YATES PETROLEUM CORPORATION
105 SOUTH FOURTH STREET
ARTESIA, NEW MEXICO 88210
TELEPHONE (505) 748-1471

February 10, 1992

New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504

Attention: David Catanach

Re: Request for Injection Pressure Limit Increase
SWD - State D Com #1 ,Unit N Sec. 16-T20S-R24E

Dear Mr. Catanach,

The State D #1 has been limited to a wellhead injection pressure of 2000# by Order #SWD-395. A step rate test was conducted on February 7, 1992 and was witnessed by Johnny Robinson of the Artesia NMOCD office. Halliburton conducted the test, and their results are included.

Prudent operating practices prohibited us from running a wireline BHP device that would pass through the packer and potentially be lost. It was also considered impractical to leave a BHP device in the tubing during the test. BHP data was calculated. These calculations are included for your review.

Graphs of BHP vs. rate and surface pressure vs. rate are included. Results yielded a surface fracture pressure of approximately 2800#.

Yates Petroleum respectfully requests an increase of the pressure limit on their State D Com #1 injection well to 2750 psi surface pressure.

Should you have any questions please call.

Sincerely,

Chuck Morgan

Chuck Morgan
Petroleum Engineer

CM/sj

xc: NMOCD Artesia

	RATES			PRESSURES			
Point #	BPM	BPD	GPM	Ph +	Psurface -	Pfriction =	BHP
1.	1	1440	42	4624	30	77	4577
2.	2	2880	84	4624	320	251	4693
3.	3	4320	126	4624	680	521	4783
4.	4	5760	168	4624	1110	869	4865
5.	5	7200	210	4624	1600	1303	4921
6.	6	8640	252	4624	2075	1690	5009
7.	7	10080	294	4624	2702	2241	5085
8.	8	11520	336	4624	3310	2827	5107
9.	9	12960	378	4624	4020	3524	5120
10.	9.7	13968	407.4	4624	4505	4000	5129

HYDROSTATIC PRESSURE

Perfs 10,000 - 11,250'
Specific Gravity H2O = 1.005 (Sample Attached)
Hydrostatic Pressure = (Perf/Mid Pt.) (.435 Psi/Ft.) = Ph
Ph = (10625) (.435) = 4624 Psi

FRICTION PRESSURES

Plastic Pipe I.D. = 2.297"
Pfriction (via chart in psi/100'):

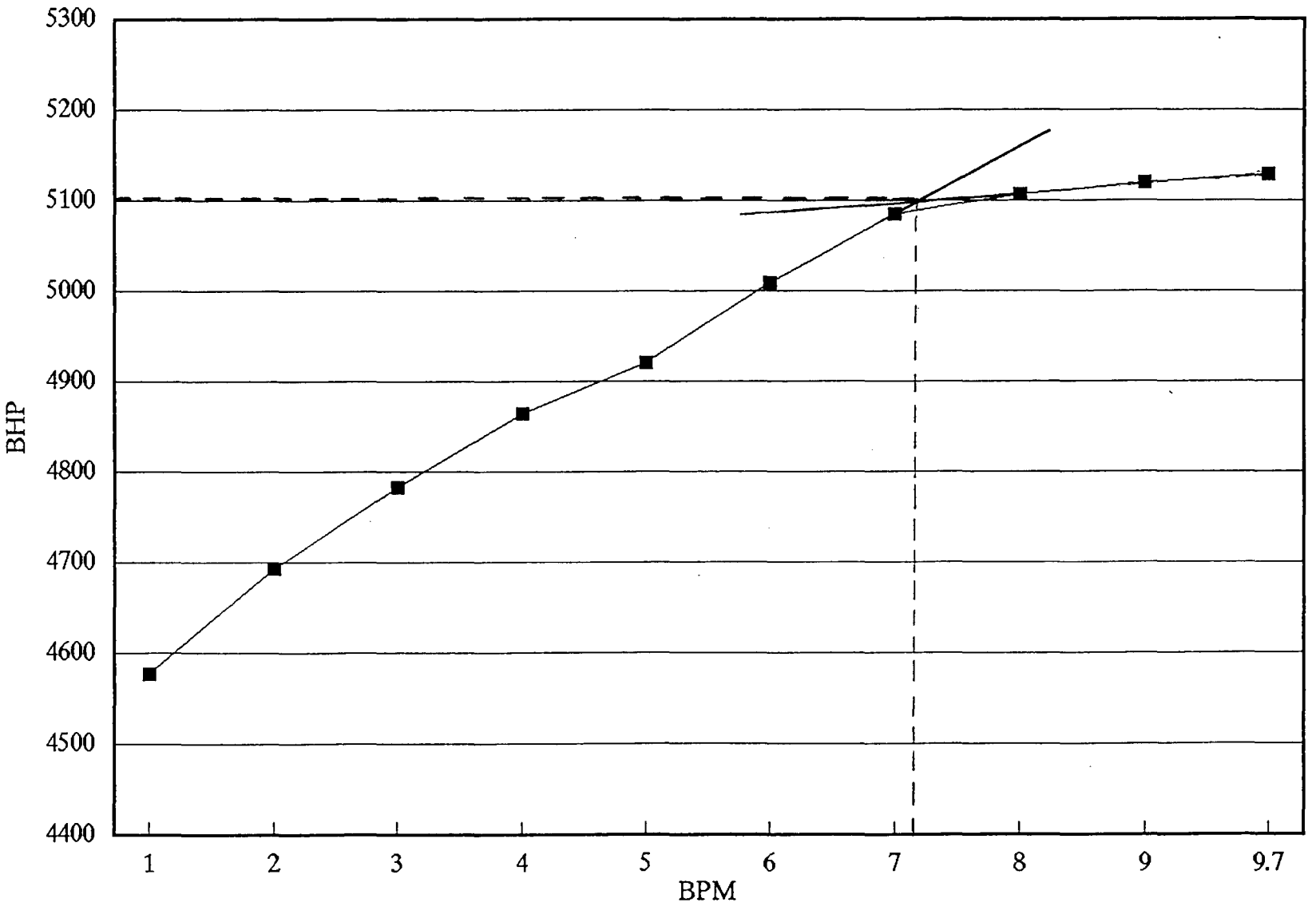
Point #	Coefficient of Friction Psi/100 Ft.	Packer Depth	Pfriction (Coefficient of Friction x Packer Depth/100)
1.	0.8	9655	77 psi
2.	2.6	9655	251 psi
3.	5.4	9655	521 psi
4.	9.0	9655	869 psi
5.	13.5	9655	1303 psi
6.	17.5	9655	1690 psi
7.	23.2	9655	2241 psi
8.	29.4	9655	2827 psi
9.	36.5	9655	3524 psi
10.	41.4	9655	4000 psi

