NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

May 31, 2000

Amoco Production Company
Durango Operations Center
380 Airport Road
Durango, Colorado 81301

Attn: Mr. Daryl Erickson

RE: Injection Pressure Increase,
E.E. Elliot SWD Well No. 1,
Administrative Order No. SWD-376,
San Juan County, New Mexico

Reference is made to your request dated May 26, 2000 to increase the surface injection pressure on the above referenced well. This request is based on a step rate test conducted on May 5, 2000. The results of the test have been reviewed by my staff and we feel an increase in injection pressure on this well is justified at this time.

You are therefore authorized to increase the surface injection pressure on the following well:

Well and Location	*Maximum Injection Pressure*
E.E. Elliot SWD Well No. 1	1690 PSIG
Located in Section 26, Township 30 North, Range 9 West, San Juan County, New Mexico.	

The Division Director may rescind this injection pressure increase if it becomes apparent that the injected water is not being confined to the injection zone or is endangering any fresh water aquifers.

Sincerely,

Lori Wrotenbery

Lori Wrotenbery
Director

LW/MWA/kv
cc: Oil Conservation Division - Aztec
Files: SWD-376; IPI 2nd QTR-2000

BP Amoco

Amoco Production Company
Durango Operations Center
380 Airport Road
Durango, Colorado 81301
(970) 247-6800

May 25, 2000

New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Attention: David Catanach

Request for Revised Maximum
Allowable Surface Injection Pressure
Order No. SWD-376
E. E. Elliot SWD No. 1
NW/4 Sec. 26-T30N-R9W
San Juan County, New Mexico

Pursuant to Administrative Order No. SWD-376, the Director of the Division may authorize an increase in injection pressure upon proper showing by the operator that such higher pressure will not result in migration of the injected fluid from the Morrison, Bluff, and Entrada formations. It goes on to say that proper showing shall consist of a valid step rate test run in accordance with and acceptable to your office. On May 5, 2000 a step rate test was successfully completed on the subject well. Based on the results of the test, we are requesting the maximum allowable surface injection pressure be raised from 1480 psig to 1740 psig.

The step rate test procedure was approved by the Aztec NMOCD personnel and witnessed by Mr. Bruce Martin of that office. The E. E. Elliot SWD No. 1 was shut-in several days prior to running the test. Approximately 24 hours prior to performing the step rate test, dual pressure recorders were set at 7436' and 7442' KB, respectively, and recorded a stable reservoir pressure of 4658 psig. The test consisted of 15 twenty minute rate steps beginning with 0.3 BPM and ending with 4.5 BPM. The test was performed as planned and the data quality of the test was good. Included with this letter are the following attachments related to this test:

- Approved Step Rate Test Procedure (Attachment No. 1)
- Wellbore Diagram (Attachment No. 2)
- Schlumberger/Dowell Field Stimulation Service Report (Attachment No. 3)
- Schlumberger Report of Bottomhole Pressure Recorder Data (Attachment No. 4)
- Graph showing the field measured data points - Pressure & Rate vs. Time (Attachment No. 5)
- Graph showing the surface injection pressure vs. rate (Attachment No. 6)
- Graph showing the bottomhole pressure vs. rate - conventional step rate plot (Attachment No. 7)
- Treating Reports for the Entrada Refrac (Attachment No. 8)

Attachment No. 7 shows an apparent break or part of the formation at 4731 psig at a depth of 7442' (an equivalent surface injection pressure of approximately 1740 psig). The conventional pressure vs. rate plot showing the line segment intersection is subject to some interpretation as it appears that the last rate step is just starting to bend over to establish the post fracture trendline. Using the last two rate steps to establish the post fracture trendline should provide a conservative estimate of the formation parting pressure. The surface injection formation parting pressure of 1740 psig established by this analysis corresponds quite well with the ISIP after the step rate test of 1680 psig (see Attachment No. 3). In addition the Entrada formation was refraced in November 1999 to bypass near wellbore cement damage

which occurred during the completion of the Morrison formation. The Entrada refrac ISIP was 1680 psig. Correcting for fluid densities equates to a surface fracturing pressure of 1713 psig. The treating reports for the Entrada refrac are provide as Attachment No. 8.

It is our understanding that the current maximum allowable surface injection pressure of 1480 psig is based on 0.2 psig/ft times the depth of the top formation injection perforation. However, now that a field measured parting pressure of 1740 psig has been demonstrated , Amoco requests the maximum allowable surface injection pressure be based on the step rate test results. Therefore, we are requesting the permit be modified to allow a maximum surface injection pressure of 1740 psig.

If you have any questions please contact Daryl Erickson at (970) 247-6821.

Sincerely,

Daryl Erickson
Project Engineer

Attachments

cc:
New Mexico Oil Conservation Division
1000 Rio Brazos Road
Aztec, NM 87410
Attention: Charlie Perrin

Buddy Shaw - Farmington OC

UIC Environmental File

Attachment No. 1
Step Rate Test Procedure
E. E. Elliot SWD No. 1

Elliot SWD #1 - Step Rate Test
Morrison, Bluff, and Entrada Formations

Step Rate Test Procedure:

Prior to performing the step rate test the building setting over the wellhead must be removed by a roustabout crew. Ensure that water storage tanks are completely full before initiating the step rate test. Water storage capacity on location is 2000 bbls, available capacity for test is 1520 bbls. Must contact NMOCD prior to the step rate test so that they can have a representative witness the test.

1. Shut-in well for 24 hours prior to running step rate test.

2. Rig up wireline unit and lubricator. Trip in the hole with tandem pressure bombs capable of measuring pressure from 0 psig to 10,000 psig. Land bombs in 2.25" ID F seating nipple at approximately 7442'. Note the exact time the gauge was set in the seating nipple.

    - the gauge should allow water to pass by.
    - Program bombs to take readings every 5 seconds throughout the test.

3. Rig up pump trucks (if required provide second pump truck to span range of injection rates for step rate test). Tie suction to disposal tanks and discharge to tubing. Pressure test lines and connections. Monitor casing and bradenhead pressures during the test.

4. Perform step rate test as follows:

Step	Time	Injection Rate (BPM)	Injection Rate (BWPD)	Cum. Inj. Vol. BW
1	20 minutes	0.30	432	6
2	20 minutes	0.60	864	12
3	20 minutes	0.90	1296	18
4	20 minutes	1.20	1728	24
5	20 minutes	1.50	2160	30
6	20 minutes	1.80	2592	36
7	20 minutes	2.10	3024	42
8	20 minutes	2.40	3456	48
9	20 minutes	2.70	3888	54
10	20 minutes	3.00	4320	60
11	20 minutes	3.30	4752	66
12	20 minutes	3.60	5184	72
13	20 minutes	3.90	5616	78
14	20 minutes	4.20	6048	84
			Total =	630 bbls

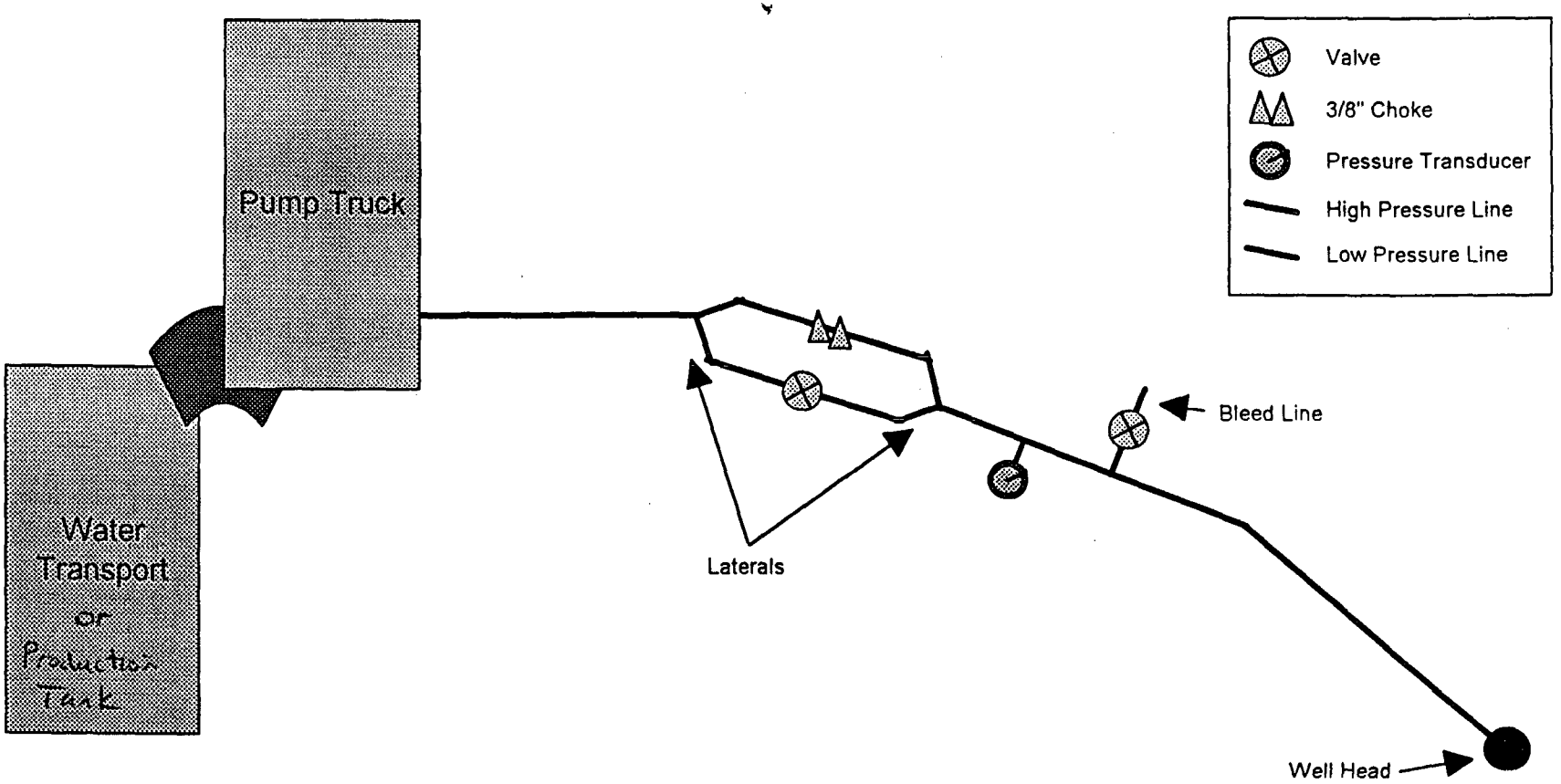
- Continuously monitor surface injection pressure and rate in a digital format. Use a computer van or equivalent if necessary.
- The time step intervals are critical. Inconsistencies such as shorter or longer time steps are unacceptable.
- Once an injection rate has been established at or near the requested rate every effort must be made to keep the rate constant.

5. Shut down and record ISIP.

6. After performing the step rate test, trip out of the hole with pressure gauges.

7. Perform Mechanical Integrity Test following New Mexico Oil Conservation Division guidelines.

8. Return well to injection. Send all test results to Daryl Erickson in Durango immediately.


Valve
3/8" Choke
Pressure Transducer
High Pressure Line
Low Pressure Line
Pump Truck
Water Transport or Production Tank
Laterals
Bleed Line
Well Head

Attachment No. 2
Wellbore Diagram
E. E. Elliot SWD #1

Amoco Production Company

ENGINEERING CHART

Sheet No. ____ Of ____

File ____

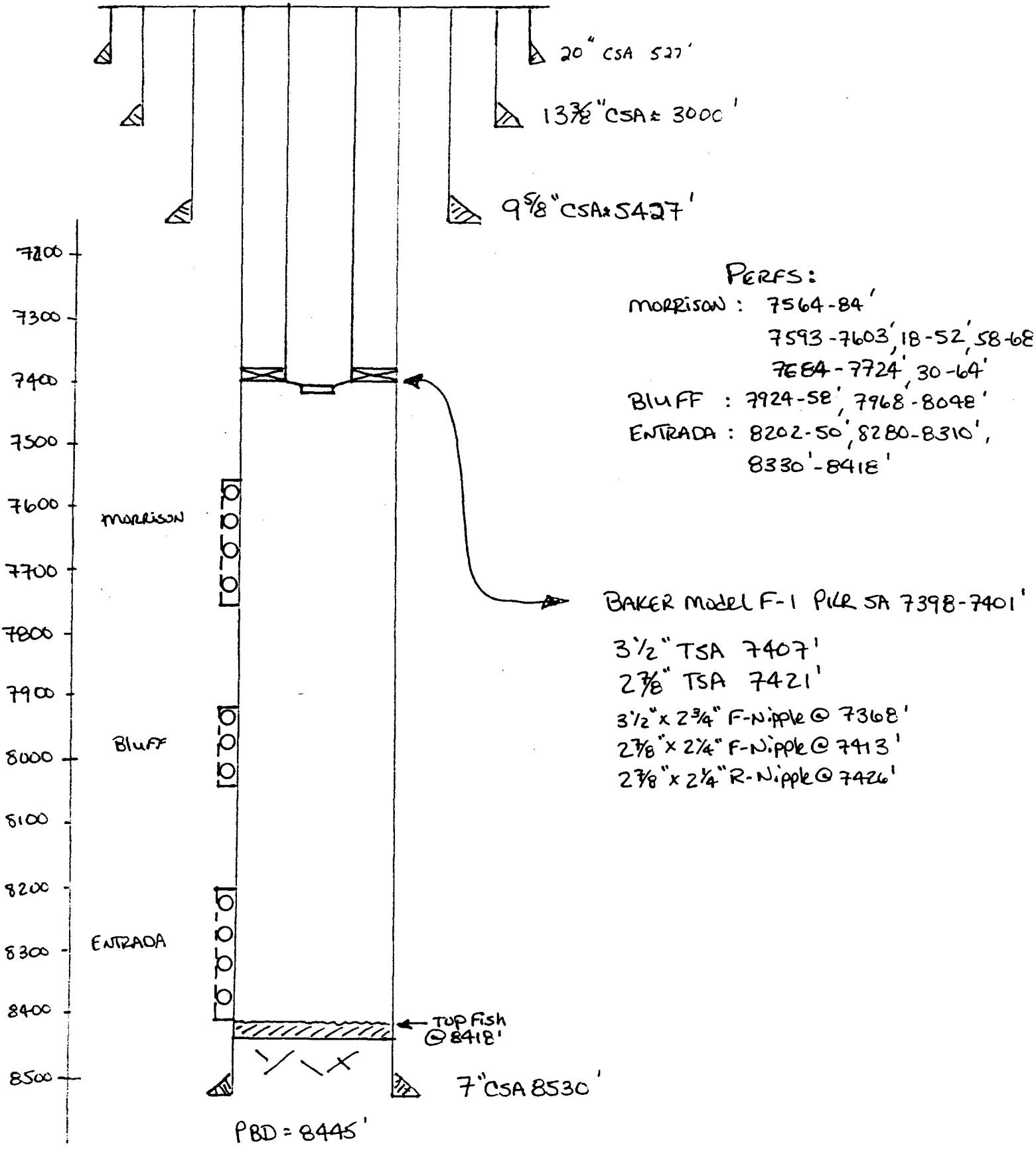
Appr. ____

Date 12/1/99

By GMK

SUBJECT: Elliott SWD #1

WELLBORE DIAGRAM



PERFS:

