0.00	0.00	
4500.00	0.00	217.04	4500.00	0.00 N 0.00 E	0.00	0.00	
5000.00	0.00	217.04	5000.00	0.00 N 0.00 E	0.00	0.00	
5500.00	0.00	217.04	5500.00	0.00 N 0.00 E	0.00	0.00	
6000.00	0.00	217.04	6000.00	0.00 N 0.00 E	0.00	0.00	
6500.00	0.00	217.04	6500.00	0.00 N 0.00 E	0.00	0.00	
7000.00	0.00	217.04	7000.00	0.00 N 0.00 E	0.00	0.00	
7500.00	0.00	217.04	7500.00	0.00 N 0.00 E	0.00	0.00	
8000.00	0.00	217.04	8000.00	0.00 N 0.00 E	0.00	0.00	
8500.00	0.00	217.04	8500.00	0.00 N 0.00 E	0.00	0.00	
9000.00	0.00	217.04	9000.00	0.00 N 0.00 E	0.00	0.00	
9500.00	0.00	217.04	9500.00	0.00 N 0.00 E	0.00	0.00	
10000.00	0.00	217.04	10000.00	0.00 N 0.00 E	0.00	0.00	
10500.00	0.00	217.04	10500.00	0.00 N 0.00 E	0.00	0.00	
11000.00	0.00	217.04	11000.00	0.00 N 0.00 E	0.00	0.00	
11500.00	0.00	217.04	11500.00	0.00 N 0.00 E	0.00	0.00	
12000.00	0.00	217.04	12000.00	0.00 N 0.00 E	0.00	0.00	
12209.24	0.00	217.04	12209.24	0.00 N 0.00 E	0.00	0.00	KOP 3.0 DEG. / 100'
12309.24	3.00	217.04	12309.19	2.09 S 1.58 W	3.00	2.62	
12409.24	6.00	217.04	12408.87	8.35 S 6.30 W	3.00	10.46	
12509.24	9.00	217.04	12508.01	18.77 S 14.16 W	3.00	23.51	
609.24	12.00	217.04	12606.32	33.31 S 25.14 W	3.00	41.74	
12709.24	15.00	217.04	12703.55	51.95 S 39.20 W	3.00	65.08	
12809.24	18.00	217.04	12799.42	74.61 S 56.31 W	3.00	93.48	
12909.24	21.00	217.04	12893.67	101.26 S 76.41 W	3.00	126.85	
12942.57	22.00	217.04	12924.68	111.01 S 83.77 W	3.00	139.07	Begin 22.0 DEG. Hold
13000.00	22.00	217.04	12977.93	128.18 S 96.73 W	0.00	160.58	
13500.00	22.00	217.04	13441.52	277.69 S 209.55 W	0.00	347.89	
14000.00	22.00	217.04	13905.11	427.20 S 322.38 W	0.00	535.19	
14016.05	22.00	217.04	13920.00	432.00 S 326.00 W	0.00	541.20	TD / PBHL

All data is in feet unless otherwise stated
Coordinates are from slot #1 and TVDs are from wellhead.
Vertical section is from wellhead on azimuth 217.04 degrees.
Calculation uses the minimum curvature method.

AL&L #14-33 Yellowcreek, #14-33
Summit County, Utah

Your ref : REV 0
Last revised : 17-Jul 6

Comments in wellpath

MD	TVD	Rectangular Coords.		Comment
12209.24	12209.24	0.00 N	0.00 E	KOP 3.0 DEG. / 100'
12942.57	12924.68	111.01 S	83.77 W	Begin 22.0 DEG. Hold
14016.05	13920.00	432.00 S	326.00 W	TD / PBHL

Casing positions in string 'A'

Top MD	Top TVD	Rectangular Coords.		Bot MD	Bot TVD	Rectangular Coords.		Casing
0.00	0.00	0.00N	0.00E	11900.00	11900.00	0.00N	0.00E	9 5/8 in
0.00	0.00	0.00N	0.00E	5800.00	5800.00	0.00N	0.00E	13 3/8 in
0.00	0.00	0.00N	0.00E	1500.00	1500.00	0.00N	0.00E	20 in

All data is in feet unless otherwise stated
Coordinates are from slot #1 and TVDs are from wellhead.
Vertical section is from wellhead on azimuth 217.04 degrees.
Calculation uses the minimum curvature method.

Form OGC-1a

(Other instructions on reverse side)

Confidential - Tight Hole

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

5. Lease Designation and Serial No.

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

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

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 [ ]

7. Unit Agreement Name: N/A

8. Farm or Lease Name: AL&L

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

9. Well No.: #14-33 43-043-30315

3. Address of Operator: PERMITCO INC. - Agent 303/452-8888 13585 Jackson Drive Denver, CO 80241

10. Field and Pool, or Widlcat: Wildcat

4. Location of Well (Report location clearly and in accordance with any State requirements.*)
At surface: 592' ~~552'~~ FSL and 748' ~~786'~~ FEL (Surface Location)
At proposed prod. zone: 100' FSL and 460' FEL (Btm. Hole Location)

11. Sec., T., R., M., OR Blk. and Survey or Area: Sec. 33, T6N - R8E

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): 100' (btm. hole)

16. No. of acres in lease: 726.91

17. No. of acres assigned to this well: 726.91

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

19. Proposed depth: 13,821' (TVD)

20. Rotary or cable tools: Rotary

21. Elevations (Show whether DF, RT, GR, etc.): 7147.0'

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
26"	20"	106#	1,500'	2950 sx Class "A"
17-1/2"	13-3/8"	68, 72 & 81.4#	5,900'	1770 sx Class "G"
12-1/4"	9-5/8"	47#	12,000'	1860 sx Class "E"
8-1/2"	7"	32#	13,821'	400 sx Class "E"

The Anschutz Corporation proposes to drill a well to a depth of 13,821' to test the Phosphoria/Weber 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

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

CONFIDENTIAL - TIGHT HOLE

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 K Smith Title: Consultant for: The Anschutz Corp. Date: 06/24/96

(This space for Federal or State office use)

Permit No. 43-043-30315 Approval Date

Approved by: R Matthews Title: Petroleum Engineer Date: 8/29/96

Conditions of approval, if any:

Cement behind the 13 3/8" will have to be brought to the top of the Frontier formation either by stage tool or volume. The Frontier must be covered by cement.

See Instructions On Reverse Side

Application for Permit to Drill
The Anschutz Corporation
AL&L #14-33
532' FSL and 786' FEL (Surface Location)
100' FSL and 460' FEL (Btm. Hole Location)
Sec. 33, T5N- R8E
Summit County, Utah

CONFIDENTIAL - TIGHT HOLE

DRILLING PROGRAM

The proposed wellsite is located on Fee Surface/Fee Minerals and will be directionally drilled. An application for directional drilling will be filed with the division under separate cover.

1. Estimated Tops/Geologic Markers

The estimated tops of important geologic markers are as follows:

Formation	True Vertical Depth	Measured Depth
Tertiary	Surface	
Cretaceous	1,778'	1,778'
Preuss	4,344'	4,344'
Preuss Salt	5,381'	5,381'
Twin Creek	5,851	5,851'
Leeds Creek	6,371'	6,371'
Watton Canyon	6,579'	6,579'
Boundary Ridge	6,909	6,909'
Rich	6,959'	6,959'
Slide Rock	7,308'	7,308'
Gypsum Springs	7,321'	7,321'
Nugget	7,448'	7,448'
Ankarah	8,598'	8,598'
Thaynes	9,649'	9,649'
Woodside	11,018'	11,018'
Phosphoria	12,020'	12,020'
Weber	12,524'	12,526'
Amsden	13,694'	13,772'
T.D.	13,821'	13,909'

Permitco

Permitco Incorporated
A Petroleum Permitting Company

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

Substance	Formation	Depth
Sour Gas/Condensate	Phosphoria/Weber	12,020-13,694'

3. **Well Control Equipment & Testing Procedures**

Anschutz's minimum specifications for pressure control equipment are as follows:
Ram Type: 11" Hydraulic double, 5000 psi w.p.

Anschutz will comply will 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	Hole Size	O.D.	Weight	Grade	Type
Surface	0-1500'	26"	20"	106.5#	J-55	Weld
Intermed.	0-2600'	17-1/2"	13-3/8"	68#	N-80	ST&C
Intermed.	2600-4100'	17-1/2"	13-3/8"	72#	N-80	ST&C
Intermed.	4100-5600'	17-1/2"	13-3/8"	72#	S-95	ST&C
Intermed.	5600-5900'	17-1/2'	13-3/8"	81.4#	S-95	Butr.
Intermed.	0-8000'	12-1/4"	9-5/8"	47#	L-80	LT&C
Intermed.	8000-11900'	12-1/4"	9-5/8"	47#	HCL-80	LT&C
Liner	11700-T.D.	8-1/2"	7"	32#	S-80	LT&C

Casing design subject to revision based on geologic conditions encountered.

5. Cement Program

Surface	Type and Amount
0-1500'	± 2950 sx Class A or sufficient to circulate to surface.

Intermediate	Type and Amount
13-3/8"	1770 sx Class "G" 50/50 Poz cement. Top of cement @ approx. 3300'.

Intermediate	Type and Amount
9-5/8"	1860 sx Class E 50/50 Poz cement. Top of cement @ approx. 5400'.

Liner	Type and Amount
7"	400 sx Class E cement. Top of cement @ approx. 11,500'.

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
1500-4300'	LSND	8.6-9.1	40-60	<10 cc's
4300-5800'	Saturated Salt	10.0-10.5	40-60	<10 cc's
5800-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. No drill stem tests are anticipated.

b. The logging program will consist of the following:

DIL-SP-GR	Surface to T.D.
BHC Sonic-GR	Surface to 12,000'
Structural Dipmeter	5900'-T.D.
Dipole Sonic-GR	12,000' to T.D.
High Resolution LDT-APS	12,000' to T.D.
Formation MicroImager-GR	12,000' to T.D.

c. No cores are anticipated.

8. Anticipated Pressures and H_2S

a. The maximum anticipated bottom hole pressure is 6800 psi.

9. Water Source

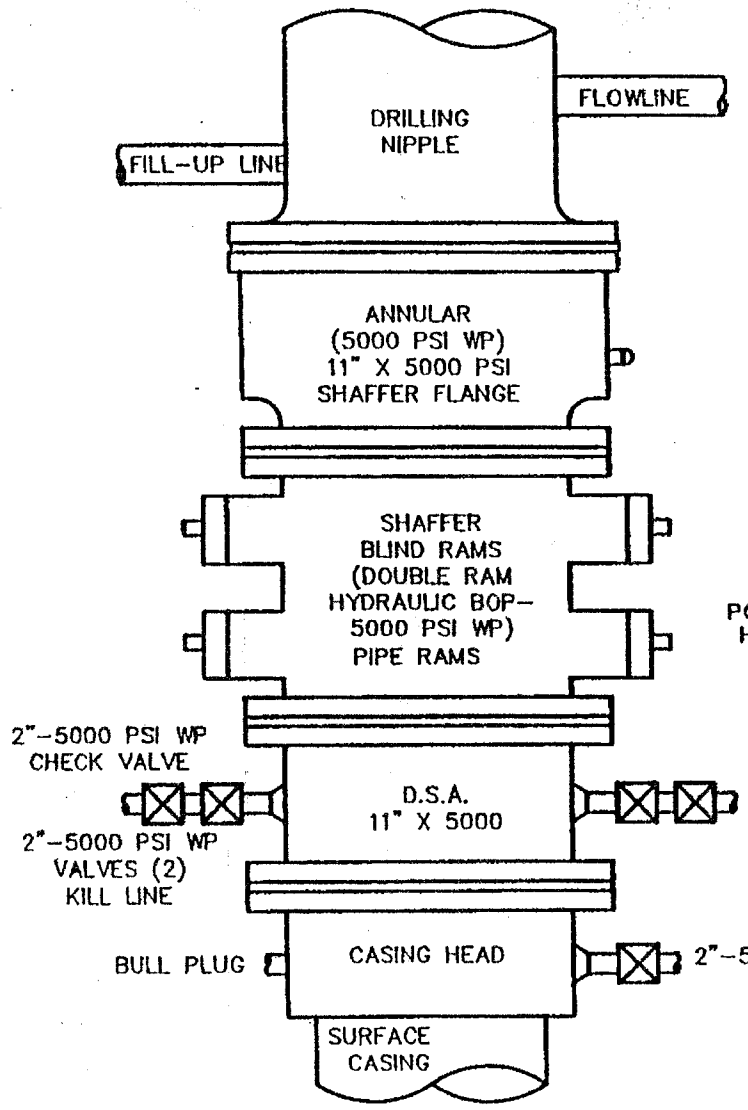
a. A water well will be drilled on location. All appropriate water permits will be filed with the Utah Division of Water Resources.

10. Other Information

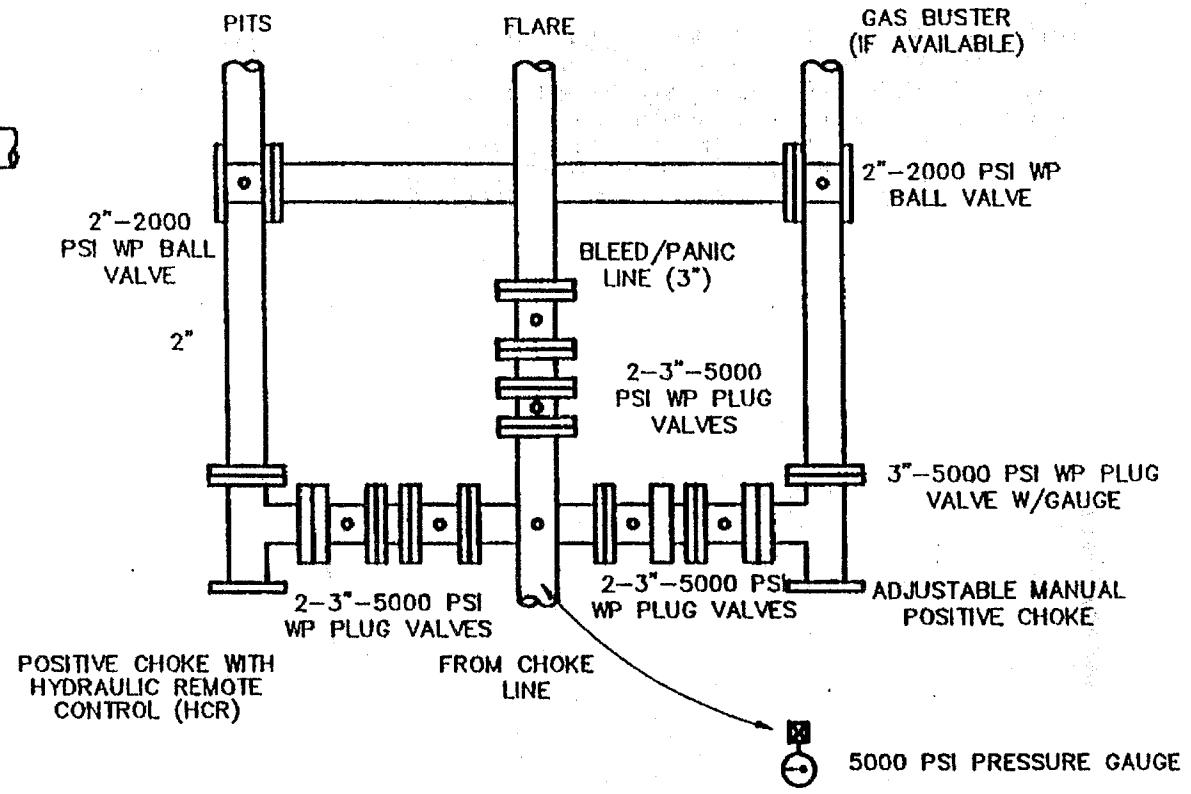
a. Drilling is planned to commence immediately upon approval of this application.

b. It is anticipated that the drilling of this well will take approximately 160 days.

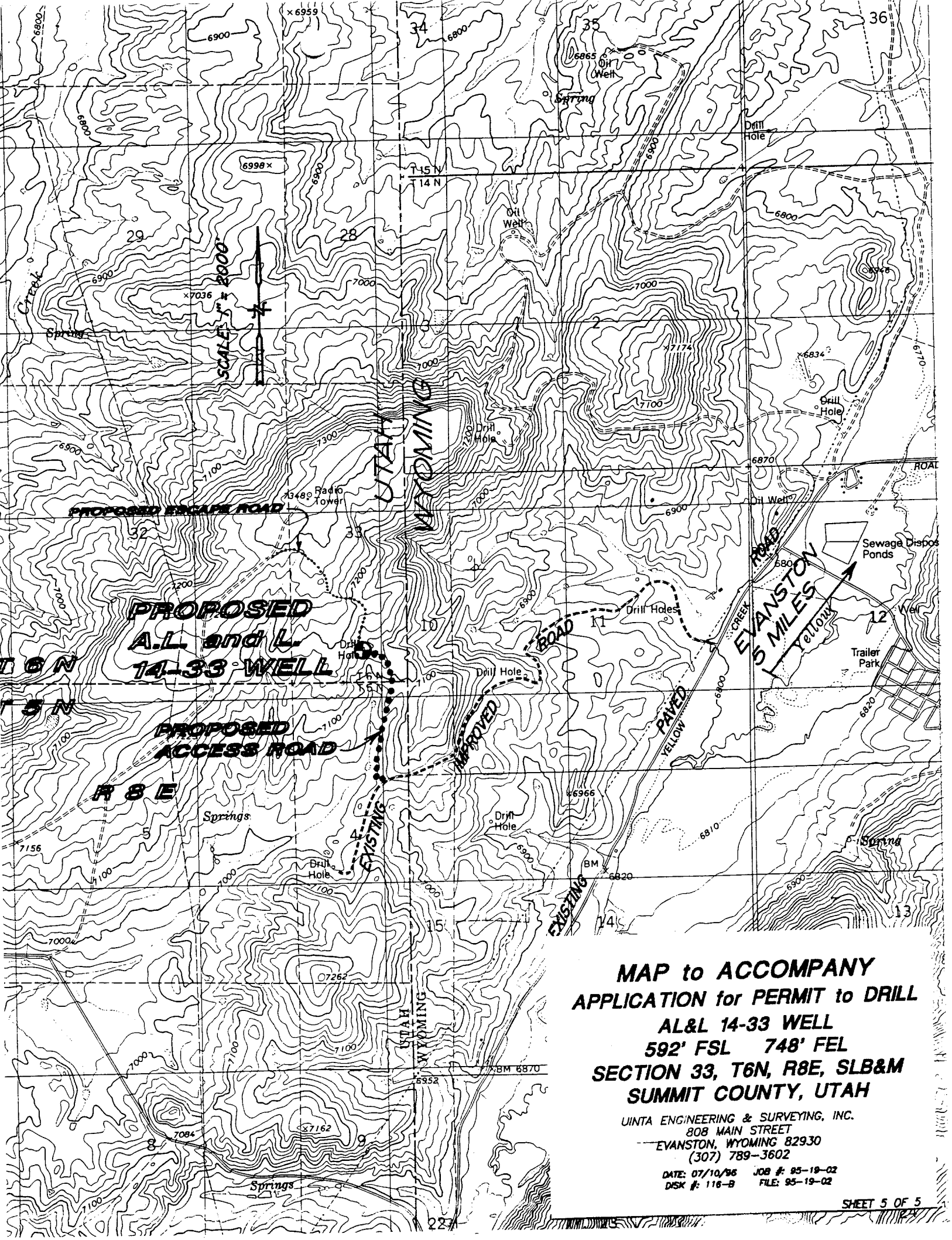
BOP SCHEMATIC
5000 PSI WORKING PRESSURE



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.

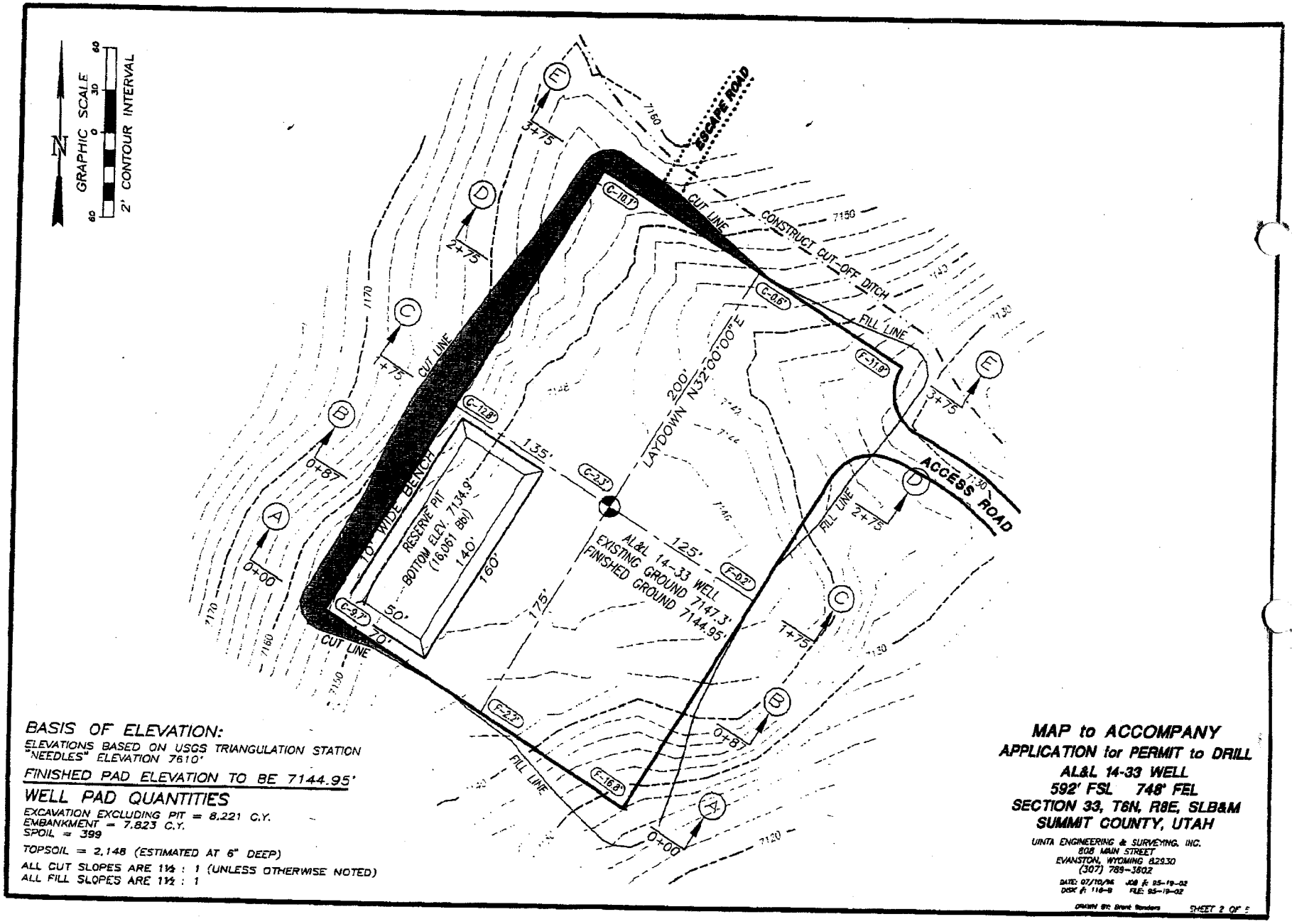


MAP to ACCOMPANY
APPLICATION for PERMIT to DRILL
AL&L 14-33 WELL
592' FSL 748' FEL
SECTION 33, T6N, R8E, SLB&M
SUMMIT COUNTY, UTAH

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

DATE: 07/10/96 JOB #: 95-19-02
DISK #: 116-B FILE: 95-19-02

SHEET 5 OF 5



BASIS OF ELEVATION:

ELEVATIONS BASED ON USGS TRIANGULATION STATION "NEEDLES" ELEVATION 7610'

FINISHED PAD ELEVATION TO BE 7144.95'

WELL PAD QUANTITIES

EXCAVATION EXCLUDING PIT = 8,221 C.Y.
EMBANKMENT = 7,823 C.Y.
SPOIL = 399

TOPSOIL = 2,148 (ESTIMATED AT 6" DEEP)

ALL CUT SLOPES ARE 1½ : 1 (UNLESS OTHERWISE NOTED)
ALL FILL SLOPES ARE 1½ : 1

MAP to ACCOMPANY
APPLICATION for PERMIT to DRILL
AL&L 14-33 WELL
592' FSL 748' FEL
SECTION 33, T6N, R8E, SLB&M
SUMMIT COUNTY, UTAH

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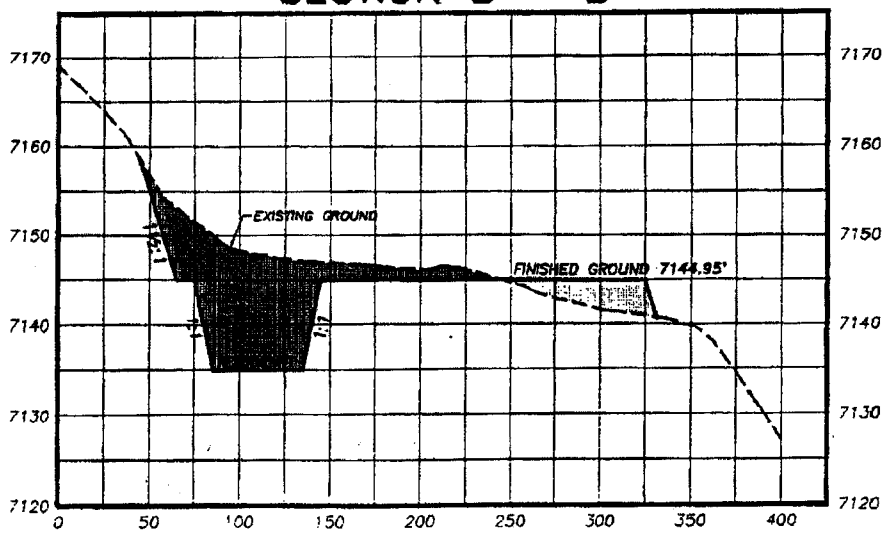
(307) 789-3602

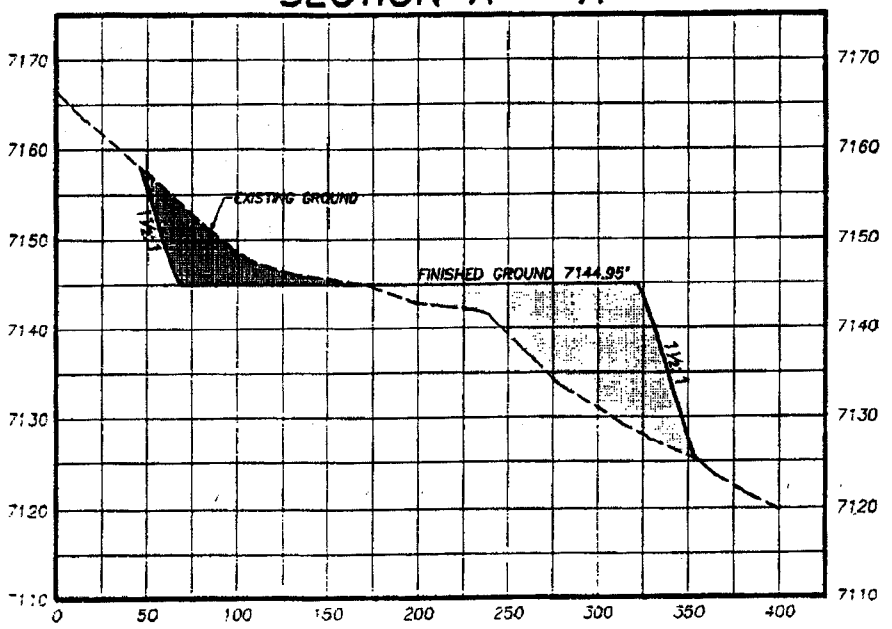
DATE: 07/10/96 JOB #: 95-19-03
DISK #: 116-9 FILE: 95-19-02

DRAWN BY: Brent Sanders SHEET 2 OF 5

SECTION B – B



SECTION A – A



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592' FSL 748' FEL
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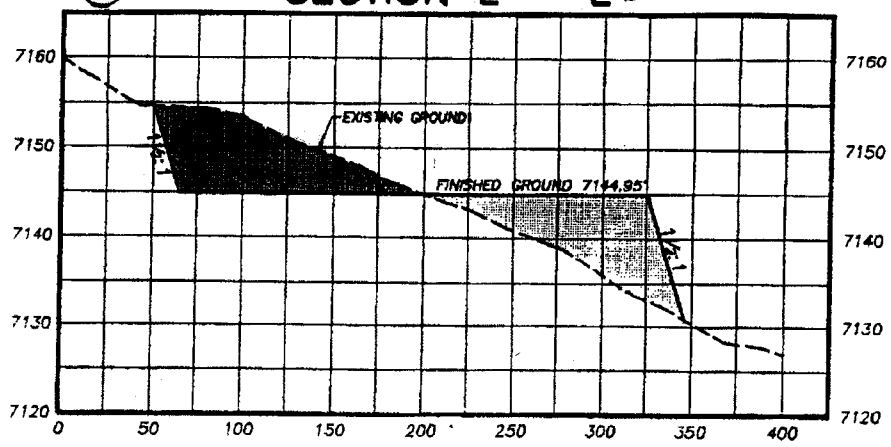
SCALE:
HORIZ: 1" = 100'
VERT: 1" = 20'

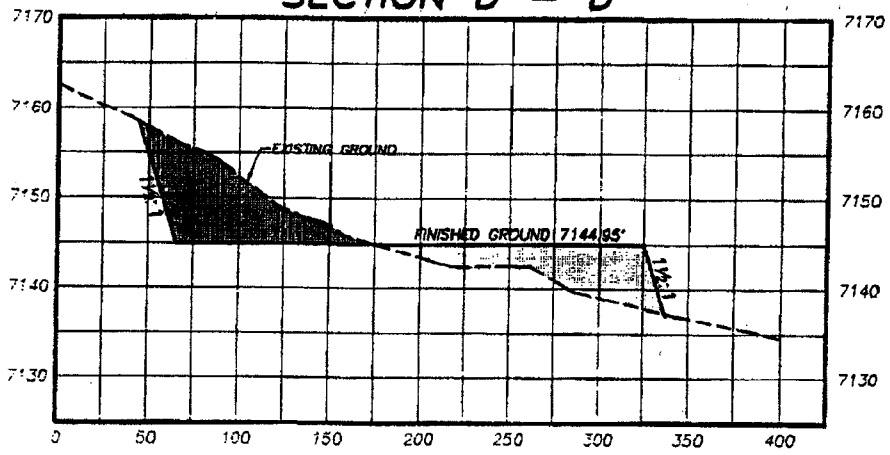
ALL CUT SLOPES ARE 1½ : 1 (UNLESS OTHERWISE NOTED)
ALL FILL SLOPES ARE 1½ : 1

DRAWN BY: Brent Sanders

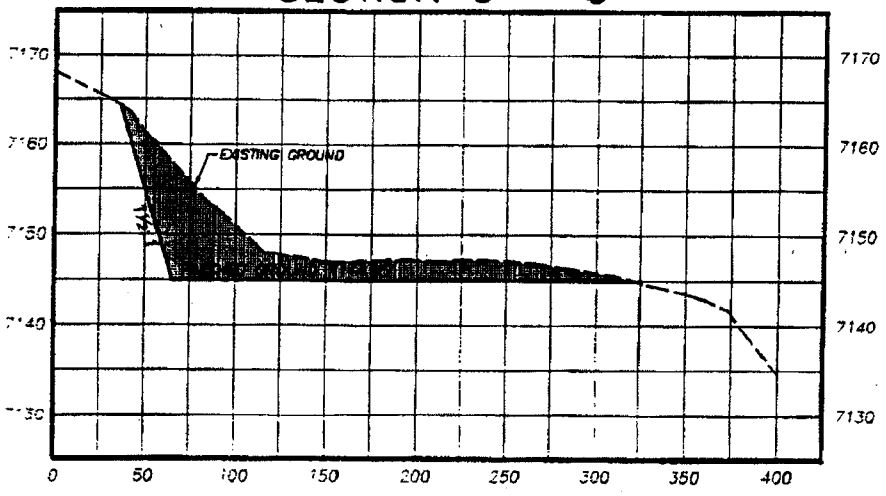
SECTION E – E



SECTION D – D



SECTION C – C



MAP to ACCOMPANY
APPLICATION for PERMIT to DRILL
AL&L 14-33 WELL
592' FSL 748' FEL
SECTION 33, T6N, R8E, SLB&M
SUMMIT COUNTY, UTAH

UINTA ENGINEERING & SURVEYING, INC.
808 MAIN STREET
EVANSTON, WYOMING 82930
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DATE: 07/10/96 JOB #: 95-19-02
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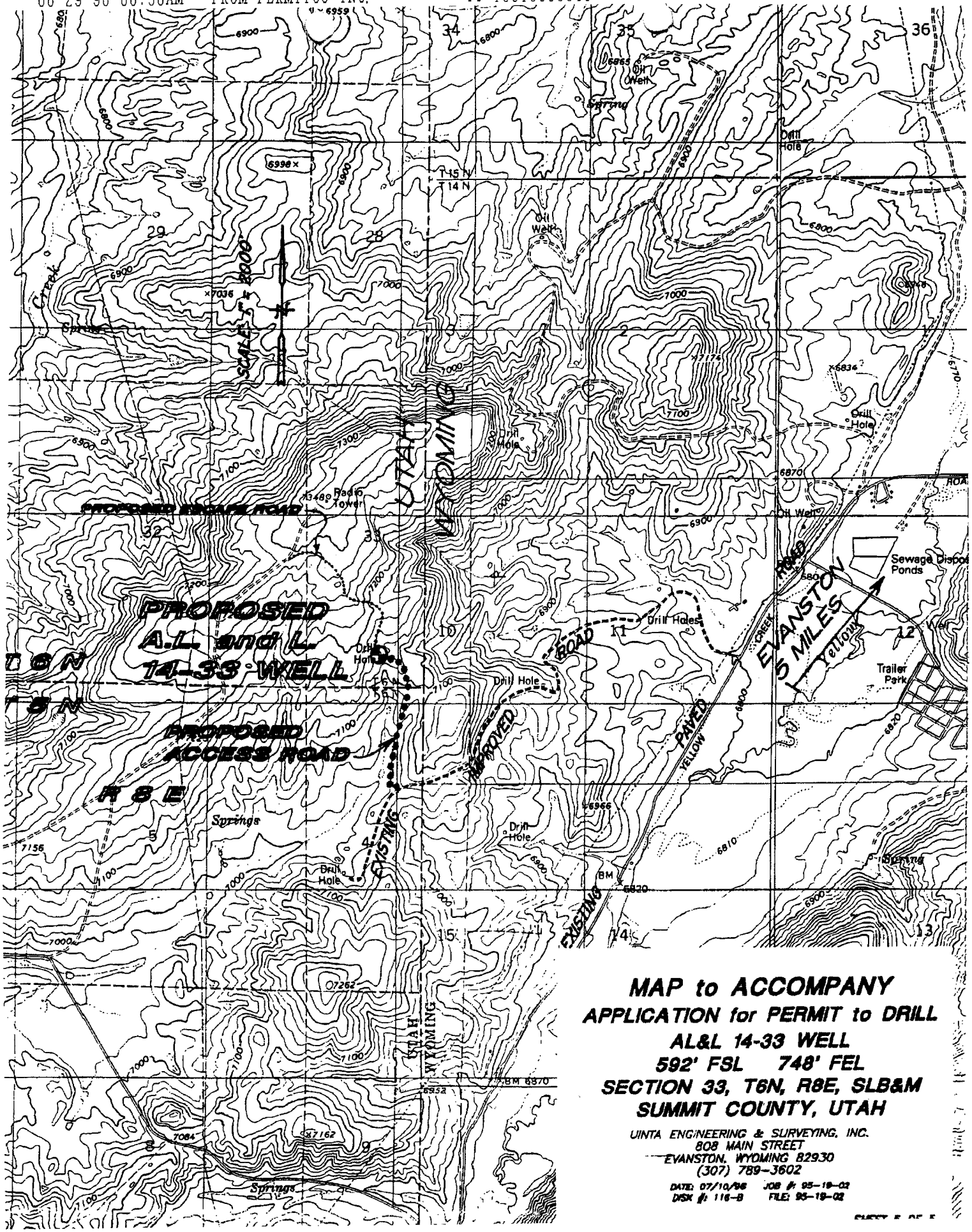
SCALE:
HORIZ: 1" = 100'
VERT: 1" = 20'

ALL CUT SLOPES ARE 1½ : 1 (UNLESS OTHERWISE NOTED)
ALL FILL SLOPES ARE 1½ : 1

DRAWN BY: Brent Sanders



MAP to ACCOMPANY
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AL&L 14-33 WELL
592' FSL 748' FEL
SECTION 33, T6N, R8E, SLB&M
SUMMIT COUNTY, UTAH

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EVANSTON, WYOMING 82930
(307) 789-3602

DATE: 07/10/96 JOB #: 95-19-02
DISK #: 116-B FILE: 95-19-02

H2S Contingency Plan

for

A L & L # 14-33

Township 6N, Range 8E

Section 33

Summit County, Utah

Anschutz Exploration Corporation
555 17th St. Suite 2400
Denver, CO. 80202

Table of Contents

Introduction and directions

I. Responsibilities and Duties
- A. All personnel
- B. Drilling Foreman
- C. Rig Supervisor- Toolpusher
- D. Safety Consultant
- E. Union Pacific Resource Co- Wahsatch Gathering System

II. Drilling Rig Layout
- A. Location

III. Safety Procedures
- A. Training
- B. Operating Conditions
- C. Evacuation Plan
- D. Emergency Rescue Procedures

IV. H2S Safety Equipment on Drilling Location

V. Well Ignition Procedures
- A. Ignition Equipment
- B. Ignition Procedures

VI. Residents- Pubic in Roe
- A. Map of area around location

VII. Emergency Phone Directory
- A. Anschutz Exploration Corporation
- B. Emergency Service Phone List

VIII. Reference for Hydrogen Sulfide and Sulfur Dioxide

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 A L & L # 14-33 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:

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 are no residents within a 1 mile radius of the well site. The Hansen Ranch buildings border the 1 mile radius and have been included in our notification list. Anschutz Exploration Corporation and Union Pacific Resource CO have personnel working in the area at any time of the day. The Urroz Ranch operated by Cathy Seale of Seale Services borders this lease and Seale Oilfield Services may have personnel in the adjacent area at any time of day. Castle Rock L & L may have ranching personnel in the area at any time of the day.

Anschutz Ranch East Office.....(307) 783-2905
Evanston, WY. (307) 782-7111

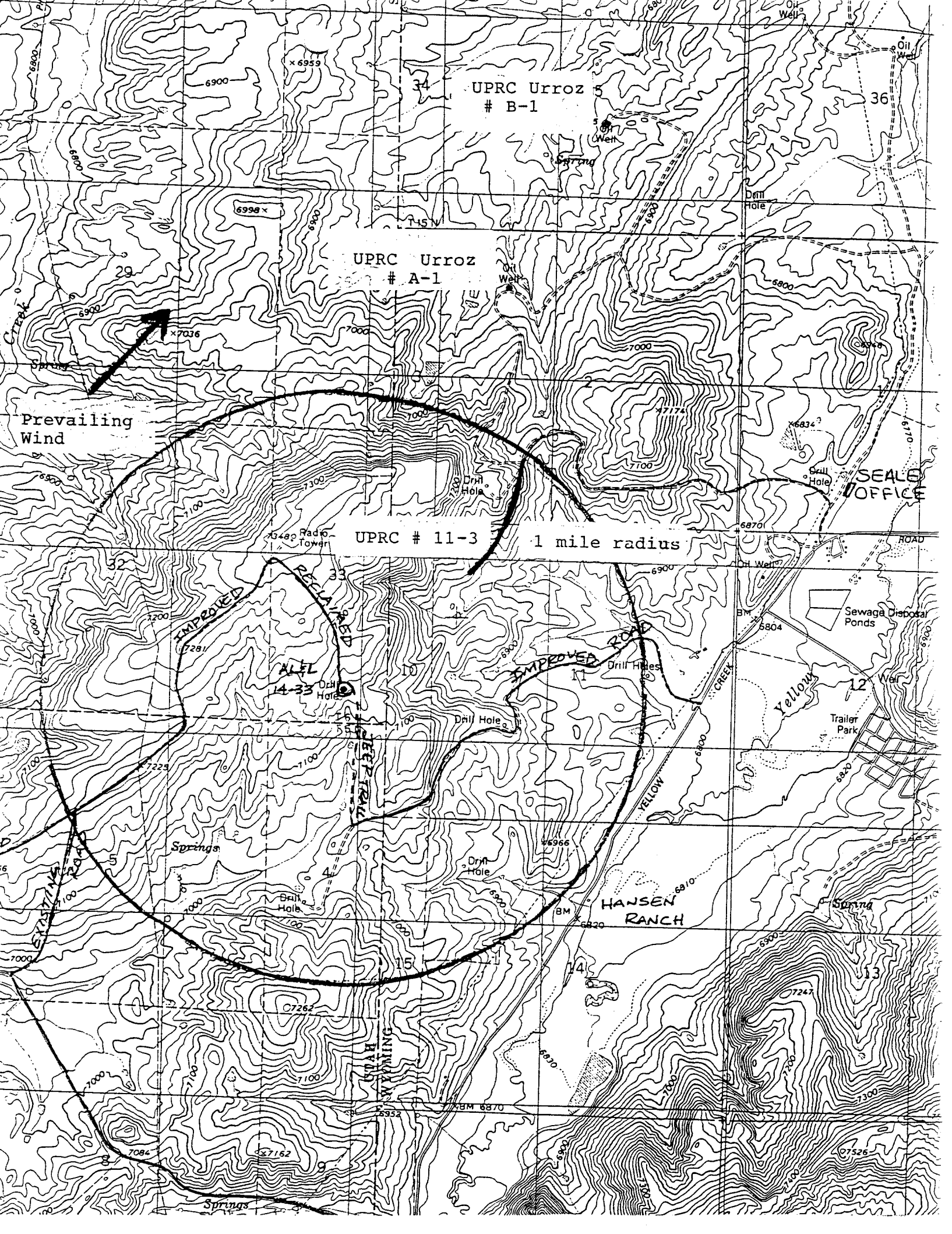
Union Pacific Resources CO.....(307) 789-1573
UPRC Emergency Phone to WGS Control Room.....(307) 789-9735

Hansen Ranch.....(307) 789-3686

Urroz Ranch & Seale Oilfield Services.....(307) 789-4453
Cathy or Hank Seale

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


UPRC Urroz
B-1
UPRC Urroz
A-1
Prevailing
Wind
UPRC # 11-3
1 mile radius
SEALE
OFFICE
Sewage Disposal
Ponds
IMPROVED
RECLAIMED
IMPROVED ROAD
ALEL
14-33
JEEP TRAIL
EXISTING ROAD
HANSEN
RANCH
Yellow
Trailer
Park
Drill Hole
Oil Well
Spring
Radio
Tower
Springs
UTAH
WYOMING
Creek
ROAD
YELLOW
CREEK
BM 6870

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
		Pager	(800) 759-8888
		PIN	195-8787
Drilling Superintendent	Haw Gallagher		(303) 299-1532
		Home	see pager
		Mobil	(303) 981-5609
		Pager	(800) 492-0694
Drilling	Dave Dlouhy		(303) 299-1228
		Home	(303) 797-0115

Engineering			
	Don Day		(303) 299-1324
		Home	(303) 979-2396
	Jim Oursland		(713) 750-0210
		Home	(719) 688-1362
		Pager	(800) 759-8888
		PIN	198-3975
Anschutz Ranch East Pipeline Foreman	Stan Dolinar		(307) 783-2905
		Home	(307) 789-9048
		Mobil	(307)
Field Supervision			
	Bob Griffin		
		Home	(801) 789-1564
		Mobil	(719) 881-1362
	Ken Claire		
		Home	(801) 789-8838
		Mobil	(801) 790-5192
	Jerry Blair		
		Home	(307) 455-4030
		Mobil	(719) 349-1862
Public Relations	Bill Miller		(303) 299-1330
		Home	(303) 797-8071
		Mobil	(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

WORKSHEET
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 06/24/1996

API NO. ASSIGNED: 43-043-30315 - 01

SIDE TRACK CODE PER API

WELL NAME: AL&L 14-33ST

OPERATOR: ANSCHUTZ EXPLORATION (N7940)

CONTACT: ERIC ROOT

PHONE NUMBER: 303-298-1000

PROPOSED LOCATION:

SESE 33 060N 080E

SURFACE: 0642 FSL 0748 FEL

BOTTOM: 0527 FSL 0782 FEL *Current Prod. Loc.

*New - BHL 1400 FNL 300 FEL Sec. 10, 14N, 121W Wyoming

SUMMIT

WILDCAT (1)

LEASE TYPE: 4-Fee

LEASE NUMBER: FEE

SURFACE OWNER: 4-Fee

PROPOSED FORMATION: WEBR

INSPECT LOCATN BY: / /		
Tech Review	**Initials**	**Date**
Engineering	R.A. Mike	4/3/01
Geology		
Surface		

RECEIVED AND/OR REVIEWED:

✓ Plat

✓ Bond: Fed[] Ind[] Sta[] Fee[4] ✓

(No. 10-42-53)

N Potash (Y/N)

N Oil Shale (Y/N) *190-5 (B) or 190-3

✓ Water Permit

(No. 21-1711)

N RDCC Review (Y/(N))

(Date:)

Y Fee Surf Agreement ((Y)/N)

LOCATION AND SITING:

___ R649-2-3. Unit ___

___ R649-3-2. General

Siting: 460 From Qtr/Qtr & 920' Between Wells

___ R649-3-3. Exception

✓ Drilling Unit

Board Cause No: 189-5 (391.51)

Eff Date: 7-10-2000

Siting:

___ R649-3-11. Directional Drill

COMMENTS: Need Presite. (3-21-01)

STIPULATIONS: 1) PRODUCTION FROM THIS WELL WILL BE LIMITED TO THE WEBER FORMATION (CAUSE 189-5).

2) PROVIDE COPY OF THE APPROVED WYOMING APD PLUS ANY CONDITIONS OF APPROVAL.

(5) S.O.B.

3) ALL OPERATIONS SHALL ADHERE TO RULE R649-3-12, DRILLING PRACTICES FOR HYDROGEN SULFIDE AREAS AND FORMATIONS

4) AT THE CONCLUSION OF DRILLING SUBMIT A COMPLETE COPY OF THE DIRECTIONAL SURVEY INCLUDING PLAN VIEW AND VERTICAL SECTION.

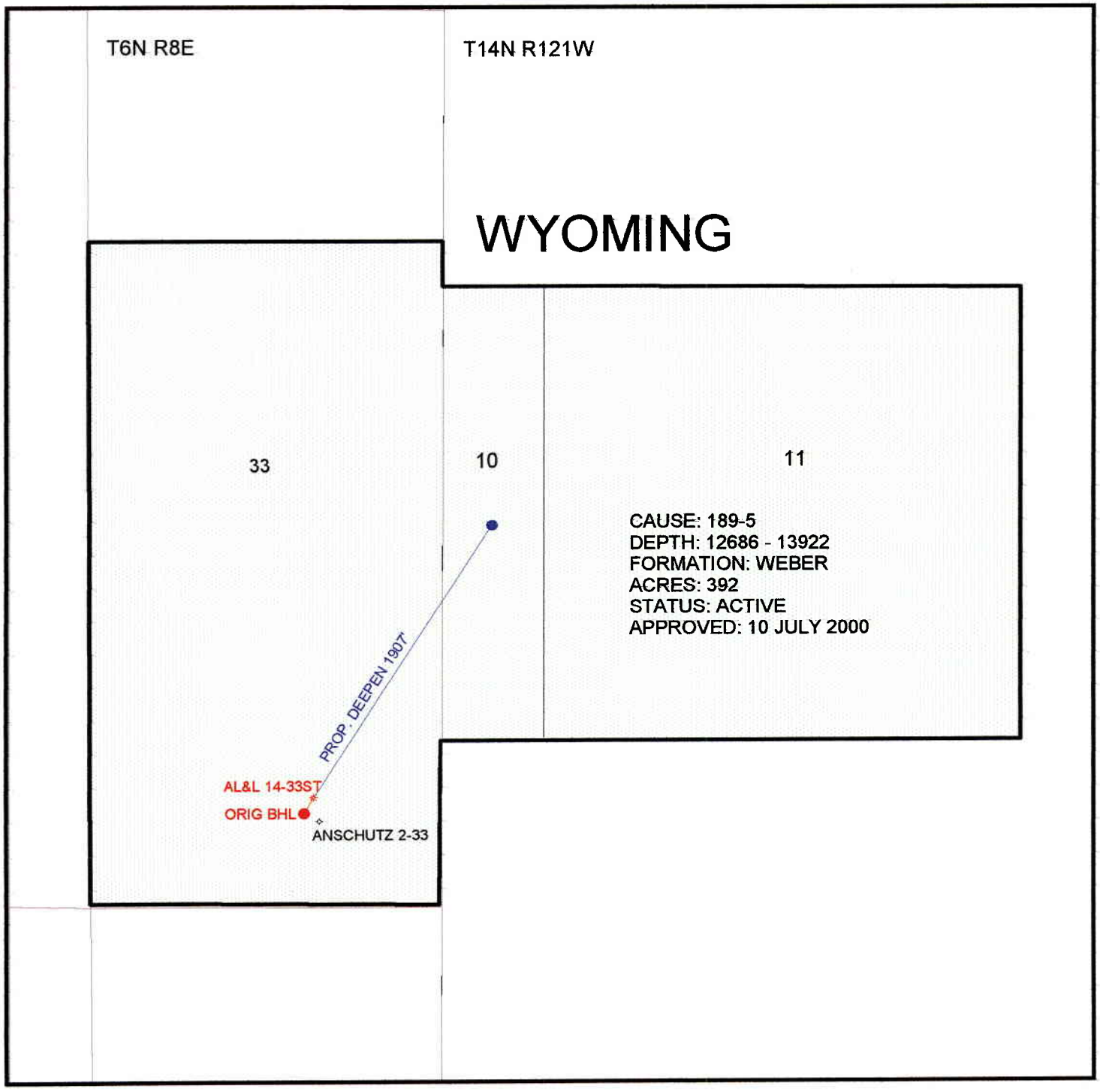
Utah Oil Gas and Mining

OPERATOR: THE ANSCHUTZ CORP (N7940)

FIELD: WILDCAT (001)

SEC. 33, T6N, R8E,

COUNTY: SUMMIT CAUSE: 189-5

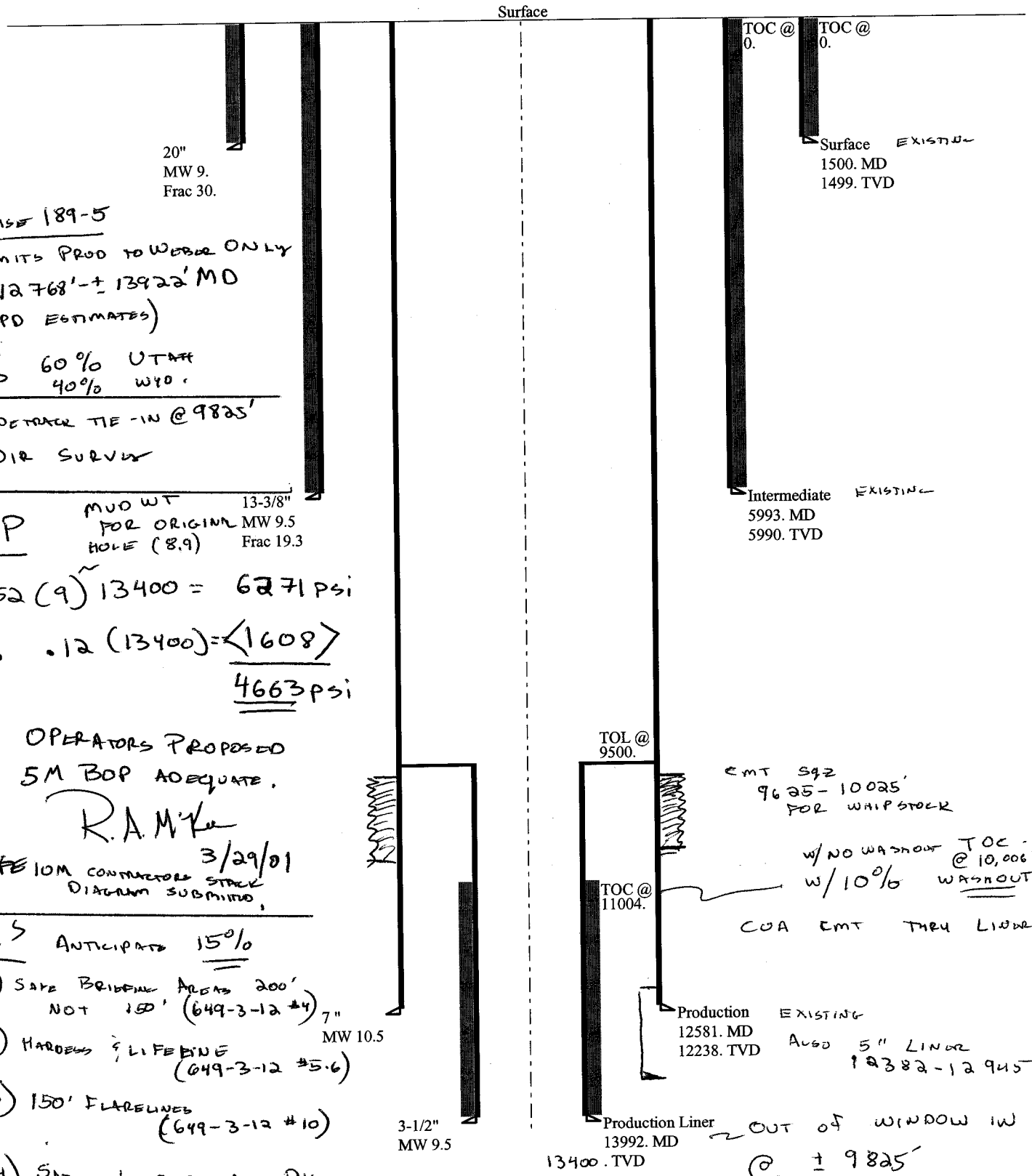


PREPARED BY: LCORDOVA
DATE: 23-FEBRUARY-2001

* Copy Wyoming APD. Plus all conditions

03-01 Anschutz #14-33ST

Casing Schematic



CAUSE 189-5

* LIMITS PROD TO WEBER ONLY
± 12768'-± 13922' MD
(APD ESTIMATES)

VB 60% UTAH
40% WYO.

SIDETRACK TIE-IN @ 9825'

* DIR SURVEY

MUD WT FOR ORIGINAL HOLE (8.9)

BOP

.052 (9) 13400 = 6271 psi

GAS GRAD .12 (13400) = <1608>

4663 psi

∴ OPERATORS PROPOSED 5M BOP ADEQUATE.

R.A. Mike
3/29/01

NOTE 10M CONTRACTORS STACK DIAGRAM SUBMITTED.

H_2S ANTICIPATE 15%

1) SAFE BRIDGING AREAS 200' NOT 150' (649-3-12 #4)
2) HARDESS & LIFELINE (649-3-12 #5.6)
3) 150' FLARELINES (649-3-12 #10)
4) SAFETY LAY OUT AS DISCUSSED IN CONTINGENCY PLAN Pg 12.

* CBA FOR RULE.

EMT SQZ 9625-10025' FOR WHIPSTOCK

w/ NO WASHOUT TOC @ 10,006'
w/ 10% WASHOUT

COA EMT THRU LINER TOP.

OUT OF WINDOW IN 7" @ ± 9825'

* COAs (4)

Well name:	**03-01 Anschutz #14-33ST**
Operator:	**Anschutz Exploration Company**
String type:	Production Liner
Project ID:	43-043-30315 -01
Location:	Summit County

Design parameters:

Collapse

Mud weight: 9.500 ppg

Design is based on evacuated pipe.

Burst

Max anticipated surface pressure: 0 psi

Internal gradient: 0.494 psi/ft

Calculated BHP 0 psi

No backup mud specified.

Minimum design factors:

Collapse:

Design factor 1.125

Burst:

Design factor 1.00

Tension:

API - tubing:	1.60 (J)
8 Round LTC:	1.80 (J)
Buttress:	1.60 (J)
Premium:	1.50 (J)
Body yield:	1.50 (B)

Tension is based on air weight.

Neutral point: 0 ft

Environment:

H2S considered?	Yes
Surface temperature:	65 °F
Bottom hole temperature:	252 °F
Temperature gradient:	1.40 °F/100ft
Minimum section length:	1,500 ft
Cement top:	11,004 ft
Liner top:	9,500 ft

Directional well information:

Kick-off point	0 ft
Departure at shoe:	2002 ft
Maximum dogleg:	3.01 °/100ft
Inclination at shoe:	0 °

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	4492	3.5	10.20	L-80	VAM ACE	13380 13391	13992	2.797	90.9

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
1	6603	12109	1.83	6603	11540	1.75	40	233	5.84 J

Prepared by: R.A.McKee, Utah Dept. of Natural Resources

Phone: 801-538-5274

Date: March 27,2001, Salt Lake City, Utah

Engineering Stipulations: NONE

Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

For this liner string, the top is rounded to the nearest 100 ft.Collapse is based on a vertical depth of 0 ft, a mud weight of 9.5 ppg The

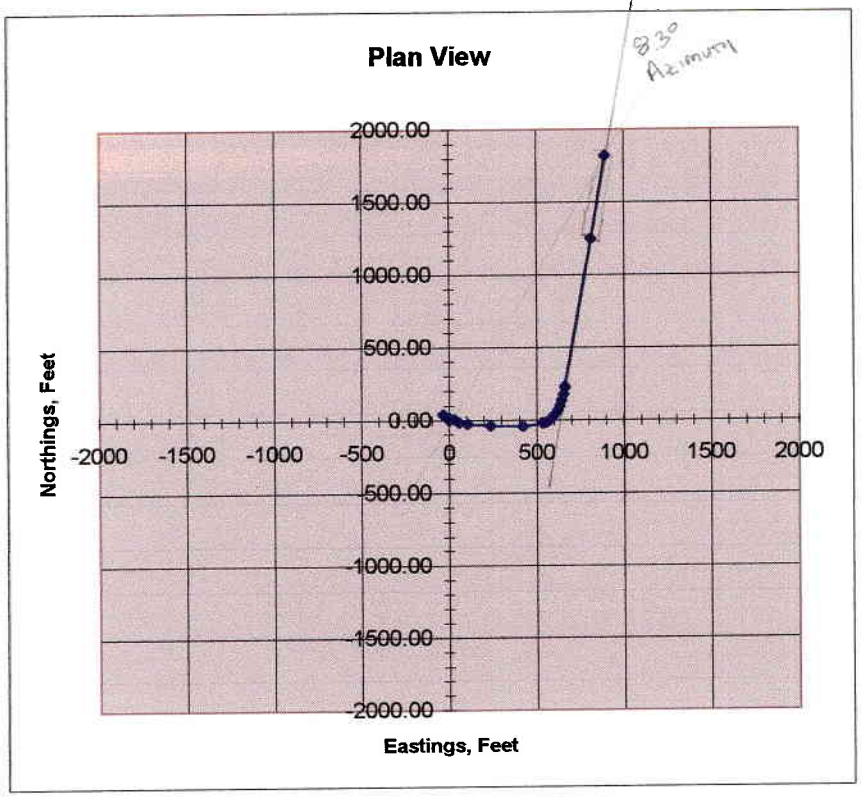
In addition, burst strength is biaxially adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

Engineering responsibility for use of this design will be that of the purchaser.

35° VERTICAL PLANE

Anschutz 14-33ST - Proposed Plan and Vertical Section

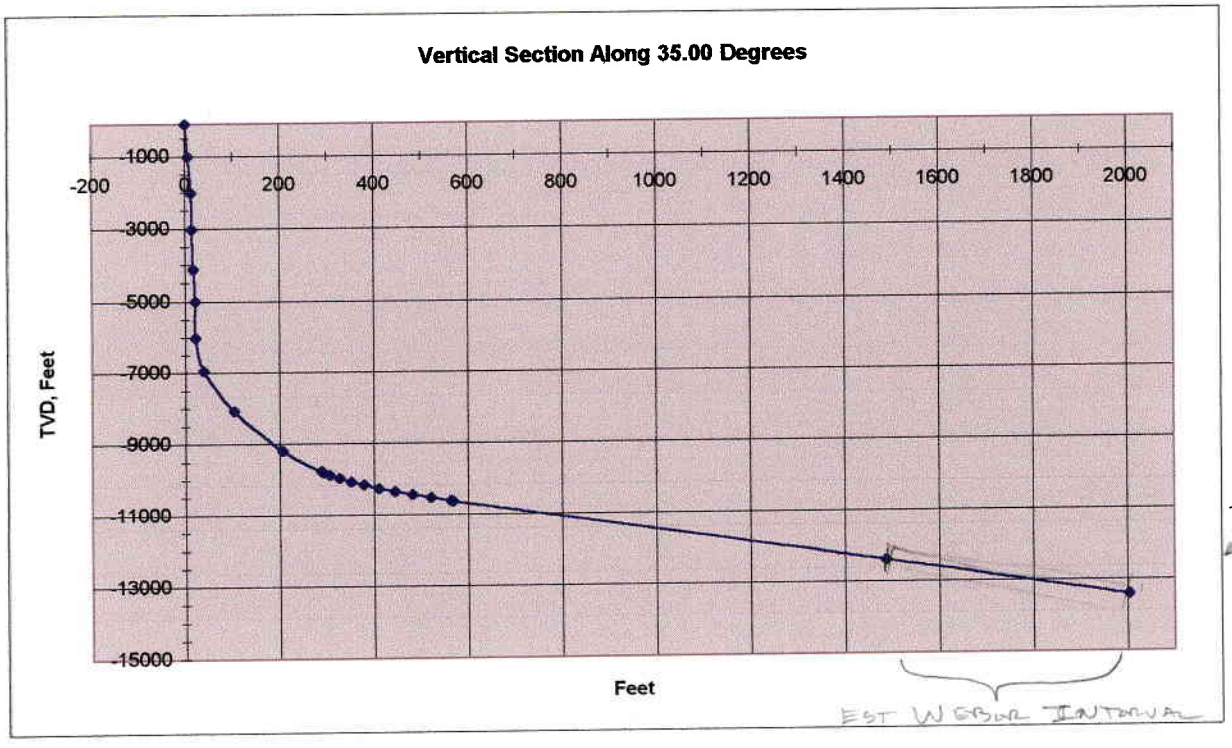


TOTAL DISPLACEMENT FROM ORIGIN (WELL BORE)

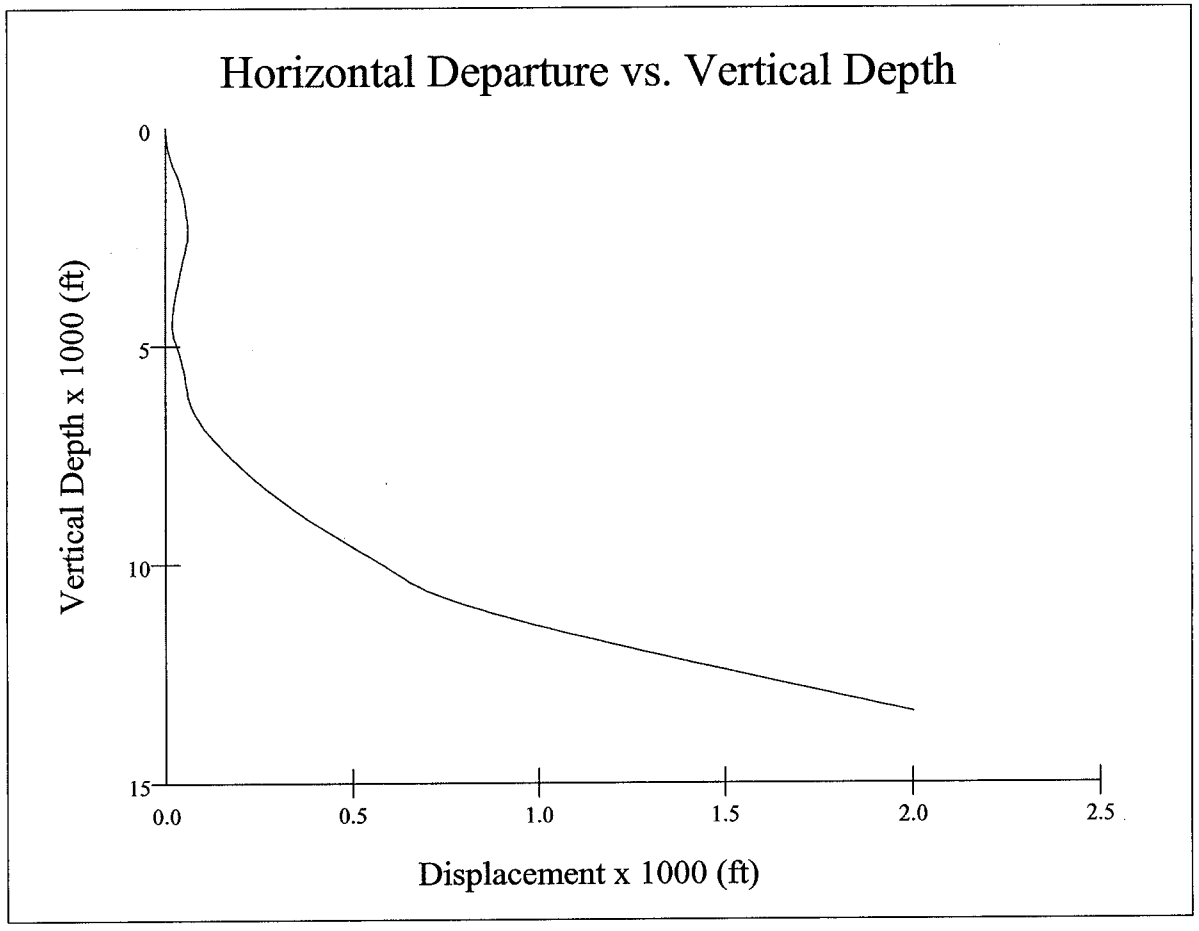
1800' NORTH
944' EAST } ALONG 35° VERTICAL PLANE

WELL PATH PROPOSED 83° AZIMUTH

2033' DISPLACEMENT



03-01 Anschutz #14-33ST - Production Liner



3-01 Anschutz #14-33ST

[Survey Data Input]

Station	Meas. Depth (ft)	Inclination (Dec.)	Azimuth (Dec.)
1	0.0	0.0	0.0
2	1000.0	2.95	318.0
3	2000.0	0.52	325.0
4	3000.0	1.51	125.0
5	4100.0	1.73	118.0
6	5000.0	2.87	117.0
7	6000.0	1.0	154.6
8	6938.0	5.4	94.4
9	8078.0	7.9	97.1
10	9217.0	10.7	86.7
11	9801.0	12.2	72.6
12	TIE-IN → 9825.0	12.27	72.5
13	9900.0	12.61	62.2
14	10000.0	13.63	49.7
15	10100.0	15.18	39.4
16	10200.0	17.1	31.1
17	10300.0	19.3	24.5
18	10400.0	21.68	19.3
19	10500.0	24.2	15.1
20	10600.0	26.8	11.6
21	10700.0	29.5	8.8
22	10719.0	30.0	8.3
23	12768.0	30.0	8.3
24	13922.0	30.0	0.0

========== End of SDI file ==========

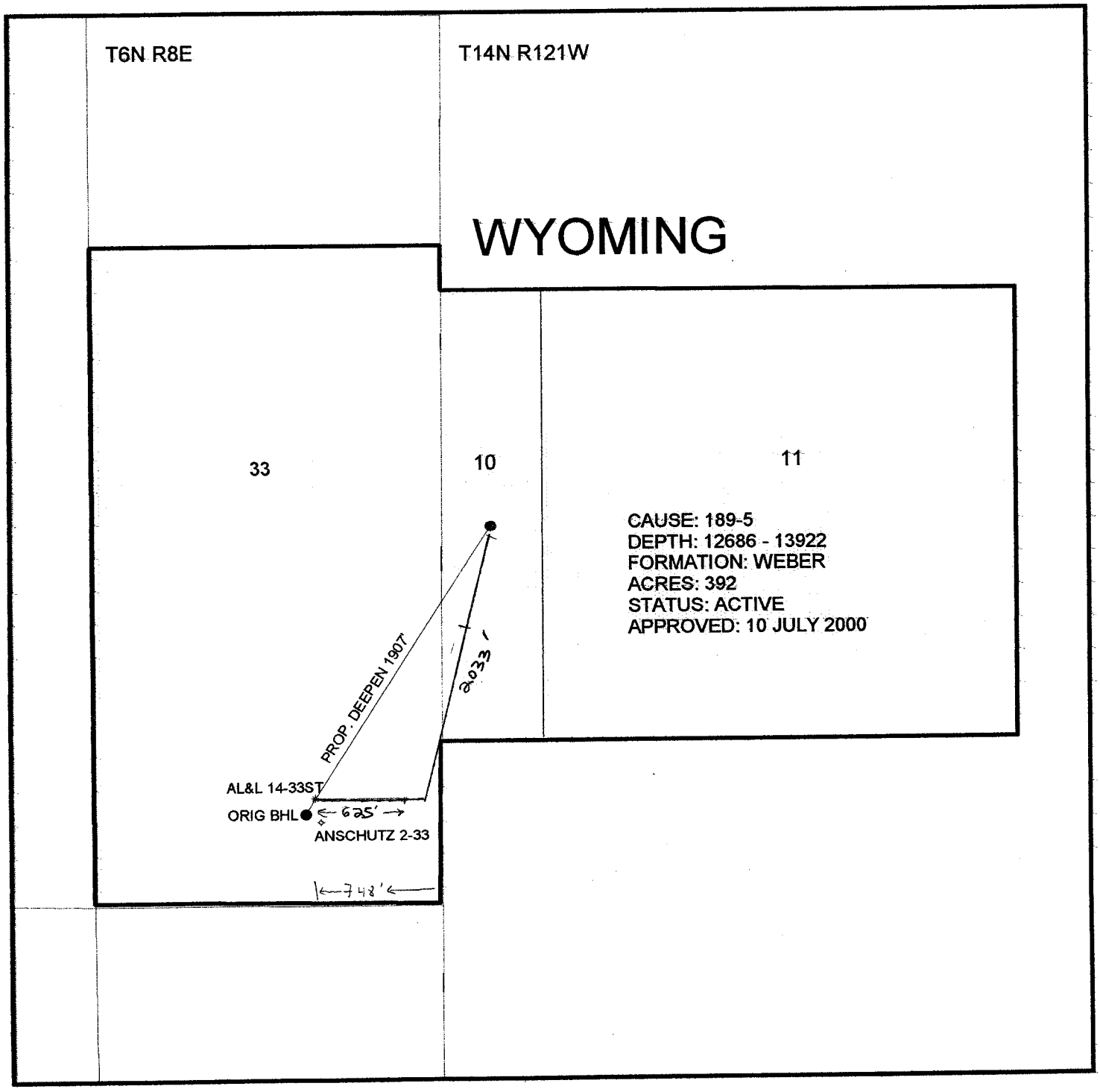
Utah Oil Gas and Mining

OPERATOR: THE ANSCHUTZ CORP (N7940)

FIELD: WILDCAT (001)

SEC. 33, T6N, R8E,

COUNTY: SUMMIT CAUSE: 189-5



PREPARED BY: LCORDOVA
DATE: 23-FEBRUARY-2001

STATE OF UTAH, DIV OF OIL, GAS & MINERALS

Operator: ANSCHUTZ CORP.	**Well Name: AL & L 14-33**
Project ID:	**Location: SEC. 33 - T05N - R08E**

Design Parameters:

Mud weight (10.00 ppg)	: 0.519	psi/ft
Shut in surface pressure	: 2660	psi
Internal gradient (burst)	: 0.069	psi/ft
Annular gradient (burst)	: 0.000	psi/ft

Tensile load is determined using air weight

Service rating is "Sweet"

Design Factors:

Collapse	: 1.125	
Burst	: 1.00	
8 Round	: 1.80	(J)
Buttress	: 1.60	(J)
Other	: 1.50	(J)
Body Yield	: 1.50	(B)

	Length (feet)	Size (in.)	Weight (lb/ft)	Grade	Joint	Depth (feet)	Drift (in.)	Cost
1	2,600	13.375	68.00	N-80	ST&C	2,600	12.259	
2	1,500	13.375	72.00	N-80	ST&C	4,100	12.250	
3	1,500	13.375	72.00	S-95	ST&C	5,600	12.250	
4	300	13.375	80.70	S-95	Buttress	5,900	12.059	

	Collapse Load (psi)	Collapse Strgth (psi)	Collapse S.F.	Burst Load (psi)	Min Int Yield Strgth (psi)	Burst S.F.	Tension Load (kips)	Tension Strgth (kips)	Tension S.F.
1	1351	2144	1.587	2838	5020	1.77	417.01	963	2.31 J
2	2130	2607	1.224	2941	5380	1.83	240.21	1040	4.33 J
3	2909	3459	1.189	3044	6390	2.10	132.21	1215	9.19 J
4	3065	4990	1.628	3065	7210	2.35	24.21	2173	89.76 J

Prepared by : MATTHEWS, Salt Lake City, Utah
Date : 06-27-1996
Remarks :

Minimum segment length for the 5,900 foot well is 1,500 feet.

SICP is based on the ideal gas law, a gas gravity of 0.69, and a mean gas temperature of 115°F (Surface 74°F , BHT 157°F & temp. gradient 1.400°/100 ft.)

String type: Surface

Next string will set at 5,900 ft. with 9.50 ppg mud (pore pressure of 2,912 psi.) The frac gradient of 1.000 psi/ft at 5,900 feet results in an injection pressure of 5,900 psi Effective BHP (for burst) is 3,065 psi.

The minimum specified drift diameter is 12.250 in.

NOTE: The design factors used in this casing string design are as shown above. As a general guideline, Lone Star Steel recommends using minimum design factors of 1.125 - collapse (with evacuated casing), 1.0 - (uniaxial) burst, 1.8 - API 8rd tension, 1.6 - buttress tension, 1.5 - body yield tension, and 1.6 - EUE 8rd tension. Collapse strength under axial tension was calculated based on the Westcott, Dunlop and Kemler curve. Engineering responsibility for use of this design will be that of the purchaser.
Costs for this design are based on a 1987 pricing model. (Version 1.07)

STATE OF UTAH, DIV OF OIL, GAS & MINERALS

Operator: ANSCHUTZ CORP.	**Well Name: AL & L 14-33**
Project ID:	**Location: SEC. 33 - T05N - R08E**

Design Parameters:

Mud weight (9.50 ppg)	: 0.494	psi/ft
Shut in surface pressure	: 4504	psi
Internal gradient (burst)	: 0.115	psi/ft
Annular gradient (burst)	: 0.000	psi/ft

Tensile load is determined using air weight

Service rating is "Sweet"

*** WARNING *** Design factor for joint strength exceeded in design!

Design Factors:

Collapse	: 1.125	
Burst	: 1.00	
8 Round	: 1.80	(J)
Buttress	: 1.60	(J)
Other	: 1.50	(J)
Body Yield	: 1.50	(B)

	Length (feet)	Size (in.)	Weight (lb/ft)	Grade	Joint	Depth (feet)	Drift (in.)	Cost
1	8,000	9.625	47.00	L-80	LT&C	8,000	8.625	
2	3,900	9.625	47.00	HCL-80	LT&C	11,900	8.625	

	Collapse Load (psi)	Collapse Strgth (psi)	Collapse S.F.	Burst Load (psi)	Min Int Yield Strgth (psi)	Burst S.F.	Tension Load (kips)	Tension Strgth (kips)	Tension S.F.
1	3948	4487	1.137	5424	6870	1.27	559.30	893	1.60 J
2	5873	7100	1.209	5873	6870	1.17	183.30	1027	5.60 J

Prepared by : MATTHEWS, Salt Lake City, Utah
Date : 06-27-1996
Remarks :

Minimum segment length for the 11,900 foot well is 1,500 feet.

SICP is based on the ideal gas law, a gas gravity of 0.69, and a mean gas temperature of 115°F (Surface 74°F , BHT 241°F & temp. gradient 1.400°/100 ft.)

String type: Intermediate - Drlg

Next string will set at 11,900 ft. with 9.50 ppg mud (pore pressure of 5,873 psi.) The frac gradient of 1.000 psi/ft at 11,900 feet results in an injection pressure of 11,900 psi Effective BHP (for burst) is 5,873 psi.

The minimum specified drift diameter is 8.500 in.

NOTE: The design factors used in this casing string design are as shown above. As a general guideline, Lone Star Steel recommends using minimum design factors of 1.125 - collapse (with evacuated casing), 1.0 - (uniaxial) burst, 1.8 - API 8rd tension, 1.6 - buttress tension, 1.5 - body yield tension, and 1.6 - EUE 8rd tension. Collapse strength under axial tension was calculated based on the Westcott, Dunlop and Kemler curve. Engineering responsibility for use of this design will be that of the purchaser.
Costs for this design are based on a 1987 pricing model. (Version 1.07)

STATE OF UTAH, DIV OF OIL, GAS & MINERALS

Operator: ANSCHUTZ CORP.	**Well Name: AL & L 14-33**
Project ID:	**Location: SEC. 33 - T05N - R08E**

Design Parameters:

Mud weight (9.50 ppg)	: 0.494	psi/ft
Shut in surface pressure	: 5231	psi
Internal gradient (burst)	: 0.115	psi/ft
Annular gradient (burst)	: 0.000	psi/ft

Tensile load is determined using air weight

Service rating is "Sweet"

Design Factors:

Collapse	: 1.125	
Burst	: 1.00	
8 Round	: 1.80	(J)
Buttress	: 1.60	(J)
Other	: 1.50	(J)
Body Yield	: 1.50	(B)

	Length (feet)	Size (in.)	Weight (lb/ft)	Grade	Joint	Depth (feet)	Drift (in.)	Cost
1	2,121	7.000	32.00	N-80	LT&C	13,821	6.000	

	Collapse Load (psi)	Collapse Strgth (psi)	Collapse S.F.	Burst Load (psi)	Min Int Yield Strgth (psi)	Burst S.F.	Tension Load (kips)	Tension Strgth (kips)	Tension S.F.
1	6821	8610	1.262	6821	9060	1.33	67.87	672	9.90 J

Prepared by : MATTHEWS, Salt Lake City, Utah
Date : 06-27-1996
Remarks :

Minimum segment length for the 13,821 foot well is 1,500 feet.

SICP is based on the ideal gas law, a gas gravity of 0.69, and a mean gas temperature of 115°F (Surface 74°F , BHT 267°F & temp. gradient 1.400°/100 ft.)

The liner string design has a specified top of 11,700 feet.

The burst load shown is the pressure at the bottom of the segment.

String type: Liner - Production

The mud gradient and bottom hole pressures (for burst) are 0.494 psi/ft and 6,821 psi, respectively.

NOTE: The design factors used in this casing string design are as shown above. As a general guideline, Lone Star Steel recommends using minimum design factors of 1.125 - collapse (with evacuated casing), 1.0 - (uniaxial) burst, 1.8 - API 8rd tension, 1.6 - buttress tension, 1.5 - body yield tension, and 1.6 - EUE 8rd tension. Collapse strength under axial tension was calculated based on the Westcott, Dunlop and Kemler curve. Engineering responsibility for use of this design will be that of the purchaser.
Costs for this design are based on a 1987 pricing model. (Version 1.07)

WORKSHEET
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 06/28/96

API NO. ASSIGNED: 43-043-30315

WELL NAME: AL&L 14-33
OPERATOR: ANSCHUTZ EXPLORATION CORP (N7940) (~~N7080~~)

PROPOSED LOCATION:
SESE 33 - T06N - R08E
SURFACE: 0~~532~~592-FSL-~~0786~~748-FEL
BOTTOM: 0100-FSL-0460-FEL
SUMMIT COUNTY
WILDCAT FIELD (001)

LEASE TYPE: FEE
LEASE NUMBER: FEE

PROPOSED PRODUCING FORMATION: WEBER

INSPECT LOCATION BY: 07/08/96		
TECH REVIEW	Initials	Date
Engineering		
Geology		
Surface		

RECEIVED AND/OR REVIEWED:

✓ Plat
✓ Bond: Federal[] State[] Fee[✓]
(Number 104253)
N Potash (Y/N)
N Oil shale (Y/N)
✓ Water permit
(Number BY SUNDRY)
N RDCC Review (Y/N)
(Date:)

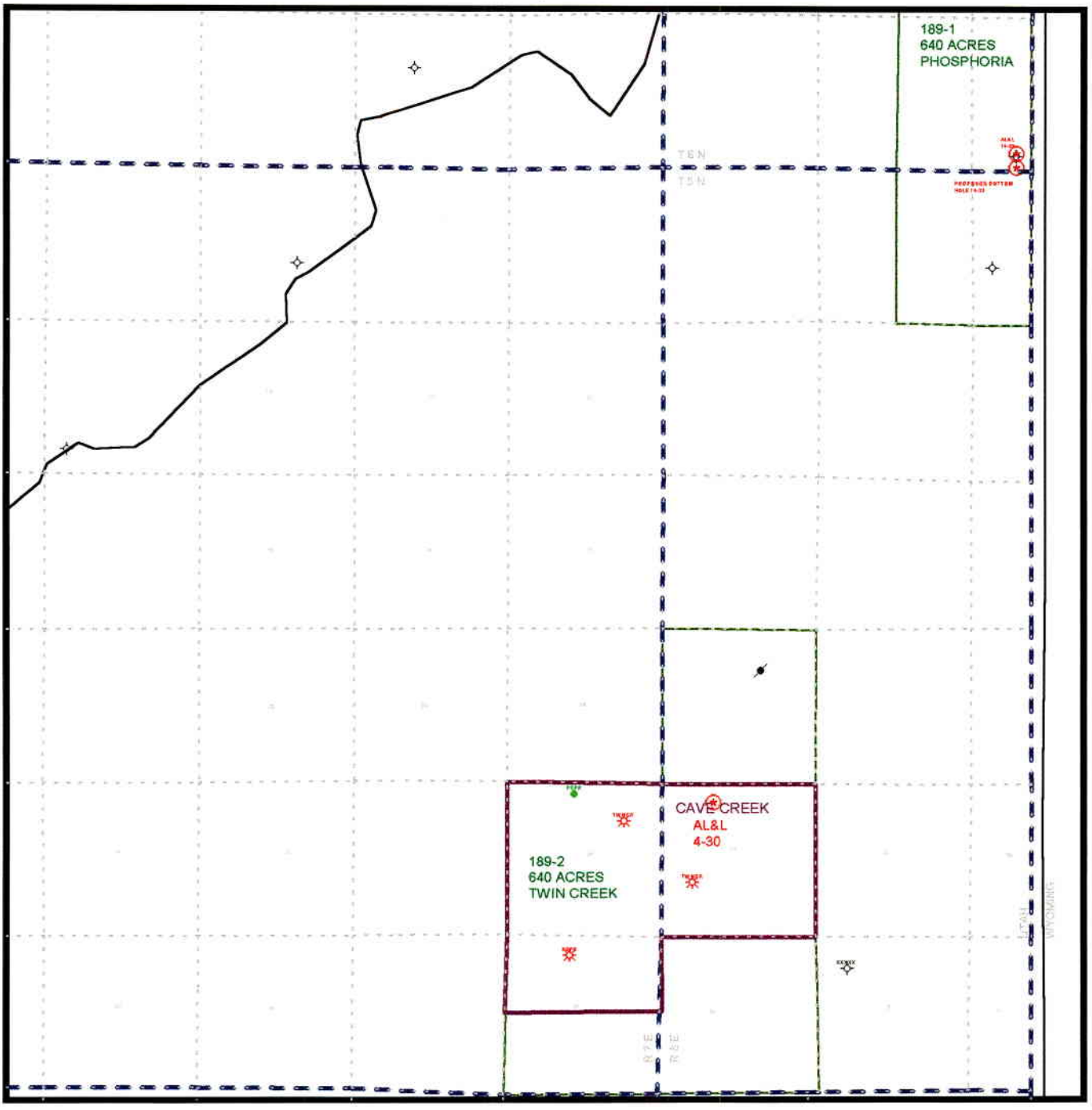
LOCATION AND SITING:

___ R649-2-3. Unit: ___
___ R649-3-2. General.
___ R649-3-3. Exception.
✓ Drilling Unit.
Board Cause no: 189-1B
Date: ___

COMMENTS:

STIPULATIONS:

ANSCHUTZ EXPLORATION CORP.
EXPLORATORY DRILLING
SEC. 33, T5N, R8E
SUMMIT COUNTY, UAC R649-3-3



PREPARED:
DATE: 1-JUL-96

Permitco

July 2, 1996

RECEIVED
JUL 05 1996
DIV. OF OIL, GAS & MINING

Utah Division of Oil, Gas & mining
1494 West North Temple, Suite 1210
Box 145801
Salt Lake City, UT 84114-5801

Attn: Frank Matthews

Re: The Anschutz Corporation
AL&L #14-33
Sec. 33, T6N - R8E
Summit County, Utah

Dear Frank,

As per our telephone conversation, enclosed please find three "revised" copies of the A.P.D. for the subject well along with the corrected survey plat.

Thanks for bringing this error to our attention.

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
Mr. Larry Williams - SLC, UT

Permitco Incorporated
A Petroleum Permitting Company

13585 Jackson Drive Denver, Colorado 80241 (303) 452-8888

Permitco

RECEIVED
JUL 16 1996
DIV. OF OIL, GAS & MINING

July 12, 1996

Utah Division of Oil, Gas & Mining
1494 West North Temple, Suite 1210
Box 145801
Salt Lake City, UT 84114-5801

Attn: Brad Hill

Re: The Anschutz Corporation
AL&L #14-33
Sec. 33, T6N - R8E
Summit County, Utah

Dear Brad,

As requested at the onsite inspection held on Monday, July 8, 1996 for the subject well, enclosed please find three copies each of the survey plat, wellpad diagram with cuts and fills, cross sections and access map.

A copy of the water permit will be submitted by Larry Williams under separate cover. If you should need anything further, 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
Mr. Larry Williams - SLC, UT

Permitco Incorporated
A Petroleum Permitting Company

13585 Jackson Drive Denver, Colorado 80241 (303) 452-8888

THE ANSCHUTZ CORPORATION

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

July 22, 1996

Brad Hill
Utah Division of Oil, Gas & Mining
1494 W. North Temple, #1210
Salt Lake City, UT 84114-5801

RE: AL&L 14-33, Section 33, T6N, R8E, Summit County, UT
Surface Use Agreement Certificate

It is hereby certified that conditions of surface use for the above-captioned proposed well have been determined and agreed to by the applicant, Anschutz Exploration Corporation, and the surface owner.

Sincerely,

Miles A. Williams
Executive Vice President

Permitco

June 24, 1996

RECEIVED
JUN 27 1996
DIV. OF OIL, GAS & MINING

Utah Division of Oil, Gas & mining
1494 West North Temple, Suite 1210
Box 145801
Salt Lake City, UT 84114-5801

Attn: Brad Hill

Re: The Anschutz Corporation
AL&L #14-33
Sec. 33, T5N - R8E
Summit County, Utah

Dear Brad,

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 directional drilling information.

An application for directional drilling and request for exception to spacing, as well as an H_2S Contingency Plan will be submitted under separate cover.

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
Mr. Larry Williams - SLC, UT

Permitco Incorporated
A Petroleum Permitting Company

13585 Jackson Drive Denver, Colorado 80241 (303) 452-8888

CONFIDENTIAL - TIGHT HOLE

AL&L #14-33
532' FSL and 786' FEL (Surface Location)
100' FSL and 460' FEL (Btm. Hole Location)
Section 33, T5N - R8E
Summit County, Utah

Prepared For:

THE ANSCHUTZ CORPORATION

By:

PERMITCO INC.
13585 Jackson Drive
Denver, Colorado 80241
303/452-8888

CONFIDENTIAL - TIGHT HOLE

Copies Sent To:

3 - Division of Oil, Gas & Mining
3 - The Anschutz Corporation - Denver, CO

Permitco

Permitco Incorporated
A Petroleum Permitting Company

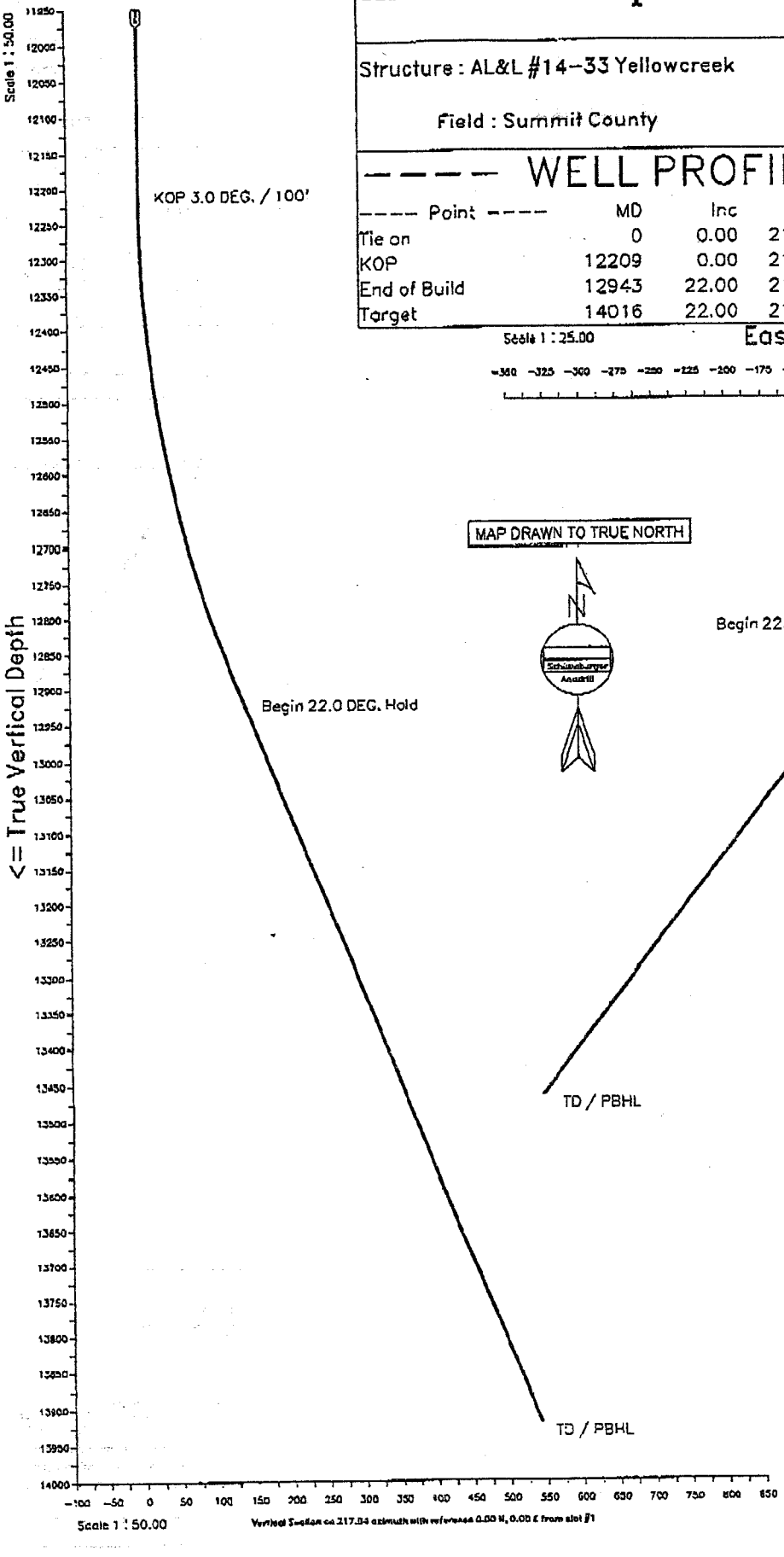
Anschutz Exploration Corporation

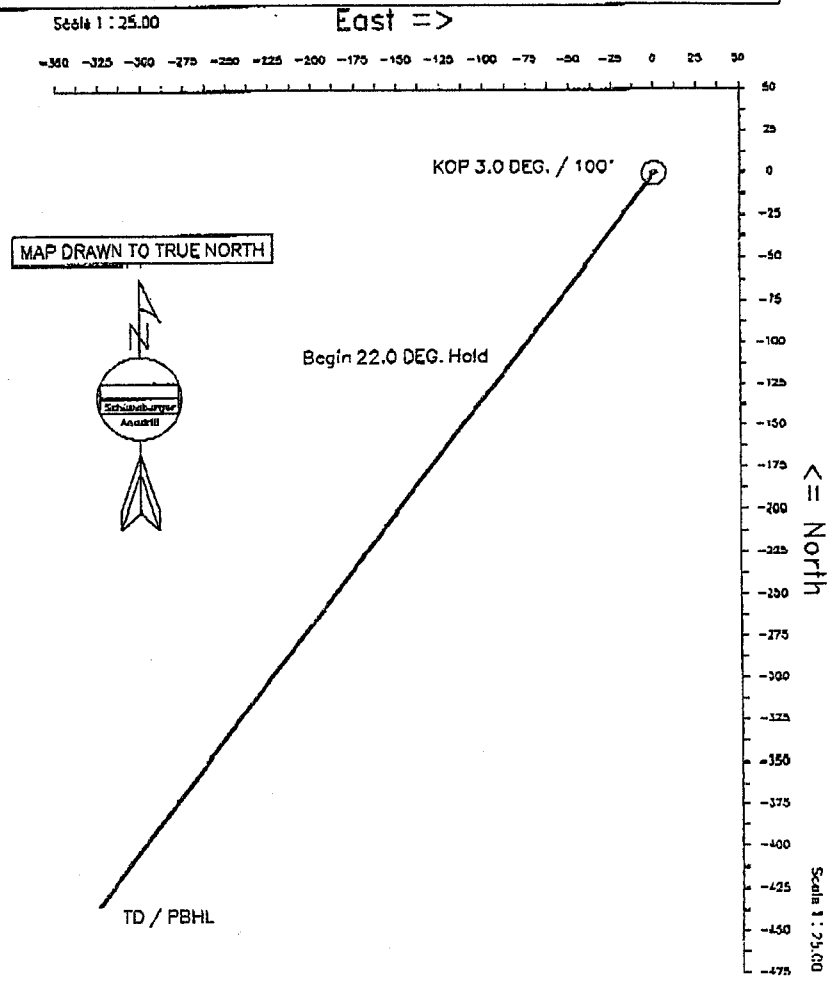
Structure : AL&L #14-33 Yellowcreek Well : #14-33

Field : Summit County Location : Utah

WELL PROFILE DATA

Point	MD	Inc	Dir	TVD	North	East
Tie on	0	0.00	217.04	0	0	0
KOP	12209	0.00	217.04	12209	0	0
End of Build	12943	22.00	217.04	12925	-111	-84
Target	14016	22.00	217.04	13920	-432	-326





Schlumberger
Anadrill

Created by : USL D.P.C. / Ken Sullivan
Date plotted : 17-Jun-96
Plot Reference is REV 0.
Coordinates are in feet reference slot #1.
True Vertical Depths are reference wellhead.

--- Anadrill Schlumberger ---

Anschutz Exploration Corporation

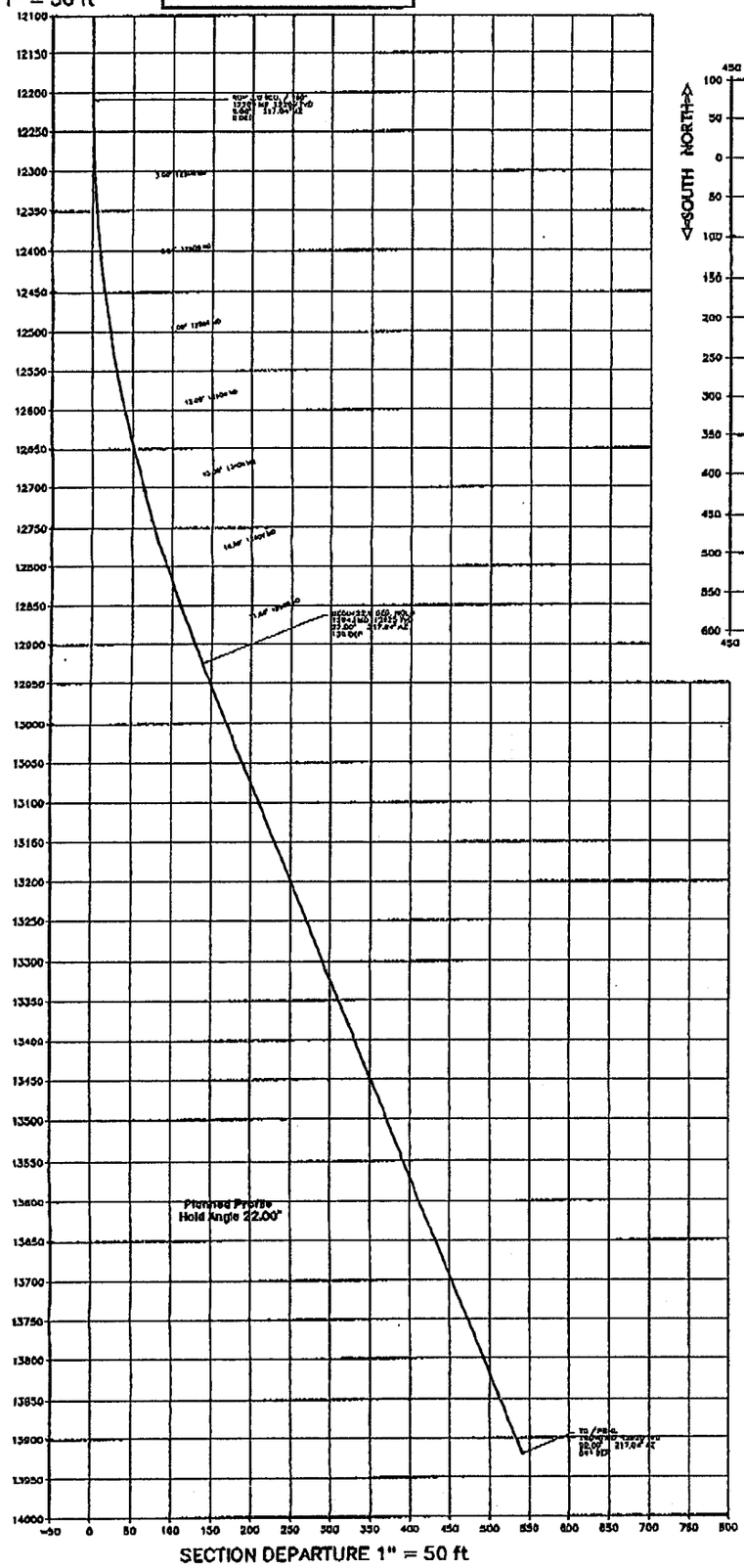
Schlumberger Anadrill

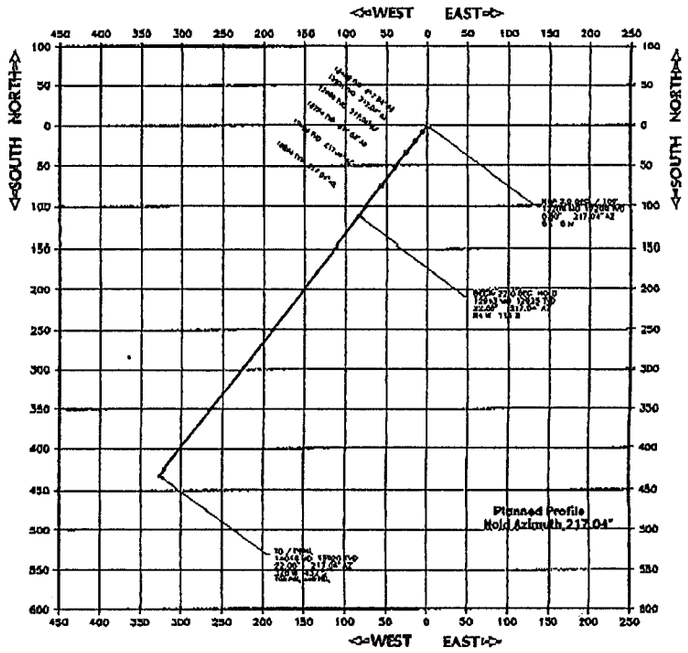
WELL	FIELD	RIG
AL&L #14-33 Yellowcreek	Summit County, Utah	Proposal

Surface Tailstocks

Magnetic Declination	Angle: 13.6736°E	Fit: 54145.34	Lat: N40°31'0.00"	Grid Corr:	Legal: T5N R6E Section 33	KB Elevation: 7720 Est	Drawn: 18-Jun-96
Model: IGRF	Dip: 66.6283°	Date: 18 Jun 96	Long: W111°00'0.00"	Scale Fact:	532 FSL 786 FEL		Plan#: REV 0

VERTICAL SECTION VIEW
SECTION AT 217.04° Az





PLAN VIEW
1" = 50 ft

MAP DRAWN TO TRUE NORTH

Magnetic to True North Correction 13.67° East
(Estimated)

FORMATION	TVD@SL
Woodside	11018
Phosphoria	12020
Weber	12524
Amsden	13694

DATE	TVD@VS	DIP	TARGET

Drawn by: Ken Sullivan
Checked by: Mike Croel
Client OK:

Anschutz Exploration Corporation
AL&L #14-33 Yellowcreek
slot #1
Summit County
Utah

P R O P O S A L L I S T I N G

Your ref : REV 0
Our ref : prop2554
Other ref :

Date printed : 17-Jun-96
Date created : 17-Jun-96
Last revised : 17-Jun-96

Field is centred on n40 51 0.000,w111 0 0.000,-111
Structure is centred on n40 51 0.000,w111 0 0.000,-111

AL&L #14-33 Yellowcreek. #14
Summit County,Uta

Your Ref : REV 0
Last revised : 17-Ju 96

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	RECTANGULAR COORDINATES		Dogleg Deg/100Ft	Vert Sect	
0.00	0.00	217.04	0.00	0.00 N	0.00 E	0.00	0.00	
500.00	0.00	217.04	500.00	0.00 N	0.00 E	0.00	0.00	
1000.00	0.00	217.04	1000.00	0.00 N	0.00 E	0.00	0.00	
1500.00	0.00	217.04	1500.00	0.00 N	0.00 E	0.00	0.00	
2000.00	0.00	217.04	2000.00	0.00 N	0.00 E	0.00	0.00	
2500.00	0.00	217.04	2500.00	0.00 N	0.00 E	0.00	0.00	
3000.00	0.00	217.04	3000.00	0.00 N	0.00 E	0.00	0.00	
3500.00	0.00	217.04	3500.00	0.00 N	0.00 E	0.00	0.00	
4000.00	0.00	217.04	4000.00	0.00 N	0.00 E	0.00	0.00	
4500.00	0.00	217.04	4500.00	0.00 N	0.00 E	0.00	0.00	
5000.00	0.00	217.04	5000.00	0.00 N	0.00 E	0.00	0.00	
5500.00	0.00	217.04	5500.00	0.00 N	0.00 E	0.00	0.00	
6000.00	0.00	217.04	6000.00	0.00 N	0.00 E	0.00	0.00	
6500.00	0.00	217.04	6500.00	0.00 N	0.00 E	0.00	0.00	
7000.00	0.00	217.04	7000.00	0.00 N	0.00 E	0.00	0.00	
7500.00	0.00	217.04	7500.00	0.00 N	0.00 E	0.00	0.00	
8000.00	0.00	217.04	8000.00	0.00 N	0.00 E	0.00	0.00	
8500.00	0.00	217.04	8500.00	0.00 N	0.00 E	0.00	0.00	
9000.00	0.00	217.04	9000.00	0.00 N	0.00 E	0.00	0.00	
9500.00	0.00	217.04	9500.00	0.00 N	0.00 E	0.00	0.00	
10000.00	0.00	217.04	10000.00	0.00 N	0.00 E	0.00	0.00	
10500.00	0.00	217.04	10500.00	0.00 N	0.00 E	0.00	0.00	
11000.00	0.00	217.04	11000.00	0.00 N	0.00 E	0.00	0.00	
11500.00	0.00	217.04	11500.00	0.00 N	0.00 E	0.00	0.00	
12000.00	0.00	217.04	12000.00	0.00 N	0.00 E	0.00	0.00	
12209.24	0.00	217.04	12209.24	0.00 N	0.00 E	0.00	0.00	KOP 3.0 DEG. / 100'
12309.24	3.00	217.04	12309.19	2.09 S	1.58 W	3.00	2.62	
12409.24	6.00	217.04	12408.87	8.35 S	6.30 W	3.00	10.46	
12509.24	9.00	217.04	12508.01	18.77 S	14.16 W	3.00	23.51	
609.24	12.00	217.04	12606.32	33.31 S	25.14 W	3.00	41.74	
12709.24	15.00	217.04	12703.55	51.95 S	39.20 W	3.00	65.08	
12809.24	18.00	217.04	12799.42	74.61 S	56.31 W	3.00	93.48	
12909.24	21.00	217.04	12893.67	101.26 S	76.41 W	3.00	126.85	
12942.57	22.00	217.04	12924.68	111.01 S	83.77 W	3.00	139.07	Begin 22.0 DEG. Hold
13000.00	22.00	217.04	12977.93	128.18 S	96.73 W	0.00	160.58	
13500.00	22.00	217.04	13441.52	277.69 S	209.55 W	0.00	347.89	
14000.00	22.00	217.04	13905.11	427.20 S	322.38 W	0.00	535.19	
14016.05	22.00	217.04	13920.00	432.00 S	326.00 W	0.00	541.20	TD / PBHL

All data is in feet unless otherwise stated
Coordinates are from slot #1 and TVDs are from wellhead.
Vertical section is from wellhead on azimuth 217.04 degrees.
Calculation uses the minimum curvature method.

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

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

August 29, 1996

Anschutz Exploration Corporation
c/o Permitco, Inc.
13585 Jackson Drive
Denver, Colorado 80241

Re: AL&L 14-33 Well, 592' FSL, 748' FEL, SE SE, Sec. 33, T. 6 N., R. 8 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., the attached Conditions of Approval, and the Board of Oil, Gas and Mining Decision and Order in Cause No. 189-1B, August 28, 1996, 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 43-043-30315.

Sincerely,

R. J. Firth
Associate Director

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

Operator: Anschutz Exploration Corporation

Well Name & Number: AL&L 14-33

API Number: 43-043-30315

Lease: Fee

Location: SE SE Sec. 33 T. 6 N. R. 8 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 following spudding the well or commencing drilling operations. Contact Jimmie Thompson at (801)538-5336.

   Notify the Division prior to commencing operations to plug and abandon the well. Contact Frank Matthews at (801)538-5334 or Mike Hebertson at (801)538-5333.

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 dated July 22, 1996 (copy attached).

Form 9

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

RECEIVED
SEP 03 1996
OIL, GAS & MINING

SUNDRY NOTICES AND REPORTS ON WELLS

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

6. Lease Designation and Serial Number: Fee

7. Indian Allottee or Tribe Name: N/A

8. Unit or Communitization Agreement: N/A

1. Type of Well: [ ] Oil Well [X] Gas Well [ ] Other (specify) Directional

9. Well Name and Number: AL&L #14-33

2. Name of Operator: Anschutz Exploration Corp.

10. API Well Number: 43-043-30315

3. Address of Operator: 555-17th Street, Suite 2400, Denver, CO 80202

4. Telephone Number: 303/298-1000

11. Field and Pool, or Wildcat: Wildcat

5. Location of Well
Footage : 592' FSL and 748' FEL
QQ, Sec, T., R., M. : Sec. 33, T6N - R8E
County : Summit
State : Utah

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

NOTICE OF INTENT
(Submit in Duplicate)

- [ ] Abandonment
- [ ] Casing Repair
- [ ] Change of Plans
- [ ] Conversion to Injection
- [ ] Fracture Treat
- [ ] Multiple Completion
- [ ] New Construction
- [ ] Pull or Alter Casing
- [ ] Recompletion
- [ ] Shoot or Acidize
- [ ] Vent or Flare
- [ ] Water Shut-Off
- [X] Other Move Location

Approximate Date Work Will Start: Immediately upon approval

SUBSEQUENT REPORT
(Submit Original Form Only)

- [ ] Abandonment *
- [ ] Casing Repair
- [ ] Change of Plans
- [ ] Conversion to Injection
- [ ] Fracture Treat
- [ ] Other
- [ ] New Construction
- [ ] Pull or Alter Casing
- [ ] Shoot or Acidize
- [ ] 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 AND LOG form.

* Must be accomplanied by a cement verification report.

13. 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.)

The above mentioned location was staked at 532' FSL and 786' FEL (surface location) with a proposed bottom hole location of 100' FSL and 460' FEL.

This location was staked utilizing the wellpad of an abandoned well. In order to avoid construction in the area of the old reserve pit, the surface location has been moved. The new footages are 592' FSL and 748' FEL. The bottom hole footages will remain the same.

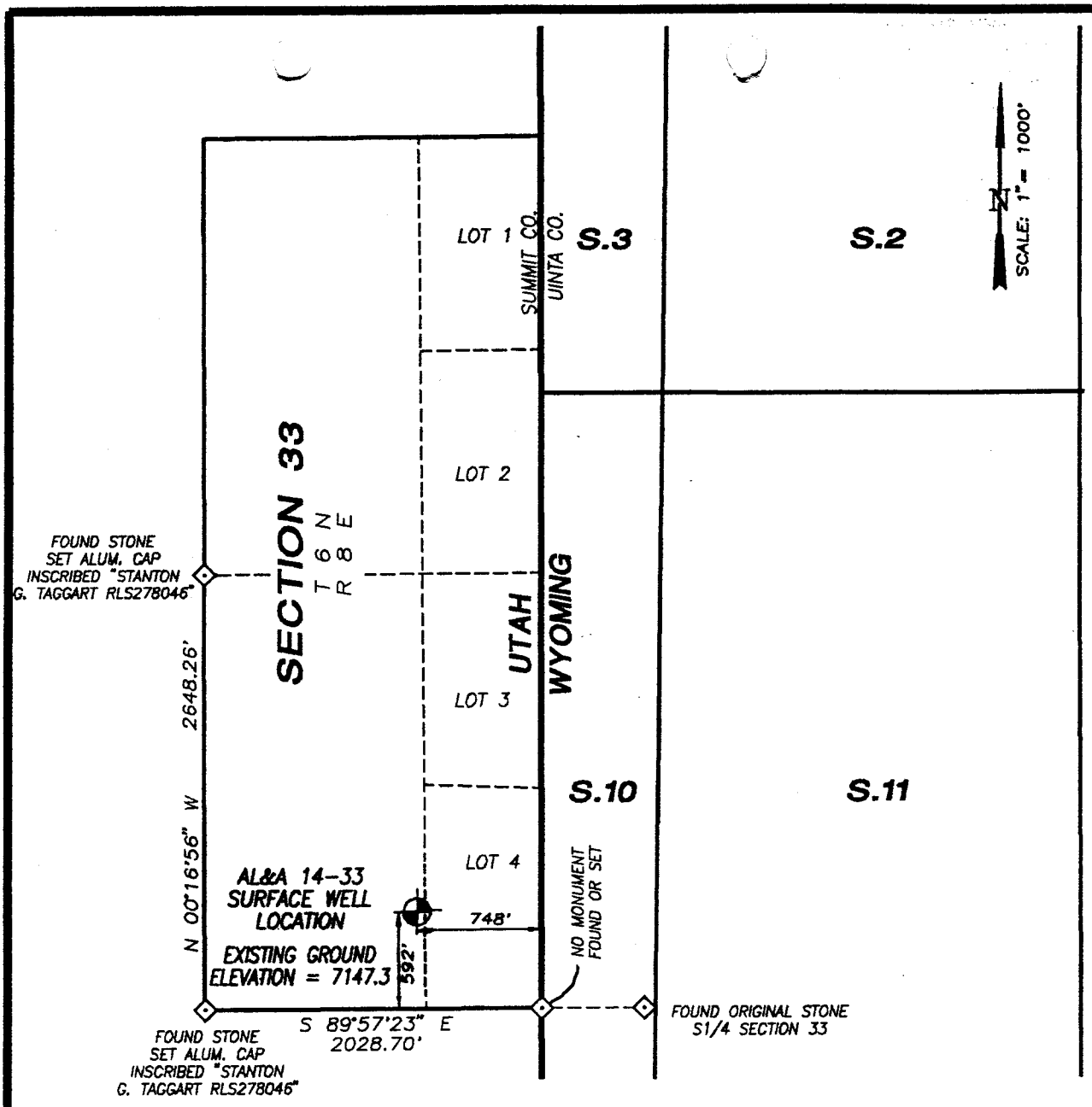
Attached please find copies of the revised survey plat, wellpad diagram, cross section and access map.

Your early approval of this revised location would be greatly appreciated.

14. I hereby certify that the foregoing is true and correct

Name & Signature: Lisa L Smith Title: Consultant Date: 8/29/96

(State Use Only)



LOCATION MAP

SURVEYED UNDER MY SUPERVISION
IN JULY 1996

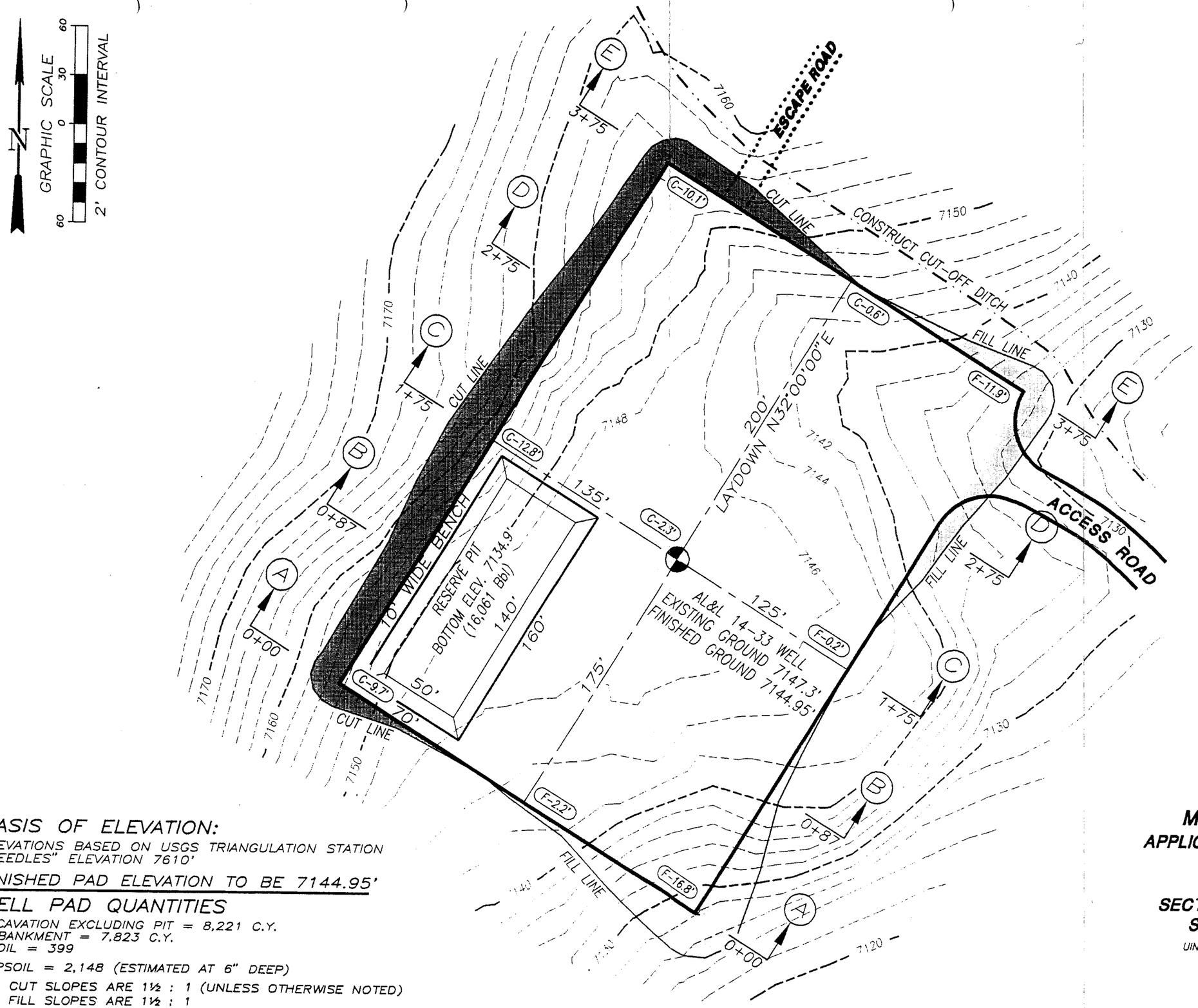
LICENSED LAND SURVEYOR
7/12/96
No. 278046
STANTON G. TAGGART
STATE OF UTAH

MAP to ACCOMPANY
APPLICATION for PERMIT to DRILL
AL&L 14-33 WELL
592' FSL 748' FEL
SECTION 33, T6N, R8E, SLB&M
SUMMIT COUNTY, UTAH

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

DATE: 07/10/96 JOB #: 95-19-02
DISK #: 116-B FILE: 95-19-02

DRAWN BY: Brent Sanders SHEET 1 OF 5



BASIS OF ELEVATION:

ELEVATIONS BASED ON USGS TRIANGULATION STATION "NEEDLES" ELEVATION 7610'

FINISHED PAD ELEVATION TO BE 7144.95'

WELL PAD QUANTITIES

EXCAVATION EXCLUDING PIT = 8,221 C.Y.
EMBANKMENT = 7,823 C.Y.
SPOIL = 399

TOPSOIL = 2,148 (ESTIMATED AT 6" DEEP)

ALL CUT SLOPES ARE 1½ : 1 (UNLESS OTHERWISE NOTED)
ALL FILL SLOPES ARE 1½ : 1

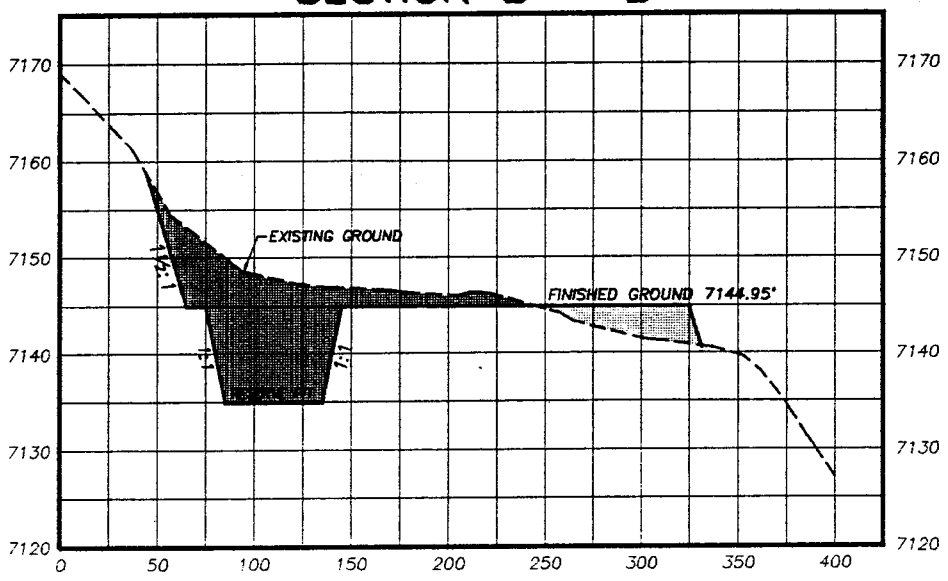
MAP to ACCOMPANY
APPLICATION for PERMIT to DRILL
AL&L 14-33 WELL
592' FSL 748' FEL
SECTION 33, T6N, R8E, SLB&M
SUMMIT COUNTY, UTAH

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

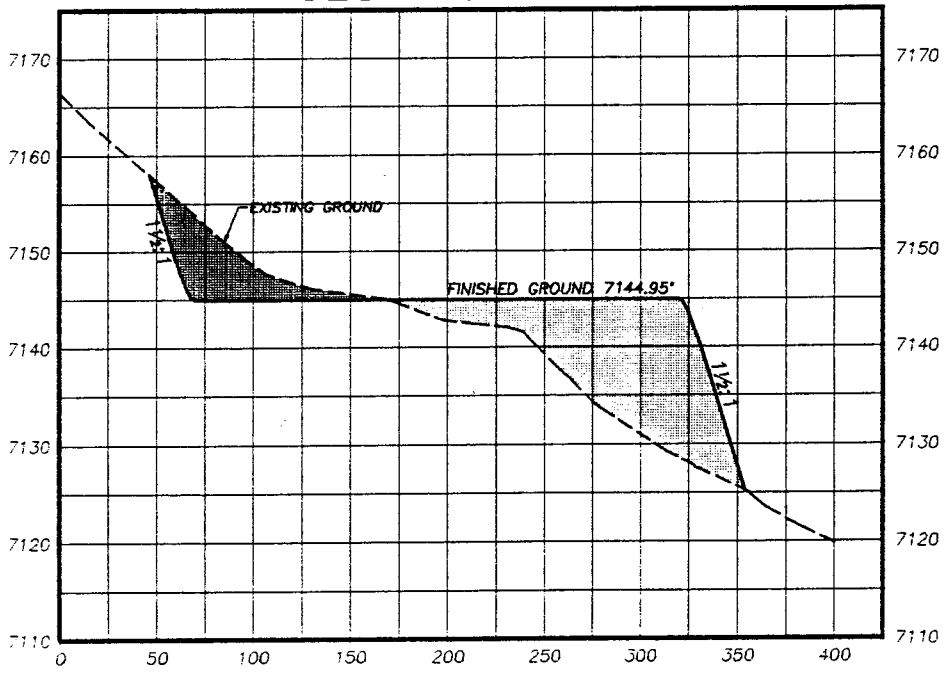
DATE: 07/10/96 JOB #: 95-19-02
DSK #: 116-B FILE: 95-19-02

DRAWN BY: Brent Sanders

SECTION B – B



SECTION A – A



MAP to ACCOMPANY
APPLICATION for PERMIT to DRILL
AL&L 14-33 WELL
592' FSL 748' FEL
SECTION 33, T6N, R8E, SLB&M
SUMMIT COUNTY, UTAH

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

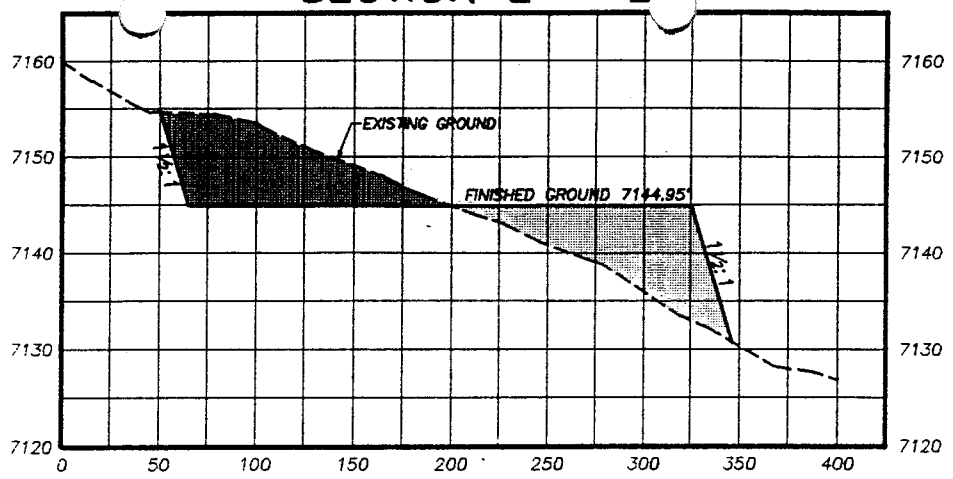
DATE: 07/10/96 JOB #: 95-19-02
DISK #: 116-B FILE: 95-19-02

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

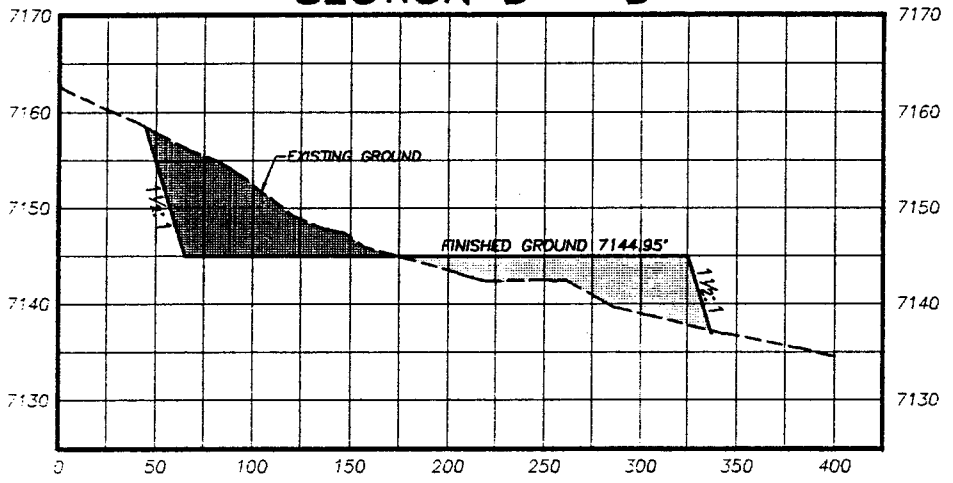
ALL CUT SLOPES ARE 1½ : 1 (UNLESS OTHERWISE NOTED)
ALL FILL SLOPES ARE 1½ : 1

DRAWN BY: Brent Sanders

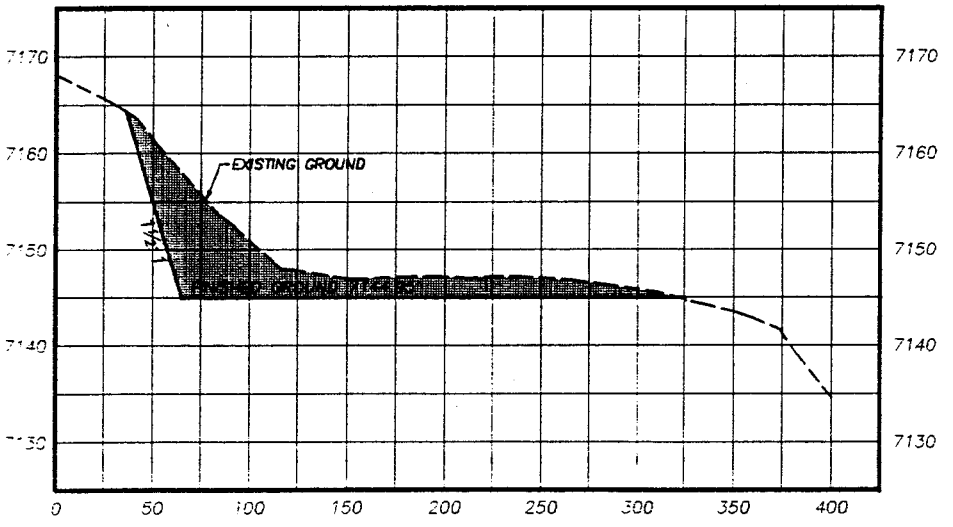
SECTION E – E



SECTION D – D



SECTION C – C



MAP to ACCOMPANY
APPLICATION for PERMIT to DRILL
AL&L 14-33 WELL
592' FSL 748' FEL
SECTION 33, T6N, R8E, SLB&M
SUMMIT COUNTY, UTAH

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

DATE: 07/10/96 JOB #: 95-19-02
DISK #: 116-B FILE: 95-19-02

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

ALL CUT SLOPES ARE 1½ : 1 (UNLESS OTHERWISE NOTED)
ALL FILL SLOPES ARE 1½ : 1

DRAWN BY: Brent Sanders

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

ENTITY ACTION FORM - FORM 6

OPERATOR The Anschutz Corporation
ADDRESS 555 17th Street, Suite 2400
Denver, Co. 80202

OPERATOR ACCT. NO. N 7940

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	12221	43-043-30315	A.L.& L. 14-33	SW,SW	33	6N	8C	Summit	1/17/97	

WELL 1 COMMENTS: Entity added 9-15-97. Lec

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.

James Oursland
Signature
Engineering Mgr.
Title
Date
Phone No. (713) 750-0210

(3/89)

DIVISION OF OIL, GAS AND MINING

CONFIDENTIAL

SPUDDING INFORMATION

Name of Company: ANSCHUTZ CORP.

Well Name: AL & L 14-33

Api No. 43-043-30315

Section 33 Township 6N Range 8E County SUMMIT

Drilling Contractor PARKER

Rig # 235

SPUDDED:

Date 1/16/97

Time

How ROTARY

Drilling will commence

Reported by

Telephone #

Date: 1/20/97 Signed: FRM

ANSCHUTZ EXPLORATION CORPORATION
555 17th Street, Ste. 2400 ◆ Denver, Colorado 80202 (303)298-1000

March 14, 1997

State of Utah
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Ste. 350
Salt Lake City, Utah 84180-1203

Attn.: Mike Hebertson

RE: A L & L No. 4-30
Wildcat Field
Summit County, Utah

Dear Mr. Hebertson:

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
Engineering Mgr.

RECEIVED
MAR 19 1997
DIV. OF OIL, GAS & MINING

JPO:al430reg.doc
Enclosures

xc: AEC Denver Well Files

ANSCHUTZ

THE ANSCHUTZ CORPORATION

3/31/97

PAGES: 1

To: UPRC
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: R. J. Firth
Fax: (801) 359-3940
Phone: (801) 538-5274

From: Susan Balano
Phone: (303) 299-1344
Fax: (303) 299-1518

43-043-30315

A.L. & L #14-33 (Yellow Creek)
Operator: TAC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

03/28/97 Day 70. 6953' (125'). PO: Drilling. Drill f/6828-6853'. Change out lower kelly valve and survey. Drill f/6853-6916', survey. Drill f/6916-6953'. Lithology: 100% limestone.

Surveys:

Depth	*Direction*	*Degrees*
6803'	S86E	5-1/2°
6866'	S86E	5-1/2°

03/29/97 Day 71. 7077' (124'). PO: Drilling. Drill f/6953-6978', survey. Drill f/6978-7039', survey. Drill f/7039-7077'. Lithology: 20% shale, 20% sandstone, 60% limestone.

Surveys:

Depth	*Direction*	*Degrees*
6928'	S81E	5-1/2°
6989'	S80E	5-3/4°

03/30/97 Day 72. 7238' (161'). PO: Drilling. Drill f/7077-7101', survey. Drill f/7101-7161', survey. Drill f/7161-7193', survey. Drill f/7193-7238'. Lithology: 100% limestone.

Surveys:

Depth	*Direction*	*Degrees*
7051'	S81E	5-3/4°
7111'	S81E	5-3/4°
7143'	S81E	6°

03/31/97 Day 73. 7417' (179'). PO: Drilling. Drill f/7238-7256', survey (misrun). Drill f/7256-7259', survey (misrun). Drill f/7259-7286', survey (misrun). Drill f/7286-7291', survey. Drill f/7291-7347', survey. Drill f/7347-7417'. Lithology: 100% limestone.

Surveys:

Depth	*Direction*	*Degrees*
7236'	No report	6°
7297'	No report	6°

THE ANSCHUTZ CORPORATION

4/1/97

PAGES: 1

To: U
A ok
F 7912
P 77-6727

Utah Div. of O&G Mining
Attn: R. J. Firth
Fax: (801) 359-3940
Phone: (801) 538-5274

From: S
P 99-1344
F 1518

A.L. & L # Creek)
Operator
Section 33
460' FEL
Summit C
Yellow C
13,670' P ber
TAC WI:
TIGHT H

04/01/97

Day 74. 7640' (223'). PO: Drilling. Drill f/7417-7440', survey (misrun). Drill f/7440-7447', survey. Drill f/7447-7502', survey. Drill f/7502-7564', survey. Drill f/7564-7625', survey. Drill f/7625-7640'. Lithology: 100% sandstone.

Formation Top:
Nugget 7521'

Surveys:

Depth	*Degrees*	*Direction*
7390'	7°	S80E
7452'	7°	S79E
7514'	7-¼°	S80E

43·043·30316
AL&L 4-30

THE ANSCHUTZ CORPORATION

4/2/97

PAGES: 1

To: UPRC
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: R. J. Firth
Fax: (801) 359-3940
Phone: (801) 538-5274

From: **Susan Balano**
Phone: (303) 299-1344
Fax: (303) 299-1518

A.L. & L #14-33 (Yellow Creek)
Operator: TAC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

04/02/97

Day 75. 7860' (220'). PO: TOOH. Drill f/7640-7687', survey. Drill f/7687-7749', survey (misrun). Drill f/7749-7811', survey. Drill f/7811-7860'. Check for pressure loss and TOOH. Lithology: 100% sandstone.

Surveys:

Depth	*Direction*	*Degrees*
7637'	S81E	7-¼°
7761'	S81E	7-3/4°

ANSCHUTZ

THE ANSCHUTZ CORPORATION

4/3/97

PAGES: 1

To: **UPRC**
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: R. J. Firth
Fax: (801) 359-3940
Phone: (801) 538-5274

From: **Susan Balano**
Phone: (303) 299-1344
Fax: (303) 299-1518

A.L. & L #14-33 (Yellow Creek)
Operator: TAC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

04/03/97

Day 76. 7860' (0'). PO: TIH w/bit #17. Magnaflux BHA and LD wash jars. One bad face on pin end of DC. Twisted off shock sub and left 2.16' of shock sub, IBS + bit in hole. Cut & slip 454' DL. MU overshot, PU 1 DC & jars. TIH w/overshot and work over fish. TOOH, chain out. LD fish & fishing tools. MU new BHA and bit #17. TIH.

THE ANSCHUTZ CORPORATION

4/4/97

PAGES:
3 page chronological report attached.

To:	**U**	**Utah Div. of O&G Mining**
	A ok	**Attn: R. J. Firth**
	F 7912	**Fax: (801) 359-3940**
	Phone: (817) 877-6727	**Phone: (801) 538-5274**

From: **Susan Balano**
P 99-1344
F 1518

A.L. & L # Creek) 04/04/97

Operator:
Section 33
460' FEL,
Summit C
Yellow Creek Prospect
13,670' P ber
TAC WI:
TIGHT HO

Day 77. 7969' (109'). PO: Drilling. TIH and wash 33', no fill. Drill f/7860-7904', rig service & survey (misrun). Drill f/7904-7908', survey (misrun - 3). Drill f/7908-7924', survey. Drill f/7924-7953'. Lost circulation. Losing returns from 7943', mix LCM. Drill f/7953-7965', survey. Drill f/7965-7969'. Lithology: 100% sandstone. Lost approx 365 bbls mud f/7943-7953'. Last 24 hrs lost 425 bbls mud; cum loss = 635 bbls.

Surveys:

Depth	***Direction***	***Degrees***
7854'	S81E	7-3/4°
7915'	Misrun	

Depth	Direction	Degrees
6928′	S81E	5-1/2°
6989′	S80E	5-3/4°

03/30/97 Day 72. 7238′ (161′). PO: Drilling. Drill f/7077-7101′, survey. Drill f/7101-7161′, survey. Drill f/7161-7193′, survey. Drill f/7193-7238′. Lithology: 100% limestone.

Surveys:

Depth	Direction	Degrees
7051′	S81E	5-3/4°
7111′	S81E	5-3/4°
7143′	S81E	6°

03/31/97 Day 73. 7417′ (179′). PO: Drilling. Drill f/7238-7256′, survey (misrun). Drill f/7256-7259′, survey (misrun). Drill f/7259-7286′, survey (misrun). Drill f/7286-7291′, survey. Drill f/7291-7347′, survey. Drill f/7347-7417′. Lithology: 100% limestone.

Surveys:

Depth	Direction	Degrees
7236′	No report	6°
7297′	No report	6°

04/01/97 Day 74. 7640′ (223′). PO: Drilling. Drill f/7417-7440′, survey (misrun). Drill f/7440-7447′, survey. Drill f/7447-7502′, survey. Drill f/7502-7564′, survey. Drill f/7564-7625′, survey. Drill f/7625-7640′. Lithology: 100% sandstone.

Formation Top:

Nugget 7521′

Surveys:

Depth	Degrees	Direction
7390′	7°	S80E
7452′	7°	S79E
7514′	7-¼°	S80E

04/02/97 Day 75. 7860′ (220′). PO: TOOH. Drill f/7640-7687′, survey. Drill f/7687-7749′, survey (misrun). Drill f/7749-7811′, survey. Drill f/7811-7860′. Check for pressure loss and TOOH. Lithology: 100% sandstone.

Surveys:

Depth	Direction	Degrees
7637′	S81E	7-¼°
7761′	S81E	7-3/4°

04/03/97 Day 76. 7860′ (0′). PO: TIH w/bit #17. Magnaflux BHA and LD wash jars. One bad face on pin end of DC. Twisted off shock sub and left 2.16′ of shock sub, IBS + bit in hole. Cut & slip 454′ DL. MU overshot, PU 1 DC & jars. TIH w/overshot and work over fish. TOOH, chain out. LD fish & fishing tools. MU new BHA and bit #17. TIH.

04/04/97 Day 77. 7969′ (109′). PO: Drilling. TIH and wash 33′, no fill. Drill f/7860-7904′, rig service & survey (misrun). Drill f/7904-7908′, survey (misrun - 3). Drill f/7908-7924′, survey. Drill f/7924-7953′. Lost circulation. Losing returns from 7943′, mix LCM. Drill f/7953-7965′, survey. Drill f/7965-7969′. Lithology: 100% sandstone. Lost approx 365 bbls mud f/7943-7953′. Last 24 hrs lost 425 bbls mud; cum loss ~ 635 bbls.

Surveys:

Depth	Direction	Degrees
7854′	S81E	7-3/4°
7915′	Misrun	

of 13-3/8" 68#, L80 buttress, 5210.72'. Total 142 jts, 6024.99', set @ 5993'. Plug @ 2344 hrs, 3/19/97. Cement csg., ND and set csg. slips w/340M#, 100% wt.

03/21/97 6015' (0'). PO: Nipple up B-section and test 1808 psi. Nipple up BO.Ps. Test w/Double Jack (high-low test).

03/22/97 Day 64. 6019' (4'). PO: Pick up BHA. Function test BOPs. Correction on csg. set found shoe @ 6015'. Test BOPs. Test csg. to 2400 psi 15 min. Lay down 6-10" drill collars. TIH. Lay down jacs. Displace salt mud out cement. Plug float collar @ 5934', 81' cmt shoe at 6015'. 6015' 6019' 4 circ. up samples. TOOH. Magn. flux 6 6-1/2" drill collars. Lay down 6 8" drill collars.

03/23/97 Day 65. 6236' (217'). PO: Make up new BHA. Pick up 6-1/2 D-Cs. TIH, Lay down 10 JTs drill pipe. Drill f/6019' to 6068', survey @ 6040' no picture. Drill f/6068' to 6071', survey at 6040' no picture. Drill f/6071' to 6097', survey at 6057'. Drill f/6097 to 6160', 63', survey at 6120'. Drill f/6160' to 6222', 62', survey @ 6182'. Drill f/6222' to 6236'.

03/24/97 Day 66. 6363 (127'). PO: Drilling. Drill f/6236' to 6284'. Rig service function test BOPs. Survey 3 misrun @ 6248' 4° S88E.. Drill f/6284' to 6290'. TOH for IBS. Make-up new BHA. TIH. W&R, 55' to bottom. No fill or reaming. Drill f/6290' to 6357', survey @ 6307', 4° N88E. Drill f/6357' to 6363'.

03/25/97 Day 67. 6555' (192'). PO: Drilling. Drill f/6363-6388'. Rig service, function test BOP's. Drill f/6388-6419', survey. Drill f/6419-6482', survey. Drill f/6482-6543', survey. Drill f/6543-6555'. Lithology: 20% shale, 80% limestone.

Direction	*Degrees*
N88E	4.25°
N85E	4.25°
N89E	4.5°

03/26/97 Day 68. 6704' (149'). PO: Drilling. Drill f/6555-6575', rig service. Drill f/6575-6605', survey. Drill f/6605-6667', survey. Drill f/6667-6704'. Lithology: 20% sand, 80% limestone.

Surveys:

Depth	*Direction*	*Degrees*
6493'	N89E	4.5°
6555'	N89E	5.0°
6617'	N89E	5.0°

03/27/97 Day 69. 6828' (124'). PO: Drilling. Drill f/6704-6729', survey. Drill f/6729-6790', survey. Drill f/6790-6828'. Lithology: 100% limestone.

Surveys:

Depth	*Direction*	*Degrees*
6679'	S86E	5-1/4°
6740'	S86E	5-1/4°

03/28/97 Day 70. 6953' (125'). PO: Drilling. Drill f/6828-6853'. Change out lower kelly valve and survey. Drill f/6853-6916', survey. Drill f/6916-6953'. Lithology: 100% limestone.

Surveys:

Depth	*Direction*	*Degrees*
6803'	S86E	5-1/2°
6866'	S86E	5-1/2°

03/29/97 Day 71. 7077' (124'). PO: Drilling. Drill f/6953-6978', survey. Drill f/6978-7039', survey. Drill f/7039-7077'. Lithology: 20% shale, 20% sandstone, 60% limestone.

[redacted]

A.L. & L. #14-33 (Yellow Creek)
Operator: TAC
Summit County, Utah

[redacted] 3-1/4°

03/10/97 Day 52. 5480' (73'). PO: Drilling. Drill f/5407-5462', survey. Drill f/5462-5480'. Lithology: 60% sandstone, 40% siltstone.

Survey:

Depth	***Degrees***
5447'	3-1/2°

03/11/97 Day 53. 5508' (28'). PO: Drilling. Drill f/5480-5496', survey and TOOH. LD 2 IBS, 1 3 pt and change jars. MU bit and TIH. Break circ and wash to bottom (no fill). Drill f/5496-5508'. Lithology: 30% shale, 40% sand, 30% siltstone.

Survey:

Depth	***Degrees***
5496'	Misrun

03/12/97 Day 54. 5638' (130'). PO: Drilling. Survey @ 5493'. Drill f/5508-5531', rig service. Drill f/5531-5590'. Make 3 jt wiper trip to 5500'. Drill f/5590-5604'. Rig repair, stand pipe. Drill f/5604-5638'. Lithology: 80% salt, 20% siltstone, 20% free salt.

Survey:

Depth	***Degrees***
5493'	3-1/2°

03/13/97 Day 55. 5772' (134'). PO: Drilling. Drill f/5638-5661'. Make 4 std wiper trip. Drill f/5661-5689', rig service. Make 5 std wiper trip. W&R 95' (good), no fill. Drill f/5689-5754'. Make 5 std wiper trip. W&R 90' (good), no fill. Drill f/5754-5772'. Lithology: 100% salt.

03/14/97 Day 56. 5872' (100'). PO: Drilling. Drill f/5772-5835'. Make 5 std wiper trip. Tight @ 5540'. Drill f/5835-5866'. Make 5 std wiper trip. Tight @ 5645'. Drill f/5866-5872'. Lithology: 40% salt, 60% siltstone. Preuss formation.

03/15/97 Day 57. 5908' (36'). PO: Drilling. Drill f/5872-5878', survey. Drill f/5878-5893'. Make 5 std wiper trip. Tight @ 5615' & 5553'. Drill f/5893-5902'. Make 5 std wiper trip, clean trip. Drill f/5902-5908'. Lithology: 80% siltstone, 20% shale.

Survey:

Depth	***Degrees***
[redacted]	1-1/4°

03/16/97 Day 58. 5939' (31'). PO: Drilling. Drill f/5908-5921'. Make 13 std wiper trip (good). Had slight tool jt wear @ 1120'. Drill f/5921-5936'. Make 5 std wiper trip. Drill f/5936-5939'. Lithology: 30% siltstone, 40% shale, 30% dolomite.

03/17/97 Day 59. 5986' (47'). PO: Drilling. Drill f/5939-5955'. Make 6 std wiper trip. Drill f/5955-5981'. Make 6 std wiper trip. Drill f/5981-5986'. Lithology: 50% limestone, 30% shale, 20% siltstone.

03/18/97 Day 60. 6015' (29'). PO: E-log. Drill f/5986-6015' (TD 17-1/2" hole). Make 6 std wiper trip. C&C hole for logs. TOOH for logs, SLM. RU Schlumberger and log. Lost 50 bbls mud @ 5998' and 45 bbls @ 6008'. Survey @ 6000' - misrun. Lithology: 30% limestone, 20% siltstone, 50% shale.

03/19/[redacted] 6,015' (0'). PO: Running Csg. E-Log. Make up bit 3pt. BHA. T.I.H. circ. & cond. RU CER csg. equipment. Run 13-5/8" csg.

03/20/97 Day 62. 6015' (0'). PO: Nipple down. Run 13-3/8 csg. Rig down casing tools. Circulate casing. R.U. Dowell and run csg as follows: 20 jts of 13-5/8" 88.2#, L80 buttress, 814.27';

THE ANSCHUTZ CORPORATION

4/7/97

PAGES: 1

To: UPRC
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: R. J. Firth
Fax: (801) 359-3940
Phone: (801) 538-5274

From: **Susan Balano**
Phone: (303) 299-1344
Fax: (303) 299-1518

A.L. & L #14-33 (Yellow Creek)
Operator: TAC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

04/05/97 Day 78. 8101' (132'). PO: TOOH. Drill f/7969-7975', survey. Drill f/7975-8028', survey. Drill f/8028-8090', survey. Drill f/8090-8101', TOOH. Lithology: 100% sandstone.

Surveys:

Depth	***Direction***	***Degrees***
7915'	S81E	7-3/4°
7978'	S84E	8°
8040'	S84W	8°

04/06/97 Day 79. 8180' (79'). PO: Drilling. TOOH, MU bit #18 and new BHA. TIH and W&R f/8021-8101'. Drill f/8101-8180'. Lithology: 100% sandstone.

04/07/97 Day 80. 8285' (105'). PO: Trip. Drill f/8180-8197', rig service - function test BOP's and survey. Drill f/8197-8206', survey. Drill f/8206-8285', survey. Pump pill and TOOH. Rig repair. TOOH. MU bit #19 & new BHA (new bit, 1 new IBS). LD top IBS, move others up. New IBS above 6 pt. Lithology: 100% sandstone.

Surveys:

Depth	***Direction***	***Degrees***
8135'	S82E	8°
8227'	S84E	8°

43-043-30315

DOUBLE JACK TESTING & SERVICES, INC.

PHONE (307) 276-5265

B.O.P. TEST REPORT

B.O.P. TEST PERFORMED ON (DATE) 3-21-97

OIL COMPANY Anschutz Exploration

WELL NAME & NUMBER 14-33

SECTION 33

TOWNSHIP 6N

RANGE 8E

COUNTY & STATE Summit, Utah

DRILLING CONTRACTOR Parker 235

OIL COMPANY SITE REPRESENTATIVE Ken Clare

RIG TOOL PUSHER

TESTED OUT OF Big Piney, Wy.

NOTIFIED PRIOR TO TEST

COPIES OF THIS TEST REPORT SENT TO: Utah Oil & Gas
Utah BLM
Ken Clare

ORIGINAL CHART & TEST REPORT ON FILE AT:

DOUBLE JACK TESTING & SERVICES, INC.
P.O. BOX [illegible]
[illegible], WY [illegible]

TESTED BY: David Apelson

RECEIVED
FEB 17 1997
DIV. OF OIL, GAS & MINING

Double Jack Testing & Services Inc.

