Beach Exploration, Inc.

February 12, 2003

OIL CONSERVATION DIVISION

CASE NUMBER _____

EXHIBIT 3

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

ATTENTION: Mr. David Catanach

RE: Request for increased surface injection pressure
West High Lonesome Penrose Sand Unit
Eddy County, New Mexico

Dear Mr. Catanach:

Beach Exploration Inc., respectfully request approval to increase the surface injection pressure limit for the West High Lonesome Penrose Sand Unit to 1,100 psi. This pressure is necessary to recover the estimated 558,000 barrels of secondary oil that would not otherwise be recovered, thereby preventing waste. It is also necessary for the economic success of the project, to fill-up the reservoir in a timely manner, get an oil production response and return the large initial capital investment. It has been shown by Beach Exploration, in past hearing testimony, that injection water will be confined to the Queen interval and not pose a threat to ground water at surface injection pressures as high as 1500 psi.

Enclosed for your consideration is the following data:

1. Copy of the OCD Order No. R-9453-A (Case No. 10495) authorizing Beach exploration to inject into the Red Lake (Penrose – Queen) Unit at a surface pressure of 1500 psi.
2. Map showing the WHL Unit and its relationship to the Red Lake Unit and other Penrose Queen units in the area. Also depicts cross section and Red Lake wells used for testing in Case No. 10495.
3. Cross section of the Queen interval and the Penrose Sand member of the Queen in the Red Lake Unit No. 23 and the West High Lonesome wells No.19 and 26.
4. Halliburton's "Frac Height" log run on Beach's Red Lake Unit No. 23, in 1992, to *determine fracture growth potential for the above hearing* (Case No. 10495)
5. Step Rate Tests run by John West Engineering in 1991 to determine fracture gradients in the Red Lake Unit wells No.s 5, 9, 14, 22 and 25.
6. Injection Profile logs run by Holmes Wireline in June 1992, while injecting fluid at 1500 psi in the Red Lake Unit wells No. 2, 10, 21 and 24 (Case No 10495).

Main points to be considered:

1. Injection into the WHL waterflood project commenced in September 2002. Injection was originally planned to be 200 BWPD per well in 13 wells. We initially injected into 10 wells at an average of 140 BWPD each and now are

injecting into 8 wells at less than 90 BWPD each. This reduction has been caused by increasing injection pressures and the imposed 0.2 psi/ft limit. Cumulative water injection through January 2003 has been 167,000 bbl of water. No injection response has been seen.

2. The WHL waterflood is in an advanced state of depletion and will require an estimated 1,630,000 bbl of water to fill the reservoir and get a peak oil response. The time to fillup was originally estimated to be 21 months. Under current conditions and pressure limits, fillup will require 6 years. This delay, combined with an increased installation cost of $1,300,000 will spell economic disaster for this project. (Original installation estimate was $865,000. Over-expenditures were primarily due to difficulties in required casing leak repairs and repluggings)
3. There are several Queen (Penrose) waterflood projects in the area of WHL which have historically utilized injection pressures from 1360 to 1800 psi to effectively carry out secondary recovery operations.
4. Step Rate Tests in the Red Lake Unit indicate that Frac initiation pressures range from 805 psi to 1152 psi surface pressure and 1504 to 1820 psi bottom hole pressure. These pressures translate to frac gradients ranging from a low of 0.85 to 1.15 psi/ft.
5. Cross section A – A' shows, from Exhibit 5 of previous hearing (Case No. 10495), the Queen section extends from 240' above to 430' below the Penrose Sand. The cross section also shows that the Queen interval in the Red Lake correlates and is approximately the same thickness as in the West High Lonesome. The WHL No. 19 and 26 are the only two wells in the flood that penetrated the base of the Queen.
6. Beach Exploration had Halliburton run a "Full Wave Sonic" log in May of 1992 to determine rock properties. The resulting "Frac Height" log is a threoretical indication that fracturing the Penrose with 200 psi over frac initiation pressure would grow a fracture vertically 30 ft above the Penrose and 135 ft below the Penrose.
7. Beach Exploration had Holmes Wireline run injection profile logs on four Red Lake Unit injectors in June 1992. These profile logs were run while injecting fluid at 1500 psi to confirm fracture height and any associated channeling behind casing. All four logs indicate that 100% of the fluid is staying within six feet of the perforated interval with no channeling up or down behind casing.