BHP at Fracture Pt. = 5100 at 7.25 BPM from chart
Coefficient of Friction = 24
Pfric = 2317

Surface Fracture Pressure = 5100 - Ph + Pfric
Sfrac Pressure = 5100 - 4624 + 2317
P = 2800

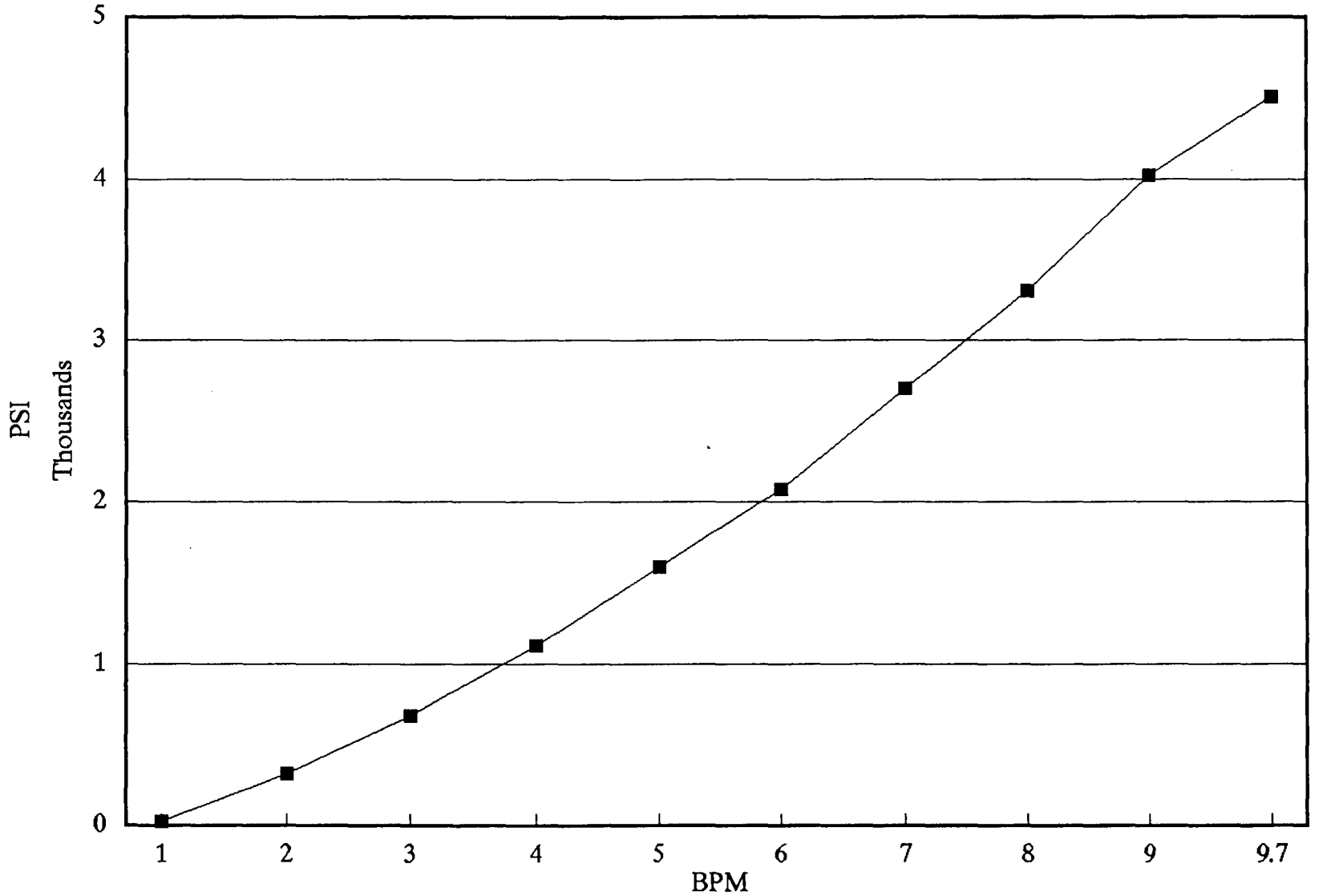
STATE D COM #1 – SWD

BHP VS. RATE



STATE D COM #1 – SWD

SURFACE PRESSURE VS. RATE



HALLIBURTON DATA LOG

COMPUPAC Ver. 1.54 2/06/92

Customer:	Yates-Pet-Corp	Ticket Number:	193504 3
Contractor:		Permit Number:	
Lease:	State-D	Well #:	1
Location:	S-Artesia	Sec.:	16
Field:	Dagger-Draw	Twn.:	20-S
Country:	USA	Rng.:	24-E
