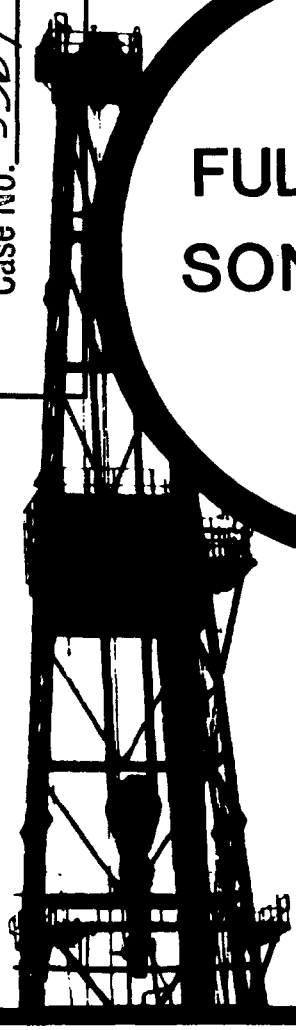
EXHIBIT #6
BGBSAU PRESSURE LIMITATION STUDY
FULL WAVE SONIC LOG BGBSAU #23-4

BEFORE EXAMINER STOGNER
Oil Conservation Division
Exhibit No. 6
Case No. 9364

FULL WAVE SONIC LOG



Formation
Evaluation
Systems

COMPANY ANADARKO PRODUCTION COMPANY

WELL BALLARD GSA UNIT NO.23-4

FIELD LOCO HILLS

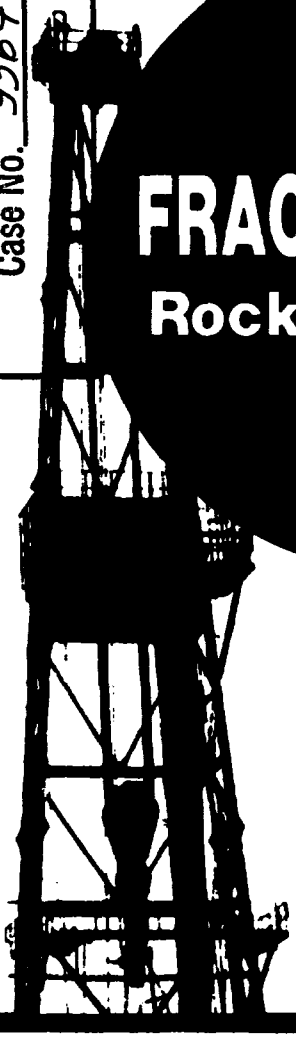
COUNTY/PROV EDDY STATE/COUNTRY NEW MEXICO

EXHIBIT #7 & #8

EXHIBIT #7
BGBSAU PRESSURE LIMITATION STUDY
FRAC PRESSURE - ROCK PROPERTIES LOG

BEFORE EXAMINER STOGNER
Oil Conservation Division
Exhibit No. 7
Case No. 9364

FRACPRESSURE
Rock Properties



Formation
Evaluation
Systems

COMPANY ANADARKO PRODUCTION COMPANY

WELL BALLARD GSA UNIT NO.23-4

FIELD LOCO HILLS

COUNTY/PROV EDDY STATE/COUNTRY NEW MEXICO

EXHIBIT #8
BGBSAU PRESSURE LIMITATION STUDY
FRAC PRESSURE - BORE HOLE STRESS LOG

BEFORE EXAMINER STOGNER
Oil Conservation Division
Exhibit No. 8
Case No. 9364

FRACPRESSURE
Borehole Stress

Formation
Evaluation
Systems

COMPANY ANADARKO PRODUCTION COMPANY
WELL BALLARD GSA UNIT NO.23-4
FIELD LOCO HILLS
COUNTY/PROV EDDY STATE/COUNTRY NEW MEXICO

EXHIBIT #9

EXHIBIT #9
BGBSAU PRESSURE LIMITATION STUDY
FRAC PRESSURE - FRACTURE HEIGHT LOG

FRACPRESSURE
Fracture Height

Formation
Evaluation
Systems

COMPANY ANADARKO PRODUCTION COMPANY

WELL BALLARD GSA UNIT NO.23-4

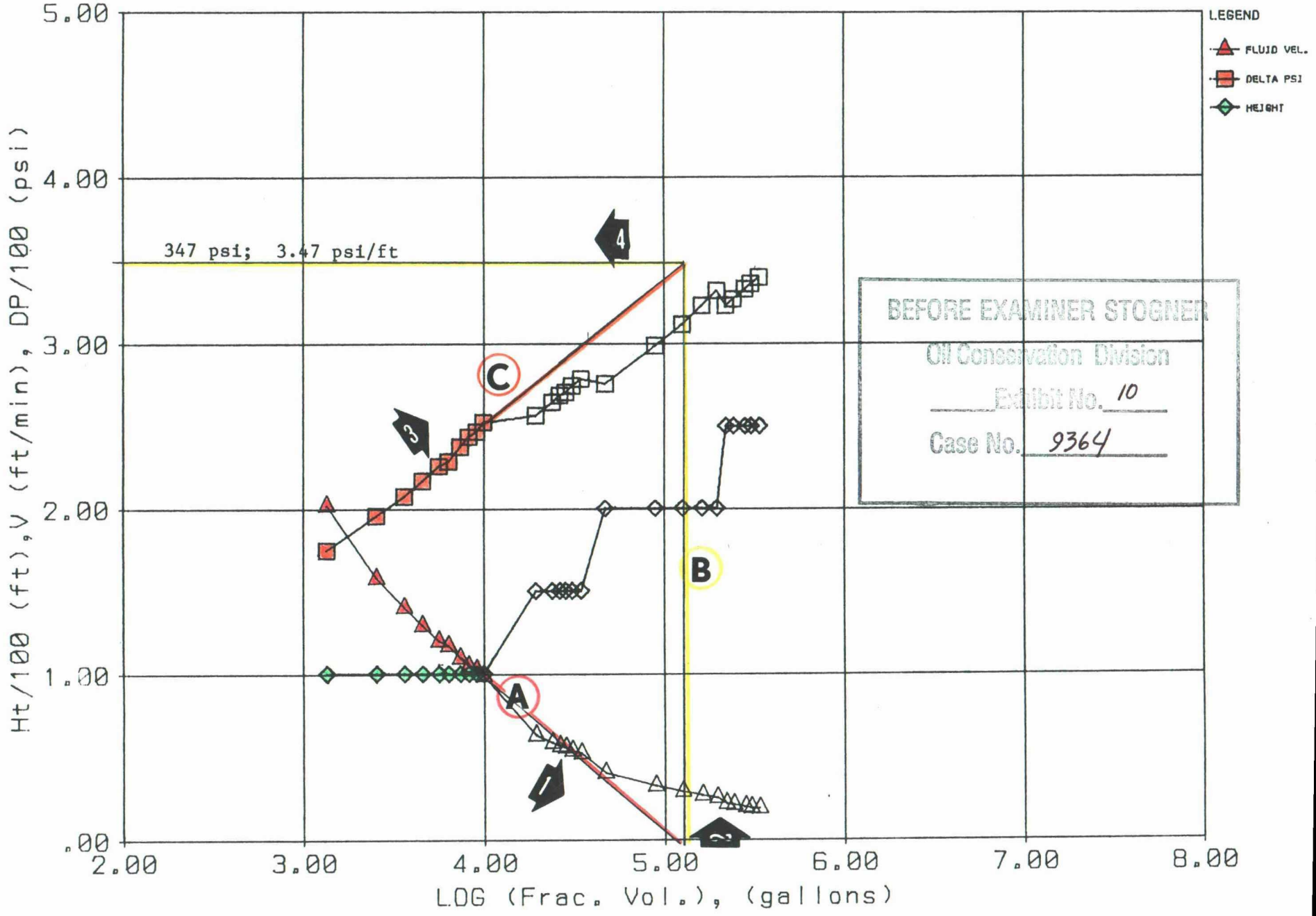
FIELD LOCO HILLS

COUNTY/PROV EDDY STATE/COUNTRY NEW MEXICO

EXHIBIT #10

FRACTURE EQUILIBRIUM ANALYSIS

Anadarko Petroleum

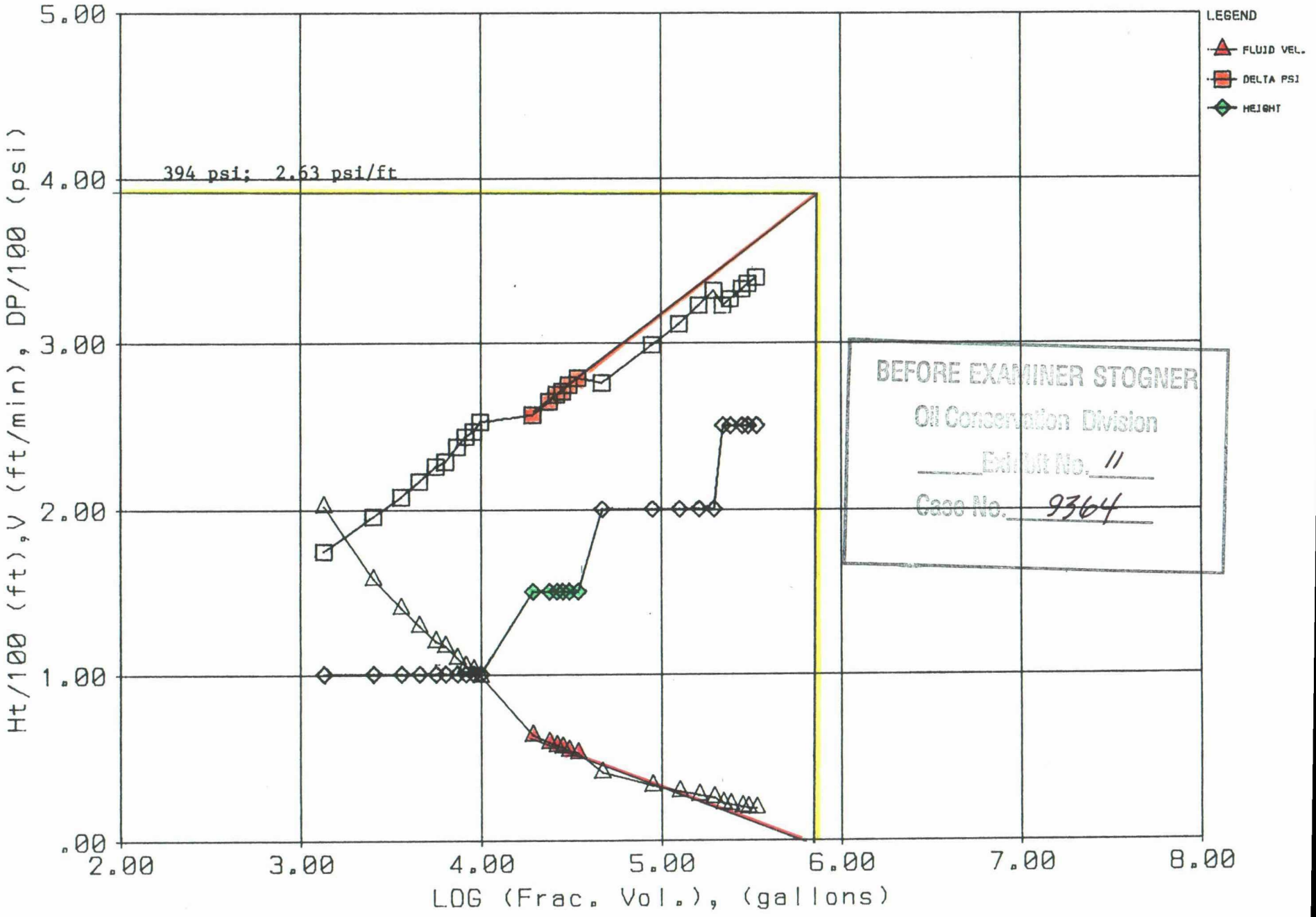


BEFORE EXAMINER STOGNER
Oil Conservation Division
Exhibit No. 10
Case No. 9364

EXHIBIT #11

FRACTURE EQUILIBRIUM ANALYSIS

Anadarko Petroleum



BEFORE EXAMINER STOGNER
Oil Conservation Division
Exhibit No. 11
Case No. 9364

EXHIBIT #12

FRACTURE EQUILIBRIUM ANALYSIS

Anadarko Petroleum

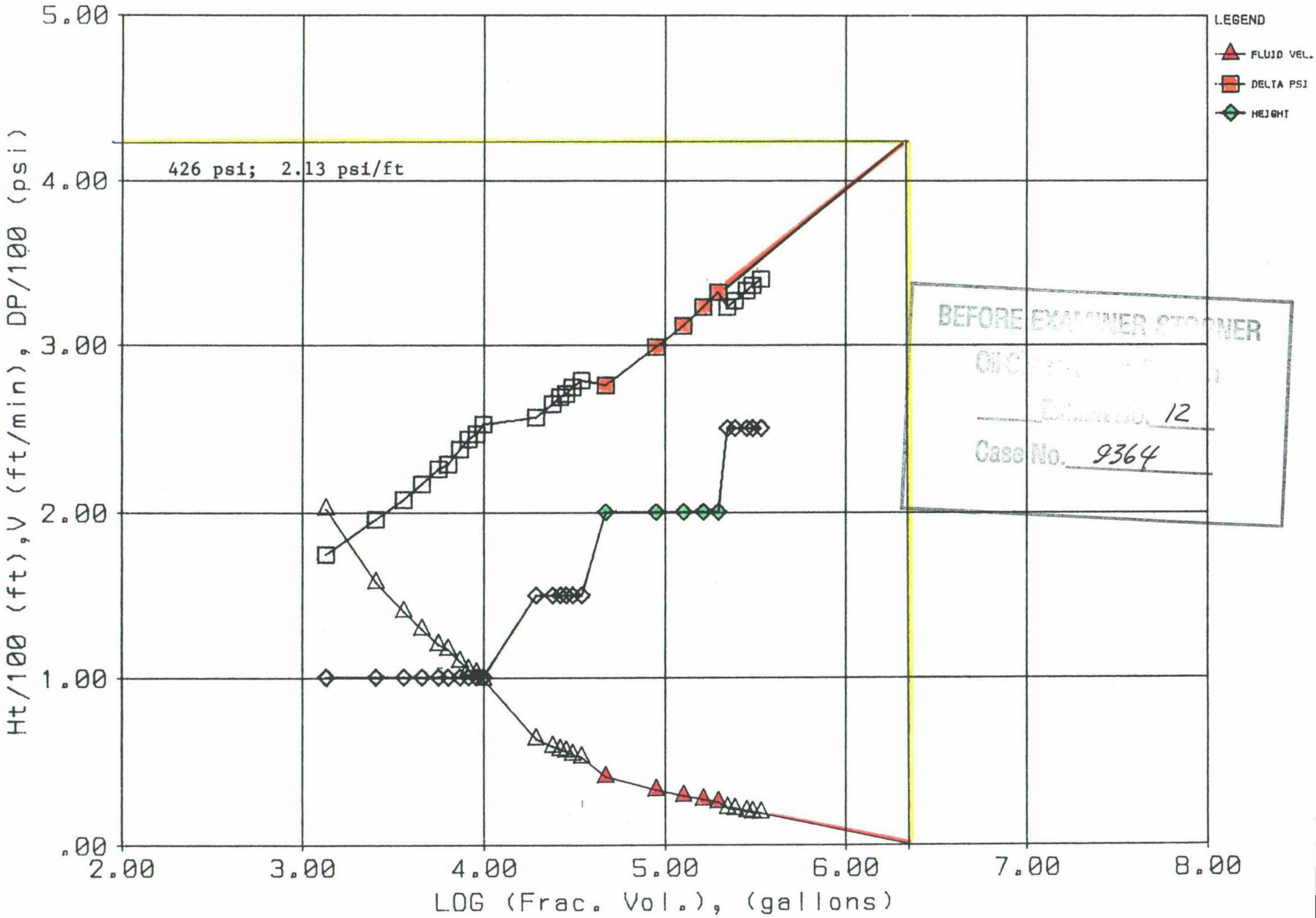
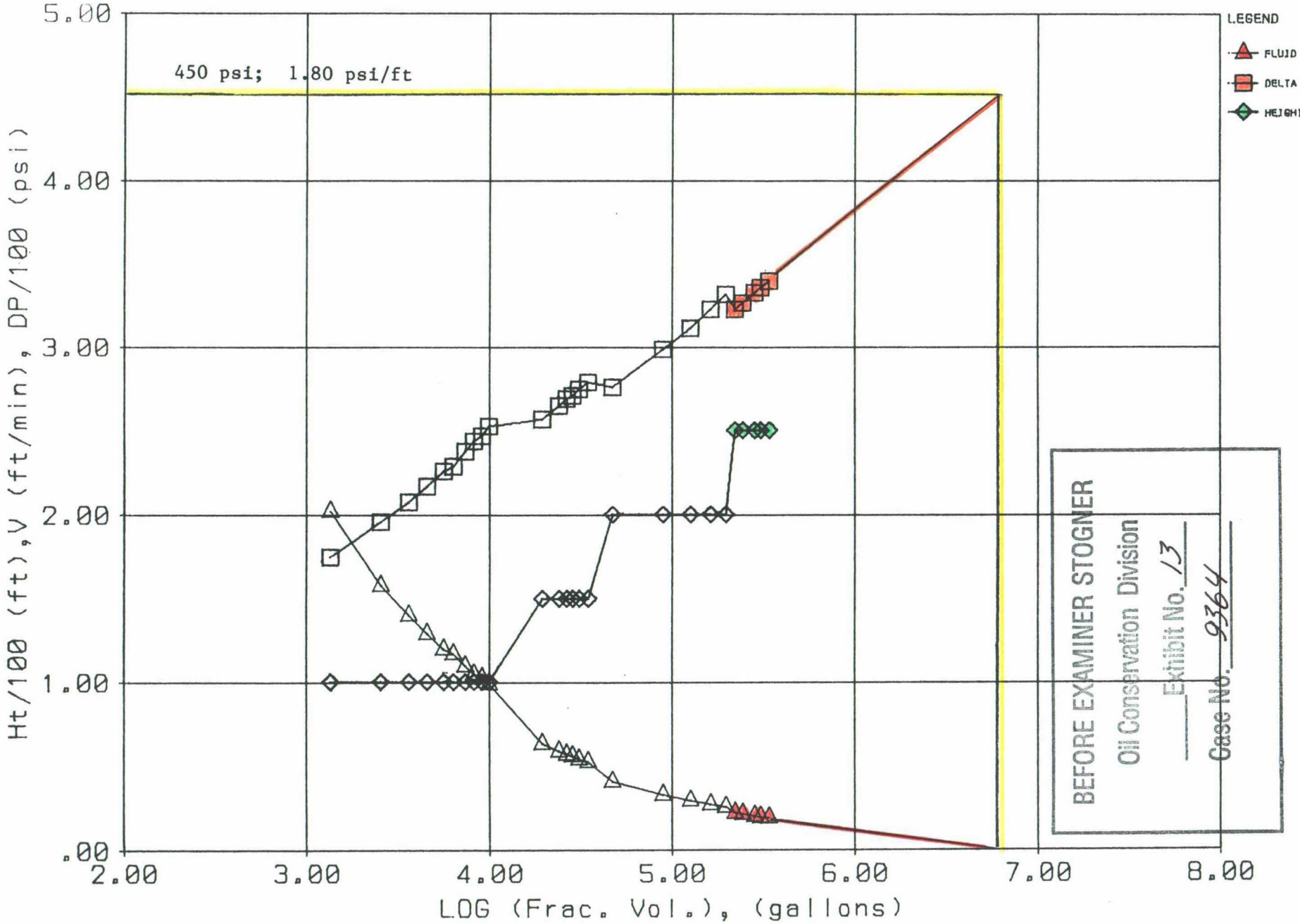


EXHIBIT #13

FRACTURE EQUILIBRIUM ANALYSIS

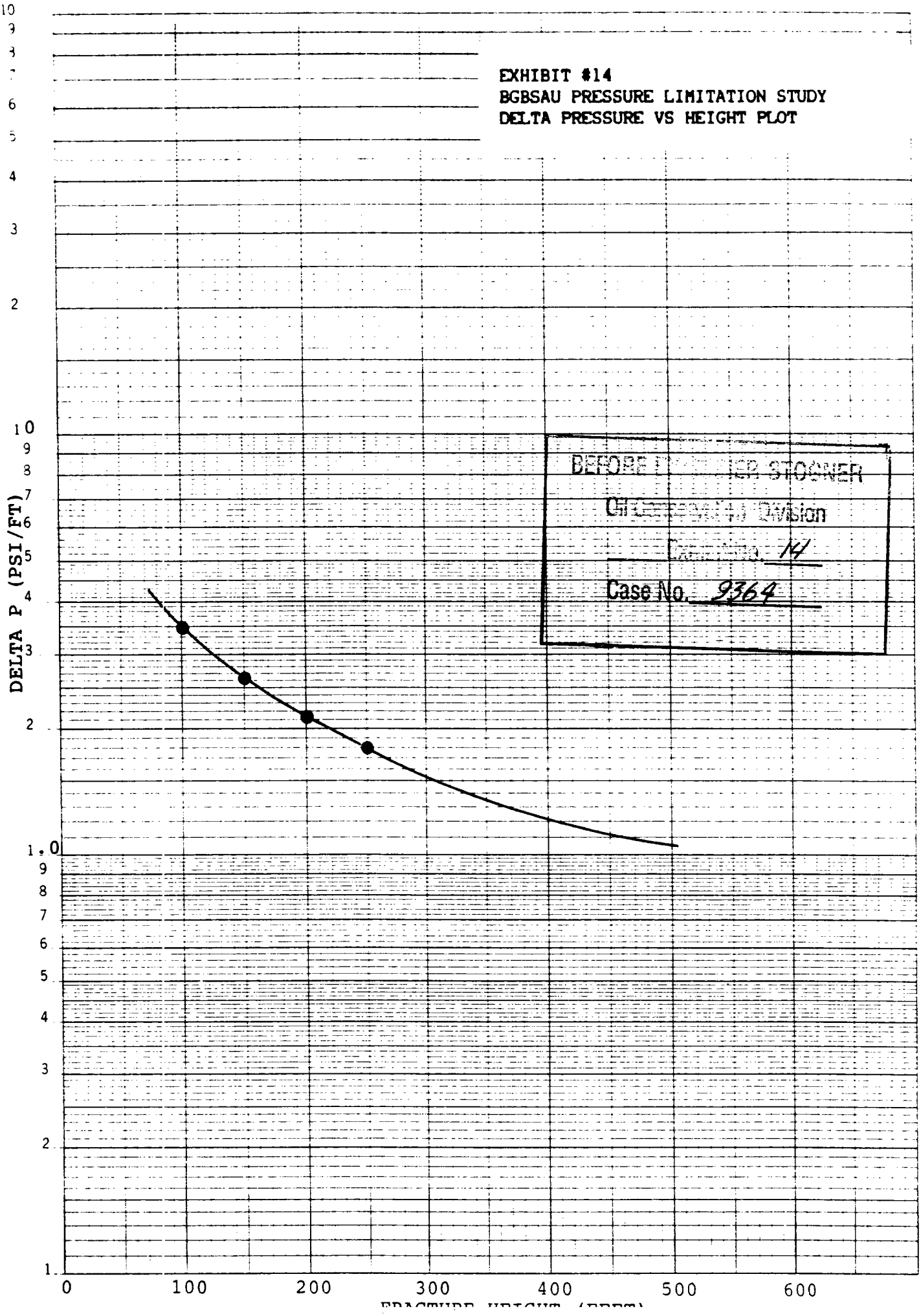
Anadarko Petroleum



BEFORE EXAMINER STOGNER
Oil Conservation Division
Exhibit No. 13
Case No. 9364

EXHIBIT #14

EXHIBIT #14
BGBSAU PRESSURE LIMITATION STUDY
DELTA PRESSURE VS HEIGHT PLOT



BEFORE EXAMINER STOGNER
OIL CONSERVATION Division
Exhibit No. 14
Case No. 9364

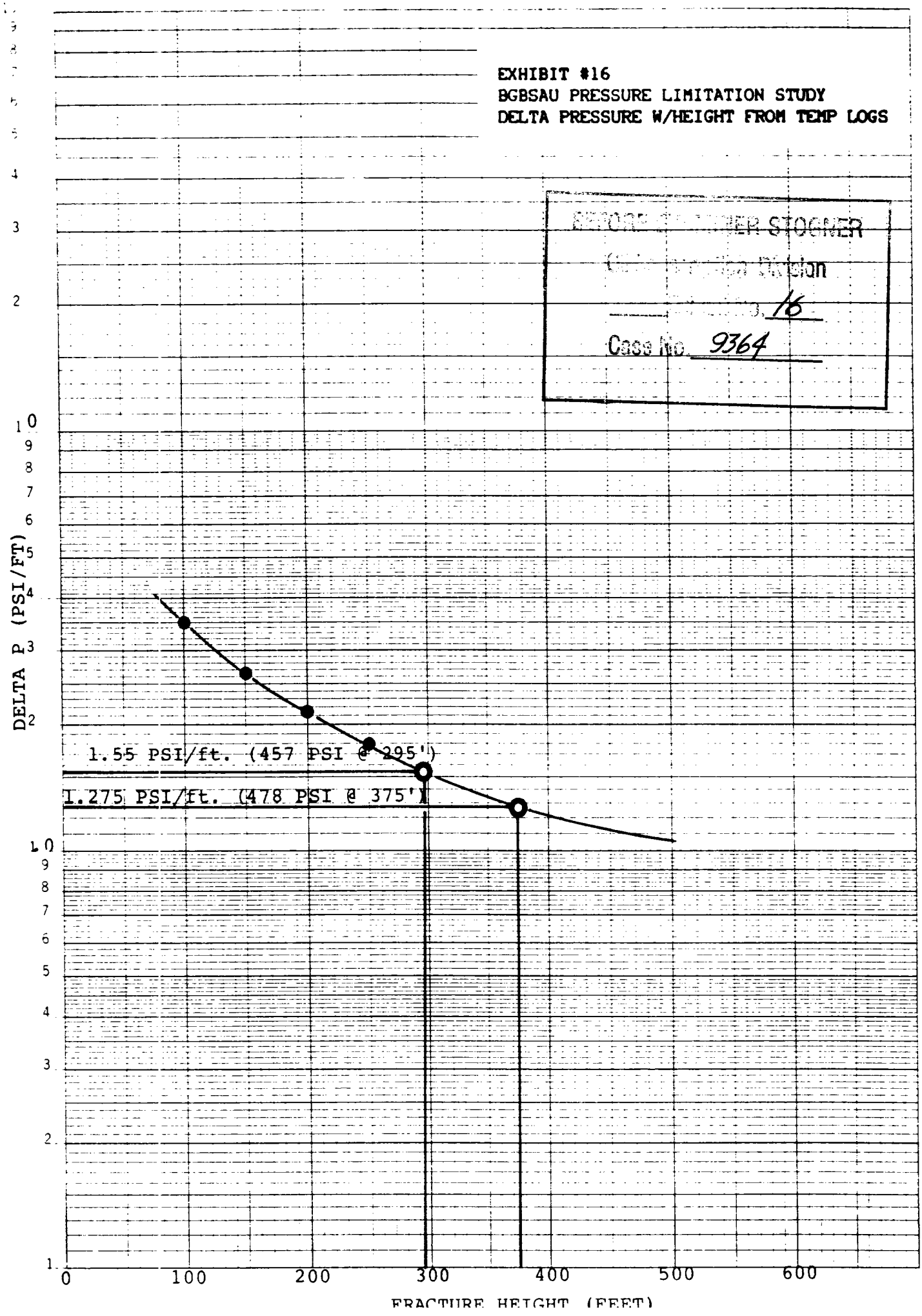
46 5490

K&E SEMI-LOGARITHMIC • 3 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO MADE IN U.S.A.

EXHIBIT #16

EXHIBIT #16
BGBSAU PRESSURE LIMITATION STUDY
DELTA PRESSURE W/HEIGHT FROM TEMP LOGS

BEFORE EXAMINER STOGNER
Oil Conservation Division
Exhibit No. 16
Case No. 9364



46 5490
K&E SEMI-LOGARITHMIC • 3 CYCLES X 70 DIVISIONS KEUFFEL & ESSER CO MADE IN USA

STATE OF NEW MEXICO
DEPARTMENT OF ENERGY AND MINERALS
OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION OF ANADARKO PETROLEUM CORPORATION FOR AMENDMENT OF ORDER R-7773 TO INCREASE THE INJECTION PRESSURE LIMITATION FOR THE BALLARD GAS WATERFLOOD PROJECT, EDDY COUNTY, NEW MEXICO.

CASE: 9364

CERTIFICATE OF MAILING
AND
COMPLIANCE WITH ORDER R-8054

In accordance with Division Rule 1207 (Order R-8054) I hereby certify that on April 4, 1988, notice of the hearing, and a copy of the application for the above referenced case, was mailed at least twenty days prior to hearings originally set for April 27, 1988 to the interested parties listed on Exhibit "C" attached hereto.

W. Thomas Kellahin

SUBSCRIBED AND SWORN to before me this 16th day of April, 1988.