FIELD TICKET
№ 012807

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 3-21-97
OPERATOR Anschutz Exp.
RIG NAME & NO. Parker 235
WELL NAME & NO. 14-33

COUNTY	STATE	SECTION	TOWNSHIP	RANGE
Summit	Utah	33	T6N	R8E

Items Tested:

	LOW TEST PSI	TIME HELD MINUTES	HIGHTEST PSI	TIME HELD MINUTES
Top Pipe Rams	250	5	5000	10
Bottom Pipe Rams	250	5	5000	10
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			2400	15

Closing Unit PSI 3000
Closing Time of Rams 4 sec
Closing Time of Annular 7 sec
Closed Casing Head Valve yes
Set Wear Sleeve yes

COMMENTS
Function test Kooney
3000 to 1175
pump up time 2:15

ADDITIONAL TESTS & COMMENTS

Co Hand
BLM Utah
Utah Oil & Gas

TEST PLUG 12 C22 4½ IF
RET. TOOL 4½ XH
TOP SUB. 4½ XH
KELLY SUB. 4½ XH
X-OVER SUB. 4½ IF x 4½ XH

RATES
UNIT RATES Setup charge 7hr 9:00 to 4:00
ADDITIONAL 7hr O.T at 50 per hour
MILEAGE
METHANOL 130 at 2 per gal
OTHER

PURACHASE ORDER #

David Axelson
TESTED BY

Ken Hall
COMPANY REPRESENTATIVE

144 Thank you
DOUBLE JACK TESTING UNIT NUMI

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 of collection including attorney's fees and court cost in compliance with TRUTH IN LENDING AND THE UNIFORM CONSUMEF terms of our regular accounts, all amounts for service due and payable within THIRTY (30) DAYS from the receipt of an invoice for are not paid when due. THE LATE CHARGE is computed by a "periodic rate" 1-3/4% PER MONTH which is an ANNUAL PERC on the billing date. No further credit can be extended on unpaid delinquent accounts until the delinquent account is paid in full. of God, or unforeseen circumstances that could not be reasonably anticipated in performing the work done as set forth above.

DOUBLE JACK TESTING

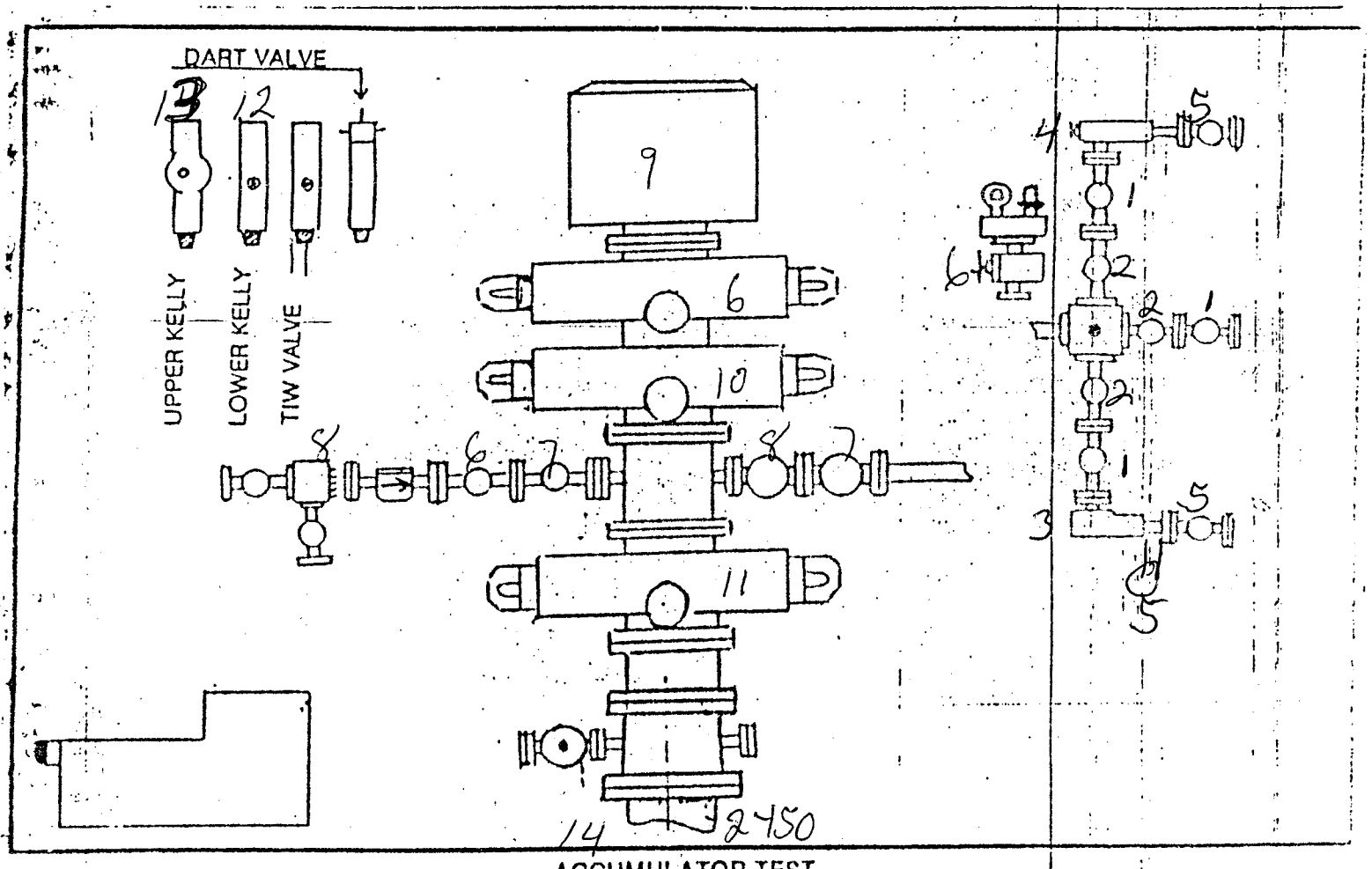
DATE 3-21-97

OPERATOR Anschutz Exp.

RIG Parker 235

WELL 1423

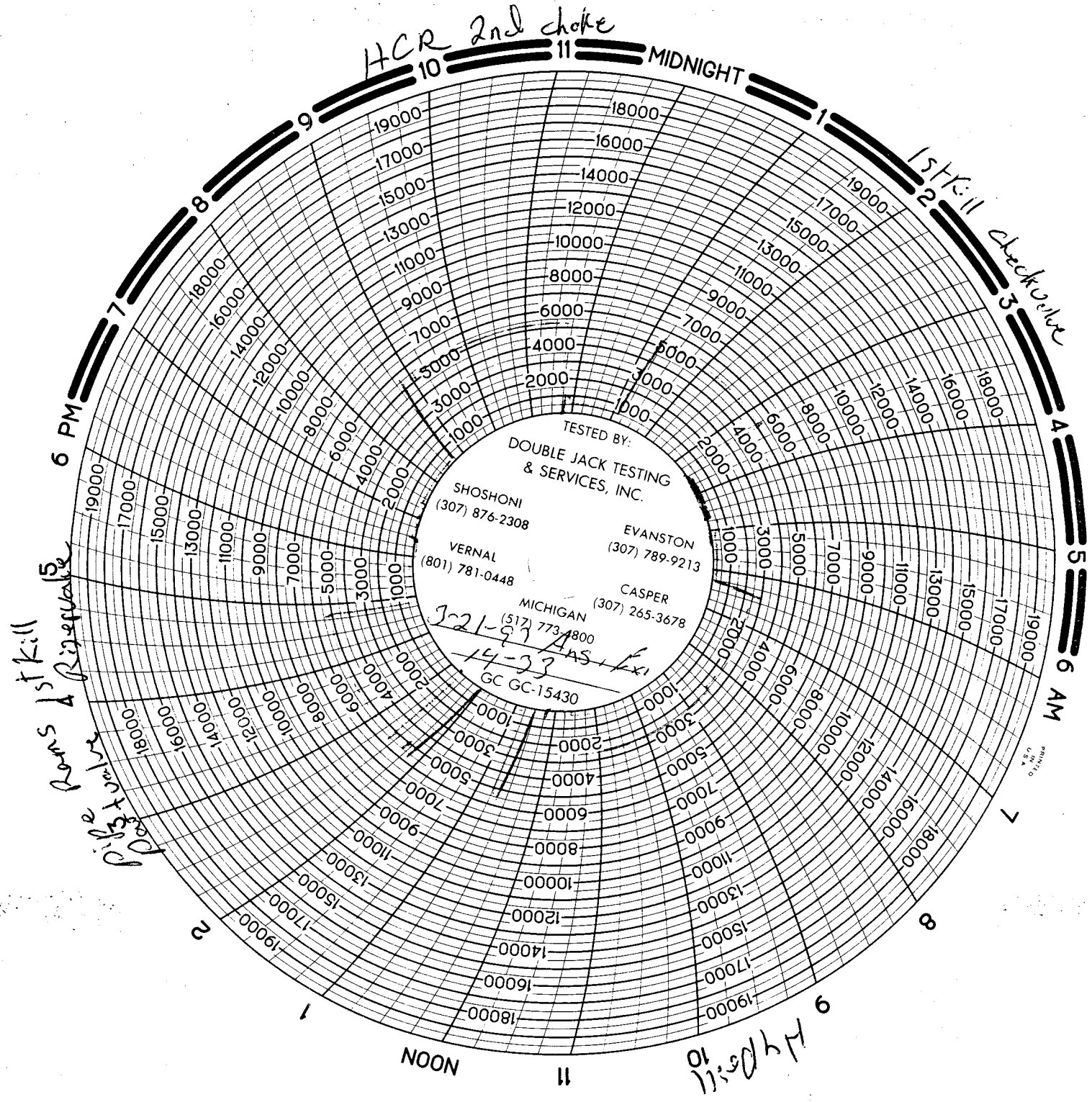
9:00	TEST #1	Outside Manifold
9:20	TEST# 2	inside Manifold
9:45	TEST #3	Super choke
10:15	TEST #4	Manual choke
10:25	TEST #5	Down stream valve
2:45	TEST #6	pipe Rams Dart valve 1st Kill Riser valve
3:10	TEST #7	HCR 2nd choke
3:25	TEST #8	1st kill check valve
4:00	TEST #9	Hy Drill
6:45	TEST#10	Blind Ram
8:15	TEST#11	Pipe Ram Backdam TIW valve
6:10	TEST#12	Lower Kelly
6:25	13	Upper Kelly
	14	Casing



ACCUMULATOR TEST

MIDNIGHT
NOON
6 AM
6 PM
1 Outside Manifold
2 Inside Manifold
3 Upper choke
4 Manual Valve Choke
5 Down Stream valve
TESTED BY:
DOUBLE JACK TESTING & SERVICES, INC.
SHOSHONI (307) 876-2308
EVANSTON (307) 789-9213
CASPER (307) 265-3678
VERNAL (801) 781-0448
MICHIGAN (517) 773-4800
GC GC-15430

MIDNIGHT
1
2
3
4
5
6 AM
7
8
9
10
11
NOON
11
10
9
8
7
6 PM
5
4
3
2
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


HCR 2nd choke
1st Kill checkvalve
Hydrill
Pipe Rams & 1st Kill Pos + valve Riservalve
MIDNIGHT
NOON
6 PM
6 AM
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
3-21-93 Ans. Ex.
14-33

THE ANSCHUTZ CORPORATION

4/8/97

PAGES: 1

To:	**UPR[illegible]**	**Utah Div. of O&G Mining**
	Attn: [illegible] Cook	**Attn: R. J. Firth**
	Fax: [illegible]77-7912	**Fax: (801) 359-3940**
	Phon[illegible] [illegible]877-6727	**Phone: (801) 538-5274**
From:	**Susa[illegible]**	
	Phon[illegible] [illegible]299-1344	
	Fax: [illegible]99-1518	

A.L. & L #14-[illegible]ow Creek)
Operator: TAC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

04/08/97

Day 81. 8392' (107'). PO: Drilling. TIH. W&R f/7982-8285'. Drill f/8285-8377', circ & survey. Drill f/8377-8392'.

Survey:

Depth	***Direction***	***Degrees***
8319'	S84E	8°

THE ANSCHUTZ CORPORATION

4/10/97

PAGES: 1

To: **UPRC**
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: R. J. Firth
Fax: (801) 359-3940
Phone: (801) 538-5274

From: **Susan Balano**
Phone: (303) 299-1344
Fax: (303) 299-1518

A.L. & L #14-33 (Yellow Creek)
Operator: TAC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

04/10/97

Day 83. 8638' (80'). PO: Trip in. Drill f/8558-8566', survey. Drill f/8566-8638'. Trip out. Inspect BHA. Trip in. Cut drill line. Trip in. Lithology: 80% sandstone, 20% siltstone. Last 24 hrs lost 245 bbls mud; cum bbls lost = 1440. Start using water from rig tank.

Survey:

Depth	***Direction***	***Degrees***
8505'	S86E	8-¼°

THE ANSCHUTZ CORPORATION

4/11/97

PAGES: 2
Includes 1 page Chronological Report

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460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

04/11/97

Day 84. 8750' (112'). PO: Drilling. TIH and W&R 116' to bottom. Drill f/8638-8658'. Spot LCM pill and survey. Drill f/8658-8664', rig service. Drill f/8664-8718', survey. Drill f/8718-8750'. Lithology: 90% shale, 10% sandstone. Last 24 hrs lost 256 bbls mud; cum bbls lost = 1696.

Surveys:

Depth	***Direction***	***Degrees***
8600'	S87E	9°
8660'	S86E	9-¼°

A.L. & L. #14-33 (Yellow Creek)
Operator: TAC
Summit County, Utah

04/05/97 Day 78. 8101' (132'). PO: TOOH. Drill f/7969-7975', survey. Drill f/7975-8028', survey. Drill f/8028-8090', survey. Drill f/8090-8101', TOOH. Lithology: 100% sandstone.

Surveys:

Depth	***Direction***	***Degrees***
7915'	S81E	7-3/4°
7978'	S84E	8°
8040'	S84W	8°

04/06/97 Day 79. 8180' (79'). PO: Drilling. TOOH, MU bit #18 and new BHA. TIH and W&R f/8021-8101'. Drill f/8101-8180'. Lithology: 100% sandstone.

04/07/97 Day 80. 8285' (105'). PO: Trip. Drill f/8180-8197', rig service - function test BOP's and survey. Drill f/8197-8206', survey. Drill f/8206-8285', survey. Pump pill and TOOH. Rig repair. TOOH. MU bit #19 & new BHA (new bit, 1 new IBS). LD top IBS, move others up. New IBS above 6 pt. Lithology: 100% sandstone.

Surveys:

Depth	***Direction***	***Degrees***
8135'	S82E	8°
8227'	S84E	8°

04/08/97 Day 81. 8392' (107'). PO: Drilling. TIH. W&R f/7982-8285'. Drill f/8285-8377', circ & survey. Drill f/8377-8392'.

Survey:

Depth	***Direction***	***Degrees***
8319'	S84E	8°

04/09/97 Day 82. 8558' (166'). PO: Drilling. Drill f/8392-8469'. Rig service and survey. Drill f/8469-8558'. Lithology: 100% sandstone.

Formation Top:

Ankareh 8590'

Survey:

Depth	***Direction***	***Degrees***
8411'	S86E	8°

04/10/97 Day 83. 8638' (80'). PO: Trip in. Drill f/8558-8566', survey. Drill f/8566-8638'. Trip out. Inspect BHA. Trip in. Cut drill line. Trip in. Lithology: 80% sandstone, 20% siltstone. Last 24 hrs lost 245 bbls mud; cum bbls lost = 1440. Start using water from rig tank.

Survey:

Depth	***Direction***	***Degrees***
8505'	S86E	8-¼°

04/11/97 Day 84. 8750' (112'). PO: Drilling. TIH and W&R 116' to bottom. Drill f/8638-8658'. Spot LCM pill and survey. Drill f/8658-8664', rig service. Drill f/8664-8718', survey. Drill f/8718-8750'. Lithology: 90% shale, 10% sandstone. Last 24 hrs lost 256 bbls mud; cum bbls lost = 1696.

Surveys:

Depth	***Direction***	***Degrees***
8600'	S87E	9°
8660'	S86E	9-¼°

THE ANSCHUTZ CORPORATION

4/14/97

PAGES: 1

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Attn: R. J. Firth
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Fax: (303) 299-1518

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Operator: TAC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

04/12/97 Day 85. 8864' (114'). PO: Drilling. Drill f/8750-8781', survey. Drill f/8781-8844', survey. Drill f/8844-8864'. Lithology: 60% siltstone, 40% shale. Last 24 hrs: 0 bbls mud loss; cum mud loss = 1696 bbls.

Surveys:

Depth	***Direction***	***Degrees***
8723'	S88E	9°
8786'	S88E	9°

04/13/97 Day 86. 8969' (105'). PO: Survey. Drill f/8864-8908', survey. Drill f/8908-8969', survey. Lithology: 60% siltstone, 40% shale. Last 24 hrs: lost 60 bbls mud @ 8900'; cum mud loss = 1756 bbls.

Surveys:

Depth	***Direction***	***Degrees***
8850'	East	9¼°
8912'	East	9-3/4°

04/14/97 Day 87. 9109' (140'). PO: Drilling. Drill f/8969-9065', survey. Drill f/9065-9109'. Lithology: 30% shale, 20% sand, 50% siltstone. Last 24 hrs: lost 45 bbls mud @ 9028'; cum mud loss = 1801 bbls.

Surveys:

Depth	***Direction***	***Degrees***
9007'	N89E	9-3/4°

THE ANSCHUTZ CORPORATION

4/15/97

PAGES: 1

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460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

04/15/97

Day 88. 9205' (96'). PO: Trip. Drill f/9109-9129', survey. Drill f/9129-9192', survey. Drill f/9192-9205'. Trip out w/bit #20. Last 24 hrs: 0 bbls mud lost; cum bbls mud lost = 1801. Lithology: 20% shale, 80% siltstone.

Surveys:

Depth	*Direction*	*Degrees*
9071'	N89E	10-¼°
9134'	N87E	10-3/4°

THE ANSCHUTZ CORPORATION

4/17/97

PAGES: 1

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460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

04/17/97

Day 90. 9359' (82'). PO: Drilling. Drill f/9277-9286', survey. Drill f/9286-9291', rig repair - rotary chain. Drill f/9291-9318', rig service. Drill f/9318-9332', rig repair - SCR. Drill f/9332-9359'. Lithology: 20% shale, 40% sand, 40% silt. Last 24 hrs: 0 bbls mud lost; cum bbls mud lost = 1801.

Surveys:

Depth	*Direction*	*Degrees*
9228'	N87E	10-3/4°

THE ANSCHUTZ CORPORATION

4/16/97

PAGES: 1

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Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

04/16/97

Day 89. 9277' (72'). PO: Drilling. TOOH, MU bit #21. PU new 6 pt and TIH. W&R 60', 9' out of gauge hole. Drill f/9205-9277'. Lithology: 50% shale, 30% sand, 20% silt. Last 24 hrs: 0 bbls mud loss; cum bbls mud loss - 1801.

ANSCHUTZ

THE ANSCHUTZ CORPORATION

4/18/97

PAGES: 2
Includes 1 page chronological report

To: **UPRC**
Attn: Lance Cook
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460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

04/18/97

Day 91. 9410' (51'). PO: Drilling. Drill f/9359-9369', rig repair. Drill f/9369-9380', survey. Drill f/9380-9384'. TOOH, rig service. TOOH, MU bit #22 and TIH. Wash 35' to bottom, no fill. Drill f/9384-9410'. Lithology: 10% shale, 70% sand, 20% silt.

Survey:

Depth	*Direction*	*Degrees*
9322'	N85E	11°

8723′	S88E	9°
8786′	S88E	9°

04/13/97 Day 86. 8969′ (105′). PO: Survey. Drill f/8864-8908′, survey. Drill f/8908-8969′, survey. Lithology: 60% siltstone, 40% shale. Last 24 hrs: lost 60 bbls mud @ 8900′; cum mud loss – 1756 bbls.

Surveys:

Depth	***Direction***	***Degrees***
8850′	East	9¼°
8912′	East	9-3/4°

04/14/97 Day 87. 9109′ (140′). PO: Drilling. Drill f/8969-9065′, survey. Drill f/9065-9109′. Lithology: 30% shale, 20% sand, 50% siltstone. Last 24 hrs: lost 45 bbls mud @ 9028′; cum mud loss – 1801 bbls.

Surveys:

Depth	***Direction***	***Degrees***
9007′	N89E	9-3/4°

04/15/97 Day 88. 9205′ (96′). PO: Trip. Drill f/9109-9129′, survey. Drill f/9129-9192′, survey. Drill f/9192-9205′. Trip out w/bit #20. Last 24 hrs: 0 bbls mud lost; cum bbls mud lost – 1801. Lithology: 20% shale, 80% siltstone.

Surveys:

Depth	***Direction***	***Degrees***
9071′	N89E	10-¼°
9134′	N87E	10-3/4°

04/16/97 Day 89. 9277′ (72′). PO: Drilling. TOOH, MU bit #21. PU new 6 pt and TIH. W&R 60′, 9′ out of gauge hole. Drill f/9205-9277′. Lithology: 50% shale, 30% sand, 20% silt. Last 24 hrs: 0 bbls mud loss; cum bbls mud loss – 1801.

04/17/97 Day 90. 9359′ (82′). PO: Drilling. Drill f/9277-9286′, survey. Drill f/9286-9291′, rig repair - rotary chain. Drill f/9291-9318′, rig service. Drill f/9318-9332′, rig repair - SCR. Drill f/9332-9359′. Lithology: 20% shale, 40% sand, 40% silt. Last 24 hrs: 0 bbls mud lost; cum bbls mud lost – 1801.

Surveys:

Depth	***Direction***	***Degrees***
9228′	N87E	10-3/4°

04/18/97 Day 91. 9410′ (51′). PO: Drilling. Drill f/9359-9369′, rig repair. Drill f/9369-9380′, survey. Drill f/9380-9384′. TOOH, rig service. TOOH, MU bit #22 and TIH. Wash 35′ to bottom, no fill. Drill f/9384-9410′. Lithology: 10% shale, 70% sand, 20% silt.

Survey:

Depth	***Direction***	***Degrees***
9322′	N85E	11°

THE ANSCHUTZ CORPORATION

4/21/97

PAGES: 1

To: **UPRC**
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: R. J. Firth
Fax: (801) 359-3940
Phone: (801) 538-5274

From: **Susan Balano**
Phone: (303) 299-1344
Fax: (303) 299-1518

A.L. & L #14-33 (Yellow Creek)
Operator: TAC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

04/19/97

Day 92. 9530' (120'). PO: Drilling. Drill f/9410-9475', survey. Drill f/9475-9530'. Lithology: 10% shale, 60% sand, 30% silt. Last 24 hrs: lost 0 bbls mud; cum bbls lost = 1801.

Survey:

Depth	***Direction***	***Degrees***
9417'	N85E	11-¼°

04/20/97

Day 93. 9664' (134'). PO: Drilling. Drill f/9530-9538', survey. Drill f/9538-9570'. Rig service. Drill f/9570-9601', survey. Drill f/9601-9664', survey. Lithology: 10% shale, 20% sand, 70% silt. Last 24 hrs: lost 55 bbls mud; cum bbls lost = 1855.

Formation Top:

Thaynes 9600'

Surveys:

Depth	***Direction***	***Degrees***
9480'	N84E	11-¼°
9543'	N84E	11-¼°

04/21/97

Day 94. 9794' (130'). PO: Drilling. Survey and drill f/9664-9726'. Rig service. Drill f/9726-9758', survey. Drill f/9758-9794'. Lithology: 20% dolomite, 20% shale, 10% sand, 50% silt. Last 24 hrs: lost 360 bbls mud; cum bbls lost = 2210.

Surveys:

Depth	***Direction***	***Degrees***
9606'	N82E	11°
9700'	N81E	11-3/4°

THE ANSCHUTZ CORPORATION

4/22/97

PAGES: 1

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Attn: Lance Cook
Fax: (817) 877-7912
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Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

04/22/97

Day 95. 9798' (4'). PO: TIH. Drill f/9794-9798'. Check pressure loss (250 psi). TOH, SLM 9798.53', board 9798'. Magnaflux BHA (all OK). Test BOP's, pipe, blind, choke, all valves, safety valves, and annular. Set wear bushing. PU Anadrill tools. Orient and test. TIH. Lithology: 10% dolomite, 10% shale, 10% sand, 10% limestone, 60% silt. Last 24 hrs: 0 bbls mud lost; cum bbls lost = 2210.

THE ANSCHUTZ CORPORATION

4/23/97

PAGES: 1

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Fax: (817) 877-7912
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Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

04/23/97

Day 96. 9935' (137'). PO: Drilling. TIH and survey every 270'. Drill f/9798-9811', rig service. Drill f/9811-9935'. Lithology: 50% sand, 50% limestone. After trip in Ankareh formation sloughing, lower water loss and add more polymer.

Surveys:

Depth	*Direction*	*Degrees*
9801'	76.1	12.2°
9865'	72.6	11.9°
9883'	73.4	12.3°
9896'	75.0	10.0°

ANSCHUTZ

THE ANSCHUTZ CORPORATION

4/24/97

PAGES: 1

To: **UPRC**
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: R. J. Firth
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Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

04/24/97

Day 97. 10,064' (129'). PO: Trip (check tools). Drill f/9935-10,064', circ & survey. TOOH, check tools and work on Anadrill tools. Slide first 7' - 10' of each kelly, then rotate the remainder of kelly. Lithology: 10% shale, 20% limestone, 70% silt. Last 24 hrs: 0 bbls mud lost.

Surveys:

Depth	*Direction*	*Degrees*
9928'	74.4	9.7°
9960'	74.2	9.3°
9991'	73.3	9.4°
10,023'	74.1	9.5°

THE ANSCHUTZ CORPORATION

4/25/97

PAGES: 2
Includes 1 page chronological report.

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Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
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Phone: (801) 538-5274

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Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

04/25/97

Day 98. 10,180' (116'). PO: Drilling. Test MWD tools. TIH to shoe, fill pipe. Slip & cut drill line. Trip in and ream 77' under gauge hole. Drill f/10,064-10,180'. Lithology: 10% shale, 40% limestone, 50% silt. Last 24 hrs: 0 bbls mud lost.

Surveys:

Depth	***Direction***	***Degrees***
10,055'	75.4	9.2°
10,086'	75.5	8.4°
10,118'	72.7	7.7°

Thaynes 9600'

Surveys:

Depth	***Direction***	***Degrees***
9480'	N84E	11-¼°
9543'	N84E	11-¼°

04/21/97 Day 94. 9794' (130'). PO: Drilling. Survey and drill f/9664-9726'. Rig service. Drill f/9726-9758', survey. Drill f/9758-9794'. Lithology: 20% dolomite, 20% shale, 10% sand, 50% silt. Last 24 hrs: lost 360 bbls mud; cum bbls lost – 2210.

Surveys:

Depth	***Direction***	***Degrees***
9606'	N82E	11°
9700'	N81E	11-3/4°

04/22/97 Day 95. 9798' (4'). PO: TIH. Drill f/9794-9798'. Check pressure loss (250 psi). TOH, SLM 9798.53', board 9798'. Magnaflux BHA (all OK). Test BOP's, pipe, blind, choke, all valves, safety valves, and annular. Set wear bushing. PU Anadrill tools. Orient and test. TIH. Lithology: 10% dolomite, 10% shale, 10% sand, 10% limestone, 60% silt. Last 24 hrs: 0 bbls mud lost; cum bbls lost – 2210.

04/23/97 Day 96. 9935' (137'). PO: Drilling. TIH and survey every 270'. Drill f/9798-9811', rig service. Drill f/9811-9935'. Lithology: 50% sand, 50% limestone. After trip in Ankareh formation sloughing, lower water loss and add more polymer.

Surveys:

Depth	***Direction***	***Degrees***
9801'	76.1	12.2°
9865'	72.6	11.9°
9883'	73.4	12.3°
9896'	75.0	10.0°

04/24/97 Day 97. 10,064' (129'). PO: Trip (check tools). Drill f/9935-10,064', circ & survey. TOOH, check tools and work on Anadrill tools. Slide first 7' - 10' of each kelly, then rotate the remainder of kelly. Lithology: 10% shale, 20% limestone, 70% silt. Last 24 hrs: 0 bbls mud lost.

Surveys:

Depth	***Direction***	***Degrees***
9928'	74.4	9.7°
9960'	74.2	9.3°
9991'	73.3	9.4°
10,023'	74.1	9.5°

04/25/97 Day 98. 10,180' (116'). PO: Drilling. Test MWD tools. TIH to shoe, fill pipe. Slip & cut drill line. Trip in and ream 77' under gauge hole. Drill f/10,064-10,180'. Lithology: 10% shale, 40% limestone, 50% silt. Last 24 hrs: 0 bbls mud lost.

Surveys:

Depth	***Direction***	***Degrees***
10,055'	75.4	9.2°
10,086'	75.5	8.4°
10,118'	72.7	7.7°

ANSCHUTZ

THE ANSCHUTZ CORPORATION

4/28/97

PAGES: 1

To: **UPRC**
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: R. J. Firth
Fax: (801) 359-3940
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Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

04/26/97 Day 99. 10,290' (110'). PO: Trip out. Drill f/10,180-10,290'. TOOH for new bit. RU to acidize DP. Trip out. Lithology: 20% dolomite, 30% limestone, 50% siltstone.

Surveys:

Depth	*Direction*	*Degrees*
10,150'	72.9	7.3°
10,181'	72.1	6.7°
10,212'	65.5	6.0°
10,244'	61.4	5.2°

04/27/97 Day 100. 10,348' (58'). PO: Trip out. Orient tools and test same. Trip in, LD 6 jts. Stage in surveys @ 9801'; 9833'; 9865'; 9896'; 9928'. Ream 135' to bottom w/6' of fill. Drill f/10,290-10,348'. Circ pump sweep. Trip out to repair MWD tools. Acidize DP. Last 24 hrs: lost 160 bbls; cum bbls lost – 2470. Lithology: 30% limestone, 70% siltstone.

Surveys:

Depth	*Direction*	*Degrees*
10,275'	57.2	4.7°
10,307'	57.2	4.1°

04/28/97 Day 101. 10,444' (96'). PO: Drilling. Trip out hole (look for tool failure). PU new motor and test MWD tools. TIH and fill pipe @ shoe. Ream 75' to bottom. Circ and attempt to get survey, could not get read out. Drill f/10,348-10,440'. Last 24 hrs: lost 80 bbls; cum bbls lost – 2250. Lithology: 30% limestone, 70% siltstone.

Surveys:

Depth	*Direction*	*Degrees*
10,339'	53.0	3.7°
10,368'	49.6	3.6°
10,400'	47.4	3.3°

THE ANSCHUTZ CORPORATION

4/29/97

PAGES: 1

To: **UPRC**
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: R. J. Firth
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460' FEL, 100' FSL
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Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

04/29/97

Day 102. 10,586' (142'). PO: Trip out. Drill f/10,444-10,586'. TOOH. Last 24 hrs: 0 bbls mud lost; cum bbls lost = 2250. Lithology: 10% shale, 40% dolomite, 50% siltstone.

Surveys:

Depth	*Direction*	*Degrees*
10,431'	43.0	3.3°
10,463'	37.5	2.7°
10,495'	36.6	2.3°
10,526'	31.3	2.0°

THE ANSCHUTZ CORPORATION

5/1/97

PAGES: 1

To: **UPRC**
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: R. J. Firth
Fax: (801) 359-3940
Phone: (801) 538-5274

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Fax: (303) 299-1518

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Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

05/01/97

Day 104. 10,771' (97'). PO: Drilling. Drill f/10,674-10,691', survey & orient. Drill f/10,691-10,722', survey and pump pill. TOOH, adjust motor to 1.83 and test MWD. TIH. Cut & slip drill line. TIH, break circ @ 6050'. Break circ & survey. Drill f/10,722-10,771'. Last 24 hrs: lost 0 bbls mud; cum bbls lost = 2594. Lithology: 30% silt, 40% lime, 30% dolomite.

Surveys:

Depth	***Direction***	***Degrees***
10,650'	62.80	2.1°
10,681'	80.70	1.7°
10,713'	110.60	1.1°

THE ANSCHUTZ CORPORATION

5/2/97

PAGES: ~~2~~ 3
Includes ~~1~~ page chronological report.

To: **UPRC**
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

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Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

05/02/97

Day 105. 10,967' (196'). PO: Drilling. Drill f/10,771-10,786', survey. Drill f/10,786-10,817', survey. Drill f/10,817-10,849', rig service & survey. Drill f/10,849-10,880', survey. Drill f/10,880-10,912', survey. Drill f/10,912-10,943', survey. Drill f/10,943-10,967'. Last 24 hrs: lost 267 bbls; cum bbls lost = 2861. Lithology: 20% shale, 80% silt.

Formation Top:
Woodside 10,900'

Surveys:

Depth	*Direction*	*Degrees*
10,745'	191.90	.6°
10,776'	234.30	.9°
10,807'	264.60	1.9°
10,839'	272.30	3.1°

Drill f/10,880-10,912', survey. Drill f/10,912-10,943', survey. Drill f/10,943-10,967'. Last 24 hrs: lost 267 bbls; cum bbls lost = 2861. Lithology: 20% shale, 80% silt.

Formation Top:

Woodside 10,900'

Surveys:

Depth	***Direction***	***Degrees***
10,745'	191.90	.6°
10,776'	234.30	.9°
10,807'	264.60	1.9°
10,839'	272.30	3.1°

10,181'	72.1	6.7°
10,212'	65.5	6.0°
10,244'	61.4	5.2°

04/27/97 Day 100. 10,348' (58'). PO: Trip out. Orient tools and test same. Trip in, LD 6 jts. Stage in surveys @ 9801'; 9833'; 9865'; 9896'; 9928'. Ream 135' to bottom w/6' of fill. Drill f/10,290-10,348'. Circ pump sweep. Trip out to repair MWD tools. Acidize DP. Last 24 hrs: lost 160 bbls; cum bbls lost = 2470. Lithology: 30% limestone, 70% siltstone.

Surveys:

Depth	***Direction***	***Degrees***
10,275'	57.2	4.7°
10,307'	57.2	4.1°

04/28/97 Day 101. 10,444' (96'). PO: Drilling. Trip out hole (look for tool failure). PU new motor and test MWD tools. TIH and fill pipe @ shoe. Ream 75' to bottom. Circ and attempt to get survey, could not get read out. Drill f/10,348-10,440'. Last 24 hrs: lost 80 bbls; cum bbls lost – 2250. Lithology: 30% limestone, 70% siltstone.

Surveys:

Depth	***Direction***	***Degrees***
10,339'	53.0	3.7°
10,368'	49.6	3.6°
10,400'	47.4	3.3°

04/29/97 Day 102. 10,586' (142'). PO: Trip out. Drill f/10,444-10,586'. TOOH. Last 24 hrs: 0 bbls mud lost; cum bbls lost = 2250. Lithology: 10% shale, 40% dolomite, 50% siltstone.

Surveys:

Depth	***Direction***	***Degrees***
10,431'	43.0	3.3°
10,463'	37.5	2.7°
10,495'	36.6	2.3°
10,526'	31.3	2.0°

04/30/97 Day 103. 10,674' (88'). PO: Drilling. TOOH (acid DP). Check MWD, change bits. TIH, break circ @ 6050'. Break circ and survey. Drill f/10,586-10,629', survey & orient. Drill f/10,629-10,661', survey & orient. Drill f/10,661-10,674'. Last 24 hrs: lost 344 bbls; cum bbls lost – 2594. Lithology: 40% limestone, 60% dolomite.

Surveys:

Depth	***Direction***	***Degrees***
10,557'	35.20	2.3°
10,588'	49.30	2.4°
10,620'	53.00	2.5°

05/01/97 Day 104. 10,771' (97'). PO: Drilling. Drill f/10,674-10,691', survey & orient. Drill f/10,691-10,722', survey and pump pill. TOOH, adjust motor to 1.83 and test MWD. TIH. Cut & slip drill line. TIH, break circ @ 6050'. Break circ & survey. Drill f/10,722-10,771'. Last 24 hrs: lost 0 bbls mud; cum bbls lost – 2594. Lithology: 30% silt, 40% lime, 30% dolomite.

Surveys:

Depth	***Direction***	***Degrees***
10,650'	62.80	2.1°
10,681'	80.70	1.7°
10,713'	110.60	1.1°

05/02/97 Day 105. 10,967' (196'). PO: Drilling. Drill f/10,771-10,786', survey. Drill f/10,786-10,817', survey. Drill f/10,817-10,849', rig service & survey. Drill f/10,849-10,880', survey.

ANSCHUTZ

THE ANSCHUTZ CORPORATION

5/5/97
PAGES: 1

To: **UPRC**
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: R. J. Firth
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460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

05/03/97 Day 106. 11,063' (96'). PO: Drilling. Drill f/10,967-10,975', survey. Drill f/10,975-11,006', survey. Drill f/11,006-11,038', survey. Circ and pump pill. TOOH (acid bath DP). Check MWD, change bits and TIH. Break circ, TIH, break circ and survey. Drill f/11,038-11,063'. Last 24 hrs: lost 79 bbls; cum bbls lost – 2940.

Surveys:

Depth	***Direction***	***Degrees***
10,934'	274.20	5.6°
10,965'	275.30	6.1°
10,997'	276.20	6.4°

05/04/97 Day 107. 11,258' (195'). PO: Drilling. Drill f/11,063-11,070', survey. Drill f/11,070-11,101', survey. Drill f/11,101-11,133', survey. Drill f/11,133-11,164', survey. Drill f/11,164-11,196', survey. Drill f/11,196-11,226', survey. Drill f/11,226-11,258'. Last 24 hrs: lost 87 bbls mud; cum bbls lost – 3027. Lithology: 10% shale, 30% sand, 60% siltstone.

Surveys:

Depth	***Direction***	***Degrees***
11,029'	277.10	7.2°
11,060'	274.10	8.1°
11,092'	270.30	9.2°
11,123'	266.70	9.8°

05/05/97 Day 108. 11,433' (175'). PO: Drilling. Survey and drill f/11,258-11,290'. Drill f/11,290-11,320', survey. Drill f/11,320-11,351', survey. Drill f/11,351-11,383'. Make 12 std wiper trip. Break circ & survey. Drill f/11,383-11,415', survey. Drill f/11,415-11,433'. Last 24 hrs: lost 106 bbls; cum bbls lost – 3287 (corrected volume). Lithology: 20% shale, 40% sand, 40% siltstone.

Surveys:

Depth	***Direction***	***Degrees***
11,155'	263.90	9.8°
11,185'	263.20	10.9°
11,217'	263.20	11.9°
11,249'	264.90	12.9°

THE ANSCHUTZ CORPORATION

5/6/97
PAGES: 1

To: UPRC
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: R. J. Firth
Fax: (801) 359-3940
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13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

05/06/97

Day 109. 11,463' (30'). PO: TIH. Drill f/11,433-11,446', survey. Drill f/11,446-11,463'. TOOH for logs. LD one wash jt DP. RU Schlumberger and run Dipmeter & well survey f/11,455-6015'. Rig down. RU Scientific Drilling and run Gyro f/base of inter. 13-3/8" csg to surface. Rig down. MU bit #29, orient and test tools, TIH. Last 24 hrs: lost 0 bbls; cum bbls lost = 3287. Lithology: 30% shale, 30% sand, 40% silt.

THE ANSCHUTZ CORPORATION

5/7/97
PAGES: 1

To: **UPRC**
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: Vicky Dyson
Fax: (801) 359-3940
Phone: (801) 538-5274

From: **Susan Balano**
Phone: (303) 299-1344
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Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

05/07/97

Day 110. 11,552' (89'). PO: Drilling. TIH and W&R to bottom. Orient tools and slide f/11,463-11,468'. Drill f/11,468-11,478', survey. Drill f/11,478-11,552'. Last 24 hrs: lost 19 bbls; cum bbls lost = 3306. Lithology: 30% shale, 70% silt.

Surveys:

Depth	***Direction***	***Degrees***
11,437'	265.6	17.6°
11,468'	266.6	18.2°
11,500'	267.7	19.1°

THE ANSCHUTZ CORPORATION

5/8/97
PAGES: 1

To: **UPRC**
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: Vicky Dyson
Fax: (801) 359-3940
Phone: (801) 538-5274

From: **Susan Balano**
Phone: (303) 299-1344
Fax: (303) 299-1518

A.L. & L #14-33 (Yellow Creek)
Operator: TAC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

05/08/97

Day 111. 11,597' (45'). PO: Drilling. Drill f/11,552-11,555'. TOOH, acidize DP for mud motor. Change out bits, mud motor and orient new tools. Trip in, fill pipe and slip & cut drill line. Trip in and W&R 60' to bottom (no fill). Drill f/11,555-11,597'. Last 24 hrs: lost 109 bbls; cum bbls lost 3415 bbls. Lithology: 20% shale, 10% sand, 70% silt.

Surveys:

Depth	***Direction***	***Degrees***
11,500'	267.70	19.10°
11,532'	267.30	20.20°

THE ANSCHUTZ CORPORATION

5/9/97

PAGES: 3

Includes 2 page chronological report

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Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

05/09/97

Day 112. 11,737' (140'). PO: Drilling. Drill f/11,597-11,737'. Slide 10' to 15' every connection. Last 24 hrs: lost 50 bbls; cum bbls lost = 3465. Lithology: 60% shale, 40% silt.

Surveys:

Depth	***Direction***	***Degrees***
11,594'	267.70	21.7°
11,625'	266.90	22.3°
11,657'	269.40	22.9°
11,689'	268.70	23.2°

Drill f/10,880-10,912', survey. Drill f/10,912-10,943', survey. Drill f/10,943-10,967'. Last 24 hrs: lost 267 bbls; cum bbls lost = 2861. Lithology: 20% shale, 80% silt.

Formation Top:

Woodside 10,900'

Surveys:

Depth	***Direction***	***Degrees***
10,745'	191.90	.6°
10,776'	234.30	.9°
10,807'	264.60	1.9°
10,839'	272.30	3.1°

05/03/97 Day 106. 11,063' (96'). PO: Drilling. Drill f/10,967-10,975', survey. Drill f/10,975-11,006', survey. Drill f/11,006-11,038', survey. Circ and pump pill. TOOH (acid bath DP). Check MWD, change bits and TIH. Break circ, TIH, break circ and survey. Drill f/11,038-11,063'. Last 24 hrs: lost 79 bbls; cum bbls lost = 2940.

Surveys:

Depth	***Direction***	***Degrees***
10,934'	274.20	5.6°
10,965'	275.30	6.1°
10,997'	276.20	6.4°

05/04/97 Day 107. 11,258' (195'). PO: Drilling. Drill f/11,063-11,070', survey. Drill f/11,070-11,101', survey. Drill f/11,101-11,133', survey. Drill f/11,133-11,164', survey. Drill f/11,164-11,196', survey. Drill f/11,196-11,226', survey. Drill f/11,226-11,258'. Last 24 hrs: lost 87 bbls mud; cum bbls lost = 3027. Lithology: 10% shale, 30% sand, 60% siltstone.

Surveys:

Depth	***Direction***	***Degrees***
11,029'	277.10	7.2°
11,060'	274.10	8.1°
11,092'	270.30	9.2°
11,123'	266.70	9.8°

05/05/97 Day 108. 11,433' (175'). PO: Drilling. Survey and drill f/11,258-11,290'. Drill f/11,290-11,320', survey. Drill f/11,320-11,351', survey. Drill f/11,351-11,383'. Make 12 std wiper trip. Break circ & survey. Drill f/11,383-11,415', survey. Drill f/11,415-11,433'. Last 24 hrs: lost 106 bbls; cum bbls lost = 3287 (corrected volume). Lithology: 20% shale, 40% sand, 40% siltstone.

Surveys:

Depth	***Direction***	***Degrees***
11,155'	263.90	9.8°
11,185'	263.20	10.9°
11,217'	263.20	11.9°
11,249'	264.90	12.9°

05/06/97 Day 109. 11,463' (30'). PO: TIH. Drill f/11,433-11,446', survey. Drill f/11,446-11,463'. TOOH for logs. LD one wash jt DP. RU Schlumberger and run Dipmeter & well survey f/11,455-6015'. Rig down. RU Scientific Drilling and run Gyro f/base of inter. 13-3/8" csg to surface. Rig down. MU bit #29, orient and test tools, TIH. Last 24 hrs: lost 0 bbls; cum bbls lost = 3287. Lithology: 30% shale, 30% sand, 40% silt.

05/07/97 Day 110. 11,552' (89'). PO: Drilling. TIH and W&R to bottom. Orient tools and slide f/11,463-11,468'. Drill f/11,468-11,478', survey. Drill f/11,478-11,552'. Last 24 hrs: lost 19 bbls; cum bbls lost = 3306. Lithology: 30% shale, 70% silt.

Surveys:

Depth	*Direction*	*Degrees*
11,437′	265.6	17.6°
11,468′	266.6	18.2°
11,500′	267.7	19.1°

05/08/97 Day 111. 11,597′ (45′). PO: Drilling. Drill f/11,552-11,555′. TOOH, acidize DP for mud motor. Change out bits, mud motor and orient new tools. Trip in, fill pipe and slip & cut drill line. Trip in and W&R 60′ to bottom (no fill). Drill f/11,555-11,597′. Last 24 hrs: lost 109 bbls; cum bbls lost 3415 bbls. Lithology: 20% shale, 10% sand, 70% silt.

Survey:

Depth	*Direction*	*Degrees*
11,532′	267.30	20.20°

05/09/97 Day 112. 11,737′ (140′). PO: Drilling. Drill f/11,597-11,737′. Slide 10′ to 15′ every connection. Last 24 hrs: lost 50 bbls; cum bbls lost = 3465. Lithology: 60% shale, 40% silt.

Surveys:

Depth	*Direction*	*Degrees*
11,594′	267.70	21.7°
11,625′	266.90	22.3°
11,657′	269.40	22.9°
11,689′	268.70	23.2°

THE ANSCHUTZ CORPORATION

5/12/97

PAGES: 1

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Attn: Lance Cook
Fax: (817) 877-7912
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From: Susan Balano
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A.L. & L #14-33 (Yellow Creek)
Operator: TAC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

05/10/97 Day 113. 11,888' (151'). PO: Drilling. Drill f/11,737-11,761', rig service. Drill f/11,761-11,888'. Slide 10' to 13' every joint. Last 24 hrs: lost 50 bbls; cum bbls lost = 3515. Lithology: 40% dolomite, 20% shale, 40% silt.

Surveys:

Depth	*Direction*	*Degrees*
11,720'	270.10	24.2°
11,752'	280.10	24.9°
11,783'	269.90	24.9°
11,815'	268.80	25.8°

05/11/97 Day 114. 11,943' (110'). PO: Drilling. Drill f/11,888-11,933'. Circ bottoms up. Trip out, change out MWD and orient tools. Test MWD tools & motor. TIH, fill pipe @ shoe. Ream 60' to bottom, no fill. Drill f/11,933-11,943'. Last 24 hrs: lost 45 bbls; cum bbls lost = 3560. Lithology: 50% dolomite, 20% shale, 10% chert, 20% silt.

Surveys:

Depth	*Direction*	*Degrees*
11,847'	270.10	26.9°

05/12/97 Day 115. 12,077' (134'). PO: Drilling. Drill f/11,943-12,077. Slide 5' to 7' every joint. Last 24 hrs: lost 315 bbls; cum bbls lost = 3875. Lithology: 70% dolomite, 20% limestone, 10% chert.

Surveys:

Depth	*Direction*	*Degrees*
11,909'	267.90	27.3°
11,972'	266.00	27.8°
12,004'	266.00	27.4°
12,035'	264.00	27.1°

ANSCHUTZ

THE ANSCHUTZ CORPORATION

5/13/97

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Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

05/13/97

Day 116. 12,206' (129'). PO: Trip out. Drill f/12,077-12,206'. Circ & mix slug. Trip out and acidize DP. Last 24 hrs: lost 220 bbls; cum bbls lost = 4095. Lithology: 70% dolomite, 20% limestone; 10% chert. Possible Phosphoria top @ 11,940'. Good gas show f/12,156-12,170'; fair gas show f/12,082-12,128' and f/12,134-12,156'.

Surveys:

Depth	***Direction***	***Degrees***
12,098'	262.50	26.3°
12,130'	263.80	26.5°
12,162'	263.60	26.6°

THE ANSCHUTZ CORPORATION

5/14/97

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Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

05/14/97

Day 117. 12,273' (67'). PO: Drilling. TOOH, acidize DP and magnaflux BHA (2 bad collars). Check MWD and test. TIH w/bit #32. Fill pipe and break circ @ 6050' and @ 9800'. No returns while TIH. Wash 90' to bottom, no fill. Drill f/12,206-12,242', survey (jammed, no survey). Drill f/12,242-12,273'. Last 24 hrs: lost 725 bbls; cum bbls lost = 4820. No H_2S recorded. Lithology: 20% shale, 10% limestone, 70% dolomite.

THE ANSCHUTZ CORPORATION

5/15/97

PAGES: 1

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TAC WI: 100%
TIGHT HOLE

05/15/97

Day 118. 12,354' (81'). PO: Install MWD. Drill f/12,273-12,305', survey. Drill f/12,305-12,336', rig service and survey (misrun). Drill f/12,336-12,354'. Spot LCM and TOOH 13 stds. RU OWP and attempt to retrieve MWD. Pull 3 more stds. RIH w/OWP and retrieve MWD. TIH and wash 90' with 60' of fill. TOH 16 stds to install MWD. Last 24 hrs: lost 600 bbls; cum bbls lost - 5420. Lithology: 70% shale, 20% dolomite, 10% chert.

Surveys:

Depth	*Direction*	*Degrees*
12,232'	262.50	27.4°
12,264'	263.20	28.1°

THE ANSCHUTZ CORPORATION

5/16/97

PAGES: 3

Includes 2 page chronological report

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Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

05/16/97

Day 119. 12,380' (26'). PO: Drilling. Run MWD in hole w/OWP wireline. Stopped @ 9130'. Top DC's pulled loose, hung up @ 6400'. Pulled 1000# over, came free. Left MWD in hole. RD OWP. TOOH to recover MWD, top of collars. Change out motor, MWD, float. Surface test. TIH w/bit #33. Break circ and W&R 120' to bottom, taking new surveys. Drill f/12,354-12,367', survey. Drill f/12,367-12,380'. Last 24 hrs: lost 162 bbls; cum bbls lost = 5582. Lithology: 100% shale.

Surveys:

Depth	*Direction*	*Degrees*
12,323'	263.20	27.7°
12,264'	262.90	28.0°
12,295'	262.30	27.8°
12,326'	260.90	28.1°

12,098'	262.50	26.3°
12,130'	263.80	26.5°
12,162'	263.60	26.6°

05/14/97 Day 117. 12,273' (67'). PO: Drilling. TOOH, acidize DP and magnaflux BHA (2 bad collars). Check MWD and test. TIH w/bit #32. Fill pipe and break circ @ 6050' and @ 9800'. No returns while TIH. Wash 90' to bottom, no fill. Drill f/12,206-12,242', survey (jammed, no survey). Drill f/12,242-12,273'. Last 24 hrs: lost 725 bbls; cum bbls lost = 4820. No H_2S recorded. Lithology: 20% shale, 10% limestone, 70% dolomite.

05/15/97 Day 118. 12,354' (81'). PO: Install MWD. Drill f/12,273-12,305', survey. Drill f/12,305-12,336', rig service and survey (misrun). Drill f/12,336-12,354'. Spot LCM and TOOH 13 stds. RU OWP and attempt to retrieve MWD. Pull 3 more stds. RIH w/OWP and retrieve MWD. TIH and wash 90' with 60' of fill. TOH 16 stds to install MWD. Last 24 hrs: lost 600 bbls; cum bbls lost = 5420. Lithology: 70% shale, 20% dolomite, 10% chert.

Surveys:

Depth	***Direction***	***Degrees***
12,232'	262.50	27.4°
12,264'	263.20	28.1°

05/16/97 Day 119. 12,380' (26'). PO: Drilling. Run MWD in hole w/OWP wireline. Stopped @ 9130'. Top DC's pulled loose, hung up @ 6400'. Pulled 1000# over, came free. Left MWD in hole. RD OWP. TOOH to recover MWD, top of collars. Change out motor, MWD, float. Surface test. TIH w/bit #33. Break circ and W&R 120' to bottom, taking new surveys. Drill f/12,354-12,367', survey. Drill f/12,367-12,380'. Last 24 hrs: lost 162 bbls; cum bbls lost = 5582. Lithology: 100% shale.

Surveys:

Depth	***Direction***	***Degrees***
12,323'	263.20	27.7°
12,264'	262.90	28.0°
12,295'	262.30	27.8°
12,326'	260.90	28.1°

Depth	Direction	Degrees
11,437′	265.6	17.6°
11,468′	266.6	18.2°
11,500′	267.7	19.1°

05/08/97 Day 111. 11,597′ (45′). PO: Drilling. Drill f/11,552-11,555′. TOOH, acidize DP for mud motor. Change out bits, mud motor and orient new tools. Trip in, fill pipe and slip & cut drill line. Trip in and W&R 60′ to bottom (no fill). Drill f/11,555-11,597′. Last 24 hrs: lost 109 bbls; cum bbls lost 3415 bbls. Lithology: 20% shale, 10% sand, 70% silt.

Survey:

Depth	Direction	Degrees
11,532′	267.30	20.20°

05/09/97 Day 112. 11,737′ (140′). PO: Drilling. Drill f/11,597-11,737′. Slide 10′ to 15′ every connection. Last 24 hrs: lost 50 bbls; cum bbls lost – 3465. Lithology: 60% shale, 40% silt.

Surveys:

Depth	Direction	Degrees
11,594′	267.70	21.7°
11,625′	266.90	22.3°
11,657′	269.40	22.9°
11,689′	268.70	23.2°

05/10/97 Day 113. 11,888′ (151′). PO: Drilling. Drill f/11,737-11,761′, rig service. Drill f/11,761-11,888′. Slide 10′ to 13′ every joint. Last 24 hrs: lost 50 bbls; cum bbls lost – 3515. Lithology: 40% dolomite, 20% shale, 40% silt.

Surveys:

Depth	Direction	Degrees
11,720′	270.10	24.2°
11,752′	280.10	24.9°
11,783′	269.90	24.9°
11,815′	268.80	25.8°

05/11/97 Day 114. 11,943′ (110′). PO: Drilling. Drill f/11,888-11,933′. Circ bottoms up. Trip out, change out MWD and orient tools. Test MWD tools & motor. TIH, fill pipe @ shoe. Ream 60′ to bottom, no fill. Drill f/11,933-11,943′. Last 24 hrs: lost 45 bbls; cum bbls lost – 3560. Lithology: 50% dolomite, 20% shale, 10% chert, 20% silt.

Surveys:

Depth	Direction	Degrees
11,847′	270.10	26.9°

05/12/97 Day 115. 12,077′ (134′). PO: Drilling. Drill f/11,943-12,077. Slide 5′ to 7′ every joint. Last 24 hrs: lost 315 bbls; cum bbls lost – 3875. Lithology: 70% dolomite, 20% limestone, 10% chert.

Surveys:

Depth	Direction	Degrees
11,909′	267.90	27.3°
11,972′	266.00	27.8°
12,004′	266.00	27.4°
12,035′	264.00	27.1°

05/13/97 Day 116. 12,206′ (129′). PO: Trip out. Drill f/12,077-12,206′. Circ & mix slug. Trip out and acidize DP. Last 24 hrs: lost 220 bbls; cum bbls lost – 4095. Lithology: 70% dolomite, 20% limestone; 10% chert. Possible Phosphoria top @ 11,940′. Good gas show f/12,156-12,170′; fair gas show f/12,082-12,128′ and f/12,134-12,156′.

Surveys:

Depth	Direction	Degrees

file

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THE ANSCHUTZ CORPORATION

5/19/97
PAGES: 1

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Attn: Lance Cook
Fax: (817) 877-7912
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460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

05/17/97 Day 120. 12,436' (56'). PO: TIH. Drill f/12,380-12,399', rig service. Drill f/12,399-12,430', survey. Drill f/12,430-12,436'. Pump pill, TOH, and LD 12 jts. Change bit and check MWD. TIH, PU 12 jts pipe. Last 24 hrs: lost 402 bbls; cum bbls lost = 5984. Lithology: 100% shale.

Surveys:

Depth	***Direction***	***Degrees***
12,358'	260.80	27.4°
12,389'	261.10	26.9°

05/18/97 Day 121. 12,589' (153'). PO: Drilling. TIH, cut & slip drill line. TIH and W&R 80' w/3' fill. Drill f/12,436-12,462', survey. Drill f/12,462-12,494', survey. Drill f/12,494-12,525', survey. Drill f/12,525-12,557', survey. Drill f/12,557-12,589'. Last 24 hrs: lost 318 bbls; cum bbls lost = 6302.

Surveys:

Depth	***Direction***	***Degrees***
12,421'	264.20	27.1°
12,453'	263.10	26.7°
12,484'	264.50	26.5°
12,516'	263.80	26.5°

05/19/97 Day 122. 12,746' (157'). PO: Circ to trip. Survey and drill f/12,589-12,651', survey. Drill f/12,651-12,683', survey. Drill f/12,683-12,714', survey (misrun). Drill f/12,714-12,746'. Circ bottoms up and set LCM pill on bottom. Last 24 hrs: lost 739 bbls; cum bbls lost = 7041. Lithology: 10% dolomite, 60% sand, 30% anhydrite. Show f/12,626-12,630': before 9 units; during 58 units; after 12 units.

Formation Top:
Weber 12,620'; TVD 12,446'

Surveys:

Depth	***Direction***	***Degrees***
12,547'	264.80	26.6°
12,579'	261.80	26.6°
12,610'	263.20	26.3°
12,641'	262.50	26.4°

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file

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THE ANSCHUTZ CORPORATION

5/20/97
PAGES: 1

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Attn: Lance Cook
Fax: (817) 877-7912
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Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

05/20/97

Day 123. 12,818' (72'). PO: Drilling. TOOH, change motors and LD MWD. Release Anadrill hands. Tag bridge @ 8760' and work through. TIH, no returns. Last 24 hrs: lost 575 bbls; cum bbls lost - 7616. Lithology: 70% sand, 30% anhydrite.

ANSCHUTZ

THE ANSCHUTZ CORPORATION

5/21/97
PAGES: 1

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Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

05/21/97

Day 124. 12,945' (127'). PO: Trip out. Drill f/12,818-12,874', rig service. Drill f/12,874-12,945', bit locked up. Circ and spot LCM pill and trip out SLM. Last 24 hrs: lost 268 bbls; cum bbls lost = 7984. Lithology: 100% sand.

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THE ANSCHUTZ CORPORATION

5/22/97
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Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: Vicky Dyson
Fax: (801) 359-3940
Phone: (801) 538-5274

From: **Susan Balano**
Phone: (303) 299-1344
Fax: (303) 299-1518

A.L. & L #14-33 (Yellow Creek)
Operator: TAC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
13,670' Phosphoria/Weber
TAC WI: 100%
TIGHT HOLE

05/22/97

Day 125. 12,945' (0'). PO: Ream w/6 pt. Trip out SLM 12,944.68', LD 2 Monels and PU 6 pt reamer. Trip in and tag up on bridge @ 9285'. LD DP to ream. Start reaming @ 9285'. Run stds and ream as needed. Last 24 hrs: lost 268 bbls; cum bbls lost - 8252. Note: clean & tally 341 jts casing. All Anadrill tools off location.

THE ANSCHUTZ CORPORATION

5/23/97
PAGES: 2
Includes 1 page chronological report.

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05/23/97

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7041. Lithology: 10% dolomite, 60% sand, 30% anhydrite. Show f/12,626-12,630': before 9 units; during 58 units; after 12 units.

Formation Top:

Weber 12,620'; TVD 12,446'

Surveys:

Depth	***Direction***	***Degrees***
12,547'	264.80	26.6°
12,579'	261.80	26.6°
12,610'	263.20	26.3°
12,641'	262.50	26.4°

05/20/97 Day 123. 12,818' (72'). PO: Drilling. TOOH, change motors and LD MWD. Release Anadrill hands. Tag bridge @ 8760' and work through. TIH, no returns. Last 24 hrs: lost 575 bbls; cum bbls lost – 7616. Lithology: 70% sand, 30% anhydrite.

05/21/97 Day 124. 12,945' TD (127'). PO: Trip out. Drill f/12,818-12,874', rig service. ***Drill f/12,874 to total depth of 12,945'.*** Bit locked up. Circ and spot LCM pill and trip out SLM. Last 24 hrs: lost 268 bbls; cum bbls lost – 7984. Lithology: 100% sand.

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05/24/97 Day 127. 12,945' TD (0'). PO: Logging. TIH to shoe. Slip & cut drill line. Trip in to 12,710' (tight spot). W&R f/12,710-12,945'. Circ bottoms up. Trip out for logs. Logging.

05/25/97 Day 128. 12,945' TD (0'). PO: Attempt to retrieve pkr. Log w/Schlumberger: FMI Dipmeter and Sonic. LD twelve 6-1/2" DC's. ND BOP. Run 3 stds, set pkr and ND & remove bottom pipe rams. Install C section. NU, test C section w/rig pump to 800 psi. Drop to 500 psi and held. Attempt to retrieve pkr. Set pkr @ 280', pkr now @ 500' (call for overshot).

05/26/97 Day 129. 12,945' TD (0'). PO: LD DP. Trip in w/overshot to catch pkr. Tag @ 500'. Trip out and LD fish. Test BOP equipment - OK. TIH and PU 12 jts DP. W&R f/12,695-12,945'. Circ, build volume and mix LCM. Make 10 std short trip. Circ, spot LCM on backside. LD DP. Unplug bit and LD DP.

THE ANSCHUTZ CORPORATION

5/28/97
PAGES: 1

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Fax: (817) 877-7912
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Yellow Creek Prospect
12,945' TD Weber
TAC WI: 100%
TIGHT HOLE

05/27/97 Day 130. 12,945' TD (0'). PO: Work tight csg. LD DP. Rig repair - cathead. LD DP. Break kelly. LD DC's. Change pipe rams to 7-5/8" csg rams. RU casing crew. Run casing. Work tight csg @ 12,524'. Cum bbls lost = 8835.

05/28/97 Day 131. 12,945' TD (0'). PO: Clean out inside csg w/coil tbg. Work csg f/12,524-12,590'. Will not circ w/1000 psi limit. RD csg equip. Work csg @ 12,590', will not circ. RU Dowell coil tbg unit. RIH w/circ jet and circ @ 1 bpm. Shaking out LCM. Tag float collar. Csg depth 12,509'; tbg depth 12,533'. Circ rate 2 bpm on top of float collar @ 3900 psi. Last 24 hrs: lost 150 bbls. Cum bbls lost = 8985.

ANSCHUTZ

THE ANSCHUTZ CORPORATION

5/29/97
PAGES: 1

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Attn: Lance Cook
Fax: (817) 877-7912
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Yellow Creek Prospect
12,945' TD Weber
TAC WI: 100%
TIGHT HOLE

05/29/97

Day 132. 12,945' TD (0'). PO: Pressure up w/coiled tbg. Clean out to float collar. Circ and shake out LCM. Pull coiled tbg. Flush coiled tbg and pump truck w/H_2O. PU motor and mill. RIH w/motor & mill, tag @ 12,513'. Drill float collar @ 12,513'. Wash to top of shoe @ 12,601'. PU to 12,500'. SI, attempt to circ @ 750 psi. RIH drill out shoe @ 12,601-12,603'. Drop down to 12,610' openhole (shoe @ 12,579.89' KB). PU to 12,500' and pressure up to 1540 psi. Pressure dropped to 863 psi in 90 minutes. Will not circ.

THE ANSCHUTZ CORPORATION

5/30/97
PAGES: 3

Includes 2 page chronological report.

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12,945' TD Weber
TAC WI: 100%
TIGHT HOLE

05/30/97

Day 133. 12,945' TD (0'). PO: Test BOP's. POOH w/coiled tbg. RD unit. RU Schlumberger. RIH and perforate ECP-pkr f/12,363-12,364' and @ top of sub f/12,347-12,348'. Try to circ and work csg. ND BOP's. Set csg slips w/360M. Cut off 7-5/8" csg. NU BOP's and change rams to 3-1/2". Test BOP's to 5000 psi. Note: ran 215 jts 7" csg 32# L80 = 9510.44; 70 jts 7-5/8" csg 38.5# L80 = 3049.94 + ECP packer, shoe FT/C XO = 38.71'. Total of 285 jts = 12,599.09' set @ 12,581' KB. Cum bbls mud lost = 8985 bbls.

@ 12,601'. PU to 12,500'. SI, attempt to circ @ 750 psi. RIH drill out shoe @ 12,601-12,603'. Drop down to 12,610' openhole (shoe @ 12,579.89' KB). PU to 12,500' and pressure up to 1540 psi. Pressure dropped to 863 psi in 90 minutes. Will not circ.

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THE ANSCHUTZ CORPORATION

6/2/97

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460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
12,945' TD Weber
TIGHT HOLE

05/31/97 Day 134. 12,945' TD (0'). PO: TIH w/retainer. PU 3-1/2" DP. RIH w/5-5/8" bit, 7" scraper. Tag float @ 12,491'. Circ and clean out inside csg. TOOH, RU retainer (Baker) and TIH. Cum bbls lost = 8985.

06/01/97 Day 135. 12,945' TD (0'). PO: POOH. TIH w/Baker retainer and circ. Set retainer @ 12,481'. Test DP to 1500 psi 5 minutes. Pressure up to 1400 psi. Held pressure and stung out of retainer. Pressure up to 1400 psi. Broke down (try to circ, will not circ). Sting back into retainer and pressured up to 2550 psi. Shot jt plugged. Release pressure. Stung out. Circ to run cement (WO Dowell). Squeeze cement 50 sx 10 bbls 15.8# @ 12,331'. Pull 5 stds, circ and WOC. Squeeze cement 50 sx 10 bbls 15.0# @ 12,331'. Held pressure 19 minutes from 700 to 0 psi. TOOH.

06/02/97 Day 136. 12,945' TD (0'). PO: TIH w/packer. TOOH, WOC. Close blind rams and pressure up to 550 psi; 1140 psi. Broke down to 540 psi. WO tools. RU retainer and TIH. Break circ and set retainer @ 12,330'. RU Dowell and test lines (est rate). Squeeze 25 sx 5 bbls 15.8#. TOOH, chain out. RU Dial-log. Perforate 4 holes @ 180° phasing @ 11,805' and 11,808'. Close blind rams and pressure to 400 psi. Broke down and held @ 350 psi. Will not circ on backside of 7" csg. MU retrievable packer and TIH.

THE ANSCHUTZ CORPORATION

6/4/97

CONFIDENTIAL

PAGES: 1

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12,945' TD Weber
TIGHT HOLE

43-043-30315

06/03/97 Day 137. 12,945' TD (0'). PO: Drill retainer @ 12,330'. TIH w/packer and break circ. Est injection rate @ 11,718', 1 bpm @ 4000 psi. Pump 11 bbls, 55 sx 15.8# cement and 5 bbls water ahead and 5 bbl water spacer. Squeeze last barrel. Increased 60 psi; SI 341 psi. WOC, reverse circ & reset pkr. Chain out of hole w/pkr. LD pkr and PU 6" bit + six 4-3/4" DC's. TIH. Cut & slip drill line. TIH, kelly up and break circ @ 11,868'. TIH, tag @ 12,110' (stringers). W&R f/12,110-12,314'. Drill cement f/12,314-12,330' (good cement). Drill retainer @ 12,330'.

06/04/97 Day 138. 12,945' TD (0'). PO: TIH w/7" scraper. Drill retainer f/12,330-12,343' (cement). Wash f/12,343-12,481'. Drill cement, retainer and float collar to 12,492' and bit quit. TOOH. MU 7-5/8" csg scraper. TIH to 3000'. TOOH, MU bit & 7" csg scraper.

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file

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6/5/97

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06/05/97

Day 139. 12,945' TD (0'). PO: TOOH to run liner. TIH w/7" scraper. TOOH, LD scraper. MU bit and TIH. Drill shoe @ 12,581' (drill firm f/12,600-12,635'). Wash f/12,581-12,945'. C&C mud and hole. Make 4 std wiper trip to 12,565'. C&C. TOOH SLM.

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THE ANSCHUTZ CORPORATION

6/6/97

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12,945' TD Weber
TIGHT HOLE

06/06/97

Day 140. 12,945' TD (0'). PO: Trip in w/bit. TOOH SLM 12,949'. RU and run 12 jts 5" 18# L80 liner hanger 557.73'. TIH slow, fill every 20 stds and drift. Circ. Cement w/Dowell. Plug down @ 2250 hrs, held. Reverse circ w/Dowell. Pump 38 bbls and pressure increased to 650 psi. SD, pull 6 stds and circ out down DP. TOOH. Liner set @ 12,946'; Overlap 192.73; Top liner @ 12,382.27.

@ 12,601'. PU to 12,500'. SI, attempt to circ @ 750 psi. RIH drill out shoe @ 12,601-12,603'. Drop down to 12,610' openhole (shoe @ 12,579.89' KB). PU to 12,500' and pressure up to 1540 psi. Pressure dropped to 863 psi in 90 minutes. Will not circ.

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06/02/97 Day 136. 12,945' TD (0'). PO: TIH w/packer. TOOH, WOC. Close blind rams and pressure up to 550 psi; 1140 psi. Broke down to 540 psi. WO tools. RU retainer and TIH. Break circ and set retainer @ 12,330'. RU Dowell and test lines (est rate). Squeeze 25 sx 5 bbls 15.8#. TOOH, chain out. RU Dial-log. Perforate 4 holes @ 180° phasing @ 11,805' and 11,808'. Close blind rams and pressure to 400 psi. Broke down and held @ 350 psi. Will not circ on backside of 7" csg. MU retrievable packer and TIH.

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06/05/97 Day 139. 12,945' TD (0'). PO: TOOH to run liner. TIH w/7" scraper. TOOH, LD scraper. MU bit and TIH. Drill shoe @ 12,581' (drill firm f/12,600-12,635'). Wash f/12,581-12,945'. C&C mud and hole. Make 4 std wiper trip to 12,565'. C&C. TOOH SLM.

06/06/97 Day 140. 12,945' TD (0'). PO: Trip in w/bit. TOOH SLM 12,949'. RU and run 12 jts 5" 18# L80 liner hanger 557.73'. TIH slow, fill every 20 stds and drift. Circ. Cement w/Dowell. Plug down @ 2250 hrs, held. Reverse circ w/Dowell. Pump 38 bbls and pressure increased to 650 psi. SD, pull 6 stds and circ out down DP. TOOH. Liner set @ 12,946'; Overlap 192.73; Top liner @ 12,382.27.

WELLSITE GEOLOGIST'S REPORT

CONFIDENTIAL

TIGHT HOLE

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

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

MICROFICHE

RECEIVED
JUN 09 1997
DIV. OF OIL, GAS & MINING

THE ANSCHUTZ CORPORATION

A L & L #14-33

SESE DRL
~~SW SW~~ **SEC 33 T6N R8E**

SUMMIT COUNTY, UTAH
43 043 30315

SUMMARY	2
WELL DATA	5
FORMATION TOPS	6
LITHOLOGY & SHOWS	7
SERVICES	80
DAILY OPERATIONS	81
MUD RECORD	108
BIT RECORD	114
DEVIATIONS	116
WELL SURVEY	119
DRILLING CURVE	123
DRILLING TIME LOG	125

SUMMARY

The Anschutz Corporation plans completion of the A L & L #14-33 in the Permian Phosphoria Formation and the Pennsylvanian Weber Sandstone having reached 12945' TD. Evaluation included computerized drilling time, samples, and hot-wire total gas and FID chromatography from a 2-man mud logging unit. Schlumberger ran laterolog, induction, neutron, density, sonic, spectral gamma, FMI fullbore micro imager, and structural dipmeter logs. There were no cores or DSTs.

Prospect

The principal objectives were the Phosphoria and upper Weber at Yellow Creek field, part of the western trend of Paleozoic sour gas production of the Utah-Wyoming thrust belt. Nearby tests include The Anschutz Corporation Fee #2-33, a 1977 dry hole in the Nugget Sandstone that was drilled from the same pad as the A L & L #14-33. Two deeper wells immediately across the state line in Uinta County, Wyoming, were also used for correlation. Just over 1/2 mile northeast is the 1995 UPRC Yellow Creek Deep #11-3, SEC 11 T14N R121W, a good Phosphoria producer. 1 1/4 miles northeast is the 1980 Amoco Urroz WIU #1, SEC 2 T14N R121W, which initially tested 25 MMCFPD from Phosphoria and 17.5 MMCFPD from Weber.

Drilling Program

The well plan addressed several potential difficulties. The 330-ft thick Preuss Salt was drilled with salt-saturated mud and was reamed every 1 – 5 ft. Drag during short trips was least when rig-salt was circulated to surface, indicating best hole conditions with full salt saturation. Heavy-walled 13 5/8" and 13 3/8" intermediate casing was set through the salt at 6015' in the underlying Twin Creek Limestone.

Lost circulation in the 8 3/4" hole was controlled by LCM; a second intermediate string was not required. In contrast to the prior well at Cave Creek field, mud losses were greater in the Phosphoria than in the Nugget.

Deviation was controlled by reduced weight on bit and stabilization in the 17 1/2" intermediate hole where casing was set at 1 3/4 deg. The 8 3/4" hole deviated updip to the east to a maximum of 12 1/2 deg. From a kickoff point at 9800' in the Thaynes Limestone, the hole was then drilled directionally back to the west at a maximum of 28 deg. Directional work went well, no keyseats developed, and the desired target was reached.

H2S was controlled by carrying 1.5 lbs/barrel zinc carbonate scavenger in the drilling mud. Less than 1 ppm H2S was detected from the mud during the first show in the Phosphoria. No other H2S was detected.

Most of the hole was logged without difficulty. Tight conditions for logging were found only toward the bottom in the Weber Sandstone.

The 7" production casing, equipped with centralizers and a 20-ft external casing packer, stopped at 12581' due to tight hole. At the time of this report, a 5" liner is scheduled to be run to 12945' TD.

SUMMARY

Well Survey

The composite well survey comprises: 1) Scientific Drilling gyro-survey from 0' – 6000'; 2) Schlumberger Anadrill MWD surveys from 6000' – 12704'; and 3) Schlumberger wireline data from 12704' – TD.

Structure

Field data from the A L & L #14-33 agree well with the structural cross sections prepared for the project.

The well spuds in Tertiary Wasatch that dips SE, opposite the dominantly W dip of all underlying strata expected at the A L & L #14-33. Evidence for SE dip in the Wasatch is hole drift to the NW, best shown on the azimuth vs. true vertical depth plot of the Schlumberger run #1 directional survey. The Scientific Drilling gyro survey also shows drift to the NW in the Wasatch.

The major thrust fault cut by the A L & L #14-33 lies in the Preuss Salt where the Jurassic Gannett Group and Stump/Preuss Formations override Jurassic Twin Creek Limestone.

Hole deviation and field-processed dipmeter-dips indicate the A L & L #14-33 penetrates the gently dipping W limb of the Yellow Creek anticline from the Twin Creek Limestone through the Woodside Red Beds. Statistical rosette plots show some possible E dip in the Dinwoody through Weber but quality of dip data is poor. The fully processed FMI may clarify dip in the Phosphoria and Weber.

Log correlation with the Amoco Urroz WIU #1 shows 140 ft of repeated section in the upper Phosphoria. A thrust fault is indicated at 12126'. Increasing dip, perhaps due to penetration of the steep east limb, is suggested by thickening at the anhydrites at the top of the Weber.

Twin Creek Limestone

Best gas show in the well is 190 units from a thin fractured interval at 6900' in the Watton Canyon Member.

Woodside Red Beds

Small scale imbricates may account for gray dolomitic siltstone—similar to Dinwoody—found within the Woodside Red Beds. Some of the anomalous gray strata were accompanied by drill breaks and significant hot-wire gas increases, e.g., 64 units total gas at 11000' and 33 units at 11172'.

SUMMARY

Phosphoria Formation and Weber Sandstone

The A L & L #14-33 is high at both the Phosphoria and Weber pays. The top of the Phosphoria is 440 ft high to that at the UPRC Yellow Creek Deep #11-3. The base of the Phosphoria is 550 ft above the original gas/water contact (-5900' datum) in the Phosphoria.

Mud losses due to seepage increased and persisted from the top of the Phosphoria to TD in the Weber. These losses were likely due to fractures. For comparison, losses to the Nugget Sandstone averaged roughly 150 B/day and were healed while drilling the Ankareh Red Beds. Losses while drilling the Phosphoria and Weber averaged 350 B/day even when substantial efforts were made to control seepage.

Mud log gas shows of C1 – C3 in the Phosphoria and Weber are relatively subtle but consistent with drilling overbalanced in fractured reservoirs of low matrix porosity. The following table summarizes gas shows:

Phosphoria/Depth	12022'	12040'	12086'	12118'	12162'	12280'	12630'	12698'
Total Gas Units	44	21	26	37	44	56	58	40
Weber/Depth	12848'	12862'	12900'	12942'				
Total Gas Units	24	30	24	20				

As expected, wireline log matrix porosity is low in both the Phosphoria and Weber. For example, sonic porosity in the Weber where delta-T matrix = 51.3 microsec/ft varies from 2% to 4%. The Weber gas shows fall outside the intervals of valid sonic log data but samples indicate low porosity here, too. At 40X, no to some slight porosity was visible in the Phosphoria cuttings. Mostly no to rare fair porosity was visible in the Weber. There were essentially no sample shows.

In conclusion, the A L & L #14-33 is expected to make a good gas well due to the high structural position and fracture-enhancement of the relatively tight Phosphoria and Weber reservoirs.

T. M. McCoy

T. M. McCoy
Consulting Geologist
2 June 1997

WELL DATA

OPERATOR:	The Anschutz Corporation
WELL NAME:	A L & L #14-33
LOCATION:	592' FSL & 748' FEL (Partial Section—East 1/2 Missing) SW SW Section 33, T6N, R8E Summit County, Utah
BOTTOM HOLE LOCATION:	74' S & 87' W of surface location: 518' FSL & 835' FEL at 12945' TD.
ELEVATIONS:	7147' GL 7170' KB
API NUMBER:	43-043-30315
FIELD:	Yellow Creek
ROAD DIRECTIONS:	From exit #3 of Interstate 80 in Evanston, 6.0 miles W & S on Harrison, Overthrust Road, and Yellow Creek Road (Uinta County Road 151); W 2.2 miles on lease road to location.
CONDUCTOR:	30" set at 60'.
SURFACE CASING:	20" 106.5# set at 1500' KB.
INTERMEDIATE CASING:	13 5/8" 88.2# & 13 3/8" 68# set at 6015' KB.
SPUD DATE:	17 January 1997 at 11:00 AM
DRILLING COMPLETED:	21 May 1997 at 2:30 AM
TOTAL DEPTH:	12945' Driller 12944' SLM 12935' Schlumberger: did not reach TD
LAST FORMATION PENETRATED:	Pennsylvanian Weber Ss.
WELL STATUS:	To be completed in Phosphoria Formation and in Weber Sandstone. 7 5/8" 39# & 7" 32# casing stopped at 12581'. A 5" liner is to be run to 12945' TD.
OPERATOR REPRESENTATIVES:	Hal Koerner - Engineering Dan Gallagher - Drilling/Operations Dave Dlouhy – Operations/Exploration Monte Fryt - Petrophysics

FORMATION TOPS

Formation	Log Top	TVD	Datum
KB	7170		7170
TERTIARY			
Wasatch Group	Surface		7170
LOWER CRETACEOUS/JURRASSIC			
Gannett Group	2130	2130	5040
JURASSIC			
Stump/Preuss Fms.	4456	4455	2715
Preuss Salt	5505	5502	1668
Base Preuss Salt	5832	5829	1341
Twin Creek Ls.			
Giraffe Creek/Leeds Creek Mbrs.	5906	5903	1267
Watton Canyon Mbr.	6640	6635	535
Boundary Ridge Mbr.	6984	6978	192
Rich Mbr.	7032	7026	144
Slide Rock Mbr.	7305	7297	-127
Gypsum Spring Mbr.	7417	7408	-238
JURASSIC/TRIASSIC			
Nugget Ss.	7528	7518	-348
TRIASSIC			
Ankareh Red Beds	8580	8560	-1390
Thaynes Ls.	9603	9567	-2397
Woodside Red Beds	10901	10854	-3684
Dinwoody Fm.	11674 ?	11601	-4431
PERMIAN			
Phosphoria	11910	11814	-4644
Fault	12126	12006	-4836
PENNSYLVANIAN			
Weber Anhydrite	12706	12523	-5353
Weber Ss.	12726	12541	-5371
TD Driller	12945		
TD SLM	12944		
Schlumberger: did not reach TD	12935		

LITHOLOGY AND SHOWS

The following descriptions are interpretive and are tied to drilling time at points of good correlation. Mud loggers collected lagged 30-ft samples from 1500' to 3000' and lagged 10-ft samples to TD. Sample quality was generally very good, rarely poor due to caving of grayish red purple shale from upper Ankareh.

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 GROUP

Surface Casing:	20" set at 1500' KB.
1470' – 1500'	100% **Cement**; firm to medium hard.
1500' – 1530'	100% **Conglomeratic Sandstone**; varicolored, overall pale yellowish brown, individual grains very light gray to dark gray, black, yellowish orange, pale red to reddish orange, trace greenish gray; some very fine to medium grained clusters; mostly loose medium to very coarse grains, some granules and probable pebble fragments; freshly angular to subrounded; moderately to poorly sorted; overall slightly calcareous; resistant lithics including chert. No show.
Remark:	Conglomeratic sandstone recovered at 1530' likely correlates to fast drilling break 1530' – 1550' at A L & L #14-33 and to sandstone 1520' – 1540' at Anschutz Fee #2-33.
1530' – 1560'	60% **Sandstone**; pale yellowish brown to lesser pale red and pale reddish brown; very fine to very coarse grained, part likely conglomeratic; angular to subround, trace rounded grains; moderately well to poorly sorted; loose medium to very coarse varicolored lithics; firm clusters; calcareous; argillaceous; no to slight porosity visible in clusters; fast drilling break 1530' – 1550' to 0.8 min/ft at best. 40% **Siltstone**; pale reddish brown to pale yellowish brown; argillaceous, part very fine to fine grained sandy; firm; calcareous; subblocky. Trace **Limestone**; pale red; earthy; moderately hard; argillaceous; no porosity visible. No show.
1560' – 1590'	60% **Siltstone**; pale reddish brown; firm; argillaceous; some very fine to medium grained sandy; calcareous, chips decrepitate in acid to argillaceous powder; subblocky. 40% **Sandstone**; varicolored loose lithics; pale yellowish brown to pale reddish brown very fine to fine grained clusters; angular to subround; moderately well to poorly sorted; very fine to very coarse grained; calcareous; clusters are commonly silty, argillaceous, and coated with clay; no porosity visible in clusters. No show.

LITHOLOGY AND SHOWS

1590' – 1620'	70% **Conglomeratic Sandstone**; overall pale yellowish brown, individual grains very light gray to dark gray, black, yellowish orange, pale red to reddish orange, trace greenish gray; mostly loose medium to very coarse grains, some granules and pebble fragments; minor clusters; freshly angular to subrounded; moderately to poorly sorted; moderately calcareous; resistant lithics including chert; mostly no porosity visible in clusters but fast drilling break 1612' – 1620' to 0.8 min/ft at best. 30% **Siltstone**; pale reddish brown; argillaceous, some sandy; calcareous. No show.
1620' – 1680'	10% – 30% **Shale**; grayish red to reddish brown; silty, some sandy; firm, some soft that is lost during sample washing; calcareous; subblocky. 70% – 50% **Siltstone**; pale red to grayish red; argillaceous, some sandy; firm, some medium hard; calcareous; subblocky. 20% **Sandstone**; pale red to pale reddish brown; very fine to fine grained clusters and loose varicolored fine to very coarse grained lithics; clusters are silty and argillaceous; calcareous; no porosity visible. No show.
1680' – 1800'	Interbedded. 20% – 30% **Sandstone**; pale reddish brown to yellowish brown; very fine to medium grained clusters, some loose varicolored medium to very coarse grained lithics; angular to subround; moderately to some poorly sorted; firm to medium hard clusters; calcareous; much is silty and argillaceous; lithics include black and yellowish orange chert; no to slight porosity visible, numerous thin fast drilling breaks. 70% – 60% **Siltstone**; pale reddish brown, pale red to grayish red, some yellowish brown; argillaceous; commonly very fine to medium grained sandy; firm, some medium hard; calcareous; subblocky, blocky. 10% **Shale**; pale reddish brown, pale red to grayish red, some tinted yellowish brown; smooth to silty; firm; calcareous; subblocky. No show.
1800' – 1890'	10% – 30% **Quartz Sand/Lithics**; varicolored, clear to light to dark gray, black, yellowish orange, pale red; medium to very coarse grains and some pebbles; angular to rounded; mostly loose fragments including trace dense limestone and chert; downhole, fast drilling breaks to 0.4 min/ft at best. 70% – 50% **Siltstone**; pale red to grayish red, yellowish brown to yellowish orange, some pale reddish brown—increased yellowish brown to orange iron staining; argillaceous, some sandy; firm to medium hard; calcareous; trace calcite fracture fill associated with some iron staining and mottling; subblocky, blocky. 20% **Shale**; pale red to grayish red, yellowish brown to yellowish orange, light gray; calcareous—part grades to argillaceous limestone. No show.
Remark:	Sharp lithologic change in following samples.
1890' – 1950'	**Sandstone**; overall medium to medium light gray, individual grains clear, light to medium gray, black, trace tinted pink and yellow; some fine to mostly medium to very coarse grained, part **conglomeratic**; angular to subround; moderately well to poorly sorted; abundant loose grains uphole, increased firm clusters downhole; calcareous; some carbonaceous and pyritic coaly inclusions; trace coarse crystalline pyrite and pyritic cement; no to some fair porosity visible, fast drilling breaks to 0.9 min/ft up to 12 ft thick. No show.
Remark:	No power to mud logging unit from 1796' – 1890'.

LITHOLOGY AND SHOWS

1950' – 2010' **Conglomeratic Sandstone**; overall medium to medium dark gray, individual grains and lithics are white, light to dark gray, black, and some brownish gray to yellowish brown, yellowish orange, pink, and green; abundant loose coarse grains to pebble fragments up to 6 mm; freshly angular to rarely rounded; some very fine to coarse grained clusters; moderately well to poorly sorted; clusters are firm to moderately hard; lithics include much hard gray, black, and brownish gray **chert** and light colored **quartzitic sandstone**; trace carbonaceous inclusions and coaly chips; no to fair porosity visible in clusters and in some lithic fragments. Trace **Shale** and **Siltstone**; medium to dark gray; some carbonaceous. No show.

2010' – 2040' **Conglomeratic Sandstone**; increased freshly angular fragments of pebbles of very light gray to pale yellowish orange and trace green **quartzitic sandstone**; fast drilling break 2013' – 2038' to 0. 6 min/ft at best. No show.

Remark: Fast drill breaks from 1858' – 2038' correlate well but not perfectly with porous sandstones/conglomerates 1848' – 2018' at the Anschutz Fee #2-33.

2040' – 2130' **Conglomeratic Sandstone**; overall yellowish brown, individual grains varicolored; very fine to very coarse grains and freshly broken fragments of pebbles; angular to some rounded; individual chips moderately well to poorly sorted; moderately hard clusters to loose lithics; calcareous; lithics are mainly light gray to pale yellowish orange, pink, and trace green quartzitic sandstone and quartzite; lesser white, medium to dark gray, and black chert; pale reddish brown to yellowish brown clay and silt coats some grains and is likely part of matrix; trace carbonaceous and coaly chips; no to slight porosity visible in lithics; slower drilling, no good drill breaks with increased weight on bit. Minor interbeds of **Siltstone**; medium light to medium gray, brownish gray; some carbonaceous; subblocky. No show.

GANNETT GROUP LOG TOP: 2130' TVD: 2130' DATUM: +5040'

2130' – 2160' 30% **Conglomeratic Sandstone**; as above. 30% **Sandstone**; very light gray; very fine to lower fine grained; well sorted; firm; non- to moderately calcareous; nonpeppered, quite clean; no to some fair porosity visible. 40% **Shale**; grayish red, some tinted reddish brown, partly mottled light greenish gray; silty; firm; calcareous; subblocky; trace cut by calcite microfracture fill; subblocky. Trace **Limestone**; pale red, light brownish gray to pale yellowish brown; cryptocrystalline; dense, hard; slightly argillaceous; probable nodules or pebble fragments; no porosity visible. No show.

2160' – 2190' 80% **Claystone/Shale**; much tinted grayish red purple, some medium gray, minor reddish brown, trace mottled light olive brown; smooth and slightly waxy, some dispersed sand; firm; mostly noncalcareous where gray, reddish brown is moderately calcareous and in acid decrepitates in part to argillaceous powder; subblocky to irregular. 10% **Limestone**; pale red, light brownish gray to pale yellowish brown; cryptocrystalline; dense, hard; slightly argillaceous; some rounded

LITHOLOGY AND SHOWS

grains and granules as well as freshly broken chips from probable nodules or pebbles; no porosity visible. 10% **Lithics**; loose varicolored grains as in conglomeratic sandstone. No show.

2190' – 2220' — 80% **Shale/Claystone**; grayish red to reddish brown, some medium to medium dark gray, trace light greenish gray; smooth to silty, sandy; moderately soft to firm; moderately calcareous where red; subblocky, blocky, irregular. 20% **Quartz Sand** and **Lithics**; clear to varicolored; as in conglomeratic sandstones above. Trace **Limestone**; light brownish gray, pale yellowish brown, pale red—hues mixed in part; dense, fragments of nodules or pebbles. No show.

2220' – 2266' — 100% **Sandstone**; very light gray to some very pale orange; some fine to coarse grained clusters, mostly loose medium to coarse and minor very coarse quartz sand; subangular, subround; moderately well to moderately sorted; 10% white to light gray to pinkish gray (buff) **chert** grains and freshly angular fragments of possible pebbles; trace bright reddish orange chert; noncalcareous; fair to good porosity visible in clusters, fast drilling break to 1 min/ft at best.

Remark: Good sample quality. Porous sandstone 2220' – 2266' correlates to 2206' – 2246' at the Anschutz Fee #2-33.

2266' – 2310' — 80% – 60% **Conglomeratic Sandstone**; overall pale yellowish brown; abundant white, light gray, and pale yellowish brown to pale yellowish orange **chert** fragments to 4 mm. 20% – 40% **Claystone/Shale**; medium light gray, part tinted grayish red purple, lesser grayish red to reddish brown. No show.

2310' – 2355' — Interbedded. 40% – 50% **Sandstone**; white to medium light gray; very fine to medium grained; well to moderately sorted; firm to medium hard; noncalcareous where white to very light gray; moderately calcareous where medium light gray; silty, argillaceous, and slightly carbonaceous streaks where darker; some clean sandstone chips may be lithic fragments; rare pyrite; no to some good porosity visible. 10% **Lithics**; varicolored; very light gray to pale yellowish orange quartzitic sandstone, light to medium dark gray **chert**; light brownish gray, yellowish brown, and pale red dense cryptocrystalline **limestone**—rounded and weathered surfaces in part. 50% – 40% **Claystone/Shale**; grayish red purple, light to medium light gray, pinkish gray (buff), pale reddish brown and grayish red, trace light greenish gray and dark yellowish orange; smooth and slightly waxy in part to silty; dispersed floating fine to medium quartz sand in part; non- to moderately calcareous; platy, subblocky, irregular. No show.

Remark: Tripped for new bit #6 Reed MS43A-M at 2360'. No trip gas.

2355' – 2370' — **Claystone/Shale**; light gray tinted pinkish gray (buff), light greenish gray, grayish red purple, minor grayish red to pale reddish brown; mottled, lacy texture in part; moderately smooth and slightly waxy to very fine and fine grained sandy—dispersed floating sand grains common; firm; noncalcareous; platy to irregular, most lacks fissility of true shale. No show.

LITHOLOGY AND SHOWS

2370' – 2400'	60% **Sandstone**; pale red to grayish red, lesser pinkish gray (buff); very fine to fine grained; subangular, subround; moderately well sorted; firm, some medium hard; mostly noncalcareous; moderately clean to silty, argillaceous; trace light green grains; no to fair porosity visible, some faster drilling to 1 min/ft. Grades to 20% **Siltstone**; grayish red; very fine grained sandy in part; argillaceous; firm; slightly to moderately calcareous; subblocky. 20% **Claystone**; light varicolored. Trace **Limestone**; pale red, light brownish gray to pale yellowish brown; cryptocrystalline, dense; probable nodules or pebble fragments. No show.
2400' – 2430'	80% **Sandstone**; very light gray, much variably tinted pinkish gray (buff), light greenish gray, and yellowish gray to light brownish gray; some very fine to mostly fine to medium grained; subangular, subround; moderately well sorted; firm to medium hard; non- to some slightly calcareous; slight to some good porosity visible, thin fast drilling breaks to 1 min/ft. 20% **Claystone** and lesser **Siltstone**; varicolored. No show.
2430' – 2460'	40% **Sandstone**; light gray, light greenish gray, light brownish gray, pale red, and yellowish gray; very fine to lower coarse grained; mostly tight, some fair porosity visible. 30% **Claystone**; light varicolored. 30% **Siltstone**; grayish red, some tinted dark reddish brown; argillaceous, commonly very fine grained sandy; firm; noncalcareous; subblocky, blocky. No show.
Remark:	Continued good sample quality.
2460' – 2490'	70% **Siltstone**; pale reddish brown, minor light gray to greenish gray, minor mottling; argillaceous, commonly very fine grained sandy; firm; calcareous; subblocky. 30% **Sandstone**; moderate orange pink to pale reddish brown, minor light gray to light greenish gray; very fine to fine grained; moderately well sorted; firm; calcareous; some silty, argillaceous; no to slight porosity visible. Rare **Calcite**; white microfracture fill cutting siltstone. Trace **Limestone**; light brownish gray, pinkish gray (buff), pale red; cryptocrystalline; dense; probable nodules or pebble fragments; no porosity visible. No show.
2490' – 2550'	Interbedded. 70%+ **Sandstone**; pale red to grayish red, some light to medium light gray; very fine to fine grained, minor medium grains; moderately well to moderately sorted; firm; non- to moderately calcareous; much is silty and argillaceous; trace green grains; mostly no porosity visible. 20% **Siltstone**; grayish red, minor light gray; argillaceous, commonly very fine grained sandy; firm; calcareous; subblocky, blocky. 2% – 5% **Limestone**; pinkish gray to yellowish brown; cryptocrystalline; dense; quite clean; likely fragments of nodules or pebbles; no porosity visible. 5% **Claystone**; medium light gray, some tinted grayish red purple; moderately smooth and slightly waxy in part; floating sand grains in part. Few chips **Calcite**; white fracture fill. No show.
2550' – 2580'	70% **Sandstone**; light gray, part stained yellowish orange; very fine and fine to minor medium grained; angular to subround; moderately well to moderately sorted; slightly friable, firm; calcareous; some yellowish brown to yellowish orange chert inclusions; mostly no porosity visible. 30% **Claystone**; varicolored, medium light gray, grayish red purple, grayish red, trace greenish gray, some mottled. No show.

LITHOLOGY AND SHOWS

2580' – 2610'	80% **Sandstone**; pale yellowish brown to yellowish gray; very fine grained; well sorted; firm; slightly to moderately calcareous; much is silty and partly argillaceous—grades to argillaceous sandy **siltstone**; no porosity visible. 10% **Limestone**; pinkish gray, pale red, pale yellowish brown; cryptocrystalline; dense, no porosity visible; likely fragments of nodules or pebbles. 10% **Claystone**; varicolored. No show.
Remark:	Tripped to change jets at 2622'. No trip gas.
2610' – 2630'	60%+ **Siltstone**; pale red to grayish red, some reddish brown, minor light brownish gray; commonly argillaceous and very fine grained sandy; firm; slightly to moderately calcareous; subblocky. 30% **Sandstone**; pale red, some pinkish gray to light brownish gray; very fine grained; well sorted; firm; slightly to moderately calcareous; some silty, argillaceous; no porosity visible. 5% **Limestone**; pinkish gray, pale red, pale yellowish brown; cryptocrystalline; dense; rare rounded surfaces coated with siltstone indicate nodules or pebbles; no porosity visible. No show.
2630' – 2670'	50%+ **Siltstone**; grayish red to reddish brown; argillaceous, part very fine grained sandy; firm; calcareous; subblocky, blocky. 20% **Shale**; grayish red to dark reddish brown; slightly silty; firm; calcareous, subblocky. 20% **Sandstone**; pale red to pale reddish brown; very fine to some fine grained; part silty and argillaceous; firm; calcareous; no porosity visible. 5% **Limestone**; pale red, lesser pale yellowish brown; cryptocrystalline; dense; probable nodules or pebbles; no porosity visible. No show.
2670' – 2700'	Interbedded. 50% **Sandstone**; pale red, lesser pinkish gray to light gray, trace pale brown; very fine to fine grained; subangular, subround; moderately well sorted; firm, some medium hard; calcareous; moderately clean to silty and argillaceous; mostly no to some slight porosity visible. 30% **Shale**; grayish brown to dark reddish brown; moderately smooth; firm; slightly calcareous; subblocky, blocky and **Claystone**; medium light to medium gray, grayish red purple; smooth and slightly waxy in part; some dispersed floating sand grains; subblocky to irregular. 20% **Siltstone**; reddish brown; very fine grained sandy, argillaceous. Trace **Limestone**; pinkish gray to pale red, light brownish gray to pale yellowish brown; cryptocrystalline; dense. No show.
Remarks:	Faster drilling at 2690' correlates to lowest resistivity and increased gamma of shale/claystone at 2674' at the Anschutz #2-33. Worked tight hole at 2663' and at 2694'.
2700' – 2730'	50% **Claystone/Shale**; medium to medium dark gray, grayish red purple, grayish red to dark reddish brown with minor greenish gray mottling; smooth and slightly waxy with some floating sand grains, some silty and very fine grained sandy; moderately soft to firm; gray and purple are mostly noncalcareous, red is slightly to moderately calcareous; irregular to subblocky. 30% **Siltstone**; grayish red to reddish brown; firm; calcareous; subblocky. 10% **Sandstone**; grayish red, lesser pale red; very fine to some fine grained; silty, argillaceous; firm; calcareous; no porosity

LITHOLOGY AND SHOWS

visible. 10% **Limestone**; pinkish gray, pale red, pale yellowish brown; cryptocrystalline; dense; quite clean; probable nodules or pebbles. No show.

2730' – 2760'

40% **Siltstone**; grayish red to dark reddish brown; argillaceous, very fine grained sandy; firm; calcareous; subblocky, blocky. 20% **Limestone**; pinkish gray to pale red, light brownish gray to pale yellowish brown; cryptocrystalline; dense; quite clean; rounded surfaces of some chips indicate nodules or pebbles. 20% **Shale/Claystone**; grayish red to dark reddish brown, some medium gray to grayish red purple; smooth to silty; firm, some moderately soft; slightly to moderately calcareous; subblocky to irregular. 20% **Sandstone**; pale red to grayish red, some faintly grayish red purple; very fine to fine grained; silty, argillaceous; firm, medium hard; calcareous; no porosity visible. No show.

2760' – 2820'

20% increasing to 50% **Sandstone**; pale red to grayish red, tinted reddish orange downhole, minor medium light gray; very fine and fine grained, trace medium grains uphole; subangular, subround; moderately to moderately well sorted; firm; moderately to very calcareous; some silty and argillaceous, moderately clean downhole; mostly no porosity visible. 50% – 20% **Siltstone**; pale to some dark reddish brown; argillaceous, some very fine grained sandy; firm, part moderately water sensitive; calcareous; subblocky. 20% **Shale**; dark reddish brown; silty to moderately smooth; firm; calcareous; subblocky and **Claystone**; medium gray, tinted grayish red purple, some mottled grayish red; smooth and slightly waxy; moderately soft to firm; non- to slightly calcareous; some floating sand grains; irregular subblocky. 10% **Limestone**; pale red, light brownish gray to pale yellowish brown; cryptocrystalline; dense; probable nodules or pebbles; no porosity visible. Trace **Calcite**; white fracture fill. No show.

2820' – 2850'

40% **Claystone**; medium light to medium gray, tinted grayish red purple; smooth and slightly waxy; and lesser **Shale**; grayish red. 20% **Siltstone**; reddish brown. 30% **Sandstone**; medium light gray to pale red; very fine to medium grained; moderately well to moderately sorted; calcareous; mostly no porosity visible, some loose grains. 10% **Limestone**; pale red to pale yellowish brown; dense. No show.

2850' – 2880'

50% **Sandstone**; light brownish gray, pale red, minor light gray, very fine to medium grained clusters, some loose medium to very coarse quartz, limestone, and chert grains; angular to subrounded, minor rounded; moderately well to moderately sorted clusters, part may be conglomeratic; firm to moderately hard; moderately to very calcareous; some dark lithics; moderately clean to silty, argillaceous; mostly no porosity visible. 30% **Claystone**; medium gray, grayish red purple, some mottled grayish red; smooth and slightly waxy; floating fine to medium sand grains; moderately soft to firm; non- to slightly calcareous; and lesser **Shale**; grayish red; smooth to silty; firm; slightly calcareous; subblocky. 20% **Limestone**; light brownish gray to pale yellowish brown, pinkish gray to minor pale red; cryptocrystalline; dense; subround to round coarse grains and granules suggest freshly angular chips are fragments of nodules or pebbles rather than chips of bedded limestone; no porosity visible. Minor **Siltstone**; reddish brown. Trace **Calcite**; white fracture fill. No show.

LITHOLOGY AND SHOWS

2880' – 3040'

20% **Sandstone**; pale red to some light brownish gray; very fine and fine to minor medium grained clusters; some loose medium to very coarse grains in part; subangular, subround; moderately well to moderately sorted; firm; slightly to moderately calcareous; much is argillaceous, commonly silty; no porosity visible. 20% **Siltstone**; grayish red, part tinted reddish brown; argillaceous, some very fine grained sandy; firm; calcareous; subblocky. 50% **Shale/Claystone**; grayish red to dark reddish brown, some mottled greenish gray, lesser medium light to medium gray and grayish red purple; smooth and slightly waxy in part to silty; some dispersed floating sand grains, streaks of very fine to medium grained sandstone laminae; red is slightly to moderately calcareous, gray and grayish red purple are less calcareous; gray and grayish red purple are sensitive to rewetting—chips flake apart; subblocky to irregular and nonfissile. 10% **Limestone**; light brownish gray to pale yellowish brown, lesser pinkish gray to pale red, hues mixed in part; cryptocrystalline; quite clean; probable nodules or pebbles, some loose subround grains and granules; dense, no porosity visible. Trace **Calcite**; white fracture fill; loose and cutting all rock types. No show.

3040' – 3050'

70% **Shale/Claystone**; increased grayish red purple and medium gray, also grayish red to reddish brown, minor greenish gray; smooth and slightly waxy in part, some silty and very fine grained sandy; floating sand grains in part; moderately soft to firm; calcareous; coarse platy, subblocky, and irregular. 10% **Sandstone**; mostly pale red, tinted reddish brown. 10% **Siltstone**; reddish brown. 10% **Limestone**; light brownish gray to pale yellowish brown, pale red; dense. No show.

3050' – 3099'

10% – 30% **Sandstone**; pale brown, part tinted pale reddish brown; very fine to fine grained clusters, some medium to very coarse grains are loose or floating in finer matrix; subangular, subround; moderately well to some poorly sorted; firm, some medium hard; calcareous; silty, argillaceous; no porosity visible. 10% – 20% **Siltstone**; reddish brown; argillaceous; calcareous; subblocky. 80% – 40% **Shale/Claystone**; reddish brown, grayish red, medium gray, grayish red purple, minor greenish gray, some mottled; moderately smooth and slightly waxy, some silty to sandy; dispersed, floating fine to very coarse quartz and limestone grains common; firm, some moderately soft; moderately calcareous; platy to subblocky, also irregular and nonfissile. Trace – 10% **Limestone**; light brownish gray to pale yellowish brown, minor pale red; cryptocrystalline; quite clean; probable nodules or pebbles as well as sand-size grains; dense, no porosity visible. Trace **Calcite**; white fracture fill; loose, attached, and cutting across all rock types. One **Fossil**; dark yellowish brown; 1 mm; spherical; whorled ridges. No show.

Remark:

Tripped for new bit #7 Security SS-84 at 3099'. No trip gas.

3099' – 3150'

10% – 20% **Sandstone**; light brownish gray, pale brown, some tinted pale reddish brown; very fine to medium grained; subangular, subround; moderately well to some poorly sorted; firm; calcareous; part silty, argillaceous; no porosity visible. 10% – 20% **Siltstone**; reddish brown; calcareous; subblocky. 70% – 50% **Shale/Claystone**; reddish brown, grayish red, medium gray, grayish red purple, minor greenish gray; hues mixed in part; firm, some moderately soft; calcareous; smooth and slightly waxy to silty, sandy; floating fine to very coarse sand grains in part; platy, subblocky, irregular. 10% **Limestone**; pale to dark yellowish brown,

LITHOLOGY AND SHOWS

light brownish gray, minor pale red; cryptocrystalline; dense; no porosity visible. Trace **Calcite**; white, some red stained; fracture fill. No show.

3150' – 3200' — 70% – 50% **Sandstone**; grayish orange pink, light brownish gray to pale brown; very fine to fine grained, minor medium to coarse grained; subangular, subround; moderately well to moderately sorted; firm, some medium hard; some loose grains at 3180' – 3190'; calcareous; commonly argillaceous, silty; some reddish orange stained quartz and chert; mostly no porosity visible. 20% – 40% **Shale/Claystone**; grayish red, grayish red purple, medium light to medium gray, some tinted greenish gray, reddish brown; smooth and slightly waxy, some silty, floating sand grains common; firm, some moderately soft; slightly to moderately calcareous; platy, subblocky, irregular. 10% **Siltstone**; reddish brown, minor gray. Trace **Limestone**; light brownish gray to pale to dark yellowish brown; cryptocrystalline; dense; no porosity visible. Rare **Calcite**; white fracture fill. No show.

3200' – 3240' — 30% – 20% **Sandstone**; grayish orange pink to pale brown, pale red; very fine to fine grained; calcareous; tight. 20% – 40% **Siltstone**; much reddish brown; argillaceous, some very fine grained sandy; firm, some medium hard; calcareous; subblocky. 40% – 50% **Shale/Claystone**; grayish red, reddish brown, medium light to medium gray, grayish red purple, minor greenish gray; some mottled, spotted; quite smooth to silty, sandy; firm; slightly to moderately calcareous, some appears partly dolomitic; platy, subblocky, irregular. Trace **Limestone**; light brownish gray to yellowish brown, some tinted pale red; dense. Trace **Calcite**; white; fracture fill. No show.

3240' – 3250' — 60% **Sandstone**; pinkish gray, some white; some very fine to medium grained clusters, mostly loose medium to coarse quartz sand; subangular to some rounded; moderately well to medium sorted; firm; calcareous; some moderately clean; no porosity visible in clusters, fair drilling at 6 min/ft. 10% **Siltstone**. 30% **Shale/ Claystone**; varicolored. Trace **Limestone**; yellowish brown; dense. Trace **Calcite**. No show.

3250' – 3260' — 40% **Sandstone**; mostly white to pinkish gray, some moderately red, some light brownish gray; fine to lower medium grained, decrease in loose sand from above; subangular to some rounded; moderately well sorted; firm to moderately hard; very calcareous; no porosity visible, some white clay fill. 40% **Shale/Claystone**; grayish red, light brownish gray, light gray, light olive gray; some mottled; smooth to silty, occasional sand grains; firm; slightly to moderately calcareous; platy to some splintery, irregular. 20% **Siltstone**; varicolored, mostly red. Trace **Limestone**; light brownish gray to brownish gray; dense. Trace **Calcite**. Trace bit-smeared chips; orange and white mottled; soft; highly calcareous; argillaceous. Trace mineral fluorescence in limestone and some sandstone chips. No show.

3260' – 3280' — 50% – 60% **Shale/Claystone**; grayish red to medium light gray, much is mottled; smooth, some sandy; moderately calcareous; platy to blocky, irregular. 25% **Sandstone**; white; very fine to medium grained, some coarse grains, many loose grains; subrounded; moderately to poorly sorted; hard; very calcareous, some rounded limestone grains; no porosity visible. 10% **Siltstone**; grayish red to dark reddish brown to light brownish gray; sandy, some biotite grains; slightly

LITHOLOGY AND SHOWS

calcareous. 5% **Limestone**; light brownish gray to grayish red. Trace **Calcite**. Trace bit-smeared chips; orange and white mottled; soft; highly calcareous; argillaceous. Mineral fluorescence in limestone. No show.

3280' – 3340' 50% **Shale/Claystone**; grayish red to medium light gray, much is mottled; smooth to silty; moderately calcareous; platy to blocky, irregular. 40% **Siltstone**; grayish red to light brownish gray, some white mottling in red chips; red chips are more argillaceous; firm to hard; moderately calcareous; subblocky to blocky. 5% **Sandstone**; very light gray to pinkish gray; very fine to medium grained; rounded to subangular; poorly to moderately sorted; highly calcareous; no porosity visible. 5% – 10% **Limestone**; light brownish gray to some pale red; clean except for pale red chips; cryptocrystalline; dense; trace loose rounded grains. Trace **Calcite**. Some mineral fluorescence in limestone and calcite. No show.

3340' – 3350' 40% – 50% **Sandstone**; grayish red to dark reddish brown to light brownish gray; conglomeratic with predominantly very fine grained matrix grading to siltstone; rounded to subangular; poorly sorted; firm; slightly calcareous except for limestone grains; no porosity visible. 40% **Shale/Claystone** as above. 10% **Limestone** as above. Trace **Sandstone**; white to light greenish gray; very fine to fine grained; moderately well sorted; very calcareous. No show.

3350' – 3360' 70% **Shale/Claystone**; grayish red to light brownish gray; smooth, occasional coarse rounded sand grains; slightly calcareous where red, moderately calcareous where gray; blocky. 20% **Claystone**; moderate reddish orange; very soft, probably washed away in most samples, could be the orange mottling in the bit smeared chips mentioned before. 5% **Sandstone**; conglomeratic; as above. 5% **Limestone** as above. Trace **Claystone**; light greenish gray; soft; smooth; noncalcareous. No show.

3360' – 3370' 60% **Sandstone**; white to light brownish gray to grayish red; very fine to fine grained grading to **siltstone**; subangular to subrounded; moderately well sorted; firm; slightly to highly calcareous, more calcareous in whiter chips; no porosity visible. 30% **Shale** as above. 10% **Limestone** as above. Trace soft orange **Claystone** as above. No show.

3370' – 3390' 50% **Shale** grading to **Siltstone**; grayish red to medium reddish brown; moderately to highly calcareous; blocky. 30% **Shale**; light gray to light brownish gray; sandy; moderately calcareous due to calcite grains; irregular. 15% – 20% **Sandstone**; light brownish gray to grayish red, lightly peppered; very fine to lower fine grained; subrounded; moderately well sorted; firm; moderately to highly calcareous. Trace **Limestone**; dense. Trace **Limestone**; nodules. No show.

3390' – 3450' 40% – 60% **Siltstone** grading to very fine grained **Sandstone**, sandier downhole; dark reddish brown to grayish red, occasionally peppered; some conglomeratic; firm; moderately to very calcareous, many embedded calcite sand grains; argillaceous. 20% – 30% **Shale/Claystone**; medium light to medium gray to light brownish gray; silty to sandy; soft; moderately calcareous; platy to subblocky. 10% – 20% **Shale/ Claystone**; pale red to grayish red, some mottled with gray; silty, some smooth; moderately calcareous; subblocky, irregular. 5% – 10% **Limestone**; light brownish gray, greenish gray, pale red, yellowish brown; dense. Trace **Calcite**

LITHOLOGY AND SHOWS

fracture fill. Distinctly smaller cuttings from 3410' – 3420' and 3440' – 3450' correspond with faster drilling. No show.

3450' – 3460' — **Shale** and **Claystone**; red and gray; as above in same percentages. 5% **Limestone** as above. 10% **Siltstone** and **Sandstone**; very fine grained; as above. 40% **Quartz Sand**; loose medium grains and medium to coarse grain-sized calcareous cuttings. No show.

3460' – 3470' — As from 3390' – 3450', but with 15% dense **Limestone**. No show.

3470' – 3480' — 40% **Siltstone** grading to very fine grained **Sandstone**; dark reddish brown to grayish red, occasionally peppered; some conglomeratic; firm; moderately to very calcareous, many embedded calcite sand grains; argillaceous. 30% **Shale/Claystone**; medium gray to brownish gray; silty to sandy; soft; slightly to non-calcareous; subblocky, irregular. 20% **Shale/Claystone**; pale red to grayish red, some mottled with gray; silty, some smooth; moderately calcareous; subblocky, irregular. 10% **Limestone**; light brownish gray, greenish gray, pale red, yellowish brown; dense. Trace **Claystone**; moderate reddish orange; very soft to friable and sandy, probably washed away in most samples; many chips bit-smeared, possible wall cake, but some show sedimentary structure. No show.

3480' – 3498' — Many loose sand grains and very tiny cuttings. 50% – 75% **Siltstone** grading to **Sandstone**; dark reddish brown to grayish red; very fine grained; subangular to subrounded, well sorted; firm; very calcareous; no porosity visible. 10% **Shale/Claystone**; medium gray to brownish gray; silty to sandy; soft; slightly to noncalcareous; subblocky, irregular. 5% – 20% **Shale/Claystone**; pale red to grayish red, some mottled with gray; silty, some smooth; moderately calcareous; subblocky, irregular. Trace **Limestone**; light brownish gray, pale red, bluish white; dense. Trace **Calcite**, fracture fill. No show.

Remark: — Tripped for new bit #8 Hughes GTX-03 at 3498'. Larger cuttings with new bit—better sample quality.

3498' – 3535' — 80% **Siltstone** grading to **Sandstone**; pale red to grayish red; very fine grained, occasional medium grains; subrounded to subangular; moderately well sorted; firm; highly to moderately calcareous; no porosity visible. 10% – 15% **Shale/Claystone**; medium light gray; sandy; soft; slightly calcareous, slowly decrepitates partially in HCl; blocky. 5% – 10% **Shale/Claystone**; grayish red with occasional redox mottling; smooth to silty; soft; moderately calcareous; subblocky, irregular. Trace **Limestone**; dense. No show.

3535' – 3552' — As from 3498' – 3530' but with increase in sandstone grain size corresponding to good drill break. 30% **Sandstone**; pale red, some lightly peppered; very fine to fine grained; some medium grained; subrounded to subangular; moderately well sorted; firm, medium grained chips are somewhat friable; very calcareous initial reaction followed by moderate bubbling, larger grained chips decrepitate; white clay fill/calcite cement? seen in chips with larger grain size; no porosity visible. No show.

LITHOLOGY AND SHOWS

3552' – 3570'	Many tiny cuttings. 60% – 70% **Shale/Claystone**; light gray to grayish red to grayish red purple with blended hues and frequent redox mottling; smooth, some with rounded medium to very coarse sand grains included; soft; slightly to moderately calcareous; platy to subblocky, irregular. (Some of the gray and red shale/claystone described in the previous 400 feet are likely oxidized and reduced samples from the same bed, but were described separately. The evidence in these samples is more convincing.) 20% – 30% **Siltstone** grading to very fine grained **Sandstone**; pale red to grayish red; subrounded to subangular; moderately well sorted; firm; highly to moderately calcareous; no porosity visible. Trace increasing downhole to 10% **Sandstone**; pale red, some lightly peppered; fine grained; some medium grained; subrounded to subangular; moderately well sorted; firm, medium grained chips are somewhat friable; very calcareous initial reaction followed by moderate bubbling; white calcite cement/clay fill? seen in chips with larger grain size, no porosity visible. Trace **Chert**. Trace **Limestone**. Trace **Calcite**. No show.
3570' – 3620'	Larger cuttings, but otherwise as above with increase to 20% **Sandstone**; fine to medium grained; and increase to 10% – 20% **Limestone**. Trace **Chert**; yellowish; from 3610' – 3620'. One chip of red shale from 3610' – 3620' with included 8-sided black mineral prisms. No show.
3620' – 3650'	50% – 70% **Shale/Claystone**; light gray to grayish red to grayish red purple with blended hues and some redox mottling; smooth, some with rounded medium to very coarse sand grains included; soft; slightly to moderately calcareous; platy to subblocky, irregular. 20% decreasing to 5% **Sandstone**; pale red, brownish gray to light brownish gray, trace peppered; very fine to lower fine grained; subrounded to subangular; moderately well sorted; firm to friable, some hard; very calcareous initial reaction followed by moderate bubbling; white calcite cement/clay fill?, no porosity visible. Trace **Sandstone**; fine to medium grained as in 3552' – 3570'. 10% **Limestone**; light brownish gray; dense; argillaceous; blocky. No show.
3650' – 3660'	60% **Sandstone**; light gray to light brownish gray, some whitish, some dark grains especially in larger grain sizes; very fine to some fine to medium grained; subangular; well to moderately sorted; firm to some friable; very calcareous; no porosity visible. 35% **Shale/Claystone** as above. 5% **Limestone**; light brownish gray; dense; argillaceous; blocky. Trace **Calcite**. No show.
3660' – 3710'	50% – 60% **Shale/Claystone**; grayish red to light gray to light greenish gray, some grayish red purple; smooth to silty, some sandy; soft; moderately to highly calcareous; subblocky, subplaty, trace splintery, irregular. 30% **Sandstone** as from 3650' – 3660'. Trace **Limestone**; brownish gray; dense, some microcrystalline; argillaceous. Trace **Calcite**. No show.
3710' – 3720'	**Shale/Claystone**; as above with occasional limestone nodules up to 2mm where gray. Trace **Calcite**; soft white cuttings with brown and black very fine sand grains; argillaceous; subrounded cuttings, some bit-smeared; does not fully decrepitate in HCl, 50% calcite/50% clay and sand. No show.
3720' – 3730'	Color shift to predominantly red. 70% **Shale** grading to **Siltstone**; grayish red to dark reddish brown, some with gray-green redox mottling; smooth to silty, trace

LITHOLOGY AND SHOWS

with embedded limestone nodules; soft; slightly calcareous; platy to blocky. 10% **Siltstone** grading to **Sandstone**; pale red to light brownish gray, trace dark grains; very fine grained; subangular; moderately well sorted; firm to hard; moderately calcareous; platy, some blocky; no porosity visible. 5% **Shale/Claystone**; medium light gray to light brownish gray; smooth to some sandy; soft; moderately to very calcareous; subblocky to blocky. Trace **Limestone**. Trace loose **Limestone** nodules up to 2mm. Trace **Calcite** fracture fill. No show.

3730' – 3800' Color shift to predominantly gray. 85% **Shale**; light brownish gray; smooth to some sandy; firm where platy, hard where blocky; very calcareous, some dolomitic; platy/fissile uphole where limy, blocky downhole where dolomitic, subblocky and limy where sandy. 10% **Shale**; grayish red; smooth, some silty; soft; slightly calcareous; subblocky to blocky. Trace **Sandstone**; light brownish gray, some whitish due to calcite cement?; very fine grained. Trace **Calcite** fracture fill. Trace **Limestone**; loose nodules. Trace **Dolomite**. No show.

3800' – 3810' **Shale**; light brownish gray as above, increase in grayish red shale to 25%. No show.

3810' – 3820' 85% **Dolomitic Shale** and **Argillaceous Dolomite**; grayish red purple to brownish gray; smooth; hard chips but surface can be scratched with tweezers; blocky. 5% **Shale**; grayish red; silty; soft to firm; non-calcareous; blocky. 10% **Siltstone**; grayish red; firm; very calcareous; platy to blocky. No show.

3820' – 3860' 50% **Shale/Dolomite** as above. 40% **Siltstone**; grayish red to pale reddish brown, trace dark minerals; firm; slightly to some moderately calcareous; blocky, irregular. 10% **Shale**; grayish red; smooth; soft to firm; noncalcareous; rounded to blocky. Trace **Claystone**; light greenish gray; smooth to silty; firm to soft; slightly calcareous; blocky. Trace **Calcite**. Trace **Limestone** nodules. No show.

3860' – 3870' 15% **Dolomite**; medium gray to light brownish gray; microcrystalline; hard; blocky. 25% **Sandstone**; white to very light gray; very fine grained, subrounded to subangular, moderately well sorted; noncalcareous to some slightly calcareous; rounded plates and blocks. 40% **Shale/Siltstone**; grayish red, some with redox mottling; some sandy; firm; non- to moderately calcareous; blocky. 20% **Shale**; grayish red purple; smooth to silty; soft to firm; slowly flakes apart in HCl with little bubbling; platy, blocky, irregular. Trace **Calcite** fracture fill. No show.

3870' – 3900' 30% **Shale**; light brownish gray; smooth with some free floating very fine grained sand; firm; noncalcareous; platy. 20% **Shale**; light to medium light gray to light brownish gray; sandy; firm; moderately to highly calcareous; blocky. 10% – 20% **Limestone**, light brownish gray to brownish gray; dense; blocky; argillaceous. 10% – 15% **Shale**; grayish red; silty, some sand; firm; non- to slightly calcareous; blocky, platy. 10% – 15% **Siltstone**; grayish red; some sandy; firm; slightly calcareous; blocky. 10% – 25% **Shale**; grayish red purple; smooth to silty; non- to some slightly calcareous; platy to blocky. Trace **Limestone** nodules. Trace **Sandstone**: white; fine to medium grained; hard; very calcareous; no porosity visible. No show.

LITHOLOGY AND SHOWS

3900' – 3910'	75% **Shale**; grayish red purple; smooth to some sandy; soft; non- to moderately calcareous, some probably dolomitic; platy to blocky. 15% **Limestone**; light brownish gray; dense; clean; blocky. 10% **Shale** grading to siltstone; grayish red; soft to firm; slightly to moderately calcareous; platy to blocky. Trace **Calcite**. Trace **Dolomite**; microcrystalline. No show.
3910' – 3930'	50% – 60% **Shale**; grayish red purple to very dusky red; smooth to sandy; soft to firm; non- to slightly calcareous; blocky, irregular. 30% **Shale** grading to **Siltstone**; medium gray to light brownish gray; firm to soft; slightly to moderately calcareous, sandier chips more reactive in HCl; blocky to platy. 10% – 20% **Shale** grading to **Siltstone**; grayish red; firm to friable; moderately to highly calcareous; blocky. 5% - 10% **Limestone** as above. Trace **Limestone** nodules. No show.
3930' – 3940'	40% **Shale** and **Siltstone**; grayish red. 30% **Shale** and **Siltstone**; gray. 25% **Shale**; dusky red. 5% **Limestone**. No show.
3940' – 3960'	90% **Shale** and **Siltstone**; grayish red, dark reddish brown—mottled greenish gray in part, some tinted grayish red purple; smooth to sandy; firm; slightly to moderately calcareous; subblocky. 5% **Limestone**; pale red to grayish red, minor light brownish gray; cryptocrystalline; dense; some rounded surfaces suggest nodules or pebbles; no porosity visible. 5% **Sandstone**; pale red to grayish red, medium light gray; very fine to fine grained; calcareous; no porosity visible. Trace **Calcite**; white fracture fill. No show.
3960' – 4020'	50% – 90% **Sandstone**; pale red, some grayish orange pink downhole; very fine to very coarse grained, mostly fine to medium grained; angular to subround; moderately well to some poorly sorted; firm, medium hard; moderately to very calcareous; silty and argillaceous to moderately clean; white, gray, yellowish brown, and reddish orange **chert** grains common; no to some fair porosity visible downhole, overall slower drilling, few thin fast breaks at 4.3 min/ft at best. 45% – 10% **Shale** and **Siltstone**; grayish red, lesser dark reddish brown. 5% – Trace **Limestone**; pale red, grayish red; cryptocrystalline, dense. Trace free **Chert**. No show.
4020' – 4060'	20% – 40% **Limestone**; light brownish to brownish gray, trace pale red; cryptocrystalline; moderately hard, hard; commonly very fine to fine grained sandy; slightly siliceous; argillaceous; grades to calcareous, slightly siliceous **claystone**; no porosity visible; likely fractured. 60% – 40% **Shale** and lesser **Siltstone**; medium to medium dark gray; much tinted grayish red, greenish gray, and trace grayish red purple; minor dark reddish brown; smooth to some sandy; firm, medium hard; non- to some moderately calcareous; subblocky to irregular. 20% **Sandstone**; pale red to grayish orange pink; very fine to coarse grained; as above. Trace **Calcite**; white fracture fill; commonly cutting limestone. No show.
4060' – 4110'	Interbedded. 30% – 40% **Sandstone**; light to medium gray, pinkish gray to light brownish gray, minor pale red to grayish red, trace greenish gray; very fine and fine to some medium grained; subangular, subround; moderately well to moderately sorted; firm, some medium hard; non- to slightly calcareous; mostly argillaceous, silty; no porosity visible. 60% – 50% **Shale**; medium light to medium dark gray,

LITHOLOGY AND SHOWS

grayish red, minor dark reddish brown—partly mottled light greenish gray, and minor yellowish to olive gray; some smooth and slightly waxy, mostly silty and very fine to some medium grained sandy; firm; non- to some moderately calcareous; platy to subblocky, irregular. 10% **Limestone**; pale red, light brownish gray; cryptocrystalline; moderately hard, hard; quite clean; probable nodules or fragments of pebbles; no porosity visible. No show.

4110' – 4140' 30% – 40% **Claystone**; light brownish gray, some pale red; calcareous/dolomitic; dense cryptocrystalline appearance; partly silicified, commonly scrapes steel from tweezers; hard, sharp cuttings; grades to lesser **Limestone/Dolomite**; cryptocrystalline; dense, hard; partly silicified, clear to light gray cherty patches; part stains in Alizarin Red and largely dissolves, part does not stain and remains largely intact; argillaceous; distinct brecciated texture in part; no porosity visible but 1% – 2% associated **Calcite** fracture fill. 70% – 60% **Shale**; medium light to medium dark gray, much tinted grayish red purple, grayish red, minor greenish gray; some smooth and slightly waxy, mostly silty and very fine to fine grained sandy; firm to moderately hard; non- to some slightly calcareous; platy, subblocky, irregular. No show.

4140' – 4200' 90%+ **Shale**; grayish red to dark reddish brown, minor dark grayish red; some smooth, much is silty to very fine grained sandy; grades to lesser argillaceous, sandy siltstone; firm; non- to slightly calcareous; platy, subblocky to irregular. 10% – 5% **Claystone**; light brownish gray, pale red; cryptocrystalline appearance; hard, dense; calcareous/dolomitic; partly silicified; grades to **Limestone**; light brownish gray, pale red; cryptocrystalline, dense; hard; argillaceous to quite clean; part siliceous; no porosity visible. No show.

4200' – 4220' 100% **Shale/Claystone**; medium light to medium gray, minor grayish red to dark reddish brown is likely caving; smooth and slightly waxy, minor dispersed floating fine to coarse grained sand; moderately soft to firm; noncalcareous; platy to irregular, part exhibits no fissility. Trace **Limestone**; light brownish gray, pale red; cryptocrystalline, dense. Trace **Calcite**; white fracture fill. No show.

4220' – 4270' 5% – 10% **Limestone/Dolomite**; pale reddish brown, grayish red, pale brown; cryptocrystalline, dense; hard; argillaceous, grades to calcareous/dolomitic **claystone**; no porosity visible. 20% – 40% **Siltstone**; pale to dark reddish brown; argillaceous, very fine grained sandy; moderately hard; non- to slightly calcareous/dolomitic; subblocky, blocky; may account for slower drilling; grades downhole to some **Sandstone**; grayish red to reddish brown; very fine to fine grained; calcareous; dirty; no porosity visible. 70% – 50% **Shale/Claystone**; medium light to medium gray, some tinted greenish gray, grayish red to reddish brown; smooth and slightly waxy with minor dispersed sand as above, much is silty; firm, some moderately hard; non- to slightly calcareous/dolomitic; platy to irregular; part likely caving. Trace **Calcite**; white fracture fill. No show.

4270' – 4300' 30% – 70% **Sandstone**; some grayish red to mostly pale red; some very fine, mostly fine to medium grained, minor coarse to very coarse grains and possible pebble fragments—coarsens downhole; angular to subround; moderately well to some poorly sorted; firm to moderately hard; noncalcareous; conspicuous opaque white

LITHOLOGY AND SHOWS

grains appear altered, some may be chert; some glassy broken quartz grains and siliceous streaks; some free white, gray, yellowish brown, and reddish orange **chert** downhole; no to minor fair porosity visible, fair drilling break 4274' – 4290' averages 4.2 min/ft, at best 2.8 min/ft. 60% – 30% **Shale** and lesser **Siltstone**; medium gray, grayish red, some tinted grayish red purple, reddish brown. Trace **Limestone**; light brownish gray, yellowish brown, pale red; dense. No show.

4300' – 4340' 80% – 100% **Shale**; moderate to dark reddish brown—reddish orange tint when wet, minor grayish red and medium gray may be caving, trace greenish gray mottling; some smooth, mostly silty and very fine to fine grained sandy, minor medium to coarse dispersed sand grains; grades to argillaceous, sandy **siltstone;** firm; calcareous, some decrepitates in acid to red powder; platy, subblocky. 20% – 0% **Sandstone**; as above. Trace **Limestone**; light brownish gray, pale red; cryptocrystalline, dense. Trace **Calcite**; white fracture fill to 3 mm. No show.

4340' – 4360' **Shale**; moderate to dark reddish brown—reddish orange tint when wet, minor grayish red and medium gray are likely caving; silty and very fine to fine grained sandy, some dispersed medium to coarse subround sand; firm; slightly to moderately calcareous, platy, subblocky. Grades to **Siltstone**; reddish brown; argillaceous, sandy. Trace **Limestone**; light brownish gray, pale red; cryptocrystalline, dense. Trace **Calcite**; white fracture fill. No show.

Remark: Twisted off drill collars at 4363'. Fished without difficulty.

4360' – 4400' **Shale**; moderate to dark reddish brown, trace greenish gray mottling, minor grayish red; most is silty and very fine to fine grained sandy, some dispersed medium to coarse subround quartz sand; firm, medium hard; calcareous, grayish red is non- to slightly calcareous; subblocky. Grades to increasing **Siltstone**; moderate to dark reddish brown; argillaceous, very fine to fine grained sandy, some dispersed medium to coarse sand; subblocky, blocky. Trace to 10% **Sandstone**; reddish brown; very fine to fine grained; moderately well sorted; firm, medium hard; calcareous; argillaceous, silty; no porosity visible. Trace **Limestone**; pale red; dense. Trace **Calcite**; white fracture fill. No show.

4400' – 4420' 20% – 40% **Sandstone**; grayish red to minor pale red, some tinted reddish brown; mostly very fine to medium grained, some coarse to very coarse grains; subangular, subround; moderately to some poorly sorted; moderately hard; calcareous and partly siliceous cement—some glassy broken quartz grains; commonly argillaceous, silty; no porosity visible. 80% – 60% gradational **Siltstone** and **Shale**; reddish brown, lesser grayish red. Trace **Chert**; light gray to brownish gray, reddish orange; loose and included in sandstone. Trace **Calcite**; white fracture fill. No show.

4420' – 4450' 20% – 10% **Sandstone**; grayish red to reddish brown; mostly very fine to fine grained, some dispersed medium to very coarse grains; firm, medium hard; slightly to moderately calcareous; argillaceous, silty; no porosity visible. 80% – 90% gradational **Shale** and **Siltstone**; moderate to dark reddish brown, minor dark grayish red, trace greenish gray mottling; some smooth shale, most is silty, some very fine to medium grained sandy; argillaceous siltstone, partly sandy; firm,

LITHOLOGY AND SHOWS

medium hard; slightly to moderately calcareous; slightly micaceous; some platy, mostly subblocky. Trace **Calcite**; white fracture fill. No show.

STUMP/PREUSS FMS. LOG TOP: 4456' TVD: 4455' DATUM: +2715'

4450' – 4470' Trace **Shale**; greenish gray; subwaxy; firm; slightly calcareous. Trace **Siltstone** and **Sandstone**; light olive gray, rare light greenish gray; moderately clean to argillaceous; firm to moderately hard; slightly to moderately calcareous; some orange grains in part; very rare possible glauconite; no porosity visible. 30% – 40% **Sandstone**; grayish orange pink to much pale brown, some very pale orange with conspicuous orange grains; very fine to fine grained, minor medium grains; moderately well to some well sorted; firm, medium hard; moderately to some very calcareous; commonly silty and argillaceous to some moderately clean; some black grains in part; some is micaceous; trace questionable glauconite in rare chips; mostly no porosity visible. 70% – 60% **Shale** and **Siltstone**; grayish brown, reddish brown may be caving or late circulated; shale varies from some smooth to much that is silty, sandy; siltstone is argillaceous and partly sandy; calcareous; slightly to some very micaceous; some platy, mostly subblocky. No show.

Remark: Marked increase in overall grayish brown color of samples.

4470' – 4540' 30% – 10% **Sandstone**; pale brown, some tinted reddish brown; very fine to fine grained, some dispersed medium grains; subangular, subround; moderately well sorted, some medium sorted; firm, medium hard; calcareous; minor black grains; minor biotite in part; much is silty, argillaceous; no porosity visible. 70% – 90% **Siltstone** and **Shale**; grayish brown (5 YR 3/2), some tinted reddish brown; siltstone is argillaceous and commonly very fine to fine grained sandy; shale varies from some smooth to silty and sandy; firm; slightly to moderately calcareous; slightly micaceous, occasional partings are very micaceous; some platy, mostly subblocky. No show.

4540' – 4580' Interbedded, gradational. 50% **Sandstone**; pale brown (5 YR 6/2 to 5 YR 4/2); very fine and fine grained, minor medium grains in part; subangular, subround; moderately well sorted; some firm, mostly medium hard; calcareous; some glassy broken quartz grains suggest silica cement as well; moderately clean to silty and argillaceous; some black grains; no porosity visible. 30% **Siltstone**; grayish brown (5 YR 4/2 to 5 YR 3/2); argillaceous, very fine to fine grained sandy, rare medium sand grains; firm to moderately hard; moderately to slightly calcareous; part micaceous; subblocky. 20% **Shale**; grayish brown; very smooth to silty, sandy; firm, some medium hard; slightly calcareous; some platy, mostly subblocky to irregular, trace splintery. Trace **Calcite**; white fracture fill. No show.

4580' – 4610' 70% decreasing to 50% **Sandstone**; some grayish orange pink to mostly pale brown; very fine to medium grained, some coarse grained; subangular to subround, rarely round; well to moderately sorted; firm to moderately hard; calcareous; some

LITHOLOGY AND SHOWS

glassy broken quartz grains; trace reddish orange and yellow chert; some black grains; moderately clean to silty and argillaceous; no porosity visible. 20% **Siltstone**; grayish brown, some pale brown; argillaceous and partly very fine to fine grained sandy; firm, medium hard; slightly to moderately calcareous; subblocky. 10% – 30% **Shale**; grayish brown; very smooth to silty, sandy; firm, medium hard; slightly calcareous; slightly to moderately micaceous; some platy, subblocky to irregular. Trace **Calcite**; white fracture fill; few dogstooth euhedral crystals indicate minor open fractures. No show.

Remark: Coarse moderately sorted sandstone at 4580' – 4600' suggests possible unconformity within Preuss.

4610' – 4630' 60% **Sandstone**; pale brown, lesser grayish orange pink; very fine and fine to some medium grained clusters, downhole some loose medium to coarse sand; subangular to some round; moderately well sorted; firm to medium hard clusters; calcareous; slightly anhydritic; silty and argillaceous, some moderately clean; some black and trace orange grains; no porosity visible. 20% **Siltstone**; pale brown to grayish brown; argillaceous, some sandy; slightly to moderately calcareous; subblocky. 20% **Shale**; grayish brown; smooth to silty, sandy; firm; slightly calcareous; platy to irregular; some contacts of smooth shale with fine grained sandstone. Trace **Calcite**; white fracture fill. Increased reddish brown shale and siltstone and lesser medium gray claystone are cavings from Gannett during slower drilling (11 – 33 min/ft). No show.

Remark: Tripped at 4632' to pick up packed BHA (near bit reamer, shock sub, and two IBSs). Reamed new BHA to bottom with rerun bit #7.

4630' – 4667' Sample quality gradually improves from poor to good following reaming. Interbedded. 60% **Sandstone**; pale brown, some grayish orange pink; very fine and fine to minor medium grained; moderately well sorted; firm, medium hard; calcareous; slightly anhydritic; part is silty and argillaceous; some black grains; no porosity visible. 20% **Siltstone**; grayish brown to lesser pale brown; commonly sandy; firm; slightly to moderately calcareous; part micaceous; subblocky. 20% **Shale**; grayish brown; smooth, some silty and sandy; firm; slightly calcareous; much is micromicaceous; occasional contacts with pale brown sandstone; platy to some irregular. No show.

Remark: Tripped at 4670' for new bit #10. During trip out, drill string parted while in slips. From 2/20/97 to 2/26/97 fished drill pipe and packed BHA. Tripped in Hughes GTX-09.

4667' – 4700' Samples gradually clean up following fishing job. Varicolored Gannet cavings decrease from 100% – 80% – 60% – 20%. Preuss cuttings comprise:

70% **Sandstone**; grayish orange pink, pale brown; very fine and fine to some medium grained; moderately well to moderately sorted; firm, medium hard; calcareous; slightly anhydritic; some is silty and argillaceous; black grains common; rare possible glauconite downhole; no porosity visible. 20% **Siltstone**; pale brown to grayish brown; argillaceous, commonly sandy; firm; slightly to some moderately

LITHOLOGY AND SHOWS

calcareous; part micaceous; subblocky. 10% **Shale**; grayish brown; much is smooth, some silty, sandy; firm; slightly calcareous; some micaceous; platy to irregular. No show.

4700' – 4750' Interbedded. 50% – 70% **Sandstone**; pale brown to some grayish orange pink; very fine and fine to some medium grained; moderately well sorted; firm, medium hard; calcareous, slightly anhydritic; part is silty, argillaceous; some black and orange grains; no porosity visible. 30% – 20% **Siltstone**; pale brown, grayish brown; argillaceous, part very fine grained sandy; slightly to some moderately calcareous; subblocky. 20% – 10% **Shale**; grayish brown; very smooth to silty, sandy; firm; slightly calcareous; some micaceous; platy to irregular. No show.

4750' – 4760' 70% **Sandstone**; grayish orange pink, lesser pale brown; some very fine, increased fine to some medium grained; subangular, subround; moderately well sorted; firm, some medium hard; calcareous; some black, orange, and increased altered white grains; overall somewhat cleaner than sandstone above; no to slight porosity visible; relative fast break, 8 min/ft at best. 30% **Siltstone**; pale brown to grayish brown; argillaceous, sandy; slightly to moderately calcareous; some micaceous; subblocky. Trace **Shale**; grayish brown. No show.

Remark: At this horizon, rig depth is 26 ft deeper than log depth at the Anschutz Fee #2-33. Faster drilling 4755' – 4761' correlates to 4729' – 4735' at the Anschutz Fee #2-33.

4760' – 4830' Interbedded, gradational. 50% – 60% **Sandstone**; pale brown to some grayish orange pink; very fine and fine grained, minor dispersed medium grains in part; subangular, subround; moderately well to some moderately sorted; firm to medium hard; calcareous; slightly anhydritic; commonly silty, argillaceous; some black and orange grains; trace white altered grains; rare possible glauconite; part slightly micaceous; mostly no porosity visible. 20% – 40% **Siltstone**; pale brown to grayish brown; argillaceous, commonly very fine to fine grained sandy; firm to medium hard; slightly to moderately calcareous; part micaceous; subblocky. 10% – 20% **Shale**; grayish brown; smooth to silty, sandy; firm; slightly calcareous; much is micromicaceous; platy to irregular. Rare **Calcite**; white fracture fill. No show.

4830' – 4895' 50% – 60% **Sandstone**; pale brown to some grayish orange pink; very fine to fine grained, trace dispersed medium grains in part; subangular, subround; moderately well sorted; firm to medium hard; calcareous; slightly anhydritic; some black grains; rare possible glauconite; some slightly micaceous; no porosity visible. 30% – 40% **Siltstone**; pale brown to grayish brown; part argillaceous, some sandy; firm to medium hard; slightly to moderately calcareous; slightly anhydritic; some micaceous; subblocky. Trace – 20% **Shale**; grayish brown; smooth to silty, sandy; firm; slightly calcareous; micromicaceous; platy to irregular. No show.

Remark: Tripped at 4897' for new bit #11 Smith 2JS and to pick up packed BHA.

4895' – 4940' Interbedded, gradational. 50% – 60% **Sandstone**; pale brown to some grayish orange pink; very fine and fine grained, trace dispersed medium grains; subangular, subround; moderately well to some moderately sorted; firm, medium hard; calcareous; slightly anhydritic; part silty and argillaceous, some moderately clean;

LITHOLOGY AND SHOWS

trace very argillaceous medium grained clusters; some black grains and trace reddish orange grains; rare possible glauconite; no porosity visible. 30% – 40% **Siltstone**; pale brown to grayish brown; argillaceous, some sandy; firm to medium hard; slightly to moderately calcareous; part micaceous; subblocky. 10% **Shale**; grayish brown; smooth to silty, sandy; firm; slightly calcareous; rare sharp contacts of smooth shale with light colored fine grained sandstone; part micromicaceous; platy to irregular. Very rare **Anhydrite**; white; microcrystalline; soft. No show.

Remark: Good sample quality, only trace cavings from Gannett.

4940' – 5010' 60% – 50% **Sandstone**; pale brown; increasingly very fine grained, lesser fine grained; subangular, subround; moderately well sorted; soft—perhaps where more anhydritic—to firm and some medium hard; calcareous, slightly dolomitic, appears more anhydritic; increasingly argillaceous and silty; some black grains; no porosity visible. 30% – 50% **Siltstone**; pale brown to grayish brown; argillaceous, very fine to some fine grained sandy; soft to medium hard; slightly to moderately calcareous, slightly dolomitic, anhydritic; some micromicaceous; subblocky. Trace – 10% **Shale**; grayish brown; smooth to silty, sandy; firm; slightly calcareous; platy to irregular. Few chips **Chalcedony**; bright reddish orange, very light gray; intermixed with brown siltstone. Trace **Anhydrite**; white; soft masses to firm microcrystalline chips. No show.

5010' – 5050' Interbedded, gradational. 50% – 70% **Sandstone**; pale brown, minor grayish orange pink; very fine and fine to minor medium grained; moderately well sorted; soft to medium hard; calcareous, slightly dolomitic, anhydritic; argillaceous and silty to some moderately clean; some black and orange grains; tightest sandstone may correlate to thin hard drilling breaks; no porosity visible. 40% – 30% **Siltstone**; pale brown to grayish brown; argillaceous, commonly sandy; calcareous, anhydritic; subblocky. Trace – 10% **Shale**; grayish brown. Trace **Anhydrite**; white; soft patches to rare firm microcrystalline chips; may be cause of increased softer partly smeared chips. Few chips **Chalcedony**; bright reddish orange, very light gray. No show.

5050' – 5140' 60% – 70% **Sandstone**; pale brown to minor grayish orange pink; very fine and fine grained, minor dispersed and loose medium grains; subangular and subround, some round; moderately well to some medium sorted; soft to medium hard; slightly to moderately calcareous-dolomitic; anhydritic; argillaceous and silty to moderately clean; some black grains; no porosity visible. 30% – 20% **Siltstone**; pale brown to grayish brown; argillaceous, commonly sandy; soft—where apparently more anhydritic—to medium hard; slightly to moderately calcareous-dolomitic; anhydritic; subblocky. Trace – 10% **Shale**; grayish brown; smooth to silty, sandy; firm; slightly calcareous-dolomitic; platy to irregular. Trace **Anhydrite**; white; commonly in soft, smeared chips; trace associated with rare reddish orange to clear and very light gray **chalcedony**. No show.

5140' – 5210' 70% – 90% **Sandstone**; pale brown to minor grayish orange pink; very fine and fine grained, some medium grained particularly at 5150', 5180', and 5190', minor loose medium to trace coarse grains in part; subangular to some rounded; moderately well to some moderately sorted; mostly firm to medium hard; mixed calcareous-

LITHOLOGY AND SHOWS

dolomitic and anhydritic cement; silty and argillaceous to moderately clean; some black and minor orange grains, rare possible glauconite downhole; no porosity visible. 10% – 20% **Siltstone**; pale brown to grayish brown; argillaceous, commonly sandy; soft to medium hard; slightly to moderately calcareous-dolomitic; slightly anhydritic; subblocky. Trace – 10% **Shale**; grayish brown; smooth to silty, sandy; firm; slightly calcareous-dolomitic; occasional contacts of smooth dark shale with moderately clean sandstone; some micromicaceous; platy to irregular. Trace **Anhydrite**; mixed white and brown, commonly soft masses and smeared chips. Few chips **Silica/Chalcedony**; mixed bright reddish orange and clear to very light gray; associated with minor anhydrite and calcite-dolomite. No show.

Remark: At last correlation point, rig depth at A L & L #14-33 is 32 ft deeper than log depth at offsetting Anschutz Fee #2-33. The A L & L #14-33 is being held to less deviation updip than the Anschutz Fee #2-33.

5210' – 5250' 70% – 90% **Sandstone**; pale brown to some grayish orange pink; very fine and fine grained, some dispersed medium grains; subangular to subround, minor round; moderately well to some moderately sorted; firm, medium hard; calcareous-dolomitic and anhydritic cement; silty and argillaceous to some moderately clean; black grains common; no porosity visible. 10% – 20% **Siltstone**; pale brown to grayish brown; argillaceous, commonly sandy; firm; slightly to moderately calcareous-dolomitic; slightly anhydritic; subblocky. Trace – 10% **Shale**; grayish brown; smooth, some silty, sandy; firm; slightly calcareous-dolomitic; platy to irregular. Trace **Anhydrite**. Few chips **Silica/Chalcedony**; mixed bright reddish orange and clear to very light gray. No show.

5250' – 5298' 60% **Sandstone**; pale brown; very fine and lesser fine grained; moderately well sorted; firm, medium hard; slightly to moderately calcareous-dolomitic; anhydritic; much is silty and argillaceous; black grains common; no porosity visible. 30% **Siltstone**; grayish brown to lesser pale brown; argillaceous, commonly very fine grained sandy; firm; slightly to moderately calcareous-dolomitic; slightly anhydritic; subblocky. 10% **Shale**; grayish brown; mostly smooth, some silty, sandy; firm; non- to slightly calcareous-dolomitic; micromicaceous; platy to irregular. Increase to trace **Silica/Chalcedony**; mixed bright reddish orange to pink orange and clear to very light gray; hard; associated with minor mixed calcite-dolomite and anhydrite. No show.

Remarks: Began salt-up at 5240'. Abundant coaly material in samples 5250' – 5270' is from lignite added to mud. Good sample quality resumes below 5270'. Tripped at 5300' for new bit #12 Security SS84. No trip gas.

5298' – 5310' 70% **Sandstone**; pale brown; very fine and lesser fine grained; moderately well sorted; firm, medium hard; slightly to moderately calcareous-dolomitic and anhydritic cement; much is silty and argillaceous; black grains common; no porosity visible. 20% **Siltstone**; grayish brown to some light brown; argillaceous, much is very fine grained sandy; firm, medium hard; slightly calcareous-dolomitic and anhydritic; some micromicaceous; subblocky. 10% **Shale**; grayish brown; mostly smooth; firm; slightly calcareous-dolomitic. Trace **Silica/Chalcedony**; mixed bright reddish orange to pink orange and clear to very light gray; hard,

LITHOLOGY AND SHOWS

scrapes steel from tweezers; associated with minor mixed calcite-dolomite and anhydrite; appears to be patchy replacement, no microfracture fill. No show.

5310' – 5390'

60% – 50% **Sandstone**; pale brown, minor grayish brown where most argillaceous and minor grayish orange pink where moderately clean; very fine to some fine grained; moderately well sorted; firm to medium hard; most is very silty and argillaceous; slightly to moderately calcareous-dolomitic; slightly anhydritic; some black grains; no porosity visible. 30% – 50% **Siltstone**; pale brown to grayish brown, some light brown; argillaceous, commonly very fine grained sandy; firm to medium hard chips, some mushy to soft masses that are often smeared; subblocky. 10% – Trace **Shale**; grayish brown; smooth to silty, sandy; platy to irregular. Trace **Silica/Chalcedony**; mixed bright reddish orange and pink orange to clear, white, and very light gray; hard, scrapes steel from tweezers; associated with minor calcite-dolomite and anhydrite; apparently patchy replacement in sandstone and siltstone rather than fracture fill. No show.