MORRISON: 7564-84', 7593-7603', 18-52', 58-68', 7684-7724', 30-64'

BLUFF: 7924-58', 7968-8048'

ENTRADA: 8202-50', 8280-8310', 8330'-8418'

BAKER Model F-1 PKR SA 7398-7401'

3 1/2" TSA 7407'

2 7/8" TSA 7421'

3 1/2" x 2 3/4" F-Nipple @ 7368'

2 7/8" x 2 1/4" F-Nipple @ 7413'

2 7/8" x 2 1/4" R-Nipple @ 7426'

E. Elliott SWD #1 - Completion Information

Entrada: Date: 11/24/90
Perf interval: 8202' - 8418'
Frac: 70 mgal 40# x-l pad
86 mgal 30# x-l + 243 m# 20/40 sand
max/min/avg prs - 1500/1200/520 psig @ 45 bpm
ISIP = 740 psig

Bluff: Date: 11/30/90
Perf interval: 7924' - 8048'
Frac: 70 mgal 30# x-l pad
82 mgal 30# x-l + 232 m# 20/40 sand
max/min/avg prs = 2500/2030/1770 psig @ 45 bpm
ISIP = 1940 psig

Morrison: Date: 1/3/91
Perf interval: 7564' - 7764'
Frac: 40 mgal 30# x-l pad
44 mgal 30# x-l + 121 m# 20/40 sand
max/min/avg prs = 2600/na/2050 psig @ 35 bpm
ISIP = 2400 psig

Refrac of Morrison, Bluff, & Entrada:
Date: 11/10/99
Perf intervals: 8202' - 8418' Entrada
7924' - 8048' Bluff
7564' - 7764' Morrison
Frac: 167 mgal 30# x-l gel + 260 m# 20/40 sand
max/min/avg prs = 2051/1030/1500 psig @ 45.5 bpm
ISIP = 1680 psig

Attachment No. 3
Schlumberger/Dowell Field Simulation Service Report
E. E. Elliot SWD #1

Schlumberger
Dowell

Stimulation Service Report

Customer	Job Number
AMOCO PRODUCTION COMPANY	20156543

Well	Location (legal)	Dowell Location	Job Start
E.E. Elliott SWD #1 #1	Sec26-T30N-R09W	Farmington, NM	5/5/00

Field	Formation Name/Type	Deviation	BitSize:	Well MD	Well TVD
	Dirty-Sandstone	0 °	0 in	8,418 ft	8,418 ft

County	State/Province	BHP	BHST	BHCT	Pore Pres Gradient
San Juan	NM	0 psi	210 °F	0 °F	0 psi/ft

Rig Name	Drilled For	Service Via
	Disposal	Land

Offshore Zone	Well Class	Well Type
	Old	Workover

Primary Treating Fluid	Polymer Loading	Fluid Density
	0 lb/1000gal	lb/gal

Service Line	Job Type
Fracturing	Frac,Misc/Incomplete

Max. Allowed Tubing Pressure	Max. Allowed Ann. Pressure	WellHead Connection
2000 psi	0 psi	2 7/8" 6.5# T/S

Service Instructions

Perform step rate test and monitor per attatched procedure. Will be rigging up to disposal tanks for suction. Wellhead +/- 220 feet from tanks. 2000 psi max pressure, 4 bpm max rate. State rep will be on location.

Casing

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
8418	7	23	K55	8RD
0	0	0		

Tubing

Depth,	Size, in	Weight, lb/ft	Grade	Thread
7407	3.5	9.3	N80	N/A
0				

Perforated Intervals

Top, ft	Bottom, ft	spf	No. of Shots	Total Interval
7570	7770	4	800	530 ft
7930	8050	3.3333333	400	Diameter
8200	8410	3.8095238	800	0.5 in

Treat Down	Displacement	Packer Type	Packer Depth
Tubing	0 bbl	Baker Model F	7398 ft

Job Scheduled For:	Arrived on Location:	Leave Location:	Tubing Vol.	CasingVol.	AnnularVol.	OpenHoleVol
	5/5/00 8:00	5/5/00 17:30	64.4 bbl	40 bbl	203.5 bbl	104.4 bbl

Time 24 hr clock	Annulus Pressure psi	Pressure U1 psi	Total Flowrate bpm	Total Volume bbl					Message
10:15	0	0	0	0	0	0	0	0	START ACQUISITION
10:15	-13.74	0.	0.	0.	0	0	0	0	
10:15	-13.74	0.	0.	0.	0	0	0	0	load and test annulus
10:17	-13.74	0.	0.028	0.056	0	0	0	0	
10:19	-4.58	4.58	1.12	0.257	0	0	0	0	
10:21	-9.16	0.	0.	0.569	0	0	0	0	
10:23	4.58	41.21	0.028	0.689	0	0	0	0	
10:25	32.05	50.37	0.	0.77	0	0	0	0	
10:25	32.05	50.37	0.	0.77	0	0	0	0	test annulus
10:27	348.	361.7	0.	1.05	0	0	0	0	
10:29	348.	384.6	0.	1.05	0	0	0	0	
10:31	343.4	380.	0.	1.05	0	0	0	0	
10:33	343.4	389.2	0.	1.05	0	0	0	0	
10:35	343.4	389.2	0.	1.05	0	0	0	0	
10:36	343.4	389.2	0.	1.05	0	0	0	0	end test
10:37	91.58	274.7	0.	1.05	0	0	0	0	
10:39	-13.74	4.58	0.	1.05	0	0	0	0	
10:41	-13.74	2408	0.	1.15	0	0	0	0	
10:43	-13.74	4.58	0.	1.15	0	0	0	0	
10:45	-13.74	4.58	0.	1.15	0	0	0	0	
10:47	-13.74	2248	0.	1.24	0	0	0	0	
10:49	-13.74	9.16	0.	1.24	0	0	0	0	
10:51	-13.74	4.58	0.	1.24	0	0	0	0	
10:53	-13.74	4.58	0.	1.24	0	0	0	0	
10:55	-13.74	4.58	0.	1.24	0	0	0	0	
10:57	-13.74	2624	0.	1.31	0	0	0	0	
10:59	-13.74	1429	0.	1.32	0	0	0	0	
11:00	-13.74	1429	0.	1.32	0	0	0	0	[Stage Volume]=1.315 bbl

Well	Fi	Service Date	Customer	Job Number
E.E. Elliott SWD #1 ##1			1OCO PRODUCTION COMP	20156543

Time 24 hr clock	Annulus Pressure psi	Pressure U1 psi	Total Flowrate bpm	Total Volume bbl					Message
11:00	-13.74	1429	0.	1.32	0	0	0	0	Reset Volume
11:00	-13.74	1429	0.	1.32	0	0	0	0	stage 1
11:00	-13.74	1429	0.	1.32	0	0	0	0	[Stage Volume]=0 bbl
11:00	-13.74	1429	0.	1.32	0	0	0	0	Reset Volume
11:00	-13.74	1429	0.	1.32	0	0	0	0	[Total Volume]=0 bbl
11:01	-13.74	1424	0.175	0.103	0	0	0	0	
11:03	-13.74	1419	0.33	0.679	0	0	0	0	
11:04	-13.74	1419	0.33	0.679	0	0	0	0	[Stage Volume]=.9793 bbl
11:04	-13.74	1419	0.33	0.679	0	0	0	0	Reset Volume
11:04	-13.74	1419	0.33	0.679	0	0	0	0	[Total Volume]=0 bbl
11:05	-18.32	1415	0.33	0.316	0	0	0	0	
11:07	-18.32	1415	0.33	0.98	0	0	0	0	
11:09	-18.32	1415	0.33	1.64	0	0	0	0	
11:11	-22.89	1415	0.33	2.31	0	0	0	0	
11:13	-22.89	1415	0.35	2.96	0	0	0	0	
11:15	-22.89	1415	0.33	3.64	0	0	0	0	
11:17	-22.89	1415	0.33	4.31	0	0	0	0	
11:19	-22.89	1415	0.33	4.97	0	0	0	0	
11:21	-27.47	1415	0.33	5.63	0	0	0	0	
11:23	-27.47	1415	0.583	6.38	0	0	0	0	
11:23	-27.47	1415	0.583	6.38	0	0	0	0	[Total Volume]=0 bbl
11:25	-27.47	1415	0.603	1.06	0	0	0	0	
11:27	-27.47	1419	0.622	2.66	0	0	0	0	
11:29	-27.47	1419	0.603	3.89	0	0	0	0	
11:31	-27.47	1419	0.603	5.11	0	0	0	0	
11:33	-27.47	1419	0.622	6.33	0	0	0	0	
11:35	-27.47	1419	0.622	7.56	0	0	0	0	
11:37	-27.47	1419	0.603	8.78	0	0	0	0	
11:39	-27.47	1419	0.603	10.	0	0	0	0	
11:41	-27.47	1419	0.622	11.23	0	0	0	0	
11:43	-27.47	1419	0.603	12.45	0	0	0	0	
11:44	-27.47	1419	0.603	12.45	0	0	0	0	[Total Volume]=0 bbl
11:45	-27.47	1424	0.914	0.83	0	0	0	0	
11:47	-27.47	1424	0.933	2.67	0	0	0	0	
11:49	-27.47	1424	0.933	4.52	0	0	0	0	
11:51	-27.47	1424	0.933	6.36	0	0	0	0	
11:53	-27.47	1424	0.914	8.2	0	0	0	0	
11:55	-27.47	1424	0.914	10.05	0	0	0	0	
11:57	-27.47	1424	0.914	11.89	0	0	0	0	
11:59	-32.05	1424	0.914	13.74	0	0	0	0	
12:01	-32.05	1424	0.914	15.58	0	0	0	0	
12:03	-32.05	1424	0.914	17.43	0	0	0	0	
12:04	-32.05	1424	0.914	17.43	0	0	0	0	[Total Volume]=0 bbl
12:05	-32.05	1438	1.22	1.16	0	0	0	0	
12:07	-32.05	1438	1.21	3.61	0	0	0	0	
12:09	-32.05	1438	1.22	6.05	0	0	0	0	
12:11	-32.05	1438	1.21	8.5	0	0	0	0	
12:13	-32.05	1438	1.22	10.94	0	0	0	0	
12:15	-32.05	1438	1.22	13.39	0	0	0	0	
12:17	-32.05	1438	1.22	15.84	0	0	0	0	
12:19	-32.05	1438	1.22	18.28	0	0	0	0	
12:21	-32.05	1438	1.21	20.73	0	0	0	0	
12:23	-32.05	1438	1.22	23.17	0	0	0	0	

Well	Field	Service Date	Customer	Job Number
E.E. Elliott SWD #1 ##1			1OCO PRODUCTION COMP	20156543

Time	Annulus Pressure	Pressure U1	Total Flowrate	Total Volume					Message
24 hr clock	psi	psi	bpm	bbl					
12:24	-32.05	1438	1.22	23.17	0	0	0	0	[Total Volume]=0 bbl
12:25	-32.05	1447	1.5	1.74	0	0	0	0	
12:28	-32.05	1447	1.5	4.73	0	0	0	0	
12:30	-32.05	1447	1.5	7.73	0	0	0	0	
12:32	-32.05	1447	1.48	10.72	0	0	0	0	
12:34	-32.05	1447	1.48	13.71	0	0	0	0	
12:36	-32.05	1447	1.48	16.7	0	0	0	0	
12:38	-36.63	1447	1.48	19.69	0	0	0	0	
12:40	-32.05	1447	1.5	22.68	0	0	0	0	
12:42	-32.05	1447	1.48	25.67	0	0	0	0	
12:44	-32.05	1447	1.48	28.66	0	0	0	0	
12:45	-32.05	1447	1.48	28.66	0	0	0	0	[Total Volume]=0 bbl
12:46	-32.05	1465	1.79	1.94	0	0	0	0	
12:48	-36.63	1465	1.81	5.55	0	0	0	0	
12:50	-36.63	1465	1.79	9.16	0	0	0	0	
12:52	-32.05	1465	1.79	12.78	0	0	0	0	
12:54	-32.05	1465	1.81	16.39	0	0	0	0	
12:56	-36.63	1465	1.81	20.	0	0	0	0	
12:58	-36.63	1465	1.81	23.61	0	0	0	0	
13:00	-36.63	1465	1.79	27.21	0	0	0	0	
13:02	-36.63	1465	1.79	30.81	0	0	0	0	
13:04	-36.63	1465	1.79	34.41	0	0	0	0	
13:05	-36.63	1465	1.79	34.41	0	0	0	0	[Total Volume]=0 bbl
13:06	-36.63	1497	2.14	0.776	0	0	0	0	
13:08	-36.63	1493	2.08	4.99	0	0	0	0	
13:10	-36.63	1493	2.1	9.19	0	0	0	0	
13:12	-36.63	1493	2.08	13.4	0	0	0	0	
13:14	-36.63	1493	2.1	17.6	0	0	0	0	
13:16	-32.05	1493	2.08	21.81	0	0	0	0	
13:18	-36.63	1493	2.1	26.01	0	0	0	0	
13:20	-36.63	1493	2.1	30.22	0	0	0	0	
13:22	-32.05	1493	2.08	34.42	0	0	0	0	
13:24	-32.05	1493	2.1	38.63	0	0	0	0	
13:26	-32.05	1493	2.1	42.83	0	0	0	0	
13:26	-32.05	1493	2.1	42.83	0	0	0	0	[Total Volume]=0 bbl
13:28	-36.63	1516	2.41	4.43	0	0	0	0	
13:30	-36.63	1516	2.39	9.26	0	0	0	0	
13:32	-36.63	1516	2.39	14.09	0	0	0	0	
13:34	-36.63	1516	2.39	18.92	0	0	0	0	
13:36	-32.05	1516	2.41	23.74	0	0	0	0	
13:38	-32.05	1516	2.39	28.57	0	0	0	0	
13:40	-36.63	1516	2.41	33.4	0	0	0	0	
13:42	-36.63	1516	2.39	38.23	0	0	0	0	
13:44	-32.05	1516	2.39	43.06	0	0	0	0	
13:46	-32.05	1516	2.41	47.89	0	0	0	0	
13:46	-32.05	1516	2.41	47.89	0	0	0	0	[Total Volume]=0 bbl
13:48	-32.05	1543	2.72	4.96	0	0	0	0	
13:50	-32.05	1543	2.72	10.42	0	0	0	0	
13:52	-32.05	1543	2.72	15.88	0	0	0	0	
13:54	-32.05	1543	2.72	21.34	0	0	0	0	
13:56	-32.05	1543	2.72	26.8	0	0	0	0	
13:58	-32.05	1548	2.7	32.26	0	0	0	0	
14:00	-32.05	1548	2.72	37.72	0	0	0	0	