Notary Public

My Commission Expires:
9-26-91

BEFORE EXAMINER STOGNER
Oil Conservation Division
Anadarko Exhibit No. 17
Case No. 9364

EXHIBIT "C"

MAILING LIST

Smith & Watson
Mrs. H. G. Watson
920 South Roselawn Avenue
Artesia, New Mexico 88210

Bogle Farms, Inc.
P. O. Box 441
Artesia, New Mexico 88210
Attn: Mr. Millard Derrick

United States Bureau of Land Management
P. O. Box 1397
Roswell, New Mexico 88201

Gordon M. Cone
P. O. Drawer 1509
Lovington, New Mexico 88260

J. C. Thompson & J. C. Thompson, Jr.
4500 Republic National Bank Tower
Dallas, Texas 75201

Depco, Inc.
110 16th Street
Denver, Colorado 80202

Marbob Energy Corp.
P. O. Box 304
Artesia, New Mexico 88210

Kersey and Company
808 W. Grand Avenue
Artesia, New Mexico 88210

Cities Service Oil & Gas Company
6 Desta Drive
Suite 6002
Midland, Texas 79702

Conoco Inc
P. O. Box 460
Hobbs, New Mexico 88240

Sell-Rasmussen Operating, Inc
P. O. Box 5061
Midland, Texas 79704

APPENDIX

BALLARD GRAYBURG-SAN ANDRES UNIT

INJECTION PRESSURE STUDY

APPENDIX

Table 2 – Definition of elastic constants.

Elastic Constants	Basic Equations	Interrelation of Equations	Equations in Well Logging Terms
Young's Modulus[1]	$E = \frac{9K\rho V_s^2}{3K + \rho V_s^2}$	$E = \frac{3K\mu}{3K + \mu} = 2\mu(1 + \sigma) = 3K(1 - 2\sigma)$	$E = \left(\frac{\rho}{\Delta t_s^2}\right)\left(\frac{3\Delta t_s^2 - 4\Delta t_c^2}{\Delta t_s^2 - \Delta t_c^2}\right) \times 1.34 \times 10^{10}$
Bulk Modulus[2]	$K = \rho\left(V_c^2 - \frac{4}{3}V_s^2\right)$	$K = \frac{E\mu}{3(3\mu - E)} = \mu\frac{2(1+\sigma)}{3(1-2\sigma)} = \frac{E}{3(1-2\sigma)}$	$K = \rho\left(\frac{3\Delta t_s^2 - 4\Delta t_c^2}{3\Delta t_s^2 \Delta t_c^2}\right) \times 1.34 \times 10^{10}$
Shear Modulus[3]	$\mu = \rho V_s^2$	$\mu = \frac{3KE}{9K - E} = 3K\frac{1 - 2\sigma}{2 + 2\sigma} = \frac{E}{2 + 2\sigma}$	$\mu = \left(\frac{\rho}{\Delta t_s^2}\right) \times 1.34 \times 10^{10}$
Poisson's Ratio[4]	$\sigma = 1/2\left(\frac{\left(\frac{V_c^2}{V_s^2}\right) - 2}{\left(\frac{V_c^2}{V_s^2}\right) - 1}\right)$	$\sigma = \frac{3K - 2\mu}{2(3K + \mu)} = \left(\frac{E}{2\mu} - 1\right) = \frac{3K - E}{6K}$	$\sigma = 1/2\left(\frac{\Delta t_s^2 - 2\Delta t_c^2}{\Delta t_s^2 - \Delta t_c^2}\right)$

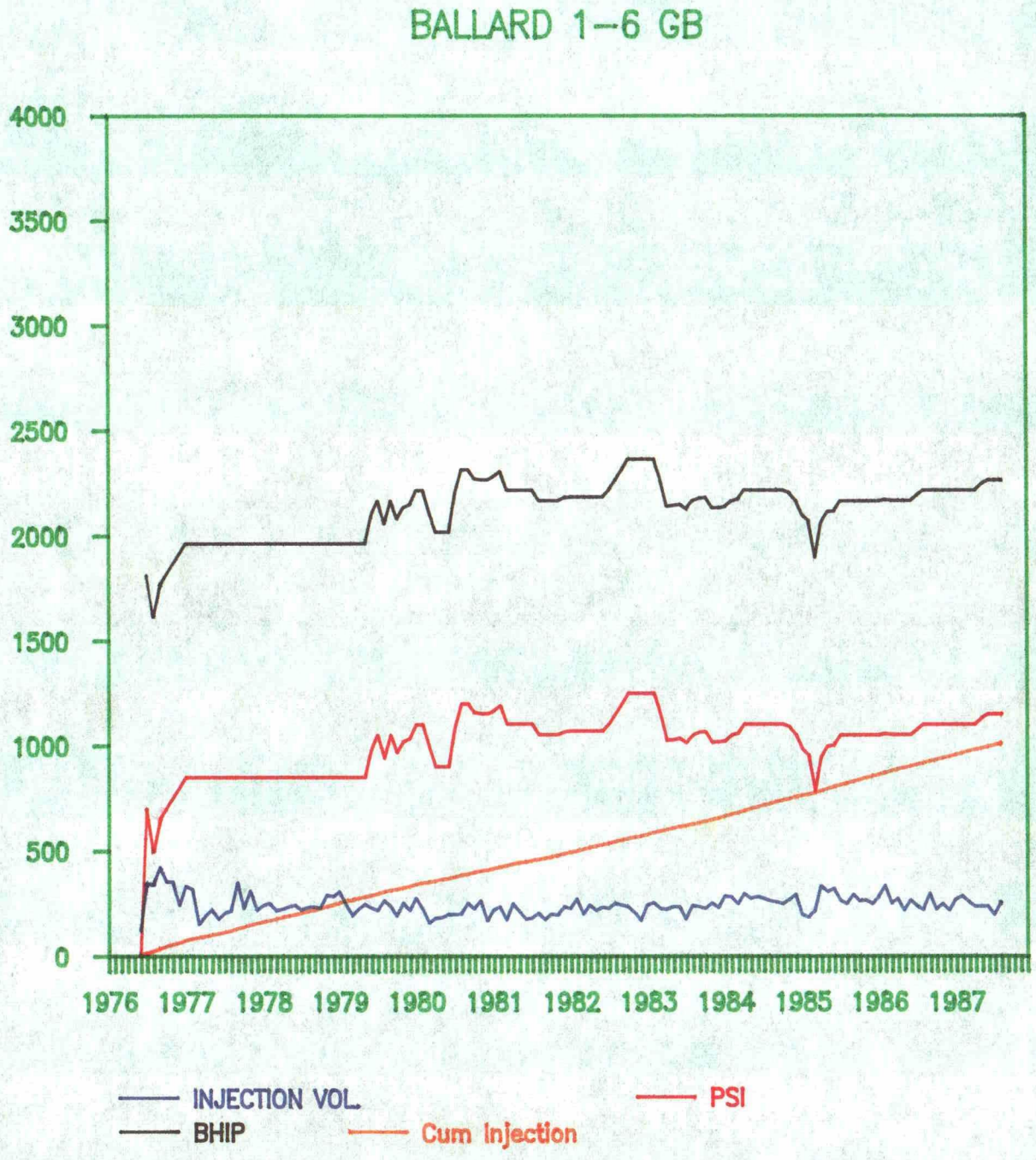
ρ = bulk density g/cc
V_s = shear velocity, ft/sec
Δt_s = shear travel time, μsec/ft
V_c = compressional velocity, ft/sec
Δt_c = compressional travel time, μsec/ft
1.34×10^{10} = conversion factor

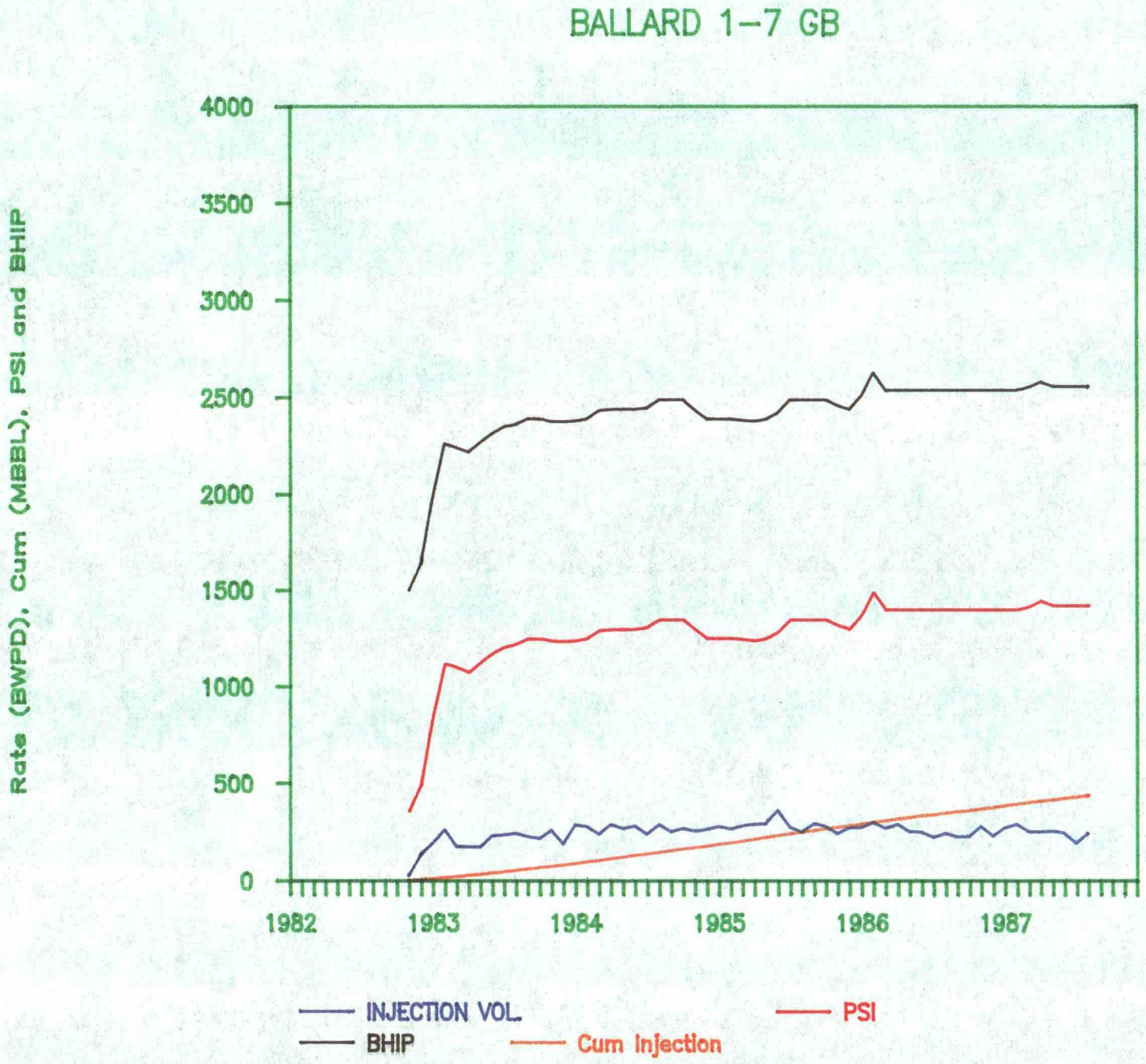
1) Young's Modulus (E) measures opposition of a substance to extensional stress, $E = \frac{F/A}{\Delta l/l}$

2) Bulk Modulus (K) is the coefficient of incompressibility and measures opposition of a substance to compressional stress, $K = \frac{F/A}{\Delta V/V}$

3) Shear Modulus (μ), also called rigidity modulus, measures the opposition of a substance to shear stresses.
Finite values for solids, zero values for fluid, $\mu = \frac{F/A}{\tan S}$

4) Poisson's Ratio (σ) is the ratio of relative decrease in diameter to relative elongation, $\sigma = \frac{\Delta d/d}{\Delta l/l}$


BALLARD 1--6 GB
4000
3500
3000
2500
2000
1500
1000
500
0
1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987
INJECTION VOL.
BHIP
PSI
Cum Injection


BALLARD 1-7 GB
Rate (BWPD), Cum (MBBL), PSI and BHIP
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3500
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2500
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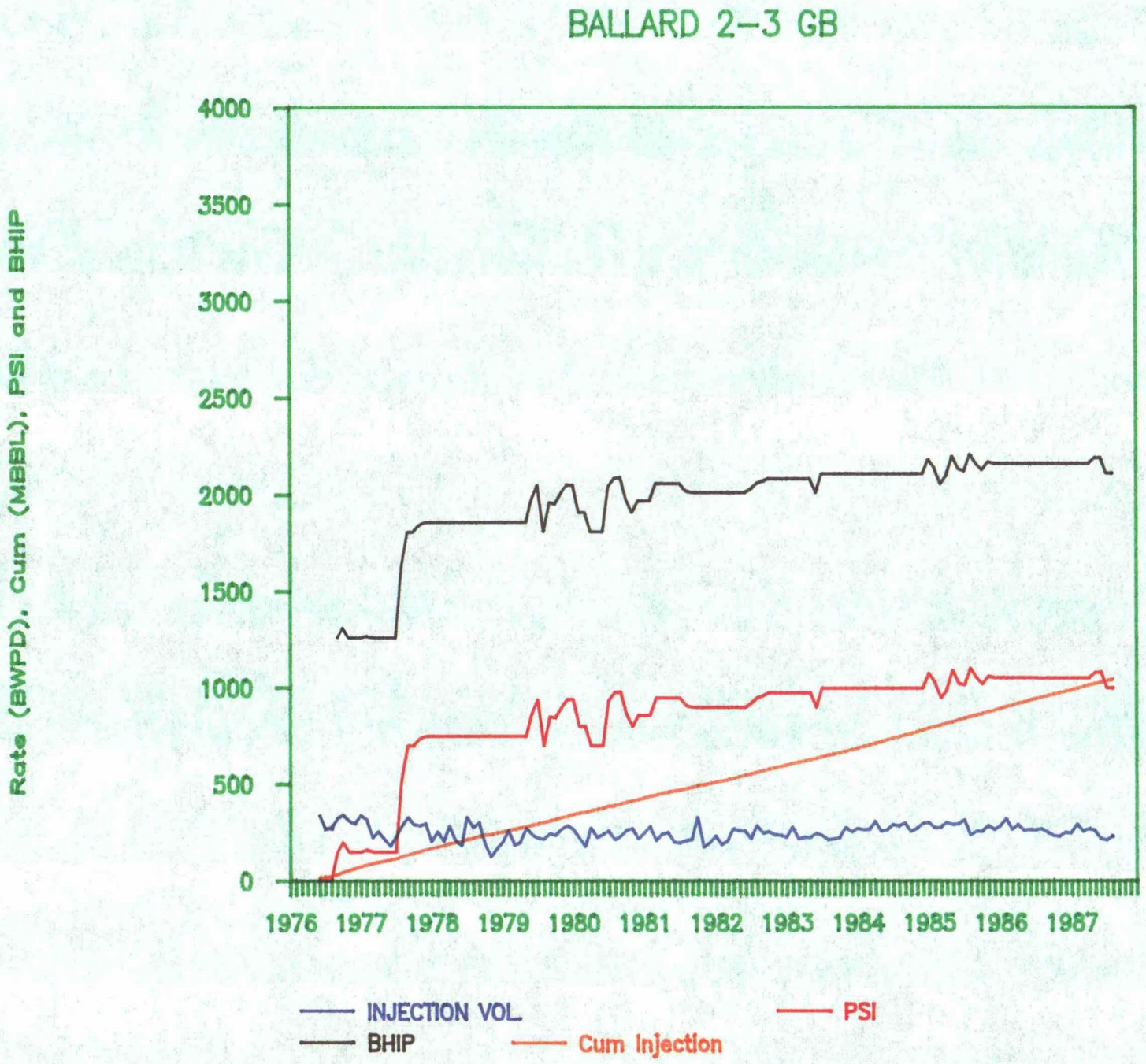
500
0
1982
1983
1984
1985
1986
1987
INJECTION VOL.
PSI
BHIP
Cum Injection


BALLARD 2-3 GB
Rate (BWPD), Cum (MBBL), PSI and BHIP
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2500
2000
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500
0
1976
1977
1978
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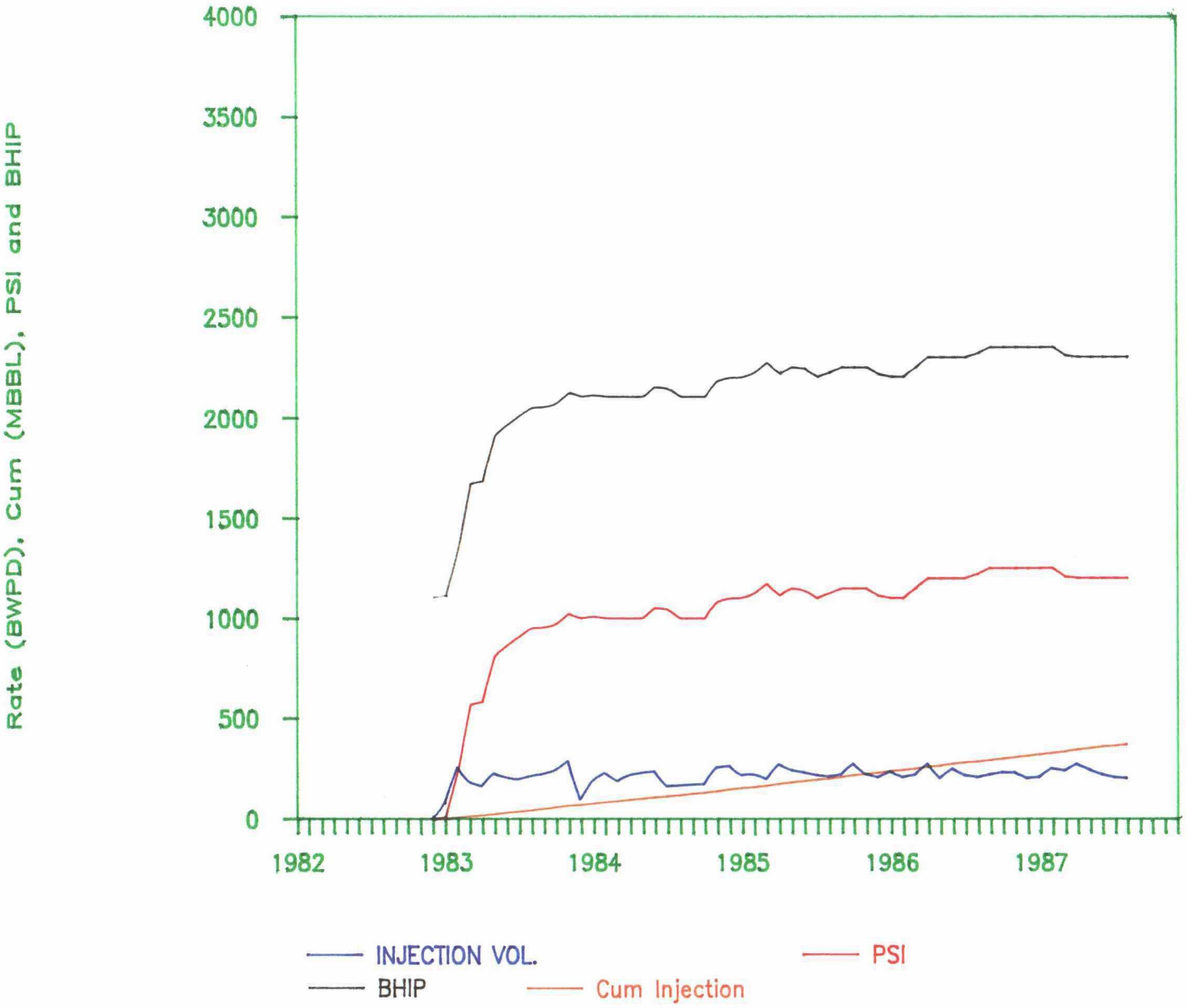
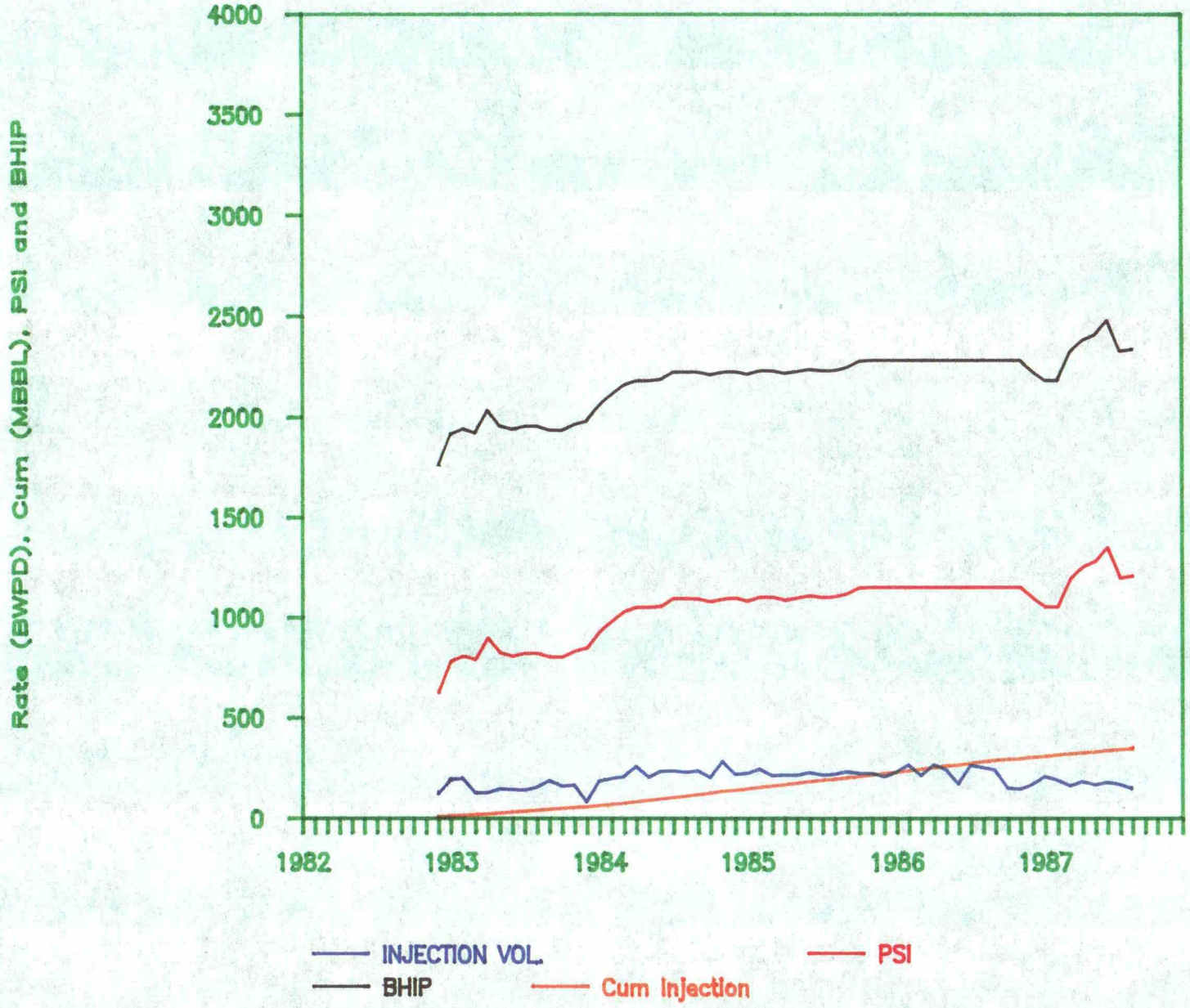
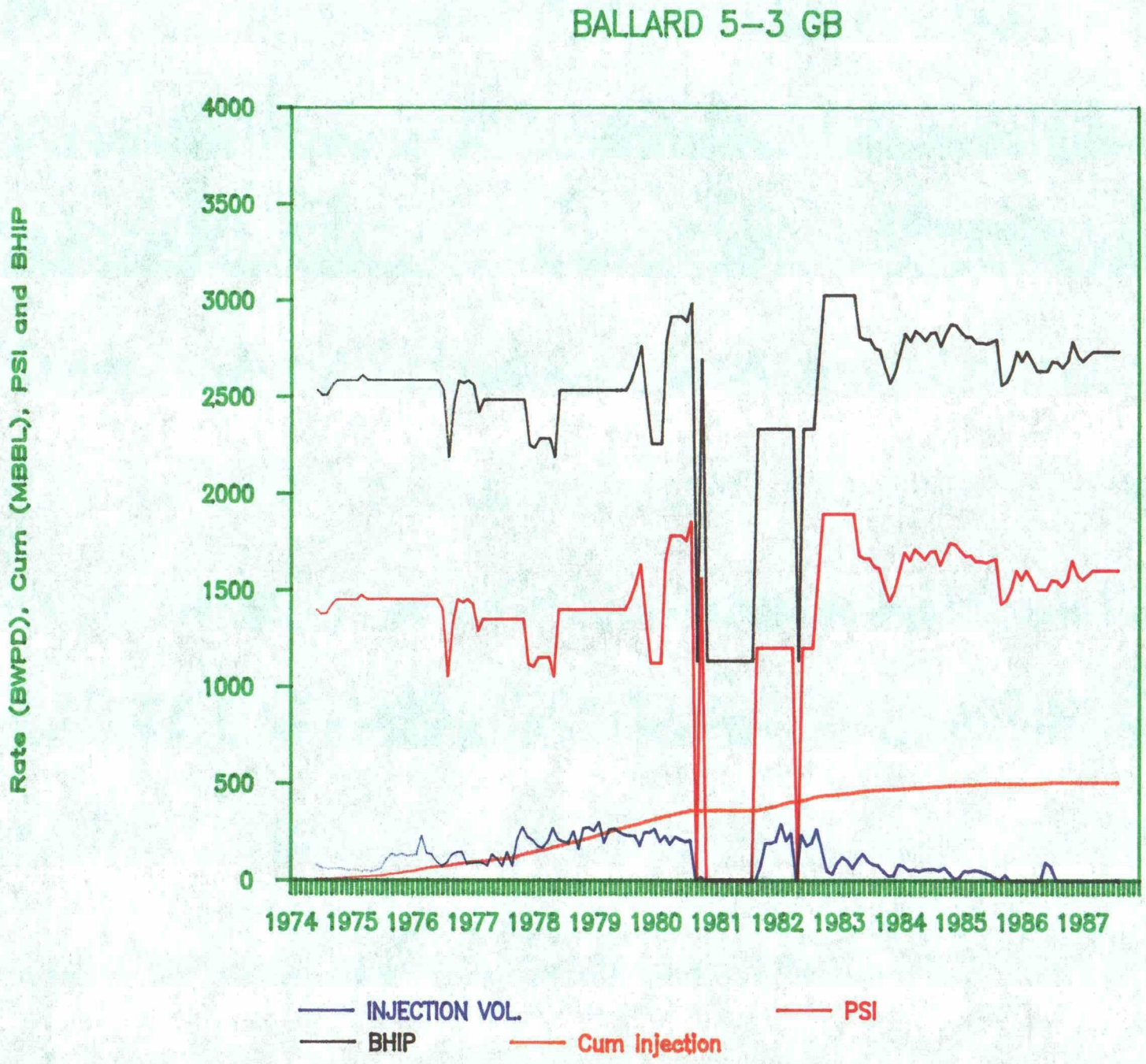
1980
1981
1982
1983
1984
1985
1986
1987
INJECTION VOL.
PSI
BHIP
Cum Injection

