

State of New Mexico
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
Santa Fe, New Mexico 87505



May 25, 1995

CF 3234

R- 2901

CF 10866

R- 2901-A

OXY USA, Inc.
P.O. Box 50250
Midland, Texas 79710-0250

Attn: Mr. Richard E. Foppiano

**RE: Injection Pressure Increase East Eumont Unit
Waterflood Project, Lea County, New Mexico**

Dear Mr. Foppiano:

Reference is made to your request dated December 6, 1994 to increase the surface injection pressure on eight wells. This request is based on step rate tests conducted on these wells between April 24 and 27, 1995. The results of the tests have been reviewed by my staff and we feel an increase in injection pressure on these wells is justified at this time.

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

<i>East Eumont Well Number, Unit Letter and Section</i>	<i>API Number</i>	<i>Maximum Injection Surface Pressure</i>
#6W; "I", 33	30-025-05531	1030 PSIG
#11W; "M", 34	30-025-05538	2130 PSIG
#28W; "A", 9	30-025-05583	2290 PSIG
#35W; "K", 10	30-025-05586	2090 PSIG
#36W; "M", 10	30-025-05590	2610 PSIG
#37W; "A", 16	30-025-05607	1970 PSIG
#39W; "C", 15	30-025-05602	1750 PSIG
#41W; "E", 15	30-025-05600	1730 PSIG
All wells located in Township 19 South, Range 37 East, Lea County, New Mexico.		

VILLAGRA BUILDING - 408 Galisteo
Forestry and Resources Conservation Division
P.O. Box 1948 87504-1948
827-5830
Park and Recreation Division
P.O. Box 1147 87504-1147
827-7465

2040 South Pacheco
Office of the Secretary
827-5950
Administrative Services
827-5925
Energy Conservation & Management
827-5900
Mining and Minerals
827-5970
Oil Conservation
827-7131

Injection Pressure Increase

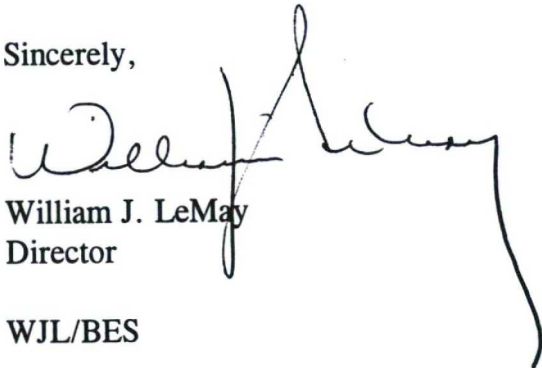
OXY USA, Inc.

May 25, 1995

Page 2

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,

A handwritten signature in black ink, appearing to read 'William J. LeMay', with a long, sweeping underline that extends to the right.

William J. LeMay
Director

WJL/BES

cc: Oil Conservation Division - Hobbs
Files: 2nd QTR 95 PSI-X;
4th Case Files: 3234, 10866

N/R
OXY USA Inc.OIL CONSERVATION DIVISION P.O. Box 50250, Midland, TX 79710-0250
REC'DMay 12, 1995
MAY 15 1995 8 52

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Attention: Mr. William J. Lemay, Director

RE: Application of OXY USA Inc. for an Increase in the Authorized
Injection Pressure for the East Eumont Unit, Eumont Yates-
7 Rvrs-Queen (Oil), Lea County NM.

Dear Sir:

OXY USA Inc. respectfully requests an increase in the authorized
injection pressure for eight (8) wells in the referenced waterflood
unit:

	<u>Well</u>	<u>Requested Authorized Injection Pressure*</u>
R-2901 FIND THESE PERMITS CASE 3234 + 10846	EEU #6W 1.33 05531	✓ 1030 psi
	EEU #11W 1.34 05538	✓ 2130 psi
	EEU #28W A.9 05583	✓ 2290 psi
	EEU #35W	✓ 2090 psi
	EEU #36W	✓ 2610 psi
	EEU #37W	✓ 1970 psi
	EEU #39W	✓ 1750 psi
	EEU #41W	✓ 1730 psi

TESTED
4/24.27/95

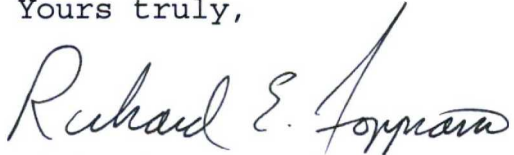
*fracture pressure from step-rate tests less 50 psi.

Injection in this Unit was originally granted in Order No. R-2901-A on 2/15/94 (copy attached). Paragraph (5) of this Order allows for the NMOCD to authorize a higher pressure based on evidence that such pressure will not result in migration of the injection fluid out of the respective formation. To satisfy this requirement, OXY commissioned John West Engineering Company to perform step-rate tests on selected wells within the Unit. Included with this request are copies of the results of these tests on wells 6W, 11W, 28W, 35W, 36W, 37W, 39W, & 41W.

As required by Statewide Rule 704(C)(1) and Division instructions, OXY gave notice of the date and time the step-rate tests were to be run to the NMOCD District Office in Hobbs and the BLM District office in Carlsbad. By copy of this letter, we are also giving notice of application for an increase in the authorized injection pressure on these eight wells.

If you require any additional information relating to this request, please contact David Stewart @ 915-685-5717 or Sharon Haggard @ 915-685-5675. Thank you for consideration of this request.

Yours truly,

A handwritten signature in cursive script, reading "Richard E. Foppiano". The signature is written in dark ink and is positioned above the printed name and title.

Richard E. Foppiano
Regulatory Affairs Advisor
Western Region-Midland

REF/drs
enclosures

CC: Scott Gengler, w/ enclosures
Sharon Haggard, w/ enclosures
David Stewart, w/ enclosures

New Mexico Oil Conservation Division
District I Office
P.O. Box 1980
Hobbs, NM 88240

Bureau of Land Management
Carlsbad Resource Area
P.O. Box 1778
Carlsbad, NM 88220

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

APPLICATION OF OXY USA, INC. TO AMEND DIVISION
ORDER NO. R-2901 AND TO EITHER INSTITUTE A NEW
WATERFLOOD PROJECT OR RENEW AUTHORITY TO
INJECT INTO A PORTION OF AN EXISTING WATERFLOOD
PROJECT, LEA COUNTY, NEW MEXICO.

Case No. 10866

APPLICATION OF OXY USA, INC. TO QUALIFY A PORTION
OF ITS EAST EUMONT UNIT WATERFLOOD PROJECT FOR
THE RECOVERED OIL TAX RATE PURSUANT TO THE "NEW
MEXICO ENHANCED OIL RECOVERY ACT," LEA COUNTY,
NEW MEXICO.

Case No. 10867

Order No. R-2901-A

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on November 18, 1993, December 16, 1993, and on January 6, 1994 at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 15th day of February, 1994, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) By Order No. R-2894, issued in Case No. 3233 and dated April 21, 1965, the Division approved the application of Tidewater Oil Company for unitization of the following described 5,535.06 acres, more or less, of State, Federal and Fee lands in Lea County, New Mexico, also known as the East Eumont Unit Area:

north of the half-section lines that divide said Sections 15 and 16. The applicant proposes to utilize twenty-one existing wells for water injection and to drill one new injection well, all further described in Exhibit "A", attached hereto and made a part hereof.

(6) In Case No. 10867 Oxy seeks an order pursuant to the Rules and Procedures for Qualification of Enhanced Oil Recovery Projects and Certification for the Recovered Oil Tax Rate, as promulgated by Division Order No. R-9708, qualifying this "renewed area" in the northern portion of the East Eumont Unit Waterflood Project Area, Eumont (Oil) Pool, Lea County, New Mexico, for the recovered oil tax rate pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5). The portion of the East Eumont Unit to be included is as follows:

LEA COUNTY, NEW MEXICO
TOWNSHIP 18 SOUTH, RANGE 37 EAST, NMPM

Section 33: S/2 NE/4, SE/4 NW/4, NE/4 SW/4, S/2 SW/4, and SE/4
Section 34: SW/4 SW/4

TOWNSHIP 19 SOUTH, RANGE 37 EAST, NMPM

Section 3: Lot 4 (NW/4 NW/4 equivalent), S/2 NW/4 and SW/4
Section 4: Lots 1 through 4 (N/2 N/2 equivalent), S/2 N/2 and E/2 SE/4
Section 9: N/2 NE/4
Section 10: NW/4 NE/4 and W/2
Section 15: NW/4
Section 16: E/2 NE/4.