Well		Field		Service Date	Customer		Job Number
E.E. Elliott SWD #1 ##1					1OCO PRODUCTION COMP		20156543

Time 24 hr clock	Annulus Pressure psi	Pressure U1 psi	Total Flowrate bpm	Total Volume bbl					Message
14:02	-32.05	1548	2.7	43.18	0	0	0	0	
14:04	-32.05	1548	2.72	48.64	0	0	0	0	
14:06	-32.05	1520	2.55	54.08	0	0	0	0	
14:06	-32.05	1520	2.55	54.08	0	0	0	0	[Total Volume]=0 bbl
14:08	-32.05	1580	3.03	5.91	0	0	0	0	
14:10	-32.05	1580	3.03	12.02	0	0	0	0	
14:12	-32.05	1580	3.03	18.12	0	0	0	0	
14:14	-32.05	1580	3.05	24.22	0	0	0	0	
14:16	-32.05	1584	3.03	30.32	0	0	0	0	
14:18	-32.05	1584	3.03	36.42	0	0	0	0	
14:20	-32.05	1584	3.03	42.52	0	0	0	0	
14:22	-32.05	1584	3.05	48.62	0	0	0	0	
14:24	-32.05	1584	3.03	54.72	0	0	0	0	
14:26	-32.05	1584	3.03	54.72	0	0	0	0	[Total Volume]=0 bbl
14:26	-32.05	1506	2.07	60.41	0	0	0	0	
14:28	-32.05	1616	3.38	6.45	0	0	0	0	
14:30	-32.05	1616	3.3	13.13	0	0	0	0	
14:32	-32.05	1616	3.27	19.74	0	0	0	0	
14:34	-32.05	1616	3.27	26.36	0	0	0	0	
14:36	-32.05	1616	3.27	32.95	0	0	0	0	
14:38	-36.63	1612	3.3	39.54	0	0	0	0	
14:40	-36.63	1612	3.27	46.12	0	0	0	0	
14:42	-36.63	1612	3.27	52.7	0	0	0	0	
14:44	-36.63	1612	3.27	59.29	0	0	0	0	
14:46	-36.63	1612	3.27	59.29	0	0	0	0	[Total Volume]=0 bbl
14:46	-36.63	1635	3.58	0.511	0	0	0	0	
14:48	-36.63	1653	3.58	7.81	0	0	0	0	
14:50	-36.63	1653	3.58	15.04	0	0	0	0	
14:52	-36.63	1653	3.58	22.24	0	0	0	0	
14:54	-36.63	1653	3.58	29.45	0	0	0	0	
14:56	-36.63	1653	3.58	36.65	0	0	0	0	
14:58	-36.63	1653	3.58	43.85	0	0	0	0	
15:00	-36.63	1653	3.58	51.04	0	0	0	0	
15:02	-36.63	1653	3.55	58.23	0	0	0	0	
15:04	-36.63	1653	3.58	65.41	0	0	0	0	
15:06	-36.63	1653	3.58	65.41	0	0	0	0	[Total Volume]=0 bbl
15:06	-36.63	1680	3.8	1.4	0	0	0	0	
15:08	-36.63	1680	3.8	1.4	0	0	0	0	[Total Volume]=0 bbl
15:08	-36.63	1694	3.9	2.61	0	0	0	0	
15:10	-36.63	1694	3.88	10.48	0	0	0	0	
15:12	-36.63	1694	3.84	18.3	0	0	0	0	
15:14	-36.63	1694	3.89	26.1	0	0	0	0	
15:16	-36.63	1685	3.83	33.82	0	0	0	0	
15:18	-36.63	1685	3.81	41.5	0	0	0	0	
15:20	-36.63	1685	3.79	49.18	0	0	0	0	
15:22	-36.63	1685	3.83	56.85	0	0	0	0	
15:24	-36.63	1685	3.84	64.53	0	0	0	0	
15:26	-36.63	1690	3.83	72.22	0	0	0	0	
15:27	-36.63	1690	3.83	72.22	0	0	0	0	[Total Volume]=0 bbl
15:28	-36.63	1731	4.19	4.04	0	0	0	0	
15:30	-36.63	1735	4.14	12.42	0	0	0	0	
15:33	-32.05	1735	4.16	20.77	0	0	0	0	
15:35	-32.05	1735	4.13	29.11	0	0	0	0	

Well	Field	Service Date	Customer	Job Number
E.E. Elliott SWD #1 ##1			1OCO PRODUCTION COMP	20156543

Time 24 hr clock	Annulus Pressure psi	Pressure U1 psi	Total Flowrate bpm	Total Volume bbl					Message
15:37	-36.63	1735	4.13	37.48	0	0	0	0	
15:39	-36.63	1735	4.16	45.88	0	0	0	0	
15:41	-36.63	1735	4.19	54.28	0	0	0	0	
15:43	-36.63	1735	4.19	62.96	0	0	0	0	
15:45	-36.63	1735	4.14	71.27	0	0	0	0	
15:47	-36.63	1740	4.19	79.66	0	0	0	0	
15:49	-32.05	1786	4.53	88.12	0	0	0	0	
15:49	-32.05	1786	4.53	88.12	0	0	0	0	[Total Volume]=0 bbl
15:51	-32.05	1790	4.5	8.94	0	0	0	0	
15:53	-36.63	1790	4.5	18.03	0	0	0	0	
15:55	-32.05	1790	4.53	27.13	0	0	0	0	
15:57	-36.63	1795	4.5	36.24	0	0	0	0	
15:59	-36.63	1795	4.53	45.33	0	0	0	0	
16:01	-32.05	1795	4.48	54.42	0	0	0	0	
16:03	-36.63	1795	4.53	63.52	0	0	0	0	
16:05	-32.05	1795	4.51	72.62	0	0	0	0	
16:07	-36.63	1799	4.53	81.75	0	0	0	0	
16:09	-36.63	1639	0.	90.37	0	0	0	0	
16:11	-32.05	1451	0.	90.37	0	0	0	0	
16:13	-36.63	1451	0.	90.37	0	0	0	0	
16:14	-36.63	1451	0.	90.37	0	0	0	0	min 5
16:15	-36.63	1451	0.	90.37	0	0	0	0	
16:17	-32.05	1456	0.	93.17	0	0	0	0	
16:19	-32.05	1456	0.	93.17	0	0	0	0	
16:21	-32.05	1451	0.	93.17	0	0	0	0	
16:23	-32.05	1451	0.	93.17	0	0	0	0	
16:24	-32.05	1451	0.	93.17	0	0	0	0	min15

Post Job Summary

Average Injection Rates, bpm

Fluid	N2	CO2	Maximum Rate
3	0	0	4.6

Volume of Fluid Injected, bbl

Clean Fluid	Acid	Oil	CO2	N2 (scf)
0	0	0	0	0

Treating Pressure Summary, psi

Breakdown	Maximum	Final	Average	ISIP	15 Min. ISIP
0	1808	1808	1500	1680	0

Quantity of & placed, lb

Total Injected	Total Ordered/Designed
0	0

N2 Percent	CO2 Percent	Designed Fluid Volume	Displacement	Slurry Volume	Pad Volume	Percent Pad
0 %	0 %	0 gal	780 bbl	0 bbl	0 gal	0 %

Customer or Authorized Representative	Dowell Supervisor	Number of Stages	Fracture Gradient	
Daryl Erickson	Larry Jennings	0	0 psi/ft	☐ Job Completed ☐ Screen Out

Attachment No. 4
Schlumberger Report of Bottomhole Pressure Recorder Data
E. E. Elliot SWD #1

Amoco Production Co.

Step Rate Test

Elliot SWD

1

May 04, 00 to May 08, 00

Service Company Contact Info		
Report Writer: Steve Nelson, 505-325-5006	Service Company: Schlumberger	
Operator: Steve Nelson, 505-325-5006	Job ID: Elliot SWD#1-Step Rate	Test Date: May 04, 00 to May 08, 00

Gauge: Lee Memory Recorder Model 3000s (Quartz)

Manufacturer: Lee Tool, Division of Schlumberger Canada Limited

Step Rate Test

Amoco Production Co.
New Mexico, USA

May 04, 00 to May 08, 00

Elliot SWD | **1** | **Morrison/Bluff/Entrada**

Well

Client	State	Country
Amoco Production Co.	New Mexico	USA
Well Name	**Deviated Well**	**Well Status**
Elliot SWD		Injection
Well No.	**KB Elevation**	**CF Elevation**
1		
Field / **Pool**	**Pool Datum**	
Morrison/Bluff/Entrada		

Test

Test Name				Atmospheric		
Step Rate Test				14.69 PSI A		
Test Start (mm/dd/yy)		**Test Finish**		**Casing ID**		**Tubing ID**
05/04/00	12:09 PM	05/08/00	10:45 AM	6.50 in		2.95 in
On Bottom		**Off Bottom**		**C. Pres. Before**		**T. Pres. Before**
05/04/00	12:56 PM	05/08/00	10:18 AM	0.00 PSI A		
Shut In		**ETO**		**C. Pres. After**		**T. Pres. After**
		05/04/00	12:09 PM	0.00 PSI A		

	Meas. Depth [ftKB]	TVD [ftKB]	Est. Pressure [PSI A]	Est. Gradient [PSI/ft]	Est. Temperature [DegF]	Grad. Threshold
Well Datum						Grad. Recorder
Landed Depth	7442.00	7442.00				
Avg. MPP Depth	7991.00	7991.00				

Operator	Service Company
Steve Nelson, 505-325-5006	Schlumberger

Remarks

Depth References

Depth Reference	Offset [ft]	Elevation [ftMSL]
Kelly Bushing (KB)		

Perforations

Perf Top MD, [ftKB]	Perf Bottom MD, [ftKB]	MPP TVD, [ftKB]	Pressure	Gradient
7564.00	8418.00	7991.00		

Top Recorder

Model	Serial	Latest Calibration	
LMR-3000S	9654Q-10E	12/20/99	
Max. Rated Press.	**Max. Rated Temp.**		
10000.06 PSI A	301.71 DegF		

Bottom Recorder

Model	Serial	Latest Calibration	
LMR-3000S	9653Q-10E	12/20/99	
Max. Rated Press.	**Max. Rated Temp.**		
10000.06 PSI A	301.71 DegF		

Tool Summary

Amoco Production Co.

New Mexico, USA | **May 04, 00 to May 08, 00**

Elliot SWD | **1** | **Morrison/Bluff/Entrada**

Top Recorder

Tool	Serial	Latest Calibration	Battery Serial
LMR-3000S	9654Q-10E	12/20/99	
Landed Depth	**Depth Offset**	**Min. Battery**	
7436.00 ftKB	-6.00 ft	0.10 V	

Program: 20 Days @5 sec.

	Intervals				Expected Samples			Actual Samples				
Mode	Interval [d hh:mm:ss]	Rate [hh:mm:ss]	Delta [PSI]	Periodic [hh:mm:ss]	Regular Samples	Percent Storage	Energy [Ahr]	Regular Samples	Delta Samples	Percent Storage	Energy [Ahr]	Duration [d hh:mm:ss]
HB	20	5			345600	98.9%	3.9396	68116		19.5%	0.7765	3 22:36:20
Totals:	20				345600	98.9%	3.9396	68116		19.5%	0.7765	3 22:36:20

Bottom Recorder

Tool	Serial	Latest Calibration	Battery Serial
LMR-3000S	9653Q-10E	12/20/99	
Landed Depth	**Depth Offset**	**Min. Battery**	
7442.00 ftKB	0.00 ft	0.19 V	

Program: 20 Days @5 sec.

	Intervals				Expected Samples			Actual Samples				
Mode	Interval [d hh:mm:ss]	Rate [hh:mm:ss]	Delta [PSI]	Periodic [hh:mm:ss]	Regular Samples	Percent Storage	Energy [Ahr]	Regular Samples	Delta Samples	Percent Storage	Energy [Ahr]	Duration [d hh:mm:ss]
HB	20	5			345600	98.9%	3.9396	68117		19.5%	0.7765	3 22:36:25
Totals:	20				345600	98.9%	3.9396	68117		19.5%	0.7765	3 22:36:25

Recorded Data

Amoco Production Co.