BALLARD 3-1 GB



BALLARD 4-2 GB




BALLARD 5-3 GB
Rate (BWPD), Cum (MBBL), PSI and BHIP
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3000
2500
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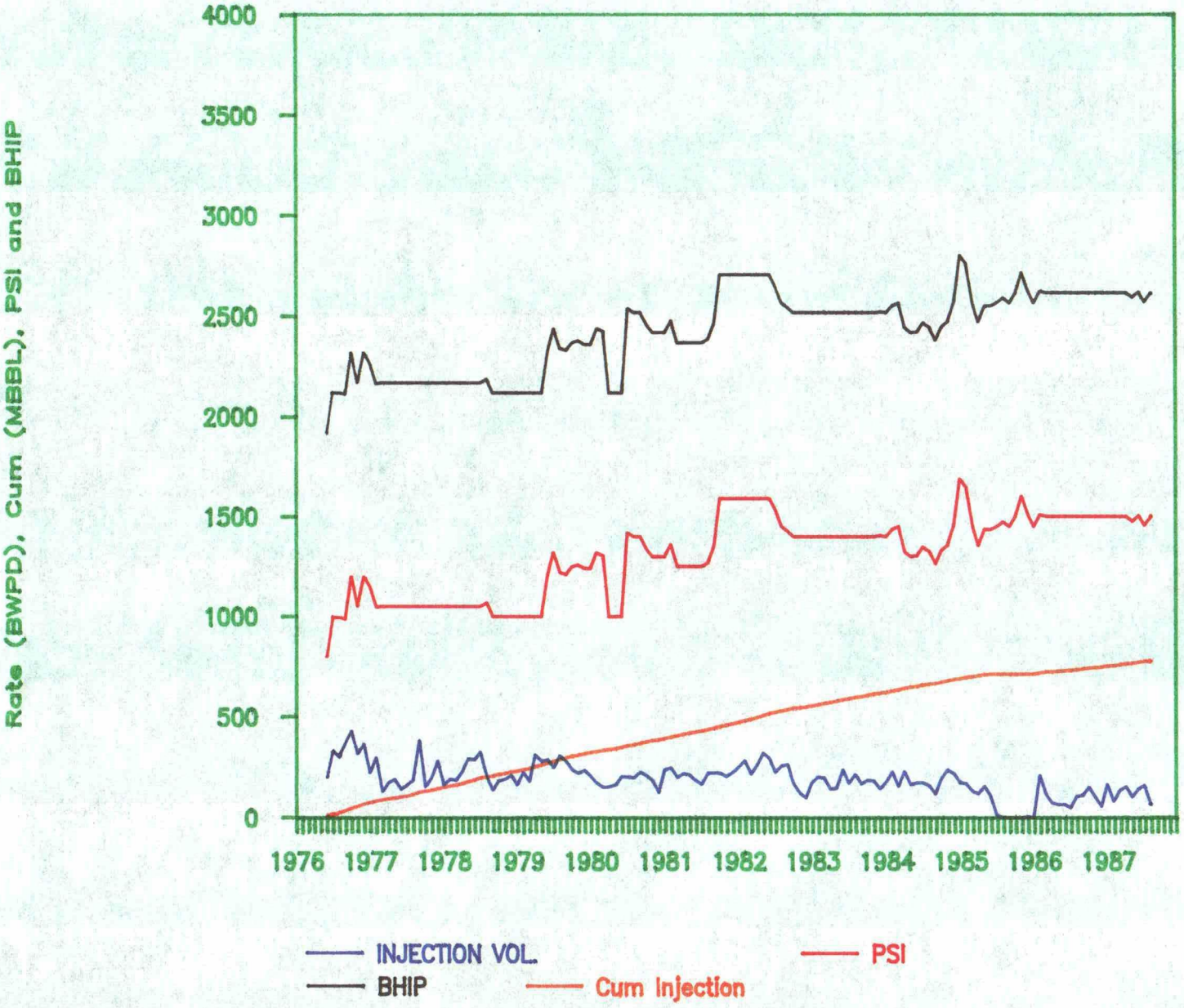
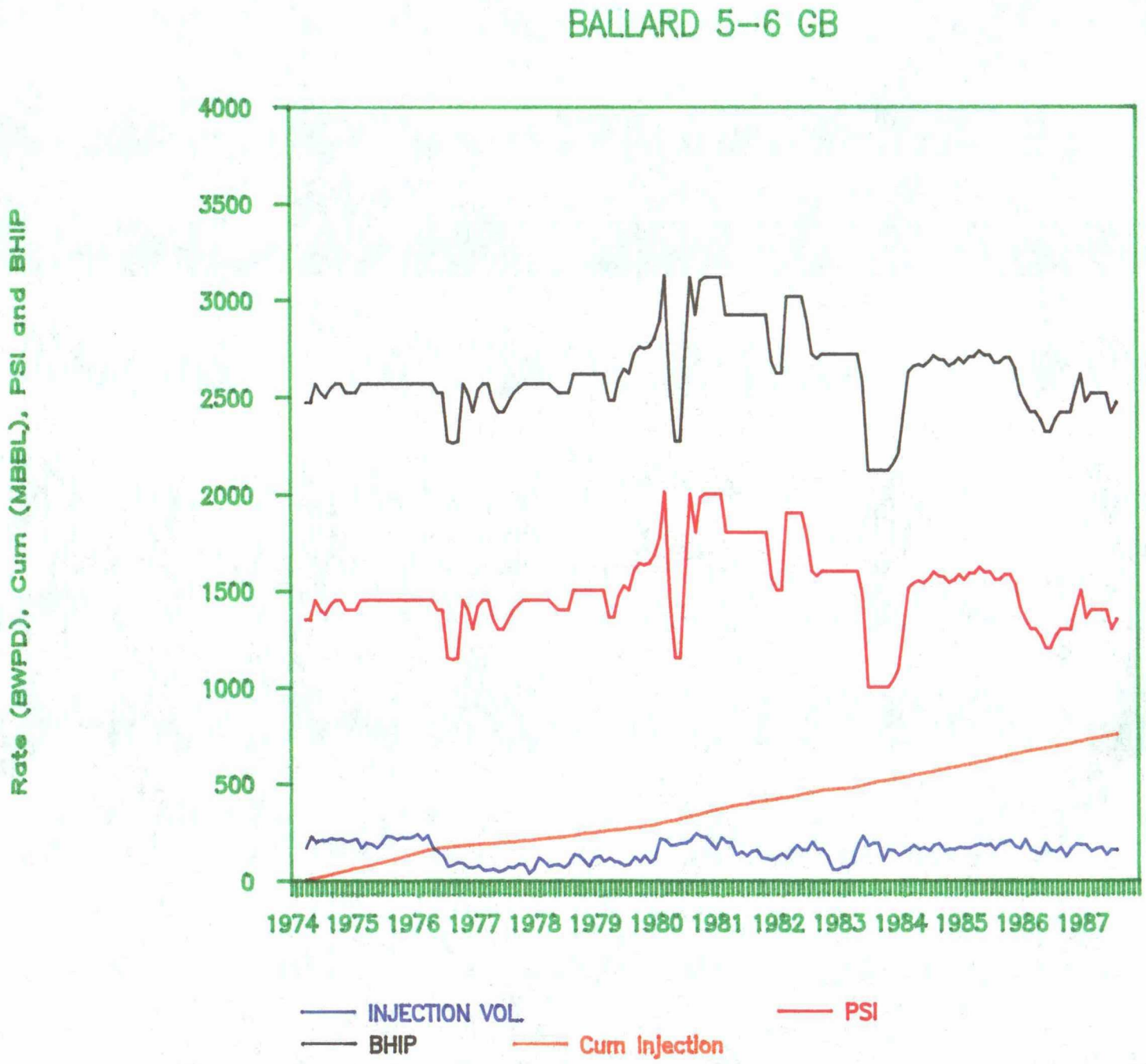
1500
1000
500
0
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987
INJECTION VOL.
PSI
BHIP
Cum injection

BALLARD 5-4 GB

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2500
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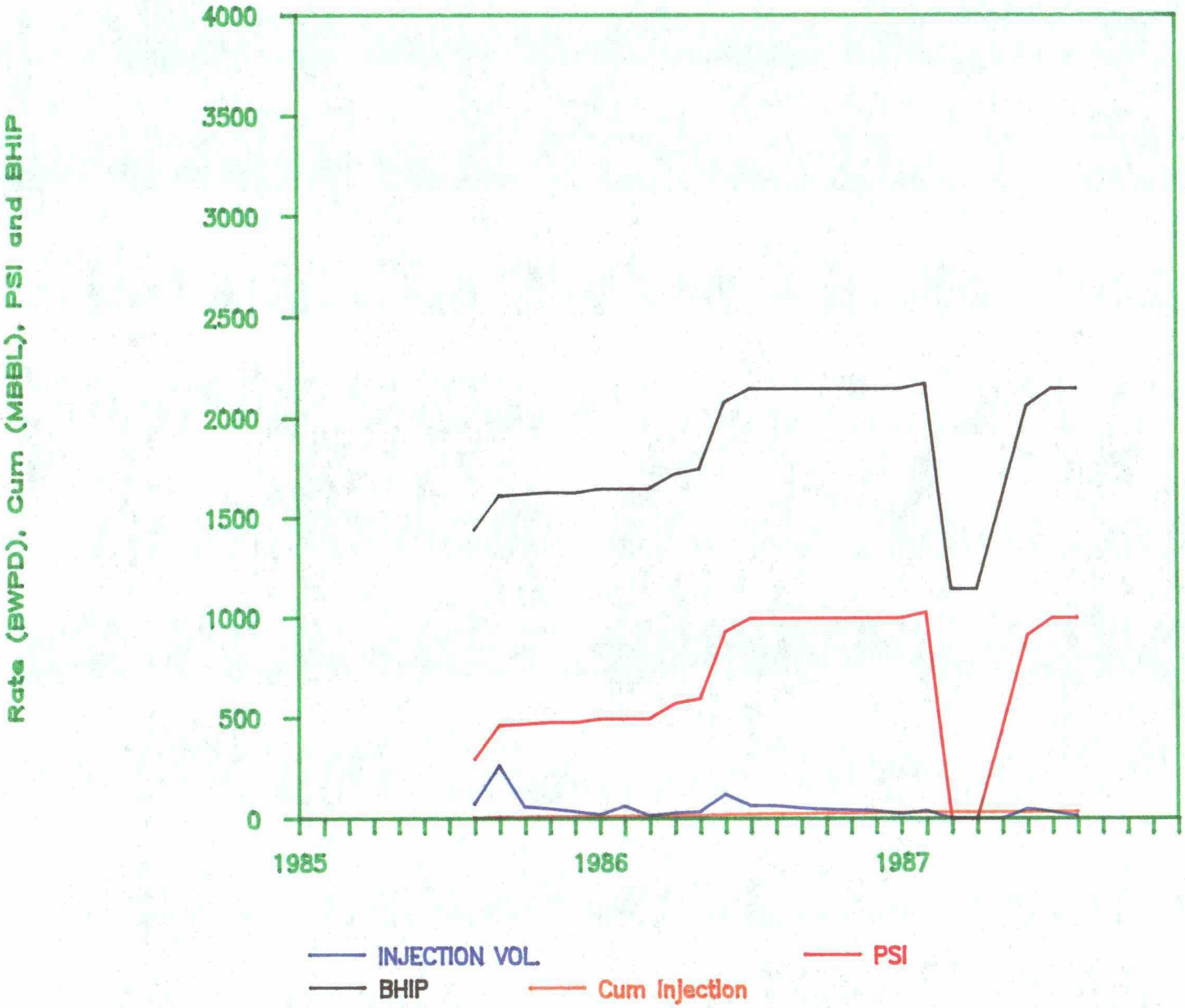
INJECTION VOL.
PSI
BHIP
Cum Injection

BALLARD 5-9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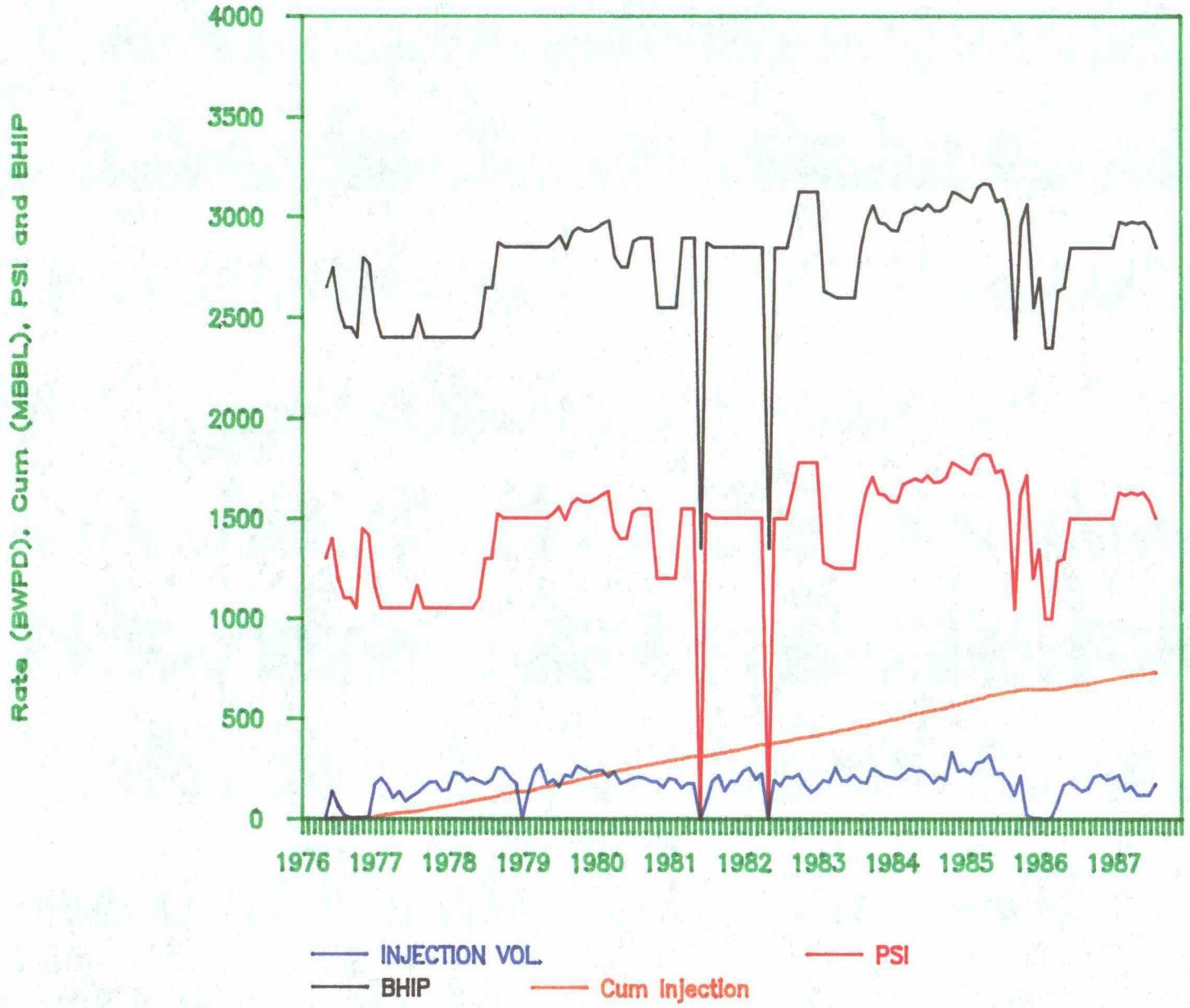
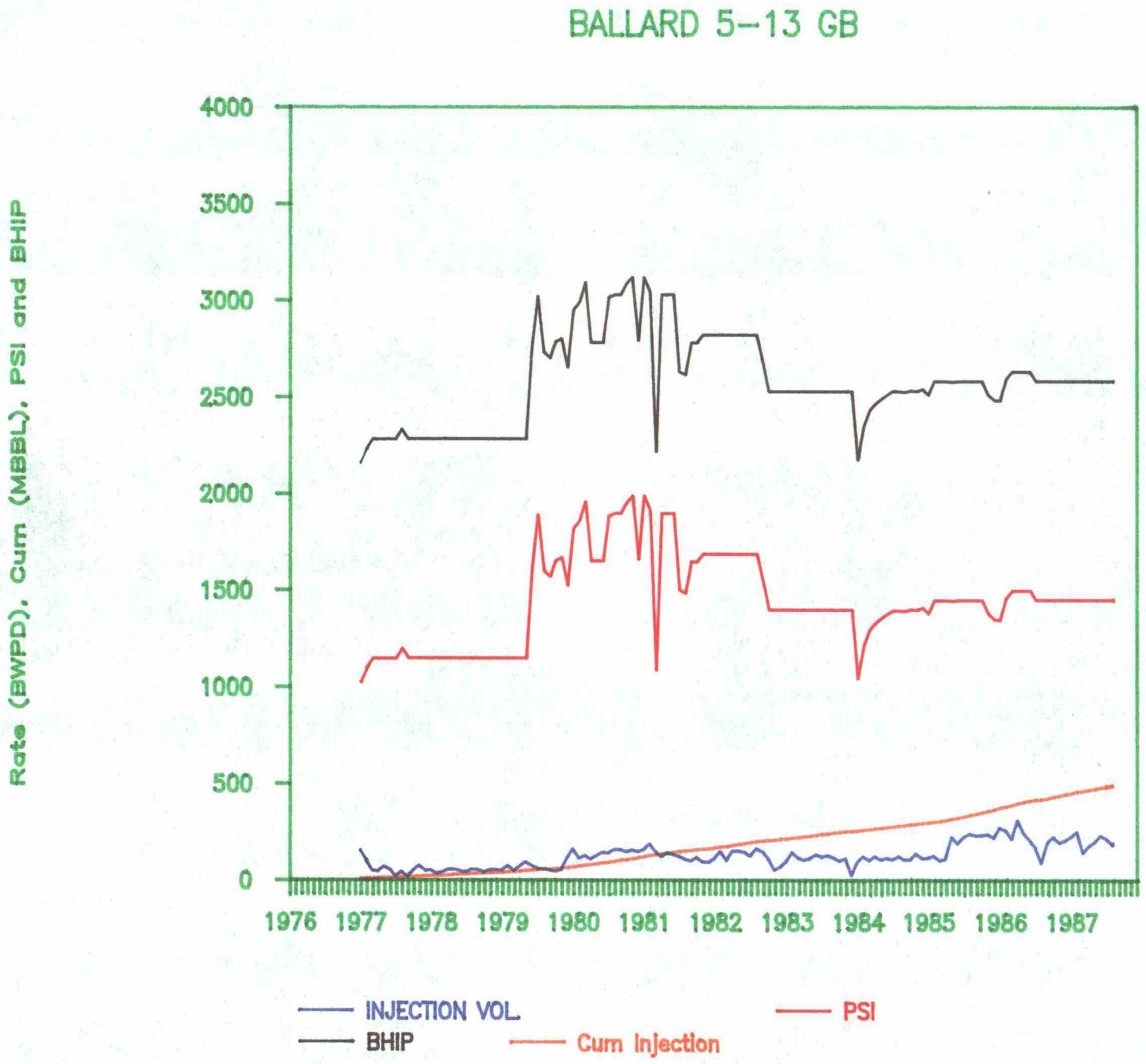
INJECTION VOL.
PSI
BHIP
Cum Injection

BALLARD 5-10J

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Rate (BWPD), Cum (MBBL), PSI and BHIP
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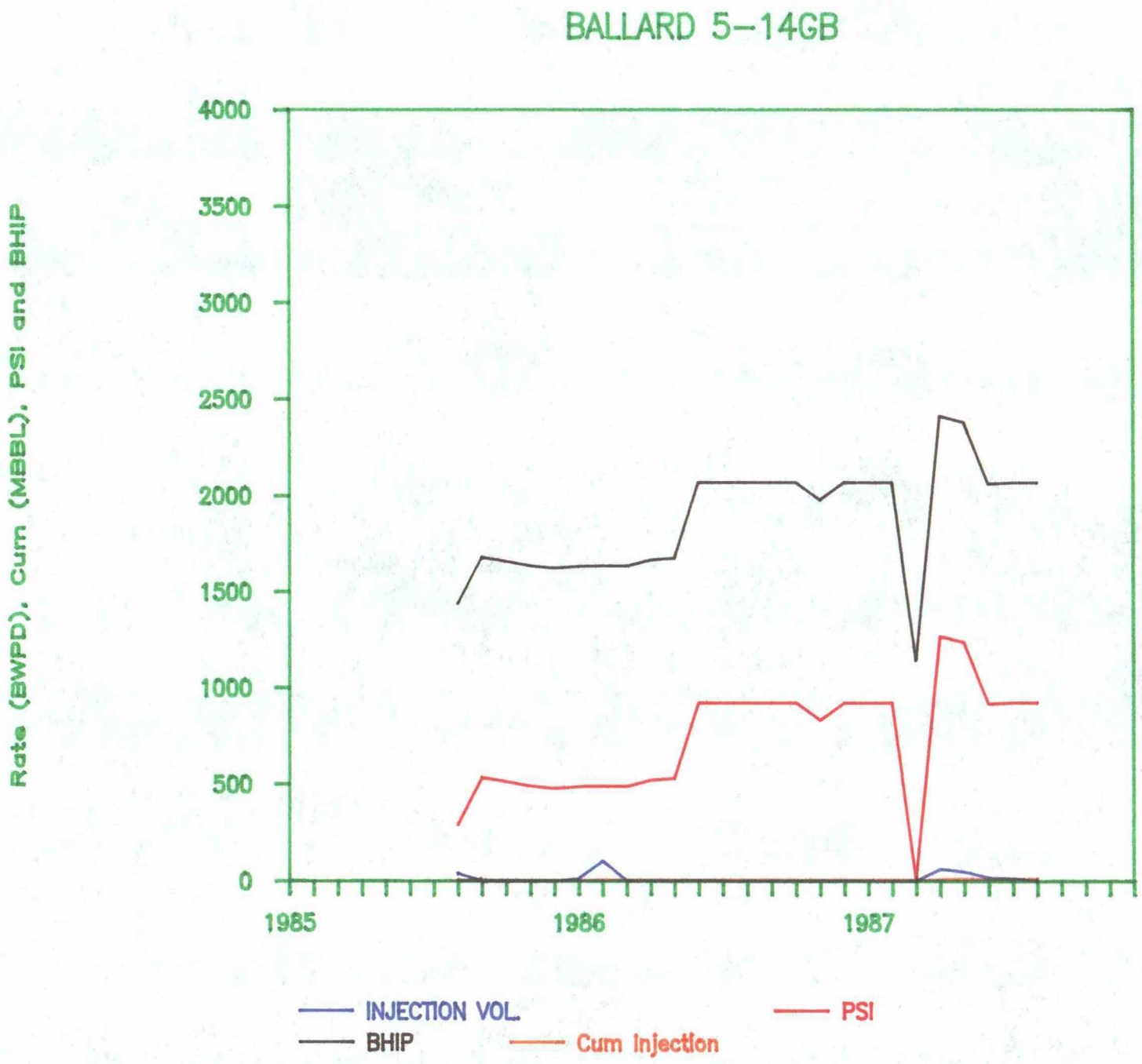
PSI
BHIP
Cum Injection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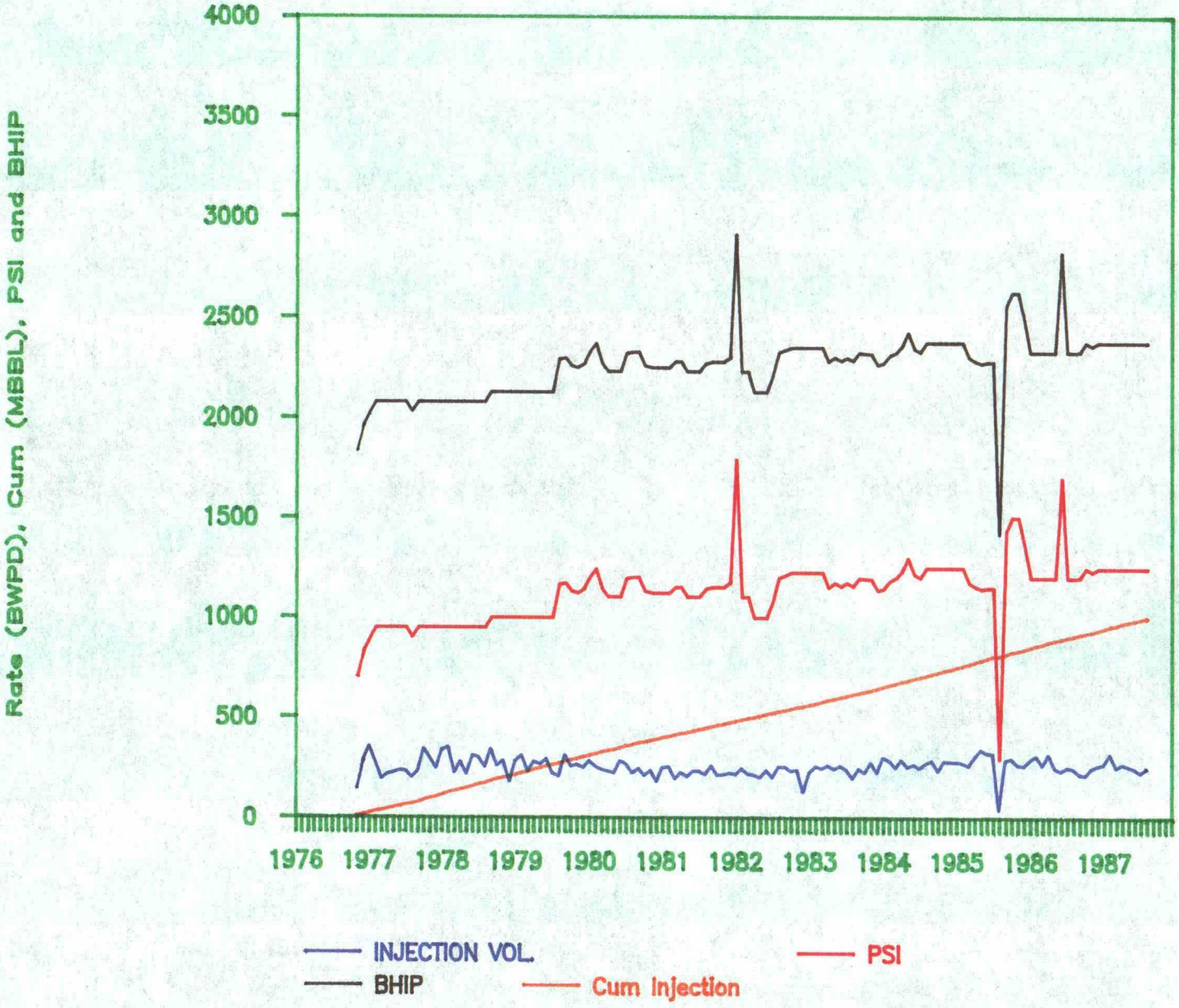
0
1985
1986
1987
INJECTION VOL.
PSI
BHIP
Cum Injection

BALLARD 6-3 GB



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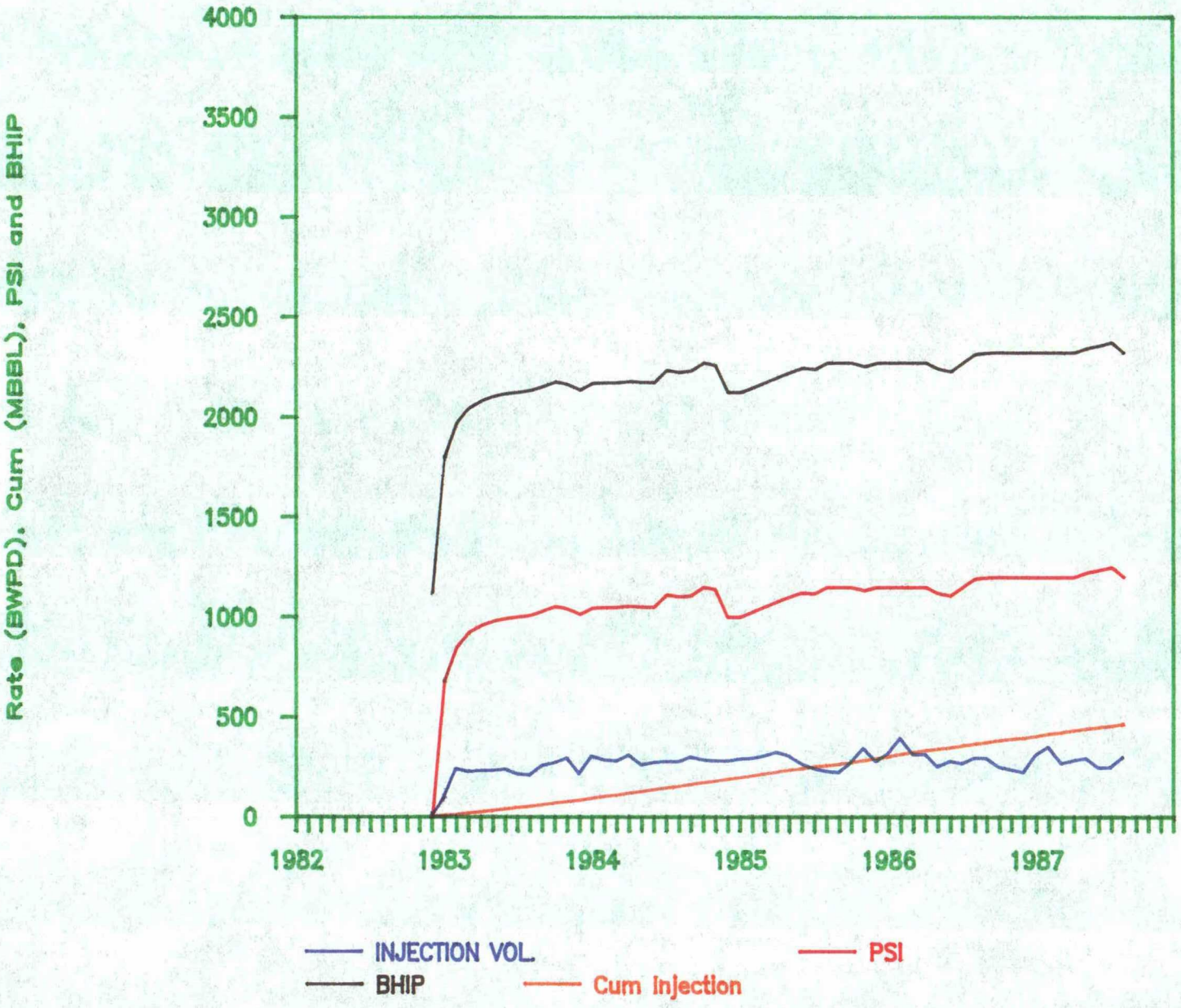