5390' – 5470'

60% – 40% **Sandstone**; pale brown, some grayish brown, increasingly light brown; very fine to lesser fine grained, minor streaks medium grained; moderately well sorted; firm to medium hard, some soft where light brown; most is argillaceous and silty; slightly to moderately calcareous-dolomitic; slightly anhydritic; no porosity visible. 30% – 60% **Siltstone**; pale brown to grayish brown, increasingly light brown; argillaceous, much is very fine grained sandy; firm, increasingly soft; slightly to moderately calcareous-dolomitic, some decrepitates quickly in acid to powder; subblocky to much rounded and smeared. 10% – Trace **Shale**; grayish brown; smooth to silty, sandy; firm; platy to irregular. Trace **Silica/Chalcedony**; mixed bright reddish to pinkish orange and clear to white to very light gray; hard, scrapes steel from tweezers; downhole few chips are vuggy and associated with very rare drusy quartz. No show.

Remark:

No rig salt observed yet in lightly washed samples.

5470' – 5494'

30% – 50% **Sandstone**; light brown, some pale to grayish brown; very fine to fine grained, minor streaks of medium grained; subangular, subrounded; moderately well sorted; soft where light brown, firm to medium hard where grayish brown; moderately well sorted; slightly to moderately calcareous-dolomitic; anhydritic; much is silty, argillaceous; no porosity visible. 70% – 50% gradational **Siltstone** and **Claystone**; light brown; clayey sandy siltstone and silty sandy claystone; soft; chips are rounded, commonly smeared, and appear water sensitive; calcareous—chips decrepitate quickly in acid to powder; anhydritic. Trace **Silica/Chalcedony**; mixed bright reddish to pinkish orange and clear, white, very light gray; hard; associated with **Trace Quartz**; clear, drusy micro- to very fine crystalline masses. No show.

Remark:

Tripped at 5496' for new bit #13 Security S84 and to lay down stabilization before drilling Preuss Salt.

5494' – 5504'

Temporarily reduced sample volume. 80% **Sandstone**; pale brown to grayish brown, minor soft light brown; very fine and fine to minor medium grained; subangular, subrounded; moderately well to moderately sorted; firm to medium

LITHOLOGY AND SHOWS

hard; slightly to moderately calcareous-dolomitic; slightly anhydritic; part silty, argillaceous; no porosity visible. 20% **Siltstone**; pale brown to grayish brown, minor soft light brown; argillaceous, commonly sandy; firm to medium hard; slightly to moderately calcareous-dolomitic; slightly anhydritic; subblocky. 2% **Silica/Chalcedony**; mixed bright reddish to pinkish orange and clear, white, and very light gray; hard, scrapes steel from tweezers; part vuggy, associated with **Trace Quartz**; clear microcrystalline drusy masses. No show.

Remarks: Abundant rig salt circulated at 5502'. Faster drilling at 13 – 10 min/ft indicates Preuss Salt sample top is 5504'. Rig depth at A L & L #14-33 is approximately 30 ft deeper than log depth at the offsetting Anschutz #2-33 Fee at top of salt.

PREUSS SALT — LOG TOP: 5505' TVD: 5502' DATUM: +1668'

5504' – 5540' 100% **Rig Salt**; clear to partly translucent white; coarse to very coarse sand-size; subrounded. Overall samples are tinted moderate orange pink from very fine sand-size masses of apparent clay/silt. No show.

Remark: Reamed salt every ft from 5504' – 5520' and every 2 ft from 5520' – 5550'.

5540' – 5610' Gradual decrease from 70% – 10% **Rig Salt**; clear to partly translucent white; coarse and very coarse sand-size uphole, becoming fine sand-size downhole. 30% increasing to 90% **Preuss Salt**; white to tinted moderate orange pink, some mottled pale red to pale reddish brown downhole; mostly opaque; microcrystalline texture; fine to very coarse sand size cuttings, rare chips to 1 cm downhole; overall faintly orange pink to pale red coloration results from clay/silt impurities—only trace free pale red siltstone. Trace **Silica/Chalcedony**; bright reddish orange to orange pink; associated with clear to white drusy quartz masses; best seen by washing away salt in hot water. No show.

Remarks: Picked up and reamed salt every 4 ft from 5550' – 5670' and every 5 ft from 5670' – 5750'. Pulled 3 – 4 joints and reamed back to bottom at 5590' and 5604'. Short tripped 5 stands at 5689' and at 5754'.

5610' – 5750' 10% – Trace **Rig Salt**; clear to partly translucent white; fine to coarse sand-size; small chips becoming more difficult to distinguish from formation salt. 90% – 100% **Preuss Salt**; white to faintly moderate orange pink, minor part mottled pale red to pale reddish brown with silty patches; mostly opaque; microcrystalline surface texture; fine to very coarse sand-size chips, trace to 8 mm. Rare **Silica/Chalcedony**; bright reddish to orange pink and clear to white; associated with Trace **Quartz**; clear to white drusy masses; best seen by washing away salt in hot water. No show.

5750' – 5830' Trace **Rig Salt**; clear to partly translucent white; small chips difficult to distinguish from formation salt. 100% **Preuss Salt**; mostly white to faintly moderate orange

LITHOLOGY AND SHOWS

pink, some clear; mostly opaque, microcrystalline texture common; fine to very coarse sand-size chips, trace to 1 cm; minor patches of pale red to pale reddish brown siltstone, virtually no lamination evident; cuttings become markedly smaller below 5790'. Rare **Silica/Chalcedony**; bright reddish to pinkish orange, associated with minor **Quartz**; clear to white; medium to coarse sand-size grains and drusy masses best seen after washing away salt in hot water. No show.

Remark: Samples of Preuss Salt above were momentarily rinsed in cold water and then spun dry. Resulting samples were clean and easy to observe. The following raw samples were pasty and required much washing. Salt content is questionable, estimated by volume of sample washed away.

5830' – 5850' 70% decreasing to 30% **Preuss Salt**. 30% to 70% **Siltstone**; faintly moderate reddish orange to pale reddish brown; argillaceous, very fine grained sandy; soft, most decrepitates to fine to medium sand-size masses during drilling and sample washing; slightly calcareous; anhydritic; slower drilling. White to tan rounded medium sand-size masses appear to be salt-gel added to mud, not anhydrite. No show.

5850' – 5860' 100% **Mudstone**; grayish red to faintly pale reddish brown; soft to mushy; calcareous—chips decrepitate quickly in acid to reddish brown powder. Minor Preuss Salt, if any. White to tan rounded masses are apparently salt-gel added to mud. No show.

5860' – 5890' 100% **Mudstone**; faintly pale reddish brown to increasingly grayish red; soft to mushy; calcareous—chips decrepitate quickly in acid to reddish brown powder; minor dispersed very fine grained sand; rounded to smeared masses. Rare **Silica/Chalcedony**; bright reddish orange; associated with trace **Quartz**; clear drusy masses. White to tan rounded masses of probable salt-gel have decreased in percentage and are fine to medium sand-size. No show.

5890' – 5905' 100% **Mudstone**; faintly pale reddish brown to grayish red, trace increasing to 30% is pinkish gray; soft to mushy; calcareous—chips decrepitate quickly in acid to powder; minor dispersed very fine grained sand; rounded to smeared masses. Minor fine to medium sand-size masses of white to tan probable salt-gel. No show.

Remark: No rig salt or Preuss Salt has been seen in samples after addition of bulk salt at 5897'. Short trip through salt at 5902' improved, only minor spotty drag.

5905' – 5915' 100% **Mudstone**; pale red to minor grayish red, trace light greenish gray—continuation of overall trend from red to gray; soft, mushy; calcareous—chips decrepitate quickly in acid to powder; minor dispersed very fine grained sand; rounded to smeared masses. No show.

LITHOLOGY AND SHOWS

TWIN CREEK LS. LOG TOP: 5906' TVD: 5903' DATUM: +1267'

5915' – 5930'

Trace **Shale**; medium gray; smooth; calcareous; firm; slightly splintery to platy; rare slickensides. Uphole, few chips **Shale**; light greenish gray to pale green; smooth, slightly waxy; few possible slickensides; platy. 10% – 20% **Siltstone**; medium light gray; crystalline appearance in part; increasingly calcareous, chips stain in Alizarin Red; virtually all chips remain intact in acid; rather small chips are platy, subblocky. 90% – 80% **Mudstone**; increasingly light gray, minor pale red; soft to mushy; calcareous, rounded and smeared masses decrepitate quickly in acid to powder; soft masses are likely artifact of drilling as well as possible fault gouge. No show.

Remarks:

Short tripped 13 stands at 5921'; negligible drag. Short tripped 5 stands at 5936'; pulled 40K over string weight at 5630' and at 5565'.

Good sample quality. Sample top of Twin Creek Limestone is picked by 5-ft samples and increased rotary torque; no diagnostic drilling break.

5930' – 5970'

70% – 90% **Shaly Limestone?**; recovered as light gray; soft to mushy; moderately sticky; rounded and/or smeared masses that decrepitate quickly in acid with strong effervescence, leaving abundant gray clayey insoluble residue. 10% – Trace **Limestone**; medium gray; earthy texture; firm; argillaceous; platy; no porosity visible. 10% – 20% **Siltstone**; light to medium light gray; slightly argillaceous, some very fine grained sandy; firm, medium hard; moderately to very calcareous; few chips with rare possible glauconite; subblocky, blocky. Few chips with **Calcite**; white to faintly moderate orange pink; microfracture fill contacting argillaceous limestone and limy siltstone. No show.

Remarks:

Short tripped 6 stands at 5955'; pulled 50K over string weight. Short tripped 6 stands at 5981'; tight 5655' – 5565', pulled 70K over string weight.

Good sample quality except for softness of cuttings. Virtually no cavings from Wasatch, Gannett, or Preuss sandstone and siltstone. Trace reddish orange silica/chalcedony, drusy quartz masses, and vuggy siltstone from Preuss Salt.

5970' – 6015'

80% – 90% **Shaly Limestone?**; recovered as light gray, soft to mushy, lumpy masses that decrepitate quickly in acid with strong effervescence, leaving abundant gray clayey insoluble residue, perhaps mixed with drilling mud solids. 10% – 20% **Siltstone**; light to medium light gray; slightly argillaceous, some very fine grained sandy; firm to moderately hard; calcareous, chips remain intact in acid; subblocky, blocky. Trace **Shale**; medium to medium dark gray; calcareous; platy. One chip **Limestone**; medium dark gray; faint medium grained oolitic texture; firm; slightly argillaceous, very silty; no porosity visible. Trace **Calcite**; fracture fill. No show.

Remarks:

Circulated rig salt at approximately 5990'. Short tripped 6 stands at 6015'; less drag in salt than on preceding three short trips. Lost 50 B at 5998' and 45 B at 6008'. Circulated LCM and rig salt before tripping out for logs.

LITHOLOGY AND SHOWS

Intermediate Casing:	13 5/8" and 13 3/8" set at 6015'.
6015' – 6020'	90% **Cement**; firm, some moderately hard. 10% gradational **Shale**; medium gray; calcareous; silty; platy and **Limestone**; medium gray; argillaceous; silty; chips decrepitate in acid leaving abundant insoluble residue; no porosity visible. Trace **Siltstone**; medium light to medium gray; calcareous; subblocky. No show.
6020' – 6060'	80% gradually decreasing to 20% **Cement**. 20% – 80% interbedded gradational **Shale**; medium gray; calcareous, partly silty; platy and **Limestone**; medium light to medium gray; argillaceous, some silty; abundant powdery insoluble residue; no porosity visible. Minor **Siltstone**; medium light gray; calcareous; subblocky. Trace **Calcite**; white fracture fill. No show.
Remark:	In the following samples cutting size becomes very small, only fine to coarse sand-size.
6060' – 6100'	60% – 20% **Cement**. 40% – 80% interbedded gradational **Shale**; medium to some medium dark gray; calcareous; platy; **Limestone**; medium light to medium gray; earthy texture; argillaceous; no porosity; and increasing **Siltstone**; medium light to light gray; commonly argillaceous, some very fine grained sandy; firm; calcareous; subblocky. No show.
6100' – 6200'	No **Cement**. Interbedded, gradational **Shale**; medium gray; some silty; firm; calcareous; platy. **Siltstone**; medium light to some light gray; commonly argillaceous, some very fine grained sandy; firm; calcareous; subblocky. Subordinate **Limestone**; medium light to medium gray; argillaceous; platy, subblocky; no porosity visible. Below 6150', few chips **Bentonite**; faintly greenish gray; waxy; platy. No show.
6200' – 6290'	60% **Shale**; medium to some medium dark gray; earthy, some with microcrystalline appearance; firm; calcareous; platy. Grades to 30% **Limestone**; medium to medium light gray; earthy; firm; argillaceous; many chips are bit-marked, some possible slickensides; no porosity visible. 10% **Siltstone**; medium light to some light gray; commonly argillaceous, some very fine grained sandy; firm; calcareous; subblocky. Trace **Bentonite/Devitrified Tuff**; faintly light greenish gray; some waxy; brown flecks in part; platy, few possible slickensides. Few chips **Calcite**; white fracture fill. Rare **Pyrite**; free masses and dispersed microcrystals in shale and argillaceous limestone. No show.
Remark:	Tripped at 6290' to pick up 3 IBSs for packed BHA.
6290' – 6340'	60% – 70% **Shale**; medium to medium dark gray; firm; earthy to some silty; calcareous; most chips remain intact in acid, some decrepitate to argillaceous flakes and powder; platy. Grades to 30% **Limestone**; medium to medium light gray; earthy; firm; argillaceous; many chips are bit-marked, some possible slickensides; thin platy to some subblocky; no porosity visible. Trace – 10% **Siltstone**; light gray to mostly medium light gray; commonly argillaceous; firm; calcareous; chips remain intact in acid; subblocky. Trace **Bentonite/Devitrified Tuff**; light greenish

LITHOLOGY AND SHOWS

gray; some waxy; soft; some brown flecks appear to be biotite; platy, few possible slickensides. Few chips **Calcite**; white fracture. No show.

Remarks: Rig depth at A L & L #14-33 is 14 ft deeper than correlative log depth at the Anschutz Fee #2-33. Cuttings remain very small.

6340' – 6390' 60% – 70% **Shale**; medium dark gray; smooth, some appears microcrystalline; firm; calcareous, most chips remain intact in acid; platy. 40% – 30% **Limestone**; medium light gray; earthy texture; firm; argillaceous, chips decrepitate in acid to clayey powder and flakes; thin platy chips are commonly bit-smeared, some probable slickensides where glazed; no porosity visible. Rare **Calcite**; white fracture fill. Rare **Bentonite/Devitrified Tuff**; faintly light greenish gray; brown flecks in part; smooth, part waxy. No show.

6390' – 6430' 60% – 50% **Shale**; medium dark gray, some medium gray; firm; calcareous; platy. Grades to 40% – 50% **Limestone**; medium light to some light gray; earthy texture; trace fine to medium sand-size medium gray to dark gray **oolitic** streaks; firm; argillaceous, oolitic streaks moderately clean; thin platy; no porosity visible. Rare **Calcite**; white fracture fill. Rare **Bentonite**; faintly light greenish gray. No show.

6430' – 6510' Interbedded, gradational. 40% – 60% **Shale**; medium to medium dark gray; firm; calcareous; part silty, some faintly waxy; trace mica; platy. Trace – 30% **Siltstone**; medium light to some light gray; commonly argillaceous, some very fine grained sandy streaks; firm; calcareous; subblocky, some platy. 20% – 40% **Limestone**; medium light to some light gray, rare light brownish gray; earthy, trace oolitic; few chips contain yellowish brown probable shell fragments; argillaceous, some silty; chips decrepitate in acid to powder and argillaceous flakes; thin platy, commonly bit-smeared, some probable slickensides where glazed; no porosity visible. Few chips **Calcite**; white fracture fill. Trace **Bentonite/Tuffaceous Shale** and **Siltstone**; faintly light greenish gray; brown flecks common; some waxy. No show.

Remark: Cutting size increased from 6430' – 6470', then became very small again.

6510' – 6520' 30% **Tuffaceous Siltstone**; faintly light greenish gray; firm; slightly to moderately calcareous, some very fine grained sandy; minute brown biotite flecks in part; trace bentonitic; subblocky, blocky. 70% interbedded, gradational **Shale**, **Siltstone**, and **Limestone**; as above. No show.

6520' – 6550' 30% – 50% **Siltstone**; medium to light gray; some argillaceous, some very fine grained sandy; firm, trace moderately hard; calcareous; trace biotite in part; trace oolitic; subblocky, minor blocky. 0% – 20% **Sandstone**; medium light to light gray; very fine grained; part silty; trace contains dark ooliths; calcareous; no porosity visible. 20% **Limestone**; medium dark gray to light gray; earthy; some fine to medium grained dark ooliths; much is argillaceous; no porosity visible. 10% – 30% **Shale**; medium dark to some medium gray; smooth, some silty; firm; calcareous; some slightly waxy; platy. Rare **Calcite**; white fracture fill. No show.

6550' – 6560' 50% **Siltstone**; medium to light gray; some argillaceous, some very fine grained sandy; firm, some medium hard; calcareous; biotite in part; subblocky, blocky. 20%

LITHOLOGY AND SHOWS

Sandstone; medium light to light gray; very fine grained; part silty; calcareous; some oolitic; no porosity visible. 20% **Limestone**; medium light to light gray; earthy, part with very fine to fine grained brownish gray to medium dark gray ooliths; firm; part argillaceous; commonly thin platy; no porosity visible. 10% **Shale**; medium dark gray; calcareous; platy. Few chips **Calcite**; white fracture fill. No show.

6560' – 6590' — 60% – 70% **Shale**; medium dark gray, tinted brownish gray in part; smooth, cryptocrystalline carbonate appearance in part; firm, medium hard; calcareous; chips remain intact in acid; rare micropyrite; trace mica; thin platy, some subblocky. 30% – 40% **Limestone**; medium light to light gray; earthy; firm; argillaceous; chips decrepitate in acid to argillaceous powder and flakes; no porosity visible. No show.

6590' – 6600' — 5% **Tuffaceous Siltstone** and **Shale**; light greenish gray to pale green; firm; slightly calcareous; minute brown flecks common; some waxy; subblocky, some platy. Trace **Quartz**; grayish pink; few chips contacting pale green tuffaceous siltstone. 35% **Siltstone**; medium light to light gray; calcareous; grades to minor streaks of very fine grained sandstone; trace mica; subblocky. 50% **Shale**; medium dark gray; calcareous; platy, some subblocky. 10% **Limestone**; medium light to light gray; earthy; firm; thin platy, commonly bit-marked; no porosity visible. No show.

Remark: Green tuffaceous siltstone and shale likely correlate to thin hot-gamma at 6582' at The Anschutz Corp. #2-33 Fee.

6600' – 6640' — 40% **Siltstone**; medium light to light gray; part argillaceous, some very fine grained sandy streaks; firm; calcareous, chips remain intact in acid; minor mica; subblocky. 40% **Shale**; medium dark to some medium gray; smooth to silty; firm; calcareous; platy, some subblocky. 20% **Limestone**; medium light to light gray; mostly earthy; firm; commonly argillaceous, chips decrepitate to argillaceous powder and flakes; no porosity visible. Trace **Calcite**; white; loose chips and microfracture fill cutting shale and siltstone. No show.

WATTON CANYON MBR. — LOG TOP: 6640' TVD: 6635' DATUM: +535'

Remark: Top is picked by good correlation of drilling time with The Anschutz Corporation #2-33 Fee. Best sample evidence is in one sample deeper, 6650' – 6660'.

6640' – 6670' — Increasing **Limestone**; medium dark gray—part tinted brownish gray—to lesser medium light and light gray; cryptocrystalline where darker, earthy where lighter colored; in acid dark chips decrepitate to abundant argillaceous flakes, lighter colored chips to moderate argillaceous powder and flakes; thin platy to subblocky; no porosity visible. Grades to subordinate **Shale**; medium dark gray, some brownish gray; calcareous; platy, some subblocky. No show.

LITHOLOGY AND SHOWS

6670' – 6690'	40% – 50% **Siltstone**; medium light gray; partly argillaceous, part very fine grained sandy; firm; calcareous; some biotite; subblocky, blocky. Grades to 20% – 30% **Sandstone**; medium light to light gray; very fine grained; well sorted; firm; calcareous; some argillaceous; no porosity visible. 10% – 20% **Limestone**; medium light to light gray; earthy, trace fine grained gray to light brownish gray ooliths; firm; partly argillaceous; thin platy, commonly bit-marked; no porosity visible. 10% **Shale**; medium dark gray; smooth, some silty; firm; slightly to moderately calcareous; platy. No show.
6690' – 6700'	50% **Shale**; medium light to medium dark gray, brownish gray; most has earthy to cryptocrystalline carbonate appearance but chips largely remain intact in acid; moderately to very calcareous; firm where lighter colored, some medium hard where darker; platy to subblocky. 30% **Limestone**; medium light to light gray and earthy to medium dark gray and brownish gray and cryptocrystalline; firm to moderately hard; argillaceous; no porosity visible. 20% **Siltstone**; medium to light gray; slightly to moderately calcareous; commonly argillaceous; platy, subblocky. Trace **Siltstone**; pale brown; firm; slightly calcareous; argillaceous; subblocky. Trace **Anhydrite**; white; microcrystalline. No show.
6700' – 6740'	50% **Limestone**; medium light to light gray and medium dark gray tinted brownish gray; earthy where light colored, cryptocrystalline where dark; firm where earthy, moderately hard where cryptocrystalline; slightly to moderately argillaceous where light colored, very argillaceous where dark; platy, subblocky, some sharp irregular. Grades to 40% **Shale**; medium dark gray; cryptocrystalline appearance; acid is required to distinguish shale from argillaceous limestone; moderately hard; moderately to very calcareous; trace biotite; platy, subblocky. 10% **Siltstone**; medium light to medium gray; argillaceous, some very fine grained sandy; firm; calcareous; subblocky. Trace **Anhydrite**; white; microcrystalline patches in limestone and shale. No show.
6740' – 6780'	50% – 60% **Siltstone** and minor **Sandstone**; medium to light gray; partly argillaceous and very fine grained sandy siltstone grading to very fine grained silty sandstone; firm; calcareous; trace biotite; no porosity visible. 20% – 30% **Shale**; medium to medium dark gray, some tinted brownish gray, some faintly olive gray; smooth, some silty; firm; calcareous; trace biotite in part; mostly platy, trace splintery. 10% – 20% **Limestone**; medium light to light gray; earthy; firm; argillaceous; no porosity visible. Trace **Anhydrite**; white; microcrystalline patches. Minute spotty goldish yellow mineral fluorescence in siltstone and sandstone is best seen under magnification in dark room; no cut fluorescence. No show.
6780' – 6820'	70% **Limestone**; some light gray to much medium dark gray, some tinted brownish gray; earthy where light colored, cryptocrystalline where dark; firm where light colored, some moderately hard where dark; slightly to moderately argillaceous; no porosity visible. 20% **Shale**; medium to medium dark gray, some tinted brownish gray; calcareous; platy. 10% **Siltstone**; medium to some light gray, minor streaks of light gray very fine grained sandstone; calcareous; part argillaceous; some biotite; subblocky. Rare **Calcite**; white; fracture fill. Rare **Anhydrite**; white; microcrystalline patches. Trace **Tuffaceous Shale** and **Siltstone**; light greenish gray to pale green. No show.

LITHOLOGY AND SHOWS

6820' – 6830'

Limestone; faintly light brownish gray, minor light gray; cryptocrystalline; moderately hard; slightly argillaceous, much cleaner than all overlying limestone; trace contacts with light gray earthy firm limestone; mostly dense, no porosity visible. Trace **Calcite**; white; loose chips and microfracture fill cutting dense limestone. No sample show.

Hot-wire/FID Gas:	Total	C1	C2	C3	C4	Min/Ft	Mud Log
Before	1	100%	0%	0%	0%	11.7	6816'
Maximum	14	88%	10%	2%	0%	5.0	6824'
During	2	90%	10%	0%	0%	8.0	6830'
After	1	100%	0%	0%	0%	11.8	6840'

Remarks: Hot-wire gas detector did not record show and was replaced. Total gas peak was calculated from good readings from hydrogen flame chromatograph. Show is likely from fractures. No correlative shows at The Anschutz Fee #2-33 or at the UPRC Yellow Creek Deep #11-3.

6830' – 6860'

Limestone; brownish gray to some light brownish gray, lesser light gray, trace yellowish brown; cryptocrystalline, light gray is earthy; moderately hard, some firm; slightly argillaceous; dense no porosity visible. Trace **Calcite**; white; fracture fill; loose and attached, some microfracture fill. Total gas trace – 2 units. No show.

6860' – 6880'

Limestone; brownish gray to some light brownish gray, lesser light gray; crypto- to some microcrystalline downhole, part fine to medium grained oolitic, some pelletal; moderately hard to firm; slightly argillaceous; trace pyritic; rare green grains, possible glauconite; no porosity visible. Trace **Calcite**; white; fracture fill. Rare **Anhydrite**; white; microcrystalline; firm; patches in limestone. No show.

6880' – 6890'

Limestone; increased brownish gray; cryptocrystalline; moderately hard; slightly argillaceous; dense, no porosity visible. Trace **Calcite**; white; fracture fill. No show.

6890' – 6900'

Limestone; brownish gray to some light brownish gray, minor light gray; cryptocrystalline, light gray is earthy; moderately hard; slightly argillaceous; dense, no porosity visible; thin fast drilling break to 4.7 min/ft is likely fracture porosity. Increased **Calcite**; white fracture fill; loose and attached. No sample show.

Hot-wire/FID Gas:	Total	C1	C2	C3	C4	Min/Ft	Mud Log
Before	2	83%	17%	0%	0%	9.5	6987'
Maximum	190	71%	13%	11%	5%	4.7	6900'
After	4	90%	10%	0%	0%	8.9	6902'

LITHOLOGY AND SHOWS

6900' – 6940' **Limestone**; brownish gray to some light brownish gray, minor light gray, some medium dark gray downhole; cryptocrystalline, light gray is earthy; moderately hard, some firm; slightly to some moderately argillaceous; forms trace brownish gray film that floats on acid; dense, no porosity visible. Trace **Calcite**; white; loose chips and microfracture fill. Total gas 2 – 6 units. No sample show.

6940' – 6960' **Limestone**; brownish gray to some light brownish gray, minor dark yellowish brown; cryptocrystalline, also fine to medium grained oolitic; slightly argillaceous; dense, no porosity visible. No show. Total gas 2 – 3 units.

Remark: Good quality of samples is shown by sharp lithologic changes in 5-ft samples collected from 6960' – 7000'. Descriptions for this interval emphasize first appearances. Cutting size has increased with increased yield point of mud.

6960' – 6965' **Shale** and **Siltstone**; medium dark gray to some medium gray; gradational silty shale and argillaceous siltstone; firm, medium hard; calcareous/dolomitic, chips are bleached and remain intact in acid; trace micropyrite; platy, subblocky. Also **Limestone**; medium dark to some light gray and brownish to some light brownish gray; cryptocrystalline and medium grained oolitic; slightly to moderately argillaceous; no porosity visible. Rare **Calcite**; white; fracture fill. No show.

6965' – 6975' **Limestone**; brownish gray and lesser light brownish gray to pale yellowish brown, medium light gray, and light gray; cryptocrystalline where dark, earthy where lighter colored; also some conspicuously medium grained oolitic; clean to slightly argillaceous, forms trace bubbly brownish gray film that floats on acid; dense, no porosity visible. Trace **Calcite**; white; loose chips and microfracture fill cutting limestone. No show. Total gas 2 units.

6975' – 6980' **Limestone**; some white and increased light to medium light gray, also light brownish gray and brownish gray; many brownish gray to medium light gray medium grained ooliths; some chalky, part microcrystalline; firm to medium hard; clean to slightly argillaceous; trace dark gray styolites; trace micropyrite; no porosity visible. Trace **Calcite**; white; microfracture fill, some loose chips. No show. Total gas 2 units.

BOUNDARY RIDGE MBR. LOG TOP: 6984' TVD: 6978' DATUM: +192'

Remark: Good quality 5-ft samples and drilling time correlated to the Anschutz Fee #2-33 show that increased gamma at top of Boundary Ridge log pick results from gray shale and siltstone; first appearance of reddish siltstone follows 15 ft deeper.

6980' – 6985' **Shale**; dark to medium dark gray; smooth, some silty; firm to some moderately hard; slightly to moderately calcareous/dolomitic; trace micropyrite; platy, subblocky; trace probable slickensides where glazed. Also much white to gray to

LITHOLOGY AND SHOWS

brownish gray cryptocrystalline to oolitic limestone from basal Watton Canyon. Trace **Calcite**; white; microfracture fill. No show. Total gas 2 – 4 units.

6985' – 6995' **Siltstone**; medium to medium light gray; part argillaceous, part very fine grained sandy; firm to moderately hard; calcareous; trace biotite; trace micropyrite; subblocky, blocky. Minor **Sandstone**; medium light to some very light gray; very fine to trace fine grained; firm to medium hard; non- to moderately calcareous; part silty; some with fine to medium sand-sized biotite books and flecks; no porosity visible. Also **Shale**; dark to medium dark gray. Downhole, 1% **Anhydrite**; white; microcrystalline; firm; some rimming patches of quartz. Limestone is likely from basal Watton Canyon. No show. Total gas 2 – 5 units.

Remark: Following sample contains first hint of red beds, recognizable in unwashed cuttings at shaker as well as in prepared samples.

6995' – 7000' 70% **Siltstone**; medium to medium light gray tinted light olive to greenish gray; also light brownish gray to pinkish gray—tinted pale red in part; part argillaceous; moderately soft to firm; slightly to moderately calcareous/dolomitic; trace biotite where olive to greenish; platy to subblocky. 10% **Shale**; medium dark to some dark gray as above. 20% Limestone; gray and brownish gray; likely from basal Watton Canyon. Few chips **Anhydrite**; white to very light gray; crypto- to microcrystalline; dense to firm. No show. Total gas 5 – 1 units.

7000' – 7030' 100% **Siltstone**; grayish red, hints of reddish brown when wet; commonly argillaceous, some very fine grained sandy; moderately soft and firm to some medium hard; slightly to moderately calcareous/dolomitic; slightly anhydritic; coarse platy to subblocky. No show. Total gas 1 unit.

RICH MBR. LOG TOP: 7032' TVD: 7026' DATUM: +144'

7030' – 7040' 70% **Limestone**; brownish gray to some dark yellowish brown, light brownish gray; cryptocrystalline where dark; brownish gray to yellowish brown fine and medium to rarely coarse grained lime ooliths set in light to very light gray dolomitic and anhydritic microcrystalline to earthy matrix—grades to lesser **dolomite**; slightly argillaceous; firm to moderately hard; trace dark greenish gray mineralization; no porosity visible. 10% **Shale**; medium dark gray to brownish gray. 20% **Siltstone**; grayish red, likely caving. No show. Total gas 3 – 1 units.

7040' – 7050' **Limestone**; light brownish gray to some pale to dark yellowish brown, much brownish to dark brownish gray; fine to medium grained oolitic where light brownish gray, remainder is cryptocrystalline; firm to moderately hard; HCl insoluble residue is slightly argillaceous, very silty, and contains patches of silicified matrix of oolitic limestone; no porosity visible. Rare **Calcite**; microfracture fill and **Anhydrite**; white; microcrystalline patches. No show.

LITHOLOGY AND SHOWS

7050' – 7080'	Interbedded, gradational. **Limestone**; light brownish gray to yellowish brown, much brownish gray; uphole, fine to medium grained oolitic and cryptocrystalline; downhole, cryptocrystalline; some firm to much moderately hard; slightly to very argillaceous, part silty, some silicification of oolitic matrix; part dolomitic; uphole, forms slight bubbly brownish film that floats on acid; platy to sharp irregular chips; no porosity visible. Downhole, increased **Shale**; brownish gray; very calcareous, some also partly dolomitic; minor **Siltstone**; medium gray, part tinted brownish gray; calcareous/dolomitic; chips remain intact in acid; subblocky. No show. Total gas 2 – 1 units.
7080' – 7100'	60% – 70% **Shale**; medium dark gray, tinted brownish gray in part; cryptocrystalline carbonate appearance in part; moderately hard to some firm; very calcareous/dolomitic to some slightly calcareous/dolomitic; in acid chips are weakened but remain intact; trace micropyrite; subblocky, platy, trace splintery and finely laminated. 10% – 20% **Siltstone**; medium dark to some medium light gray; moderately hard, some firm; calcareous/dolomitic; part argillaceous; subblocky, blocky. 20% – 10% **Limestone**; light brownish and yellowish brown to brownish gray; may be late circulated cuttings. Trace **Calcite**; white; microfracture fill. No show. Total gas 1 unit.
7100' – 7150'	30% – 40% **Limestone**; some medium light gray; earthy; firm; abundant powdery argillaceous insoluble residue; platy and **Limestone**; medium dark gray, some tinted brownish gray; cryptocrystalline; moderately hard; very argillaceous, chips decrepitate in acid to flakes and clayey powder; no porosity visible. Grades to and interbedded with 70% – 60% **Shale**; medium dark to some dark gray, part faintly brownish gray; cryptocrystalline carbonate appearance; very calcareous/dolomitic; chips remain intact in acid but are mostly fragile; platy, subblocky, sharp irregular. No show. Total gas 1 – 20 units.
Remarks:	Sharp increase from 1 to 10+ units background total gas is coincident with addition of aromatic petroleum distillate. Hydrogen flame chromatography indicates natural background gas should be 1 – 2 units. Descoe mud thinner stains upper surfaces of light colored limestone slightly pinkish as chips dry.
7150' – 7240'	60% – 80% **Limestone**; some medium light gray; earthy; firm; slightly to moderately argillaceous; platy and commonly bit-smeared; no porosity visible and much **Limestone**; medium dark to dark gray, some faintly brownish gray; cryptocrystalline; moderately hard; very argillaceous, slight odor released as chips decrepitate in acid; some gradational and thin sharp contacts with medium light gray earthy limestone; trace micropyrite; no porosity visible. 40% – 20% **Shale**; medium dark to dark gray; cryptocrystalline carbonate appearance; moderately hard; very calcareous and partly dolomitic; chips remain intact in acid or flake apart; platy, subblocky; sharp irregular. Trace **Calcite**; white; microfracture fill. No show. Total gas 20 – 12 units, likely affected by aromatic additive.
7240' – 7310'	Gradational from argillaceous limestone to calcareous shale: Uphole, minor **Limestone**; medium light gray; earthy; firm; slightly to moderately argillaceous;

LITHOLOGY AND SHOWS

platy; no porosity visible and some **Limestone**; medium dark to dark gray, some tinted brownish gray; cryptocrystalline; moderately hard; very argillaceous, some contacts with medium light gray earthy limestone; no porosity visible. Downhole, entirely **Shale**; medium dark to dark gray; silt content evident at 40X after dissolution of carbonate; firm to moderately hard; calcareous; most chips remain intact in acid and are fragile to firm after dissolution of carbonate; platy, subblocky. No show. Total gas 14 – 16 units, likely elevated by mud additive.

SLIDE ROCK MBR. LOG TOP: 7305' TVD: 7297' DATUM: -127'

Remark: Drilling time suggested top would be 7325', however, the sharp lithologic change from dark gray shale to brown limestone occurs in the 7310' – 7320' sample.

7310' – 7350' **Limestone**; dark brownish gray to dusky yellowish brown; cryptocrystalline; trace medium sand-size dark gray ovate possible fossils; moderately hard; slightly argillaceous; forms slight bubbly brown film in acid; platy to sharp irregular chips; no porosity visible. Slight increase in **Calcite**; white; thin microfracture fill. No show.

7350' – 7390' **Limestone**; dark brownish gray to increasingly dark gray; cryptocrystalline; moderately hard, some firm; increasingly argillaceous; chips decrepitate in acid to argillaceous powder and flakes and form slight bubbly brown film; platy, subblocky, some sharp irregular; no porosity visible. Grades downhole to 30% **Shale**; dark gray, faintly brownish gray; cryptocrystalline appearance; calcareous, chips remain intact in acid but are weakened by dissolution of carbonate; platy, subblocky. Trace **Calcite**; white; thin microfracture fill; some larger loose chips toward base. Trace **Shale**; brownish gray to faintly olive gray; some slightly waxy, appears bentonitic; trace minute probable biotite flecks. No show.

Remark: Excellent sample quality. The following tuffaceous rocks correlate to hot gamma at 7384' – 7390' at the Anschutz Fee #2-33 and at 6750' – 6756' at the UPRC Yellow Creek Deep #11-3. A thinner correlative bed is found at 7222' – 7226' at the Anschutz A L & L #4-30 at Cave Creek field.

7390' – 7400' 80% probable **Tuff** and associated **Tuffaceous Shale**; minor greenish white to mostly light greenish and greenish gray, some light olive gray; moderately soft and waxy (appears bentonitic) to firm and some moderately hard (few chips scrape steel from tweezers); chaotic, nonoriented brown biotite flecks; mostly noncalcareous to some slightly calcareous; minor part grades to tuffaceous very fine grained dirty sandstone; platy to irregular blocky. Trace **Sandstone**; light brownish to light olive gray; very fine to fine grained; quartzitic; hard; contains brown flecks; no porosity visible. 20% **Shale** and **Limestone**; dark gray, tinted brownish gray. No show.

7400' – 7410' 90% **Limestone**; dark yellowish to some dusky yellowish brown and dark brownish gray; cryptocrystalline, some indistinct fine to medium grained texture in part;

LITHOLOGY AND SHOWS

slightly argillaceous, minor part grades to calcareous shale; some small patches of sparry calcite and thin calcite-filled microfractures; no porosity visible. 10% **Shale**; dark gray to dark brownish gray; calcareous; platy. Trace **Tuff**; light greenish gray; from above. No show.

GYPSUM SPRING MBR. LOG TOP: 7417' TVD: 7408' DATUM: -238'

7410' – 7420' 70% **Shale**; grayish red, tinted reddish brown in part; slightly silty; firm, moderately hard; slightly dolomitic; subblocky. 30% **Limestone**; light brownish gray and brownish gray to yellowish brown; cryptocrystalline; probable cavings. No show.

Remark: Spot sample taken for thin anhydrite shown at 7412' – 7416' at the Anschutz Fee #2-33. Better recovery in following 5-ft sample suggests cuttings are lagging slightly behind carbide gas lag checks.

7420' – 7425' 70% **Shale**; grayish red, tinted reddish brown in part. 30% **Shale**; pale red to pale reddish brown; moderately soft and virtually all bit-marked; platy. Few chips **Anhydrite**; white to grayish pink; microcrystalline; firm. No show.

7425' – 7430' 20% **Anhydrite**; white, trace grayish pink; microcrystalline; firm. 10% **Dolomite**; light brownish gray to some pale yellowish brown; microcrystalline; appears anhydritic; no porosity visible. 70% **Shale** and lesser **Siltstone**; grayish red to reddish brown, some light greenish to greenish gray; occasionally mottled, trace apparent dolomite clasts; trace sandy; platy to blocky. No show.

7430' – 7470' Interbedded, gradational. 50% – 20% **Shale**; dark reddish brown, minor slightly waxy light greenish to greenish gray; moderately smooth, some silty, very fine grained sandy; nondolomitic/noncalcareous; firm; platy, subblocky. 30% – 50% **Siltstone**; pale reddish brown; commonly argillaceous, some very fine grained sandy; slightly dolomitic; some anhydritic; subblocky. 10% – 20% **Sandstone**; pale reddish brown to some moderate reddish orange; very fine grained; some moderately clean, much silty and variably argillaceous; slightly dolomitic; some appears anhydritic; slightly peppered; no porosity visible. 10% **Anhydrite**; white; loose microcrystalline chips and some patches in redbeds; firm. Uphole, Trace **Chert**; reddish orange; hard and few grains of **Quartz Sand**; loose upper medium to lower coarse; subround to round. No show.

7470' – 7480' 70% **Red Beds**; pale to dark reddish brown, minor light greenish to greenish gray streaks. 30% **Anhydrite**. Trace **Dolomite**; light brownish gray; microcrystalline; anhydritic; no porosity visible. No show.

7480' – 7495' 50% **Anhydrite**; white, some very light gray; microcrystalline; moderately soft to firm. 30% **Red Beds**; minor streaks and patches are light greenish to greenish gray.

LITHOLOGY AND SHOWS

10% **Dolomite**; light brownish gray, yellowish brown; crypto- to microcrystalline; firm to moderately hard; part very anhydritic; no porosity visible. 10% **Limestone**; dark gray, dark brownish gray; cryptocrystalline; argillaceous; may be caving. No show.

Remark: Collected 5-ft samples from 7490' – 7530' for top of Nugget.

7495' – 7500' 70% **Dolomite**; light brownish to some brownish gray; crypto- to microcrystalline; firm to moderately hard; slightly argillaceous; anhydritic; no porosity visible. 20% **Anhydrite**; white, some very light gray; microcrystalline; firm, some moderately soft. 10% **Red Beds**; pale to dark reddish brown, minor greenish gray patches and streaks. No show.

7500' – 7510' 40% **Dolomite**; light brownish to some brownish gray; crypto- to microcrystalline; firm to moderately hard; slightly argillaceous; some very anhydritic; no porosity visible. 30% **Anhydrite**; white to some light gray and light brownish gray; micro- to some very fine crystalline; mostly firm. 30% – 10% **Red Beds**; some pale reddish brown to mostly dark reddish brown. Trace - 20% **Shale**; greenish gray to some olive gray, trace grayish green streaks, increase in medium dark to dark gray downhole—possibly caving; some waxy; appears bentonitic/tuffaceous in part; probable hot gamma. No show.

7510' – 7520' 80% – 70% **Dolomite**; light brownish to brownish gray, pale to dusky yellowish brown, some brownish black; crypto- and microcrystalline to little very fine crystalline; some slightly sucrosic; clean to slightly argillaceous/organic—minute brown to black flecks are released in acid; firm to moderately hard; part anhydritic; no to some slight microsucrosic porosity. 20% – 30% **Anhydrite**; white, some mottled pale yellowish brown; microcrystalline; firm; part dolomitic.

Trace Show: No definite oil stain. No fluorescence. Dark dolomite—particularly from 7510' – 7515'—yields slow to moderately fast, non- to faintly streaming bluish yellow cut fluorescence that dries to weak fluorescent yellow halos. Under white light, no cut or oil ring. Reaction in acid from chips with show produces slightly larger bubbles than chips without show.

Slight increase in C1 7506' – 7516'.

Remark: Excellent sample quality shown by sharp lithologic and color changes in 5-ft and 10-ft samples through Gypsum Spring Mbr.

LITHOLOGY AND SHOWS

NUGGET SS.	LOG TOP: 7528' TVD: 7518' DATUM: -348'
Remark:	Drilling time suggests tighter sandstone is topped at 7521'. Sample 7520' – 7525' contains 2% sandstone; sample 7525' – 7530' contains 50% sandstone.
7520' – 7530'	2% – 50% **Sandstone**; most is tinted moderate orange pink, minor white and grayish orange pink; dominantly fine grained, minor dispersed and loose medium grains; subround; well to some moderately sorted; moderately hard, more friable downhole; slightly dolomitic to siliceous cement; trace orange to reddish orange grains common, occasional black grains; tight to some slight porosity visible. No sample show. Slight increase in C1 at 7528'.
7530' – 7550'	80% **Sandstone**; most is faintly tinted moderate orange pink, some nearly white; fine to some medium grained; subround, some round; mostly well sorted; firm to partly friable, some medium hard; slightly dolomitic to mostly siliceous cement; trace orange grains, rare black grains; some slight to mostly fair to some good porosity visible; some loose grains, small clusters, and faster drilling to 2.2 min/ft at best suggest better porosity. 20% Cavings. No sample show.
7550' – 7600'	90% – 70% **Sandstone**; faintly tinted moderate orange pink; fine to medium grained, minor loose and dispersed lower coarse grains; subround, some round; well to some moderately sorted; firm to much friable; siliceous cement; trace orange and rare black grains; fair to some good porosity visible; increased loose grains, small clusters, and fast drilling to 1.1 min/ ft at best suggest better porosity. 10% – 30% Cavings; mostly dark Twin Creek shale and argillaceous limestone, minor red beds. No sample show.
7600' – 7680'	40% – 60% **Sandstone**; faintly tinted moderate orange pink; fine to medium grained, some loose and dispersed coarse grains; subround, coarse grains are commonly round; mostly well sorted, some bimodal; mostly loose grains and very small friable clusters, larger clusters are firm to moderately hard; dominantly silica cement, some very slightly dolomitic; trace to rare orange grains and rare black grains; slight to fair porosity visible in clusters, continued fast drilling and loose grains and very small clusters suggest better porosity. Trace **Rock Flour**; white; soft, commonly platy, non- to very slightly calcareous/dolomitic. 60% – 40% **Cavings**; dark Twin Creek shale and argillaceous limestone, trace greenish bentonitic to tuffaceous shale, some mixed carbonate, and trace red beds. No sample show.
Remark:	Cavings are being concentrated on sample board. Below this point mud loggers used finer top sieve to screen out large cavings which are excluded from the following sample descriptions.
7680' – 7720'	80% – 70% **Sandstone**; faintly tinted moderate orange pink, some very pale orange; fine to medium grained, some coarse; subround, some round where coarse; most is likely well sorted with some bimodal streaks; almost all loose grains. Trace – 10% **Rock Flour**; white; soft, platy; non- to some very slightly calcareous/dolomitic. 20% **Cavings**; mostly dark platy Twin Creek. No sample show.

LITHOLOGY AND SHOWS

7720' – 7830'	70% – 80% **Sandstone**; tinted moderate orange pink—slight increase in color intensity; fine to medium grained, some coarse grains, minor streaks are very fine grained; mostly well sorted; mostly loose grains and small friable clusters. Trace – 10% **Rock Flour**; white; soft, platy. 20% **Cavings**; mostly dark Twin Creek shale and lesser carbonate, only minor red beds. No sample show.
Remark:	Lost 75 B at 7745' and 25 B at 7772' in faster drilling.
7830' – 7850'	70% **Sandstone**; moderate orange pink (5 YR 8/4), some streaks pale red (10 R 6/3); some very fine grained streaks, mostly fine to medium grained, minor loose and dispersed lower coarse grains; subround; well to some moderately sorted; mostly loose grains, slight increase in clusters; trace black grains; silica cement, non- to very slightly dolomitic; slight and fair to some good porosity visible, loose grains and continued fast drilling suggest better porosity. 10% **Rock Flour**; white. 20% **Cavings**; mostly dark platy Twin Creek. No show.
Remarks:	Lost 600 psi pump pressure at 7860'. Tripped out. Found possible wash in jars; bit, near bit IBS, and part of shock sub were left in hole. Fished, successful on first run. Hughes GT-09 that drilled virtually all of Twin Creek and 340 ft of Nugget was thoroughly worn, 1/4" out of gauge.
7850' – 7860'	No sample.
7860' – 7870'	90% **Sandstone**; moderate orange pink; fine to some medium grained; subround, some round; well sorted; moderately friable clusters; silica cement; trace orange and rare black grains; fair porosity visible. 5% **Rock Flour**; white. 5% **Cavings**; gray Twin Creek. No show.
7870' – 7900'	95% **Sandstone**; moderate orange pink; fine to some medium grained; subround, some round; well sorted; mostly loose grains, some small clusters exhibit fair to good porosity. 5% **Rock Flour**; white. Trace to virtually no **Cavings**. No show.
7900' – 7920'	85% **Sandstone**; moderate orange pink (5 YR 8/4), minor streaks pale red (10 R 6/3); mostly fine to medium grained, minor very fine grained streaks are commonly pale red, minor loose and dispersed coarse grains; subround, some round particularly where coarse; well to some moderately well sorted; increase in moderately friable clusters indicates somewhat better cementation and correlates to slower drilling with continued light weight on bit; silica cement; slight to fair porosity visible. 15% **Rock Flour**; white; remnant sandy texture in part. No show.
7920' – 7950'	90% – 95% **Sandstone**; moderate orange pink, minor streaks pale red; fine to medium grained, minor very fine grained streaks are commonly pale red, minor loose and dispersed coarse grains; subround, some round; well to some moderately sorted; increased weight on bit and perhaps better cementation result in increased size of chips to 3 – 4 mm; downhole, increased loose grains and slight increase in rock flour correlate to mud loss; silica cement; trace orange and black grains; slight to some fair porosity visible in clusters. 5% – 10% **Rock Flour**; white. No show.
Remark:	Lost 365 B from approximately 7943' – 7953'.

LITHOLOGY AND SHOWS

7950' – 7960'	95% **Sandstone**; moderate orange pink; fine to medium grained; subround, some round; well sorted; firm to moderately hard chips to 6 mm; silica cement, some glassy broken quartz grains; trace orange and black grains; slight to some fair porosity visible. 5% **Rock Flour**; white, platy, commonly bit-marked. No show.
7960' – 8010'	95% **Sandstone**; moderate orange pink; fine to medium grained, minor coarse grains; subround, some round; well to some moderately well sorted; sharp change to small cuttings and abundant loose grains; silica cement; trace orange and black grains; slight to some fair porosity visible. 5% **Rock Flour**; white. No show.
8010' – 8090'	90% – 95% **Sandstone**; tinted moderate orange pink, slight decrease in color intensity; fine to medium grained, some loose and dispersed coarse grains; subround, some round; well to some moderately well sorted; continued small cuttings and loose grains even though many chips appear better cemented; silica and trace dolomite cement; increased glassy broken quartz grains; rare quartzitic streaks; trace orange and black grains; slight to some fair porosity visible. 5% to occasionally 10% **Rock Flour**; white; commonly bit-smeared; tests for anhydrite were negative. No show.
Remark:	Began controlling water loss at approximately 7860'. Cavings of dark, platy Twin Creek became negligible almost immediately and have remained so for two days.
8090' – 8098'	80% **Sandstone**; moderate orange pink; as above but increase in cutting size to 4 mm. 20% **Cavings**; mostly dark Twin Creek, minor red beds; likely concentrated by slow drilling and perhaps also by LCM sweep. Trace **Rock Flour**; white. No show.
Remark:	Tripped at 8101' for new bit #17 Smith F47H. Bit #16 Smith F3H had thoroughly worn inserts and was 1/4" undergauge. No trip gas.
8098' – 8120'	90% **Sandstone**; tinted moderate orange pink; fine to medium grained, some very fine grained streaks, some loose and dispersed coarse grains; subround, some round; well to some moderately sorted, bimodal in part; small firm cuttings and loose grains; silica cement, some very slightly dolomitic, tests negative for significant anhydrite; some glassy broken quartz grains, rare quartzitic chips; trace orange and black grains; no to some fair porosity visible. 10% **Rock Flour**; white; bit-marked; tests for anhydrite were negative. Trace **Cavings**; dark Twin Creek. No show.
8120' – 8165'	95% – 90% **Sandstone**; moderate orange pink (5 YR 8/3 to 10 R 6/3); fine to medium grained, increase in very fine grained streaks, trace coarse grains; subround; well to some moderately sorted; firm to moderately hard chips and loose grains; entirely silica cemented to part also slightly dolomitic, glassy broken quartz grains common; minor quartzitic chips; trace orange and black grains particularly in very fine grained streaks which are nearly pale red; no to slight porosity visible, slightly faster drilling downhole. 5% – 10% **Rock Flour**; white; bit-marked; remnant sandy texture opposite bit-marked side of chips. No show.
8165' – 8175'	95% **Sandstone**; tinted moderate orange pink; fine to medium grained; subround, some round; well sorted; increase in loose grains and small firm to friable clusters;

LITHOLOGY AND SHOWS

silica cement; fair to some good porosity visible; fast drilling break to 2.2 min/ft at best, average 3 min/ft. 5% **Rock Flour**; white. No show.

8175' – 8270'

90% – 95% **Sandstone**; moderate orange pink (5 YR 8/3 to 10 R 6/3), some nearly clear to white; some very fine grained streaks, mostly fine to medium grained, minor loose and dispersed coarse grains in part; subangular to subround, some round; well to some moderately sorted, some chips are bimodal; silica cement, little is also very slightly dolomitic; mixture of firm to moderately hard larger chips and firm to friable small chips and loose grains corresponds to highly variable drilling times—20 min/ft to 1.7 min/ft, average 7-8 min/ft; glassy broken quartz grains common; trace orange and black grains, particularly in very fine grained streaks which are nearly pale red; mostly no to slight to some fair porosity visible, small clusters, loose grains, and thin fast drilling breaks suggest streaks of better porosity. 10% – 5% **Rock Flour**; white. No show.

Remark:

Tripped at 8285' for new bit #18 Hughes ATJ44C. Washed and reamed 7982' – 8285' with fresh BHA (6-point reamer, IBS, shock-sub, IBS, Monel, and IBS); 8 ft of hole was undergauge. Hole gave up 10% cavings of dark Twin Creek and substantial LCM during washing and reaming. No trip gas.

8270' – 8340'

90% – 95%+ **Sandstone**; moderate orange pink, some nearly clear; upper very fine grained to fine grained, lesser medium grained, trace loose and dispersed coarse grains; subangular and subround to some round; well to some moderately sorted; silica cement, some also very slightly dolomitic; firm to moderately hard larger chips, firm to friable small clusters and loose grains increase downhole—especially at thin fast drilling break to 1.9 min/ft at 8310'; glassy broken quartz grains common; trace orange and black grains; no to slight porosity visible, streaks of better porosity are suggested by small clusters, loose grains, and thin fast drilling breaks. Trace – 5% **Rock Flour**; white; marked on one side of chips by bit or stabilization. 10% – Trace **Cavings**; dark shaly Twin Creek. No show.

Remark:

Fast thin drilling break at 8308' – 8311' was start of 200 B cumulative loss.

8340' – 8370'

95%+ **Sandstone**; moderate orange pink, approaching pale red in part, minor streaks and patches are clear to white; very fine to fine grained, lesser medium grains; subangular, subround; well to some moderately sorted; firm to moderately hard clusters, sharp decrease in loose grains and small clusters; siliceous, slight increase in dolomite cement; glassy broken quartz grains common, minor quartzitic streaks; trace orange and trace to minor black grains—particularly where nearly pale red and finer grained—metallic to earthy luster common; no to some slight porosity visible, overall slower drilling. 5% – 2% **Rock Flour**; white. No show.

8370' – 8390'

95%+ **Sandstone**; moderate orange pink, minor streaks clear to white; upper very fine and fine grained, some medium grains; subangular, subround; mostly well sorted; firm, some moderately hard—increase in smaller clusters; silica and in part trace dolomite cement; glassy broken quartz grains common; trace orange and minor black grains; no to slight porosity visible, slightly faster drilling. 2% – 5% **Rock Flour**; white. No show.

LITHOLOGY AND SHOWS

8390' – 8490'

95%+ **Sandstone**; moderate orange pink, minor streaks clear to white; upper very fine to fine grained, some medium grains; subangular, subround; mostly well sorted; small firm to friable clusters and some loose grains, lesser large firm to moderately hard clusters; silica cement, some also slightly dolomitic; some glassy broken quartz grains, some faceted grains indicate quartz overgrowth; trace orange and minor black grains; no to slight to some fair porosity visible, fair drilling with thin streaks of better porosity. 2% – 5% **Rock Flour**; white. In some samples, few chips **Shale**; dark reddish brown to grayish red. No show.

8490' – 8520'

95% **Sandstone**; faint to moderate orange pink, trace pale red; upper very fine to fine grained; subangular, subround; mostly well sorted; moderate increase in larger firm to moderately hard clusters; silica cement, some slightly calcareous/dolomitic; some glassy broken quartz grains; no to slight porosity visible, mostly slow drilling. Trace **Shale** and **Siltstone**; dark reddish brown, very dusky red; rare contacts with dominant Nugget Sandstone. 5% **Rock Flour**; white. No show.

8520' – 8550'

95% **Sandstone**; moderate orange pink; upper very fine to fine grained; subangular, subround; well sorted; some larger moderately hard clusters, firm to slightly friable smaller clusters increase downhole; siliceous, some also slightly dolomitic; some glassy broken quartz grains; trace orange and minor black grains; no to slight to minor fair porosity visible, faster drilling. Rare **Shale** and **Siltstone**; dark reddish brown, grayish red to blackish red; blocky to platy. 5% **Rock Flour**. No show.

8550' – 8580'

95% **Sandstone**; moderate orange pink, downhole minor streaks of white to light gray; upper very fine to fine grained; subangular, subround; well sorted; firm to moderately hard to hard—part **quartzitic**; entirely siliceous to some slightly calcareous/dolomitic; glassy broken quartz grains common; trace orange and minor black grains; no to slight porosity visible, hard to fair drilling. Trace **Shale** and **Siltstone**; dark reddish brown, grayish red. 5% **Rock Flour**. No show.

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RED BEDS

LOG TOP: 8580' TVD: 8560' DATUM: -1390'

Remark:

Good sample quality; rather fine cuttings but marked increase in red beds is visible without microscope.

8580' – 8590'

30% **Shale** and **Siltstone**; grayish to dark grayish red, some dark reddish brown, trace greenish gray patches and laminae; silty shale and argillaceous siltstone; very fine to some fine grained sandy; firm to moderately hard; non- to slightly dolomitic; subblocky to platy. 20% **Sandstone**; some pale red, much grayish red; very fine to some fine grained; slightly to very argillaceous, silty; firm; non- to slightly calcareous/dolomitic; no porosity visible. 50% **Sandstone**; moderate orange pink; similar to overlying Nugget. No show.

LITHOLOGY AND SHOWS

8590' – 8600'	30% **Shale** and **Siltstone**; grayish to dark grayish red, some dark reddish brown; smooth to silty and partly sandy shale; argillaceous and partly sandy siltstone; firm, some medium hard; non- to slightly dolomitic; platy to blocky. 20% **Shale** and **Siltstone**; greenish gray; firm to moderately hard; slightly to moderately dolomitic; platy. 30% **Sandstone**; some grayish orange pink, much pale red to grayish red, minor pale reddish brown; very fine to fine grained, minor dispersed medium to rare coarse grains in part; subangular, subround; firm, some medium hard; moderately to some very dolomitic where mottled white; moderately to very argillaceous, some silty; no to minor slight porosity where most dolomitic. 20% **Sandstone**; moderate orange pink; similar to Nugget, cavings or transitional beds. No show.
8600' – 8610'	50% **Shale**; dark reddish brown; smooth to moderately very fine grained sandy; firm, brittle; non- to some slightly dolomitic; platy. 50% **Sandstone**; white to very light gray, some tinted grayish pink; upper very fine to lower fine grained; well sorted; firm to moderately hard; siliceous—part quartzitic—to some slightly dolomitic; trace dark grains and numerous brown to black to blackish red specks, possible hematite; no porosity visible; slower erratic drilling. No show.
8610' – 8630'	90% – 100% **Sandstone**; increasing moderate orange pink, decreasing grayish pink to pale red, minor white; mostly upper very fine to lower fine grained, trace upper fine to medium grains; well sorted; firm to moderately hard, some hard where **quartzitic**; siliceous, minor part also slightly dolomitic; clean to slightly argillaceous; no to trace black and blackish red specks and microgranular staining, possible hematite; no to some slight porosity visible, fair drilling downhole. 10% – Trace **Shale**; dark reddish brown; smooth to dispersed sandy; platy; decreases downhole. No show.
Remarks:	Very good sample quality. Continued rather fine cuttings but sharp lithologic changes in 10 ft samples. Tripped at 8638' for new bit #19 Security ERA22. Trip gas 1 unit, C1. Abundant pipe scale and some fresh steel in first sample after trip.
8630' – 8640'	90% **Sandstone**; moderate orange pink, grayish pink to pale red, some white to very light gray, trace tinted greenish gray; very fine to fine grained; firm to some moderately hard; siliceous, minor part quartzitic, some very slightly dolomitic; no to slight porosity visible. 10% **Shale** and lesser **Siltstone**; dark reddish brown, grayish red; smooth to sandy shale; argillaceous and partly sandy siltstone. No show.
8640' – 8660'	70% – 60% **Sandstone**; increased white to very light gray and light greenish gray, some grayish pink to pale red, trace moderate orange pink; very fine to fine grained; well to moderately well sorted; mostly medium hard to hard—part **quartzitic**; siliceous, commonly slightly dolomitic; trace black grains and blackish red specks and intergranular staining; mostly no porosity visible. 30% – 40% **Shale** and lesser **Siltstone**; dark grayish red, part tinted dark reddish brown, trace grayish green; smooth to silty and partly very fine to fine grained sandy shale; argillaceous and sandy siltstone; firm; non- to slightly dolomitic; platy, subblocky. No show.
8660' – 8680'	70% – 80% **Shale** and lesser **Siltstone**; grayish red, dark grayish red, some tinted dark reddish brown, trace greenish gray streaks and mottling; smooth to silty and

LITHOLOGY AND SHOWS

very fine to fine grained sandy shale; argillaceous and sandy siltstone; slightly dolomitic; platy, subblocky. 30% – 20% **Sandstone**; light greenish gray, white to light gray, pale red to grayish red; very fine to fine grained; lighter colors are moderately to very clean; grayish red is very argillaceous; no porosity visible. No show.

8680' – 8710' — 80% – 90% **Shale** and lesser **Siltstone**; increasing dark to some moderate reddish brown—moderate reddish orange where thin platy and smeared by drilling, also grayish red, trace greenish gray streaks and mottling; smooth to silty and partly very fine to fine grained sandy shale; argillaceous and partly sandy siltstone; firm; non- to slightly calcareous/dolomitic; platy, subblocky. 20% – 10% **Sandstone**; light greenish gray, pale red to grayish red; very fine to fine grained; moderately clean to very argillaceous where grayish red; no porosity visible. No show.

8710' – 8730' — 100% **Siltstone** and lesser **Shale**; some pale red to mostly grayish red, increasingly tinted grayish red purple downhole, minor light greenish to greenish gray patches, some thin curved bit-marked moderate reddish orange chips; very fine grained sandy and commonly argillaceous siltstone; silty shale; firm to medium hard; some microcrystalline appearance where pale red; dolomitic; platy to blocky. Trace **Calcite**; white microfracture fill. No show.

8730' – 8790' — 100% **Shale** and lesser **Siltstone**; grayish red, much tinted grayish red purple, minor light greenish to dark greenish gray, some dark reddish brown downhole, minor reddish orange chips are thin, curved and bit-marked; silty shale and argillaceous siltstone; firm to medium hard; slightly dolomitic; platy, subblocky. Trace **Calcite**; white microfracture fill. No show.

8790' – 8820' — 100% **Shale** and minor **Siltstone**; increasing dark reddish brown, some bit-marked thin curved moderate reddish orange chips, some grayish red to grayish red purple, minor light to dark greenish gray streaks and spots; silty, some smooth; mostly firm; non- to slightly calcareous/dolomitic; platy, subblocky. Trace **Calcite** and possible **Anhydrite**; white microfracture fill. No show.

8820' – 8840' — 100% **Shale**; medium dark gray tinted red purple; silty; moderately hard; dolomitic; platy to sharp subblocky, part likely fractured where penetration increased from average 12 min/ft to 4.7 min/ft and driller noted increased torque. No show.

8840' – 8870' — **Claystone/Shale**; moderate reddish orange to moderate reddish brown—increased color intensity—some grayish red purple downhole; soft, some firm; chips commonly decrepitate quickly in acid with slight effervescence to reddish orange powder, reddish orange is particularly water sensitive; much is rounded and appears pulverized, some platy to subblocky. No show.

8870' – 8890' — 30% – 10% **Sandstone**; tinted moderate orange pink, some nearly white; upper very fine to lower fine grained; subangular, subround; well sorted; firm, some friable; silica cement; trace black and rare orange grains; slight porosity visible. 70% – 90% **Shale** and lesser **Siltstone**; dark reddish brown, decreasing moderate reddish brown to moderate reddish orange, increasing grayish red purple, minor light greenish to

LITHOLOGY AND SHOWS

dark greenish gray, some white mottling; smooth to silty shale; argillaceous siltstone; non- to slightly calcareous/dolomitic; platy, subblocky. No show.

8890' – 8930' 90% – 100% **Shale** and minor **Siltstone**; dark reddish brown, minor moderate reddish brown and reddish orange where bit-smeared, much grayish red purple with minor white to light gray mottling in part, minor light greenish to greenish gray; firm, some moderately soft; non- to some moderately calcareous/dolomitic; platy, subblocky. 10% – Trace **Sandstone**; white to pale red purple; very fine to fine grained; silica cement, some quartzitic; mostly no porosity visible. No show.

8930' – 8950' 100% **Shale**; grayish red purple—much white to light gray, pale red purple, and dark reddish brown to dark grayish purple mottling; smooth and slightly waxy, some silty and very fine grained sandy; soft to firm; noncalcareous; chips crack upon drying and easily flake apart when rewet, appears water sensitive; platy. No show.

8950' – 8970' 70% – 40% **Shale**; grayish red purple, commonly mottled white to light gray, pale red purple, and dark reddish brown, some reddish brown to moderate reddish orange where bit-marked, minor dark greenish gray; smooth and slightly waxy, some silty and sandy; moderately soft to firm; noncalcareous, some slightly calcareous; platy, rounded where reddish orange; trace probable slickensides where glazed. No show.

8970' – 9010' 20% – 40% **Sandstone**; pale red to grayish red, minor pale to grayish red purple, some light gray to white; very fine to medium grained; angular to subround; well to moderately sorted; firm, some medium hard; non- to moderately calcareous; quite clean to very argillaceous; part micaceous; mostly no porosity visible. 40% – 30% **Shale**; grayish red purple, dark to moderate reddish brown, some moderate reddish orange—white mottling abundant downhole. 40% – 30% **Siltstone**; dark reddish brown, grayish red; argillaceous; commonly very fine to fine grained sandy. Rare **Calcite**; white, clear; probable fracture fill. No show.

9010' – 9050' 60% – 90% **Sandstone**; pale red to some grayish red, part tinted pale to grayish red purple, trace light greenish gray, some light gray to white; very fine to medium grained, minor coarse grains; angular to subround; well to moderately sorted; firm, some medium hard; slightly to moderately calcareous; glassy broken quartz grains indicate silica cement and suggest rock harder than apparent in small clusters and loose grains; moderately clean, some very argillaceous; part micaceous; minor green, black and reddish brown lithics; mostly no porosity visible. 30% – 10% **Shale** and lesser **Siltstone**; grayish red purple slightly waxy shale, smooth to silty reddish brown shale, and argillaceous partly sandy siltstone. No show.

9050' – 9100' 40% – 10% **Shale**; mostly dark reddish brown to some grayish red, minor grayish red purple except possible cavings at 9070' – 9080'; some smooth, increasingly silty and partly very fine grained sandy; firm; slightly calcareous; some micaceous; platy, subblocky. 50% – 80% **Siltstone**; pale reddish brown; commonly argillaceous, some very fine grained sandy; firm, some medium hard; slightly to moderately calcareous; some micaceous; subblocky. 10% – 30% **Sandstone**; pale reddish

LITHOLOGY AND SHOWS

brown; very fine grained; commonly silty, argillaceous; slightly to moderately calcareous; anhydritic; no porosity visible. No show.

9100' – 9120'

30% – 20% **Sandstone**; pale reddish brown; very fine grained; silty, argillaceous; slightly to moderately calcareous; no porosity visible. 60% **Siltstone**; pale to some dark reddish brown; part argillaceous, some very fine grained sandy; firm, some medium hard; slightly to moderately calcareous; some micaceous; subblocky. 10% – 20% **Shale**; dark reddish brown, part tinted grayish red; mostly silty and partly very fine grained sandy; firm; slightly calcareous; platy, subblocky. No show.

9120' – 9200'

30% – 50% **Shale**; dark reddish brown, part pale reddish brown where thin platy and commonly marked by bit or stabilization, some grayish to dark grayish red downhole, trace greenish gray spots and streaks; silty and partly sandy to moderately smooth; firm, soft where thin platy; slightly calcareous; some very micaceous partings; platy, subblocky. 50% – 20% **Siltstone**; pale to some dark reddish brown, trace greenish gray streaks; commonly argillaceous and very fine grained sandy; firm; slightly to moderately calcareous; some micaceous; subblocky. 20% – 30% **Sandstone**; pale to some dark reddish brown; very fine grained; much is argillaceous and silty; firm, some medium hard; slightly to moderately calcareous; slightly anhydritic; part micaceous; no porosity visible, thin slow drilling breaks appear to correlate to thin resistive beds which have slightly cleaner gamma values. No show.

Remark:

Below 9150', 10% – 30% grayish red purple smooth and slightly waxy shale may be interbedded but is more likely caving from upper Ankareh. Tripped at 9205' for new bit #20 Smith F2H. No trip gas.

9200' – 9210'

50% **Shale**; dark reddish brown to grayish red; smooth to silty, very fine grained sandy; micaceous; firm; slightly calcareous; platy. 40% **Siltstone**; pale to some dark reddish brown, grayish red; argillaceous, part very fine grained sandy; some very micaceous partings; firm, medium hard; slightly to moderately calcareous; subblocky. 10% **Sandstone**; pale reddish brown, trace light greenish gray streaks; very fine grained; silty, commonly argillaceous; firm, some medium hard; slightly to moderately calcareous; no porosity visible.

9210' – 9230'

60% **Sandstone**; pale reddish brown, downhole white to very light gray with minor streaks light greenish gray; very fine grained; subangular, subround; well sorted; firm, medium hard; slightly to moderately calcareous, part slightly anhydritic; increased pale reddish brown mottled white rock flour and smeared chips of sandstone; no porosity visible. 20% **Siltstone**; pale reddish brown. 20% **Shale**; dark reddish brown to grayish red. No show.

9230' – 9240'

60% **Shale**; dark grayish red to dark reddish brown; smooth, some silty, very fine grained sandy; firm; non- to slightly calcareous; some micaceous partings; part pulverized by bit and stabilization to pale reddish brown rock flour and rounded to thin platy curved chips; platy, subblocky. 20% **Siltstone**; pale reddish brown. 20% **Sandstone**; pale reddish brown, some white; as above. No show.

LITHOLOGY AND SHOWS

9240' – 9250'	70% **Shale**; grayish red, dark grayish red, and dark reddish brown; smooth to silty; firm; non- to slightly calcareous; some micaceous streaks; platy, subblocky. 30% **Siltstone**; pale reddish brown. Trace **Sandstone**. No show.
9250' – 9260'	50% **Siltstone**; pale reddish brown; commonly argillaceous, some very fine grained sandy. 20% **Sandstone**; pale reddish brown; very fine grained; part silty, argillaceous; no porosity visible. 30% **Shale**; grayish to dark grayish red, dark reddish brown; smooth to silty and partly very fine grained sandy. No show.
9260' – 9280'	40% – 20% probable **Cavings**; grayish red purple, mottled off-white to light gray and dark grayish purple; smooth and partly waxy; appears sensitive to water (cracks upon drying, flakes easily when rewet); no contacts observed with reddish brown shale, siltstone, or sandstone. 30% **Shale**; dark reddish brown; smooth to some silty, very fine grained sandy; firm; non- to slightly calcareous; platy, subblocky. 20% – 30% **Siltstone**; pale to some dark reddish brown; argillaceous to very fine grained sandy; firm, some medium hard; slightly to moderately calcareous; subblocky. 20% **Sandstone**; pale reddish brown, some faintly moderate reddish orange; very fine grained; part silty, argillaceous; slightly to moderately calcareous; no porosity visible. No show.
9280' – 9310'	50% – 40% **Shale**; dark reddish brown, some grayish to dark grayish red; smooth to silty and partly very fine grained sandy; firm; non- to slightly calcareous; some conspicuous micaceous partings; platy. 40% **Siltstone**; pale to some dark reddish brown; argillaceous, some very fine grained sandy; firm, some moderately hard; slightly to moderately calcareous; some micaceous; subblocky. 10% – 20% **Sandstone**; pale reddish brown, some faintly moderate reddish orange; very fine grained; firm, some moderately hard; slightly to moderately calcareous; some appears anhydritic; no porosity visible. No show.
Remark:	Possible cavings excluded from descriptions: 10% – 20% **Shale**; grayish red purple, mottled white to light gray and dark grayish purple to dark grayish red; smooth and commonly waxy; appears water sensitive.
9310' – 9350'	30% increasing to 50% **Sandstone**; pale reddish brown; very fine grained, trace dispersed upper fine grains; well sorted; firm, minor part quite hard; slightly to moderately calcareous; some appears anhydritic, part siliceous; trace dark grains; no porosity visible. Interbedded and gradational with 30% **Siltstone**; pale to some dark reddish brown; commonly argillaceous, some very fine grained sandy; firm, some moderately hard; slightly to moderately calcareous; subblocky. 40% – 20% **Shale**; dark reddish brown. No show.
9350' – 9377'	70% – 80% **Sandstone**; pale reddish brown to increasingly light brown, minor streaks nearly white; very fine grained, some dispersed fine grains and rare lower medium grains; well to some moderately sorted; firm to moderately hard; slightly to moderately calcareous; some silica cement and glassy broken quartz grains; numerous black grains in part; no porosity visible. 10% – 20% **Siltstone**; reddish brown, some light to nearly moderate brown; argillaceous streaks, much is very fine grained sandy; firm, some medium hard; slightly to moderately calcareous;

LITHOLOGY AND SHOWS

subblocky. 10% **Shale**; dark reddish brown; smooth, some silty, sandy; some micaceous partings. No show.

Remark: Tripped at 9384' for new bit #21 Hughes ATJ-33. No trip gas. 10% – 20% probable cavings of light gray-mottled grayish red purple slightly waxy shale are excluded from interpreted lithology.

9377' – 9390' 60% **Sandstone**; pale reddish brown, some light to nearly moderate brown; very fine grained with minor dispersed fine to rare medium grains; well to moderately sorted; firm, some medium hard; slightly to moderately calcareous; slightly anhydritic; more silty and argillaceous than sandstone above; some micaceous partings; no porosity visible. 30% **Siltstone**; pale to some dark reddish brown, some tinted moderate brown; argillaceous, some very fine grained sandy; firm, some medium hard; slightly to moderately calcareous/dolomitic; subblocky. 10% **Shale**; dark reddish brown, trace greenish gray, rare contacts of red with green; smooth, some silty, sandy; trace very micaceous streaks; non- to slightly calcareous; platy, subblocky. No show.

9390' – 9510' 60% – 70% **Sandstone**; pale reddish brown (10 R 6/5 to 10 R 4/3); very fine grained; firm, some medium hard; some slightly calcareous, most is slightly dolomitic; slightly anhydritic; commonly silty, some dark very argillaceous streaks; some slightly smeared, part pulverized to rock flour; no porosity visible. 40% - 20% **Siltstone**; pale to some dark reddish brown; commonly argillaceous and very fine grained sandy; mostly firm; slightly dolomitic; some micaceous partings; subblocky. Trace – 10% **Shale**; dark grayish red, tinted dark reddish brown; moderately smooth to silty, very fine grained sandy; firm; non- to slightly calcareous/dolomitic; micaceous laminae; platy, subblocky. No show.

9510' – 9540' 60% **Sandstone**; pale reddish brown; mostly lower very fine grained; well sorted; firm, some medium hard; slightly dolomitic; some appears anhydritic; part silty, argillaceous; part bit-marked or pulverized to rock flour; no porosity visible. 40% **Siltstone**; pale reddish brown with dark reddish brown streaks and laminae; some argillaceous, commonly very fine grained sandy; firm; slightly dolomitic; some micaceous partings; subblocky. Trace **Shale**; dark reddish brown to dark grayish brown; smooth, some silty and sandy; firm; non- to slightly calcareous; some very micaceous partings; platy. Trace mixed **Dolomite/Anhydrite**; white; microfracture fill cutting sandstone, siltstone, and shale. No show.

9540' – 9560' 90% – 100% **Red Beds**; as above. 10% – Trace **Siltstone**; light gray, some tinted grayish pink, some faintly greenish gray; moderately hard; dolomitic; anhydritic; trace with red specks and hints of rectangular casts; subblocky. No show.

9560' – 9600' 40% decreasing to 10% **Shale**; dark reddish brown to dark grayish brown; smooth to some silty, sandy; firm; non- to slightly dolomitic; some very micaceous partings; platy. 30% – 40% **Siltstone**; pale reddish brown with some dark reddish brown streaks; some argillaceous, commonly very fine grained sandy; firm, some moderately hard; slightly dolomitic; anhydritic; some micaceous; subblocky. 20% – 50% **Sandstone**; pale reddish brown; very fine grained; well sorted; some silty, minor dark argillaceous streaks; firm, some moderately hard; slightly dolomitic;

LITHOLOGY AND SHOWS

anhydritic; no porosity visible. Rare mixed **Dolomite/Anhydrite**; white microfracture fill. Trace **Anhydrite**; white; microcrystalline patches in siltstone and sandstone. No show.

THAYNES LS. LOG TOP: 9603' TVD: 9567' DATUM: -2397'

Remark: Subtle appearance in first two samples is supported by fair correlation of drilling time with the UPRC Yellow Creek Deep #11-3.

9600' – 9620' 90% **Red Beds**; similar to gradational very fine grained sandstone, siltstone, and minor shale above. 10% **Siltstone**; light to medium light gray—tinted pinkish gray to light brownish gray, grayish pink to pale red, and light olive gray; dolomitic; anhydritic; trace with reddish brown spots and hints of minute rectangular casts. No show.

9620' – 9630' 90% **Siltstone**; light to medium light gray; firm to moderately hard; dolomitic; anhydritic; chips remain intact in acid; rare reddish brown spots, rarely partly dissolved leaving small isolated pores; subblocky. 10% **Red Beds**; probable cavings. No show.

Remarks: Good sample quality. Increased torque on thin fast drilling break to 2.6 min/ft at 9624' – 9627'.

9630' – 9730' Interbedded, gradational. 80% – 90% **Siltstone** and **Sandstone**; some light to mostly medium light gray—commonly tinted light olive gray; coarse silt to lower very fine grained sand; some firm, mostly medium hard; dolomitic, becoming slightly calcareous downhole; chips remain intact in acid but are weakened by dissolution of carbonate cement; minute green specks or mineralization in part; trace medium to medium dark gray and greenish gray argillaceous and slightly micaceous streaks; subblocky, blocky; no porosity visible; thin fast drill breaks suggest some fracture porosity. 10% – 20% **Dolomite**; light gray to pinkish gray; micro- to very fine crystalline; firm, some medium hard; silty to lower very fine grained sandy; some slightly calcareous downhole; no porosity visible. No show.

9730' – 9750' Interbedded, gradational. 80% **Siltstone** and **Sandstone**; some light to mostly medium light gray—much is tinted light olive gray; coarse silt to lower very fine grained sandy; moderately hard; slightly to moderately calcareous—approximately 40% of bulk sample is stained in Alizarin Red—but most chips remain intact in acid; subblocky, blocky; some likely fractured, hints of calcareous fracture faces. 10% **Limestone**; light to medium light gray, tinted light olive gray; silty, lower very fine grained sandy; firm, moderately hard; no porosity visible. 10% **Dolomitic Sandstone** and lesser **Sandy Dolomite**; light brown; very fine grained quartz sand and micro- to very fine crystalline dolomite; some sparry dolomite; firm; slight porosity visible. No sample show. Total gas Trace – 7 – 1 units; C1 – C3.

LITHOLOGY AND SHOWS

9750' – 9760'

Dolomitic Sandstone and lesser **Sandy Dolomite**; pale red to grayish red; very fine grained quartz sand and micro- to very fine crystalline dolomite; silty and slightly to moderately argillaceous; firm, some moderately hard; chips either remain intact in acid and are very fragile or decrepitate; some dark reddish brown to dark grayish red argillaceous streaks; mostly no porosity visible. Grades to Trace **Dolomite**; crypto- to microcrystalline; non- to slightly argillaceous, slightly silty and sandy; platy; no porosity visible. No show.

9760' – 9795'

Siltstone and lesser **Sandstone**; light to medium light gray, some medium gray; coarse silt and lower very fine grained sand; moderately hard, some hard where more siliceous—part scrapes steel from tweezers; dolomitic, becomes partly calcareous downhole; anhydritic; chips remain intact in acid, 30% – 10% carbonate cement; trace dark grains; no porosity visible. No show.

Remarks:

Tripped at 9798' for new bit #22 Security HP61A. Inspected BHA and tested BOPs. Laid down stabilization. Picked up second Monel and Anadrill directional tools (1.5 deg motor and MWD).

270-ft surveys with MWD on trip in. Coordinates from base of intermediate csg: Anadrill: 76.8' S & 619.1' E at 9757'. Rig surveys: 85.6' S & 603.0' E at 9700'. Good correlation of the two methods. Anadrill found hole inclination had increased to 12.4 deg at 9757'.

9795' – 9850'

Siltstone and minor **Sandstone**; some light gray—tinted pinkish gray (buff) and light brownish gray—to medium gray tinted light olive gray; coarse silt and lower very fine grained sand; slightly to moderately dolomitic/calcareous uphole, increasingly calcareous downhole; virtually all chips remain intact in acid but are weakened by dissolution of carbonate, 30% – 10% carbonate cement; micaceous, numerous minute brown to reddish brown flecks; may be anhydritic; some argillaceous; platy, subblocky. Trace **Shale**; medium dark to dark gray, tinted olive gray; smooth to silty; slightly dolomitic/calcareous; platy, subblocky. No show.

Remark:

80% – 30% **Cavings** of grayish red purple slightly waxy shale from upper Ankareh are excluded from lithologic descriptions from 9795' – 9840'. Water loss was reduced following trip.

9850' – 9940'

100% – 80% **Siltstone** and minor **Sandstone**; light to increasingly medium to some medium dark gray and minor dark gray, some tinted olive gray to light brownish gray; coarse silt and lower very fine grained sand; firm, medium hard; moderately to very calcareous, most chips remain intact in acid, few decrepitate to silty insoluble residue, 10% – 40% carbonate cement; some argillaceous; slightly micaceous; some pyritic; platy to blocky. Trace to 20% **Limestone**; light to medium light gray; very silty; firm, some medium hard; platy, subblocky; no porosity visible. Trace **Shale** toward base; medium dark gray, dark greenish gray; smooth, some micaceous; non- to slightly calcareous; platy, subblocky. Trace **Limestone** near base; light gray, mottled medium dark gray; microcrystalline, faint medium grained texture appears clastic; no porosity visible. Trace **Calcite**; white to pinkish gray; microfracture fill cutting or attached to siltstone. No sample show. Total gas 3 – 1 units.

LITHOLOGY AND SHOWS

9940' – 9980'	Interbedded. 40% **Shale**; grayish brown to dusky brown, increasingly medium dark gray to dark greenish gray downhole; smooth; firm; non- to slightly calcareous; some micaceous; platy, subblocky. 20% – 30% **Limestone**; pinkish gray (buff) to light brownish gray, medium light gray; microcrystalline, medium grained texture appears partly clastic, possible dark shale clasts, some may be fossiliferous; trace styolites; slightly silty and argillaceous; platy; no porosity visible. 40% – 30% **Siltstone**; light gray to medium dark gray, greenish gray; non- to very argillaceous; very to slightly calcareous; some micaceous; part grades to shale. No show.
9980' – 10050'	Interbedded. 70% – 80% **Siltstone** and minor **Sandstone**; light to medium dark gray; coarse silt and lower very fine grained sand; firm, some medium hard; moderately to very calcareous, chips remain intact in acid; some slightly to moderately argillaceous; platy, subblocky. 10% – 20% **Limestone**; pinkish gray (buff) to light brownish gray; microcrystalline; some medium grained medium dark to dark gray mottling and inclusions appear partly clastic, some may be fossiliferous; some silty, slightly argillaceous; platy, some subblocky; no porosity visible. Trace – 10% **Shale**; medium dark gray, dark greenish gray; smooth to silty; firm; non- to some moderately calcareous; some micaceous; platy, subblocky. No sample show. Total gas 3 – 1 units.
Remark:	Tripped at 10064' to work on MWD. Actual downhole toolface was different than shown on display at surface. Tripped in with new bit Security ERA33. Trip gas 8 units, C1 – C3.
10050' – 10150'	Interbedded. 90% – 70% **Siltstone**; some light gray to mostly medium light to medium dark gray, minor dark gray along argillaceous streaks; firm to moderately hard, moderately to very calcareous; some very hard, sharp, light to medium light gray and light bluish gray silicified chips—**cherty,** scrapes steel from tweezers; platy, subblocky. 10% – 30% **Limestone**; pinkish gray (buff) to light brownish gray, minor brownish gray; microcrystalline and commonly chalky where light colored, crypto- to microcrystalline where dark; firm, some moderately hard; silty, part argillaceous; one 2 mm fragment of bivalve; no porosity visible. Trace **Calcite**; white to pinkish gray (buff); microfracture fill. No show.
10150' – 10170'	30% – 50% **Limestone**; white to light gray, tinted pinkish gray (buff) to light brownish gray—medium to medium dark gray mottling common—minor brownish gray; microcrystalline, commonly chalky, and soft to firm where light colored; lesser crypto- to microcrystalline and moderately hard where darker; slightly to moderately silty and argillaceous; trace cherty; mostly no porosity visible, rare faces show crystal masses formed in open fractures. 70% – 50% **Siltstone**; some light to mostly medium light to medium dark gray; moderately to very calcareous; minor light to medium gray and light bluish gray cherty streaks; minor dark brownish gray argillaceous partings; platy, subblocky. Trace **Calcite**; white to pinkish gray (buff); microfracture fill cutting limestone and siltstone. No show.
10170' – 10230'	70% – 80% **Limestone**; white to pinkish gray (buff), downhole increased medium to medium dark gray mottling and light brownish gray to some brownish gray; micro- to some cryptocrystalline; moderately soft and chalky uphole (chalky texture is likely accentuated by drilling, bit-marks common), increasingly firm to medium

LITHOLOGY AND SHOWS

hard downhole; clean to slightly argillaceous uphole, moderately argillaceous and partly silty downhole; little is silicified, hard light to medium gray cherty streaks; some styolites; some dark brownish gray to brownish black argillaceous partings; trace pyrite; mostly no porosity visible, better drilling uphole. 30% - 20% **Siltstone**; medium light to medium dark gray; very calcareous; slightly argillaceous; platy, subblocky; laminae to thin beds in limestone. Trace **Calcite**; white, some pinkish gray (buff); microfracture fill. No show. Total gas 1 – 2 units.

Remark: Clean limestone likely correlates to clean gamma at 9580' at UPRC Yellow Creek Deep #11-3.

10230' – 10280' Interbedded, gradational. 60% decreasing to 30% **Limestone**; some pinkish gray (buff) to mostly light brownish gray with medium to medium dark gray mottling common, minor brownish gray; earthy and firm, some crypto- to microcrystalline and moderately hard; trace to 10% is very hard and **cherty**; forms slight bubbly brownish gray film in acid; increasingly argillaceous and silty; brownish gray to brownish black silty argillaceous partings increase downhole; trace pyrite; no porosity visible, slower drilling. 40% – 70% **Siltstone**; medium light to medium dark gray, brownish gray where more argillaceous; very to some moderately calcareous; some light to medium gray and light bluish gray siliceous streaks—cherty, scrapes steel from tweezers; subblocky, blocky. Rare free **Chert**; very light gray to medium gray and brownish gray; hard. Trace **Calcite**; white, some pinkish gray; microfracture fill. No show. Total gas 1 – 3 units.

Remark: Tripped at 10290' for new bit #24 Hughes ATJ33. Trip gas 14 units, C1 – C4.

10280' – 10340' Interbedded, gradational. 20% – 30% **Limestone**; pinkish gray (buff) to light brownish gray, minor gray mottling; microcrystalline, chalky where light colored; firm to moderately hard; slightly to very argillaceous, silty; forms slight bubbly brownish gray film in acid; no porosity visible. 70% – 80% **Siltstone**; some light gray, mostly medium light to medium dark gray; moderately to very calcareous; slightly to some very argillaceous particularly where darker; platy, subblocky. Trace **Calcite**; white microfracture fill; at 10290' – 10300' few chips to 2 mm of clear dogstooth euhedral crystals indicating some open fractures. No sample show. Total gas 2 – 8 units.

Remarks: Lost 100 B mud at 10292' in fracture. Tripped at 10348' to work on MWD tool. Tripped in new bit #25 Smith F3H. Trip gas 11 units; C1 – C4.

10340' – 10360' 80% **Siltstone**; some light gray, mostly medium light to medium dark gray; very to moderately calcareous, some appears dolomitic; black specks in part; minor dark argillaceous streaks. 20% **Limestone**; pinkish gray (buff) to some light brownish gray, medium to medium dark gray mottling common; microcrystalline, part chalky; slightly argillaceous, much is silty; forms slight brownish gray bubbly film in acid; no porosity visible. Trace **Calcite**; white; microfracture fill. No show. Total gas 2 units.

10360' – 10380' 90% **Siltstone**; increased pinkish gray to some light brownish gray with carbonate appearance, also medium light to medium dark gray; firm to some hard; very to

LITHOLOGY AND SHOWS

moderately calcareous/dolomitic; many chips that would appear to dissolve in acid do not; moderately clean, some argillaceous; minor light gray to medium light gray and light bluish gray siliceous streaks; platy, subblocky. Grades to 10% **Limestone**; pinkish gray (buff); microcrystalline; dolomitic; silty; platy, subblocky; no porosity visible. No show. Total gas 2 – 1 units.

10380' – 10400' — 90% **Siltstone**; much medium light to medium gray, lesser light gray and medium dark gray; firm to much hard—some scrapes steel from tweezers; increased light to medium light gray and light bluish gray silicified streaks; moderately calcareous/dolomitic; part very fine grained sandy; black specks common; platy to sharp irregular. 10% **Limestone**; pinkish gray, light brownish gray, some mottled gray; microcrystalline, partly chalky; silty; part dolomitic; no porosity visible. Trace **Calcite**; white; microfracture fill. No show. Total gas 1 unit.

10400' – 10420' — 90% **Siltstone**; mostly medium light to medium gray, minor light gray and medium dark gray; firm to moderately hard, little hard; less is silicified; calcareous/ dolomitic; anhydritic; some argillaceous, little is very fine grained sandy; platy, subblocky, some blocky. 10% **Limestone**; pinkish gray to light brownish gray, minor gray mottling; microcrystalline; part chalky; commonly silty, some argillaceous; no porosity visible. No sample show. Total gas 6 units from 1-ft drill break near base.

10420' – 10460' — 80% – 90% **Siltstone**; some light gray, mostly medium light to medium dark gray; firm, some moderately hard; dolomitic and slightly to moderately calcareous; little is silicified; most is likely anhydritic; some argillaceous; platy and subblocky. 10% – 20% **Limestone**; pinkish gray, some tinted light brownish gray; microcrystalline, commonly chalky; firm; silty; partly dolomitic; no porosity visible. Trace **Calcite**; white; microfracture fill. No show. Total gas 1 – 2 units.

10460' – 10470' — 10% **Red Beds**. 90% **Siltstone**; light to medium dark gray; firm, some moderately hard; dolomitic, part calcareous; much is likely anhydritic; some dark argillaceous streaks; platy, subblocky. No show.

10470' – 10550' — 80% – 100% **Red Beds**: 70% – 90% **Siltstone**; pale reddish brown, some tinted moderate reddish orange; argillaceous, part lower very fine grained sandy; moderately soft to firm; dolomitic, slightly calcareous; anhydritic; rounded to subblocky. 30% – 10% **Shale**; grayish red to dusky red, some tinted dark reddish brown; smooth to silty; firm; non- to slightly dolomitic; part micaceous; platy, subblocky. No sample show. Total gas 1 – 4 units.

Remark: — Red beds within Thaynes are noted on mud log at the UPRC Yellow Creek Deep #11-3 at 9890' – 9960' as well at Cave Creek field.

10550' – 10570' — 30% – 20% **Red Beds**: Gradational **Siltstone** and **Sandstone**; pale reddish brown; coarse silt and lower very fine grained sand; firm; slightly calcareous/dolomitic; anhydritic; some dark reddish brown argillaceous streaks, some micaceous; subblocky; no porosity visible. 70% – 80% **Siltstone** and minor **Sandstone**; light to medium dark gray; coarse silt and lower very fine grained sand; firm to moderately

LITHOLOGY AND SHOWS

hard; dolomitic/slightly calcareous; likely anhydritic; chips remain intact in acid; platy to subblocky. No show.

10570' – 10590' **Siltstone**; some light gray, mostly medium light to medium dark gray; firm to moderately hard; dolomitic/slightly calcareous; may be anhydritic; some lower very fine grained sandy; most chips remain intact in acid, grades to minor silty dolomite; black specks in part; some medium dark gray shaly streaks; rare micropyrite; platy to blocky. No show.

Remark: Tripped at 10586' for new bit #26 Smith F4. Bit #25 Smith F3H had many broken inserts from center and middle rows. Trip gas 55 units, C1 – C3, is likely from fracture in Twin Creek (trip gas at 85 min, carbide lag at 101 min) and was probably influenced by reduced hydrostatic pressure during trip out.

10590' – 10630' 20% – 70% **Limestone**; pinkish gray (buff) and some light to medium light gray; microcrystalline and chalky where pinkish gray, some cryptocrystalline where neutral gray; firm, some moderately hard; clean to slightly argillaceous, part silty; trace medium to medium dark gray mottling; trace dark gray styolites; no to rare isolated pores visible. 80% – 30% **Siltstone**; medium light to medium dark gray; dolomitic, some calcareous; some dark gray argillaceous streaks; platy, subblocky. No show. Total gas 10 – 2 units, 10 unit peak is likely recycled trip gas.

Remark: Limestone correlates to 10000' – 10035' at the UPRC Yellow Creek Deep #11-3.

10630' – 10660' 50% – 30% **Limestone**; some pinkish gray (buff) grading to medium light to medium dark gray; dark gray pelloids common; chalky to fine grained; firm, some moderately hard; silty, increasingly argillaceous downhole; part likely fossiliferous; some dark gray argillaceous streaks; trace micropyrite; no porosity visible. 50% – 70% **Siltstone**; mostly medium light to medium dark gray, minor dark gray; firm to moderately hard; calcareous; chips remain intact in acid, 10% – 40% carbonate content; slightly to very argillaceous; trace micropyrite; subblocky, blocky. No show. Total gas 3 – 1 units.

10660' – 10710' 80% – 90% **Siltstone**; some light to medium light gray, mostly medium to medium dark gray; firm to moderately hard; very to moderately calcareous, some appears dolomitic; chips remain intact in acid; slightly to very argillaceous, some dark gray shaly streaks; trace micropyrite, particularly along shaly partings; platy to blocky. 20% – 10% **Limestone**; pinkish gray (buff) to medium gray, dark gray pelloids in part; commonly silty, slightly to very argillaceous; late circulated cuttings and thin beds; no porosity visible. No show. Total gas 2 – 4 units.

Remark: Tripped at 10722' to increase bend in motor from 1.5 deg to 1.83 deg. Reran bit #26 Smith F4. Trip gas 9 units, C1 – C3. Good sample quality following trip, only trace red and purple siltstone and shale from Ankareh.

10710' – 10730' 30% **Limestone**; some pinkish gray (buff) to mostly light brownish gray with medium to medium dark gray mottling in part; micro- to some cryptocrystalline, part chalky, fine grained pelloids in part; firm; slightly to moderately argillaceous; thin platy chips commonly bit-marked, some possible slickensides where glazed;

LITHOLOGY AND SHOWS

probable thin beds and laminae; no porosity visible. 70% **Siltstone**; some light gray to mostly medium to medium dark gray, part tinted brownish gray; firm, some moderately hard; very to moderately calcareous; chips remain intact in acid; anhydritic; some dark gray to dark brownish argillaceous streaks; platy to subblocky. No show. Total gas 2 units.

10730' – 10900' Interbedded; alternating dominant rock types: 80% – 20% **Siltstone** and minor **Sandstone**; some light gray, mostly medium light to medium dark gray, minor brownish gray; silt and lower very fine grained sand; some minutely peppered; crystalline carbonate appearance in part; firm, some moderately hard; very to moderately calcareous, some dolomitic; may be anhydritic; some gray, dark gray, and brownish gray argillaceous streaks; trace micropyrite; much is platy, some subblocky. 20% – 80% **Limestone**; very light to light gray, pinkish gray (buff) to minor light brownish gray; microcrystalline, commonly chalky, some fine grained texture including dark pelloids; moderately soft to firm; quite clean to moderately argillaceous and silty; much is bit-marked, some glazed surfaces suggest slickensides; much is platy; no porosity visible, some 1 to 2-ft fast drill breaks. At base, some **Dolomite**; light to medium light gray; crypto- to microcrystalline; silty; dense; no porosity visible. Trace **Calcite**; white; microfracture fill. No sample show. Total gas background 2 units, slight increases from 4 to 7 units.

Remark: Limestone is particularly dominant in samples 10740' – 10750', 10790' – 10800', and 10820' – 10860'.

WOODSIDE
RED BEDS LOG TOP: 10901' TVD: 10854' DATUM: -3684'

10900' – 10940' 100% **Red Beds**: **Siltstone/Mudstone**; pale reddish brown, some faintly reddish orange (mostly 10 R 6/4); most appears pulverized and artificially soft, some firm; slightly to some moderately calcareous/dolomitic, many chips swell or flake apart in dilute HCl; anhydritic; rounded masses, some platy to subblocky. Minor **Shale**; grayish red to dark grayish red, some faintly dark reddish brown; smooth, some silty; firm; non- to slightly calcareous/dolomitic; some micaceous; platy, trace splintery. No show. Total gas 2 – 3 units.

10940' – 11000' 100% **Red Beds**: **Siltstone**; pale reddish brown, some faintly reddish orange (10 R 6/4 to 10 R 5/4); soft to firm, commonly bit-marked or pulverized; dolomitic/slightly calcareous; commonly swells or flakes apart in acid; anhydritic; some micaceous; rounded masses and platy to subblocky chips. Lesser **Shale**; grayish red to dark grayish red, some tinted dark reddish brown; smooth, some silty; non- to slightly dolomitic; some micaceous; platy. Rare **Calcite** and **Anhydrite**; white; microfracture fill. No show.

LITHOLOGY AND SHOWS

Possible Fault: Faster erratic drilling time, moderate hot-wire gas increases, sharp change from red beds to gray dolomitic shaly siltstone that resembles Dinwoody, and different response to directional drilling (stopped building angle) suggest possible fault slice.

11000' – 11010' 90% **Gray Beds**: **Siltstone** and minor **Sandstone**; medium light to medium dark gray, some pinkish gray (buff); silt and lower very fine grained sand; moderately soft, firm; dolomitic, some calcareous; anhydritic; moderately clean to argillaceous; some micaceous; trace micropyrite; platy, subblocky. Minor **Shale**; greenish gray, medium gray to medium dark gray; micropyrite common on shaly partings; occasional contacts with siltstone; firm; non- to slightly dolomitic; platy, some subblocky. 10% **Red Beds**. No sample show.

Hot-wire/FID Gas:	Total	C1	C2	C3	C4	Min/Ft	Mud Log
Before	2	100%				7.7	10990'
Maximum	64	97%	0%	3%	0%	2.4 /0.7	11000'
During	45	97%	0%	3%	0%	1.5	11014'
After	6	100%				5.3	11020'

Remark: Mud loggers reviewed gas chart and verified lack of C2 & presence of C3.

11010' – 11030' 90% **Red Beds**: **Siltstone**; pale reddish brown; argillaceous, some lower very fine grained sandy; moderately soft, firm; dolomitic, anhydritic; chips commonly swell slightly or flake apart in acid with minor effervescence; some micaceous; rounded masses to platy and subblocky chips. Minor **Shale**; grayish to dark grayish red. 10% **Gray Beds**: **Siltstone**; gray; dolomitic; shaly; as above. No show.

Remark: Tripped at 11038' for new bit #27 Smith F4. Bit #26 Smith F4 was not badly worn; bit condition does not fully account for lack of steering response.

11030' – 11040' One poor sample following trip: includes pipe scale following acidization of drill pipe; pipe dope; LCM; minor grayish red purple shale from upper Ankareh; dominant red beds of Woodside; and minor gray dolomitic siltstone. No show.

11040' – 11050' 80% **Red Beds**. 20% **Gray Beds**: **Siltstone**; medium light to medium dark gray; dolomitic; some shaly streaks. No show. Total gas 1 unit.

11050' – 11060' 40% **Gray Beds**: **Siltstone**; medium light to dark gray, minor pinkish gray (buff); part argillaceous, some lower very fine grained sandy; firm; dolomitic, some calcareous; likely anhydritic; some chips decrepitate slightly in acid releasing black silty insoluble residue; micropyritic; some medium dark to dark gray and minor greenish gray shaly streaks; subblocky, some platy; drilling time slightly faster to 2.7 min/ft at best. 60% **Red Beds**. No sample show. Total gas 1 – 10 units.

11060' – 11080' 95% **Red Beds**: **Siltstone**; pale reddish brown; commonly argillaceous, some lower very fine grained sandy; moderately soft, firm; dolomitic; chips often decrepitate quickly in acid to reddish powder and flakes with minor effervescence; anhydritic; subblocky, commonly rounded, some platy. Minor **Shale**; grayish to dark grayish

LITHOLOGY AND SHOWS

red, some tinted dark reddish brown; smooth, some silty; part micaceous; firm; non- to slightly dolomitic; platy. 5% **Gray Beds**: **Siltstone**; medium light to medium dark gray; dolomitic; platy, subblocky. No sample show. Total gas 1 – 8 units.

11080' – 11100'

80% – 70% **Red Beds**. 20% – 30% **Gray Beds**: **Siltstone**; medium light to medium dark gray, minor pinkish gray (buff); commonly argillaceous; firm; dolomitic; likely anhydritic; some shaly streaks; subblocky, some platy. No sample show. Total gas 10 – 2 units.

11100' – 11160'

100% **Red Beds**: **Siltstone**; pale reddish brown; commonly argillaceous; firm, moderately soft; dolomitic; some chips decrepitate quickly in acid to powder and flakes with minor effervescence; some micaceous; platy, subblocky. Subordinate **Shale**; grayish red to dark grayish red, part tinted dark reddish brown; smooth to silty; firm; non- to slightly dolomitic; platy. No sample show. Virtually steady 2 units total gas, 11 units at 11117'.

11160' – 11175'

30% **Gray Beds**: **Siltstone** and lesser **Shale**; medium light to medium dark gray; most is pulverized to rounded masses so soft that they cannot be picked up with tweezers; some firm chips are dolomitic; likely anhydritic; micropyrite common; platy, subblocky. 70% **Red Beds**. No sample show.

Hot-wire/FID Gas:	Total	C1	C2	C3	C4	Min/Ft	Mud Log
Before	2	100%				5.0	11158'
During	26	91%	8%	1%		2.3	11170'
Maximum	33	90%	9%	1%		1.7	11172'
After	5	94%	6%			5.6	11176'

11175' – 11230'

100% **Red Beds**: **Siltstone**; pale reddish brown; argillaceous, some lower very fine grained sandy; moderately soft to firm; dolomitic; likely anhydritic; platy to subblocky, commonly rounded. Lesser **Shale**; grayish red to dark grayish red, much is tinted dark reddish brown; smooth to some silty; firm; non- to slightly dolomitic; some micaceous; platy. No show. Total gas 5 – 1 units.

11230' – 11290'

95% – 100% **Red Beds**: **Siltstone**; pale reddish brown; commonly argillaceous, some very fine grained sandy streaks; moderately soft to firm; slightly to moderately dolomitic; anhydritic cement and trace patches of white anhydrite; some micaceous; soft rounded masses and firm platy to subblocky chips. Lesser **Shale**; grayish red to dark grayish red, some tinted dark reddish brown; smooth, some silty; firm; non- to slightly dolomitic; platy, some subblocky. 5% – 0% **Gray Beds**: **Siltstone** and **Shale**; medium to medium dark gray. No sample show. Total gas 1 – 3 units, brief increases to 6 and 18 units.

Remark:

Total gas increase to 18 units at 11280' may be associated with increase in gray siltstone and shale in following sample.

LITHOLOGY AND SHOWS

11290' – 11400'	90% to occasionally 80% **Red Beds**: **Siltstone**; pale reddish brown (10 R 6/4 to 10 R 5/4); commonly argillaceous, some very fine grained sandy; moderately soft to firm; slightly to moderately dolomitic; appears anhydritic; some micaceous; platy, subblocky chips and rounded smeared masses. Lesser **Shale**; grayish red to dark grayish red; smooth, some silty; firm; non- to slightly dolomitic; few chips show contacts with greenish gray shale. 10% to occasionally 20% **Gray Beds**: **Siltstone** and **Shale**; medium to medium dark gray, some greenish gray; argillaceous siltstone and smooth to silty shale; non- to moderately dolomitic; some pulverized, decrepitates immediately in acid with minor effervescence; platy, subblocky chips and very soft rounded masses. No sample show. Total gas 2 – 3 units background, brief increase to 10 units at 11396'.
Remark:	Short tripped 12 stands at 11383'; no problems. Short trip gas 8 units.
11400' – 11446'	70% increasing to 90% **Red Beds**: **Siltstone** and subordinate **Sandstone**; pale reddish brown; silt and lower very fine grained sand; moderately soft to firm; slightly to moderately dolomitic; anhydritic; commonly argillaceous; some micaceous; no porosity visible. Minor **Shale**; grayish red to dark grayish red, some tinted dark reddish brown; smooth, some silty; firm; non- to slightly dolomitic; platy, subblocky. 30% decreasing to 10% **Gray Beds**: **Siltstone**, **Shale**, and minor **Sandstone**; medium to medium dark gray, tinted greenish gray in part; light gray to pinkish gray (buff) streaks of sandstone; non- to slightly dolomitic; anhydritic; no porosity visible. No sample show. Total gas 1 – 4 units.
Remark:	Tripped for new bit #28 at 11463'. Schlumberger ran SHDT dipmeter and well survey from 6015' to 11455' log TD. Scientific Drilling ran gyro survey from 0' to 6000'. Trip gas 11 units, C1 – C3. Samples logged after trip contain only trace of grayish red purple shale/claystone from upper Ankareh.
11446' – 11460'	Logged after trip, still good sample quality: 98% **Red Beds**: **Siltstone** and minor **Sandstone**; pale reddish brown; silt and lower very fine grained sand; commonly argillaceous; moderately soft to firm; slightly to moderately dolomitic; chips remain intact in acid or decrepitate quickly to red powder and flakes; appears anhydritic; some micaceous; platy, subblocky. Minor **Shale**; grayish red to dark grayish red, some tinted dark reddish brown; smooth, some silty; firm; non- to slightly dolomitic; some micaceous; platy. 2% **Gray Beds**: **Siltstone** and **Shale**; medium to medium dark gray. No show. Total gas 1 unit.
11460' – 11480'	60% **Red Beds**. 40% **Gray Beds**: **Shale** and lesser **Siltstone**; medium to medium dark gray; most is pulverized, cracks upon drying. No show. Total gas 3 – 2 units.
11480' – 11510'	70% increasing to 95% **Gray Beds**: **Shale** and lesser **Siltstone**; medium to medium dark gray smooth to partly silty shale; medium light to medium gray and some pinkish gray (buff) siltstone; **much of sample is pulverized** to rounded medium light to medium dark gray masses that decrepitate quickly in acid to gray powder with minimal effervescence; remainder of sample comprises firm chips of non- to slightly dolomitic shale and slightly to moderately dolomitic siltstone; some micaceous; some micropyrite; platy, subblocky, rounded; slower drilling. 30% decreasing to 5% **Red Beds**. No show. Total gas 1 – 3 units.

LITHOLOGY AND SHOWS

11510' – 11520'	Pasty, pulverized, rounded masses of gray and red rocks that decrepitate quickly in acid to powder with slight effervescence. No show. Total gas 3 – 1 units.
11520' – 11550'	80% – 90% **Red Beds**: mostly pulverized rounded masses; some chips of **Siltstone**; pale reddish brown; mostly argillaceous, some very fine grained sandy; firm; slightly to moderately dolomitic; anhydritic; some micaceous; platy, subblocky; and minor **Shale**; dark reddish brown. 20% – 10% **Gray Beds**: **Shale** and **Siltstone**; mostly medium to medium dark gray; pulverized rounded masses that decrepitate in acid with slight effervescence. No show. Total gas 2 – 1 units.
Remark:	Initial impression of poor sample quality. Distinct layers of gray and red samples on sample board at shaker, however, suggest sample quality is still very good. Pasty samples likely reflect rocks downhole, perhaps relatively thin intervals smeared to fault gouge during thrusting.
Remark:	Tripped at 11555' to move drill collars uphole. New BHA consists of the 1.83 deg bent motor assembly, (2) Monel drill collars, (10) stands of G drill pipe, (16) 6 1/2" drill collars, jars, and (6) 6 1/2" drill collars. Tripped in at 11555' with new bit #29 Reed HP61. Trip gas 12 units, C1 – C3. No H2S detected. Penetration rate improved. Washed cuttings still contain abundant red and gray, smeared, pasty clumps.
11550' – 11570'	60% **Red Beds**: pulverized rounded masses that decrepitate quickly in acid to powder with slight effervescence; mostly **Siltstone**; pale reddish brown; commonly argillaceous, some very fine grained sandy; moderately soft to firm; slightly to moderately dolomitic; likely anhydritic; some micaceous; platy, subblocky; and minor **Shale**; grayish red to dark grayish red, some tinted dark reddish brown; smooth, some silty; firm; non- to some slightly dolomitic; platy. 40% **Gray Beds**: **Shale** and **Siltstone**; medium light to medium dark gray; pulverized rounded masses that decrepitate quickly in acid to powder with slight effervescence; firm chips of smooth to silty, non- to slightly dolomitic shale; and firm partly argillaceous, dolomitic, anhydritic, micropyritic, subblocky siltstone. No show.
11570' – 11610'	80% – 90% **Red Beds**; as above. Trace **Anhydrite**; free white soft masses. 20% - 10% **Gray Beds**. No show. Total gas 1 – 3 units.
11610' – 11620'	60% **Red Beds**. Trace **Anhydrite**. 40% **Gray Beds**. No show. Total gas 1 – 2 units.
11620' – 11680'	70% to mostly 90% **Red Beds**: **Siltstone**; pale reddish brown; commonly argillaceous; soft to firm; slightly to moderately dolomitic; anhydritic; platy, subblocky, rounded. Trace – 1% **Anhydrite**; free white soft masses and thin laminae or microfracture fill. 30% – 10% **Gray Beds**. No show.
11680' – 11700'	80% **Red Beds**. Trace **Anhydrite**. 20% **Gray Beds**. No show. Total gas 1 – 3 units.
Remark:	Most of red and gray cuttings are recovered as very soft to thoroughly pulverized masses that are pasty and difficult to wash clean.

LITHOLOGY AND SHOWS

DINWOODY FM. LOG TOP: 11674'? TVD: 11601'? DATUM: -4431'?

Remark: Sharp increase in gray cuttings; probably very good sample quality. Top may be 10 – 20 ft higher if represented by minor gray siltstone and shale in two preceding samples.

11700' – 11710' 50% **Gray Beds**: **Siltstone**; some light gray, minor pinkish gray (buff), mostly medium light to medium gray; partly argillaceous; firm; slightly to moderately dolomitic; likely anhydritic; platy, subblocky. Lesser **Shale**; medium to medium dark gray, some tinted greenish gray; smooth to silty; firm; non- to slightly dolomitic; some flake apart in acid with minimal effervescence; part micropyritic; platy, some subblocky. 50% **Red Beds**. Less of sample is pulverized to rounded masses that decrepitate quickly in acid with minor effervescence. No show. Total gas 1 – 3 units.

11710' – 11730' 100% – 90% **Gray Beds**: **Siltstone**; medium light to medium dark gray, some faintly greenish gray; commonly argillaceous, some very fine grained sandy streaks; firm chips can be recovered from masses coated with minute pulverized cuttings; slightly to very dolomitic; anhydritic; chips remain intact in acid, carbonate content varies from 10% where fine silty and most argillaceous to 40% where sandy; grades to some dolomitic, slightly argillaceous very fine grained **sandstone**; some dark gray and greenish gray argillaceous streaks; trace micropyrite; platy, subblocky; no porosity visible. Lesser **Shale**; medium to medium dark gray, greenish gray; some smooth, much silty; firm; slightly to moderately dolomitic; some micropyrite along bedding planes. Trace mixed **Dolomite** and **Anhydrite**; white; microfracture fill. 0% – 10% **Red Beds**. No sample show.

Hot-wire/FID Gas:	Total	C1	C2	C3	C4	Min/Ft	Mud Log
Before	3	100%	0%	0%	0%	11.5	11716'
Maximum	27	88%	9%	3%	0%	7.3	11718'
After	4	88%	12%	0%	0%	9.3	11724'

11730' – 11770' 50% to mostly 90% **Red Beds**: **Siltstone**; pale reddish brown; argillaceous; moderately soft to firm; slightly to moderately dolomitic; anhydritic cement and minor streaks and patches of soft white anhydrite; smeared cuttings decrepitate to red powder and flakes in acid with minimal effervescence; platy to subblocky where nonpulverized. 50% – 10% **Gray Beds**: **Siltstone** and **Shale**; medium light to medium dark gray. Trace to 1% **Anhydrite**; white; soft masses and streaks. No show. Total gas 1 – 2 units.

11770' – 11800' 60% increasing to 100% **Gray Beds**: **Siltstone** and lesser **Sandstone**; some light gray, mostly medium light to medium dark gray; coarse silt and lower very fine grained sand; firm, some moderately hard; slightly to very dolomitic; chips remain intact in acid but vary from firm to fragile after acidization—10% – 40% carbonate content; some dark gray and greenish gray argillaceous streaks; trace micropyrite;

LITHOLOGY AND SHOWS

platy, subblocky. Lesser **Shale**; medium gray to medium dark gray, some greenish gray; slightly dolomitic; trace micropyrite; platy, subblocky. Rare **Anhydrite**; white; patches or microfracture fill. No show. Total gas 2 units.

11800' – 11860' Interbedded, gradational. 20% increasing to 50% **Dolomite**; some light gray, mostly medium light to medium dark gray, and increasing light brownish to brownish gray; silty, very fine grained sandy, and slightly to moderately argillaceous; firm, some moderately hard; anhydritic; forms faint brownish gray film in acid, insoluble residue includes minute black specks where brownish gray; some medium dark gray mottling, possible pelloids or shale clasts; no porosity visible. 60% – 30% **Siltstone** and **Sandstone**; medium light to medium dark gray, increase in light brownish to brownish gray downhole; silt to lower very fine grained quartz sand; commonly argillaceous; dolomitic; anhydritic; chips remain intact in acid but vary from firm to fragile, 10% to 40% carbonate content; platy, subblocky. 20% **Shale**; medium to medium dark gray, minor greenish gray; some smooth, mostly silty; firm; slightly dolomitic; trace micropyrite; platy, subblocky; contacts with dolomite, siltstone, and sandstone. No fluorescence, virtually no cut fluorescence. Total gas 2 – 12 units.

11860' – 11870' 70% **Siltstone** and lesser **Sandstone**; increase in medium dark to dark gray, brownish gray; firm, some medium hard; dolomitic; slightly to moderately argillaceous, some thin shaly laminae; platy, subblocky. 30% **Dolomite**; minor light gray to light brownish gray, mostly medium to medium dark gray and brownish gray; silty, very fine grained sandy; firm; slightly to moderately argillaceous; no porosity visible. No show.

11870' – 11900' Abundant pulverized medium light gray clayey masses that decrepitate quickly in acid with moderate effervescence may represent smeared gray shale. Chips comprise mostly **Siltstone**; medium to dark gray, some dark brownish gray; dolomitic; slightly to moderately argillaceous; platy, subblocky. No show.

11900' – 11920' Abundant pulverized medium light gray clayey masses, possibly from gray shale. Subordinate chips comprise 70% **Siltstone**; some light gray, mostly medium light to medium dark gray; firm, moderately hard; dolomitic; commonly argillaceous, some very fine grained sandy; acidization shows some apparent microcrystalline dolomite is either dolomitic siltstone or is largely silicified. 30% **Shale**; medium to medium dark gray; smooth to silty; firm; slightly dolomitic, bleached by acid; trace micropyrite; platy, subblocky. No show.

11920' – 11940' 10% **Chert**; very light to medium light gray; hard, sharp; some slightly dolomitic. 20% – 30% **Sandstone**; light to medium dark gray, moderately peppered with brown and dark gray grains; moderately hard, hard; slightly to moderately dolomitic, part siliceous—scrapes steel from tweezers; quite clean to moderately argillaceous; minor micro- to fine crystalline pyrite; subblocky, blocky; no porosity visible. 50% – 40% **Siltstone**; some light gray, mostly medium light to medium dark gray; firm to moderately hard; dolomitic, some siliceous; platy, subblocky. 20% **Shale**; medium to medium dark gray, minor dark gray; smooth to silty; firm; slightly dolomitic; some micropyritic; platy, subblocky. No show.

LITHOLOGY AND SHOWS

Remarks: Moderately faster drilling from 11920' – 11933' is likely due to fractures in chert and tight sandstone and siltstone. Circulated samples prior to trip at 11933' for new bit #30 Reed HP61A. Trip gas 14 units, C1 – C3.

Samples become lighter colored overall starting at 11920' due to chert, sandstone, and inferred calcite fracture fill. Chert and siliceous sandstone may be the detrital record of an unconformity. Solid Phosphoria seems best represented by cherty dolomite starting at 11940'. Significant siliceous dolomitic sandstone was not found at the Anschutz A L & L #4-30 at Cave Creek or in review of samples from UPRC Yellow Creek Deep #11-3.

PHOSPHORIA LOG TOP: 11910' TVD: 11814' DATUM: -4644'

11940' – 11960' 50% – 70% **Dolomite**; some very light gray, mostly light to medium light gray, some tinted light brownish gray; crypto- to microcrystalline, commonly earthy; firm to hard; part silicified, scrapes steel from tweezers; quite clean, chips dissolve in acid leaving slight to moderate brownish gray clayey insoluble residue; some thin dark gray styolites and microfractures; trace dark gray shaly partings; virtually no porosity visible. 10% **Chert**; very light to medium light gray; hard; some dolomitic; trace pyritic; sharp, blocky. 10% – 20% **Calcite**; white, commonly stained moderate orange pink; most is chalky, pulverized and recovered as rounded masses; trace is firm, attached, and cutting dolomite; most is likely smeared fracture fill rather than bedded limestone. No sample show. Total gas 2 – 5 units.

Remark: Lost 50 B quickly after connection at 11950'. Pumped nut plug sweep. Additional seepage losses totaled 315 B/24 hrs.

11960' – 12010' 40% – 20% **Dolomite**; light to medium light gray; crypto- to microcrystalline; commonly earthy; firm to moderately hard, some hard where siliceous; partly calcitic effervescence may be due to microscopic fracture fill; some thin dark styolites and minor dark gray shaly partings; no porosity visible. Grades to 45% - 65% **Siltstone**; some light to medium light gray, increasingly medium to medium dark gray, minor dark gray; firm to some hard; dolomitic; argillaceous; part appears finely siliceous; part cherty; some micro- to very fine crystalline pyrite; platy to blocky. 10% **Calcite**; white to stained moderate orange pink; mostly soft and pulverized; interpreted fracture fill. 5% **Chert**; very light to medium gray, some tinted light bluish gray, minor brownish gray and some dark gray downhole; hard, sharp chips and occasional patches in dolomite. Several **Fossil** fragments; dark gray. No show. Total gas 2 – 7 units.

12010' – 12030' **Dolomite** and **Chert/Silicified Dolomite**; trace white, light to medium dark gray, some light brownish to brownish gray; numerous fine sand-sized brown spots and blades where light colored; moderately hard to hard; lighter colored chips are highly

LITHOLOGY AND SHOWS

silicified and remain intact in acid; darker chips release numerous minute black and brown flecks, some black flecks float on acid, some chips dissolve leaving extremely fragile brownish gray clayey framework; virtually no porosity visible, slightly faster drilling to 3.8 min/ft at best.

Trace Sample Show: Some moderate yellow mineral fluorescence; no cut fluorescence from selected chips. Chips with minute black possible stain do not yield cut fluorescence. Bulk or pinch samples yield slow very faint nonstreaming cut fluorescence in both trichloroethylene and in acetone; solvents dried to extremely faint yellow fluorescent halos. Under white light, no cut or oil ring.

Hot-wire/FID Gas:	Total	C1	C2	C3	C4	Min/Ft	Mud Log
Before	11	88%	9%	2%	0%	8.4	12014'
Maximum (Carbide)	44	76%	8%	16%	0%	5.3	12022'
After	25	89%	9%	3%	0%	7.7	12026'

Hot-wire/FID Gas:	Total	C1 ppm	C2 ppm	C3 ppm	C4 ppm	Min/Ft	Mud Log
Before	11	810	85	22	0	8.4	12014'
Maximum (Carbide)	44	2878	303	622	0	5.3	12022'
After	25	2518	250	76	0	7.7	12026'

Remarks: Carbide was dropped at 12018' to check pump pressure decrease. Table showing ppm of C1 – C4 is presented to help quantify gas show involving carbide. Trace H2S, less than 1 ppm, at 12224'.

This show appears to correlate to second gas show at the Anschutz A L & L #4-30 at Cave Creek field; please see 11850' – 11870' at that well. Dolomite and dolomitic chert containing brown specks and blades are correlative; similar rock was also found in reviewing samples from UPRC Yellow Creek Deep #11-3 at 12250' – 12260'.

12030' – 12050' Increase in **Dolomite**; light brownish gray, nonmottled, lacks brown spots and blades; cryptocrystalline, earthy; faint fine grained texture in part, some pelloids; moderately hard, hard; some chips scrape steel from tweezers; slightly silty and slightly argillaceous; some thoroughly silicified; trace thin styolites and dark microfractures; platy. 10% – 20% **Calcite**; white, pinkish gray (buff), some faintly stained orange pink; chalky, appears pulverized; possibly smeared fracture fill. 2% – 5% **Chert**; light brownish gray, light gray. No sample show.

Hot-wire/FID Gas:	Total	C1	C2	C3	C4	Min/Ft	Mud Log
Before	9	86%	8%	5%	0%	11.2	12030'
Maximum	21	90%	8%	2%	0%	8.9	12040'
After	8	83%	13%	4%	0	7.9	12064'

LITHOLOGY AND SHOWS

12050' – 12060'

Mixed **Dolomite**; light brownish gray, nonmottled; as above and **Siltstone** and **Sandstone**; medium light to some medium gray; as below. Increased torque at 12055', motor stalled, possible fracture porosity. No sample show.

12060' – 12100'

Siltstone and lesser **Sandstone**; medium light to some medium gray; coarse silt and lower very fine grained quartz sand; moderately hard, some hard where silicified; micro- to very fine carbonate appearance but reaction in acid clearly shows siltstone and sandstone—chips remain intact following acidization, 5% to 25% dolomite cement; trace micro- to fine crystalline pyrite; platy to blocky. 5% increasing downhole to 20% **Calcite**; white, pinkish gray (buff), some faintly stained moderate orange pink; chalky, often pulverized, rounded masses or bit-marked chips of inferred fracture fill (rather than bedded limestone). 2% – Trace **Chert**; very light to light gray, light brownish gray, some translucent; hard, sharp. No sample show.

Hot-wire/FID Gas:	Total	C1	C2	C3	C4	Min/Ft	Mud Log
Before	7	88%	12%	0%	0%	7.6	12082'
Maximum	26	88%	9%	3%	0%	7.3	12086'
After	12	89%	9%	2%	0%	8.6	12106'

Remark: Lost 75 B at 12080' – 12098'. Pumped 40 B nut plug sweep.

12100' – 12110'

80% **Dolomite**; medium light gray, minor light brownish to brownish gray; microcrystalline; firm, medium hard; silty, slightly argillaceous, brownish gray insoluble residue; some silicified; small cuttings, no porosity visible. 20% **Calcite**; white to pinkish gray (buff); chalky, pulverized. No sample show.

12110' – 12130'

Dolomite; mottled white, light to dark gray, and light brownish to brownish gray; crypto- to microcrystalline; mostly earthy; slightly silty; moderately argillaceous; HCl insoluble residue consists of brownish gray clay and some white to light gray siliceous masses; no porosity visible. Staining in Alizarin Red shows abundant, chalky, pulverized **calcite** that is likely fracture fill rather than bedded limestone. Much of sample is recovered as chalky, smashed masses retaining mottled texture of dolomite but apparently mixed with calcitic inferred fracture fill. Trace **Chert.**

Trace Sample Show: Minor faint yellow fluorescence mineral fluorescence. Very faint slow nonstreaming cut fluorescence, virtually no fluorescent halo. Under white light, no cut or oil ring.

Hot-wire/FID Gas:	Total	C1	C2	C3	C4	Min/Ft	Mud Log
Before	13	89%	9%	2%	0%	8.6	12106'
Maximum	37	88%	10%	3%	0%	6.3	12118'
After	10	85%	12%	3%	0%	9.7	12130'

Fault: 11990' – 12126' is repeated section; log correlation indicates fault at 12126'.

LITHOLOGY AND SHOWS

12130' – 12160'

Dolomite; medium light to some dark gray; microcrystalline; firm, minor part hard where siliceous; argillaceous, silty; grades to some dolomitic, argillaceous siltstone; rare green mineralization; no porosity visible. Trace **Chert**; clear to light gray; hard, sharp; some siliceous microfracture fill. No sample show. Total gas 9 – 18 units.

12160' – 12170'

Dolomite; light to medium dark gray, mottled white; microcrystalline; firm to hard; calcitic; part siliceous, cherty; numerous minute black and brown specks are released in acid, some of which float; trace pyrite; no to some slight intercrystalline porosity visible at 40X. 10% **Chert**; clear partly spotted white, white, and light gray; part translucent; hard, sharp. Minor dull yellow fluorescence; virtually no cut fluorescence.

Hot-wire/FID Gas:	Total	C1	C2	C3	C4	Min/Ft	Mud Log
Before	12	88%	9%	4%	0%	7.2	12154'
Maximum	44	87%	10%	4%	0%	4.3	12162'
Maximum	44	88%	9%	2%	0%	5.2	12170'
After	17	84%	13%	3%	0%	7.6	12174'

12170' – 12200'

Dolomite; light brownish gray to pinkish gray (buff); crypto- to microcrystalline, earthy in part; firm to hard; some siliceous, scrapes steel from tweezers; slight brownish gray clayey HCl-insoluble residue; trace dark gray mottling and thin styolites; trace pyrite; staining in Alizarin Red indicates calcitic microfractures; no porosity visible. Lesser **Siltstone** and **Sandstone**; medium light to medium gray and minor medium dark to dark gray; silt and lower very fine grained sand where lighter colored; slightly to very argillaceous; micro- to very fine crystalline carbonate appearance but reaction in acid reveals siltstone and sandstone with 20% – 40% dolomite cement, chips remain intact in acid; firm to moderately hard; micropyrite common; grades to some silty, argillaceous gray dolomite; no porosity visible. 5% – 10% **Chert**; light brownish gray to pinkish gray (buff) and very light to light gray; trace pyrite; hard, sharp. No sample show. Total gas 24 – 10 units.

Remarks:

Lost 220 B mud in 24 hrs preceding trip. Tripped for new bit #31 Smith F5 at 12206'. Trip gas questionable due to fluctuating mud level as shaker was partially bypassed for LCM, 10 units recorded.

Abundant cavings of grayish red purple shale from upper Ankareh following trip. In the first four samples following trip, percent of purple shale was 95%, 50%, 10%, and 5%.

Circulated beneath intermediate casing shoe with good returns. Hole took mud while tripping in to 9800'. Broke circulation again and pumped LCM. Lost 500 B during trip in. Lost total 725 B/24 hrs.

LITHOLOGY AND SHOWS

12200' – 12230' **Siltstone** and lesser **Sandstone**; medium light to medium gray, minor medium dark and trace dark gray; firm to moderately hard; dolomitic, minor part siliceous; chips remain intact in acid, 5% to 25% dolomite cement; micropyritic; most is quite clean, some dark argillaceous streaks; platy, subblocky; no porosity visible. No sample show. Total gas 3 – 10 units.

12230' – 12240' **Dolomite**; light brownish to brownish gray; crypto- to microcrystalline, some faint fine to medium grained texture; firm, some hard where siliceous; slightly silty, slightly to moderately argillaceous; chips dissolve leaving mainly brown clayey insoluble residue; micro- to fine crystalline pyrite; no porosity visible. Trace **Chert**; white, very light gray; hard, sharp; free chips and patches in dolomite. No sample show. Total gas 10 – 20 units.

12240' – 12250' 30% **Ankareh Shale Cavings**; grayish red purple. 40% **Dolomite**; light brownish gray; microcrystalline, some faint fine grained texture; silty, slightly argillaceous; no porosity visible. 30% **Siltstone**; medium light gray; dolomitic. No sample show. Total gas 16 – 5 units.

12250' – 12270' 70% **Dolomite**; light brownish to minor brownish gray; microcrystalline, some faintly fine grained; silty, slightly argillaceous; no porosity visible. 20% **Siltstone**; medium light gray to some medium gray; dolomitic. 5% – 10% **Ankareh Shale Cavings**; grayish red purple. Trace **Silica/Chert** and **Calcite**; white to light gray; probable fracture fill. No sample show. Total gas 8 – 24 units.

12270' – 12290' **Dolomite**; light brownish gray; microcrystalline, very fine grained sandy, some faintly fine grained; slightly argillaceous; no to slight intercrystalline porosity visible. Grades to subordinate **Sandstone**; light brownish gray; very dolomitic; chips remain intact in acid but are fragile following dissolution of dolomite cement. Trace minute black intercrystalline and intergranular specks, possible stain but no fluorescence or cut fluorescence. Trace mixed **Silica** and **Calcite**; white; fracture fill. 40% – 20% **Ankareh Shale Cavings**; grayish red purple. No sample show.

Hot-wire/FID Gas:	Total	C1	C2	C3	C4	Min/Ft	Mud Log
Before	10	91%	9%	0%	0%	9.3	12268'
During	33	89%	8%	3%	0%	5.1	12272'
Maximum	56	88%	10%	3%	0%	2.8	12280'
After	15	87%	10%	3%	0%	6.4	12286'

Remark: Sharp increase in cutting size results from changing from sample board where shaker was partially bypassed to bucket where shaker screens were pulled down.

12290' – 12330' 70% – 100% **Shale**; some dark gray uphole, mostly grayish black; moderately smooth to apparently silty; moderately hard to hard; dolomitic; some thoroughly siliceous—scrapes steel from tweezers; chips remain intact in acid and slowly form white stubby radiating crystal clusters upon evaporation of acid; may be organic or

LITHOLOGY AND SHOWS

phosphate rich, no diagnostic tests run; some micropyrite; numerous white mixed silica/calcite filled microfractures; sharp blocky and irregular to subblocky. Trace **Silica/Chert** and **Calcite**; clear, white, light gray; probable fracture fill, chips to 3 mm. 30% – Trace **Ankareh Shale Cavings**; grayish red purple. No fluorescence or cut fluorescence. Total gas 11 – 26 units, C1 – C3.

12330' – 12348' — 40% – 60% **Ankareh Shale Cavings**; grayish red purple; most chips are fresh, some are tumbled and rounded. 55% – 20% **Shale** and lesser **Siltstone**; grayish black and medium to dark gray. 5% – 20% **Silica/Chert** and minor **Calcite**; clear, white, light gray; hard sharp chips to 4 mm. No sample show.

Slight Gas Increase: At 12336' – 12338', total gas 18 – 22 units, C1 – C4: first C4s in Phosphoria.

Remarks: Difficulty getting MWD survey, likely due to LCM. Pulled MWD tool from drill string with Oil Well Perforators' wireline at 12354'.

MWD tool stuck in top of drill collars when run in, then pulled off wireline. Tripped to recover MWD tool. Motor was plugged with purple shale cavings from Ankareh. Tripped in with new bit #32 Smith F5 at 12354'. Trip gas questionable due to fluctuating mud levels at shaker, 10 units recorded.

12348' – 12360' — 90% **Ankareh Shale Cavings**; grayish red purple. 8% **Shale**; grayish black, some dark gray; part silty; moderately hard, hard; dolomitic, some siliceous—scrapes steel from tweezers; micropyrite in part; slight odor during acidization; subblocky. 2% **Chert**; very light gray, trace brownish gray, part translucent; hard, sharp; likely fracture fill in black shale. One chip possible **Sulfur**; yellow; very fine crystalline mass; one face planar. No show. Total gas 2 – 4 units.

Remark: Very poor initial sample quality due to flood of purple Ankareh shale cavings follows 29 hrs since last drilling. Correlation between long off bottom time and abundance of Ankareh shale cavings has been indicated several times.

12360' – 12431' — 80% increasing quickly to 100% **Shale**; grayish black to dark gray, minute white specks and mottling increase downhole; silty/microcrystalline appearance; firm to moderately hard; dolomitic, some may be slightly calcareous, part siliceous—scrapes steel from tweezers; faint odor upon acidization; much is slightly micropyritic, trace hard mixed chert and pyrite at 12410'; subblocky, blocky. Trace to rarely 2% mixed **Chert/Silica** and minor **Calcite**; white to light gray; loose chips of probable fracture fill, rarely seen cutting shale. 20% quickly decreasing to Trace **Ankareh Shale Cavings**; grayish red purple. No show. Total gas 2 – 9 units.

Remark: Tripped at 12436' due to slow penetration. Reran Hughes ATJ44 bit; old bit #32 Smith F5 was slightly worn. Moved drill collars up the string 4 stands—now 14 stands of drill pipe between bent motor assembly and drill collars.

12431' – 12460' — **Shale**; some dark gray, mostly grayish black downhole; silty, some moderately smooth; soft where apparently pulverized, firm to some moderately hard; dolomitic, some may be slightly calcareous; slight odor upon acidization; subblocky, some blocky. No sample show. Total gas 3 – 12 units.

LITHOLOGY AND SHOWS

12460' – 12470'	98% **Shale**; dark gray to grayish black, some white specks and mottling; silty; firm to moderately hard; dolomitic, some slightly calcareous; slightly micropyritic, rare chips very pyritic; some possible black phosphate nodules; subblocky, blocky; trace slickensides. 2% mixed **Silica/Chert** and **Calcite**; white to light gray; fracture fill; loose, attached, and some cutting across black shale. No sample show. Total gas 12 – 7 units.
12470' – 12480'	**Dolomite**; medium light to medium gray, light brownish gray; crypto- to microcrystalline; firm; slightly argillaceous; some siliceous patches and insoluble residue; anhydritic; cut by **calcite** microfracture fill; much is platy and possibly slickensided; no porosity visible. No sample show. Total gas 7 – 3 units.
12480' – 12500'	**Dolomite**; light brownish to some brownish gray, mottled medium light to medium dark gray; crypto- to microcrystalline, some faint fine grained texture in part; part appears pulverized and artificially chalky, also firm to some moderately hard; slightly argillaceous; silty, perhaps finely siliceous; trace cherty patches; highly cut by **calcite** microfracture fill; no porosity visible. No sample show. Total gas 3 – 12 units.
12500' – 12550'	100% – 80% **Dolomite**; light brownish to brownish gray, highly mottled medium light to increasingly dark gray; crypto- to microcrystalline; soft and apparently artificially chalky, also firm, minor part hard where silicified—scrapes steel from tweezers; slightly to increasingly very argillaceous; highly cut by **calcite** microfracture fill which commonly is smeared to chalk; trace micropyrite; no porosity visible; several thin fast breaks to 1.2 min/ft at best. Trace to 2% **Chert/Silica**; white to light gray, light brownish gray, minor medium dark gray and brownish gray; hard, sharp; most is likely fracture fill, partly mixed with **calcite**. Several **Quartz Crystals**; clear; euhedral, with attached microcrystalline calcite; indicate some open fractures. Trace to 20% **Shale**; dark gray to grayish black; dolomitic; platy, subblocky. No sample show. Total gas 5 – 18 units.
12550' – 12580'	80% – 90% **Dolomite**; light brownish to brownish gray, medium light to dark gray, mottled, hues mixed; crypto- to microcrystalline, rare faint fine to medium grained texture; much appears pounded and artificially chalky; also firm, medium hard, and some hard where siliceous; moderately to very argillaceous; cut by **calcite** microfracture fill; no porosity visible but thin fast drilling breaks suggest fractures—1.7 min/ft at best at 12564'. 1% – 2% **Chert/Silica**; white to light gray; commonly associated with micro- to fine crystalline calcite. Several **Quartz Crystals**; clear; broken crystal masses retaining some planar faces; indicate some open fractures. 10% – 20% **Shale**; dark gray, grayish to some brownish black; silty; dolomitic; subblocky. No sample show. Total gas 4 – 25 units, average 10 units.
Mud Loss:	Lost 150+ B, likely to fractures from 12554' – 12606'.

LITHOLOGY AND SHOWS

12580' – 12590'

Dolomite; brownish gray, medium dark gray to dark gray, hues mixed; crypto- to microcrystalline; much appears pounded and artificially chalky, also firm to hard; moderately to very argillaceous; part silty to very fine grained sandy; some siliceous; few slickensides, highly glazed; no porosity visible. Grades to **Shale** and **Siltstone**; dark gray; dolomitic; moderately smooth textured shale and argillaceous siltstone. 1% mixed **Chert/Silica** and **Calcite**; clear, white to light gray; fracture fill; more calcite fracture fill is suggested by limy light colored powder on surfaces of many chips. No sample show. Total gas 5 – 10 units.

12590' – 12600'

Increase to 20% **Chert** and **Siliceous Shale**; dark gray to grayish black; hard, sharp; scrapes steel from tweezers; cut by abundant white **calcite** microfracture fill; faster drilling. Trace **Chert/Silica**; clear to light gray; some free, commonly associated with calcite. Also **Dolomite**; brownish gray and medium dark to dark gray; argillaceous. Lesser **Shale**; dark gray to grayish black; firm to moderately hard; dolomitic; part silty, very fine grained sandy. No sample show. Total gas 6 – 16 units.

Remark:

May correlate to possible cherty interval inferred from logs at 11586' – 11592' at the Amoco Urroz WIU #1.

12600' – 12620'

Shale; dark gray to some grayish black; dolomitic; chips remain intact in acid and are firm to fragile following dissolution of carbonate; part silty, some very fine sandy; micropyrite; subblocky, blocky. 5% decreasing to Trace mixed **Calcite** and **Chert/Silica**; white, clear to light gray fracture fill; fast drilling break to 1.3 min/ft at 12602'. Several **Quartz Crystals**; euhedral; indicate open fractures. No sample show. Total gas 8 – 25 units.

12620' – 12630'

Dolomite; brownish gray to medium dark gray, mixed hues in part; crypto- to microcrystalline; firm to moderately hard; slightly argillaceous, some sandy; no porosity visible; probable fast drilling was only partially recorded. Grades to 20% **Sandstone**; brownish gray; dolomitic and siliceous; some quartzitic—glassy broken quartz grains common; slightly argillaceous; no porosity visible. Abundant **Calcite**; white; mostly powdered fracture fill, few intact cleavage blocks. Trace **Silica/Chert**; clear to light gray; associated with calcite. Few **Quartz Crystals**; euhedral; indicate growth in open fractures. No sample show.

Hot-wire/FID Gas:	Total	C1	C2	C3	C4	Min/Ft	Mud Log
Before	12	87%	11%	3%	0%	6.6	12620'
During	40	90%	8%	2%	0%	2.0	12628'
Maximum	58	89%	9%	2%	0%	2.1	12630'
After	12	89%	9%	2%	0%	6.6	12632'

Remark:

Geolograph was not engaged from 12620' – 12627'.

LITHOLOGY AND SHOWS

12630' – 12650'

10% increasing to 40% **Sandstone**; very light to medium light gray; very fine and fine grained with trace upper medium to lower coarse subround to well rounded quartz grains; overall well sorted; firm, some hard; slightly to moderately dolomitic, some partly calcareous, little is siliceous; minute black intergranular specks in part; no porosity visible. 70% – 40% **Dolomite**; medium dark to dark gray, light brownish to brownish gray; microcrystalline, much is earthy to artificially chalky; firm and moderately hard, some hard where siliceous; slightly to very argillaceous, some sandy; trace micropyrite; calcite microfracture fill common; no porosity visible. 20% **Shale**; dark gray to grayish black; dolomitic. No sample show. Total gas 16 – 6 units.

12650' – 12660'

60% **Dolomite**; light brownish to brownish gray, partly mottled medium dark to dark gray; microcrystalline; firm to moderately hard; slightly to moderately argillaceous; silty and very fine grained sandy; no porosity visible. Grades to 40% **Siltstone** and **Sandstone**; light brownish to brownish gray; coarse silt and lower very fine grained sand; dolomitic; no porosity visible. No sample show. Total gas 8 – 14 units.

12660' – 12680'

Uphole, **Dolomite**; brownish gray, medium dark to dark gray; microcrystalline; firm to moderately hard; slightly argillaceous; no porosity visible. Grades to **Siltstone** and minor **Sandstone**; dolomitic; no porosity visible. **Anhydrite**; not observed in samples but suggested by correlation of slower drilling 12669' – 12677' with Amoco Urroz WIU #1; likely became part of mud, samples dry to overall lighter gray. Downhole, 60% **Sandstone**; light to medium gray, light brownish gray; very fine grained, some dispersed upper fine to medium grains; well sorted; firm, moderately hard; dolomitic, some siliceous; trace micropyrite; no porosity visible. No sample show. Total gas 26 – 4 units.

12680' – 12700'

Dolomite; light brownish gray, increasingly brownish gray downhole; slightly to moderately argillaceous; silty and very fine grained sandy; firm, some moderately hard; no porosity visible. No sample show.

Hot-wire/FID Gas:	Total	C1	C2	C3	C4	Min/Ft	Mud Log
Before	5	85%	12%	3%	0%	11.4	12676'
Maximum	40	89%	9%	2%	0%	4.5	12698'
After	2	90%	10%	0%	0%	14.0	12706'

LITHOLOGY AND SHOWS

WEBER ANHYDRITE LOG TOP: 12706' TVD: 12523' DATUM: -5353'

12700' – 12710' **Sandstone**; light gray; very fine to lower fine grained, trace medium grains; well sorted; firm, some moderately hard; slightly to moderately dolomitic; some is siliceous and scrapes steel from tweezers; may be anhydritic; no porosity visible. No sample show. Total gas 10 – 2 units.

Remark: Light gray powder washed from samples is believed to represent anhydrite. Slower drilling 12703' – 12711'.

12710' – 12720' **Sandstone**; very light to some medium light gray; very fine to fine grained, minor dispersed rounded medium grains; well to moderately sorted; firm, some moderately hard; slightly to moderately dolomitic—may be interbedded with streaks of light brownish gray sandy dolomite; likely anhydritic; no porosity visible. 20% **Anhydrite**; white; very soft rounded masses. No sample show. Total gas 2 – 8 units.

WEBER SS. LOG TOP: 12726' TVD: 12541' DATUM: -5371'

12720' – 12740' **Sandstone**; white to very light gray, mostly light gray downhole; very fine and fine grained with numerous loose and dispersed subround to well rounded medium to coarse grains; well to moderately sorted—part bimodal; moderately friable to firm; little is hard, minor glassy broken quartz grains; slightly dolomitic; likely anhydritic; trace patches of micropyrite; rare pink orange stained grains; no porosity visible, moderate to slow drilling time: 8 – 14 min/ft. 30% – 20% **Rock Flour**; white, light gray downhole; soft rounded masses may be very anhydritic but most contain substantial sand. No sample show. Total gas 4 – 2 units.

12740' – 12746' **Sandstone**; minor white, mostly light gray; very fine and fine grained, trace dispersed medium grains; well to some moderately sorted; moderately friable to firm, some moderately hard; slightly dolomitic, some siliceous—slight increase in glassy broken quartz grains; anhydritic; trace micropyrite; no porosity visible, slow drilling 13 – 18 min/ft. No sample show. Total gas 2 – 3 units.

Remarks: Circulated samples prior to trip at 12746'. Reran bit #32 Smith F5 in at 12746'. Rerun bit #28 Hughes ATJ44 was flat crested but in gauge. Hit bridge at 8760' tripping in, then lost all returns while finishing trip in. Lost 500 B during trip.

Trip gas 26 units. No H2S. Sample from just below bridge at 8760' comprised 95% **Ankareh Shale Cavings**; grayish red purple.

12746' – 12750' Temporarily very poor sample quality. 10% **Sandstone**; white to light gray; very fine to fine grained. 70% **Ankareh Shale Cavings**; grayish red purple. 20% **Shale** and **Dolomite Cavings**; dark gray to grayish black, dark brownish gray. No show.

LITHOLOGY AND SHOWS

12750' – 12760'	20% **Dolomite**; light brownish gray to pinkish gray (buff); microcrystalline; firm; anhydritic; sandy; no porosity visible. 40% **Sandstone**; white to light gray, some medium light gray; very fine to fine grained, minor loose and dispersed medium to coarse subround to round quartz grains; friable to moderately hard; moderately to nondolomitic; no porosity visible. 20% **Rock Flour** and **Anhydrite**; white to very light gray; soft. 20% Cavings; dark gray to grayish black shale, brownish gray dolomite, minor grayish red purple shale from upper Ankareh. No show. Total gas 3 – 5 units.
12760' – 12790'	60% - 80% **Sandstone**; white to very light gray, some light gray; very fine to fine grained with some dispersed upper medium to coarse subround to well rounded quartz grains; well to moderately sorted, part bimodal; friable and firm, some moderately hard, rarely hard; slightly to nondolomitic; anhydritic; some siliceous; glassy broken quartz grains in part; trace micropyrite; no porosity visible; drilling time 15 to 8 min/ft, generally increasing downhole. 40% - 20% **Rock Flour** and **Anhydrite**; white; powdery coating on cuttings and very soft to some firm, well rounded to subround, masses and chips—apparently minor pure anhydrite, most is likely pulverized anhydritic sandstone. No show. Total gas 5 – 1 units.
12790' – 12810'	**Sandstone**; white to light gray; very fine and fine grained clusters with dispersed upper medium to coarse, subround to well rounded grains; well to moderately sorted, part bimodal; non- to slightly dolomitic; anhydritic; no porosity visible. Abundant **Rock Flour**; white; powdery coating on cuttings and variably pulverized chips; apparently minor pure **anhydrite**. No show. 1 – 2 units.
12810' – 12820'	Poor sample recovery, shakers partially bypassed. **Sandstone**; white to very light gray; very fine and fine grained clusters with dispersed medium to coarse, subround to well rounded quartz grains; moderately friable to some medium hard; mostly nondolomitic; anhydritic; some silica cement; no porosity visible. Also **Sand**; white to very light gray; loose fine to coarse grains; frosted. No show. 1 – 2 units.
Remark:	Slid shaker screen down and switched to sample bucket. Resume good sample volume and quality.
12820' – 12830'	**Sandstone**; light gray, part tinted light brownish gray; very fine to fine grained; firm to moderately hard, little hard; slightly to moderately dolomitic, little is siliceous; some minute undetermined brown and black flecks released in acid; virtually no porosity visible, hints of slight microcrystalline porosity on some dolomitic faces. Also **Sandstone**; white to very light gray; nondolomitic; anhydritic; as above. No fluorescence or cut fluorescence.
Slight Gas Increase:	Total gas 2 – 12 – 5 units; C1 – C2; from 12829'.
12830' – 12870'	**Sandstone**; light to medium light gray tinted light brownish gray in part, downhole some medium gray tinted brownish gray; very fine to fine grained; firm to quite hard; non- to slightly dolomitic, some siliceous; increased brownish gray to black intergranular fill/stain where nondolomitic—much appears finely argillaceous,

LITHOLOGY AND SHOWS

earthy textured, but may be organic; no discernible odor when acidized; no to some slight to rare fair porosity visible at 40X; pores are somewhat vuggy, commonly associated with brown to black partial fill/stain, and are scattered, not uniform in distribution. Trace **Rock Flour** and **Anhydrite**; much less than uphole, increasing slightly at base below show. No fluorescence or cut fluorescence.

Hot-wire/FID Gas:	Total	C1	C2	C3	C4	Min/Ft	Mud Log
Before	3	100%	0%	0%	0%	11.4	12834'
Maximum	24	89%	10%	1%	0%	5.9	12842'
During	24	89%	10%	2%	0%	7.4	12848'
After	7	94%	6%	0%	0%	12.7	12852'

Hot-wire/FID Gas:	Total	C1	C2	C3	C4	Min/Ft	Mud Log
Before	9	87%	11%	1%	0%	9.7	12854'
During	25	87%	11%	3%	0%	5.0	12860'
Maximum	30	88%	10%	3%	0%	5.7	12862'
After	7	86%	13%	1%	0%	12.4	12866'

Remark: Chromatograph relative percentages are rounded to nearest percent.