New Mexico, USA **May 04, 00 to May 08, 00**

Elliot SWD **1** **Morrison/Bluff/Entrada**

Data

9654Q-10E		9654Q-10E	9653Q-10E	9653Q-10E vs 9654Q-10E	9654Q-10E	9653Q-10E
Real Time (mm/dd/yyyy 24 hr.)	Elapsed Time (DDD:HH:MM:SS)	Pressure (PSI A)	Pressure (PSI A)	Press. Diff. (PSI)	Temperature (DegF)	Temperature (DegF)
05/04/2000 12:09:30	0:00:00:00	14.452	15.916	1.464	113.38	120.70
12:21:30	0:00:12:00	14.895	16.271	1.376	111.91	119.77
12:33:30	0:00:24:00	1511.017	1528.132	17.115	102.31	102.37
12:45:30	0:00:36:00	3233.326	3262.783	29.457	94.11	97.22
12:57:30	0:00:48:00	4659.384	4663.056	3.671	145.31	153.45
13:09:30	0:01:00:00	4658.221	4660.519	2.298	169.24	171.51
13:21:30	0:01:12:00	4658.158	4660.278	2.121	173.72	174.35
13:33:30	0:01:24:00	4658.110	4660.189	2.078	174.77	174.99
13:45:30	0:01:36:00	4658.074	4660.139	2.065	175.11	175.17
13:57:30	0:01:48:00	4658.057	4660.125	2.068	175.26	175.24
14:09:30	0:02:00:00	4658.026	4660.108	2.082	175.35	175.29
14:21:30	0:02:12:00	4658.004	4660.100	2.096	175.42	175.33
14:33:30	0:02:24:00	4657.982	4660.102	2.120	175.47	175.36
14:45:30	0:02:36:00	4657.961	4660.096	2.135	175.50	175.38
14:57:30	0:02:48:00	4657.941	4660.088	2.148	175.54	175.41
15:09:30	0:03:00:00	4657.916	4660.087	2.171	175.57	175.43
15:21:30	0:03:12:00	4657.907	4660.075	2.168	175.60	175.44
15:33:30	0:03:24:00	4657.887	4660.074	2.187	175.62	175.47
15:45:30	0:03:36:00	4657.875	4660.058	2.183	175.65	175.48
15:57:30	0:03:48:00	4657.857	4660.063	2.205	175.67	175.50
16:09:30	0:04:00:00	4657.845	4660.062	2.217	175.69	175.52
16:21:30	0:04:12:00	4657.827	4660.049	2.222	175.72	175.54
16:33:30	0:04:24:00	4657.822	4660.046	2.225	175.73	175.56
16:45:30	0:04:36:00	4657.803	4660.037	2.234	175.75	175.58
16:57:30	0:04:48:00	4657.788	4660.033	2.245	175.77	175.60
17:09:30	0:05:00:00	4657.771	4660.024	2.253	175.78	175.61
17:21:30	0:05:12:00	4657.757	4660.006	2.249	175.80	175.62
17:33:30	0:05:24:00	4657.746	4660.002	2.257	175.80	175.64
17:45:30	0:05:36:00	4657.724	4659.997	2.272	175.82	175.65
17:57:30	0:05:48:00	4657.713	4659.978	2.265	175.83	175.66
18:09:30	0:06:00:00	4657.697	4659.972	2.275	175.84	175.67
18:21:30	0:06:12:00	4657.676	4659.961	2.285	175.86	175.69
18:33:30	0:06:24:00	4657.657	4659.939	2.282	175.87	175.69
18:45:30	0:06:36:00	4657.631	4659.919	2.289	175.89	175.71
18:57:30	0:06:48:00	4657.611	4659.906	2.295	175.91	175.71
19:09:30	0:07:00:00	4657.587	4659.876	2.289	175.93	175.73
19:21:30	0:07:12:00	4657.560	4659.855	2.294	175.94	175.74
19:33:30	0:07:24:00	4657.535	4659.826	2.291	175.97	175.74
19:45:30	0:07:36:00	4657.506	4659.799	2.292	175.98	175.74
19:57:30	0:07:48:00	4657.475	4659.765	2.289	176.00	175.75
20:09:30	0:08:00:00	4657.450	4659.744	2.294	176.02	175.76
20:21:30	0:08:12:00	4657.419	4659.706	2.287	176.04	175.77
20:33:30	0:08:24:00	4657.375	4659.667	2.291	176.06	175.77
20:45:30	0:08:36:00	4657.341	4659.639	2.298	176.08	175.78
20:57:30	0:08:48:00	4657.304	4659.603	2.298	176.09	175.79
21:09:30	0:09:00:00	4657.265	4659.570	2.305	176.11	175.80
21:21:30	0:09:12:00	4657.222	4659.527	2.305	176.11	175.81
21:33:30	0:09:24:00	4657.190	4659.486	2.296	176.12	175.82
21:45:30	0:09:36:00	4657.146	4659.448	2.302	176.14	175.83

Data

9654Q-10E Real Time (mm/dd/yyyy 24 hr.)	Elapsed Time (DDD:HH:MM:SS)	9654Q-10E Pressure (PSI A)	9653Q-10E Pressure (PSI A)	9653Q-10E vs 9654Q-10E Press. Diff. (PSI)	9654Q-10E Temperature (DegF)	9653Q-10E Temperature (DegF)
21:57:30	0:09:48:00	4657.097	4659.408	2.311	176.14	175.84
22:09:30	0:10:00:00	4657.063	4659.362	2.299	176.15	175.85
22:21:30	0:10:12:00	4657.021	4659.326	2.305	176.17	175.86
22:33:30	0:10:24:00	4656.973	4659.284	2.312	176.17	175.87
22:45:30	0:10:36:00	4656.938	4659.240	2.302	176.17	175.88
22:57:30	0:10:48:00	4656.893	4659.192	2.299	176.18	175.89
23:09:30	0:11:00:00	4656.847	4659.150	2.303	176.19	175.90
23:21:30	0:11:12:00	4656.799	4659.113	2.314	176.19	175.91
23:33:30	0:11:24:00	4656.766	4659.063	2.297	176.20	175.91
23:45:30	0:11:36:00	4656.723	4659.029	2.306	176.20	175.92
23:57:30	0:11:48:00	4656.683	4658.991	2.308	176.20	175.93
05/05/2000 00:09:30	0:12:00:00	4656.642	4658.951	2.309	176.20	175.94
00:21:30	0:12:12:00	4656.603	4658.903	2.300	176.20	175.95
00:33:30	0:12:24:00	4656.559	4658.874	2.315	176.20	175.95
00:45:30	0:12:36:00	4656.529	4658.834	2.305	176.20	175.96
00:57:30	0:12:48:00	4656.488	4658.797	2.309	176.20	175.97
01:09:30	0:13:00:00	4656.460	4658.761	2.300	176.21	175.98
01:21:30	0:13:12:00	4656.422	4658.721	2.298	176.21	175.99
01:33:30	0:13:24:00	4656.395	4658.688	2.293	176.22	175.99
01:45:30	0:13:36:00	4656.360	4658.657	2.297	176.22	176.00
01:57:30	0:13:48:00	4656.335	4658.631	2.296	176.23	176.01
02:09:30	0:14:00:00	4656.303	4658.595	2.293	176.24	176.02
02:21:30	0:14:12:00	4656.278	4658.566	2.288	176.25	176.02
02:33:30	0:14:24:00	4656.251	4658.543	2.292	176.26	176.03
02:45:30	0:14:36:00	4656.226	4658.519	2.293	176.26	176.04
02:57:30	0:14:48:00	4656.197	4658.491	2.295	176.27	176.05
03:09:30	0:15:00:00	4656.177	4658.466	2.289	176.28	176.05
03:21:30	0:15:12:00	4656.149	4658.441	2.292	176.29	176.06
03:33:30	0:15:24:00	4656.132	4658.431	2.298	176.29	176.07
03:45:30	0:15:36:00	4656.113	4658.400	2.287	176.31	176.07
03:57:30	0:15:48:00	4656.087	4658.378	2.291	176.32	176.08
04:09:30	0:16:00:00	4656.067	4658.362	2.295	176.32	176.09
04:21:30	0:16:12:00	4656.042	4658.346	2.305	176.33	176.09
04:33:30	0:16:24:00	4656.025	4658.326	2.300	176.34	176.10
04:45:30	0:16:36:00	4656.001	4658.302	2.301	176.35	176.10
04:57:30	0:16:48:00	4655.979	4658.270	2.292	176.36	176.11
05:09:30	0:17:00:00	4655.952	4658.251	2.300	176.37	176.12
05:21:30	0:17:12:00	4655.929	4658.232	2.303	176.38	176.12
05:33:30	0:17:24:00	4655.910	4658.208	2.298	176.39	176.13
05:45:30	0:17:36:00	4655.878	4658.182	2.305	176.40	176.14
05:57:30	0:17:48:00	4655.864	4658.151	2.288	176.41	176.14
06:09:30	0:18:00:00	4655.829	4658.125	2.296	176.42	176.15
06:21:30	0:18:12:00	4655.801	4658.096	2.295	176.42	176.16
06:33:30	0:18:24:00	4655.776	4658.066	2.290	176.43	176.17
06:45:30	0:18:36:00	4655.746	4658.031	2.285	176.43	176.17
06:57:30	0:18:48:00	4655.711	4658.010	2.298	176.44	176.18
07:09:30	0:19:00:00	4655.674	4657.969	2.295	176.45	176.18
07:21:30	0:19:12:00	4655.642	4657.936	2.295	176.46	176.19
07:33:30	0:19:24:00	4655.599	4657.895	2.296	176.48	176.19
07:45:30	0:19:36:00	4655.567	4657.857	2.290	176.48	176.20
07:57:30	0:19:48:00	4655.527	4657.818	2.291	176.49	176.21
08:09:30	0:20:00:00	4655.480	4657.770	2.291	176.50	176.21
08:21:30	0:20:12:00	4655.437	4657.736	2.299	176.51	176.22
08:33:30	0:20:24:00	4655.392	4657.688	2.296	176.52	176.23
08:45:30	0:20:36:00	4655.347	4657.640	2.293	176.53	176.23
08:57:30	0:20:48:00	4655.294	4657.590	2.296	176.54	176.24
09:09:30	0:21:00:00	4655.247	4657.544	2.298	176.55	176.24
09:21:30	0:21:12:00	4655.199	4657.491	2.292	176.56	176.24

Data

9654Q-10E		9654Q-10E	9653Q-10E	9653Q-10E vs 9654Q-10E	9654Q-10E	9653Q-10E
Real Time (mm/dd/yyyy 24 hr.)	Elapsed Time (DDD:HH:MM:SS)	Pressure (PSI A)	Pressure (PSI A)	Press. Diff. (PSI)	Temperature (DegF)	Temperature (DegF)
09:33:30	0:21:24:00	4655.146	4657.438	2.292	176.57	176.25
09:45:30	0:21:36:00	4655.098	4657.387	2.288	176.57	176.26
09:57:30	0:21:48:00	4655.040	4657.341	2.300	176.58	176.26
10:09:30	0:22:00:00	4654.988	4657.284	2.296	176.60	176.27
10:21:30	0:22:12:00	4654.945	4657.226	2.280	176.60	176.28
10:33:30	0:22:24:00	4654.879	4657.179	2.300	176.63	176.31
10:45:30	0:22:36:00	4654.795	4657.108	2.314	176.58	176.22
10:57:30	0:22:48:00	4654.754	4657.062	2.308	176.61	176.25
11:09:30	0:23:00:00	4655.412	4658.824	3.413	177.41	177.49
11:21:30	0:23:12:00	4658.467	4658.397	-0.070	175.93	175.77
11:33:30	0:23:24:00	4659.024	4661.548	2.524	172.67	172.24
11:45:30	0:23:36:00	4664.607	4666.912	2.305	169.14	168.73
11:57:30	0:23:48:00	4664.718	4666.061	1.342	164.40	163.87
12:09:30	1:00:00:00	4666.395	4666.876	0.481	160.28	159.74
12:21:30	1:00:12:00	4666.465	4667.456	0.991	155.77	155.29
12:33:30	1:00:24:00	4671.864	4672.375	0.511	151.42	150.87
12:45:30	1:00:36:00	4673.248	4675.092	1.844	147.25	146.79
12:57:30	1:00:48:00	4675.485	4678.742	3.257	142.35	141.77
13:09:30	1:01:00:00	4682.064	4681.338	-0.727	137.74	137.13
13:21:30	1:01:12:00	4684.808	4683.941	-0.866	132.54	131.92
13:33:30	1:01:24:00	4688.004	4687.516	-0.488	127.50	126.81
13:45:30	1:01:36:00	4689.136	4691.024	1.888	122.48	121.88
13:57:30	1:01:48:00	4695.514	4695.866	0.352	117.47	116.83
14:09:30	1:02:00:00	4700.228	4699.663	-0.565	113.13	112.57
14:21:30	1:02:12:00	4701.093	4702.010	0.918	108.81	108.30
14:33:30	1:02:24:00	4704.816	4706.290	1.473	105.36	104.91
14:45:30	1:02:36:00	4708.704	4708.460	-0.244	102.32	101.98
14:57:30	1:02:48:00	4714.338	4711.609	-2.729	99.49	99.16
15:09:30	1:03:00:00	4721.829	4719.187	-2.642	97.21	96.95
15:21:30	1:03:12:00	4724.436	4721.117	-3.319	95.02	94.81
15:33:30	1:03:24:00	4727.628	4724.781	-2.847	93.31	93.11
15:45:30	1:03:36:00	4731.537	4731.040	-0.497	91.60	91.46
15:57:30	1:03:48:00	4736.890	4738.624	1.734	90.13	89.99
16:09:30	1:04:00:00	4722.805	4722.208	-0.597	88.91	88.85
16:21:30	1:04:12:00	4704.543	4707.436	2.893	90.51	96.19
16:33:30	1:04:24:00	4700.553	4703.161	2.608	95.24	103.29
16:45:30	1:04:36:00	4697.996	4700.519	2.523	100.47	108.69
16:57:30	1:04:48:00	4696.088	4698.612	2.524	105.36	113.10
17:09:30	1:05:00:00	4694.580	4697.081	2.501	109.71	116.93
17:21:30	1:05:12:00	4693.298	4695.790	2.492	113.65	120.31
17:33:30	1:05:24:00	4692.153	4694.622	2.469	117.22	123.33
17:45:30	1:05:36:00	4691.118	4693.588	2.470	120.45	126.07
17:57:30	1:05:48:00	4690.186	4692.638	2.452	123.39	128.57
18:09:30	1:06:00:00	4689.318	4691.743	2.425	126.05	130.87
18:21:30	1:06:12:00	4688.494	4690.909	2.415	128.46	132.94
18:33:30	1:06:24:00	4687.727	4690.137	2.410	130.70	134.87
18:45:30	1:06:36:00	4687.017	4689.414	2.397	132.75	136.67
18:57:30	1:06:48:00	4686.339	4688.727	2.388	134.63	138.32
19:09:30	1:07:00:00	4685.688	4688.084	2.396	136.37	139.85
19:21:30	1:07:12:00	4685.065	4687.463	2.398	138.02	141.29
19:33:30	1:07:24:00	4684.474	4686.875	2.401	139.53	142.61
19:45:30	1:07:36:00	4683.912	4686.303	2.391	140.97	143.85
19:57:30	1:07:48:00	4683.371	4685.776	2.405	142.27	145.05
20:09:30	1:08:00:00	4682.861	4685.259	2.399	143.48	146.16
20:21:30	1:08:12:00	4682.362	4684.758	2.396	144.67	147.20
20:33:30	1:08:24:00	4681.883	4684.286	2.403	145.76	148.16
20:45:30	1:08:36:00	4681.419	4683.832	2.413	146.77	149.07
20:57:30	1:08:48:00	4680.983	4683.388	2.406	147.75	149.94