County:	EDDY	State:	NM
Job Type:	Step-Rate-Test		

WELL DESCRIPTION

HOLE DEPTH	TYPE	SIZE	WEIGHT
11145 -			
-	Csg	5.5"	20#
-	TBG	2.78"	6.5#
-			
-			

PERF DEPTH	NUMBER	SIZE	FORMATION
10000 - 11052	577	0.40	Devonian
-			

Open Hole I.D.:		Total Depth:	
Zone #:		Formation:	
Packer Depth:	9618	Packer Type:	Guiberson
Baffle/MSC Depth:		Baffle Size:	
BHST:		Frac Gradient:	

STIMULATION DATA

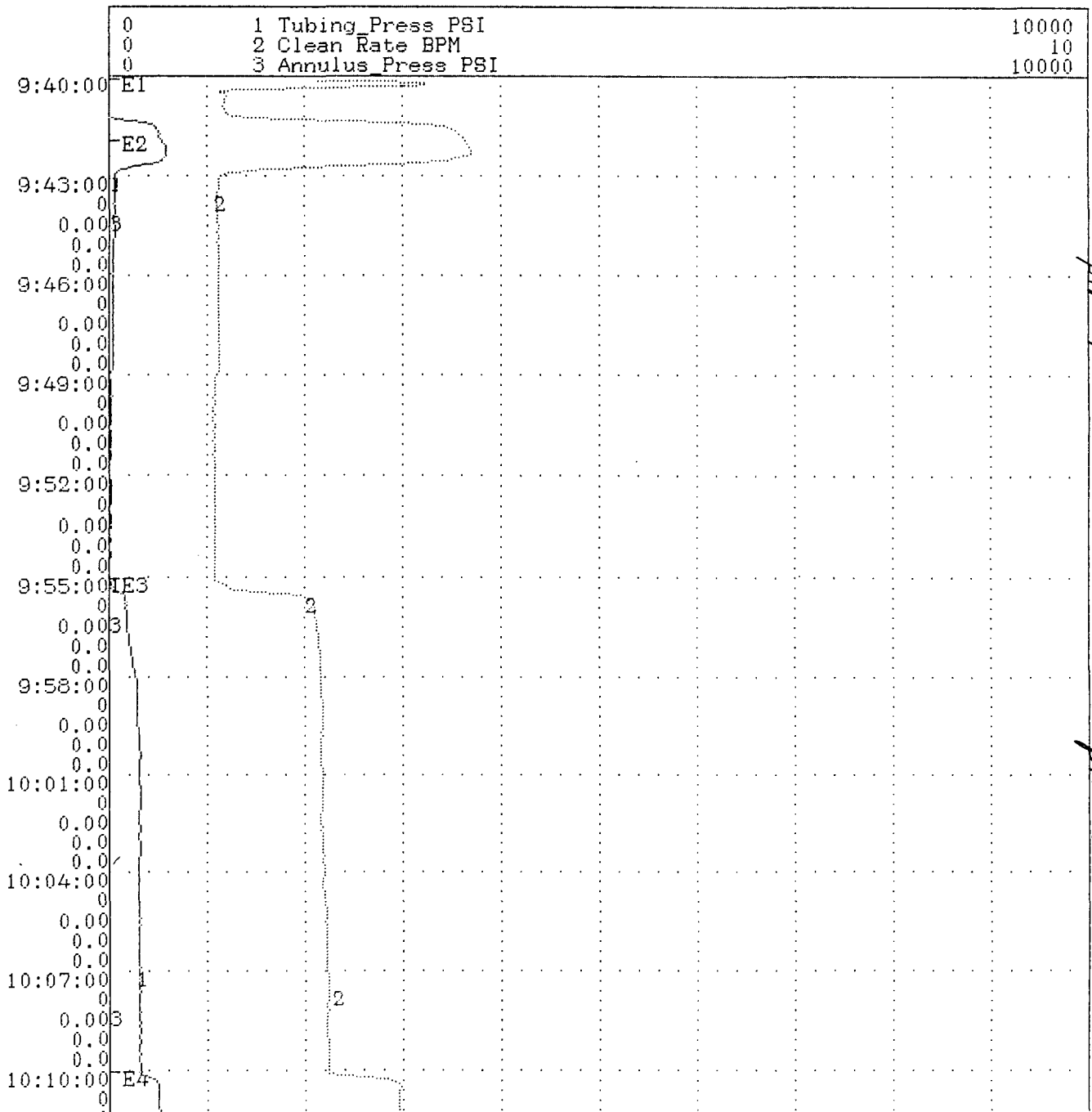
	TYPE	CONC/RATIO	VOLUME
PrePad:			
Pad:			
Acid:			
Sand Laden:			
Flush:			
Overflush:			
Total:	Produced-H20		
N2:			
CO2:			