(7) Both Case Nos. 10866 and 10867 were consolidated at the time of the hearing for the purpose of presenting testimony.

(8) Geologic testimony describes the Eumont Pool as a relatively large anticlinal feature and the East Eumont Unit was created on the northeastern "oil rim" of this anticline. Said Unit was designed to waterflood the oil lying between the water bearing down-dip portion of this structure to the east and the gas cap positioned up-dip of this oil rim to the west.

(9) Testimony presented by the applicant indicates that the entire Unit had ultimate primary production from the Eumont (Oil) Pool of approximately 3.27 million barrels of oil and ultimate secondary production in excess of 3.0 million barrels of oil, with total production from the Unit as of October 1, 1993 being 6.3 million barrels of

producers, the reactivation of twenty-one producers, and the upgrading of existing battery and injection facilities. The capital expenditure is expected to be approximately \$3,765,000.00.

(16) At the hearing, the applicant testified that an estimated 775,000 barrels of oil from the Eumont (Oil) Pool could be obtained by initiating the proposed injection activity, resulting in the recovery of additional oil which would not otherwise be recovered.

(17) The Unit operator should take all steps necessary to ensure that the injected water enters and remains confined to only the proposed injection interval and is not permitted to escape into other formations or onto the surface from injection, production or plugged and abandoned wells.

(18) The injection of water into the proposed injection wells should be accomplished through 2-3/8 inch internally plastic-lined tubing installed in a packer set within 100 feet of the uppermost injection perforation; the casing-tubing annulus should be filled with an inert fluid and a gauge or approved leak-detection device should be attached to the annulus in order to determine leakage in the casing, tubing or packer.

(19) Prior to commencing injection operations into the proposed injection wells, the casing in each well should be pressure tested throughout the interval from the surface down to the proposed packer setting depth, to assure the integrity of such casing.

(20) The injection wells or pressurization system for each of the proposed injection wells should be so equipped at this time as to limit injection pressure at the wellhead to no more than 750 psi; however the operator should have the opportunity to request, at a later date, an increase in the injection pressure limitation placed upon any well upon a proper showing by the operator that such higher pressure will not result in the migration of the injected water from its respective interval or fracture the confining strata. Such authorization will however remain with the Division Director.

(21) The operator should give advance notification to the supervisor of the Hobbs District Office of the Division of the date and time of the installation of injection equipment and of the mechanical integrity pressure-tests in order that the same may be witnessed.

(22) No offset operator or interested party appeared at the hearing in opposition to this application.

IT IS THEREFORE ORDERED THAT:

(1) The applicant in both Case Nos. 10866 and 10867, OXY USA, Inc. ("Oxy"), is hereby authorized in commence water injection into the Eumont-Yates-Seven Rivers-Queen (Oil) Pool, herein referred to as the Eumont (Oil) Pool, for the purpose of re-instituting the East Eumont Unit Waterflood project, originally authorized by Division Order No. R-2901, issued in Case No. 3234 and dated May 4, 1965, within the following described "northern" portion of the East Eumont Unit:

LEA COUNTY, NEW MEXICO

TOWNSHIP 18 SOUTH, RANGE 37 EAST, NMPM

Section 33: S/2 NE/4, SE/4 NW/4, NE/4 SW/4, S/2 SW/4, and SE/4

Section 34: SW/4 SW/4

TOWNSHIP 19 SOUTH, RANGE 37 EAST, NMPM

Section 3: Lot 4 (NW/4 NW/4 equivalent), S/2 NW/4 and SW/4

Section 4: Lots 1 through 4 (N/2 N/2 equivalent), S/2 N/2 and E/2 SE/4

Section 9: N/2 NE/4

Section 10: NW/4 NE/4 and W/2

Section 15: NW/4

Section 16: E/2 NE/4

The applicant is authorized to utilize 21 existing wells and to drill an additional well for the purpose of injection, all of which are further described in Exhibit "A", attached hereto and made a part hereof.

(2) The applicant must take all steps necessary to ensure that the injected water only enters and remains confined to the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

IT IS FURTHER ORDERED THAT:

(3) Injection shall be accomplished through 2-3/8 inch internally plastic-lined tubing installed in a packer set approximately within 100 feet of the uppermost injection perforation; the casing-tubing annulus in each well shall be filled with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.

(4) The injection wells or pressurization system for each injection well shall be so equipped as to limit injection pressure at the wellhead to no more than 750 psi.

(12) The injection authority granted herein for the proposed injection wells shall terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject wells, provided however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

(13) The previous injection authority granted by the Division for each of the proposed 22 injection wells, listed on the attachment designated as Exhibit "A", by said Division Order No. R-2901 shall be superseded by this order at this time. All other provisions of said Order No. R-2901 shall remain in full force and effect until further notice.

(14) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


WILLIAM J. LEMAY
Director

SEAL

East Eumont Unit Well No.	Original Operator, Well Name and No.	Footage Location	Unit	S-T-R	API No.	Injection Perforations (feet)
32	Gulf F.W. Kutter (NCT-E) No. 2	1980' FNL - 660' FWL	E	10-19S-37E	30-025-05588	3773-3940
35	Humble New Mexico State "E" No. 4	1980' FS & WL	K	10-19S-37E	30-025-05591	3835-4018
36	Humble New Mexico State "E" No. 2	660' FS & WL	M	10-19S-37E	30-025-05590	3781-3955
37	Continental State "KU-16" No. 3	660' FNL - 990' FEL	A	16-19S-37E	30-025-05607	3765-3934
39	Tidewater State "AI" No. 4	660' FNL - 1980' FWL	C	15-19S-37E	30-025-05602	3845-3998
41	Tidewater State "AI" No. 2	1980' FNL - 660' FWL	E	15-19S-37E	30-025-05600	3784-3951
133*	Proposed Injection Well (R-2091)	1980' FS & WL	K	3-19S-37E	Unassigned	3700-4000

• **Proposed Well**

HINKLE, COX, EATON, COFFIELD & HENSLEY

LEWIS C. COX
PAUL W. EATON
CONRAD E. COFFIELD
HAROLD L. HENSLEY, JR.
STUART D. SHANOR
ERIC D. LANPHERE
C. D. MARTIN
ROBERT P. TINNIN, JR.
MARSHALL G. MARTIN
OWEN M. LOPEZ
DOUGLAS L. LUNSFORD
JOHN J. KELLY
NICHOLAS J. NOEDING
T. CALDER EZZELL, JR.
WILLIAM B. BURFORD*
RICHARD E. OLSON
RICHARD R. WILFONG*
THOMAS J. MCBRIDE
JAMES J. WECHSLER
NANCY S. CUSACK
JEFFREY L. FORNACIARI
JEFFREY D. HEWETT
JAMES BRUCE
JERRY F. SHACKELFORD*
JEFFREY W. HELLBERG*
ALBERT L. PITTS
THOMAS M. HNASKO
JOHN C. CHAMBERS*
GARY D. COMPTON*
MICHAEL A. GROSS
THOMAS D. HAINES, JR.
GREGORY J. NIBERT
DAVID T. MARKETTE*

MARK C. DOW
FRED W. SCHWENDIMANN
JAMES M. HUDSON
JEFFREY S. BAIRD*
REBECCA NICHOLS JOHNSON
WILLIAM P. JOHNSON
STANLEY K. KOTOVSKY, JR.
H. R. THOMAS
ELLEN S. CASEY
MARGARET CARTER LUDEWIG
CHRISTOPHER M. MOODY
S. BARRY PAISNER
MARTIN MEYERS
GREGORY S. WHEELER
ANDREW J. CLOUTIER
JAMES A. GILLESPIE
GARY W. LARSON
STEPHANIE LANDRY
JOHN R. KULSETH, JR.
MARGARET R. MCNETT
LISA K. SMITH*
ROBERT H. BETHEA*
BRADLEY W. HOWARD
NORMAN D. EWART
DARREN T. GROCE*
MOLLY MCINTOSH
MARCIA B. LINCOLN
SCOTT A. SHUART*
DARREN L. BROOKS
PAUL G. NASON
DARLA M. SILVA

*NOT LICENSED IN NEW MEXICO

ATTORNEYS AT LAW
218 MONTEZUMA
POST OFFICE BOX 2068
SANTA FE, NEW MEXICO 87504-2068
(505) 982-4554
FAX (505) 982-8623

CLARENCE E. HINKLE (1904-1985)
W. E. BONDURANT, JR. (1913-1973)
ROY C. SNODGRASS, JR. (1914-1987)

OF COUNSEL
O. M. CALHOUN*
MACK EASLEY
JOE W. WOOD
RICHARD S. MORRIS

AUSTIN AFFILIATION
HOFFMAN & STEPHENS, P.C.
KENNETH R. HOFFMAN
TOM D. STEPHENS
RONALD C. SCHULTZ, JR.

