



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**GARY E. JOHNSON**

Governor

**Betty Rivera**

Cabinet Secretary

December 1, 2002

**Lori Wrotenbery**

Director

**Oil Conservation Division**

Richardson Operating Company  
3100 La Plata Highway  
Farmington, New Mexico 87401

Attn: Mr. Drew Carnes

**Re: Injection Pressure Increase - 190**  
**Salty Dog Well No. 2**  
**San Juan County, New Mexico**

Dear Mr. Carnes:

Reference is made to your request dated November 22, 2002, to increase the surface injection pressure on the above referenced well. This request is based on a step rate test conducted on this well on November 21, 2002. The test results have been reviewed and we feel an increase in injection pressure is justified at this time.

You are therefore authorized to inject at or below the following surface injection pressure.

Well and Location	Maximum Surface Injection Pressure 2 7/8" Tubing
Salty Dog Well No. 2	1,300 PSIG
Located in Unit J, Section 5, Township 29 North, Range 14 West, NMPM, 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

cc: Oil Conservation Division - Aztec  
Files: SWD-811; PSI-X, 2002

November 22, 2002

Will Jones  
New Mexico Oil Conservation Division  
1220 S. St. Francis Drive  
Santa Fe, NM 87505

Re: Salty Dog #2 Step Rate Test

Dear Mr. Jones,

Please find the attached data and analysis of the step rate test performed on the Salty Dog #2 on November 21, 2002. I have included all raw data, as well as the analysis performed by American Energy Services. Also attached is the Salty Dog #2 well diagram containing all pertinent well information.

Based on the Tefteller and American Energy Services charts, I agree with the AES determination of FPP being 2587 psi. I did a rough determination based on the Tefteller chart alone and determined the FPP being 2600 psi.

Please review this information and review and if possible increase our allowable surface injection pressure.

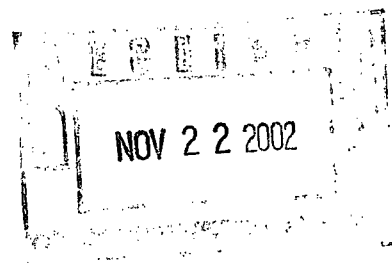
Thank you for your time and consideration.

Regards,

Drew Carnes  
Operations Manager  
505-564-3100  
505-215-3926 (Cell)

RICHARDSON Operating COMPANY

(SWD-811)