AVE.RATE: _____ AVE. PRESSURE: _____ AVE. HHP: _____

Comments: _____

Legend for Side

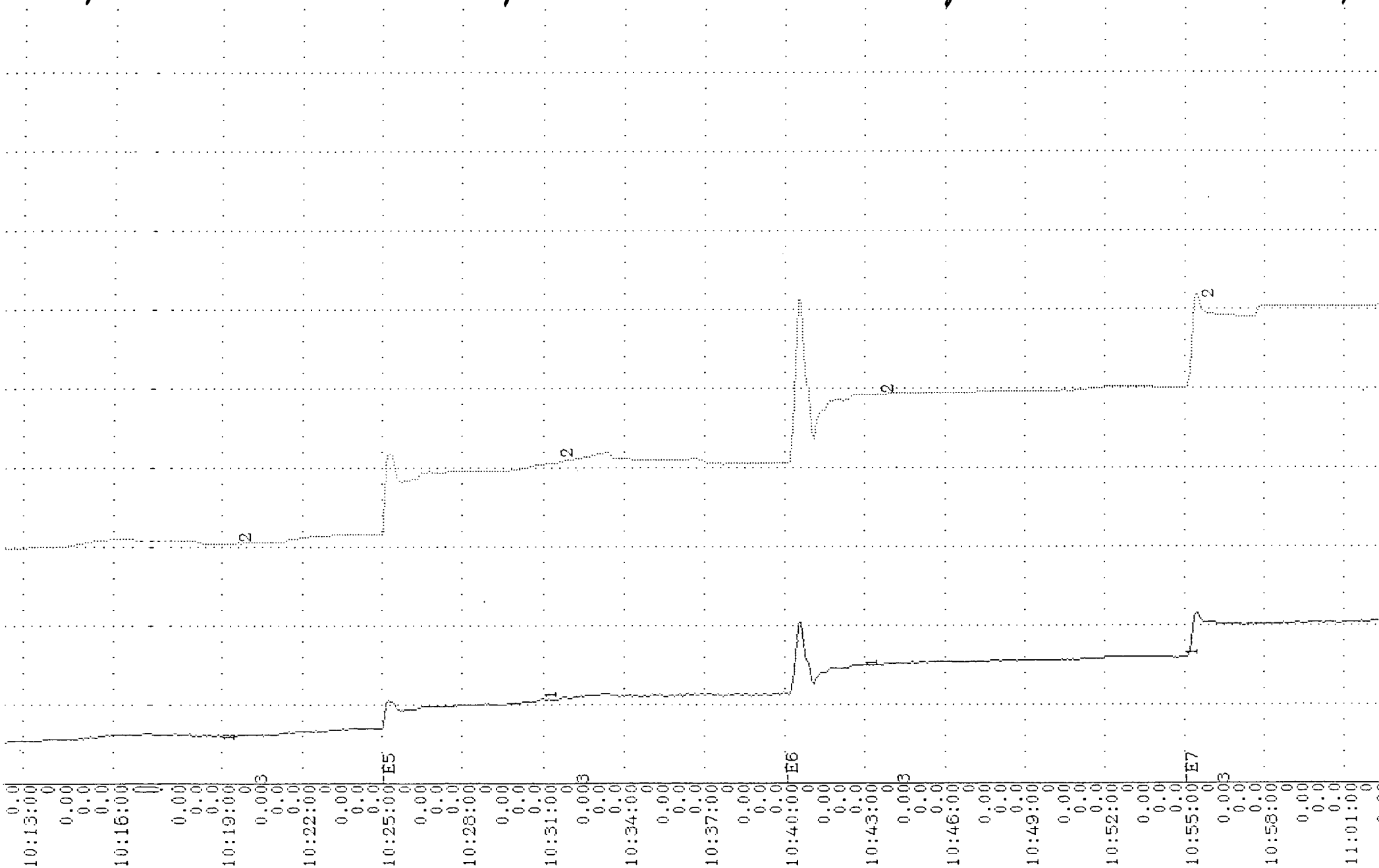
1. Time
2. Press_A PSI
3. Flow_A Rate BPM
4. Density_A PPG
5. Temp Deg F