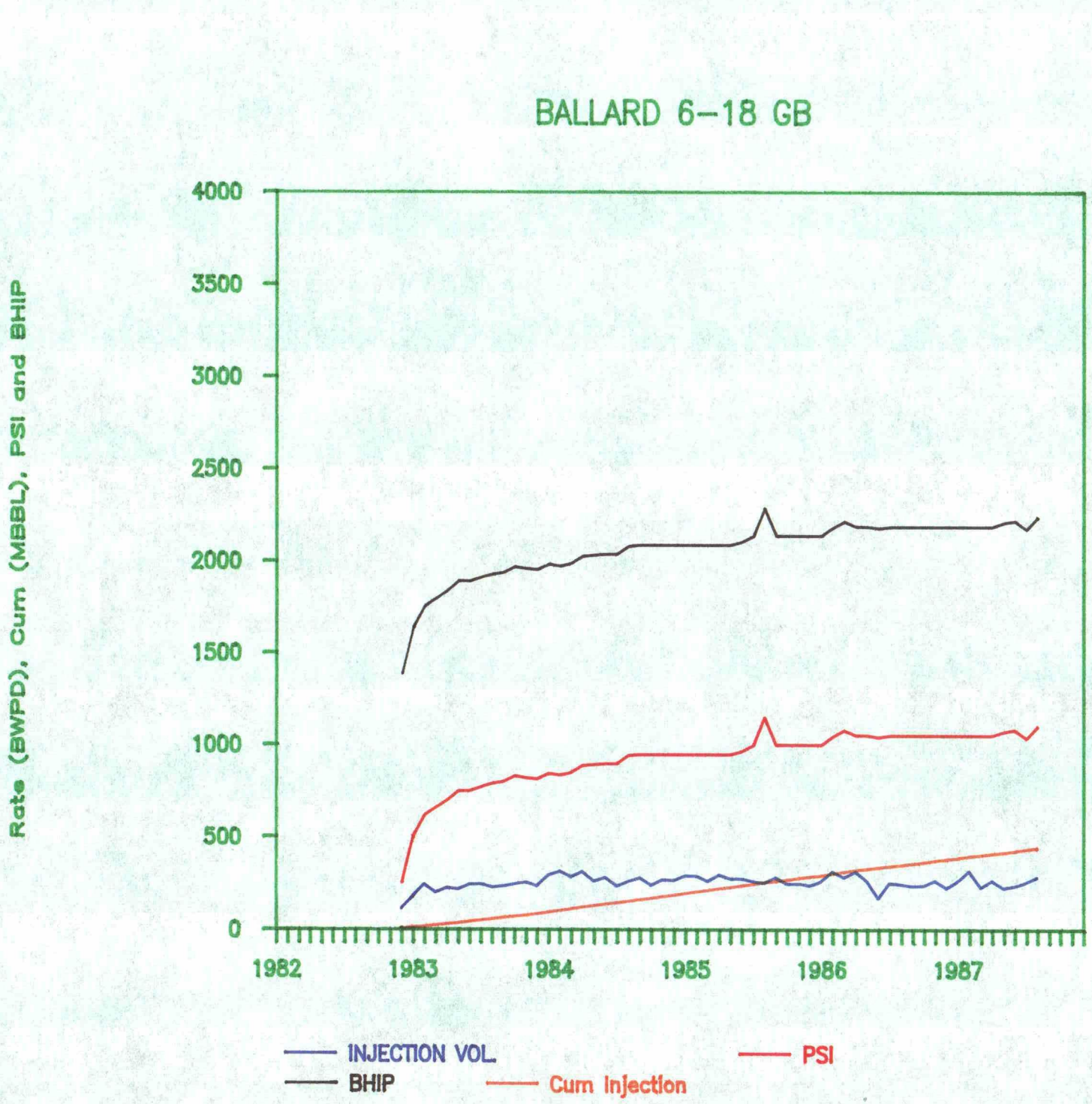
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Rate (BWPD), Cum (MBBL), PSI and BHIP
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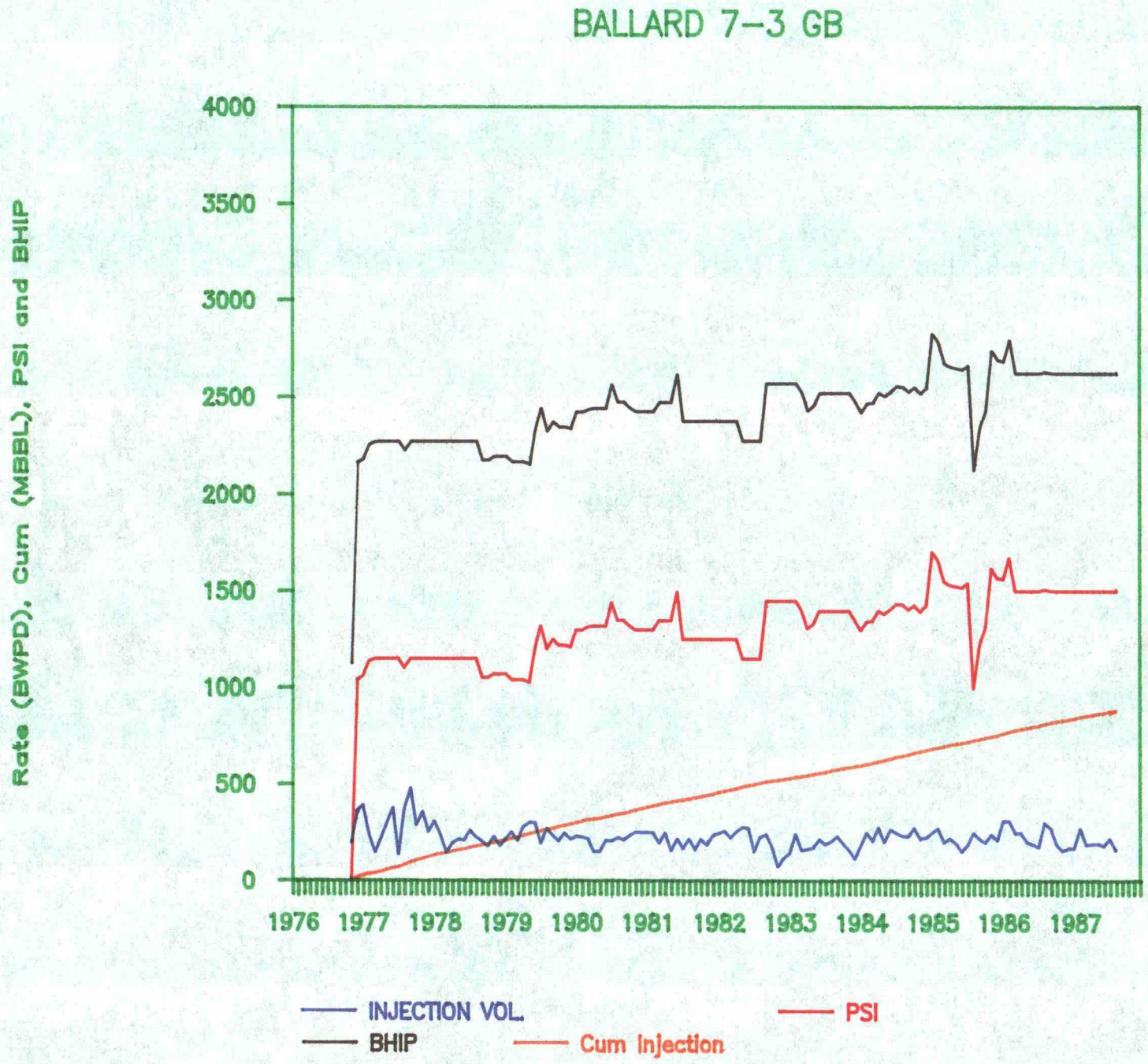
INJECTION VOL.
PSI
BHIP
Cum Injection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Rate (BWPD), Cum (MBBL), PSI and BHIP
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3500
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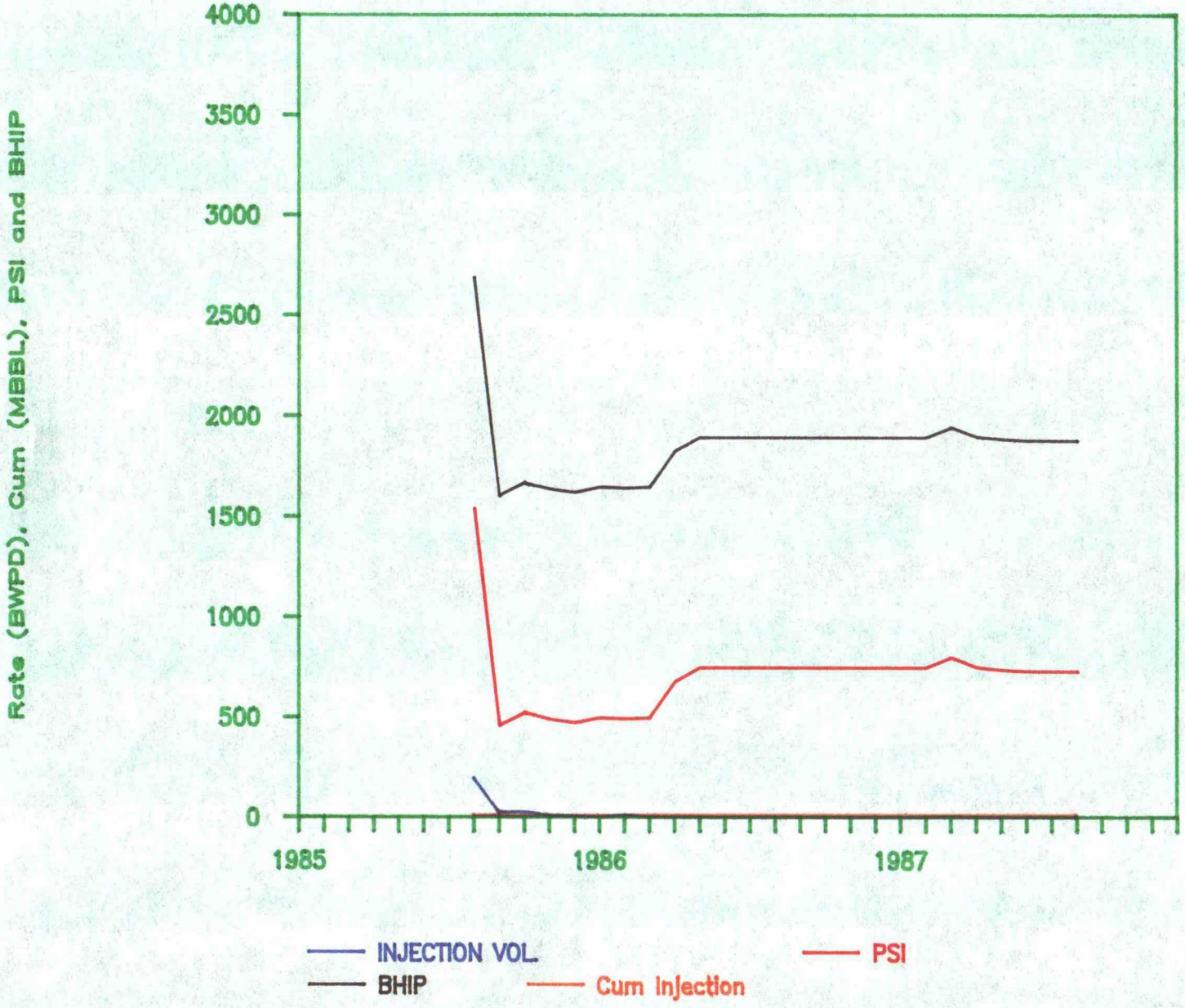
INJECTION VOL.
PSI
BHIP
Cum Injection

BALLARD 8-4 GB



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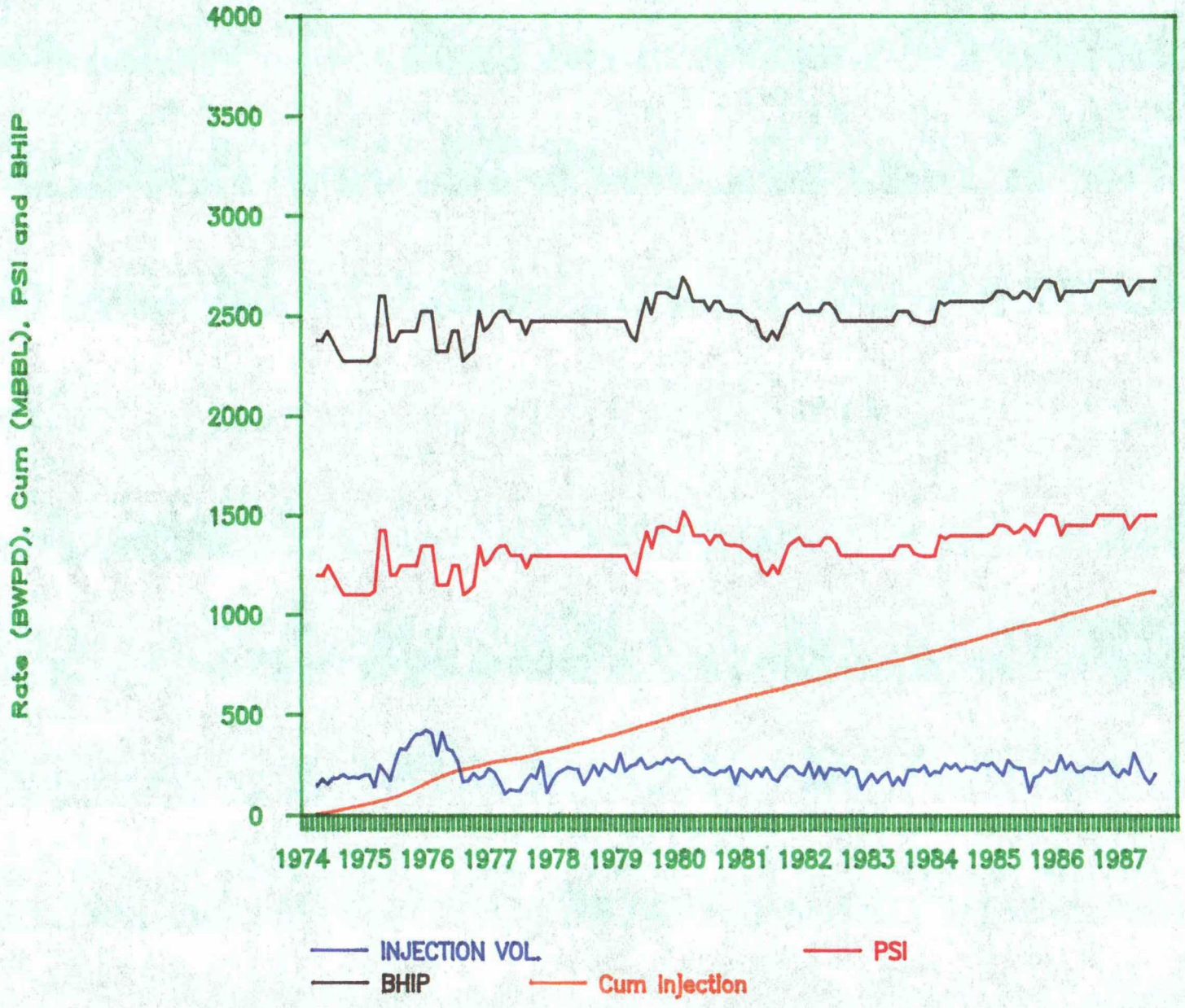
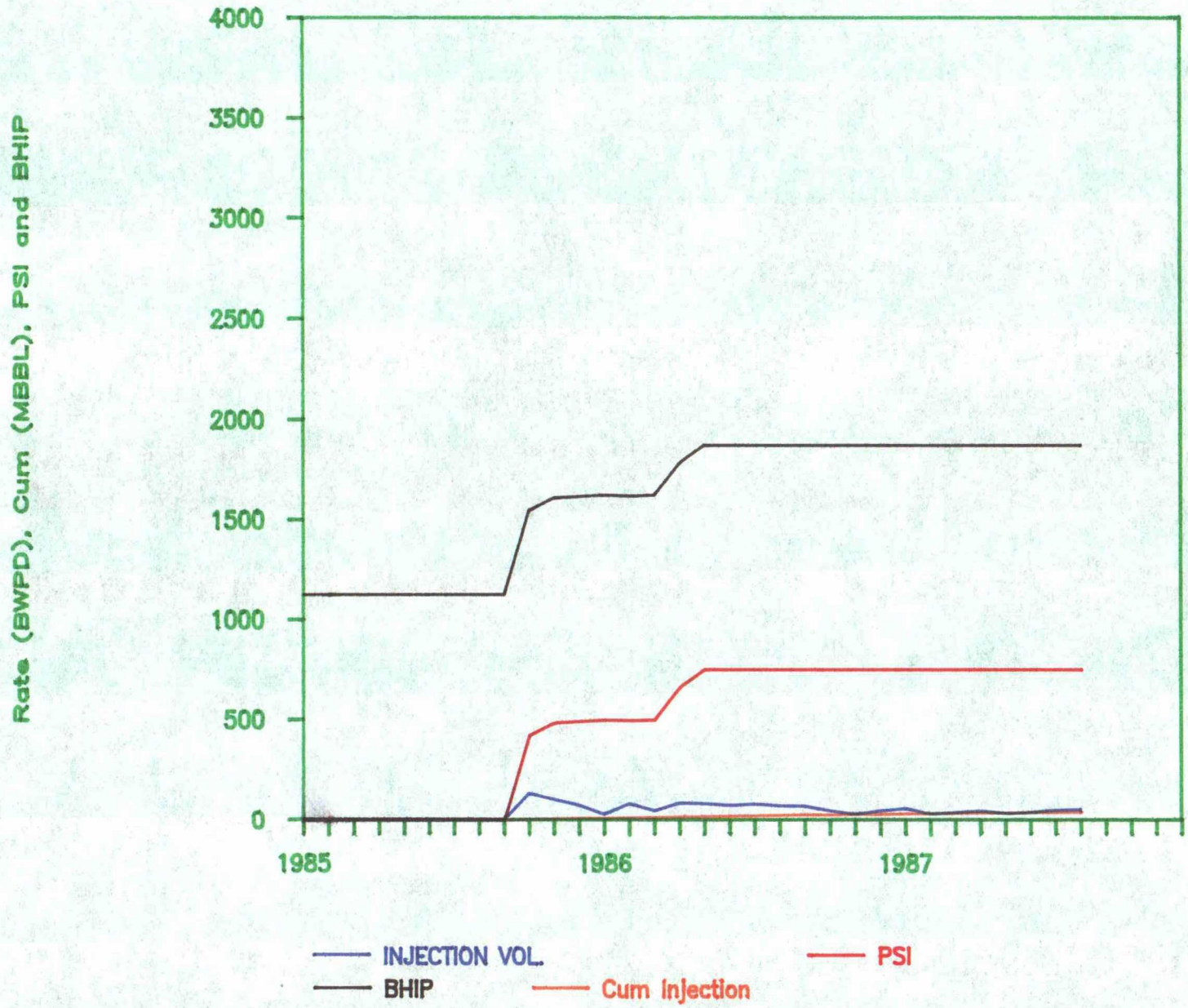
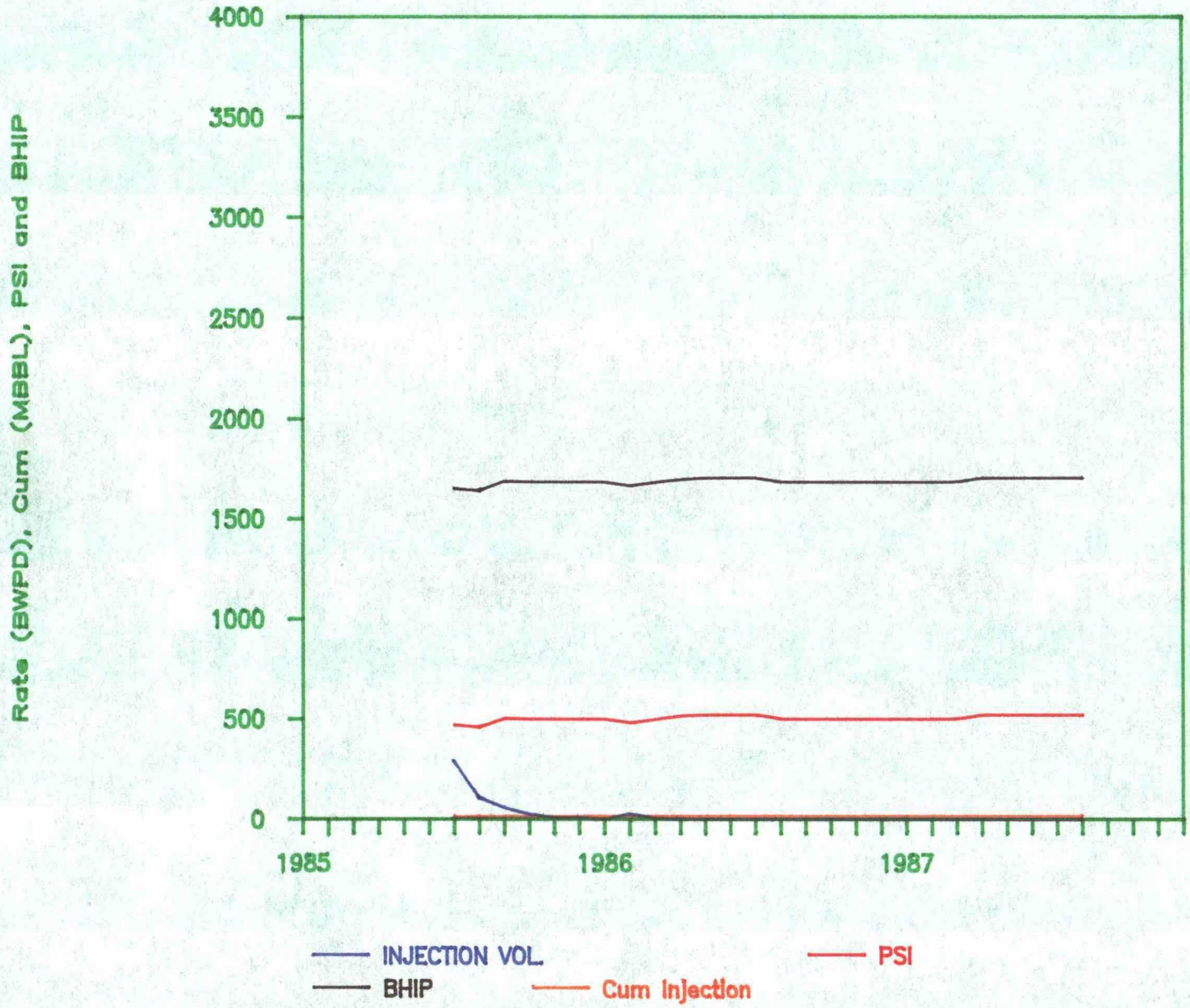
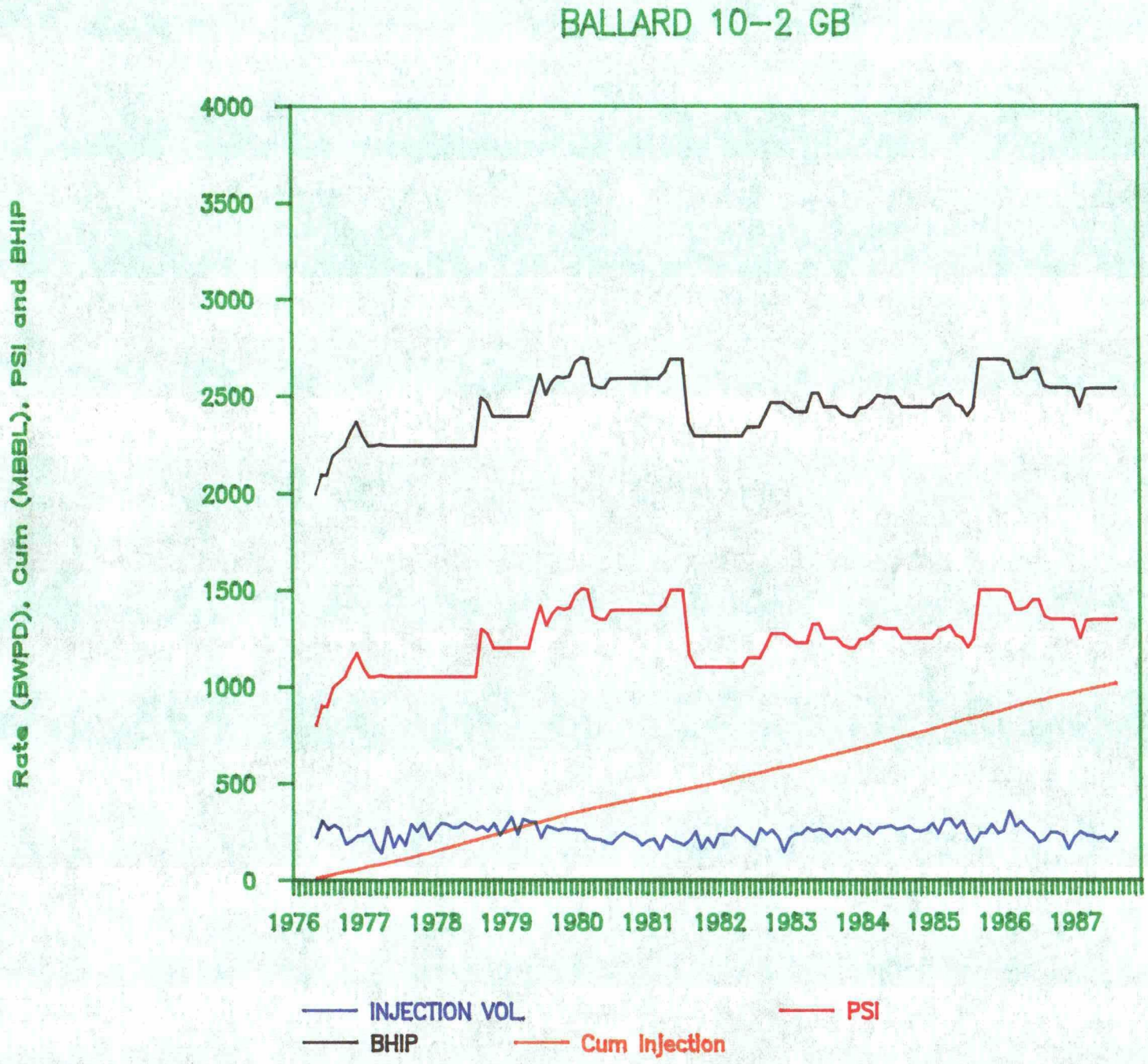


BALLARD 9-2 GB



BALLARD 10-1 GB

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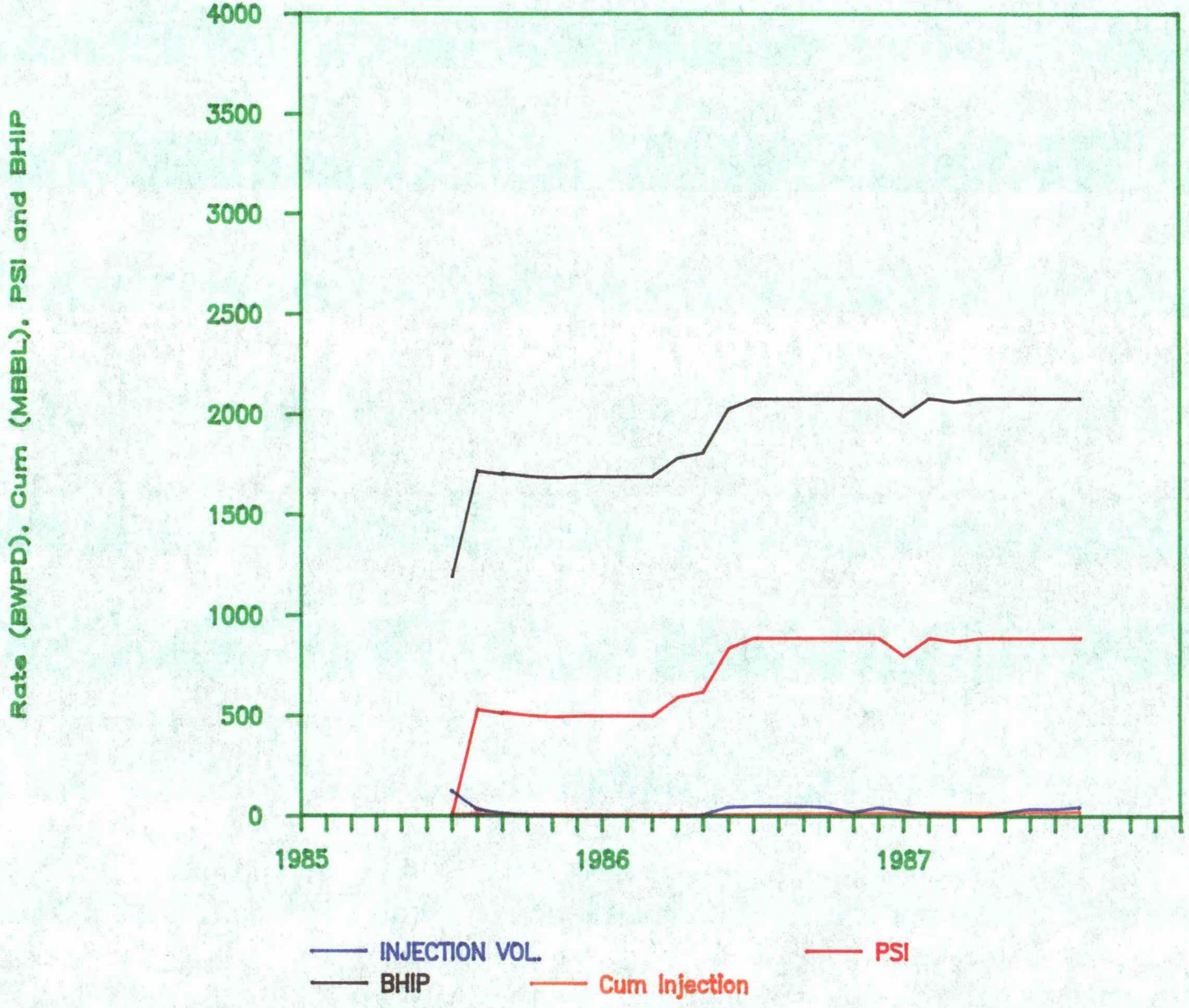
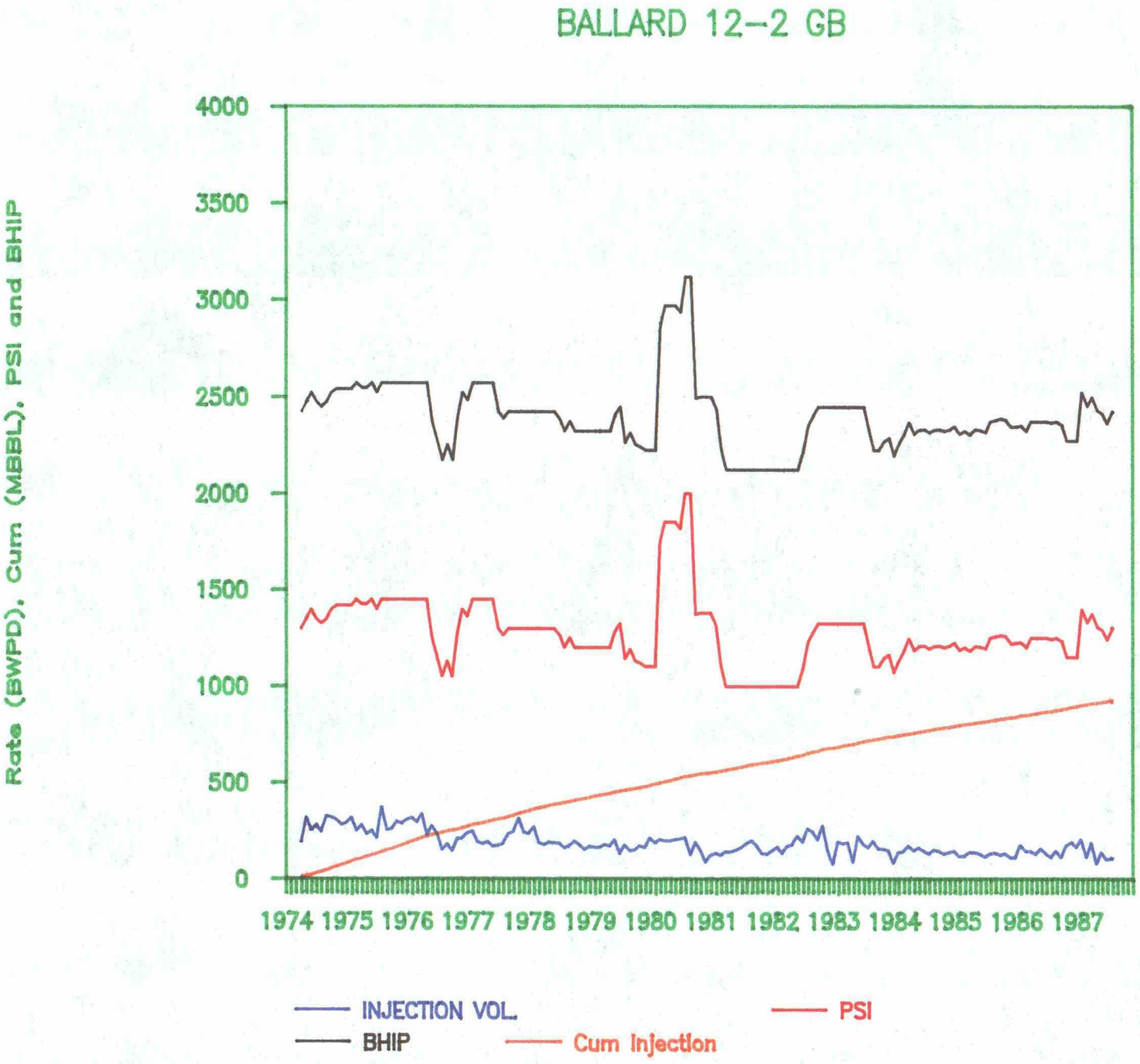
INJECTION VOL.
PSI
BHIP
Cum Injection