700 UNITED BANK PLAZA
POST OFFICE BOX 10
ROSWELL, NEW MEXICO 88202
(505) 622-6510
FAX (505) 623-9332

2800 CLAYDESTA CENTER
6 DESTA DRIVE
POST OFFICE BOX 3580
MIDLAND, TEXAS 79702
(915) 683-4691
FAX (915) 683-6518

1700 BANK ONE CENTER
POST OFFICE BOX 9238
AMARILLO, TEXAS 79105
(806) 372-5569
FAX (806) 372-9761

500 MARQUETTE N.W., SUITE 800
POST OFFICE BOX 2043
ALBUQUERQUE, NEW MEXICO 87103
(505) 768-1500
FAX (505) 768-1529

401 WEST 15TH STREET, SUITE 800
AUSTIN, TEXAS 78701
(512) 476-7137
FAX (512) 476-5431

February 21, 1994

VIA FACSIMILE TRANSMISSION

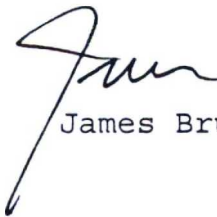
Richard Foppiano
OXY USA Inc.
Post Office Box 50250
Midland, Texas 79710

Dear Rick:

Enclosed is a copy of Order No. R-2901-A approving the water flood for the northern part of the east Yuma unit and approving it as an enhanced oil recovery project. Please apply to the OCD for a Certificate of Qualification before you begin injection.

Very truly yours,

HINKLE, COX, EATON, COFFIELD
& HENSLEY



James Bruce

JB/bc

Enclosure

WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: OXY USA, INC.

DATE: APRIL 24, 1995

WELL NAME: EAST EUMONT UNIT NO. 6
LEA COUNTY, NEW MEXICO

WO#: 95-14-0624

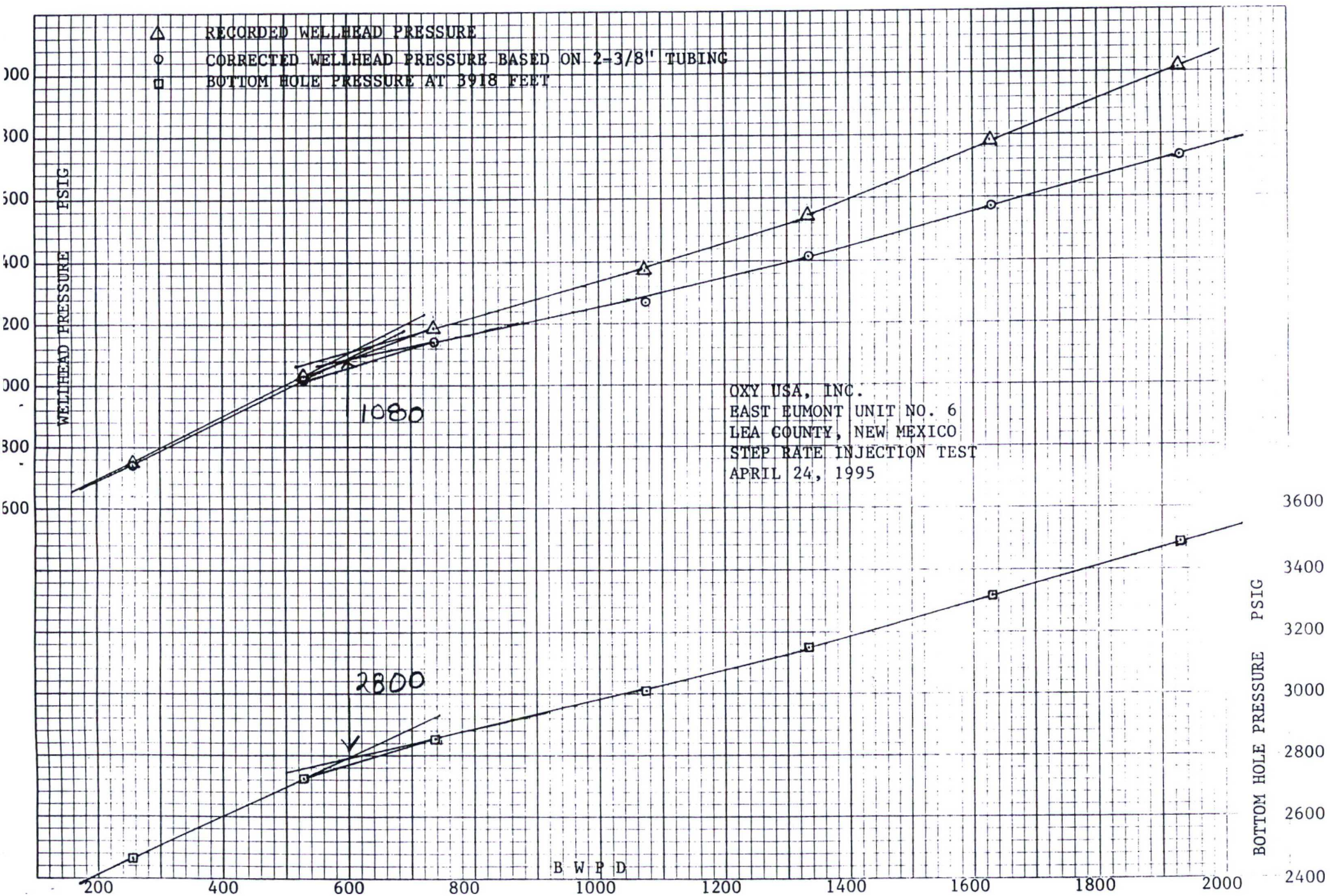
PERFS = 3838-3999

PACKER DEPTH =

BHP GAUGE DEPTH = 3918

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbis)	(3) INJECTION RATE (bbis/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1) - (4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
1	9:35	102.0				102.0		1823.0
	9:40	473.0	0.8	230.4	5.633	467.4	6.72	2196.0
	9:45	657.0	1.9	316.8	10.152	646.8	9.24	2367.0
	9:50	746.0	2.7	230.4	5.633	740.4	6.72	2460.0
				259.2				
2	9:55	899.0	4.5	518.4	25.249	873.8	15.12	2618.0
	10:00	947.0	6.3	518.4	25.249	921.8	15.12	2669.0
	10:05	1034.0	8.2	547.2	27.905	1006.1	15.96	2721.0
3				528.0				
	10:10	1132.0	10.8	748.8	49.853	1082.1	21.84	2809.0
	10:15	1168.0	13.4	748.8	49.853	1118.1	21.84	2838.0
	10:20	1189.0	15.9	720.0	46.364	1142.6	21.00	2855.0
4				739.2				
	10:25	1302.0	19.7	1094.4	100.598	1201.4	31.92	2957.0
	10:30	1348.0	23.4	1065.6	95.755	1252.2	31.08	2981.0
	10:35	1366.0	27.1	1065.6	95.755	1270.2	31.08	3005.0
				1075.2				
5	10:40	1497.0	31.7	1324.8	143.249	1353.8	38.64	3097.0
	10:45	1525.0	36.4	1440.0	167.141	1357.9	42.00	3128.0
	10:50	1551.0	41.0	1324.8	143.249	1407.8	38.64	3156.0
6				1334.4				
	10:55	1686.0	46.7	1641.6	212.989	1473.0	47.88	3243.0
	11:00	1750.0	52.3	1612.8	206.128	1543.9	47.04	3284.0
	11:05	1785.0	58.0	1641.6	212.989	1572.0	47.88	3320.0
				1632.0				
7	11:10	1923.0	64.8	1958.4	295.210	1627.8	57.12	3404.0
	11:15	1973.0	71.5	1929.6	287.229	1685.8	56.28	3449.0
	11:20	2005.0	78.1	1900.8	279.348	1725.7	55.44	3483.0
				1929.6				

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WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: OXY U.S.A. INC.