12870' – 12880'

Sandstone; light to some medium gray, decreased light brownish gray tint; very fine to fine grained with trace dispersed medium grains; firm to some hard; slightly dolomitic to some moderately dolomitic; some glassy broken quartz grains where more siliceous; slight lacy dark brownish gray to black intergranular fill/stain; no to trace slight porosity visible. Trace **Shale**; dark gray to grayish black; slightly dolomitic; trace contacts with sandstone; suggests some of intergranular fill is argillaceous material; faint odor when acidized; subblocky, blocky. No sample show. Total gas 7 – 15 units.

Remark: Increase in pale yellowish brown tint and subtle luster change in the following shows:

12880' – 12910'

Sandstone; much is tinted pale yellowish brown, some light to medium light gray; mostly fine grained, some very fine grained, some dispersed medium grains; well sorted; some firm to increasingly medium hard and hard; nondolomitic and siliceous where tinted pale yellowish brown; brownish gray to black fill/stain and lacy streaks; mostly no to rare slight porosity visible. No sample show.

Hot-wire/FID Gas:	Total	C1	C2	C3	C4	Min/Ft	Mud Log
Before	7	86%	12%	2%	0%	10.8	12886'
During	19	87%	10%	3%	0%	4.5	12892'
During	8	85%	12%	3%	0%	8.3	12896'
Maximum	24	87%	9%	3%	0%	8.2	12900'
After	8	85%	11%	3%	0%	12.7	12904'

LITHOLOGY AND SHOWS

12910' – 12930'

Sandstone; much is tinted pinkish gray (5 YR 8/1) (buff), some neutral light to medium light gray; lower fine grained; well sorted; moderately hard; slight brownish gray to black intergranular fill/stain; moderate increase in rock flour, powdery coating on most cuttings and variably pounded chips; no porosity visible. No sample show. Total gas 4 – 7 units.

12930' – 12945' TD

Sandstone; much is tinted pale yellowish brown and light brownish gray, minor dark yellowish brown; very fine to fine grained—grains difficult to distinguish due to silicification; appears well sorted; moderately hard to hard; much is siliceous—increased vitreous luster and abundant glassy broken quartz grains; some also slightly dolomitic; slight increase in brownish gray to black fill/stain; only trace rock flour; virtually no porosity visible at 40X. No sample show.

Hot-wire/FID Gas:	Total	C1	C2	C3	C4	Min/Ft	Mud Log
Before	6	100%	0%	0%	0%	14.3	12934'
During	12	97%	3%	0%	0%	6.9	12936'
Maximum	20	97%	3%	0%	0%	5.7	12942'
After	8	91%	9%	0%	0%	13.8	12945'

Remarks:

Tripped out Smith F5 at 12945' due to high torque. Teeth were thoroughly worn, seals had failed, and bit was 3/4" undergauge all around (8 3/4" original diameter decreased to 7 1/4"). Reran Smith F4 and near-bit 6-point reamer for cleanout run after drilling with mud motor. Tagged bridge at 9285'. Washed and reamed to 12945'. Maximum 10 units total gas during reaming.

Samples during reaming indicate minor caving from red purple shale of upper Ankareh and from common red beds, perhaps of Woodside. Overall, mixed lithology and low volume of reamed cuttings show continued good hole conditions.

SERVICES

CONTRACTOR:	Parker Drilling Company Rig #235	Casper, WY
Toolpushers:	Lawrence Jarvis	(307) 266-2428
	Mike Lewis	
Drillers:	Lee Johansen	
	Jack Larsen	
	David Reid	
	Steve Lundberg	
	Brent Gilbert	
SUPERVISION:	Enmarc, Inc.	Denver, CO
	Doug Legacie	(303) 825-7061
	Ken Clare	
DIRECTIONAL DRILLING:	Schlumberger Anadrill	Casper, WY
	Brent Clouser & Wally Whitney	(307) 472-3113
MWD:	Schlumberger Anadrill	Casper, WY
	Pat Thorpen & Frank Zgaynor	(307) 472-3113
GYRO SURVEY:	Scientific Drilling	Casper, WY
	Jon Valenzuela	(307) 472-6621
MUD:	Anchor Drilling Fluids USA, Inc.	Denver, CO
	Larry Dye	(303) 892-5601
	Gary Tarasen	
	Gerald Ashcraft	
H2S SAFETY:	Intermountain Safety Co., Inc.	Evanston, WY
	Will Moore & Larry Hoggatt	(307) 789-3882
	Dan Van Syoc & Scott Hawkins	
MUD LOGGING:	NorAm Wellsite Services	Billings, MT
	Jeff Buchowiski	(406) 652-3922
	Mike Hirsch	
	Scott Olson	
	Jim Lancaster	
WELLSITE GEOLOGY:	T. M. McCoy & Co., Inc.	Wilson, WY
	Tim McCoy & John Sherman	(307) 733-4332
CORES:	None	
DRILL STEM TESTS:	None	
LOGS:	Schlumberger	Evanston, WY
	Kim Bunning – Run 1	(307) 789-2638
	Samantha Williams & Chris Hein – Run 2	
	Tom Becker – Run 3	

DAILY OPERATIONS

Day from spud, depth at start of morning tour (7:00 PM the preceding day), time, and activity are taken from the rig tour sheets.

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
0	1/17	70	0	11:00	5.0	Pick up BHA. Thaw stand pipe and kelly hose.
				15:00	4.0	Drill 70' - 73'. Spud 26" hole at 11:00 AM 1/17/97.
				15:30	0.5	Trip out to check bit, OK. Trip in.
				17:30	2.0	Drill 73' - 75'.
				19:00	1.5	Trip out. Change crossover subs to short subs. Pick up drill collar #2.
1	1/18	75	5	5:00	10.0	Drill 75' - 86'.
				6:00	1.0	Trip for new bit #2 Hughes R1 retip at 86'.
				8:00	2.0	Trip out. Unplug jets. Trip in.
				16:30	8.5	Drill 86' - 199'. Conductor pipe is loose; have to pump mud from cellar back to rig tanks.
				17:00	0.5	Service rig.
				19:00	2.0	Drill 199' - 223'.
2	1/19	223	148	22:00	3.0	Drill 223' - 259'.
				22:30	0.5	Survey: 241' 1/4 deg.
				17:30	19.0	Drill 259' - 467'.
				18:00	0.5	Survey: 460' 1 1/4 deg.
				19:00	1.0	Drill 467' - 473'.
3	1/20	473	250	2:00	7.0	Drill 473' - 553'.
				2:30	0.5	Survey: 547' 1/2 deg.
				11:30	9.0	Drill 553' - 683'.
				12:30	1.0	Circulate for trip. Service rig.
				14:30	2.0	Trip out. Drop survey: misrun.
				17:00	2.5	Trip in with new bit #3 Security DSJ, new bit sub, and shock sub.
				18:30	1.5	Drill 683' - 715'.
				19:00	0.5	Survey: 704' 2 deg.
4	1/21	715	242	3:30	8.5	Drill 715' - 813'.
				4:00	0.5	Survey: 800' 1 3/4 deg.
				13:00	9.0	Drill 813' - 940'.
				13:30	0.5	Survey: 928' 1 1/2 deg.
				19:00	5.5	Drill 940' - 1024'.
5	1/22	1024	309	21:30	2.5	Drill 1024' - 1066'.
				22:30	1.0	Survey: 1054' 2 3/4 deg.
				2:30	4.0	Drill 1066' - 1129'.
				3:30	1.0	Survey: 1118' 3 3/4 deg.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				6:30	3.0	Drill 1129' - 1161'.
				7:00	0.5	Survey: 1149' 3 1/2 deg.
				10:00	3.0	Drill 1161' - 1192'.
				10:30	0.5	Survey: 1180' 3 1/4 deg.
				14:30	4.0	Drill 1192' - 1224'.
				15:00	0.5	Survey: 1212' 2 3/4 deg.
				19:00	4.0	Drill 1224' - 1248'.
6	1/23	1248	224	20:00	1.0	Drill 1248' - 1256'.
				20:30	0.5	Survey: 1245' 2 3/4 deg.
				21:00	0.5	Drill 1256' - 1258'.
				0:30	3.5	Circulate. Trip out.
				4:00	3.5	Trip in with new bit #4 Hughes 3AJ and new bit sub. Wash 15 ft to bottom; no fill.
				9:30	5.5	Drill 1258' - 1319'.
				10:00	0.5	Survey: 1307' 2 1/2 deg.
				12:30	2.5	Drill 1319' - 1351'.
				13:00	0.5	Survey: 1339' 2 1/4 deg.
				17:30	4.5	Drill 1351' - 1414'.
				18:00	0.5	Survey: 1402' 2 deg.
				19:00	1.0	Drill 1414' - 1426'.
7	1/24	1426	178	4:00	9.0	Drill 1426' - 1500'.
				4:30	0.5	Circulate for short trip.
				6:00	1.5	Short trip.
				7:00	1.0	Circulate. Stand back 7 stands in derrick.
				9:30	2.5	Drop survey: 1500' 1 3/4 deg. Trip out. SLM.
				11:00	1.5	Rig up casing crew.
				17:00	6.0	Set 20" 106.5#/ft casing at 1500' KB.
				18:30	1.5	Rig down casing crew.
				19:00	0.5	Trip in to cement with stinger.
8	1/25	1500	74	20:00	1.0	Trip in to cement with stinger.
				21:30	1.5	Rig up BJ and circulate. Full returns.
				0:30	3.0	Mix and pump cement. Pressure casing-drill pipe annulus to 750 psi.
				6:00	5.5	Wait on cement.
				8:00	2.0	Rig down cement head. Trip out.
				12:30	4.5	Cut conductor and 20" casing. Lay down spider, bales, casing.
				17:30	5.0	Weld on well head.
				19:00	1.5	Nipple up.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
9	1/26	1500	0	3:30	8.5	Nipple up diverter.
				6:00	2.5	Set wear ring.
				10:30	4.5	Trip in with new bit #5 Hughes GTX-01. Change shock sub, pick up jars.
				11:30	1.0	Lay down 21 joints of drill pipe.
				12:00	0.5	Trip in.
				1:30	13.5	Drill float and cement. Pressure test Hydril with 1500 psi on casing for 30 min; OK.
				3:30	2.0	Drill cement and shoe.
				19:00	15.5	Drill 1500' - 1521'.
10	1/27	1521	21	23:00	4.0	Drill 1521' - 1607'.
				0:00	1.0	Survey: 1592' 1 1/4 deg.
				5:00	5.0	Drill 1607' - 1701'.
				5:30	0.5	Survey: 1687' 3/4 deg.
				11:00	5.5	Drill 1701' - 1796'.
				11:30	0.5	Survey: 1781' 1/4 deg.
				15:00	3.5	Drill 1796' - 1890'.
				15:30	0.5	Survey: 1875' 1/2 deg.
				19:00	3.5	Drill 1890' - 1939'.
11	1/28	1939	418	21:30	2.5	Drill 1939' - 1985'.
				22:00	0.5	Survey: 1971' 3/4 deg.
				11:00	13.0	Drill 1985' - 2111'.
				11:30	0.5	Survey: 2096' 1/2 deg.
				15:00	3.5	Drill 2111' - 2143'.
				15:30	0.5	Service rig.
				19:00	3.5	Drill 2143' - 2170'.
12	1/29	2170	231	6:00	11.0	Drill 2170' - 2280'.
				6:30	0.5	Survey: 2269' 1/2 deg.
				15:30	9.0	Drill 2280' - 2360'.
				19:00	3.5	Trip for new bit #6 Reed MS43A-M at 2360'. SLM; no correction.
13	1/30	2360	190	20:30	1.5	Trip in.
				21:00	0.5	Wash and ream 60 ft to bottom; 2 ft of fill.
				23:00	2.0	Drill 2360' - 2394'.
				23:30	0.5	Survey: 2379' 1 deg.
				7:30	8.0	Drill 2394' - 2489'.
				8:00	0.5	Survey: 2473' 1 1/2 deg.
				14:00	6.0	Drill 2489' - 2552'.
				14:30	0.5	Survey: 2537' 1 3/4 deg.
				19:00	4.5	Drill 2552' - 2588'.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
14	1/31	2588	228	22:30	3.5	Drill 2588' - 2622'.
				2:30	4.0	Trip; change jets from 14-14-16-16 to14-18-20-20.
				3:00	0.5	Wash and ream 40 ft to bottom; no fill.
				7:30	4.5	Drill 2622' - 2647'.
				8:00	0.5	Survey: 2632' 1 3/4 deg.
				12:30	4.5	Drill 2647' - 2678'.
				13:00	0.5	Survey: 2663' 1 3/4 deg.
				16:30	3.5	Drill 2678' - 2709'.
				18:00	1.5	Work tight hole at 2663'.
				19:00	1.0	Drill 2709' - 2714'.
15	2/1	2714	126	21:30	2.5	Drill 2714' - 2740'.
				22:30	1.0	Work tight hole at 2694'.
				3:00	4.5	Drill 2740' - 2772'.
				4:00	1.0	Work tight hole. Survey: 2757' 1 1/4 deg.
				9:30	5.5	Drill 2772' - 2803'.
				10:00	0.5	Service rig.
				11:00	1.0	Change swivel packing.
				16:30	5.5	Drill 2803' - 2835'.
				17:00	0.5	Survey: 2820' 1 3/4 deg.
				19:00	2.0	Drill 2835' - 2841'.
16	2/2	2841	127	3:00	8.0	Drill 2841' - 2899'.
				4:00	1.0	Work tight hole; back ream.
				4:30	0.5	Survey: 2884' 1 3/4 deg.
				14:00	9.5	Drill 2899' - 2963'.
				14:30	0.5	Survey: 2948' 1 3/4 deg.
				19:00	4.5	Drill 2963' - 2990'.
17	2/3	2990	149	23:30	4.5	Drill 2990' - 3026'
				0:00	0.5	Survey: 3011' 1 1/2 deg.
				10:00	10.0	Drill 3026' - 3089'.
				10:30	0.5	Survey: 3074' 1 3/4 deg.
				14:00	3.5	Drill 3089' - 3099'.
				14:30	0.5	Pump pill.
				17:00	2.5	Trip out. Inspect bit.
				19:00	2.0	Trip in with new bit #7 Security SS-84.
18	2/4	3099	109	19:30	0.5	Trip in.
				20:30	1.0	Wash and ream 75 ft to bottom; no fill.
				0:00	3.5	Drill 3099' - 3121'.
				1:00	1.0	Work tight hole and back ream on connection.
				5:00	4.0	Drill 3121' - 3152'.
				5:30	0.5	Survey: 3137' 1 1/2 deg.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				14:00	8.5	Drill 3152' - 3215'.
				14:30	0.5	Survey: 3200' 2 deg.
				19:00	4.5	Drill 3215' - 3240'.
19	2/5	3240	141	3:00	8.0	Drill 3240' - 3276'.
				3:30	0.5	Survey: 3261' 2 deg.
				17:30	14.0	Drill 3276' - 3340'.
				18:00	0.5	Survey: 3326' 2 deg.
				19:00	1.0	Drill 3340' - 3342'
20	2/6	3342	102	10:00	15.0	Drill 3342' - 3404'
				10:30	0.5	Service rig.
				11:00	0.5	Survey: 3389' 2 deg.
				19:00	8.0	Drill 3404' - 3439'.
21	2/7	3439	97	0:00	5.0	Drill 3439' - 3466'.
				0:30	0.5	Survey: 3451' 1 3/4 deg.
				7:30	7.0	Drill 3466' - 3499'.
				8:00	0.5	Circulate and pump pill. Blow down kelly.
				16:30	8.5	Trip out. Inspect BHA. Change out one 8" collar and one crossover.
				19:00	2.5	Trip in with new bit #8 Hughes GTX-03 at 3499'.
22	2/8	3499	60	20:00	1.0	Trip in.
				20:30	0.5	Wash and ream 60' to bottom; no fill.
				2:30	6.0	Drill 3499' - 3561'.
				3:00	0.5	Survey: 3546' 1 3/4 deg.
				10:00	7.0	Drill 3561' - 3624'.
				10:30	0.5	Survey: 3610' 1 3/4 deg.
				11:00	0.5	Service rig.
				19:00	8.0	Drill 3624' - 3683'.
23	2/9	3683	184	19:30	0.5	Drill 3683' - 3687'.
				20:30	1.0	Survey: 3672' 2 deg.
				5:00	8.5	Drill 3687' - 3750'.
				5:30	0.5	Survey: 3745' 1 3/4 deg.
				16:30	11.0	Drill 3750' - 3815'.
				17:30	1.0	Survey: 3800' 2 deg.
				19:00	1.5	Drill 3815' - 3824'.
24	2/10	3824	141	3:30	8.5	Drill 3824' - 3878'.
				4:00	0.5	Survey: 3863' 1 3/4 deg.
				8:00	4.0	Drill 3878' - 3909'.
				9:00	1.0	Work tight hole and back ream on connection.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				14:00	5.0	Drill 3909' - 3941'.
				16:00	2.0	Short trip 55 stands. Work tight hole; wash 90 ft to bottom.
				19:00	3.0	Drill 3941' - 3953'.
25	2/11	3953	129	22:30	3.5	Drill 3953' - 3973'.
				23:00	0.5	Survey: 3958' 1 1/2 deg.
				10:30	11.5	Drill 3973' - 4036'.
				11:00	0.5	Service rig.
				11:30	0.5	Survey: 4020' 1 1/2 deg.
				16:30	5.0	Drill 4036' - 4077'.
				17:00	0.5	Work tight hole at 4042'.
				19:00	2.0	Drill 4077' - 4088'.
26	2/12	4088	135	20:00	1.0	Drill 4088' - 4098'.
				20:30	0.5	Survey: 4083' 1 1/2 deg.
				7:30	11.0	Drill 4098' - 4161'.
				8:00	0.5	Survey: 4146' 1 3/4 deg.
				12:30	4.5	Drill 4161' - 4193'.
				15:30	3.0	Work tight hole; back ream.
				19:00	3.5	Drill 4193' - 4216'.
27	2/13	4216	128	20:00	1.0	Drill 4216' - 4225'.
				20:30	0.5	Work tight hole at 4200'.
				21:30	1.0	Drill 4225' - 4228'.
				22:00	0.5	Work pipe. Survey: 4210' 1 3/4 deg.
				1:30	3.5	Drill 4228' - 4243'.
				3:30	2.0	Work tight hole at 4217'.
				4:30	1.0	Drill 4243' - 4248'.
				5:30	1.0	Work tight hole at 4210'.
				7:30	2.0	Drill 4248' - 4257'.
				8:30	1.0	Work tight hole and circulate for short trip.
				9:30	1.0	Short trip 9 stands; tight at 3950'.
				10:00	0.5	Wash and ream 75 ft to bottom; no fill.
				19:00	9.0	Drill 4257' - 4305'.
28	2/14	4305	89	21:00	2.0	Drill 4305' - 4320'.
				21:30	0.5	Survey: 4305' 2 1/4 deg.
				9:00	11.5	Drill 4320' - 4363'.
				12:00	3.0	Twisted off drill collars, chain out.
				16:30	4.5	Change out kelly. Pick up overshot with 16 1/2" guide, bumper sub, oil jars, and crossover. Trip in. Catch fish.
				19:00	2.5	Trip out with fish, chain out.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
29	2/15	4363	58	22:30	3.5	Trip out. Lay down fish, fishing tools, & shock sub.
				13:00	14.5	Pick up new bit #9 Reed EMS 41-H and shock sub. Magnaflux BHA. Replace (2) 10" drill collars.
				14:00	1.0	Trip in.
				15:30	1.5	Wash and ream 150 ft to bottom; 5 ft of fill.
				19:00	3.5	Drill 4363' - 4378'.
30	2/16	4378	15	20:00	1.0	Drill 4378' - 4388'.
				20:30	0.5	Survey: 4373' 1 3/4 deg.
				3:30	7.0	Drill 4388' - 4419'.
				4:30	1.0	Work tight hole at 4394'.
				9:00	4.5	Drill 4419' - 4447'.
				11:00	2.0	Work tight hole.
				11:30	0.5	Drill 4447' - 4451'.
				12:30	1.0	Work tight hole.
				19:00	6.5	Drill 4451' - 4488'.
31	2/17	4488	110	21:30	2.5	Drill 4488' - 4509'.
				22:00	0.5	Survey: 4468' 2 deg.
				23:00	1.0	Drill 4509' - 4514'.
				23:30	0.5	Work tight hole at 4479'.
				13:00	13.5	Drill 4514' - 4578'.
				13:30	0.5	Survey: 4563' 2 3/4 deg.
				19:00	5.5	Drill 4578' - 4592'.
32	2/18	4592	104	23:00	4.0	Drill 4592' - 4609'.
				23:30	0.5	Survey: 4594' 2 1/2 deg.
				9:00	9.5	Drill 4609' - 4632'.
				11:00	2.0	Pump pill. Trip out.
				17:00	6.0	Lay down all rental equipment. Pick up new packed BHA: near bit, shock sub, 10" drill collar, IBS, (5) 10" drill collars, crossover, (10) 8" drill collars, crossover, jars, (6) 6" drill collars. Reran bit #7 Security SS84.
				19:00	2.0	Ream 1900' - 2036'.
33	2/19	4632	40	7:00	12.0	Ream 2036' - 3885'.
				19:00	12.0	Ream 3885' - 4582'.
34	2/20	4632	0	3:00	8.0	Wash and ream 4582' - 4632'.
				14:30	11.5	Drill 4632' - 4670'.
				16:30	2.0	Trip out. Pulled 28 stands. Drill string parted while in slips, slips popped out, and rest of pipe went down hole.
				18:30	2.0	Cut drilling line.
				19:00	0.5	Wait on fishing tools.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
35	2/21	4670	38	22:00	3.0	Pick up 13 5/8" guide and screw-in sub. Trip in.
				7:00	9.0	Trip in. Wash and ream looking for top of fish.
				7:30	0.5	Screw into fish.
				10:00	2.5	Trip out. SLM. Chain out.
				12:30	2.5	Stand fish back--19 joints bent pipe.
				13:30	1.0	Break down fishing tools.
				15:00	1.5	Lay down 2 bent stands.
				18:30	3.5	Pick up 8" drill collars and fishing tools. Trip in.
				19:00	0.5	Look for fish.
36	2/22	4670	0	20:00	1.0	Look for fish.
				21:00	1.0	Latch onto fish with overshot.
				22:00	1.0	Trip out with fish. Pulled 8 stands, dropped fish.
				23:30	1.5	Find top of fish. Lost approximately 20K weight.
				2:00	2.5	Trip out, chain out.
				3:00	1.0	Change grapple in overshot.
				6:00	3.0	Trip in.
				7:00	1.0	Circulate and find top of fish.
				11:30	4.5	Fish.
				13:30	2.0	Trip out. Chain out.
				16:00	2.5	Change guide shoe. Bend joint of drill pipe for fishing.
				17:30	1.5	Trip in.
				19:00	1.5	Fish.
37	2/23	4670	0	21:30	2.5	Fish.
				23:30	2.0	Trip out. Chain out.
				1:00	1.5	Change oversize guide shoe to 15" wall hook.
				3:30	2.5	Trip in.
				8:30	5.0	Fish.
				12:00	3.5	Trip out with fish. Chain out.
				15:30	3.5	Break down fish. Recovered 22 joints of drill pipe and (2) 6 1/2" drill collars.
				19:00	3.5	Lay down wall hook. Pick up oversize guide shoe, 8" drill collar, and accellerator.
38	2/24	4670	0	20:30	1.5	Trip in.
				1:00	4.5	Break circulation. Ream to top of fish, 4004'.
				3:30	2.5	Work fish free.
				7:00	3.5	Trip out with fish. Chain out.
				9:00	2.0	Lay down fish. Recovered (1) 6" drill collar. Pick up screw-in sub.
				11:30	2.5	Trip in.
				12:00	0.5	Break circulation.
				19:00	7.0	Screw into fish. Jar.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
39	2/25	4670	0	7:00	12.0	Jar on fish.
				14:30	7.5	Work pipe.
				17:30	3.0	Kelly up and break circulation. Pump out 9 joints. Blow down kelly. Pick up 3 stands. Pump pill.
				19:00	1.5	Trip out. Chain out with fish.
40	2/26	4670	0	20:00	1.0	Trip out. Chain out with fish.
				22:30	2.5	Lay down fishing tools.
				23:30	1.0	Trip out.
				1:00	1.5	Lay down near bit reamer, shock sub, & (2) IBSs.
				7:00	6.0	Magnaflux BHA.
				12:00	5.0	Lay down (3) 6 1/2" drill collars, jars, (6) 8" drill collars. Pick up (6) 6 1/2" drill collars.
				14:00	2.0	Trip in new bit #10 Hughes GTX-09 at 4670'. SLM. Check torque on tool joints to 4000'.
				17:30	3.5	Wash and ream 4000' - 4670'.
				19:00	1.5	Drill 4670' - 4672'.
41	2/27	4672	2	3:30	8.5	Drill 4672' - 4703'.
				4:00	0.5	Survey: 4688' 3 deg.
				12:30	8.5	Drill 4703' - 4733'.
				13:00	0.5	Survey: 4718' deg.
				19:00	6.0	Drill 4733' - 4746'.
42	2/28	4746	74	23:00	4.0	Drill 4746' - 4764'.
				23:30	0.5	Survey: 4749' 2 1/2 deg.
				12:30	13.0	Drill 4764' - 4795'.
				13:00	0.5	Survey: 4780' 2 1/2 deg.
				19:00	6.0	Drill 4795' - 4810'.
43	3/1	4810	64	23:30	4.5	Drill 4810' - 4825'.
				0:00	0.5	Survey: 4810' 2 3/4 deg.
				11:30	11.5	Drill 4825' - 4856'.
				12:00	0.5	Survey: 4841' 2 3/4 deg.
				19:00	7.0	Drill 4856' - 4870'.
44	3/2	4870	60	2:00	7.0	Drill 4870' - 4887'.
				2:30	0.5	Survey: 4871' 2 3/4 deg.
				8:00	5.5	Drill 4887' - 4897'.
				11:00	3.0	Blow down kelly. Trip out.
				12:30	1.5	Pick up new BHA: new bit #11 Smith 2JS, 3-point reamer, shock sub, IBS, 10" drill collar, IBS, (5) 10" drill collars, crossover, (8) 8" drill collars, jars, crossover, (6) 6 1/2" drill collars.
				14:30	2.0	Trip in.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				18:00	3.5	Ream 200 ft to bottom; 5 ft of fill.
				19:00	1.0	Drill 4897' - 4900'.
45	3/3	4900	30	5:30	10.5	Drill 4900' - 4960'.
				6:00	0.5	Survey: 4945' 2 3/4 deg.
				19:00	13.0	Drill 4960' - 5018'.
46	3/4	5018	118	19:30	0.5	Drill 5018' - 5023'.
				20:00	0.5	Survey: 5008' 2 3/4 deg.
				10:30	14.5	Drill 5023' - 5086'.
				11:00	0.5	Survey: 5071' 3 deg.
				19:00	8.0	Drill 5086' - 5110'.
47	3/5	5110	92	20:30	1.5	Drill 5110' - 5117'.
				21:00	0.5	Survey: 5102' 2 3/4 deg.
				14:30	17.5	Drill 5117' - 5179'.
				15:00	0.5	Service rig.
				15:30	0.5	Survey: 5163' 3 deg.
				19:00	3.5	Drill 5179' - 5189'.
48	3/6	5189	79	1:00	6.0	Drill 5189' - 5209'.
				1:30	0.5	Survey: 5194' 3 deg.
				19:00	17.5	Drill 5209' - 5267'.
49	3/7	5267	78	20:00	1.0	Drill 5267' - 5272'.
				20:30	0.5	Survey: 5257' 3 deg.
				8:00	11.5	Drill 5272' - 5300'.
				12:00	4.0	Trip out. Chain out.
				15:30	3.5	Change 3-point reamer. Cut drilling line.
				19:00	3.5	Trip in with new bit #12 Security SS82 at 5300'.
50	3/8	5300	33	20:00	1.0	Trip in.
				21:30	1.5	Wash and ream 25 ft under gauge hole to bottom.
				9:00	11.5	Drill 5300' - 5332'.
				9:30	0.5	Service rig.
				10:00	0.5	Survey: 5322' 3 deg.
				19:00	9.0	Drill 5332' - 5367'.
51	3/9	5367	67	4:00	9.0	Drill 5367' - 5400'.
				4:30	0.5	Survey: 5385' 3 1/4 deg.
				19:00	14.5	Drill 5400' - 5452'.
52	3/10	5452	85	22:30	3.5	Drill 5452' - 5462'.
				23:00	0.5	Survey: 5447' 3 1/2 deg.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				14:00	15.0	Drill 5462' - 5496'.
				19:00	5.0	Pump pill. Drop survey: misrun. Trip out. Lay down (2) IBSs and 3-point reamer.
53	3/11	5496	44	19:30	0.5	Lay down 3-point reamer. Pick up new bit #13 Security S84 and bit sub.
				22:00	2.5	Trip in. Pick up jars.
				22:30	0.5	Break circulation. Wash to bottom; no fill.
				6:00	7.5	Drill 5496' - 5508'. Top Preuss Salt 5504'.
				6:30	0.5	Survey: 5493' 3 1/2 deg.
				11:00	4.5	Drill 5508' - 5531'.
				11:30	0.5	Service rig.
				19:00	7.5	Drill 5531' - 5580'.
54	3/12	5580	84	20:00	1.0	Drill 5580' - 5590'.
				20:30	0.5	Pull 3 joints and ream back.
				23:30	3.0	Drill 5590' - 5604'.
				0:30	1.0	Pull 4 joints and ream back. Replace O-rings in stand pipe.
				9:00	8.5	Drill 5604' - 5661'.
				10:30	1.5	Pull 4 joints and ream back to bottom.
				15:00	4.5	Drill 5661' - 5689'.
				15:30	0.5	Service rig.
				16:30	1.0	Short trip 5 stands. Wash & ream 95 ft to bottom.
				19:00	2.5	Drill 5689' - 5698'.
55	3/13	5698	118	1:30	6.5	Drill 5698' - 5754'.
				2:30	1.0	Short trip 5 stands. Wash & ream 90 ft to bottom.
				16:00	13.5	Drill 5754' - 5835'.
				17:00	1.0	Short trip 5 stands. Tight at 5540'.
				19:00	2.0	Drill 5835' - 5838'.
56	3/14	5838	140	3:00	8.0	Drill 5838' - 5866'.
				4:00	1.0	Short trip 5 stands. Tight at 5645'.
				8:30	4.5	Drill 5866' - 5878'.
				9:30	1.0	Survey: 5863' 1 1/4 deg.
				16:30	7.0	Drill 5878' - 5893'.
				17:00	0.5	Short trip 5 stands. Tight at 5615' and 5553'; pulled 75K over string weight.
				19:00	2.0	Drill 5893' - 5894'.
57	3/15	5894	56	1:00	6.0	Drill 5894' - 5902'.
				1:30	0.5	Short trip 5 stands; no problems.
				14:00	12.5	Drill 5902' - 5921'.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				15:00	1.0	Short trip 13 stands; good. Observed cuts on tool joints indicating probable damage to 20" casing at 1120'.
				19:00	4.0	Drill 5921' - 5925'.
58	3/16	5925	31	3:00	8.0	Drill 5925' - 5936'.
				3:30	0.5	Short trip 5 stands. Pulled 40K over at 5630' and 5565'.
				15:00	11.5	Drill 5936' - 5955'.
				15:30	0.5	Short trip 6 stands. Pulled 50K over at 5640'.
				19:00	3.5	Drill 5955' - 5960'.
59	3/17	5960	35	3:00	8.0	Drill 5960' - 5981'.
				3:30	0.5	Short trip 6 stands. Tight 5655' - 5565'; pulled 70K over.
				19:00	15.5	Drill 5981' - 6014'.
60	3/18	6015	55	19:30	0.5	Drill 6014' - 6015'.
				20:00	0.5	Short trip 6 stands. Hole in good shape.
				22:30	2.5	Pump LCM sweep and remainder of bulk salt. Circulate for logs.
				2:00	3.5	Drop survey: misrun. Trip out. SLM; no change.
				2:30	0.5	Lay down shock sub and bit sub.
				14:30	12.0	Rig up and log with Schlumberger. Run laterolog, well survey, and dipole sonic logs.
				17:30	3.0	Pick up 3-point and bit sub. Trip in.
				19:00	1.5	Circulate for casing.
61	3/19	6015	0	20:30	1.5	Circulate for casing.
				0:30	4.0	Trip out. Lay down bit and bit sub.
				3:00	2.5	Rig up casing crew.
				14:00	11.0	Run 13 5/8" and 13 3/8".
				15:00	1.0	Lay down casing crew.
				17:00	2.0	Circulate casing to bottom.
				19:00	2.0	Rig up Dowell.
62	3/20	6015	0	23:30	4.5	Pump cement. Plug down 11:40 PM. Lead 3950 sx 50-50 poz G; tail 1300 sx class G. Circulated 141 B cement to reserve pit.
				7:00	7.5	Nipple down and set slips at 340,000#.
				8:00	1.0	Nipple down BOP.
				9:00	1.0	Cut casing. Nipple up wellhead. Pressure test wellhead; held OK for 15 min.
				19:00	10.0	Nipple up BOP. Move choke house forward.
63	3/21	6015	0	0:00	5.0	Nipple up BOP. Test choke.
				7:00	7.0	Test BOP. Tested top rams, blind rams, lower rams, HCR and choke valves to 5000 psi high, 250 psi low. Tested

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
						annular to 2500 psi high, 250 psi low; upper and lower kelly valves, dart valve, and TIW valve to 5000 psi high, 250 psi low.
				9:00	2.0	Test casing to 2400 psi. Install wear bushing.
				14:00	5.0	Lay down 10" drill collars.
				17:00	3.0	Trip in with rerun 12 1/4" bit. Lay down jars.
				19:00	2.0	Pick up 3 joints drill pipe. Tag cement at 5833'; 700# back pressure. Salt mud out of hole.
64	3/22	6015	0	22:30	3.5	Drill cement. Plug and float collar at 5934', shoe at 6015'.
				23:00	0.5	Drill 6015' - 6019'.
				0:00	1.0	Circulate.
				2:00	2.0	Trip out.
				3:30	1.5	Inspect 6 1/2" drill collars. Reface 1 drill collar.
				6:00	2.5	Lay down 8" drill collars.
				7:00	1.0	Pick up 6" drill collars, Monel, shock sub, bit sub, and 8 3/4" new bit #15 Hughes GT-09.
				9:30	2.5	Strap bit sub, shock sub, Monel, drill collars and jars. Trip in.
				13:00	3.5	Trip in.
				17:00	4.0	Drill 6019' - 6068'.
				17:30	0.5	Survey: 6040', misrun.
				18:00	0.5	Drill 6068' - 6071'.
				18:30	0.5	Survey: 6040', misrun.
				19:00	0.5	Drill 6071' - 6073'.
65	3/23	6015	0	20:00	1.0	Drill 6073' - 6097'.
				20:30	0.5	Survey: 6057' 1 3/4 deg Due East.
				0:00	3.5	Drill 6097' - 6160'.
				0:30	0.5	Survey: 6120' 2 1/4 deg N89E.
				4:30	4.0	Drill 6160' - 6222'.
				5:00	0.5	Survey: 6182' 3 deg N86E.
				7:00	2.0	Drill 6222' - 6284'.
				12:00	5.0	Service rig.
				14:30	2.5	Survey: 6248' 4 deg S88E.
				15:00	0.5	Drill 6284' - 6290'.
				19:00	4.0	Trip out.
66	3/24	6290	275	22:00	3.0	Pick up new BHA: near bit IBS, shock sub, IBS, Monel, and IBS. Trip in.
				22:30	0.5	Wash and ream 55 ft to bottom; no fill.
				5:00	6.5	Drill 6290' - 6357'.
				5:30	0.5	Survey: 6307' 4 deg N88E.
				8:00	2.5	Drill 6357' - 6388'.
				8:30	0.5	Service rig.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				11:30	3.0	Drill 6388' - 6419'.
				12:30	1.0	Survey: one misrun; 6369' 4 1/4 deg N88E.
				19:00	6.5	Drill 6419' - 6463'.
67	3/25	6463	173	21:00	2.0	Drill 6463' - 6482'.
				21:30	0.5	Survey: 6432' 4 1/4 deg N85E.
				4:00	6.5	Drill 6482' - 6543'.
				4:30	0.5	Survey: 6493' 4 1/2 deg N89E.
				9:30	5.0	Drill 6543' - 6575'.
				10:00	0.5	Service rig.
				15:00	5.0	Drill 6575' - 6605'.
				15:30	0.5	Survey: 6555' 5 deg N89E.
				19:00	3.5	Drill 6605' - 6626'.
68	3/26	6626	163	0:30	5.5	Drill 6626' - 6667'.
				1:00	0.5	Survey: 6617' 5 deg N89E.
				10:00	9.0	Drill 6667' - 6729'.
				10:30	0.5	Survey: 6679' 5 1/4 deg S86E.
				19:00	8.5	Drill 6729' - 6771'.
69	3/27	6771	145	22:30	3.5	Drill 6771' - 6790'.
				23:00	0.5	Survey: 6740' 5 1/4 deg S86E.
				10:00	11.0	Drill 6790' - 6853'.
				10:30	0.5	Change lower kelly valve.
				11:00	0.5	Survey: 6803' 5 1/2 deg S86E.
				19:00	8.0	Drill 6853' - 6893'.
70	3/28	6893	122	22:00	3.0	Drill 6893' - 6916'.
				22:30	0.5	Survey: 6866' 5 1/2 deg S86E.
				10:30	12.0	Drill 6916' - 6978'.
				11:00	0.5	Survey: 6928' 5 1/2 deg S81E.
				19:00	8.0	Drill 6978' - 7013'.
71	3/29	7013	120	22:30	3.5	Drill 7013' - 7039'.
				23:00	0.5	Survey: 6989' 5 3/4 deg S80E.
				9:00	10.0	Drill 7039' - 7101'.
				9:30	0.5	Survey: 7051' 5 3/4 deg S81E.
				17:30	8.0	Drill 7101' - 7161'.
				18:00	0.5	Survey: 7111' 5 3/4 deg S81E.
				19:00	1.0	Drill 7161' - 7164'.
72	3/30	7164	151	23:00	4.0	Drill 7164' - 7193'.
				23:30	0.5	Survey: 7143' 6 deg S81E.
				8:00	8.5	Drill 7193' - 7256'.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				8:30	0.5	Survey: misrun.
				9:00	0.5	Drill 7256' - 7259'.
				9:30	0.5	Survey: misrun, spinning.
				13:00	3.5	Drill 7259' - 7286'.
				13:30	0.5	Survey: misrun, spinning.
				14:00	0.5	Drill 7286' - 7291'.
				14:30	0.5	Survey: 7236' 6 deg (Totco).
				19:00	4.5	Drill 7291' - 7321'.
73	3/31	7321	157	21:00	2.0	Drill 7321' - 7347'.
				21:30	0.5	Survey: 7297' 6 deg (Totco).
				8:30	11.0	Drill 7347' - 7440'.
				9:00	0.5	Survey: misrun.
				9:30	0.5	Drill 7440' - 7447'.
				10:00	0.5	Survey: 7390' 7 deg S79E.
				17:30	7.5	Drill 7447' - 7502'.
				18:00	0.5	Survey: 7452' 7 deg S79E.
				19:00	1.0	Drill 7502' - 7505'.
74	4/1	7505	184	23:00	4.0	Drill 7505' - 7564'.
				23:30	0.5	Survey: 7514' 7 1/4 deg S80E.
				4:30	5.0	Drill 7564' - 7625'.
				5:00	0.5	Survey: 7575' 7 1/4 deg S80E.
				9:30	4.5	Drill 7625' - 7687'.
				10:00	0.5	Survey: 7637' 7 1/4 deg S81E.
				14:30	4.5	Drill 7687' - 7749'.
				15:00	0.5	Survey: misrun.
				19:00	4.0	Drill 7749' - 7785'.
75	4/2	7785	280	20:00	1.0	Drill 7785' - 7811'.
				20:30	0.5	Survey: 7761' 7 3/4 deg S81E.
				0:30	4.0	Drill 7811' - 7860'.
				1:00	0.5	Lost 600 psi pump pressure.
				6:00	5.0	Trip out. Blow down kelly. Chain out.
				12:00	6.0	Inspect BHA. Lay down jars with possible washout, 1 drill collar, 2 IBSs. Left bit, near bit IBS, and part of shock sub in hole.
				14:00	2.0	Cut and slip drilling line.
				17:30	3.5	Pick up drill collars, jars, and fishing tools.
				19:00	1.5	Trip in.
76	4/3	7860	75	20:30	1.5	Trip in.
				23:00	2.5	Break circulation. Latch onto fish at 7855'.
				2:30	3.5	Trip out with fish.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				3:30	1.0	Lay down fishing tools.
				5:30	2.0	Strap and make up bit, near bit IBS, shock sub, IBS, Monel, and IBS.
				9:00	3.5	Trip in.
				9:30	0.5	Wash 33 ft to bottom; no fill.
				13:30	4.0	Drill 7860' - 7904'.
				14:00	0.5	Service rig.
				14:30	0.5	Survey: misrun.
				15:00	0.5	Drill 7904' - 7908'.
				17:30	2.5	Survey: 3 misruns.
				19:00	1.5	Drill 7908' - 7918'.
77	4/4	7918	58	20:30	1.5	Drill 7918' - 7924'.
				21:30	1.0	Surveys: 1 misrun; 7854' 7 3/4 deg S81E.
				1:30	4.0	Drill 7924' - 7957'.
				2:30	1.0	Lost 365 B. Pump sweep.
				4:30	2.0	Drill 7957' - 7965'.
				5:30	1.0	Survey: misrun.
				7:00	1.5	Drill 7965' - 7975'.
				8:30	1.5	Survey: 7915' 7 3/4 deg S81E.
				14:00	5.5	Drill 7975' - 8028'.
				14:30	0.5	Survey: 7978' 8 deg S84E.
				19:00	4.5	Drill 8028' - 8053'.
78	4/5	8053	135	1:30	6.5	Drill 8053' - 8090'.
				2:30	1.0	Survey: 8040' 8 deg S84E.
				6:00	3.5	Drill 8090' - 8101'.
				10:00	4.0	Trip out. Lay down bottom 2 IBSs.
				11:30	1.5	Pick up 6 point reamer and 2 IBSs.
				15:30	4.0	Trip in new bit #17 Smith F47H at 8101'.
				17:00	1.5	Break circulation. Wash and ream 80 ft to bottom; 15 ft undergauge hole.
				19:00	2.0	Drill 8101' - 8108'.
79	4/6	8108	55	9:30	14.5	Drill 8108' - 8197'.
				10:00	0.5	Service rig.
				11:00	1.0	Survey: misrun.
				12:00	1.0	Drill 8197' - 8206'.
				12:30	0.5	Survey: 8135' 8 deg S82E.
				19:00	6.5	Drill 8206' - 8252'.
80	4/7	8252	144	22:30	3.5	Drill 8252' - 8285'.
				23:30	1.0	Survey: 8227' 8 deg S84E.
				1:30	2.0	Pump pill. Trip out.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				2:30	1.0	Repair hanging line on make-up tongs.
				4:30	2.0	Trip out.
				7:00	2.5	Pick up new BHA: 6-point, IBS, shock sub, IBS, Monel, & IBS. Trip in new bit #18 HTC ATJ44C.
				9:30	2.5	Trip in.
				13:00	3.5	Break circulation. Wash and ream 7982' - 8285'; 8 ft of undergauge hole.
				19:00	6.0	Drill 8285' - 8327'.
81	4/8	8327	75	3:00	8.0	Drill 8327' - 8377'.
				4:00	1.0	Survey: 8319' 8 deg S84E.
				15:00	11.0	Drill 8377' - 8469'. Wall stuck at 8390' for 3 min; pumped 50B LCM pill.
				15:30	0.5	Service rig.
				17:00	1.5	Survey: 8411' 8 deg S86E.
				19:00	2.0	Drill 8469' - 8485'.
82	4/9	8485	158	7:30	12.5	Drill 8485' - 8566'.
				8:00	0.5	Survey: 8505' 8 1/4 deg S86E.
				19:00	11.0	Drill 8566' - 8615'.
83	4/10	8615	130	22:00	3.0	Drill 8615' - 8638'.
				2:00	4.0	Pump slug. Blow down kelly. Trip out.
				2:30	0.5	Visually inspect BHA. Pick up new bit #19 Security ERA22 at 8638'.
				3:30	1.0	Trip in BHA.
				4:30	1.0	Cut drilling line.
				8:30	4.0	Trip in.
				9:00	0.5	Wash and ream 116 ft to bottom; 8 ft undergauge.
				12:30	3.5	Drill 8638' - 8658'.
				13:00	0.5	Spot LCM. Survey: 8600' 9 deg S87E.
				13:30	0.5	Drill 8658' - 8664'.
				14:00	0.5	Service rig.
				19:00	5.0	Drill 8664' - 8690'.
84	4/11	8690	75	22:30	3.5	Drill 8690' - 8718'.
				23:00	0.5	Survey: 8660' 9 1/4 deg S86E.
				11:30	12.5	Drill 8718' - 8781'.
				12:00	0.5	Survey: 8723' 9 deg S88E.
				19:00	7.0	Drill 8781' - 8809'.
85	4/12	8809	119	1:00	6.0	Drill 8809' - 8844'.
				1:30	0.5	Survey: 8786' 9 deg S88E.
				14:30	13.0	Drill 8844' - 8908'.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				15:00	0.5	Survey: 8850' 9 1/4 deg due East.
				19:00	4.0	Drill 8908' - 8925'.
86	4/13	8915	106	5:30	10.5	Drill 8925' - 8970'.
				6:00	0.5	Survey: 8912' 9 3/4 deg due East.
				19:00	13.0	Drill 8970' - 9040'
87	4/14	9040	125	22:00	3.0	Drill 9040' - 9065'.
				22:30	0.5	Survey: 9007' 9 3/4 deg N89E.
				9:30	11.0	Drill 9065' - 9129'.
				10:00	0.5	Survey: 9071' 10 1/4 deg N89E.
				19:00	9.0	Drill 9129' - 9171'.
88	4/15	9171	131	22:30	3.5	Drill 9171' - 9192'.
				23:00	0.5	Survey: 9134' 10 3/4 deg N87E.
				3:00	4.0	Drill 9192' - 9205'.
				7:00	4.0	Trip out.
				8:00	1.0	Change near bit IBS and 6-point. Pick up new bit #20 Smith F2H.
				11:00	3.0	Trip in.
				11:30	0.5	Wash and ream 60 ft to bottom.
				19:00	7.5	Drill 9205' - 9228'.
89	4/16	9228	57	8:00	13.0	Drill 9228' - 9286'.
				9:00	1.0	Survey: 9228' 10 3/4 deg N87E.
				10:00	1.0	Drill 9286' - 9291'.
				11:30	1.5	Replace rotary chain.
				15:00	3.5	Drill 9291' - 9318'.
				15:30	0.5	Service rig.
				19:00	3.5	Drill 9318' - 9324'.
90	4/17	9324	96	20:00	1.0	Drill 9324' - 9332'.
				21:30	1.5	Work on SCR.
				9:00	11.5	Drill 9332' - 9369'.
				10:00	1.0	Repair SCR.
				13:30	3.5	Drill 9369' - 9380'.
				14:30	1.0	Survey: 9322' 11 deg N85E.
				15:30	1.0	Drill 9380' - 9384'.
				18:00	2.5	Pump pill. Trip out.
				18:30	0.5	Service rig.
				19:00	0.5	Trip out.
91	4/18	9384	60	20:00	1.0	Trip out.
				0:00	4.0	Trip in at 9384' with new bit #21 Hughes ATJ33.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				0:30	0.5	Wash 35 ft to bottom. No fill.
				18:00	17.5	Drill 9384' - 9475'.
				19:00	1.0	Survey: 9417' 11 1/4 deg N85E.
92	4/19	9475	91	7:30	12.5	Drill 9475' - 9538'.
				8:30	1.0	Survey: 9480' 11 1/4 deg N84E.
				13:00	4.5	Drill 9538' - 9570'.
				13:30	0.5	Service rig.
				19:00	5.5	Drill 9570' - 9595'.
93	4/20	9595	120	19:30	0.5	Drill 9595' - 9601'.
				20:30	1.0	Survey: 9543' 11 1/4 deg N84E.
				5:30	9.0	Drill 9601' - 9664'.
				6:30	1.0	Survey: 9606' 11 deg N82E.
				15:00	8.5	Drill 9664' - 9726'.
				15:30	0.5	Service rig.
				19:00	3.5	Drill 9726' - 9750'.
94	4/21	9750	155	19:30	0.5	Drill 9750' - 9758'.
				20:30	1.0	Survey: 9700' 11 3/4 deg N81E.
				8:00	11.5	Drill 9758' - 9798'. Lost 200 psi pump pressure.
				4:00	20.0	Trip out. Chain out; suspect hole in drill string. SLM; no correction.
				19:00	15.0	Inspect drill collars with CMC inspection service. Lay down BHA.
95	4/22	9798	48	0:00	5.0	Test BOP with Double Jack. Pull wear bushing. Test top & bottom pipe rams, blind rams, HCR valve, & choke manifold at 250 psi for 5 min and at 5000 psi for 10 min. Test Hydril at 3500 psi for 10 min.
				0:30	0.5	Set wear bushing.
				2:30	2.0	Pick up Anadrill 1.5 deg bent motor and MWD tools. Orient MWD. Pick up kelly & test.
				7:00	4.5	Trip in at 9798' with new bit #22 Reed HP61A. Pick up new jars.
				12:30	5.5	Trip in. Survey every 270 ft from base of intermediate casing at 6015' to TD.
				15:00	2.5	Drill 9798' - 9811'.
				15:30	0.5	Service rig.
				19:00	3.5	Drill 9811' - 9834'.
96	4/23	9834	36	19:00	24.0	Drill 9834' - 10026'. Slide first 7 - 10 ft of each kelly, rotate remainder of kelly.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
97	4/24	10026	192	23:30	4.5	Drill 10026' - 10064'.
				0:30	1.0	Survey: hole not going at desired inclination or direction.
				4:30	4.0	Trip out.
				7:00	2.5	Check directional tools. Re-orient MWD. Function test BOPs.
				7:30	0.5	Test MWD.
				11:00	3.5	Trip in at 10064' with new bit #23 Security ERA33 to shoe. Fill drill pipe.
				12:00	1.0	Cut drilling line.
				13:30	1.5	Trip in.
				16:00	2.5	Ream 77 ft of undergauge hole to bottom.
				19:00	3.0	Drill 10064' - 10077'.
98	4/25	10077	51	19:00	24.0	Drill 10077' - 10264'. Slide first 10 ft of each kelly; rotate remainder of kelly.
99	4/26	10264	187	0:00	5.0	Drill 10264' - 10290'.
				2:00	2.0	Pump slug, blow kelly. Trip out.
				2:30	0.5	Rig up to acidize drill pipe.
				6:00	3.5	Chain out acidizing drill pipe.
				7:00	1.0	Orient MWD.
				7:30	0.5	Kelly up and test MWD.
				12:00	4.5	Trip in at 10290' with bit #24 Hughes ATJ33.
				14:00	2.0	Trip in. Resurvey with MWD at 9801', 9833', 9865', 9896', 9928'. Dogleg severity at 9896' was 6.3, resurveyed at 5.5.
				16:00	2.0	Ream 135 ft to bottom. 6 ft of fill.
				19:00	3.0	Drill 10290' - 10301'. Lost 100 B at 10292'.
100	4/27	10301	37	1:00	6.0	Drill 10301' - 10348'.
				2:00	1.0	Pump existing sweep, circulate, pump slug.
				7:00	5.0	Trip out. Acidize drill pipe.
				8:00	1.0	Trip out. Lay down motor.
				10:30	2.5	Pick up new motor and orient. Test MWD.
				15:00	4.5	Trip in at 10348' with new bit #25 Smith F3H. Fill pipe at shoe.
				15:30	0.5	Ream 75 ft to bottom.
				17:00	1.5	Survey; problems getting readout.
				19:00	2.0	Drill 10348' - 10364'.
101	4/28	10364	63	19:00	24.0	Drill 10364' - 10516'.
102	4/29	10576	212	5:00	10.0	Drill 10516' - 10586'.
				11:30	6.5	Pump pill, blow kelly. Trip out. Acidize drill pipe.
				19:00	7.5	Trip in bit #26 Smith F4 at 10586'. Fill pipe at 6050'.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
103	4/30	10586	10	19:30	0.5	Circulate and survey.
				23:30	4.0	Rotate 10586' - 10598'; slide 10598' - 10613'; rotate 10613' - 10629'.
				0:00	0.5	Survey and orient tool.
				3:30	3.5	Slide 10629' - 10644'; rotate 10644' - 10661'.
				4:30	1.0	Survey and orient tool.
				7:30	3.0	Slide 10661' - 10691'.
				8:00	0.5	Survey and orient tool.
				11:00	3.0	Slide 10691' - 10707'; rotate 10707' - 10722'.
				12:00	1.0	Survey and orient tool.
				16:00	4.0	Trip out.
				17:00	1.0	Increase bend in motor from 1.5 to 1.83 deg. Orient tool and test at surface.
				19:00	2.0	Trip in.
104	5/1	10722	136	20:00	1.0	Cut and slip drilling line.
				21:30	1.5	Trip in.
				22:00	0.5	Break circulation.
				23:30	1.5	Trip in.
				0:00	0.5	Survey.
				7:30	7.5	Slide 10722' - 10744'; rotate 10744' - 10754'; slide 10754' - 10769'; rotate 10769' - 10786'.
				8:00	0.5	Survey.
				11:00	3.0	Slide 10786' - 10806'; rotate 10806' - 10817'.
				11:30	0.5	Survey.
				14:30	3.0	Slide 10817' - 10832'; rotate 10832' - 10849'.
				15:00	0.5	Service rig and survey.
				19:00	4.0	Slide 10849' - 10864'; rotate 10864' - 10880'.
105	5/2	10878	156	19:30	0.5	Survey.
				23:00	3.5	Slide 10880' - 10891'; rotate 10891' - 10912'.
				23:30	0.5	Survey.
				2:30	3.0	Slide 10912' - 10923'; rotate 10923' - 10943'.
				3:00	0.5	Survey.
				7:00	4.0	Slide 10943' - 10954'; rotate 10954' - 10975'.
				7:30	0.5	Survey.
				10:00	2.5	Slide 10975' - 10990'; rotate 10990' - 11006'.
				10:30	0.5	Survey.
				13:30	3.0	Slide 11006' - 11021'; rotate 11021' - 11038'.
				14:00	0.5	Survey.
				14:30	0.5	Pump pill.
				19:00	4.5	Trip out.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
106	5/3	11038	160	21:00	2.0	Trip out. Acidize drill pipe.
				1:30	4.5	Check MWD. Trip in new bit #27 Smith F4 at 11038'.
				2:00	0.5	Break circulation.
				3:00	1.0	Trip in.
				3:30	0.5	Survey.
				6:30	3.0	Slide 11038' - 11058'; rotate 11058' - 11070'.
				7:00	0.5	Survey.
				10:00	3.0	Slide 11070' - 11091'; rotate 11091' - 11101'.
				10:30	0.5	Survey.
				13:00	2.5	Slide 11101' - 11121'; rotate 11121' - 11133'.
				14:00	1.0	Survey.
				17:30	3.5	Slide 11133' - 11149'; rotate 11149' - 11164'.
				18:00	0.5	Survey.
				19:00	1.0	Slide 11164' - 11167'.
107	5/4	11167	129	21:00	2.0	Slide 11167' - 11184'; rotate 11184' - 11196'.
				21:30	0.5	Survey.
				1:30	4.0	Slide 11196' - 11216'; rotate 11216' - 11226'.
				2:00	0.5	Survey.
				6:00	4.0	Slide 11226' - 11243'; rotate 11243' - 11258'.
				6:30	0.5	Survey.
				9:00	2.5	Slide 11258' - 11278'; rotate 11278' - 11290'.
				9:30	0.5	Survey.
				12:30	3.0	Slide 11290' - 11308'; 11308' - 11320'.
				13:00	0.5	Survey.
				17:00	4.0	Slide 11320' - 11340'; rotate 11340' - 11351'.
				17:30	0.5	Survey.
				19:00	1.5	Slide 11351' - 11354'.
108	5/5	11354	187	22:00	3.0	Slide 11354' - 11366'; rotate 11366' - 11383'.
				23:30	1.5	Short trip 12 stands, clean.
				0:00	0.5	Circulate and orient tools.
				4:00	4.0	Slide 11383' - 11403'; rotate 11403' - 11415'.
				4:30	0.5	Survey.
				8:00	3.5	Slide 11415' - 11435'; rotate 11435' - 11446'.
				8:30	0.5	Survey.
				10:30	2.0	Slide 11446' - 11463'.
				15:30	5.0	Pump pill. Trip out. Lay down 1 joint with hole.
				19:00	3.5	Rig up Schlumberger. Log SHDT dipmeter & directional survey 11463' - 6015'.
109	5/6	11463	109	21:00	2.0	Log dipmeter & directional survey.
				22:00	1.0	Rig down Schlumberger.
				0:00	2.0	Rig up Scientific Drilling.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				3:00	3.0	Run gyro survey from 0' to 6000'.
				9:00	6.0	Orient MWD tools and test. Trip in at 11463' with new bit #28 Hughes ATJ-44 with open jets.
				9:30	0.5	Break circulation. Wash 30 ft to bottom, 15 ft fill.
				12:30	3.0	Slide 11463' - 11468'; rotate 11468' - 11478'.
				13:00	0.5	Survey.
				19:00	6.0	Slide 11478' - 11500'; rotate 11500' - 11502'.
110	5/7	11502	39	8:00	13.0	Rotate 11502' - 11509'; slide 11509' - 11529'; rotate 11529' - 11541'; slide 11541' - 11555'.
				14:00	6.0	Pump pressure increased, suspect motor damage. Trip out. Acidize drill pipe.
				19:00	5.0	Lay down motor. Pick up new bit #29 Reed HP61 at 11555'. Pick up and orient new motor. Test motor. Trip in new BHA: motor, float, UBHO, (2) Monel drill collars, (10) stands of G drill pipe, (16) 6 1/2" drill collars, jars, and (6) 6 1/2" drill collars.
111	5/8	11555	53	19:30	0.5	Trip in to shoe. Fill pipe.
				20:30	1.0	Cut drilling line.
				22:00	1.5	Trip in.
				22:30	0.5	Wash & ream 60 ft to bottom.
				19:00	20.5	Rotate 11555' - 11573'; slide 11573' - 11588'; rotate 11588' - 11603'; slide 11603' - 11618'; rotate 11618' - 11635'; slide 11635' - 11646'; rotate 11646' - 11666'; slide 11666' - 11668'.
112	5/9	11668	113	19:00	24.0	Slide 11668' - 11678'; rotate 11678' - 11698'; slide 11698' - 11710'; rotate 11710' - 11730'; slide 11730' - 11744'; rotate 11744' - 11761'; slide 11761' - 11774'; rotate 11774' - 11793'; slide 11793' - 11806'; rotate 11806' - 11824'.
113	5/10	11824	156	14:30	19.5	Slide 11824' - 11837'; rotate 11837' - 11888'; slide 11888' - 11895'; rotate 11895' - 11919'; slide 11919' - 11926'; rotate 11926' - 11933'.
				16:30	2.0	Circulate samples.
				19:00	2.5	Pump slug. Trip out.
114	5/11	11933	109	21:30	2.5	Trip out.
				23:30	2.0	Change MWD. Reorient tools. Pick up new bit #30 Reed HP61A at 11933'. Test MWD.
				4:00	4.5	Trip in. Fill pipe at shoe.
				4:30	0.5	Wash & ream 60 ft to bottom. No fill.
				7:00	2.5	Rotate 11933' - 11963'. Lost 50 B at 11950'.
				19:00	12.0	Rotate 11963' - 11982'; slide 11982' - 11989'; rotate 11989' - 12010'.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
115	5/12	12010	77	19:00	24.0	Rotate 12010' - 12013'; slide 12013' - 12018'; rotate 12018' - 12076'; slide 12076' - 12081'; rotate 12081' - 12171'. Lost 75 B at 12080' - 12098'.
116	5/13	12171	161	1:00	6.0	Rotate 12171' - 12206'.
				2:00	1.0	Circulate & pump slug.
				7:30	5.5	Trip out. Acidize drill pipe on trip out.
				12:30	5.0	Magnaflux BHA. Lay down (2) 6 1/2" DCs.
				14:00	1.5	Check MWD. Pick up bit #31 Smith F5 in at 12206'.
				19:00	5.0	Trip in. Change jars. Fill pipe at shoe. No returns while tripping in to 9800'.
117	5/14	12206	35	19:30	0.5	Circulate at 9800'. Pump LCM sweep.
				20:30	1.0	Trip in.
				21:00	0.5	Wash 90 ft to bottom. No fill.
				1:30	4.5	Rotate 12206' - 12242'.
				2:00	0.5	Survey: misrun.
				6:00	4.0	Rotate 12242' - 12273'.
				6:30	0.5	Survey.
				10:30	4.0	Rotate 12273' - 12305'.
				11:00	0.5	Survey.
				15:30	4.5	Rotate 12305' - 12336'.
				16:00	0.5	Service rig.
				16:30	0.5	Survey.
				19:00	2.5	Rotate 12336' - 12344'.
118	5/15	12344	138	20:30	1.5	Rotate 12344' - 12354'.
				22:00	1.5	Spot LCM pill on bottom. Pull 13 stands to 10800'. Tight at 11940' and at 11475' on way out.
				1:00	3.0	Rig up Oil Well Perforators. Attempt to pull MWD with wireline. Found sawdust in overshot.
				3:00	2.0	Pull 3 stands. Pull MWD with wireline. MWD plugged.
				4:00	1.0	Trip in. Wash 90 ft to bottom, 60 ft of fill.
				5:00	1.0	Spot LCM pill on bottom.
				6:00	1.0	Pull 16 stands.
				7:00	1.0	Run new MWD back in hole on O.W.P. wireline.
				8:30	1.5	Run in MWD. Tag at top of drill collars. Pull out, lost MWD.
				14:00	5.5	Trip out to retrieve MWD from top of drill collars.
				14:30	0.5	Service rig.
				16:00	1.5	Trip out, wet.
				19:00	3.0	Lay down motor. Pick up new motor and orient.
119	5/16	12354	10	23:30	4.5	Trip in. Break circulation below shoe.
				1:00	1.5	Wash 120 ft to bottom; 75 ft of fill.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				3:00	2.0	Slide 12354' - 12360'; rotate 12360' - 12367'.
				3:30	0.5	Survey.
				9:00	5.5	Rotate 12367' - 12399'.
				9:30	0.5	Service rig.
				18:00	8.5	Slide 12399' - 12404'; rotate 12404' - 12430'.
				18:30	0.5	Survey.
				19:00	0.5	Rotate 12430' - 12432'.
120	5/17	12432	78	20:30	1.5	Rotate 12432' - 12436'.
				2:30	6.0	Pump pill. Trip out. Lay down 12 joints of pipe.
				4:00	1.5	Pick up rerun bit #28 Hughes ATJ44. Test MWD.
				7:00	3.0	Trip in. Now 14 stands of drill pipe between motor/Monels and drill collars.
				8:00	1.0	Cut and slip drilling line.
				12:00	4.0	Trip in. Extra short trip to recover screen left in pipe after breaking circulation.
				17:00	5.0	Rotate 12436' - 12462'.
				17:30	0.5	Survey.
				19:00	1.5	Slide 12462' - 12467'; rotate 12467' - 12469'.
121	5/18	12469	37	20:00	1.0	Rotate 12469' - 12494'.
				20:30	0.5	Survey.
				23:30	3.0	Rotate 12494' - 12525'.
				0:00	0.5	Survey.
				3:00	3.0	Rotate 12525' - 12557'.
				3:30	0.5	Survey.
				6:00	2.5	Rotate 12557' - 12589'.
				6:30	0.5	Survey.
				12:30	6.0	Rotate 12589' - 12651'.
				13:00	0.5	Survey.
				17:00	4.0	Rotate 12651' - 12683'.
				17:30	0.5	Survey.
				19:00	1.5	Rotate 12683' - 12690'.
122	5/19	12690	221	21:30	2.5	Rotate 12690' - 12714'.
				22:00	0.5	Survey: misrun.
				4:00	6.0	Rotate 12714' - 12746'.
				6:00	2.0	Survey. Circulate bottoms up.
				11:00	5.0	Trip out.
				11:30	0.5	Service rig.
				16:30	5.0	Pick up new motor; decrease bend from 1.83 deg to 1.5 deg. Lay down and release Anadrill MWD. Trip in. Tagged bridge at 8760'. Lost total returns while tripping in below bridge. Ankareh purple shale caving.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				18:00	1.5	Wash and ream 12606' - 12746'.
				19:00	1.0	Rotate 12746' - 12749'.
123	5/20	12749	59	14:30	19.5	Rotate 12749' - 12874'.
				15:00	0.5	Service rig.
				19:00	4.0	Rotate 12874' - 12898'.
124	5/21	12898	149	2:30	7.5	Rotate 12898' - 12945'.
				4:30	2.0	Circulate bottoms up.
				11:30	7.0	Spot LCM, pump slug. Trip out. SLM = 12944.28; board = 12945'; no correction.
				13:00	1.5	Lay down 2 Monels and motor. Pick up near-bit 6-point reamer. Rerun bit #26 Smith F4 to ream.
				17:00	4.0	Trip in. Tag at 9285'.
				18:00	1.0	Lay down 6 joints of drill pipe. Trip in 2 stands.
				19:00	1.0	Ream 9285' - 9360'.
125	5/22	12945	47	7:00	12.0	Trip in slow and ream tight spots 9360' - 12700'.
				13:00	6.0	Ream 12700' - 12945' with rerun Smith F4.
				15:00	2.0	Circulate bottoms up. Spot LCM pill. Pump slug.
				19:00	4.0	Trip out for logs.
126	5/23	12945	0	20:00	1.0	Trip out for logs.
				4:30	8.5	Rig up Schlumberger. Log Platform Express array induction, neutron, density, gamma, caliper. Tag at 9150', pick up, continue down. Logs stopped at 12806', 139 ft off bottom. Log out. Rig down Schlumberger.
				7:30	3.0	Trip in rerun Smith F4 and near-bit 6-point to csg. shoe.
				8:30	1.0	Cut drilling line.
				10:30	2.0	Trip in to 12710'. Tagged bridge at 12710' - 12725'.
				14:00	3.5	Wash & ream 12710' - 12945'.
				16:00	2.0	Circulate bottoms up. Pump slug.
				19:00	3.0	Trip out for logs.
127	5/24	12945	0	20:30	1.5	Trip out for logs.
				10:00	13.5	Rig up Schlumberger. Log FMI dipmeter and array sonic. Rig down Schlumberger.
				13:00	3.0	Lay down (12) 6 1/2" drill collars. Release Schlumberger at 12:00 noon.
				16:30	3.5	Partially nipple down BOP.
				18:30	2.0	Run in 3 stands and set packer in 13 3/8" casing.
				19:00	0.5	Finish nipple down.
128	5/25	12945	0	0:00	5.0	Sting out of packer. Trip out 3 stands. Pick up stack. Remove bottom pipe rams. Install C-section. Nipple up.

DAILY OPERATIONS

Day	Date	Depth	Ft Cut	To Time	Hrs	Activity
				1:00	1.0	Test C-section to 800 psi. Pressure dropped and held at 500 psi.
				7:00	6.0	Unseated packer. It came free and slid down hole. Fish for packer at 500'.
				8:30	1.5	Fish out packer with overshot.
				12:30	4.0	Test BOP: choke manifold, blind rams, and pipe rams to 250 psi for 5 min and to 5000 psi for 10 min; annular to 250 psi for 5 min and to 2500 psi for 10 min.
				17:00	4.5	Trip in. Pick up 12 joints of drill pipe. Tag at 12695'.
				19:00	2.0	Wash and ream 12695' - 12785'.
129	5/26	12945	0	19:30	0.5	Wash and ream 12785' - 12945'.
				23:00	3.5	Circulate, build volume, and mix LCM.
				24:00	1.0	Short trip 10 stands.
				2:00	2.0	Circulate, spot LCM on back side, and pump slug.
				2:30	0.5	Trip out laying down drill pipe.
				3:30	1.0	Kelly up and unplug bit.
				4:30	1.0	Trip out laying down drill pipe.
				5:00	0.5	Kelly up and unplug bit.
				9:00	4.0	Trip out laying down drill pipe.
				9:30	0.5	Repair broken air line on breakout cat head.
				13:30	4.0	Trip out laying down drill pipe.
				14:00	0.5	Break kelly.
				15:00	1.0	Lay down 6 1/2" drill collars.
				16:30	1.5	Change 4 1/2" pipe rams to 7 5/8". Rig up casing crew.
				19:00	2.5	Run 7" casing with 70 centralizers and 20-ft external casing packer 230 ft up from shoe.
130	5/27	12945	0	5:30	10.5	Run 7" casing.
				7:00	1.5	Pipe stopped at 12520'. Slack off to 280,000 lbs and pull to 450,000 lbs per company man's orders. Cannot circulate. Moved pipe down to 12590'.
				16:30	9.5	Work casing at 12590'. Attempt to break circulation. Work stuck casing. Pull to 450,000 lbs; slack off to 200,000 lbs. Not moving. Cannot circulate. String weight is 360,000 lbs.
				19:00	2.5	Work casing; still no movement.
				2:00	6.0	Rig up Schlumberger Dowell coiled tubing.
131	5/28	12945	0	20:00	1.0	Work stuck casing.
				7:00	5.0	Run coiled tubing in hole. Clean out to float collar.
				12:00	5.0	Circulate with coiled tubing. Shake out LCM. Geologist released at 12:30 PM 5/28/97 (unlikely to run correlation log for positioning external casing packer).

The Anschutz Corporation
A L & L #14-33

MUD RECORD

Date	Depth	Wt	Vis	PV	YP	Gels	FL	Cake	Sol	Oil	H2O	Sd	Me B	pH	Pf	Mf	Cl	Ca	LCM	Remarks
1/18	86	8.6	37	8	4	1/1	10.0	2	2.0	0	98.0	Tr	12.5	10.5	0.30	0.60	2600	80	0	
1/19	340	8.9	39	10	7	1/3	8.0	2	3.8	0	96.2	Tr	12.5	9.0	0.05	0.30	1700	120	0	
1/20	575	9.0	40	9	12	3/9	8.0	2	4.5	0	95.5	Tr	14.0	9.0	0.05	0.30	1100	48	0	
1/21	820	9.1	39	7	10	4/10	12.0	2	5.5	0	94.5	Tr	13.0	9.0	0.10	0.30	800	12	0	
1/22	1142	9.2	39	8	9	3/10	12.0	2	6.0	0	94.0	Tr	15.0	`9.0	0.05	0.25	600	10	0	
1/23	1226	9.0	40	7	10	2/8	11.2	2	4.8	0	95.2	Tr	15.0	9.0	0.10	0.30	500	10	0	
1/24	1500	9.1	37	7	10	2/7	10.8	2	5.5	0	94.5	Tr	15.0	9.0	0.10	0.30	500	8	0	
1/25	1500	9.1	36	7	8	2/6	8.0	2	5.5	0	94.5	Tr	15.0	9.0	0.10	0.30	500	8	0	20" set at 1500' KB.
1/26	1500	9.1	36	7	6	2/6	8.0	2	5.5	0	94.5	Tr	15.0	9.0	0.10	0.30	500	8	0	
1/27	1681	9.1	43	10	12	5/25	9.6	2	5.5	0	94.5	Tr	15.0	12.0	2.30	3.40	500	4	0	
1/28	2058	9.2	40	11	9	2/10	8.0	2	6.0	0	94.0	Tr	15.0	11.0	1.20	1.85	400	2	0	Lost 134 B/24 hrs
1/29	2269	9.0	36	9	5	2/4	7.6	2	4.4	0	95.6	Tr	15.0	9.5	0.45	0.85	300	2	0	Lost 42 B/24 hrs
1/30	2457	9.1	40	13	7	2/6	8.8	2	5.5	0	94.5	Tr	15.0	9.5	0.40	0.80	300	2	0	Lost 169 B/24 hrs
1/31	2629	9.1	38	9	9	2/5	8.0	2	5.5	0	94.5	Tr	15.0	9.5	0.40	0.70	300	2	0	Lost 276 B/24 hrs
2/1	2775	9.0	39	10	10	2/3	7.4	2	4.8	0	95.2	Tr	14.0	9.5	0.30	0.65	500	8	0	
2/2	2901	9.0	40	12	11	2/3	7.0	2	5.2	0	94.8	Tr	17.5	9.5	0.30	0.70	500	16	0	
2/3	3062	9.0	39	10	6	2/3	7.2	2	4.5	0	95.5	Tr	20.0	9.5	0.30	0.60	500	10	0	
2/4	3149	8.9	37	9	7	2/3	7.8	2	3.8	0	96.2	Tr	50.0	10.5	0.50	0.80	600	10	0	
2/5	3282	8.9	41	13	12	2/3	7.6	2	4.0	0	96.0	Tr	20.0	10.0	0.40	0.70	600	8	0	
2/6	3380	8.9	40	12	11	2/3	7.6	2	4.0	0	96.0	Tr	17.5	9.8	0.35	0.70	600	4	0	
2/7	3487	8.9	38	10	7	2/2	7.6	2	3.5	0	96.5	Tr	17.5	9.5	0.35	0.70	600	4	0	
2/8	3571	8.9	38	9	7	2/4	7.6	2	3.5	0	96.5	Tr	17.5	9.0	0.30	0.60	400	10	0	
2/9	3743	8.9	37	9	9	2/5	8.0	2	3.5	0	96.5	Tr	17.5	9.0	0.30	0.55	400	10	0	Lost 50 B/24 hrs
2/10	3878	8.9	40	11	10	2/5	7.6	2	3.8	0	96.2	Tr	20.0	9.0	0.30	0.60	500	10	0	Lost 50 B/24 hrs
2/11	3999	8.9	30	10	9	2/5	7.2	2	3.8	0	96.2	Tr	20.0	9.5	0.35	0.70	600	10	0	Lost 50 B/24 hrs

The Anschutz Corporation
A L & L #14-33

MUD RECORD

Date	Depth	Wt	Vis	PV	YP	Gels	FL	Cake	Sol	Oil	H2O	Sd	Me B	pH	Pf	Mf	Cl	Ca	LCM	Remarks
2/12	4140	9.0	40	12	10	2/5	8.0	2	4.5	0	95.5	Tr	20.0	10.0	0.50	0.90	600	10	0	Lost 50 B/24 hrs
2/13	4245	9.0	41	13	12	3/7	7.2	2	4.5	0	95.5	Tr	20.0	9.5	0.45	0.85	600	10	0	
2/14	4344	9.0	38	10	10	2/5	8.0	2	4.5	0	95.5	Tr	20.0	10.0	0.55	1.05	800	20	0	
2/15	4363	8.8	37	6	6	1/2	8.8	2	3.0	0	97.0	Tr	18.8	10.0	0.65	1.20	900	10	0	Twisted off drill collars at 4363'
2/16	4420	8.9	38	10	9	2/3	8.2	2	3.8	0	96.2	Tr	18.8	10.0	0.50	1.20	1000	10	0	
2/17	4542	8.9	40	13	11	2/3	8.6	2	4.8	0	95.2	Tr	17.5	10.0	0.60	1.30	1100	10	0	
2/18	4621	8.9	43	14	15	3/7	8.8	2	3.8	0	96.2	Tr	17.5	10.2	0.80	1.65	1200	10	0	
2/19	4632	8.9	45	14	17	3/10	9.0	2	3.8	0	96.2	Tr	21.3	10.5	1.00	1.70	1200	8	0	Reamed new BHA to bottom
2/20	4637	8.9	42	14	14	2/8	8.8	2	4.0	0	96.0	Tr	21.3	10.0	0.70	1.40	1200	10	0	
2/21	4670	8.9	43	13	15	3/9	8.4	2	4.5	0	95.5	Tr	21.3	10.0	0.60	1.20	1400	10	0	Fishing for drill pipe & BHA
2/22	4670	8.9	40	12	11	1/8	8.2	2	4.5	0	95.5	Tr	22.5	9.0	0.30	0.80	1350	30	0	Fishing for drill pipe & BHA
2/23	4670	8.9	40	12	8	1/5	8.4	2	5.0	0	95.0	Tr	21.3	9.5	0.40	1.00	1350	10	0	Fishing for drill pipe & BHA
2/24	4670	8.9	46	16	13	2/10	8.0	2	5.0	0	95.0	Tr	21.0	9.5	0.40	1.00	1350	10	0	Fishing for BHA
2/25	4670	8.9	41	12	9	1/8	8.0	2	5.0	0	95.0	Tr	21.0	9.3	0.35	1.00	1350	10	0	Fishing for BHA
2/26	4670	8.9	41	12	11	2/10	8.2	2	5.0	0	95.0	Tr	20.5	9.8	0.60	1.10	1350	10	0	Magnaflux new BHA
2/27	4703	8.9	46	14	13	2/12	9.0	2	5.0	0	95.0	0.25	20.0	9.5	0.40	1.00	1400	10	0	
2/28	4775	8.9	56	24	13	4/15	9.2	2	5.0	0	95.0	Tr	19.5	9.5	0.50	0.80	1400	10	0	
3/1	4837	8.7	49	16	19	4/23	8.8	2	3.0	0	97.0	Tr	20.0	10.5	0.60	1.10	1400	20	0	
3/2	4891	8.7	43	11	10	3/15	10.0	2	3.0	0	97.0	Tr	17.5	10.5	0.50	1.00	1400	40	0	
3/3	4954	8.7	42	11	9	3/15	10.0	2	3.0	0	97.0	Tr	16.3	10.0	0.50	0.90	1400	40	0	
3/4	5060	8.7	45	13	11	6/14	9.8	2	3.0	0	97.0	Tr	15.0	10.0	0.30	0.70	1400	36	0	
3/5	5142	8.7	43	12	10	4/16	9.6	2	3.0	0	97.0	Tr	13.8	10.0	0.30	0.80	1400	68	0	
3/6	5222	8.6	42	10	8	2/8	9.5	2	2.0	0	98.0	Tr	12.5	10.0	0.30	0.70	1400	88	0	
3/7	5292	9.6	41	12	14	2/8	7.5	2	3.0	0	97.0	Tr	12.5	9.5	0.20	0.60	100000	560	0	Began salt-up at 5240'
3/8	5318	9.7	40	14	18	2/5	8.2	2	10.0	0	90.0	0.25	13.0	9.5	0.45	1.15	115000	480	0	

The Anschutz Corporation
A L & L #14-33

MUD RECORD

Date	Depth	Wt	Vis	PV	YP	Gels	FL	Cake	Sol	Oil	H2O	Sd	Me B	pH	Pf	Mf	Cl	Ca	LCM	Remarks
3/9	5400	9.7	43	17	18	2/6	9.6	2	10.0	0	90.0	0.25	11.5	10.0	0.80	1.30	116000	480	0	
3/10	5475	10.1	45	15	10	1/5	8.4	2	11.0	0	89.0	0.25	11.0	9.8	0.60	0.95	160000	320	0	
3/11	5502	10.5	41	15	11	1/7	9.6	2	16.0	0	84.0	0.25	11.5	9.8	0.60	0.90	205000	280	0	Circulated rig salt.
3/12	5627	10.5	41	16	10	1/5	8.4	2	17.0	0	83.0	0.25	11.0	9.5	0.50	1.10	200000	320	0	70%-10% rig salt.
3/13	5761	10.6	43	16	10	1/5	7.8	2	17.0	0	83.0	0.25	11.5	9.7	0.63	0.90	200000	280	0	10% - Trace rig salt.
3/14	5866	10.6	46	20	15	2/10	8.8	2	17.0	0	83.0	0.25	12.0	9.5	0.50	0.90	200000	280	0	
3/15	5905	10.6	46	18	10	2/6	10.2	2	16.5	0	83.5	Tr	13.8	10.0	0.40	0.80	200000	800	0	
3/16	5937	10.6	44	17	8	1/5	8.6	2	16.5	0	83.5	Tr	13.8	10.0	0.40	0.90	174000	400	0	
3/17	5983	10.6	42	17	6	1/3	8.0	2	16.5	0	83.5	Tr	13.8	10.0	0.30	0.90	182000	336	0	Circulated rig salt. Lost 90 B.
3/18	6015	10.7	44	17	11	1/3	7.6	2	17.0	0	83.0	Tr	12.5	10.0	0.30	0.90	195000	284	0	Log, no problems.
3/19	6015	10.7	45	21	12	1/3	7.8	2	17.0	0	83.0	Tr	12.5	9.5	0.25	0.70	195000	336	0	Set 13 5/8" & 13 3/8" at 6015'.
3/20	6015	10.7	44	18	6	1/2	7.8	2	16.5	0	83.5	Tr	12.5	9.0	0.25	0.80	195000	400	0	
3/21	6015	10.5	42	14	5	1/1	7.6	2	16.0	0	84.0	Tr	11.3	9.0	0.25	0.80	195000	400	0	
3/22	6019	8.7	28	1	1	1/1	26.8	1	3.0	0	97.0	0	3.5	9.8	0.60	0.90	40000	400	0	Drilled cement w/ 12 1/4" bit.
3/23	6220	8.7	28	1	2	1/1	19.4	2	3.0	0	97.0	0	6.0	9.5	0.40	0.70	30000	60	0	Drilled out w/ water.
3/24	6350	8.8	29	2	2	1/1	23.6	2	4.0	0	96.0	Tr	8.5	9.3	0.30	0.50	28000	80	0	
3/25	6493	8.8	30	3	5	2/5	48.0	3	4.0	0	96.0	Tr	11.0	9.8	0.60	1.00	24000	40	0	
3/26	6691	8.8	30	3	4	2/5	68.0	3	4.0	0	96.0	0.25	11.5	10.0	0.70	1.20	23000	20	0	
3/27	6815	8.9	31	3	9	4/9	76.0	3	5.0	0	95.0	0.25	13.0	9.5	0.50	0.80	22000	20	0	
3/28	6943	8.8	32	4	8	5/9	80.0	3	4.0	0	96.0	Tr	13.0	10.0	0.75	1.20	23000	10	0	
3/29	7071	8.8	32	4	8	7/7	NC	4	3.5	0	96.5	Tr	12.5	10.0	0.60	1.00	24000	60	0	
3/30	7229	8.8	32	4	4	4/8	NC	3	13.5	0	86.5	Tr	12.5	10.0	0.50	1.20	25000	84	0	
3/31	7408	8.8	31	4	4	2/5	NC	3	3.5	0	96.5	Tr	15.0	10.0	0.50	0.90	24000	100	0	
4/1	7625	8.8	32	5	6	3/6	NC	3	3.5	0	96.5	Tr	15.0	9.5	0.30	0.50	24000	200	0	
4/2	7860	8.9	34	4	10	3/6	NC	3	4.0	0	96.0	Tr	16.3	9.5	0.30	0.50	24000	280	0	Lost 100 B/24 hrs. LCM sweeps.

The Anschutz Corporation
A L & L #14-33

MUD RECORD

Date	Depth	Wt	Vis	PV	YP	Gels	FL	Cake	Sol	Oil	H2O	Sd	Me B	pH	Pf	Mf	Cl	Ca	LCM	Remarks
4/3	7860	8.9	35	5	8	4/6	NC	3	4.0	0	96.0	Tr	16.3	10.0	0.50	1.00	24000	80	0	Lost 50 B/24 hrs. LCM sweeps.
4/4	7966	8.9	37	7	8	2/6	16.0	2	4.0	0	96.0	Tr	16.3	10.0	0.60	1.60	24000	2	0	Lost 425 B/24 hrs. LCM sweeps.
4/5	8097	8.9	34	7	4	1/4	15.8	2	4.0	0	96.0	Tr	15.0	10.0	0.68	1.50	25000	10	0	No hole losses.
4/6	8160	8.8	34	5	5	1/6	16.1	2	4.0	0	96.0	Tr	16.0	10.5	0.80	1.70	25000	10	0	No hole losses.
4/7	8285	8.8	34	6	5	2/8	18.4	2	4.0	0	96.0	Tr	17.5	9.5	0.40	1.50	24500	30	0	Lost 20B/24 hrs. LCM sweeps.
4/8	8379	8.9	37	8	7	1/7	16.4	2	5.0	0	95.0	Tr	18.0	9.5	0.45	2.10	24000	50	0	Lost 287 B/24 hrs. LCM sweeps.
4/9	8550	8.9	34	6	5	1/5	18.8	2	5.0	0	95.0	Tr	18.0	9.8	0.60	1.80	24500	100	0	Lost 253 B/24 hrs. LCM sweeps.
4/10	8638	8.9	37	9	6	1/4	11.6	2	5.0	0	95.0	Tr	18.0	9.8	0.63	1.40	22000	80	0	Lost 245 B/24 hrs. LCM sweeps.
4/11	8740	8.9	39	11	9	1/3	10.2	2	5.0	0	95.0	Tr	19.0	9.8	0.65	1.40	18000	80	0	Lost 256 B/24 hrs. LCM sweeps.
4/12	8855	8.8	39	10	9	1/2	10.0	2	3.5	0	96.5	Tr	17.5	10.0	0.50	1.40	18000	60	0	No hole losses.
4/13	8962	8.7	42	12	11	1/3	9.8	2	3.0	0	97.0	Tr	16.3	10.0	0.50	1.50	18000	60	0	Lost 60 B/24 hrs. LCM sweeps.
4/14	9100	8.6	41	14	9	1/3	9.8	2	2.0	0	98.0	Tr	15.0	9.5	0.50	1.30	16000	112	0	Lost 45 B/24 hrs. LCM sweeps.
4/15	9205	8.7	44	15	9	1/5	9.8	2	2.8	0	97.2	Tr	15.0	9.8	0.60	1.30	16000	20	0	No hole losses.
4/16	9270	8.6	43	13	9	1/6	9.8	2	2.0	0	98.0	Tr	13.8	10.0	0.60	1.60	16000	160	0	No hole losses.
4/17	9353	8.6	40	10	8	1/3	9.6	2	2.0	0	98.0	Tr	13.8	10.2	0.70	1.90	16000	10	0	No hole losses.
4/18	9402	8.7	42	11	11	1/5	`10.6	2	2.5	0	97.5	Tr	13.0	10.5	1.00	2.30	16000	60	0	No hole losses.
4/19	9521	8.7	44	15	8	2/8	11.0	2	3.0	0	97.0	Tr	14.5	10.0	0.80	2.10	15000	10	0	Lost 24 B/24 hrs.
4/20	9647	8.9	50	20	13	3/8	9.4	2	5.0	0	95.0	Tr	14.5	9.8	0.60	1.50	14500	80	0	Lost 55 B/24 hrs.
4/21	9789	8.9	45	17	10	2/7	9.4	2	5.0	0	95.0	Tr	14.0	9.8	0.60	1.40	15000	60	0	Lost 360 B/ 24 hrs.
4/22	9798	8.9	47	17	12	1/6	9.8	2	5.0	0	95.0	Tr	14.0	9.5	0.50	1.40	14500	50	0	Lost 40 B/24 hrs.
4/23	9917	8.8	46	17	8	1/5	10.0	2	4.0	0	96.0	Tr	13.5	9.8	0.65	1.80	14000	20	0	Began directional work at 9798.
4/24	10064	8.9	42	15	10	2/6	9.4	2	5.0	0	95.0	Tr	13.3	9.8	0.60	1.50	13500	40	0	No hole losses.
4/25	10160	8.9	46	18	14	1/5	9.0	2	5.0	0	95.0	Tr	14.0	9.5	0.45	1.40	14000	50	0	No hole losses.
4/26	10290	8.9	43	20	13	2/6	10.0	2	5.0	0	95.0	Tr	12.5	9.5	0.40	1.40	15000	120	0	No hole losses.
4/27	10348	8.8	42	12	9	1/3	10.0	2	3.5	0	96.5	Tr	12.5	9.5	0.50	1.50	15000	88	0	Lost 160 B/24 hrs. LCM sweeps.

The Anschutz Corporation
A L & L #14-33

MUD RECORD

Date	Depth	Wt	Vis	PV	YP	Gels	FL	Cake	Sol	Oil	H2O	Sd	Me B	pH	Pf	Mf	Cl	Ca	LCM	Remarks
4/28	10438	8.8	41	14	9	2/3	10.2	2	3.5	0	96.5	Tr	12.5	9.5	0.42	1.30	16000	140	0	No hole losses.
4/29	10585	8.8	42	14	8	1/2	9.6	2	3.5	0	96.5	Tr	13.8	10.0	0.50	1.50	16000	80	0	No hole losses.
4/30	10662	8.9	45	17	15	1/3	9.8	2	4.2	0	95.8	Tr	13.8	10.0	0.80	2.00	16000	12	0	Lost 212 B/24 hrs.
5/1	10756	8.9	45	18	15	1/3	9.7	2	4.2	0	95.8	Tr	13.8	10.0	0.75	2.10	16000	24	0	No hole losses.
5/2	10956	8.8	45	15	12	1/2	9.6	2	3.5	0	96.5	Tr	12.5	9.5	0.50	1.50	16000	80	0	Lost 317 B/24 hrs.
5/3	11040	8.8	44	18	10	1/3	9.2	2	4.0	0	96.0	Tr	12.5	9.3	0.30	1.40	14500	40	0	Lost 79B/24 hrs.
5/4	11236	8.8	41	15	12	1/2	9.4	2	4.0	0	96.0	Tr	13.0	9.5	0.42	1.20	14000	100	0	Lost 87 B/24 hrs.
5/5	11410	8.8	44	18	10	1/4	9.0	2	4.0	0	96.0	Tr	13.5	9.5	0.40	1.10	14000	120	0	Lost 106 B/24 hrs.
5/6	11463	8.9	47	18	14	1/3	9.2	2	5.0	0	95.0	Tr	14.0	9.3	0.30	1.00	14000	120	0	Lost 6 B/24 hrs.
5/7	11545	8.8	45	18	12	1/4	9.4	2	4.0	0	96.0	Tr	14.0	9.5	0.40	1.00	14000	130	0	Lost 19 B/24 hrs.
5/8	11586	8.9	45	18	14	1/4	9.6	2	5.0	0	95.0	Tr	13.5	9.3	0.30	1.10	14000	130	0	Lost 109 B/24 hrs.
5/9	11728	8.9	46	22	13	1/3	9.2	2	5.0	0	95.0	Tr	13.5	9.8	0.60	1.30	14500	150	0	Lost 50 B/24 hrs.
5/10	11880	8.9	44	18	10	1/2	9.2	2	5.0	0	95.0	Tr	12.5	9.5	0.80	2.40	15000	100	0	Lost 50 B/24 hrs.
5/11	11933	8.9	49	23	14	1/2	9.3	2	5.0	0	95.0	Tr	12.5	9.8	0.80	1.50	16000	80	0	Lost 45 B/24 hrs.
5/12	12072	8.9	47	20	13	1/3	9.4	2	5.0	0	95.0	Tr	11.3	9.8	1.30	2.80	16000	40	0	Lost 315 B/24 hrs.
5/13	12206	8.9	45	17	11	1/3	9.8	2	4.5	0	95.5	Tr	10.0	10.8	1.40	3.10	16000	20	0	Lost 220 B/24 hrs.
5/14	12264	8.8	40	13	9	1/2	9.2	2	3.5	0	96.5	Tr	10.0	9.5	0.50	1.80	17000	60	0	Lost 725 B/24 hrs.
5/15	12354	8.8	48	19	18	2/3	9.0	2	3.5	0	96.5	Tr	12.5	9.0	0.30	1.20	16000	88	1-2	Lost 600 B/24 hrs.
5/16	12368	8.9	45	18	10	1/2	9.2	2	5.0	0	95.0	Tr	12.5	10.0	0.50	1.70	16000	48	1	Lost 162 B/24 hrs.
5/17	12436	8.9	44	16	14	1/4	9.0	2	5.0	0	95.0	0.25	12.5	9.8	0.50	1.80	15000	20	Tr	Lost 402 B/24 hrs.
5/18	12568	8.8	42	15	12	1/3	8.8	2	4.0	0	96.0	0.25	12.5	10.0	0.80	1.80	13000	20	0	Lost 318 B/24 hrs.
5/19	12746	8.8	41	15	11	1/2	8.8	2	4.0	0	96.0	0.25	12.5	9.5	0.60	1.20	13500	160	0	Lost 739 B/24 hrs.
5/20	12803	8.8	40	15	10	1/2	9.0	2	4.0	0	96.0	0.25	13.0	9.5	0.40	1.00	13000	160	0	Lost 575 B/24 hrs.
5/21	12945	8.9	40	15	10	1/2	8.6	2	5.0	0	95.0	0.25	13.0	9.5	0.50	1.20	14000	140	1-2	Lost 268 B/24 hrs.
5/22	12945	8.9	42	17	10	1/3	8.4	2	5.0	0	95.0	0.25	13.0	9.5	0.40	1.20	14000	200	2-3	Lost 268 B/24 hrs.

The Anschutz Corporation
A L & L #14-33

MUD RECORD

Date	Depth	Wt	Vis	PV	YP	Gels	FL	Cake	Sol	Oil	H2O	Sd	Me B	pH	Pf	Mf	Cl	Ca	LCM	Remarks
5/23	12945	8.9	44	18	16	1/3	8.6	2	5.0	0	95.0	0.25	14.0	9.8	0.55	1.30	13000	160	4-5	Lost 40 B/24 hrs.
5/24	12945	8.9	47	19	14	1/2	8.8	2	4.5	0	95.5	Tr	12.5	9.5	0.30	1.20	15000	188	2-4	Lost 321 B/24 hrs.
5/25	12945	8.9	46	18	12	1/2	9.0	2	4.5	0	95.5	Tr	12.5	9.0	0.20	1.00	15000	188	2-4	Lost 85 B/24 hrs.
5/26	12945	8.9	42	14	12	1/1	9.0	2	4.5	0	95.5	Tr	11.3	9.5	0.30	1.50	16000	120	10-25	Lost 138 B/24 hrs.
5/27	12945	8.9	42	13	13	1/1	9.0	2	4.5	0	95.5	Tr	11.3	9.5	0.30	1.30	16000	180	10-25	Lost 0 B/24 hrs.
5/28	12945	8.9	44	18	16	1/1	8.8	2	4.5	0	95.5	Tr	11.3	9.0	0.20	2.00	15000	220	1-2	Lost 150 B/24 hrs.

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
Water Content (H2O)	% by volume
Sand (Sd)	% by volume
Methelyne Blue (Me B)	lbs/bbl equivalent
pH	
Pf	ml of N-50 H2SO4/ml
Mf	ml of N-50 H2SO4/ml
Chlorides (Cl)	ppm
Calcium (Ca)	ppm
Lost Circulation Material (LCM)	% by volume

The Anschutz Corporation
A L & L #14-33

BIT RECORD

Run	Bit	Size	Make	Type	Depth Out	Ft Cut	Hrs	Ft/Hr	z. 32nds			WOB	RPM Table	Motor	Pump Press	Pump SPM	Cutting Struc. I	O	Dull	Loc	Brng Seals	Gage 16ths	Other Char	Reason Pulled
1	1	26 ----	Smith	CD	86	16	16.0	1.0	O	O	O	3	50/65	N/A			Locked							
2	2	26 ----	Hughes	R1	683	597	49.5	12.1	20	20	20	10/45	55/60	N/A	500/800	65+65	8				8	I		
3	3	26 ----	Smith	DSJ	1258	575	15.0	46.5	20	20	20	30/60	35/80	N/A	900/1200	65+65	8				5	I		
4	4	26 ----	Hughes	3AJ	1500	242	22.5	10.8	20	20	20	35/40	80/85	N/A	1300	65+65	4				5	I		TD
5	5	17 1/2	Hughes	GTX-01	2360	860	79.5	10.8	18	18	18	25/50	70/80	N/A	1400/1800	65+65	8				4	I		PR
6	6	17 1/2	Reed	MS43AM	3099	739	97.5	7.6	8-20-20			35/50	65/85	N/A	2200/1800	74+74	6				6	8		PR
7	7	17 1/2	Security	SS-84	3499	400	78.5	5.1	8-18-22			38/55	80/85	N/A	1800/1850	74+74	6				4	4		PR
8	8	17 1/2	Hughes	GTX-03	4363	864	136.0	6.4	8-20-20			38/45	85	N/A	2000/1900	76+76	5				5	1		TW
9	9	17 1/2	Reed	EMS41-H	4632	269	59.0	4.6	0-24-24			38/44	75/80	N/A	2000/1900	72+72	8				2	1		PR
10	7rr	17 1/2	Security	SS-84	4670	38	11.5	3.3	4-28-28			45/65	75/80	N/A	1800	66+66	No Grade							PR/TW
11	10	17 1/2	Hughes	GTX-09	4897	227	83.0	2.7	4-24-24			45/35	75/85	N/A	1900	72+72	7				4	1		PR
12	11	17 1/2	Smith	2JS	5300	403	106.0	3.8	28	28	28	50/65	75/85	N/A	1800/2100	75+75	6				4	8		PR
13	12	17 1/2	Security	SS-82	5496	196	62.5	3.1	28	28	28	55/66	65/80	N/A	2000	2	2	3			E	1		PR
14	13	17 1/2	Security	S84	6015	519	152.0	3.4	8-28-28			45/65	70/85	N/A	1900/2300	67+67	2	2			E	I		TD
15	14	12 1/4	Hughes	ATJ11 RR	6019	4	0.5	8.0	16	16	O			N/A			No Grade							
16	15	8 3/4	Hughes	GT-09	7860	1841	218.0	8.4	13	13	13	30/10	65/88	N/A	1900/2400	81/88	8	8	BT	A	E	4	LT	TW
17	16	8 3/4	Smith	F3H	8101	241	35.0	6.9	14	14	14	10/25	70/80	N/A	1800/2125	80/86	8	8	WT	A	E	4	RG	PR
18	17	8 3/4	Smith	F47H	8285	184	27.5	6.7	14	14	14	20	65	N/A	2000	85	4	7	WT	A	E	2	RG	TQ
19	18	8 3/4	Hughes	ATJ44C	8638	353	53.5	6.6	14	14	14	20/25	65	N/A	2050/2100	85	6				E	4		PR
20	19	8 3/4	Security	ERA22	9205	567	109.0	5.2	14	14	14	20/30	65/77	N/A	2100/2200	85/80	6	7	WT	A	F	4	NO	PR
21	20	8 3/4	Smith	F2H	9384	179	45.5	3.9	15	15	15	22/28	75/78	N/A	2200	85	4	4	WT	A	E	I	TR	PR
22	21	8 3/4	Hughes	ATJ33	9798	414	73.5	5.6	15	15	15	20/22	70/80	N/A	2300/2600	85	3	3	BT	G	E	I	WT	PP
23	22	8 3/4	Reed	HP61A	10064	266	34.5	7.7	15	20	20	20/26	55	100	2200	80	3	3	BT	M	F	4	NO	DTF
24	23	8 3/4	Security	ERA33	10290	226	32.0	7.1	18	18	18	26	55	100	2300/2400	80	3	3	PB	CI	F	2	NO	PR
25	24	8 3/4	Hughes	ATJ33	10348	58	9.0	6.4	20	22	22	26	55	100	2350	80	No Grade							
26	25	8 3/4	Smith	F3H	10586	238	36.0	6.6	22	22	22	26	55	100	2000	80	8	4	BT	M	E	1	WT	DEV
27	26	8 3/4	Smith	F4	11038	452	47.0	9.6	22	22	22	22/26	40/55	100	2100/2400	80/82	3	3	WT	A	E	1	FC	DEV
28	27	8 3/4	Smith	F4	11463	425	46.5	9.1	20	22	22	24/26	40	100	2400/2500	80	No Grade							

The Anschutz Corporation
A L & L #14-33

BIT RECORD

Run	Bit	Size	Make	Type	Depth	Ft	Hrs	Ft/Hr	z. 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
29	28	8 3/4	Hughes	ATJ44	11555	92	22.0	4.2	O	O	O	26	35/40	100	2600	80	No Grade							
30	29	8 3/4	Reed	HP61	11933	378	64.0	5.9	O	O	O	26	35	100	2600	80	No Grade							
31	30	8 3/4	Reed	HP61A	12206	273	44.5	6.1	O	O	O	26	35/40	100	2500	80	No Grade							
32	31	8 3/4	Smith	F5	12354	148	21.0	7.0	O	O	O	26	35	100	2200	80	4	5	FC	A	E	3	SD	DTF
33	32	8 3/4	Smith	F5	12436	82	18.0	4.6	O	O	O	24/28	50	100	1950	80	2	2	BT	G	E	I	NO	PR
34	28rr	8 3/4	Hughes	ATJ44	12746	310	36.0	8.6	O	O	O	24/26	50	100	2000/1900	80	5	5	FC	A	E	I	BT	PR
35	32rr	8 3/4	Hughes	F5	12945	199	32.0	6.2	O	O	O	22/26	55/60	100	1950	85	7	7	FC	A	E	12	BT	TQ
36	26rr	8 3/4	Smith	F4	12945	0	0.0	0.0	22	O	O	2/5	65	N/A	1100/1600	65/80	3	3	WT	A	E	1	NO	TD

The Anschutz Corporation
A L & L #14-33

DEVIATIONS

Depth	Degree	Direction
241	1/4	
460	1 1/4	
547	1/2	
704	2 ----	
800	1 3/4	
928	1 1/2	
1054	2 3/4	
1118	3 3/4	
1149	3 1/2	
1180	3 1/4	
1212	2 3/4	
1245	2 3/4	
1307	2 1/2	
1339	2 1/4	
1402	2 ----	
1500	1 3/4	
1592	1 1/4	
1687	3/4	
1781	1/4	
1875	1/2	
1971	3/4	
2096	1/2	
2269	1/2	
2379	1 ----	
2473	1 1/2	
2537	1 3/4	
2632	1 3/4	
2663	1 3/4	
2757	1 1/4	
2820	1 3/4	
2884	1 3/4	
2948	1 3/4	
3011	1 1/2	
3074	1 3/4	
3137	1 1/2	
3200	2 ----	
3261	2 ----	
3326	2 ----	
3389	2 ----	
3451	1 3/4	
3546	1 3/4	
3610	1 3/4	
3672	2 ----	
3745	1 3/4	
3800	2 ----	
3863	1 3/4	
3958	1 1/2	
4020	1 1/2	
4083	1 1/2	
4146	1 3/4	
4210	1 3/4	
4305	2 1/4	
4373	1 3/4	
4468	2 ----	
4563	2 3/4	
4594	2 1/2	
4688	3 ----	
4718	2 3/4	
4749	2 1/2	
4780	2 1/2	
4810	2 3/4	
4841	2 3/4	
4871	2 3/4	
4945	2 3/4	
5008	2 3/4	
5071	3 ----	
5102	2 3/4	
5163	3 ----	
5194	3 ----	
5257	3 ----	
5322	3 ----	
5385	3 1/4	
5447	3 1/2	
5493	3 1/2	
Suspended surveys whiles drilling salt.		
5863	1 1/4	
6057	1 3/4	Due E
6120	2 1/4	N89E
6182	3 ----	N86E
6248	4 ----	S88E
6307	4 ----	N88E
6369	4 1/4	N88E
6432	4 1/4	N85E
6493	4 1/2	N89E
6555	5 ----	N89E
6617	5 ----	N89E
6679	5 1/4	S86E
6740	5 1/4	S86E
6803	5 1/2	S86E
6866	5 1/2	S86E
6928	5 1/2	S81E
6989	5 3/4	S80E
7051	5 3/4	S81E
7111	5 3/4	S81E
7143	6 ----	S81E
7236	6 ----	(Totco)----

DEVIATIONS

Depth	Degree	Direction
7297	6 ----	(Totco)----
7390	7 ----	S79E
7452	7 ----	S79E
7514	7 1/4	S80E
7575	7 1/4	S80E
7637	7 1/4	S81E
7761	7 3/4	S81E
7854	7 3/4	S81E
7915	7 3/4	S81E
7978	8 ----	S84E
8040	8 ----	S84E
8135	8 ----	S82E
8227	8 ----	S84E
8319	8 ----	S84E
8411	8 ----	S86E
8505	8 1/4	S86E
8600	9 ----	S87E
8660	9 1/4	S86E
8723	9 ----	S88E
8786	9 ----	S88E
8850	9 1/4	Due E
8912	9 3/4	Due E
9007	9 3/4	N89E
9071	10 1/4	N89E
9134	10 3/4	N87E
9228	10 3/4	N87E
9322	11 ----	N85E
9417	11 1/4	N85E
9480	11 1/4	N84E
9543	11 1/4	N84E
9606	11 ----	N82E
9700	11 3/4	N81E
Start directional work & MWD surveys.		
9770	12.5	79.7
9801	12.2	72.6
9833	12.3	72.5
9865	12.1	72.0
9896	10.4	72.4
9928	9.8	73.9
9960	9.3	74.2
9991	9.4	73.3
10023	9.5	74.1
10055	9.2	75.4
10086	8.4	75.5
10118	7.7	72.7
10150	7.3	72.9
10181	6.7	72.1
10212	6.0	65.6
10244	5.2	61.4
10275	4.7	57.2
10307	4.1	57.2
10339	3.7	53.0
10368	3.6	49.5
10400	3.3	47.4
10431	3.3	43.0
10463	2.7	37.5
10495	2.3	36.6
10526	2.0	31.3
10557	2.3	35.2
10588	2.4	49.3
10620	2.5	53.0
10650	2.1	62.8
10681	1.7	80.7
10713	1.1	110.6
10745	0.6	191.9
10776	0.9	234.4
10807	1.9	264.6
10839	3.1	272.3
10871	4.1	270.8
10902	5.0	271.1
10934	5.6	274.2
10965	6.1	275.3
10997	6.4	276.2
11029	7.2	277.1
11060	8.1	274.1
11092	9.2	270.3
11123	9.8	266.7
11155	9.8	263.9
11185	10.9	263.2
11217	11.9	263.2
11249	12.9	264.9
11279	13.6	264.4
11310	14.9	264.9
11342	15.6	263.2
11374	16.2	262.5
11405	16.7	263.2
11437	17.6	265.6
11468	18.2	266.6
11500	19.1	267.7
11532	20.2	267.3
11562	20.7	266.3
11594	21.7	267.7
11625	22.3	266.9
11657	22.9	269.4
11689	23.2	268.7
11720	24.2	270.1

DEVIATIONS

Depth	Degree	Direction	Depth	Degree	Direction
11752	24.9	270.1			
11783	24.9	269.9			
11815	25.8	268.8			
11847	26.9	271.1			
11878	27.2	269.0			
11909	27.3	267.9			
11941	27.8	267.8			
11972	27.8	266.0			
12004	27.4	266.0			
12035	27.1	264.6			
12067	26.6	264.1			
12098	26.3	262.5			
12130	26.5	263.8			
12162	26.6	263.6			
12201	27.0	262.2			
12232	27.7	263.2			
12264	28.0	262.9			
12295	27.7	262.3			
12326	28.1	260.9			
12358	27.4	260.8			
12389	26.9	261.1			
12421	27.1	264.2			
12453	26.7	263.1			
12484	26.5	264.5			
12516	26.5	263.8			
12547	26.6	264.8			
12579	26.6	261.8			
12610	26.3	263.2			
12641	26.4	262.5			
12673	26.9	263.5			
12704	26.8	261.5			

WELL SURVEY

M.D. ft	INC. deg	DIR. deg	C.L. ft	T.V.D. ft	N+/S- ft	E+/W- ft	D.L.S. deg/100ft	FSL ft	FEL ft
ANADRILL MWD SURVEYS TIED TO SCIENTIFIC DRILLING GYRO SURVEY									
6000	0.99	154.6		5996.7	-31.7	83.5		560.3	664.5
6368	4.20	85.3	368	6364.2	-33.4	98.3	1.1	558.6	649.7
6653	5.20	90.2	285	6648.2	-32.6	121.6	0.4	559.4	626.4
6938	5.40	94.4	285	6932.0	-33.7	147.9	0.2	558.3	600.1
7223	6.50	96.8	285	7215.5	-36.6	177.3	0.4	555.4	570.7
7508	7.50	97.9	285	7498.3	-41.1	211.7	0.4	550.9	536.3
7793	7.60	96.9	285	7780.9	-45.9	248.9	0.1	546.1	499.1
8078	7.90	97.1	285	8063.3	-50.6	287.0	0.1	541.4	461.0
8363	8.50	92.9	285	8345.3	-54.1	327.5	0.3	537.9	420.5
8648	8.90	93.0	285	8627.1	-56.3	370.5	0.1	535.7	377.5
8933	9.70	89.8	285	8908.3	-57.4	416.6	0.3	534.6	331.4
9217	10.70	86.7	284	9187.8	-55.8	466.8	0.4	536.2	281.2
9502	11.30	83.2	285	9467.6	-50.9	520.9	0.3	541.1	227.1
9757	12.40	79.8	255	9717.1	-43.1	572.7	0.5	548.9	175.3
9770	12.50	79.7	268	9730.0	-42.6	575.5	0.5	549.4	172.5
9801	12.20	72.6	31	9760.3	-41.1	581.9	5.0	550.9	166.1
9833	12.30	72.5	32	9791.6	-39.0	588.4	0.3	553.0	159.6
9865	12.10	72.0	32	9822.9	-37.0	594.8	0.7	555.0	153.2
9896	10.40	72.4	31	9853.3	-35.1	600.6	5.5	556.9	147.4
9928	9.80	73.9	32	9884.8	-33.5	605.9	2.0	558.5	142.1
9960	9.30	74.2	32	9916.3	-32.0	611.0	1.6	560.0	137.0
9991	9.40	73.3	31	9946.9	-30.6	615.9	0.6	561.4	132.1
10023	9.50	74.1	32	9978.5	-29.1	620.9	0.5	562.9	127.1
10055	9.20	75.4	32	10010.1	-27.8	625.9	1.1	564.2	122.1
10086	8.40	75.5	31	10040.7	-26.6	630.5	2.6	565.4	117.5
10118	7.70	72.7	32	10072.4	-25.4	634.8	2.5	566.6	113.2
10150	7.30	72.9	32	10104.1	-24.1	638.8	1.3	567.9	109.2
10181	6.70	72.1	31	10134.9	-23.0	642.4	2.0	569.0	105.6
10212	6.00	65.6	31	10165.7	-21.8	645.6	3.2	570.2	102.4
10244	5.20	61.4	32	10197.5	-20.4	648.4	2.8	571.6	99.6
10275	4.70	57.2	31	10228.4	-19.0	650.7	2.0	573.0	97.3
10307	4.10	57.2	32	10260.3	-17.7	652.8	1.9	574.3	95.2
10339	3.70	53.0	32	10292.2	-16.4	654.6	1.5	575.6	93.4
10368	3.60	49.5	29	10321.2	-15.3	656.0	0.8	576.7	92.0
10400	3.30	47.4	32	10353.1	-14.0	657.5	1.0	578.0	90.5

WELL SURVEY

M.D. ft	INC. deg	DIR. deg	C.L. ft	T.V.D. ft	N+/S- ft	E+/W- ft	D.L.S. deg/100ft	FSL ft	FEL ft
10431	3.30	43.0	31	10384.1	-12.8	658.7	0.8	579.2	89.3
10463	2.70	37.5	32	10416.0	-11.5	659.8	2.1	580.5	88.2
10495	2.30	36.6	32	10448.0	-10.4	660.7	1.3	581.6	87.3
10526	2.00	31.3	31	10479.0	-9.4	661.3	1.2	582.6	86.7
10557	2.30	35.2	31	10509.9	-8.4	661.9	1.1	583.6	86.1
10588	2.40	49.3	31	10540.9	-7.5	662.8	1.9	584.5	85.2
10620	2.50	53.0	32	10572.9	-6.7	663.9	0.6	585.3	84.1
10650	2.10	62.8	30	10602.9	-6.0	664.9	1.9	586.0	83.1
10681	1.70	80.7	31	10633.9	-5.7	665.8	2.3	586.3	82.2
10713	1.10	110.6	32	10665.8	-5.7	666.6	2.9	586.3	81.4
10745	0.60	191.9	32	10697.8	-6.0	666.8	3.7	586.0	81.2
10776	0.90	234.4	31	10728.8	-6.3	666.6	2.0	585.7	81.4
10807	1.90	264.6	31	10759.8	-6.5	665.9	3.9	585.5	82.1
10839	3.10	272.3	32	10791.8	-6.5	664.5	3.9	585.5	83.5
10871	4.10	270.8	32	10823.7	-6.4	662.5	3.1	585.6	85.5
10902	5.00	271.1	31	10854.6	-6.4	660.0	2.9	585.6	88.0
10934	5.60	274.2	32	10886.5	-6.3	657.1	2.1	585.7	90.9
10965	6.10	275.3	31	10917.3	-6.0	653.9	1.7	586.0	94.1
10997	6.40	276.2	32	10949.1	-5.6	650.5	1.0	586.4	97.5
11029	7.20	277.1	32	10980.9	-5.2	646.7	2.5	586.8	101.3
11060	8.10	274.1	31	11011.6	-4.8	642.6	3.2	587.2	105.4
11092	9.20	270.3	32	11043.3	-4.6	637.8	3.9	587.4	110.2
11123	9.80	266.7	31	11073.8	-4.8	632.7	2.7	587.2	115.3
11155	9.80	263.9	32	11105.4	-5.2	627.3	1.5	586.8	120.7
11185	10.90	263.2	30	11134.9	-5.8	621.9	3.7	586.2	126.1
11217	11.90	263.2	32	11166.3	-6.6	615.6	3.1	585.4	132.4
11249	12.90	264.9	32	11197.5	-7.3	608.8	3.3	584.7	139.2
11279	13.60	264.4	30	11226.7	-7.9	601.9	2.4	584.1	146.1
11310	14.90	264.9	31	11256.8	-8.6	594.3	4.2	583.4	153.7
11342	15.60	263.2	32	11287.6	-9.5	586.0	2.6	582.5	162.0
11374	16.20	262.5	32	11318.4	-10.6	577.3	2.0	581.4	170.7
11405	16.70	263.2	31	11348.1	-11.7	568.6	1.7	580.3	179.4
11437	17.60	265.6	32	11378.7	-12.6	559.2	3.6	579.4	188.8
11468	18.20	266.6	31	11408.2	-13.3	549.7	2.2	578.7	198.3
11500	19.10	267.7	32	11438.5	-13.8	539.5	3.0	578.2	208.5
11532	20.20	267.3	32	11468.7	-14.2	528.7	3.5	577.8	219.3
11562	20.70	266.3	30	11496.8	-14.8	518.2	2.0	577.2	229.8

WELL SURVEY

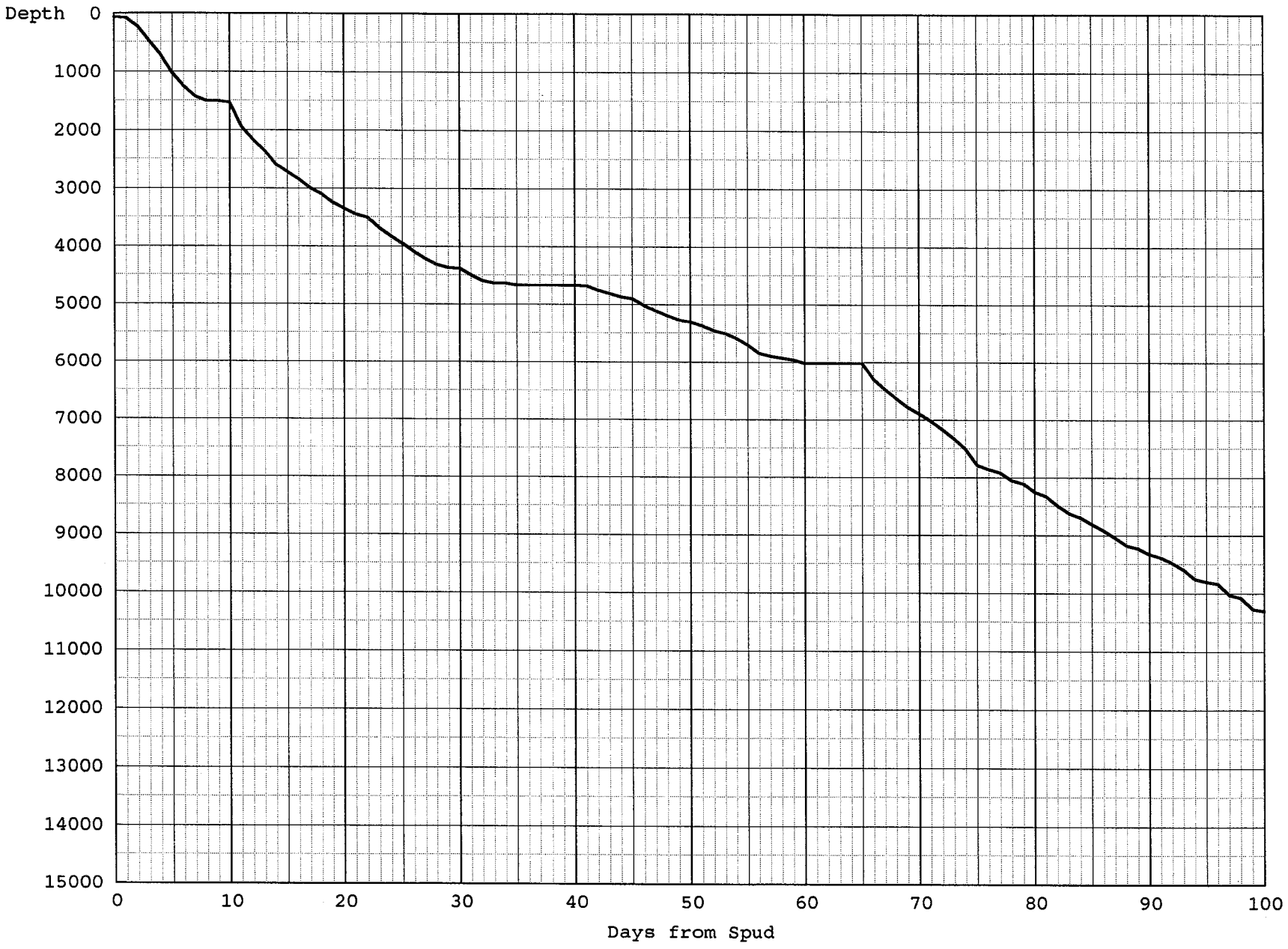
M.D. ft	INC. deg	DIR. deg	C.L. ft	T.V.D. ft	N+/S- ft	E+/W- ft	D.L.S. deg/100ft	FSL ft	FEL ft
11594	21.70	267.7	32	11526.6	-15.4	506.7	3.5	576.6	241.3
11625	22.30	266.9	31	11555.3	-16.0	495.1	2.2	576.0	252.9
11657	22.90	269.4	32	11584.9	-16.4	482.8	3.5	575.6	265.2
11689	23.20	268.7	32	11614.3	-16.6	470.3	1.3	575.4	277.7
11720	24.20	270.1	31	11642.7	-16.7	457.8	3.7	575.3	290.2
11752	24.90	270.1	32	11671.8	-16.7	444.5	2.2	575.3	303.5
11783	24.90	269.9	31	11699.9	-16.7	431.5	0.3	575.3	316.5
11815	25.80	268.8	32	11728.9	-16.8	417.8	3.2	575.2	330.2
11847	26.90	270.1	32	11757.5	-17.0	403.6	3.9	575.0	344.4
11878	27.20	269.0	31	11785.1	-17.1	389.5	1.9	574.9	358.5
11909	27.30	267.9	31	11812.7	-17.5	375.3	1.7	574.5	372.7
11941	27.80	267.8	32	11841.1	-18.0	360.5	1.6	574.0	387.5
11972	27.80	266.0	31	11868.5	-18.8	346.1	2.7	573.2	401.9
12004	27.40	266.0	32	11896.9	-19.8	331.3	1.2	572.2	416.7
12035	27.10	264.6	31	11924.4	-21.0	317.1	2.3	571.0	430.9
12067	26.60	264.1	32	11953.0	-22.4	302.7	1.7	569.6	445.3
12098	26.30	262.5	31	11980.7	-24.0	289.0	2.5	568.0	459.0
12130	26.50	263.8	32	12009.4	-25.7	274.9	1.9	566.3	473.1
12162	26.60	263.6	32	12038.0	-27.3	260.7	0.4	564.7	487.3
12201	27.00	262.2	39	12072.8	-29.5	243.2	1.9	562.5	504.8
12232	27.70	263.2	31	12100.4	-31.3	229.1	2.7	560.7	518.9
12264	28.00	262.9	32	12128.6	-33.1	214.3	1.0	558.9	533.7
12295	27.70	262.3	31	12156.1	-34.9	199.9	1.3	557.1	548.1
12326	28.10	260.9	31	12183.5	-37.1	185.6	2.5	554.9	562.4
12358	27.40	260.8	32	12211.8	-39.4	170.8	2.2	552.6	577.2
12389	26.90	261.1	31	12239.4	-41.7	156.9	1.7	550.3	591.1
12421	27.10	264.2	32	12267.9	-43.5	142.5	4.4	548.5	605.5
12453	26.70	263.1	32	12296.4	-45.1	128.1	2.0	546.9	619.9
12484	26.50	264.5	31	12324.1	-46.6	114.3	2.1	545.4	633.7
12516	26.50	263.8	32	12352.8	-48.1	100.1	1.0	543.9	647.9
12547	26.60	264.8	31	12380.5	-49.4	86.3	1.5	542.6	661.7
12579	26.60	261.8	32	12409.1	-51.1	72.1	4.2	540.9	675.9
12610	26.30	263.2	31	12436.9	-52.9	58.4	2.2	539.1	689.6
12641	26.40	262.5	31	12464.6	-54.6	44.7	1.1	537.4	703.3
12673	26.90	263.5	32	12493.2	-56.4	30.5	2.1	535.6	717.5
12704	26.80	261.5	31	12520.9	-58.2	16.6	2.9	533.8	731.4

WELL SURVEY

M.D. ft	INC. deg	DIR. deg	C.L. ft	T.V.D. ft	N+/S- ft	E+/W- ft	D.L.S. deg/100ft	FSL ft	FEL ft
SCHLUMBERGER WIRELINE SURVEYS TIED TO ANADRILL MWD SURVEYS AT 12704'									
12730	26.30	262.2	26	12544.2	-59.9	5.1	2.2	532.1	742.9
12760	26.20	262.8	30	12571.1	-61.6	-8.1	1.0	530.4	756.1
12790	25.86	262.4	30	12598.0	-63.3	-21.1	1.2	528.7	769.1
12820	25.75	262.2	30	12625.0	-65.0	-34.1	0.5	527.0	782.1
12850	25.26	261.4	30	12652.1	-66.9	-46.8	2.0	525.1	794.8
12880	25.64	260.8	30	12679.2	-68.9	-59.6	1.6	523.1	807.6
12910	25.86	259.7	30	12706.2	-71.1	-72.4	1.7	520.9	820.4
12930	26.08	258.6	20	12724.2	-72.7	-81.0	2.6	519.3	829.0
PROJECTION TO 12945' TOTAL DEPTH									
12945	26.02	259.2	15	12737.7	-74.0	-87.5	1.6	518.0	835.5

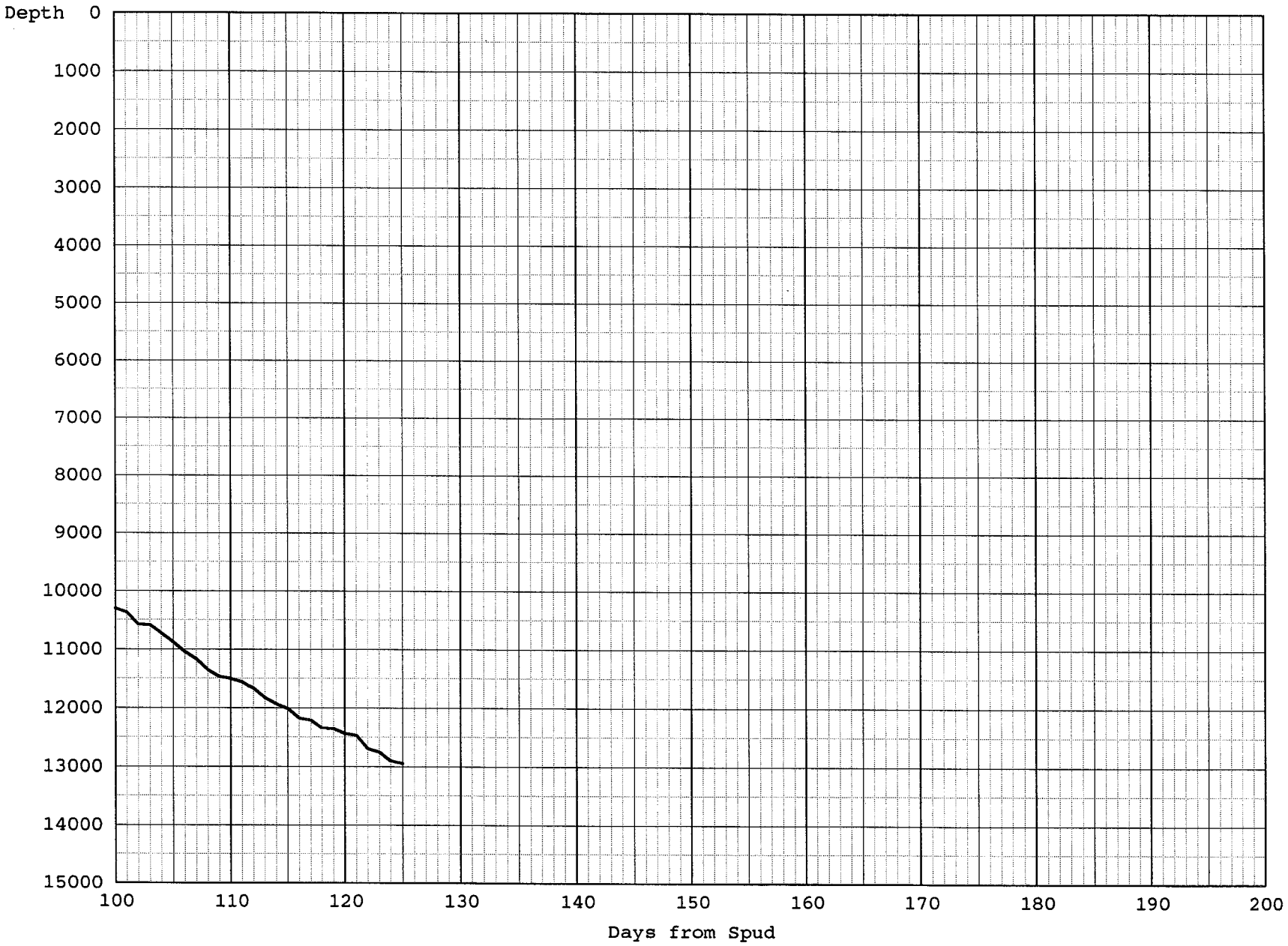
The Anschutz Corporation
A L & L #14-33

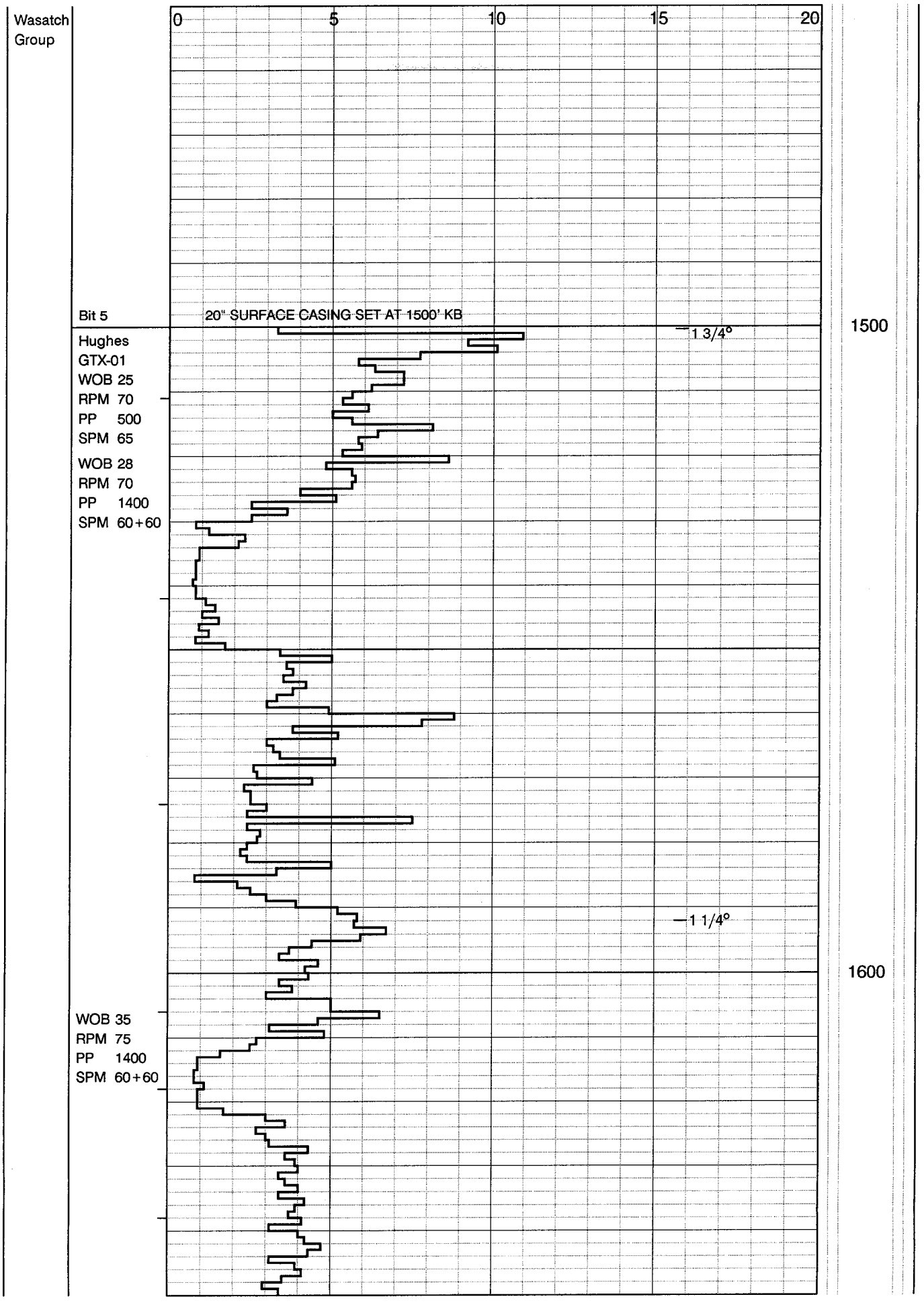
DRILLING CURVE

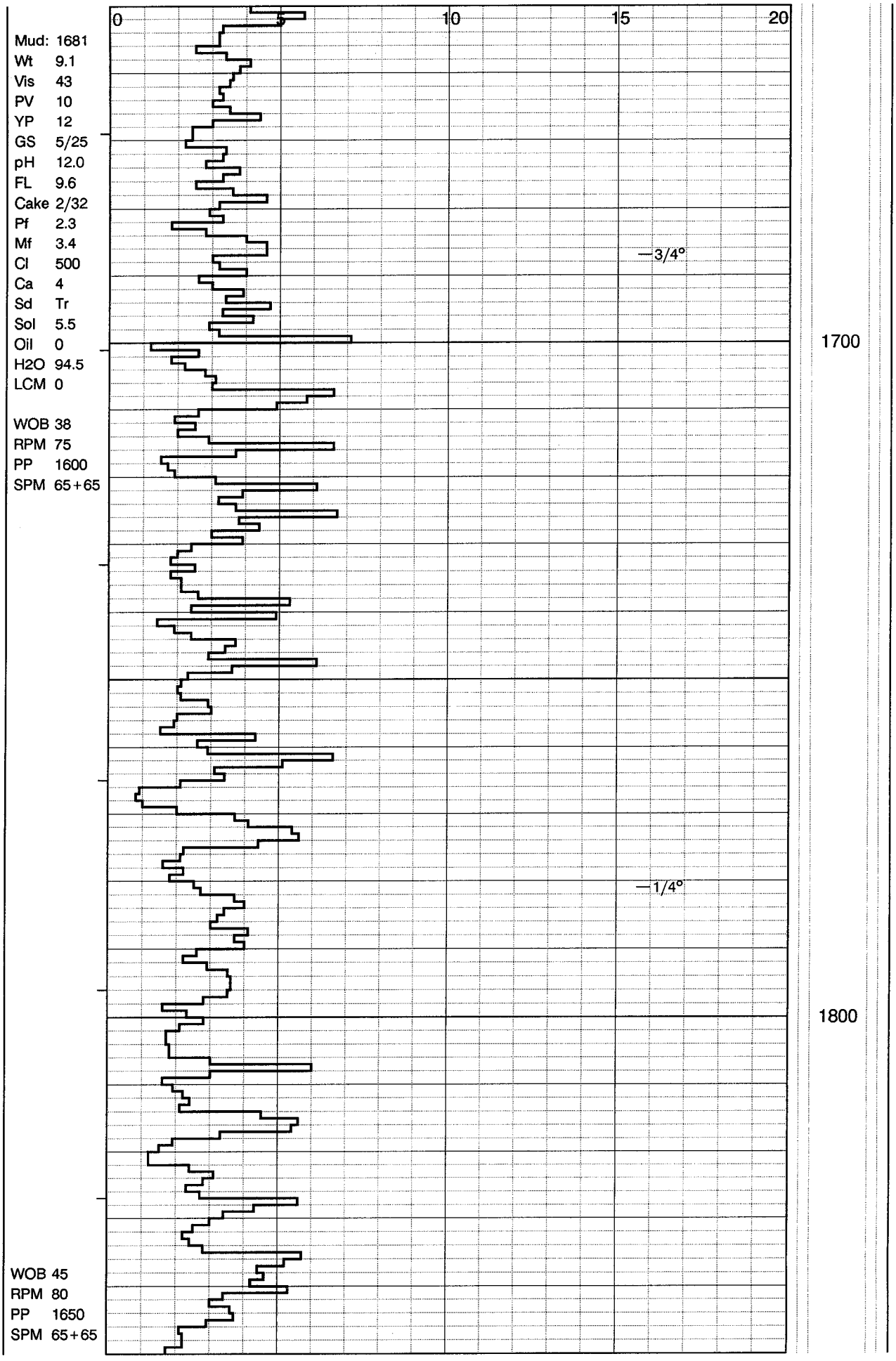


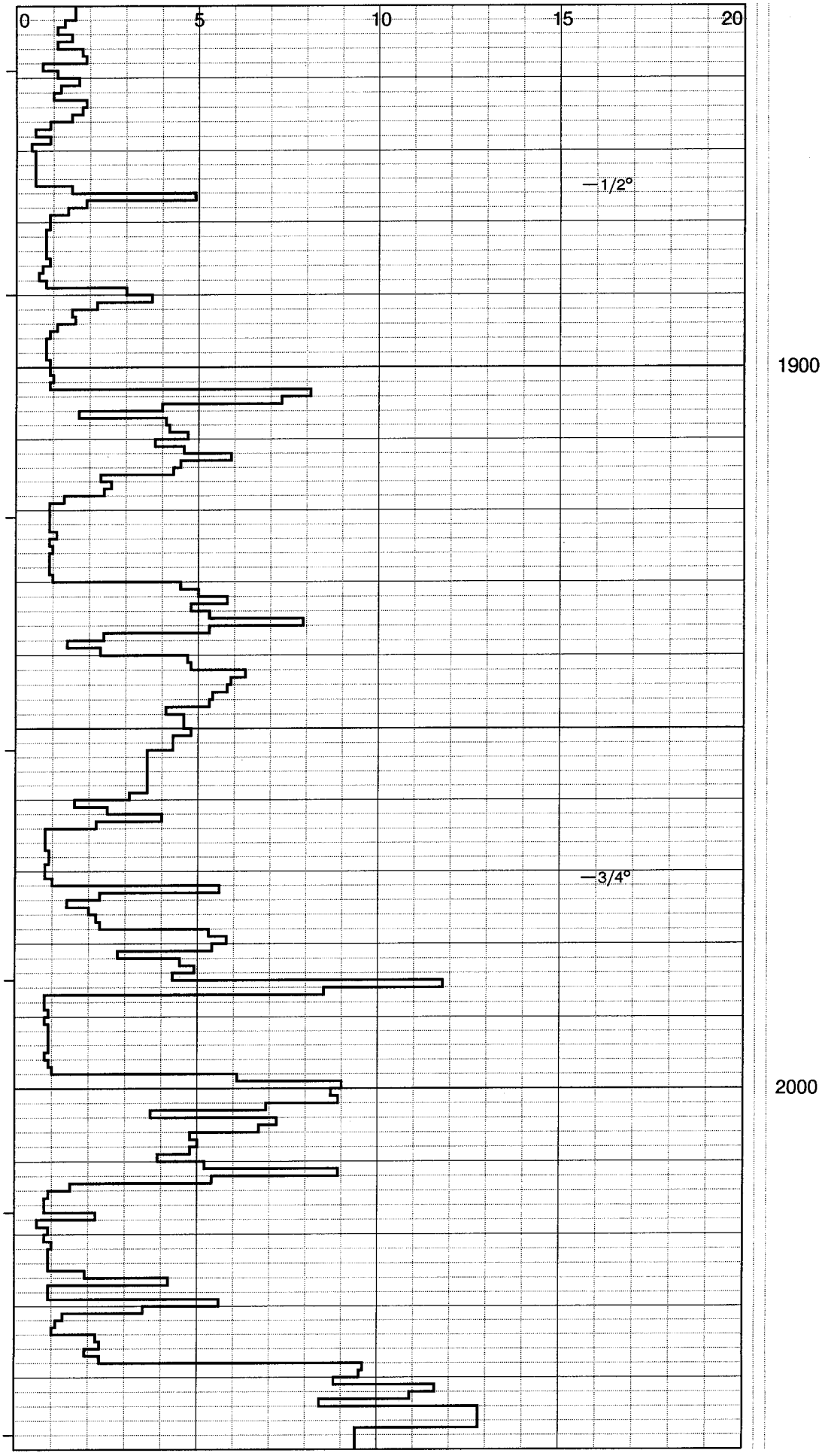
The Anschutz Corporation
A L & L #14-33

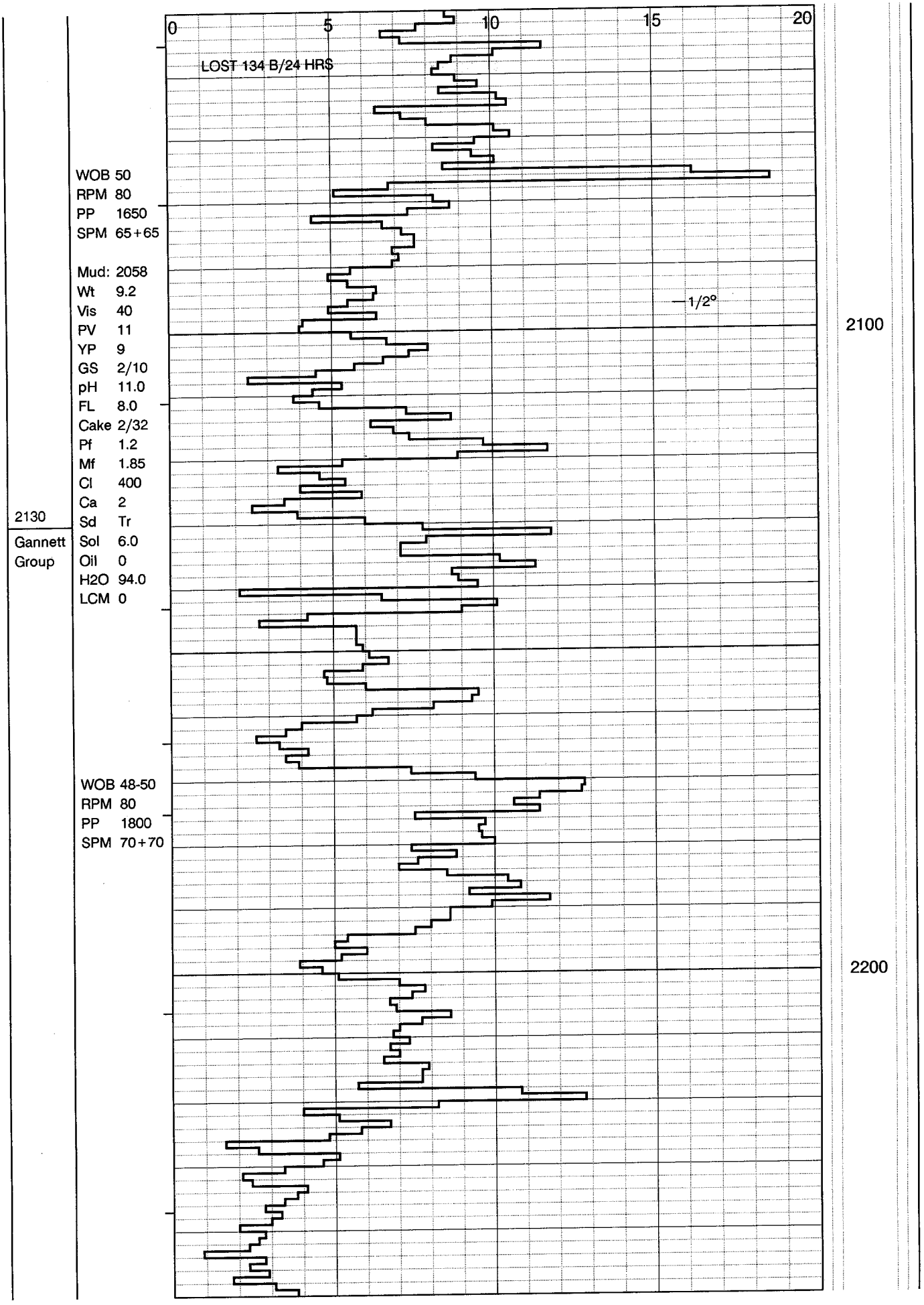
DRILLING CURVE

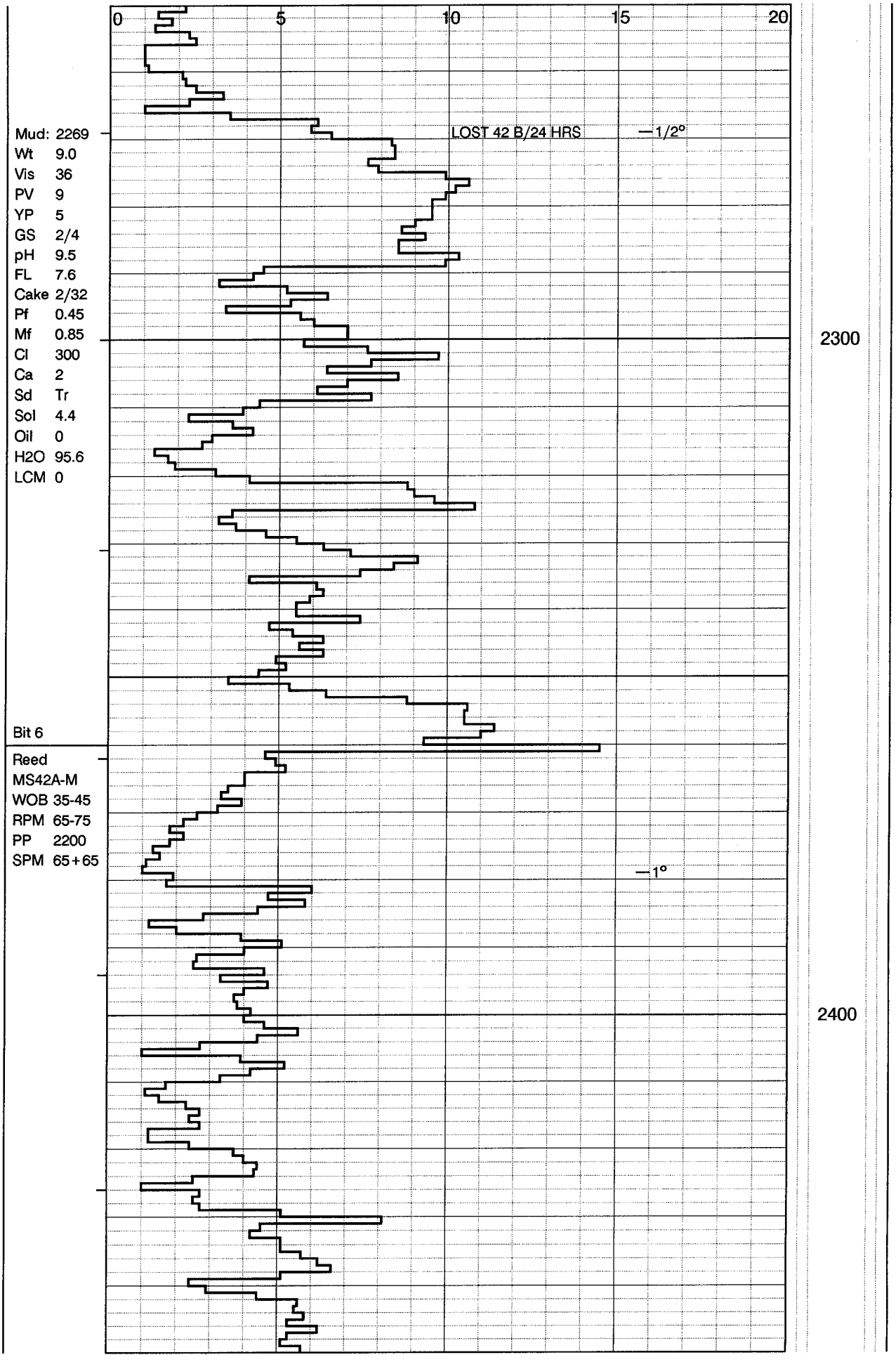


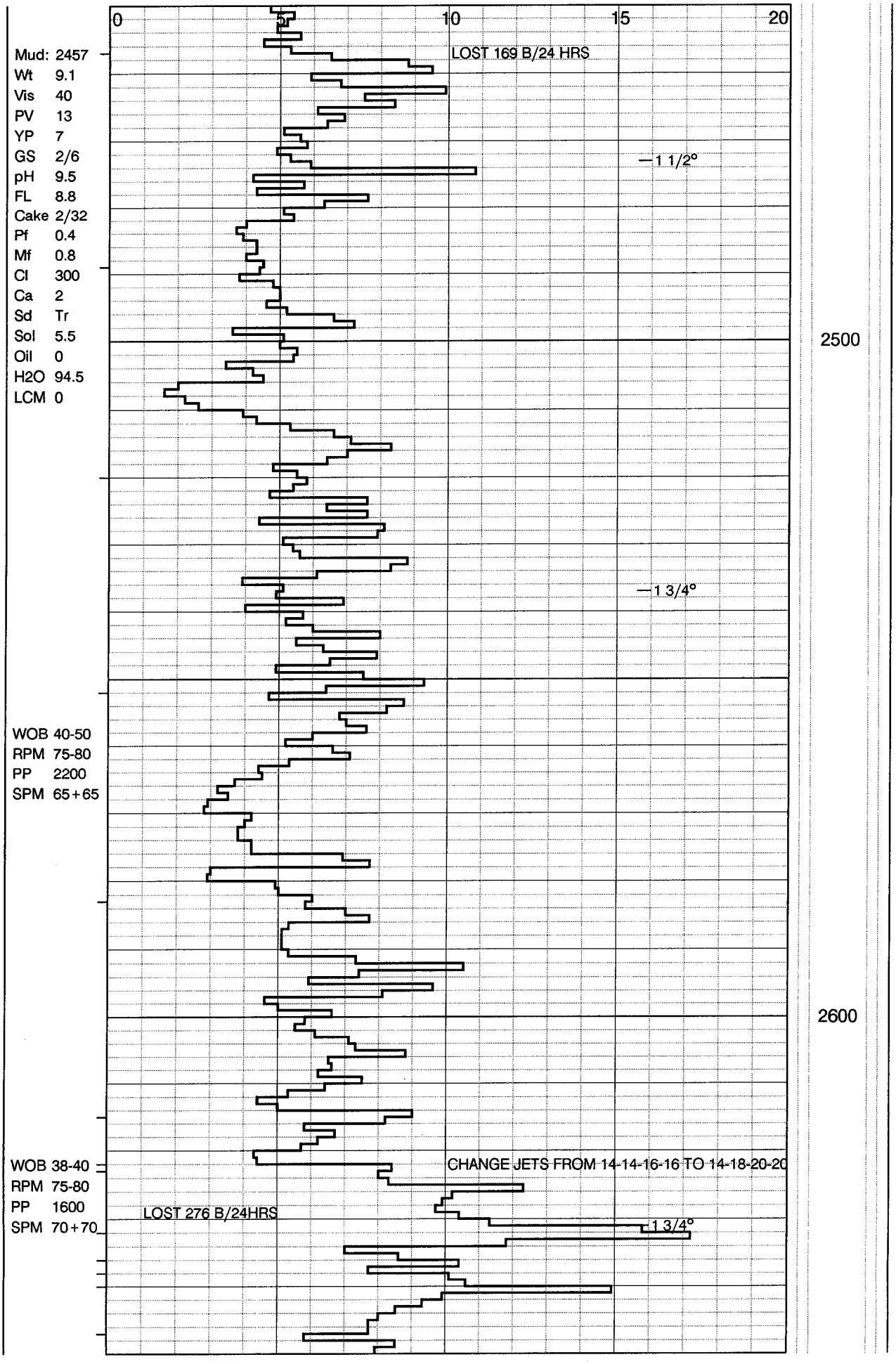

Wasatch Group
0
5
10
15
20
Bit 5
20" SURFACE CASING SET AT 1500' KB
1500
1 3/4°
Hughes
GTX-01
WOB 25
RPM 70
PP 500
SPM 65
WOB 28
RPM 70
PP 1400
SPM 60+60
1 1/4°
1600
WOB 35
RPM 75
PP 1400
SPM 60+60