BALLARD 10-9 GB




BALLARD 12-2 GB
Rate (BWPD), Cum (MBBL), PSI and BHIP
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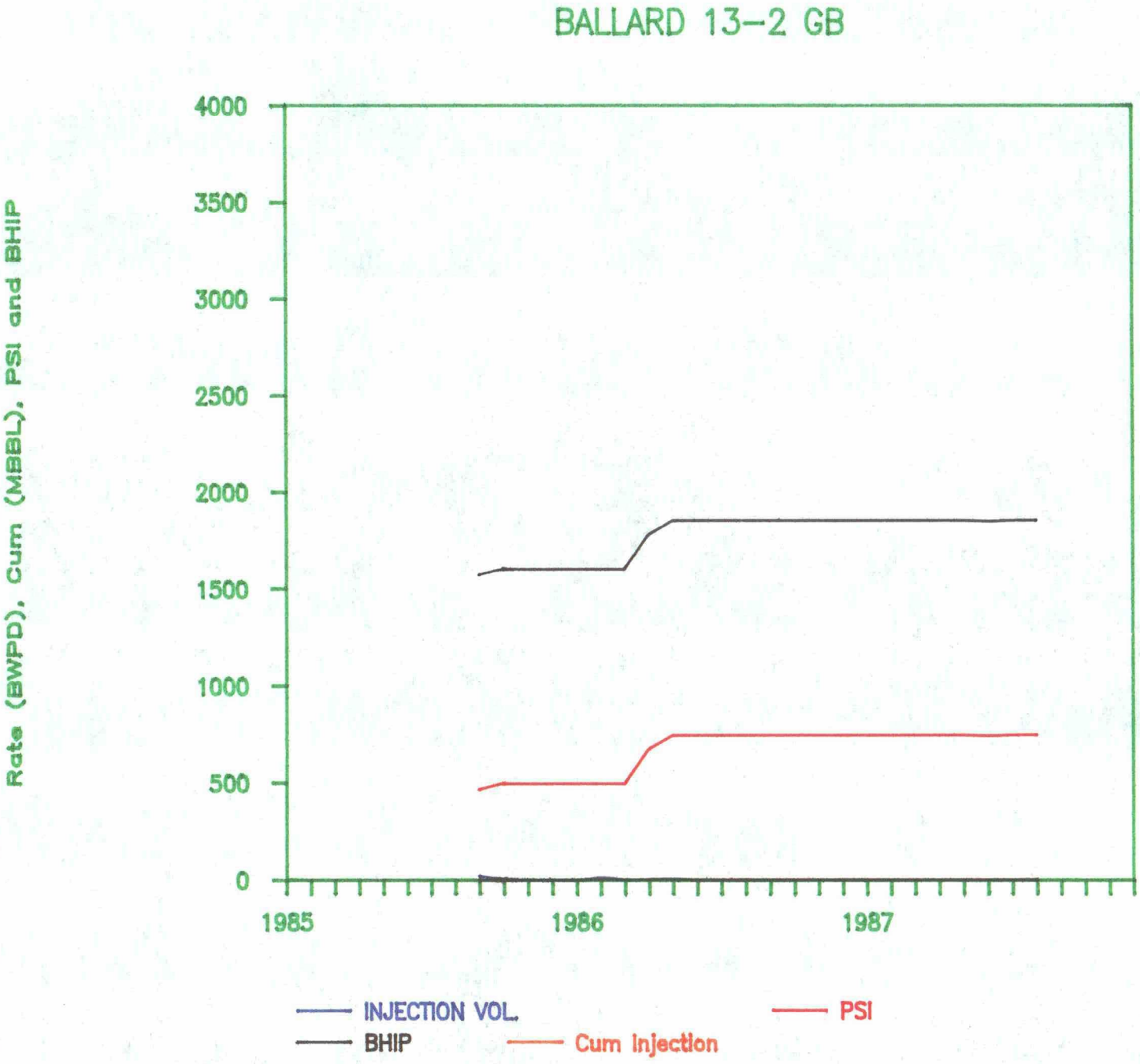
PSI
BHIP
Cum Injection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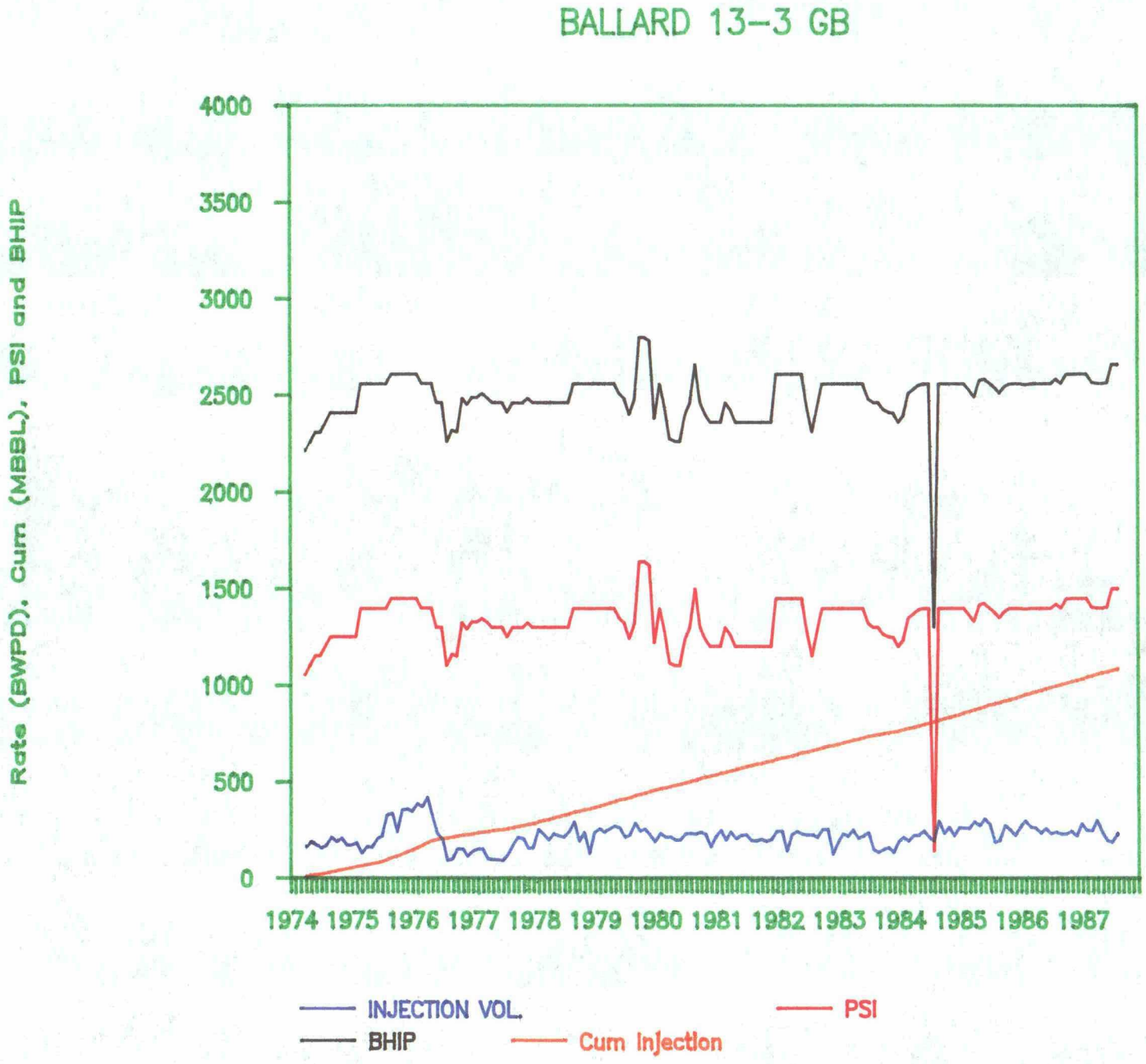
1986
1987
INJECTION VOL.
BHIP
PSI
Cum Injection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Rate (BWPD), Cum (MBBL), PSI and BHIP
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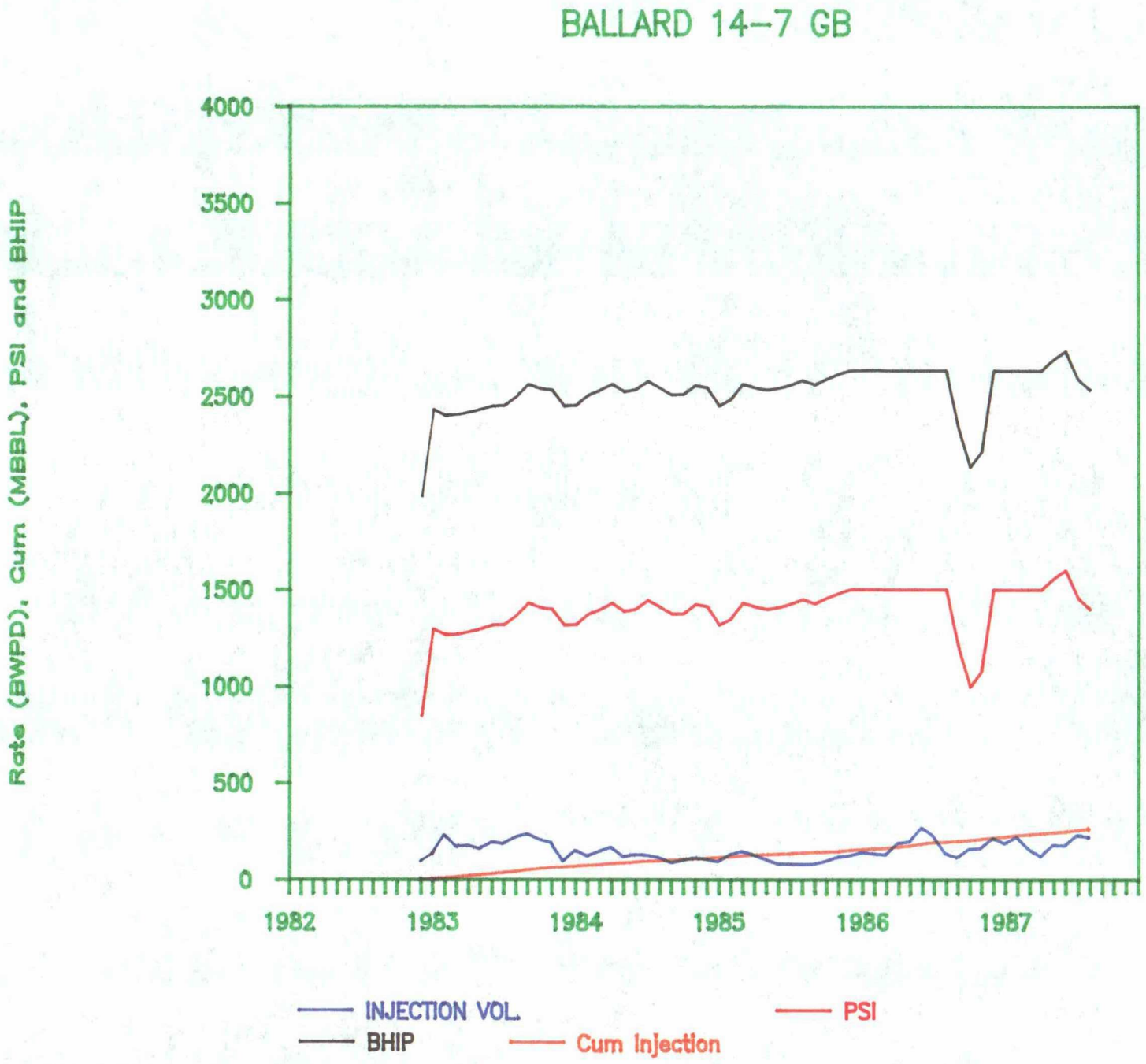
PSI
BHIP
Cum Injection


BALLARD 14-7 GB
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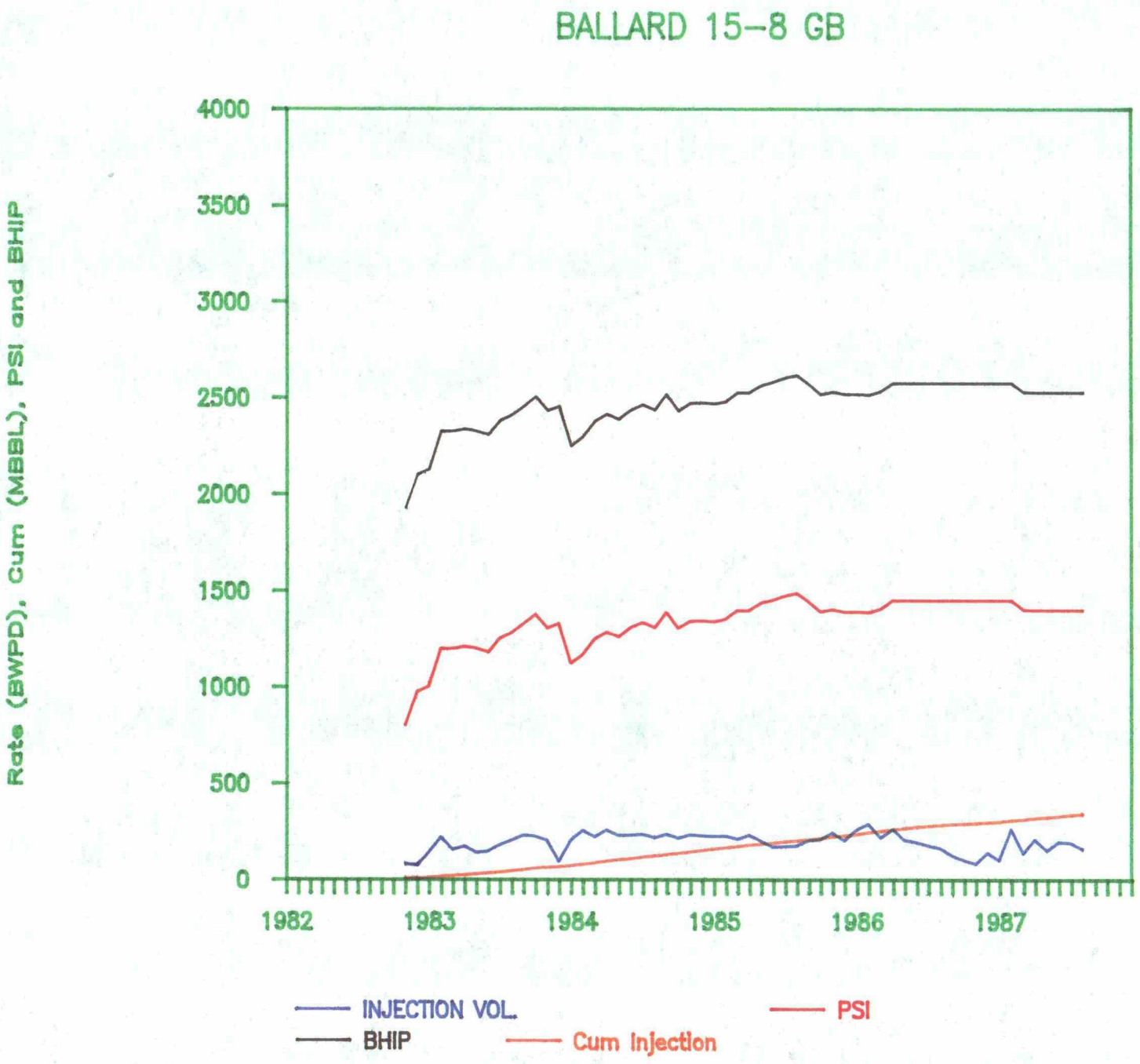
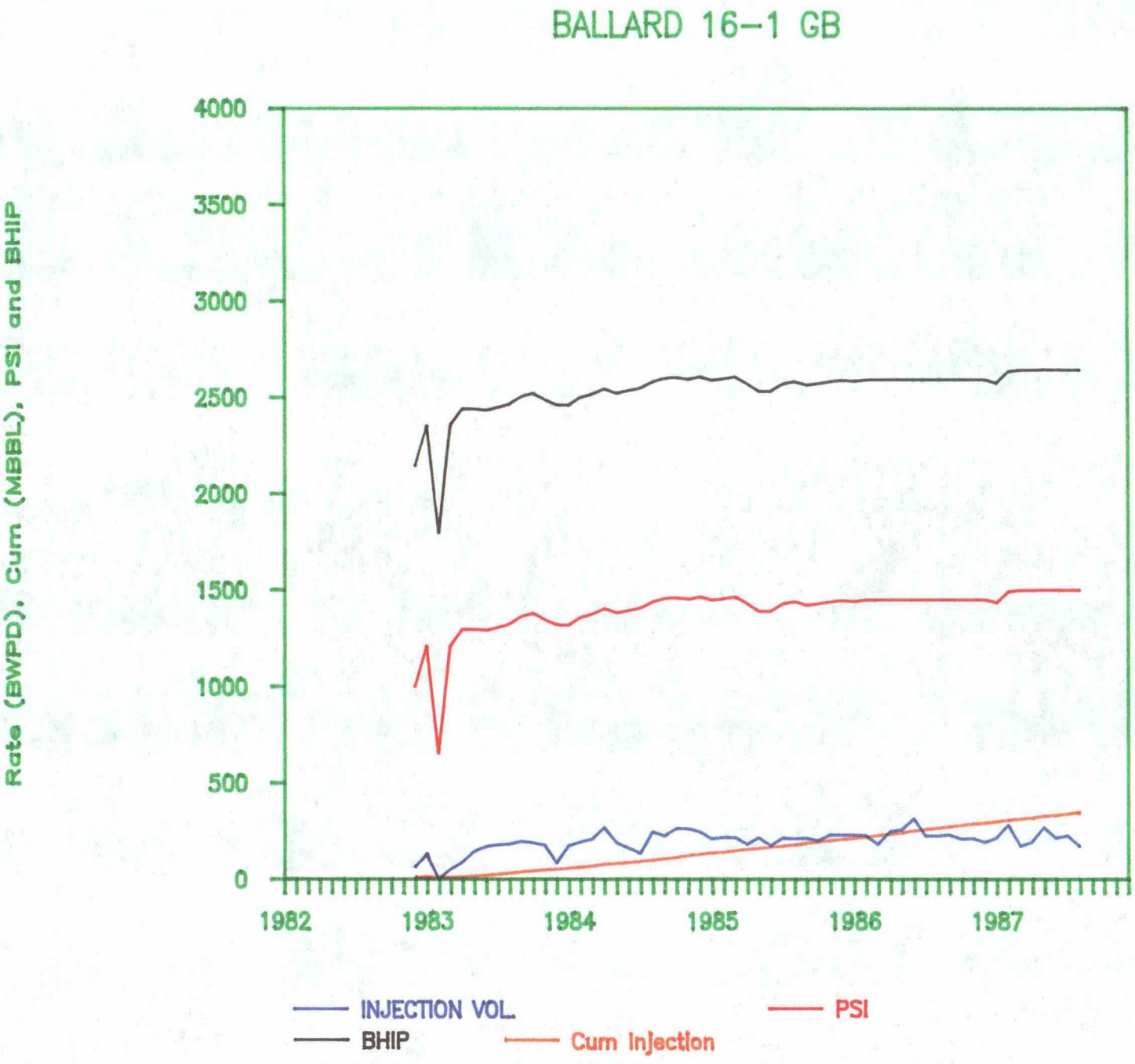
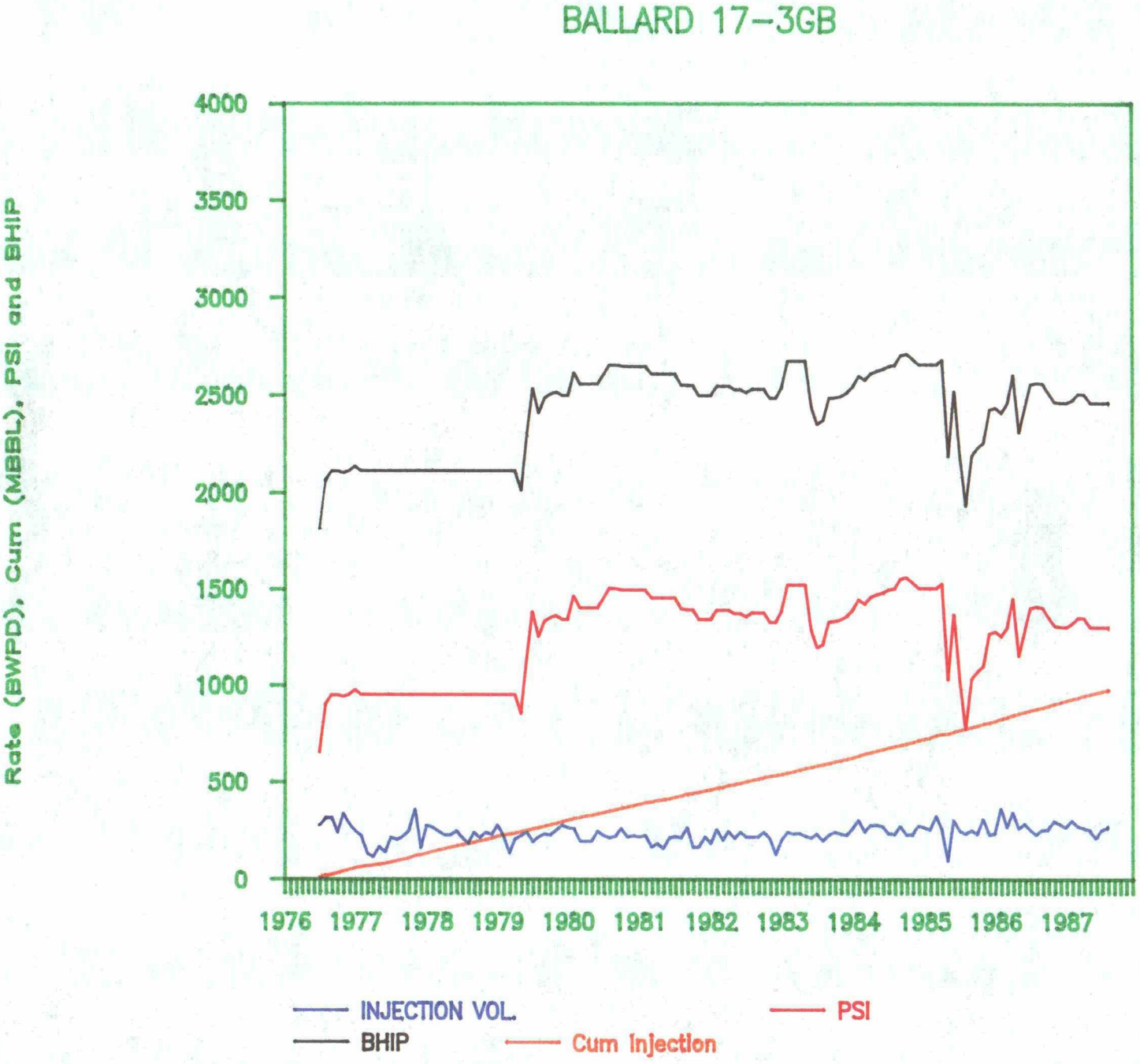
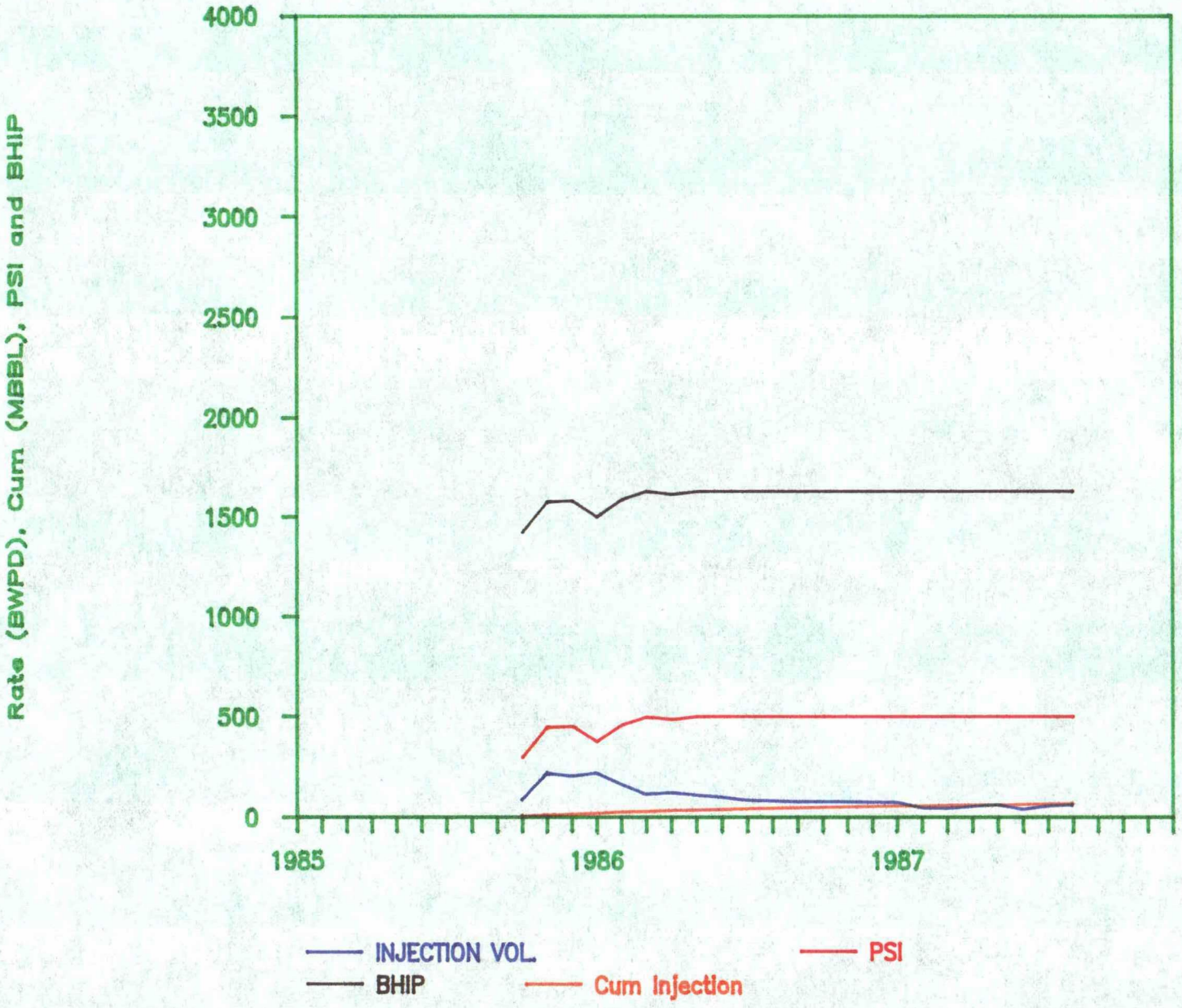
1986
1987
INJECTION VOL.
PSI
BHIP
Cum Injection