DATE: APRIL 24, 1995

WELL NAME: EAST EUMONT UNIT NO. 11
LEA COUNTY, NEW MEXICO

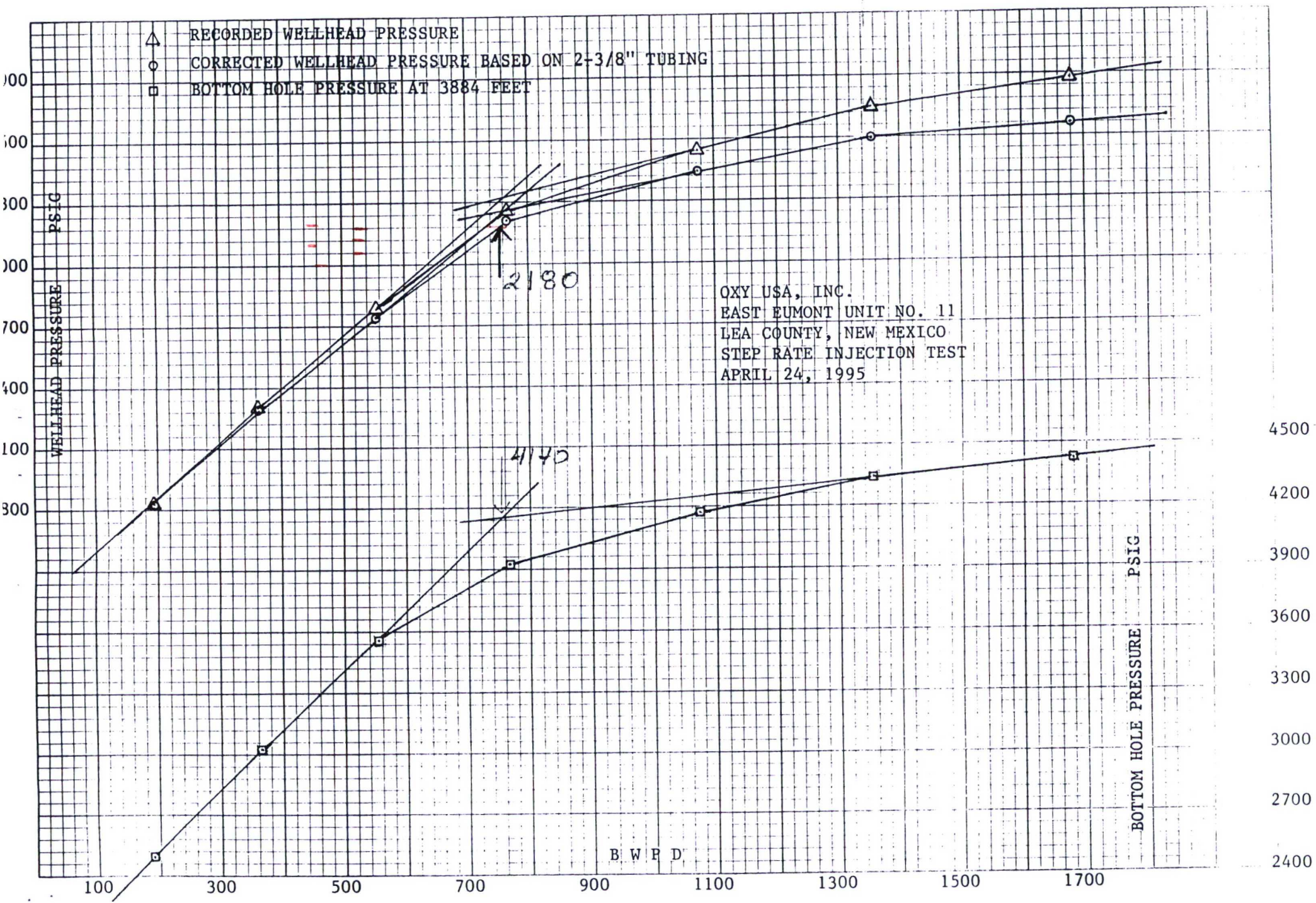
WO#: 95-14-0625

PERFS = 3797-3970

PACKER DEPTH = 3742

BHP GAUGE DEPTH = 3884

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
	12:45							1680.0
	12:50	524.0	0.7	201.6	4.361	519.6	5.88	2234.0
	12:55	720.0	1.4	201.6	4.361	715.6	5.88	2423.0
1	1:00	826.0	2.0	172.8	3.279	822.7	5.04	2494.0
				192.0				
	1:05	1088.0	3.3	374.4	13.709	1074.3	10.92	2785.0
	1:10	1216.0	4.6	374.4	13.709	1202.3	10.92	2924.0
2	1:15	1299.0	5.8	345.6	11.822	1287.2	10.08	3026.0
				364.8				
	1:20	1578.0	7.7	547.2	27.663	1550.3	15.96	3276.0
	1:25	1708.0	9.6	547.2	27.663	1680.3	15.96	3427.0
3	1:30	1877.0	11.6	576.0	30.417	1846.6	16.80	3551.0
				556.8				
	1:35	2084.0	14.3	777.6	52.994	2031.0	22.68	3750.0
	1:40	2218.0	16.9	748.8	49.420	2168.6	21.84	3856.0
4	1:45	2263.0	19.6	777.6	52.994	2210.0	22.68	3925.0
				768.0				
	1:50	2390.0	23.3	1065.6	94.924	2295.1	31.08	4068.0
	1:55	2508.0	27.0	1065.6	94.924	2413.1	31.08	4135.0
5	2:00	2541.0	30.8	1094.4	99.725	2441.3	31.92	4175.0
				1075.2				
	2:05	2658.0	35.4	1324.8	142.006	2516.0	38.64	4266.0
	2:10	2718.0	40.2	1382.4	153.639	2564.4	40.32	4313.0
6	2:15	2746.0	44.9	1353.6	147.770	2598.2	39.48	4341.0
				1353.6				
	2:20	2871.0	50.7	1670.4	218.045	2653.0	48.72	4394.0
	2:25	2883.0	56.5	1670.4	218.045	2665.0	48.72	4411.0
7	2:30	2885.0	62.4	1699.2	225.051	2659.9	49.56	4420.0
				1680.0				



WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: OXY USA, INC.