Conclusions:

1. The WHL Unit consists of the same geologic interval as the Red Lake Unit and other Penrose-Queen floods in the immediate vicinity.
2. Approval to inject at a surface pressure of up to 1500 psi was granted previously based on the information that has been enclosed.
3. Surface injection pressures of 1360 to 1800 psi have historically been used to successfully carry out secondary recovery operations in this interval in this area with no adverse effects to fresh water or other potential pay zones.
4. Theoretical evidence exists (Halliburton's "Frac Height" log) that water injected at 200 psi over frac pressure will stay in zone vertically from 30 ft above to 230 ft below the Penrose.

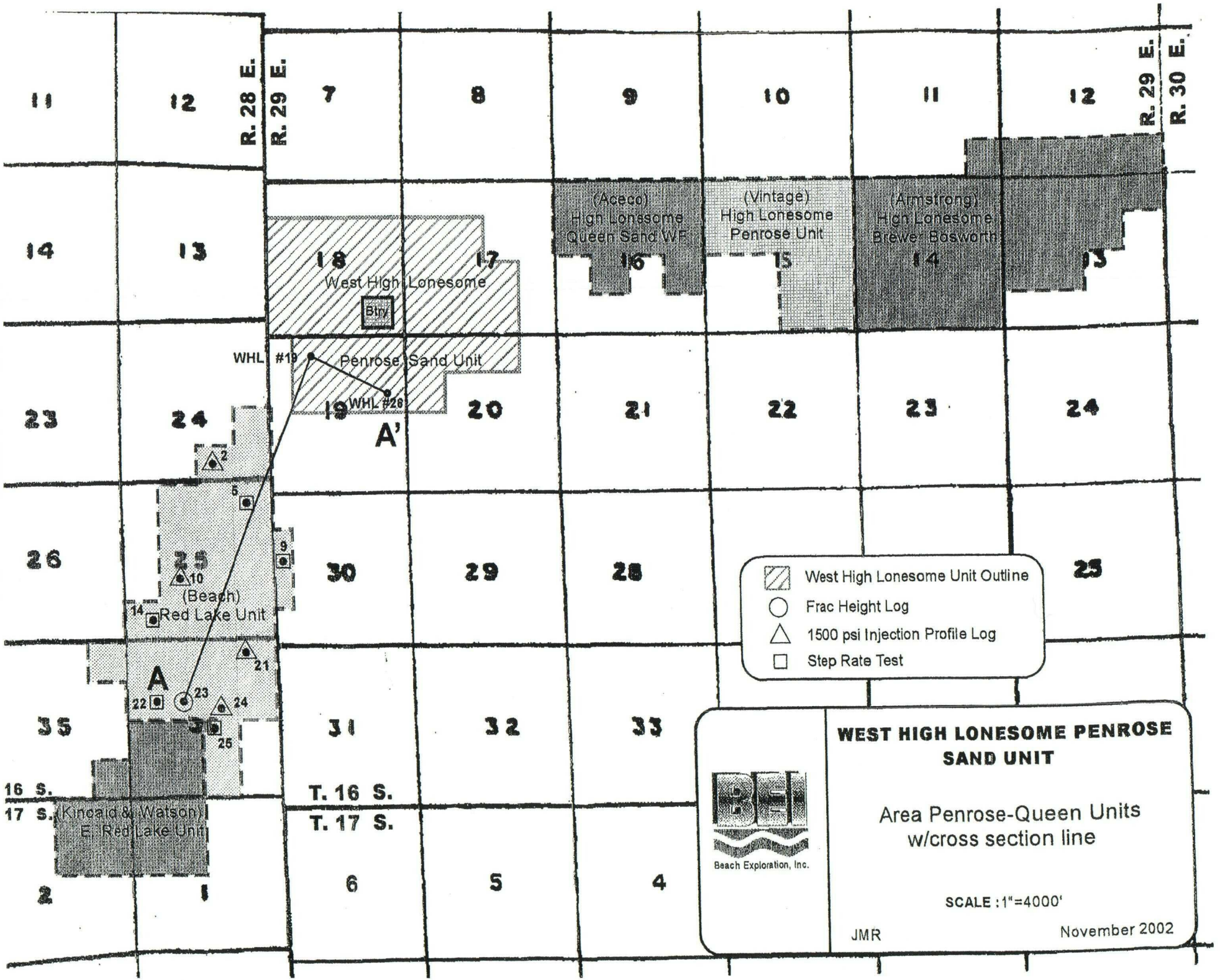
5. Practical evidence exists (Holmes Injection Profile logs) that fluid injected at a surface pressure of 1500 psi stays within six feet of the perforated Penrose interval.
6. Without authority to increase surface injection pressure the WHL Unit will be an economic failure.

If you have any questions, or if I may be of further help, please call me at (915) 683-6226.