Data

9654Q-10E Real Time (mm/dd/yyyy 24 hr.)	Elapsed Time (DDD:HH:MM:SS)	9654Q-10E Pressure (PSI A)	9653Q-10E Pressure (PSI A)	9653Q-10E vs 9654Q-10E Press. Diff. (PSI)	9654Q-10E Temperature (DegF)	9653Q-10E Temperature (DegF)
21:09:30	1:09:00:00	4680.541	4682.963	2.422	148.68	150.76
21:21:30	1:09:12:00	4680.131	4682.544	2.413	149.55	151.53
21:33:30	1:09:24:00	4679.732	4682.150	2.418	150.35	152.27
21:45:30	1:09:36:00	4679.339	4681.763	2.424	151.11	152.99
21:57:30	1:09:48:00	4678.954	4681.377	2.423	151.85	153.65
22:09:30	1:10:00:00	4678.601	4681.027	2.426	152.51	154.29
22:21:30	1:10:12:00	4678.235	4680.671	2.437	153.19	154.90
22:33:30	1:10:24:00	4677.882	4680.305	2.423	153.81	155.47
22:45:30	1:10:36:00	4677.557	4679.963	2.406	154.44	156.01
22:57:30	1:10:48:00	4677.222	4679.643	2.421	155.00	156.54
23:09:30	1:11:00:00	4676.909	4679.317	2.408	155.55	157.04
23:21:30	1:11:12:00	4676.605	4679.006	2.402	156.08	157.52
23:33:30	1:11:24:00	4676.296	4678.711	2.415	156.59	157.97
23:45:30	1:11:36:00	4676.008	4678.420	2.413	157.07	158.41
23:57:30	1:11:48:00	4675.718	4678.130	2.412	157.51	158.83
05/06/2000 00:09:30	1:12:00:00	4675.447	4677.846	2.398	157.96	159.23
00:21:30	1:12:12:00	4675.169	4677.576	2.407	158.39	159.62
00:33:30	1:12:24:00	4674.909	4677.309	2.399	158.78	159.99
00:45:30	1:12:36:00	4674.662	4677.056	2.394	159.19	160.36
00:57:30	1:12:48:00	4674.403	4676.811	2.407	159.56	160.70
01:09:30	1:13:00:00	4674.160	4676.567	2.407	159.92	161.03
01:21:30	1:13:12:00	4673.927	4676.319	2.391	160.26	161.35
01:33:30	1:13:24:00	4673.696	4676.101	2.405	160.59	161.67
01:45:30	1:13:36:00	4673.468	4675.872	2.404	160.92	161.96
01:57:30	1:13:48:00	4673.248	4675.652	2.404	161.24	162.25
02:09:30	1:14:00:00	4673.032	4675.441	2.409	161.52	162.53
02:21:30	1:14:12:00	4672.823	4675.230	2.407	161.82	162.80
02:33:30	1:14:24:00	4672.621	4675.036	2.415	162.10	163.06
02:45:30	1:14:36:00	4672.428	4674.829	2.400	162.39	163.31
02:57:30	1:14:48:00	4672.240	4674.634	2.393	162.66	163.55
03:09:30	1:15:00:00	4672.046	4674.444	2.398	162.90	163.78
03:21:30	1:15:12:00	4671.865	4674.266	2.400	163.15	164.01
03:33:30	1:15:24:00	4671.689	4674.081	2.392	163.38	164.23
03:45:30	1:15:36:00	4671.514	4673.905	2.392	163.61	164.45
03:57:30	1:15:48:00	4671.351	4673.742	2.390	163.83	164.66
04:09:30	1:16:00:00	4671.179	4673.570	2.391	164.05	164.86
04:21:30	1:16:12:00	4671.018	4673.410	2.392	164.24	165.06
04:33:30	1:16:24:00	4670.856	4673.241	2.385	164.46	165.25
04:45:30	1:16:36:00	4670.702	4673.088	2.386	164.65	165.43
04:57:30	1:16:48:00	4670.546	4672.931	2.385	164.85	165.62
05:09:30	1:17:00:00	4670.394	4672.777	2.383	165.06	165.79
05:21:30	1:17:12:00	4670.243	4672.629	2.386	165.23	165.96
05:33:30	1:17:24:00	4670.095	4672.483	2.387	165.40	166.12
05:45:30	1:17:36:00	4669.949	4672.336	2.388	165.57	166.28
05:57:30	1:17:48:00	4669.810	4672.196	2.386	165.74	166.44
06:09:30	1:18:00:00	4669.663	4672.049	2.386	165.90	166.59
06:21:30	1:18:12:00	4669.522	4671.911	2.388	166.06	166.74
06:33:30	1:18:24:00	4669.384	4671.775	2.391	166.21	166.89
06:45:30	1:18:36:00	4669.245	4671.631	2.386	166.35	167.03
06:57:30	1:18:48:00	4669.118	4671.496	2.379	166.51	167.17
07:09:30	1:19:00:00	4668.981	4671.359	2.378	166.66	167.30
07:21:30	1:19:12:00	4668.842	4671.227	2.384	166.80	167.43
07:33:30	1:19:24:00	4668.706	4671.086	2.380	166.93	167.56
07:45:30	1:19:36:00	4668.577	4670.942	2.366	167.08	167.68
07:57:30	1:19:48:00	4668.438	4670.818	2.380	167.22	167.81
08:09:30	1:20:00:00	4668.302	4670.683	2.381	167.33	167.92
08:21:30	1:20:12:00	4668.171	4670.551	2.380	167.46	168.04
08:33:30	1:20:24:00	4668.038	4670.415	2.377	167.60	168.15

Data

9654Q-10E Real Time (mm/dd/yyyy 24 hr.)	Elapsed Time (DDD:HH:MM:SS)	9654Q-10E Pressure (PSI A)	9653Q-10E Pressure (PSI A)	9653Q-10E vs 9654Q-10E Press. Diff. (PSI)	9654Q-10E Temperature (DegF)	9653Q-10E Temperature (DegF)
08:45:30	1:20:36:00	4667.901	4670.280	2.380	167.71	168.27
08:57:30	1:20:48:00	4667.764	4670.147	2.383	167.82	168.37
09:09:30	1:21:00:00	4667.636	4670.014	2.378	167.93	168.48
09:21:30	1:21:12:00	4667.502	4669.876	2.375	168.05	168.59
09:33:30	1:21:24:00	4667.369	4669.739	2.371	168.15	168.69
09:45:30	1:21:36:00	4667.234	4669.614	2.380	168.25	168.79
09:57:30	1:21:48:00	4667.107	4669.479	2.373	168.37	168.89
10:09:30	1:22:00:00	4666.969	4669.350	2.380	168.48	168.98
10:21:30	1:22:12:00	4666.837	4669.216	2.379	168.58	169.08
10:33:30	1:22:24:00	4666.708	4669.073	2.365	168.67	169.17
10:45:30	1:22:36:00	4666.579	4668.941	2.362	168.77	169.26
10:57:30	1:22:48:00	4666.442	4668.816	2.373	168.86	169.35
11:09:30	1:23:00:00	4666.325	4668.681	2.356	168.96	169.43
11:21:30	1:23:12:00	4666.186	4668.566	2.379	169.05	169.52
11:33:30	1:23:24:00	4666.060	4668.431	2.372	169.14	169.60
11:45:30	1:23:36:00	4665.931	4668.304	2.372	169.22	169.68
11:57:30	1:23:48:00	4665.813	4668.184	2.371	169.31	169.76
12:09:30	2:00:00:00	4665.691	4668.058	2.367	169.40	169.84
12:21:30	2:00:12:00	4665.562	4667.946	2.384	169.48	169.92
12:33:30	2:00:24:00	4665.450	4667.809	2.359	169.56	169.99
12:45:30	2:00:36:00	4665.335	4667.689	2.354	169.65	170.06
12:57:30	2:00:48:00	4665.217	4667.583	2.366	169.72	170.13
13:09:30	2:01:00:00	4665.105	4667.464	2.359	169.80	170.21
13:21:30	2:01:12:00	4664.988	4667.351	2.363	169.88	170.28
13:33:30	2:01:24:00	4664.886	4667.261	2.375	169.95	170.36
13:45:30	2:01:36:00	4664.772	4667.156	2.384	170.02	170.42
13:57:30	2:01:48:00	4664.671	4667.049	2.378	170.10	170.49
14:09:30	2:02:00:00	4664.569	4666.939	2.370	170.16	170.55
14:21:30	2:02:12:00	4664.466	4666.847	2.381	170.24	170.62
14:33:30	2:02:24:00	4664.371	4666.747	2.376	170.30	170.68
14:45:30	2:02:36:00	4664.281	4666.656	2.375	170.38	170.75
14:57:30	2:02:48:00	4664.191	4666.561	2.370	170.44	170.81
15:09:30	2:03:00:00	4664.097	4666.472	2.375	170.51	170.87
15:21:30	2:03:12:00	4664.006	4666.387	2.382	170.57	170.93
15:33:30	2:03:24:00	4663.929	4666.296	2.367	170.62	170.99
15:45:30	2:03:36:00	4663.842	4666.213	2.372	170.69	171.04
15:57:30	2:03:48:00	4663.763	4666.131	2.368	170.75	171.10
16:09:30	2:04:00:00	4663.680	4666.058	2.378	170.82	171.16
16:21:30	2:04:12:00	4663.608	4665.981	2.373	170.87	171.22
16:33:30	2:04:24:00	4663.531	4665.907	2.375	170.92	171.27
16:45:30	2:04:36:00	4663.459	4665.835	2.376	170.99	171.32
16:57:30	2:04:48:00	4663.390	4665.760	2.370	171.04	171.38
17:09:30	2:05:00:00	4663.321	4665.690	2.369	171.10	171.43
17:21:30	2:05:12:00	4663.254	4665.622	2.368	171.16	171.48
17:33:30	2:05:24:00	4663.180	4665.557	2.377	171.21	171.53
17:45:30	2:05:36:00	4663.115	4665.488	2.373	171.26	171.58
17:57:30	2:05:48:00	4663.056	4665.424	2.368	171.32	171.63
18:09:30	2:06:00:00	4662.987	4665.362	2.375	171.37	171.68
18:21:30	2:06:12:00	4662.925	4665.303	2.378	171.42	171.73
18:33:30	2:06:24:00	4662.861	4665.236	2.375	171.47	171.77
18:45:30	2:06:36:00	4662.799	4665.165	2.366	171.52	171.82
18:57:30	2:06:48:00	4662.734	4665.113	2.379	171.57	171.86
19:09:30	2:07:00:00	4662.678	4665.047	2.369	171.62	171.91
19:21:30	2:07:12:00	4662.610	4664.980	2.370	171.66	171.95
19:33:30	2:07:24:00	4662.549	4664.924	2.375	171.71	172.00
19:45:30	2:07:36:00	4662.480	4664.858	2.378	171.76	172.04
19:57:30	2:07:48:00	4662.416	4664.797	2.381	171.81	172.09
20:09:30	2:08:00:00	4662.357	4664.727	2.370	171.86	172.13