DATE: APRIL 25, 1995

WELL NAME: EAST EUMONT UNIT NO.28
LEA COUNTY, NEW MEXICO

WO#: 95-14-0626

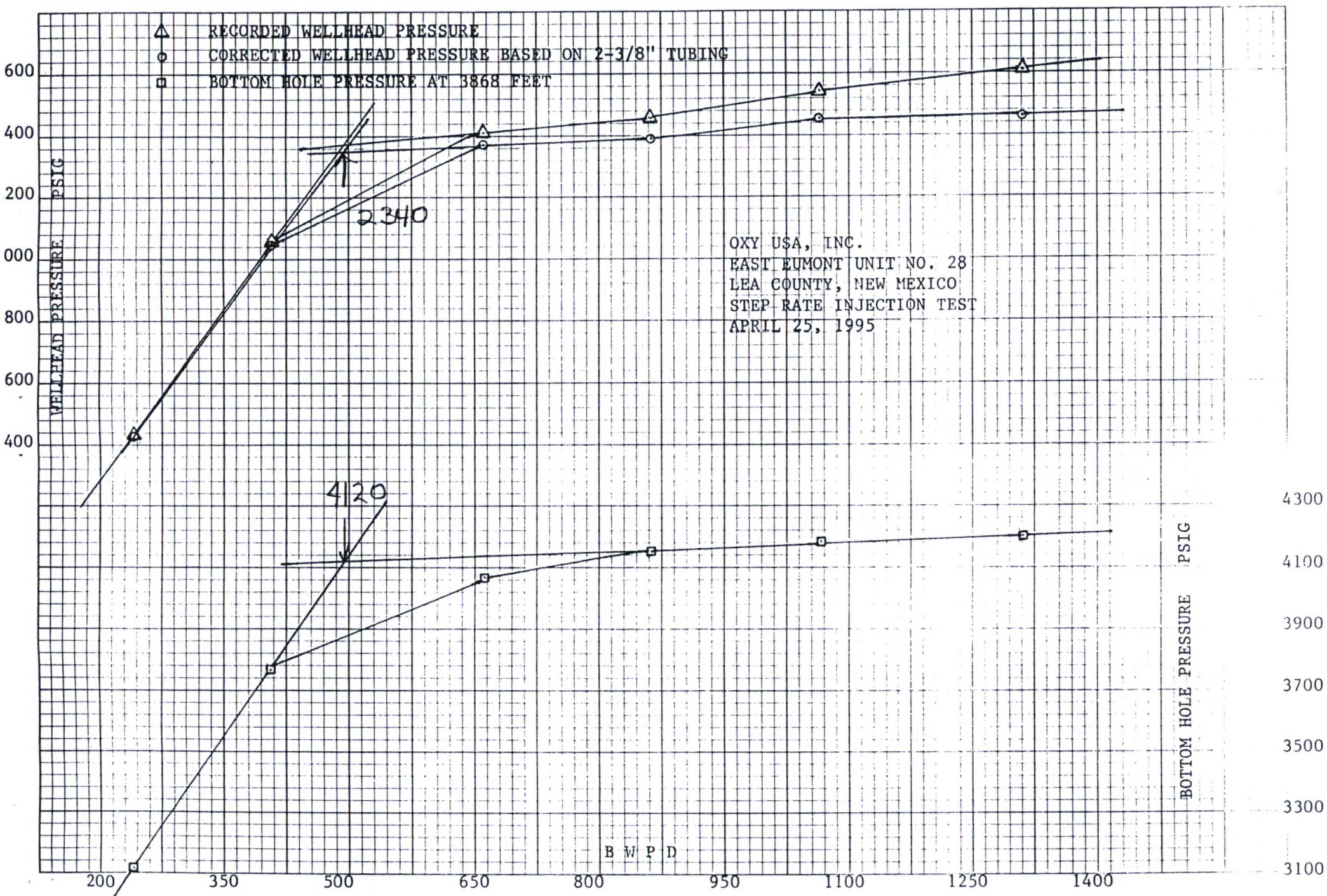
PERFS = 3782-3954

PACKER DEPTH = 3715

BHP GAUGE DEPTH = 3868

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
	8:20							1679.0
	8:25	1132.0	1.1	316.8	10.023	1122.0	9.24	2840.0
	8:30	1263.0	1.7	172.8	3.266	1259.7	5.04	2973.0
1	8:35	1430.0	2.5	230.4	5.561	1424.4	6.72	3117.0
				240.0				
	8:40	1841.0	4.0	432.0	17.790	1823.2	12.60	3543.0
	8:45	1948.0	5.3	374.4	13.652	1934.3	10.92	3659.0
2	8:50	2058.0	6.7	403.2	15.658	2042.3	11.76	3769.0
				403.2				
	8:55	2336.0	9.0	662.4	39.229	2296.8	19.32	3976.0
	9:00	2362.0	11.3	662.4	39.229	2322.8	19.32	4037.0
3	9:05	2413.0	13.6	662.4	39.229	2373.8	19.32	4070.0
				662.4				
	9:10	2469.0	16.6	864.0	64.134	2404.9	25.20	4127.0
	9:15	2468.0	19.6	864.0	64.134	2403.9	25.20	4143.0
4	9:20	2460.0	22.6	864.0	64.134	2395.9	25.20	4150.0
				864.0				
	9:25	2537.0	26.3	1065.6	94.533	2442.5	31.08	4175.0
	9:30	2546.0	30.0	1065.6	94.533	2451.5	31.08	4180.0
5	9:35	2552.0	33.7	1065.6	94.533	2457.5	31.08	4182.0
				1065.6				
	9:40	2596.0	38.2	1296.0	135.786	2460.2	37.80	4199.0
	9:45	2600.0	42.7	1296.0	135.786	2464.2	37.80	4201.0
6	9:50	2602.0	47.3	1324.8	141.421	2460.6	38.64	4203.0
				1305.6				

		(1)	(2)	(3)	(4)	(5)	(6)	(7)
STEP NO. & REMARKS	TIME	SURFACE TUBING PRESS. (psig)	CUMMULATIVE VOL. INJECTED (bbls)	INJECTION RATE (bbls/day)	FRICTION HEAD LOSS (psi)	CORRECTED TUBING PRESS. (psi) (1) - (4)	INJECTION RATE (gpm) (3)/34.2857	MEASURED BHP (psi)
FALLOFF	9:51	2432.0				2432.0		4151.0
	9:52	2407.0				2407.0		4130.0
	9:53	2390.0				2390.0		4111.0
	9:54	2375.0				2375.0		4095.0
	9:55	2362.0				2362.0		4082.0
	10:00	2305.0				2305.0		4022.0
	10:05	2259.0				2259.0		3976.0



WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY
Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: OXY USA, INC.

DATE: APRIL 25, 1995

WELL NAME: EAST EUMONT UNIT NO. 35
LEA COUNTY, NEW MEXICO

WO#: 95-14-0627

PERFS = 3835-4018

PACKER DEPTH = 3791

BHP GAUGE DEPTH = 3926

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
1	11:45	337.0				337.0		2053.0
	11:50	700.0	0.8	230.4	5.644	694.4	6.72	2405.0
	11:55	811.0	1.6	230.4	5.644	805.4	6.72	2520.0
	12:00	907.0	2.6	288.0	8.529	898.5	8.40	2621.0
2				249.6				
	12:05	1228.0	4.3	489.6	22.762	1205.2	14.28	2930.0
	12:10	1337.0	5.9	460.8	20.347	1316.7	13.44	3038.0
	12:15	1398.0	7.5	460.8	20.347	1377.7	13.44	3109.0
3				470.4				
	12:20	1635.0	9.8	662.4	39.817	1595.2	19.32	3334.0
	12:25	1731.0	12.2	691.2	43.079	1687.9	20.16	3427.0
	12:30	1804.0	14.5	662.4	39.817	1764.2	19.32	3500.0
4				672.0				
	12:35	1980.0	17.5	864.0	65.095	1914.9	25.20	3657.0
	12:40	2049.0	20.6	892.8	69.166	1979.8	26.04	3732.0
	12:45	2097.0	23.6	864.0	65.095	2031.9	25.20	3781.0
5				873.6				
	12:50	2233.0	27.3	1065.6	95.951	2137.0	31.08	3883.0
	12:55	2259.0	31.1	1094.4	100.803	2158.2	31.92	3922.0
	1:00	2302.0	34.7	1036.8	91.208	2210.8	30.24	3952.0
6				1065.6				
	1:05	2383.0	39.1	1267.2	132.210	2250.8	36.96	4020.0
	1:10	2422.0	43.4	1238.4	126.704	2295.3	36.12	4045.0
	1:15	2433.0	47.8	1267.2	132.210	2300.8	36.96	4064.0
7				1257.6				
	1:20	2509.0	52.9	1468.8	173.732	2335.3	42.84	4108.0
	1:25	2519.0	58.0	1468.8	173.732	2345.3	42.84	4123.0
	1:30	2529.0	63.0	1440.0	167.483	2361.5	42.00	4133.0
				1459.2				

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1) - (4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
FALLOFF	1:31	2274.0				2274.0		4008.0
	1:32	2253.0				2253.0		3990.0
	1:33	2242.0				2242.0		3978.0
	1:34	2234.0				2234.0		3970.0
	1:35	2227.0				2227.0		3963.0
	1:40	2204.0				2204.0		3938.0
	1:45	2188.0				2188.0		3921.0