Yours truly,

Beach Exploration, Inc

Jack M. Rose, Engineer


R. 28 E.
R. 29 E.
R. 29 E.
R. 30 E.
11
12
7
8
9
10
11
12
14
13
18
17
16
15
14
13
West High Lonesome
Bttry
(Aceco)
High Lonesome
Queen Sand WF
(Vintage)
High Lonesome
Penrose Unit
(Armstrong)
High Lonesome
Brewer Bosworth
WHL #19
Penrose Sand Unit
WHL #26
19
20
21
22
23
24
23
24
A'
2
5
9
26
25
30
29
28
25
10
(Beach)
14
Red Lake Unit
21
A
22
23
24
35
36
31
32
33
25
16 S.
17 S.
T. 16 S.
T. 17 S.
(Kincaid & Watson)
E. Red Lake Unit
2
1
6
5
4
West High Lonesome Unit Outline
Frac Height Log
1500 psi Injection Profile Log
Step Rate Test
BEI
Beach Exploration, Inc.
WEST HIGH LONESOME PENROSE SAND UNIT
Area Penrose-Queen Units
w/cross section line
SCALE :1"=4000'
JMR
November 2002

A

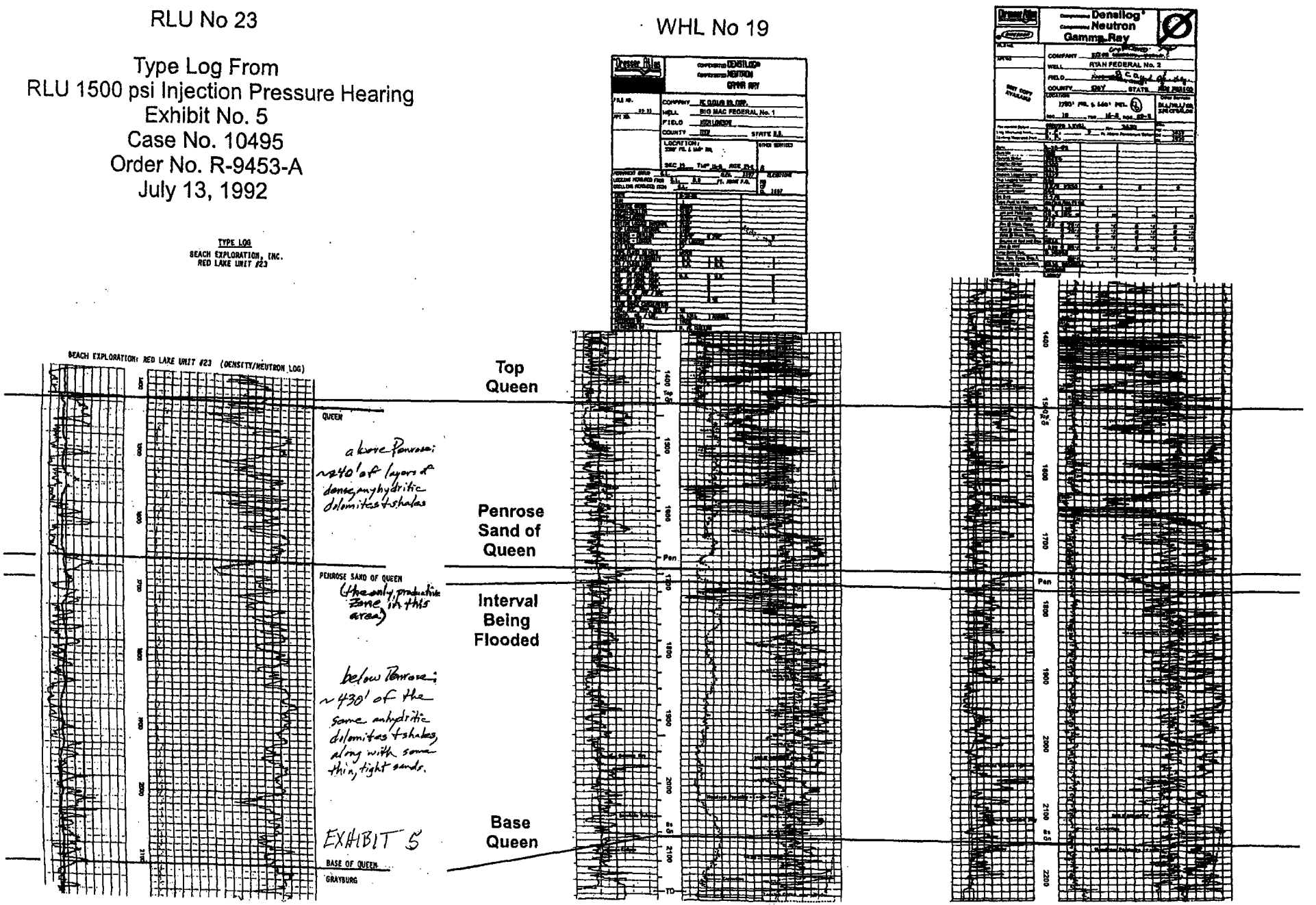
A'