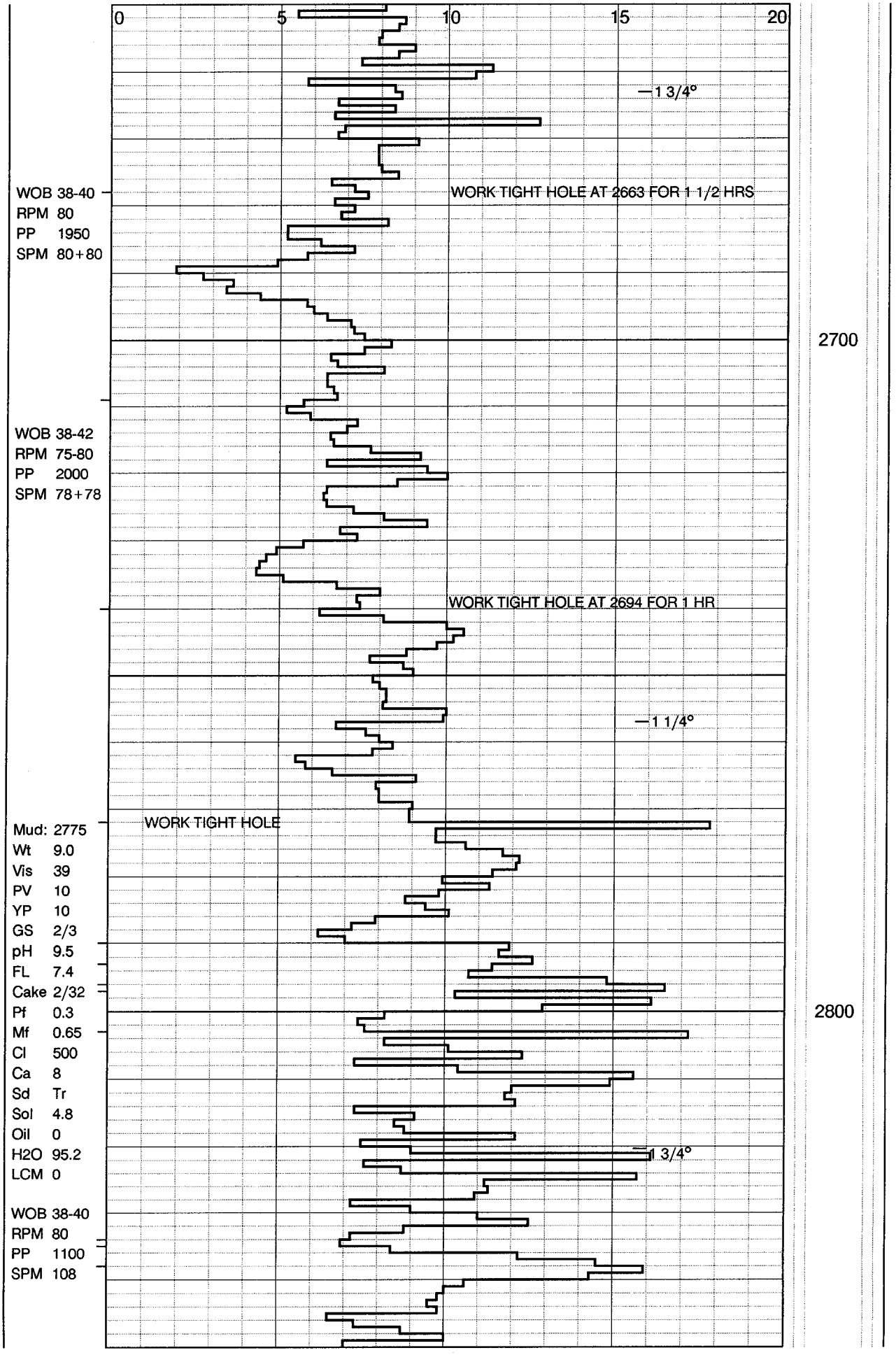

0
5
10
15
20
Mud: 1681
Wt 9.1
Vis 43
PV 10
YP 12
GS 5/25
pH 12.0
FL 9.6
Cake 2/32
Pf 2.3
Mf 3.4
Cl 500
Ca 4
Sd Tr
Sol 5.5
Oil 0
H2O 94.5
LCM 0
WOB 38
RPM 75
PP 1600
SPM 65+65
—3/4°
1700
—1/4°
1800
WOB 45
RPM 80
PP 1650
SPM 65+65

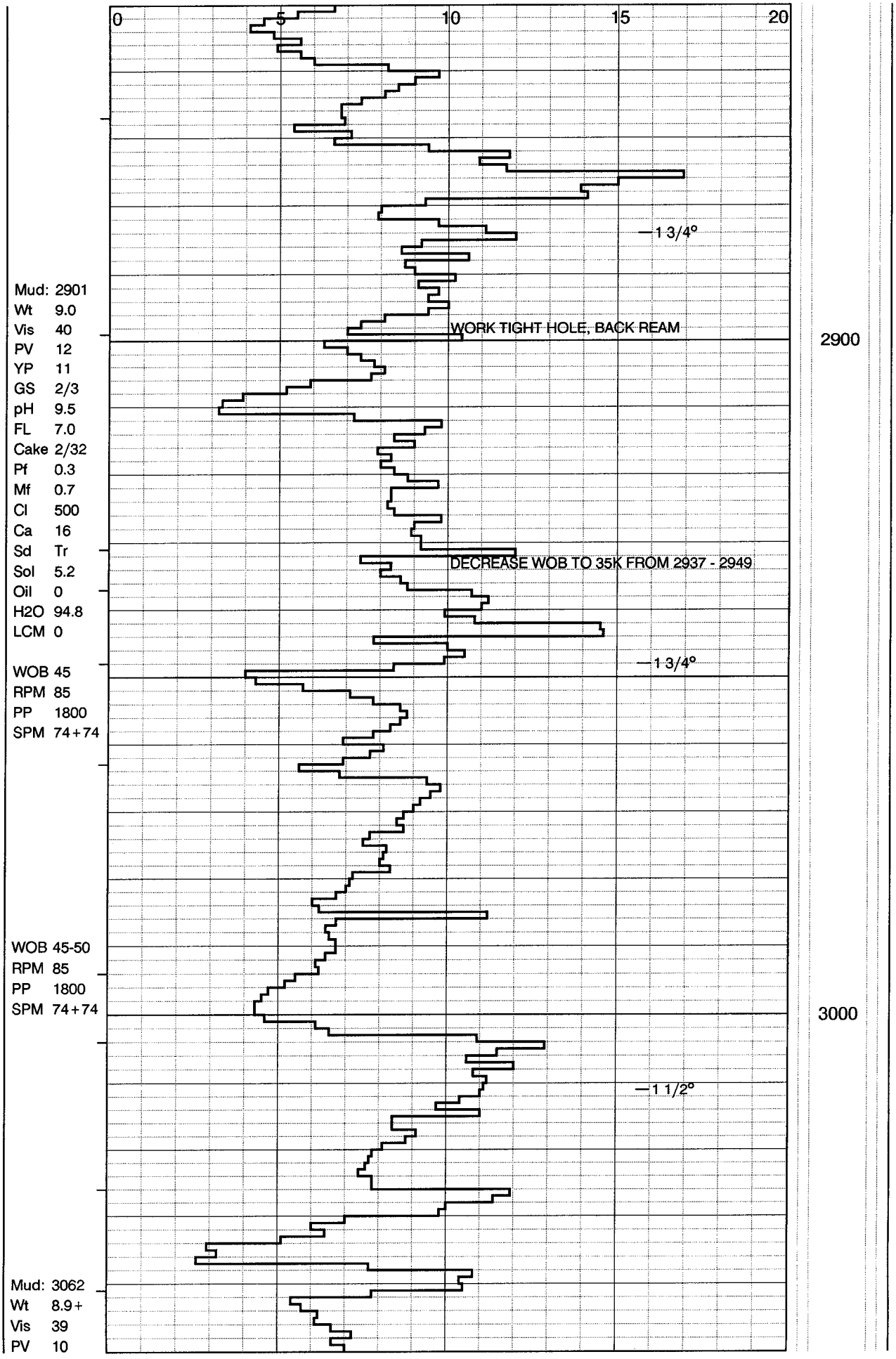

0
5
10
15
20
—1/2°
—3/4°
1900
2000

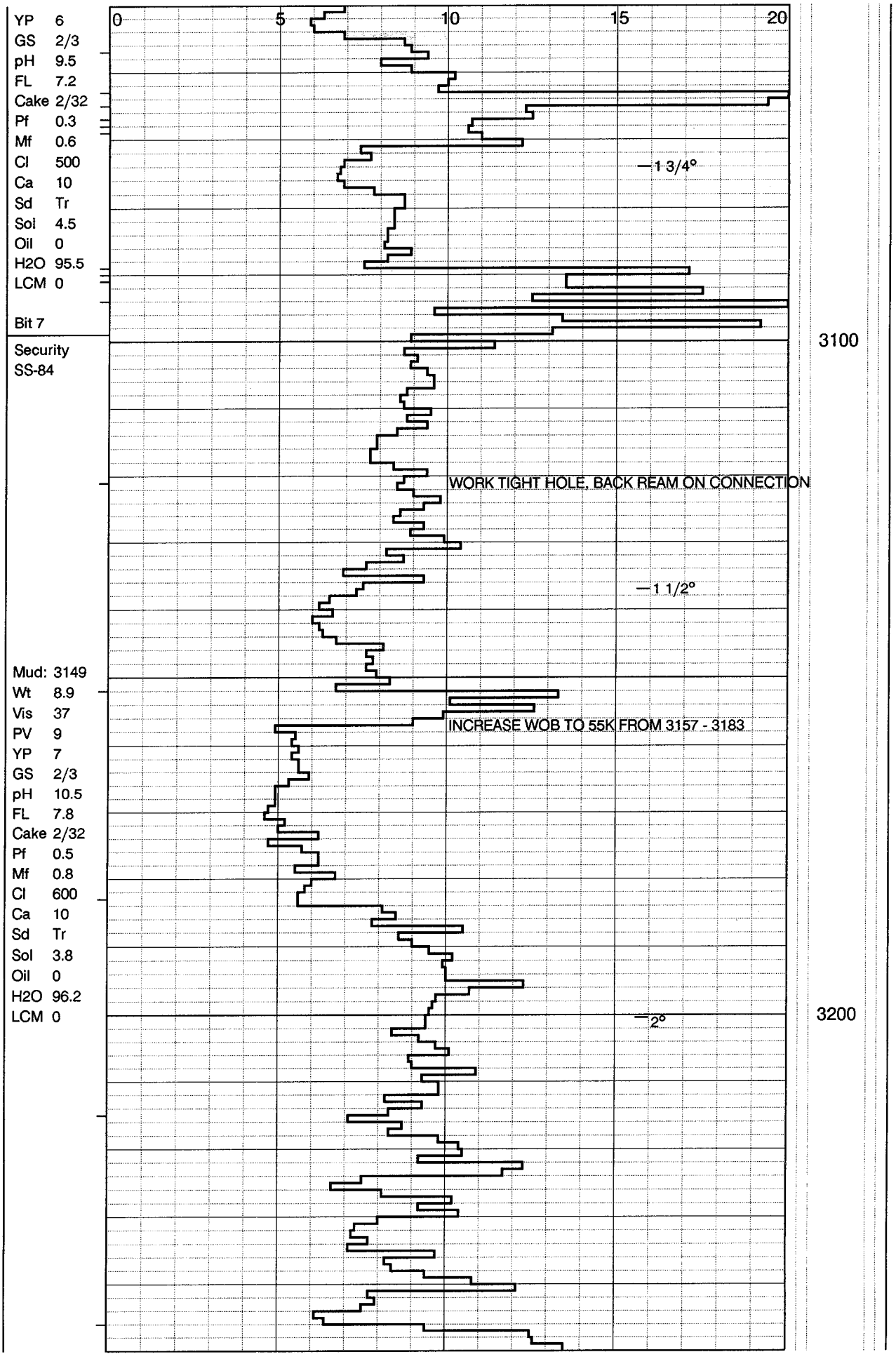

0
5
10
15
20
LOST 134 B/24 HRS
WOB 50
RPM 80
PP 1650
SPM 65+65
Mud: 2058
Wt 9.2
Vis 40
PV 11
YP 9
GS 2/10
pH 11.0
FL 8.0
Cake 2/32
Pf 1.2
Mf 1.85
Cl 400
Ca 2
Sd Tr
Sol 6.0
Oil 0
H2O 94.0
LCM 0
1/2°
2100
2130
Gannett
Group
WOB 48-50
RPM 80
PP 1800
SPM 70+70
2200

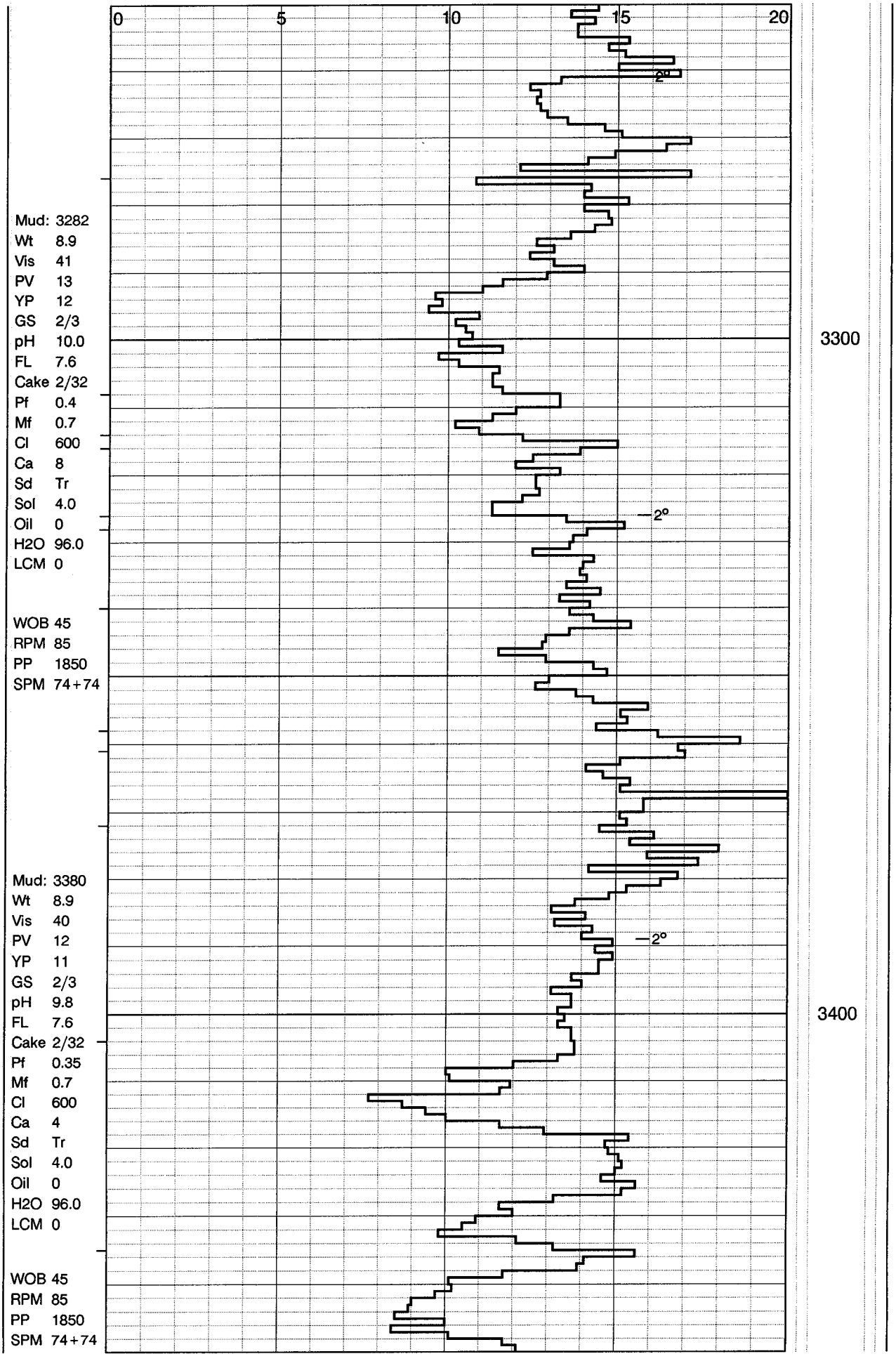

0
5
10
15
20
Mud: 2269
Wt 9.0
Vis 36
PV 9
YP 5
GS 2/4
pH 9.5
FL 7.6
Cake 2/32
Pf 0.45
Mf 0.85
Cl 300
Ca 2
Sd Tr
Sol 4.4
Oil 0
H2O 95.6
LCM 0
LOST 42 B/24 HRS
—1/2°
2300
Bit 6
Reed
MS42A-M
WOB 35-45
RPM 65-75
PP 2200
SPM 65+65
—1°
2400

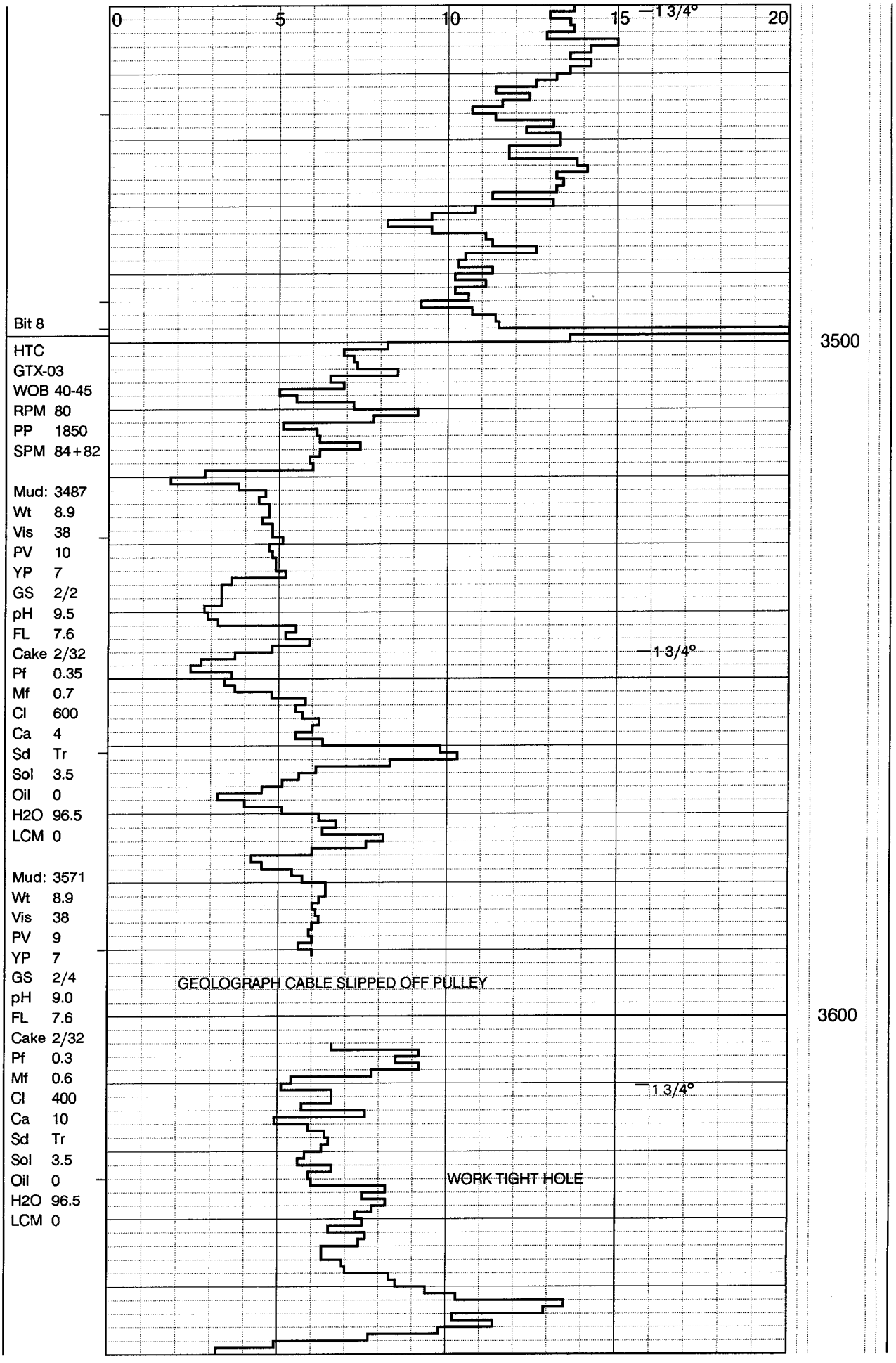

0
5
10
15
20
Mud: 2457
Wt 9.1
Vis 40
PV 13
YP 7
GS 2/6
pH 9.5
FL 8.8
Cake 2/32
Pf 0.4
Mf 0.8
Cl 300
Ca 2
Sd Tr
Sol 5.5
Oil 0
H2O 94.5
LCM 0
LOST 169 B/24 HRS
1 1/2°
2500
1 3/4°
WOB 40-50
RPM 75-80
PP 2200
SPM 65+65
2600
WOB 38-40
RPM 75-80
PP 1600
SPM 70+70
CHANGE JETS FROM 14-14-16-16 TO 14-18-20-20
LOST 276 B/24HRS
1 3/4°

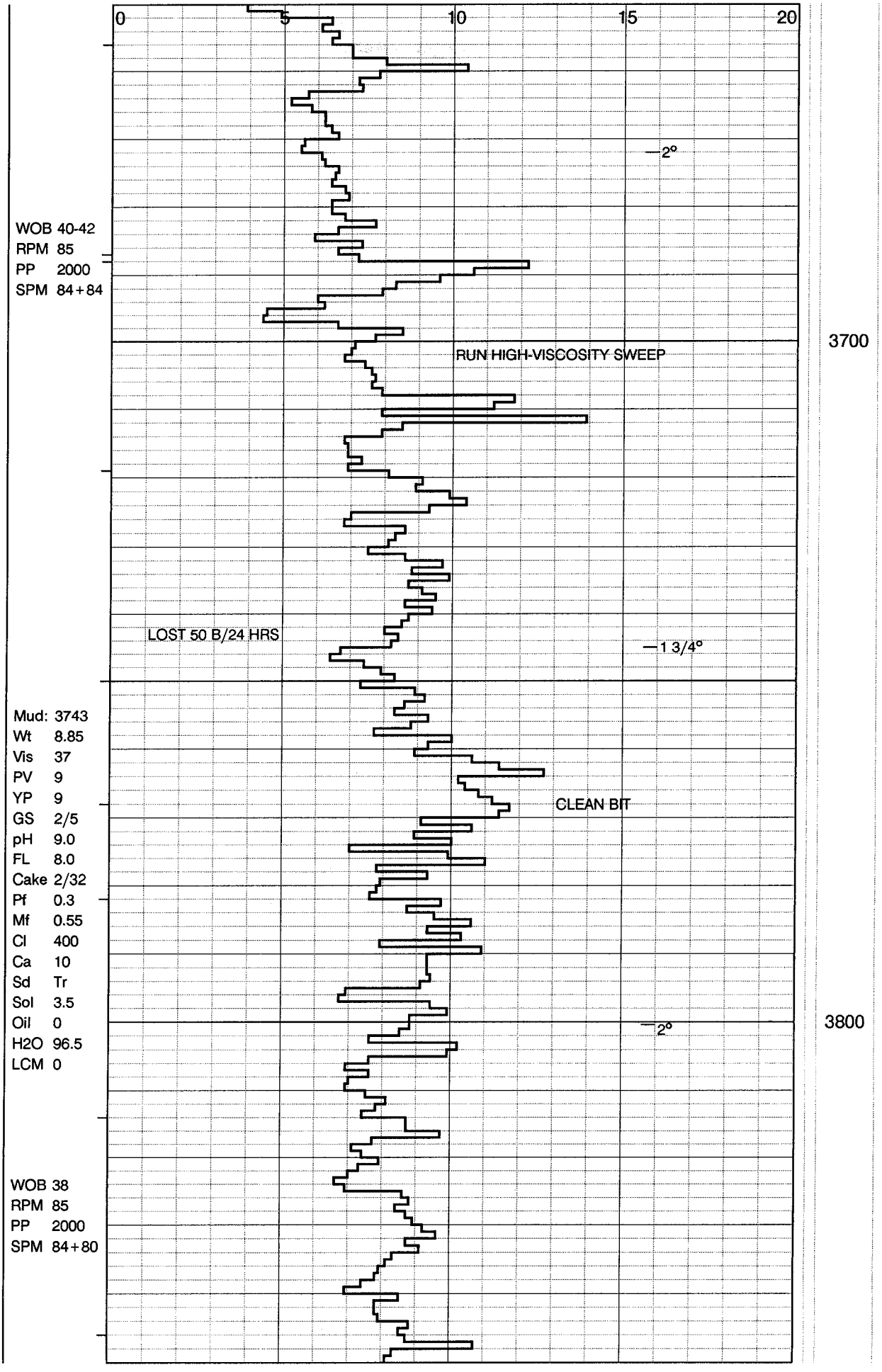

0
5
10
15
20
—1 3/4°
WOB 38-40
RPM 80
PP 1950
SPM 80+80
WORK TIGHT HOLE AT 2663 FOR 1 1/2 HRS
2700
WOB 38-42
RPM 75-80
PP 2000
SPM 78+78
WORK TIGHT HOLE AT 2694 FOR 1 HR
—1 1/4°
Mud: 2775
Wt 9.0
Vis 39
PV 10
YP 10
GS 2/3
pH 9.5
FL 7.4
Cake 2/32
Pf 0.3
Mf 0.65
Cl 500
Ca 8
Sd Tr
Sol 4.8
Oil 0
H2O 95.2
LCM 0
WORK TIGHT HOLE
2800
—1 3/4°
WOB 38-40
RPM 80
PP 1100
SPM 108

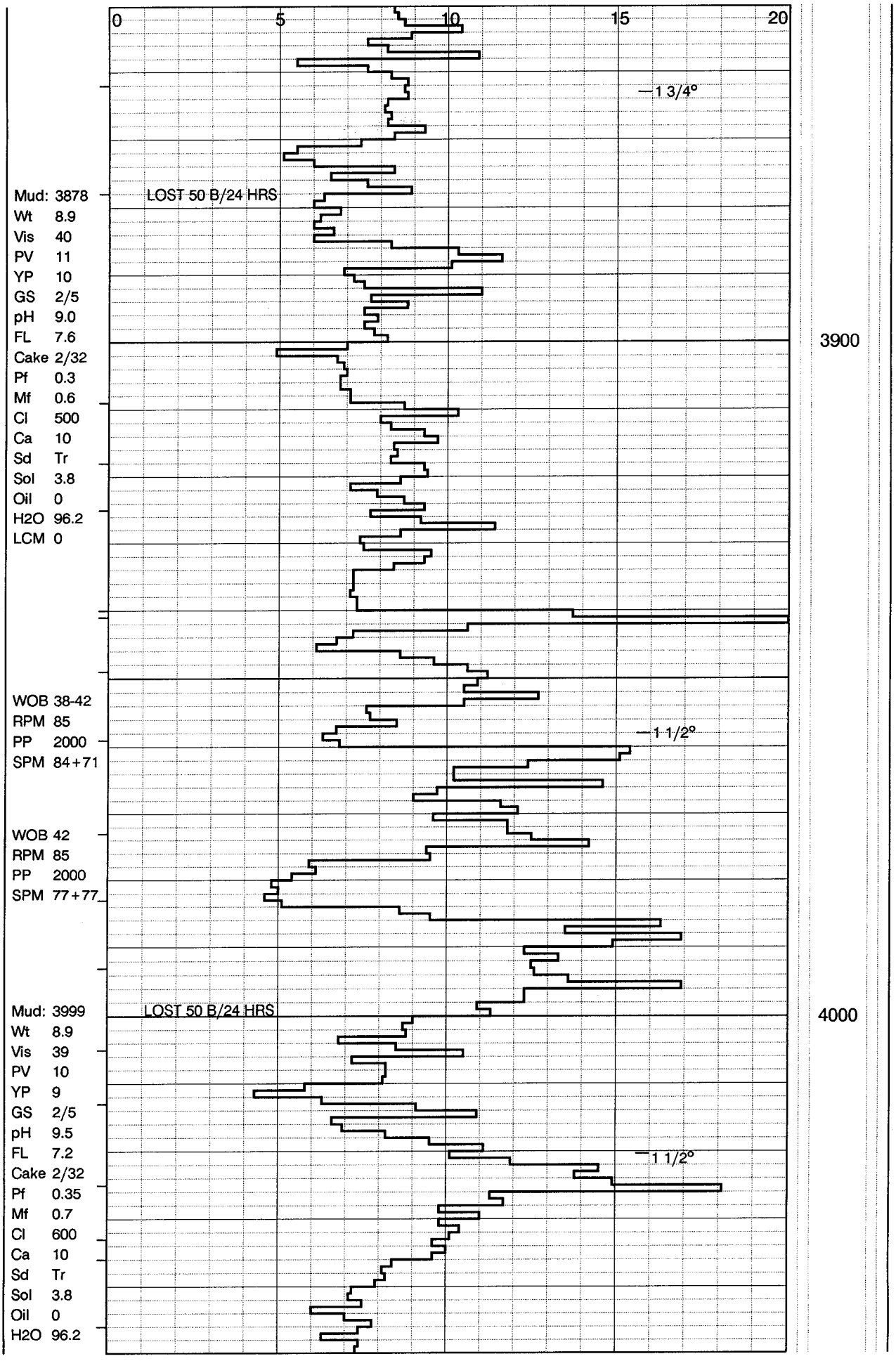

0
5
10
15
20
1 3/4°
Mud: 2901
Wt 9.0
Vis 40
PV 12
YP 11
GS 2/3
pH 9.5
FL 7.0
Cake 2/32
Pf 0.3
Mf 0.7
Cl 500
Ca 16
Sd Tr
Sol 5.2
Oil 0
H2O 94.8
LCM 0
WORK TIGHT HOLE, BACK REAM
2900
DECREASE WOB TO 35K FROM 2937 - 2949
1 3/4°
WOB 45
RPM 85
PP 1800
SPM 74+74
WOB 45-50
RPM 85
PP 1800
SPM 74+74
3000
1 1/2°
Mud: 3062
Wt 8.9+
Vis 39
PV 10

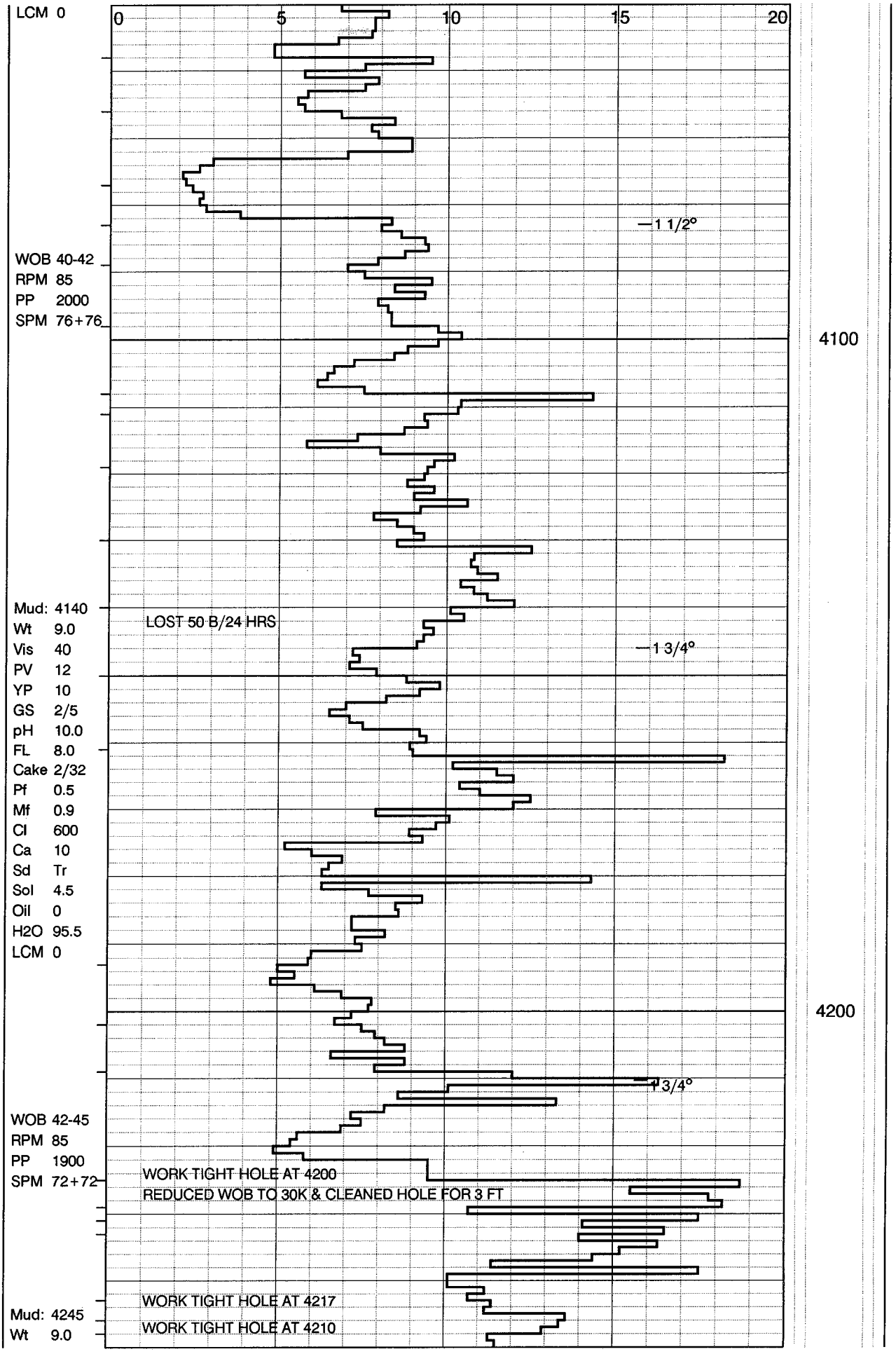

YP 6
GS 2/3
pH 9.5
FL 7.2
Cake 2/32
Pf 0.3
Mf 0.6
Cl 500
Ca 10
Sd Tr
Sol 4.5
Oil 0
H2O 95.5
LCM 0
Bit 7
Security
SS-84
Mud: 3149
Wt 8.9
Vis 37
PV 9
YP 7
GS 2/3
pH 10.5
FL 7.8
Cake 2/32
Pf 0.5
Mf 0.8
Cl 600
Ca 10
Sd Tr
Sol 3.8
Oil 0
H2O 96.2
LCM 0
0
5
10
15
20
1 3/4°
WORK TIGHT HOLE, BACK REAM ON CONNECTION
1 1/2°
INCREASE WOB TO 55K FROM 3157 - 3183
2°
3100
3200

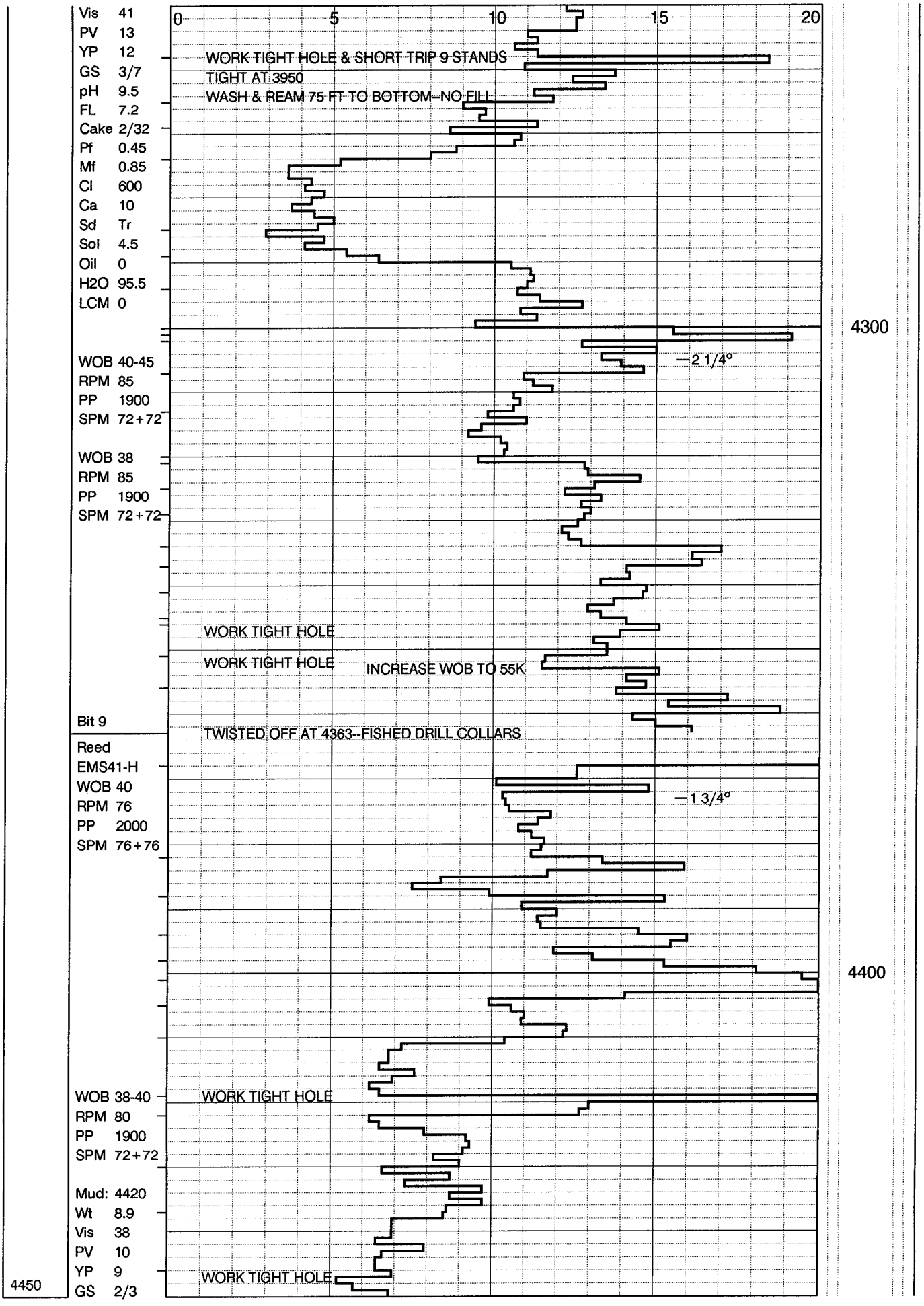

0
5
10
15
20
2°
Mud: 3282
Wt 8.9
Vis 41
PV 13
YP 12
GS 2/3
pH 10.0
FL 7.6
Cake 2/32
Pf 0.4
Mf 0.7
Cl 600
Ca 8
Sd Tr
Sol 4.0
Oil 0
H2O 96.0
LCM 0
WOB 45
RPM 85
PP 1850
SPM 74+74
3300
2°
Mud: 3380
Wt 8.9
Vis 40
PV 12
YP 11
GS 2/3
pH 9.8
FL 7.6
Cake 2/32
Pf 0.35
Mf 0.7
Cl 600
Ca 4
Sd Tr
Sol 4.0
Oil 0
H2O 96.0
LCM 0
WOB 45
RPM 85
PP 1850
SPM 74+74
2°
3400

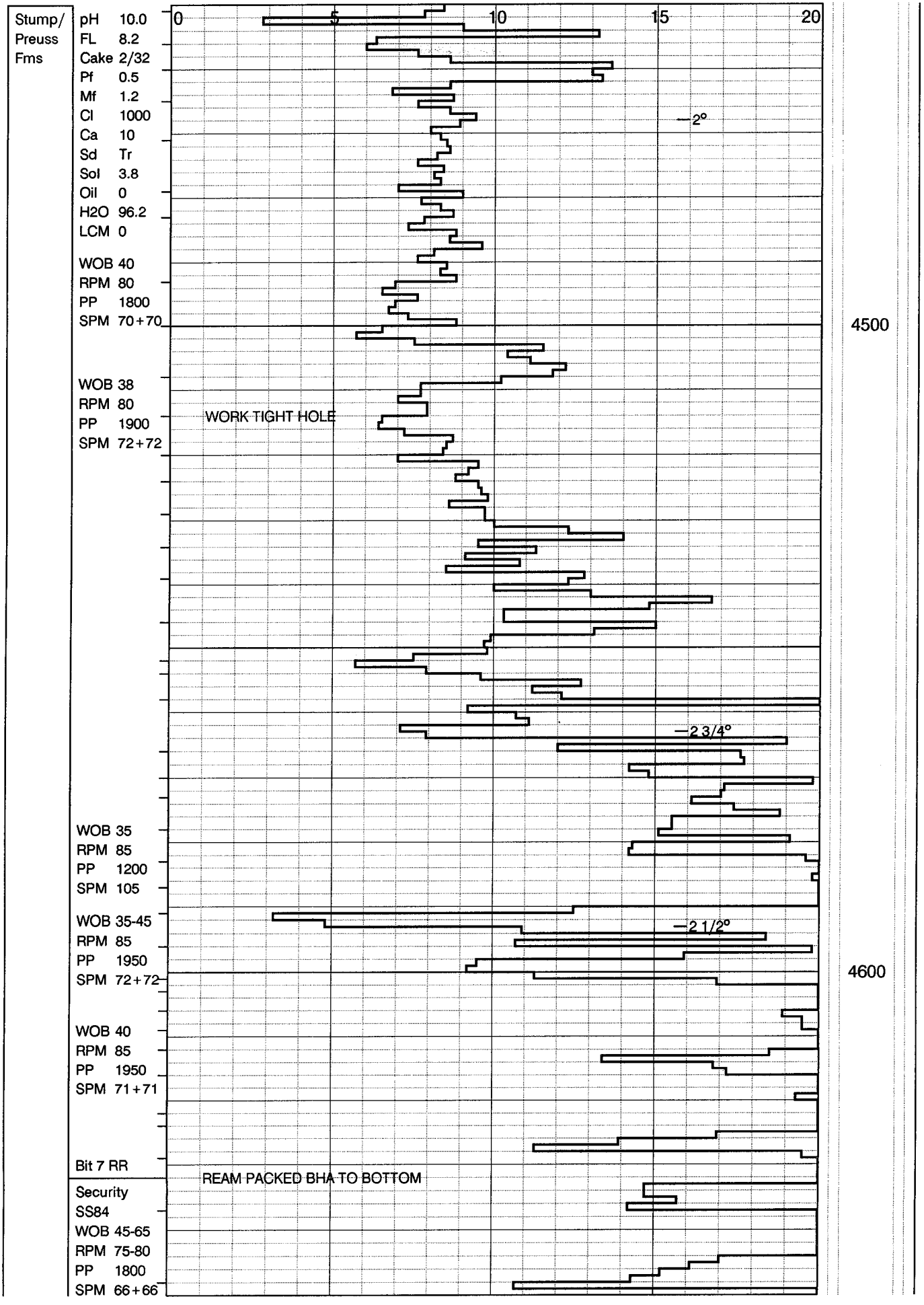

0
5
10
15
20
1 3/4°
Bit 8
3500
HTC
GTX-03
WOB 40-45
RPM 80
PP 1850
SPM 84+82
Mud: 3487
Wt 8.9
Vis 38
PV 10
YP 7
GS 2/2
pH 9.5
FL 7.6
Cake 2/32
Pf 0.35
Mf 0.7
Cl 600
Ca 4
Sd Tr
Sol 3.5
Oil 0
H2O 96.5
LCM 0
1 3/4°
Mud: 3571
Wt 8.9
Vis 38
PV 9
YP 7
GS 2/4
pH 9.0
FL 7.6
Cake 2/32
Pf 0.3
Mf 0.6
Cl 400
Ca 10
Sd Tr
Sol 3.5
Oil 0
H2O 96.5
LCM 0
GEOLOGRAPH CABLE SLIPPED OFF PULLEY
3600
1 3/4°
WORK TIGHT HOLE

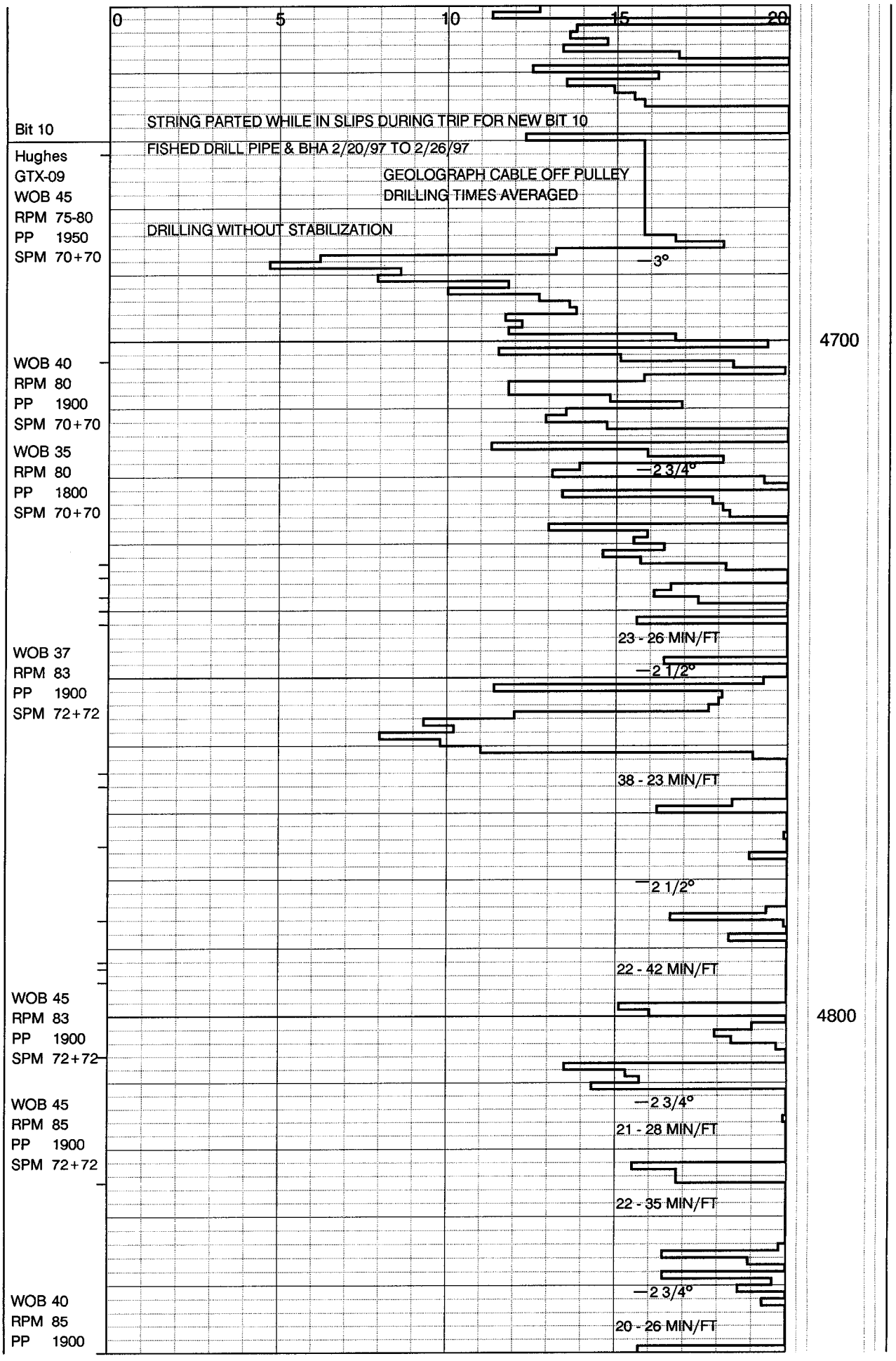

0
5
10
15
20
—2°
WOB 40-42
RPM 85
PP 2000
SPM 84+84
3700
RUN HIGH-VISCOSITY SWEEP
LOST 50 B/24 HRS
—1 3/4°
Mud: 3743
Wt 8.85
Vis 37
PV 9
YP 9
GS 2/5
pH 9.0
FL 8.0
Cake 2/32
Pf 0.3
Mf 0.55
Cl 400
Ca 10
Sd Tr
Sol 3.5
Oil 0
H2O 96.5
LCM 0
CLEAN BIT
—2°
3800
WOB 38
RPM 85
PP 2000
SPM 84+80

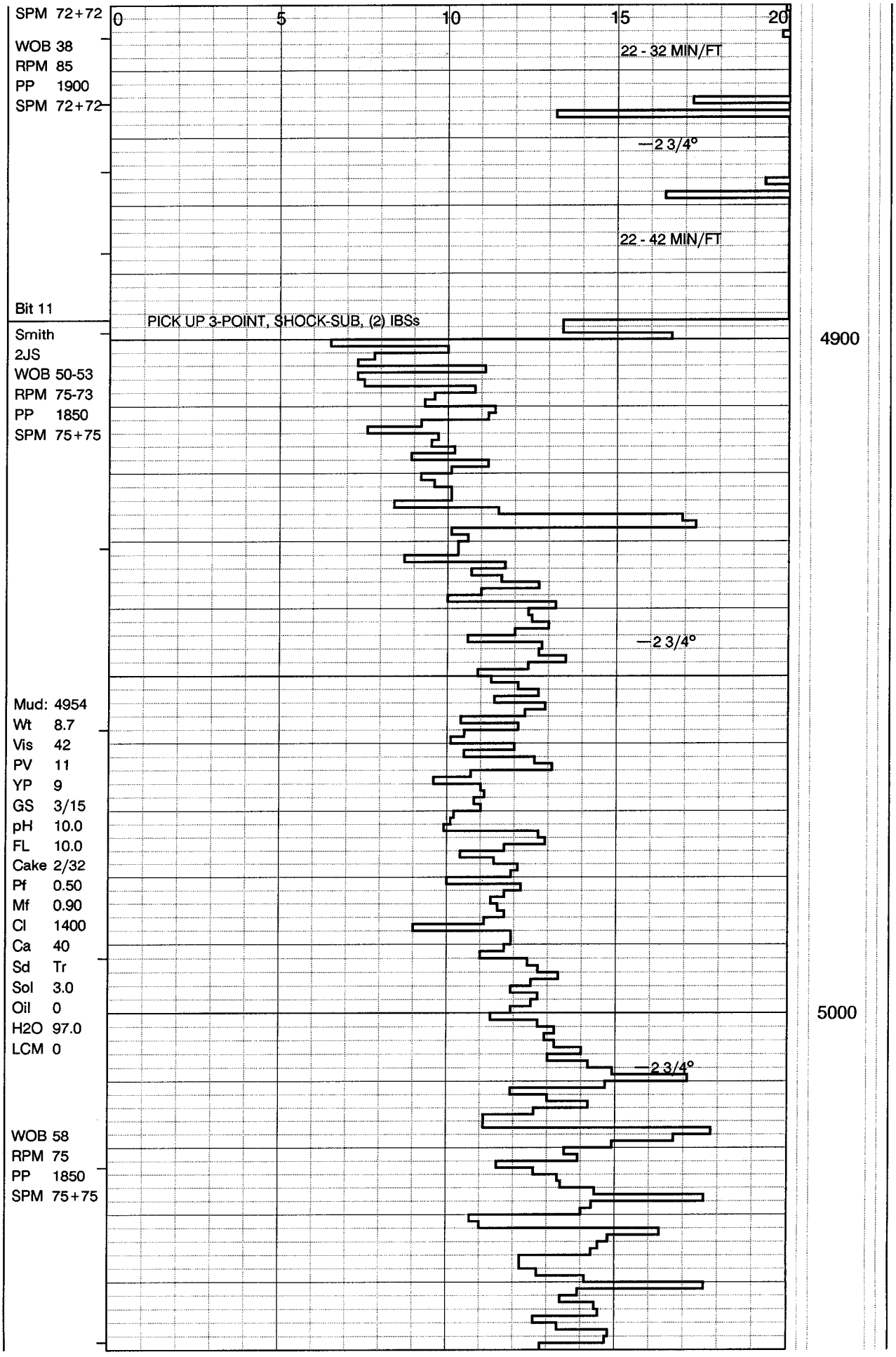

0
5
10
15
20
—1 3/4°
Mud: 3878
LOST 50 B/24 HRS
Wt 8.9
Vis 40
PV 11
YP 10
GS 2/5
pH 9.0
FL 7.6
Cake 2/32
Pf 0.3
Mf 0.6
Cl 500
Ca 10
Sd Tr
Sol 3.8
Oil 0
H2O 96.2
LCM 0
3900
WOB 38-42
RPM 85
PP 2000
SPM 84+71
—1 1/2°
WOB 42
RPM 85
PP 2000
SPM 77+77
Mud: 3999
LOST 50 B/24 HRS
4000
Wt 8.9
Vis 39
PV 10
YP 9
GS 2/5
pH 9.5
FL 7.2
—1 1/2°
Cake 2/32
Pf 0.35
Mf 0.7
Cl 600
Ca 10
Sd Tr
Sol 3.8
Oil 0
H2O 96.2

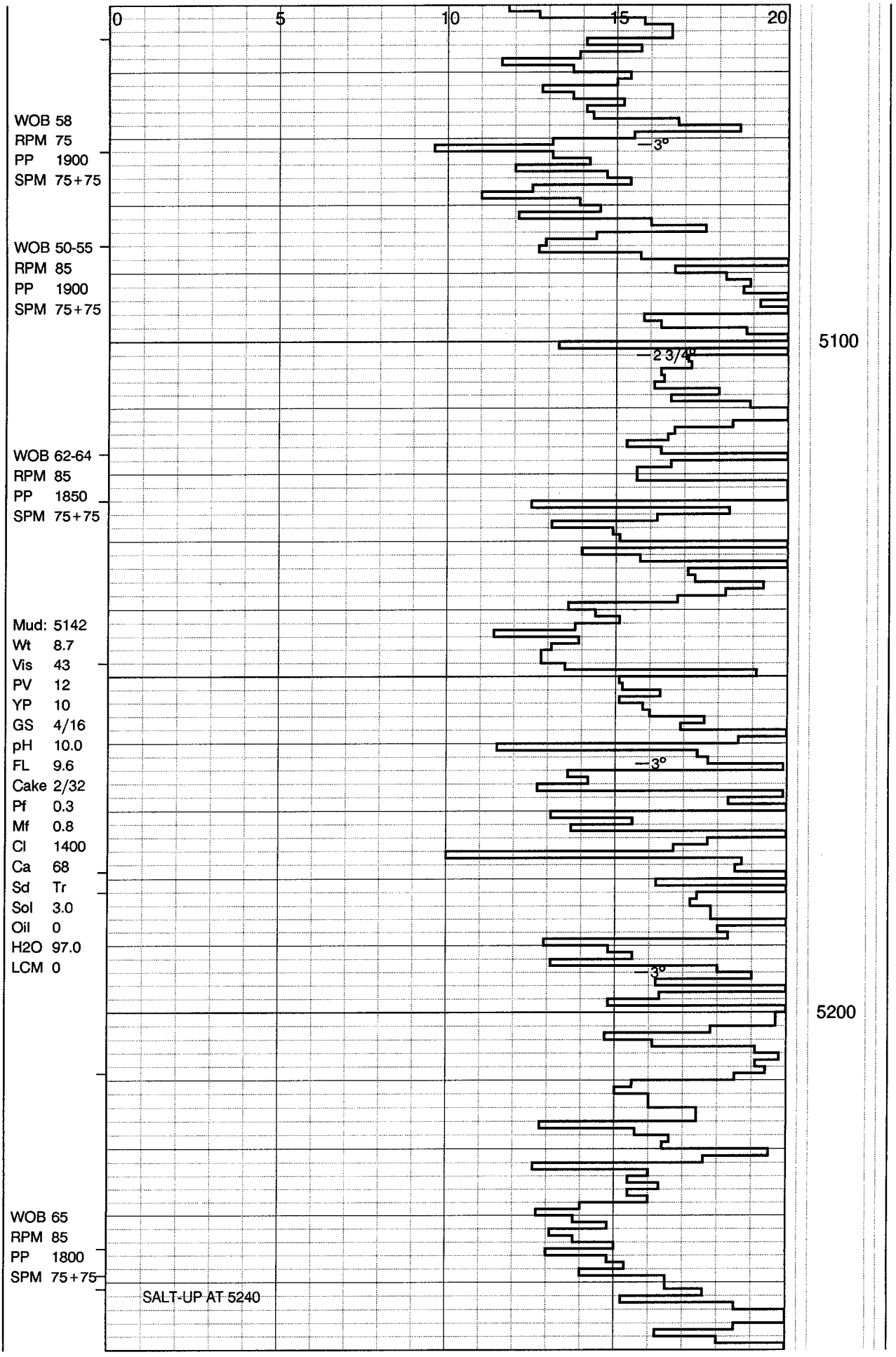

LCM 0
0
5
10
15
20
1 1/2°
WOB 40-42
RPM 85
PP 2000
SPM 76+76
4100
Mud: 4140
Wt 9.0
Vis 40
PV 12
YP 10
GS 2/5
pH 10.0
FL 8.0
Cake 2/32
Pf 0.5
Mf 0.9
Cl 600
Ca 10
Sd Tr
Sol 4.5
Oil 0
H2O 95.5
LCM 0
LOST 50 B/24 HRS
1 3/4°
4200
1 3/4°
WOB 42-45
RPM 85
PP 1900
SPM 72+72
WORK TIGHT HOLE AT 4200
REDUCED WOB TO 30K & CLEANED HOLE FOR 3 FT
WORK TIGHT HOLE AT 4217
WORK TIGHT HOLE AT 4210
Mud: 4245
Wt 9.0

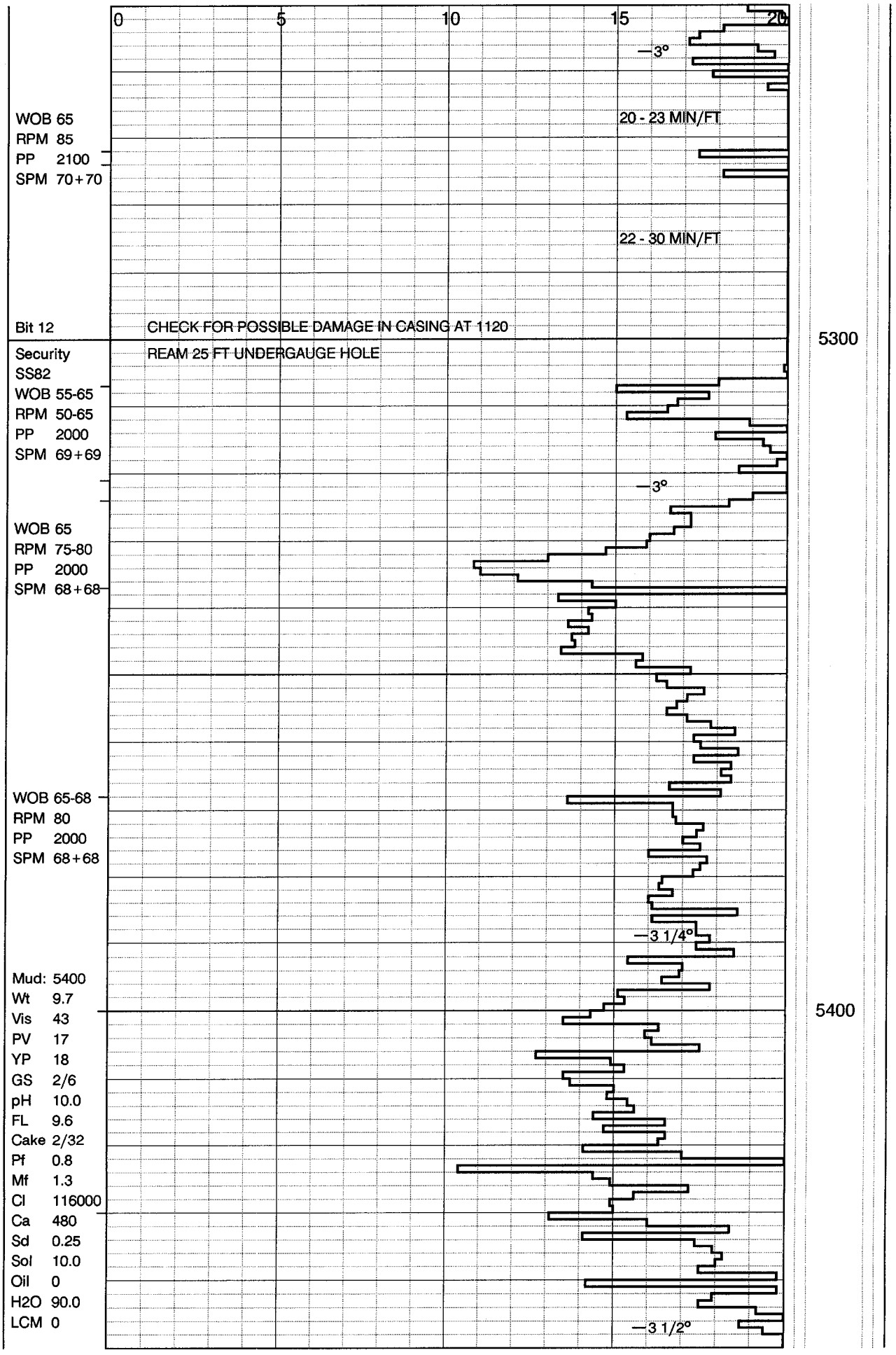

Vis 41
PV 13
YP 12
GS 3/7
pH 9.5
FL 7.2
Cake 2/32
Pf 0.45
Mf 0.85
Cl 600
Ca 10
Sd Tr
Sol 4.5
Oil 0
H2O 95.5
LCM 0
0
5
10
15
20
WORK TIGHT HOLE & SHORT TRIP 9 STANDS
TIGHT AT 3950
WASH & REAM 75 FT TO BOTTOM--NO FILL
4300
WOB 40-45
RPM 85
PP 1900
SPM 72+72
—2 1/4°
WOB 38
RPM 85
PP 1900
SPM 72+72
WORK TIGHT HOLE
WORK TIGHT HOLE
INCREASE WOB TO 55K
Bit 9
TWISTED OFF AT 4363--FISHED DRILL COLLARS
Reed
EMS41-H
WOB 40
RPM 76
PP 2000
SPM 76+76
—1 3/4°
4400
WOB 38-40
RPM 80
PP 1900
SPM 72+72
WORK TIGHT HOLE
Mud: 4420
Wt 8.9
Vis 38
PV 10
YP 9
GS 2/3
WORK TIGHT HOLE
4450

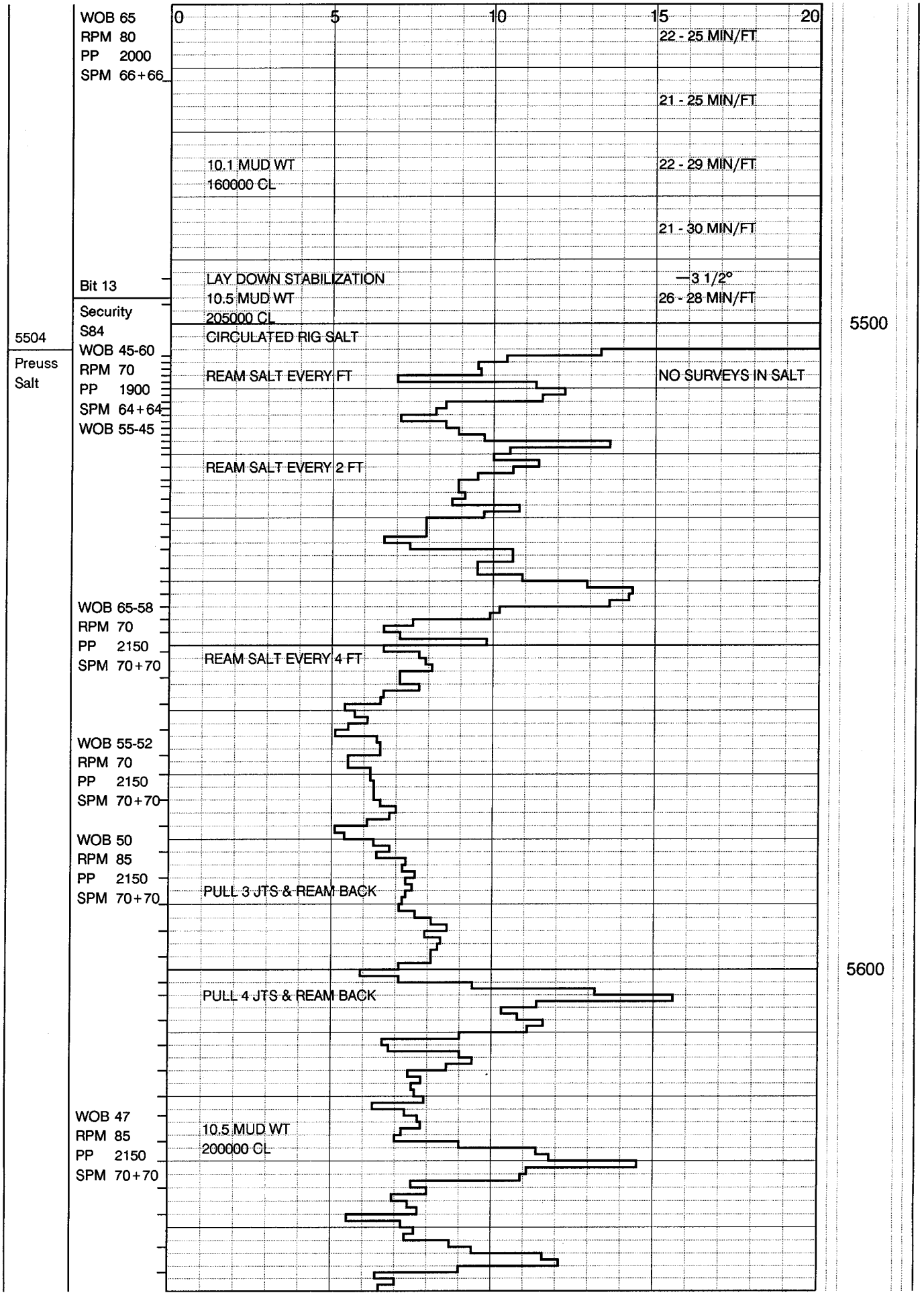

Stump/
Preuss
Fms
pH 10.0
FL 8.2
Cake 2/32
Pf 0.5
Mf 1.2
Cl 1000
Ca 10
Sd Tr
Sol 3.8
Oil 0
H2O 96.2
LCM 0
WOB 40
RPM 80
PP 1800
SPM 70+70
WOB 38
RPM 80
PP 1900
SPM 72+72
WOB 35
RPM 85
PP 1200
SPM 105
WOB 35-45
RPM 85
PP 1950
SPM 72+72
WOB 40
RPM 85
PP 1950
SPM 71+71
Bit 7 RR
Security
SS84
WOB 45-65
RPM 75-80
PP 1800
SPM 66+66
0
5
10
15
20
2°
WORK TIGHT HOLE
2 3/4°
2 1/2°
REAM PACKED BHA TO BOTTOM
4500
4600

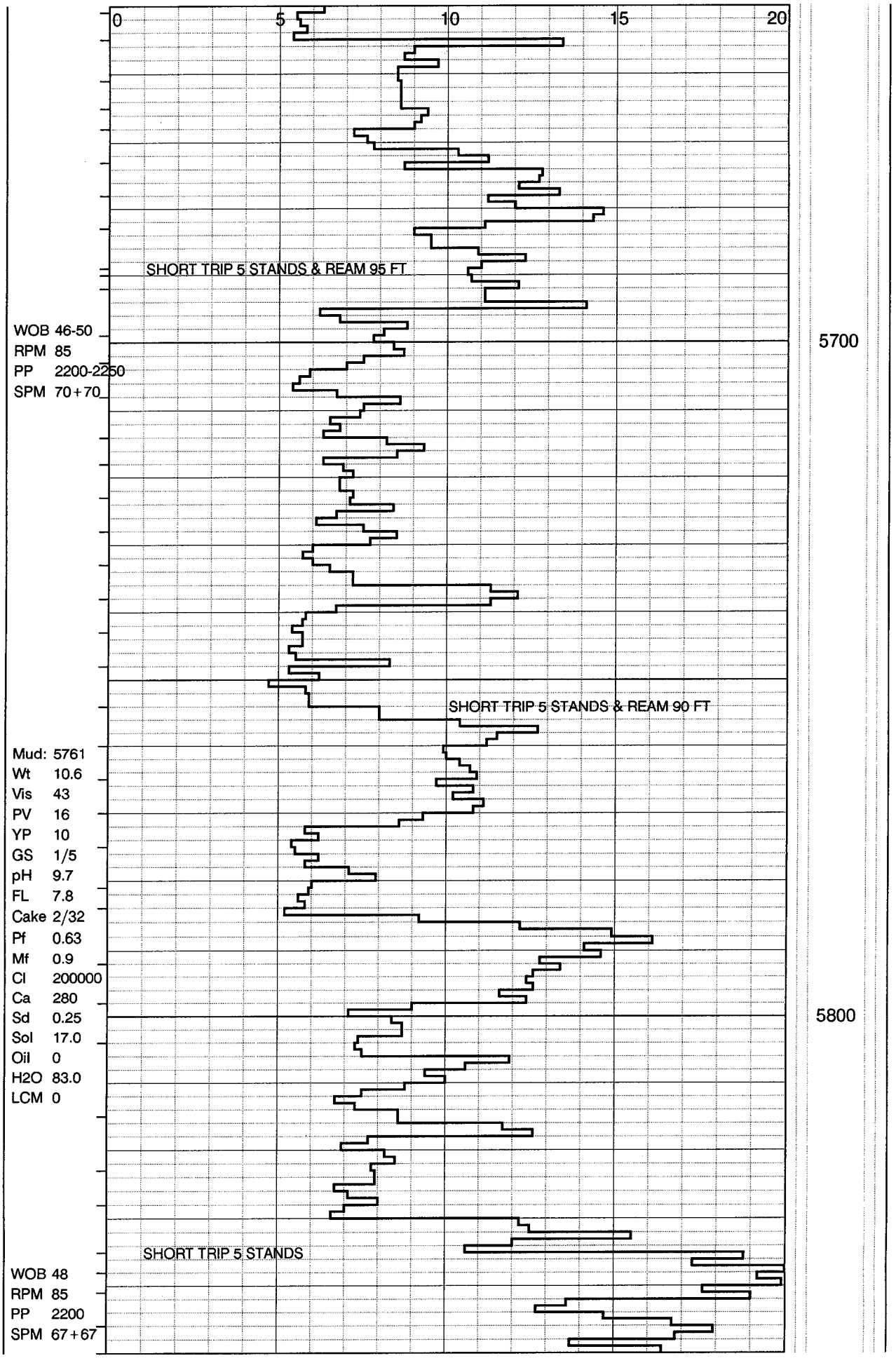

0
5
10
15
20
Bit 10
STRING PARTED WHILE IN SLIPS DURING TRIP FOR NEW BIT 10
FISHED DRILL PIPE & BHA 2/20/97 TO 2/26/97
Hughes
GTX-09
WOB 45
RPM 75-80
PP 1950
SPM 70+70
GEOLOGRAPH CABLE OFF PULLEY
DRILLING TIMES AVERAGED
DRILLING WITHOUT STABILIZATION
3°
4700
WOB 40
RPM 80
PP 1900
SPM 70+70
WOB 35
RPM 80
PP 1800
SPM 70+70
2 3/4°
23 - 26 MIN/FT
WOB 37
RPM 83
PP 1900
SPM 72+72
2 1/2°
38 - 23 MIN/FT
2 1/2°
22 - 42 MIN/FT
WOB 45
RPM 83
PP 1900
SPM 72+72
4800
2 3/4°
WOB 45
RPM 85
PP 1900
SPM 72+72
21 - 28 MIN/FT
22 - 35 MIN/FT
2 3/4°
WOB 40
RPM 85
PP 1900
20 - 26 MIN/FT

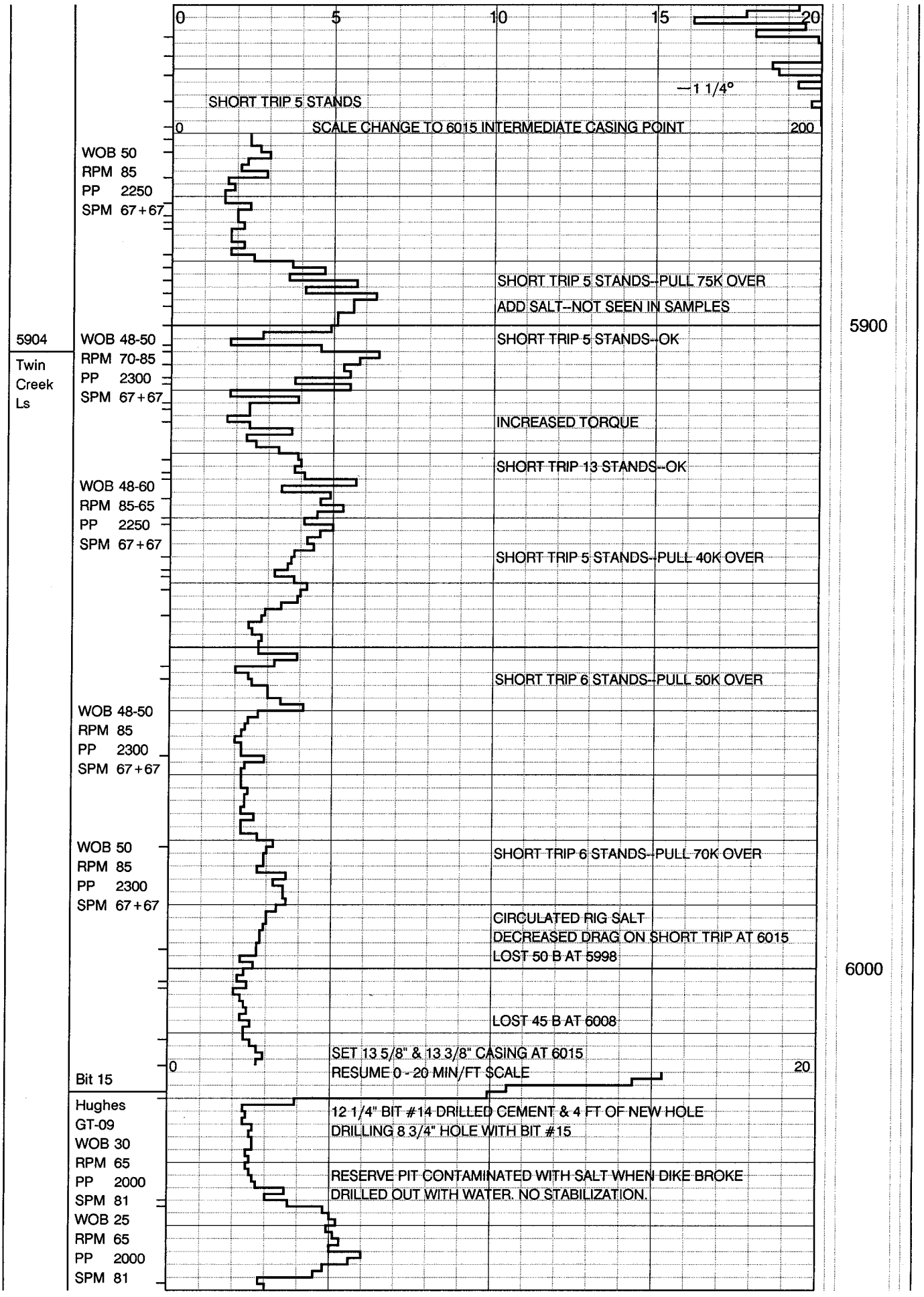

SPM 72+72
WOB 38
RPM 85
PP 1900
SPM 72+72
0
5
10
15
20
22 - 32 MIN/FT
2 3/4°
22 - 42 MIN/FT
Bit 11
Smith
2JS
WOB 50-53
RPM 75-73
PP 1850
SPM 75+75
PICK UP 3-POINT, SHOCK-SUB, (2) IBSs
4900
2 3/4°
Mud: 4954
Wt 8.7
Vis 42
PV 11
YP 9
GS 3/15
pH 10.0
FL 10.0
Cake 2/32
Pf 0.50
Mf 0.90
Cl 1400
Ca 40
Sd Tr
Sol 3.0
Oil 0
H2O 97.0
LCM 0
5000
2 3/4°
WOB 58
RPM 75
PP 1850
SPM 75+75

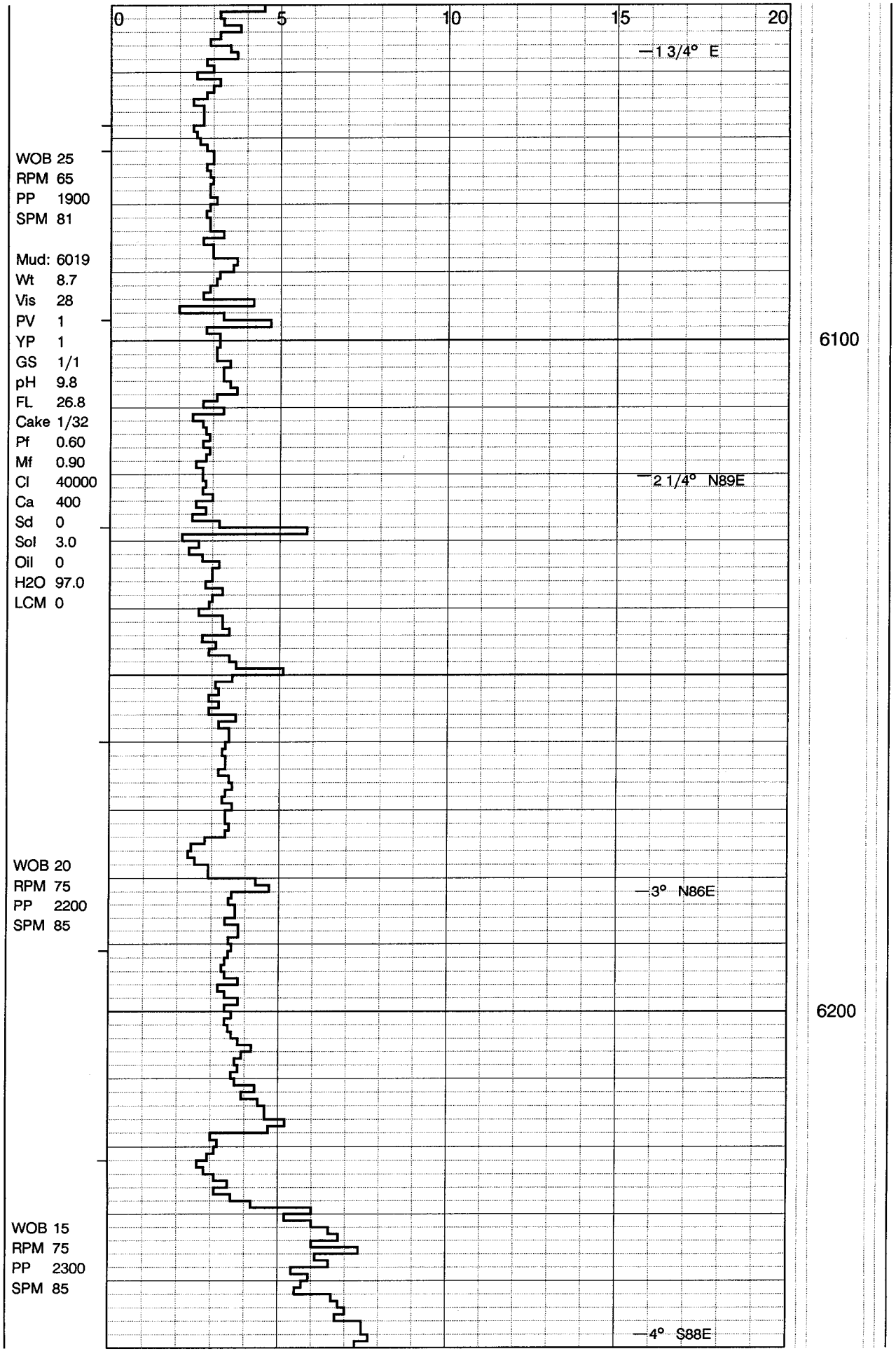

0
5
10
15
20
WOB 58
RPM 75
PP 1900
SPM 75+75
WOB 50-55
RPM 85
PP 1900
SPM 75+75
WOB 62-64
RPM 85
PP 1850
SPM 75+75
Mud: 5142
Wt 8.7
Vis 43
PV 12
YP 10
GS 4/16
pH 10.0
FL 9.6
Cake 2/32
Pf 0.3
Mf 0.8
Cl 1400
Ca 68
Sd Tr
Sol 3.0
Oil 0
H2O 97.0
LCM 0
WOB 65
RPM 85
PP 1800
SPM 75+75
SALT-UP AT 5240
—3°
—2 3/4°
—3°
—3°
5100
5200

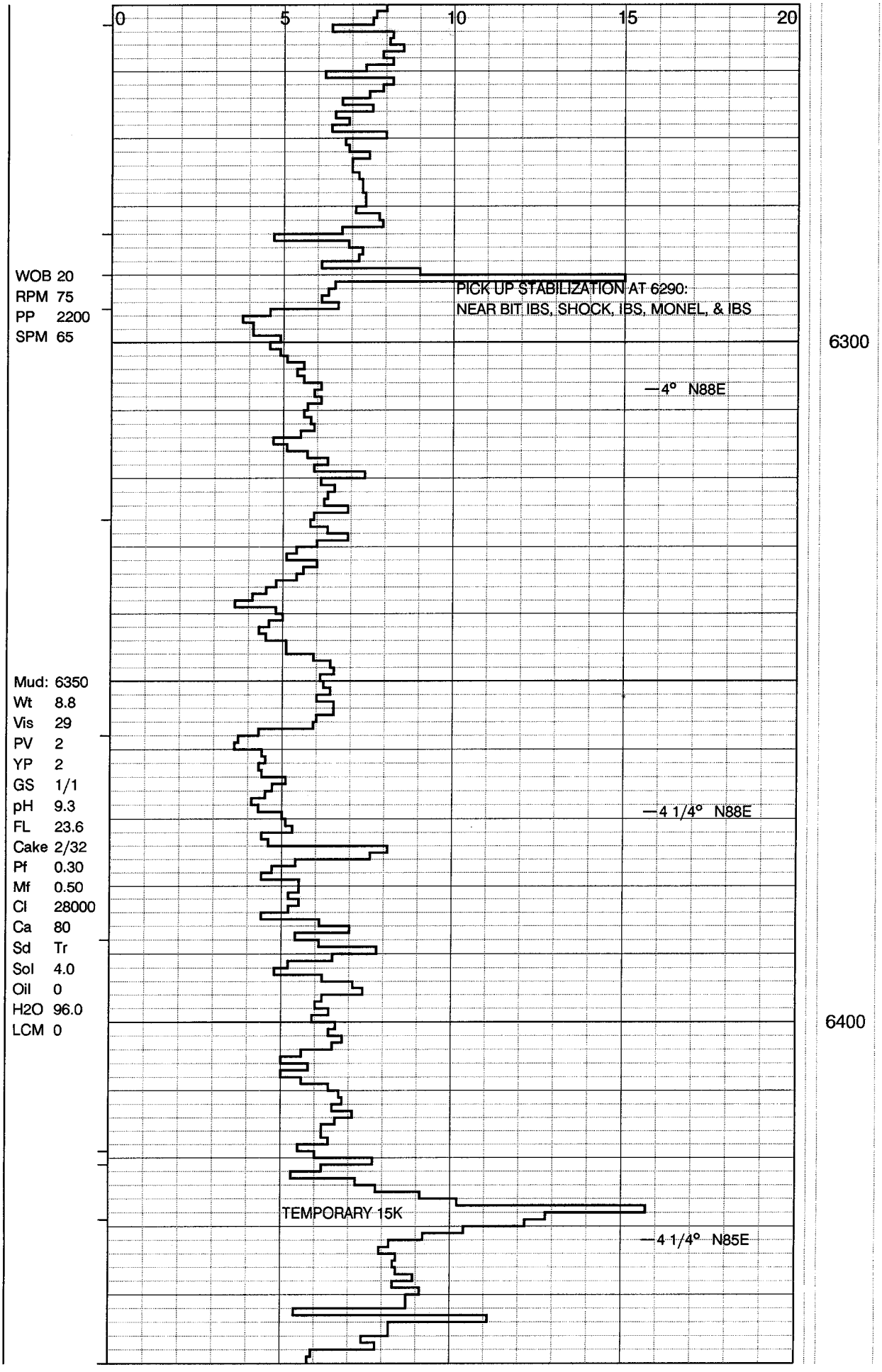

0
5
10
15
20
—3°
WOB 65
RPM 85
PP 2100
SPM 70+70
20 - 23 MIN/FT
22 - 30 MIN/FT
Bit 12
CHECK FOR POSSIBLE DAMAGE IN CASING AT 1120
5300
Security
SS82
WOB 55-65
RPM 50-65
PP 2000
SPM 69+69
REAM 25 FT UNDERGAUGE HOLE
—3°
WOB 65
RPM 75-80
PP 2000
SPM 68+68
WOB 65-68
RPM 80
PP 2000
SPM 68+68
—3 1/4°
Mud: 5400
Wt 9.7
Vis 43
PV 17
YP 18
GS 2/6
pH 10.0
FL 9.6
Cake 2/32
Pf 0.8
Mf 1.3
Cl 116000
Ca 480
Sd 0.25
Sol 10.0
Oil 0
H2O 90.0
LCM 0
5400
—3 1/2°

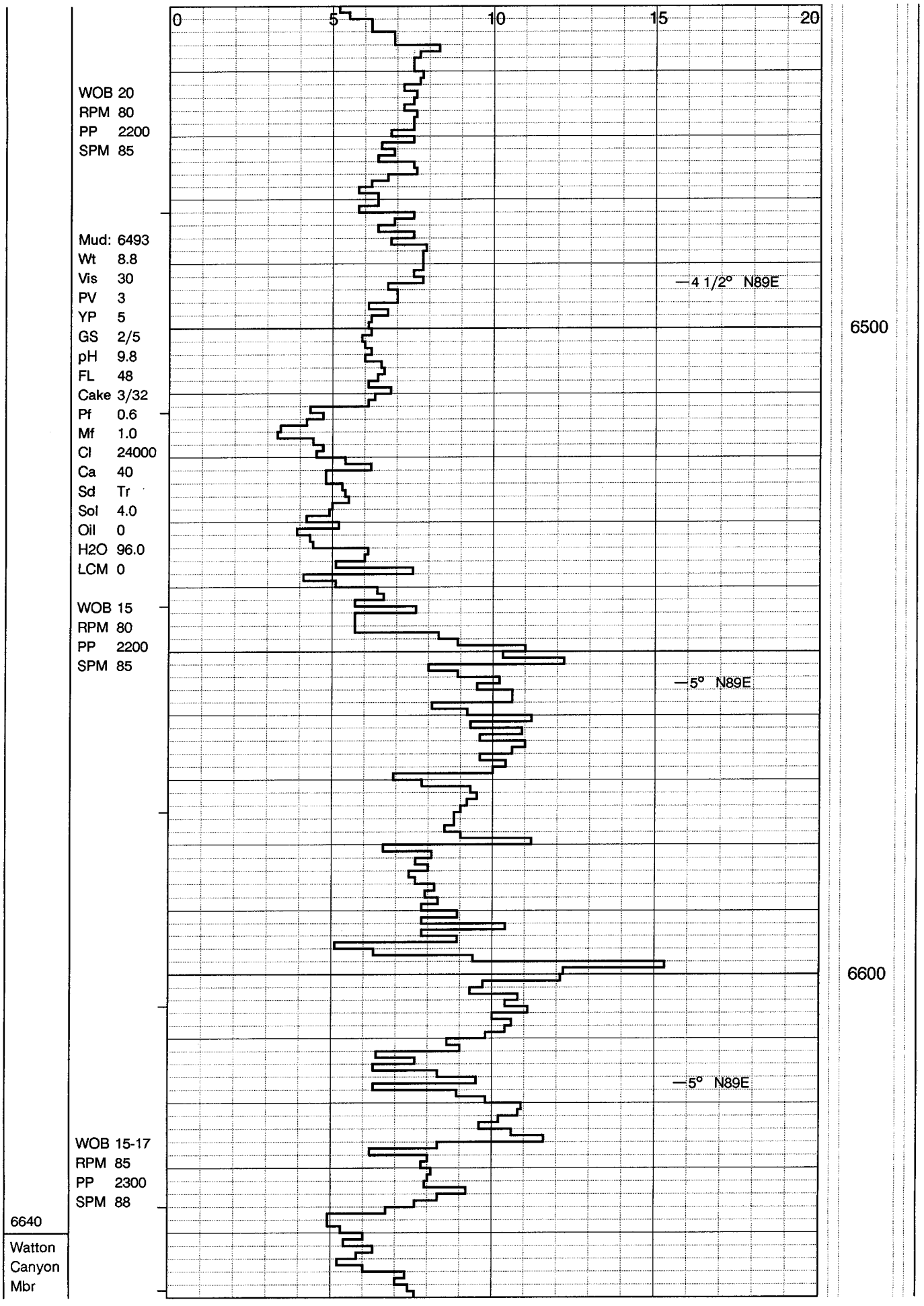

WOB 65
RPM 80
PP 2000
SPM 66+66
0
5
10
15
20
22 - 25 MIN/FT
21 - 25 MIN/FT
10.1 MUD WT
160000 CL
22 - 29 MIN/FT
21 - 30 MIN/FT
Bit 13
LAY DOWN STABILIZATION
10.5 MUD WT
205000 CL
—3 1/2°
26 - 28 MIN/FT
Security
S84
WOB 45-60
RPM 70
PP 1900
SPM 64+64
WOB 55-45
5504
Preuss
Salt
CIRCULATED RIG SALT
REAM SALT EVERY FT
NO SURVEYS IN SALT
5500
REAM SALT EVERY 2 FT
WOB 65-58
RPM 70
PP 2150
SPM 70+70
REAM SALT EVERY 4 FT
WOB 55-52
RPM 70
PP 2150
SPM 70+70
WOB 50
RPM 85
PP 2150
SPM 70+70
PULL 3 JTS & REAM BACK
5600
PULL 4 JTS & REAM BACK
WOB 47
RPM 85
PP 2150
SPM 70+70
10.5 MUD WT
200000 CL

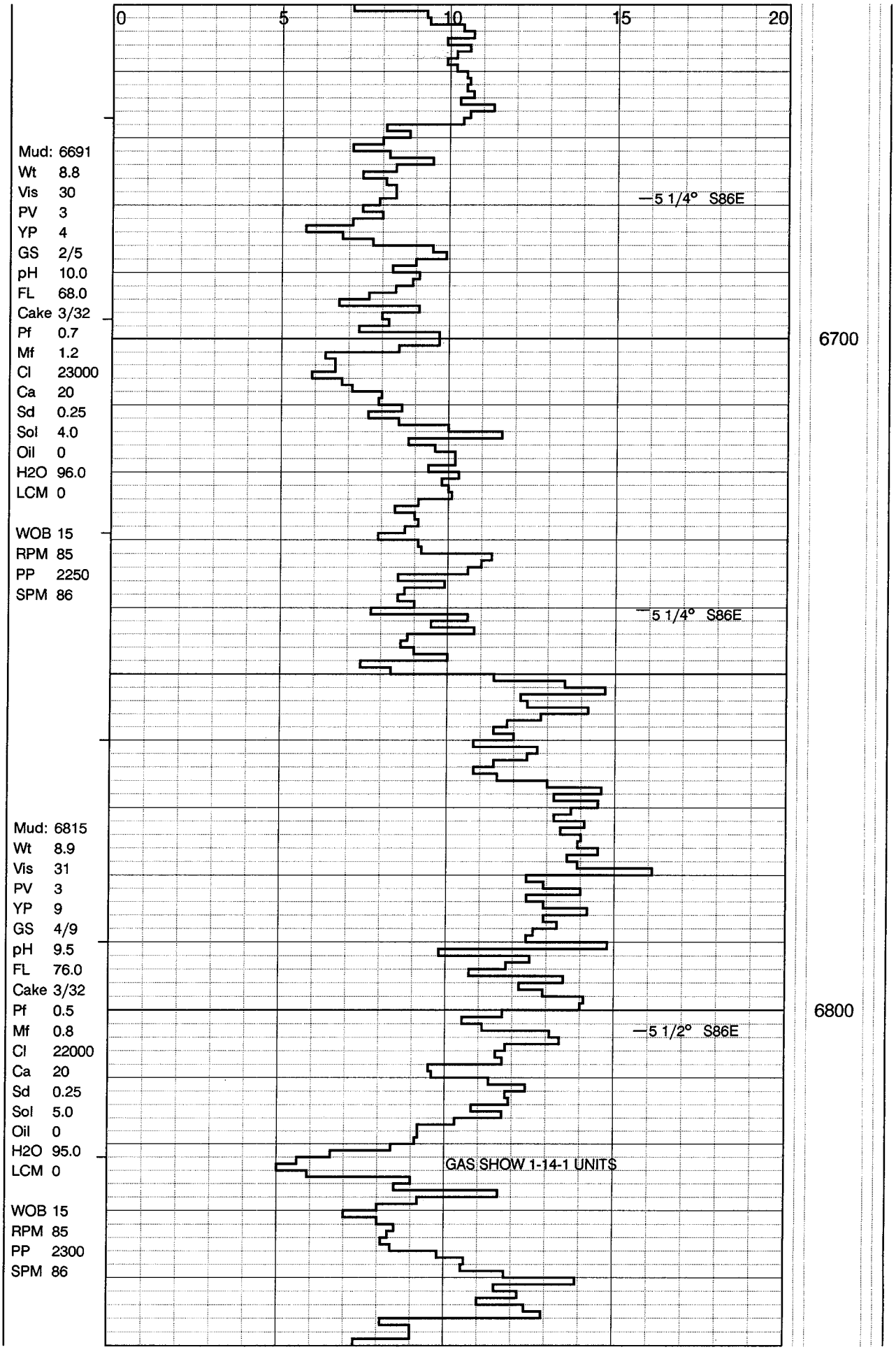

0
5
10
15
20
SHORT TRIP 5 STANDS & REAM 95 FT
WOB 46-50
RPM 85
PP 2200-2250
SPM 70+70
5700
SHORT TRIP 5 STANDS & REAM 90 FT
Mud: 5761
Wt 10.6
Vis 43
PV 16
YP 10
GS 1/5
pH 9.7
FL 7.8
Cake 2/32
Pf 0.63
Mf 0.9
Cl 200000
Ca 280
Sd 0.25
Sol 17.0
Oil 0
H2O 83.0
LCM 0
5800
SHORT TRIP 5 STANDS
WOB 48
RPM 85
PP 2200
SPM 67+67

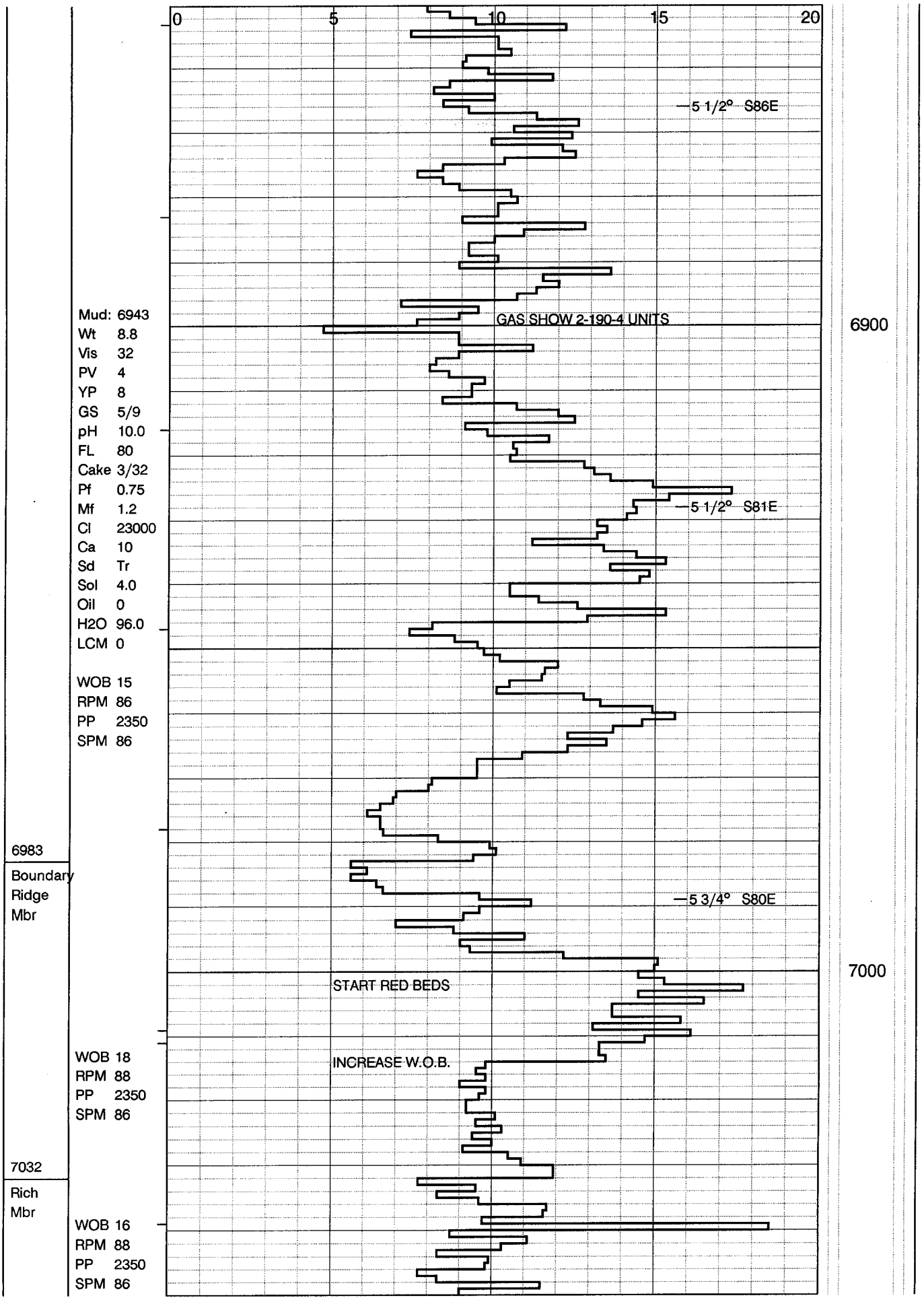

0
5
10
15
20
—1 1/4°
SHORT TRIP 5 STANDS
0
SCALE CHANGE TO 6015 INTERMEDIATE CASING POINT
200
WOB 50
RPM 85
PP 2250
SPM 67+67
SHORT TRIP 5 STANDS--PULL 75K OVER
ADD SALT--NOT SEEN IN SAMPLES
5900
5904
Twin Creek Ls
WOB 48-50
RPM 70-85
PP 2300
SPM 67+67
SHORT TRIP 5 STANDS--OK
INCREASED TORQUE
SHORT TRIP 13 STANDS--OK
WOB 48-60
RPM 85-65
PP 2250
SPM 67+67
SHORT TRIP 5 STANDS--PULL 40K OVER
SHORT TRIP 6 STANDS--PULL 50K OVER
WOB 48-50
RPM 85
PP 2300
SPM 67+67
WOB 50
RPM 85
PP 2300
SPM 67+67
SHORT TRIP 6 STANDS--PULL 70K OVER
CIRCULATED RIG SALT
DECREASED DRAG ON SHORT TRIP AT 6015
LOST 50 B AT 5998
6000
LOST 45 B AT 6008
SET 13 5/8" & 13 3/8" CASING AT 6015
RESUME 0 - 20 MIN/FT SCALE
0
20
Bit 15
Hughes
GT-09
WOB 30
RPM 65
PP 2000
SPM 81
WOB 25
RPM 65
PP 2000
SPM 81
12 1/4" BIT #14 DRILLED CEMENT & 4 FT OF NEW HOLE
DRILLING 8 3/4" HOLE WITH BIT #15
RESERVE PIT CONTAMINATED WITH SALT WHEN DIKE BROKE
DRILLED OUT WITH WATER. NO STABILIZATION.

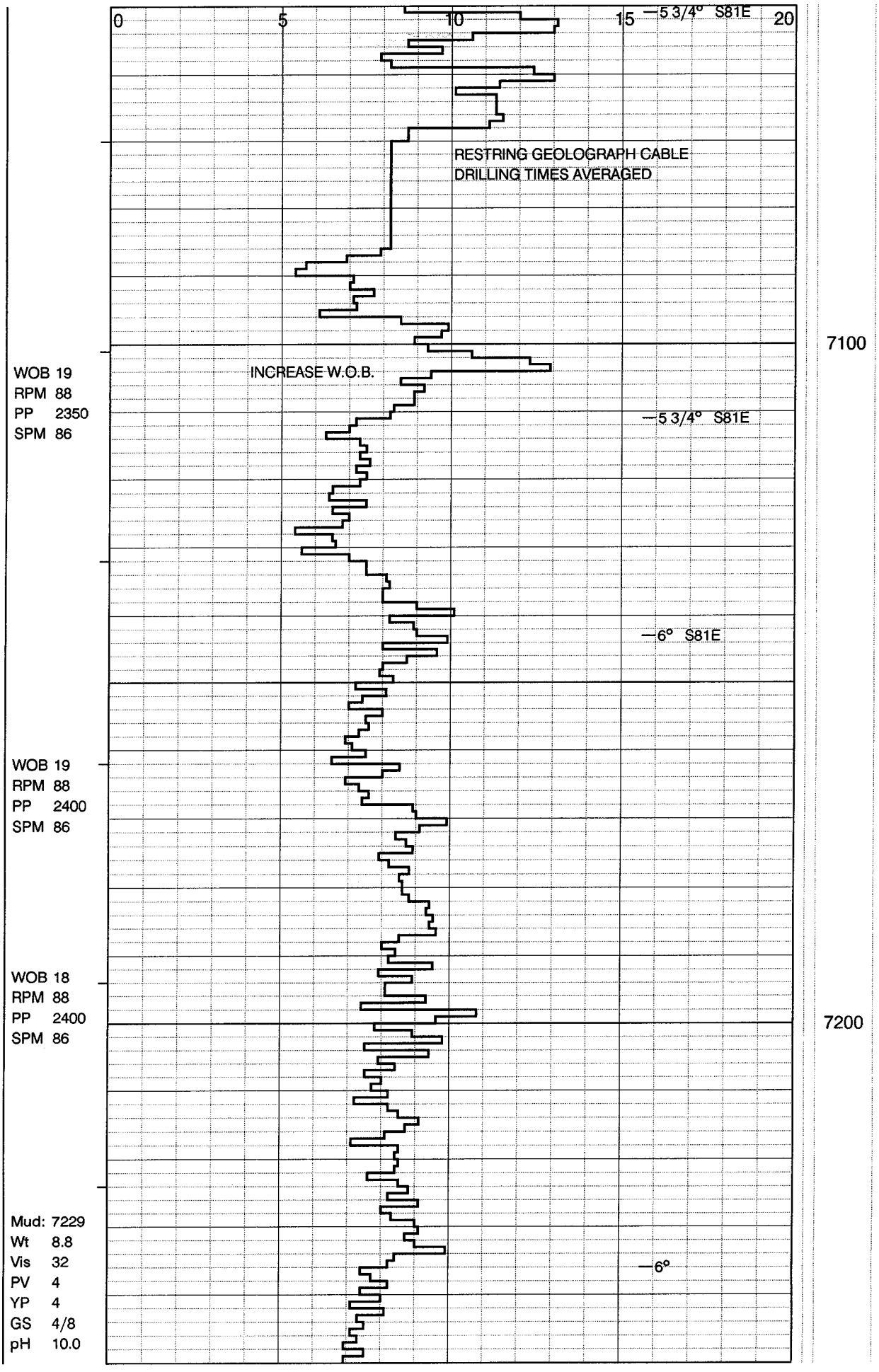

0
5
10
15
20
1 3/4° E
WOB 25
RPM 65
PP 1900
SPM 81
Mud: 6019
Wt 8.7
Vis 28
PV 1
YP 1
GS 1/1
pH 9.8
FL 26.8
Cake 1/32
Pf 0.60
Mf 0.90
Cl 40000
Ca 400
Sd 0
Sol 3.0
Oil 0
H2O 97.0
LCM 0
6100
2 1/4° N89E
WOB 20
RPM 75
PP 2200
SPM 85
3° N86E
6200
WOB 15
RPM 75
PP 2300
SPM 85
4° S88E

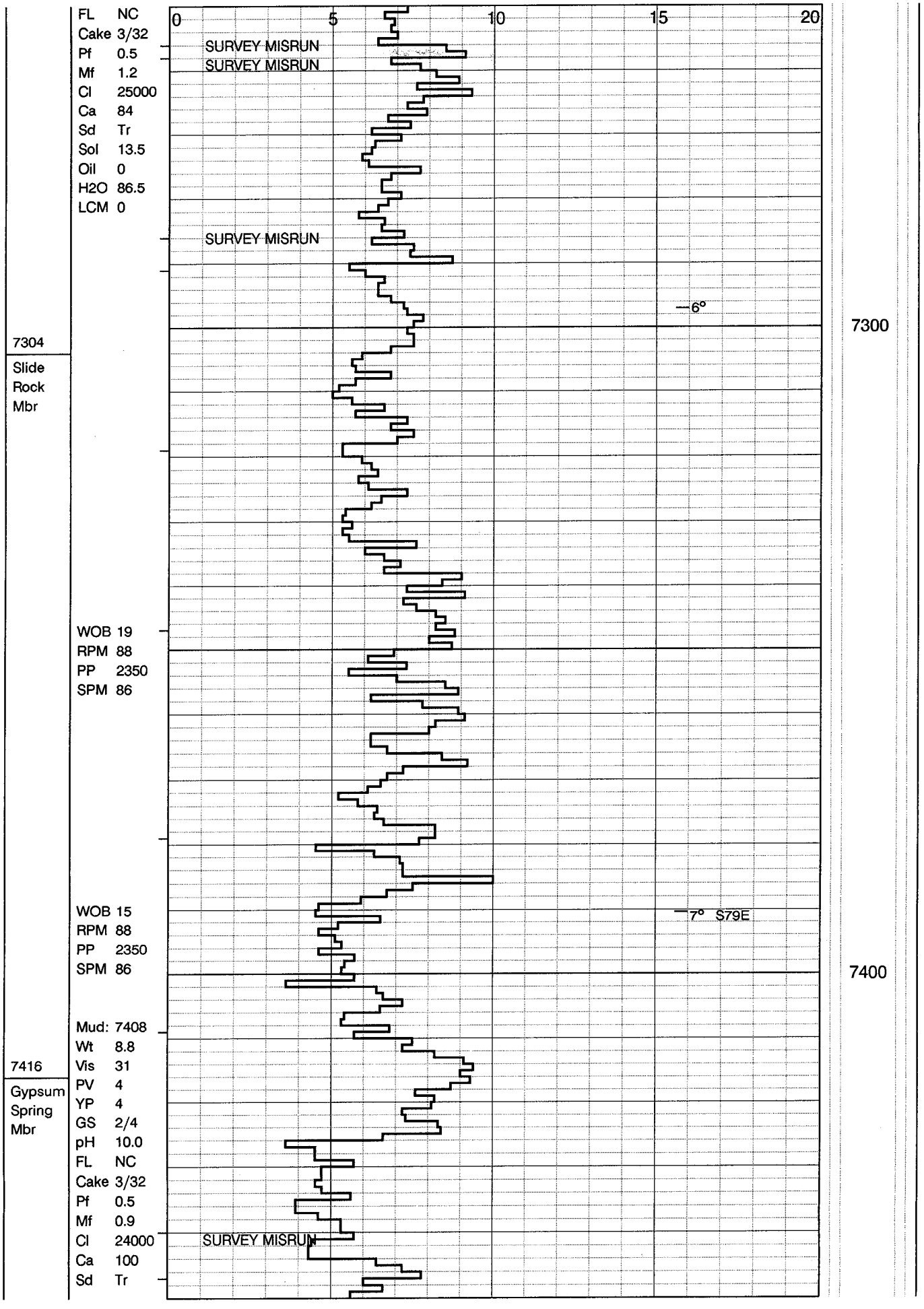

0
5
10
15
20
WOB 20
RPM 75
PP 2200
SPM 65
PICK UP STABILIZATION AT 6290:
NEAR BIT IBS, SHOCK, IBS, MONEL, & IBS
6300
—4° N88E
Mud: 6350
Wt 8.8
Vis 29
PV 2
YP 2
GS 1/1
pH 9.3
FL 23.6
Cake 2/32
Pf 0.30
Mf 0.50
Cl 28000
Ca 80
Sd Tr
Sol 4.0
Oil 0
H2O 96.0
LCM 0
—4 1/4° N88E
6400
TEMPORARY 15K
—4 1/4° N85E

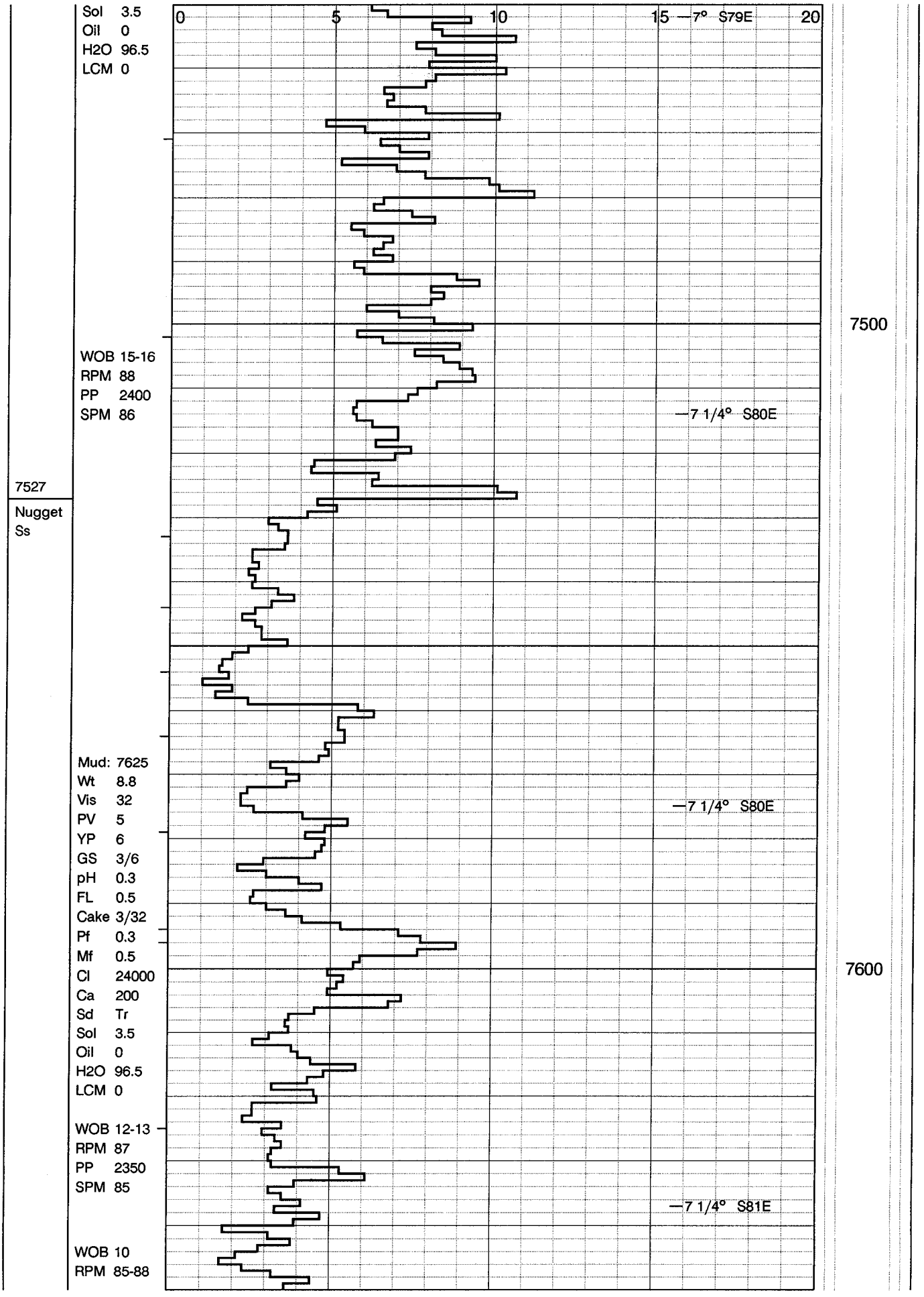

0
5
10
15
20
WOB 20
RPM 80
PP 2200
SPM 85
Mud: 6493
Wt 8.8
Vis 30
PV 3
YP 5
GS 2/5
pH 9.8
FL 48
Cake 3/32
Pf 0.6
Mf 1.0
Cl 24000
Ca 40
Sd Tr
Sol 4.0
Oil 0
H2O 96.0
LCM 0
WOB 15
RPM 80
PP 2200
SPM 85
WOB 15-17
RPM 85
PP 2300
SPM 88
—4 1/2° N89E
—5° N89E
—5° N89E
6500
6600
6640
Watton
Canyon
Mbr

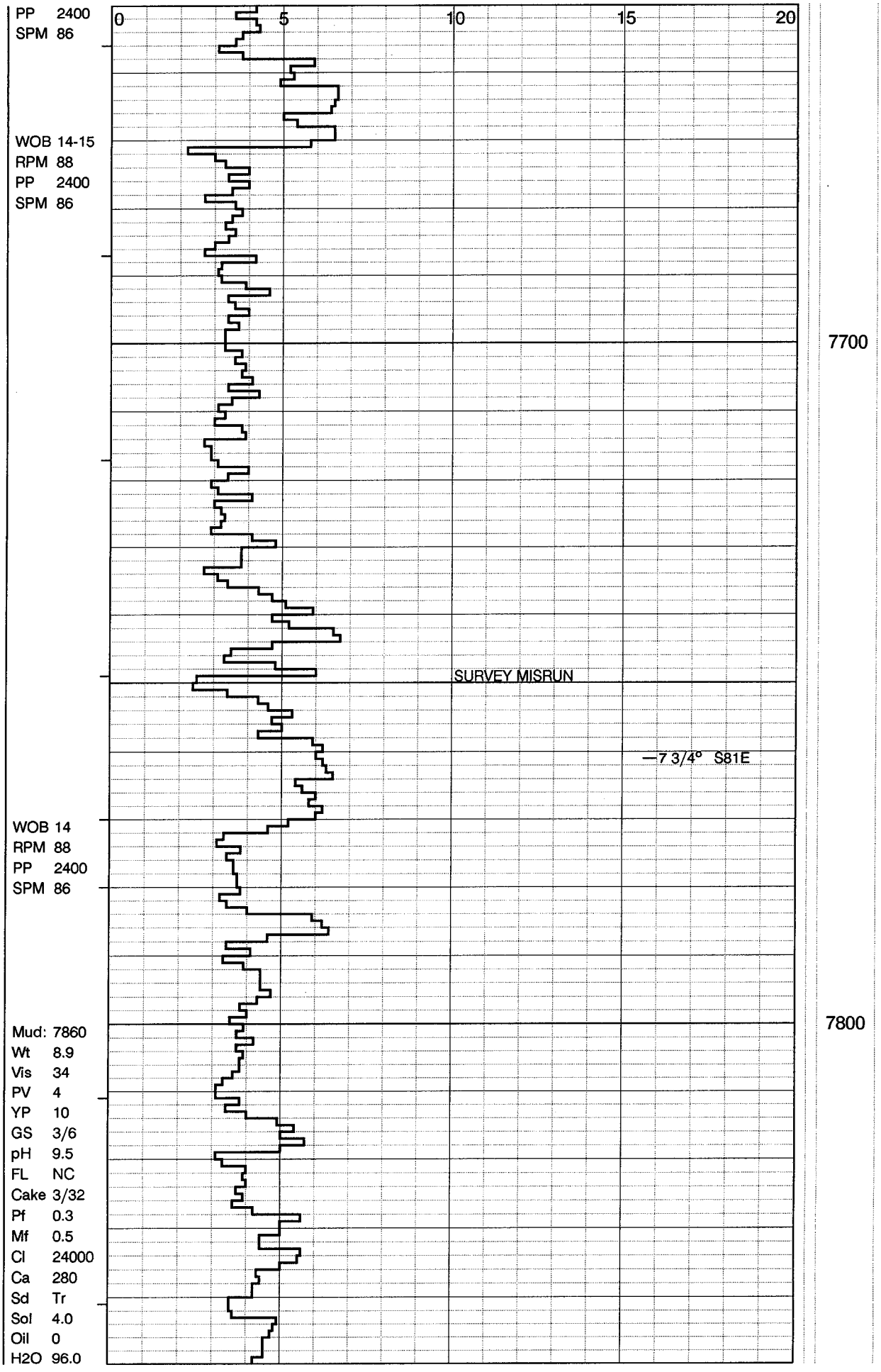

0
5
10
15
20
Mud: 6691
Wt 8.8
Vis 30
PV 3
YP 4
GS 2/5
pH 10.0
FL 68.0
Cake 3/32
Pf 0.7
Mf 1.2
Cl 23000
Ca 20
Sd 0.25
Sol 4.0
Oil 0
H2O 96.0
LCM 0
WOB 15
RPM 85
PP 2250
SPM 86
5 1/4° S86E
6700
5 1/4° S86E
Mud: 6815
Wt 8.9
Vis 31
PV 3
YP 9
GS 4/9
pH 9.5
FL 76.0
Cake 3/32
Pf 0.5
Mf 0.8
Cl 22000
Ca 20
Sd 0.25
Sol 5.0
Oil 0
H2O 95.0
LCM 0
WOB 15
RPM 85
PP 2300
SPM 86
6800
5 1/2° S86E
GAS SHOW 1-14-1 UNITS

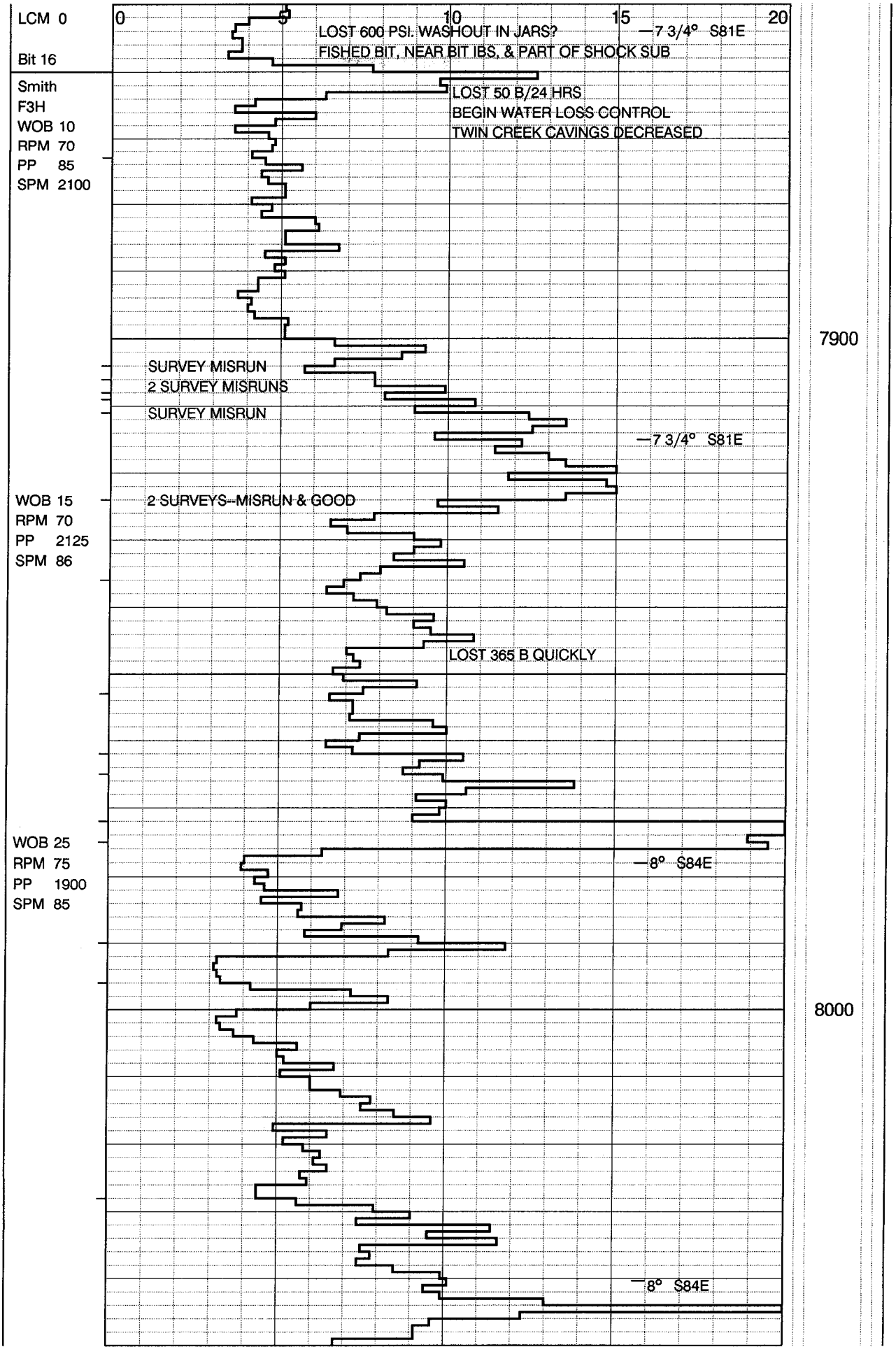

0
5
10
15
20
5 1/2° S86E
Mud: 6943
Wt 8.8
Vis 32
PV 4
YP 8
GS 5/9
pH 10.0
FL 80
Cake 3/32
Pf 0.75
Mf 1.2
Cl 23000
Ca 10
Sd Tr
Sol 4.0
Oil 0
H2O 96.0
LCM 0
GAS SHOW 2-190-4 UNITS
6900
5 1/2° S81E
WOB 15
RPM 86
PP 2350
SPM 86
6983
Boundary
Ridge
Mbr
5 3/4° S80E
7000
START RED BEDS
WOB 18
RPM 88
PP 2350
SPM 86
INCREASE W.O.B.
7032
Rich
Mbr
WOB 16
RPM 88
PP 2350
SPM 86

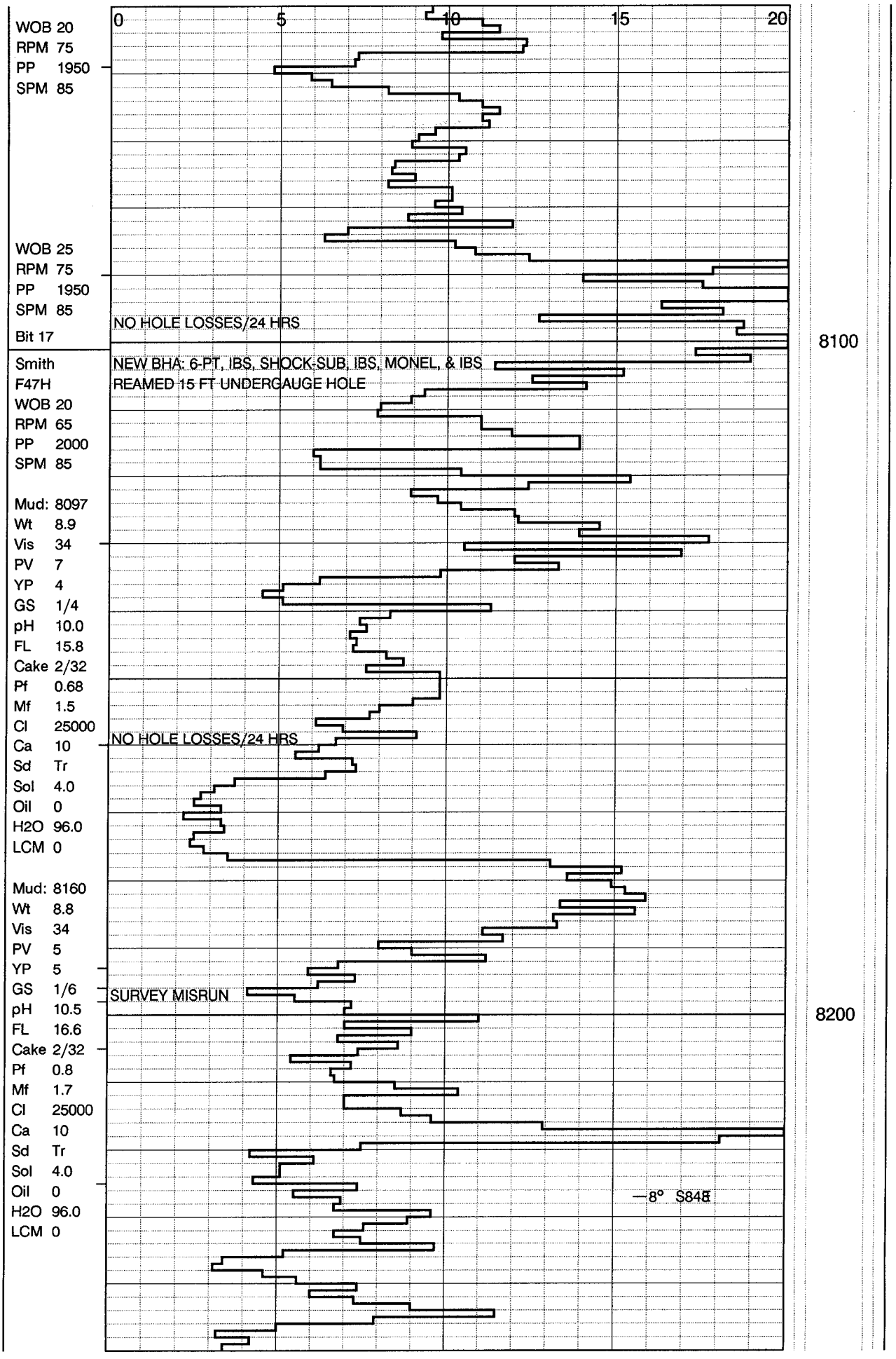

0
5
10
15
20
—5 3/4° S81E
RESTRING GEOLOGRAPH CABLE
DRILLING TIMES AVERAGED
7100
WOB 19
RPM 88
PP 2350
SPM 86
INCREASE W.O.B.
—5 3/4° S81E
—6° S81E
WOB 19
RPM 88
PP 2400
SPM 86
WOB 18
RPM 88
PP 2400
SPM 86
7200
Mud: 7229
Wt 8.8
Vis 32
PV 4
YP 4
GS 4/8
pH 10.0
—6°

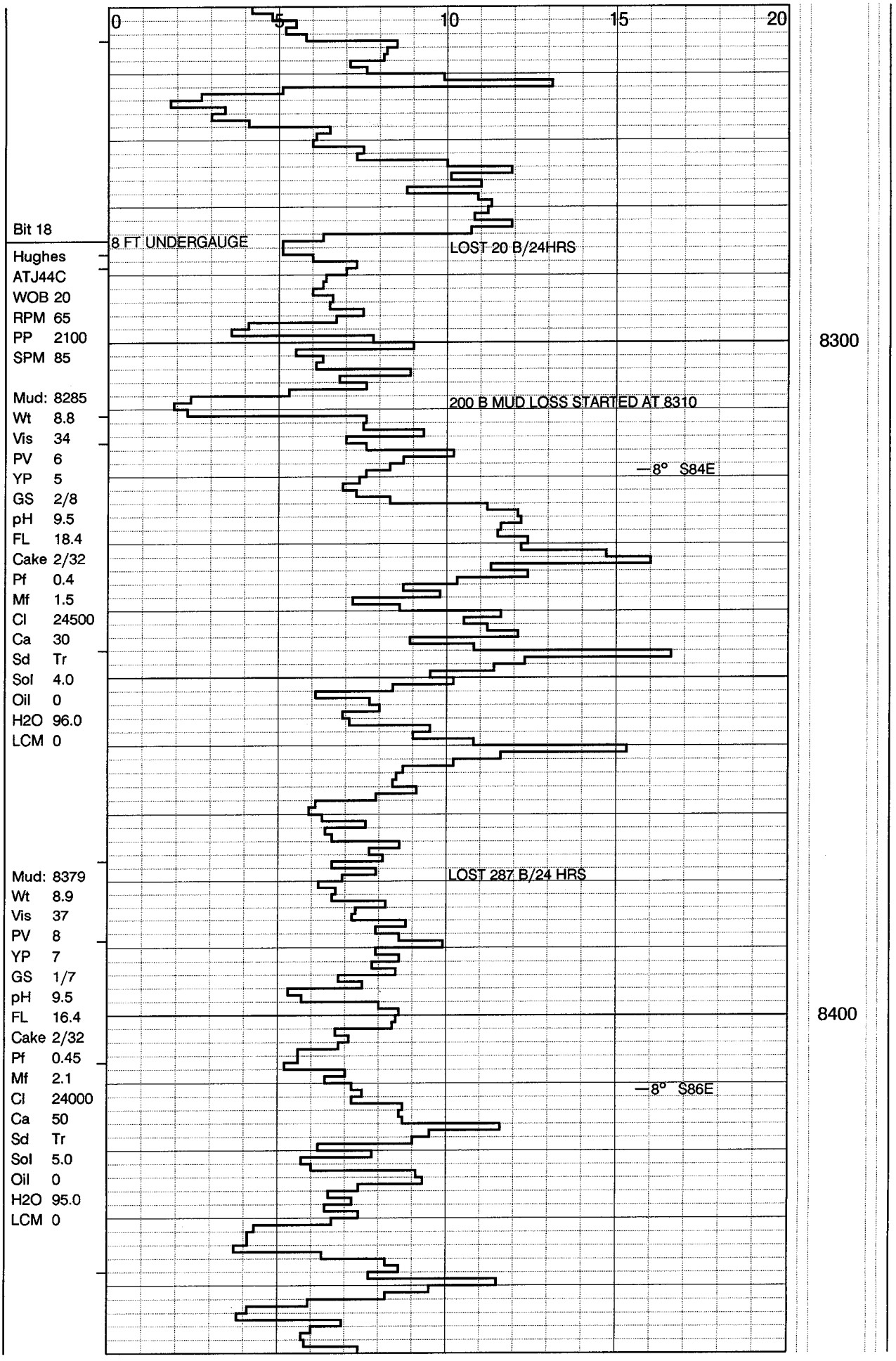

FL NC
Cake 3/32
Pf 0.5
Mf 1.2
Cl 25000
Ca 84
Sd Tr
Sol 13.5
Oil 0
H2O 86.5
LCM 0
0
5
10
15
20
SURVEY MISRUN
SURVEY MISRUN
SURVEY MISRUN
6°
7300
7304
Slide
Rock
Mbr
WOB 19
RPM 88
PP 2350
SPM 86
WOB 15
RPM 88
PP 2350
SPM 86
7° S79E
7400
Mud: 7408
Wt 8.8
Vis 31
PV 4
YP 4
GS 2/4
pH 10.0
FL NC
Cake 3/32
Pf 0.5
Mf 0.9
Cl 24000
Ca 100
Sd Tr
SURVEY MISRUN
7416
Gypsum
Spring
Mbr

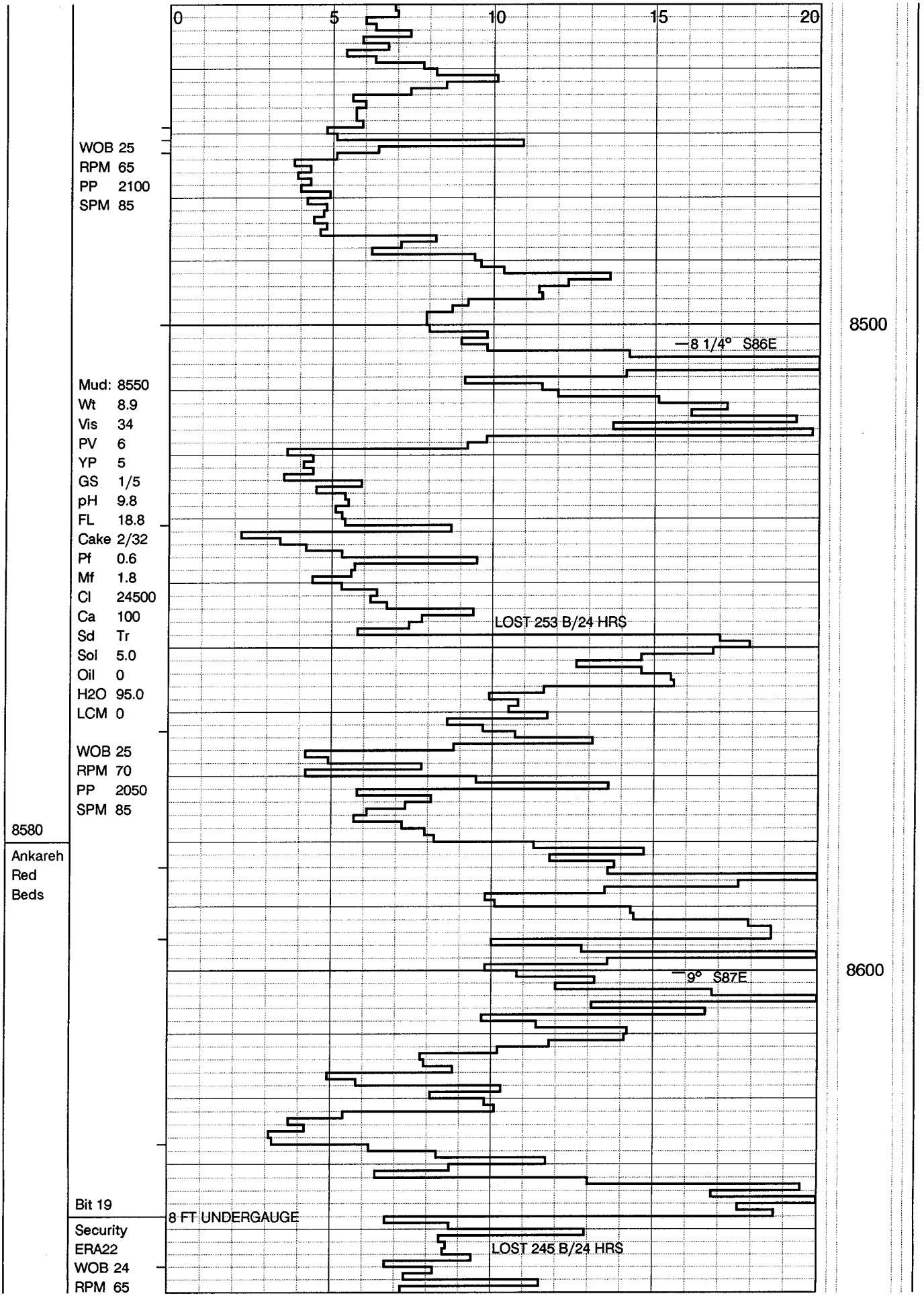

Sol 3.5
Oil 0
H2O 96.5
LCM 0
0
5
10
15
20
—7° S79E
7500
WOB 15-16
RPM 88
PP 2400
SPM 86
—7 1/4° S80E
7527
Nugget
Ss
Mud: 7625
Wt 8.8
Vis 32
PV 5
YP 6
GS 3/6
pH 0.3
FL 0.5
Cake 3/32
Pf 0.3
Mf 0.5
Cl 24000
Ca 200
Sd Tr
Sol 3.5
Oil 0
H2O 96.5
LCM 0
—7 1/4° S80E
7600
WOB 12-13
RPM 87
PP 2350
SPM 85
—7 1/4° S81E
WOB 10
RPM 85-88

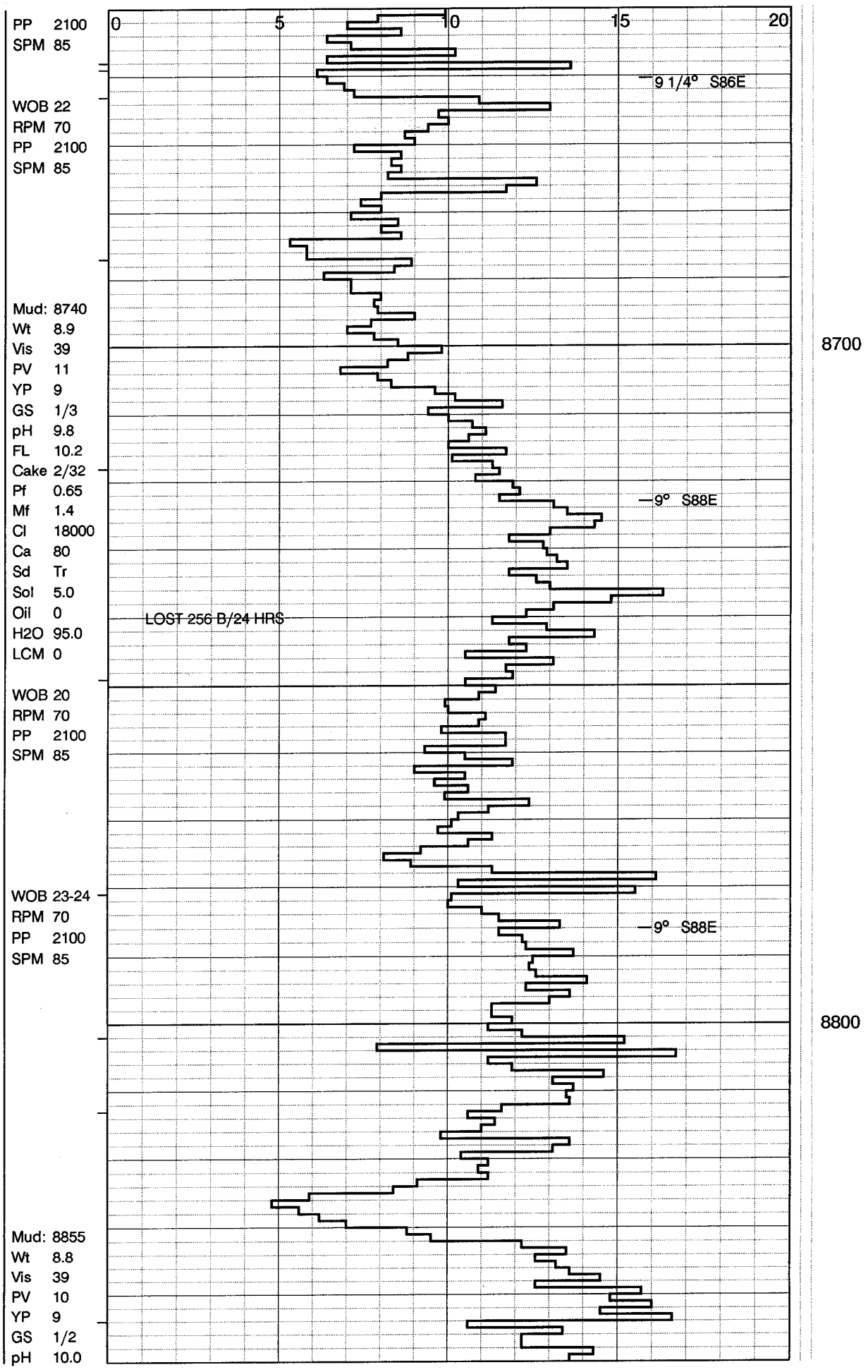

PP 2400
SPM 86
0
5
10
15
20
WOB 14-15
RPM 88
PP 2400
SPM 86
7700
SURVEY MISRUN
—7 3/4° S81E
WOB 14
RPM 88
PP 2400
SPM 86
7800
Mud: 7860
Wt 8.9
Vis 34
PV 4
YP 10
GS 3/6
pH 9.5
FL NC
Cake 3/32
Pf 0.3
Mf 0.5
Cl 24000
Ca 280
Sd Tr
Sol 4.0
Oil 0
H2O 96.0

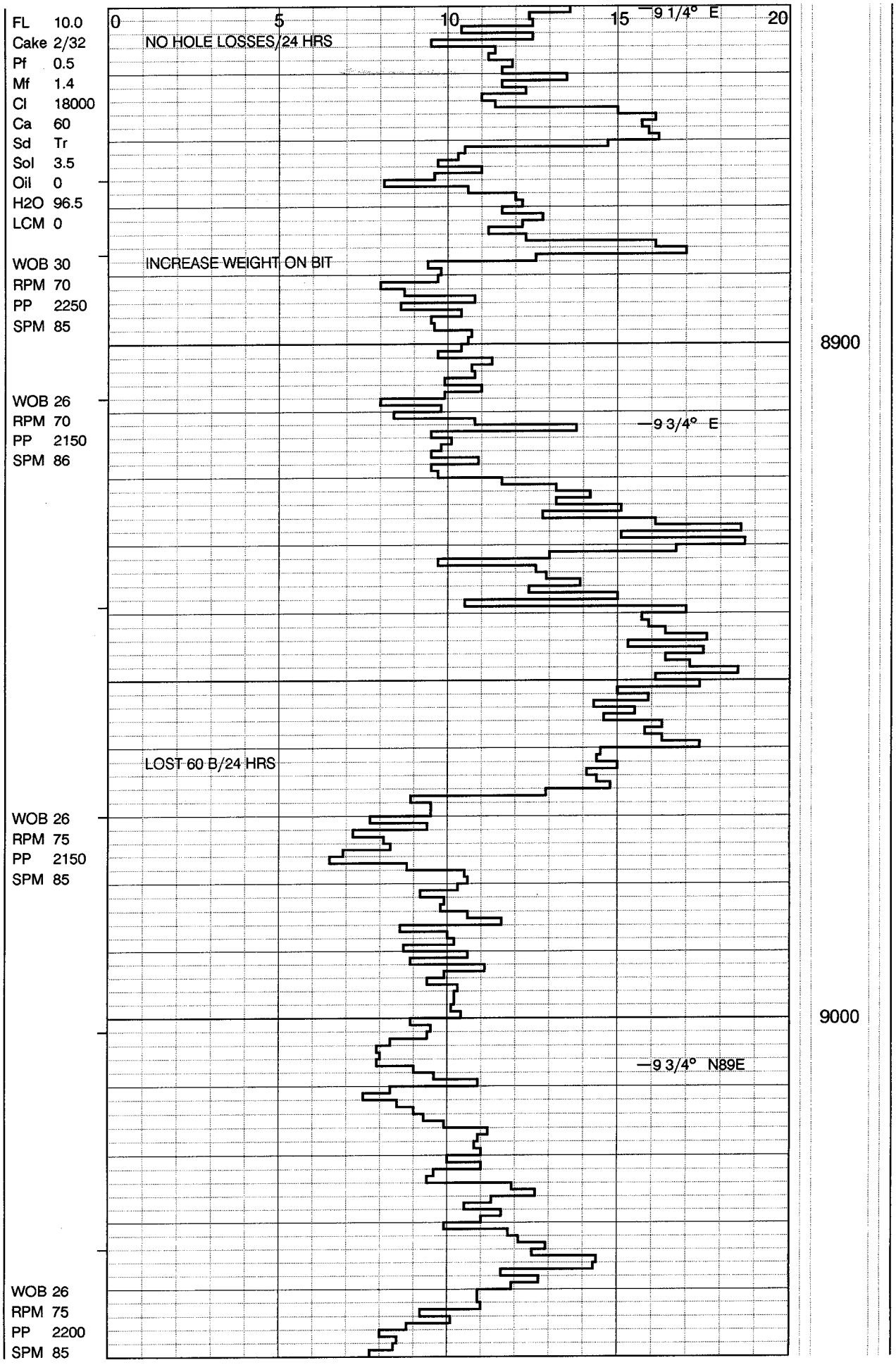

LCM 0
Bit 16
0
5
10
15
20
LOST 600 PSI. WASHOUT IN JARS?
FISHED BIT, NEAR BIT IBS, & PART OF SHOCK SUB
—7 3/4° S81E
Smith
F3H
WOB 10
RPM 70
PP 85
SPM 2100
LOST 50 B/24 HRS
BEGIN WATER LOSS CONTROL
TWIN CREEK CAVINGS DECREASED
7900
SURVEY MISRUN
2 SURVEY MISRUNS
SURVEY MISRUN
—7 3/4° S81E
WOB 15
RPM 70
PP 2125
SPM 86
2 SURVEYS--MISRUN & GOOD
LOST 365 B QUICKLY
WOB 25
RPM 75
PP 1900
SPM 85
—8° S84E
8000
—8° S84E