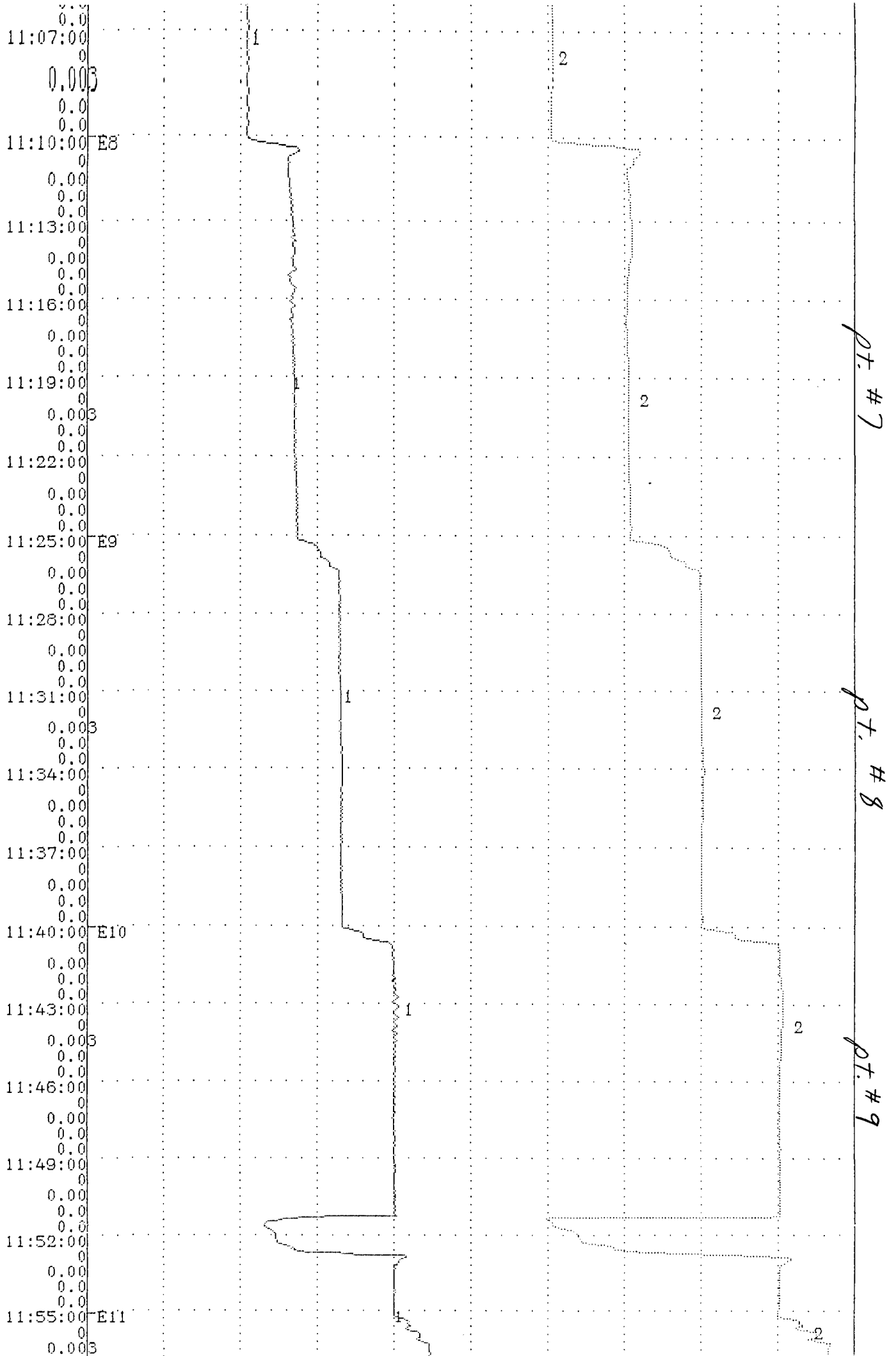


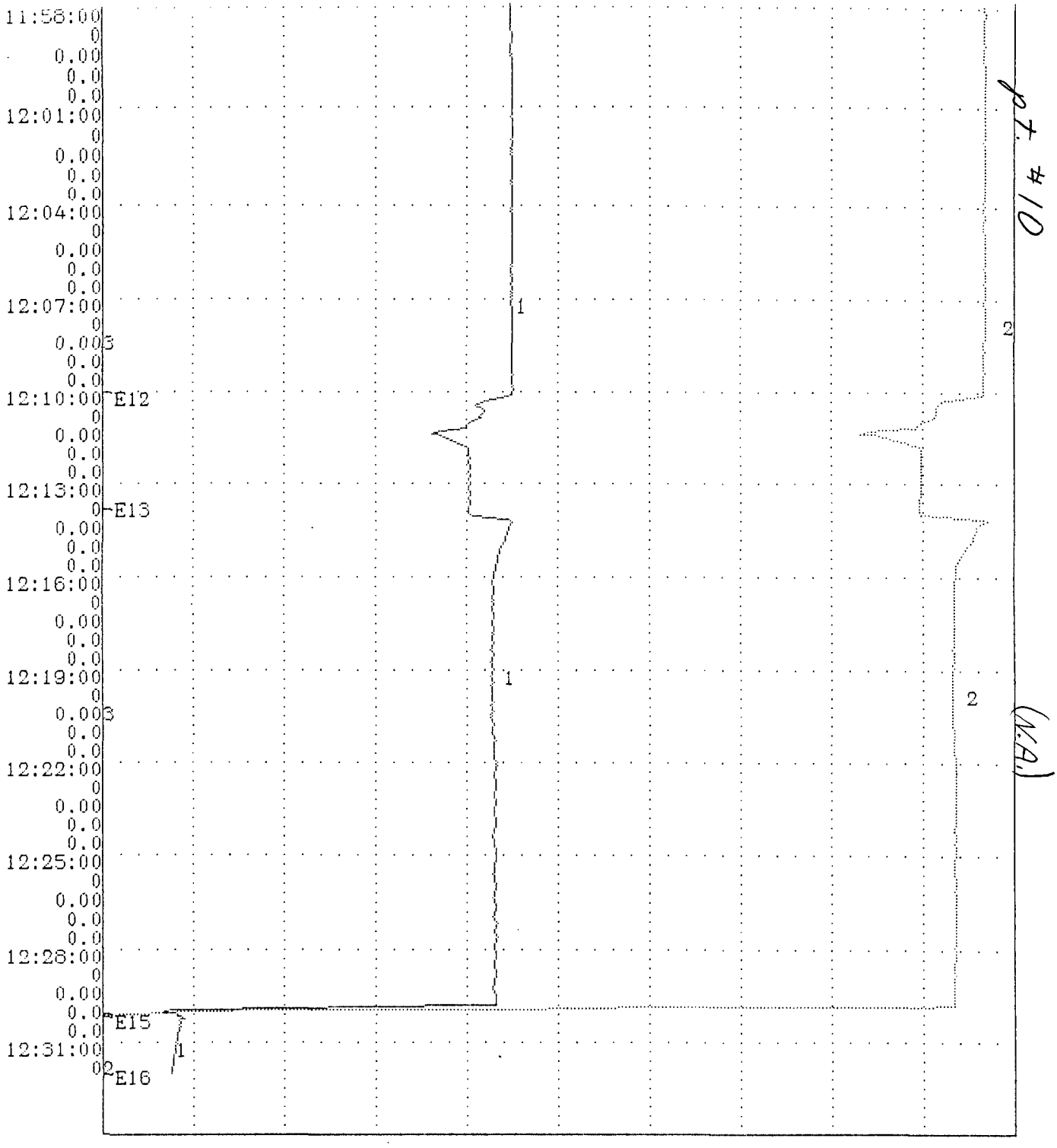
pt. # 1

pt. # 2

pt. #3 pt. #4 pt. #5 pt.




11:07:00
11:10:00 E8
11:13:00
11:16:00
11:19:00
11:22:00
11:25:00 E9
11:28:00
11:31:00
11:34:00
11:37:00
11:40:00 E10
11:43:00
11:46:00
11:49:00
11:52:00
11:55:00 E11
1
2
Pt. #7
Pt. #8
Pt. #9


11:58:00
12:01:00
12:04:00
12:07:00
12:10:00
E12
12:13:00
E13
12:16:00
12:19:00
12:22:00
12:25:00
12:28:00
12:31:00
E15
E16
1
2
3
pt. #10
(W.A.)

STAGE/EVENT SUMMARY

Customer: Yates-Pet-Corp
Job Type: Step-Rate-Test

Date: 2/06/92
Ticket #: 193504_3

**********	9:40:05 Start Job	**********						
9:41:57	Event #2	Zero Flow Totals						
9:55:01	Event #3	Establish Rate						
CAPTURE DATA		Tubing_Press	=	14 PSI	Dirty Rate	=	1.00 BPM	pt. #1
10:10:01	Event #4	Establish Rate						
CAPTURE DATA		Tubing_Press	=	319 PSI	Dirty Rate	=	2.00 BPM	pt. #2
10:25:01	Event #5	Establish Rate						
CAPTURE DATA		Tubing_Press	=	730 PSI	Dirty Rate	=	3.00 BPM	pt. #3
10:40:04	Event #6	Establish Rate						