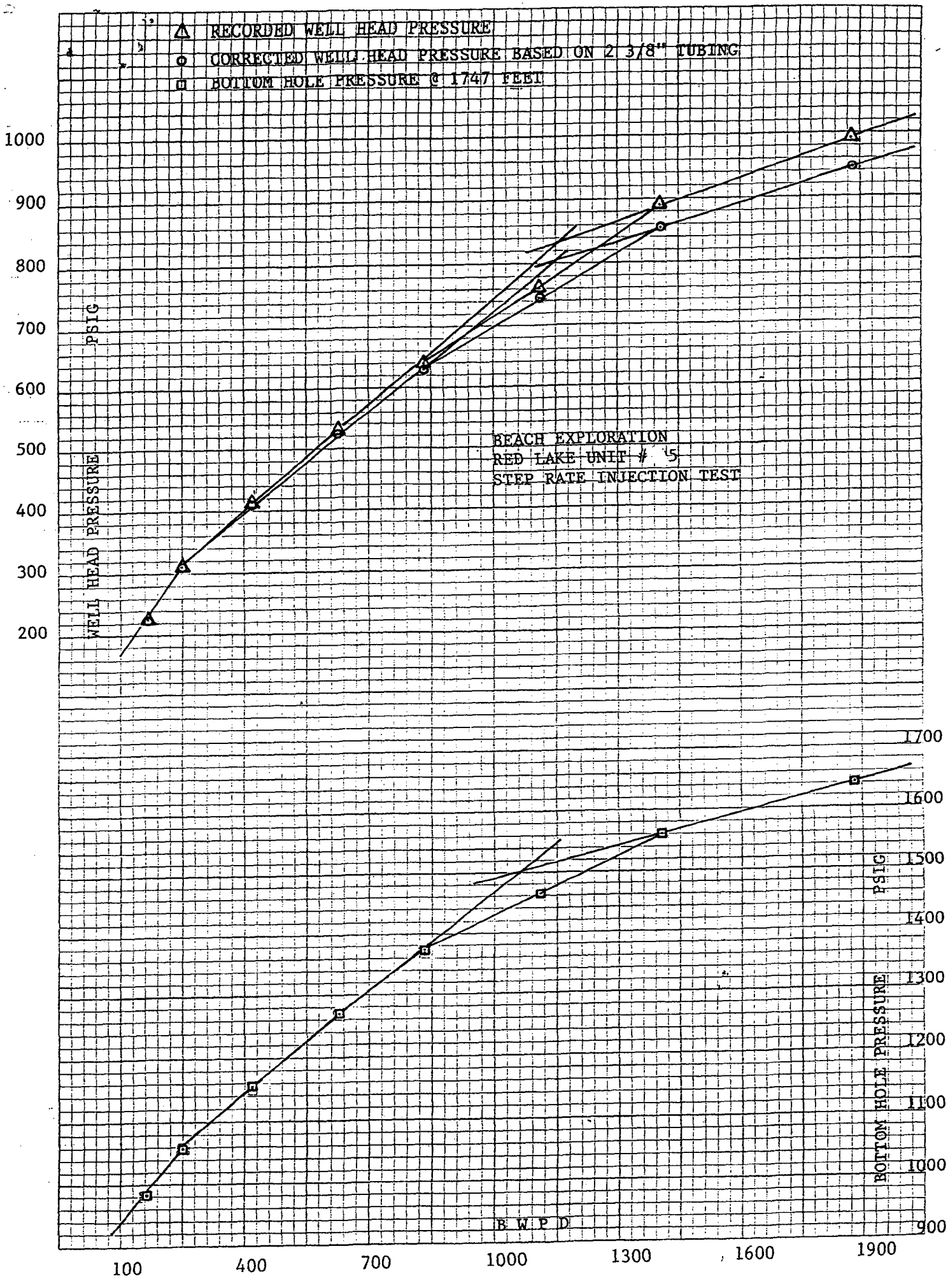
RLU No 23

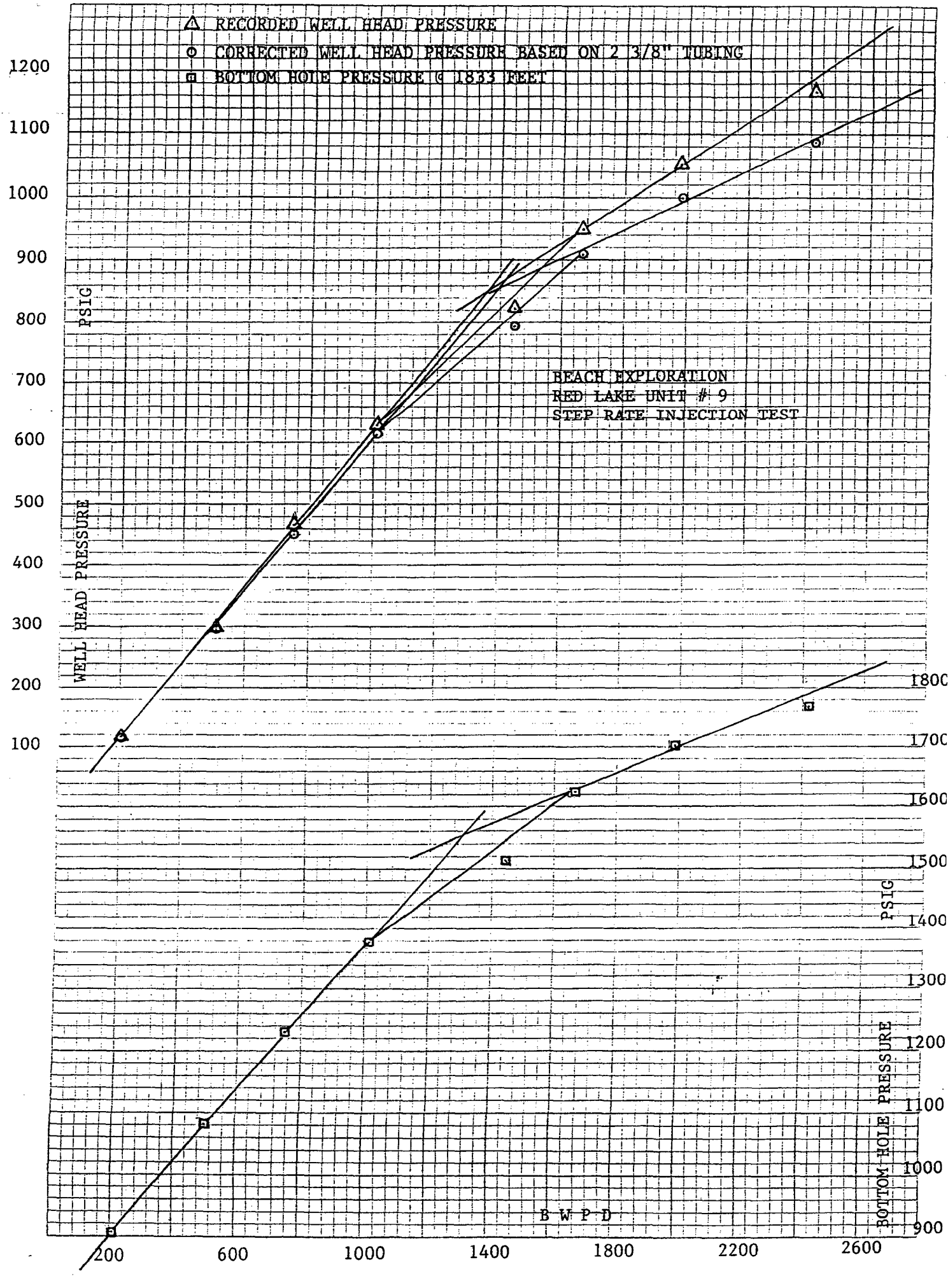
Type Log From
RLU 1500 psi Injection Pressure Hearing
Exhibit No. 5
Case No. 10495
Order No. R-9453-A
July 13, 1992