- △ RECORDED WELLHEAD PRESSURE
- CORRECTED WELLHEAD PRESSURE BASED ON 2-3/8" TUBING
- BOTTOM HOLE PRESSURE AT 3926 FEET

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WELLHEAD PRESSURE PSIG

BOTTOM HOLE PRESSURE PSIG

4200

4000

3800

3600

3400

3200

3000

2800

2600

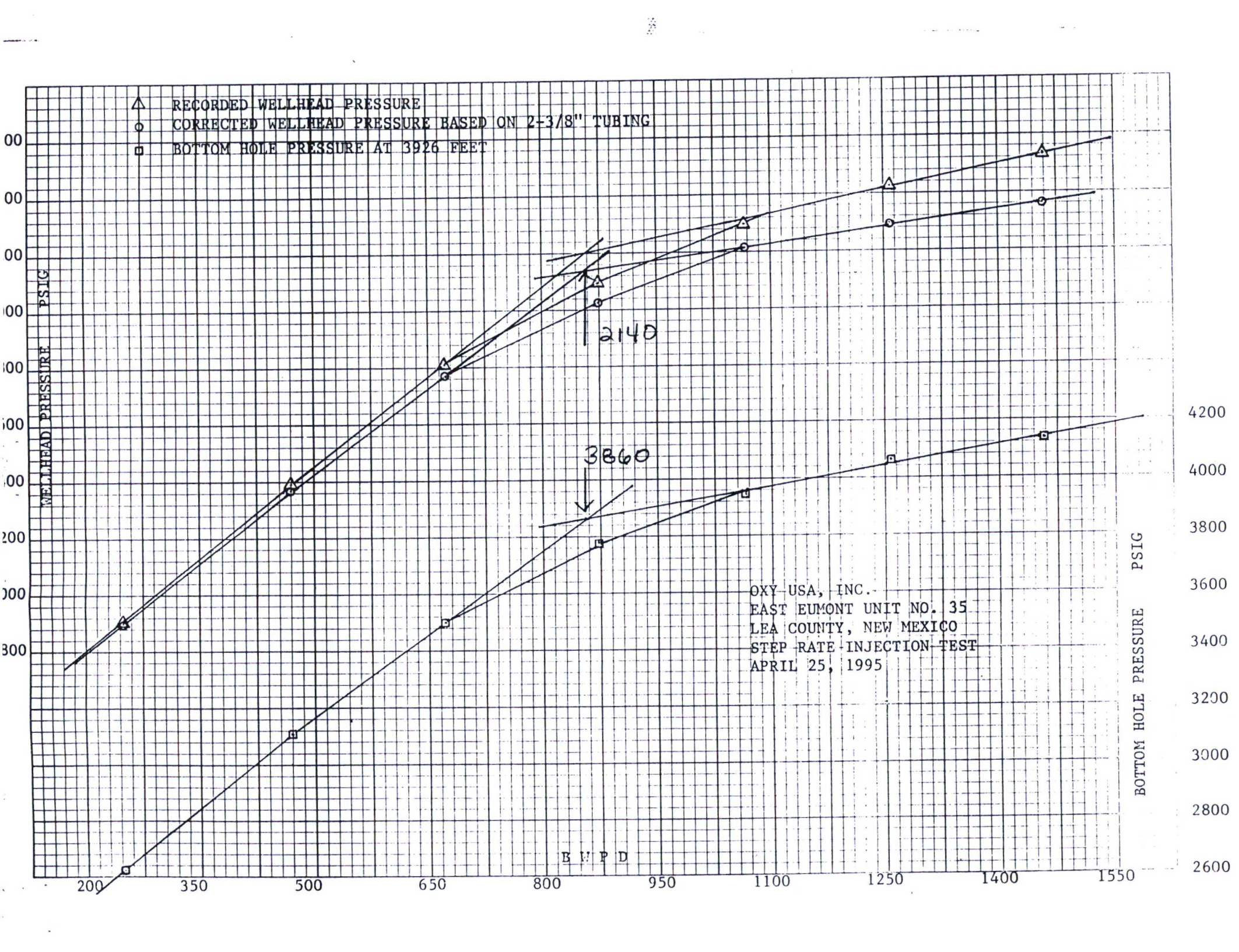
B W P D

200 350 500 650 800 950 1100 1250 1400 1550

2140

3860

OXY-USA, INC.
EAST EUMONT UNIT NO. 35
LEA COUNTY, NEW MEXICO
STEP RATE INJECTION TEST
APRIL 25, 1995



WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: OXY USA, INC.

DATE: APRIL 26, 1995

WELL NAME: EAST EUMONT UNIT NO. 36
LEA COUNTY, NEW MEXICO

WO#: 95-14-0628

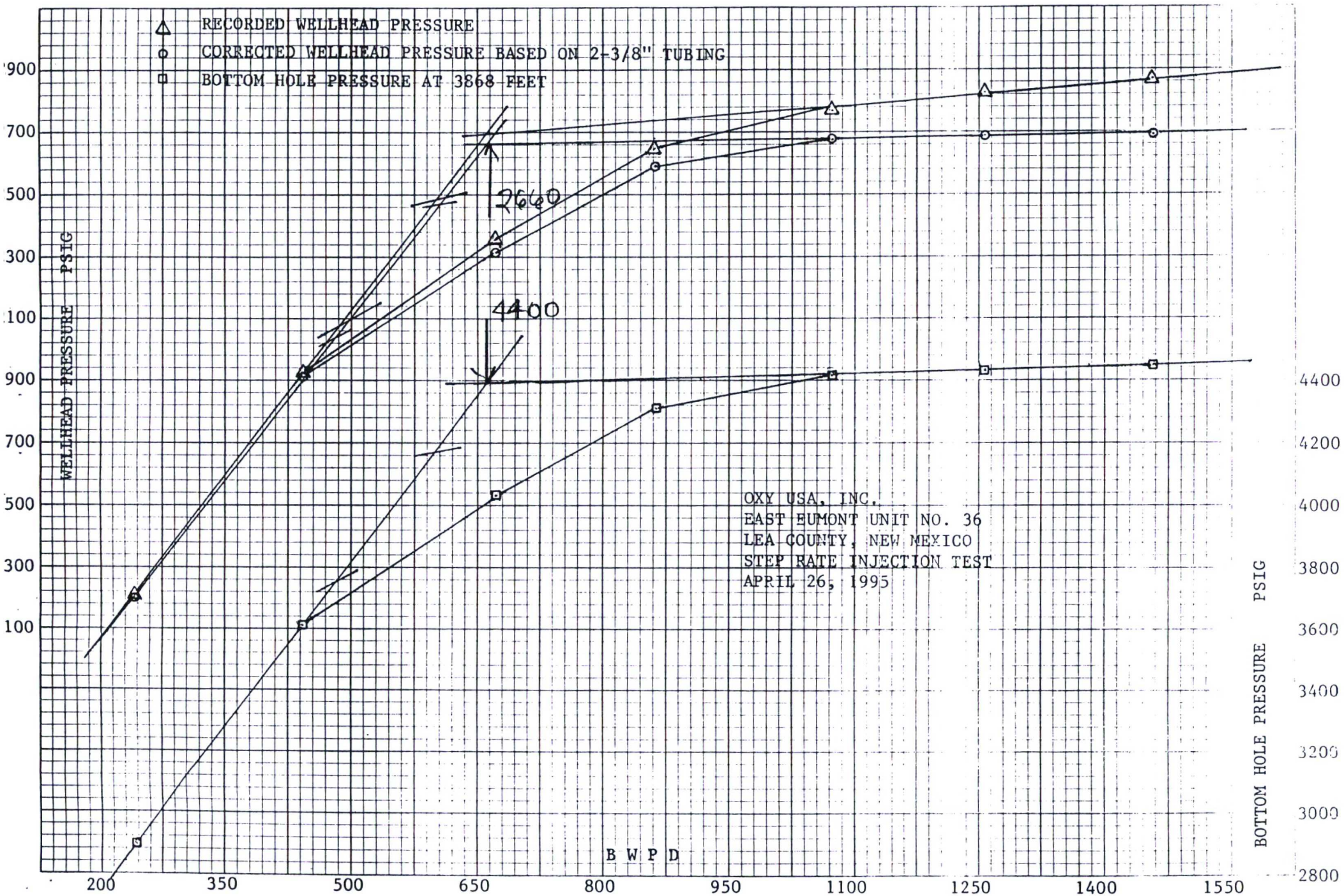
PERFS = 3781-3955

PACKER DEPTH = 3705

BHP GAUGE DEPTH = 3868

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
1	8:15	46.0				46.0		1722.0
	8:20	819.0	0.8	230.4	5.561	813.4	6.72	2488.0
	8:25	1043.0	1.6	230.4	5.561	1037.4	6.72	2723.0
	8:30	1213.0	2.5	259.2	6.914	1206.1	7.56	2894.0
2				240.0				
	8:35	1616.0	4.0	432.0	17.790	1598.2	12.60	3290.0
	8:40	1789.0	5.5	432.0	17.790	1771.2	12.60	3466.0
	8:45	1924.0	7.1	460.8	20.046	1904.0	13.44	3612.0
3				441.6				
	8:50	2190.0	9.5	691.2	42.443	2147.6	20.16	3875.0
	8:55	2278.0	11.8	662.4	39.229	2238.8	19.32	3964.0
	9:00	2358.0	14.1	662.4	39.229	2318.8	19.32	4037.0
4				672.0				
	9:05	2562.0	17.2	892.8	68.144	2493.9	26.04	4220.0
	9:10	2626.0	20.1	835.2	60.235	2565.8	24.36	4285.0
	9:15	2654.0	23.1	864.0	64.134	2589.9	25.20	4316.0
5				864.0				
	9:20	2743.0	26.9	1094.4	99.314	2643.7	31.92	4384.0
	9:25	2771.0	30.5	1036.8	89.861	2681.1	30.24	4407.0
	9:30	2770.0	34.3	1094.4	99.314	2670.7	31.92	4411.0
6				1075.2				
	9:35	2831.0	38.6	1238.4	124.833	2706.2	36.12	4434.0
	9:40	2822.0	43.0	1267.2	130.256	2691.7	36.96	4434.0
	9:45	2824.0	47.4	1267.2	130.256	2693.7	36.96	4432.0
7				1257.6				
	9:50	2864.0	52.5	1468.8	171.166	2692.8	42.84	4448.0
	9:55	2869.0	57.5	1440.0	165.008	2704.0	42.00	4449.0
	10:00	2865.0	62.6	1468.8	171.166	2693.8	42.84	4447.0
				1459.2				

430



WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: OXY USA, INC.