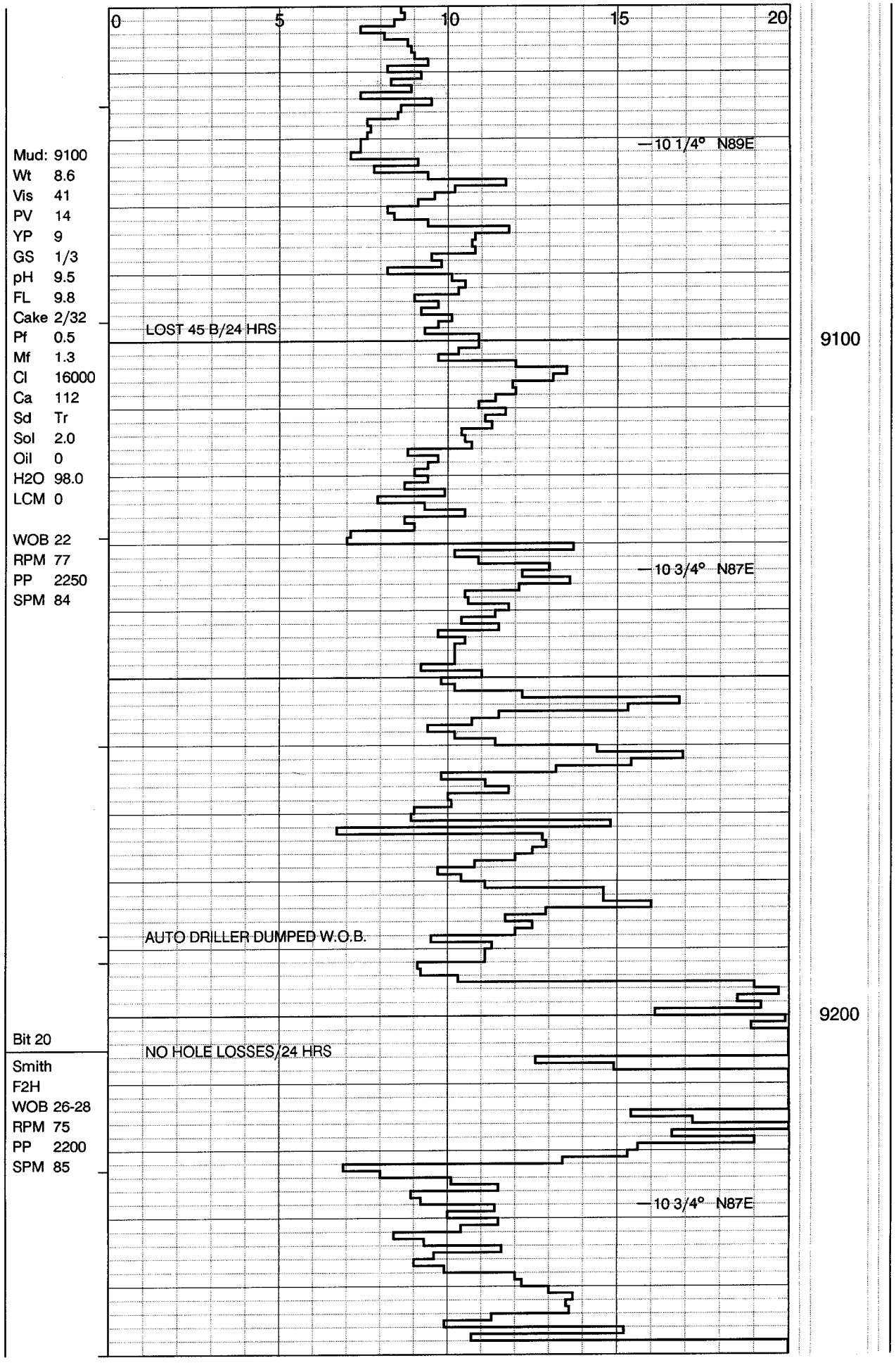

0
5
10
15
20
WOB 20
RPM 75
PP 1950
SPM 85
WOB 25
RPM 75
PP 1950
SPM 85
Bit 17
NO HOLE LOSSES/24 HRS
8100
Smith
F47H
WOB 20
RPM 65
PP 2000
SPM 85
NEW BHA: 6-PT, IBS, SHOCK-SUB, IBS, MONEL, & IBS
REAMED 15 FT UNDERGAUGE HOLE
Mud: 8097
Wt 8.9
Vis 34
PV 7
YP 4
GS 1/4
pH 10.0
FL 15.8
Cake 2/32
Pf 0.68
Mf 1.5
Cl 25000
Ca 10
Sd Tr
Sol 4.0
Oil 0
H2O 96.0
LCM 0
NO HOLE LOSSES/24 HRS
Mud: 8160
Wt 8.8
Vis 34
PV 5
YP 5
GS 1/6
pH 10.5
FL 16.6
Cake 2/32
Pf 0.8
Mf 1.7
Cl 25000
Ca 10
Sd Tr
Sol 4.0
Oil 0
H2O 96.0
LCM 0
SURVEY MISRUN
8200
—8° S84E

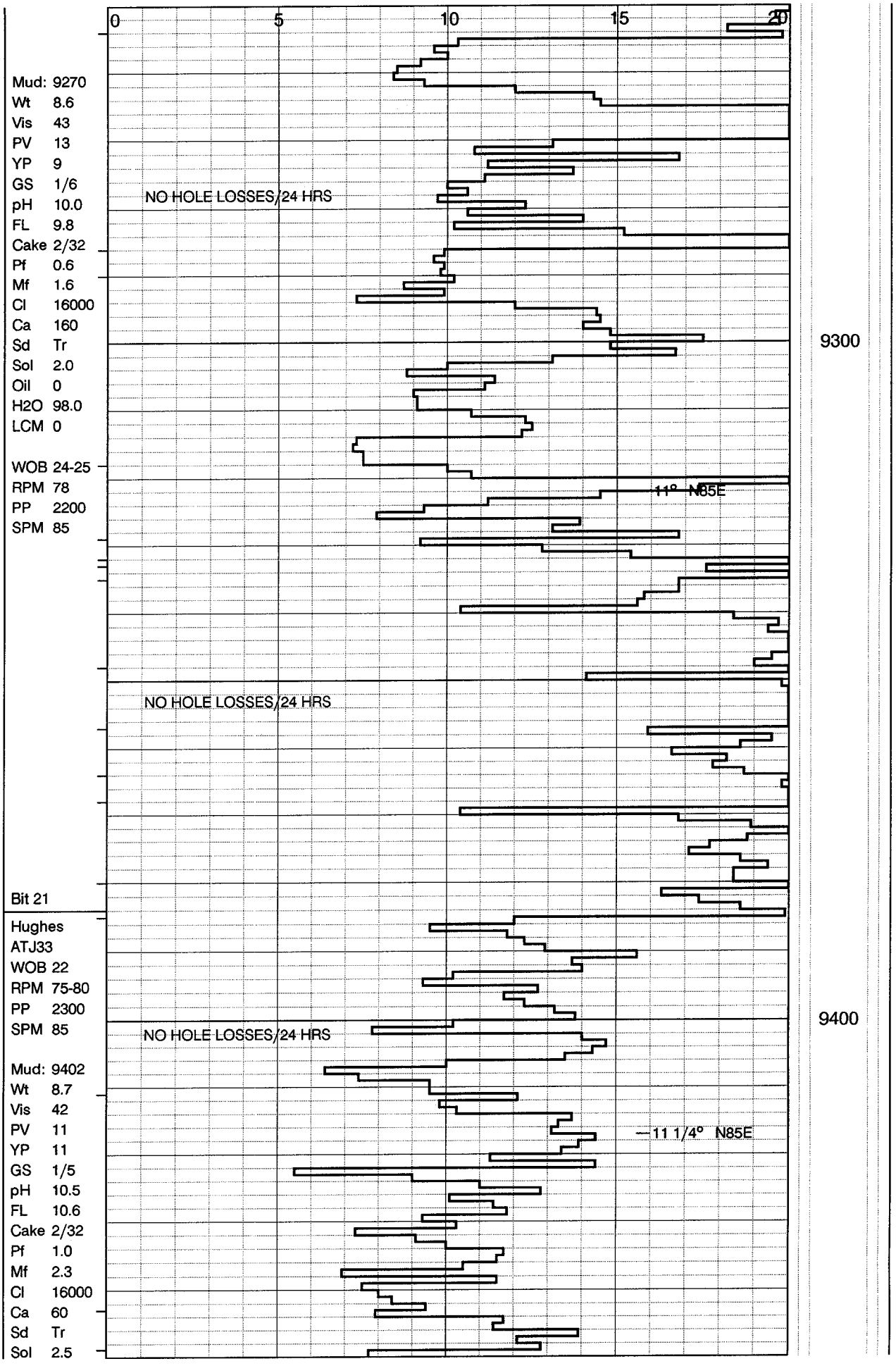

0
5
10
15
20
Bit 18
Hughes
ATJ44C
WOB 20
RPM 65
PP 2100
SPM 85
Mud: 8285
Wt 8.8
Vis 34
PV 6
YP 5
GS 2/8
pH 9.5
FL 18.4
Cake 2/32
Pf 0.4
Mf 1.5
Cl 24500
Ca 30
Sd Tr
Sol 4.0
Oil 0
H2O 96.0
LCM 0
Mud: 8379
Wt 8.9
Vis 37
PV 8
YP 7
GS 1/7
pH 9.5
FL 16.4
Cake 2/32
Pf 0.45
Mf 2.1
Cl 24000
Ca 50
Sd Tr
Sol 5.0
Oil 0
H2O 95.0
LCM 0
8 FT UNDERGAUGE
LOST 20 B/24HRS
200 B MUD LOSS STARTED AT 8310
—8° S84E
LOST 287 B/24 HRS
—8° S86E
8300
8400

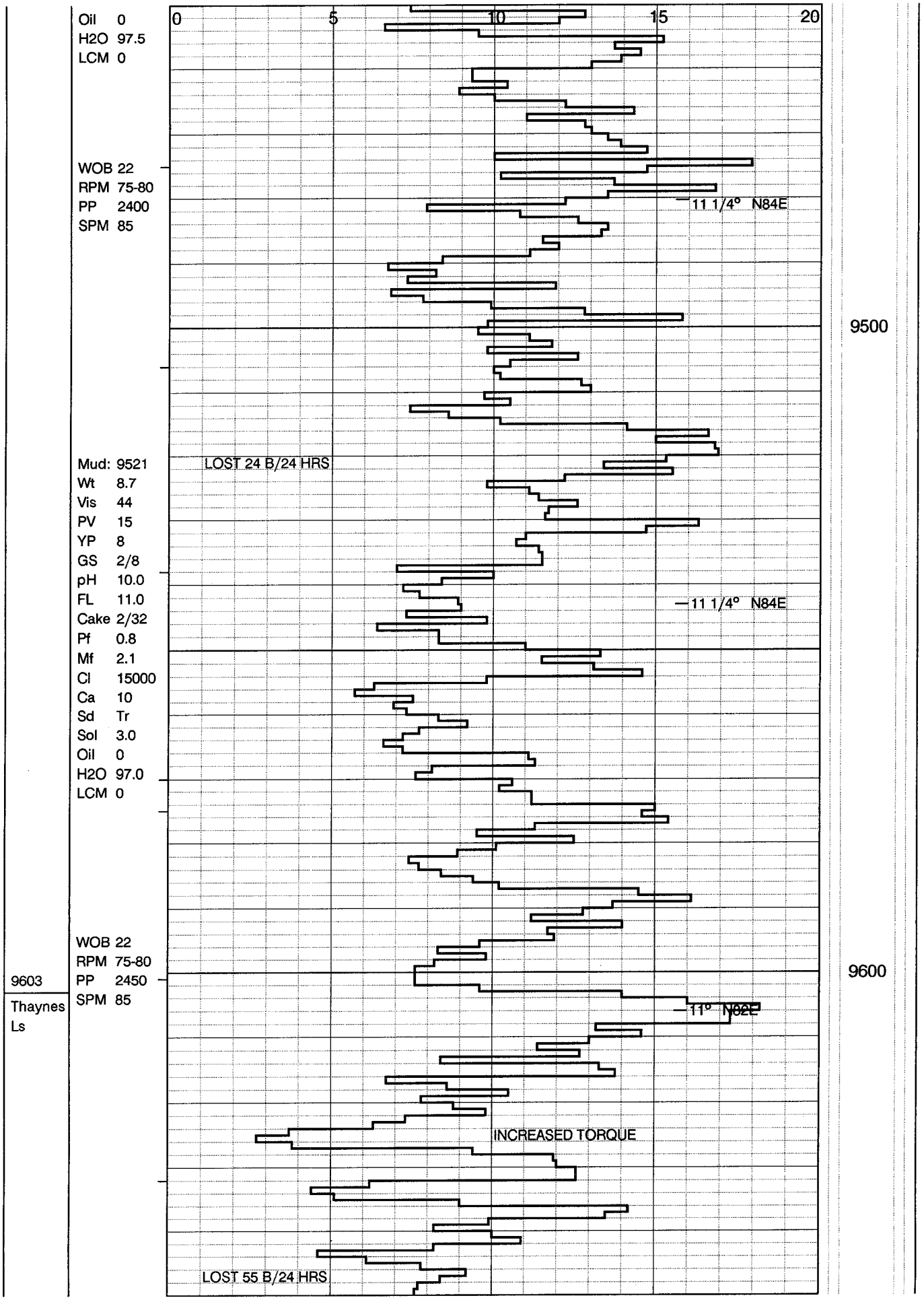

0
5
10
15
20
WOB 25
RPM 65
PP 2100
SPM 85
8500
8 1/4° S86E
Mud: 8550
Wt 8.9
Vis 34
PV 6
YP 5
GS 1/5
pH 9.8
FL 18.8
Cake 2/32
Pf 0.6
Mf 1.8
Cl 24500
Ca 100
Sd Tr
Sol 5.0
Oil 0
H2O 95.0
LCM 0
LOST 253 B/24 HRS
WOB 25
RPM 70
PP 2050
SPM 85
8580
Ankareh
Red
Beds
8600
9° S87E
Bit 19
8 FT UNDERGAUGE
Security
ERA22
WOB 24
RPM 65
LOST 245 B/24 HRS

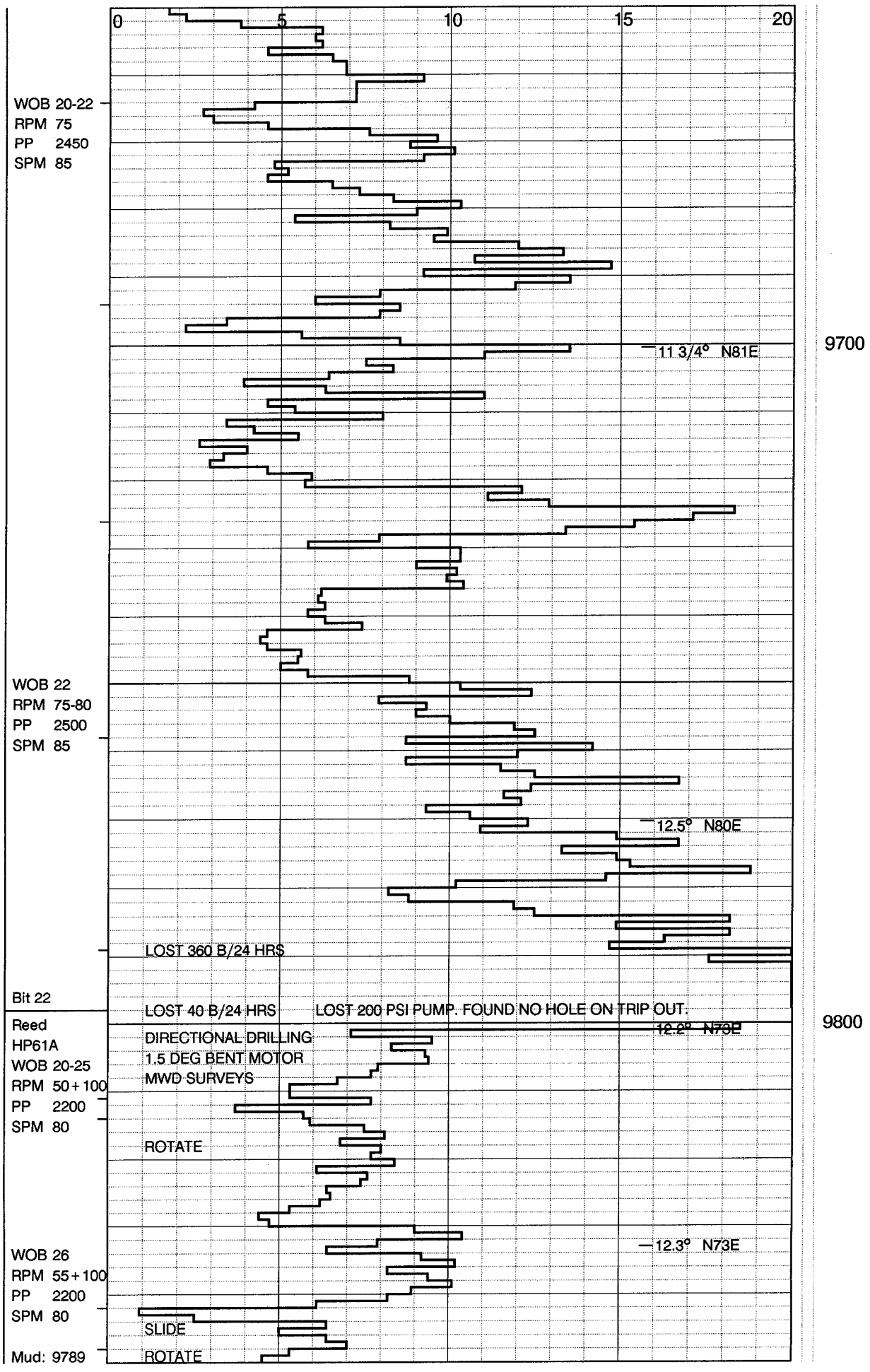

PP 2100
SPM 85
WOB 22
RPM 70
PP 2100
SPM 85
Mud: 8740
Wt 8.9
Vis 39
PV 11
YP 9
GS 1/3
pH 9.8
FL 10.2
Cake 2/32
Pf 0.65
Mf 1.4
Cl 18000
Ca 80
Sd Tr
Sol 5.0
Oil 0
H2O 95.0
LCM 0
WOB 20
RPM 70
PP 2100
SPM 85
WOB 23-24
RPM 70
PP 2100
SPM 85
Mud: 8855
Wt 8.8
Vis 39
PV 10
YP 9
GS 1/2
pH 10.0
0
5
10
15
20
9 1/4° S86E
9° S88E
LOST 256 B/24 HRS
9° S88E
8700
8800

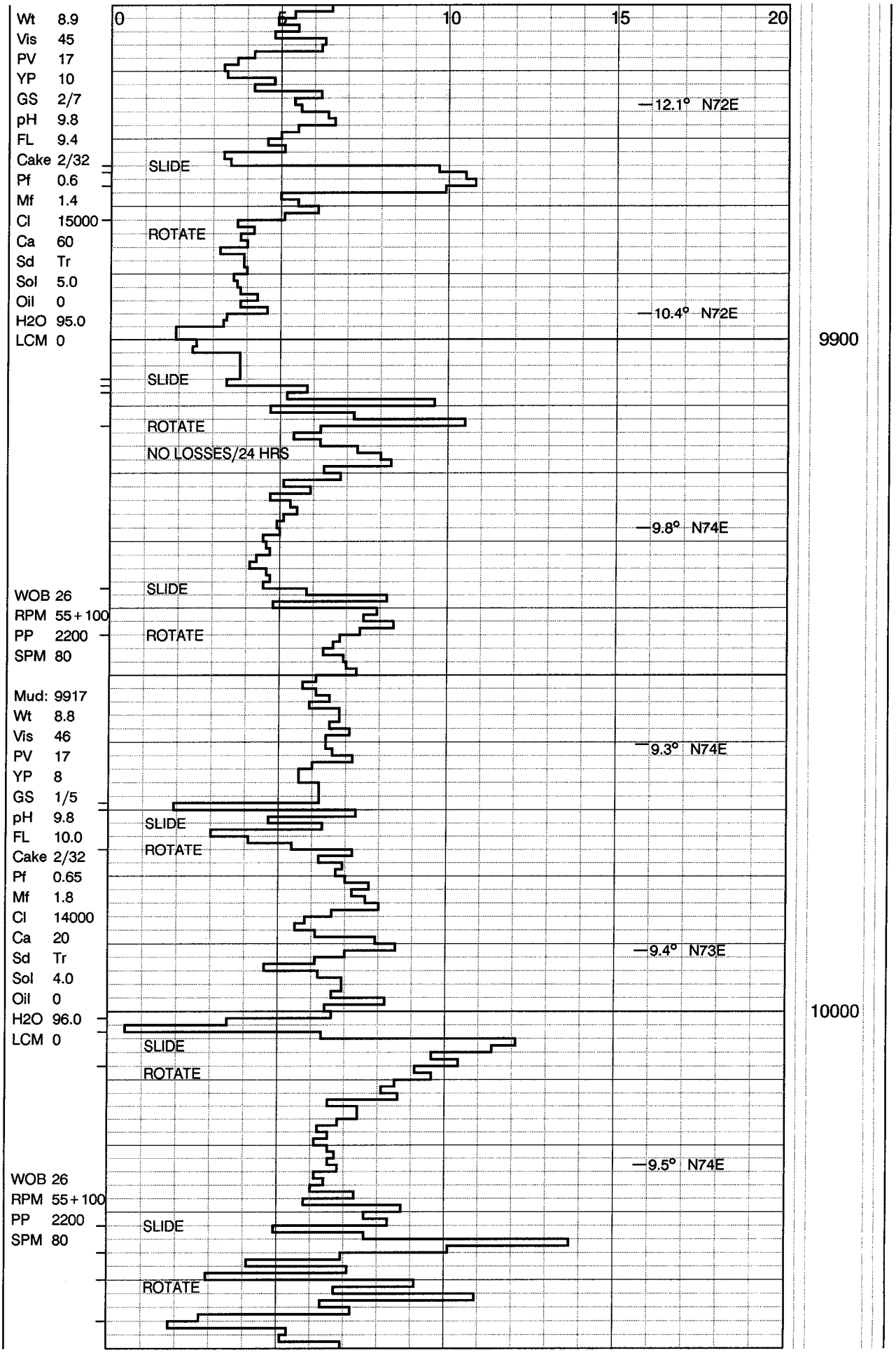

FL 10.0
Cake 2/32
Pf 0.5
Mf 1.4
Cl 18000
Ca 60
Sd Tr
Sol 3.5
Oil 0
H2O 96.5
LCM 0
WOB 30
RPM 70
PP 2250
SPM 85
WOB 26
RPM 70
PP 2150
SPM 86
WOB 26
RPM 75
PP 2150
SPM 85
WOB 26
RPM 75
PP 2200
SPM 85
0
5
10
15
20
9 1/4° E
NO HOLE LOSSES/24 HRS
INCREASE WEIGHT ON BIT
9 3/4° E
LOST 60 B/24 HRS
9 3/4° N89E
8900
9000

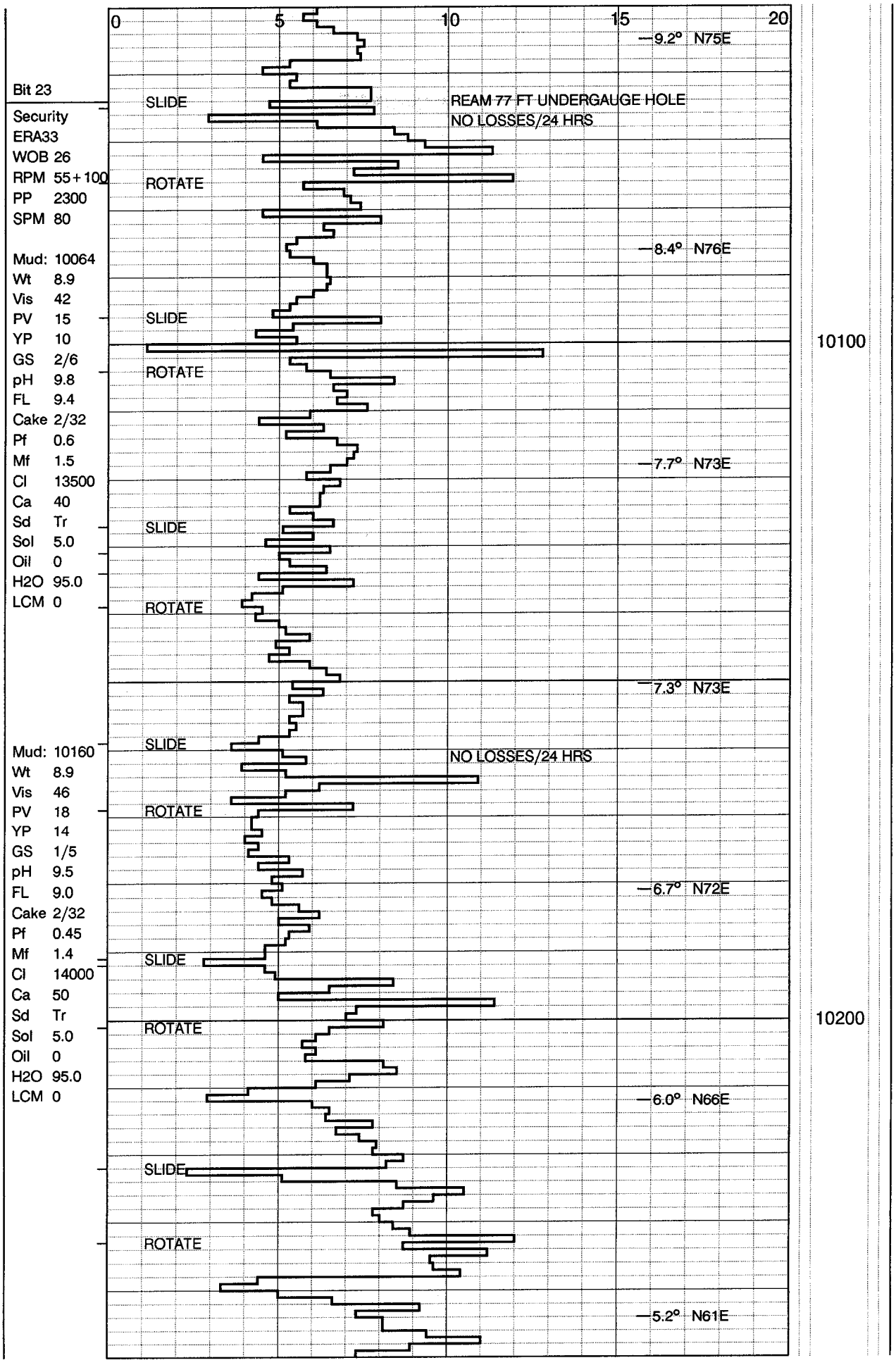

0
5
10
15
20
Mud: 9100
Wt 8.6
Vis 41
PV 14
YP 9
GS 1/3
pH 9.5
FL 9.8
Cake 2/32
Pf 0.5
Mf 1.3
Cl 16000
Ca 112
Sd Tr
Sol 2.0
Oil 0
H2O 98.0
LCM 0
WOB 22
RPM 77
PP 2250
SPM 84
Bit 20
Smith
F2H
WOB 26-28
RPM 75
PP 2200
SPM 85
—10 1/4° N89E
LOST 45 B/24 HRS
9100
—10 3/4° N87E
AUTO DRILLER DUMPED W.O.B.
9200
NO HOLE LOSSES/24 HRS
—10 3/4° N87E

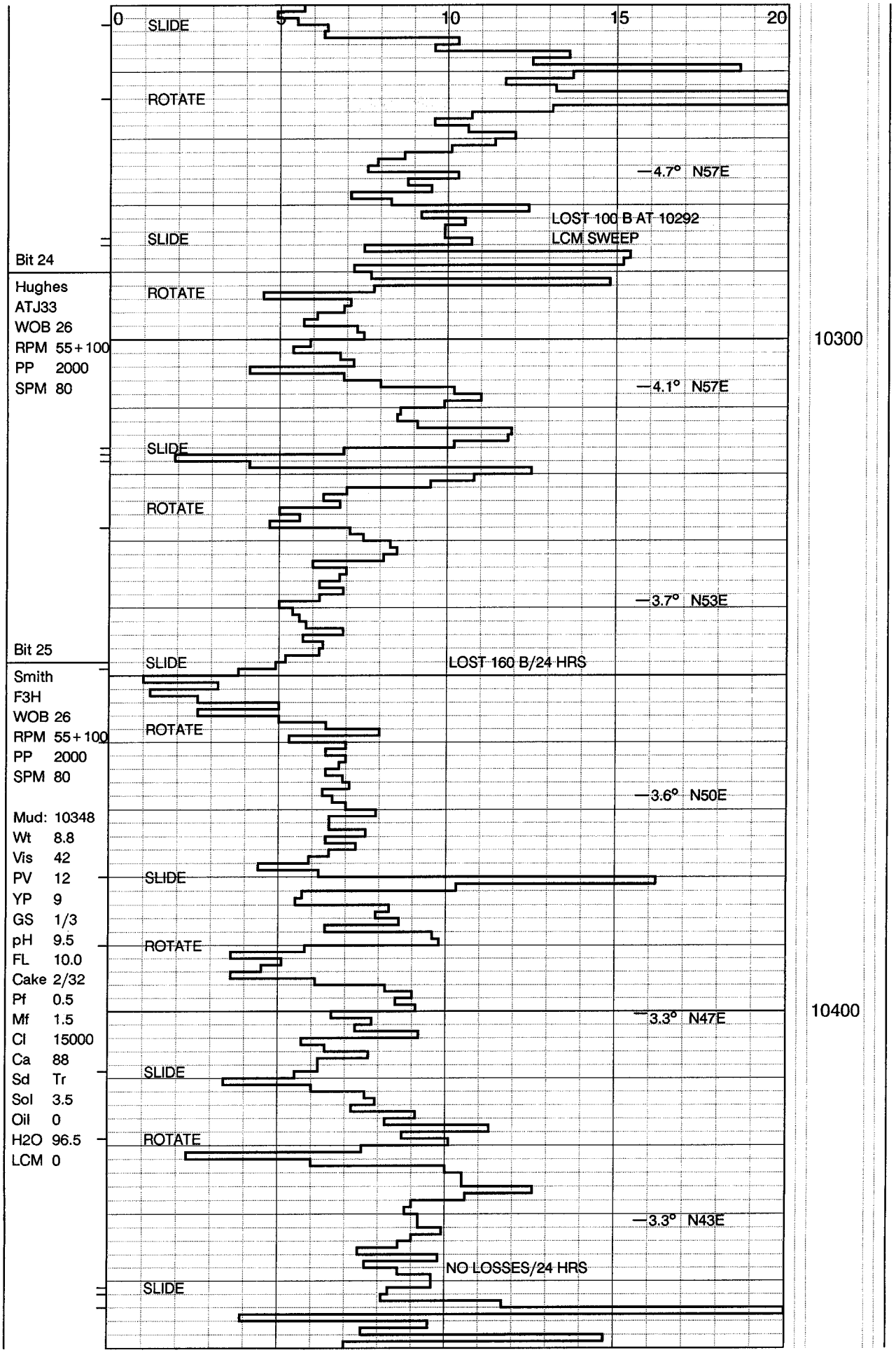

0
5
10
15
20
Mud: 9270
Wt 8.6
Vis 43
PV 13
YP 9
GS 1/6
pH 10.0
FL 9.8
Cake 2/32
Pf 0.6
Mf 1.6
Cl 16000
Ca 160
Sd Tr
Sol 2.0
Oil 0
H2O 98.0
LCM 0
WOB 24-25
RPM 78
PP 2200
SPM 85
NO HOLE LOSSES/24 HRS
11° N85E
9300
NO HOLE LOSSES/24 HRS
Bit 21
Hughes
ATJ33
WOB 22
RPM 75-80
PP 2300
SPM 85
NO HOLE LOSSES/24 HRS
9400
Mud: 9402
Wt 8.7
Vis 42
PV 11
YP 11
GS 1/5
pH 10.5
FL 10.6
Cake 2/32
Pf 1.0
Mf 2.3
Cl 16000
Ca 60
Sd Tr
Sol 2.5
11 1/4° N85E

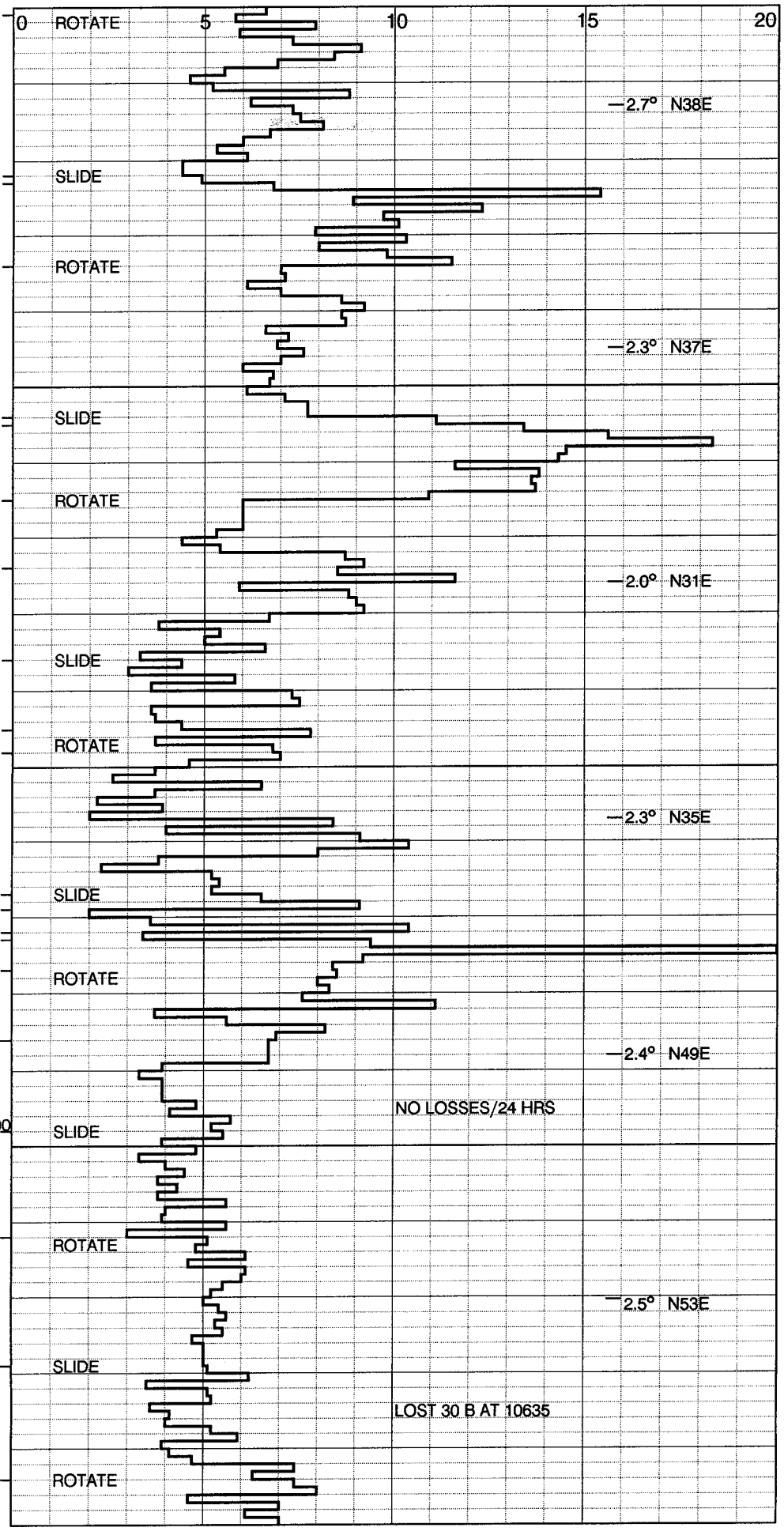

Oil 0
H2O 97.5
LCM 0
0
5
10
15
20
WOB 22
RPM 75-80
PP 2400
SPM 85
11 1/4° N84E
9500
Mud: 9521
LOST 24 B/24 HRS
Wt 8.7
Vis 44
PV 15
YP 8
GS 2/8
pH 10.0
FL 11.0
Cake 2/32
Pf 0.8
Mf 2.1
Cl 15000
Ca 10
Sd Tr
Sol 3.0
Oil 0
H2O 97.0
LCM 0
11 1/4° N84E
WOB 22
RPM 75-80
9603
PP 2450
SPM 85
9600
Thaynes
Ls
11° N82E
INCREASED TORQUE
LOST 55 B/24 HRS


0
5
10
15
20
WOB 20-22
RPM 75
PP 2450
SPM 85
11 3/4° N81E
9700
WOB 22
RPM 75-80
PP 2500
SPM 85
12.5° N80E
LOST 360 B/24 HRS
Bit 22
LOST 40 B/24 HRS
LOST 200 PSI PUMP. FOUND NO HOLE ON TRIP OUT.
12.2° N73E
9800
Reed
HP61A
WOB 20-25
RPM 50+100
PP 2200
SPM 80
DIRECTIONAL DRILLING
1.5 DEG BENT MOTOR
MWD SURVEYS
ROTATE
12.3° N73E
WOB 26
RPM 55+100
PP 2200
SPM 80
SLIDE
ROTATE
Mud: 9789


Wt 8.9
Vis 45
PV 17
YP 10
GS 2/7
pH 9.8
FL 9.4
Cake 2/32
Pf 0.6
Mf 1.4
Cl 15000
Ca 60
Sd Tr
Sol 5.0
Oil 0
H2O 95.0
LCM 0
WOB 26
RPM 55+100
PP 2200
SPM 80
Mud: 9917
Wt 8.8
Vis 46
PV 17
YP 8
GS 1/5
pH 9.8
FL 10.0
Cake 2/32
Pf 0.65
Mf 1.8
Cl 14000
Ca 20
Sd Tr
Sol 4.0
Oil 0
H2O 96.0
LCM 0
WOB 26
RPM 55+100
PP 2200
SPM 80
0
5
10
15
20
SLIDE
ROTATE
SLIDE
ROTATE
NO LOSSES/24 HRS
SLIDE
ROTATE
SLIDE
ROTATE
SLIDE
ROTATE
SLIDE
ROTATE
—12.1° N72E
—10.4° N72E
—9.8° N74E
—9.3° N74E
—9.4° N73E
—9.5° N74E
9900
10000


0
5
10
15
20
Bit 23
Security
ERA33
WOB 26
RPM 55+100
PP 2300
SPM 80
Mud: 10064
Wt 8.9
Vis 42
PV 15
YP 10
GS 2/6
pH 9.8
FL 9.4
Cake 2/32
Pf 0.6
Mf 1.5
Cl 13500
Ca 40
Sd Tr
Sol 5.0
Oil 0
H2O 95.0
LCM 0
Mud: 10160
Wt 8.9
Vis 46
PV 18
YP 14
GS 1/5
pH 9.5
FL 9.0
Cake 2/32
Pf 0.45
Mf 1.4
Cl 14000
Ca 50
Sd Tr
Sol 5.0
Oil 0
H2O 95.0
LCM 0
SLIDE
ROTATE
SLIDE
ROTATE
SLIDE
ROTATE
SLIDE
ROTATE
SLIDE
ROTATE
SLIDE
ROTATE
REAM 77 FT UNDERGAUGE HOLE
NO LOSSES/24 HRS
NO LOSSES/24 HRS
—9.2° N75E
—8.4° N76E
—7.7° N73E
—7.3° N73E
—6.7° N72E
—6.0° N66E
—5.2° N61E
10100
10200

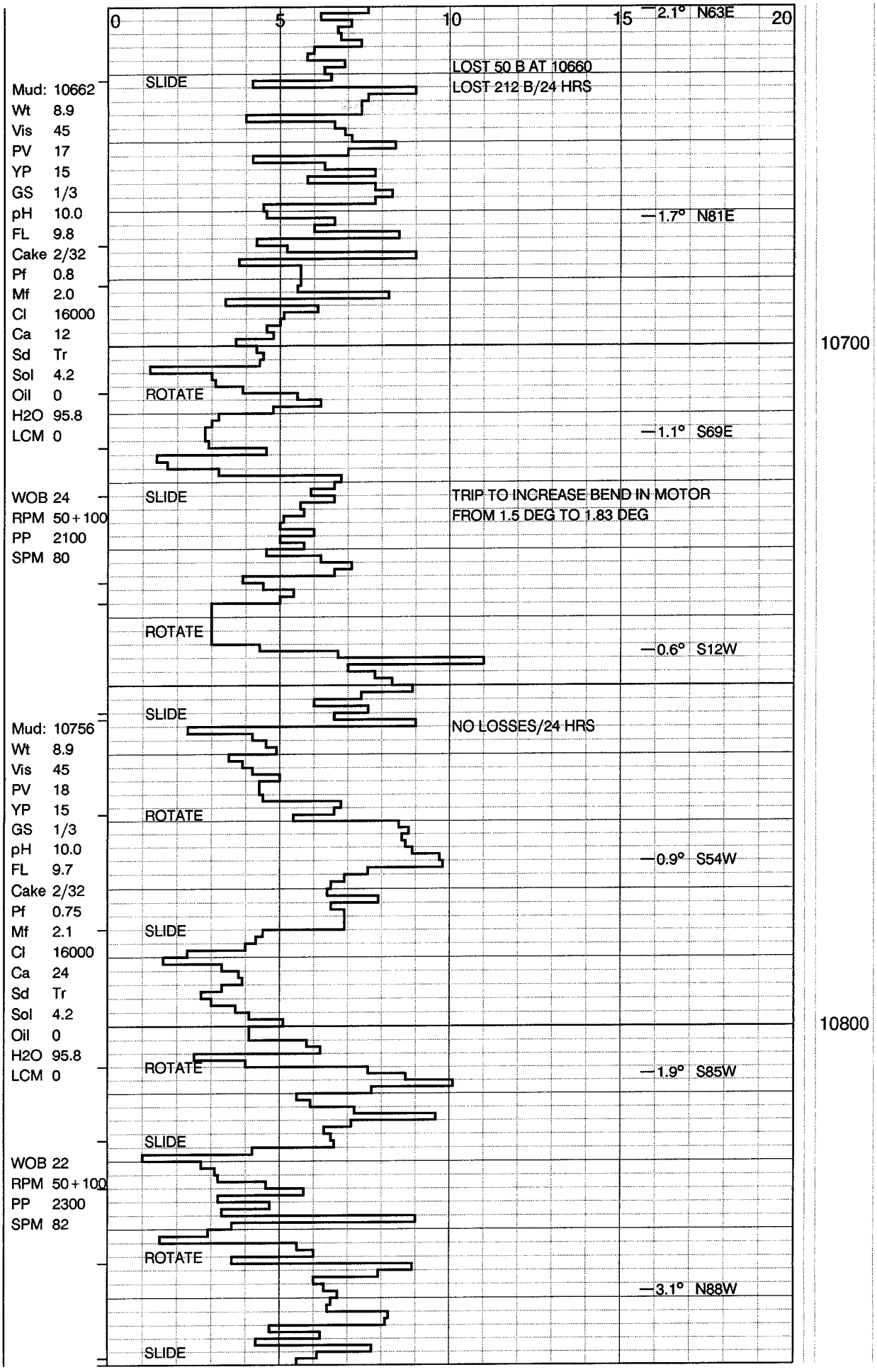

0
5
10
15
20
SLIDE
ROTATE
—4.7° N57E
LOST 100 B AT 10292
LCM SWEEP
SLIDE
Bit 24
Hughes
ATJ33
WOB 26
RPM 55+100
PP 2000
SPM 80
ROTATE
10300
—4.1° N57E
SLIDE
ROTATE
—3.7° N53E
Bit 25
SLIDE
LOST 160 B/24 HRS
Smith
F3H
WOB 26
RPM 55+100
PP 2000
SPM 80
ROTATE
—3.6° N50E
Mud: 10348
Wt 8.8
Vis 42
PV 12
YP 9
GS 1/3
pH 9.5
FL 10.0
Cake 2/32
Pf 0.5
Mf 1.5
Cl 15000
Ca 88
Sd Tr
Sol 3.5
Oil 0
H2O 96.5
LCM 0
SLIDE
ROTATE
10400
—3.3° N47E
SLIDE
ROTATE
—3.3° N43E
NO LOSSES/24 HRS
SLIDE

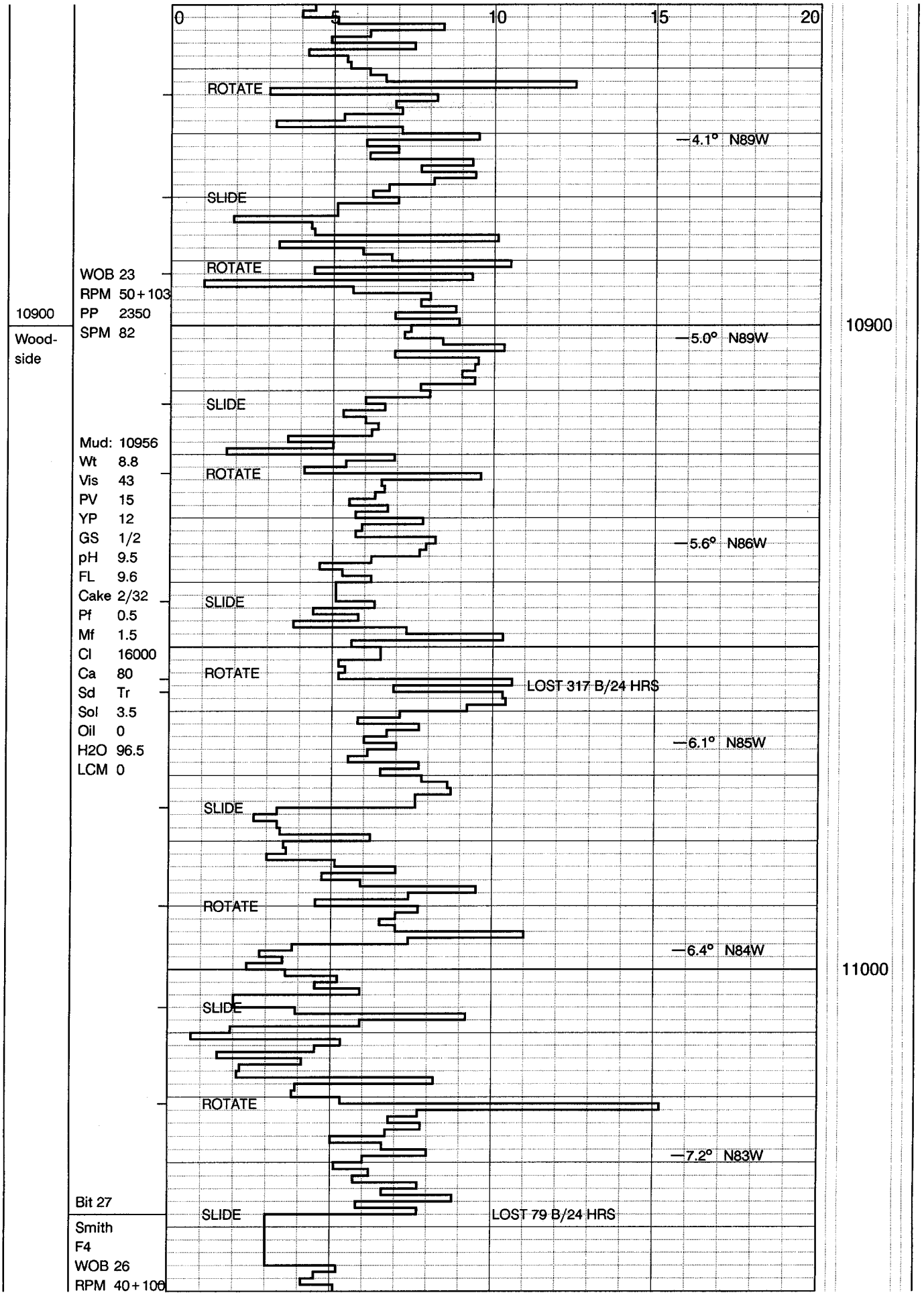


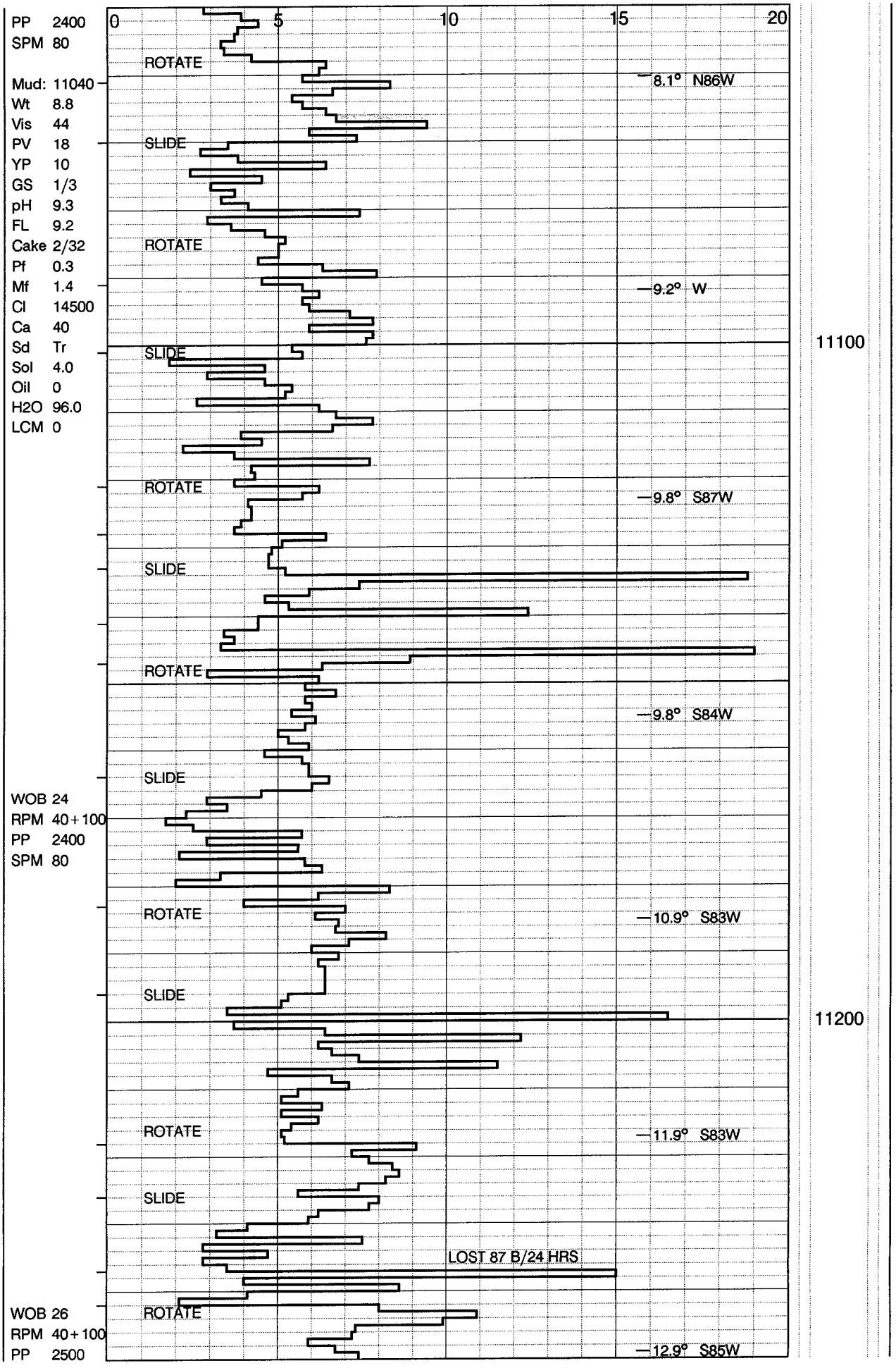
Mud: 10585
Wt 8.8
Vis 42
PV 14
YP 8
GS 1/2
pH 10.0
FL 9.6
Cake 2/32
Pf 0.5
Mf 1.5
Cl 16000
Ca 80
Sd Tr
Sol 3.5
Oil 0
H2O 96.5
LCM 0

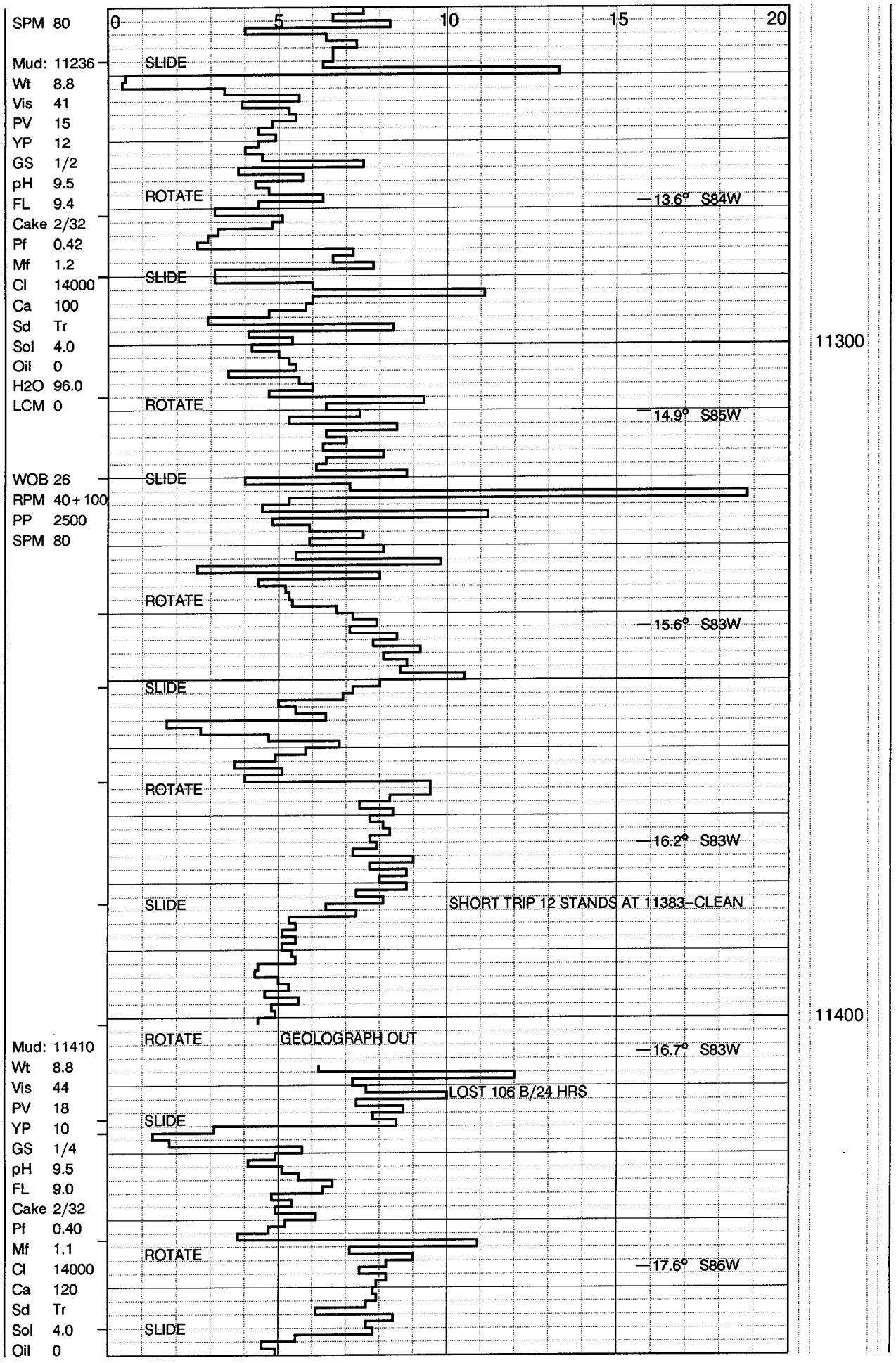
Bit 26

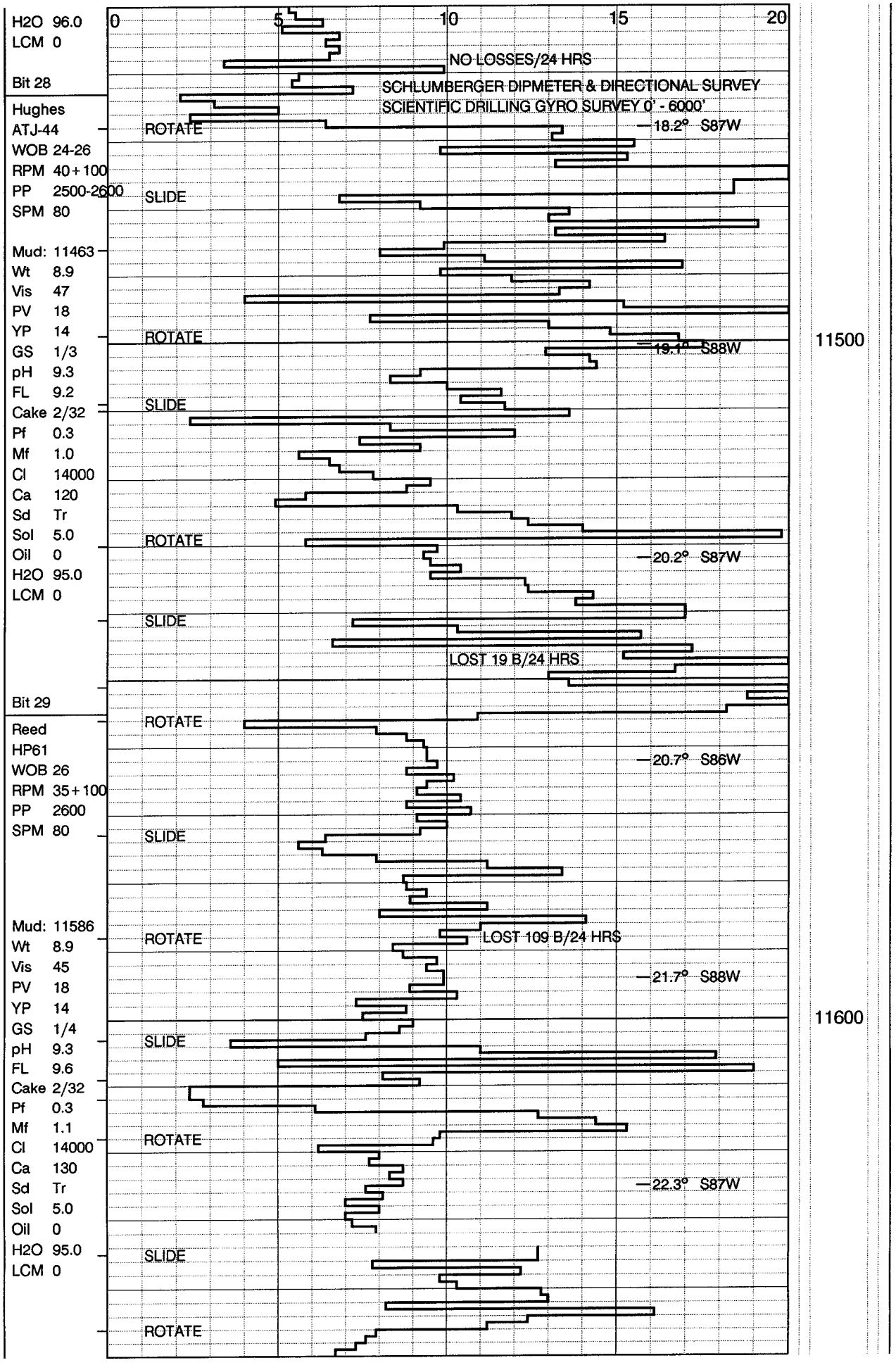
Smith
F4
WOB 26
RPM 55+100
PP 2300
SPM 80


0
5
10
15
20
2.1° N63E
LOST 50 B AT 10660
LOST 212 B/24 HRS
Mud: 10662
Wt 8.9
Vis 45
PV 17
YP 15
GS 1/3
pH 10.0
FL 9.8
Cake 2/32
Pf 0.8
Mf 2.0
Cl 16000
Ca 12
Sd Tr
Sol 4.2
Oil 0
H2O 95.8
LCM 0
SLIDE
1.7° N81E
10700
ROTATE
1.1° S69E
WOB 24
RPM 50+100
PP 2100
SPM 80
SLIDE
TRIP TO INCREASE BEND IN MOTOR
FROM 1.5 DEG TO 1.83 DEG
ROTATE
0.6° S12W
SLIDE
Mud: 10756
Wt 8.9
Vis 45
PV 18
YP 15
GS 1/3
pH 10.0
FL 9.7
Cake 2/32
Pf 0.75
Mf 2.1
Cl 16000
Ca 24
Sd Tr
Sol 4.2
Oil 0
H2O 95.8
LCM 0
NO LOSSES/24 HRS
ROTATE
0.9° S54W
SLIDE
10800
ROTATE
1.9° S85W
SLIDE
WOB 22
RPM 50+100
PP 2300
SPM 82
ROTATE
3.1° N88W
SLIDE


0
5
10
15
20
ROTATE
—4.1° N89W
SLIDE
ROTATE
WOB 23
RPM 50+103
PP 2350
SPM 82
10900
Wood-
side
10900
—5.0° N89W
SLIDE
Mud: 10956
Wt 8.8
Vis 43
PV 15
YP 12
GS 1/2
pH 9.5
FL 9.6
Cake 2/32
Pf 0.5
Mf 1.5
Cl 16000
Ca 80
Sd Tr
Sol 3.5
Oil 0
H2O 96.5
LCM 0
ROTATE
—5.6° N86W
SLIDE
ROTATE
LOST 317 B/24 HRS
—6.1° N85W
SLIDE
ROTATE
—6.4° N84W
11000
SLIDE
ROTATE
—7.2° N83W
Bit 27
Smith
F4
WOB 26
RPM 40+100
SLIDE
LOST 79 B/24 HRS


PP 2400
SPM 80
Mud: 11040
Wt 8.8
Vis 44
PV 18
YP 10
GS 1/3
pH 9.3
FL 9.2
Cake 2/32
Pf 0.3
Mf 1.4
Cl 14500
Ca 40
Sd Tr
Sol 4.0
Oil 0
H2O 96.0
LCM 0
WOB 24
RPM 40+100
PP 2400
SPM 80
WOB 26
RPM 40+100
PP 2500
0
5
10
15
20
ROTATE
SLIDE
ROTATE
SLIDE
ROTATE
SLIDE
ROTATE
SLIDE
ROTATE
SLIDE
ROTATE
SLIDE
ROTATE
8.1° N86W
9.2° W
9.8° S87W
9.8° S84W
10.9° S83W
11.9° S83W
LOST 87 B/24 HRS
12.9° S85W
11100
11200


SPM 80
Mud: 11236
Wt 8.8
Vis 41
PV 15
YP 12
GS 1/2
pH 9.5
FL 9.4
Cake 2/32
Pf 0.42
Mf 1.2
Cl 14000
Ca 100
Sd Tr
Sol 4.0
Oil 0
H2O 96.0
LCM 0
WOB 26
RPM 40+100
PP 2500
SPM 80
Mud: 11410
Wt 8.8
Vis 44
PV 18
YP 10
GS 1/4
pH 9.5
FL 9.0
Cake 2/32
Pf 0.40
Mf 1.1
Cl 14000
Ca 120
Sd Tr
Sol 4.0
Oil 0
0
5
10
15
20
SLIDE
ROTATE
SLIDE
ROTATE
SLIDE
ROTATE
SLIDE
ROTATE
SLIDE
ROTATE
SLIDE
13.6° S84W
14.9° S85W
15.6° S83W
16.2° S83W
SHORT TRIP 12 STANDS AT 11383–CLEAN
GEOLOGRAPH OUT
16.7° S83W
LOST 106 B/24 HRS
17.6° S86W
11300
11400


H2O 96.0
LCM 0
Bit 28
Hughes
ATJ-44
WOB 24-26
RPM 40+100
PP 2500-2600
SPM 80
Mud: 11463
Wt 8.9
Vis 47
PV 18
YP 14
GS 1/3
pH 9.3
FL 9.2
Cake 2/32
Pf 0.3
Mf 1.0
Cl 14000
Ca 120
Sd Tr
Sol 5.0
Oil 0
H2O 95.0
LCM 0
Bit 29
Reed
HP61
WOB 26
RPM 35+100
PP 2600
SPM 80
Mud: 11586
Wt 8.9
Vis 45
PV 18
YP 14
GS 1/4
pH 9.3
FL 9.6
Cake 2/32
Pf 0.3
Mf 1.1
Cl 14000
Ca 130
Sd Tr
Sol 5.0
Oil 0
H2O 95.0
LCM 0
0
5
10
15
20
NO LOSSES/24 HRS
SCHLUMBERGER DIPMETER & DIRECTIONAL SURVEY
SCIENTIFIC DRILLING GYRO SURVEY 0' - 6000'
ROTATE
18.2° S87W
SLIDE
ROTATE
19.1° S88W
SLIDE
ROTATE
20.2° S87W
SLIDE
LOST 19 B/24 HRS
ROTATE
20.7° S86W
SLIDE
ROTATE
LOST 109 B/24 HRS
21.7° S88W
SLIDE
ROTATE
22.3° S87W
SLIDE
ROTATE
11500
11600

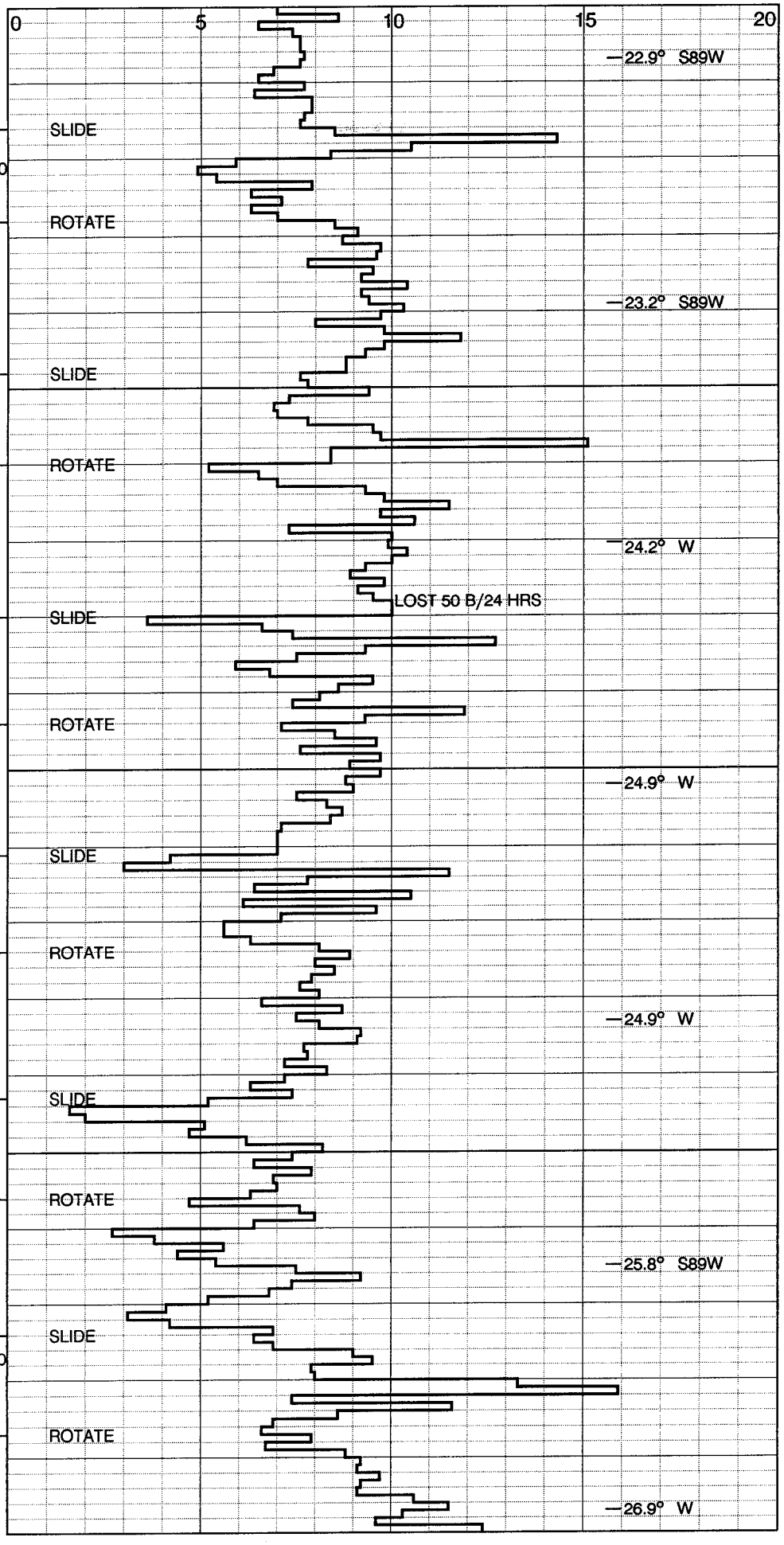
11674

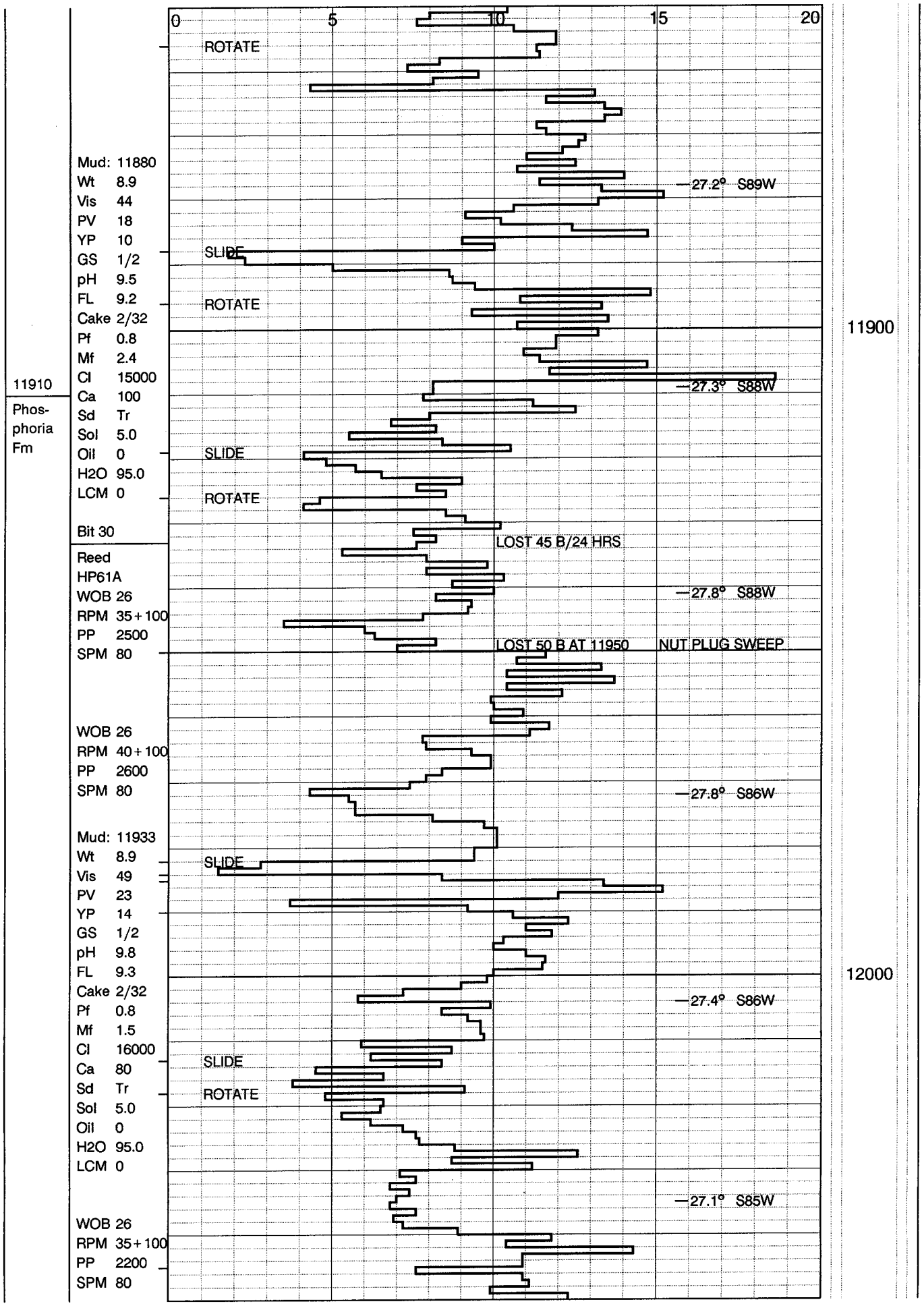
Din-
woody
Fm?

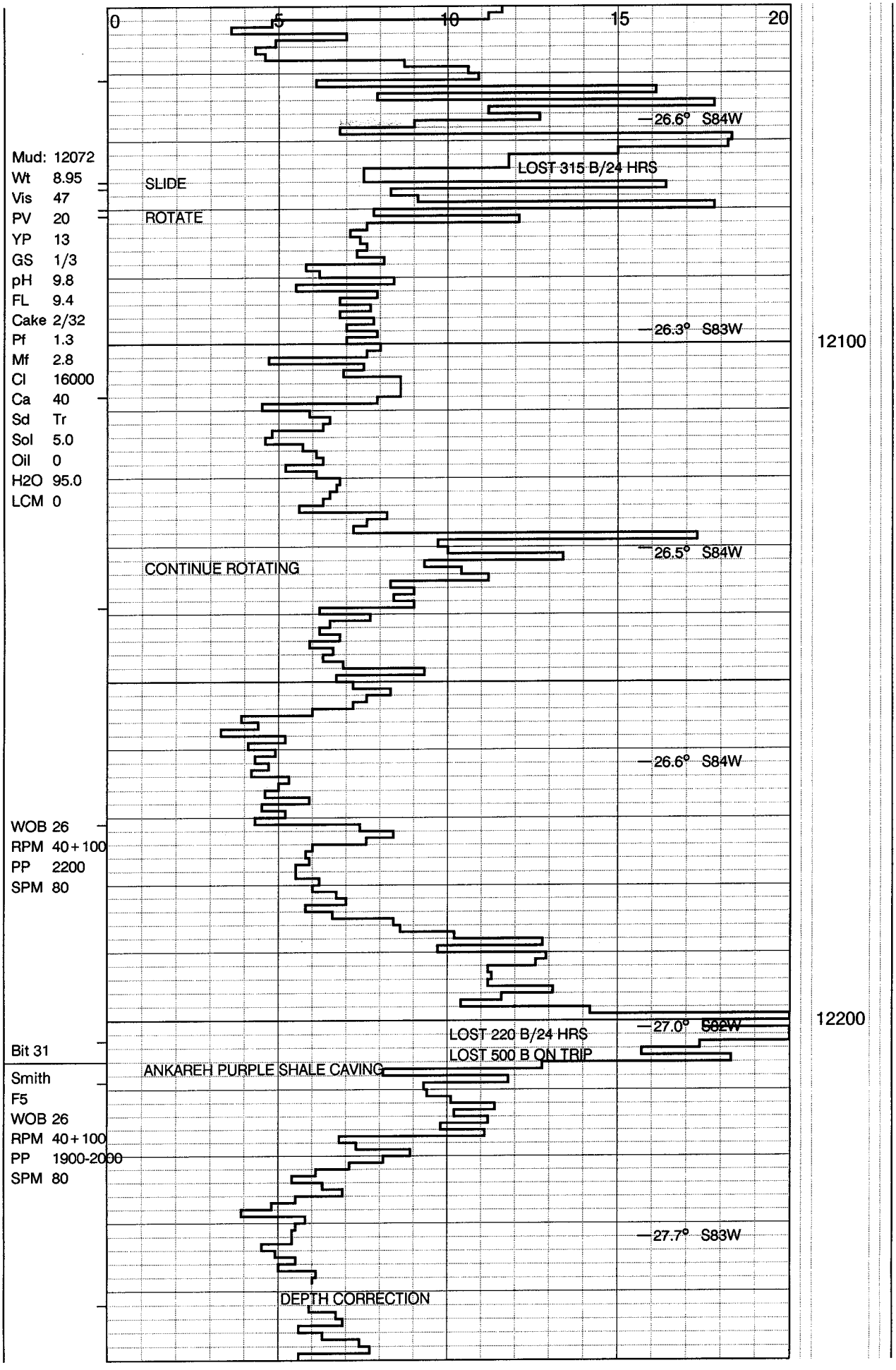
WOB 26
RPM 35+100
PP 2550
SPM 80

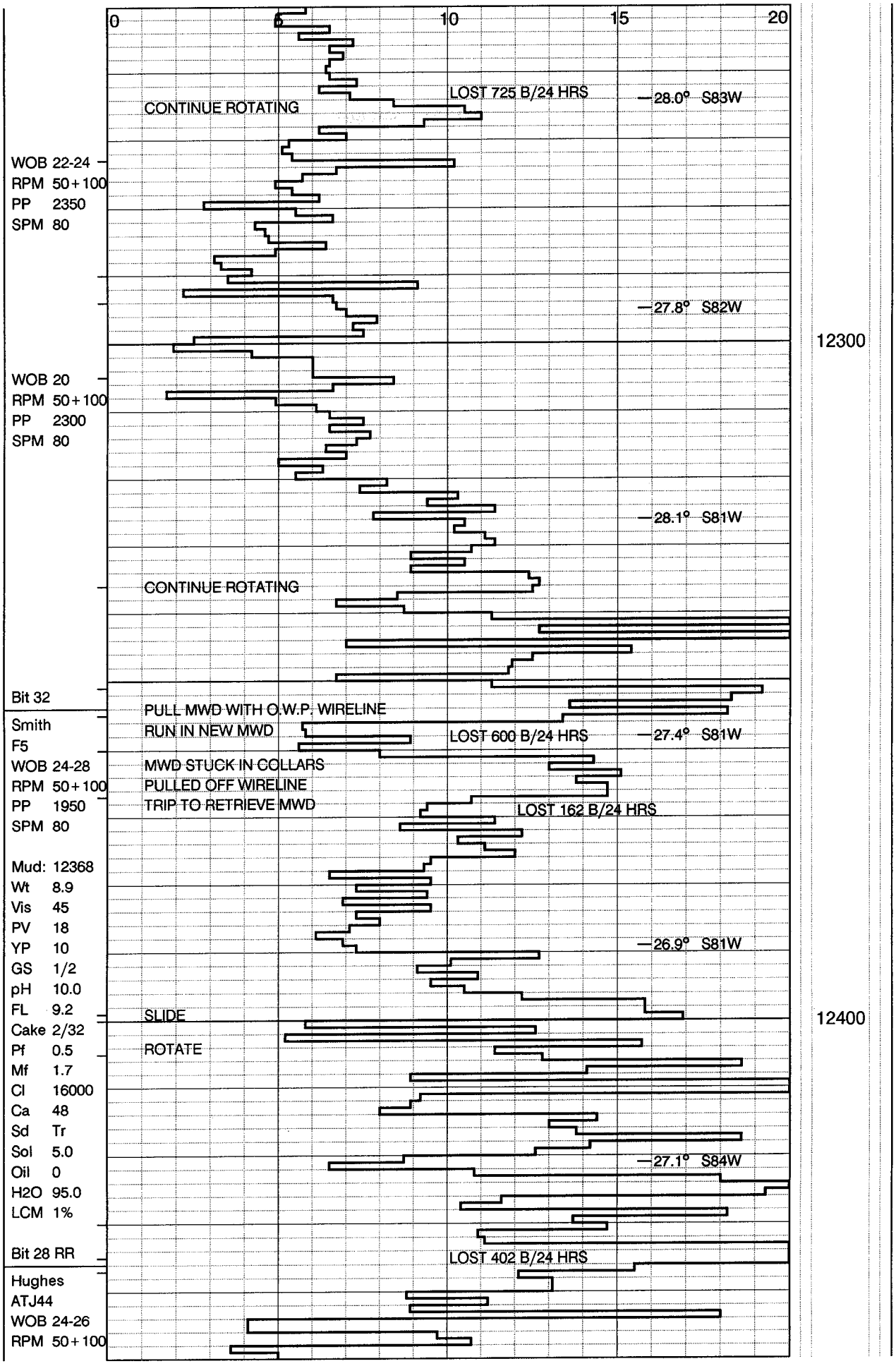
Mud: 11728
Wt 8.9
Vis 46
PV 22
YP 13
GS 1/3
pH 9.8
FL 9.2
Cake 2/32
Pf 0.6
Mf 1.3
Cl 14500
Ca 150
Sd Tr
Sol 5.0
Oil 0
H2O 95.0
LCM 0

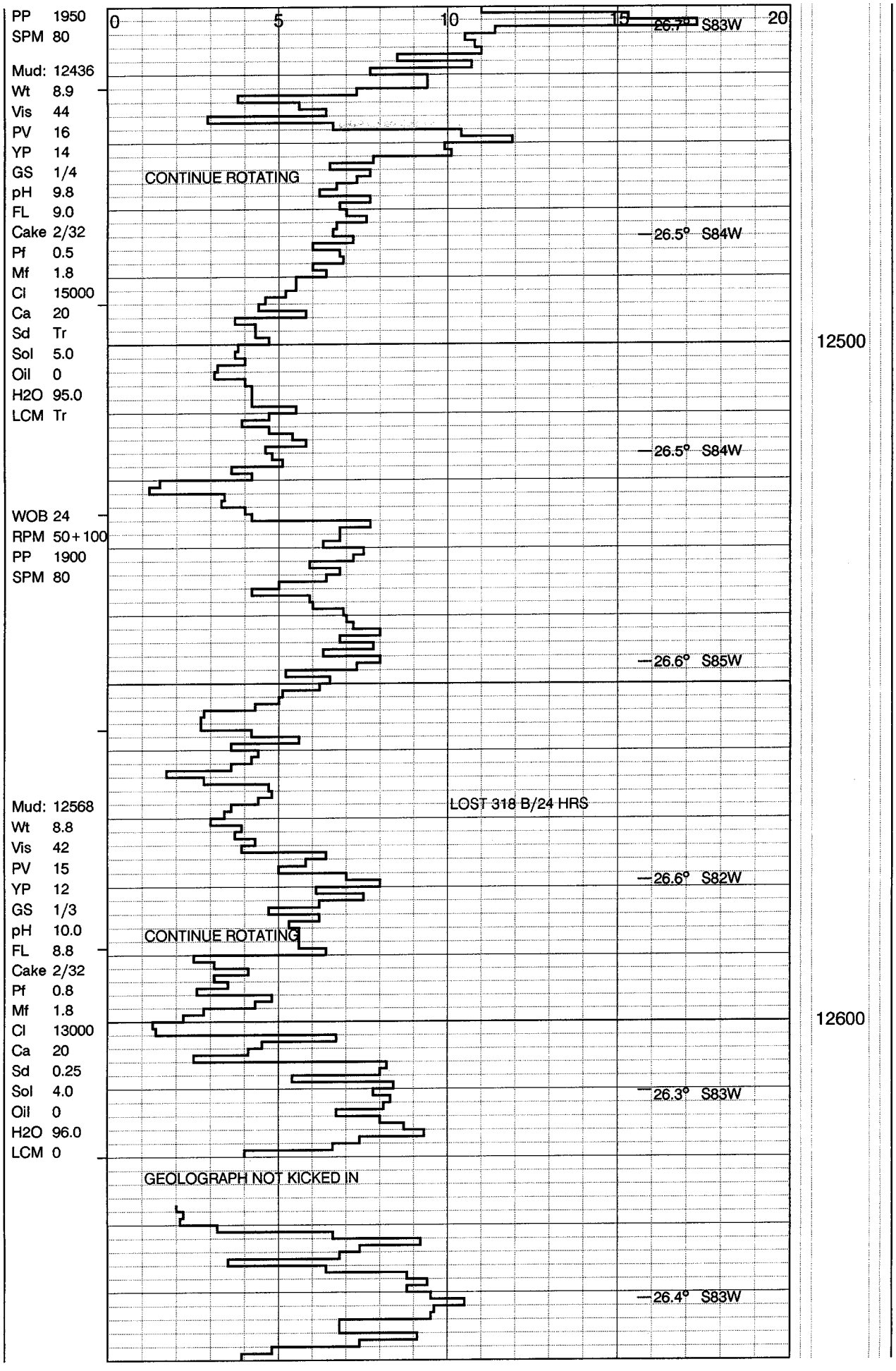
WOB 26
RPM 35+100
PP 2600
SPM 80

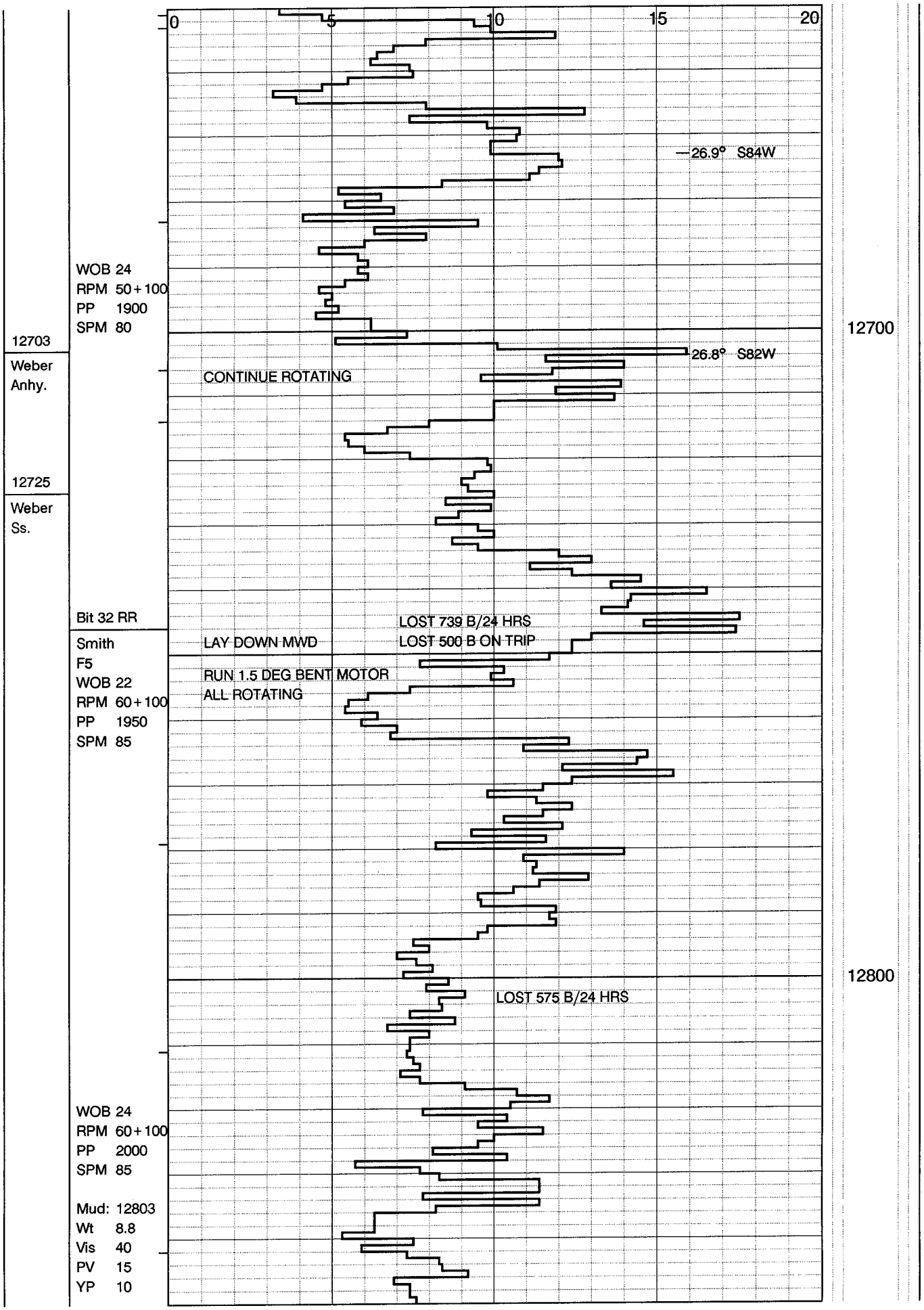



0
5
10
15
20
ROTATE
Mud: 11880
Wt 8.9
Vis 44
PV 18
YP 10
GS 1/2
pH 9.5
FL 9.2
Cake 2/32
Pf 0.8
Mf 2.4
Cl 15000
Ca 100
Sd Tr
Sol 5.0
Oil 0
H2O 95.0
LCM 0
27.2° S89W
SLIDE
ROTATE
11900
11910
Phos-
phoria
Fm
27.3° S88W
SLIDE
ROTATE
Bit 30
LOST 45 B/24 HRS
Reed
HP61A
WOB 26
RPM 35+100
PP 2500
SPM 80
27.8° S88W
LOST 50 B AT 11950
NUT PLUG SWEEP
WOB 26
RPM 40+100
PP 2600
SPM 80
27.8° S86W
Mud: 11933
Wt 8.9
Vis 49
PV 23
YP 14
GS 1/2
pH 9.8
FL 9.3
Cake 2/32
Pf 0.8
Mf 1.5
Cl 16000
Ca 80
Sd Tr
Sol 5.0
Oil 0
H2O 95.0
LCM 0
SLIDE
12000
27.4° S86W
SLIDE
ROTATE
27.1° S85W
WOB 26
RPM 35+100
PP 2200
SPM 80


0
5
10
15
20
Mud: 12072
Wt 8.95
Vis 47
PV 20
YP 13
GS 1/3
pH 9.8
FL 9.4
Cake 2/32
Pf 1.3
Mf 2.8
Cl 16000
Ca 40
Sd Tr
Sol 5.0
Oil 0
H2O 95.0
LCM 0
SLIDE
ROTATE
LOST 315 B/24 HRS
26.6° S84W
26.3° S83W
12100
CONTINUE ROTATING
26.5° S84W
26.6° S84W
WOB 26
RPM 40+100
PP 2200
SPM 80
27.0° S82W
12200
LOST 220 B/24 HRS
LOST 500 B ON TRIP
Bit 31
Smith
F5
WOB 26
RPM 40+100
PP 1900-2000
SPM 80
ANKAREH PURPLE SHALE CAVING
27.7° S83W
DEPTH CORRECTION


0
5
10
15
20
CONTINUE ROTATING
LOST 725 B/24 HRS
28.0° S83W
WOB 22-24
RPM 50+100
PP 2350
SPM 80
27.8° S82W
12300
WOB 20
RPM 50+100
PP 2300
SPM 80
28.1° S81W
CONTINUE ROTATING
Bit 32
PULL MWD WITH O.W.P. WIRELINE
Smith
RUN IN NEW MWD
LOST 600 B/24 HRS
27.4° S81W
F5
WOB 24-28
MWD STUCK IN COLLARS
RPM 50+100
PULLED OFF WIRELINE
PP 1950
TRIP TO RETRIEVE MWD
LOST 162 B/24 HRS
SPM 80
Mud: 12368
Wt 8.9
Vis 45
PV 18
YP 10
26.9° S81W
GS 1/2
pH 10.0
FL 9.2
SLIDE
12400
Cake 2/32
Pf 0.5
ROTATE
Mf 1.7
Cl 16000
Ca 48
Sd Tr
Sol 5.0
27.1° S84W
Oil 0
H2O 95.0
LCM 1%
Bit 28 RR
LOST 402 B/24 HRS
Hughes
ATJ44
WOB 24-26
RPM 50+100


PP 1950
SPM 80
Mud: 12436
Wt 8.9
Vis 44
PV 16
YP 14
GS 1/4
pH 9.8
FL 9.0
Cake 2/32
Pf 0.5
Mf 1.8
Cl 15000
Ca 20
Sd Tr
Sol 5.0
Oil 0
H2O 95.0
LCM Tr
WOB 24
RPM 50+100
PP 1900
SPM 80
Mud: 12568
Wt 8.8
Vis 42
PV 15
YP 12
GS 1/3
pH 10.0
FL 8.8
Cake 2/32
Pf 0.8
Mf 1.8
Cl 13000
Ca 20
Sd 0.25
Sol 4.0
Oil 0
H2O 96.0
LCM 0
0
5
10
15
20
26.7° S83W
CONTINUE ROTATING
26.5° S84W
26.5° S84W
26.6° S85W
LOST 318 B/24 HRS
26.6° S82W
CONTINUE ROTATING
26.3° S83W
GEOLOGRAPH NOT KICKED IN
26.4° S83W
12500
12600

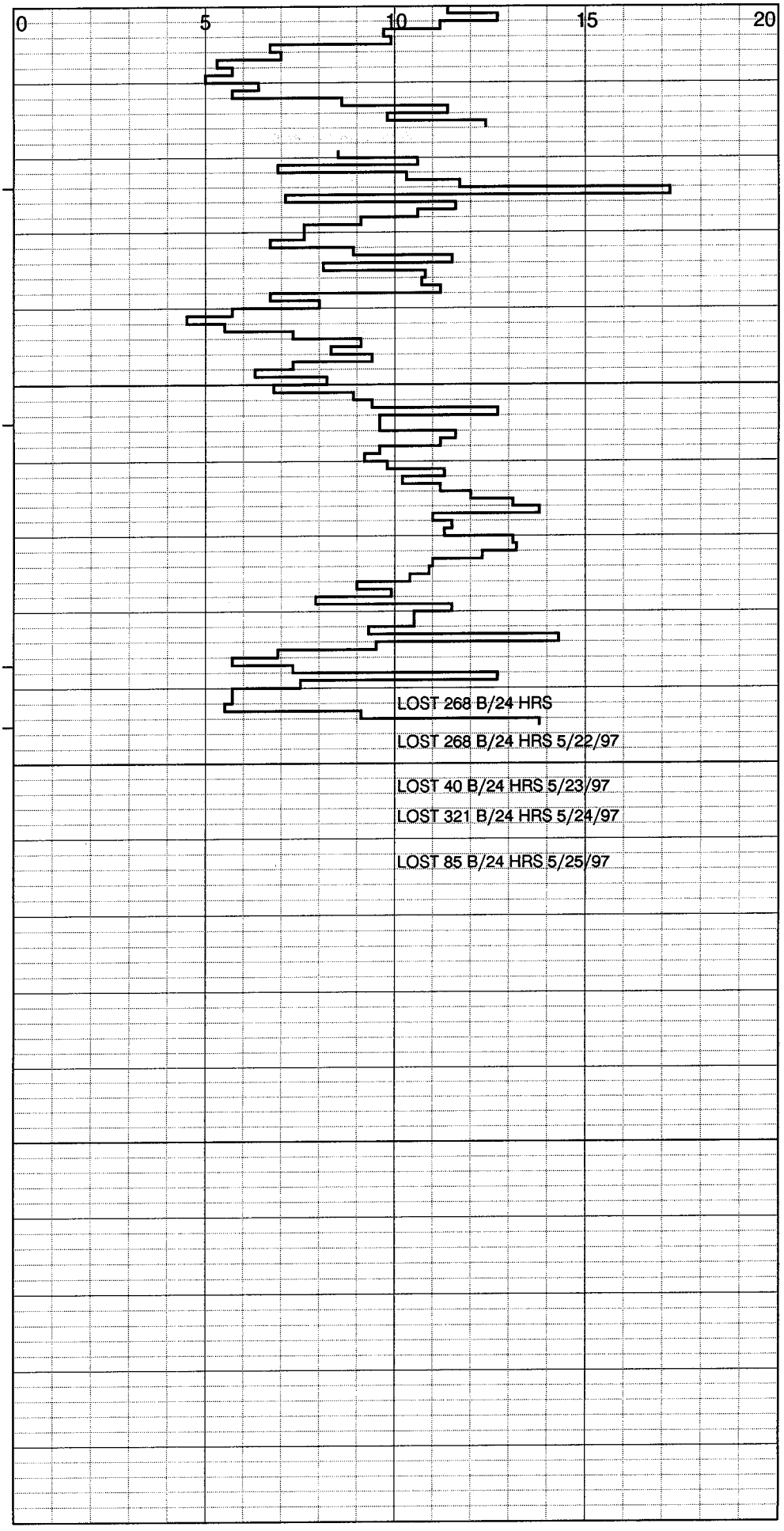

0
5
10
15
20
26.9° S84W
WOB 24
RPM 50+100
PP 1900
SPM 80
12703
Weber
Anhy.
26.8° S82W
CONTINUE ROTATING
12700
12725
Weber
Ss.
Bit 32 RR
LOST 739 B/24 HRS
LOST 500 B ON TRIP
Smith
F5
WOB 22
RPM 60+100
PP 1950
SPM 85
LAY DOWN MWD
RUN 1.5 DEG BENT MOTOR
ALL ROTATING
12800
LOST 575 B/24 HRS
WOB 24
RPM 60+100
PP 2000
SPM 85
Mud: 12803
Wt 8.8
Vis 40
PV 15
YP 10

GS 1/2
pH 9.5
FL 9.0
Cake 2/32
Pf 0.4
Mf 1.0
Cl 13000
Ca 160
Sd 0.25
Sol 4.0
Oil 0
H2O 96.0
LCM Tr

WOB 24
RPM 60
PP 2050
SPM 85

12935
Log TD
12945
Rig TD

Mud: 12945
Wt 8.9
Vis 40
PV 15
YP 10
GS 1/2
pH 9.5
FL 8.6
Cake 2/32
Pf 0.5
Mf 1.2
Cl 14000
Ca 140
Sd 0.25
Sol 5.0
Oil 0
H2O 95.0
LCM 1-2



12900

13000

file

THE ANSCHUTZ CORPORATION

6/9/97

PAGES: 1

To: **UPRC**
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: Vicky Dyson
Fax: (801) 359-3940
Phone: (801) 538-5274

From: **Susan Balano**
Phone: (303) 299-1344
Fax: (303) 299-1518

A.L. & L #14-33 (Yellow Creek)
Operator: TAC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
12,945' TD Weber
TIGHT HOLE

06/07/97 Day 141. 12,945' TD (0'). PO: Trip out w/7" scraper. TIH w/bit and tag cement @ 12,070'. Drill cement f/12,070-12,388'. Circ and trip out w/bit. Trip in w/7" casing scraper to 12,388'. Trip out.

06/08/97 Day 142. 12, 945' TD (0'). PO: Trip out, Bond log. POOH w/7" scraper. MU 4-1/8" bit and PU 19 jts of 2-7/8" tbg. TIH. Slip & cut drill line. TIH and tag up @ 12,388' liner top. Drill out liner, very little cement. From 12,388-12,740' strings of cement. From 12,740' to float collar, good cement. Drill f/12,388-12,935'. From float collar drill slow, good cement to 12,935'. Circ and trip out.

06/09/97 Day 143. 12,945' TD (0'). PO: POOH w/setting tools. Run Cement Bond log f/12,935-11,400'. LD all 2-7/8" tbg. Run perforating tools and perf f/11,540-11,542' and f/11,740-11,742'. Run cement retainer w/WL. Stuck @ 8590', Set tool and POOH w/setting tools.

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file

ANSCHUTZ

THE ANSCHUTZ CORPORATION

6/11/97

PAGES: 1

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Operator: TAC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
12,945' TD Weber
TIGHT HOLE

06/11/97

Day 145. 12,945' TD (0'). PO: Circ @ 12,388'. Drill on retainer @ 8590'. TOOH w/bit. Rig service and WO mill. PU mill + 2 junk subs and TIH. Mill on retainer. Drill cement. Wash & circ f/8770-8849'. Trip in to 9417'. POOH, LD mill & junk subs. PU 7" csg scraper and trip in. Circ @ liner top.

ANSCHUTZ

THE ANSCHUTZ CORPORATION

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6/12/97

PAGES: 1

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Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

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A.L. & L #14-33 (Yellow Creek)
Operator: TAC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
12,945' TD Weber
TIGHT HOLE

06/12/97

Day 146. 12,945' TD (0'). PO: TIH w/mill. Trip in w/7" scraper & bit to 12,388'. Circ, trip out and RU Schlumberger. RIH w/gauge ring and junk basket. Tight spot @ 3000', some junk in basket. Run retainer, no problems and set @ 11,650'. TIH and squeeze perfs 11,540-42'; 11,740-42'. Circ perforations and cement w/80 sx Class "C" cement (16 bbls).

Microfilmed
to this point

UTAH DIVISION OF OIL, GAS AND MINING

OIL AND GAS WELL INSPECTION RECORD

Operator: ANSCHUTZ EXPLORATION CORP. Lease Number: FEE

Well Name: AL & L 14-33 API Number: 43-043-30315

Sec: 33 Twp: 6N Rng: 8E County: SUMMIT Field: WILDCAT

Well Status: SGW

GENERAL	Inspected (✓)
1. Well Identification	x
2. Well Equipment	x
3. Environmental Protection	x
4. Temporary/Emergency Pits	x
5. Spills, Discharges, Seepage	x
Remarks: New completion-wellhead, reserve pit still open-1/2 full of fluid.	
Well was completed 6/97.	

OIL PRODUCTION	Inspected (✓)
1. Method of Measurement: Tank Gauge ☐ LACT Unit ☐ Other ☐	
2. Storage Facilities	
3. Lines Leaving Storage Facilities Sealed/Locked	
4. Oil Handling/Treatment Equipment	
Remarks:	

GAS PRODUCTION	Inspected (✓)
1. Type of Gas Production: Gas Well x Casinghead ☐	x
2. Gas Disposition: Sold ☐ Flared/Vented ☐ Used on Lease ☐ Other ☐	
3. Method of Measurement: Orifice Meter ☐ Turbine Meter ☐ Estimated ☐ Other ☐	
4. Gas Handling/Treatment Equipment	
Remarks: No gas equipment installed.	

PRODUCED WATER DISPOSAL	Inspected (✓)
1. Disposal Method: Unlined Pit ☐ Lined Pit ☐ Subsurface ☐ Other ☐	
2. If Disposal by Pits, Are Pits Satisfactory? Yes ☐ No ☐	
3. Other E & P Waste Disposal	
Remarks:	

Inspector: Jimmie Thompson Date: 7/15/97

UTAH DIVISION OF OIL, GAS AND MINING

OIL AND GAS WELL INSPECTION RECORD

Operator: ANSCHUTZ CORP. Lease Number: FEE

Well Name: A L & L 14-33 API Number: 43-043-30315

Sec: 33 Twp: 6N Rng: 8E County: SUMMIT Field: WILDCAT

Well Status: SGW

GENERAL	Inspected (✓)
1. Well Identification	x
2. Well Equipment	x
3. Environmental Protection	x
4. Temporary/Emergency Pits	x
5. Spills, Discharges, Seepage	x
Remarks: Wellhead-reserve pit still open-fenced on 3 sides, full of fluid.	

OIL PRODUCTION	Inspected
1. Method of Measurement: Tank Gauge ☐ LACT Unit ☐ Other ☐	
2. Storage Facilities	
3. Lines Leaving Storage Facilities Sealed/Locked	
4. Oil Handling/Treatment Equipment	
Remarks:	

GAS PRODUCTION	Inspected (✓)
1. Type of Gas Production: Gas Well ☐ Casinghead ☐	
2. Gas Disposition: Sold ☐ Flared/Vented ☐ Used on Lease ☐ Other ☐	
3. Method of Measurement: Orifice Meter ☐ Turbine Meter ☐ Estimated ☐ Other ☐	
4. Gas Handling/Treatment Equipment	
Remarks:	

PRODUCED WATER DISPOSAL	Inspected (✓)
1. Disposal Method: Unlined Pit ☐ Lined Pit ☐ Subsurface ☐ Other ☐	
2. If Disposal by Pits, Are Pits Satisfactory? Yes ☐ No ☐	
3. Other E & P Waste Disposal	
Remarks:	

Inspector: Jimmie Thompson Date: 7/15/97

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

OPERATOR: ANSCHUTZ CORP. COMPANY REP: _____

WELL NAME: AL & L 14-33 API NO: 43-043-30315

QTR/QTR: SE/SE SECTION: 33 TWP: 6N RANGE: 8E

CONTRACTOR: PARKER RIG NUMBER: 235

INSPECTOR: JLT TIME: 1:30 PM DATE: 6/18/97

SPUD DATE: DRY: _____ ROTARY: 1/16/97 PROJECTED T.D.: 13,821

OPERATIONS AT TIME OF VISIT: RAN 7 5/8", 7" CSG. RAN 5" LINER

IN PROCESS OF SETTING PACKER ON 2 7/8" TUBING.

WELL SIGN: Y MUD WEIGHT _____ LBS/GAL BOPE: X

BLOOIE LINE: X FLARE PIT: X H2S POTENTIAL: _____

ENVIRONMENTAL:

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

RUBBER: _____ BENTONITE: _____ SANITATION: _____

BOPE TEST RECORDED IN THE RIG DAILY TOUR BOOK: _____

REMARKS:

WELL TD 5/19/97. @ 12,946'.

11/23/94

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

OPERATOR: ANSCHUTZ EXPLORATION COMPANY REP: KEN CLARE

WELL NAME: AL & L 14-33 API NO: 43-043-30315

QTR/QTR: SE/SE SECTION: 33 TWP: 6N RANGE: 8E

CONTRACTOR: PARKER RIG NUMBER: 235

INSPECTOR: JLT TIME: 2:00 PM DATE: 5/13/97

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

SPUD DATE:DRY: _____ ROTARY: 1/15/97 PROJECTED T.D.: 13,500'

OPERATIONS AT TIME OF VISIT: TRIPPING FOR BIT @12,206'.

WELL SIGN: YES MUD WEIGHT: 8.9 LBS/GAL BOPE: 13 38" 5000#

BLOOIE LINE: _____ FLARE PIT: _____ H2S POTENTIAL: YES

ENVIRONMENTAL:

RESERVE PIT: ____ FENCED: _____ LINED: _____ PLASTIC: _____
RUBBER: _____ BENTONITE: _____ SANITATION: _____

WATER ENCOUNTERED DURING DRILLING: _____
DEPTH: _____

BOPE TEST RECORDED IN THE RIG DAILY TOUR BOOK: YES

REMARKS:

9/23/94

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

OPERATOR: ANSCHUTZ EXPLORATION COMPANY REP: DOUG LEGACY

WELL NAME: AL & L 14-33 API NO: 43-043-30315

QTR/QTR: SE/SE SECTION: 33 TWP: 6N RANGE: 8E

CONTRACTOR: PARKER RIG NUMBER: 235

INSPECTOR: JLT TIME: 11:00 AM DATE: 4/9/97

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

SPUD DATE:DRY:_____ ROTARY: 1/15/97 PROJECTED T.D.:16,000'

OPERATIONS AT TIME OF VISIT: DRILLING AHEAD @ 8533'. BOTTOM OF NUGGET FORMATION AND AT THE TOP OF THE ANKAREH. RAN LAST SURVEY @ 8505'. 8 1/4 DEGRESS SOUTH 86 DEGREES EAST. SURVEYS ARE RUN EVERY 90 DAYS.

WELL SIGN: YES MUD WEIGHT: 8.8 LBS/GAL BOPE: 13 38" 5000#

BLOOIE LINE:_____ FLARE PIT:_____ H2S POTENTIAL:_____

ENVIRONMENTAL:

RESERVE PIT:____FENCED:_____ LINED: _____ PLASTIC:_____

RUBBER:_____ BENTONITE:_____ SANITATION:_____

BOPE TEST RECORDED IN THE RIG DAILY TOUR BOOK: YES

REMARKS:
WILL TEST BOPES AGAIN ON 4/21/97.

9/23/94

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

OPERATOR: ANSCHUTZ EXPLORATION CORP. COMPANY REP: DOUG LEGACIE

WELL NAME: AL & L 14-33 API NO: 43-043-30315

QTR/QTR: SE/SE SECTION: 33 TWP: 6N RANGE: 8E

CONTRACTOR: PARKER RIG NUMBER: 235

INSPECTOR: JLT TIME: 9:10 AM DATE: 3/6/97

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

SPUD DATE:DRY:_____ ROTARY: 1/16/97 PROJECTED T.D.:13,821'

OPERATIONS AT TIME OF VISIT: DRL AHEAD-17 1/2" HOLE @ 5240'. NO WATER ENCOUNTERED. LAST SURVEY @ 5163' @ 3 DEGREES. DRILLING PROGNOSIS: 26" HOLE, 20" 106.5 #, J55 @ 1500'. 17 1/2" HOLE, 13 3/8" 106.5 #, J 55 @ 5900'.

WELL SIGN: X MUD WEIGHT: 8.8 LBS/GAL BOPE: 20" 3000#

BLOOIE LINE: X FLARE PIT: X H2S POTENTIAL: YES

ENVIRONMENTAL:

RESERVE PIT: X FENCED: _____ LINED: YES PLASTIC: 12 MIL

RUBBER: _____ BENTONITE: _____ SANITATION: _____

BOPE TEST RECORDED IN THE RIG DAILY TOUR BOOK: YES

REMARKS:
LAST BOPE TEST RUN-1/26/97. COMPANY RUNS BOPE TEST EVERY 30 DAYS. RIG WAS DOWN 6 DAYS FISHING FOR IBS TOOL. 20" CSG @ 1500'. W/1350 SX LEAD AND 856 SX TAIL.

9/23/94

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

WELL NAME: ALTL 14-33 API NO: 43-043-30315

QTR/QTR: _____ SECTION: 33 TOWNSHIP: 6N RANGE: 8E

COMPANY NAME: Anschutz COMPANY MAN Doug Legacie

INSPECTOR: Frank Matthews DATE: 1/24-25/97

CASING INFORMATION: SURFACE CASING: ✓

SIZE: 20" GRADE: K-55 HOLE SIZE: 26" DEPTH: 1500

PIPE CENTRALIZED: Yes

CEMENTING COMPANY: B.J.

CEMENTING STAGES: 1

SLURRY INFORMATION:

1. CLASS: G ADDITIVES: BJ Lite followed by Cl "G"

LEAD: 1350 sk BJ Lite 536 bbls TAIL: 856 sk Cl G - 175 bbls

2. SLURRY WEIGHT LBS. PER GALLON:

LEAD: 12.0 2.23 ft³/sk TAIL: 15.8 1.16 ft³/sk.

3. WATER (GAL/SX)

LEAD: _____ TAIL: 4.97 gal/sk

CEMENT TO SURFACE: ✓ LOST RETURNS: N

1 INCH INFORMATION: WEIGHT: _____ CEMENT TO SURFACE: ____

FEET: _____ SX: _____ CLASS: ____ CACL%: ____ RETURNS: _____

ADDITIONAL COMMENTS: Cement stayed at the surface 30 mins. left location before cut off & nipple up. Returns to surface with 250 bbls to be pumped. 26 bbls displacement. Finished pumping @ 12:15 AM left location 12:45 AM Arrived home @ 2:00 AM.

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

COMPANY: Anschutz COMPANY REP: Doug Legacie

WELL NAME: AL+L 7-14-33 API NO: 43-043-30315

QTR/QTR: _____ SECTION: 33 TWP: 6N RANGE: 8E

CONTRACTOR: Parker RIG NUMBER: 235

INSPECTOR: Frank Matthews TIME: 2:00 ~~AM~~ PM DATE: 1/24/97

OPERATIONS: Running 20" Surface String DEPTH: 1500'

SPUD DATE: DRY: 1-16-97 ROTARY: 1-16-97 PROJECTED T.D.: 13,821 TVD

==========

WELL SIGN: N SANITATION: ✓ BOPE: NA BLOOIE LINE: NA

H2S POTENTIAL: N ENVIRONMENTAL: ✓ FLARE PIT: _____

RESERVE PIT: ✓ FENCED: ✓ LINED: ✓ PLASTIC: ✓

RUBBER: _____ BENTONITE: _____ OTHER: _____ MUD WEIGHT 9.1 LBS/GAL

BOPE TEST RECORDED IN THE RIG DAILY TOUR BOOK: NA

BOPE TRAINING RECORDED IN THE RIG DAILY TOUR BOOK: NA

==========

LEGEND: (Y)=YES (U)=UNKNOWN (NA)=NOT APPLICABLE

==========

REMARKS:

Ran 1500' 20" 106# K-55 ST&C w/ stab in float collar. PU 4½ DP & run in to float collar

Ask Doug Legacie that sign be posted as soon as possible.

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

Operator Name: Anschutz Corporation
Name & Number: AL&L #14-33
API Number:
Location: 1/4,1/4 SE SE Sec. 33 T. 6N R. 8E

Geology/Ground Water:

The surface geology at the proposed location consists of alluvium over Wasatch Formation. High quality ground water is present in the cretaceous age rocks through the Frontier Formation. A 20 inch casing is going to be set at 1500 feet and cemented to surface. This will protect all water encountered to this depth. It is proposed to set a 13 3/8" casing at 5900 feet and to circulate cement back to 3300 feet. Considering that the Frontier Formation will be encountered at approximately 2500 feet, it is recommended that cement should be circulated to a minimum of 2500 feet or a DV tool be used to stage the cement. The additional proposed casing and cement program should adequately protect and isolate additional zones of water encountered.

Reviewer: D. Jarvis

Date: 07/25/96

Surface:

An onsite evaluation was done on this proposed location on July 8, 1996. No significant surface problems were noted. The waste management program was discussed and it was agreed that all human waste and refuse would be contained on location while drilling and would be hauled from the location and disposed of in a proper manner. The drill cuttings will be dried and buried in the reserve pit. Water for drilling will be obtained through a reappropriation of the livestock water at the Anschutz Ranch. Evidence of a surface agreement will be sent to DOGM. The reserve pit is to be lined with a synthetic liner and the location is to be bermed to prevent runoff from the pad. A drainage diversion should be constructed to prevent drainage of water onto the location.

Reviewer: Brad Hill

Date: 7/22/96

Conditions of Approval/Application for Permit to Drill:

1. Reserve pit is to be lined with a synthetic liner with a minimum thickness of 14 mils.
2. The entire location is to be bermed to prevent any fluids from running off of the pad.
3. A drainage diversion shall be constructed on the uphill side of the pad to prevent drainage onto the location.

ON-SITE PREDRILL EVALUATION

Division of Oil, Gas and Mining

OPERATOR: Anschutz Corporation

WELL NAME & NUMBER: AL&L #14-33

API NUMBER:

LEASE: FEE FIELD/UNIT:

LOCATION: 1/4,1/4 SE SE Sec: 33 TWP: 6N RNG: 8E 532 FSL 786 FEL

LEGAL WELL SITING:____F SEC. LINE;____F 1/4,1/4 LINE; ____F ANOTHER WELL.

GPS COORD (UTM):

SURFACE OWNER: Anschutz Land & Livestock

PARTICIPANTS

Brad Hill & Dan Jarvis - DOGM; Miles Williams, Bill Miller, Dan Gallager & Larry Williams - Anschutz; Stan Taggart - Uinta Engineering (surveyor); Lisa Smith-Permitco Inc.

REGIONAL/LOCAL SETTING & TOPOGRAPHY

The proposed location lies within the Wasatch Hinterland physiographic province of Utah. This is an area of large rounded hills which are separated by moderately sized drainages and is located between the Wasatch Mountains to the west and the Bear River Drainage to the east. The pad for the proposed well will be built on a previously existing location. There are small, shallow drainages on the north and south sides of the location.

SURFACE USE PLAN

CURRENT SURFACE USE: Domestic and wildlife grazing. P&A location.

PROPOSED SURFACE DISTURBANCE: A rectangle shaped pad (375'X 260') will be constructed (through upgrade of the existing pad) which will include a 140'X 50' reserve pit. Approximately ½ mile of access road will be build to this location.

LOCATION OF EXISTING WELLS WITHIN A 1 MILE RADIUS: There are two P&A wells within a 1 mile radius(see attached map). One of theses P&A locations will be used as the pad for this well. No water wells are known to be within a 1 mile radius.

LOCATION OF PRODUCTION FACILITIES AND PIPELINES: If productive the well will be tied to the Wasatch system on the Cave Creek lateral.

SOURCE OF CONSTRUCTION MATERIAL: Onsite materials will be used for construction.

ANCILLARY FACILITIES: None

WASTE MANAGEMENT PLAN:

Portable chemical toilets will be used onsite and hauled away after the well is drilled. All refuse will be contained on location and hauled off when drilling is completed. Drill cutting will be

contained in the reserve pit and dried and buried upon well completion.

ENVIRONMENTAL PARAMETERS

AFFECTED FLOOD PLAINS AND/OR WETLANDS: None

FLORA/FAUNA: Abundant grasses with scattered sage/Elk, deer, rodents, birds, insects.

SOIL TYPE AND CHARACTERISTICS: Sandy loam with abundant gravel.

SURFACE FORMATION & CHARACTERISTICS: Quaternary alluvium on Wasatch Formation.

EROSION/SEDIMENTATION/STABILITY: No active erosion or sedimentation at present. This should be a stable location.

PALEONTOLOGICAL POTENTIAL: None observed

RESERVE PIT

CHARACTERISTICS: A rectangular reserve pit (140'X 50'X 14') will be included on the well pad.

LINER REQUIREMENTS (Site Ranking Form attached): The pit is to be lined with a synthetic liner with a minimum thickness of 14 mils.

SURFACE RESTORATION/RECLAMATION PLAN

To be reclaimed as per land owner instructions.

SURFACE AGREEMENT: Anschutz representatives stated that there is a surface agreement in place and that DOGM will be supplied with an affidavit which so states.

CULTURAL RESOURCES/ARCHAEOLOGY: Fee land, none needed.

OTHER OBSERVATIONS/COMMENTS

The proposed well is at an exception location which will be brought before the Board for approval. The reserve pit is located such that it will not be constructed over the reclaimed pit from the P&A well.

ATTACHMENTS:
Photographs:
GIS map:

Brad Hill	7/8/96
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 (near drainage)
Distance to Nearest Municipal Well (feet)		
>5280	0	
1320 to 5280	5	
500 to 1320	10	
<500	15	0
Distance to Other Wells (feet)		
>1320	0	
300 to 1320	10	
<300	20	0
Native Soil Type		
Low permeability	0	
Mod. permeability	10	
High permeability	20	15
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	5
Annual Precipitation (inches)		
<10	0	
10 to 20	5	
>20	10	5
Affected Populations		
<10	0	
10 to 30	6	
30 to 50	8	
>50	10	0
Presence of Nearby Utility Conduits		
Not Present	0	
Unknown	10	
Present	15	0
Final Score		55

ANSCHUTZ

THE ANSCHUTZ CORPORATION

file

6/16/97

PAGES: 2

Includes 1 page chronological report

To: **UPRC**
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: Vicky Dyson
Fax: (801) 359-3940
Phone: (801) 538-5274

From: **Susan Balano**
Phone: (303) 299-1344
Fax: (303) 299-1518

A.L. & L #14-33 (Yellow Creek)
Operator: TAC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
12,945' TD Weber
TIGHT HOLE

06/13/97 Day 147. 12,946' TD (0'). PO: Run Bond log. TIH w/mill & junk baskets. Cut & slip drill line. TIH, tag cement @ 11,452'. Drill cement f/11,452-11,537', soft. WOC. Drill cement f/11,537-11,563' (firm cement to 11,600'). Close in and test csg to 1000 psi for 15 minutes. Drill cement f/11,600-11,654'. Drill retainer @ 11,654'; cement to 11,757'. TIH to top of liner @ 12,388'., Circ, TOOH and RU Schlumberger to run Bond log.

06/14/97

A.L. & L. #14-33 (Yellow Creek)
Operator: TAC
Summit County, Utah

06/08/97 Day 142. 12, 945' TD (0'). PO: Trip out, Bond log. POOH w/7" scraper. MU 4-1/8" bit and PU 19 jts of 2-7/8" tbg. TIH. Slip & cut drill line. TIH and tag up @ 12,388' liner top. Drill out liner, very little cement. From 12,388-12,740' strings of cement. From 12,740' to float collar, good cement. Drill f/12,388-12,935'. From float collar drill slow, good cement to 12,935'. Circ and trip out.

06/09/97 Day 143. 12,945' TD (0'). PO: POOH w/setting tools. Run Cement Bond log f/12,935-11,400'. LD all 2-7/8" tbg. Run perforating tools and perf f/11,540-11,542' and f/11,740-11,742'. Run cement retainer w/WL. Stuck @ 8590', Set tool and POOH w/setting tools.

06/10/97 Day 144. 12,945' TD (0'). PO: Drilling retainer. Trip in to top of retainer @ 8590'. WO Dowell. Sting into retainer. Pump 2 bbls @ ¼ bpm and pressure up to 550#. Sting out, circ and start mixing cement. Choke off backside and pump 10 bbls water, 7 bbls slurry + 3 bbls water. Sting in and pump 7 bbls cement below retainer and 2 bbls cement above retainer @ 500 psi (held on backside). Pull 6 stds. Circ, trip out. Trip in w/bit to 5791'. Circ and WOC. Trip in slow, tag cement @ 8537'. Drill cement to 8590'. Drill retainer @ 8590'.

06/11/97 Day 145. 12,945' TD (0'). PO: Circ @ 12,388'. Drill on retainer @ 8590'. TOOH w/bit. Rig service and WO mill. PU mill + 2 junk subs and TIH. Mill on retainer. Drill cement. Wash & circ f/8770-8849'. Trip in to 9417'. POOH, LD mill & junk subs. PU 7" csg scraper and trip in. Circ @ liner top.

06/12/97 Day 146. 12,945' TD (0'). PO: TIH w/mill. Trip in w/7" scraper & bit to 12,388'. Circ, trip out and RU Schlumberger. RIH w/gauge ring and junk basket. Tight spot @ 3000', some junk in basket. Run retainer, no problems and set @ 11,650'. TIH and squeeze perfs 11,540-42'; 11,740-42'. Circ perforations and cement w/80 sx Class "C" cement (16 bbls).

06/13/97 Day 147. 12,946' TD (0'). PO: Run Bond log. TIH w/mill & junk baskets. Cut & slip drill line. TIH, tag cement @ 11,452'. Drill cement f/11,452-11,537', soft. WOC. Drill cement f/11,537-11,563' (firm cement to 11,600'). Close in and test csg to 1000 psi for 15 minutes. Drill cement f/11,600-11,654'. Drill retainer @ 11,654'; cement to 11,757'. TIH to top of liner @ 12,388'. Circ, TOOH and RU Schlumberger to run Bond log.

06/14/97 Day 148. 12,946' TD (0'). PO: TOOH w/5" scraper. Run Bond log 11,736' 100% up to 11,682', 80% to 11,642', 100% to 11,609', 85% to 11,450'. PU tbg, TIH and tag @ 12,876'. Attempt to drill down w/csg scraper (too much torque). TOOH (SLM) to LD scraper.

06/15/97 Day 149. 12,946' TD (0'). PO: ND BOP's. TIH w/4-½" mill. Clean out liner f/12,876-12,935'. Mix & displace packer fluid. TOOH, LD 2-7/8" tbg. ND BOP's.

06/16/97 Day 150. 12,946' TD (0'). PO: Run gauge ring. Spear 7-5/8" csg. Reset slips w/350M#, machine final dress. NU BOP's and test w/Double Jack 250# low and 5000# high. Run gauge ring and junk basket w/Schlumberger.

ANSCHUTZ

THE ANSCHUTZ CORPORATION

6/12/97

PAGES: 1

To: **UPRC**
Attn: Lance Cook
Fax: (817) 877-7912
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Utah Div. of O&G Mining
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Phone: (801) 538-5274

From: **Susan Balano**
Phone: (303) 299-1344
Fax: (303) 299-1518

A.L. & L #14-33 (Yellow Creek)
Operator: TAC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
12,945' TD Weber
TIGHT HOLE

06/12/97

Day 146. 12,945' TD (0'). PO: TIH w/mill. Trip in w/7" scraper & bit to 12,388'. Circ, trip out and RU Schlumberger. RIH w/gauge ring and junk basket. Tight spot @ 3000', some junk in basket. Run retainer, no problems and set @ 11,650'. TIH and squeeze perfs 11,540-42'; 11,740-42'. Circ perforations and cement w/80 sx Class "C" cement (16 bbls).

THE ANSCHUTZ CORPORATION

6/17/97

PAGES: 1

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Attn: Lance Cook
Fax: (817) 877-7912
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A.L. & L #14-33 (Yellow Creek) **Operator: TAC** Section 33, T6N, R8E 460' FEL, 100' FSL Summit County, Utah Yellow Creek Prospect 12,945' TD Weber **TIGHT HOLE**	06/17/97	Day 151. 12,946' TD (0'). PO: TIH w/packer assy. Run gauge ring and collar locator w/Schlumberger (couldn't correlate collars to depth). Ran Gamma Ray/CCL log. Set packer assy @ 11,690' after second run. MU tail pipe & packer assy. Test to 1000 psi w/Campbell. Camco hand pressure test sub-surface safety valve and valve leaked. Check another valve in UPRC yard, valve leaked also. Camco new, re-tested valve being shipped from Texas.

THE ANSCHUTZ CORPORATION

6/18/97

PAGES: 1

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From: **Susan Balano**
Phone: (303) 299-1344
Fax: (303) 299-1518

A.L. & L #14-33 (Yellow Creek)
Operator: AEC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
12,945' TD Weber
TIGHT HOLE

06/18/97

Day 152. 12,946' TD (0'). PO: Test inside 3-1/2". Trip in w/packer assy. Sting into packer and attempt to test annulus (leaking into DP). Trip out, check tools (no visual damage). Change out seals in seal assy. Trip in and retest assy to 10,000 psi. Sting into packer and test annulus (still leaking). RU Halliburton slick line to test inside of 3-1/2" DP.

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THE ANSCHUTZ CORPORATION

6/19/97

PAGES: 1

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Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
12,945' TD Weber
TIGHT HOLE

06/19/97

Day 153. 12,946' TD (0'). PO: Run production tbg. Set Mod D packer @ 11,511-73' w/2-7/8" TP. Sting into Mod D @ 11,690' (2.188" R @ 11,582'). LD DP wet. RU testers and torque turn. Start in hole w/20 seals on 2-7/8" 7.7 L80 Vam Ace tbg. Test connection and hydro bodies to 10,000.

ANSCHUTZ

THE ANSCHUTZ CORPORATION

6/20/97

PAGES: 3 (includes 2 page chronological report)

To:	**UPRC** **Attn: Lance Cook** **Fax: (817) 877-7912** **Phone: (817) 877-6727**	**Utah Div. of O&G Mining** **Attn: Vicky Dyson** **Fax: (801) 359-3940** **Phone: (801) 538-5274**

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Operator: AEC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
12,945' TD Weber
TIGHT HOLE

06/20/97

Day 154. 12,946' TD (0'). PO: Running tbg. PU 2-7/8" 7.7# L80 Vam Ace tbg using torque turn for make-up. Hydro test to 10,000 psi. Check SCSSV and spm assemblies. Replace 2 flow nipples and injection mandrel due to over torque. MU witnessed by Vam PTS rep.

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06/08/97 Day 142. 12, 946' TD (0'). PO: Trip out, Bond log. POOH w/7" scraper. MU 4-1/8" bit and PU 19 jts of 2-7/8" tbg. TIH. Slip & cut drill line. TIH and tag up @ 12,388' liner top. Drill out liner, very little cement. From 12,388-12,740' strings of cement. From 12,740' to float collar, good cement. Drill f/12,388-12,935'. From float collar drill slow, good cement to 12,935'. Circ and trip out.

06/09/97 Day 143. 12,946' TD (0'). PO: POOH w/setting tools. Run Cement Bond log f/12,935-11,400'. LD all 2-7/8" tbg. Run perforating tools and perf f/11,540-11,542' and f/11,740-11,742'. Run cement retainer w/WL. Stuck @ 8590', Set tool and POOH w/setting tools.

06/10/97 Day 144. 12,946' TD (0'). PO: Drilling retainer. Trip in to top of retainer @ 8590'. WO Dowell. Sting into retainer. Pump 2 bbls @ ¼ bpm and pressure up to 550#. Sting out, circ and start mixing cement. Choke off backside and pump 10 bbls water, 7 bbls slurry + 3 bbls water. Sting in and pump 7 bbls cement below retainer and 2 bbls cement above retainer @ 500 psi (held on backside). Pull 6 stds. Circ, trip out. Trip in w/bit to 5791'. Circ and WOC. Trip in slow, tag cement @ 8537'. Drill cement to 8590'. Drill retainer @ 8590'.

06/11/97 Day 145. 12,946' TD (0'). PO: Circ @ 12,388'. Drill on retainer @ 8590'. TOOH w/bit. Rig service and WO mill. PU mill + 2 junk subs and TIH. Mill on retainer. Drill cement. Wash & circ f/8770-8849'. Trip in to 9417'. POOH, LD mill & junk subs. PU 7" csg scraper and trip in. Circ @ liner top.

06/12/97 Day 146. 12,946' TD (0'). PO: TIH w/mill. Trip in w/7" scraper & bit to 12,388'. Circ, trip out and RU Schlumberger. RIH w/gauge ring and junk basket. Tight spot @ 3000', some junk in basket. Run retainer, no problems and set @ 11,650'. TIH and squeeze perfs 11,540-42'; 11,740-42'. Circ perforations and cement w/80 sx Class "C" cement (16 bbls).

06/13/97 Day 147. 12,946' TD (0'). PO: Run Bond log. TIH w/mill & junk baskets. Cut & slip drill line. TIH, tag cement @ 11,452'. Drill cement f/11,452-11,537', soft. WOC. Drill cement f/11,537-11,563' (firm cement to 11,600'). Close in and test csg to 1000 psi for 15 minutes. Drill cement f/11,600-11,654'. Drill retainer @ 11,654'; cement to 11,757'. TIH to top of liner @ 12,388'. Circ, TOOH and RU Schlumberger to run Bond log.

06/14/97 Day 148. 12,946' TD (0'). PO: TOOH w/5" scraper. Run Bond log 11,736' 100% up to 11,682', 80% to 11,642', 100% to 11,609', 85% to 11,450'. PU tbg, TIH and tag @ 12,876'. Attempt to drill down w/csg scraper (too much torque). TOOH (SLM) to LD scraper.

06/15/97 Day 149. 12,946' TD (0'). PO: ND BOP's. TIH w/4-½" mill. Clean out liner f/12,876-12,935'. Mix & displace packer fluid. TOOH, LD 2-7/8" tbg. ND BOP's.

06/16/97 Day 150. 12,946' TD (0'). PO: Run gauge ring. Spear 7-5/8" csg. Reset slips w/350M#, machine final dress. NU BOP's and test w/Double Jack 250# low and 5000# high. Run gauge ring and junk basket w/Schlumberger.

06/17/97 Day 151. 12,946' TD (0'). PO: TIH w/packer assy. Run gauge ring and collar locator w/Schlumberger (couldn't correlate collars to depth). Ran Gamma Ray/CCL log. Set packer assy @ 11,690' after second run. MU tail pipe & packer assy. Test to 1000 psi w/Campbell. Camco hand pressure test sub-surface safety valve and valve leaked. Check another valve in UPRC yard, valve leaked also. Camco new, re-tested valve being shipped from Texas.

06/18/97 Day 152. 12,946' TD (0'). PO: Test inside 3-1/2". Trip in w/packer assy. Sting into packer and attempt to test annulus (leaking into DP). Trip out, check tools (no visual damage). Change out seals in seal assy. Trip in and retest assy to 10,000 psi. Sting into packer and test annulus (still leaking). RU Halliburton slick line to test inside of 3-1/2" DP.

06/19/97 Day 153. 12,946' TD (0'). PO: Run production tbg. Set Mod D packer @ 11,511-73' w/2-7/8" TP. Sting into Mod D @ 11,690' (2.188" R @ 11,582'). LD DP wet. RU testers and torque turn. Start in hole w/20 seals on 2-7/8" 7.7 L80 Vam Ace tbg. Test connection and hydro bodies to 10,000.

06/20/97 Day 154. 12,946' TD (0'). PO: Running tbg. PU 2-7/8" 7.7# L80 Vam Ace tbg using torque turn for make-up. Hydro test to 10,000 psi. Check SCSSV and spm assemblies. Replace 2 flow nipples and injection mandrel due to over torque. MU witnessed by Vam PTS rep.

file

ANSCHUTZ

THE ANSCHUTZ CORPORATION

6/23/97

PAGES: 1

To: **UPRC**
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: Vicky Dyson
Fax: (801) 359-3940
Phone: (801) 538-5274

From: **Susan Balano**
Phone: (303) 299-1344
Fax: (303) 299-1518

A.L. & L #14-33 (Yellow Creek)
Operator: AEC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
12,945' TD Weber
TIGHT HOLE

06/21/97 Day 155. 12,946' TD (0'). PO: Space tbg and NU. TIH w/tbg (80 jts) Hydro & gas testing 10M. PU and run profile nipple, 1 jt tbg and spm assy. HU 1/4" SS inj line. Test all to 10M psi w/water & gas - OK. TIH w/tbg (90 jts). Hydro & gas testing to 10M psi. PU & test SCSSV (10M psi leaked off 20# in 5 minutes). Camco rep OK'd running valve. Finish TIH and sting into packer. Load hole w/pkr fluid and test annulus to 10M psi. LD 2 jts and PU pups to space out. Will have complete well diagram tomorrow.

06/22/97 Day 156. 12,946' TD (0'). PO: RDMO. Set tbg w/5M# compression of pkr. Test annulus, ND BOP and NU production tree. Test seals and valves, function test spm & SCSSV. Release all rentals. Release Parker Drilling rig no. 235 @ 1900 hrs, 06/22/97. **FINAL REPORT.**

Confidentiality Note: The information contained in this facsimile transmittal sheet and document(s) that follow are for the exclusive use of the addressee and may contain confidential, privileged, proprietary, and non-dissoluble information. If the recipient of this facsimile is not the addressee, or person responsible for delivering this facsimile to the addressee, such recipient is strictly prohibited from reading, photocopying, distributing, or otherwise using this facsimile transmission, or its contents, in any way. If the recipient has received this facsimile transmission in error, please call us immediately and return the facsimile transmission to us via the United States Postal service. We will gladly reimburse your telephone and postage expenses. Thank you.

ANSCHUTZ

THE ANSCHUTZ CORPORATION

6/24/97

PAGES: 1

To: **UPRC**
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: Vicky Dyson
Fax: (801) 359-3940
Phone: (801) 538-5274

From: **Susan Balano**
Phone: (303) 299-1344
Fax: (303) 299-1518

A.L. & L #14-33 (Yellow Creek) 06/24/97 WO completion tools. No report until further operations.
Operator: AEC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
12,945' TD Weber
TIGHT HOLE

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ANSCHUTZ

THE ANSCHUTZ CORPORATION

7/10/97

PAGES: 1

To: **UPRC**
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: Vicky Dyson
Fax: (801) 359-3940
Phone: (801) 538-5274

From: **Susan Balano**
Phone: (303) 299-1344
Fax: (303) 299-1518

A.L. & L #14-33 (Yellow Creek)
Operator: AEC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
11,540-42'; 11,740-42' Weber
TIGHT HOLE

07/07/97 Completion day 1. PO: RU H2S safety equip. Mobilize Norward test equip to location. Use Short Trucking cherry picker truck to stand flare stack. Move UPR MEOH pump skid to location. Move produced water tanks, methanol tank and shower tank to location. OWP ready to perforate on 07/09/97. DS will RU on 07/10/97 for pump on 07/11/97. IMS rigging up H2S safety equip.

07/08/97 WO perforator.

07/09/97 Completion day 2. Last 24 hrs: Test Norward equip to 5000 psi. Test lub to 5000. RIH w/30' shot 1-11/16" guns as dummy run to 12,924'. POOH. RIH and shoot f/12,820-12,900' w/1-11/16" rtt guns w/three 3.2 gm JSPF, 0°, 240 total. No pressure response. RDWL. NU tree cap and test to 5000 psi. Secure well and SDFN.

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ANSCHUTZ

THE ANSCHUTZ CORPORATION

7/11/97

PAGES: 3 (includes 2 page chronological report)

To:	**UPRC** **Attn: Lance Cook** **Fax: (817) 877-7912** **Phone: (817) 877-6727**	**Utah Div. of O&G Mining** **Attn: Vicky Dyson** **Fax: (801) 359-3940** **Phone: (801) 538-5274**
From:	**Susan Balano** **Phone: (303) 299-1344** **Fax: (303) 299-1518**	

A.L. & L #14-33 (Yellow Creek) **Operator: AEC** Section 33, T6N, R8E 460' FEL, 100' FSL Summit County, Utah 11,540-42'; 11,740-42' Weber **TIGHT HOLE**	07/11/97	Completion day 3. PO: MIRU Dowell Schlumberger. SITP 0; SICP 25.

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06/19/97 Day 153. 12,946' TD (0'). PO: Run production tbg. Set Mod D packer @ 11,511-73' w/2-7/8" TP. Sting into Mod D @ 11,690' (2.188" R @ 11,582'). LD DP wet. RU testers and torque turn. Start in hole w/20 seals on 2-7/8" 7.7 L80 Vam Ace tbg. Test connection and hydro bodies to 10,000.

06/20/97 Day 154. 12,946' TD (0'). PO: Running tbg. PU 2-7/8" 7.7# L80 Vam Ace tbg using torque turn for make-up. Hydro test to 10,000 psi. Check SCSSV and spm assemblies. Replace 2 flow nipples and injection mandrel due to over torque. MU witnessed by Vam PTS rep.

06/21/97 Day 155. 12,946' TD (0'). PO: Space tbg and NU. TIH w/tbg (80 jts) Hydro & gas testing 10M. PU and run profile nipple, 1 jt tbg and spm assy. HU 1/4" SS inj line. Test all to 10M psi w/water & gas - OK. TIH w/tbg (90 jts). Hydro & gas testing to 10M psi. PU & test SCSSV (10M psi leaked off 20# in 5 minutes). Camco rep OK'd running valve. Finish TIH and sting into packer. Load hole w/pkr fluid and test annulus to 10M psi. LD 2 jts and PU pups to space out. Will have complete well diagram tomorrow.

06/22/97 Day 156. 12,946' TD (0'). PO: RDMO. Set tbg w/5M# compression of pkr. Test annulus, ND BOP and NU production tree. Test seals and valves, function test spm & SCSSV. Release all rentals. Release Parker Drilling rig no. 235 @ 1900 hrs, 06/22/97. **FINAL REPORT.**

06/24/97 WO completion tools.

06/25/97 WO completion tools.

06/26/97 WO completion tools. RD and move out six loads. Removing rental equipment.

06/27/97 PO: Continue RD and MO. Crane on location. Expect to have all equipment except DP off location tomorrow.

06/28/97 PO: Continue RD and MO. All equipment removed except DP.

06/29/97 PO: Continue RD. Move rig out and clean up location. 20" - 30" conductor sent to Spidle Sales for storage.

06/30/97 WO completion tools.

07/01/97 WO completion tools.

07/02/97 WO completion tools.

07/03/97 WO completion tools.

07/04/97 WO completion tools.

07/05/97 WO completion tools.

07/06/97 WO completion tools.

07/07/97 Completion day 1. PO: RU H2S safety equip. Mobilize Norward test equip to location. Use Short Trucking cherry picker truck to stand flare stack. Move UPR MEOH pump skid to location. Move produced water tanks, methanol tank and shower tank to location. OWP ready to perforate on 07/09/97. DS will RU on 07/10/97 for pump on 07/11/97. IMS rigging up H2S safety equip.

07/08/97 WO perforator.

07/09/97 Completion day 2. Last 24 hrs: Test Norward equip to 5000 psi. Test lub to 5000. RIH w/30' shot 1-11/16" guns as dummy run to 12,924'. POOH. RIH and shoot f/12,820-12,900' w/1-11/16" rtt guns w/three 3.2 gm JSPF, 0°, 240 total. No pressure response. RDWL. NU tree cap and test to 5000 psi. Secure well and SDFN.

07/10/97 Completion day 3. PO: MIRU Dowell Schlumberger. SITP 0; SICP 25.

file

ANSCHUTZ

THE ANSCHUTZ CORPORATION

7/14/97

PAGES: 1

To: UPRC
Attn: Lance Cook
Fax: (817) 877-7912
Phone: (817) 877-6727

Utah Div. of O&G Mining
Attn: Vicky Dyson
Fax: (801) 359-3940
Phone: (801) 538-5274

From: Susan Balano
Phone: (303) 299-1344
Fax: (303) 299-1518

A.L. & L #14-33 (Yellow Creek)
Operator: AEC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
11,540-42'; 11,740-42' Weber
TIGHT HOLE

07/11/97 Completion day 4. SITP 0, SICP 25. RU stim equip (DS, Camco, Stinger). Treat Weber perfs f/12,820-12,900' w/9000 gals 7.5% HCL w/0.4 gpt J429 gel, 2 gpt W54 emulsifier, 5 gpt A261 inhib, 20 gpt A201 inhib aid, 20 gpt U42 chelating agent, 9 gpt F78 surfactant and 9#/1000 gal L58 Fe stabilizer. Lead acid w/8 bw w/2 gpt L64 cla-sta. Perfs broke @ 4800 psi @ 1.6 bpm. Pump 2000 gals acid w/no N2 @ 7 bpm @ 7000 psi. Pump 7000 gals acid w/ave 7000 scfm N2 @ 7.9 bpm @ 7000 psi w/350 1.3 s.g. 7/8" ball sealers (little ball action). Flush line w/water. Pump 4 bbls diesel w/1 bbl RU 196 champion corr inhib. Flush lines w/water. Displace w/150M scf N2 starting @ 13000 scfm. Tree saver failed. Finish disp @ 2600 scfm @ 4600 psi. ISIP 4460; 5 minutes 3940; 10 minutes 3480; 15 minutes 3204. RD stim equip. Surge balls off perfs and let drop. Start flowback @ 14:00 hrs on a 25/64" choke, STIP 3150. Burnable gas @ 14:15 hrs.

Time	*Ftp*	*Ck*	*Bp*	*Mmcfd*	*Bwph*	*Cum*	*Boph*	*Cum*
16:00	1850	25/64	300	7.2	6.5	21.7	0	0
20:00	1850	29/64	721	9.45	1.2	27.7	13.8	41.3
24:00	1640	35/64	712	10.016	0.3	31.4	14.1	98.5
04:00	1580	38/64	710	10.387	0.2	32.8	14.8	157.9

07/12/97 Completion day 5. Pull oil, gas and water samples. SWI. Dome DH freezing last 2 hrs of flowing, not pumping enough MEOH. Good mechanical integrity all tubulars strings throughout stim and well testing. SCSSV appears to be operating normally. Start RD.

Time	*Ftp*	*Ck*	*Bp*	*Mmcfd*	*Bwph*	*Cum*	*Boph*	*Cum*
06:00	1580	38/64	713	10.431	0.3	33.4	14.8	187.1
10:00	1360	38/64	714	8.966	0	34.4	12.7	238.1

07/13/97 Completion day 6. SITP 3150. Pump 4 bbls diesel w/1 bbl Champion RU196 down tbg. Chase w/40 gals MEOH. Set BPV and secure well. Release and move out all equip. Haul produced fluid to UPR facility.

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DOUBLE JACK TESTING & SERVICES, INC.

B.O.P. Test Report

B.O.P. Test Performed on (date) 4-21-97

Oil Company Anschutz Corp

Well Name & Number ALEL 14-33 4304330315

Section 33

Township 6N

Range 8E

County Summit ut

Drilling Contractor Parker 235

Oil Company Site Representative Ken Clark

Rig Tool Pusher Mike Lewis

Tested out of Evanston

Notified Prior to Test yes

Copies of This Test Report Sent to: Anschutz

Parker

State

Original Chart & Test Report on File at:

Below

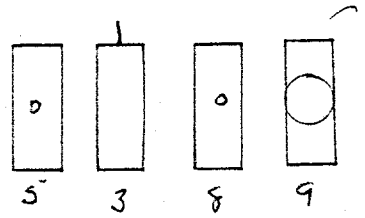
Tested by: Double Jack Testing & Services, Inc.
108 Parkview Road
P.O. Box 2097
Evanston, Wyoming 82930

RECEIVED
JUL 16 1997
DIV. OF OIL, GAS & MINING

DOUBLE JACK TESTING & SERVICES, INC.
P O BOX 2097
EVANSTON, WY 82931-2097

COMPANY	LEASE AND WELL NAME & NUMBER	TEST DATE	RIG NAME & NUMBER
	ML&L 14-33	4-21-97	

TEST #	TIME	INFORMATION
1	6:49-6:54	First Inside 3 manifold valves
2	7:10-7:15	outside 3 manifold valves
3	8:02-8:12	Top Pipe Rams Dart Valve Inside kill & manual choke
4	9:10-9:15	Bottom pipe Rams TIW
5	9:49-9:54	Top pipe Rams TIW Valve HCR
6	10:29-10:34	HYDRI 3500 PSI
7	10:57-11:02	Blind Rams Valve supper choke 2 inside manifold valves
8	11:35-11:40	Lower kelly
9	11:43-11:48	upper kelly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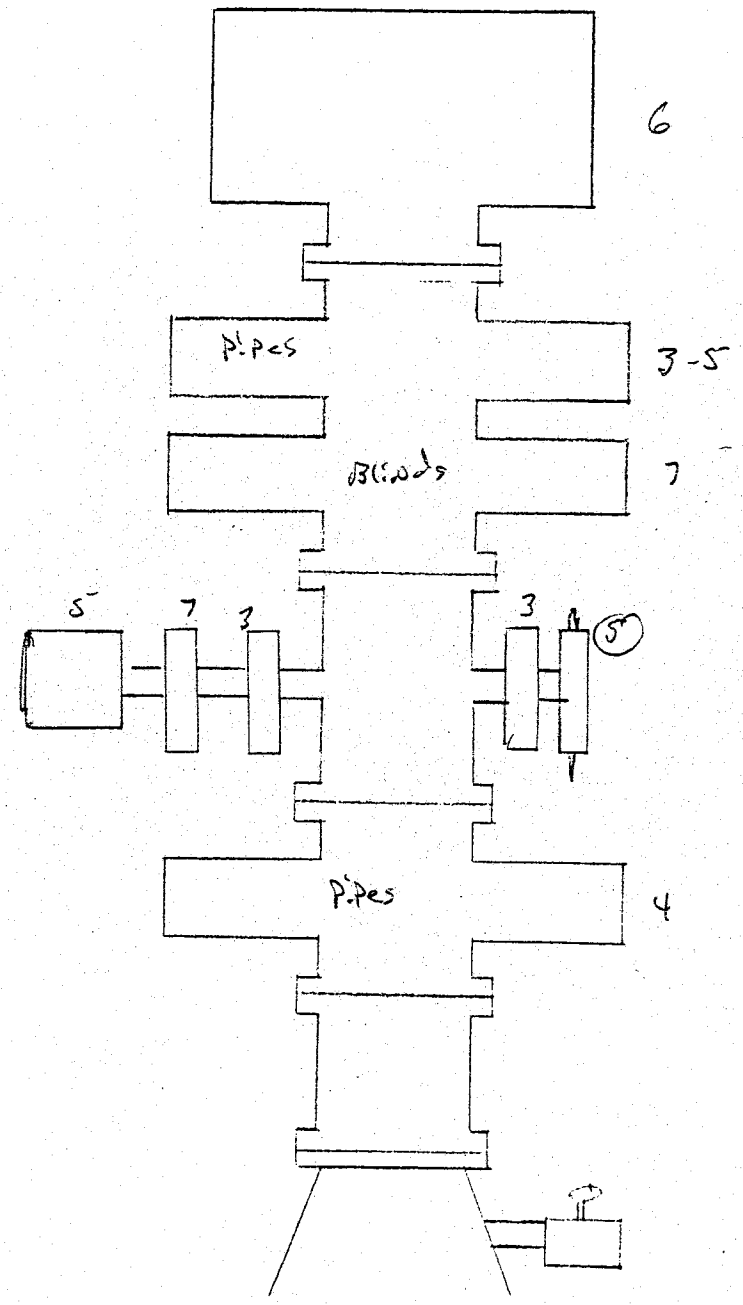
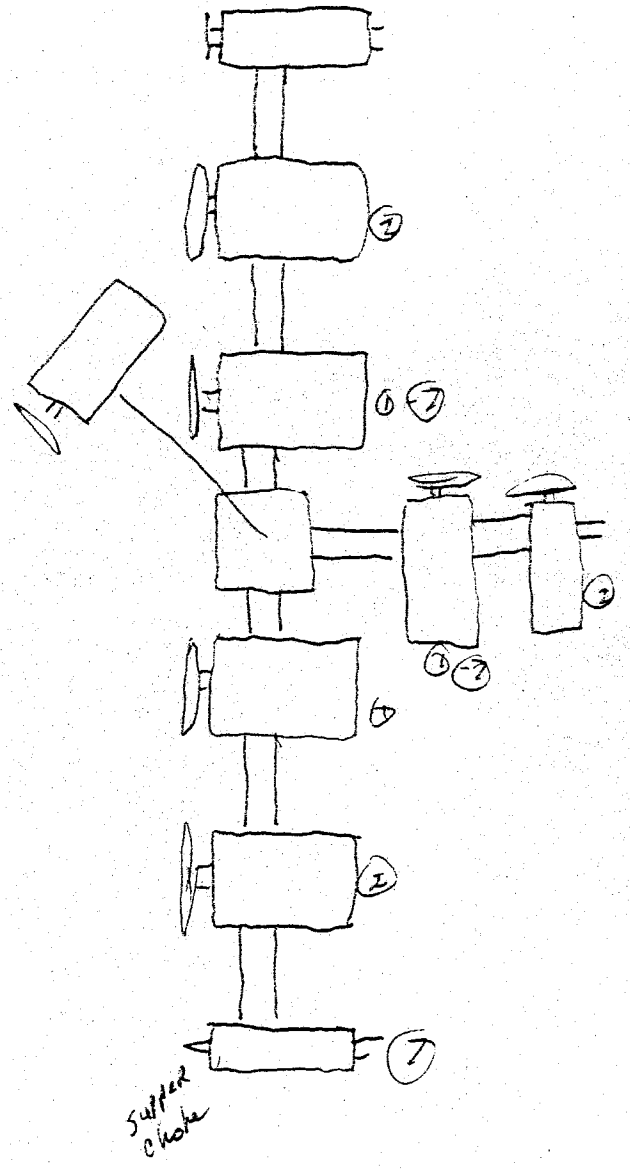

6
Pipes
3-5
Blinds
7
5
7
3
3
5
Pipes
4


2
1-2
1
2
1-2
1
2
7
Supper choke

Double Jack Testing & Services Inc.