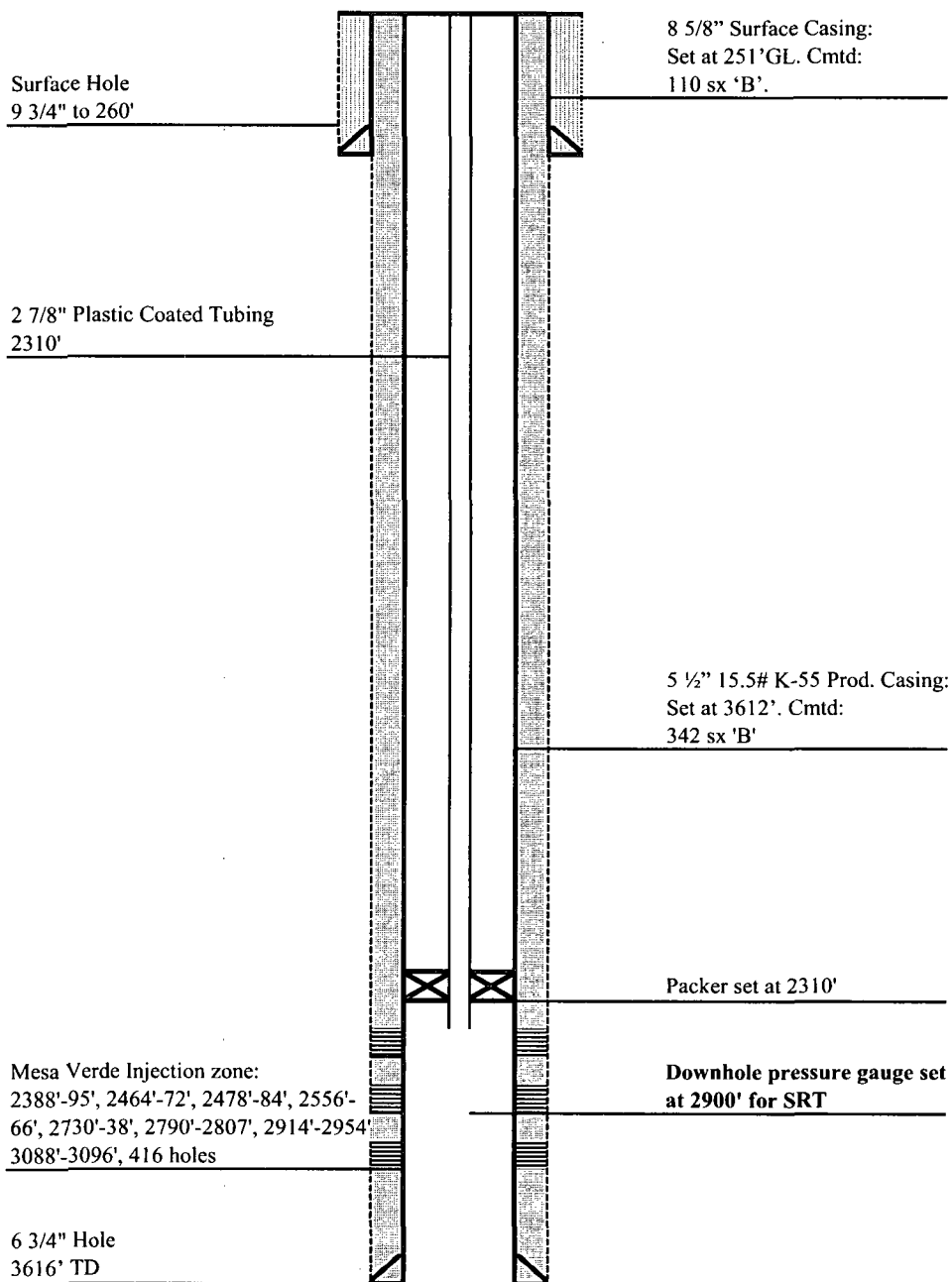
**Richardson Operating Company**

3100 La Plata Highway

Farmington, NM 87401

(505) 564-3100

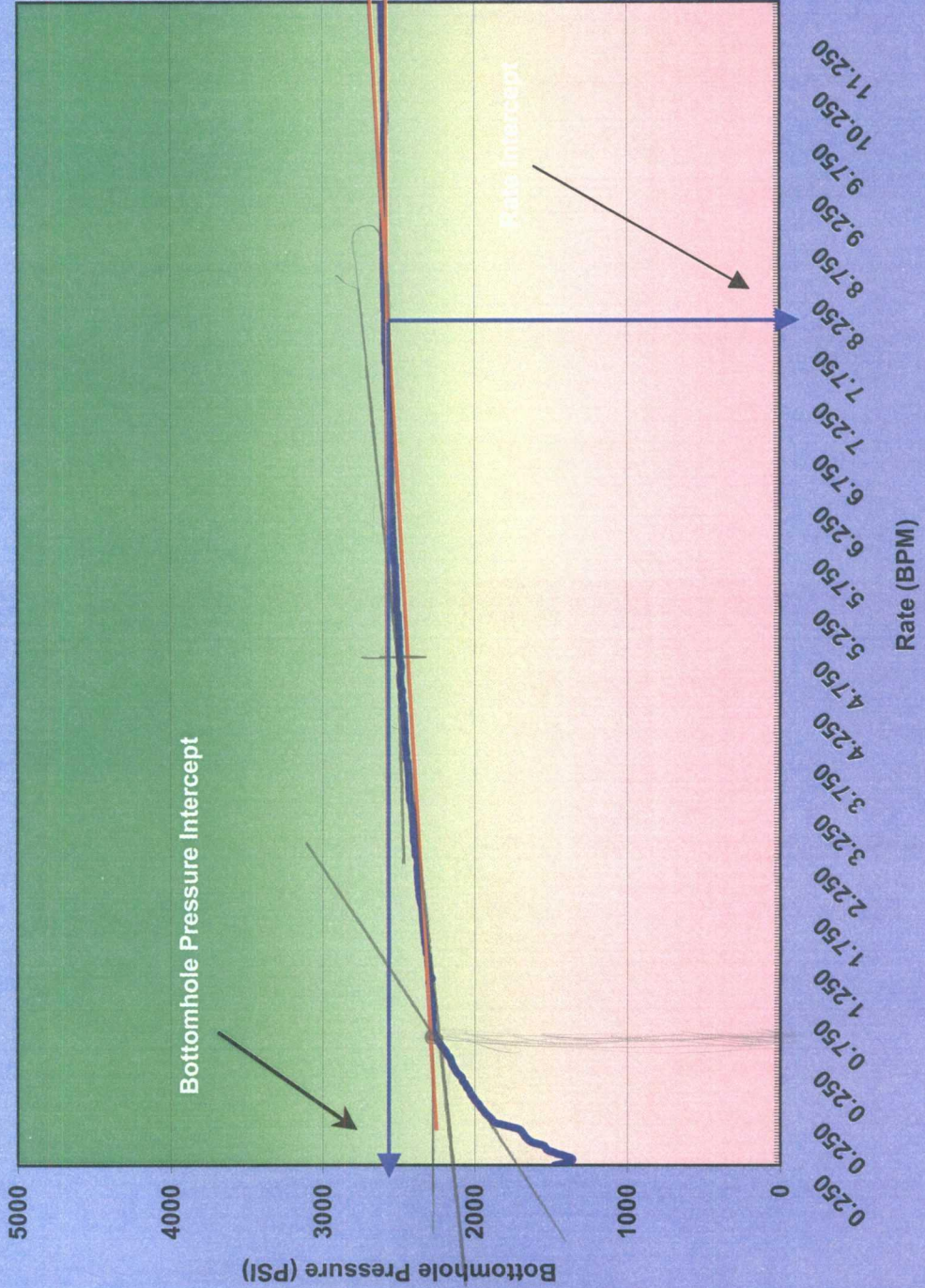
**Well Name**    **Salty Dog #2**  
**Location**    1495' FSL & 1477' FEL  
                  J Sec 5, T29N, R14W NMPM  
**County**      San Juan  
**Field**        SWD; Blanco Mesa Verde  
**API#**         30-045-30812  
**Elevation**    5297' UG



30-045-3812

# Salty Dog #2 - Step Rate Test November 21, 2002

BHP @ Fracture = 2,587 PSI  
Based on Graph Below - FG = 1.0833  
psi/ft



1950 = OLD available  
Surface Pressure

1PF 171  
3/15/02

SwD appears  
2/15/02

SD 2  
TP

**Jones, William V**

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**From:** Jones, William V  
**Sent:** Friday, November 22, 2002 3:41 PM  
**To:** 'Drew Carnes'  
**Cc:** Catanach, David; Perrin, Charlie  
**Subject:** Injection Pressure Limit for Richardson's Salty Dog Well No. 2

Mr. Drew Carnes  
Richardson Operating Company  
Farmington, New Mexico,

From preliminary analysis of the Step Rate Test you have sent today, you have permission to inject at 1200 psi surface pressure on the Salty Dog Well No. 2 until the final determination and order is issued on this matter. The final order will detail the allowable surface pressure and may be below or above the 1200 psi temporary limit.