DATE: APRIL 26, 1995

WELL NAME: EAST EUMONT UNIT NO. 37
LEA COUNTY, NEW MEXICO

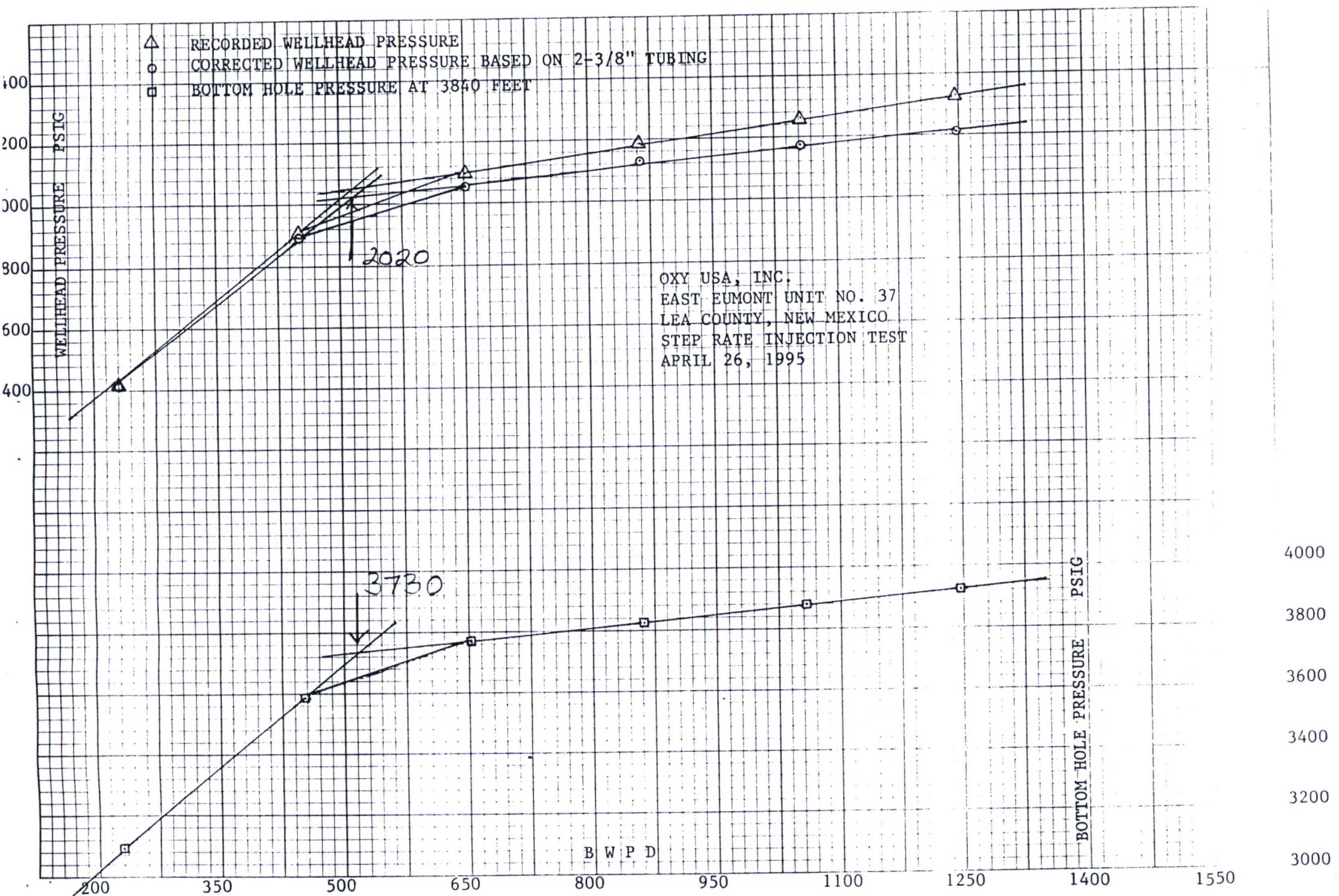
WO#: 95-14-0629

PERFS = 3765-3916

PACKER DEPTH = 3703

BHP GAUGE DEPTH = 3840

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
	12:30							1662.0
	12:35	984.0	0.8	230.4	5.520	978.5	6.72	2658.0
	12:40	1237.0	1.6	230.4	5.520	1231.5	6.72	2919.0
1	12:45	1420.0	2.4	230.4	5.520	1414.5	6.72	3087.0
				230.4				
	12:50	1760.0	3.9	432.0	17.661	1742.3	12.60	3436.0
	12:55	1848.0	5.5	460.8	19.901	1828.1	13.44	3525.0
2	1:00	1908.0	7.1	460.8	19.901	1888.1	13.44	3582.0
				451.2				
	1:05	2016.0	9.3	633.6	35.871	1980.1	18.48	3679.0
	1:10	2071.0	11.6	662.4	38.945	2032.1	19.32	3742.0
3	1:15	2092.0	13.9	662.4	38.945	2053.1	19.32	3764.0
				652.8				
	1:20	2155.0	16.9	864.0	63.669	2091.3	25.20	3800.0
	1:25	2171.0	19.9	864.0	63.669	2107.3	25.20	3816.0
4	1:30	2190.0	22.9	864.0	63.669	2126.3	25.20	3831.0
				864.0				
	1:35	2227.0	26.5	1036.8	89.210	2137.8	30.24	3858.0
	1:40	2252.0	30.1	1036.8	89.210	2162.8	30.24	3870.0
5	1:45	2264.0	33.8	1065.6	93.849	2170.2	31.08	3880.0
				1056.0				
	1:50	2306.0	38.2	1267.2	129.313	2176.7	36.96	3900.0
	1:55	2310.0	42.5	1238.4	123.929	2186.1	36.12	3910.0
6	2:00	2326.0	46.8	1238.4	123.929	2202.1	36.12	3921.0
				1248.0				



WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: OXY USA, INC.