BALLARD 15-8 GB
Rate (BWPD), Cum (MBBL), PSI and BHIP
4000
3500
3000
2500
2000
1500
1000
500
0
1982
1983
1984
1985
1986
1987
INJECTION VOL.
PSI
BHIP
Cum Injection

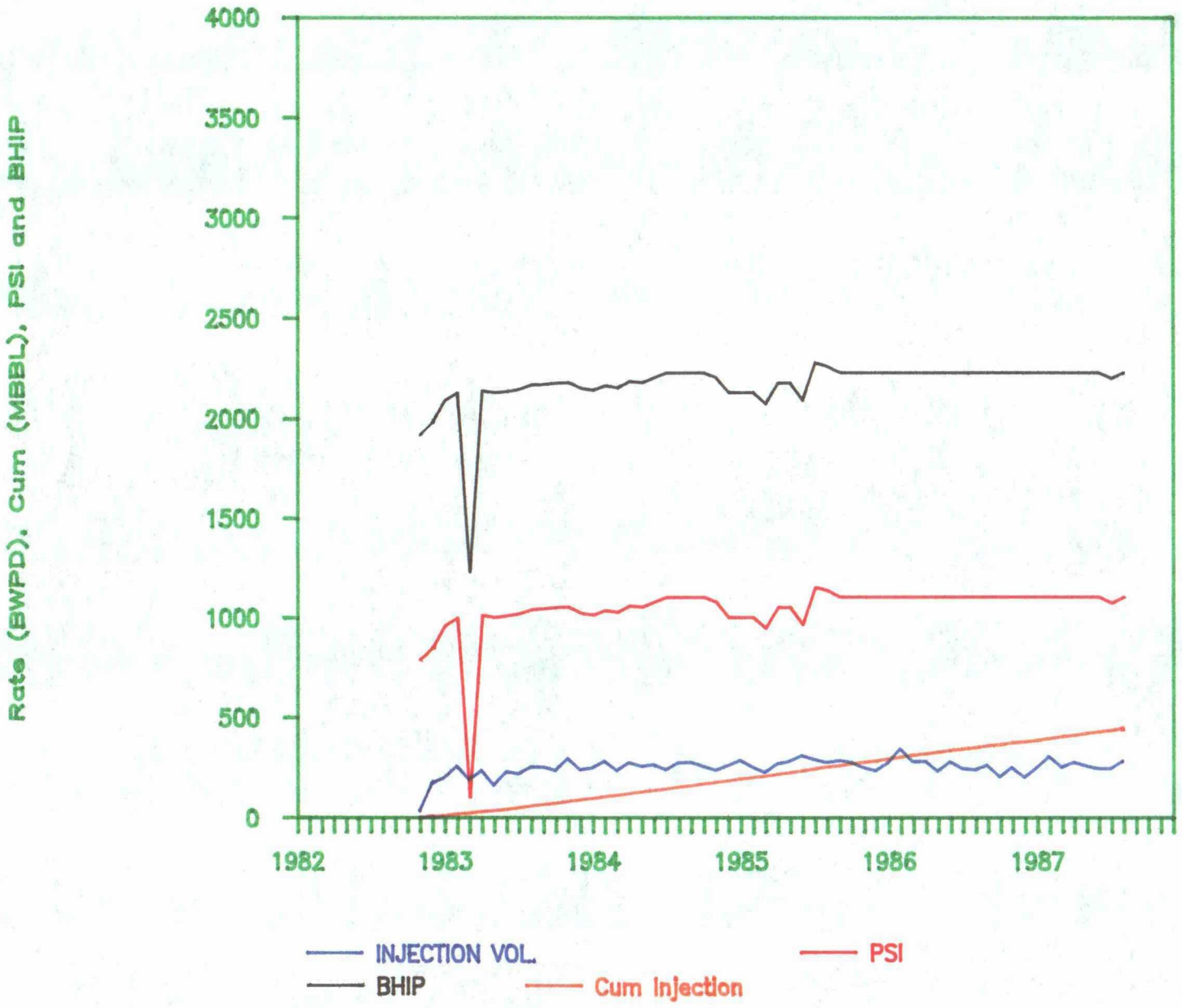

BALLARD 16-1 GB
Rate (BWPD), Cum (MBBL), PSI and BHIP
4000
3500
3000
2500
2000
1500
1000
500
0
1982
1983
1984
1985
1986
1987
INJECTION VOL.
PSI
BHIP
Cum Injection

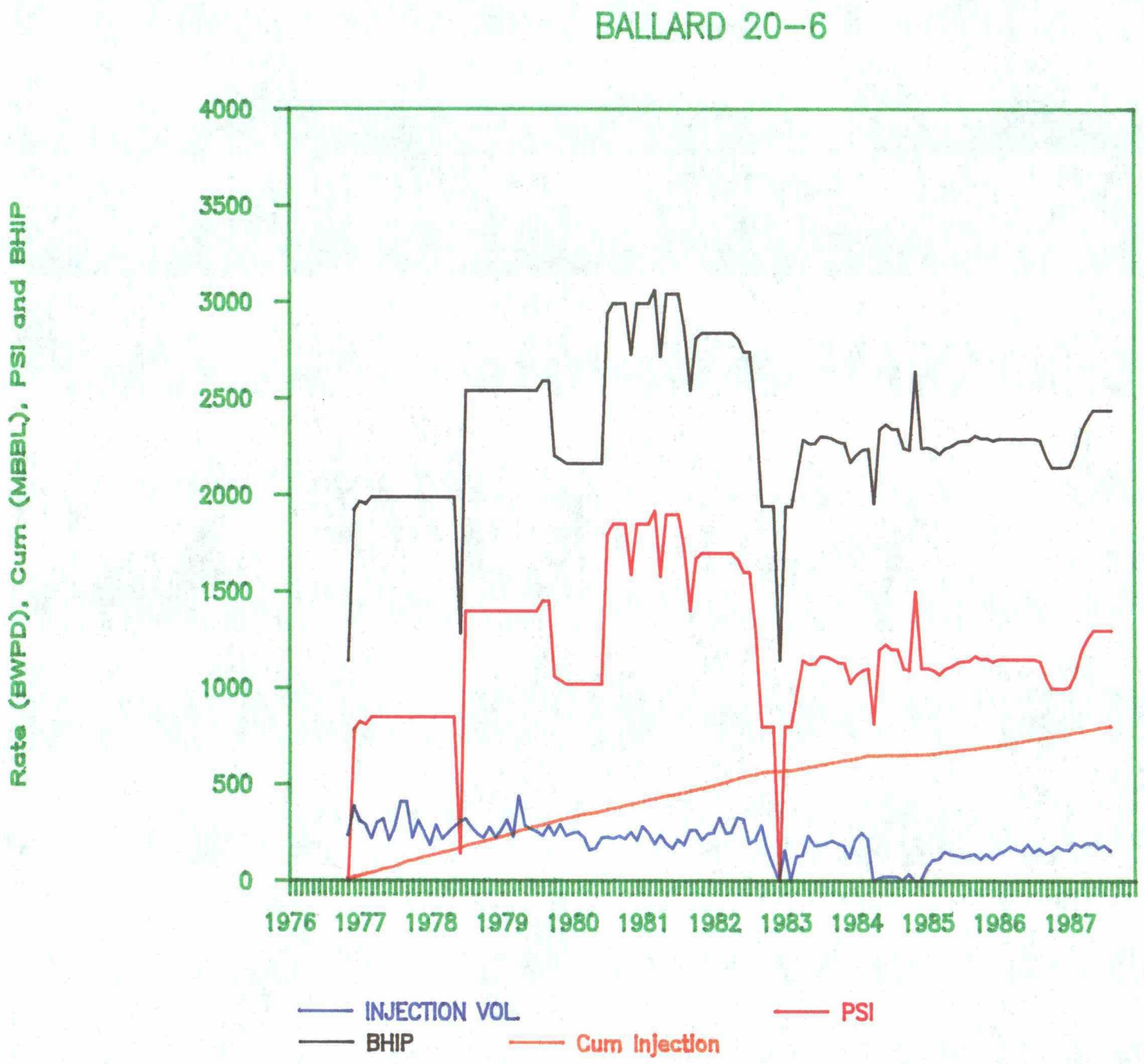

BALLARD 17-3GB
Rate (BWPD), Cum (MBBL), PSI and BHIP
4000
3500
3000
2500
2000
1500
1000
500
0
1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987
INJECTION VOL.
PSI
BHIP
Cum Injection

BALLARD 11-1 GB

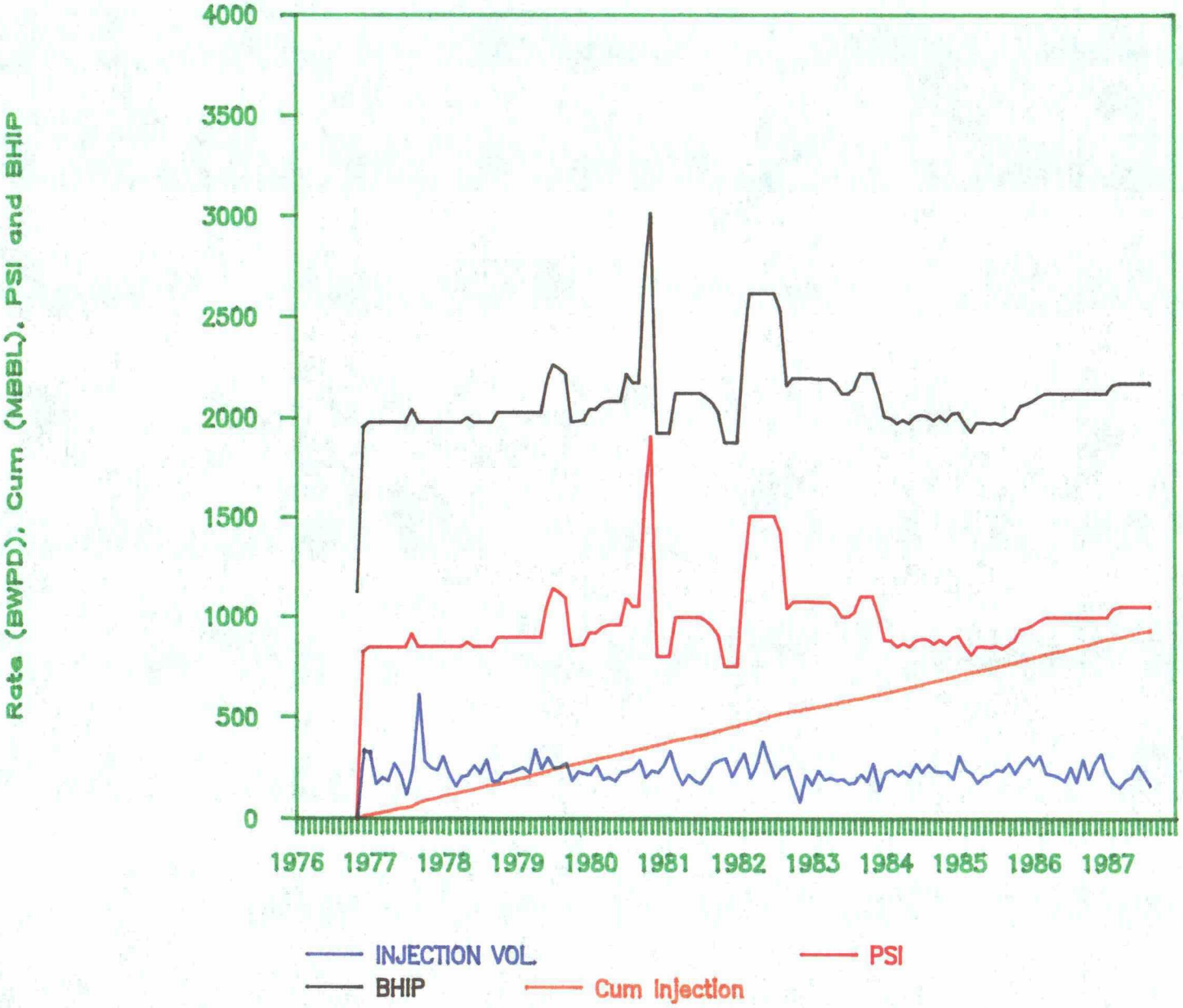


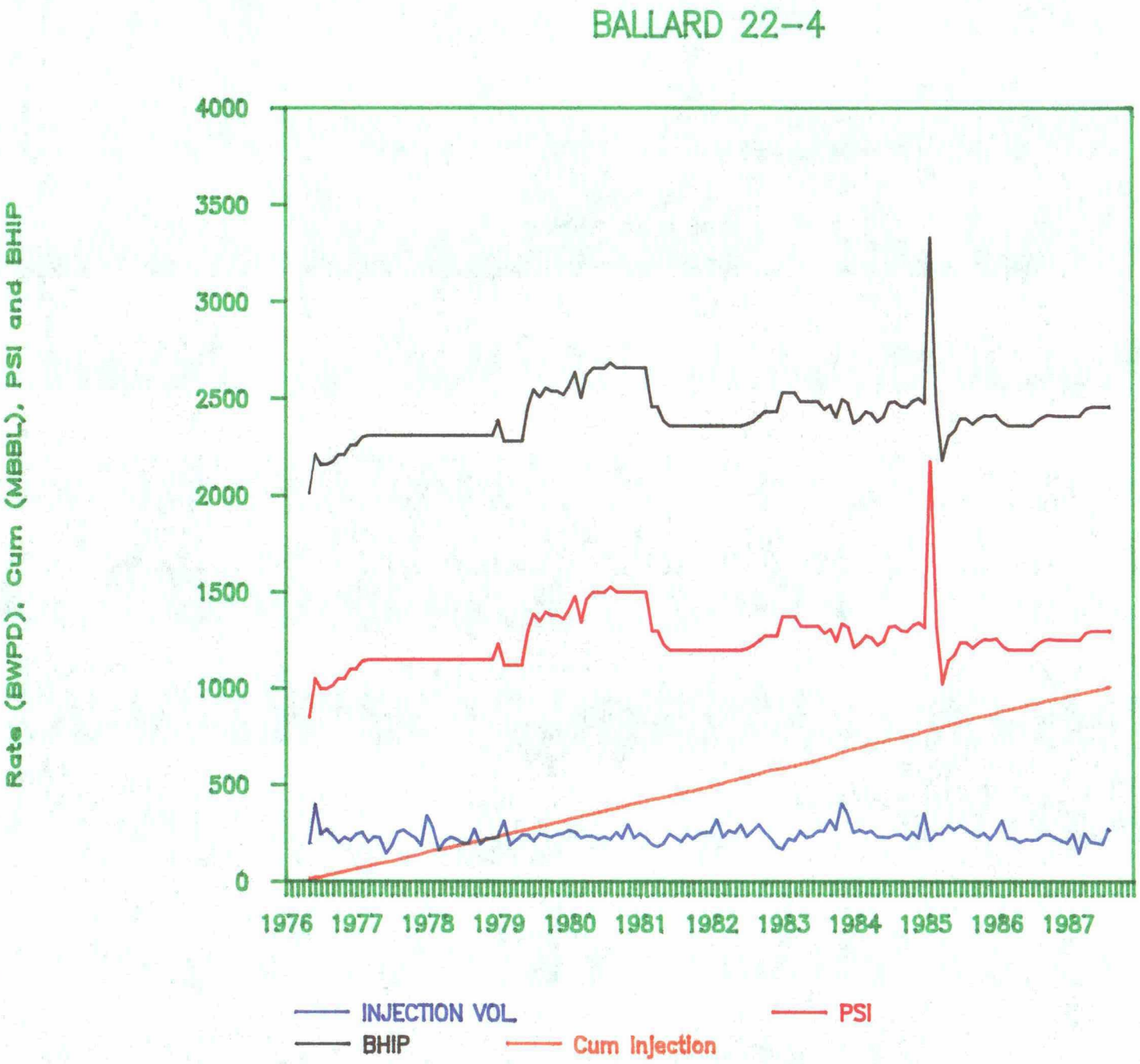
BALLARD 19-3

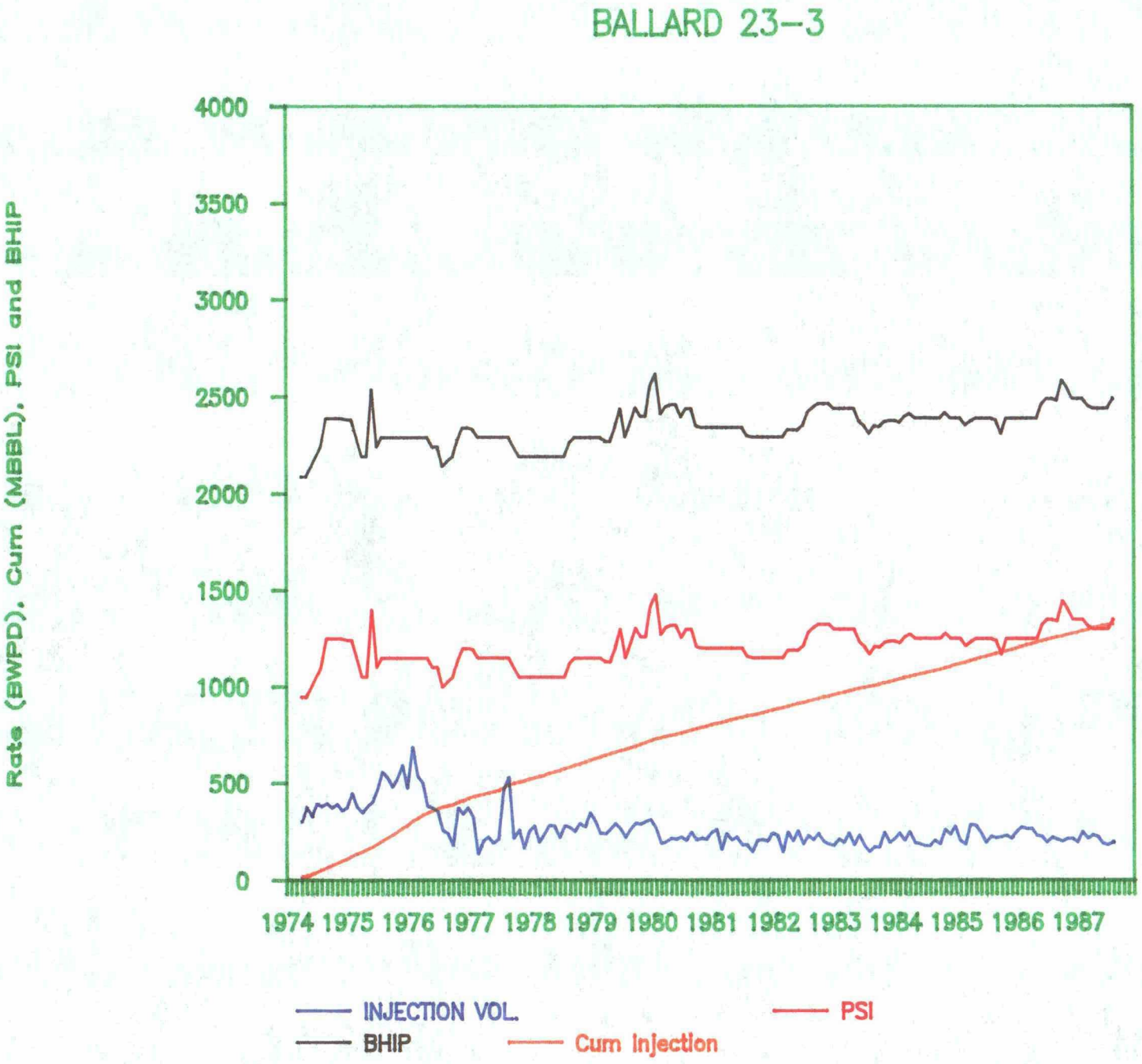

Rate (BWPD), Cum (MBBL), PSI and BHIP
4000
3500
3000
2500
2000
1500
1000
500
0
1982
1983
1984
1985
1986
1987
INJECTION VOL.
PSI
BHIP
Cum Injection


BALLARD 20-6
Rate (BWPD), Cum (MBBL), PSI and BHIP
4000
3500
3000
2500
2000
1500
1000
500
0
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
INJECTION VOL.
PSI
BHIP
Cum Injection

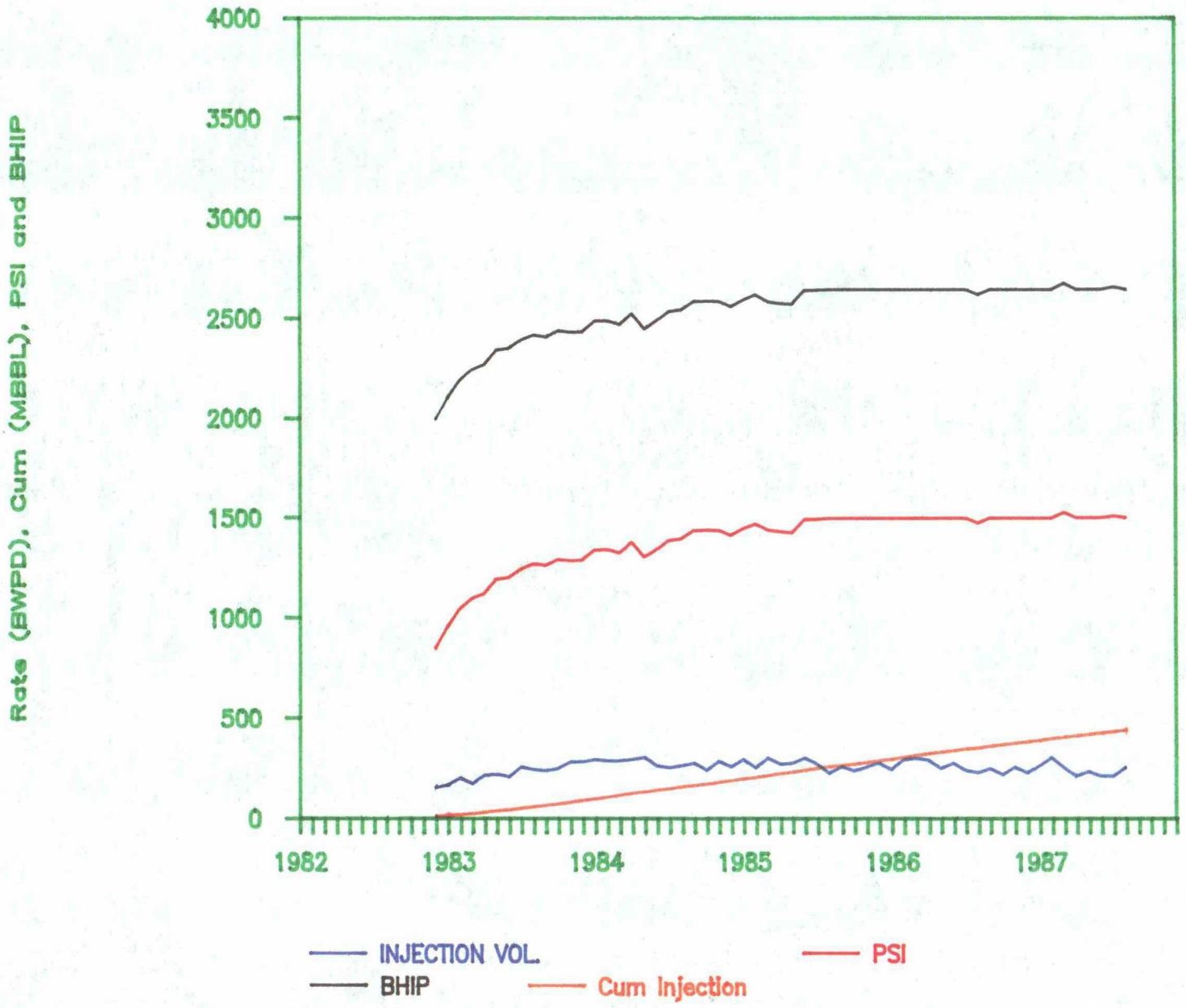
BALLARD 21-2

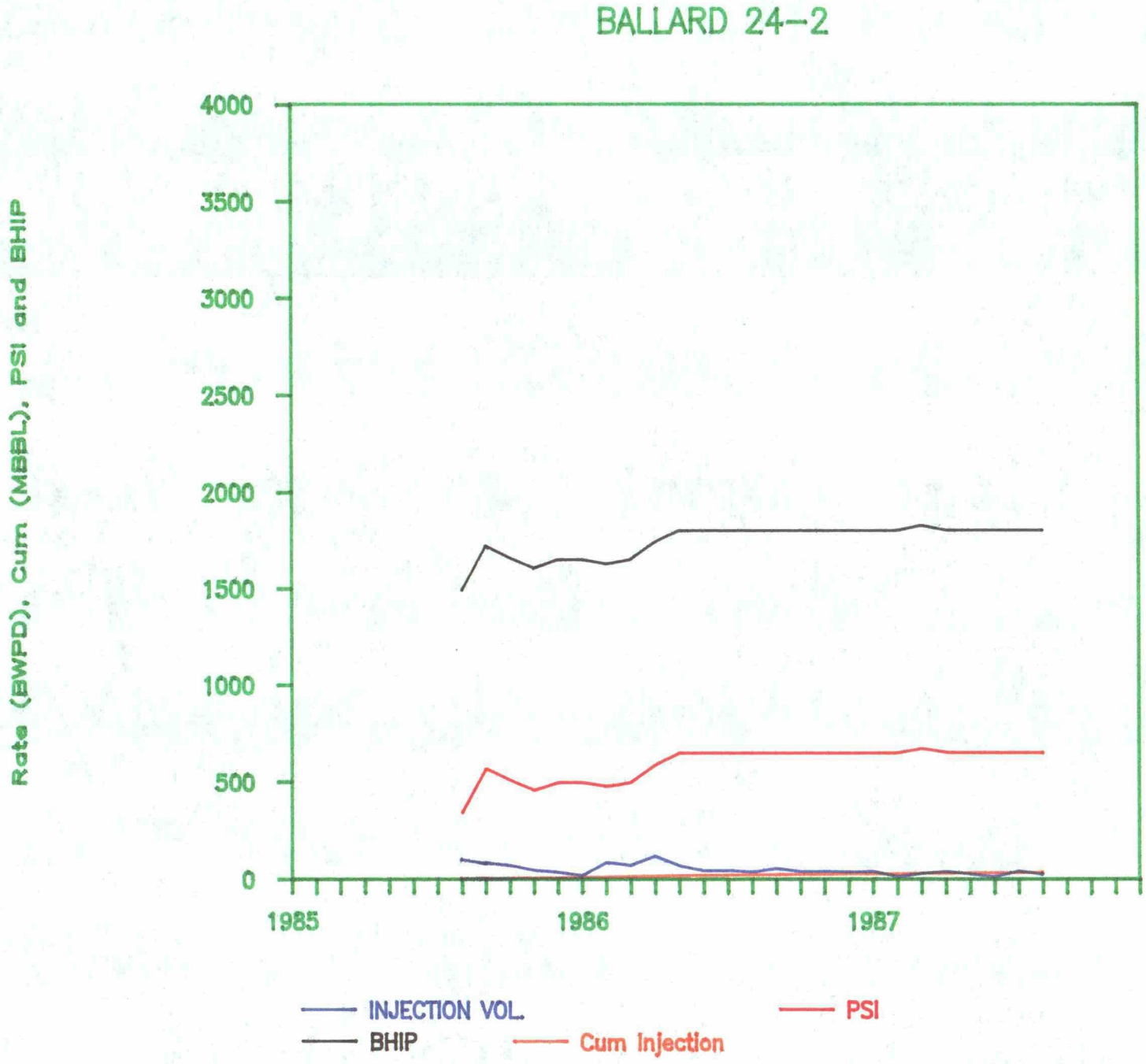

Rate (BWPD), Cum (MBBL), PSI and BHIP
4000
3500
3000
2500
2000
1500
1000
500
0
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
INJECTION VOL.
PSI
BHIP
Cum Injection