Regards,  
Will Jones  
New Mexico Oil Conservation Division

-----Original Message-----

**From:** Drew Carnes [mailto:dcarnes@digii.net]  
**Sent:** Friday, November 22, 2002 3:20 PM  
**To:** 'Jones, William V'  
**Subject:** RE: 2nd Try

Will,  
Here's one with surface pressure plotted. Because of the difference in the number of data points, I took the average pressure for each step. It should be noted that the well configuration will not change from the SRT to injection.  
Thanks...

Drew Carnes

-----Original Message-----

**From:** Jones, William V [mailto:WVJones@state.nm.us]  
**Sent:** Friday, November 22, 2002 2:35 PM  
**To:** 'Drew Carnes'  
**Subject:** RE: 2nd Try

Drew:

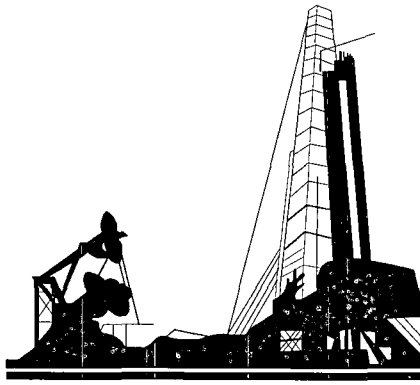
Got your application and attachments. It was pointed out to me that I am not supposed to spend time matching up data. Also, I am backlogged on other applications from other operators.

Please send a plot with the surface AND bottomhole pressures vs surface injection rate. I will retain this data and resume work on this after this plot arrives.

Regards,  
Will Jones

-----Original Message-----

**From:** Drew Carnes [mailto:dcarnes@digii.net]  
**Sent:** Friday, November 22, 2002 1:31 PM  
**To:** wvjones@state.nm.us



TRANSMITTAL COVER SHEET

OIL CONSERVATION DIVISION  
1220 S. ST. FRANCIS DRIVE  
SANTA FE, NM 87505  
(505) 476-3440  
(505)476-3462 (Fax)

PLEASE DELIVER THIS FAX:

TO:

*Fax 505-564-3109*  
Don Carner - RICHARDSON

FROM:

Will Jones -

DATE:

12/13/02

PAGES:

C+3

SUBJECT:

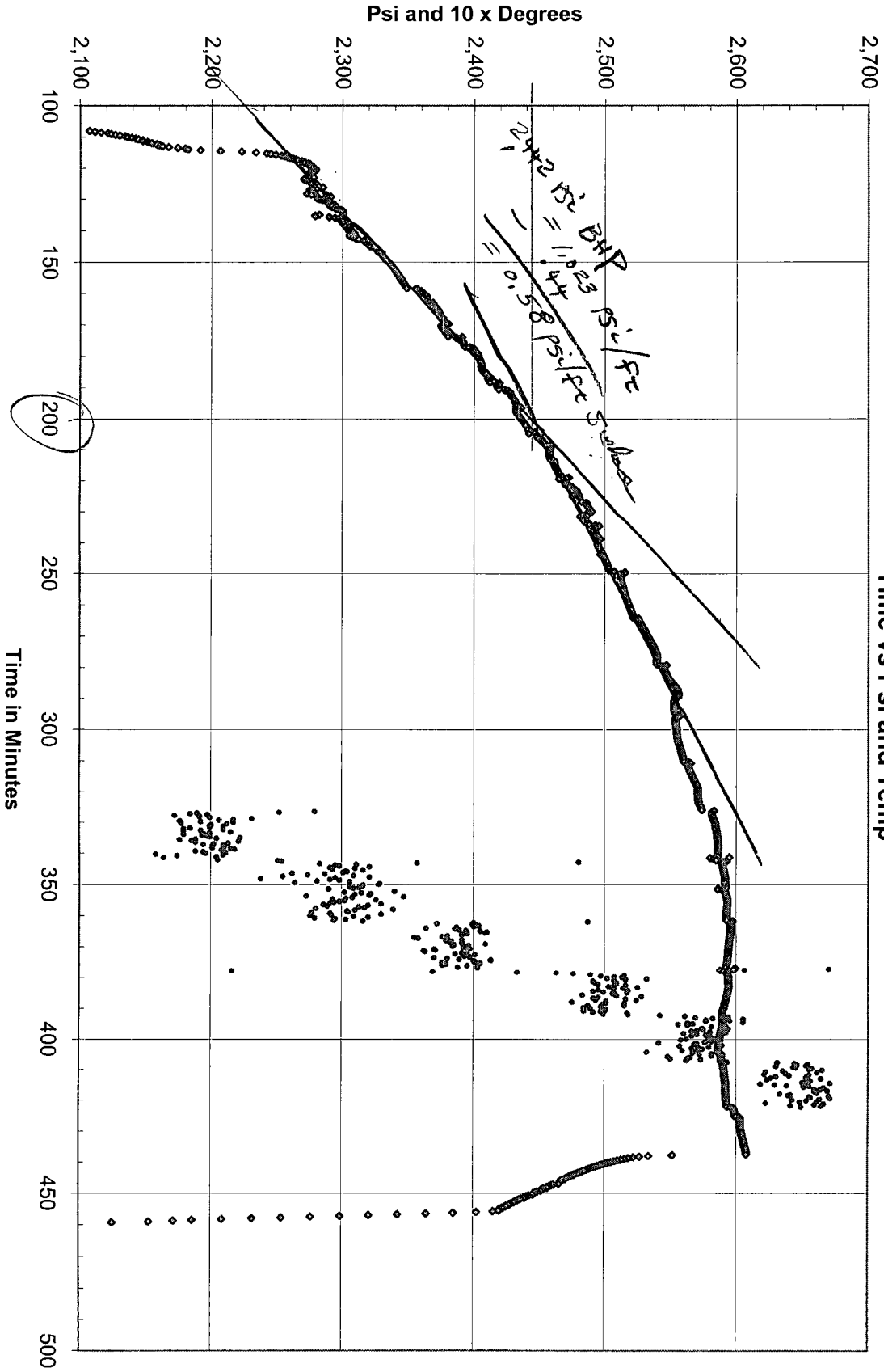
Salty Dog #2 Step Rate TEST

IF YOU HAVE TROUBLE RECEIVING THIS FAX, PLEASE CALL THE OFFICE  
NUMBER ABOVE.