CAPTURE DATA		Tubing_Press	=	1141 PSI	Dirty Rate	=	4.00 BPM	pt. #4
10:55:01	Event #7	Establish Rate						
CAPTURE DATA		Tubing_Press	=	1602 PSI	Dirty Rate	=	5.00 BPM	pt. #5
11:10:01	Event #8	Establish Rate						
CAPTURE DATA		Tubing_Press	=	2102 PSI	Dirty Rate	=	6.00 BPM	pt. #6
11:25:02	Event #9	Establish Rate						
CAPTURE DATA		Tubing_Press	=	2739 PSI	Dirty Rate	=	7.00 BPM	pt. #7
11:40:01	Event #10	Establish Rate						
CAPTURE DATA		Tubing_Press	=	3338 PSI	Dirty Rate	=	8.00 BPM	pt. #8
11:55:06	Event #11	Establish Rate						
CAPTURE DATA		Tubing_Press	=	4011 PSI	Dirty Rate	=	9.00 BPM	pt. #9
12:10:01	Event #12	Establish Rate						
CAPTURE DATA		Tubing_Press	=	4520 PSI	Dirty Rate	=	9.90 BPM	pt. #10
12:13:49	Event #13	Establish Rate						
CAPTURE DATA		Tubing_Press	=	4035 PSI	Dirty Rate	=	9.35.00 BPM	(N.A.)
12:30:04	Event #14	Stop Pumping						
12:30:11	Event #15	ISIP						
CAPTURE DATA		Tubing_Press	=	915 PSI				
				STAGE SUMMARY				
**********	12:32:02 End Job	**********						