FIELD TICKET
№ 012397

Accounting Office: P.O. Box 516 shoni, 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 4-21-97
OPERATOR Anschutz Corp
RIG NAME & NO. Parker Drlg 235
WELL NAME & NO. AL&L 14-33

COUNTY	STATE	SECTION	TOWNSHIP	RANGE
Summit	Ut	33	6N	9E

Items Tested:

	LOW TEST PSI	TIME HELD MINUTES	HIGHTEST PSI	TIME HELD MINUTES
Top Pipe Rams	250	5 min	5000	10 min
Bottom Pipe Rams	250	5 min	5000	10 min
Blind Rams	250	5 min	5000	10 min
Annular B.O.P.	250	5 min	3500	10 min
Choke Manifold	250	5 min	5000	10 min
Choke Line	250	5 min	5000	10 min
Kill Line	250	5 min	5000	10 min
Super Choke	250	5 min	5000	10 min
Upper Kelly	250	5 min	5000	10 min
Lower Kelly	250	5 min	5000	10 min
Floor Valve	250	5 min	5000	10 min
Dart Valve	250	5 min	5000	10 min
Casing				

Closing Unit PSI 2950
Closing Time of Rams 5 sec
Closing Time of Annular 14 sec
Closed Casing Head Valve yes
Set Wear Sleeve yes

COMMENTS

ADDITIONAL TESTS & COMMENTS

TEST PLUG 12" OCT
RET. TOOL on location
TOP SUB. 4 1/2 XH
KELLY SUB. 4 1/2 XH
X-OVER SUB. 4 1/2 IF X 4 1/2 XH Box

RATES

UNIT RATES 800.00 F/The First 7 hrs on Location 6:30-1:30
ADDITIONAL
MILEAGE 30 miles Round Trip F/Evanston Shop @ 1.00
METHANOL
OTHER

PURACHASE ORDER #

TESTED BY

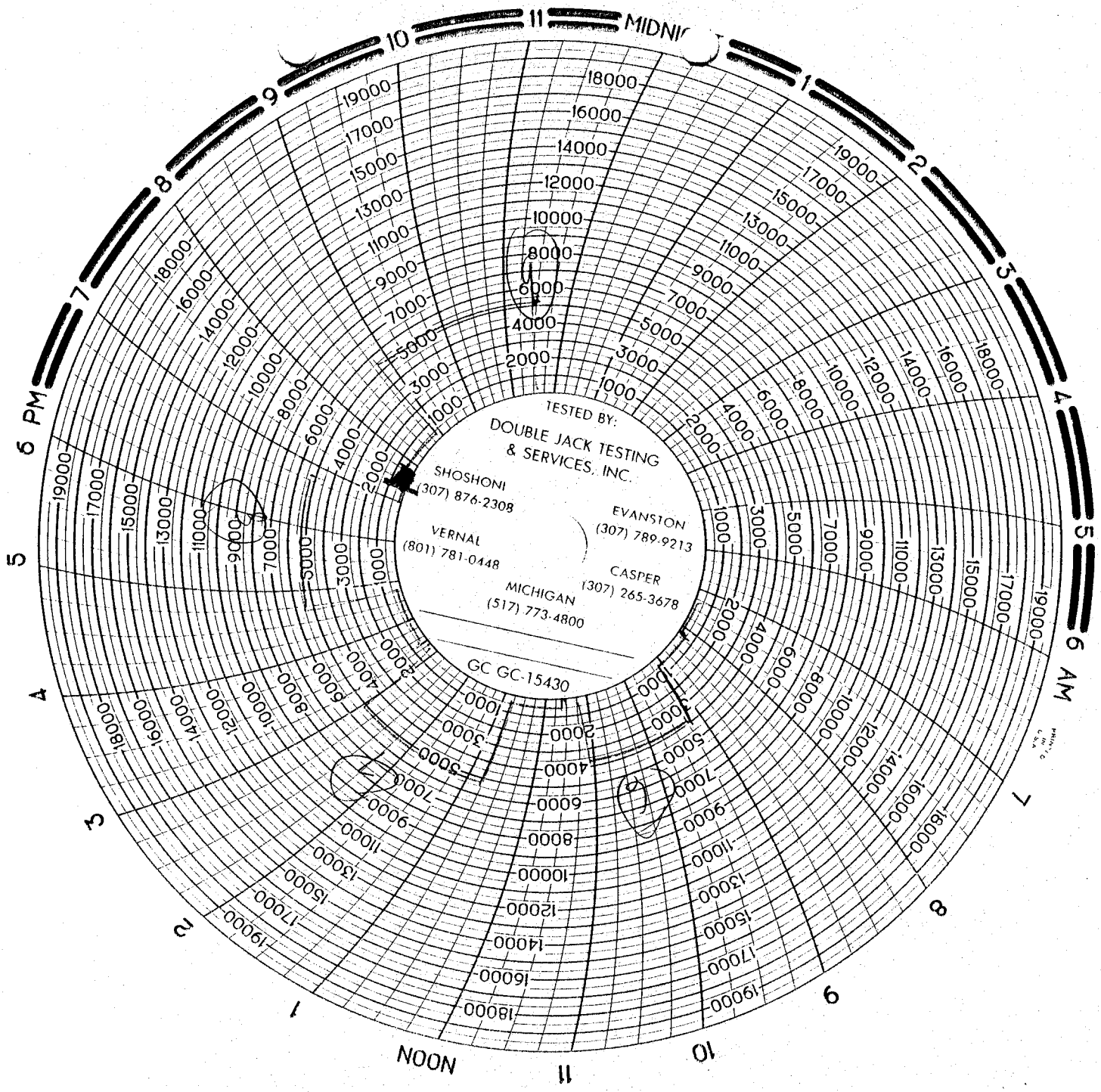
COMPANY REPRESENTATIVE

143
DOUBLE JACK TESTING UNIT NUMI

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 u of collection including attorney's fees and court cost in compliance with TRUTH IN LENDING AND THE UNIFORM CONSUMER terms of our regular accounts, all amounts for service due and payable within THIRTY (30) DAYS from the receipt of an invoice for s are not paid when due. THE LATE CHARGE is computed by a "periodic rate" 1-3/4% PER MONTH which is an ANNUAL PERC on the billing date. No further credit can be extended on unpaid delinquent accounts until the delinquent account is paid in full. T of God, or unforeseen circumstances that could not be reasonably anticipated in performing the work done as set forth above.

NOON
6 AM
6 PM
MIDNIGHT
PRINTED IN U.S.A.
GC GC 15430
MICHIGAN
(517) 773-4800
CASPER
(307) 265-3678
EVANSTON
(307) 789-9213
VERNAL
(801) 781-0448
SHOSHONI
(307) 876-2308
DOUBLE JACK TESTING
& SERVICES, INC
TESTED BY:


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
MIDNIGHT
NOON
6 AM
6 PM

ANSCHUTZ

THE ANSCHUTZ CORPORATION

7/31/97

file

PAGES: 1

To:	**UPRC** **Attn: Lance Cook** **Fax: (817) 877-7912** **Phone: (817) 877-6727**	**Utah Div. of O&G Mining** **Attn: Vicky Dyson** **Fax: (801) 359-3940** **Phone: (801) 538-5274**
From:	**Susan Balano** **Phone: (303) 299-1344** **Fax: (303) 299-1518**	

A.L. & L #14-33 (Yellow Creek)
Operator: AEC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
11,540-42'; 11,740-42' Weber
TIGHT HOLE

07/24/97 PL construction day 10. Complete line welding. Start FBE coating on joint welds. Contractors: Flint Engineering and WIX Inspection.

07/25/97 PL construction day 11. Clean joint welds and apply FBE. Shrink sleeve & form to field joints.

07/26/97 PL construction day 12. Complete pipe coating. Lowered 6" down to one side to allow 3" flare line to be layed before lowering into ditch.

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

September 12, 1997

RECEIVED
SEP 16 1997
DIV. OF OIL, GAS & MINING

State of Utah
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Ste. 350
Salt Lake City, Utah 84180-1203

Attn: Mike Hebertson

RE: A L & L No. 14-33
Wildcat Field
Summit County, Utah

Dear Mr. Hebertson:

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
Engineering Mgr.

Enclosures

xc: AEC Denver Well Files

FORM 8

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

RECEIVED
SEP 16 1997
DIV. OF OIL, GAS & MINING

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] DRY [ ] Other

b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEP-EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other

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2. NAME OF OPERATOR: The Anschutz Corporation

3. ADDRESS OF OPERATOR: 555 17th Street, Suite 2400, Denver, Co. 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)
At surface: 592' FSL and 748' FEL, Sec. 33, T6N-R8E
At top prod. interval reported below: 527' FSL and 782.1 FEL
At total depth: 518' FSL and 835.5'FEL

5. LEASE DESIGNATION AND SERIAL NO.:
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT AGREEMENT NAME:
8. FARM OR LEASE NAME: A.L. & L.
9. WELL NO.: 14-33
10. FIELD AND POOL, OR WILDCAT: Yellow Creek Deep
11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: T6N-R8E Section 33

14. API NO.	DATE ISSUED	12. COUNTY	13. STATE
43-043-30315	8/25/96	Summit	Utah

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.) or (Plug & Abd.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)	19. ELEV. CASINGHEAD
1/17/97	5/24/97	7/12/97	7147.0' G.L.	7170.0 KB

20. TOTAL DEPTH, MD & TVD	21. PLUG BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
12,945 MD	12,935' MD	N/A	→	0-12,945	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD): 12,820' - 12,900' Weber

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: AIT/LDT - CNL/DS/FML - GR MUD LOG 5-28-97 SONIC DLL

27. WAS WELL CORED YES [ ] NO [X] (Submit analysis)
DRILL STEM TEST YES [ ] NO [X] (See reverse side)

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
20"	106.5	1500'	26"	1350 sks lt. & 845 sks G	0
13 5/8', 13 3/8"	88, 68	5993'	17 1/2"	3980 sks lt. & 1300 sks G	0
7 5/8', 7"	39,32	12,581'	8 3/4"	See sqz. Record Below	0

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT	SCREEN (MD)
5"	12,382'	12,945'	233 sk G	N/A

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 7/8"	11,932'	11,512' & 11,690'

31. PERFORATION RECORD (Interval, size and number): 12,820' - 12,900' - 240 holes

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32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
12,820'-12,900'	9000 gal 7.5% HCL
12,347'-12,369'	Sqz'd w/125 sks Cl G
11,805'-11,808'	Sqz'd w/55 sks Cl G
11,540'-11,742'	Circulated 80 sks Cl G

33. PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
8/27/97	Flowing	Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
7/12/97	27.5	25-38/64	→	238.1	7,569	34.4	31,789

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
1360	25	→	207.7	6606	30.0	

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.): Gas gathered by Wasatch

TEST WITNESSED BY:

CONFIDENTIAL PERIOD EXPIRED ON 9-12-98

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 9/12/97

See Spaces for Additional Data on Reverse Side

(3/89)

INSTRUCTIONS

This form should be completed in compliance 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.

ITEMS 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 producinginterval, or intervals, top(s), bottom(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	11,910'	12,702'	Gas Productive
Weber	12,726'		Gas Productive, the entire Weber interval was not drilled

38. GEOLOGIC MARKERS

Name	Top Meas. Depth	Top True Vert. Depth
Twin Creek Ls.	5906	5903
Nugget Ss.	7528	7518
Ankareh Red Beds	8580	8560
Thaynes Ls.	9603	9567
Woodside Red Beds	10901	10854
Dinwoody Fm.	11674	11601
Phosphoria	11910	11814
Weber Ss.	12726	12541

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4032797992 NORWARD CAL. SHOP 479 P04 SEP 09 '97 10:22

Job Number: ANSCH3.FLD
Customer: ANSCHUTZ CORP.
Wellname:
Well Location: AL&L 14-33
Formation: WEBER

FieldNotes

NORWARD ENERGY SERVICES

Row	Date	Time	C Time	Tbg Pres	Csg Pres	WHT	Choke	Orif	Static	Diff	Temp	Gas Rate	Cum Gas	Wat Gain	Wat Rate	Cum Wat	WGR	Oil Gain	Oil Rate	Cum Oil	GOR	pH	Salinity
	yy/mm/dd	clock	hr	psig	psig	F	in	in	psig	in of H2O	F	MMCF/d	MMCF	bbl	bbl/d	bbl	bbl/mmcf	bbl	bbl/d	bbl	scf/bbl		ppm
1	1997/07/11	06:30:00	0.00	NORWARD ARRIVE ON LOCATION. DOWELL RIGGING UP FOR ACID JOB																			
2		13:00:00	6.50	OPENING PRESSURE AFTER ACID JOB = 3425 PSI ON TUBING 0 PSI ON CASING. TOTAL LOAD TO RECOVER = 322 BBLS.																			
3		13:06:00	6.60	OPEN WELL ON 30/64 CHOKE THROUGH EQUIPMENT																			
4		13:15:00	6.75	SHUT IN WELL TO DROP PERF BALLS TO BOTTOM. 1620PSI ON TUBING																			
5		13:30:00	7.00	2920	50																		
6		14:00:00	7.50	3150	110																		
7		14:00:00	7.50	OPEN WELL ON 25/64 CHOKE THROUGH EQUIPMENT																			
8		14:00:00	7.50	0	0	0	0	0.000	0	0	0	0.000	0.000	0.0	0.00	0.00		0.000	0.00	0.00			
9		14:10:00	7.67	BURNABLE GAS TO SURFACE																			
10		14:13:00	7.72	FLUID TO SURFACE																			
11		14:30:00	8.00	1600	200	70	25	2.250	290	80	124	4.874	0.102	2.8	134.40	2.80	27.409	0.000	0.00	0.00		5.0	
12		15:00:00	8.50	1620	325	70	25	2.250	315	122	109	6.008	0.215	6.3	302.40	9.10	50.026	0.000	0.00	0.00			
13		15:30:00	9.00	1960	500	68	25	2.250	340	176	80	7.749	0.368	6.1	292.80	15.20	37.553	0.000	0.00	0.00			
14		15:35:00	9.08	INCREASE BACK PRESSURE																			
15		16:00:00	9.50	1850	600	70	25	2.250	500	104	81	7.279	0.515	6.5	312.00	21.70	42.600	0.000	0.00	0.00			
16		16:30:00	10.00	1850	650	70	25	2.250	510	100	78	7.242	0.688	1.1	52.80	22.80	7.248	3.800	182.40	3.80	39704.0		
17		16:45:00	10.25	INCREASE BACK PRESSURE																			
18		17:00:00	10.50	1620	720	70	25	2.250	620	62	82	7.394	0.818	0.9	43.20	23.70	5.807	4.500	216.00	8.30	34231.8		
19		17:30:00	11.00	1800	770	70	25	2.250	810	53	84	6.767	0.966										
20	1997/07/11	18:00:00	11.50	1700	800	70	25	2.250	800	49	90	6.402	1.103	0.8	19.20	24.50	2.981	7.800	187.20	16.10	34200.9	5.0	84848.0
21		18:00:00	11.50	INCREASE CHOKE TO 29/64 TO DRAW DOWN TUBING TO 1500 PSI. (DECREASE BACK PRESSURE TO STAY IN CRITICAL FLOW)																			
22		18:30:00	12.00	1500	825	71	29	2.250	700	72	93	7.168	1.245										
23		18:40:00	12.17	WELL ACTING AS IF AN ICE PLUG LET GO																			
24		19:00:00	12.50	1850	940	72	29	2.250	705	114	78	9.252	1.416	2.0	48.00	26.50	5.156	11.400	273.60	27.50	33815.3		
25		19:30:00	13.00	1860	970	72	29	2.250	712	112	70	9.334	1.609										
26		20:00:00	13.50	1850	1030	72	29	2.250	712	114	68	9.446	1.805	1.2	28.80	27.70	3.030	13.800	331.20	41.30	28519.9		
27		20:30:00	14.00	1850	1075	72	29	2.250	713	108	68	9.201	1.999										
28	1997/07/11	21:00:00	14.50	1850	1110	72	29	2.250	712	110	68	9.278	2.191	1.1	26.40	28.80	2.828	13.600	326.40	54.90	28426.3		
29		21:01:00	14.52	INCREASE CHOKE TO 32/64.																			
30		21:30:00	15.00	1750	1150	74	32	2.250	710	122	71	9.711	2.389										
31		22:00:00	15.50	1740	1160	74	32	2.250	710	121	73	9.642	2.591	1.0	24.00	29.80	2.474	15.100	362.40	70.00	28605.4		
32		22:01:00	15.52	INCREASE CHOKE TO 34/64																			
33		22:30:00	16.00	1650	1200	74	34	2.250	712	128	75	9.904	2.794										
34		23:00:00	16.50	1675	1210	74	34	2.250	711	129	76	9.920	3.001	1.3	31.20	31.10	3.126	14.400	345.60	84.40	28702.6		
35		23:01:00	16.52	INCREASE CHOKE TO 35/64.																			
36		23:30:00	17.00	1650	1240	74	35	2.250	711	132	78	10.005	3.209										
37	1997/07/12	00:00:00	17.50	1640	1250	74	35	2.250	712	132	78	10.013	3.417	0.3	7.20	31.40	0.715	14.100	338.40	98.50	29588.7	5.0	66666.0
38		00:01:00	17.52	INCREASE CHOKE TO 37/64																			
39		00:30:00	18.00	1580	1260	74	37	2.250	714	139	79	10.277	3.628										
40		01:00:00	18.50	1580	1270	74	37	2.250	714	140	79	10.314	3.843	0.6	14.40	32.00	1.388	14.900	357.60	113.40	28841.2		
41		01:30:00	19.00	1590	1280	74	37	2.250	707	139	79	10.219	4.057										
42		02:00:00	19.50	1600	1300	75	37	2.250	707	141	79	10.293	4.270	0.0	0.00	32.00	0.000	15.600	374.40	129.00	27491.2		
43		02:01:00	19.52	INCREASE CHOKE TO 38/64																			
44		02:30:00	20.00	1575	1310	74	38	2.250	709	140	80	10.258	4.484										
45	1997/07/12	03:00:00	20.50	1570	1320	75	38	2.250	710	140	80	10.286	4.698	0.6	14.40	32.60	1.394	14.100	338.40	143.10	30336.1		
46		03:30:00	21.00	1570	1340	75	38	2.250	710	142	80	10.339	4.913										
47		04:00:00	21.50	1580	1350	76	38	2.250	711	143	80	10.384	5.129	0.2	4.80	32.80	0.459	14.800	355.20	157.90	29233.2		
48		04:30:00	22.00	1580	1360	76	38	2.250	710	143	81	10.380	5.345										
49	1997/07/12	05:00:00	22.50	1590	1360	76	38	2.250	710	144	81	10.397	5.561	0.3	7.20	33.10	0.688	14.400	345.60	172.30	30082.5		
50		05:30:00	23.00	1580	1380	76	38	2.250	713	144	82	10.406	5.778										
51		05:35:00	23.08	BLEED OFF CASING.																			
52		06:00:00	23.50	1580	0	77	38	2.250	713	145	83	10.427	5.995	0.3	7.20	33.40	0.686	14.800	355.20	187.10	29356.3		
53		06:30:00	24.00	1580	0	78	38	2.250	711	145	84	10.398	6.212										
54		07:00:00	24.50	1575	10	78	38	2.250	711	140	84	10.215	6.426	0.4	9.60	33.80	0.904	14.400	345.60	201.50	29558.5	6.0	67272.0
55		07:30:00	25.00	1580	15	77	38	2.250	711	138	92	10.028	6.637										
56		08:00:00	25.50	1350	20	76	38	2.250	713	111	96	8.957	6.835	0.6	14.40	34.40	1.598	12.500	300.00	214.00	29856.7		
57		08:30:00	26.00	1350	25	76	38	2.250	713	104	95	8.681	7.019										
58	1997/07/12	09:00:00	26.50	1340	25	74	38	2.250	714	104	95	8.688	7.200	0.0	0.00	34.40	0.000	11.400	273.60	225.40	31755.0		
59		09:30:00	27.00	1360	25	75	38	2.250	714	110	96	8.923	7.383										
60		09:45:00	27.25	SAMPLES TAKEN 2-H.P. GAS 2- H.P. COND 3- STOCK H2O SAMPLES																			
61		10:00:00	27.50	1360	25	75	38	2.250	714	111	96	8.984	7.569	0.0	0.00	34.40	0.000	12.700	304.80	238.10	29409.5	6.0	66060.0
62	1997/07/12	10:01:00	27.52	END OF TEST. SHUT IN WELL																			
63		10:01:00	27.52						0	0	0	0.000	7.569	0.0	0.00	34.40							

fast

Microfilmed to this point

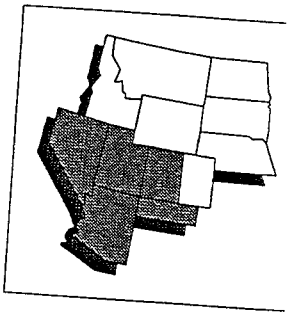
The Week in Review...Four Corners Area

43-043-30315

Anschutz Exploration completed an exploratory test on the northeastern Utah salient of the Overthrust Belt just west of the Wyoming border about five miles southwest of Evanston, Wyoming, flowing 6,606,000 cu ft of gas, 208 bbls of condensate and 30 bbls of water per day. The 14-33 AL&L is producing from Weber between 12,820 and 12,900 ft. It was directionally drilled from a surface location 592 ft from the south line and 748 ft from the east line of irregular section 33-6n-8e, Summit County, southwestward to a bottom-hole location 518 ft from the south line and 835.5 ft from the east line of the same section. The well is within three quarters of a mile southwest of a high-volume Phosphoria sour gas producer completed last year by Union Pacific Resources in the Uinta County, Wyoming portion of Yellow Creek field. *(RMRR 9/19/97)*

Big West Oil & Gas completed a new oil producer in Sans Springs field about 22 miles south-southwest of Currant in Nevada's Railroad Valley. The 5-14A Sans Springs, sw nw 14-7n-56e, Nye County, produced 17,854 bbls of oil and 12,901 bbls of water from an undisclosed Garrett Ranch interval during its first 43 days on line (26 days in May, 17 days in June), according to state records, an average of about 415 bbls of oil and 300 bbls of water daily. *(RMRR 9/18/97)*

Twining Drilling completed a wildcat in the southern Albuquerque-Belen Basin five miles southwest of Belen, New Mexico, as a 7400-ft dry hole. The 1 NFT, sw sw 33-5n-1e, Valencia County, was set up to evaluate the oil and gas potential of the Santa Fe Group to about 8000 ft. The wildcat, a subthrust play, also was to have evaluated shallow oil potential in Entrada. It's about 80 miles south-southeast of McKinley County's Miguel Creek field, a Gallup pool on the southern flank of the San Juan Basin. *(RMRR 9/18/97)*



Burlington Resources Oil & Gas has drilled to a total depth of 14,032 ft at a San Juan Basin wildcat seven miles northeast of Aztec in northwestern New Mexico. The 2 Marcotte, ne se 8-31n-10w, San Juan County, a test of Pennsylvanian sediments, is in an area of gas production from the Cretaceous Fruitland, Pictured Cliffs, Chacra, Mesaverde, Graneros and Dakota in the Basin/Blanco field area. The nearest production from Pennsylvanian zones is 23 miles to the west-northwest, in Barker Dome field. *(RMRR 9/17/97)*

The New Mexico State Office of the Bureau of Land Management will hold an oral-bid oil and gas lease sale on Wednesday, October 22, in Santa Fe. The sale is comprised of 123 parcels encompassing 57,454.1 acres in New Mexico, Kansas and Texas. The sale offering includes 62 tracts totaling 37,720.06 acres in the northern townships of New Mexico. *(RMRR 9/17/97)*

The September 16 New Mexico state lease sale in Santa Fe drew high bids totaling $1,748,124.20 for 42 tracts covering 18,895.72 acres, an average of $92.51 per acre. Three parcels covering 1,600 acres in the state's northern townships were leased for a total of $151,670.40 in bonus, an average of $94.79 an acre. The top per-acre bid for a northern parcel was $115, made by High Plains Associates Inc for 640 acres covering all 16-20n-5w, McKinley County, approximately eight miles west of Penistaja. The lease is less than two miles east of the Franciscan Lake-Mesaverde oil pool. *(RMRR 9/23/97)*

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FILED

JUL 1 0 2000

SECRETARY, BOARD OF OIL, GAS & MINING

BEFORE THE BOARD OF OIL, GAS AND MINING

DEPARTMENT OF NATURAL RESOURCES

STATE OF UTAH

IN THE MATTER OF THE REQUEST FOR AGENCY ACTION OF THE ANSCHUTZ CORPORATION FOR AN ORDER ESTABLISHING A SINGLE 391.51-ACRE DRILLING AND SPACING UNIT FOR THE PRODUCTION OF HYDROCARBONS FROM THE WEBER FORMATION UNDERLYING APPROXIMATELY 184.81 ACRES IN SECTION 33, TOWNSHIP 6 NORTH, RANGE 8 EAST, S.L.B.& M., SUMMIT COUNTY, UTAH, AND APPROXIMATELY 206.7 ACRES IN SECTIONS 10 AND 11, TOWNSHIP 14 NORTH, RANGE 121 WEST, 6TH P.M., UINTA COUNTY, WYOMING	)	**FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER ESTABLISHING DRILLING AND SPACING UNIT, DESIGNATING UNIT WELL, APPROVING ALLOCATION OF PRODUCTION, AND ENTERING DEFAULT** **Docket No. 2000-006** **Cause No. 189-5**

This cause came on regularly for hearing before the Utah Board of Oil, Gas and Mining (the "Board") on Wednesday, May 24, 2000, at the hour of 10:00 a.m. in the Emery County Courthouse, Commission Chambers, 95 East Main, Castle Dale, Utah. The following Board members were present at the hearing: Dave D. Lauriski, Chairman, Raymond Murray; Thomas B. Faddies, Elise L. Erler; W. Allan Mashburn; Stephanie B. Cartwright; and Jim Peacock. Lowell Braxton, Director, and John Baza, Associate Director, Oil and Gas, were present for the Division of Oil, Gas and Mining (the "Division"). Thomas A. Mitchell and Kurt E. Seel, Assistant Attorneys General and counsel to the Division and the Board, respectively, were also present. The petitioner,

hydrocarbons from the Weber Formation underlying the following described lands in Summit County, Utah (hereinafter the "Utah Subject Lands"):

Township 6 North, Range 8 East, S.L.B.& M.

Section 33: S½N½ (SW¼NW¼ and Lot 2)
S½ (W½SW¼ and Lots 3 and 4)

containing 184.81 acres, more or less. The remaining lands contained within the proposed approximate 391.51-acre proposed drilling and spacing unit are located in Uinta County, Wyoming, and are described as follows (the "Wyoming Subject Lands"):

Township 14 North, Range 121 West, 6th P.M.

Section 10: Lots 1 and 2 (46.70 acres)
Section 11: NW¼

containing 206.7 acres, more or less. The Utah Subject Lands and the Wyoming Subject Lands are hereinafter collectively referred to as the "Subject Lands."

4. Anschutz is the owner of certain working interests and operating rights, or the contractual right to acquire the same, or both, in and to all or a portion of the Subject Lands. Anschutz and related entities own approximately 99.4% of the working interest in the proposed drilling and spacing unit.

5. The minerals in the lands embraced within the Subject Lands are privately owned and, except for a 1-acre tract owned by AT&T Communications located within the Utah Subject Lands, are subject to fee oil and gas leases. The surface estate of portions of the Utah Subject Lands has been severed from the mineral estate and is owned by Castle Rock Land and Livestock LLC.

upstructure to the northeast. Anschutz anticipates that the perforations in the top of the Weber Formation in the Subject Well will be located very close to, or may even straddle, the Utah-Wyoming state line, and that the Subject Well will produce from the Weber Formation underlying both the Utah and Wyoming Subject Lands.

11. The Utah Subject Lands are not subject to any spacing orders of the Board for the production of hydrocarbons from the Weber Formation. The Phosphoria Formation, which is stratigraphically above the Weber Formation, is subject to the November 19, 1980 Order of the Board entered in Cause No. 189-1. The well location for the AL&L No. 14-33 Well (for the Phosphoria Formation) was approved by the Board by Order dated September 18, 1996, in Cause No. 189-1B. Anschutz does not intend the Subject Well to produce hydrocarbons from the Phosphoria Formation and did not request that the existing spacing pattern established under the Order entered in Cause No. 189-1 be modified.

12. The pool in the Weber Formation beneath the Subject Lands is separate and distinct from the pool contained within the Phosphoria Formation beneath the Subject Lands.

13. In its Request for Agency Action, Anschutz also sought approval of the allocation of production from the proposed Weber Formation drilling and spacing unit, for all purposes, between the separately-owned tracts in the Utah Subject Lands and in the Wyoming Subject Lands on the basis of the bulk rock volume in the Weber Formation underlying the Subject Lands. That allocation would yield an allocation of approximately 60.1815% of production to the Utah Subject Lands and approximately 39.8185% of

17. Anschutz presented a "mirror-image" application of its Request for Agency Action for the proposed drilling and spacing unit covering the Subject Lands to the Wyoming Oil and Gas Conservation Commission (the "Wyoming Commission") (Wyoming Docket No. 107-2000), which was heard by the Wyoming Commission on April 12, 2000 in Casper, Wyoming. The Wyoming Commission approved Anschutz's application by its Order dated May 19, 2000. The Wyoming Commission approved: (1) the approximate 391.51-acre Weber Formation drilling and spacing unit comprising lands beneath both Utah and Wyoming (the Subject Lands) as to the Wyoming Subject Lands; (2) the Subject Well as the authorized well for the drilling and spacing unit; and (3) that the allocation of production from the Weber Formation shall be allocated, for all purposes, on the basis of bulk rock volume so that approximately 39.8185% of production shall be allocated to the separately-owned tracts within Wyoming and approximately 60.1815% of production shall be allocated to the separately-owned tracts within Utah. The Wyoming Commission's approval was made contingent upon the Board's approval of Anschutz's Request for Agency Action.

18. At the May 24, 2000 hearing Anschutz made an oral motion for the entry of an order of default against all parties who failed to participate in the Board's formal adjudicative proceeding that was initiated by Anschutz's Request for Agency Action.

CONCLUSIONS OF LAW

1. Due and regular notice of the time, place, and purposes of the May 24, 2000 hearing was given to all interested parties in the form and manner and within the time required by law and the Rules and Regulations of the Board. Due and regular

4. Anschutz's Request for Agency Action satisfies all statutory and regulatory requirements for the relief sought therein and should be granted.

5. The establishment of the proposed Weber Formation drilling and spacing unit, the designation of the Subject Well as the authorized unit well, and the allocation of production as proposed (and calculated) by Anschutz is reasonably necessary to fulfill the purposes of Chapter 6 of Title 40 of the Utah Code.

6. Pursuant to Section 63-46b-11(1)(b) of the Utah Code and U.A.C. Rule R641-104-151.1, the Board may enter an order of default against a party to a formal adjudicative proceeding who fails to attend or participate in a properly scheduled hearing after receiving proper notice. No written objections to Anschutz's Request for Agency Action were filed with the Board and no one appeared at the May 24, 2000 hearing in protest of Anschutz's Request. Accordingly, it is proper to enter an order of default against all parties who received proper notice of the May 24, 2000 hearing and who did not participate in the Board's formal adjudicative proceedings.

ORDER

Based upon Anschutz's Request for Agency Action, the testimony and evidence submitted, and the Findings of Fact and Conclusions of Law set forth above, and good cause appearing, IT IS HEREBY ORDERED:

1. The Request for Agency Action in this cause is granted.

2. The Weber Formation, defined as follows:

> The Weber Formation as identified by the log run in the Urroz WIU No. 1 Well located in Section 2, Township 14 North, Range 121 West, Uinta County, Wyoming, with

4. The allocation of production from the Weber Formation underlying the drilling and spacing unit shall be allocated, for all purposes, on the basis of bulk rock volume so that approximately 60.1815% of production shall be allocated to the separately-owned tracts in Utah and approximately 39.8185% of production shall be allocated to the separately-owned tracts in Wyoming.

5. Anschutz's oral motion made at the May 24, 2000 hearing for entry of an order of default against all parties who received notice of Anschutz's Request for Agency Action and the May 24, 2000 hearing, but who failed to participate in the Board's formal adjudicative proceedings, is granted.

6. If any additional development is proposed within the approximate 391.51-acre drilling and spacing unit, whether it be within the Utah Subject Lands or the Wyoming Subject Lands, Anschutz shall provide timely written notice of the same to both the Utah Board and the Wyoming Commission.

7. Pursuant to Utah Administrative Code R641 and Utah Code Ann. § 63-46b-6 to -10, the Board has considered and decided this matter as a formal adjudication.

8. This Findings of Fact, Conclusion of Law and Order ("Order") is based exclusively on evidence of record in the adjudicative proceeding or on facts officially noted, and constitutes the signed written order stating the Board's decision and the reasons for the decision, all as required by the Utah Administrative Procedures Act, Utah Code Ann. § 63-46b-10 and Utah Administrative Code R641-109.

9. Notice re Right to Seek Judicial Review by the Utah Supreme Court or to Request Board Reconsideration: As required by Utah Code Ann. § 63-46b-10(e) to -

> Any person affected by a final order or decision of the Board may file a petition for rehearing. Unless otherwise provided, a petition for rehearing must be filed no later than the 10th day of the month following the date of signing of the final order or decision for which the rehearing is sought. A copy of such petition will be served on each other party to the proceeding no later than the 15th day of that month.

Id. See Utah Administrative Code R641-110-200 for the required contents of a Petition for Rehearing. If there is any conflict between the deadline in Utah Code Ann § 63-46b-13 and the deadline in Utah Administrative Code R641-110-100 for moving to rehear this matter, the Board hereby rules that the later of the two deadlines shall be available to any party moving to rehear this matter. If the Board later denies a timely petition for rehearing, the party may still seek judicial review of the Order by perfecting a timely appeal with the Utah Supreme Court within 30 days thereafter.

10. The Board retains continuing jurisdiction over all the parties and over the subject matter of this Cause, except to the extent said jurisdiction may be divested by the filing of a timely appeal to seek judicial review of this Order by the Utah Supreme Court.

11. For all purposes, the Chairman's signature on a faxed copy of this Order shall be deemed the equivalent of a signed original.

ISSUED this 10th day of ~~June~~ July, 2000.

STATE OF UTAH
BOARD OF OIL, GAS AND MINING

By _____
Dave D. Lauriski, Chairman

228\210899.V1

Schlumberger

Orginal Well Survey Report

Client: Anschutz
Field: UT, Summit County
Structure: Anschutz
Well: AL&L #14-33 ST
Borehole: New Borehole
UWI/API#:
Date: March 03, 2000
Convergence: -4.22122445°
Scale Factor: 1.00003394

Survey Computatior mum Curvature
Vertical Section A: 0.000°
Vertical Section (00 ft, E 0.000 ft
TVD Referend .0 ft above
Magnetic Declin: 15.472°
Total Field Stre 2317.774 nT
Dip: 64.768°
Declination D arch 03, 2000
Magnetic Declinatio GGM 1999
North Referen True North
Coordinate Refere Well Head

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	0.0	0.00	0.00	0.00	0.00	0.00	0.0		-51.6 M
	100.00	0.20	308.4	100.00	0.11	0.11	-0.14	0.17	308.4	0.20	-32.6 M
	200.50	0.23	327.4	200.50	0.39	0.39	-0.38	0.54	315.4	0.08	-42.5 M
	301.60	0.17	317.5	301.60	0.67	0.67	-0.59	0.89	318.4	0.07	-22.2 M
	401.20	0.21	337.8	401.20	0.95	0.95	-0.76	1.22	321.2	0.08	-27.1 M
	500.60	0.80	332.9	500.59	1.73	1.73	-1.15	2.08	326.5	0.59	-20.5 M
	601.20	1.80	339.5	601.17	3.84	3.84	-2.02	4.34	332.2	1.00	-18.2 M
	700.10	1.58	341.8	700.02	6.59	6.59	-2.99	7.24	335.6	0.23	-17.8 M
	801.70	1.59	342.2	801.58	9.26	9.26	-3.86	10.03	337.4	0.01	-24.7 M
	900.30	1.75	335.3	900.14	11.93	11.93	-4.91	12.90	337.6	0.26	-42.1 M
	1000.50	2.95	317.9	1000.26	15.23	15.23	-7.27	16.88	334.5	1.38	-42.2 M
	1100.60	3.15	317.8	1100.22	19.18	19.18	-10.85	22.04	330.5	0.20	-38.1 M
	1200.50	2.63	321.9	1199.99	23.02	23.02	-14.11	27.00	328.5	0.56	-28.7 M
	1300.30	1.81	331.3	1299.71	26.20	26.20	-16.28	30.85	328.1	0.90	-26.9 M
	1401.80	1.31	333.1	1401.18	28.64	28.64	-17.57	33.60	328.5	0.49	-23.2 M
	1500.20	1.17	336.8	1499.55	30.57	30.57	-18.48	35.72	328.9	0.16	-36.8 M
	1600.60	1.03	323.2	1599.93	32.23	32.23	-19.42	37.63	328.9	0.29	-39.4 M
	1700.70	0.79	320.6	1700.02	33.49	33.49	-20.40	39.21	328.7	0.24	-24.5 M
	1800.30	0.55	335.5	1799.61	34.45	34.45	-21.03	40.37	328.6	0.30	-22.1 M
	1900.50	0.57	337.9	1899.81	35.35	35.35	-21.42	41.34	328.8	0.03	-35.0 M
	2000.50	0.52	325.0	1999.81	36.19	36.19	-21.87	42.28	328.9	0.13	-59.5 M
	2100.50	0.37	300.5	2099.80	36.72	36.72	-22.41	43.02	328.6	0.24	-79.1 M
	2201.20	0.30	280.9	2200.50	36.94	36.94	-22.95	43.48	328.1	0.13	108.9 M
	2300.40	0.62	108.9	2299.70	36.81	36.81	-22.69	43.24	328.3	0.93	108.5 M
	2400.60	0.94	108.5	2399.89	36.37	36.37	-21.40	42.20	329.5	0.32	113.4 M
	2500.70	1.04	113.4	2499.97	35.75	35.75	-19.79	40.86	331.0	0.13	108.3 M
	2600.40	1.23	108.3	2599.66	35.06	35.06	-17.94	39.38	332.9	0.22	110.3 M
	2701.00	1.31	110.3	2700.23	34.32	34.32	-15.84	37.80	335.2	0.09	115.3 M
	2800.50	1.45	115.3	2799.70	33.39	33.39	-13.63	36.06	337.8	0.19	117.7 M
	2900.00	1.31	117.7	2899.17	32.32	32.32	-11.49	34.30	340.4	0.15	125.5 M
	3000.70	1.51	125.5	2999.84	31.01	31.01	-9.39	32.40	343.2	0.27	125.7 M
	3100.20	1.50	125.7	3099.31	29.49	29.49	-7.27	30.37	346.2	0.01	130.8 M
	3200.50	1.54	130.8	3199.57	27.85	27.85	-5.18	28.32	349.5	0.14	133.3 M
	3300.60	1.47	133.3	3299.64	26.09	26.09	-3.23	26.28	352.9	0.10	142.6 M

Station ID	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	VSec (ft)	N/-S (ft)	E/-W (ft)	Closure (ft)	at Azim (°)	DLS °/100ft	TF (°)
	3400.90	1.54	142.6	3399.90	24.13	24.13	-1.47	24.18	356.5	0.25	144.3 M
	3500.10	1.56	144.3	3499.07	21.98	21.98	0.13	21.98	0.3	0.05	146.8 M
	3600.80	1.71	146.8	3599.73	19.61	19.61	1.75	19.69	5.1	0.17	145.5 M
	3700.20	1.78	145.5	3699.08	17.10	17.10	3.44	17.44	11.4	0.08	137.4 M
	3800.30	1.69	137.4	3799.13	14.73	14.73	5.32	15.66	19.9	0.26	117.7 M
	4100.90	1.73	117.7	4099.60	9.36	9.36	12.34	15.49	52.8	0.20	114.7 M
	4200.90	1.78	114.7	4199.56	8.01	8.01	15.09	17.08	62.0	0.10	117.7 M
	4300.70	1.82	117.7	4299.31	6.63	6.63	17.90	19.09	69.7	0.10	112.9 M
	4400.20	1.80	112.9	4398.76	5.29	5.29	20.74	21.40	75.7	0.15	115.2 M
	4500.90	2.18	115.2	4499.40	3.86	3.86	23.93	24.24	80.8	0.39	113.6 M
	4600.00	2.48	113.6	4598.41	2.20	2.20	27.60	27.69	85.4	0.31	114.8 M
	4700.40	2.60	114.8	4698.72	0.38	0.38	31.66	31.66	89.3	0.13	114.4 M
	4800.30	2.67	114.4	4798.51	-1.53	-1.53	35.84	35.87	92.5	0.07	118.1 M
	4900.80	2.78	118.1	4898.90	-3.65	-3.65	40.12	40.28	95.2	0.21	117.1 M
	5000.50	2.87	117.1	4998.48	-5.93	-5.93	44.47	44.86	97.6	0.10	116.8 M
	5100.40	3.06	116.8	5098.24	-8.27	-8.27	49.08	49.77	99.6	0.19	118.2 M
	5200.80	3.40	118.2	5198.48	-10.88	-10.88	54.10	55.18	101.4	0.35	119.1 M
	5300.70	3.61	119.1	5298.20	-13.81	-13.81	59.46	61.04	103.1	0.22	116.9 M
	5400.50	3.75	116.9	5397.79	-16.81	-16.81	65.11	67.25	104.5	0.20	116.6 M
	5500.40	3.66	116.6	5497.48	-19.72	-19.72	70.88	73.57	105.5	0.09	125.4 M
	5600.20	2.96	125.4	5597.11	-22.64	-22.64	75.82	79.13	106.6	0.87	138.5 M
	5700.80	2.11	138.5	5697.62	-25.53	-25.53	79.17	83.18	107.9	1.02	145.1 M
	5800.20	1.62	145.1	5796.96	-28.05	-28.05	81.19	85.90	109.1	0.54	142.9 M
	5900.20	1.02	142.9	5896.94	-29.92	-29.92	82.53	87.79	109.9	0.60	154.6 M
	6000.00	0.99	154.6	5996.72	-31.40	-31.40	83.44	89.15	110.6	0.21	85.3 M
	6368.00	4.20	85.3	6364.35	-33.17	-33.17	98.24	103.69	108.7	1.08	90.2 M
	6653.00	5.20	90.2	6648.38	-32.36	-32.36	121.56	125.79	104.9	0.38	64.8 G
	6938.00	5.40	94.4	6932.17	-33.44	-33.44	147.85	151.58	102.7	0.15	13.9 G
	7223.00	6.50	96.8	7215.63	-36.37	-36.37	177.24	180.93	101.6	0.40	8.2 G
	7508.00	7.50	97.9	7498.50	-40.84	-40.84	211.68	215.58	100.9	0.35	-53.2 G
	7793.00	7.60	96.9	7781.03	-45.66	-45.66	248.81	252.97	100.4	0.06	5.2 G
	8078.00	7.90	97.1	8063.43	-50.35	-50.35	286.96	291.34	100.0	0.11	-47.0 G
	8363.00	8.50	92.9	8345.51	-53.83	-53.83	327.43	331.83	99.3	0.30	2.2 G
	8648.00	8.90	93.0	8627.23	-56.05	-56.05	370.48	374.70	98.6	0.14	-34.5 G
	8933.00	9.70	89.8	8908.49	-57.12	-57.12	416.51	420.41	97.8	0.33	-30.3 G
	9217.00	10.70	86.7	9188.00	-55.52	-55.52	466.76	470.05	96.8	0.40	-41.8 G
	9502.00	11.50	83.2	9467.67	-50.63	-50.63	521.38	523.83	95.5	0.37	-39.7 G
	9757.00	12.40	79.8	9717.14	-42.78	-42.78	573.57	575.16	94.3	0.45	-12.2 G
	9770.00	12.50	79.7	9729.84	-42.28	-42.28	576.33	577.88	94.2	0.79	104.6 G
	9801.00	12.20	72.6	9760.12	-40.70	-40.70	582.75	584.17	94.0	4.99	-12.0 G
	9833.00	12.30	72.5	9791.39	-38.66	-38.66	589.23	590.50	93.8	0.32	152.4 G
	9865.00	12.10	72.0	9822.67	-36.60	-36.60	595.67	596.80	93.5	0.71	177.6 G
	9896.00	10.40	72.4	9853.07	-34.75	-34.75	601.43	602.43	93.3	5.49	157.1 G
	9928.00	9.80	73.9	9884.58	-33.12	-33.12	606.80	607.70	93.1	2.05	174.5 G
	9960.00	9.30	74.2	9916.13	-31.66	-31.66	611.90	612.72	93.0	1.57	-56.1 G
	9991.00	9.40	73.3	9946.72	-30.25	-30.25	616.74	617.48	92.8	0.57	53.1 G
	10023.00	9.50	74.1	9978.29	-28.78	-28.78	621.78	622.45	92.6	0.52	145.5 G
	10055.00	9.20	75.4	10009.86	-27.41	-27.41	626.80	627.40	92.5	1.15	179.0 G
	10086.00	8.40	75.5	10040.50	-26.22	-26.22	631.39	631.93	92.4	2.58	152.1 G
	10118.00	7.70	72.7	10072.18	-25.00	-25.00	635.70	636.19	92.3	2.51	176.4 G
	10150.00	7.30	72.9	10103.91	-23.76	-23.76	639.69	640.13	92.1	1.25	171.2 G

Station ID	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	VSec (ft)	N/-S (ft)	E/-W (ft)	Closure (ft)	at Azim (°)	DLS °/100ft	TF (°)
	10181.00	6.70	72.1	10134.67	-22.63	-22.63	643.29	643.69	92.0	1.96	137.4 G
	10212.00	6.00	65.6	10165.48	-21.40	-21.40	646.49	646.84	91.9	3.23	155.0 G
	10244.00	5.20	61.4	10197.33	-20.02	-20.02	649.28	649.59	91.8	2.81	146.1 G
	10275.00	4.70	57.2	10228.22	-18.65	-18.65	651.58	651.85	91.6	1.99	57.2 M
	10307.00	4.10	57.2	10260.12	-17.33	-17.33	653.65	653.88	91.5	1.87	53.0 M
	10339.00	3.70	53.0	10292.05	-16.08	-16.08	655.43	655.63	91.4	1.54	49.5 M
	10368.00	3.60	49.5	10320.99	-14.93	-14.93	656.87	657.04	91.3	0.84	47.4 M
	10400.00	3.30	47.4	10352.93	-13.65	-13.65	658.32	658.46	91.2	1.02	43.0 M
	10431.00	3.30	43.0	10383.88	-12.40	-12.40	659.58	659.70	91.1	0.82	37.5 M
	10463.00	2.70	37.5	10415.84	-11.13	-11.13	660.67	660.76	91.0	2.08	36.6 M
	10495.00	2.30	36.6	10447.81	-10.01	-10.01	661.51	661.58	90.9	1.26	31.3 M
	10526.00	2.00	31.3	10478.78	-9.05	-9.05	662.16	662.22	90.8	1.16	35.2 M
	10557.00	2.30	35.2	10509.76	-8.08	-8.08	662.80	662.85	90.7	1.08	49.3 M
	10588.00	2.40	49.3	10540.74	-7.15	-7.15	663.65	663.69	90.6	1.89	53.0 M
	10620.00	2.50	53.0	10572.71	-6.29	-6.29	664.72	664.75	90.5	0.58	62.8 M
	10650.00	2.10	62.8	10602.68	-5.65	-5.65	665.73	665.75	90.5	1.87	80.7 M
	10681.00	1.70	80.7	10633.67	-5.31	-5.31	666.69	666.71	90.5	2.29	110.6 M
	10713.00	1.10	110.6	10665.66	-5.34	-5.34	667.44	667.46	90.5	2.89	168.1 M
	10745.00	0.60	191.9	10697.65	-5.62	-5.62	667.70	667.72	90.5	3.66	125.6 M
	10776.00	0.90	234.4	10728.65	-5.92	-5.92	667.46	667.49	90.5	1.97	-95.4 M
	10807.00	1.90	264.6	10759.64	-6.11	-6.11	666.75	666.78	90.5	3.90	-87.7 M
	10839.00	3.10	272.3	10791.61	-6.12	-6.12	665.36	665.39	90.5	3.89	-89.2 M
	10871.00	4.10	270.8	10823.55	-6.07	-6.07	663.35	663.38	90.5	3.14	-88.9 M
	10902.00	5.00	271.1	10854.45	-6.03	-6.03	660.89	660.92	90.5	2.90	27.1 G
	10934.00	5.60	274.2	10886.31	-5.89	-5.89	657.94	657.97	90.5	2.08	13.2 G
	10965.00	6.10	275.3	10917.15	-5.63	-5.63	654.79	654.82	90.5	1.65	18.5 G
	10997.00	6.40	276.2	10948.96	-5.28	-5.28	651.33	651.35	90.5	0.99	8.0 G
	11029.00	7.20	277.1	10980.74	-4.84	-4.84	647.57	647.58	90.4	2.52	-25.4 G
	11060.00	8.10	274.1	11011.46	-4.44	-4.44	643.46	643.47	90.4	3.18	-29.3 G
	11092.00	9.20	270.3	11043.10	-4.26	-4.26	638.65	638.67	90.4	3.87	-46.5 G
	11123.00	9.80	266.7	11073.67	-4.40	-4.40	633.54	633.56	90.4	2.72	-90.0 G
	11155.00	9.80	263.9	11105.20	-4.85	-4.85	628.11	628.13	90.4	1.49	-6.9 G
	11185.00	10.90	263.2	11134.71	-5.46	-5.46	622.76	622.78	90.5	3.69	0.0 G
	11217.00	11.90	263.2	11166.08	-6.21	-6.21	616.48	616.51	90.6	3.12	20.9 G
	11249.00	12.90	264.9	11197.34	-6.91	-6.91	609.64	609.68	90.6	3.33	-9.5 G
	11279.00	13.60	264.4	11226.54	-7.56	-7.56	602.80	602.85	90.7	2.36	5.7 G
	11310.00	14.90	264.9	11256.58	-8.27	-8.27	595.20	595.26	90.8	4.21	-33.4 G
	11342.00	15.60	263.2	11287.46	-9.14	-9.14	586.83	586.90	90.9	2.60	-18.1 G
	11374.00	16.20	262.5	11318.23	-10.23	-10.23	578.13	578.22	91.0	1.97	22.0 G
	11405.00	16.70	263.2	11347.96	-11.32	-11.32	569.42	569.53	91.1	1.74	39.3 G
	11437.00	17.60	265.6	11378.54	-12.24	-12.24	560.03	560.17	91.3	3.58	27.6 G
	11468.00	18.20	266.6	11408.04	-12.89	-12.89	550.53	550.68	91.3	2.17	21.9 G
	11500.00	19.10	267.7	11438.36	-13.39	-13.39	540.31	540.47	91.4	3.02	-7.2 G
	11532.00	20.20	267.3	11468.49	-13.86	-13.86	529.56	529.74	91.5	3.46	-35.4 G
	11562.00	20.70	266.3	11496.60	-14.45	-14.45	519.09	519.29	91.6	2.03	27.5 G
	11594.00	21.70	267.7	11526.44	-15.05	-15.05	507.54	507.76	91.7	3.50	-26.9 G
	11625.00	22.30	266.9	11555.18	-15.60	-15.60	495.94	496.18	91.8	2.16	59.2 G
	11657.00	22.90	269.4	11584.72	-15.99	-15.99	483.65	483.91	91.9	3.54	-42.7 G
	11689.00	23.20	268.7	11614.17	-16.20	-16.20	471.12	471.40	92.0	1.27	30.0 G
	11720.00	24.20	270.1	11642.55	-16.33	-16.33	458.66	458.95	92.0	3.70	0.0 G

Schlumberger

Proposed Well Profile

Client:	Anschutz	**Survey Computation Method:**	Minimum Curvature
Field:	UT, Summit County	**DLS Computation Method:**	Lubinski
Structure:	Anschutz	**Vertical Section Azimuth:**	35.000°
Well:	AL&L #14-33 ST	**Vertical Section Origin:**	N 0.000 ft, E 0.000 ft
Borehole:	New Borehole	**TVD Reference:**	
UWI/API#:			0.0 ft above
Date:	March 06, 2000	**Magnetic Declination:**	15.472°
Grid Convergence:	-4.22122445°	**Total Field Strength:**	52317.774 nT
Scale Factor:	1.00003394	**Dip:**	64.768°
		Declination Date:	March 03, 2000
Location:	N 40 32 11.809, W 117 54 7.367	**Magnetic Declination Model:**	BGGM 1999
:	N 3420419.531 ftUS, W 137532.078 ftUS	**North Reference:**	True North
Coordinate System:	NAD83 Utah State Planes, Northern Zone, US Feet	**Coordinate Reference To:**	Well Head

Station ID	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	VSec (ft)	N/-S (ft)	E/-W (ft)	Closure (ft)	at Azim (°)	DLS (°/100ft)	TF (°)
Tie-In	9825.00	12.27	72.5	9783.57	304.95	-39.17	587.61	588.91	93.81	0.00	-86.4
	9900.00	12.61	62.2	9856.82	318.56	-32.96	602.46	603.36	93.13	3.00	-76.3
	10000.00	13.63	49.7	9954.23	339.67	-20.24	621.11	621.44	91.87	3.00	-64.2
	10100.00	15.18	39.4	10051.10	364.13	-2.50	638.41	638.42	90.22	3.00	-54.1
	10200.00	17.10	31.1	10147.16	391.86	20.22	654.31	654.62	88.23	3.00	-46.2
	10300.00	19.30	24.5	10242.16	422.79	47.86	668.76	670.47	85.91	3.00	-39.9
	10400.00	21.68	19.3	10335.84	456.83	80.34	681.72	686.44	83.28	3.00	-35.1
	10500.00	24.20	15.1	10427.93	493.89	117.57	693.16	703.06	80.37	3.00	-31.2
	10600.00	26.81	11.6	10518.18	533.87	159.45	703.05	720.90	77.22	3.00	-28.1
	10700.00	29.48	8.8	10606.35	576.66	205.87	711.36	740.55	73.86	3.00	-25.5
EOC	10718.95	30.00	8.3	10622.81	585.07	215.17	712.75	744.52	73.20	3.00	0.0
Weber Target	12767.57	30.00	8.3	12397.00	1500.00	1228.73	860.36	1500.00	35.00	0.00	0.0
TD / PBHL	13922.25	30.00	8.3	13397.00	2015.69	1800.01	943.56	2032.32	27.66	0.00	0.0

Survey Program: *(No Error Model Selected)*

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Station ID	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	VSec (ft)	N/-S (ft)	E/-W (ft)	Closure (ft)	at Azim (°)	DLS °/100ft	TF (°)
	11752.00	24.90	270.1	11671.66	-16.31	-16.31	445.37	445.67	92.1	2.19	-90.0 G
	11783.00	24.90	269.9	11699.78	-16.31	-16.31	432.31	432.62	92.2	0.27	-28.1 G
	11815.00	25.80	268.8	11728.70	-16.46	-16.46	418.62	418.94	92.3	3.17	28.3 G
	11847.00	26.90	270.1	11757.37	-16.60	-16.60	404.41	404.75	92.4	3.88	-59.5 G
	11878.00	27.20	269.0	11784.98	-16.71	-16.71	390.32	390.67	92.5	1.88	-79.3 G
	11909.00	27.30	267.9	11812.54	-17.09	-17.09	376.13	376.52	92.6	1.66	-5.3 G
	11941.00	27.80	267.8	11840.91	-17.65	-17.65	361.34	361.77	92.8	1.57	-90.0 G
	11972.00	27.80	266.0	11868.34	-18.43	-18.43	346.90	347.39	93.0	2.71	180.0 G
	12004.00	27.40	266.0	11896.69	-19.46	-19.46	332.11	332.68	93.4	1.25	115.7 G
	12035.00	27.10	264.6	11924.25	-20.63	-20.63	317.97	318.64	93.7	2.28	155.9 G
	12067.00	26.60	264.1	11952.80	-22.05	-22.05	303.59	304.39	94.2	1.71	113.5 G
	12098.00	26.30	262.5	11980.56	-23.66	-23.66	289.87	290.84	94.7	2.49	71.5 G
	12130.00	26.50	263.8	12009.22	-25.36	-25.36	275.75	276.91	95.3	1.91	-41.9 G
	12162.00	26.60	263.6	12037.85	-26.92	-26.92	261.53	262.91	95.9	0.42	-58.3 G
	12201.00	27.00	262.2	12072.66	-29.10	-29.10	244.08	245.81	96.8	1.92	33.7 G
	12232.00	27.70	263.2	12100.19	-30.91	-30.91	229.96	232.02	97.7	2.70	-25.2 G
	12264.00	28.00	262.9	12128.49	-32.72	-32.72	215.12	217.59	98.6	1.03	137.2 G
	12295.00	27.70	262.3	12155.90	-34.58	-34.58	200.76	203.71	99.8	1.32	-59.2 G
	12326.00	28.10	260.9	12183.29	-36.70	-36.70	186.41	189.99	101.1	2.48	176.2 G
	12358.00	27.40	260.8	12211.61	-39.07	-39.07	171.70	176.09	102.8	2.19	164.8 G
	12389.00	26.90	261.1	12239.20	-41.30	-41.30	157.73	163.04	104.7	1.67	83.3 G
	12421.00	27.10	264.2	12267.71	-43.15	-43.15	143.32	149.68	106.8	4.44	129.3 G
	12453.00	26.70	263.1	12296.25	-44.75	-44.75	128.93	136.48	109.1	2.00	108.3 G
	12484.00	26.50	264.5	12323.97	-46.25	-46.25	115.14	124.08	111.9	2.12	-90.0 G
	12516.00	26.50	263.8	12352.61	-47.71	-47.71	100.93	111.64	115.3	0.98	77.8 G
	12547.00	26.60	264.8	12380.34	-49.08	-49.08	87.14	100.02	119.4	1.48	-90.0 G
	12579.00	26.60	261.8	12408.95	-50.76	-50.76	72.92	88.84	124.8	4.20	116.3 G
	12610.00	26.30	263.2	12436.71	-52.56	-52.56	59.23	79.19	131.6	2.23	-72.5 G
	12641.00	26.40	262.5	12464.49	-54.27	-54.27	45.58	70.87	140.0	1.05	42.3 G
	12673.00	26.90	263.5	12493.09	-56.02	-56.02	31.33	64.19	150.8	2.10	-97.2 G
	12704.00	26.80	261.5	12520.74	-57.85	-57.85	17.45	60.42	163.2	2.93	148.3 G
	12730.00	26.30	262.2	12544.00	-59.49	-59.49	5.95	59.79	174.3	2.27	110.9 G
	12760.00	26.20	262.8	12570.91	-61.23	-61.23	-7.21	61.65	186.7	0.95	152.9 G
	12790.00	25.86	262.4	12597.87	-62.92	-62.92	-20.26	66.10	197.9	1.28	141.7 G
	12820.00	25.75	262.2	12624.87	-64.67	-64.67	-33.20	72.70	207.2	0.47	145.3 G
	12850.00	25.26	261.4	12651.95	-66.51	-66.51	-45.99	80.86	214.7	2.00	-34.4 G
	12880.00	25.64	260.8	12679.04	-68.51	-68.51	-58.73	90.23	220.6	1.53	-65.8 G
	12910.00	25.86	259.7	12706.06	-70.72	-70.72	-71.57	100.61	225.3	1.75	-65.9 G
	12930.00	26.08	258.6	12724.04	-72.36	-72.36	-80.17	108.00	227.9	2.65	103.1 G
	12945.00	26.02	259.2	12737.52	-73.63	-73.63	-86.64	113.70	229.6	1.80	---

Survey Program: *ror Model Selected)*

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Well Prognosis

GENERAL INFORMATION

		AFE No. 4357828A1	Date 2/5/01
Lease/Well Name & Number: A.L. & L. #14-33ST		AEC Prospect Code	
Prospect Name: Yellow Creek Deep		API No.	
Location:		Sec	TWP	RNG
Surface 592' FSL, 748' FEL (Summit Co., UT)		33	6N	8E
Proposed BHL in Weber ss 1400' FNL, 300' FEL (Uinta Co., WY)		10	14N	121W
Location Directions:				

Elevation	GL	KB
	7147'	

GEOLOGICAL INFORMATION

Proposed TD	Primary Objective	Secondary Objective
13,922 md	Weber	Phosphoria
	Type Production (oil or gas) gas & condensate	Type Production (oil or gas) gas & condensate

Anticipated Formation Tops

Reference Elevation: 7147' GL _____ KB

Formation Name	Lithology	Time	Top (md)	Top -TVD
Nugget ss	ss		7,522	7,511
Ankarah fm	siltst sh		8,650	8,628
Thaynes fm	lms siltst sh		9,614	9,579
KICK OFF POINT			9,825	9,784
Woodside sh	sh siltst		10,975	
Dinwoody fm	siltst sh		11,650	
Phosphoria fm	shale cherty sh		11,948	
Weber ss	ss anhy sh		12,768	12,397
TD			13,922	

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Open Hole Logging Program

Type Log Suite	Interval Top	Interval Bottom	Log Scale
	Log 9825 casing	TD	
TLC DLL SP GR Cal	Log 9825 casing	TD	1", 2", 5"
BHC sonic	Log 9825 casing	TD	1", 2", 5"
LDT - CNL	Log 9825 casing	TD	5"
Structural Dipmeter	Log 9825 casing	TD	2", 5"
FMI possible	Log 9825 casing	TD	5"
Natural Gamma Spect.	Log 9825 casing	TD	2", 5"

Coring Program

Core No.	Formation	Est. Depth	Core Length (ft)

DrillStem Test Program

Formation	Estimated Depth (ft)	Estimated Pressure (psi)	Cushion (ft)	Test Times (min)			
				Initial Flow	Initial Shut-in	Second Flow	Second Shut-in

Wellsite Geology

Service	Description of Services	Start Depth	End Depth
Paleontologist	Wellsite Geolgist Kim Mettes John Sherman	casing	TD
Mudlogger	Noram 2 man unit with FID and H_2S detection	casing	TD

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Sample Collection

Depth Interval Top(ft)	Depth Interval Bmt(ft)	Foot per Sample	Special Instructions
9,825	TD	10' sample	2 dry cuts, mudloggers will collect & process samples

General Sample Instructions:

Wash samples clean and store in an area protected from dirt and other contamination. Hang samples in groups of 100 feet. Each driller is responsible for the quality and accuracy of the samples while on his shift.

Synchronize 5 feet marks with each 5 feet of penetration. When not drilling show depth and state reason for down time. Keep footage and bit board synchronized and show all pertinent information as it occurs. Re-check board tally between pipe straps.

ENGINEERING INFORMATION

Mud Program				
Interval	Mud Description	Weight	Viscosity	Wtr Loss
9825-13,922' TD	LSND with H2S scavenger	9-9.5	38-50	< 10 cc's

Casing Program								
Hole Size (In)	Csg Size (In)	Csg Weight & Grade	Setting Depth (ft)	Number Centralizer	Sacks Cement	WOC (Hrs)	Cement Test Pressure (psi)	Cement Test Time (min)
5.75	3.5 Liner	10.2 L80	13,922		390			

Company Contacts

	Name	Office Phone	Mobile/Pager/Cellular	Home Phone
Operations	Haw Gallagher	(303) 299-1532	Cell (303) 898-7464	(303) 920-4150
	Susan Miller	(303) 299-1344	Cell (303) 882-4651	(720) 748-1657
	Rick Kieffer	(303) 299-1324		(303) 799-4394
Geology	Ed Dolly	(303) 299-1517		(303) 674-3694
Engr.	Eric Root	(303) 299-1479		(303) 756-7810
	Monte Fryt	(303) 299-1513	Cell (303) 324-9598	(303) 730-1358
Rig				
Field				

Special Instructions:

Anschutz Denver Office, Continuous Fax Number: (303) 299-1540
Anschutz Denver Office, Fax Number (303) 299-1518 - Daily Reports etc.

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Prepared By:

	Name & Title	Date
Geology	Ed Dolly, RMD Geologist	
Seismic		
Engineering	Eric Root/Rocky Mountain/Engineering Manager	
Operations	Haw Gallagher/Operations Superintendent	
Land		

Participating Companies

Company & Address	Interest
Anschutz Exploration Corporation 555 17th Street, Suite 2400 Denver, Colorado 80202	

H_2S Contingency Plan

for

A.L. & L. #14-33ST

Surface: Section 33, T6N, R8E
Summit County, Utah

Bottomhole: Section 10, T14N, R121W
Uinta County, Wyoming

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

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Table of Contents

Introduction and Directions

I. Responsibilities and Duties
- A. All Personnel
- B. Drilling Foreman
- C. Rig Supervisor - Toolpusher
- D. Safety Consultant
- E. Union Pacific Resources Company Wahsatch Gathering System (WGS)

II. Drilling Rig Layout
- A. Location

III. Safety Procedures
- A. Training
- B. Operating Conditions
- C. Evacuation Plan
- D. Emergency Rescue Procedures

IV. H_2S Safety Equipment on Drilling Location

V. Well Ignition Procedures
- A. Ignition Equipment
- B. Ignition Procedures

VI. Residents, Public in Roe
- A. Map of Area Around Location

VII. Emergency Phone Directory
- A. Anschutz Exploration Corporation
- B. Emergency Service Phone List

VIII. Reference for Hydrogen Sulfide and Sulfur Dioxide

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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 H_2S Contingency Plan for the A.L. & L. #14-33ST 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 well site in the event of a sudden release of hydrogen sulfide H_2S. All personnel working on the well site 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 H_2S. 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

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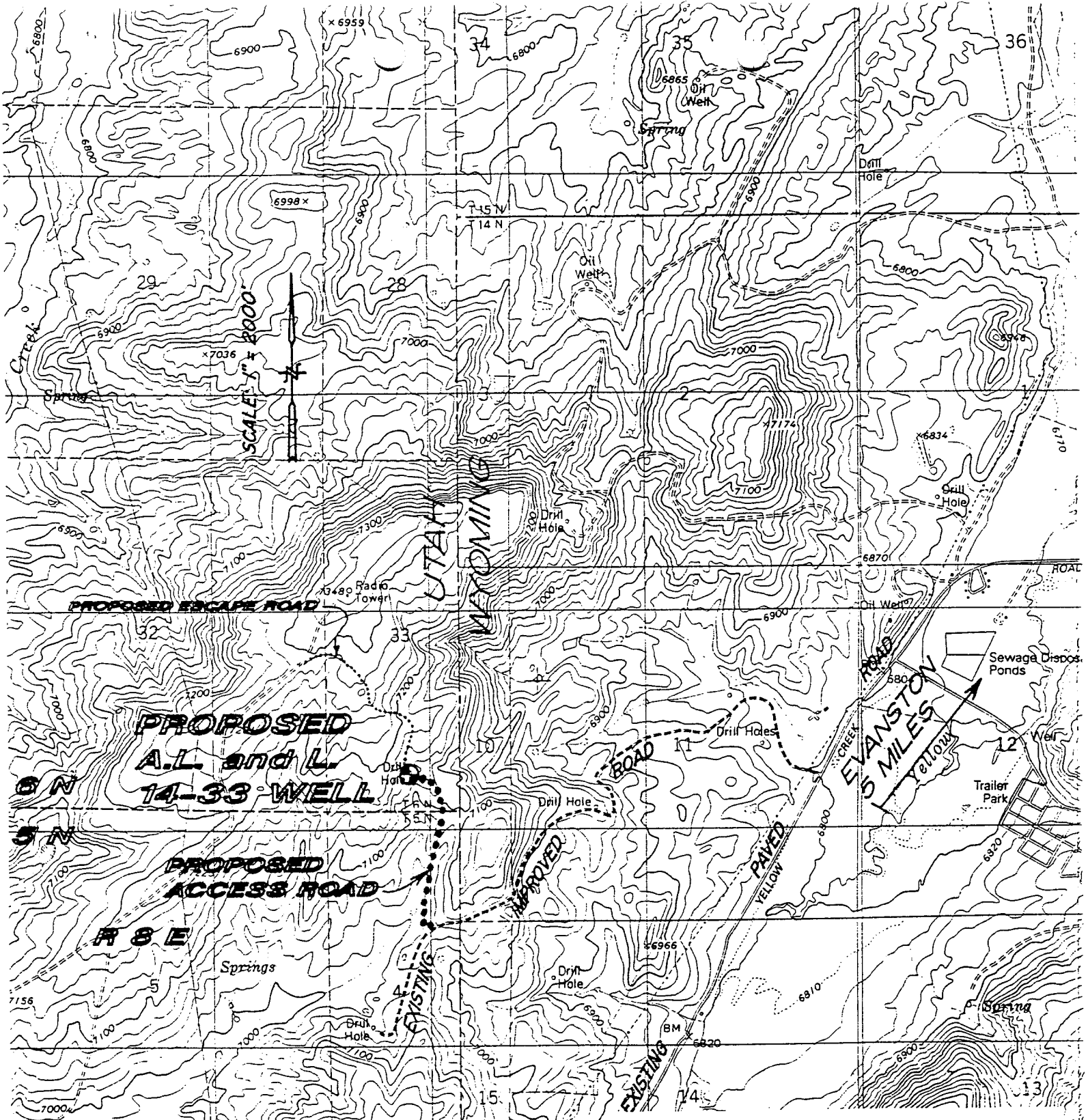

MAP to ACCOMPANY
APPLICATION for PERMIT to DRILL
AL&L 14-33 WELL
592' FSL 748' FEL
SECTION 33, T6N, R8E, SLB&M
SUMMIT COUNTY, UTAH

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

DATE: 07/10/96 JOB #: 95-19-02
DISK #: 116-B FILE: 95-19-02

I. Duties & Responsibilities

In order to assure proper execution of the contingency plan, it is essential that one person be responsible 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 H_2S 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 H_2S alarm sound, DON'T PANIC. Remain calm and follow instructions of person in charge.

6. If the H_2S 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 (H_2S 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.

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B. Drilling Foreman

1. The Anschutz drilling foreman will confirm that all personnel on location are trained in H_2S safety and aware of the above list of duties when the H_2S plan becomes effective at 300 feet above the Dinwoody Formation. ± 11650' MD

2. The Anschutz foreman will ensure that all personnel observe all safety and emergency procedures.

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 determining 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 H_2S 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 well site operations and all responsibilities listed above for the drilling foreman.

2. Ensure that all rig personnel are properly trained to work in H_2S environment and fully understand purpose of H_2S alarms and actions to take when alarms activate. Ensure that all crew personnel understand the buddy system, safe briefing areas (SBA), and individual duties as well as emergency evacuation procedures.

3. Should an extreme danger operational condition arise, the r[illegible] assist the Anschutz foreman by:

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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 H_2S present), the safety consultant will be responsible for the following:

   a. Ensure that all well site safety equipment is in place and operational.
   b. Ensure that all well site personnel are familiar with location safety layout and operation of all safety equipment.
   c. Assist the Anschutz foreman in performing weekly H_2S 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 well site 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 well site 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.

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E. Union Pacific Resources Company - Wahsatch Gathering System Office

1. The Union Pacific Resources Company - Wahsatch Gathering System operations control room will be notified of any release of H_2S by the Anschutz Operations Superintendent as well as other Anschutz Exploration Corporation supervisory

personnel. The Union Pacific Resources Company - Wahsatch Gathering System Operations Control room will be responsible for notifying and maintaining contact with the Uinta County Fire Protection Agency in the event of a H_2S release. A Memorandum of Understanding between Summit County, Utah and Uinta County, Wyoming, states that the primary responder to any event pertaining to the Wahsatch Gathering System (WGS) 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 well site if appropriate.

II. Drilling Rig Layout

A. Location

1. All respiratory protective equipment and H_2S 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 BOP'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 safe briefing area (SBA) 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 metallurgy requirements for H_2S service.

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9. The drilling rig will have a continuous electronic H_2S detection system that automatically with activate visible and audible alarms if hydrogen sulfide is detected. The visible light W11 activate if 10 ppm H_2S is present. The audible siren will activate if 15 ppm or higher concentration is present. There will be at least 4 H_2S 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, and 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 H_2S 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 everyone on the drilling location can readily determine wind direction. 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. H_2S 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

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All personnel who come onto the drilling location must be properly trained in hydrogen sulfide (H_2S), nitrogen, and oxygen deficient atmosphere 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 (H_2S), 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 well site. This system is in compliance with BLM 0.0. # 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 Company have operations within this area and travel the roads in the immediate area.

According to the Union Pacific Resources Company – Wahsatch Gathering System Emergency Response Plan, any evacuation will be conducted under the direction of Jon Lunsford, Chief, Uinta County Fire Protection Agency.

All regulatory agencies will be notified as soon as possible.

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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 (H_2S) exposure must be taken to a hospital for examination and their supervisor notified of the incident.

IV. H_2S Safety Equipment on Drilling Location

Item	Amount	Description
1.	One (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 apparatus [illegible]

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4.	Twelve (12)	Scott airline units with emergency escape cylinders.
5.	One (1)	4 channel continuous electronic H_2S 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 (4)	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.

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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.

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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 on-site for use by the ignition team.

1. Two (2) 12 gauge flare guns with flare shells.
2. Two (2) 500 ft. fire resistant retrieval ropes.
3. One (1) portable combustible gas meter.
4. Self contained breathing apparatus (SCBA) for each member of the ignition team.
5. One (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 wellbore 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 the flare gun. If trouble is encountered in trying to light the leak, retry to ignite by firing the flare shells at 45 and 90 degree 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 Company, Wahsatch Gathering System Control Room of any flaring of H_2S gas on location.

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VI. Residents – Public in Roe

There is one residence approximately one and one half miles 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

VII. Emergency Phone Directory

Union Pacific Resources Co. - Wahsatch Gathering System (UPRC-WGS) is a partner in this well and will be the lead contact in providing emergency response services. The first emergency response call should be to the UPRC-WGS control room in Evanston, Wyoming.

Union Pacific Resources Co. - Wahsatch Gathering System Pete Straub - Superintendent	(307) 789-1573
WGS Emergency Phone to Control Room	(307) 789-9735
Anschutz Exploration Corporation 555 17 Th. St. Suite 2400 Denver, CO. 80202	(303) 298-1000

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Anschutz Exploration Corporation Contacts:

Title	Name	Phone
General Manager	Hal Koerner	Wk: (303) 299-1269 Home: (303) 841-8151 Cell Ph: (303) 885-5026
Drilling Superintendent	Haw Gallagher	Wk: (303) 299-1532 Home: (303) 920-4150 Cell Ph: (303) 898-7464
Geology	Ed Dolly	Wk: (303) 299-1517 Home: (303) 674-3694
Engineering	Eric Root	Wk: (303) 299-1479 Home: (303) 756-7810
Anschutz Ranch East Pipeline Foreman	Stan Dolinar	Wk: (307) 783-2905 Home: (307) 789-9048
Field Supervision	Bob Griffin Ken Clare	Home: (435) 789-1564 Mobile: (888) 846-1155 Home: (435) 789-8838 Mobile: (307) 360-7402
Public Relations	Bill Miller	Wk: (303) 299-1330 Home: (303) 797-8071 Cell Ph: (303) 885-5122

B. Emergency Services Phone List

Uinta County, Wyoming 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

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3 Sheriff Department - Uinta County, WY.	(307) 783-1000
4. Highway Patrol – WY.	(800) 442-9090
5. Summit County Sheriffs Office (dispatch), UT.	(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

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PROPERTIES OF GAS

If gas should be produced, it could be a mixture of Carbon Dioxide, Hydrogen Sulfide (H_2S), 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.

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HYDROGEN SULFIDE

GENERAL PROPERTIES

Hydrogen Sulfide (H_2S) 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 (H_2S), which is more toxic than Carbon Monoxide. Common names: sour gas, acid gas, rotten egg gas, sulfur gas, sulfurated gas, sweet gas. H_2S is a sweet tasting gas, but often the word "tasting" is left out.

PHYSICAL - CHEMICAL PROPERTIES

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 I ppm.
5. Corrosivity	Reacts with metals, plastics, tissues and nerves.
6. Solubility in Water	4.0 to I in H_20 @ 32°F 2.6 to I 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.
10. Ignition Temperature	18°F (burns with pale flame).
11. Molecular Weight	34.08
12. Conversion Factors	I mg/1 of air = 717 ppm (at 25°C and 760 mm HG). I ppm = 0.00139 mg/1 of air.
13. pH	3 in water.
14. Conversion Factors	I mg/1 of air = 717 ppm (at 25°C and 760 mm HG). I ppm = 0.00139 mg/1 of air.

INDUSTRIAL OCCURRENCES

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Hydrogen Sulfide (H_2S) exposures occur in certain processes in the petroleum industry, chemical plants, chemical laboratories, sulfur and gypsum mines, viscose rayon and rubber industries, canneries, 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 material 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 (H_2S) is an extremely toxic and irritating gas. Free Hydrogen Sulfide (H_2S) 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 (H_2S) 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 (H_2S).

At low concentrations the predominant effect of Hydrogen Sulfide (H_2S) 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 (H_2S) 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 (H_2S) do not appear to cause any increase or decrease in susceptibility to this gas.

The paralytic effect of Hydrogen Sulfide (H_2S) 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 (H_2S), 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 (H_2S) have been summarized as follows:

0.02 ppm: No odor.

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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 (H_2S) have been reported as follows:

10 ppm:	Beginning eye irritation.
50 - 100 ppm:	Slight conjunctivitis, respiratory tract irritation after I hour exposure.
100 ppm:	Coughing, eye irritation, loss of sense of smell after 2 to 15 minutes. Altered respiration, pain in the eyes, and drowsiness after 15 to 30 minutes, followed by throat irritation after I hour. Several hours of 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 I hour of exposure.
500 - 700 ppm:	Loss of consciousness and possibly death in 30 minutes to I 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.

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H_2S EQUIVALENTS

Parts Per Million	Percents %	Grains per 100 cu. Ft.
1	.0001	0.055
10	.0010	0.550
18	.0018	1.000
100	.0100	5.500
1000	.1000	55.500
10000	1.0000	555.500

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 (SO_2) 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 (SO_2) 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 (8) eight hour exposure.
.0012	12	Throat irritation, coughing, and constriction of the chest, tearing and smarting of the eyes.
.015	150	So irritating that it can be endured for only a few minutes.
.05	500	Causes sense of suffocation, even with the first breath.

PHYSICAL PROPERTIES AND CHARACTERISTICS

Chemical Formula	SO_2
1. Specific Gravity	2.212

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2. Color	None
3. Flammable	No
4. Odor	Pungent odor 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	Eyes, throat and upper respiratory irritation.

TOXIC PROPERTIES

Sulfur Dioxide (SO_2) 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 (SO_2) contaminated atmosphere unless he were unconscious or trapped.

Sulfur Dioxide gas (SO_2) 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 extremely irritating, and can be endured for only 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 (SO_2), there are few references that would indicate pneumonia as an after effect.

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

February 15, 2001

Via Federal Express

State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
1594 W. North Temple, Ste. 1210
Salt Lake City, UT 84114-5801

RE: ***A. L. & L. #14-33ST***
Summit County, Utah
Application for Permit to Drill

Dear Ladies and Gentlemen:

Enclosed is our application for permit to drill along with required attachments. As noted on our permit the surface location of the well is located in Summit County, Utah with the bottomhole location in Uinta County, Wyoming.

We respectfully request the Division of Oil, Gas and Mining keep information regarding this well confidential or "Tight Hole".

Please advise the undersigned of your decision pertaining to the approval of our permit at (303) 299-1344. Thank you.

ANSCHUTZ EXPLORATION CORPORATION

Susan M. Miller
Operations Technician

SMM
Enclosures

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

FORM 3

AMENDED REPORT ☐
(highlight changes)

APPLICATION FOR PERMIT TO DRILL

5. LEASE DESIGNATION AND SERIAL NUMBER: Fee

1A. TYPE OF WORK: DRILL ☐ REENTER ☐ DEEPEN ☑

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

B. TYPE OF WELL: OIL ☐ GAS ☑ OTHER Directional SINGLE ZONE ☑ MULTIPLE ZONE ☐

7. UNIT or CA AGREEMENT NAME: N/A

CONFIDENTIAL

2. NAME OF OPERATOR: THE ANSCHUTZ CORPORATION

8. WELL NAME and NUMBER: A. L. & L. #14-33ST

3. ADDRESS OF OPERATOR: 555 17th St., Ste. 2400 CITY Denver STATE CO ZIP 80202 PHONE NUMBER: (303) 298-1000

9 FIELD AND POOL, OR WILDCAT: Yellow Creek Deep

4. LOCATION OF WELL (FOOTAGES)
AT SURFACE: ~~592'~~ 642 FSL and 748' FEL (Summit County, Utah)
AT PROPOSED PRODUCING ZONE: 1400' FNL & 300' FEL (Uinta County, Wyoming) T14N, R121W 10

10. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SESE 33 6N 8E

13. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE: 2 miles west of the town of Evanston, Wyoming 4561278N 495915E

11. COUNTY: Summit (Sfc)

12. STATE: UTAH

14. DISTANCE TO NEAREST PROPERTY OR LEASE LINE (FEET): 100'

15. NUMBER OF ACRES IN LEASE: 185

16. NUMBER OF ACRES ASSIGNED TO THIS WELL: 392

17. DISTANCE TO NEAREST WELL (DRILLING, COMPLETED, OR APPLIED FOR) ON THIS LEASE (FEET): 3100' f/Surface Loc. and 1500' f/BHL

18. PROPOSED DEPTH: 13,922

19. BOND DESCRIPTION: Bond No. ~~104254~~ 10-42-53

20. ELEVATIONS (SHOW WHETHER DF, RT, GR, ETC.): 7147' GL

21. APPROXIMATE DATE WORK WILL START: 4/15/2001

22. ESTIMATED DURATION: 55 Days

23. **PROPOSED CASING AND CEMENTING PROGRAM**

SIZE OF HOLE	CASING SIZE, GRADE, AND WEIGHT PER FOOT			SETTING DEPTH	CEMENT TYPE, QUANTITY, YIELD, AND SLURRY WEIGHT			
5-3/4"	3-½"	L-80	10.2	13,922	Class G	390 sacks	1.16 ft3/sk	15.8 ppg
					Note: Well will be			
					Whipstocked out of			
					existing 7" 32 ppf L-80			
					casing at 9825'.			

Updated 3-9-01

24. **ATTACHMENTS**

VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE WITH THE UTAH OIL AND GAS CONSERVATION GENERAL RULES:

☑ WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER

☑ COMPLETE DRILLING PLAN

☐ EVIDENCE OF DIVISION OF WATER RIGHTS APPROVAL FOR USE OF WATER *

☐ FORM 5, IF OPERATOR IS PERSON OR COMPANY OTHER THAN THE LEASE OWNER

*Water Well Permit to be submitted under separate cover.

NAME (PLEASE PRINT) Eric Root TITLE Rocky Mt. Engineering Mgr.

SIGNATURE E. Root DATE 2/16/2001

(This space for State use only)

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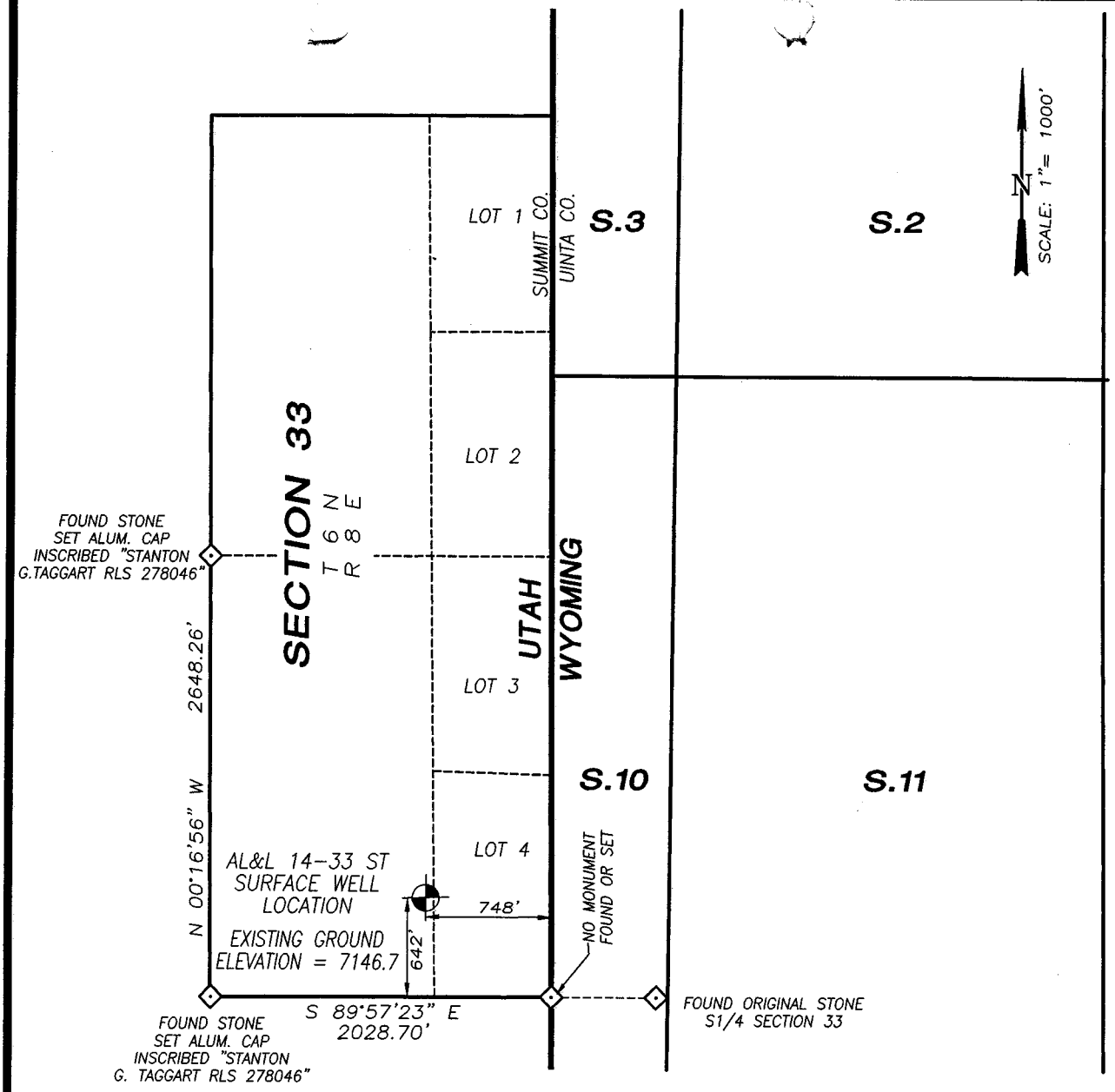
API NUMBER ASSIGNED: 43-043-30315

APPROVAL:

(5/2000)

(See Instructions on Reverse Side)



LOCATION MAP

RECEIVED
FEB 20 2001
DIVISION OF
OIL, GAS AND MINING

SURVEYED UNDER MY SUPERVISION
IN JULY AND OCTOBER 1996

LICENSED LAND SURVEYOR
2/15/01
No. 278046
STANTON G. TAGGART
STATE OF UTAH

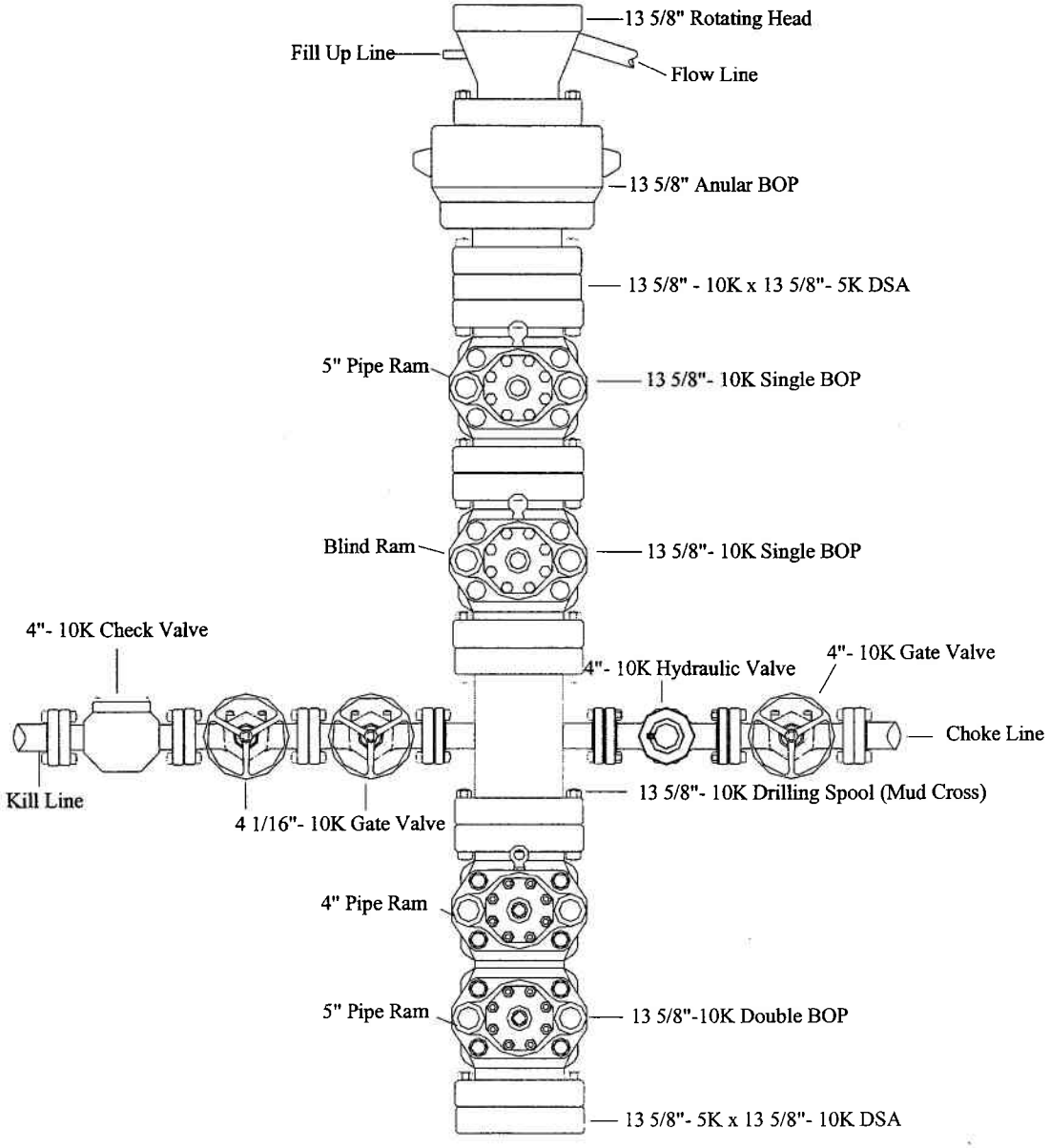
MAP to ACCOMPANY
APPLICATION for PERMIT to DRILL
AL&L 14-33 ST WELL
642' FSL 748' FEL
SECTION 33, T6N, R8E, SLB&M
SUMMIT COUNTY, UTAH

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

DATE: 02/15/01 JOB #: 95-19-02
DISK #: 116-B FILE: 95-19-02

SST Energy Corp.

Rig #88



RECEIVED
FEB 26 2001
DIVISION OF
OIL, GAS AND MINING

THE ANSCHUTZ CORPORATION

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

March 8, 2001

VIA FEDERAL EXPRESS

State of Utah
Department of Natural Resources
1594 West North Temple, Suite 1210
Salt Lake City, UT 84116
Attn: Mr. Mike Hebertson

Re: A.L.&L. #14-33 ST
Additional Information Required for Permit

Dear Mike:

Per your request attached please find additional information with regard to our Application for Permit to drill the referenced well. I have enclosed our Drilling Program, a Location Plat, Well Pad Detail Plat, Cross Sections, and BOP Stack Diagram. I have also enclosed a revised Permit which reflects the surface location to be 642' FSL.

I would like to schedule an on-site with you at your earliest convenience. We appreciate your patience in this regard.

Please contact me at 303-299-1219 to set up the on-site.

Sincerely,

THE ANSCHUTZ CORPORATION

Pamela S. Kalstrom/cv

Pamela S. Kalstrom
Sr. Landman, CPL-ESA

PSK/cv
Enclosures

RECEIVED
MAR 09 2001
DIVISION OF
OIL, GAS AND MINING

Application for Permit to Drill
Anschutz Exploration Corporation
AL&L 14-33 ST Well
642'FSL and 748'FEL Sec. 33, T6N-R8E(Surface Location)
1400' FNL and 300' FEL, T14N-R121W, Uinta County, Wy (bottomhole)

CONFIDENTIAL-TIGHT HOLE

DRILLING PROGRAM

1. Estimate Tops/Geologic Markers

The estimated tops of important geologic markers are as follows:

Formation	TVD	MD	Subsea
Nugget	7511	7522	-341
Ankarah	8628	8650	-1458
Thaynes	9579	9614	-2409
Kick Off Point	9784	9825	-2614
Woodside	10912	10975	-3742
Dinwoody	11548	11650	-4378
Phosphoria	11813	11948	-4643
Weber	12397	12768	-5227
TD	13397	13922	-6227

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

Substance	Formation	MD
SourGas/Condensate	Phosphoria/Weber	11,948-13922'

3. Well Control Equipment & Testing Procedures

Anschutz 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 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 well will be whip stocked out of an existing 7" casing. Casing currently set in the well is as follows:

Purpose	Depth (MD)	Hole Size	O.D.	Weight	Grade	Type
Surface	0-1500'	26	20"	106.5#	J55	WELD
Intermed	0-5993'	17 ½"	13 3/8"	68/88#	L80	BTC
Product	0-3049'	8 ¾"	7 5/8"	39.0#	L80	STL
Product	3049-12581	8 ¾"	7"	32.0#	L80	STL
Liner	12382-12945'	6"	5"	18#	L80	SLX

RECEIVED
MAR 09 2001
DIVISION OF
OIL, GAS AND MINING

Application for Permit to Drill
Anschutz Exploration Corporation
AL&L 14-33 ST Well
642'FSL and 748'FEL Sec. 33, T6N-R8E(Surface Location)
1400' FNL and 300' FEL, T14N-R121W, Uinta County, Wy (bottomhole)

CONFIDENTIAL-TIGHT HOLE

DRILLING PROGRAM

The well will be whipstocked at about 9825' with new casing as follows:

Purpose	Depth (MD)	Hole Size	O.D.	Weight	Grade	Type
Liner	9500-13922'	5 ¾"	3 ½"	10.2	L80	Vamace

5. Cement Program

The only cementing will be for the 3 ½" liner.

Liner	Type and Amount
3 ½"	± 390 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
9825'-13922'-TD	LSND with H2S Scavenger	9.0-9.5	38-50	<10 cc's

7. Testing, Logging and Coring

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

No cores anticipated

8. Anticipated Pressures and H2S

The maximum anticipated bottom hole pressure is 5600 psi. The Hydrogen Sulfide concentration found in the Phosphoria and Weber formations is estimated to be 15%.

9. Water Source

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

RECEIVED

MAR 09 2001

DIVISION OF
OIL, GAS AND MINING

Application for Permit to Drill
Anschutz Exploration Corporation
AL&L 14-33 ST Well
642'FSL and 748'FEL Sec. 33, T6N-R8E(Surface Location)
1400' FNL and 300' FEL, T14N-R121W, Uinta County, Wy (bottomhole)

CONFIDENTIAL-TIGHT HOLE

DRILLING PROGRAM

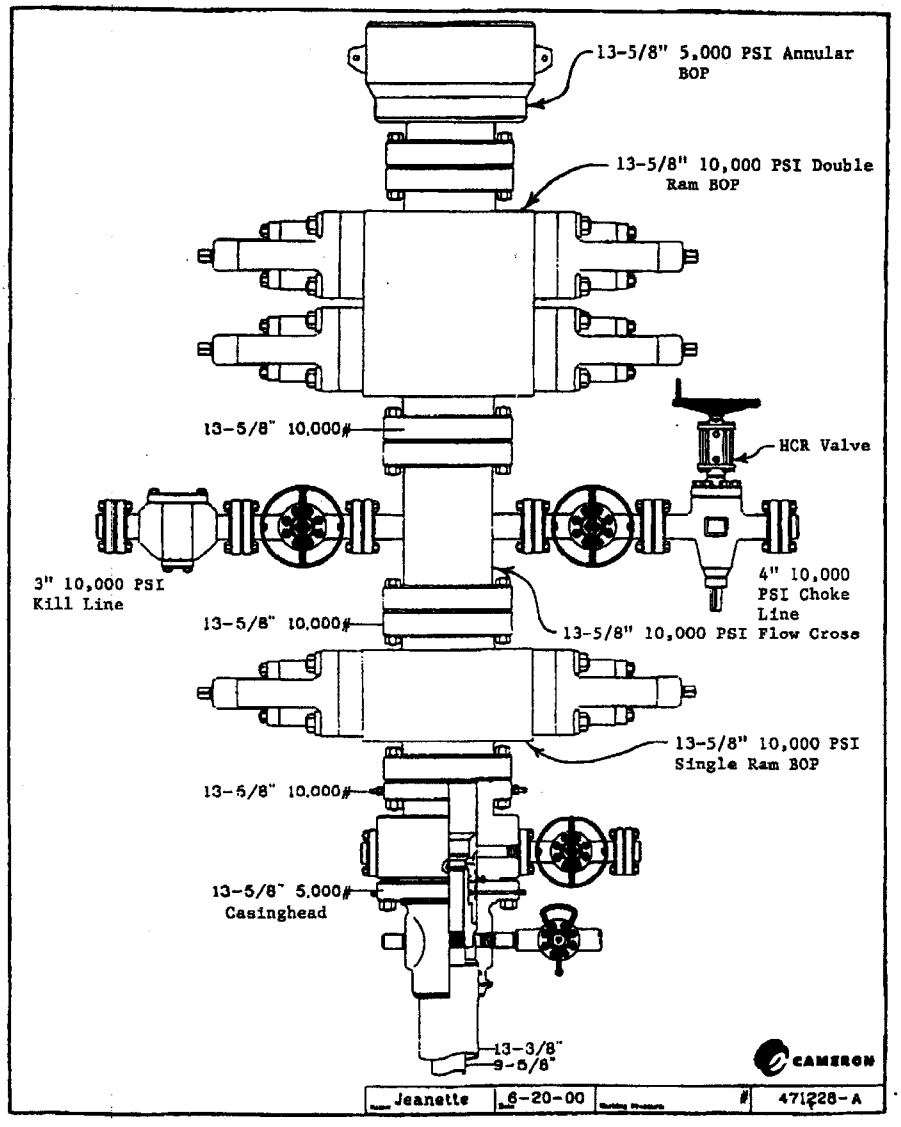
10. Other Information

Drilling is planned to commence in April 2001.
It is anticipated that the drilling of this well will take approximately 60 days.

RECEIVED

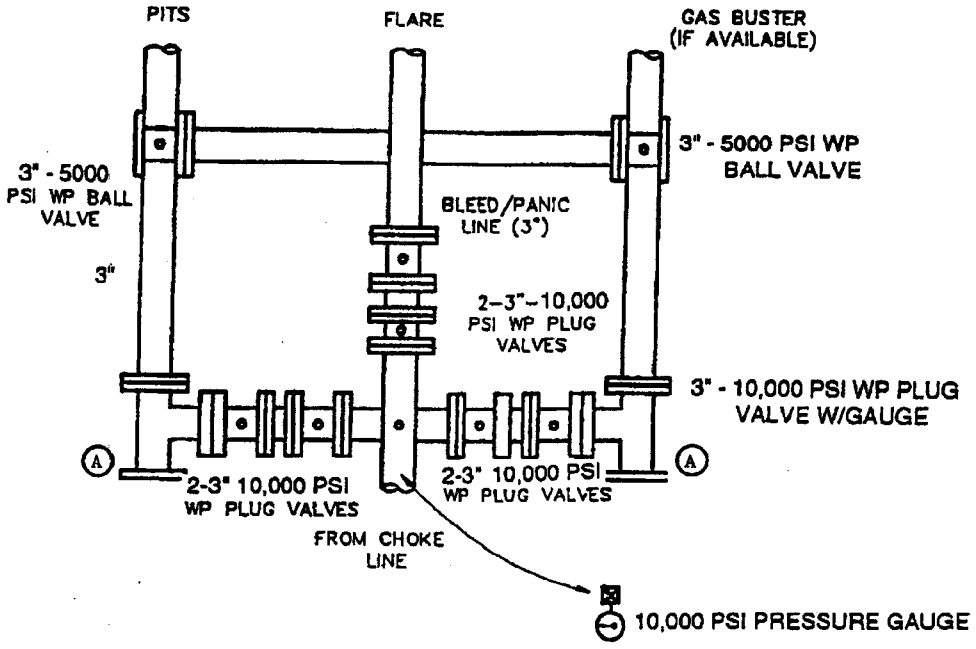
MAR 09 2001

DIVISION OF
OIL, GAS AND MINING



RECEIVED
MAR 09 2001
DIVISION OF
OIL, GAS AND MINING

PLAN VIEW CHOKE MANIFOLD



(A) ADJUSTABLE CHOKES ---- Hydraulically controlled from remote console on rig floor.

RECEIVED
MAR 0 9 2001
DIVISION OF
OIL, GAS AND MINING

MAP to ACCOMPANY
APPLICATION for PERMIT to DRILL

ANSCHUTZ EXPLORATION CORPORATION
AL&L 14-33 ST WELL

642' FSL 748' FEL

SECTION 33, T6N, R8E, SLB&M

SUMMIT COUNTY, UTAH

INDEX

LOCATION MAP _____ SHEET 1

WELL DETAIL _____ SHEET 2

CROSS SECTIONS _____ SHEET 3-4

CERTIFICATE OF SURVEYOR

STATE of WYOMING)
COUNTY of UINTA) ss

I, STANTON G. TAGGART OF EVANSTON, WYOMING HEREBY CERTIFY THAT THIS MAP WAS MADE FROM NOTES TAKEN DURING AN ACTUAL SURVEY MADE UNDER MY DIRECTION IN FEBRUARY 2001 AND THAT IT CORRECTLY SHOWS THE DRILLING LOCATION OF THE ANSCHUTZ EXPLORATION CORP. AL&L 14-33 ST WELL STAKED DURING SAID SURVEY.

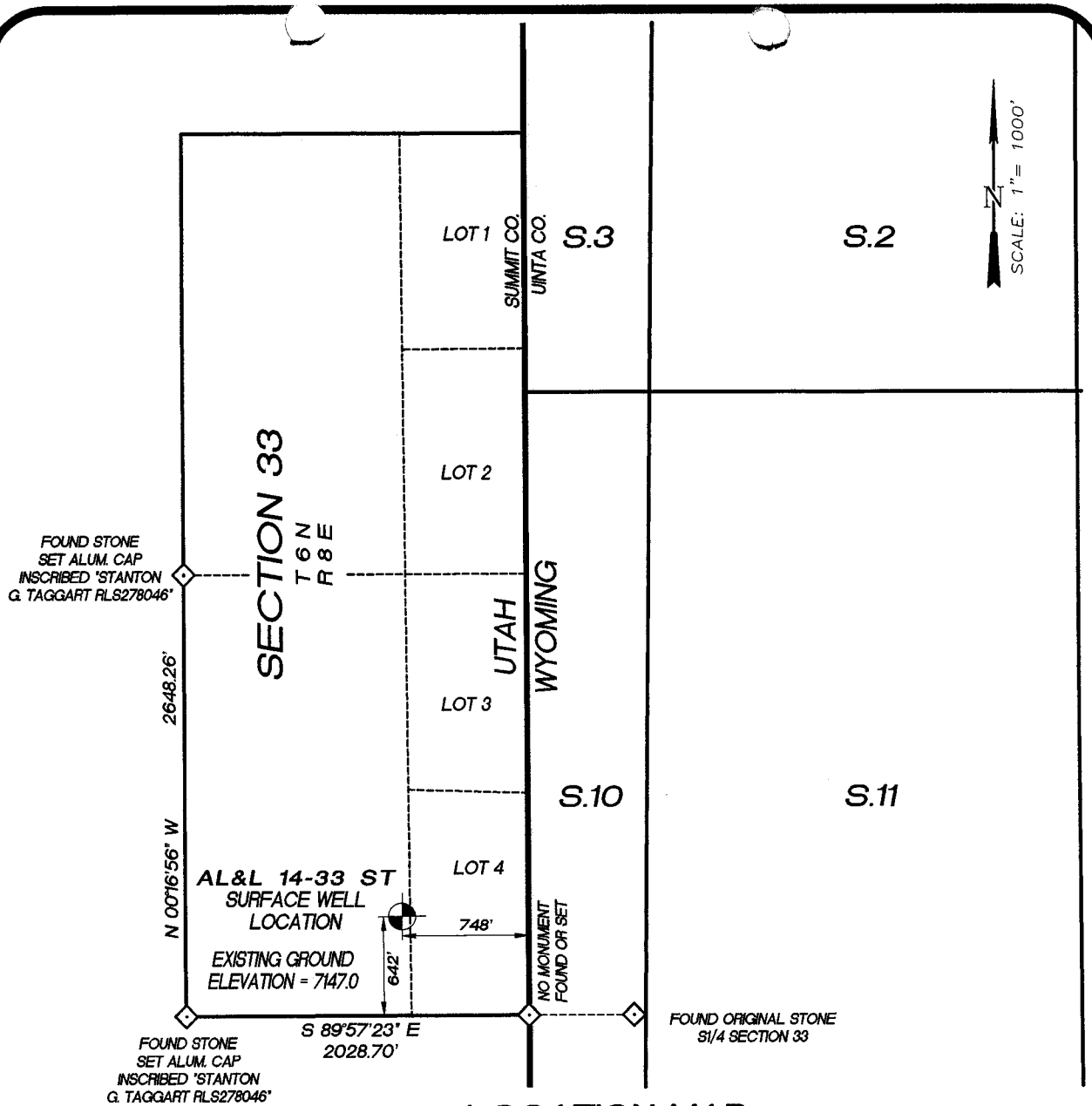
RECEIVED

MAR 09 2001

DIVISION OF
OIL, GAS AND MINING

LICENSED LAND SURVEYOR
3/6/01
No. 278046
STANTON G. TAGGART
STATE OF UTAH

FILE: 01-19-03 JOB NO. 01-19-03



LOCATION MAP

ANSCHUTZ EXPLORATION CORP.
AL&L 14-33 ST WELL

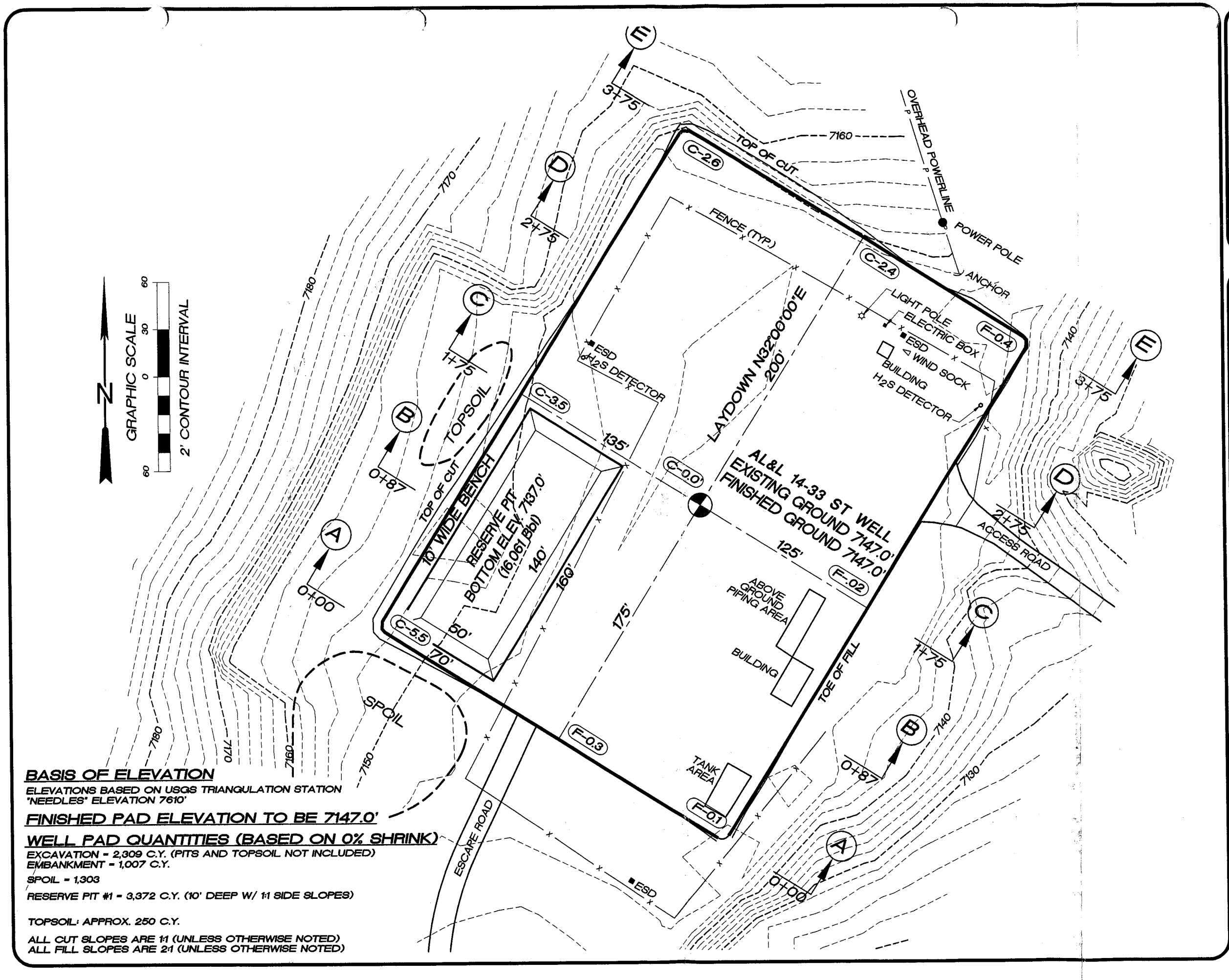
RECEIVED

MAR 09 2001

DIVISION OF
OIL, GAS AND MINING

LOCATION MAP
SHEET 1 of 4

FILE: 01-09-03 JOB NO. 01-19-03



BASIS OF ELEVATION

ELEVATIONS BASED ON USGS TRIANGULATION STATION 'NEEDLES' ELEVATION 7610'

FINISHED PAD ELEVATION TO BE 7147.0'

WELL PAD QUANTITIES (BASED ON 0% SHRINK)

EXCAVATION = 2,309 C.Y. (PITS AND TOPSOIL NOT INCLUDED)
EMBANKMENT = 1,007 C.Y.

SPOIL = 1,303

RESERVE PIT #1 = 3,372 C.Y. (10' DEEP W/ 1:1 SIDE SLOPES)

TOPSOIL: APPROX. 250 C.Y.

ALL CUT SLOPES ARE 1:1 (UNLESS OTHERWISE NOTED)
ALL FILL SLOPES ARE 2:1 (UNLESS OTHERWISE NOTED)

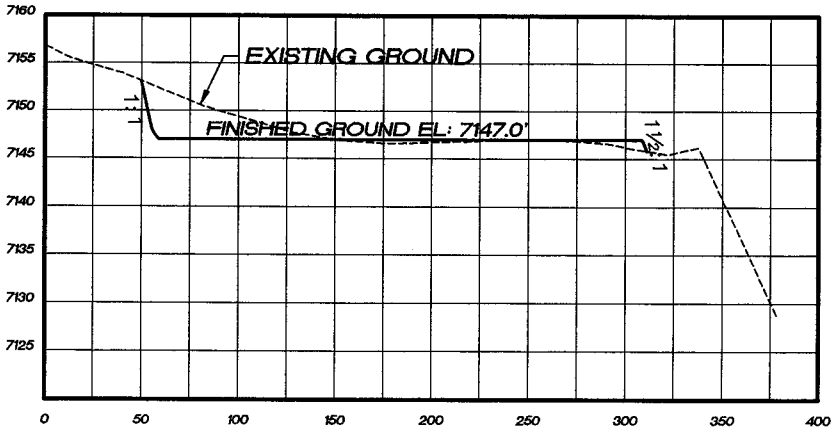
UINTA ENGINEERING & SURVEYING, INC.
808 MAIN ST. EVANSTON, WY 82930, 1-307-789-3602
E-MAIL: uintas@allwest.net
DATE: 03/05/01 JOB #01-19-03 FILE: 01-19-03 DSK #-500-B
DRAWN BY: Travis Martinez

MAP to ACCOMPANY
APPLICATION for PERMIT to DRILL
ANSCHUTZ EXPLORATION CORP.
AL&L 14-33 ST WELL
642' FSL 748' FEL
SECTION 33, T6N, R8E, SLB&M
SUMMIT COUNTY, UTAH

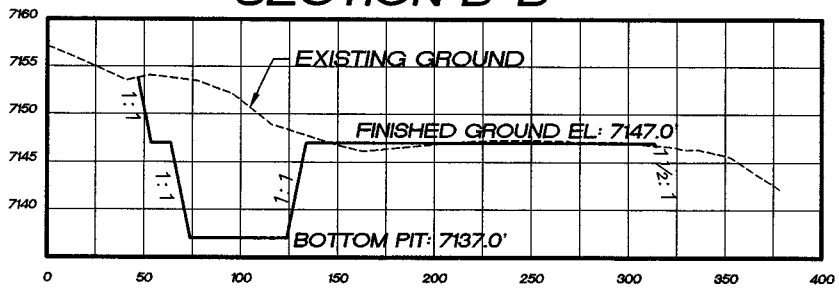
RECEIVED
MAR 09 2001
DIVISION OF
OIL, GAS AND MINING

WELL PAD DETAIL
SHEET 2 of 4

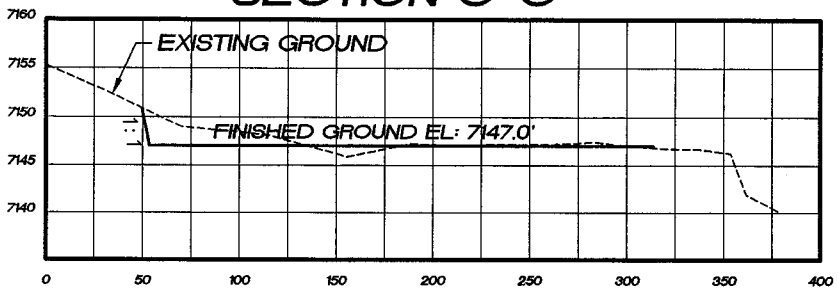
SECTION A-A



SECTION B-B



SECTION C-C



RECEIVED
MAR 09 2001
DIVISION OF
OIL, GAS AND MINING

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

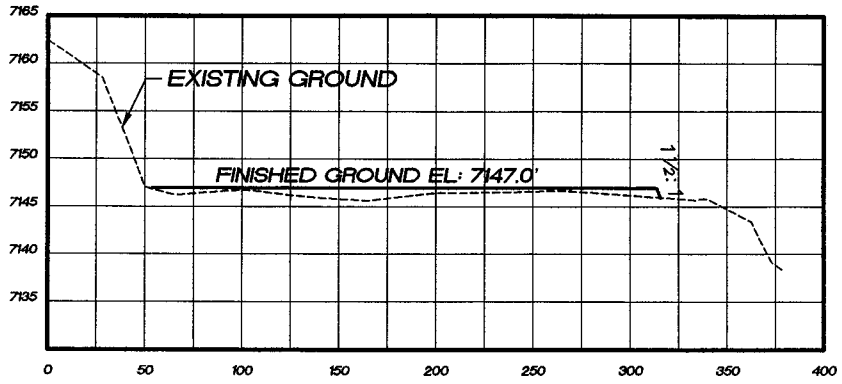
ALL CUT SLOPES ARE 1:1 (UNLESS OTHERWISE NOTED)
ALL FILL SLOPES ARE 1.5:1 (UNLESS OTHERWISE NOTED)

ANSCHUTZ CORP.
AL&L 14-33 ST WELL

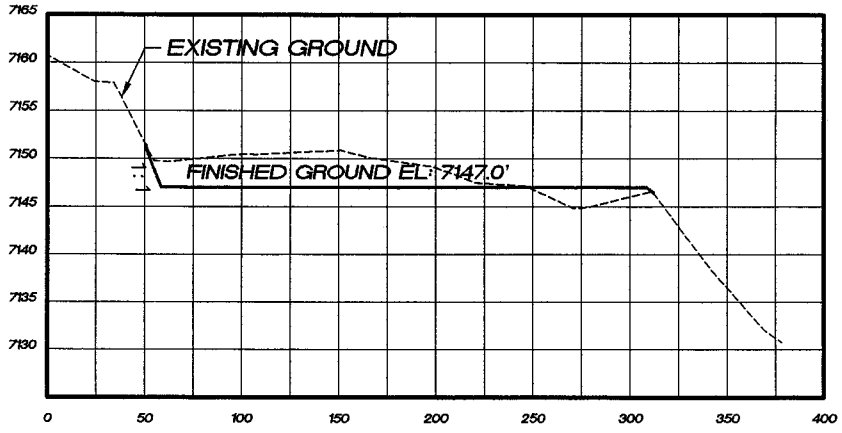
CROSS SECTIONS
SHEET 3 of 4

FILE: 01-09-03 JOB NO. 01-19-03

SECTION D-D



SECTION E-E



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MAR 09 2001
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OIL, GAS AND MINING

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ANSCHUTZ CORP.
AL&L 14-33 ST WELL

CROSS SECTIONS
SHEET 4 of 4

FILE: 01-09-03 JOB NO. 01-19-03

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

FORM 3

AMENDED REPORT ☐
(highlight changes)

APPLICATION FOR PERMIT TO DRILL

5. LEASE DESIGNATION AND SERIAL NUMBER: Fee

1A. TYPE OF WORK: DRILL ☐ REENTER ☐ DEEPEN ☑

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

B. TYPE OF WELL: OIL ☐ GAS ☑ OTHER Directional SINGLE ZONE ☑ MULTIPLE ZONE ☐

7. UNIT or CA AGREEMENT NAME: N/A

2. NAME OF OPERATOR: THE ANSCHUTZ CORPORATION CONFIDENTIAL

8. WELL NAME and NUMBER: A. L. & L. #14-33ST

3. ADDRESS OF OPERATOR: 555 17th St., Ste. 2400 CITY Denver STATE CO ZIP 80202

PHONE NUMBER: (303) 298-1000

9 FIELD AND POOL, OR WILDCAT: Yellow Creek Deep

4. LOCATION OF WELL (FOOTAGES)

AT SURFACE: 642" FSL and 748' FEL (Summit County, Utah)

AT PROPOSED PRODUCING ZONE: 1400' FNL & 300' FEL (Uinta County, Wyoming) T14N, R121W

10. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SESE 33 6N 8E

13. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE: 2 miles west of the town of Evanston, Wyoming

4561278 N
495915 E

11. COUNTY: Summit (Sfc)

12. STATE: UTAH

14. DISTANCE TO NEAREST PROPERTY OR LEASE LINE (FEET): 100'

15. NUMBER OF ACRES IN LEASE: 185

16. NUMBER OF ACRES ASSIGNED TO THIS WELL: 392

17. DISTANCE TO NEAREST WELL (DRILLING, COMPLETED, OR APPLIED FOR) ON THIS LEASE (FEET): 3100' f/Surface Loc. and 1500' f/BHL

18. PROPOSED DEPTH: 13,922

19. BOND DESCRIPTION: Bond No. 104254

20. ELEVATIONS (SHOW WHETHER DF, RT, GR, ETC.): 7147' GL

21. APPROXIMATE DATE WORK WILL START: 4/15/2001

22. ESTIMATED DURATION: 55 Days

23. **PROPOSED CASING AND CEMENTING PROGRAM**

SIZE OF HOLE	CASING SIZE, GRADE, AND WEIGHT PER FOOT	SETTING DEPTH	CEMENT TYPE, QUANTITY, YIELD, AND SLURRY WEIGHT
5-3/4"	3-½" L-80 10.2	13,922	Class G 390 sacks 1.16 ft3/sk 15.8 ppg
			Note: Well will be
			Whipstocked out of
			existing 7" 32 ppf L-80
			casing at 9825'.

24. **ATTACHMENTS**

VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE WITH THE UTAH OIL AND GAS CONSERVATION GENERAL RULES:

☑ WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER

☑ COMPLETE DRILLING PLAN

☐ EVIDENCE OF DIVISION OF WATER RIGHTS APPROVAL FOR USE OF WATER

☐ FORM 5, IF OPERATOR IS PERSON OR COMPANY OTHER THAN THE LEASE OWNER

NAME (PLEASE PRINT) Eric Root TITLE Rocky Mt. Engineering Mgr.

SIGNATURE DATE 2/16/2001

(This space for State use only)

API NUMBER ASSIGNED: 43-043-30315

Approved by the Utah Division of Oil, Gas and Mining
APPROVAL:
Date: 04-04-01
By:

RECEIVED
MAR 09 2001
DIVISION OF OIL, GAS AND MINING

(5/2000)

(See Instructions on Reverse Side)

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

Michael O. Leavitt
Governor
Kathleen Clarke
Executive Director
Lowell P. Braxton
Division Director

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)

CONDITIONS OF APPROVAL TO PLUGBACK WELL

Well Name and Number:	A.L.& L. #14-33
API Number:	43-043-30315
Operator:	The Anschutz Corporation
Reference Document:	Sundry Notice dated March 15, 2001, received by DOGM on March 16, 2001

Approval Conditions:

1. As discussed with Eric Root, plugs shall be set in the two profile nipples below the bottom packer, which is set at 11,690'.

2. Notify the Division at least 24 hours prior to conducting plugback operations. Please call Dan Jarvis at 801-538-5338.

3. All other requirements for notice and reporting in the Oil and Gas Conservation General Rules shall apply.

R. Allen McKee
Petroleum Engineer

March 21, 2001
Date

REVISED 4/2/01 – TO UTILIZE 1 - TUBING BRIDGE PLUG BELOW BOTTOM PAKER AND 1 - TUBING BRIDGE PLUG BELOW UPPER PAKER. THIS IS A CHANGE FROM PROFILE NIPPLES (3). BRIDGE PLUG IS MORE SECURE AND SINCE NO REMOVAL IS ANTICIPATED, BPs BETTER MECHANICAL CHOICE THAN PROFILE NIPPLES.

R.A. McKee

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: N/A

7. UNIT or CA AGREEMENT NAME: N/A

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER _____

8. WELL NAME and NUMBER: A. L. & L. #14-33

2. NAME OF OPERATOR: THE ANSCHUTZ CORPORATION

9. API NUMBER: 043-30315

3. ADDRESS OF OPERATOR: 555 17th St., Ste. 2400 CITY Denver STATE CO ZIP 80202

PHONE NUMBER: (303) 298-1000

10. FIELD AND POOL, OR WILDCAT: Yellow Creek Deep

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 642' FSL and 748' FEL (Summit County, Utah)

COUNTY: Summit

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SESE 33 6N 8E

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
4/15/2001	☐ 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: Plugging & Abandonment of existing perforations. — Change of Location.
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

The existing wellbore will be abandoned by setting a plug in the profile nipple below the top packer, which is set at 11,512'. One hundred feet (100') of Class "G" cement (20 sacks of neat Class "G") will be placed on top of the packer. Class "G" cement will also be circulated behind casing from approximately 10,025' to 9,625' to facilitate Whipstock operations for the A. L. & L. #14-33ST wellbore.

Surface location change due to re-survey.

Temporary Water Right Permit No. 21-1711.

Please see Wellbore Diagram attached.

SUBJECT TO ATTACHED CONDITIONS

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 3-21-01
BY: R.A.M.

RECEIVED
MAR 16 2001
DIVISION OF OIL, GAS AND MINING

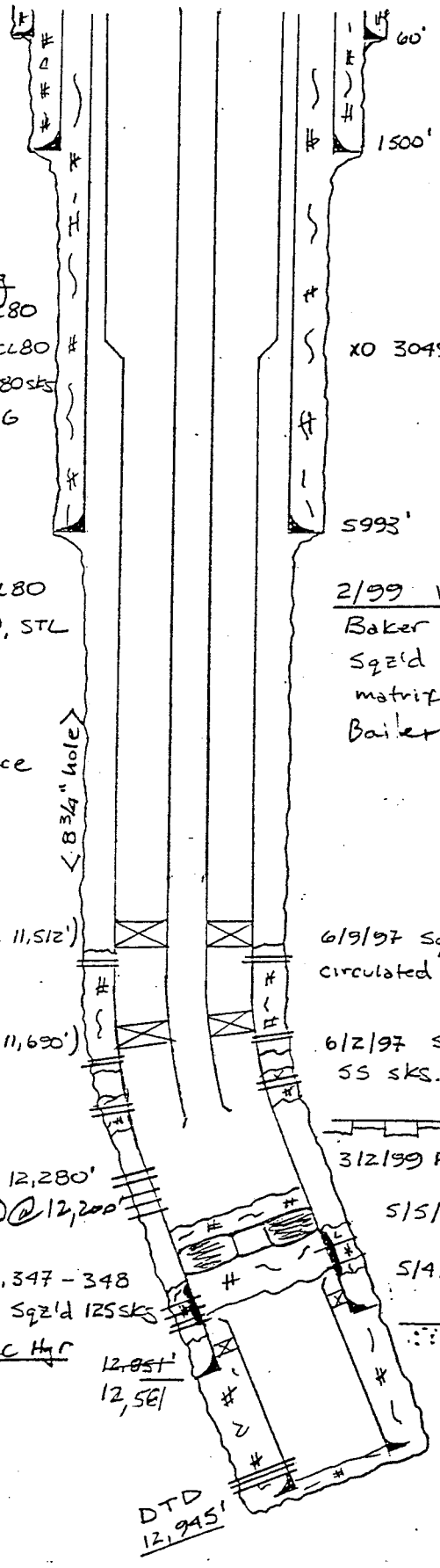
NAME (PLEASE PRINT) Eric Root TITLE Rocky Mountain Engineering Mgr.

SIGNATURE _____ DATE 3/15/2001

(This space for State use only)

Spud Date 1-17-97
KB 7170', GL 7147'

A.L. & L. 14-33
Yellow Creek Field
Summit County, Utah



60' Conductor

Surface Casing
1500', 20", 106.5#
cmt'd to surface

Intermediate Casing
5179', 13 3/8", 68#, L80
814', 13 5/8", 88.2#, HCL80
cmt'd to surface w/ 3980 sks
50/50 Poz & 1300 sks G

Production Casing
3049', 7 5/8", 39#, L80
9572', 7", 32#, L80, STL

Tubing String
2 7/8", 7.70#, Vam Ace
WLREG @ 11,932'

Baker "DB" Pkr (set @ 11,512')

Baker "DB" Pkr (set @ 11,690')

Baker TTCR set @ 12,280'
PBTD @ 12,200'

7" x 20' CTC ECP
6/1/97 Perfed ECP 12,347 - 348
& 12,363 - 364', Sqz'd 125 sks

Baker ZXP Pkr, w/ CMC Hgr

Production Liner
5", 18#, L80, SLX
TOL +/- 12,382'

2/99 Workover Details
Baker Thru-Tag cmt ret set @ 12,280'
Sqz'd w/ 2000 gal Perm Seal & 360 gal micro matrix cmt
Bailer run on top of TTCR

6/9/97 Sqz Perfs (11,540-42', 11,740-42')
circulated 80 sks between perfs (6/12/97)

6/2/97 Sqz Perfs (11,805-08') sqz'd w/ 55 sks.

TOP PHOSPHORIA (11,910' md)
3/2/99 Phos Perfs 12,040' - 12,100'

5/5/98 Phos Perfs 12,101 - 195'

5/4/98 Phos Perfs 12,340' - 370'
4 SPF, 1 11/16"

TOP WEBER (12,706 md)

7/9/97 Weber Perfs
12,820 - 900', 1 11/16 RTG

2/7/98 Re-Perf Weber
12,820' - 845', 1 11/16 EnerJet

JPO
4/00

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

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

March 15, 2001

Via Federal Express

State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
1594 W. North Temple, Ste. 1210
Salt Lake City, UT 84116

RE: *A. L. & L. #14-33*
SESE Section 33, T6N, R8E
Summit County, Utah
Sundry Notice (form 9) – Abandonment of Existing Perforations and Change of Location

Dear Ladies and Gentlemen:

Enclosed please find a copy of the referenced Sundry Notice for your records.

Please contact me at (303) 299-1344 with any questions and thank you for your assistance.

Sincerely,

ANSCHUTZ EXPLORATION CORPORATION

Susan M. Miller
Operations Technician

SMM
Attachment

RECEIVED
MAR 16 2001
DIVISION OF
OIL, GAS AND MINING

ON-SITE PREDRILL EVALUATION
Division of Oil, Gas and Mining

OPERATOR: The Anschutz Corporation
WELL NAME & NUMBER: AL & L 14-33ST (Re-entry)
API NUMBER: 43-043-30315
LEASE: Fee (Deseret Land and Livestock) FIELD/UNIT: Wildcat
LOCATION: 1/4,1/4 SE SE Sec 33 TWP: 6 N RNG: 8 E 642 FSL 748 FEL
LEGAL WELL SITING: Cause 189-5 July 10, 2000 Approved by the Board of Oil Gas, & Mining,
GPS COORD (UTM): X = 495,915 E; Y = 4,561,278 N Calculated
SURFACE OWNER: Castle Rock Land & Livestock

PARTICIPANTS

Mike Hebertson , John Baza (DOGM), Bob Griffin, Paul Gallagher, Eric Root, Ed Dolly, Hal Koerner, Bill Miller (Anschutz), David Allen (Castle Rock Land and Livestock)

REGIONAL/LOCAL SETTING & TOPOGRAPHY

This area is located in the Overthrust Belt of eastern Utah and western Wyoming north of the Uinta Mountains. The geologic setting is known as the Thrust Belt. US Highway 80 is about 3.5 miles to the north. The City of Evanston is about 7 miles to the northeast. The surface is Paleocene age Wasatch formation with possible Evanston formation underlying the area. The land slopes to the north and is incised by moderate to shallow drainages with active streams and flowing water. The well is an existing location pad with an active well already on location. It is the intent of Anschutz to drill this well horizontally into the State of Wyoming to a bottom hole location of 1400 FNL, 300 FEL, Sec 10, T14N, R121W, Uinta County

SURFACE USE PLAN

CURRENT SURFACE USE: Grazing and wildlife habitat.

PROPOSED SURFACE DISTURBANCE: The operator proposes a 375' X 260' pad, with outboard soil storage. The muid system will will be a closed loop system and the cuttings will be dried on location. The location will be enlarged to accommodate the new operations and drainage on the pad will be reestablished.

LOCATION OF EXISTING WELLS WITHIN A 1-MILE RADIUS: There is one producing well on the same pad as this well which will be re-entered, and there are 7 PA or unknown status wells within one mile of this location. Better than half of these are in Wyoming.

LOCATION OF PRODUCTION FACILITIES AND PIPELINES: All production facilities for this well will remain on the location with exception of the pipelines and utilities for power. The pipeline and utility lines will be buried underground and are already in place.

SOURCE OF CONSTRUCTION MATERIAL: Gravel location and approach road; soil stored in berm, the location will be made of natural material borrowed from leveling the pad during construction.

ANCILLARY FACILITIES: Already built

WASTE MANAGEMENT PLAN

Portable chemical toilets which will be emptied into the municipal waste treatment system; garbage cans on location will be emptied into centralized dumpsters which will be moved to an approved landfill. No crude oil is expected to be produced. Drilling fluid, completion / frac fluid and cuttings will be disposed of in a suitable disposal facility. Produced water will be gathered to the evaporation pit and eventually disposed of at an approved disposal facility. Used oil from drilling operations and support is hauled to a used oil re-cycling facility and reclaimed.

ENVIRONMENTAL PARAMETERS

AFFECTED FLOODPLAINS AND/OR WETLANDS: This location is not in any floodplain, to wetland. No major drainages access the well pad.

FLORA/FAUNA: Open sagebrush, and grass meadows, cactus, birds, lizards, coyotes, rodents, raptors, occasional elk, deer pronghorn and sage grouse. Critical winter range.

SOIL TYPE AND CHARACTERISTICS: Mostly clay with very little sand, light gray to dark brown in color. Some pit run type gravel. SM to SP type soils.

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: Stable. Wasatch type soils are generaley suseptable to slumping when slopes are wet and become saturated. The slope of the ground in this location will not be sufficient for the unstable conditions to occur. Erosion and sedimentation at this location will not be an issue.

PALEONTOLOGICAL POTENTIAL: None observed.

RESERVE PIT

CHARACTERISTICS: A series of closed loop metal tanks will be used as the mud system.

LINER REQUIREMENTS (Site Ranking Form attached): Synthetic liner will be placed under the tanks.

SURFACE RESTORATION/RECLAMATION PLAN

A surface use agreement is in place and restoration will be managed by the surface owner.

SURFACE AGREEMENT: Castle Rock Land and Livestock.

CULTURAL RESOURCES/ARCHAEOLOGY: Archaeological survey has been previously performed.

OTHER OBSERVATIONS/COMMENTS:

The well lies within less than a mile of the Wyoming, Uinta County line. The well will be drilled from Utah to Wyoming with a horizontal bore and the target zone is in Wyoming. The approval for this action has been previously cleared by the Oil and Gas Boards of both states. The engineering and drilling plan has been reviewed by the division engineer and the well has been discussed with representatives of the

surface owner. Bottom hol osition and location requirements were scussed with the operator, and new footages will be supplied.

ATTACHMENTS:

Photographs were taken at the time the location was staked.

K. Michael Hebertson
DOGM REPRESENTATIVE

21-Mar-2001 10:00 AM
DATE/TIME

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

Operator Name: The Anschutz Corporation
Name & Number: A.L. & L. 14-33 State (Re-Entry)
API Number: 43-043-30315
Location: 1/4,1/4 SE SE Sec. 33 T. 6 N R. 8 E **County:** Summit

Geology/Ground Water:

Surface , intermediate, and production casing for this well have already been set and cemented. This casing and cementing program should have adequately isolated any zones of fresh water that were penetrated and no USDW's were reported as being encountered. If the well is plugged and abandoned any zone of fresh water will be protected with cement and cement will be circulated to ground level on the surface casing string. There are seven points of diversion within one mile of this location and one stock watering pond within less ½ mile of location. These are resources that will be protected from pollutants.

Reviewer: K. Michael Hebertson **Date:** 19-March-2001

Surface:

The surface belongs to Castle Rock Land & Livestock, and there is a standing surface use agreement for this location. Representatives for the surface owner were present and had received invitations from the State and from Anschutz Corp. Those attending the onsite are noted above in the Participants section of the review document. There will be no new impacts to this site and the surface owner has good working knowledge of the issues in this area for reclamation.

Reviewer: K. Michael Hebertson **Date:** 19-March-2001

Conditions of Approval/Application for Permit to Drill:

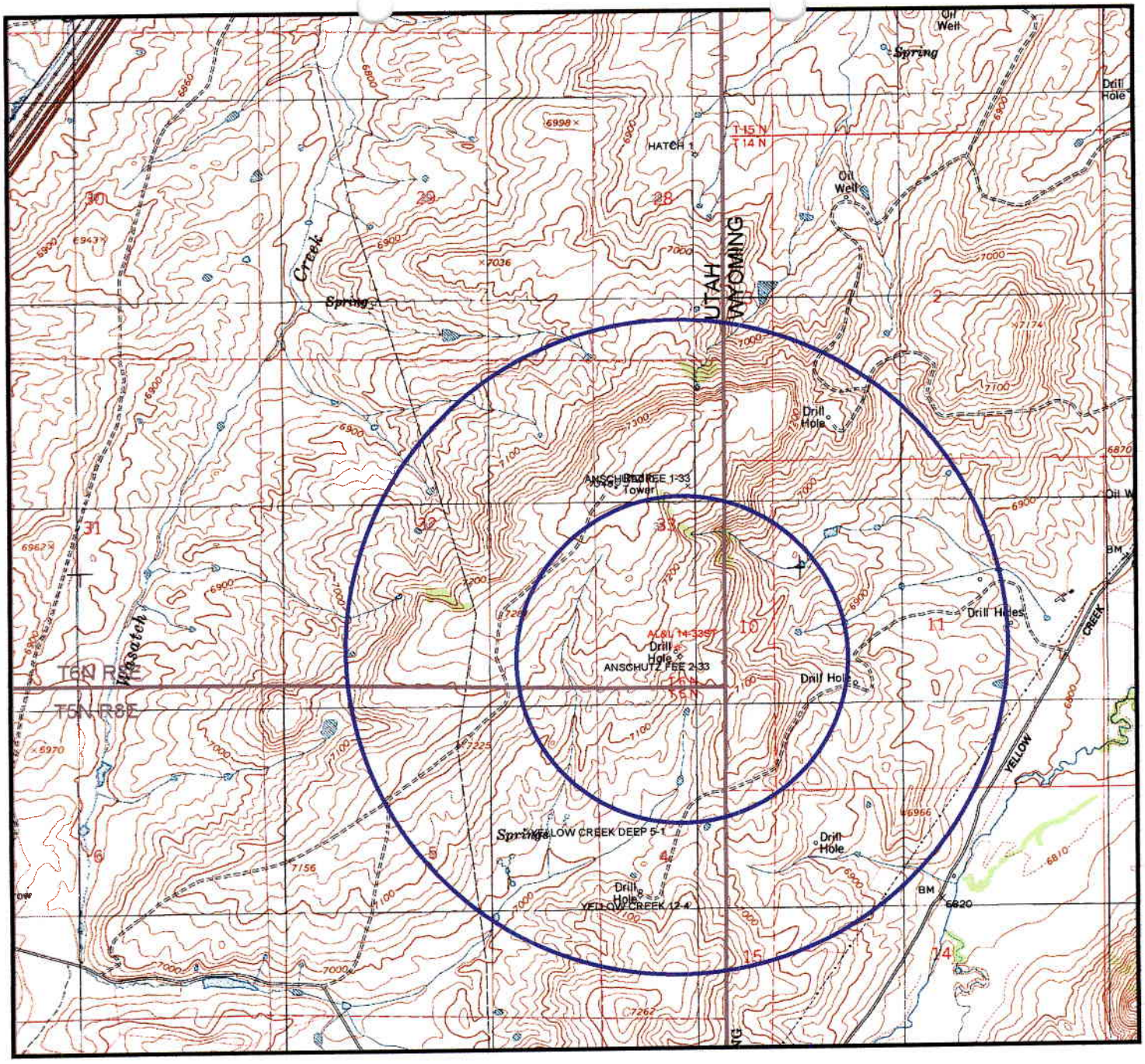
1. A closed loop tank mud system will be used for this operation.
2. A synthetic liner will be placed under the mud pits.
3. Cuttings will be dried and spread on location rather than hauled to a disposal site.
4. Berms and diversions to protect the location and spoil piles and control erosion and pollution.
3. Site infrastructure placement as per drilling location plat.
4. The location will be bermed on the top outside edge and topsoil will be stored in wind rows not piles.
5. Berms or ditches will be placed on all cut and fill slopes to catch and contain any fluids escaping location.
6. Snow and brush will be removed before any soil disturbance occurs, and snow and soil will not be mixed.

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	0
Distance to Surf. Water (feet)		
>1000	0	
300 to 1000	2	
200 to 300	10	
100 to 200	15	
< 100	20	5
Distance to Nearest Municipal Well (feet)		
>5280	0	
1320 to 5280	5	
500 to 1320	10	
<500	20	0
Distance to Other Wells (feet)		
>1320	0	
300 to 1320	10	
<300	20	0
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	10	
TDS >10000 or Oil Based Mud	15	
Fluid containing significant levels of hazardous constituents	20	10
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	0
Presence of Nearby Utility Conduits		
Not Present	0	
Unknown	10	
Present	15	0

Final Score 45 (Level I Sensitivity)

Sensitivity Level I = 20 or more; total containment is required.
Sensitivity Level II = 15-19; lining is discretionary.
Sensitivity Level III = below 15; no specific lining is required.



Well Status

- GAS INJECTION
- GAS STORAGE
- LOCATION ABANDONED
- NEW LOCATION
- PLUGGED & ABANDONED
- PRODUCING GAS
- PRODUCING OIL
- SHUT-IN GAS
- SHUT-IN OIL
- TEMP. ABANDONED
- TEST WELL
- WATER INJECTION
- WATER SUPPLY
- WATER DISPOSAL
- Sections
- Township

Utah Oil Gas and Mining

The Division of Oil, Gas & Mining does not warrant or guarantee the accuracy of any data or information contained herein, and is not responsible for the accuracy of data not under its immediate controll.

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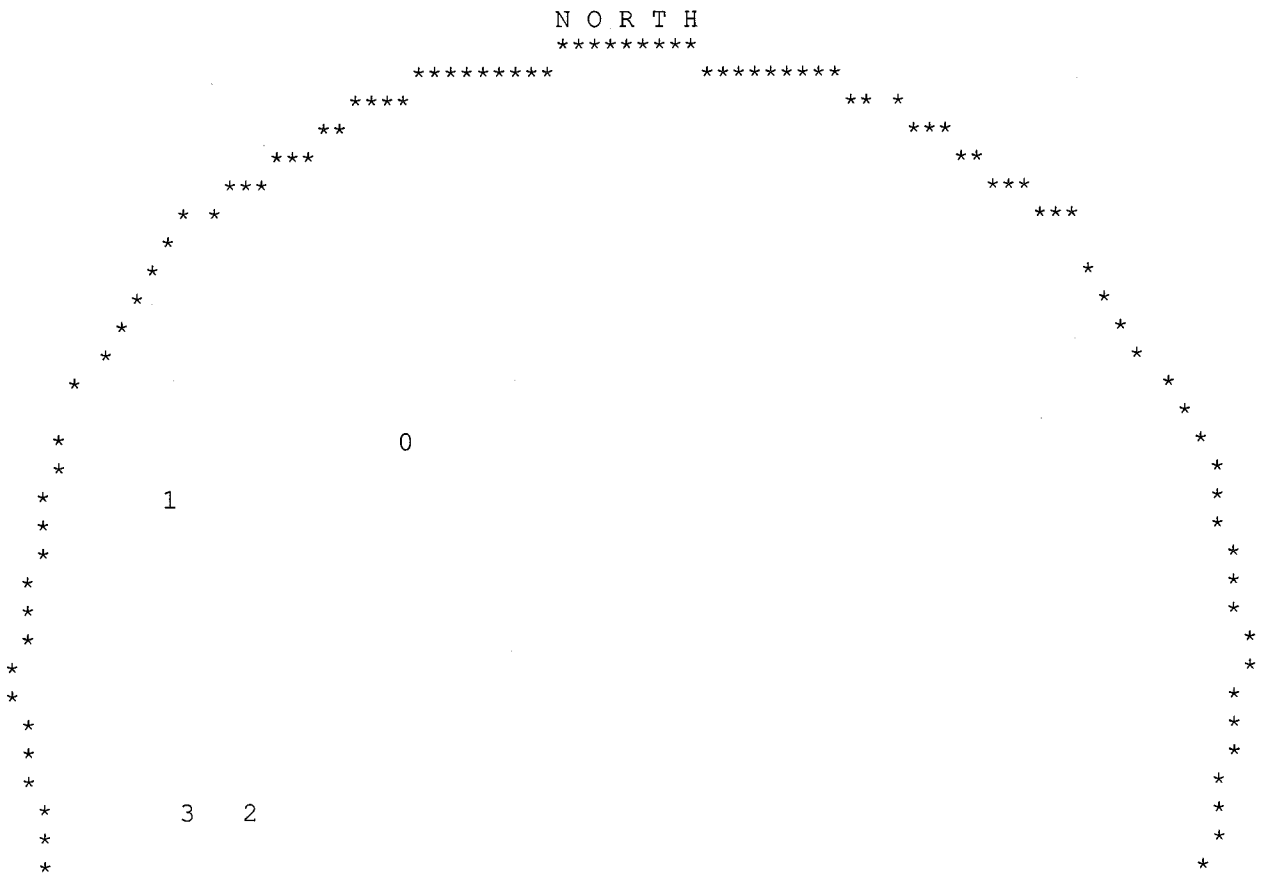
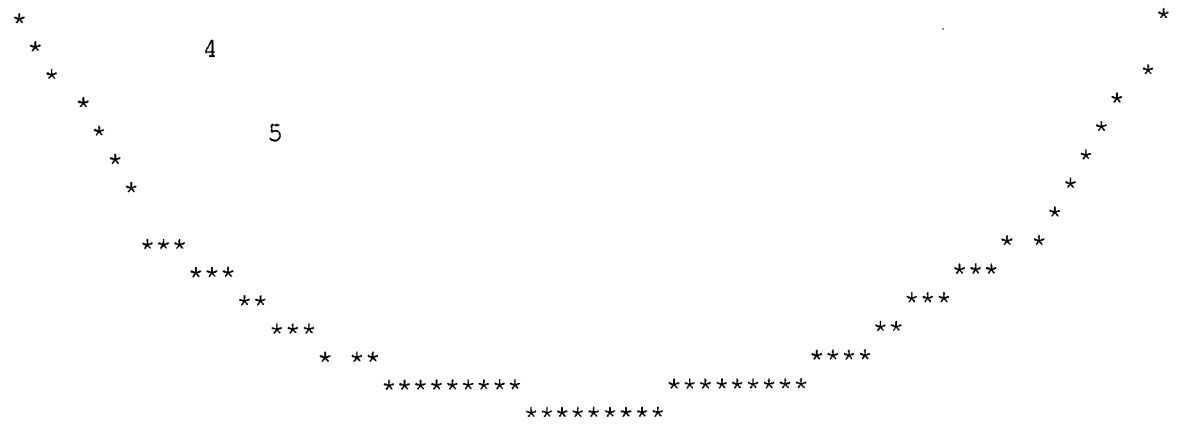
Prepared By: K. M. Hebertson
Date: -Mar-2001

UTAH DIVISION OF WATER RIGHTS
WATER RIGHT POINT OF DIVERSION PLOT CREATED MON, MAR 19, 2001, 9:26 AM
PLOT SHOWS LOCATION OF 7 POINTS OF DIVERSION

PLOT OF AN AREA WITH A RADIUS OF 5280 FEET FROM A POINT
N 642 FEET, W 748 FEET OF THE SE CORNER,
SECTION 33 TOWNSHIP 6N RANGE 8E SL BASE AND MERIDIAN

PLOT SCALE IS APPROXIMATELY 1 INCH = 2000 FEET





UTAH DIVISION OF WATER RIGHTS
NWPLAT POINT OF DIVERSION LOCATION PROGRAM

MAP CHAR	WATER RIGHT	QUANTITY CFS	QUANTITY AND/OR AC-FT	SOURCE DESCRIPTION or WELL INFO DIAMETER	DEPTH	YEAR LOG	POINT OF DIVERSION DESCRIPTION NORTH	EAST	CNR	SEC	TWN	RNG	B&M
0	21 355	.0110	.00	Unnamed Spring									
	WATER USE(S): STOCKWATERING									PRIORITY DATE: 00/00/18			
	Anschutz Land and Livestock Company Inco 2400 Anaconda Tower, 555 Seventeenth Str Denver												
1	21 1006	.0000	.00	Unnamed Tributary to Wahsatch									
	WATER USE(S): STOCKWATERING									PRIORITY DATE: 00/00/18			
	Anschutz Land and Livestock Company Inco 2400 Anaconda Tower, 555 Seventeenth Str Denver												
2	21 356	.0000	.00	Unnamed Tributary to Wahsatch			S 510	E 1280	NW	4	5N	8E	SL
	WATER USE(S): IRRIGATION									PRIORITY DATE: 00/00/18			
	Anschutz Land and Livestock Company Inco 2400 Anaconda Tower, 555 Seventeenth Str Denver												
3	21 1652	.0150	.00	8	0 - 450	N	S 532	E 786	SW	33	6N	8E	SL
	WATER USE(S): OTHER									PRIORITY DATE: 08/02/19			
	Anschutz Exploration Corporation 555 Seventeenth Street #2400 Denver												

3 21 1711 .0000 .25 8 0 - 450 N S 532 E 786 SW 33 6N 8E SL
WATER USE(S): OTHER PRIORITY DATE: 03/12/20
Anschutz Exploration Corporation 555 Seventeenth Street #2400 Denver

4 21 369 .5000 .00 Unnamed Tributary to Wahsatch N 1110 E 1300 W4 4 5N 8E SL
WATER USE(S): IRRIGATION STOCKWATERING PRIORITY DATE: 00/00/19
Anschutz Land and Livestock Company Inco 2400 Anaconda Tower, 555 Seventeenth Str Denver

5 21 311 .0000 .00 Unnamed Tributary to Yellow Cr N 400 E 1860 W4 4 5N 8E SL
WATER USE(S): STOCKWATERING PRIORITY DATE: 00/00/19
Anschutz Land and Livestock Company Inco 2400 Anaconda Tower, 555 Seventeenth Str Denver

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

March 23, 2001

State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, UT 84114-5801
Attn: Al McKee

Dear Mr. McKee,

Per our discussion, attached please find supplemental APD information concerning whipstock operations for the AL&L 14-33. Please contact me at 303-299-1479 if you have any questions.