# Salty Dog #2

11-21-02

Time vs Psi and Temp

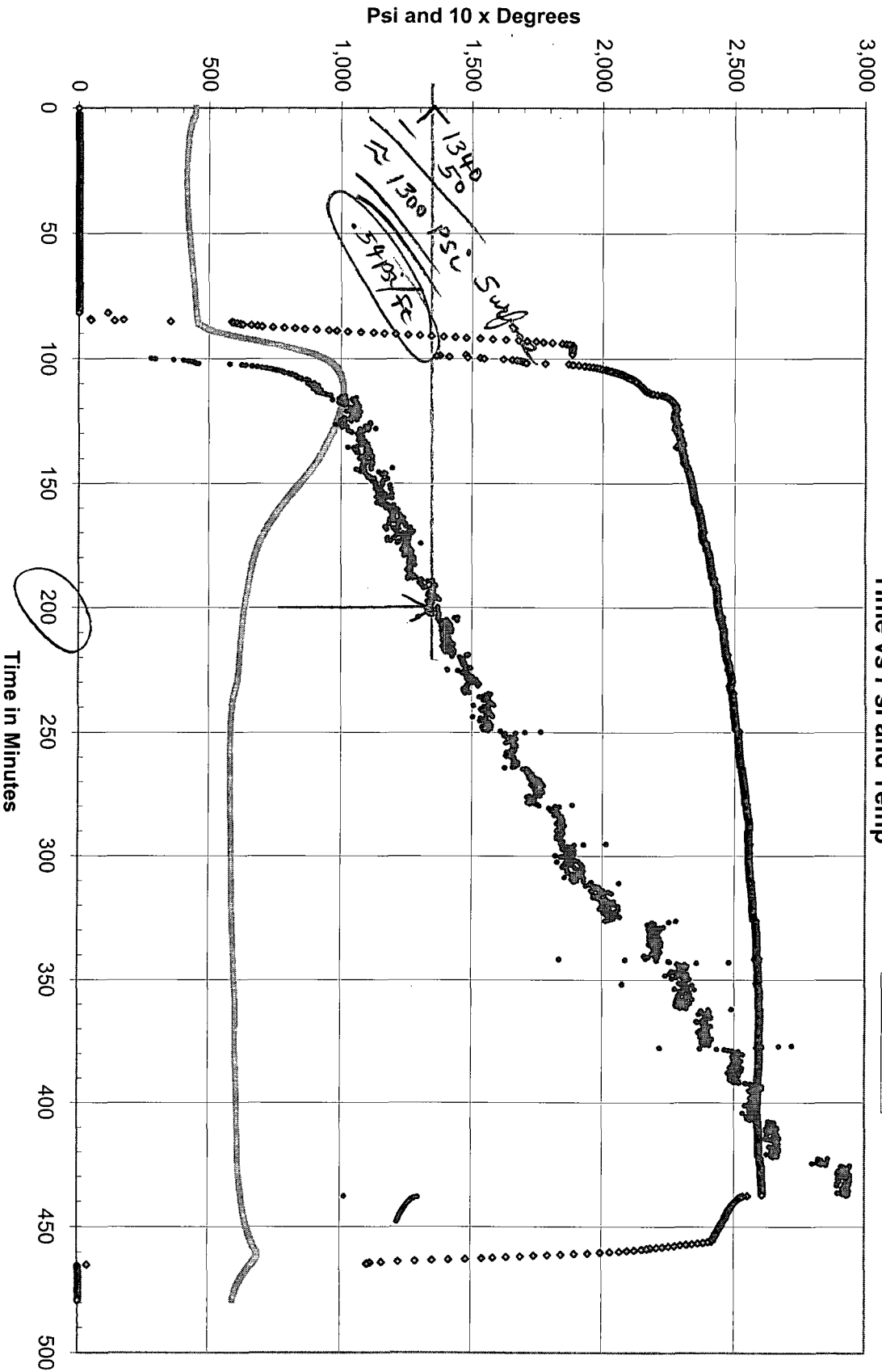


WTD  
12/1/02

# Salty Dog #2

11-21-02

Time vs Psi and Temp



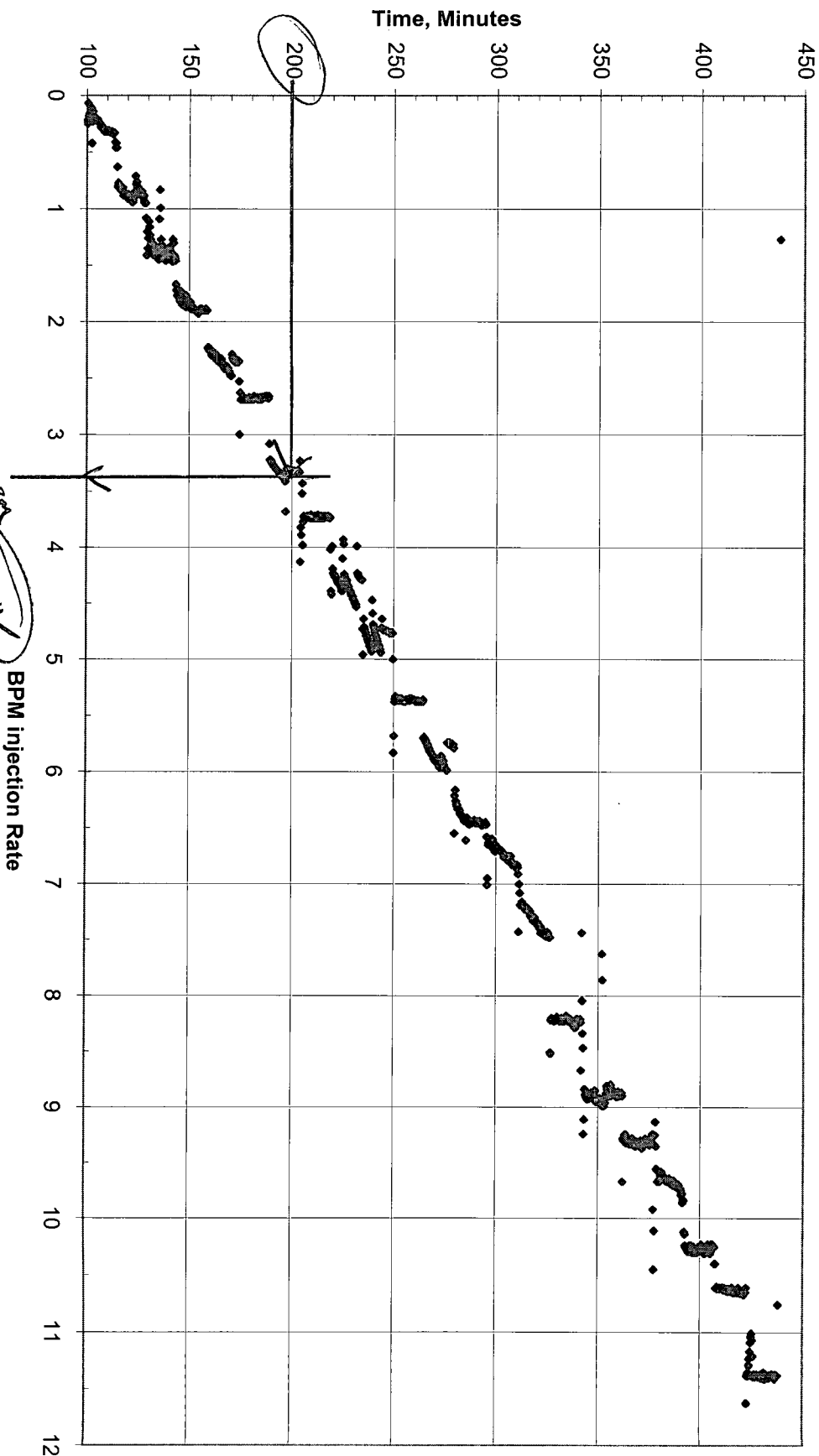
Top leaf @ 2388'

W.D. Jones

# Salty Dog #2

11-2002

Injection Rate vs Time



3.4 BPM  
4900 B.P. Data

*Handwritten signature*

## **Jones, William V**

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**From:** Catanach, David  
**Sent:** Wednesday, December 18, 2002 10:01 AM  
**To:** Drew Carnes (E-mail)  
**Cc:** Jones, William V  
**Subject:** Salty Dog No. 2

Drew, Will Jones has provided me with the latest step rate test conducted on the Salty Dog No. 2. I have examined the test and concur with the decision arrived at by Mr. Jones. Please be advised that if you wish to pursue this matter, I suggest you contact Mr. Richard Ezeanyim, the OCD Chief Petroleum Engineer. I'm sure he'd be more than happy to discuss your situation. He can be reached at:

Phone (505) 476-3467  
E-Mail- REzeanyim@state.nm.us

David Catanach

12/16/02

DAVID -

DREW Carnes w/ RICHARDSON called again.  
Apparently he is under pressure to ask us again  
for more pressure allowable for the salty DOB #2.  
I promised him I would get the test to you  
for a review of <sup>any</sup> possible increase in pressure.  
Here is the <sup>last</sup> order and Data.

Drew Carnes 505-564-3100

— Whatever You decide —

I'd say no, but you might check w/ Christ Espinosa  
or have Drew call Richard.

De 12/18/02

dcarnes@digiii.net

R Ezeanyim