Job Comments: _____

ATTACHMENT
Page 1

HALLIBURTON DIVISION LABORATORY
HALLIBURTON SERVICES
MIDLAND DIVISION
ARTESIA, NEW MEXICO 88210

LABORATORY WATER ANALYSIS

No. W65, W66, & W67-88

To Yates Petroleum Corporation

105 South Fourth Street

Artesia, NM 88210

Date

Submitted by Date Rec.

Well No. Depth Formation

County Field Source

	Ross EC Fed. #2	Foster AN Com. #1	Parish TV Comm.	
Resistivity	.91 @ 60°	.9 @ 60°	.89 @ 60°	
Specific Gravity	1.005 @ 60°	1.005 @ 60°	1.005 @ 60°	
pH	7.5	7.3	7.0	
Calcium (Ca)	1,000	1,000	1,000	*MPL
Magnesium (Mg)	600	500	650	
Chlorides (Cl)	4,000	5,000	5,000	
Sulfates (SO_4)	Heavy	Heavy	Heavy	
Bicarbonates (HCO_3)	1,200	1,000	1,100	
Soluble Iron (Fe)	Nil	Nil	Nil	

Remarks:

*Milligrams per liter

Respectfully submitted,

Analyst: Art Carrasco - District Engineer

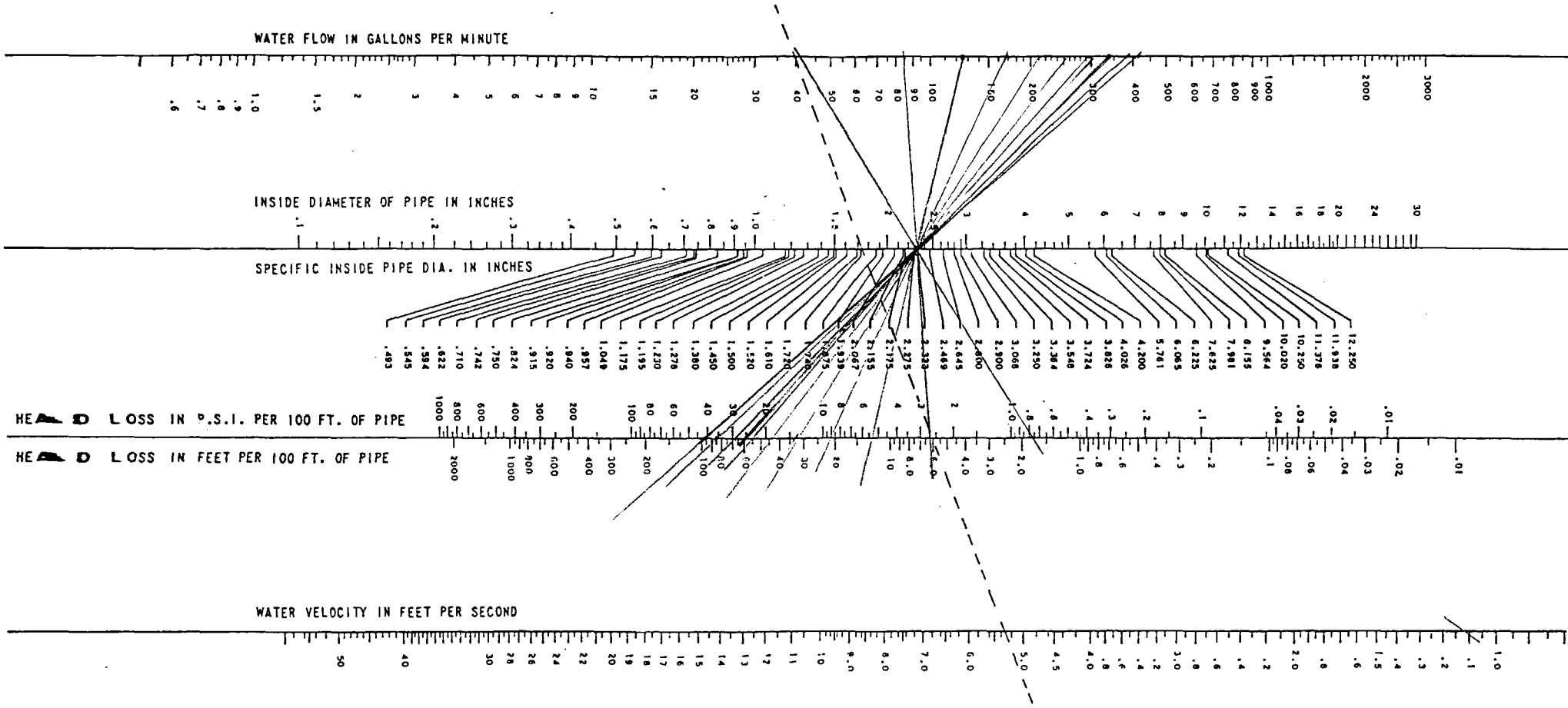
HALLIBURTON COMPANY

cc:

NOTICE

This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be held

FRICTION LOSS CHARACTERISTICS OF WATER FLOW THROUGH RIGID PLASTIC PIPE



HOW TO USE THIS NOMOGRAPH:

(1) SELECT THE DESIRED PIPE SIZE (INSIDE DIAMETER)
(2) DETERMINE THE AMOUNT OF WATER TO FLOW THROUGH THE PIPE
(3) PLACE A STRAIGHT-EDGE ON THESE TWO POINTS
(4) THE POINTS AT WHICH THE STRAIGHT-EDGE INTERSECTS THE HEAD-LOSS LINE AND THE VELOCITY LINE GIVE THESE TWO VALUES UNDER THE GIVEN CONDITIONS.

EXAMPLE:

1½" SCHEDULE A PIPE (I.D. = 1.740")
40 GAL. PER MIN. SERVICE
(1) LINE UP THESE POINTS WITH A STRAIGHT-EDGE
(2) READ 2.6 PSI (or 6 ft.) FROM THE HEAD-LOSS LINE
(3) READ 5.38 FT. PER SEC. FROM THE VELOCITY LINE

GPM * 34.3 = BPD

BPD * .0292 = GPM

THE VALUES ON THIS GRAPH ARE BASED ON THE WILLIAMS AND HAZEN FORMULA:

$$f = .2083 \left(\frac{100}{c}\right)^{1.85} \times \frac{q^{1.85}}{d^{4.8655}}$$

WHERE:

f = FRICTION HEAD IN FEET OF WATER PER 100 FEET OF PIPE
d = INSIDE DIAMETER OF PIPE IN INCHES
q = FLOW IN GALLONS PER MINUTE
c = CONSTANT FOR INSIDE ROUGHNESS OF THE PIPE (150 FOR ABS.)

HALLIBURTON SERVICES

JOB LOG

FORM 2013 R-2

WELL NO. 1 LEASE Stak D TICKET NO. 193504-3

CUSTOMER Yates Pet PAGE NO. 1

JOB TYPE Step Rate Test DATE 2-6-92

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
								Safety Meeting
1	0731	*		1		1300		Test Pump & Lines
2	40	1	16	1		32		Step Rate Test
3	50	2	33	1		320		Inc Rate
4	1010	3	49	1		680		Inc Rate
5	25	4	66	1		1120		Inc Rate
6	40	5	80	1		1600		Inc Rate
7	55	6	90	1		2000		Inc Rate
8	1110	7	101	2		2130		Inc Rate
9	25	8	120	2		3310		Inc Rate
10	40	9	135	2		4020		Inc Rate
11	55	9.7	145	2		4505		Inc Rate
12	1210	9.	97	2		4046		Lower Rate
13	11	9.35	140	2		4300		Inc Rate
14	29	9.33		2		4320		Stop Pump - Test Over
15						850		Line Vac
								Line Vac

DIVISION

8 41

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
ARTESIA DISTRICT OFFICE

BRUCE KING
GOVERNOR

P.O. DRAWER DD
ARTESIA, NEW MEXICO 88211
(505) 748-1283

February 11, 1992

Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504

Dave Catanach,

Step rate run on Yates Petr Corp. SWD State D #1 was witnessed. No problems encountered during test.

Bottom hole pressure was not run due to Yates Petr. rules. Break did not show useing surface pressure. BHP was calculated and shows break.

On June 27, 1990 we ran a step rate on Cotton MX Fed #1. We ran test without BHP and advised Yates Petr. if there was no definite break shown useing surface pressure the test would not be used.

Before the test on State D Com #1 was started I asked Chuck Morgan if he was aware of this agreement and he said he was. Agreement in June was based on David Catanach's phone call in June.

Johnny Robinson
Johnny Robinson
Field Rep II

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

New Mexico DRUG FREE It's a State of Mind!

BRUCE KING
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

March 6, 1992

Yates Petroleum Corporation
105 South Fourth Street
Artesia, New Mexico 88210

RE: Injection Pressure Increase
State "D" Com No. 1
Eddy County, New Mexico

Dear Sir:

Reference is made to your request dated February 10, 1992, to increase the surface injection pressure on the State "D" Com Well No. 1. This request is based on a step rate test conducted on the well on February 6, 1992. The results of the test have been reviewed by my staff and we feel an increase in injection pressure on the 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 SURFACE PRESSURE
State "D" Com Well No. 1 Unit N, Section 16, T-20S, R-24E, NMPM Eddy County, New Mexico	2750 PSIG

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,

William J. LeMay
Director

WJL/DC/jc

cc: Oil Conservation Division - Artesia
File: SWD-395
D. Catanach
R. Brown