DATE: APRIL 27, 1995

WELL NAME: EAST EUMONT UNIT NO. 39
LEA COUNTY, NEW MEXICO

WO#: 95-14-0630

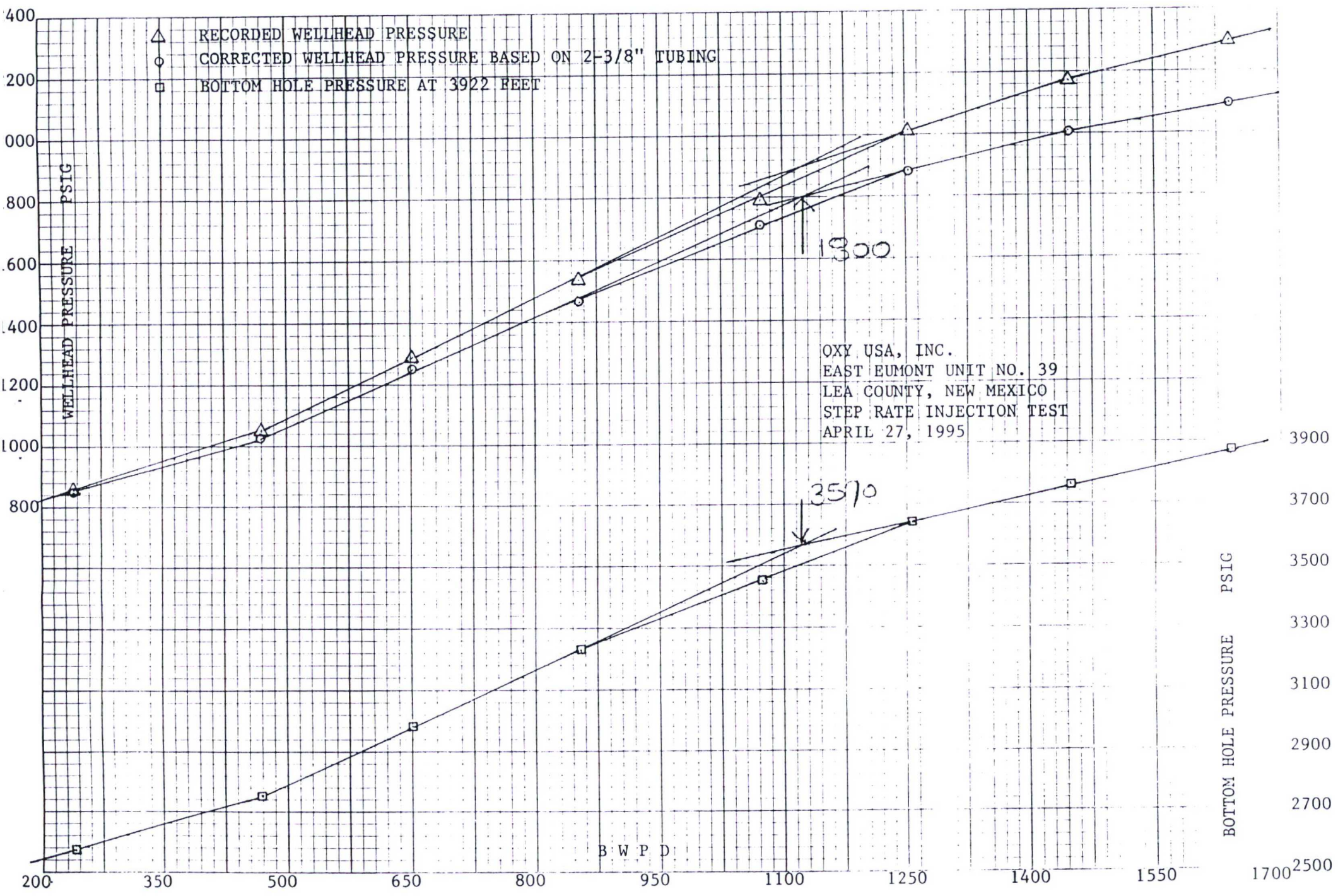
PERFS = 3845-3998

PACKER DEPTH = 3772

BHP GAUGE DEPTH = 3922

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
1	8:15	84.0				84.0		1798.0
	8:20	825.0	0.8	230.4	5.638	819.4	6.72	2543.0
	8:25	844.0	1.6	230.4	5.638	838.4	6.72	2559.0
	8:30	850.0	2.5	259.2	7.011	843.0	7.56	2571.0
				240.0				
2	8:35	1009.0	4.1	460.8	20.326	988.7	13.44	2724.0
	8:40	1015.0	5.8	489.6	22.739	992.3	14.28	2733.0
	8:45	1049.0	7.4	460.8	20.326	1028.7	13.44	2747.0
3				470.4				
	8:50	1177.0	9.7	662.4	39.777	1137.2	19.32	2874.0
	8:55	1219.0	11.9	633.6	36.637	1182.4	18.48	2917.0
	9:00	1282.0	14.2	662.4	39.777	1242.2	19.32	2980.0
				652.8				
4	9:05	1413.0	17.2	864.0	65.029	1348.0	25.20	3099.0
	9:10	1481.0	20.1	835.2	61.076	1419.9	24.36	3159.0
	9:15	1539.0	23.1	864.0	65.029	1474.0	25.20	3222.0
				854.4				
5	9:20	1683.0	26.8	1065.6	95.853	1587.1	31.08	3335.0
	9:25	1744.0	30.7	1123.2	105.658	1638.3	32.76	3396.0
	9:30	1797.0	34.3	1036.8	91.115	1705.9	30.24	3451.0
				1075.2				
6	9:35	1915.0	38.7	1267.2	132.075	1782.9	36.96	3544.0
	9:40	1963.0	43.0	1238.4	126.575	1836.4	36.12	3594.0
	9:45	2013.0	47.4	1267.2	132.075	1880.9	36.96	3639.0
				1257.6				
7	9:50	2105.0	52.4	1440.0	167.312	1937.7	42.00	3706.0
	9:55	2141.0	57.5	1468.8	173.555	1967.4	42.84	3739.0
	10:00	2170.0	62.5	1440.0	167.312	2002.7	42.00	3768.0
				1449.6				

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
8 FALLOFF	10:05	2262.0	68.2	1641.6	213.207	2048.8	47.88	3822.0
	10:10	2282.0	73.9	1641.6	213.207	2068.8	47.88	3846.0
	10:15	2303.0	79.6	1641.6	213.207	2089.8	47.88	3869.0
				1641.6				
	10:16	2036.0				2036.0		3777.0
	10:17	2021.0				2021.0		3759.0
	10:18	2008.0				2008.0		3745.0
	10:19	1994.0				1994.0		3731.0
	10:20	1983.0				1983.0		3719.0
	10:25	1936.0				1936.0		3671.0
	10:30	1897.0				1897.0		3631.0



WEST - TEST, INC.
A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY
Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: OXY USA, INC.

DATE: APRIL 27, 1995

WELL NAME: EAST EUMONT UNIT NO. 41
LEA COUNTY, NEW MEXICO

WO#: 95-14-0631

PERFS = 3779-3951

PACKER DEPTH = 3699

BHP GAUGE DEPTH = 3865

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
1	11:45	466.0				466.0		2133.0
	11:50	615.0	0.8	230.4	5.556	609.4	6.72	2279.0
	11:55	675.0	1.6	230.4	5.556	669.4	6.72	2351.0
	12:00	732.0	2.5	259.2	6.909	725.1	7.56	2403.0
				240.0				
2	12:05	861.0	4.0	432.0	17.776	843.2	12.60	2517.0
	12:10	924.0	5.6	460.8	20.031	904.0	13.44	2593.0
	12:15	985.0	7.1	432.0	17.776	967.2	12.60	2653.0
3				441.6				
	12:20	1134.0	9.7	748.8	49.178	1084.8	21.84	2775.0
	12:25	1225.0	12.4	777.6	52.735	1172.3	22.68	2864.0
	12:30	1290.0	15.0	748.8	49.178	1240.8	21.84	2933.0
4				758.4				
	12:35	1455.0	18.7	1065.6	94.460	1360.5	31.08	3049.0
	12:40	1529.0	22.5	1094.4	99.237	1429.8	31.92	3130.0
	12:45	1603.0	26.2	1065.6	94.460	1508.5	31.08	3193.0
5				1075.2				
	12:50	1732.0	31.0	1382.4	152.887	1579.1	40.32	3275.0
	12:55	1782.0	35.8	1382.4	152.887	1629.1	40.32	3333.0
	1:00	1837.0	40.5	1353.6	147.047	1690.0	39.48	3377.0
6				1372.8				
	1:05	1949.0	46.3	1670.4	216.978	1732.0	48.72	3431.0
	1:10	1983.0	52.0	1641.6	210.108	1772.9	47.88	3467.0
	1:15	2013.0	57.8	1670.4	216.978	1796.0	48.72	3498.0
7				1660.8				
	1:20	2125.0	64.5	1929.6	283.343	1841.7	56.28	3538.0
	1:25	2143.0	71.4	1987.2	299.189	1843.8	57.96	3565.0
	1:30	2168.0	78.1	1929.6	283.343	1884.7	56.28	3585.0
				1948.8				

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
8 FALLOFF	1:35	2281.0	85.9	2246.4	375.361	1905.6	65.52	3615.0
	1:40	2296.0	93.7	2246.4	375.361	1920.6	65.52	3635.0
	1:45	2301.0	101.5	2246.4	375.361	1925.6	65.52	3647.0
				2246.4				
	1:46	1925.0				1925.0		3618.0
	1:47	1917.0				1917.0		3604.0
	1:48	1904.0				1904.0		3591.0
	1:49	1892.0				1892.0		3579.0
	1:50	1881.0				1881.0		3568.0
	1:55	1836.0				1836.0		3521.0
	2:00	1799.0				1799.0		3483.0