WHL No 19

WHL No 26




RECORDED WELL HEAD PRESSURE
CORRECTED WELL HEAD PRESSURE BASED ON 2 3/8" TUBING
BOTTOM HOLE PRESSURE @ 1747 FEET
WELL HEAD PRESSURE PSIG
1000
900
800
700
600
500
400
300
200
BEACH EXPLORATION
RED LAKE UNIT # 5
STEP RATE INJECTION TEST
1700
1600
1500
1400
1300
1200
1100
1000
900
BOTTOM HOLE PRESSURE PSIG
B W P D
100
400
700
1000
1300
1600
1900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CORRECTED WELL HEAD PRESSURE BASED ON 2 3/8" TUBING
BOTTOM HOLE PRESSURE @ 1833 FEET
BEACH EXPLORATION
RED LAKE UNIT # 9
STEP RATE INJECTION TEST
WELL HEAD PRESSURE
PSIG
BOTTOM HOLE PRESSURE
PSIG
B W P D
1200
1100
1000
900
800
700
600
500
400
300
200
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600
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1400
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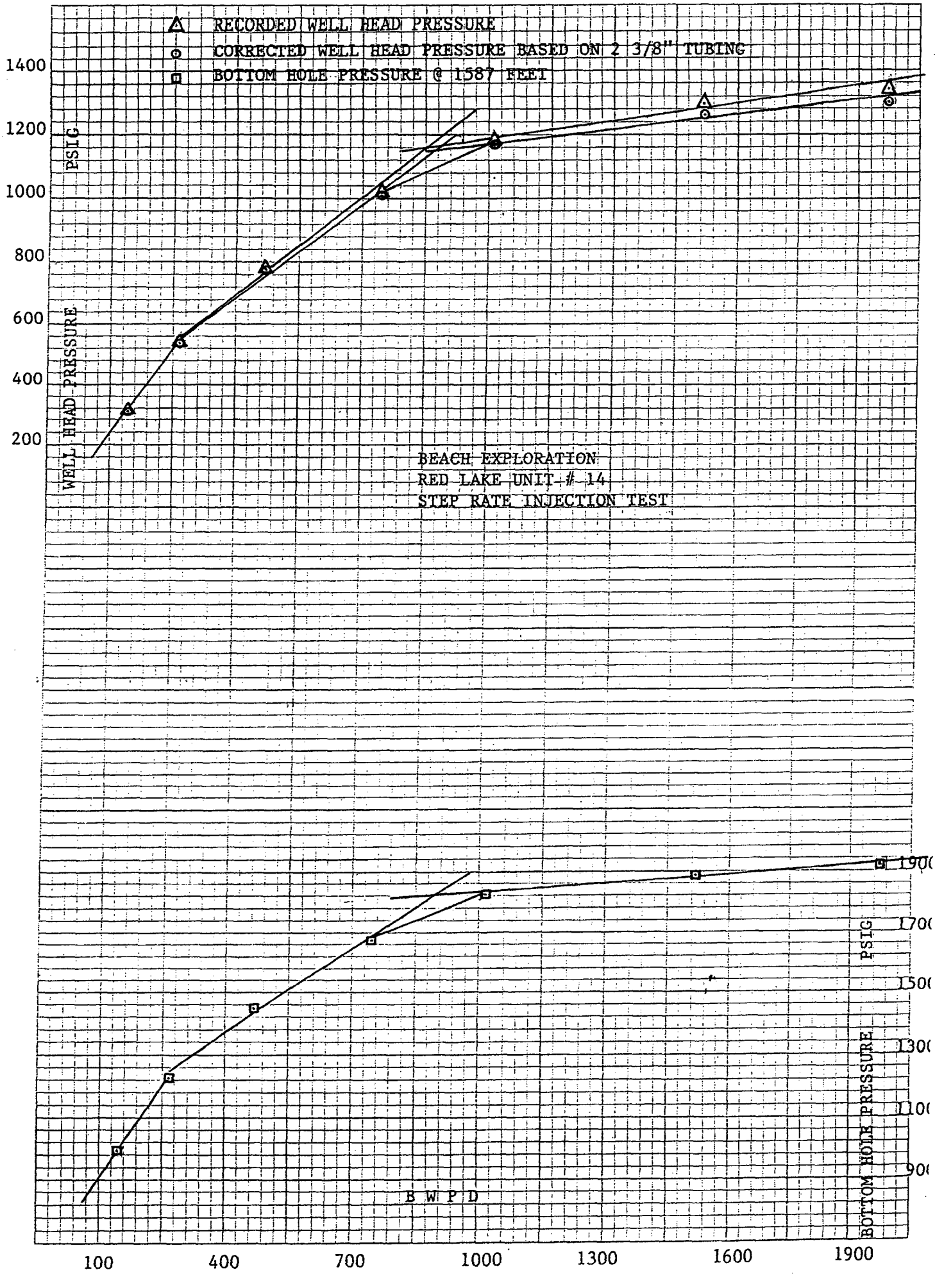
2200
2600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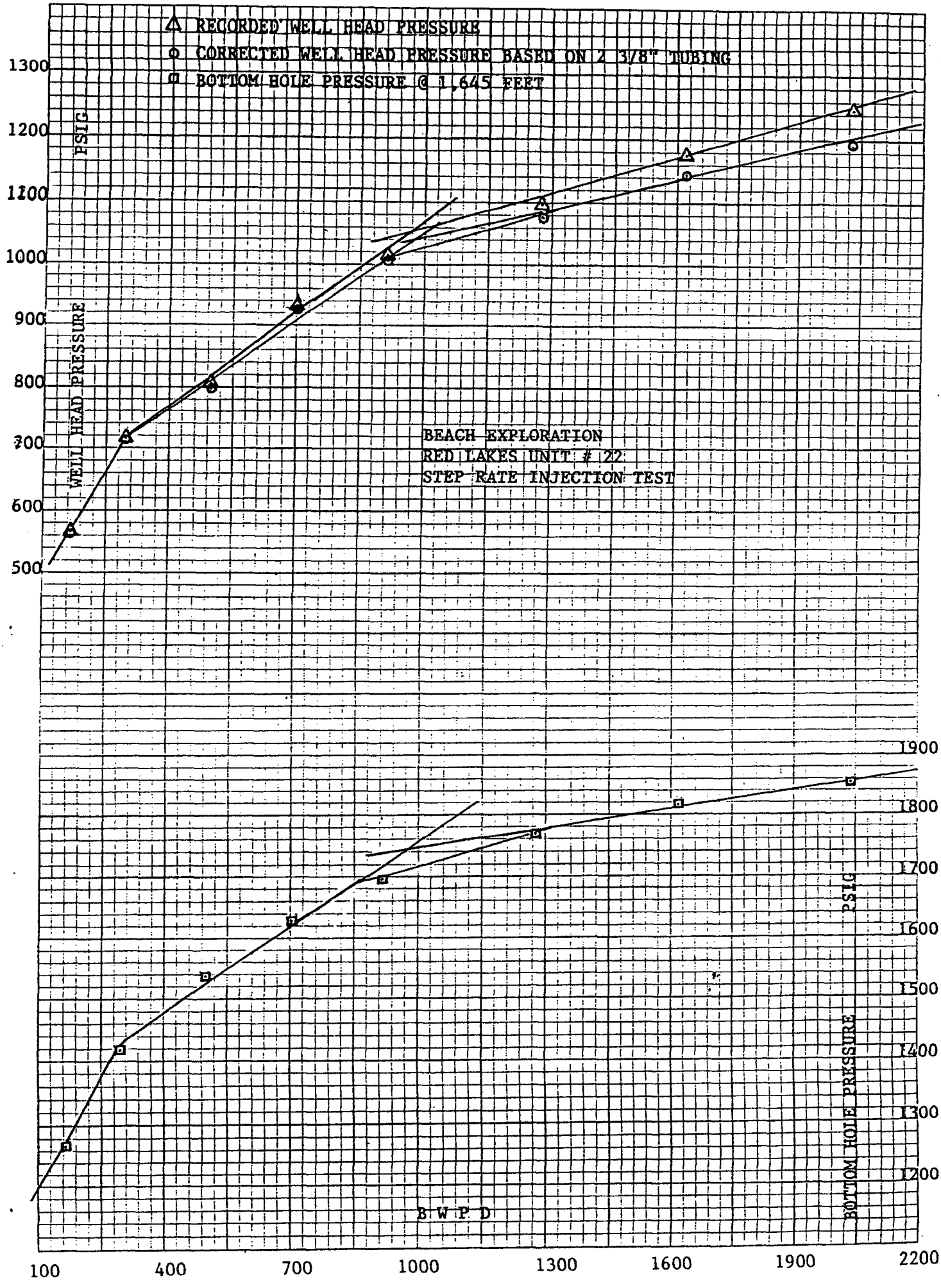
CORRECTED WELL HEAD PRESSURE BASED ON 2 3/8" TUBING
BOTTOM HOLE PRESSURE @ 1587 FEET
WELL HEAD PRESSURE
PSIG
1400
1200
1000
800
600
400
200
BEACH EXPLORATION
RED LAKE UNIT # 14
STEP RATE INJECTION TEST
BOTTOM HOLE PRESSURE
PSIG
1900
1700
1500
1300
1100
900
B W P D
100
400
700
1000
1300
1600
1900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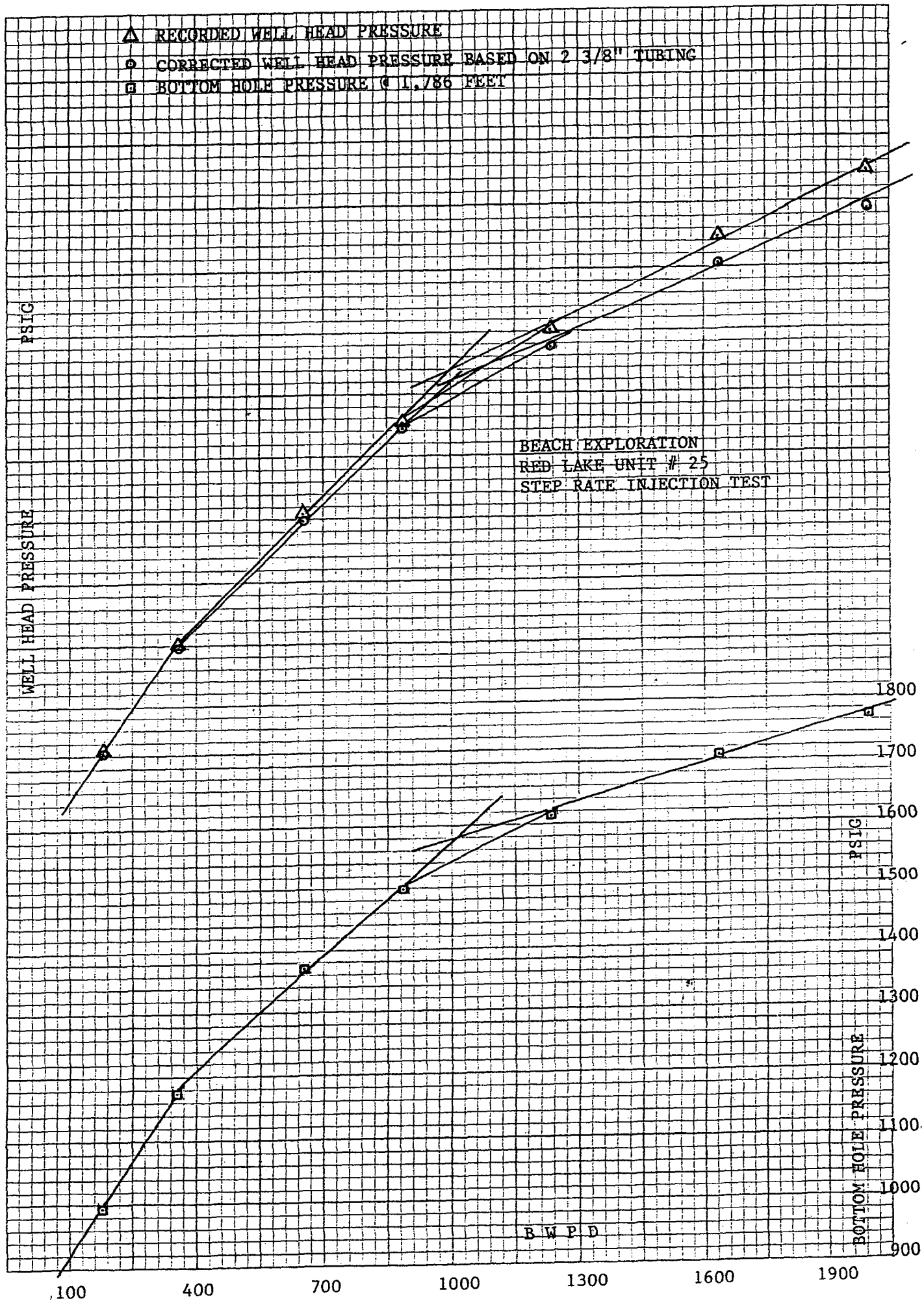
CORRECTED WELL HEAD PRESSURE BASED ON 2 3/8" TUBING
BOTTOM HOLE PRESSURE @ 1,645 FEET
PSIG
WELL HEAD PRESSURE
1300
1200
1100
1000
900
800
700
600
500
BEACH EXPLORATION
RED LAKES UNIT # 22
STEP RATE INJECTION TEST
1900
1800
1700
1600
1500
1400
1300
1200
PSIG
BOTTOM HOLE PRESSURE
B W P D
100
400
700
1000
1300
1600
1900
2200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CORRECTED WELL HEAD PRESSURE BASED ON 2 3/8" TUBING
BOTTOM HOLE PRESSURE @ 1,786 FEET
BEACH EXPLORATION
RED LAKE UNIT # 25
STEP RATE INJECTION TEST
WELL HEAD PRESSURE PSIG
BOTTOM HOLE PRESSURE PSIG
B W P D
1200
1100
1000
900
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700
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1700
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