Data

9654Q-10E		9654Q-10E	9653Q-10E	9653Q-10E vs 9654Q-10E	9654Q-10E	9653Q-10E
Real Time (mm/dd/yyyy 24 hr.)	Elapsed Time (DDD:HH:MM:SS)	Pressure (PSI A)	Pressure (PSI A)	Press. Diff. (PSI)	Temperature (DegF)	Temperature (DegF)
20:21:30	2:08:12:00	4662.288	4664.661	2.373	171.90	172.17
20:33:30	2:08:24:00	4662.223	4664.603	2.380	171.94	172.21
20:45:30	2:08:36:00	4662.158	4664.533	2.376	171.99	172.25
20:57:30	2:08:48:00	4662.092	4664.458	2.366	172.03	172.29
21:09:30	2:09:00:00	4662.031	4664.400	2.369	172.08	172.33
21:21:30	2:09:12:00	4661.961	4664.331	2.370	172.12	172.37
21:33:30	2:09:24:00	4661.889	4664.267	2.378	172.15	172.41
21:45:30	2:09:36:00	4661.822	4664.194	2.372	172.20	172.45
21:57:30	2:09:48:00	4661.744	4664.120	2.376	172.24	172.49
22:09:30	2:10:00:00	4661.670	4664.048	2.378	172.28	172.53
22:21:30	2:10:12:00	4661.605	4663.980	2.375	172.32	172.56
22:33:30	2:10:24:00	4661.538	4663.901	2.363	172.36	172.60
22:45:30	2:10:36:00	4661.457	4663.834	2.378	172.40	172.64
22:57:30	2:10:48:00	4661.383	4663.761	2.378	172.44	172.68
23:09:30	2:11:00:00	4661.313	4663.685	2.372	172.47	172.71
23:21:30	2:11:12:00	4661.241	4663.613	2.372	172.51	172.75
23:33:30	2:11:24:00	4661.167	4663.536	2.369	172.55	172.78
23:45:30	2:11:36:00	4661.090	4663.469	2.379	172.58	172.82
23:57:30	2:11:48:00	4661.016	4663.393	2.378	172.62	172.85
05/07/2000 00:09:30	2:12:00:00	4660.945	4663.321	2.376	172.66	172.89
00:21:30	2:12:12:00	4660.872	4663.245	2.373	172.70	172.92
00:33:30	2:12:24:00	4660.802	4663.170	2.367	172.73	172.95
00:45:30	2:12:36:00	4660.724	4663.104	2.380	172.76	172.98
00:57:30	2:12:48:00	4660.647	4663.025	2.378	172.80	173.01
01:09:30	2:13:00:00	4660.582	4662.959	2.377	172.84	173.05
01:21:30	2:13:12:00	4660.512	4662.885	2.373	172.87	173.08
01:33:30	2:13:24:00	4660.437	4662.814	2.377	172.90	173.11
01:45:30	2:13:36:00	4660.369	4662.745	2.376	172.94	173.14
01:57:30	2:13:48:00	4660.301	4662.676	2.375	172.97	173.17
02:09:30	2:14:00:00	4660.230	4662.607	2.377	173.00	173.20
02:21:30	2:14:12:00	4660.164	4662.543	2.378	173.03	173.23
02:33:30	2:14:24:00	4660.094	4662.480	2.386	173.06	173.26
02:45:30	2:14:36:00	4660.036	4662.421	2.385	173.09	173.29
02:57:30	2:14:48:00	4659.972	4662.352	2.379	173.12	173.32
03:09:30	2:15:00:00	4659.909	4662.293	2.384	173.15	173.35
03:21:30	2:15:12:00	4659.852	4662.225	2.373	173.19	173.38
03:33:30	2:15:24:00	4659.793	4662.171	2.378	173.22	173.41
03:45:30	2:15:36:00	4659.735	4662.113	2.378	173.25	173.44
03:57:30	2:15:48:00	4659.671	4662.056	2.385	173.28	173.46
04:09:30	2:16:00:00	4659.612	4661.993	2.381	173.31	173.49
04:21:30	2:16:12:00	4659.566	4661.946	2.380	173.33	173.52
04:33:30	2:16:24:00	4659.511	4661.888	2.378	173.37	173.55
04:45:30	2:16:36:00	4659.451	4661.832	2.381	173.39	173.57
04:57:30	2:16:48:00	4659.398	4661.780	2.382	173.42	173.60
05:09:30	2:17:00:00	4659.341	4661.729	2.388	173.45	173.62
05:21:30	2:17:12:00	4659.295	4661.671	2.376	173.48	173.65
05:33:30	2:17:24:00	4659.241	4661.621	2.380	173.50	173.67
05:45:30	2:17:36:00	4659.189	4661.568	2.379	173.53	173.70
05:57:30	2:17:48:00	4659.130	4661.517	2.387	173.55	173.73
06:09:30	2:18:00:00	4659.089	4661.466	2.378	173.58	173.75
06:21:30	2:18:12:00	4659.032	4661.410	2.378	173.61	173.78
06:33:30	2:18:24:00	4658.976	4661.364	2.389	173.64	173.80
06:45:30	2:18:36:00	4658.927	4661.308	2.381	173.67	173.83
06:57:30	2:18:48:00	4658.870	4661.252	2.383	173.69	173.85
07:09:30	2:19:00:00	4658.818	4661.196	2.378	173.72	173.87
07:21:30	2:19:12:00	4658.766	4661.145	2.379	173.74	173.90
07:33:30	2:19:24:00	4658.711	4661.091	2.380	173.76	173.92
07:45:30	2:19:36:00	4658.657	4661.034	2.378	173.79	173.95

Data

9654Q-10E		9654Q-10E	9653Q-10E	9653Q-10E vs 9654Q-10E	9654Q-10E	9653Q-10E
Real Time (mm/dd/yyyy 24 hr.)	Elapsed Time (DDD:HH:MM:SS)	Pressure (PSI A)	Pressure (PSI A)	Press. Diff. (PSI)	Temperature (DegF)	Temperature (DegF)
07:57:30	2:19:48:00	4658.600	4660.975	2.375	173.82	173.97
08:09:30	2:20:00:00	4658.537	4660.919	2.382	173.84	173.99
08:21:30	2:20:12:00	4658.482	4660.859	2.377	173.86	174.01
08:33:30	2:20:24:00	4658.423	4660.803	2.380	173.89	174.04
08:45:30	2:20:36:00	4658.362	4660.743	2.381	173.91	174.06
08:57:30	2:20:48:00	4658.304	4660.682	2.378	173.93	174.09
09:09:30	2:21:00:00	4658.242	4660.612	2.371	173.95	174.11
09:21:30	2:21:12:00	4658.172	4660.558	2.386	173.98	174.13
09:33:30	2:21:24:00	4658.112	4660.493	2.381	174.00	174.15
09:45:30	2:21:36:00	4658.044	4660.428	2.384	174.02	174.17
09:57:30	2:21:48:00	4657.987	4660.358	2.371	174.05	174.20
10:09:30	2:22:00:00	4657.909	4660.289	2.380	174.07	174.22
10:21:30	2:22:12:00	4657.848	4660.229	2.381	174.09	174.24
10:33:30	2:22:24:00	4657.777	4660.156	2.379	174.11	174.26
10:45:30	2:22:36:00	4657.709	4660.086	2.377	174.13	174.28
10:57:30	2:22:48:00	4657.634	4660.017	2.384	174.16	174.30
11:09:30	2:23:00:00	4657.566	4659.948	2.382	174.18	174.32
11:21:30	2:23:12:00	4657.493	4659.869	2.377	174.20	174.34
11:33:30	2:23:24:00	4657.422	4659.804	2.383	174.22	174.36
11:45:30	2:23:36:00	4657.350	4659.728	2.377	174.24	174.38
11:57:30	2:23:48:00	4657.288	4659.663	2.375	174.26	174.40
12:09:30	3:00:00:00	4657.216	4659.584	2.368	174.28	174.42
12:21:30	3:00:12:00	4657.138	4659.516	2.378	174.30	174.44
12:33:30	3:00:24:00	4657.072	4659.451	2.379	174.32	174.46
12:45:30	3:00:36:00	4657.004	4659.383	2.379	174.34	174.48
12:57:30	3:00:48:00	4656.938	4659.309	2.371	174.36	174.50
13:09:30	3:01:00:00	4656.865	4659.241	2.376	174.39	174.52
13:21:30	3:01:12:00	4656.799	4659.173	2.374	174.40	174.54
13:33:30	3:01:24:00	4656.730	4659.111	2.381	174.43	174.56
13:45:30	3:01:36:00	4656.667	4659.038	2.371	174.44	174.57
13:57:30	3:01:48:00	4656.600	4658.975	2.374	174.46	174.59
14:09:30	3:02:00:00	4656.532	4658.917	2.384	174.48	174.61
14:21:30	3:02:12:00	4656.471	4658.853	2.382	174.50	174.63
14:33:30	3:02:24:00	4656.410	4658.792	2.381	174.52	174.65
14:45:30	3:02:36:00	4656.354	4658.734	2.379	174.54	174.67
14:57:30	3:02:48:00	4656.293	4658.672	2.379	174.56	174.68
15:09:30	3:03:00:00	4656.235	4658.619	2.384	174.58	174.70
15:21:30	3:03:12:00	4656.184	4658.563	2.379	174.60	174.72
15:33:30	3:03:24:00	4656.128	4658.506	2.378	174.62	174.74
15:45:30	3:03:36:00	4656.074	4658.458	2.384	174.63	174.76
15:57:30	3:03:48:00	4656.025	4658.407	2.381	174.65	174.77
16:09:30	3:04:00:00	4655.980	4658.355	2.376	174.67	174.79
16:21:30	3:04:12:00	4655.934	4658.312	2.378	174.69	174.81
16:33:30	3:04:24:00	4655.883	4658.271	2.388	174.71	174.82
16:45:30	3:04:36:00	4655.848	4658.225	2.377	174.73	174.84
16:57:30	3:04:48:00	4655.802	4658.184	2.382	174.75	174.86
17:09:30	3:05:00:00	4655.761	4658.142	2.381	174.77	174.87
17:21:30	3:05:12:00	4655.718	4658.101	2.384	174.78	174.89
17:33:30	3:05:24:00	4655.679	4658.065	2.386	174.80	174.91
17:45:30	3:05:36:00	4655.646	4658.026	2.380	174.81	174.92
17:57:30	3:05:48:00	4655.604	4657.984	2.380	174.83	174.94
18:09:30	3:06:00:00	4655.569	4657.953	2.385	174.85	174.95
18:21:30	3:06:12:00	4655.538	4657.914	2.376	174.87	174.97
18:33:30	3:06:24:00	4655.502	4657.883	2.381	174.88	174.98
18:45:30	3:06:36:00	4655.466	4657.847	2.381	174.90	175.00
18:57:30	3:06:48:00	4655.433	4657.816	2.383	174.92	175.02
19:09:30	3:07:00:00	4655.401	4657.779	2.378	174.93	175.03
19:21:30	3:07:12:00	4655.371	4657.748	2.377	174.95	175.05

Data

9654Q-10E Real Time (mm/dd/yyyy 24 hr.)	Elapsed Time (DDD:HH:MM:SS)	9654Q-10E Pressure (PSI A)	9653Q-10E Pressure (PSI A)	9653Q-10E vs 9654Q-10E Press. Diff. (PSI)	9654Q-10E Temperature (DegF)	9653Q-10E Temperature (DegF)
19:33:30	3:07:24:00	4655.334	4657.719	2.385	174.96	175.06
19:45:30	3:07:36:00	4655.306	4657.683	2.377	174.98	175.08
19:57:30	3:07:48:00	4655.267	4657.648	2.381	175.00	175.09
20:09:30	3:08:00:00	4655.237	4657.617	2.380	175.02	175.11
20:21:30	3:08:12:00	4655.200	4657.586	2.386	175.03	175.12
20:33:30	3:08:24:00	4655.167	4657.547	2.380	175.05	175.14
20:45:30	3:08:36:00	4655.128	4657.515	2.387	175.06	175.16
20:57:30	3:08:48:00	4655.092	4657.481	2.389	175.08	175.17
21:09:30	3:09:00:00	4655.063	4657.440	2.376	175.09	175.19
21:21:30	3:09:12:00	4655.022	4657.400	2.378	175.11	175.20
21:33:30	3:09:24:00	4654.983	4657.366	2.382	175.12	175.21
21:45:30	3:09:36:00	4654.945	4657.329	2.385	175.14	175.23
21:57:30	3:09:48:00	4654.908	4657.285	2.377	175.15	175.24
22:09:30	3:10:00:00	4654.866	4657.243	2.377	175.17	175.26
22:21:30	3:10:12:00	4654.818	4657.204	2.386	175.18	175.27
22:33:30	3:10:24:00	4654.781	4657.167	2.386	175.20	175.29
22:45:30	3:10:36:00	4654.742	4657.123	2.380	175.21	175.30
22:57:30	3:10:48:00	4654.699	4657.078	2.379	175.23	175.32
23:09:30	3:11:00:00	4654.652	4657.032	2.380	175.24	175.33
23:21:30	3:11:12:00	4654.605	4656.987	2.382	175.26	175.35
23:33:30	3:11:24:00	4654.561	4656.942	2.381	175.27	175.36
23:45:30	3:11:36:00	4654.512	4656.897	2.386	175.28	175.37
23:57:30	3:11:48:00	4654.468	4656.853	2.385	175.30	175.39
05/08/2000 00:09:30	3:12:00:00	4654.426	4656.803	2.377	175.31	175.40
00:21:30	3:12:12:00	4654.374	4656.753	2.379	175.33	175.42
00:33:30	3:12:24:00	4654.325	4656.708	2.383	175.35	175.43
00:45:30	3:12:36:00	4654.276	4656.663	2.388	175.36	175.44
00:57:30	3:12:48:00	4654.229	4656.614	2.385	175.37	175.46
01:09:30	3:13:00:00	4654.187	4656.569	2.382	175.38	175.47
01:21:30	3:13:12:00	4654.132	4656.516	2.384	175.39	175.48
01:33:30	3:13:24:00	4654.091	4656.466	2.375	175.41	175.49
01:45:30	3:13:36:00	4654.036	4656.416	2.380	175.42	175.51
01:57:30	3:13:48:00	4653.993	4656.371	2.379	175.44	175.52
02:09:30	3:14:00:00	4653.941	4656.328	2.388	175.45	175.53
02:21:30	3:14:12:00	4653.901	4656.283	2.382	175.47	175.55
02:33:30	3:14:24:00	4653.854	4656.234	2.379	175.48	175.56
02:45:30	3:14:36:00	4653.807	4656.194	2.386	175.49	175.57
02:57:30	3:14:48:00	4653.763	4656.141	2.377	175.51	175.58
03:09:30	3:15:00:00	4653.717	4656.103	2.386	175.52	175.60
03:21:30	3:15:12:00	4653.677	4656.058	2.381	175.53	175.61
03:33:30	3:15:24:00	4653.635	4656.018	2.383	175.55	175.62
03:45:30	3:15:36:00	4653.589	4655.974	2.385	175.56	175.64
03:57:30	3:15:48:00	4653.542	4655.931	2.389	175.58	175.65
04:09:30	3:16:00:00	4653.507	4655.891	2.384	175.59	175.66
04:21:30	3:16:12:00	4653.465	4655.851	2.386	175.60	175.67
04:33:30	3:16:24:00	4653.426	4655.816	2.391	175.61	175.69
04:45:30	3:16:36:00	4653.381	4655.773	2.392	175.62	175.70
04:57:30	3:16:48:00	4653.352	4655.734	2.382	175.63	175.71
05:09:30	3:17:00:00	4653.305	4655.691	2.386	175.65	175.72
05:21:30	3:17:12:00	4653.271	4655.658	2.387	175.66	175.74
05:33:30	3:17:24:00	4653.234	4655.623	2.389	175.67	175.75
05:45:30	3:17:36:00	4653.197	4655.575	2.378	175.69	175.76
05:57:30	3:17:48:00	4653.158	4655.546	2.388	175.70	175.77
06:09:30	3:18:00:00	4653.121	4655.513	2.392	175.71	175.78
06:21:30	3:18:12:00	4653.081	4655.470	2.388	175.72	175.80
06:33:30	3:18:24:00	4653.045	4655.432	2.387	175.73	175.81
06:45:30	3:18:36:00	4653.010	4655.402	2.392	175.75	175.82
06:57:30	3:18:48:00	4652.974	4655.359	2.385	175.76	175.83

Data

9654Q-10E Real Time (mm/dd/yyyy 24 hr.)	Elapsed Time (DDD:HH:MM:SS)	9654Q-10E Pressure (PSI A)	9653Q-10E Pressure (PSI A)	9653Q-10E vs 9654Q-10E Press. Diff. (PSI)	9654Q-10E Temperature (DegF)	9653Q-10E Temperature (DegF)
07:09:30	3:19:00:00	4652.937	4655.319	2.382	175.77	175.84
07:21:30	3:19:12:00	4652.902	4655.292	2.389	175.78	175.86
07:33:30	3:19:24:00	4652.866	4655.252	2.386	175.80	175.87
07:45:30	3:19:36:00	4652.821	4655.214	2.393	175.81	175.88
07:57:30	3:19:48:00	4652.792	4655.176	2.384	175.82	175.89
08:09:30	3:20:00:00	4652.752	4655.141	2.389	175.83	175.90
08:21:30	3:20:12:00	4652.707	4655.098	2.391	175.84	175.92
08:33:30	3:20:24:00	4652.673	4655.060	2.387	175.85	175.93
08:45:30	3:20:36:00	4652.628	4655.017	2.389	175.86	175.94
08:57:30	3:20:48:00	4652.591	4654.974	2.383	175.88	175.95
09:09:30	3:21:00:00	4652.541	4654.931	2.389	175.89	175.96
09:21:30	3:21:12:00	4652.502	4654.888	2.386	175.90	175.97
09:33:30	3:21:24:00	4652.460	4654.840	2.380	175.91	175.98
09:45:30	3:21:36:00	4652.412	4654.796	2.384	175.92	175.99
09:57:30	3:21:48:00	4652.296	4654.667	2.372	175.69	175.50
10:09:30	3:22:00:00	4652.298	4654.672	2.374	175.49	175.58
10:21:30	3:22:12:00	4348.056	4276.488	-71.568	175.84	175.10
10:33:30	3:22:24:00	1669.149	1643.995	-25.153	112.20	101.74
10:45:30	3:22:36:00	12.503	11.168	-1.335	77.31	74.55

Operator's Tool Su..mary

Amoco Production Co.