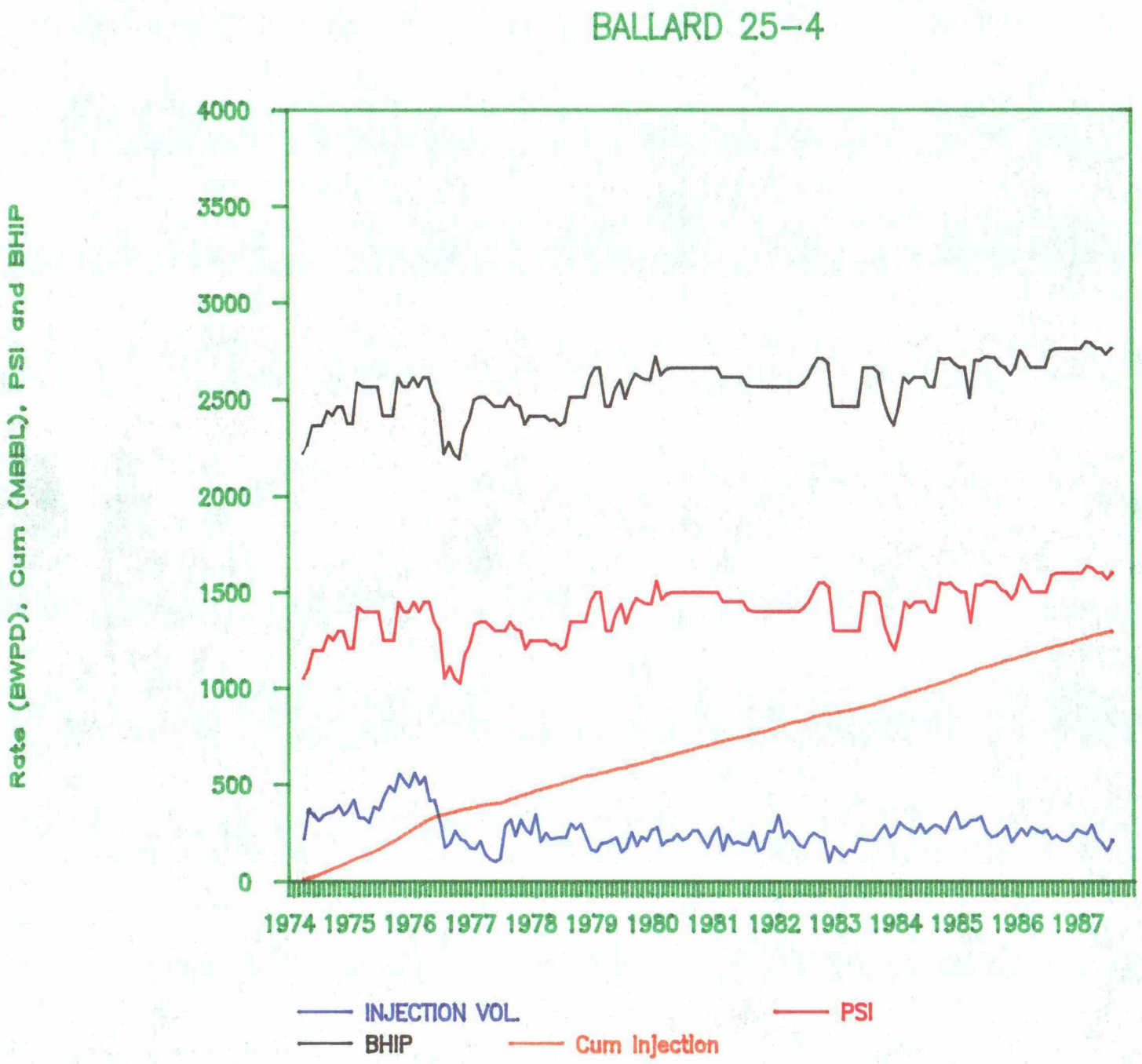

BALLARD 22-4
Rate (BWPD), Cum (MBBL), PSI and BHIP
4000
3500
3000
2500
2000
1500
1000
500
0
1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987
INJECTION VOL.
PSI
BHIP
Cum Injection

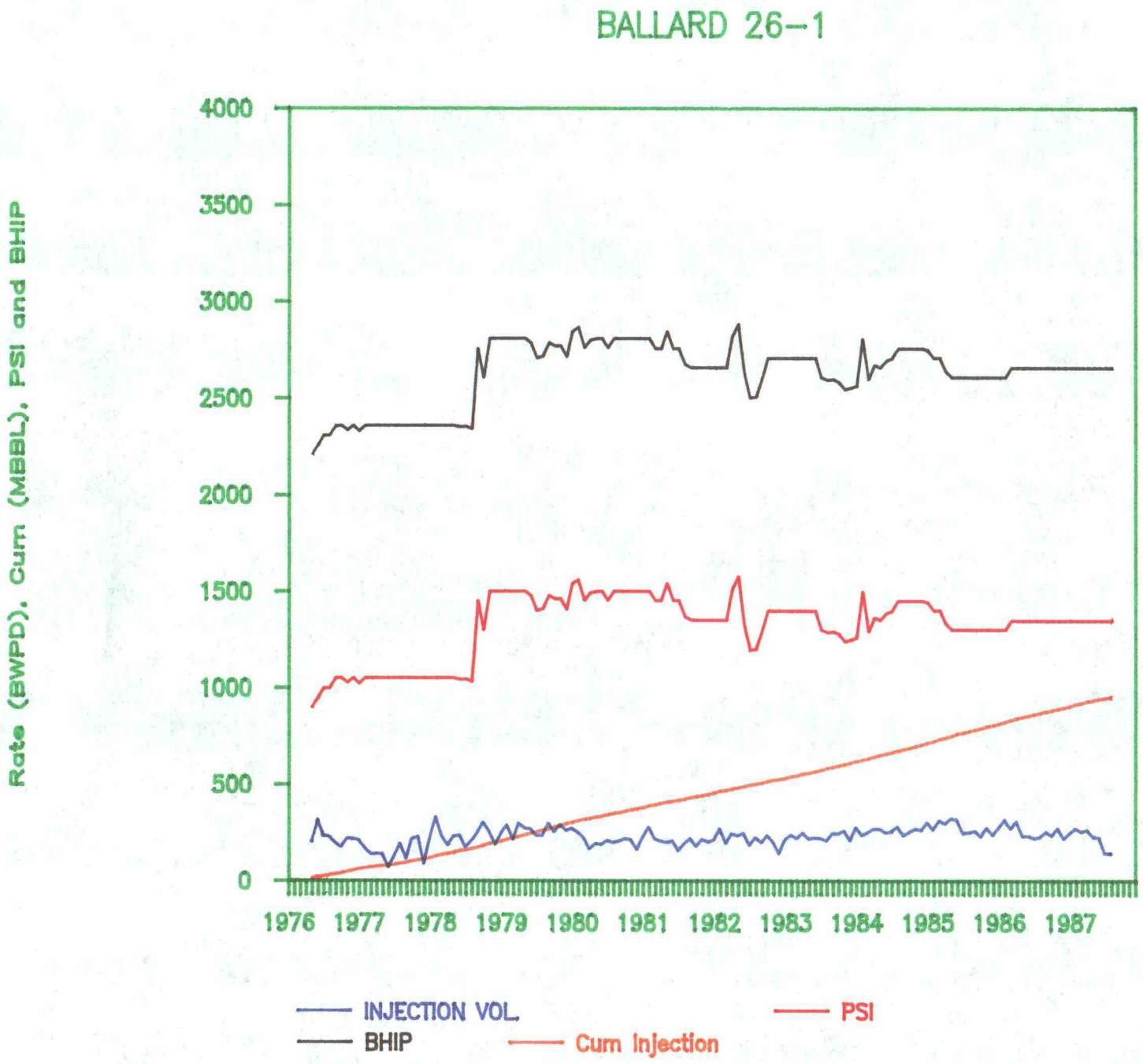

BALLARD 23-3
Rate (BWPD), Cum (MBBL), PSI and BHIP
4000
3500
3000
2500
2000
1500
1000
500
0
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987
INJECTION VOL.
PSI
BHIP
Cum Injection

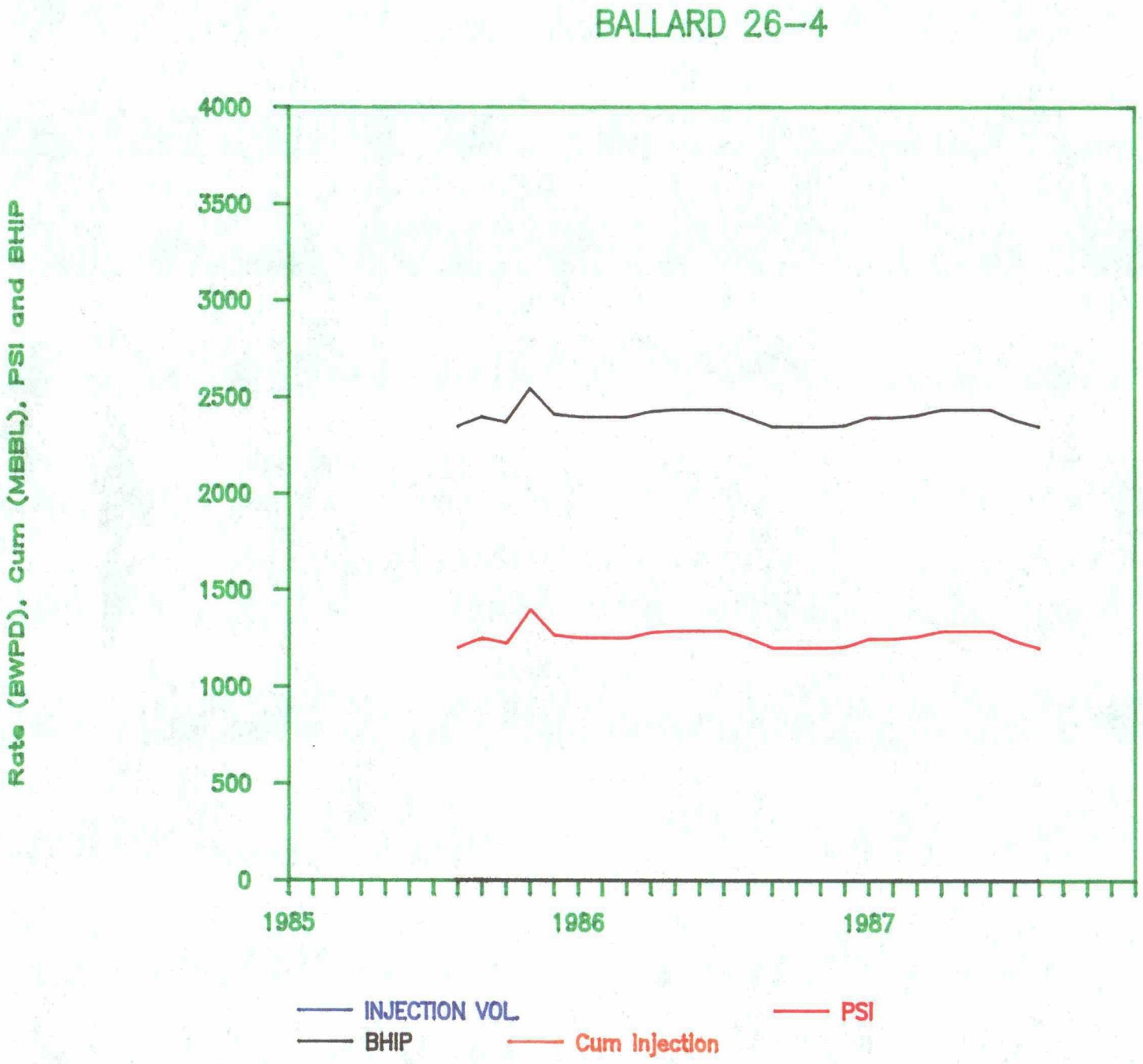
BALLARD 23-4


Rate (BWPD), Cum (MBBL), PSI and BHIP
4000
3500
3000
2500
2000
1500
1000
500
0
1982
1983
1984
1985
1986
1987
INJECTION VOL.
PSI
BHIP
Cum Injection


BALLARD 24--2
Rate (BWPD), Cum (MBBL), PSI and BHIP
4000
3500
3000
2500
2000
1500
1000
500
0
1985
1986
1987
INJECTION VOL.
PSI
BHIP
Cum Injection


BALLARD 25-4
Rate (BWPD), Cum (MBBL), PSI and BHIP
4000
3500
3000
2500
2000
1500
1000
500
0
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987
INJECTION VOL.
PSI
BHIP
Cum Injection


BALLARD 26-1
Rate (BWPD), Cum (MBBL), PSI and BHIP
4000
3500
3000
2500
2000
1500
1000
500
0
1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987
INJECTION VOL.
PSI
BHIP
Cum Injection


BALLARD 26-4
Rate (BWPD), Cum (MBBL), PSI and BHIP
4000
3500
3000
2500
2000
1500
1000
500
0
1985
1986
1987
INJECTION VOL.
PSI
BHIP
Cum Injection

EDDY COUNTY, NEW MEXICO INJECTION SUMMARY
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********** ARTESIA QUEEN GRAYBURG SAN ANDRES **********
FIELD SUMMARY

	PROJECT NAME	DEPTH	AVG.PSI	GRADIANT	
1	ARTESIA FLOOD AREA #1		450.0		
2	ARTESIA FLOOD AREA #3	2014.0	800.0	0.40	*
3	CIM ARTESIA FLOOD	2005.0	300.0	0.15	
4	ARTESIA UNIT FLOOD	2345.0	1425.0	0.61	*
5	ARTESIA DUNN A & B FLOOD	2512.0	1361.0	0.54	*
6	DEPCO CAMP ARTESIA WATERFLOOD	2471.0	148.0	0.06	
7	STATE 648 FLOOD	2016.0	620.0	0.31	*
8	WEST ARTESIA GB UNIT FLOOD	2099.0	900.0	0.43	*
9	NORTHWEST ARTESIA UNIT	1926.0	1200.0	0.62	*
10	PENROC PHILLIPS FLOOD	2377.0	800.0	0.34	*
11	STATE 14 FLOOD	2485.0	1133.0	0.46	*
12	ARTESIA NICHOLS BUFFER ZONE	2413.0	1100.0	0.46	*
13	SHENADOAH ARTESIA 7 WATERFLOOD	2464.0	900.0	0.37	*
14	ARTESIA METEX UNIT FLOOD	1992.0	1274.0	0.64	*
15	YATES ARTESIA DUNN FLOOD	2445.0	1715.0	0.70	*
	FIELD AVERAGE	2254.6	941.7	0.42	*

EDDY COUNTY, NEW MEXICO INJECTION SUMMARY
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********** ARTESIA QUEEN GRAYBURG SAN ANDRES **********

operator: ARCH PETROLEUM avg. depth: avg. PSI 450 grad.
project : ARTESIA FLOOD AREA #1

Well #	Location	Avg. PSI
7N	4-18-28	450

operator: ARCH PETROLEUM avg. depth: 2014 avg. PSI 800 grad. 0.40
project : ARTESIA FLOOD AREA #3

Well #	Location	Avg. PSI
6D	32-18-28	
7D	32-18-28	
338I	29-18-28	
341N	29-18-28	800
349N	29-18-28	
355A	32-18-28	800
368G	32-18-28	800

operator: COLLIER & COLLIER avg. depth: 2005 avg. PSI 300 grad. 0.15
project : CIM ARTESIA FLOOD

Well #	Location	Avg. PSI
1O	17-18-28	300
6O	17-18-28	300

operator: DEPCO avg. depth: 2345 avg. PSI 1425 grad. 0.61
project : ARTESIA UNIT FLOOD

Well #	Location	Avg. PSI
7D	36-17-28	1450
8A	35-17-28	1700
14G	35-17-28	850
16E	36-17-28	1600
20I	35-17-28	1600
22K	35-17-28	1550
26O	34-17-28	1250
28M	35-17-28	1550
32M	36-17-28	1600
36D	02-18-28	1250
44E	03-18-28	1550
47G	03-18-28	
49E	02-18-28	1550
59E	03-18-28	1250
61O	03-18-28	1350
63M	02-18-28	1550
65G	03-18-28	1150
67K	03-18-28	

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********** ARTESIA QUEEN GRAYBURG SAN ANDRES **********

operator: DEPCO avg. depth: 2512 avg. PSI 1361 grad. 0.54
project : ARTESIA DUNN A & B FLOOD

Well #	Location	Avg. PSI
1G	12-18-28	1480
5G	11-18-28	1520
6M	12-18-28	1500
8D	12-18-28	1040
13A	10-18-28	1540
15E	10-18-28	1400
17C	10-18-28	1250
18C	11-18-28	1540
19G	10-18-28	1560
24I	10-18-28	1540
27I	12-18-28	500
29G	11-18-28	1360
30K	11-18-28	1460

operator: DEPCO avg. depth: 2471 avg. PSI 148 grad. 0.06
project : DEPCO CAMP ARTESIA WATERFLOOD

Well #	Location	Avg. PSI
84L	27-18-28	
89K	27-18-28	170
92N	27-18-28	160
93C	27-18-28	160
100A	27-18-28	
207I	33-18-28	160
217E	34-18-28	160
205A	33-18-28	80

EDDY COUNTY, NEW MEXICO INJECTION SUMMARY
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********** ARTESIA QUEEN GRAYBURG SAN ANDRES **********

operator: DEPCO avg. depth: 2016 avg. PSI 620 grad.
project : STATE 648 FLOOD

Well #	Location	Avg. PSI
64C	10-19-28	620
73B	10-19-28	
174K	10-19-28	

operator: DEPCO avg. depth: 2099 avg. PSI 900 grad. 0.43
project : WEST ARTESIA GB UNIT FLOOD

Well #	Location	Avg. PSI
4E	8-18-28	900
11K	8-18-28	900
12L	8-18-28	900
6G	8-18-28	900
13I	7-18-28	900
1C	8-18-28	900
18D	17-18-28	900

operator: KERSEY & COMPANY avg. depth: 1926 avg. PSI 1200 grad. 0.62
project : NORTHWEST ARTESIA UNIT

Well #	Location	Avg. PSI
3B	32-17-28	1200
4H	31-17-28	1200
6H	32-17-28	1200
9L	32-17-28	1200
11P	31-17-28	1200
12M	32-17-28	1200
13N	32-17-28	1200
15P	32-17-28	1200

operator: MARBOB avg. depth: 2377 avg. PSI 800 grad. 0.34
project : PENROC PHILLIPS FLOOD

Well #	Location	Avg. PSI
4I	27-17-28	800

operator: MURPHY OPER. CORP. avg. depth: 2485 avg. PSI 1133 grad. 0.46
project : STATE 14 FLOOD

Well #	Location	Avg. PSI
3F	14-18-28	1133

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********** ARTESIA QUEEN GRAYBURG SAN ANDRES **********

operator: MURPHY OPER. CORP. avg. depth: 2413 avg. PSI 1100 grad. 0.46
project : ARTESIA NICHOLS BUFFER ZONE

Well #	Location	Avg. PSI
3E	21-18-28	1100

operator: READ & BATES PETROLEUM avg. depth: 2464 avg. PSI 900 grad. 0.37
project : SHENADOAH ARTESIA 7 WATERFLOOD

Well #	Location	Avg. PSI
2I	30-17-29	900
3N	30-17-29	900
4F	30-17-29	
1I	25-17-28	900
2G	36-17-28	900
3O	25-17-28	
1D	31-17-29	900
5E	31-17-29	900
7B	31-17-29	

operator: YATES DRILLING avg. depth: 1992 avg. PSI 1274 grad. 0.64
project : ARTESIA METEX UNIT FLOOD

Well #	Location	Avg. PSI
6K	24-18-27	1378
8I	24-18-27	1375
12K	19-18-28	1128
16H	24-18-27	1325
20P	24-18-27	1361
28C	25-18-27	1346
32C	30-18-28	1310
35H	26-18-27	1100
40H	25-18-27	1321
41E	30-18-28	1263
45L	25-18-27	1343
49K	30-18-28	1035
52M	25-18-27	1220
54O	25-18-27	1145
56A	35-18-27	1392
58C	36-18-27	1342

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********** ARTESIA QUEEN GRAYBURG SAN ANDRES **********

operator: YATES PETROLEUM avg. depth: 2445 avg. PSI 1715 grad. 0.70
project : YATES ARTESIA DUNN FLOOD

Well #	Location	Avg. PSI
20	11-18-28	2130
3M	11-18-28	1300

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********** GRAYBURG JACKSON 7 RVRS QN GB SA **********
FIELD SUMMARY

	PROJECT NAME	DEPTH	AVG PSI	GRADIANT	
1	LOCO HILLS A FEDERAL	2638.0	1884.8	0.71	*
2	LOCO HILLS B FEDERAL	2443.0	1734.7	0.71	*
3	PHILLIPS BURCH-KEELY LOOP WATERFLOOD	2649.0	718.7	0.27	*
4	PARK F G-J FLOOD		1850.0		
5	G-J PREMIER SAND UNIT FLOOD	3226.0	825.0	0.26	*
6	AMBASSADOR GB-JACKSON UNIT FLOOD	2699.0	1280.0	0.47	*
7	OLD LOCO UNIT G-J FLOOD	2466.0	1500.0	0.61	*
8	SHENANDOAH G-J PARKE WATERFLOOD	2847.0	1800.0	0.63	*
9	ROBINSON-JACKSON G-J FLOOD	2999.0	1515.0	0.51	*
10	SDX METEX WATERFLOOD	2517.0	600.0	0.24	*
11	SDX KEELY G-J WF DODD A BURCH C	2407.0	600.0	0.25	*
12	G-J WEST COOP UNIT FLOOD	2647.0	600.0	0.23	*
13	QUEEN SAND UNIT G-J FLOOD	2071.0	1000.0	0.48	*
14	WINDFOHR GB-JACKSON WATERFLOOD	3185.0	1454.4	0.46	*
15	G-J WBA FLOOD	1980.0	800.3	0.40	*
16	GIESLER B-11 SQUARE LAKE FLOOD	2934.0	1546.0	0.53	*
	FIELD AVERAGE	2647.2	1231.8	0.53	

)Y COUNTY, NEW MEXICO INJECTION SUMMARY
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********** GRAYBURG JACKSON 7 RVRS QN GB SA **********

operator:ANADARKO PETROLEUM avg. depth: 2638 avg. PSI 1884.8 grad. 0.71
project :LOCO HILLS A FEDERAL

Well #	Location	Avg. PSI
2N	10-17-30	2064
5L	10-17-30	1895
6D	15-17-30	1748
7F	15-17-30	1832

operator:ANADARKO PETROLEUM avg. depth: 2443 avg. PSI 1734.7 grad. 0.71
project :LOCO HILLS B FEDERAL

Well #	Location	Avg. PSI
1P	9-17-30	1734
5J	9-17-30	1652
7N	9-17-30	1818

erator:PHILLIPS avg. depth: 2469 avg. PSI 718.7 grad. 0.29
oject :PHILLIPS BURCH-KEELY LOOP WATERFLOOD

Well #	Location	Avg. PSI
6M	19-17-30	700
7G	23-17-29	910
10C	30-17-30	
19A	23-17-29	425
1E	23-17-29	930
2F	23-17-29	980
7I	23-17-29	890
8P	23-17-29	980
17C	23-17-29	
5I	24-17-29	900
7K	24-17-29	100
9E	24-17-29	440
15G	24-17-29	390
4A	26-17-29	940
6C	25-17-29	100
7G	26-17-29	180
10I	26-17-29	340
11O	26-17-29	1000
13H	26-17-29	980
24M	24-17-29	
5O	24-17-29	80
8A	25-17-29	
9F	26-17-29	910
10E	25-17-29	800
12G	25-17-29	900
14E	26-17-29	550
16K	26-17-29	980

Y COUNTY, NEW MEXICO INJECTION SUMMARY
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********** GRAYBURG JACKSON 7 RVRS QN GB SA **********

18K	25-17-29	1000
21M	26-17-29	1000
23M	25-17-29	1000
25O	25-17-29	1000

operator:PHILLIPS avg. depth: avg. PSI 1850 grad.
project :PARK F G-J FLOOD

Well #	Location	Avg. PSI
2J	10-17-29	1850

operator:PHILLIPS avg. depth: 3226 avg. PSI 825 grad. 0.26
project :G-J PREMIER SAND UNIT FLOOD

Well #	Location	Avg. PSI
1D	34-17-30	850
3N	27-17-30	800
1O	28-17-30	

operator:GERNERAL OPER CO avg. depth: 2699 avg. PSI 1280 grad. 0.47
project :AMBASSADOR GB-JACKSON UNIT FLOOD

Well #	Location	Avg. PSI
8L	26-17-30	
3L	23-17-30	
1N	22-17-30	1180
3B	27-17-30	1460
1M	26-17-30	
2P	22-17-30	1200
3N	23-17-30	
2H	26-17-30	
1P	23-17-30	
1B	26-17-30	
2D	26-17-30	
1H	27-17-30	
1F	26-17-30	
1J	26-17-30	
4P	26-17-30	
5L	25-17-30	
8N	25-17-30	

operator:MARBOB avg. depth: 2466 avg. PSI 1500 grad. 0.61
project :OLD LOCO UNIT G-J FLOOD

Well #	Location	Avg. PSI
1A	32-17-29	1500
3C	32-17-29	1500

)Y COUNTY, NEW MEXICO INJECTION SUMMARY
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********** GRAYBURG JACKSON 7 RVRS QN GB SA **********

5E	32-17-29	1500
9I	32-17-29	1500
13M	32-17-29	
15O	32-17-29	1500

operator:SOUTHLAND ROYALTY avg. depth: 2847 avg. PSI 1800 grad. 0.63
project :SHENANDOAH G-J PARKE WATERFLOOD

Well #	Location	Avg. PSI
1J	15-17-30	2000
1A	22-17-30	
6E	22-17-30	2000
8N	15-17-30	2000
4H	15-17-30	2000
6G	15-17-30	
7A	15-17-30	
3P	15-17-30	800
1M	15-17-30	
2K	15-17-30	2000

operator:SOUTHLAND ROYALTY avg. depth: 2999 avg. PSI 1515 grad. 0.51
project :ROBINSON-JACKSON G-J FLOOD

Well #	Location	Avg. PSI
4G	34-17-29	1200
7I	27-17-29	1200
9C	27-17-29	1650
11E	35-17-29	1900
15G	27-17-29	1350
16I	35-17-29	1675
17K	35-17-29	1375
4A	35-17-29	
6G	35-17-29	1900
8K	27-17-29	
11C	35-17-29	1450
19I	34-17-29	1450

operator:MARBOB avg. depth: 2517 avg. PSI 600 grad. 0.24
project :SDX METEX WATERFLOOD

Well #	Location	Avg. PSI
4J	11-17-29	600
5P	11-17-29	600
2H	14-17-29	
4B	14-17-29	
7F	14-17-29	
8D	14-17-29	600
16B	15-17-29	600

)Y COUNTY, NEW MEXICO INJECTION SUMMARY
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********** GRAYBURG JACKSON 7 RVRS QN GB SA **********

20P	10-17-29	600
22J	14-17-29	
27L	11-17-29	
32F	11-17-29	

operator:MARBOB avg. depth: 2407 avg. PSI 600 grad. 0.25
project :SDX KEELY G-J WF DODD A BURCH C

Well #	Location	Avg. PSI
10A	22-17-29	
19J	15-17-29	600
20L	14-17-19	600

operator:MARBOB avg. depth: 2647 avg. PSI 600 grad. 0.23
project :G-J WEST COOP UNIT FLOOD

Well #	Location	Avg. PSI
1M	28-17-29	600
3O	28-17-29	600
5M	27-17-29	
7I	28-17-29	
9K	28-17-29	
11E	28-17-29	
15G	28-17-29	600
19C	28-17-29	
29I	21-17-29	
33K	21-17-29	
34L	21-17-29	
47C	21-17-29	
58L	16-17-29	

operator:TEXAS AMERICAN OIL CORP avg. depth: 2071 avg. PSI 1000 grad. 0.48
project :QUEEN SAND UNIT G-J FLOOD

Well #	Location	Avg. PSI
24K	16-17-30	1000
2L	16-17-30	
6G	16-17-30	
18G	16-17-30	1000
8E	16-17-30	
9E	16-17-30	
12F	16-17-30	
17E	16-17-30	1000
2J	16-17-30	
3C	16-17-30	1000

operator:BURNETT OIL CO., INC avg. depth: 3185 avg. PSI 1454.4 grad. 0.46

)Y COUNTY, NEW MEXICO INJECTION SUMMARY
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********** GRAYBURG JACKSON 7 RVRS QN GB SA **********
project :WINDFOHR GB-JACKSON WATERFLOOD

Well #	Location	Avg. PSI
1H	24-17-30	1293
4B	24-17-30	1298
6D	24-17-30	1310
8B	23-17-30	1637
11P	14-17-30	1627
13N	13-17-30	1163
15P	13-17-30	1279
17J	13-17-30	1289
19L	13-17-30	1595
21J	14-17-30	1713
22L	14-17-30	1676
23G	14-17-30	1713
26F	13-17-30	1508
28H	13-17-30	1274
32D	13-17-30	
33N	12-17-30	
35P	12-17-30	1281
37J	12-17-30	1613
40F	24-17-30	1301
45B	13-17-30	1498
46B	12-17-30	1565

operator:BURNETT OIL CO., INC avg. depth: 1980 avg. PSI 800.3 grad. 0.40
project :G-J WBA FLOOD

Well #	Location	Avg. PSI
6D	25-17-30	964
9F	25-17-30	934
11B	25-17-30	525
26N	24-17-30	778

operator:BURNETT OIL CO., INC avg. depth: 2934 avg. PSI 1546.0 grad. 0.53
project :GIESLER B-11 SQUARE LAKE FLOOD

Well #	Location	Avg. PSI
7B	11-17-30	1539
8D	11-17-30	1579
9F	11-17-30	1520

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********** LOCO HILLS QUEEN GRBG SA **********
FIELD SUMMARY

	PROJECT NAME	DEPTH	AVG PSI	GRADIANT	
1	FEDERAL L & M	2949.0	2982.0	1.01	*
2	FEDERAL L & M PREMIER	2879.0	1693.0	0.59	*
3	BALLARD GBSA UNIT	2496.0	1228.6	0.49	*
4	YATES SOUTH LOCO HILLS GB UNIT	2365.0	1136.9	0.48	*
5	WEST LOCO HILLS GB #4 SAND UNIT	2705.0	1350.0	0.50	*
	FIELD AVERAGE	2678.8	1678.1	0.63	