Sincerely,

Eric L. Root
Engineering Manager, Rocky Mountains
Anschutz Exploration Corporation

RECEIVED
MAR 27 2001
DIVISION OF
OIL, GAS AND MINING

Operator: **ANSCHUTZ EXPLORATION CORPORATION**

555 17th Street
Suite 2400
Denver, CO 80202

Well:	A. L. & L #14-33 Reentry
Field:	Yellow Creek
Location:	Section 33-T6N-R8E
County/State:	Summit County, UT
Elevations:	KB 7170' GL 7147'

Objective:

Drill a sidetracked wellbore to the Weber formation from existing 7" casing utilizing a whipstock sidetracking system.

Primary Target Objectives:	Weber	12,768' MD 12.397; TVD

Log Formation Tops:

Ankaren	8,590
Thaynes	9,600
Woodside	10,900
Phosporia	11,910
Weber	12,726

Major Service Contractors:

Wellsite Supervisor:	Anschutz Exploration Company		
Drilling Contractor:	Unit Drilling Rig #166		
Cased Hole Logging	Weatherford	Mike Kirby	(303) 886-8000
Directional Drilling/MWD:	Weatherford	Mike Kirby	(303) 886-8000
Whipstock Services:	Weatherford	Mike Kirby	(303) 886-8000
Drill Pipe Rental:	Weatherford	Mike Kirby	(303) 886-8000
Drilling Fluids:	Newpark Drilling Fluids		

General Information

- A copy of the final prognosis will be available in the Anschutz Exploration Corporation's Drilling Foreman's trailer on location during drilling operations. Copies will also be distributed to the drilling contractor, well-site geologist, mud logger, directional driller and all pertinent field and office personnel associated with Anschutz Exploration Corporation and their partners on this project. One copy should be kept in the rig floor doghouse during drilling operations.

- Copies of the daily tour report including mud checks, deviation surveys and downtime will be recorded in the tour books.

The Anschutz Exploration Corporation's Drilling Representative will report details of the previous 24 hours operations ending at 6:00 a.m. to the Anschutz Exploration Corporation office in Denver by 7:30 a.m. weekdays @ (303) 298-1000

- The daily report will include the following information:

    - Depth (TVD & MD)
    - Operations
    - Formation
    - Bit #, size, type and grade when pulled
    - Weight on Bit
    - Rotary Table RPM
    - Pump Pressure
    - Annular velocities around drill pipe, HWDP and HHP at bit
    - Complete record of BHA with a caliper of ID's and OD's. Length should be recorded initially and after each change
    - Orientation surveys, including inclination, azimuth, X-Y coordinates, TVD, MD and total displacement
    - Mud properties: weight, viscosity, water loss, filter cake, % oil, % water, oil/wtr ratio, E.S., % solids, % LCM, Ph, chlorides, gel strengths, PV, YP, Ca, material used, daily and total mud costs.
    - Remarks: including BOP test information, bit grading, reduced pump rate and pressure, etc.
    - Estimated daily and cumulative costs

- On Saturday, Sunday and holidays, the Drilling Foreman will check the prior day with the Anschutz Exploration Corporation's office for disposition of reports.

- The drilling contractor will conduct weekly safety meetings, which shall include, but not limited to procedures for blowout prevention and an evacuation plan for each individual in the event of a blowout.

Workover Operations

- Prepare roads and location for drilling rig – Dismantle production equipment and move to edge of location – dig reserve pit and install liner. Test rig anchors, if necessary
- MIRU workover rig.
- Bullhead at least one tubing volume of water down tubing and kill well.
- Rig up slickline unit. Set plug in profile nipple at 11,581'. Come out of hole with slickline. Pressure test to 1000 psi.
- Remove wellhead, NU BOP's.
- Sting out of packer with tubing. Spot 100' (20 sx) of Class G cement on top of packer at 11,512'. Reverse out and trip out of hole.
- Run in hole with perforating guns and shoot squeeze holes at 10,025'. Attempt to circulate through squeeze holes back to surface. If well won't circulate, run in hole with perforating guns and shoot squeeze holes at 9625'
- Run in hole with cement retainer and GR/CCL on wireline. Set CR at approximately 9,832'. GR/CCL log dated 6/16/97 shows a collar at 9840'. Ensure there are no collars from the CR setting depth to 20' above that depth. Whipstocking through the casing at a collar will be difficult if care is not taken to locate the whipstock away from a collar.
- Squeeze Class G cement through retainer and out squeeze holes. If holes were shot at 9625', use 105 sx of cement. If holes were not shot, please use 135 sx of cement. Sting out of retainer and reverse out excess. Do not leave any excess cement on top of retainer. Trip out of hole.
- Trip in hole with bit, casing scraper and tubing to top of cement retainer. Set down with 10,000 lbs to ensure retainer will not move. Trip out of hole.
- Rig down, move out workover rig.

Potential Problems

- Lost Circuation
- Maintaining build/turn rates to target TVD
- Excessive damage to BHA due to abrasive formation

2,400' L
PROFILE
NIPPLE
BELOW
BOTTOM
PKR

Whipstock Operations

- MIRU drilling rig – PU and TIH with rental 3 ½" drill pipe and SWDP/ 4 ¾" Drill Collars. *If pickling is required, pickle with 500 gallons of 15%HCL and reverse out.* TOOH - strap drill pipe – record data.

- Make up Starting Mill and orienting sub *(Note: It is recommended that the orientation sub is run 1 joint of drill pipe above the Starting Mill)*

- Align orienting sub in direction of the whipstock face and lock.

- Bolt up whipstock to Starting Mill.

- TIH with whipstock, 1-joint of drill pipe, orienting sub, MWD and drill collars. TIH at a rate of 2,000' to 2,500' per hour. Insure that tool is not set down hard in slips or picked up hard to avoid shearing lug bolts while tripping in the hole. Insure that angle iron safety device is removed from whipstock.

- TIH to 15' to 20' above bottom and pick a joint of drill pipe and make up in string. Do not tag bottom.

- Work string to remove trapped downhole torque. Check MWD highside reading and turn whipstock face to the desired azimuth direction relative to the existing survey azimuth. Work pipe and recheck direction with MWD. Continue this process until direction checks without having to turn drill pipe. When company representative, directional driller, MWD operator and the Weatherford supervisor all agree that the concave of the whipstock is facing in the desired direction.–orient the whipstock with the MWD. Slack off string and trip whipstock to set slips in the casing *(3,000 to 6,000 pounds are required to trip the whipstock)* Recheck the direction of the whipstock concave and POOH with gyro system if being used. Slack off weight until starting mill lug bolt is sheared.

- Install ditch magnets in mud system and drill pipe screen in top joint. Insure that ditch magnets are cleaned periodically during the casing milling process.

- Establish circulation and rotation. Slack off and tag top of whipstock and mill 20 to 24" until lug is completely milled. *(Check the Weatherford chart for correct distance as per proper casing size and weight)* Mill 12" and ream top of whipstock. Mill remainder of required distance for the starting cut. *(Note: Do not ream after lug is removed. Reaming could result in the starting mill damaging the top of the whipstock.* POOH.

- PU Quick-Cut™ window mill, 2- watermelon mills, 1-joint of drill pipe and drill collars and TIH. Stop 5' above the top of the whipstock and establish circulation and rotation. Mill entire length of the whipstock and rat hole. Ream up and down the area several times until you can slack off and pickup through the entire area without any hole drag with the rotary shut off. POOH.

- If the mills are undergauged, pick up window mill, 2-watermelon mills and drill collars. TIH to top of whipstock. Begin to elongate the window and ream entire length of whipstock until you can slack off and pick up through the window without any hole drag with the rotary shut off. POOH.

- When drilling operations begin; do not rotate on the face of the whipstock with a rock bit or stabilizer.

- **Note:** The above procedure may vary with the individual supplier's whipstock system. The whipstock supervisor on location will be responsible for the whipstock operations and procedures.

DRILLING OPERATIONS

Drilling Section

Comments	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	VSec (ft)	N/-S (ft)	E/-W (ft)	Closure (ft)	at Azim (°)	DLS (°/100ft)	TF (°)
Tie-In	9825.00	12.27	72.5	9783.57	304.95	-39.17	587.61	588.91	93.81	0.00	-86.4
	9900.00	12.61	62.2	9856.82	318.56	-32.96	602.46	603.36	93.13	3.00	-76.3
	10000.00	13.63	49.7	9954.23	339.67	-20.24	621.11	621.44	91.87	3.00	-64.2
	10100.00	15.18	39.4	10051.10	364.13	-2.50	638.41	638.42	90.22	3.00	-54.1
	10200.00	17.10	31.1	10147.16	391.86	20.22	654.31	654.62	88.23	3.00	-46.2
	10300.00	19.30	24.5	10242.16	422.79	47.86	668.76	670.47	85.91	3.00	-39.9
	10400.00	21.68	19.3	10335.84	456.83	80.34	681.72	686.44	83.28	3.00	-35.1
	10500.00	24.20	15.1	10427.93	493.89	117.57	693.16	703.06	80.37	3.00	-31.2
	10600.00	26.81	11.6	10518.18	533.87	159.45	703.05	720.90	77.22	3.00	-28.1
	10700.00	29.48	8.8	10606.35	576.66	205.87	711.36	740.55	73.86	3.00	-25.5
EOC	10718.95	30.00	8.3	10622.81	585.07	215.17	712.75	744.52	73.20	3.00	0.0
Weber Target	12767.57	30.00	8.3	12397.00	1500.00	1228.73	860.36	1500.00	35.00	0.00	0.0
TD / PBHL	13922.25	30.00	8.3	13397.00	2015.69	1800.01	943.56	2032.32	27.66	0.00	0.0

-
- RU mud loggers
- PU steerable drilling assembly w/MWD system

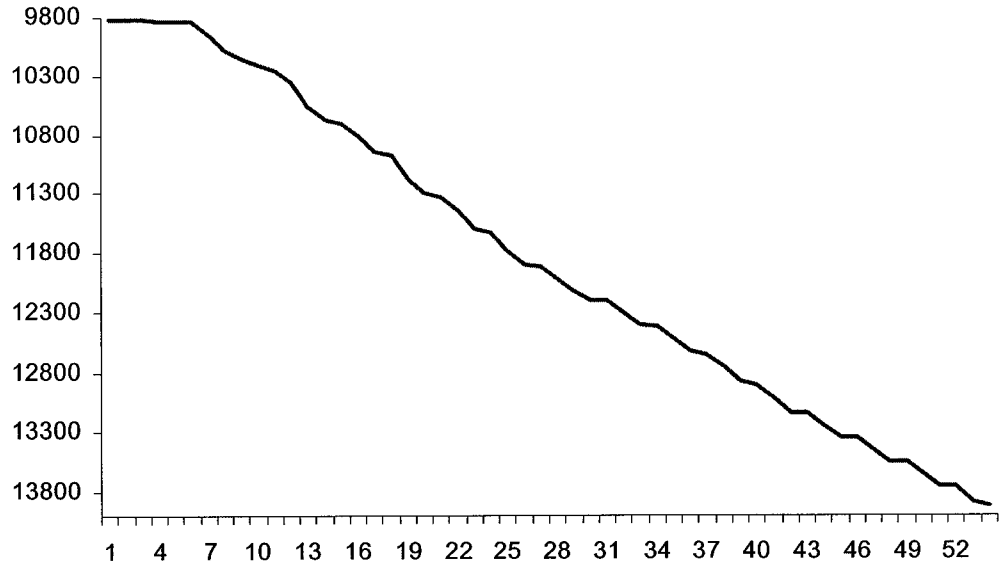
ELEMENT	LENGTH	OD
Bit	0.50	5.88
Downhole Mud Motor	18.00	4.75
Float Sub	2.00	4.75
UBHO Sub	2.00	4.75
NMDC w/MWD System	30.00	4.75
MWD Pulser Sub	5.00	4.75
Non-Magnetic Drill Collar	30.00	4.75
4 3/4" Drill Collars	186.00	4.75
3 1/2" HWDP	1550.00	3.50
3 1/2" Drill Pipe	As Req'd	3.50

- RIH with steerable drilling assembly
- RIH with highside orient assembly to +/-72 degrees azimuth
- Continue to survey with MWD system until expected magnetic interference from the casing is eliminated while time drilling off whipstock.
- Orient assembly w/MWD and drill to end of angle build, *as per above planned well profile*
- POOH with steerable drilling system at end of angle build
- Reduce motor bent housing angle - TIH (*option to pu rotary drilling assembly can be made at this point.)*
- Drill to total depth bit trip as required
- Circulate, POOH laying down drill pipe

BIT PROGRAM

RUN NO.	BIT SIZE	IADC CODE	DEPTH OUT	DAYS	FEET	HRS	ACC HRS	ROP	WOB Klbs	RPM
			9,825				KOP 9825'			
1	5 7/8	537	10,150	3.2	325	45	45	7.2	15/25	120/150
2	5 7/8	537	10,350	5.5	200	29	74	6.9	15/25	120/150
3	5 7/8	537	10,600	8.4	250	40	114	6.3	15/25	120/150
4	5 7/8	537	10,975	11.7	375	45	159	8.3	15/25	120/150
5	5 7/8	637	11,325	15.0	350	46	205	7.6	15/25	120/150
6	5 7/8	637	11,625	18.2	300	43	248	7.0	15/25	120/150
7	5 7/8	637	11,925	21.5	300	45	293	6.7	15/25	120/150
8	5 7/8	637	12,200	24.8	275	45	338	6.1	15/25	120/150
9	5 7/8	637	12,425	27.8	225	39	377	5.8	15/25	120/150
10	5 7/8	637	12,650	30.9	225	41	418	5.5	15/25	120/150
11	5 7/8	637	12,900	33.9	250	40	458	6.3	15/25	120/150
12	5 7/8	637	13,150	37.0	250	41	499	6.1	15/25	120/150
13	5 7/8	637	13,350	39.8	200	35	534	5.7	15/25	120/150
14	5 7/8	637	13,550	42.6	200	36	570	5.6	15/25	120/150
15	5 7/8	637	13,750	45.5	200	38	608	5.3	15/25	120/150
16	5 7/8	637	13,922	48.3	172	35	643	4.9	15/25	120/150

Estimated Days vs. Depth



ANSCHUTZ EXPLORATION CORPORATION 555 Seventeenth Street, Suite 2400, Denver, CO 80202

ANSCHUTZ

Date: 4/2/01

Number of pages including cover sheet: 2

Mr. Al MaKee

Phone:

Fax phone: (801) 359-3940

From: Susan Miller

AEC

Phone: (303) 299-1344

Fax phone: (303) 299-1518

RE: A.L. & L. #14-33ST, Summit County, Utah
BOP Stack Diagram – 10,000 psi

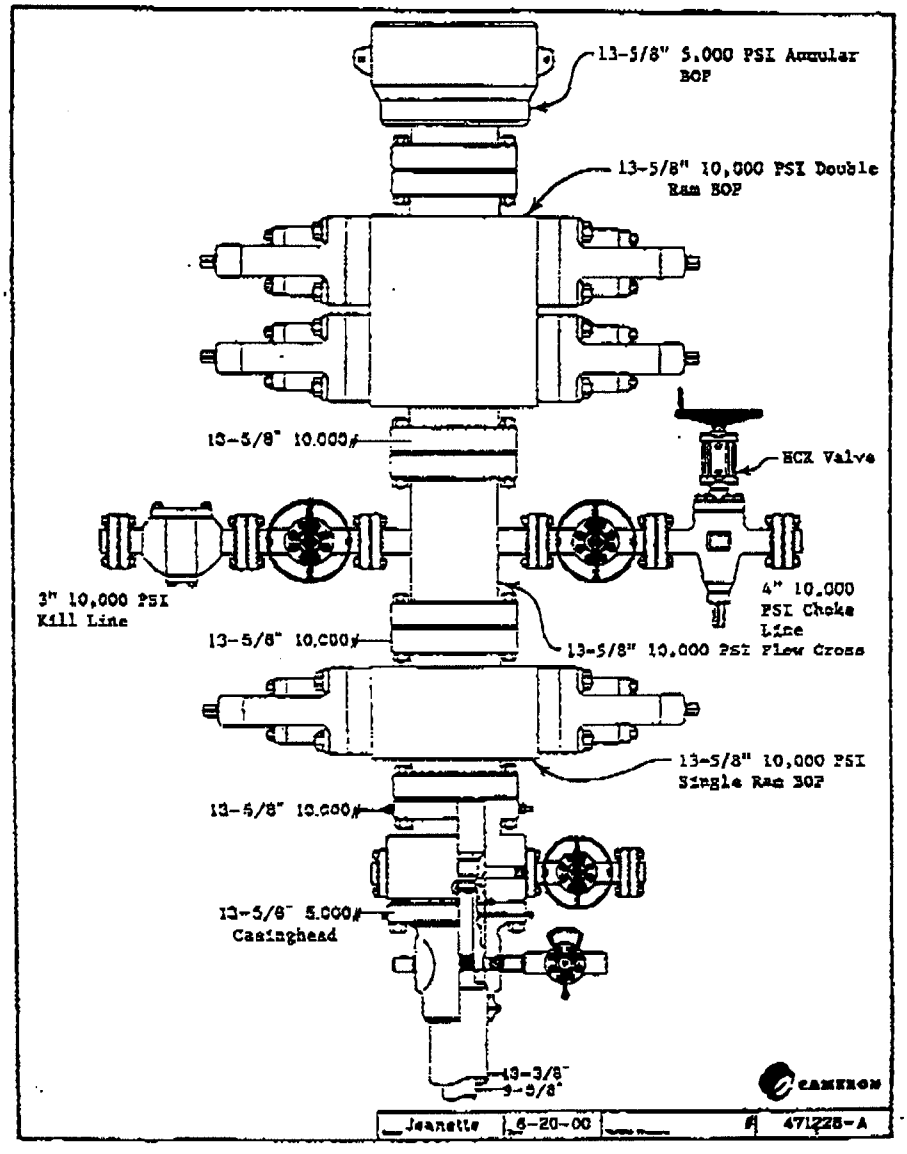
Dear Mr. MaKee,

Please see attached a copy of the BOP diagram for the referenced well. Please contact me with any questions. ~~Apologize for the poor quality of the diagram.~~

Susan Miller

Confidentiality Note: The information contained in this facsimile transmittal sheet and document(s) that follow are for the exclusive use of the addressee and may contain confidential, privileged, proprietary, and non-dissoluble information. If the recipient of this facsimile is not the addressee, or person responsible for delivering this facsimile to the addressee, such recipient is strictly prohibited from reading, photocopying, distributing, or otherwise using this facsimile transmission, or its contents, in any way. If the recipient has received this facsimile transmission in error, please call us immediately and return the facsimile transmission to us via the United States Postal service. We will gladly reimburse your telephone and postage expenses. Thank you.

APR 2 2001


13-5/8" 5,000 PSI Annular BOP
13-5/8" 10,000 PSI Double Ram BOP
13-5/8" 10,000#
HCR Valve
3" 10,000 PSI Kill Line
4" 10,000 PSI Choke Line
13-5/8" 10,000#
13-5/8" 10,000 PSI Flow Cross
13-5/8" 10,000 PSI Single Ram BOP
13-5/8" 10,000#
13-5/8" 5,000# Casinghead
13-3/8"
9-5/8"
CAMERON
Jeanette
6-20-00
471228-A

Michael O. Leavitt
Governor
Kathleen Clarke
Executive Director
Lowell P. Braxton
Division Director

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)

April 4, 2001

The Anschutz Corporation
555 - 17th St, Suite 2400
Denver, CO 80202

Re: A. L. & L. 14-33ST Well, 642' FSL 748' FEL SE SE Sec. 33 T. 6 North R. 8 East Summit County, Utah (surface) and, 1400' FNL 300' FEL NW, Sec. 10, T. 14 North, R. 121 West, , Uinta County, Wyoming (bottom hole)

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 43-043-30315.

Sincerely,

John R. Baza
Associate Director

er
Enclosures
cc: Summit and County Assessor
Uinta County Wyoming

Operator: The Anschutz Corporation

Well Name & Number A. L. & L. 14-33ST

API Number: 43-043-30315

Lease: FEE

Surface Location: SE SE **Sec.** 33 **T.** 6 North **R.** 8 East

Bottom Location: NW **Sec.** 10 **T.** 14 North **R.** 121 West

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

   The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

   - 24 hours prior to cementing or testing casing
   - 24 hours prior to testing blowout prevention equipment
   - 24 hours prior to spudding the well
   - within 24 hours of any emergency changes made to the approved drilling program
   - prior to commencing operations to plug and abandon the well

   The following are Division of Oil, Gas and Mining contacts and their work telephone numbers (please leave a voice mail message if the person is not available to take the call):

   - Dan Jarvis at (801) 538-5338
   - Carol Daniels at (801) 538-5284 (spud)

3. Reporting Requirements

   All required reports, forms and submittals will 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)

5. Production from this well will be limited to the Weber Formation (Cause 189-5).

6. Provide copy of the approved Wyoming APD plus any conditions of approval.

7. All operations shall adhere to Rule R649-3-12. Drilling practices for hydrogen sulfide areas and formations.

8. At the conclusion of drilling submit a complete copy of the directional survey, <u>including plan view and vertical sections.</u>

From: "Eric Root" <Eric.Root@aec-denver.com>
To: <nrogm.jbaza@state.ut.us>
Date: 4/9/01 10:07AM
Subject: Wellbore Diagram - AL&L 14-33

John,

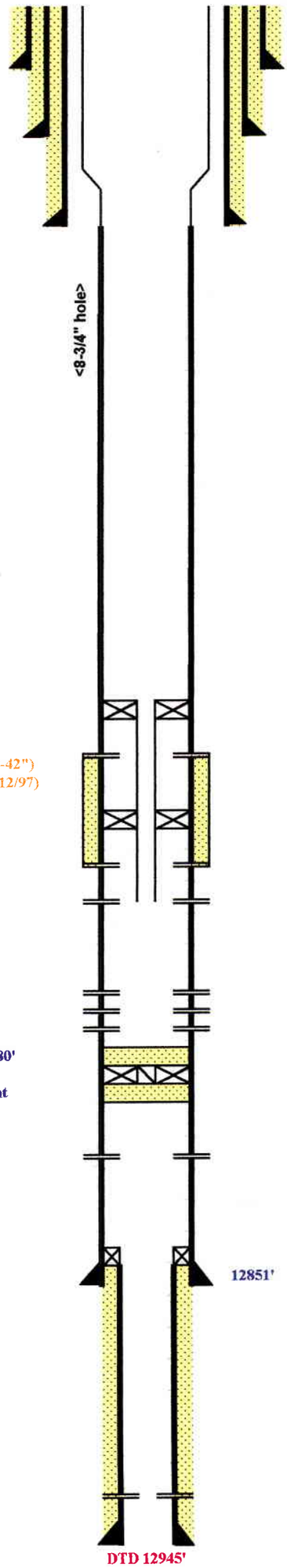
We had planned to plug back by setting plugs in the tubing below each packer. When going in the hole with a wireline set plug, the first plug pre-set above the top packer. We would like to modify the plugging order by setting a cast iron bridge plug above the top packer, and capping it with 100' of Class G cement.

Please call me when you receive this diagram.

Eric Root
Anschutz Exploration
303-299-1479

<<AL&L 14-33 Well Profile.xls>>

ANSCHUTZ EXPLORATION CORPORATION WELLBORE SCHEMATIC	
SEC: 33-T6N-R8E	WELL NAME: AL&L 14-33 COUNTY, STATE: Summit, Utah
TD: 12,945'	GROUND ELEVATION: 7147' KB ELEVATION: 7170'



Conductor @ 60'

60'

Surface Casing
1500', 20", 106.5#
cemented to surface

1500'

XO 3049'

Intermediate Casing
5179', 13-3/8", 68#, L80
814', 13-5/8", 88.2#, HCL80
cemented to surface w/3980 sks
50/50 POZ & 1300 sks G

5993'

Baker "DB" Pkr (set @ 11,512')

6/9/97 Sqz Perfs (11540-42', 11740-42")
circulated 80 sks between perfs (6/12/97)

Baker "DB" Pkr (set @ 11690')

6/2/97 Sqz Perfs (11805'-08')
sqz'd w/55 sks

Top Phosphoria (11910' md)

3/2/99 Phos Perfs 12040' - 12100'
5/5/98 Phos Perfs 12101' - 195'

Baker thru -tbg cmt ret set @ 12280'
Sqz'd w/2000 gal
2/99 Perm Seal & micro matrix cmt

5/4/98 Phos Perfs 12340' - 370'
4 spf, 1-11/16"

7" x 20' CTC ECP
6/11/97 Perfed ECP 12347' - 348'
& 12363' - 364', sqz'd 125 sks

Baker Z&P Pkr, w/CMC Hanger
TOL +/- 12382'

12851'

Top Weber (12706' md)

Production Casing
3049', 7-5/8", 39#, L80
9572', 7", 32#, L80, STL

7/9/97 Weber Perfs
12820' - 900', 1-11/16" RTG

2/7/98 Re-Perf Weber
12820' - 845', 1-11/16" EnerJet

Production Liner
5", 18#, L80, SLX

DTD 12945'

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

April 9, 2001

State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
1594 W. North Temple, Ste. 1210
Salt Lake City, UT 84116

RE: *A. L. & L. #14-33*
SESE Section 33, T6N, R8E
Summit County, Utah
Sundry Notice (form 9) – Change of Plans for Plug Back

Dear Ladies and Gentlemen:

Enclosed please find the referenced Sundry Notice for your records.

Please contact me at (303) 299-1344 with any questions and thank you for your assistance.

Sincerely,

ANSCHUTZ EXPLORATION CORPORATION

Susan M. Miller
Operations Technician

SMM
Attachments

RECEIVED
APR 11 2001
DIVISION OF
OIL, GAS AND MINING

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: N/A
7. UNIT or CA AGREEMENT NAME: N/A

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER _____

CONFIDENTIAL

8. WELL NAME and NUMBER: A. L. & L. #14-33

2. NAME OF OPERATOR: THE ANSCHUTZ CORPORATION

9. API NUMBER: 43-043-30315

3. ADDRESS OF OPERATOR: 555 17th St., Ste. 2400 CITY Denver STATE CO ZIP 80202
PHONE NUMBER: (303) 298-1000

10. FIELD AND POOL, OR WILDCAT: Yellow Creek Deep

4. LOCATION OF WELL
FOOTAGES AT SURFACE: 642' FSL and 748' FEL (Summit County, Utah) COUNTY: Summit
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SESE 33 6N 8E 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
4/11/2001	☐ 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.

Previous plug back plans will change due to a mechanical problem on the well. The existing wellbore will be abandoned by setting a 7" cast iron bridge plug in the casing at approximately 11,480'. One hundred (100') of Class "G" cement (20 sacks of Neat Class "G") will be placed on top of the packer. Class "G" cement will also be circulated behind the casing from approximately 10,025' to 9,625' to facilitate whipstock operations for the A. L. & L. #14-33ST wellbore. Verbal approval for these operations was given to Eric Root by John Baza on 04/09/01.

NAME (PLEASE PRINT) Eric Root TITLE Rocky Mountain Engineering Mgr.
SIGNATURE _____ DATE 4/9/2001

RECEIVED
APR 11 2001
DIVISION OF OIL, GAS AND MINING

(This space for State use only)
APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 4/11/01
BY: John R. Baza

(5/2000) (See Instructions on Reverse Side)

BOP Test AR Loc. _____ IV Loc. _____ Date 5-7-01

Operator ANSCHUTZ Well Number A L & L 14-33

Drilling Contractor UNIT Rig # 160 Tester DON

Time:	Test No.	Results:
9:10P	#1	Out side manifold valves HCR
9:30P	#2	inside manifold valves HCR
9:50P	#3	Blind rams, inside kill, Supper choke
1:05A	#4	Bottom Pipe & ~~Dart valve~~. Tiw valve
1:30A	#5	Top Pipe 2nd Kill Riser Tiw valve
1:47A	#6	Top Pipe check valve HCR Tiw valve
2:15A	#7	Top Pipe manual 1st Kill
2:42A	#8	Hydrill
3:05A	#9	Dart valve
5:05A	#10	Lower kelly
5:37	#11	uper kelly
	#12	
	#13	
	#14	
	#15	

_____ Acc. Function Test YES NO Pump Time _____ End Close PSI _____

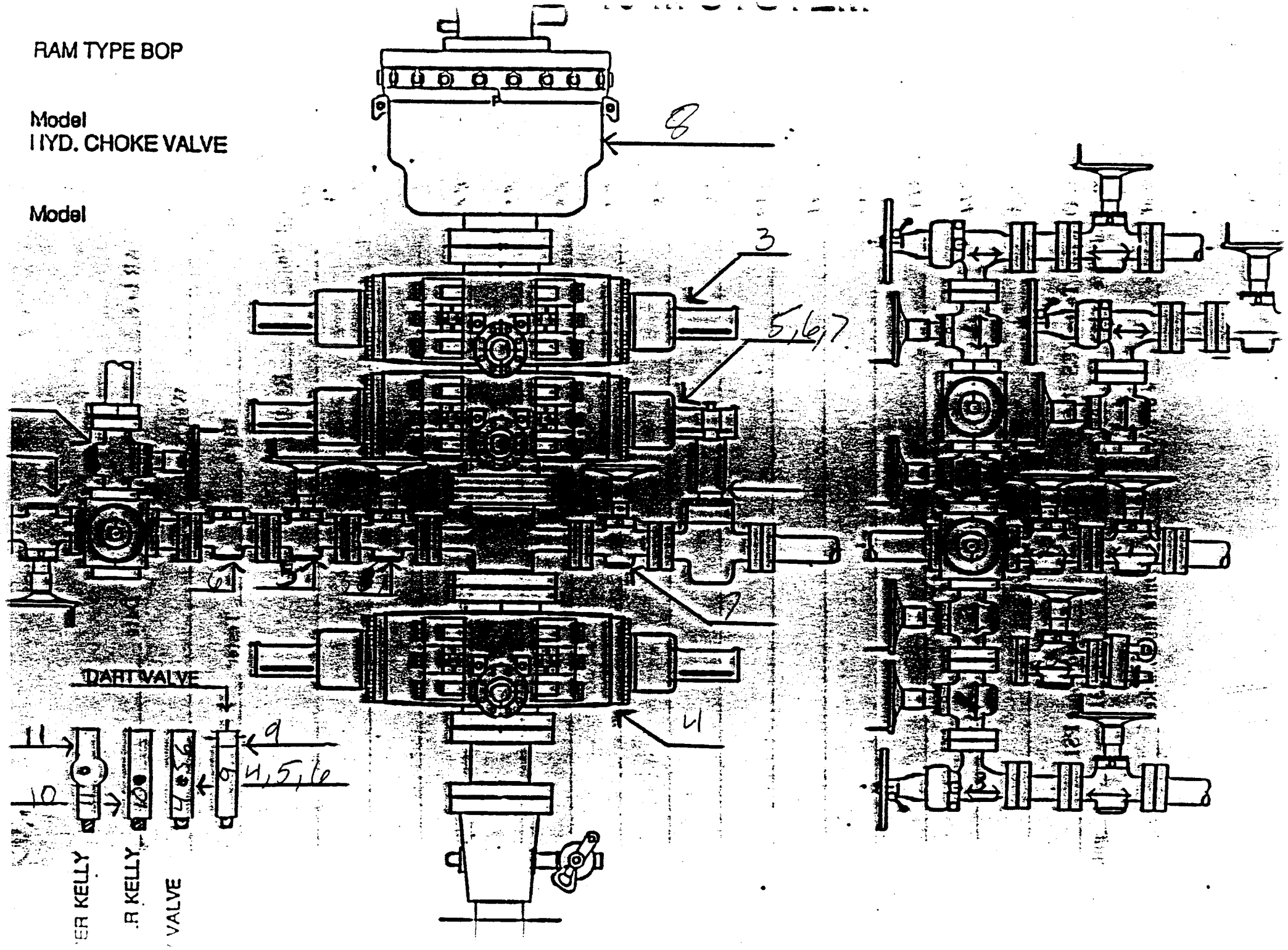
Acc. Tank Size in Inches (_____ W _____ D _____ L) ÷ 231 = _____ gal.

_____ N2 # of Bottles _____ # of low _____ Date last checked _____

RAM TYPE BOP

Model
HYD. CHOKE VALVE

Model



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

B.O.P TEST REPORT

B.O.P. TEST PERFORMED ON (DATE) 5/7/01

OIL COMPANY Anschutz

WELL NAME & NUMBER AL&L 14-33 ST

SECTION 33

TOWNSHIP 6N

RANGE 8E

COUNTY & STATE Summit, Utah

DRILLING CONTRACTOR Unit 166

OIL COMPANY SITE REPRESENTATIVE Jim Hill

RIG TOOL PUSHER Larry Evans

TESTED OUT OF Evanston, Wyoming

NOTIFIED PRIOR TO TEST

COPIES OF THIS TEST REPORT SENT TO: Utah Division of Oil, Gas & Mining

Anschutz- Jim Hill

Unit Drilling – Larry Evans

ORIGINAL CHART & TEST REPORT ON FILE AT:

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

TESTED BY: Don Bonner

RECEIVED
MAY 11 2001
DIVISION OF
OIL, GAS AND MINING

Double Jack Testing & Services Inc.

FIELD TICKET
№ 17729

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

Field Operations: Shoshoni, WY (307) 876-2308
Evanston, WY (307) 789-9213
Rock Springs, WY (307) 382-4020
Big Piney, WY (307) 276-5265
Vernal, UT (435) 781-0448

DATE 5-7-01
[X] OPERATOR ANSCHUTZ
[ ] CONTRACTOR UNIT 166
WELL NAME AL+L 14-33ST

COUNTY	STATE	SECTION	TOWNSHIP	RANGE
~~UINTA~~ SUMMIT	~~WYO.~~ UT.	33	6N	8E

Items Tested:

	LOW TEST PSI	TIME HELD MINUTES	HIGHTEST PSI	TIME HELD MINUTES
Top Pipe Rams	250	5	5000	10
Bottom Pipe Rams	250	5	5000	10
Blind Rams	250	5	5000	10
Annular B.O.P.	250	5	3500	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				
Lower Kelly				
Floor Valve	250	5	5000	10
Dart Valve	250	5	5000	10
Casing				

Closing Unit PSI
Closing Time of Rams
Closing Time of Annular
Closed Casing Head Valve yes
Set Wear Sleeve

COMMENTS

TOP P 3000 2500 PSI
BOTT. P 2500 2200 PSI
Blind 2200 2000 PSI
ANN 2000 1500 PSI
HCR 1500 1450 PSI
Recover Time 50 sec
Drop 800 PSI

ADDITIONAL TESTS & COMMENTS

		CHARGES
TEST PLUG	7"	75.00
TOP SUB.	3 1/2	50.00
KELLY SUB.	3 1/2	50.00
X-OVER SUB.	3 1/2	50.00
OTHER		

QUANTITY	RATES		
7 hrs.	UNIT RATES	Set up charge First 7 hrs. approx	1000.00
2	ADDITIONAL	Per HR. over setup charge 4 ATO 6A	120.00
20	MILEAGE	round trip @ 1.50 per mile	30.00
160 gal	~~METHANOL~~	ANTIFREEZE @ 2.50 per	400.00
	OTHER		

PURCHASE ORDER #

Jim

COMPANY REPRESENTATIVE

DON BONNER

TESTED BY

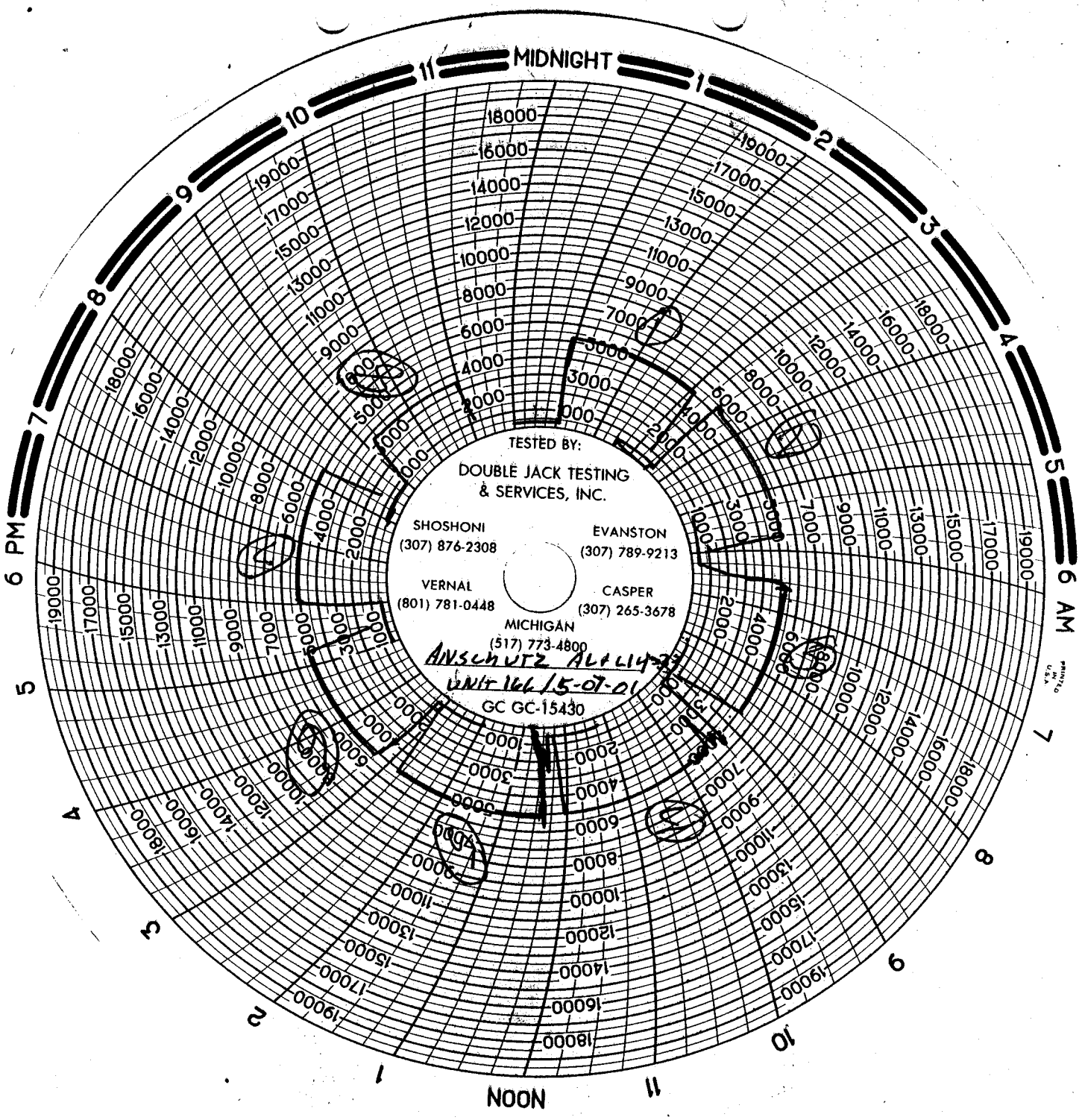
154 THANK YOU!

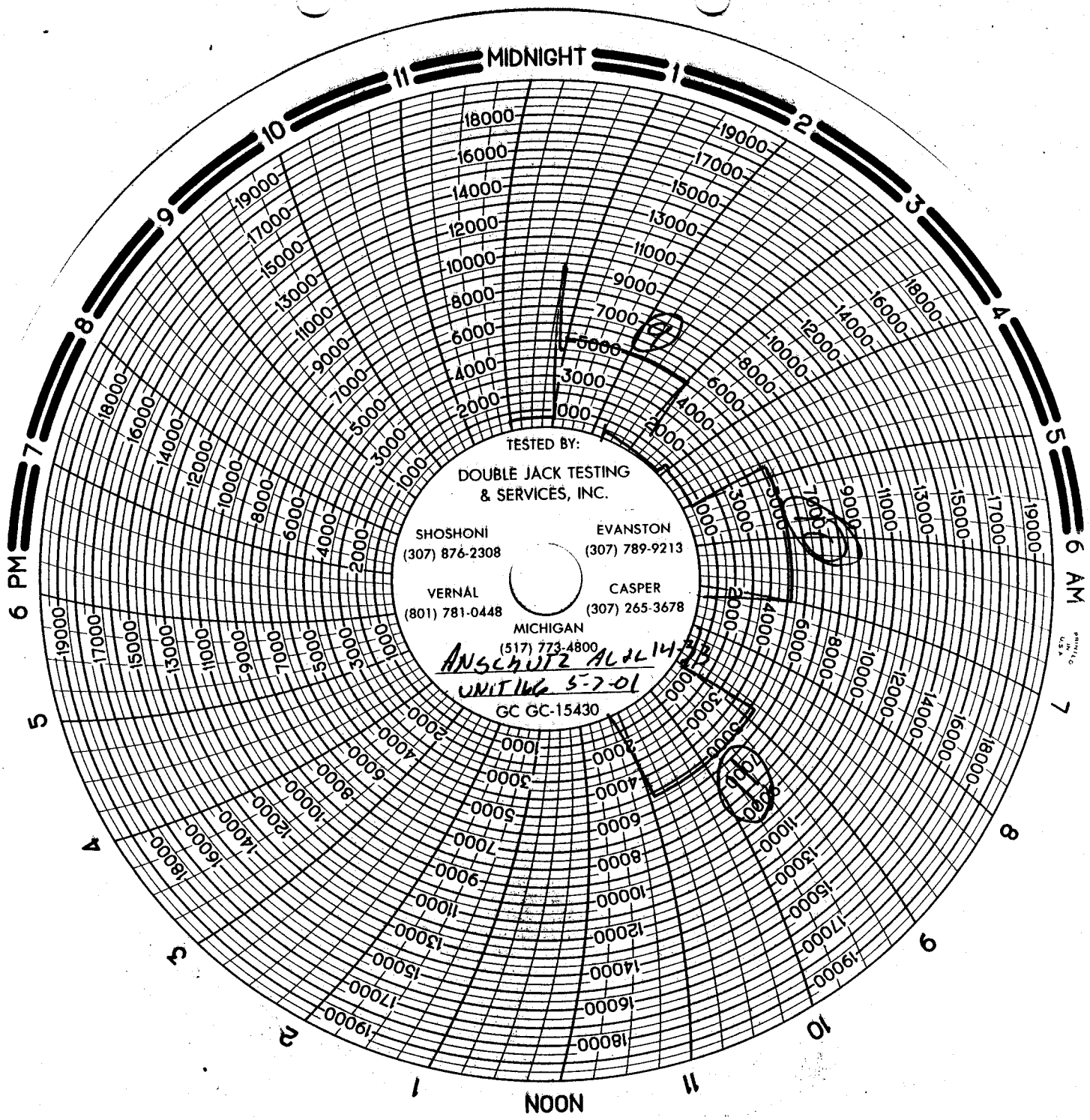
DOUBLE JACK TESTING UNIT NUMBER

SUBTOTAL 1775.00
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.


MIDNIGHT
NOON
6 AM
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
ANSCHUTZ AL+LI
UNIT 166 / 5-07-01
GC GC-15430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VERNAL
(801) 781-0448
CASPER
(307) 265-3678
MICHIGAN
(517) 773-4800
ANSCHUTZ AL&L 14-3
UNIT 166 5-7-01
GC GC-15430

CONFIDENTIAL

DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

Name of Company: ANSCHUTZ EXPLORATION CORP

Well Name: AL&L 14-33ST

Api No.. 43-043-30315 LEASE TYPE: FEE

Section 33 Township 06N Range 08E County SUMMIT

Drilling Contractor _____ RIG # _____

SPUDDED:

Date 05//10/2001

Time 9:00 A M

How ROTARY

Drilling will commence _____

Reported by JIM HILL

Telephone # 1-307-679-6902

Date 05/11/2001 Signed: CHD

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

CONFIDENTIAL

November 14, 2001

Via Federal Express

State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
1594 W. North Temple, Ste. 1210
Salt Lake City, UT 84116
Attn: Ms. Carol Daniels

RE: *A. L. & L. #14-33ST*
Summit County, Utah
API No. 43-043-30315
Well Completion or Recompletion Report (form 8)

Dear Ms. Daniels:

Enclosed please find a copy of the referenced report for your approval.

Please contact me at (303) 299-1344 with any questions and thank you for your assistance.

Sincerely,

ANSCHUTZ EXPLORATION CORPORATION

Susan M. Miller
Operations Technician

SMM
Attachments

RECEIVED
NOV 15 2001
DIVISION OF
OIL, GAS AND MINING

CONFIDENTIAL

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

AMENDED REPORT ☐ (highlight changes) FORM 8

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. LEASE DESIGNATION AND SERIAL NUMBER: Fee
6. IF INDIAN, ALLOTTEE OR TRIBE NAME: n/a
7. UNIT or CA AGREEMENT NAME: n/a
8. WELL NAME and NUMBER: A. L. & L. #14-33ST
9. API NUMBER: 43-043-30315
10 FIELD AND POOL, OR WILDCAT: Yellow Creek Deep
11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SESE 33 6N 8E
12. COUNTY: Summit (Sfc)
13. STATE: UTAH

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ DRY ☐ OTHER Sidetrack

b. TYPE OF WORK: NEW ☐ HORIZ. ☐ DEEP- ☑ RE- ☐ DIFF. ☐

CONFIDENTIAL PERIOD EXPIRED 9-12-02

2. NAME OF OPERATOR: The Anschutz Corporation

3. ADDRESS OF OPERATOR: 555 17th St., Ste. 2400 CITY Denver STATE Co ZIP 80202 PHONE NUMBER: (303) 298-1000

4. LOCATION OF WELL (FOOTAGES): 642' FSL and 748' FEL (Summit County, Ut)

AT TOP PRODUCING INTERVAL REPORTED BELOW: 1400' FNL and 300' FEL (Uinta County, Ut)

AT TOTAL DEPTH: 1400' FNL 300' FEL Uinta Co. Ut T14N, R121W

14. DATE SPUDDED: 5/8/2001
15. DATE T.D. REACHED: 6/18/2001
16. DATE COMPLETED: 8/12/2001 ABANDONED ☐ READY TO PRODUCE ☑
17. ELEVATIONS (DF, RKB, RT, GL): 7170' KB
18. TOTAL DEPTH: MD 13,636 TVD
19. PLUG BACK T.D.: MD 13,612 TVD
20. IF MULTIPLE COMPLETIONS, HOW MANY? * n/a
21. DEPTH BRIDGE PLUG SET: MD 13,330 TVD

22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each)
Cement Bond Log 11-20-01

23.
WAS WELL CORED? NO ☑ YES ☐ (Submit analysis)
WAS DST RUN? NO ☑ YES ☐ (Submit report)
DIRECTIONAL SURVEY? NO ☐ YES ☑ (Submit copy) Rec

24. CASING AND LINER RECORD (Report all strings set in well)

HOLE SIZE	SIZE/GRADE	WEIGHT (#/ft.)	TOP (MD)	BOTTOM (MD)	STAGE CEMENTER DEPTH	CEMENT TYPE & NO. OF SACKS	SLURRY VOLUME (BBL)	CEMENT TOP **	AMOUNT PULLED
26"	20"	106.5	0	1,500		2195	Cal	Surface	0
17-½"	13-3/8" L80	68	0	5,179					0
17-½"	13-5/8" HCL80	88.2	5,179	5,993		5280	Cal	Surface	0
8-3/4"	7-5/8" L80	39	0	3,049					0
8-3/4"	7" L80	32	3,049	9,825					0
5-7/8"	3-½" L80	10.2	9,442	13,647	Liner	175	CBL	9752	0

25. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-7/8"	9,458	9,452						

26. PRODUCING INTERVALS

FORMATION NAME	TOP (MD)	BOTTOM (MD)	TOP (TVD)	BOTTOM (TVD)
(A) Weber	13,000	13,155		
(B) Weber	13,366	13,608		
(C)				
(D)				

27. PERFORATION RECORD

INTERVAL (Top/Bot - MD)		SIZE	NO. HOLES	PERFORATION STATUS	
13,000	13,155	2-1/8	250	Open ☑	Squeezed ☐
13,366	13,608	2-1/8	268	Open ☐	Squeezed ☑
				Open ☐	Squeezed ☐
				Open ☐	Squeezed ☐

28. ACID, FRACTURE, TREATMENT, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND TYPE OF MATERIAL
13000 - 13155	18946 gals 7-½% HCL and 30% N2
13366 - 13608	14000 gals 7-2% HCL with 30% N2

29. ENCLOSED ATTACHMENTS:

☐ ELECTRICAL/MECHANICAL LOGS ☐ GEOLOGIC REPORT ☐ DST REPORT ☐ DIRECTIONAL SURVEY
☐ SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION ☐ CORE ANALYSIS ☑ OTHER: Sent previously

30. WELL STATUS: Producing

RECEIVED
DIVISION OF OIL, GAS AND MINING

(5/2000)

(CONTINUED ON BACK)

31. INITIAL PRODUCTION

INTERVAL A (As shown in item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
9/5/2001		8/11/2001		7			24	6,555	0	Flowing
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:
21/64	3,045									

INTERVAL B (As shown in item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

INTERVAL C (As shown in item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

INTERVAL D (As shown in item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

32. DISPOSITION OF GAS (Sold, Used for Fuel, Vented, Etc.)

Flared

33. SUMMARY OF POROUS ZONES (Include Aquifers):

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 (MD)	Bottom (MD)	Descriptions, Contents, etc.

34. FORMATION (Log) MARKERS:

Name	Top (Measured Depth)
Kick Off Point	9,848
Woodside Shale	10,934
Dinwoody Fm	11,680
Phosphoria Fm	11,956
Weber Anhydrite	12,856
Weber Sandstone	12,886

35. ADDITIONAL REMARKS (Include plugging procedure)

Please see attached Wellbore Diagram. Note, second Weber interval was plugged back.

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

NAME (PLEASE PRINT) Eric Root TITLE Rocky Mt. Engineering Manager

SIGNATURE DATE 11/14/2001

This report must be submitted within 30 days of

- completing or plugging a new well
- drilling horizontal laterals from an existing well bore
- recompleting to a different producing formation
- reentering a previously plugged and abandoned well
- significantly deepening an existing well bore below the previous bottom-hole depth
- drilling hydrocarbon exploratory holes, such as core samples and stratigraphic tests

* ITEM 20: Show the number of completions if production is measured separately from two or more formations.

** ITEM 24: Cement Top – Show how reported top(s) of cement were determined (circulated (CIR), calculated (CAL), cement bond log (CBL), temperature survey (TS)).

Send to: Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801

Phone: 801-538-5340

Fax: 801-359-3940

(5/2000)

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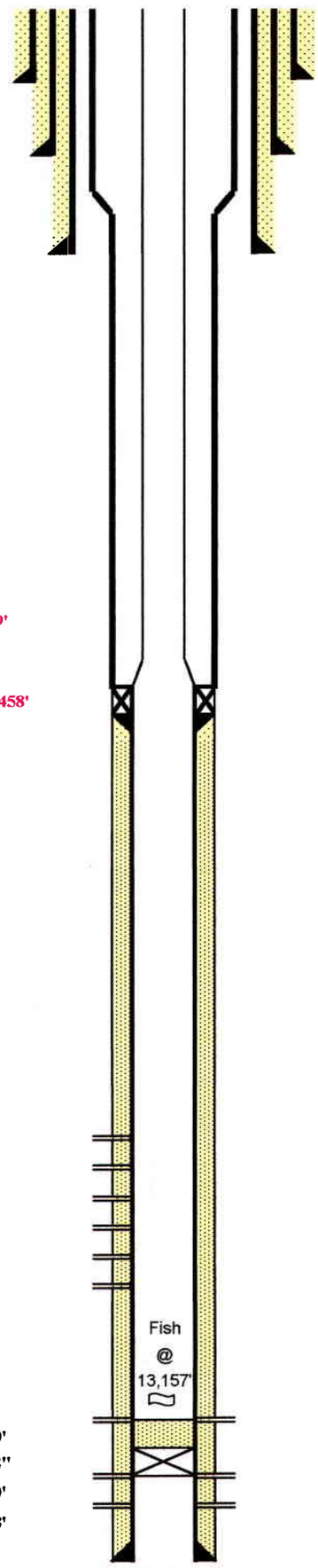
ANSCHUTZ EXPLORATION CORPORATION WELLBORE SCHEMATIC - SIDETRACK WELLBORE	
SEC: 33-T6N-R8E	WELL NAME: AL&L 14-33 ST COUNTY, STATE: Summit, Utah
TD: 13,647'	GROUND ELEVATION: 7147' KB ELEVATION: 7170'



Conductor @ 60'

60'

Surface Casing
1500', 20", 106.5#
cemented to surface

1500'

XO @ 3049'

5993'

Intermediate Casing
5179', 13-3/8", 68#, L80
814', 13-5/8", 88.2#, HCL80
cemented to surface w/3980 sks
50/50 POZ & 1300 sks G

Production Casing
0-3049', 7-5/8", 39#, L80
3049'-Liner Hanger @ 9442'
- 7", 32#, L80, STL

Tubing
2-7/8", 7.7#, L80 Vam Ace
Camco SGSSV @ 208'
Camco Injection Mandrel @ 3019'
R Nipple (2.188" ID) @ 3071'
R Nipple (2.188" ID) @ 9400'
10' Seal Unit Stung into PBR @ 9458'

Liner Top @ 9,442'
Liner Top Packer "CSP-H" @ 9,452'
Weatherford Model CHR Liner Hanger @
4" PBR @ 9,458'
TOC Inside 7" casing @ 9,752'
Top of 7" window @ 9,825'

Top of Phosphoria @ 11,986' md

Top of Weber @ 12,998' md
8/9/01 Perforate 13,000' - 13,064'
8/8/01 Perforate 13,064' - 13,094'
8/8/01 Perforate 13,116' - 13,132'
8/8/01 Perforate 13,140' - 13,155'

8/10/01 Acidize Weber 13,000' - 155'
w/ 18,946 gals. 7-1/2% HCl & 30% N_2.

Fish @ 13,157'

Dump bail 25' cmt. Left wireline fish @ 13,157'.
7/31/01 Weatherford Inflatable RBP @ 13,330'

7/18/01 Perforate 13,366' - 13,410'
7/18/01 Perforate 13,472' - 13,522"
7/17/01 Perforate 13,540' - 13,570'
7/17/01 Perforate 13,598' - 13,608'

7/20/01 Acidize Weber 13,366' - 608'
w/14000 gals. 7-/2% HCl w/30% N_2.

Liner
3-1/2" 10.2 ppf
L80 Vam Ace @ 13,647'
Cemented to 9752' w/ 175 sx 10 ppg cement w/ Kol Seal

PBTD 13,305'
TD 13,647'

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

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November 20, 2001

Via Federal Express

State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
1594 W. North Temple, Ste. 1210
Salt Lake City, UT 84116
Attn: Ms. Carol Daniels

RE: *A. L. & L. #14-33ST*
Summit County, Utah T06N R08E SEC-33
API No. 43-043-30315
Directional Survey and Cement Bond Log

Dear Ms. Daniels:

Enclosed please find a copy of the referenced reports for your records.

Please contact me at (303) 299-1344 with any questions and thank you for your assistance.

Sincerely,

ANSCHUTZ EXPLORATION CORPORATION

Susan M. Miller
Operations Technician

SMM
Attachments

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DIVISION OF
OIL, GAS AND MINING

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Weatherford
Malley

Job Number: WYL0501D043	State/Country: Utah,Summit
Company: Anschutz Exploration Corp.	Declination: 15.42
Lease/Well: A.L.& L #14-33 Reentry	Grid:
Location: Sec 33,-T6N-R8E	File name: A:\#14-33.SVY
Rig Name: Unit Drilling Rig # 166	Date/Time: 25-Jun-01 / 10:54
RKB: SHL:	Curve Name: WORK
G.L. or M.S.L.: BHL:	

WINSERVE SURVEY CALCULATIONS
Minimum Curvature Method
Vertical Section Plane 35.00
Vertical Section Referenced to Wellhead
Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Course Length FT	N-S FT	E-W FT	Vertical Section FT	BUILD RATE Deg/100	WALK RATE Deg/100	Dogleg Severity Deg/100
TIE-IN										
9825.00	12.27	72.50	9783.57		-39.17	587.61	304.95	.00	.00	.00
9871.00	14.80	70.00	9828.29	46.00	-35.69	597.79	313.65	5.50	-5.43	5.64
9966.00	16.10	64.50	9919.86	95.00	-25.87	621.09	335.05	1.37	-5.79	2.06
9998.00	16.40	58.60	9950.58	32.00	-21.60	628.95	343.05	.94	-18.44	
10030.00	16.70	56.60	9981.26	32.00	-16.72	636.64	351.47	.94	-6.25	2.01
10061.00	16.20	50.70	10010.99	31.00	-11.53	643.71	359.77	-1.61	-19.03	5.62
10093.00	16.60	46.10	10041.69	32.00	-5.53	650.46	368.56	1.25	-14.37	4.25
10125.00	17.40	44.90	10072.29	32.00	1.03	657.13	377.76	2.50	-3.75	2.73
10156.00	18.00	41.90	10101.82	31.00	7.88	663.60	387.08	1.94	-9.68	3.52
10188.00	18.40	38.10	10132.22	32.00	15.53	670.02	397.03	1.25	-11.88	3.91
10220.00	19.20	38.10	10162.52	32.00	23.65	676.38	407.33	2.50	.00	2.50
10251.00	20.60	38.10	10191.67	31.00	31.95	682.89	417.86	4.52	.00	4.52
10283.00	21.40	37.70	10221.54	32.00	41.00	689.94	429.31	2.50	-1.25	2.54
10315.00	21.10	37.20	10251.36	32.00	50.21	696.99	440.90	-.94	-1.56	1.10
10347.00	20.30	35.40	10281.30	32.00	59.32	703.69	452.21	-2.50	-5.62	3.19
10378.00	19.80	34.70	10310.42	31.00	68.02	709.79	462.84	-1.61	-2.26	1.79
10410.00	19.60	31.00	10340.55	32.00	77.08	715.64	473.61	-.62	-11.56	3.95
10442.00	19.40	30.70	10370.71	32.00	86.25	721.12	484.26	-.63	-.94	.70
10474.00	18.90	29.10	10400.94	32.00	95.34	726.35	494.72	-1.56	-5.00	2.27
10505.00	19.30	25.80	10430.24	31.00	104.34	731.02	504.77	1.29	-10.65	3.71

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Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Course Length FT	N-S FT	E-W FT	Vertical Section FT	BUILD RATE Deg/100	WALK RATE Deg/100	Dogleg Severity Deg/100
10539.00	19.10	26.50	10462.34	34.00	114.38	735.95	515.82	-.59	2.06	.90
10571.00	20.60	28.30	10492.44	32.00	124.02	740.96	526.59	4.69	5.63	5.06
10603.00	20.20	25.80	10522.44	32.00	133.95	746.03	537.63	-1.25	-7.81	3.00
10634.00	20.60	23.70	10551.49	31.00	143.77	750.55	548.27	1.29	-6.77	2.69
10666.00	20.20	23.80	10581.49	32.00	153.98	755.04	559.21	-1.25	.31	1.25
10698.00	20.80	22.00	10611.46	32.00	164.30	759.40	570.16	1.88	-5.63	2.72
10730.00	21.50	20.60	10641.30	32.00	175.06	763.59	581.38	2.19	-4.38	2.70
10761.00	22.00	18.50	10670.10	31.00	185.88	767.43	592.45	1.61	-6.77	2.98
10793.00	21.70	16.80	10699.80	32.00	197.23	771.05	603.81	-.94	-5.31	2.19
10824.00	22.40	15.00	10728.53	31.00	208.42	774.23	614.81	2.26	-5.81	3.14
10856.00	22.80	10.90	10758.08	32.00	220.40	776.98	626.20	1.25	-12.81	5.08
10888.00	24.20	7.50	10787.42	32.00	232.99	779.01	637.68	4.37	-10.62	6.09
10952.00	28.10	8.40	10844.86	64.00	260.92	782.93	662.80	6.09	1.41	6.13
11015.00	26.70	6.80	10900.79	63.00	289.65	786.77	688.54	-2.22	-2.54	2.51
11078.00	28.60	4.60	10956.60	63.00	318.74	789.66	714.02	3.02	-3.49	3.42
11141.00	31.20	.40	11011.21	63.00	350.10	790.98	740.47	4.13	-6.67	5.30
11205.00	31.70	.60	11065.81	64.00	383.49	791.27	767.99	.78	.31	.80
11268.00	31.70	2.60	11119.41	63.00	416.57	792.19	795.62	.00	3.17	1.67
11332.00	31.90	5.10	11173.81	64.00	450.22	794.46	824.48	.31	3.91	2.08
11395.00	33.00	7.00	11226.97	63.00	483.83	798.03	854.06	1.75	3.02	2.38
11458.00	30.40	4.40	11280.57	63.00	516.76	801.35	882.93	-4.13	-4.13	4.66
11522.00	29.00	3.50	11336.16	64.00	548.39	803.54	910.10	-2.19	-1.41	2.30
11586.00	29.00	1.80	11392.14	64.00	579.38	804.97	936.31	.00	-2.66	1.29
11650.00	29.70	358.80	11447.93	64.00	610.74	805.13	962.09	1.09	-4.69	2.54
11714.00	30.50	358.10	11503.30	64.00	642.82	804.25	987.87	1.25	-1.09	1.37
11778.00	32.20	359.60	11557.95	64.00	676.11	803.60	1014.76	2.66	2.34	2.92
11841.00	33.70	.20	11610.82	63.00	710.38	803.54	1042.80	2.38	.95	2.44
11904.00	34.90	.90	11662.86	63.00	745.87	803.89	1072.07	1.90	1.11	2.01
11968.00	35.50	.60	11715.16	64.00	782.76	804.37	1102.57	.94	-.47	.98
12031.00	34.80	359.60	11766.67	63.00	819.03	804.43	1132.32	-1.11	-1.59	1.44
12095.00	39.70	355.80	11817.60	64.00	857.71	802.81	1163.07	7.66	-5.94	8.45
12159.00	42.80	354.50	11865.72	64.00	899.75	799.23	1195.45	4.84	-2.03	5.03
12222.00	43.10	356.10	11911.83	63.00	942.53	795.71	1228.47	.48	2.54	1.79
12286.00	45.60	356.70	11957.59	64.00	987.17	792.91	1263.44	3.91	.94	3.96
	48.00	356.40	12000.72	63.00	1033.01	790.14	1299.40	3.81	-.48	3.83
12413.00	50.90	.20	12042.33	64.00	1081.60	788.73	1338.39	4.53	5.94	6.39
12475.00	49.90	4.50	12081.86	62.00	1129.31	790.68	1378.59	-1.61	6.94	5.58
12539.00	50.20	5.40	12122.95	64.00	1178.19	794.91	1421.06	.47	1.41	1.18
12602.00	50.60	5.40	12163.11	63.00	1226.51	799.48	1463.27	.63	.00	.63
12666.00	50.30	5.70	12203.86	64.00	1275.63	804.25	1506.24	-.47	.47	.59

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Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Course Length FT	N-S FT	E-W FT	Vertical Section FT	BUILD RATE Deg/100	WALK RATE Deg/100	Dogleg Severity Deg/100
12729.00	50.10	8.90	12244.20	63.00	1323.63	810.40	1549.08	-.32	5.08	3.92
12793.00	50.50	13.10	12285.09	64.00	1371.95	819.80	1594.05	.62	6.56	5.09
12856.00	50.20	15.50	12325.29	63.00	1418.94	831.77	1639.42	-.48	3.81	2.97
12920.00	49.40	18.50	12366.61	64.00	1465.68	846.06	1685.90	-1.25	4.69	3.79
12983.00	49.50	20.50	12407.57	63.00	1510.80	862.03	1732.02	.16	3.17	2.42
13047.00	50.20	24.20	12448.84	64.00	1556.03	880.64	1779.74	1.09	5.78	4.55
13110.00	50.60	25.20	12489.00	63.00	1600.13	900.92	1827.50	.63	1.59	1.38
13173.00	51.10	24.20	12528.78	63.00	1644.52	921.34	1875.57	.79	-1.59	1.46
13237.00	52.60	28.60	12568.32	64.00	1689.57	943.72	1925.31	2.34	6.88	5.89
13337.00	51.30	27.10	12629.96	100.00	1759.18	980.52	2003.44	-1.30	-1.50	1.76
13427.00	50.30	25.80	12686.84	90.00	1821.62	1011.58	2072.41	-1.11	-1.44	1.58
13491.00	49.70	26.10	12727.98	64.00	1865.71	1033.04	2120.82	-.94	.47	1.00
13555.00	49.10	25.30	12769.63	64.00	1909.49	1054.11	2168.78	-.94	-1.25	1.33
13594.00	49.00	24.60	12795.19	39.00	1936.20	1066.54	2197.78	-.26	-1.79	1.38
--Projection to Bit--										
13636.00	48.89	23.85	12822.77	42.00	1965.08	1079.53	2228.89	-.26	-1.79	1.38

CEMENT JOB REPORT

CUSTOMER	DATE	F.R. #	SERV. SUPV.
Anschutz Pinedale Corporation	18-JUN-04	393110002	Jaime Sandoval

LEASE & WELL NAME	LOCATION	COUNTY-PARISH-BLOCK
AL & L 14-33		Campbell Wyoming

DISTRICT	DRILLING CONTRACTOR RIG #	TYPE OF JOB
Rock Springs	Key	Squeeze-Perforation

SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT³	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER
	NA-P&A							
MATERIALS FURNISHED BY BJ								
(G neat cement) + .6% R-3 + .4% FL - 25		60	15.8	1.15	4.96	06:00	12	6.92
Mud		0	9.3	0	0	00:00	108	
						TOTAL	120	6.92

Available Mix Water 500 Bbl. Available Displ. Fluid 500 Bbl.

HOLE SIZE	% EXCESS	DEPTH	TBG-CSG-D.P. SIZE	WGT.	TYPE	DEPTH	GRADE	COLLAR DEPTHS SHOE	FLOAT	STAGE
0	0	0	7	32	CSG	9350	L-80			

LAST CASING SIZE	WGT	TYPE	DEPTH	PKR-CMT RET-BR PL-LINER BRAND & TYPE	DEPTH	PERF. DEPTH TOP	BTM	TOP CONN SIZE	THREAD	WELL FLUID TYPE	WGT.
				CEMENT RETAINER	9350			2.875	8RD	WATER BASED MU	9.3

DISPL. VOLUME VOLUME	UOM	DISPL. FLUID TYPE	WGT.	CAL. PSI BUMP PLUG	CAL. MAX PSI TO REV.	OP. MAX SQ. PSI	MAX TBG PSI RATED	Operator	MAX CSG PSI RATED	Operator	MIX WATER
54	BBLS										RIG

Circulation Prior to Job

Circulated Well: Rig [ ] BJ [X] | Circulation Time: 30 | Circulation Rate: 4 BPM

Mud Density In: 9.3 LBS/GAL Mud Density Out: 0 LBS/GAL | PV & YP Mud In: | PV & YP Mud Out:

Gas Present: NO [X] YES [ ] Units: | Solids Present at End of Circulation: NO [X] YES [ ]

Displacement And Mud Removal

Displaced By: Rig [ ] BJ [X] | Amount Bled Back After Job: 1 BBLS

Returns During Job: [ ] NONE [ ] PARTIAL [X] FULL | Method Used to Verify Returns:

Cement Returns at Surface: [X] YES [ ] NO | Were Returns Planned at Surface: [ ] NO [X] YES

Pipe Movement: [ ] ROTATION [ ] RECIPROCATION [ ] NONE [ ] UNABLE DUE TO STUCK PIPE

Centralizers: [X] NO [ ] YES | Quantity: | Type: [ ] BOW [ ] RIGID

Job Pumped Through: [ ] CHOKE MANIFOLD [ ] SQUEEZE MANIFOLD [ ] MANIFOLD [ ] NO MANIFOLD

Plugs

Number of Attempts by BJ: Competition: | Wiper Balls Used: [X] NO [ ] YES Quantity:

Plug Catcher Used: [X] NO [ ] YES | Parabow Used: [X] NO [ ] YES

Was There a Bottom: [X] NO [ ] YES | Top of Plug: FT | Bottom of Plug: FT

Squeezes (Update Original Treatment Report for Primary Job)

BLOCK SQUEEZE [ ] SHOE SQUEEZE [ ] TOP OF LINER SQUEEZE [ ] PLANNED [X] UNPLANNED [ ]

Liner Packer: [X] NO [ ] YES | Bond Log: [X] NO [ ] YES PSI Applied: 1153 Fluid Weight: 8.34 LBS/GAL

Casing Test (Update Original Treatment Report for Primary Job)

Casing Test Pressure: PSI With LBS/GAL Mud | Time Held: Hours Minutes

Shoe Test (Update Original Treatment Report for Primary Job)

Depth Drilled out of Shoe: FT | Target EMW: LBS/GAL Actual EMW: LBS/GAL

Number of Times Tests Conducted: | Mud Weight When Test was Conducted: LBS/GAL

Problems Before Job (I.E. Running Casing, Circulating Well, ETC)

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

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CEMENT JOB REPORT

Problems During Job (I.E. Lost Returns, Equipment Failure, Bulk Delivery, Foaming, ETC)

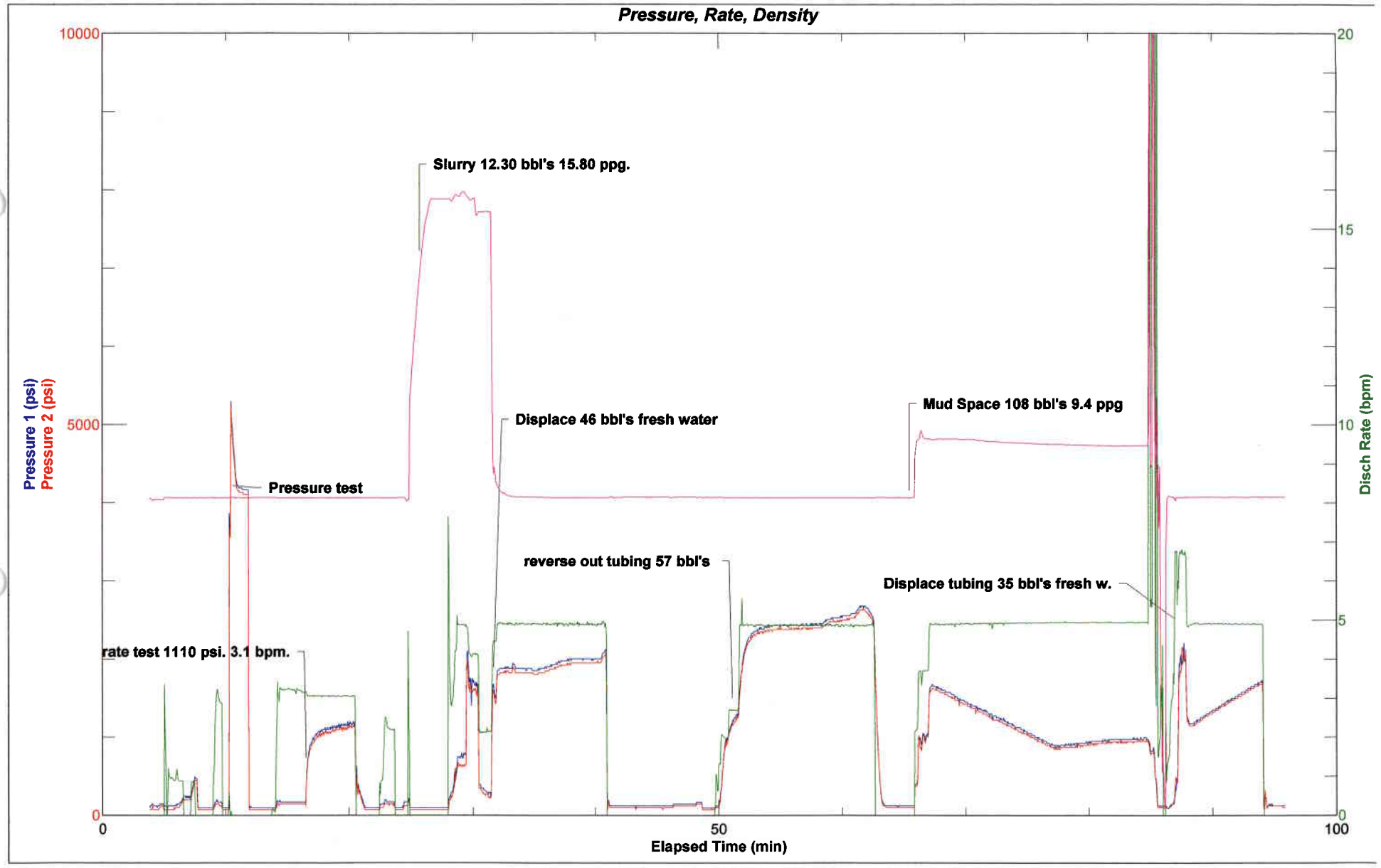
Problems After Job (I.E. Gas at Surface, Float Equipment Failed, ETC)

PRESSURE/RATE DETAIL						EXPLANATION
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW [X] CO. REP. [X]
	PIPE	ANNULUS				TEST LINES 4000 PSI
						CIRCULATING WELL - RIG [ ] BJ [X]
07:00	0	0	0	0	0	06/18/04 ON LOCATION PRE -JOB MEETING RIG UP
09:55	0	0	0	0	0	SAFETY MEETING
10:27	200	0	0	0	0	START JOB PRESSURE UP BACK SIDE TO 200 PSI.
10:31	4000	0	0	0	0	PRESSURE TEST PUMP AND LINES
10:37	1154	0	3.2	20	FRESH	INJ. RATE TEST 1154 PSI. 3.2 PSI.
10:46	1210	0	3.5	12.3	SLURRY	MIX AND PUMP 12.3 BBL'S SLURRY 15.80 PPG.
11:01	1756	0	4	46	FRESH	DISPLACE TUBING
11:09	0	0	0	0	0	STOP PUMING PULL OUT FROM RETAINER
11:30	2435	0	4.9	57	FRESH	REVERSE OUT TUBING W/ 57 BBL'S FRESH WATER
12:10	1631	0	4.9	108	MUD	PUMP 108 BBL'S MUD 9.3 PPG.
12:35	1452	0	4.5	35	FRESH	DISPLACE TUBING TO EST. TOP OF MUD AT 6100'
12:45	0	0	0	0	0	FINISH JOB WASH UP RIG DOWN MOVE OUT THANK YOU....

BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	Service Supervisor Signature:
Y [N]		Y [N]	2	279	0	Y [N]	

BJ Services JobMaster Program Version 3.00B1

Job Number: 393110002
Customer: Anschutz Pinedale Corpora
Well Name: Uinta AL & L 14-33



CEMENT JOB REPORT

CUSTOMER Anschutz Pinedale Corporation	DATE 19-JUN-04	F.R. # 393110003	SERV. SUPV. Jaime Sandoval
LEASE & WELL NAME AL & L 14-33	LOCATION		COUNTY-PARISH-BLOCK Campbell Wyoming
DISTRICT Rock Springs	DRILLING CONTRACTOR RIG # Key		TYPE OF JOB Squeeze-Perforation

SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT³	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER
	NA-P&A							
MATERIALS FURNISHED BY BJ								
(G neat cement) + .6% R-3 + .4% FL - 25		75	15.8	1.14	4.96	06:00	12	6.98
Mud			9.3	0	0	00:00	92	
(G Neat Cement)		25	15.8	1.14	4.96	06:00	5	2.91
						TOTAL	109	9.89

Available Mix Water 200 Bbl. Available Displ. Fluid 200 Bbl.

HOLE SIZE	% EXCESS	DEPTH	TBG-CSG-D.P. SIZE	WGT.	TYPE	DEPTH	GRADE	COLLAR DEPTHS SHOE	FLOAT	STAGE
0		0	7	32	CSG	6000	L-80			

LAST CASING SIZE	WGT	TYPE	DEPTH	PKR-CMT RET-BR PL-LINER BRAND & TYPE	DEPTH	PERF. DEPTH TOP	BTM	TOP CONN SIZE	THREAD	WELL FLUID TYPE	WGT.
				CEMENT RETAINER	6000			2.875	8RD	WATER BASED MU	9.3

DISPL. VOLUME VOLUME	UOM	DISPL. FLUID TYPE	WGT.	CAL. PSI BUMP PLUG	CAL. MAX PSI TO REV.	OP. MAX SQ. PSI	MAX TBG PSI RATED	Operator	MAX CSG PSI RATED	Operator	MIX WATER
35	BBLS										RIG

Circulation Prior to Job

Circulated Well: Rig [ ] BJ [X] | Circulation Time: .15 | Circulation Rate: 5 BPM

Mud Density In: 9.3 LBS/GAL Mud Density Out: 0 LBS/GAL | PV & YP Mud In: | PV & YP Mud Out:

Gas Present: NO [X] YES [ ] Units: | Solids Present at End of Circulation: NO [X] YES [ ]

Displacement And Mud Removal

Displaced By: Rig [ ] BJ [X] | Amount Bled Back After Job: .5 BBLS

Returns During Job: [ ] NONE [ ] PARTIAL [X] FULL | Method Used to Verify Returns:

Cement Returns at Surface: [ ] YES [X] NO | Were Returns Planned at Surface: [X] NO [ ] YES

Pipe Movement: [ ] ROTATION [ ] RECIPROCATION [ ] NONE [ ] UNABLE DUE TO STUCK PIPE

Centralizers: [X] NO [ ] YES | Quantity: | Type: [ ] BOW [ ] RIGID

Job Pumped Through: [ ] CHOKE MANIFOLD [ ] SQUEEZE MANIFOLD [ ] MANIFOLD [ ] NO MANIFOLD

Plugs

Number of Attempts by BJ: Competition: | Wiper Balls Used: [X] NO [ ] YES Quantity:

Plug Catcher Used: [X] NO [ ] YES | Parabow Used: [X] NO [ ] YES

Was There a Bottom: [ ] NO [X] YES | Top of Plug: 3211 FT Bottom of Plug: 3350 FT

Squeezes (Update Original Treatment Report for Primary Job)

BLOCK SQUEEZE [ ] SHOE SQUEEZE [ ] TOP OF LINER SQUEEZE [ ] PLANNED [ ] UNPLANNED [ ]

Liner Packer: [X] NO [ ] YES | Bond Log: [X] NO [ ] YES PSI Applied: 1546 Fluid Weight: 15.8 LBS/GAL

Casing Test (Update Original Treatment Report for Primary Job)

Casing Test Pressure: PSI With LBS/GAL Mud | Time Held: Hours Minutes

Shoe Test (Update Original Treatment Report for Primary Job)

Depth Drilled out of Shoe: FT | Target EMW: LBS/GAL Actual EMW: LBS/GAL

Number of Times Tests Conducted: | Mud Weight When Test was Conducted: LBS/GAL

Problems Before Job (I.E. Running Casing, Circulating Well, ETC)

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CEMENT JOB REPORT

Problems During Job (I.E. Lost Returns, Equipment Failure, Bulk Delivery, Foaming, ETC)

Problems After Job (I.E. Gas at Surface, Float Equipment Failed, ETC)

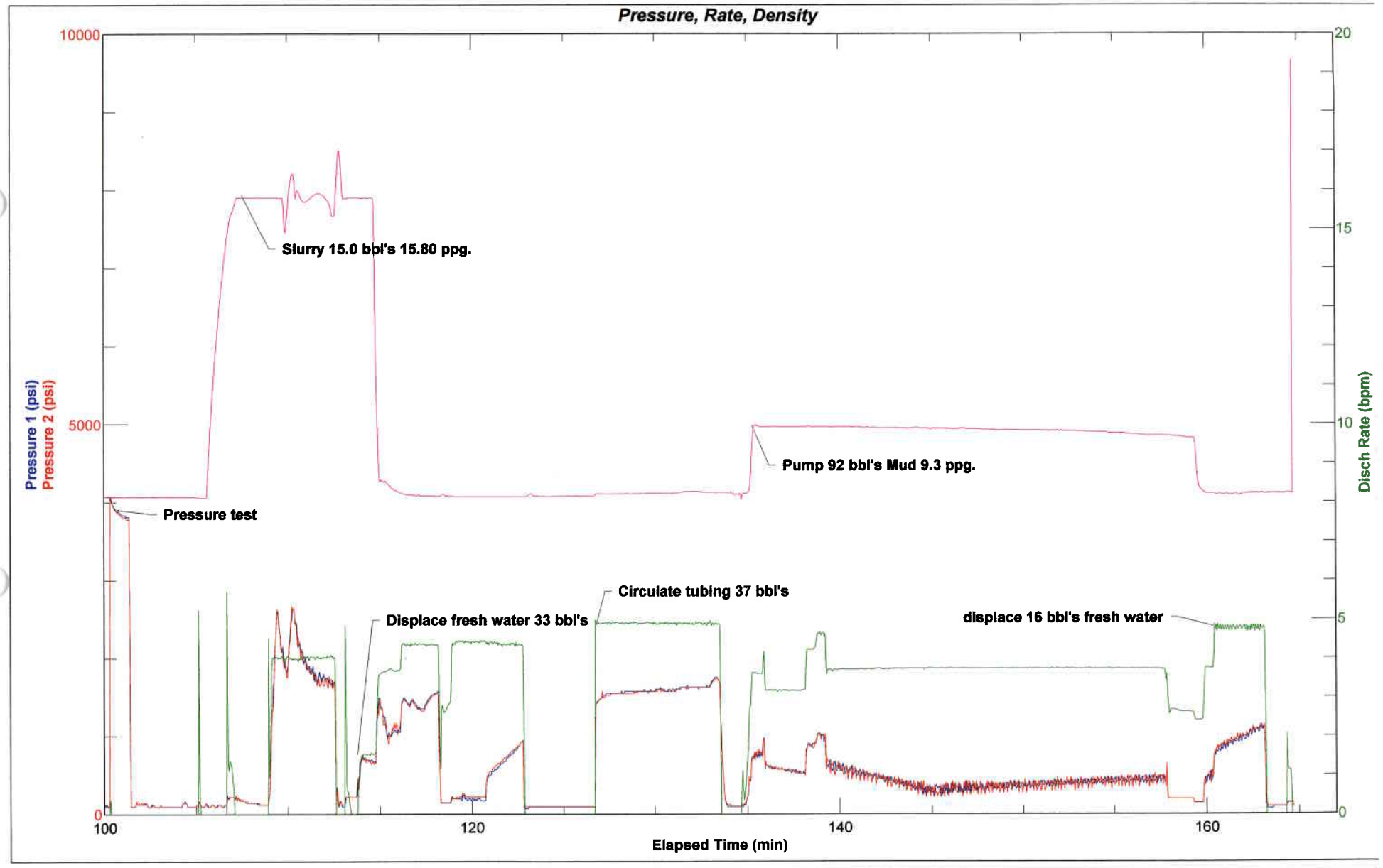
EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING:

PRESSURE/RATE DETAIL						EXPLANATION
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW [X] CO. REP. [X]
	PIPE	ANNULUS				TEST LINES 4000 PSI
						CIRCULATING WELL - RIG [ ] BJ [X]
12:30	0	0	0	0	0	06/19/04 ON LOCATION PRE - JOB MEETING RIG UP FOR SQUEEZE JOB ON WELL# AL&L 14-33
13:30	0	0	0	0	0	SAFETY MEETING
14:01	776	0	5	5	FRESH	START JOB ESTABLISH CIRCULATION
14:05	4000	0	0	0	0	PRESSURE TEST PUMP AND LINES
14:10	123	0	5	15	SLURRY	MIX AND PUMP 15 BBL'S SLURRY 15.80 PPG.
14:20	170	0	5	15	FRESH	DISPLACE 15 BBL'S OF DISPLAMENT BEFORE STAB. IN RETAINER
14:23	1878	0	3	18	FRESH	FINISH DISPLACEMENT OF TOTAL 33 BBL'S AFTER WE STAB. IN RETAINER
14:26	0	0	0	0	0	FINISH CEMENT JOB NO RETUNES PRESSURE 0 PSI.
14:40	1539	0	4	37	FRESH	CIRCULATE TUBING CLEAN W/ 37 BBL'S .5 BBL'S CEMENT BACK
15:16	776	0	5	92	MUD	PUMP 92 BBL'S MUD 9.30 PPG.
15:42	540	0	5	19	FRESH	DISPLACE TUBING VOLUME TO TOP MUD AT 3350'
15:49	0	0	0	0	0	FINISH JOB WAITING ON NEXT PLUG
17:02	290	0	4	4	FRESH	ESTABLISH CIRCULATION PUMP 4 BBLS FRESH WATER AHEAD
17:05	390	0	3	5	SLURRY	MIX AND PUMP 5 BBL'S SLURRY 15.80 PPG.
17:12	280	0	3	16	FRESH	DISPLACE TUBING VOLUME TO TOP CEMENT AT 3211'
17:40	1021	0	5	25	FRESH	CIRCULATE TUBING VOLUME
17:49	0	0	0	0	0	FINISH JOB WASH UP RIG DOWN MOVE OUT THANK YOU...

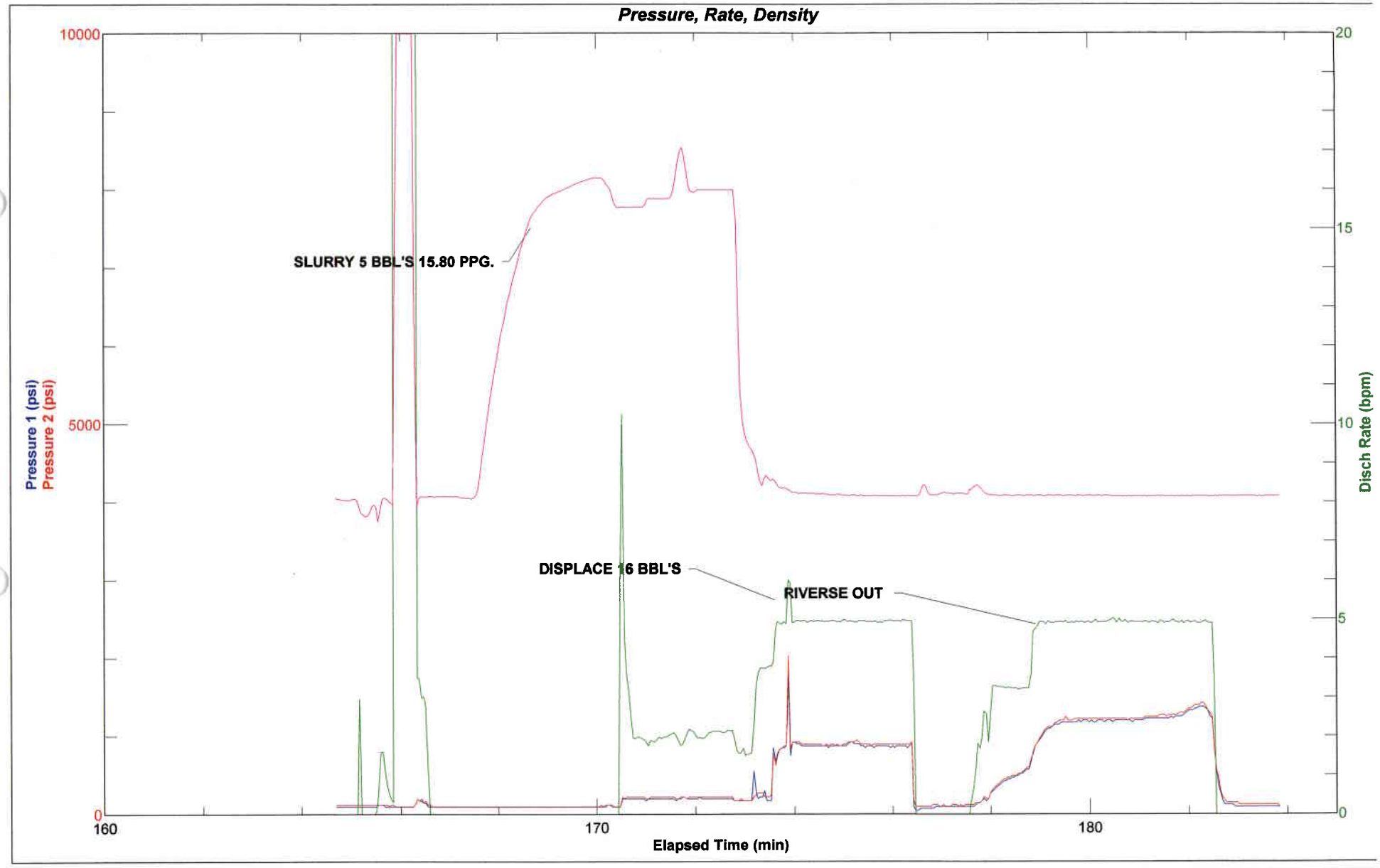
BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	Service Supervisor Signature:
Y [N]		Y [N]	1.5	249	0	Y [N]	

BJ Services JobMaster Program Version 3.00B1

Job Number: 393110003
Customer: Anschutz Pinedale Corpora
Well Name: Uinta AL & L 14-33



BJ Services JobMaster Program Version 3.00B1
Job Number: 393110002
Customer: Anschutz Pinedale Corpora
Well Name: Uinta AL & L 14-33



CEMENT JOB REPORT

CUSTOMER Anschutz Pinedale Corporation	DATE 21-JUN-04	F.R. # 393110005	SERV. SUPV. Jaime Sandoval
LEASE & WELL NAME AL & L 14-33	LOCATION		COUNTY-PARISH-BLOCK Campbell Wyoming
DISTRICT Rock Springs	DRILLING CONTRACTOR RIG # Key		TYPE OF JOB Squeeze-Perforation

SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT³	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER
	NA-P&A							
MATERIALS FURNISHED BY BJ								
G Neat + 2 % A-7		20	15.8	1.14	4.96	00:04	4	2.33
Mud		0	9.3	0	0	00:00	124	
						TOTAL	128	2.33

Available Mix Water 100 Bbl. Available Displ. Fluid 100 Bbl.

HOLE SIZE	% EXCESS	DEPTH	TBG-CSG-D.P. SIZE	WGT.	TYPE	DEPTH	GRADE	COLLAR DEPTHS SHOE	FLOAT	STAGE
			7	32	CSG	3380	L-80			
			7.625	39	CSG	3049	N-80			

LAST CASING SIZE	WGT	TYPE	DEPTH	PKR-CMT RET-BR PL-LINER BRAND & TYPE	DEPTH	PERF. DEPTH TOP	BTM	TOP CONN SIZE	THREAD	WELL FLUID TYPE	WGT.
				NO PACKER	0			2.875	8RD	WATER BASED MU	9.3

DISPL. VOLUME VOLUME	UOM	DISPL. FLUID TYPE	WGT.	CAL. PSI BUMP PLUG	CAL. MAX PSI TO REV.	OP. MAX SQ. PSI	MAX TBG PSI RATED	Operator	MAX CSG PSI RATED	Operator	MIX WATER
5	BBLS										RIG

Circulation Prior to Job

Circulated Well: Rig [ ] BJ [X] | Circulation Time: | Circulation Rate: BPM

Mud Density In: LBS/GAL Mud Density Out: LBS/GAL | PV & YP Mud In: | PV & YP Mud Out:

Gas Present: NO [X] YES [ ] Units: | Solids Present at End of Circulation: NO [X] YES [ ]

Displacement And Mud Removal

Displaced By: Rig [ ] BJ [ ] | Amount Bled Back After Job: BBLS

Returns During Job: [ ] NONE [ ] PARTIAL [ ] FULL | Method Used to Verify Returns:

Cement Returns at Surface: [ ] YES [X] NO | Were Returns Planned at Surface: [X] NO [ ] YES

Pipe Movement: [ ] ROTATION [ ] RECIPROCATION [ ] NONE [ ] UNABLE DUE TO STUCK PIPE

Centralizers: [X] NO [ ] YES | Quantity: | Type: [ ] BOW [ ] RIGID

Job Pumped Through: [ ] CHOKE MANIFOLD [ ] SQUEEZE MANIFOLD [ ] MANIFOLD [ ] NO MANIFOLD

Plugs

Number of Attempts by BJ: Competition: | Wiper Balls Used: [X] NO [ ] YES Quantity:

Plug Catcher Used: [X] NO [ ] YES | Parabow Used: [X] NO [ ] YES

Was There a Bottom: [X] NO [ ] YES | Top of Plug: FT Bottom of Plug: FT

Squeezes (Update Original Treatment Report for Primary Job)

BLOCK SQUEEZE [ ] SHOE SQUEEZE [ ] TOP OF LINER SQUEEZE [ ] PLANNED [ ] UNPLANNED [ ]

Liner Packer: [X] NO [ ] YES | Bond Log: [X] NO [ ] YES PSI Applied: Fluid Weight: LBS/GAL

Casing Test (Update Original Treatment Report for Primary Job)

Casing Test Pressure: PSI With LBS/GAL Mud | Time Held: Hours Minutes

Shoe Test (Update Original Treatment Report for Primary Job)

Depth Drilled out of Shoe: FT | Target EMW: LBS/GAL Actual EMW: LBS/GAL

Number of Times Tests Conducted: | Mud Weight When Test was Conducted: LBS/GAL

Problems Before Job (I.E. Running Casing, Circulating Well, ETC)

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CEMENT JOB REPORT

Problems During Job (I.E. Lost Returns, Equipment Failure, Bulk Delivery, Foaming, ETC)

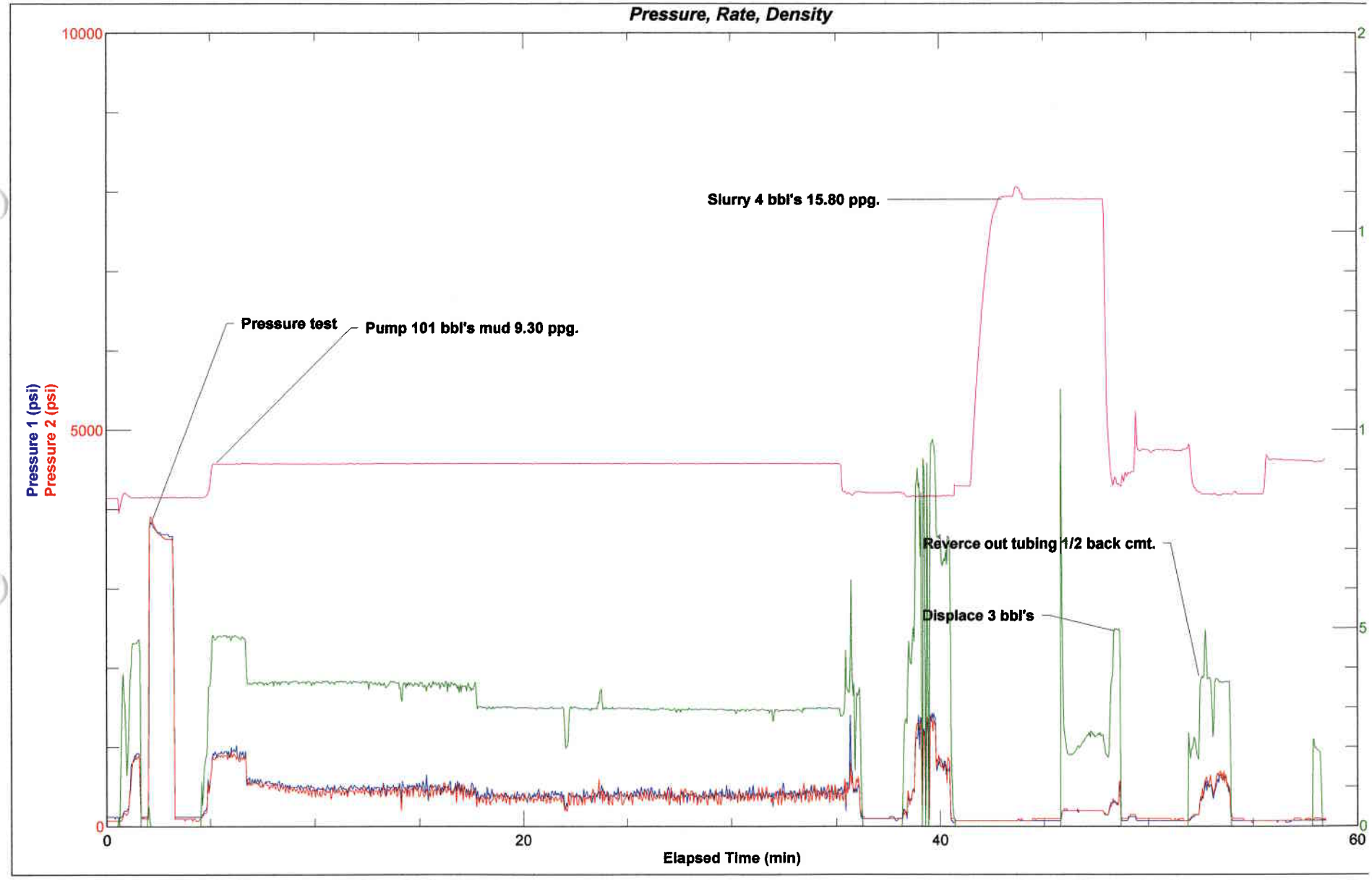
Problems After Job (I.E. Gas at Surface, Float Equipment Failed, ETC)

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

PRESSURE/RATE DETAIL						EXPLANATION
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW [X] CO. REP. [X]
	PIPE	ANNULUS				TEST LINES 3000 PSI
						CIRCULATING WELL - RIG [ ] BJ [X]
07:00	0	0	0	0	0	06/21/04 ON LOCATION RIG UP FOR PLUG ON WELL# AL&L 14-33
08:00	0	0	0	0	0	SAFETY MEETING
08:42	290	0	3	4	FRESH	START JOB ESTABLISH CIRCULATION
08:44	3000	0	0	0	0	PRESSURE TEST PUMP AND LINES TO 3000 PSI.
08:50	768	0	5	101	MUD	MIX AND PUMP 101 BBL'S MUD SPACE FROM 3260' TO 850' 9.30 PPG.
09:30	786	0	5	5	FRESH	DISPLACE TUBING VOLUME TO TOP MUD W/ 5 BBL'S FRESH WATER
09:34	0	0	0	0	0	FINISH PUMPING MUD SPACE
10:50	480	0	5	3	FRESH	PUMP 5 BBL'S FRESH WATER AHEAD
10:52	540	0	3	4	SLURRY	MIX AND PUMP 4 BBL'S SLURRY 15.80 PPG.
11:02	490	0	3	4	FRESH	DISPLACE TUBING VOLUME TO TOP CEMENT AT 750'
14:01	380	0	3	23	MUD	MUX AND PUMP 23 BBL'S OF MUD 9.30 PPG
14:20	0	0	0	0	0	FINISH JOB WASH UP RIG DOWN MOVE OUT THANK YOU.....

BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	Service Supervisor Signature:
Y [N]		Y [N]	.5	141	0	Y [N]	

BJ Services JobMaster Program Version 3.00B1
Job Number: 224940619
Customer: EOG RESORCES
Well Name: DEEP CANYON DEEP CAYON UNIT 18-15



CEMENT JOB REPORT

CUSTOMER	DATE	F.R. #	SERV. SUPV.
Anschutz Pinedale Corporation	23-JUN-04	257510267	JASON M WUOLLE

LEASE & WELL NAME	LOCATION	COUNTY-PARISH-BLOCK
AL&L 14-33		Uinta Wyoming

DISTRICT	DRILLING CONTRACTOR RIG #	TYPE OF JOB
Rock Springs	Key	Plug & Abandon

SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT^3	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER
MATERIALS FURNISHED BY BJ								
Class G+1%CACL2		145	15.8	1.15	5		29.6	17.20
						TOTAL	29.6	17.20

Available Mix Water 20 Bbl. Available Displ. Fluid 20 Bbl.

HOLE SIZE	HOLE % EXCESS	HOLE DEPTH	TBG-CSG-D.P. SIZE	WGT.	TYPE	DEPTH	GRADE	COLLAR DEPTHS SHOE	FLOAT	STAGE
			2.875	6.5	TBG	190	N-80			
			13.375	61	CSG	190	N-80			

LAST CASING SIZE	WGT	TYPE	DEPTH	PKR-CMT RET-BR PL-LINER BRAND & TYPE	DEPTH	PERF. DEPTH TOP	BTM	TOP CONN SIZE	THREAD	WELL FLUID TYPE	WGT.
				No Packer	0			2.875	EUE	WATER BASED MU	9.3

DISPL. VOLUME VOLUME	UOM	DISPL. FLUID TYPE	WGT.	CAL. PSI BUMP PLUG	CAL. MAX PSI TO REV.	OP. MAX SQ. PSI	MAX TBG PSI RATED	Operator	MAX CSG PSI RATED	Operator	MIX WATER
0	BBLS			0	0	0	0	0	10570	8456	Rig

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

TIME HR:MIN.	PRESSURE - PSI PIPE	ANNULUS	RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	EXPLANATION
						SAFETY MEETING: BJ CREW [X] CO. REP. [X]
						TEST LINES 4000 PSI
						CIRCULATING WELL - RIG [ ] BJ [ ]
06:30	0	0	0	0	0	ALL TRUCKS ON LOCATION
06:52	0	0	0	0	0	SAFETY MEETING WITH RIG
09:50	4000	0	0	0	H20	PRESSURE TEST LINES
09:59	173	0	4.7	26	CMT	MIX SLURRY @ 15.8#
10:08	0	0	0	0	CMT	SHUT DOWN

BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT
Y [N]		Y [N]	1	26	0	Y [N]

SERVICE SUPERVISOR SIGNATURE: Jason Wuolle

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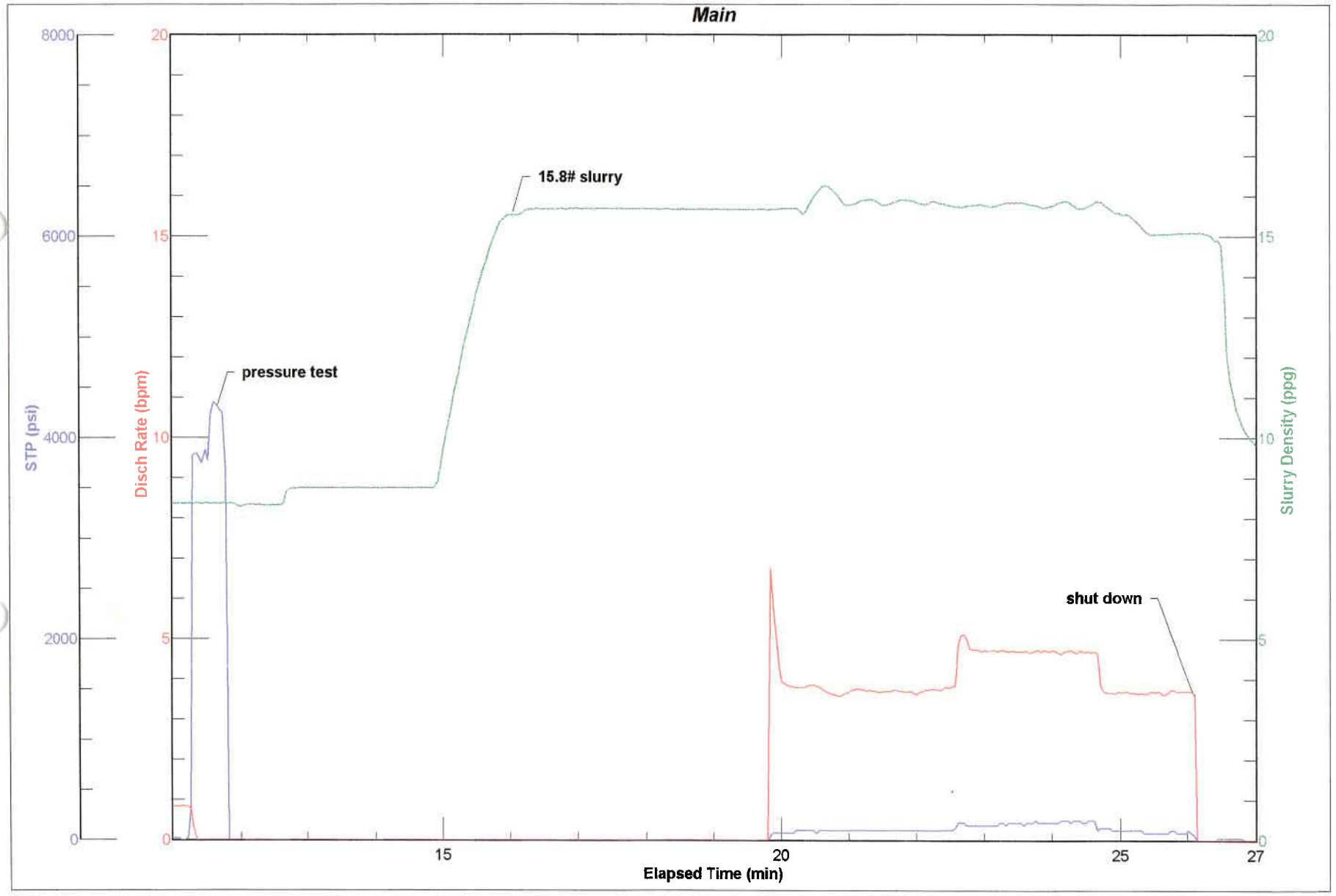
JUN 23 2004
DIV OF OIL, GAS & MINING

BJ Services JobMaster Program Version 2.61
Job Number:
Customer: Anschutz
Well Name: AL&L 14-33



INSPECTION FORM 7

STATE OF UTAH
DIVISION OF OIL GAS AND MINING
PLUGGING OPERATIONS

Well Name: AL&L 14-33ST API Number: 43-043-30315

Qtr/Qtr: SESE Section: 33 Township: 6N Range: 8E County: Summit

Company Name: Anschutz Exploration Corp. (N7940)

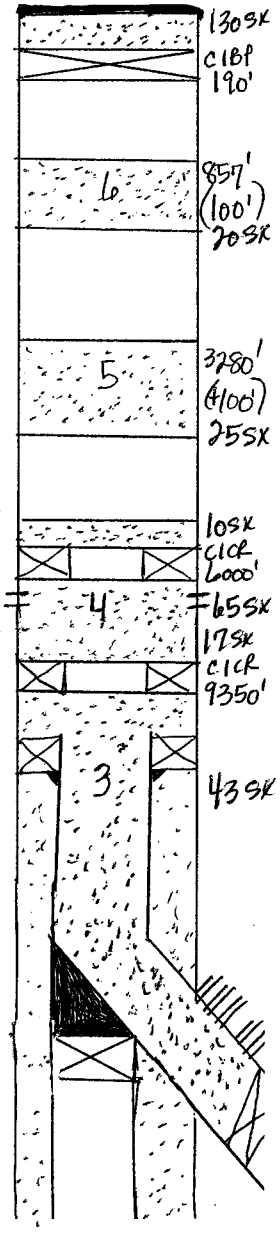
Lease: State_____ Fee X Federal_____ Indian_____

Inspector: Lisha Cordova Date: June 19-23, 2004

Casing Tested: YES X NO_____ Results: OK

Cementing Company: BJ Services (Key Rig #383/Jim Hill (307)679-6902)

Draw a wellbore diagram as plugged:



COMMENTS: Op plugged lower H2S zone (Plug 1&2) to test upper Thaynes PZ prior to final PA ops (not witn). Witn (Plug 3-surf plug) 6/18-6/23/04, Key Rig #383, BJ Services (cmt, Class G/Neat 15.8 wgt/1.15 yld), Oil Well Perforators "OWP" (wireline). 6/18/04 7" 32# Weatherford CICR set @9350. (Plug 3), TIH w/stinger, stung into retainer @9350' (296 jts in hole), tested backside @200#, tested lines @4000#, pumped 43 sx cmt @3.5 bpm below retainer & +/17 sx cmt above (12.3 bbls total), disp 57 bbls, LD 8 jts (288 jts in hole), pumped 108 bbls 9.3# mud (9115-6100'), LD 98 jts (190 jts in hole). 6/19/04 OWP ran csg gun in hole & perforated 4 shots @6050', circ water to surface, ran CICR & set @6000'. (Plug 4) TIH w/stinger, stung into retainer @6000', tested backside @200#, tested lines @4000#, pumped 65 sx cmt @5 bpm below retainer & 10 sx cmt above (15 bbls total), disp 33 bbls, cicr w/wtr ½ bbls cmt returns, LD 4 jts (186 jts in hole), pumped 92 bbls 9.3# mud (6000-3350'), disp 19 bbls, LD 80 jts (106 jts in hole). (Plug 5) pumped 25 sx cmt @3 bpm (5 bbls), disp 16 bbls, cicr w/wtr 1 bbl cmt returns, LD 8 jts (100 jts in hole). 6/21/04 TIH & tagged (Plug 5) @3260', tested lines @3000#, pumped 101 bbls 9.3# mud (3260-850'), disp 5 bbls, LD 73 jts (27 jts in hole). (Plug 6) pumped 20 sx cmt w/CaCl @3 bpm (4 bbls), disp 4 bbls, circ w/wtr ½ bbl cmt returns, LD 6 jts (21 jts in hole), wait on cmt 2 ½ hrs. TIH & tagged (Plug 6) @857', pumped 23 bbls 9.3# mud (857-

200'), LD 21 jts. OWP ran 6.5 gage ring to 190', ran 7.625 jet cutter cut csg @200'. 6/22/04 cmt truck broke down no cmt work planned for the day, op ND BOP & OWP set CIBP @190' (not witn). 6/23/04 (Surf Plug) TIH 4 jts, tested lines @4000#, pumped 130 sx cmt @4.7 bpm (26 bbls) 190'-surface. Op plans to weld metal plate w/well description top of surf csg, 6' below surface, as per surface owner "Aspen Meadows Ranches/Dave Allen" request. Notified op that site reclamation is due within 1yr of PA, by 6/23/05, see pictures.

Attach copy of cement ticket if available.

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: AL&L 14-33ST
API NUMBER: 4304330315
WELL TYPE: GW
WELL STATUS: S

OPERATOR: ANSCHUTZ EXPLORATION CORP
ACCOUNT: N7940 #
OPERATOR APPROVED BY BLM / BIA ☐

DESIGNATED OPERATOR:
ACCOUNT:

FIELD NAME: FIRTH FIELD
FIELD NUMBER: 522
FIRST PRODUCTION: 8 27 1997
LA | PA DATE:

WELL LOCATION:

SURF LOCATION: 0642 FSL 0748 FEL

Q. S. T. R. M.: SESE 33 06.0 N 08.0 E S

COUNTY: SUMMIT

UTM Coordinates:

SURFACE - N: 4561278.00
BHL - N:

SURFACE - E: 495915.00
BHL - E:

LATITUDE: 41.20477

LONGITUDE: -111.04870

CONFIDENTIAL FLAG ☐

CONFIDENTIAL DATE: 9 12 2002

DIRECTIONAL | HORIZONTAL: D

HORIZONTAL LATERALS:

ORIGINAL FIELD TYPE: W

WILDCAT TAX FLAG ☐

CB-METHANE FLAG ☐

ELEVATION: 7147 GL

BOND NUMBER / TYPE: 965001810 4

LEASE NUMBER: FEE

MINERAL LEASE TYPE: 4

SURFACE OWNER TYPE: 4

INDIAN TRIBE:

C.A. NUMBER:

UNIT NAME:

CUMULATIVE PRODUCTION:

OIL: 4013

GAS: 5083721

WATER: 8524

WELL IMAGES | PRODUCTION GRAPH

COMMENTS: 970915 ENTITY ADDED:PROP BHL FR 100 FSL 460 FEL:BHL IRR SEC 10 T14N R121W;1400 FNL 300 FEL-WYOMING; NEW SURVEY LOC FR 592 FSL 748 FEL;FR 189-1B:

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 | 11:32 AM

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: N/A
7. UNIT or CA AGREEMENT NAME: N/A
8. WELL NAME and NUMBER: ~~A. L. & L. #14-33~~ S
9. API NUMBER: 43-043-30315
10. FIELD AND POOL, OR WILDCAT: Yellow Creek Deep

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER _____

2. NAME OF OPERATOR: THE ANSCHUTZ CORPORATION

3. ADDRESS OF OPERATOR: 555 17th St., Ste. 2400 CITY Denver STATE CO ZIP 80202 PHONE NUMBER: (303) 298-1000

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 642' FSL and 748' FEL COUNTY: Summit

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SESE 33 6N 8E 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: 6/12/2004	☐ 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 requests approval to plug and abandon the subject well per the attached procedure and well sketch.

The well has watered out and is no longer productive.

COPY SENT TO OPERATOR
Date: 6-14-04
Initials: CHD

NAME (PLEASE PRINT) James Oursland TITLE Operations Manager

SIGNATURE James Oursland DATE 6/7/2004

(This space for State use only)

APPROVED WITH CONDITIONS BY THE STATE OF UTAH DIVISION OF OIL GAS AND MINING

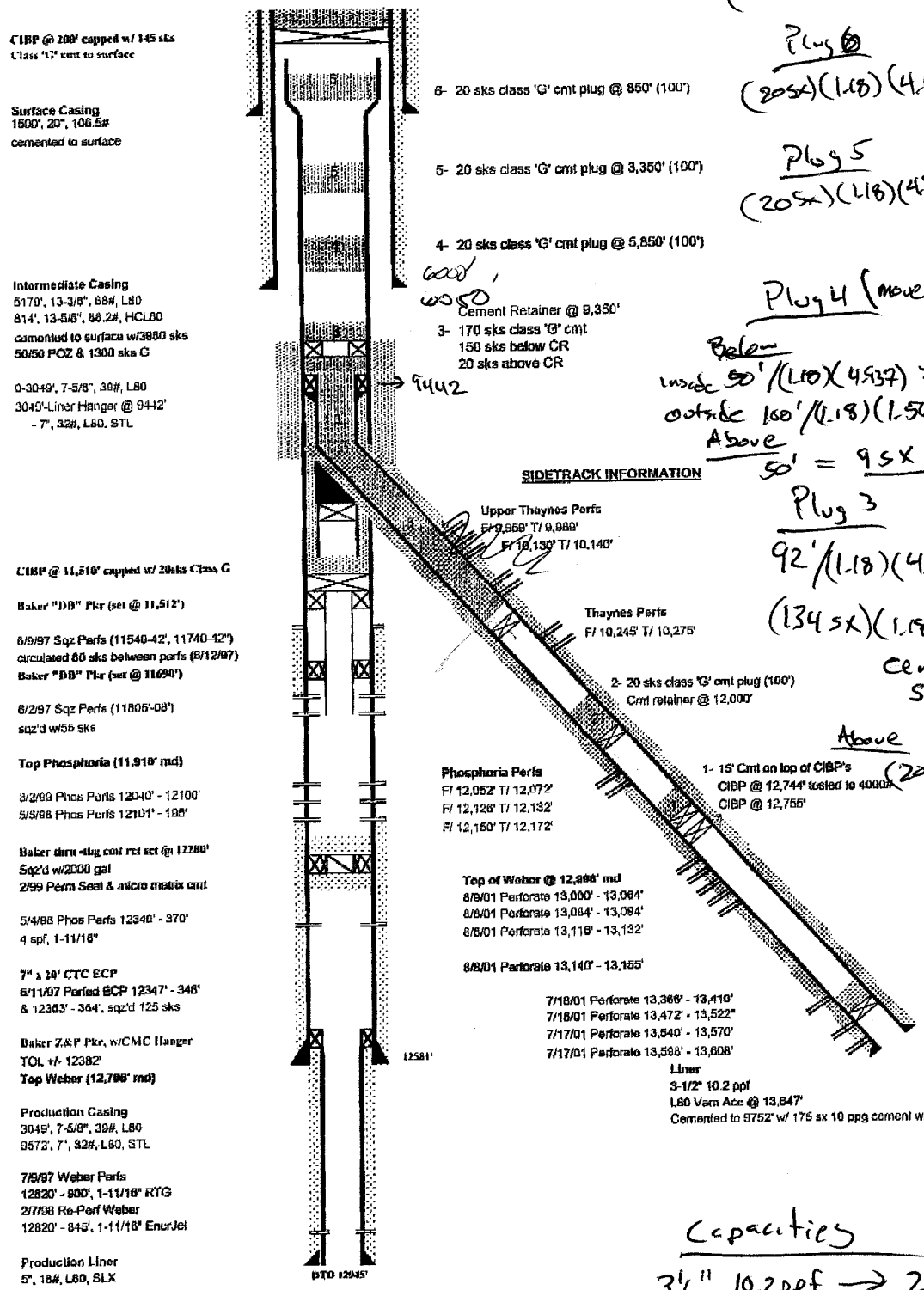
Dustin Doucet 6/11/04

(5/2000) (See Instructions on Reverse Side)

Conditions: Plug 4 shall be moved 150' deeper, squeeze holes should be shot @ 6050' with CICR set @ 6000'. ± 75 sx should pumped, pumping ± 65 sx below CICR and spotting 10 sx above CICR.

ANSCHUTZ EXPLORATION CORPORATION
WELLBORE SCHEMATIC - PROPOSED P&A

SEC: 33-T6N-R8E	WELL NAME: AL&L 14-33	COUNTY, STATE: Summit, Utah
TD: 12,945'	GROUND ELEVATION: 7,147'	KB ELEVATION: 7,170'



Surface Plug
(145sx)(1.18)(1.190) = 204'
TOC @ Surface ✓

Plug 6
(20sx)(1.18)(4.177) = 99' ✓

Plug 5
(20sx)(1.18)(4.937) = 117' ✓

Plug 4 (move to 6050 → 5950 inside out)
Below
inside 50'/(1.18)(4.937) = 9sx
outside 100'/(1.18)(1.562) = 55sx
Above
50' = 9sx
Total = 73sx

Plug 3
92'/(1.18)(4.937) = 16sx
(134sx)(1.18)(21.29) = 3341'
cement to 12783'
Sqz perts fro ~9959 → 10,140

Above
(20 sx)(1.18)(4.937) = 117'
TOC @ 9233 ✓

Capacities

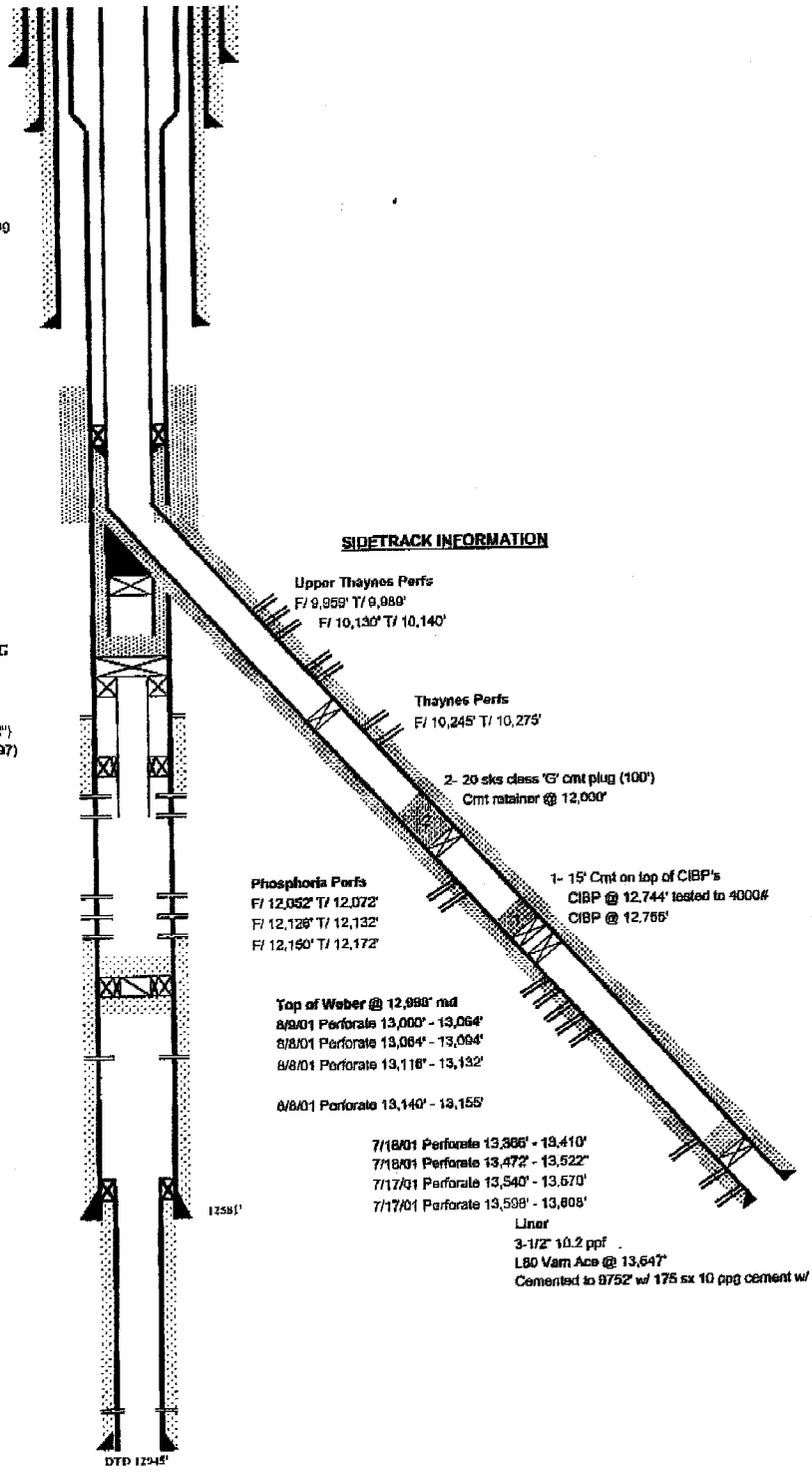
3½" 10.2ppf → 21.129 cf
7" 32# → 4.937

$$\frac{[(1.2)(10.75)]^2 - 7^2}{183.35} = 0.6404 \rightarrow 1.562$$

7⅝" 39# → 4.177
13⅜", 68# → 1.190

ANSCHUTZ EXPLORATION CORPORATION
WELLBORE SCHEMATIC - CURRENT

SEC: 33-T6N-R8E	WELL NAME: AL&L 14-33	COUNTY, STATE: Summit, Utah
TD: 12,945'	GROUND ELEVATION: 7,147'	KB ELEVATION: 7,170'



Conductor @ 60'

Surface Casing
1500', 20", 106.5#
cemented to surface

Tubing String
2-7/8", 7.7#, L-80 Vam Ace Tubing String

Intermediate Casing
5179', 13-3/8", 68#, L80
814', 13-5/8", 88.2#, HCL80
cemented to surface w/3980 sks
50/50 POZ & 1300 sks G

0-3049', 7-5/8", 39#, L80
3049'-Liner Hanger @ 9442'
- 7", 32#, L80, STL

CIBP @ 11,510' capped w/ 20sks Class G

Baker "DB" Pkr (set @ 11,512')

6/9/97 Sqz Perfs (11540-42', 11740-42')
circulated 80 sks between perfs (6/12/97)
Baker "DB" Pkr (set @ 11690')

6/2/97 Sqz Perfs (11805'-08')
sqz'd w/55 sks

Top Phosphoria (11,910' md)

3/2/99 Phos Perfs 12040' - 12100'
5/5/98 Phos Perfs 12101' - 195'

Baker thru-tbg cmt ret set @ 12280'
Sqz'd w/2000 gal
2/99 Perm Seal & micro matrix cmt

5/4/98 Phos Perfs 12340' - 370'
4 spf, 1-11/16"

7" x 20' CTC ECP
6/11/97 Perfed ECP 12347' - 348'
& 12363' - 364', sqz'd 125 sks

Baker Z&P Pkr, w/CMC Hanger
TOL +/- 12382'
Top Weber (12,706' md)

Production Casing
3049', 7-5/8", 39#, L80
9572', 7", 32#, L80, STL

7/9/97 Weber Perfs
12820' - 800', 1-11/16" RTG
2/7/98 Re-Perf Weber
12820' - 845', 1-11/16" EnerJet

Production Liner
5", 18#, L80, SLX

SIDETRACK INFORMATION

Upper Thaynes Perfs
F/ 9,959' T/ 9,989'
F/ 10,130' T/ 10,140'

Thaynes Perfs
F/ 10,245' T/ 10,275'

2- 20 sks class 'G' cmt plug (100')
Cmt retainer @ 12,000'

1- 15' Cmt on top of CIBP's
CIBP @ 12,744' tested to 4000#
CIBP @ 12,755'

Phosphoria Perfs
F/ 12,052' T/ 12,072'
F/ 12,126' T/ 12,132'
F/ 12,150' T/ 12,172'

Top of Weber @ 12,989' md
8/9/01 Perforate 13,000' - 13,064'
8/8/01 Perforate 13,064' - 13,094'
8/8/01 Perforate 13,116' - 13,132'

8/8/01 Perforate 13,140' - 13,155'

7/18/01 Perforate 13,366' - 13,410'
7/18/01 Perforate 13,472' - 13,522'
7/17/01 Perforate 13,540' - 13,570'
7/17/01 Perforate 13,598' - 13,608'

Liner
3-1/2" 10.2 ppf
L80 Vam Ace @ 13,647'
Cemented to 9752' w/ 175 sx 10 ppg cement w/ Kol Seal

AL&L 14-33ST P&A PROCEDURE

1. File proper sundry notices and notify proper authorities. Install and test anchors.
2. Install BPV.
3. RU Safety. MI Rig and support equipment.
4. NU BOPE and test.
5. Pull BPV.
6. Fill hole with 2% KCL water.
7. RU laydown machine. Have Vam PTS personnel on location to visually inspect tubing.
8. RU spooler unit to spool SS control lines. POOH laying down 2.875'', 7.7#, L-80 production string. Install thread protectors on box and pin ends. Haul to Tuboscope yard in Evanston for inspection and storage. Send SSSV and methanol injection mandrel to Camco-Houston, Tx. Seal assembly to Weatherford in Vernal, UT.
9. Maintain well control by pumping ¼ to ½ BPM down annulus while POOH.
10. RU wireline. RIH w / 5.969'' gage ring to 9,400'. POH. PU 7'', 32# cement retainer. RIH and set @ 9,350'. POOH. RD & Release wireline.
11. RU cementers. Test lines to 5000#. Pump 170 sx. Class 'G' cement plug. Pump 150 sx. Below retainer, sting out and spot remaining 20 sx. On top of retainer. LD 8 jts. Tbg. and reverse out.
12. POOH to 5,850'. Pump 20 sks class 'G' cement plug. Pull 6 jts Tbg. Reverse out.
13. POOH to 3,350'. Pump 20 sks class 'G' cement plug. Pull 6 jts Tbg. Reverse out.
14. POOH to 850'. Pump 20 sks class 'G' cement plug. Pull 6 jts Tbg. Reverse out. LD remaining work string.
15. RU wireline. RIH w/ 6.5" guage ring to 210'. POOH. PU 7.625" jet cutter. RIH to 200'. Cut off 7.625" csg. POOH. RD & release wireline.
16. ND BOPE. ND 7-1/16" x 11" csg head.
17. PU csg equipment. LD 200' 7.625" csg.
18. RU wireline. RIH w/ 13.375" CIBP. Set @ 200'. POOH. RD & release wireline.
19. RU cementers. Pump 145 sks class 'G' cement + 1% CaCl surface plug.
20. RD and release rig and support equipment.
21. Dig out csg heads and cut off 6' below ground level. Weld plate w/ weep hole on csg stub. Weld following information on plate.
    Anschutz Corp. AL&L 14-33ST Sec. 33 T6N-R8E Summit Co., Utah Date plugged.
22. Reclaim and reseed location. Notify proper authorities.

ANSCHUTZ EXPLORATION CORPORATION 555 17TH STREET, SUITE 2400, DENVER, CO 80202

FAX

Date: 6/9/2004

Number of pages including cover sheet: 5

To:
HOLIDAY INN EXPRESS

Attn: DUSTIN DOUCET
ROOM # 210

Phone: 435-564-4439
Fax: 435-564-3333
CC:

From:
JAMES DURSLAND
MOHAMED ELHAGE

Phone: 303-298-1000
Fax: 303-299-1518

REMARKS: ☑ Urgent ☐ For your review ☐ Reply ASAP ☐ Please comment

Confidentiality Note: The information contained in this facsimile transmittal sheet and document(s) that follow are for the exclusive use of the addressee and may contain confidential, privileged, proprietary, and non-disclosable information. If the recipient of this facsimile is not the addressee, or person responsible for delivering this facsimile to the addressee, such recipient is strictly prohibited from reading, photocopying, distributing, or otherwise using this facsimile transmission, or its contents, in any way. If the recipient has received this facsimile transmission in error, please call us immediately and return the facsimile transmission to us via the United States Postal Service. We will gladly reimburse your telephone and postage expenses. Thank you.

FAX

TO: James Ourslan d
Mohamed Elhage

FAX: 303.299.1518
COMPANY: ANSCHUTZ EXPLORATION
FROM: DUSTIN DOUCET

No. OF PAGES INCLUDING COVER: 5

APPROVAL WITH CONDITIONS
FOR A.L.&L 14-33 P&A

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

September 24, 2004

VIA FEDERAL EXPRESS

Utah Division of Oil, Gas and Mining
1592 West North Temple, Suite 210
Box 145801
Salt Lake City, UT 84114-5801

RE: Sundry Notice
Island Ranching D-1 (API 4304330161);
Anschutz Ranch Deep 10-27 (API 4304330321);
A. L. & L. # 14-33 ST (API 043-30315)

Plug and Abandon

Gentlemen:

Attached please find the original Sundry Notices for Plugging and Abandoning the above mentioned wells in Summit County.

Thank you for your cooperation in the handling of this matter.

Sincerely,

DeVon M. Pester
Operations Technician

/dp
Enclosure

RECEIVED
SEP 27 2004
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: N/A

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.

7. UNIT or CA AGREEMENT NAME: N/A

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER _____

8. WELL NAME and NUMBER: A. L. & L. #14-33 ST

2. NAME OF OPERATOR: THE ANSCHUTZ CORPORATION

9. API NUMBER: 43-043-30315

3. ADDRESS OF OPERATOR: 555 17th St., Ste. 2400 CITY Denver STATE CO ZIP 80202

PHONE NUMBER: (303) 298-1000

10. FIELD AND POOL, OR WILDCAT: Yellow Creek Deep

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 642' FSL and 748' FEL

COUNTY: Summit

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SESE 33 6N 8E

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
	☐ 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 subject well per the attached procedure and well sketch.

RECEIVED
SEP 27 2004
DIV. OF OIL, GAS & MINING

NAME (PLEASE PRINT) Mohamed Elhage TITLE Petroleum Engineer

SIGNATURE Mohamed DATE 9/24/2004

(This space for State use only)

ANSCHUTZ EXPLORATION CORPORATION		
P&A WELLBORE SCHEMATIC		
SEC: 33-T6N-R8E	WELL NAME: AL&L 14-33	COUNTY, STATE: Summit, Utah
TD: 12,945'	GROUND ELEVATION: 7,147'	KB ELEVATION: 7,170'

13-3/8" CIBP @ 190' capped with 140 class 'G' cmt to surface

Surface Casing
1500', 20", 106.5#
cemented to surface

Intermediate Casing
5179', 13-3/8", 68#, L80
814', 13-5/8", 88.2#, HCL80
cemented to surface w/3980 sks
50/50 POZ & 1300 sks G

0-3049', 7-5/8", 39#, L80
3049'-Liner Hanger @ 9442'
- 7", 32#, L80, STL

CIBP @ 11,510' capped w/ 20sks Class G

Baker "DB" Pkr (set @ 11,512')

6/9/97 Sqz Perfs (11540-42', 11740-42")
circulated 80 sks between perfs (6/12/97)
Baker "DB" Pkr (set @ 11690')

6/2/97 Sqz Perfs (11805'-08')
sqz'd w/55 sks

Top Phosphoria (11,910' md)

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5/5/98 Phos Perfs 12101' - 195'

Baker thru -tbg cmt ret set @ 12280'
Sqz'd w/2000 gal
2/99 Perm Seal & micro matrix cmt

5/4/98 Phos Perfs 12340' - 370'
4 spf, 1-11/16"

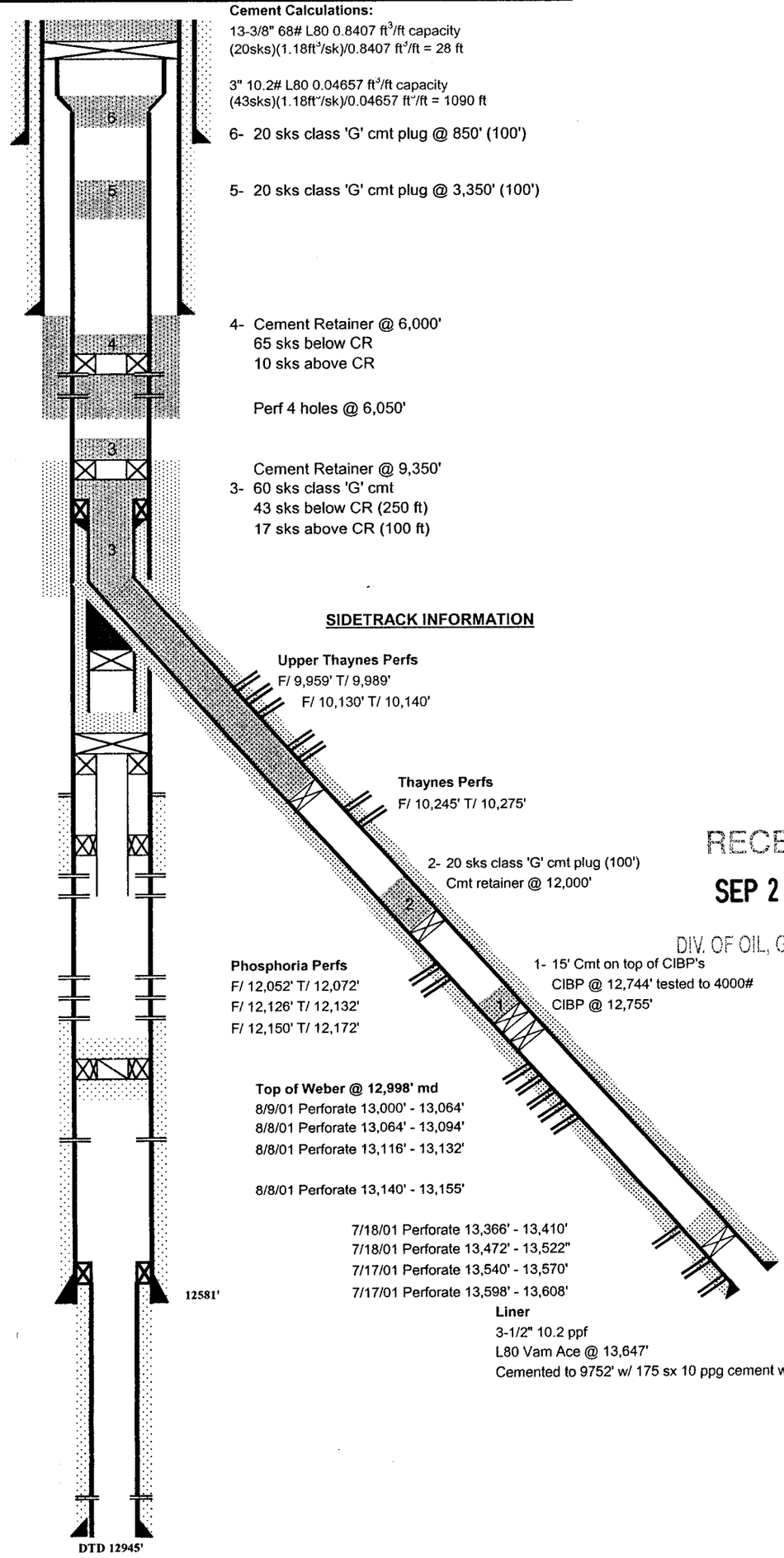
7" x 20' CTC ECP
6/11/97 Perfed ECP 12347' - 348'
& 12363' - 364', sqz'd 125 sks

Baker Z&P Pkr, w/CMC Hanger
TOL +/- 12382'
Top Weber (12,706' md)

Production Casing
3049', 7-5/8", 39#, L80
9572', 7", 32#, L80, STL

7/9/97 Weber Perfs
12820' - 900', 1-11/16" RTG
2/7/98 Re-Perf Weber
12820' - 845', 1-11/16" EnerJet

Production Liner
5", 18#, L80, SLX



Cement Calculations:
13-3/8" 68# L80 0.8407 ft^3/ft capacity
(20sks)(1.18ft^3/sk)/0.8407 ft^3/ft = 28 ft

3" 10.2# L80 0.04657 ft^3/ft capacity
(43sks)(1.18ft^3/sk)/0.04657 ft^3/ft = 1090 ft

6- 20 sks class 'G' cmt plug @ 850' (100')

5- 20 sks class 'G' cmt plug @ 3,350' (100')

4- Cement Retainer @ 6,000'
65 sks below CR
10 sks above CR

Perf 4 holes @ 6,050'

Cement Retainer @ 9,350'
3- 60 sks class 'G' cmt
43 sks below CR (250 ft)
17 sks above CR (100 ft)

SIDETRACK INFORMATION

Upper Thaynes Perfs
F/ 9,959' T/ 9,989'
F/ 10,130' T/ 10,140'

Thaynes Perfs
F/ 10,245' T/ 10,275'

2- 20 sks class 'G' cmt plug (100')
Cmt retainer @ 12,000'

Phosphoria Perfs
F/ 12,052' T/ 12,072'
F/ 12,126' T/ 12,132'
F/ 12,150' T/ 12,172'

1- 15' Cmt on top of CIBP's
CIBP @ 12,744' tested to 4000#
CIBP @ 12,755'

Top of Weber @ 12,998' md
8/9/01 Perforate 13,000' - 13,064'
8/8/01 Perforate 13,064' - 13,094'
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8/8/01 Perforate 13,140' - 13,155'

7/18/01 Perforate 13,366' - 13,410'
7/18/01 Perforate 13,472' - 13,522"
7/17/01 Perforate 13,540' - 13,570'
7/17/01 Perforate 13,598' - 13,608'

Liner
3-1/2" 10.2 ppf
L80 Vam Ace @ 13,647'
Cemented to 9752' w/ 175 sx 10 ppg cement w/ Kol Seal

RECEIVED
SEP 2 7 2004
DIV. OF OIL, GAS & MINING

A.L. & L. 14-33ST (Yellow Creek)
Operator: AEC
Section 33, T6N, R8E
460' FEL, 100' FSL
Summit County, Utah
Yellow Creek Prospect
11,540-42'; 11,740-42' Weber
12,340-70' Phosphoria
12,165-95' Phosphoria
TAC WI: 100%
TIGHT HOLE

06/10/04 Day 12. 10,285' PBTD. PO: Completion. SITP 10#. Pump 70bbls water down tbg. To displace un-spent acid out tbg.

06/11/04 Day 13. 10,285' PBTD. PO: Completion. Move from 10-27 to location, very muddy, rig tore out drop box on location, all support equipment on location, ready to RU on 6/14/04.

06/12/04 Day 14. 10,285' PBTD. PO: Completion. Repair rig, haul water, pump 900 bbls to keep well dead.

06/13/04 Day 15. 10,285' PBTD. PO: Completion. Load out Eastern test unit, haul 100 bbls water.

06/14/04 Day 16. 10,285' PBTD. PO: Completion. Set mud boat, spot rig and raise derrick string blocks, set sub & RU tbg equipment, pumping water to keep well dead.

06/15/04 Day 17. 10,285' PBTD. PO: Completion. ND tree, NU BOPs & test, finish rigging up, haul in 2.875" work string, haul water, RU LD machine, secure well, SDFN.

06/16/04 Day 18. 10,285' PBTD. PO: Completion. Pump tbg volume, POOH, LD 2.875", 7.7#, L-80, VAM Ace tbg, spooling ¼" ss injection line, LD SSSV, injection mandrel, flow couplings, nipples, pups and seal assembly, RD spooler, LD remaining 2.875" production tbg. (291 jts) total, secure well, SDFN.

06/17/04 Day 19. 10,285' PBTD. PO: Completion. RU OWP wireline, RU gauge ring to 9442', run & set CICR at 9350', PU stinger, PU 296 jts 2.875" work string, ready to cement in a.m., secure well, SDFN.

06/18/04 Day 20. 10,285' PBTD. PO: Completion. RU BJ Services, test lines, establish injection rate, pump 60 sx cement. Reverse out, spot mud to 6100', POOH, LD 106 jts, stand back 6000'.

06/19/04 Day 21. 10,285' PBTD. PO: Completion. RU OWP, RIH, perf 4 holes @ 6050', break circ, run 7", 32# CICR, set at 6000', RIH w/ stinger, pump 75 sx Class G, reverse out, spot 9.3# mud to 3350', POOH to 3350', pump 20 sx plug, reverse out, pull 10 stands, secure well, SD until 6-21-04.

06/20/04 PO: Shut down until 6/21/04.

06/21/04 Day 22. 10,285' PBTD. PO Completion. RIH, tag cement at 3280', spot 9.3# mud to 850', POOH to 850', spot 20 sx Class G cmt w/ 2% CaCl, reverse out, pull 5 stds, WO cement, tag cmt @ 793', spot mud to 200', LD tbg, run gauge ring to 200', cut off 7.625" at 200', secure well, SDFN.

06/22/04 Day 23. 10,285' PBTD. PO: Completion. ND BOPs & tbg head, weld on 7.625" lift jt, pull 200' 7.625" csg, ND 13-5/8" 5K X 11" 5K head, POOH, LD 5 jts 7.625" csg (208'), RU OWP, run 12.25" gauge ring to 190', set 13.375" CIBP at 190', RIH w/ 2.875" tbg, tag CIBP, secure sell, SDFN.

06/23/04 Day 24. 10,285' PBTD. PO: Completion. Safety meeting. RU BJ Services. Pump

140sx. Class 'G' cement w/1% CaCl. POOH - LD 6jts. TBG. RD LD machine & BJ. Rig down. All cementing on this well was witnessed by Lisha Cordova, Utah Oil & Gas.

06/24/04 Day 25. 10,285' PBTD. PO: Completion. Safety meeting. Finish rigging down & moving out rig & support equip.

06/25/04 Day 26. 10,285' PBTD. PO: Completion. Clean tank & haul off support equipment.

06/28/04 Equipment moved off on 6/25/04. FINAL REPORT.

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

March 1, 2006

Utah Division of Oil, Gas and Mining
1592 West North Temple, Suite 210
Box 145801
Salt Lake City, UT 84114-5801

6N 8E 33

RE: Sundry Notices - Reclamation
A. L. & L. # 14-33 ST (API 43-043-30315)

Gentlemen:

Attached please find the original Subsequent Sundry Notice for the reclamation and reseeding of the above mentioned well site in Summit County.

Thank you for your cooperation in the handling of this matter.

Sincerely,

DeVon M. Pester
Operations Technician

/dp
Enclosure

RECEIVED
MAR 0 6 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: N/A

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.

7. UNIT or CA AGREEMENT NAME: N/A

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER _____

8. WELL NAME and NUMBER: A.L. & L. #14-33 ST

2. NAME OF OPERATOR: The Anschutz Corporation

9. API NUMBER: 043-30315

3. ADDRESS OF OPERATOR: 555 17th St., Suite 2400 CITY Denver STATE CO ZIP 80202 PHONE NUMBER: (303) 298-1000

10. FIELD AND POOL, OR WILDCAT: Yellow Creek Deep

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 642' FSL and 748' FEL COUNTY: Summit

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SESE 33 6N 8E 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
	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
Date of work completion: 11/29/2005	☐ 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 completed the reclamation and reseeding of the AL&L 14-33ST well site per the attached time ticket & invoice from Snowy Range, Inc.

NAME (PLEASE PRINT) DeVon M. Pester TITLE Operations Technician

SIGNATURE DeVon M. Pester DATE 3/1/2006

(This space for State use only)

RECEIVED
MAR 0 6 2006
DIV. OF OIL, GAS & MINING

(5/2000) (See Instructions on Reverse Side)

SNOWY RANGE, INC.
SNOW MOVERS • RESEEDERS
P. O. Box 1725, Evanston, WY 82931 • (307) 789-6556

TIME TICKET & INVOICE № 2849

Customer: EXPLORATION ANSCHUTZ CORPORATION, 555 17TH ST. STE 2400, DENVER CO 80202

Date: NOV. 29 2005

Customer's Work Order Number: Jim Hill

Project and Area: RECLAMATION SEEDING WELL 14-33 UPPER CR. UINTA CO. WY

Equipment Identification	Shift Time or Meter Readings Start	Stop	Operating Hours	Rate	Amount
TRANSPORT w/ 10 TON TRLR MOB CAT 11.23	1400	1630	2.5	82.00	205.00
UNINCE SEED w/ RANGE DRILL MOB 11.25	1530	1600	.5	86.00	43.00
4x4 PU w/ OP 11.25	1530	1830	3.0	50.00	150.00
D-3 CAT w/ RANGE DRILL	1530	1830	3.0	90.00	270.00
4x4 PU w/ SUPV. 11-28	1500	2000	5.0	54.00	270.00
D-3 CAT w/ RANGE DRILL	1500	1900	4.0	90.00	360.00
4x4 PU w/ OP TO SITE	1900	2000	1.0	50.00	50.00
" " RTN	1400	1500	1.0	50.00	50.00
		TOTAL			$1398.00

REMARKS

Vendor Signature: [signature]

Rentor Signature: Jim Hill

Posted to Accounting Records: Date | Initials

Terms and Disclosure Statement: Accounts are due and payable within 30 days following date of invoice. A finance charge of 1½% per month (18% annum) will be charged on the unpaid, past due balance. Purchaser agrees to pay reasonable attorney's fee and other costs incurred for collection.

SNOWY RANGE, INC.
SNOW MOVERS • RESEEDERS
P. O. Box 1725, Evanston, WY 82931 • (307) 789-6556

TIME TICKET & INVOICE № 2848

Customer: ANSCHUTZ EXPLORATION CORP, 555 17TH ST STE 2400, DENVER CO 80202

Date: NOV. 29 2005

Customer's Work Order Number: Jim Hill

Project and Area: RECLAMATION SEEDING ANSCHUTZ WELL 14-33, UINTA COUNTY, WY

Equipment Identification	Shift Time or Meter Readings Start	Stop	Operating Hours	Rate	Amount
4x4 PU w/ OP. TO SITE	0900	1030	1.5	50.00	75.00
4x4 PU w/ SUPV.	0930	1230	3.0	54.00	162.00
D-3 CAT w/ RANGE DRILL	1030	1430	4.0	90.00	360.00
4x4 PU w/ OP RTN	1430	1500	1.0	50.00	50.00
TRANSPORT w/ 10 TON TRLR, DEMOB CAT	?	?	2.0	82.00	164.00
PERMIT			SUBTOTAL		811.00
	TICKET #2849		PREVIOUS PAGE		1398.00
5% WYO SALES TAX w/i 250	WEEDHEAD				55.22
PERMIT c/o					15.00
		TOTAL			$2279.22

REMARKS: EST. 9 TOTAL AC, 4½ AC TAXABLE

ADD'L SEED 200.00

TOTAL 2479.22

Vendor Signature: [signature]

Rentor Signature: Jim Hill

Posted to Accounting Records: Date | Initials

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