New Mexico, USA — **May 04, 00 to May 08, 00**

Elliot SWD — **1** — **Morrison/Bluff/Entrada**

Top Recorder

Tool	Serial	Latest Calibration	Battery Serial
LMR-3000S	9654Q-10E	12/20/99	
Landed Depth	**Depth Offset**	**Min. Battery**	
7436.00 ftKB	-6.00 ft	0.10 V	

Program: 20 Days @5 sec.

	Intervals				Expected Samples			Actual Samples				
Mode	Interval [d hh:mm:ss]	Rate [hh:mm:ss]	Delta [PSI]	Periodic [hh:mm:ss]	Regular Samples	Percent Storage	Energy [Ahr]	Regular Samples	Delta Samples	Percent Storage	Energy [Ahr]	Duration [d hh:mm:ss]
HB	20	5			345600	98.9%	3.9396	68116		19.5%	0.7765	3 22:36:20
Totals:	20				345600	98.9%	3.9396	68116		19.5%	0.7765	3 22:36:20

Battery

Serial	Mfg. Date	Avail. Energy	Energy Used	Energy Remaining
			0.7765 AHr	

Bottom Recorder

Tool	Serial	Latest Calibration	Battery Serial
LMR-3000S	9653Q-10E	12/20/99	
Landed Depth	**Depth Offset**	**Min. Battery**	
7442.00 ftKB	0.00 ft	0.19 V	

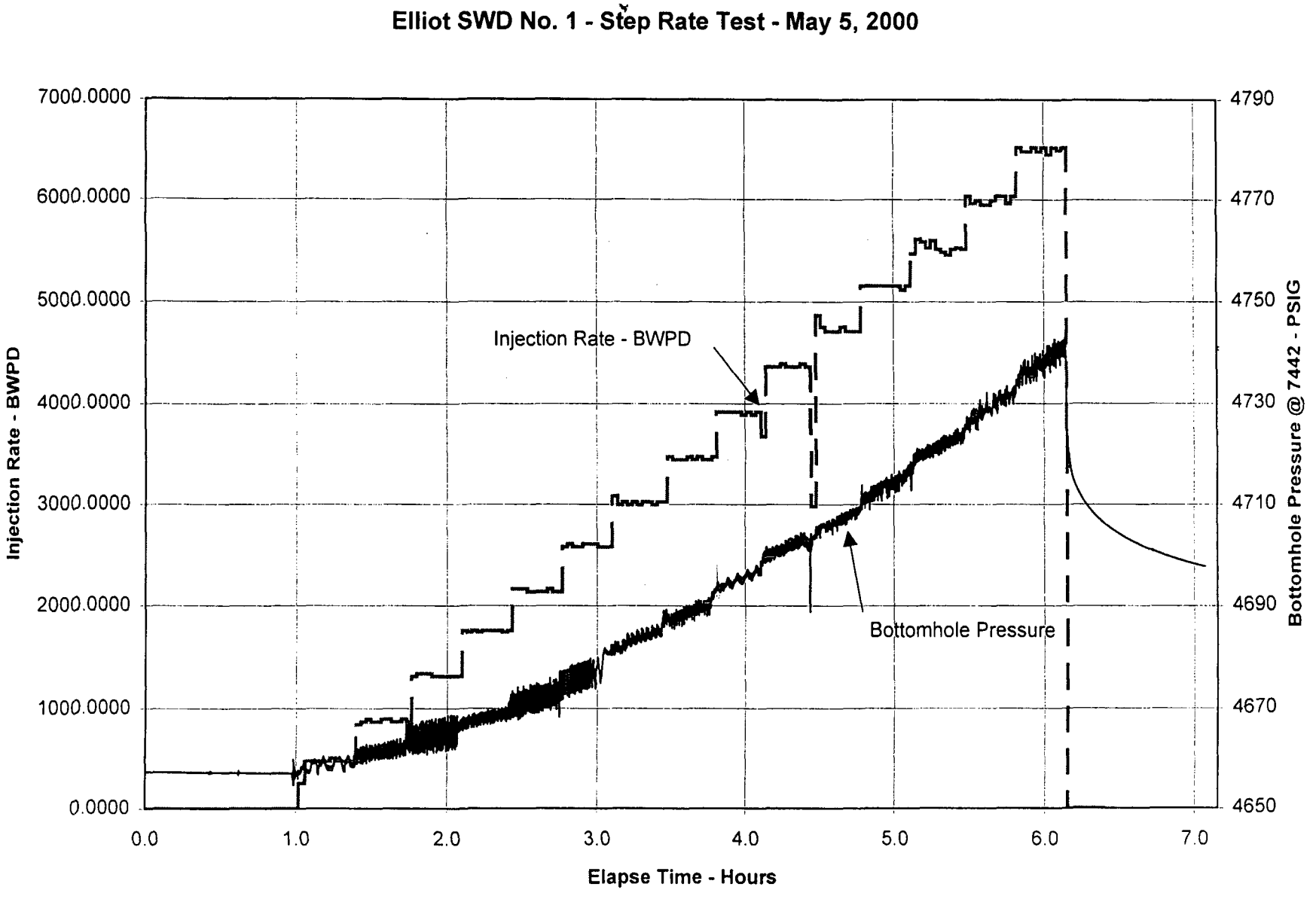
Program: 20 Days @5 sec.

	Intervals				Expected Samples			Actual Samples				
Mode	Interval [d hh:mm:ss]	Rate [hh:mm:ss]	Delta [PSI]	Periodic [hh:mm:ss]	Regular Samples	Percent Storage	Energy [Ahr]	Regular Samples	Delta Samples	Percent Storage	Energy [Ahr]	Duration [d hh:mm:ss]
HB	20	5			345600	98.9%	3.9396	68117		19.5%	0.7765	3 22:36:25
Totals:	20				345600	98.9%	3.9396	68117		19.5%	0.7765	3 22:36:25

Battery

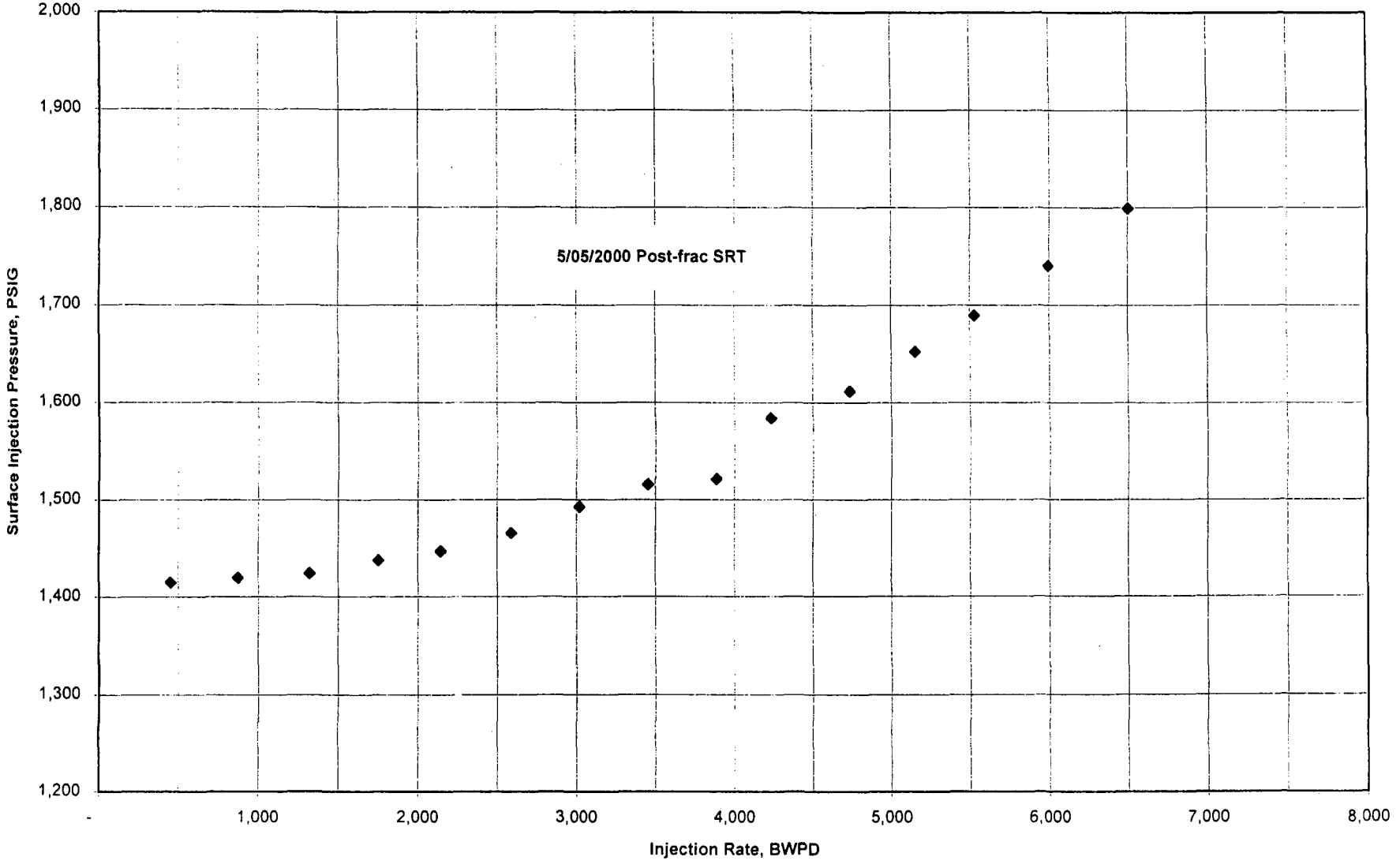
Serial	Mfg. Date	Avail. Energy	Energy Used	Energy Remaining
			0.7765 AHr	

Attachment No. 5
Graph showing the field measured data points - Pressure & Rate vs. Time
E. E. Elliot SWD #1


Elliot SWD No. 1 - Step Rate Test - May 5, 2000
Injection Rate - BWPD
Bottomhole Pressure
Injection Rate - BWPD
Bottomhole Pressure @ 7442 - PSIG
Elapse Time - Hours
7000.0000
6000.0000
5000.0000
4000.0000
3000.0000
2000.0000
1000.0000
0.0000
4790
4770
4750
4730
4710
4690
4670
4650
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0

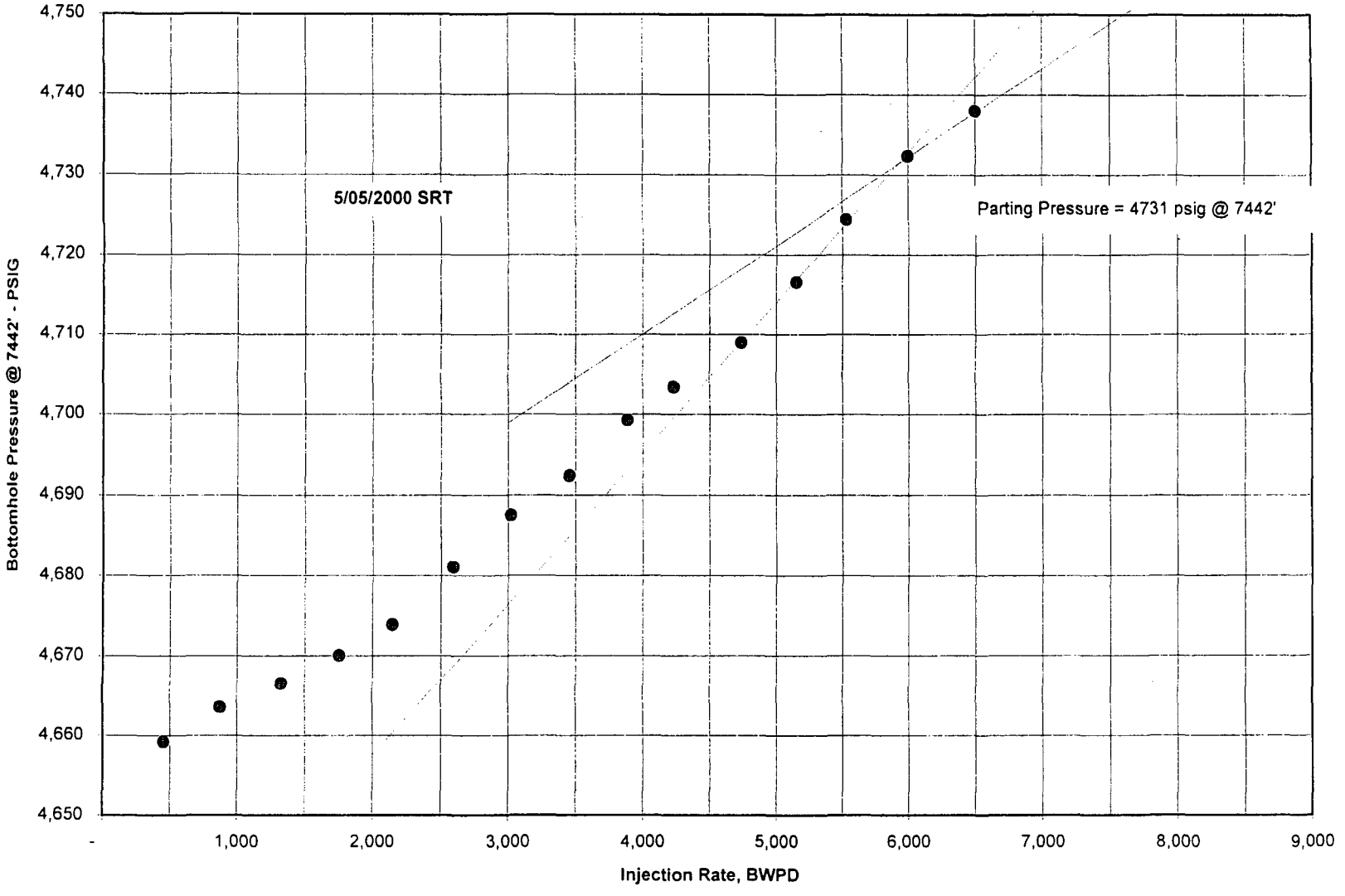
Attachment No. 6
Graph showing the surface injection pressure vs. rate
E. E. Elliot SWD No. 1

Elliot SWD No. 1 - Step Rate Test - May 5, 2000



SRT.xls

Elliot SWD No. 1 - Step Rate Tests - May 5, 2000



Attachment No. 8
Treating Reports for the Entrada Refrac
E. E. Elliot SWD #1

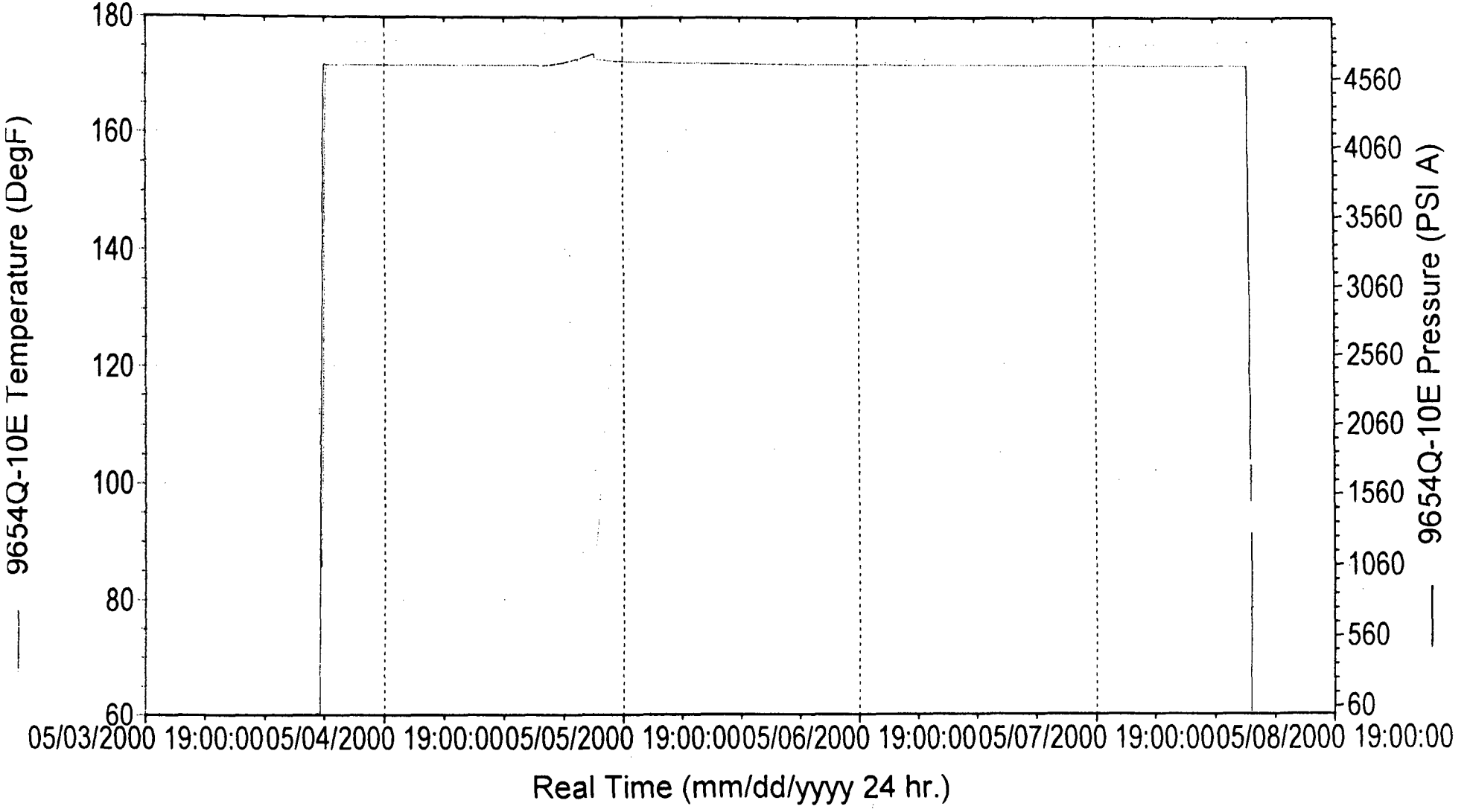
Treating reports for the Entrada refrac noted an ISIP of 1680 psig. Correcting for the density of normal injection water (0.434 psi/ft) from 2 % KCl (0.438 psi/ft) water used during the frac equates to a corrected surface ISIP of 1713 psig.

Treating reports and graphs follow.

Pressure & Temperature vs. Real Time

Company: Schlumberger
Client: Amoco Production Co.
Remarks:

Field: Morrison/Bluff/Entrada
Well Name: Elliot SWD
Well Number: 1



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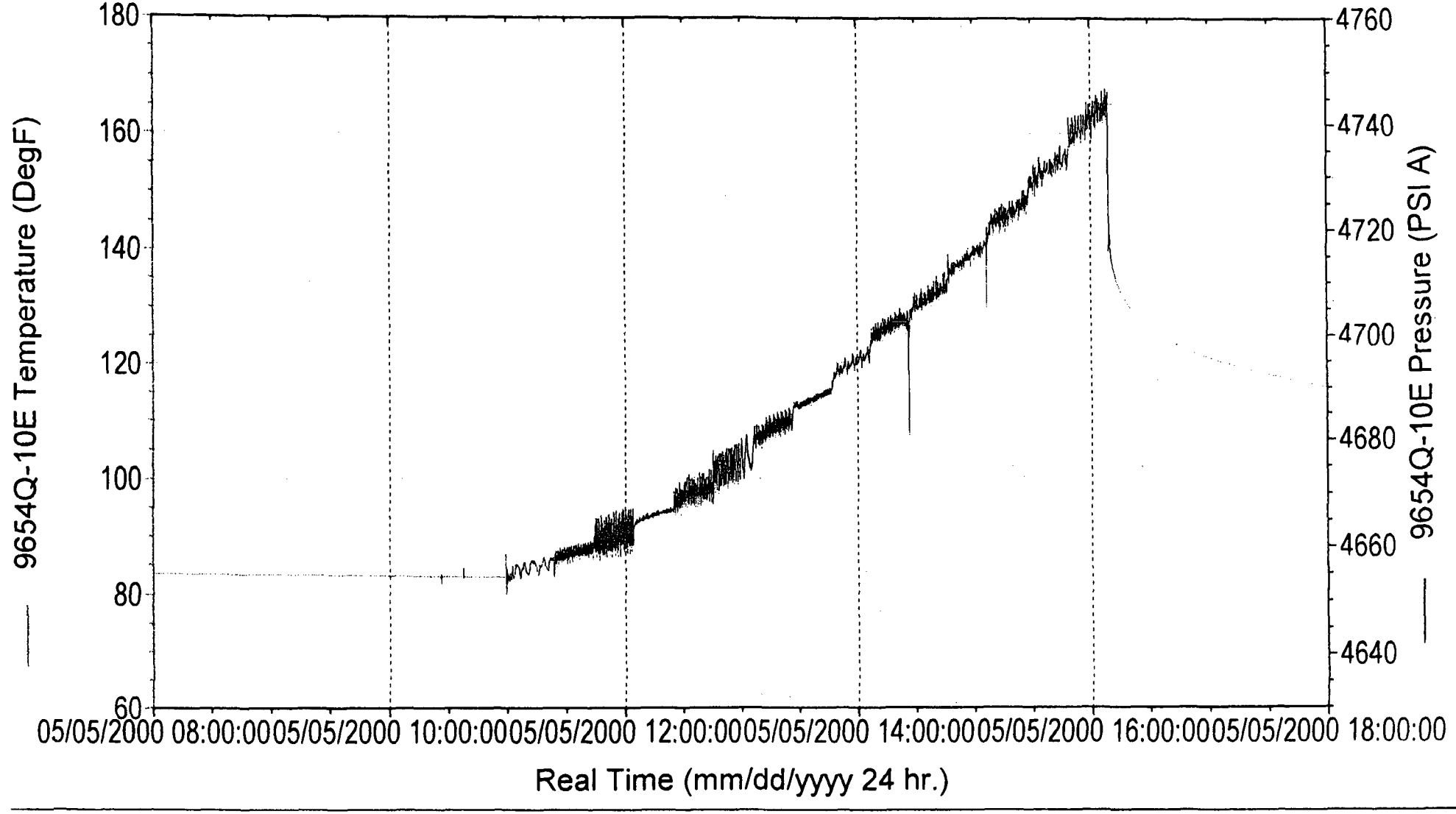
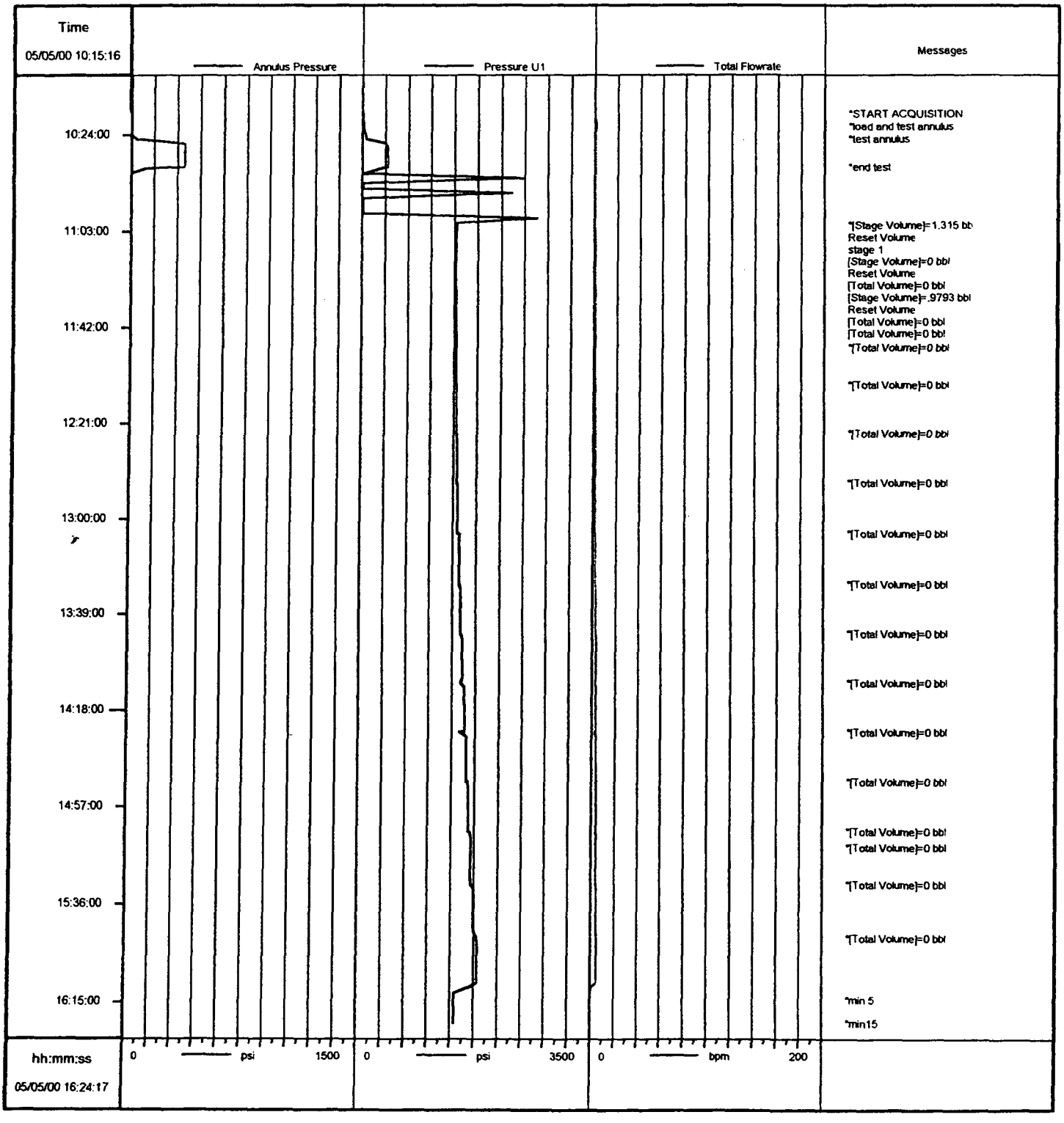


Schlumberger
Dowell

Matrix Job Report

PRISM* V2.23

Well	ee elliot swd 1	**Client**	amoco
Field		**SIR No.**	9142
Country	usa	**Job Date**	5/5/2000 10:15:16 AM



Job: am9142

05/05/2000 16:26:45

* Mark of Schlumberger