)Y COUNTY, NEW MEXICO INJECTION SUMMARY
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********** LOCO HILLS QUEEN GRBG SA **********

operator:ANADARKO PETROLEUM avg. depth: 2949 avg. PSI 2982.0 grad. 1.01
project :FEDERAL L & M

Well #	Location	Avg. PSI
1F	31-17-30	3004
5F	31-17-30	3017
1O	31-17-30	2925

operator:ANADARKO PETROLEUM avg. depth: 2879 avg. PSI 1693.0 grad. 0.59
project :FEDERAL L & M PREMIER

Well #	Location	Avg. PSI
2E	31-17-30	1734
6E	31-17-30	1652

operator:ANADARKO PETROLEUM avg. depth: 2496 avg. PSI 1228.6 grad. 0.49
oject :BALLARD GBSA UNIT

Well #	Location	Avg. PSI
6D	07-18-29	1150
7F	07-18-29	1420
3B	07-18-29	1000
1H	07-18-29	1200
2P	07-18-29	1206
3O	08-18-29	1600
4J	08-18-29	1500
6B	08-18-29	1350
8J	08-18-29	1600
9H	08-18-29	1000
10A	08-18-29	1500
13P	08-18-29	1450
14P	08-18-29	925
3J	06-18-29	1250
17N	06-18-29	1200
18P	06-18-29	1100
3B	17-18-29	1500
4B	05-18-29	730
5B	05-18-29	1500
2F	05-18-29	750
1H	05-18-29	520
2D	04-18-29	1350
9E	04-18-29	890
1H	06-18-29	500
2D	08-18-29	1300
2D	05-18-29	750
3D	05-18-29	1500
3M	08-18-29	1550

)Y COUNTY, NEW MEXICO INJECTION SUMMARY
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********** LOCO HILLS QUEEN GRBG SA **********

7N	08-18-29	1400
8F	08-18-29	1400
1F	17-18-29	1500
3B	06-18-29	1300
3J	07-18-29	1100
6D	17-18-29	1300
1L	08-18-29	1540
2L	08-18-29	1050
4D	09-18-29	1300
3L	05-18-29	1350
4N	05-18-29	1500
2P	05-18-29	650
4J	05-18-29	1600
1M	04-18-29	1350
4M	04-18-29	1200

operator:YATES DRILLING avg. depth: 2365 avg. PSI 1136.9 grad. 0.48
project :YATES SCUTH LOCO HILLS GB UNIT

ell #	Location	Avg. PSI
9E	20-18-29	1001
13I	19-18-29	828
15K	20-18-29	1443
18O	19-18-29	1290
20M	20-18-29	1145
23C	30-18-29	1123
25A	30-18-29	1292
27C	29-18-29	973

operator:YATES PETRO CORP avg. depth: 2705 avg. PSI 1350 grad. 0.50
project :WEST LOCO HILLS GB #4 SAND UNIT

Well #	Location	Avg. PSI
4M	07-18-30	1350
5K	07-18-30	
7C	07-18-30	
8E	07-18-30	
5J	07-18-30	
2D	12-18-29	
1K	12-18-29	
1I	12-18-29	1350
1A	13-18-29	
7L	3-18-29	
11F	11-18-29	
2B	12-18-29	
9E	12-18-29	
2C	1-18-29	
5H	10-18-29	
2M	26-17-29	

)Y COUNTY, NEW MEXICO INJECTION SUMMARY
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********** LOCO HILLS QUEEN GRBG SA **********

2N	1-18-29	
2H	11-18-29	
2A	11-18-29	1350
1G	2-18-29	
3A	2-18-29	

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********** MILLMAN QUEEN GB-SA, EAST **********
FIELD SUMMARY

	PROJECT NAME	DEPTH	AVG PSI	GRADIANT	
1	EAST MILMAN QNGB PRESS. MAINT. PROJECT	1814.0	1155.0	0.64	*
2	SUN EAST MILLMAN QNGB WATERFLOOD	1844.0	879.4	0.48	*
	FIELD AVERAGE	1829.0	1017.2	0.56	

)Y COUNTY, NEW MEXICO INJECTION SUMMARY
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********** MILLMAN QUEEN GB-SA, EAST **********

operator:DEPCO avg. depth: 1814 avg. PSI 1155.0 grad. 0.64
project :EAST MILMAN QNGB PRESS. MAINT. PROJECT

Well #	Location	Avg. PSI
1A	15-19-28	1200
143K	14-19-28	1200
145M	14-19-28	1200
174E	14-19-28	1200
151I	15-19-28	1200
153C	14-19-28	1125
156O	15-19-28	
160K	11-19-28	1150
184G	14-19-28	1200
189M	11-19-28	1150
2O	11-19-28	925

operator:S & J OPERATING avg. depth: 1844 avg. PSI 879.4 grad. 0.48
project :SUN EAST MILLMAN QNGB WATERFLOOD

ell #	Location	Avg. PSI
1E	12-19-28	1000
1I	12-19-28	810
1C	13-19-28	950
3O	12-19-28	975
3K	12-19-28	950
1G	13-19-28	500
4A	13-19-28	850
3K	13-19-28	1000

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********** RED LAKE QUEEN GB-SA **********
FIELD SUMMARY

	PROJECT NAME	DEPTH	AVG PSI	GRADIANT	
1	RED LAKE PREMIER SAND UNIT	2242.0	600.0	0.27	*

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********** RED LAKE QUEEN GB-SA **********

operator:KERSEY & COMPANY avg. depth: 2242 avg. PSI 600.0 grad. 0.
project :RED LAKE PREMIER SAND UNIT

Well #	Location	Avg. PSI
1F	20-17-28	
2B	20-17-28	
1K	20-17-28	
2L	20-17-28	
3N	20-17-28	600
4M	20-17-28	600
1L	20-17-28	
1[illegible]N	20-17-28	
16F	20-17-28	
[illegible]G	20-17-28	
2A	20-17-28	
3G	20-17-28	
2H	20-17-28	

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********** RED LAKE EAST GRAYBURG **********
FIELD SUMMARY

	PROJECT NAME	DEPTH	AVG PSI	GRADIANT	
1	EAST RED LAKE FLOOD	2124.0	750.0	0.35	*

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********** RED LAKE EAST GRAYBURG **********

operator:KINCAID & WATSON DRILLINavg. depth: 2154 avg. PSI 750.0 grad. 0.35
project :EAST RED LAKE FLOOD

Well #	Location	Avg. PSI
2L	36-16-28	
3N	36-16-28	750
1P	35-16-28	
1H	02-17-28	
3B	02-17-28	
1D	01-17-28	750
2F	01-17-28	

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********** SQUARE LAKE GRAYBURG SA **********
FIELD SUMMARY

	PROJECT NAME	DEPTH	AVG.PSI	GRADIANT	
1	BURNHAM GBSA UNIT	2939.0	2052.5	0.70	*
2	FEDERAL JJ SQUARE LAKE FLOOD	2833.0	2243.0	0.79	*
3	FEDERAL KK SQUARE LAKE FLOOD	2943.0	1938.5	0.66	*
4	SQUARE LAKE FEDERAL R		1570.0		
5	SQUARE LAKE FEDERAL Q	2878.0	1937.5	0.67	*
6	BOYD PARKE UNIT SQU. LAKE FLD		1800.0		
7	SQUARE LAKE 12 UNIT FLOOD	2584.0	1557.1	0.60	*
8	JACKSON B-1 SQU. LAKE FLD	2888.0	1562.0	0.54	*
	FIELD AVERAGE	2844.2	1832.6	0.64	

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********** SQUARE LAKE GRAYBURG SA **********

operator: ANADARKO PETROLEUM CORP.avg. depth: 2939 avg. PSI 2052.5 grad. 0.70
project : BURNHAM GBSA UNIT

Well #	Location	Avg. PSI
1F	2-17-30	1825
3H	2-17-30	2145
2J	2-17-30	1986
1P	2-17-30	2134
1L	2-17-30	1941
2N	2-17-30	2284

operator: ANADARKO PETROLEUM CORP.avg. depth: 2833 avg. PSI 2243.0 grad. 0.79
project : FEDERAL JJ SQUARE LAKE FLOOD

Well #	Location	Avg. PSI
2L	3-17-30	2225
3N	3-17-30	2261

operator: ANADARKO PETROLEUM CORP.avg. depth: 2946 avg. PSI 1938.5 grad. 0.66
project : FEDERAL KK SQUARE LAKE FLOOD

Well #	Location	Avg. PSI
1P	3-17-30	1959
3J	3-17-30	1918

operator: ANADARKO PETROLEUM CORP.avg. depth: avg. PSI 1570.0 grad.
project : SQUARE LAKE FEDERAL R

Well #	Location	Avg. PSI
7D	10-17-30	1920
8A	10-17-30	2225
14G	10-17-30	565

operator: ANADARKO PETROLEUM CORP.avg. depth: 2878 avg. PSI 1937.5 grad. 0.67
project : SQUARE LAKE FEDERAL Q

Well #	Location	Avg. PSI
1D	3-17-30	1852
4F	3-17-30	2023

operator: MURPHY OPERATING CORP avg. depth: avg. PSI 1800.0 grad.
project : BOYD PARKE UNIT SQU. LAKE FLD

Well #	Location	Avg. PSI
2B	3-17-30	1800

operator: CHEVRON avg. depth: 2584 avg. PSI 1557.1 grad. 0.60
project : SQUARE LAKE 12 UNIT FLOOD

Well #	Location	Avg. PSI
100L	16-17-30	1500

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********** SQUARE LAKE GRAYBURG SA **********

105B	12-17-29	1600
110F	7-17-30	1700
113J	12-17-29	2000
115L	12-17-29	1200
117N	12-17-29	1400

operator: BURNETT OIL CO., INC avg. depth: 2888 avg. PSI 1562.0 grad. 0.54
project : JACKSON B-1 SQU. LAKE FLD

Well #	Location	Avg. PSI
4D	1-17-30	1617
15L	1-17-30	1547
19P	1-17-30	1599
30N	1-17-30	1470
32J	1-17-30	1577

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********** TURKEY TRACK 7 RVRS QN GB SA **********
FIELD SUMMARY

	PROJECT NAME	DEPTH	AVG PSI	GRADIANT	
1	OLD TURKEY BRAINARD - MCKEE FLOOD	2098.0	850.0	0.41	*
2	K & H YD TURKEY TRACK	1985.0	1500.0	0.76	*
	FIELD AVERAGE	2041.5	1175.0	0.58	

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********** TURKEY TRACK 7 RVRS QN GB SA **********

operator:MARBOB avg. depth: 2098 avg. PSI 850.0 grad. 0.41
project :OLD TURKEY BRAINARD - MCKEE FLOOD

Well #	Location	Avg. PSI
7N	34-18-29	850
8O	34-18-29	850
9K	34-18-29	
10J	34-18-29	
3B	34-18-29	
4G	34-18-29	
3F	34-18-29	
4C	34-18-29	

operator:MARBOB avg. depth: 1985 avg. PSI 1500.0 grad. 0.76
project :K & H YD TURKEY TRACK

Well #	Location	Avg. PSI
2F	28-18-29	1500

CATO-SAN ANDRES POOL
(Shell Amco-Hodges Waterflood)
Chaves County, New Mexico

Order No. R-4462, Authorizing Shell Oil Company to Institute Amco-Hodges Waterflood Project in the Cato-San Andres Pool, Chaves County, New Mexico, January 5, 1973.

Application of Shell Oil Company for a Waterflood Project, Chaves County, New Mexico.

CASE NO. 4882
Order No. R-4462

ORDER OF THE COMMISSION

BY THE COMMISSION: This cause came on for hearing at 9 a.m. on December 19, 1972, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 5th day of January, 1973, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:
(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Shell Oil Company, seeks authority to institute a waterflood project on its Amco-Federal and Hodges Federal "B" Leases, Cato-San Andres Pool, by the injection of water into the San Andres formation through five injection wells in Sections 33 and 34, Township 8 South, Range 30 East, NMPM, Chaves County, New Mexico.

(3) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(4) That the proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(5) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:
(1) That the applicant, Shell Oil Company, is hereby authorized to institute a waterflood project in the Cato-San Andres Pool by the injection of water into the San Andres formation through the following-described wells in Township 8 South, Range 30 East, NMPM, Chaves County, New Mexico:

Amco Federal Well No. 4 - Section 33, Unit G
Amco Federal Well No. 6 - Section 33, Unit O
Amco Federal Well No. 7 - Section 33, Unit E
Amco Federal Well No. 8 - Section 33, Unit M
Hodges Federal B Well No. 4 - Section 34, Unit M

(2) That the subject waterflood project is hereby designated the Shell Amco-Hodges Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(3) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

LOCO HILLS POOL
(Ballard Grayburg-San Andres Unit Waterflood)
Eddy County, New Mexico

Order No. R-4493, Authorizing Anadarko Production Company to Institute a Waterflood Project in the Ballard Grayburg-San Andres Unit in the Grayburg and San Andres Formations, in the Loco Hills Pool, Eddy County, New Mexico, March 16, 1973, as Corrected by Order No. R-4493-A, March 16, 1973.

Application of Anadarko Production Company for a Waterflood Project, Special Rules, Unorthodox Locations, and Pool Redelineation, Eddy County, New Mexico.

CASE NO. 4912
Order No. R-4493

ORDER OF THE COMMISSION

BY THE COMMISSION: This cause came on for hearing at 9 a.m. on February 28, 1973, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

(LOCO HILLS (BALLARD GRAYBURG-SAN ANDRES UNIT WATERFLOOD) POOL - Cont'd.)

NOW, on this 16th day of March, 1973, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Anadarko Production Company, seeks authority to institute a waterflood project by the injection of water into the Grayburg and San Andres formations underlying its Ballard Grayburg San Andres Unit Area in Sections 4, 5, 6, 7, 8, 9, 17, and 18, Township 18 South, Range 29 East, NMPM, Loco Hills Pool, Eddy County, New Mexico.

(3) That said injection would be accomplished through 23 wells at orthodox and unorthodox locations, with 15 wells serving as injection wells into the Grayburg formation, five wells serving as injection wells into the San Andres formation, and three wells serving as dual injection wells into the Grayburg and San Andres formations.

(4) That the applicant also seeks the deletion of the NW/4 of Section 7, Township 18 South, Range 29 East, NMPM, from the Artesia Pool and the extension of the Loco Hills Pool to include said lands therein.

(5) Applicant further seeks approval of a procedure for the administrative approval of additional injection and producing wells at orthodox and unorthodox locations without notice and hearing.

(6) That the wells in the proposed project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(7) That the proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(8) (As Corrected by Order No. R-4493-A, March 16, 1973.) That to include all of the proposed waterflood project and the Ballard Grayburg San Andres Unit Area within the horizontal limits of one pool as designated by the Commission, the Artesia Pool should be contracted and the Loco Hills Pool extended as described in Finding No. (4) above.

(9) (As Corrected by Order No. R-4493-A, March 16, 1973.) That approval of the requested administrative procedure will afford the applicant the opportunity to produce its just and equitable share of the oil in the Loco Hills Pool, provided the wells are drilled no closer than 330 feet to the outer boundary of the Ballard Grayburg San Andres Unit Area nor closer than ten feet to any quarter-quarter section or subdivision inner boundary.

(10) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) (As Corrected by Order No. R-4493-A, March 16, 1973.) That the applicant, Anadarko Production Company, is hereby authorized to institute a waterflood project in the Ballard Grayburg-San Andres Unit Area, Loco Hills Pool, by the injection of water into the Grayburg and San Andres formations through the following-described wells in Township 18 South, Range 29 East, NMPM, Eddy County, New Mexico:

Tract No.	Well No.	Footage Description	Sectio
8	5	20' from North line, 1500' from East line	8
13	3	20' from North line, 1200' from West line	8
23	1	Within 330' of well located 2310' from South line, 990' from West line	8
25	3	Within 330' of well located 1980' from South line, 1980' from East line	8
5	3	330' from South line, 2310' from East line	8
5	8	2310' from South line, 1980' from East line	8
14	3	990' from South line, 990' from West line	8
21	1	2310' from South line, 990' from West line	8
5	6	990' from North line, 2310' from East line	8
12	2	990' from North line, 990' from West line	8
6	~~10~~ 3	1980' from South line, 1980' from East line	6
7	3	660' from North line, 1980' from East line	17
10	2	Within 330' of well located 990' from North line, 380' from West line	4
20	~~12~~ 6	660' from North line, 660' from West line	17
21	2	1980' from South line, 660' from West line	8
26	1	Within 330' of well located 2310' from South line, 330' from West line	4
5	13	1310' from South line, 20' from East line	1
1	6	990' from North line, 330' from West line	1
2	3	660' from North line, 1980' from East line	1
5	4	1650' from South line, 2310' from East line	
17	3	660' from North line, 1980' from East line	
22	4	990' from North line, 330' from West line	
5	10	990' from North line, 990' from East line	

PROVIDED HOWEVER, injection into each of the afor wells shall be through plastic-lined tubing set in a p located as close as is practicable to the uppermost perfo or the casing shoe, whichever is applicable, and pro further, that the casing-tubing annulus of each well sh loaded with an inert fluid and equipped with a pressure at the surface.

(2) That the subject waterflood project is hereby desi the Anadarko Ballard GSA Unit Loco Hills Waterflood P and shall be governed by the provisions of Rules 701 and 703 of the Commission Rules and Regulations.

LOCO HILLS (BALLARD GRAYBURG-SAN ANDRES UNIT WATERFLOOD) POOL - Cont'd.)

(3) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(4) That the Artesia Pool, as heretofore classified, defined, and described, is hereby contracted by the deletion of the NW/4 of Section 7, Township 18 South, Range 29 East, NMPM.

(5) That the Loco Hills Pool, as heretofore classified, defined, and described, is hereby extended to include therein the NW/4 of Section 7, Township 18 South, Range 29 East, NMPM.

(6) (As Corrected by Order No. R-4493-A, March 16, 1973.) That the Secretary-Director of the Commission may approve additional producing and injection wells at orthodox and unorthodox locations within the Ballard Grayburg San Andres Unit Area as may be necessary to complete an efficient production and injection pattern; provided said wells shall be drilled no closer than 330 feet to the outer boundary of the Ballard Grayburg San Andres Unit Area nor closer than ten feet to any quarter-quarter section or subdivision inner boundary, and provided the application therefor has been filed in accordance with Rule 701 B of the Commission Rules and Regulations.

(7) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

GRAYBURG-JACKSON POOL
(Robinson-Jackson Waterflood Project)
Eddy County, New Mexico

Order No. R-4502, Authorizing Shenandoah Oil Corporation to Institute a Waterflood Project in the Robinson-Jackson Unit into the Grayburg and San Andres Formations, in the Grayburg-Jackson Pool, Eddy County, New Mexico, April 10, 1973.

Application of Shenandoah Oil Corporation for a Waterflood Project, Eddy County, New Mexico.

CASE NO. 4926
Order No. R-4502

ORDER OF THE COMMISSION

BY THE COMMISSION: This cause came on for hearing at 9 a.m. on March 28, 1973, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 10th day of April, 1973, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS

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

(2) That the applicant, Shenandoah Oil Corporation, seeks authority to institute a waterflood project in the Robinson-Jackson Unit Area, Grayburg-Jackson Pool, by the injection of water into the Grayburg and the San Andres formations through 16 injection wells in Sections 27, 34 and 35, Township 17 South, Range 29 East, NMPM, Eddy County, New Mexico.

(3) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(4) That the proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(5) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Shenandoah Oil Corporation, is hereby authorized to institute a waterflood project in the Robinson-Jackson Unit Area, Grayburg-Jackson Pool, by the injection of water into the Grayburg and the San Andres formations through the following-described wells in Township 17 South, Range 29 East, NMPM, Eddy County, New Mexico:

WELL NAME	UNIT	SECTION
F. M. Robinson "A" Well No. 4	G	34
F. M. Robinson "A" Well No. 7	I	27
F. M. Robinson "A" Well No. 9	O	27
F. M. Robinson "A" Well No. 11	E	35
F. M. Robinson "A" Well No. 12	A	34
F. M. Robinson "B" Well No. 1	A	27
F. M. Robinson "B" Well No. 4	A	35
F. M. Robinson "B" Well No. 6	G	35
F. M. Robinson "B" Well No. 8	K	27
F. M. Robinson "B" Well No. 11	C	35
F. M. Robinson "B" Well No. 15	G	27
F. M. Robinson "B" Well No. 16	I	35
F. M. Robinson "B" Well No. 17	K	35
F. M. Robinson "B" Well No. 18	O	35
F. M. Robinson "B" Well No. 19	I	34
F. M. Robinson "B" Well No. 20	C	34

(2) That injection into each well shall be through plastic coated tubing set in a packer; that the casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface.

(3) That the subject waterflood project is hereby designated the Robinson-Jackson Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(4) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(5) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

UNEBRY OIL AND GAS (CONOCO-SOUTHLAND
INEBRY COOPERATIVE WATERFLOOD PROJECT)
OOL - Cont'd.)

IT IS THEREFORE ORDERED:
(1) (As Corrected by Order No. R-6906-A, February 15, 1982) That the applicants, Conoco Inc. and Southland Royalty Company are hereby authorized to each institute a cooperative waterflood project in the Blinebry Oil and Gas Pool by the injection of water into the Blinebry formation through nine injection wells located on Conoco's Warren Unit and Hawk B-3 Leases and Southland's State Lease in Sections 33 and 34 of Township 20 South, Range 38 East, and Sections 2 and 3 of Township 21 South, Range 37 East, NMPM, Lea County, New Mexico, as follows:

CONOCO INC.

Warren Unit Well No. 13, Unit O, Section 34
Warren Unit Well No. 14, Unit M, Section 34
Warren Unit Well No. 17, Unit I, Section 33
Warren Unit Well No. 20, Unit E, Section 34
Warren Unit Well No. 16, Unit O, Section 33
Warren Unit Well No. 75, Unit K, Section 34
Warren Unit Well No. 80, Unit G, Section 33
Hawk B-3 Well No. 15, Unit B, Section 3

SOUTHLAND ROYALTY COMPANY

State Well No. 6, Unit D, Section 2

(2) That injection into each of said wells shall be through internally coated tubing, set in a packer which shall be located as near as practicable to the uppermost perforation; that the casing-tubing annulus of each injection well shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.

(3) That the operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing or packer in any of said injection wells, the leakage of water or oil from around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.

(4) That the injection wells herein authorized and/or the injection pressurization system shall be so equipped as to limit injection pressure at the wellhead to no more than 2000 psi, provided that the supervisor of the Division's district office at Hobbs shall be notified of any injection pressure above 1000 psi in any well and may require a step-rate test to be conducted on such well.

(5) That the subject cooperative waterflood project is hereby designated the Conoco-Southland Blinebry Cooperative Waterflood Project and shall be governed by the provisions of Rules 701, 702, 703, 704, 705, and 706 of the Division Rules and Regulations.

(6) That monthly progress reports of the cooperative waterflood project herein authorized shall be submitted to the Division in accordance with Rules 706 and 1115 of the Division Rules and Regulations.

(7) That 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.

LOCO HILLS POOL
(Ballard Grayburg-San Andres Waterflood Expansion)
Eddy County, New Mexico

Order No. R-7000, Expanding the Ballard Grayburg-San Andres Waterflood Project in the Loco Hills Pool, Eddy County, New Mexico, June 11, 1982.

Application of Anadarko Production Company for a Waterflood Expansion, Eddy County, New Mexico.

CASE NO. 7572
Order No. R-7000

ORDER OF THE DIVISION

BY THE DIVISION: This cause came on for hearing at 9 a.m. on May 12, 1982, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 11th day of June, 1982, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

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

(2) That the applicant, Anadarko Production Company, seeks authority to expand its Ballard GSA Unit Waterflood project by the completion for injection or conversion to water injection of ten wells located in Unit N of Section 5, Units N and P of Section 6, Units F, H, J, and P of Section 7, Units F and N of Section 8, and Unit F of Section 17, all in Township 18 South, Range 29 East, Loco Hills Pool, Eddy County, New Mexico.

(3) That the proposed waterflood expansion should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(4) That the proposed expansion provides for additional injection offsetting five wells which may not be completed or plugged in such a manner as to confine the injected fluids in the waterflood interval.

(5) The five wells are identified as the Dunn Well No. 1 and No. 1X in Unit P and Dunn C Well No. 2 in Unit O in Section 7 and Unit Wells 20-3 in Unit D and 20-5 in Unit E of Section 17, all in Township 18 South, Range 29 East, NMPM, Eddy County, New Mexico.

(6) That the applicant should consult with the supervisor of the Division's district office at Artesia to develop an acceptable plan for repairing or replugging such wells or for monitoring for determination of fluid movement from the injected interval in order to protect neighboring properties and to protect other oil or gas zones or fresh water.

(LOCO HILLS (GRAYBURG-SAN ANDRES WATER-FLOOD EXPANSION) POOL - Cont'd.)

(7) That the operator should otherwise take all steps necessary to ensure that the injected water enters only 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.

(8) That the injection wells or injection pressurization system should be so equipped as to limit injection pressure at the wellhead to no more than 1550 psi, but the Division Director should have authority to increase said pressure limitation, should circumstances warrant.

(9) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Division Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Anadarko Production Company, is hereby authorized to expand its Ballard GSA Unit Waterflood Project by the completion for injection or conversion to water injection of ten wells in Township 18 South, Range 29 East, NMPM, Loco Hills Pool, Eddy County, New Mexico as set out below:

Well No.	Approximate Location					Section
23-4	330'	FSL	&	1980'	FWL	5
6-17	660'	FSL	&	3300'	FEL	6
6-18	660'	FSL	&	660'	FEL	6
1-7	2310'	FNL	&	1600'	FWL	7
3-1	1980'	FNL	&	660'	FEL	7
4-1	330'	FSL	&	990'	FEL	7
19-3	1650'	FSL	&	2310'	FEL	7
14-7	400'	FSL	&	2000'	FWL	8
15-8	2310'	FNL	&	1980'	FWL	8
16-1	2310'	FNL	&	1980'	FWL	17

(2) That injection into each of said wells shall be through internally coated tubing, set in a packer which shall be located as near as practicable to the uppermost perforation; that the casing-tubing annulus of each injection well shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.

(3) That the operator shall immediately notify the supervisor of the Division's Artesia district office of the failure of the tubing or packer in any of said injection wells, the leakage of water or oil from around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.

(4) That the operator shall, prior to injection into nearby wells, consult with the district supervisor of the Division's district office at Artesia to develop an acceptable plan for repairing, replugging, and/or monitoring for out-of-zone fluid movement for the five wells identified in Finding No. (5) of this order.

(5) That the injection wells herein authorized and/or the injection pressurization system shall be so equipped as to limit injection pressure at the wellhead to no more than 1550 psi; provided however, the Division Director may authorize a higher surface injection pressure upon satisfactory showing that such pressure will not result in fracturing of the confining strata.

(6) That the subject waterflood project is hereby and shall continue to be governed by the provisions of Rules 701 through 706 of the Division Rules and Regulations.

(7) That 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.

LOCO HILLS QUEEN-GRAYBURG-SAN ANDRES POOL
(Yates South Loco Hills Grayburg Unit Waterflood Project)
Eddy County, New Mexico

Order No. R-7012, Authorizing Yates Drilling Company t Institute a Waterflood Project on its South Loco Hills (Grayburg Unit Area, in the Loco Hills Queen-Grayburg-San Andres Poo Eddy County, New Mexico, June 30, 1982.

Application of Yates Drilling Company for a Waterflood Project, Eddy County, New Mexico.

CASE NO. 75
Order No. R-70

ORDER OF THE DIVISION

BY THE DIVISION: This cause came on for hearing at a.m. on May 26, 1982, at Santa Fe, New Mexico, befo Examiner Daniel S. Nutter.

NOW, on this 30th day of June, 1982, the Division Direct having considered the testimony, the record, and t recommendations of the Examiner, and being fully advised the premises,

SOUTH EUNICE SEVEN RIVERS-QUEEN (GULF J. F. JANDA (NCT-F) PILOT WATERFLOOD) POOL - Cont'd.)

(3) The initial project area should comprise the following described lands within applicant's J. F. Janda (NCT-F) Lease, Lea County, New Mexico:

TOWNSHIP 22 SOUTH, RANGE 36 EAST, NMPM
Section 4: SW/4, S/2 NW/4, W/2 SE/4, and SW/4 NE/4

(4) The wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(5) The proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(6) The operator should take all steps necessary to ensure that the injected water enters only 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.

(7) The proposed injection wells or injection pressurization system should be so equipped as to limit injection pressure at the wellhead to no more than 750 psi, but the Division Director should have authority to increase said pressure limitation, should circumstances warrant.

(8) The subject application should be approved and the project should be governed by the provisions of Rules 701 through 708 of the Division Rules and Regulations.

IT IS THEREFORE ORDERED THAT:
(1) (As Amended by Order No. R-7678-A, September 28, 1964) The applicant, Gulf Oil Exploration and Production Company, is hereby authorized to institute a pilot waterflood project on its J. F. Janda (NCT-F) Lease, South Eunice Seven Rivers-Queen Pool, by the injection of water into selected perforated intervals from approximately 3750 feet to approximately 3875 feet in the following described wells to be drilled in Section 4, Township 22 South, Range 36 East, NMPM, Lea County, New Mexico:

WELL NO.	FOOTAGE LOCATION
10	2623' FNL and 1330' FWL
11	2623' FNL and 2636' FEL
12	1306' FSL and 2636' FEL
13	1325' FSL and 1330' FWL

(2) The initial project area is to comprise the following described lands within applicant's J. F. Janda (NCT-F) Lease, Lea County, New Mexico:

TOWNSHIP 22 SOUTH, RANGE 36 EAST, NMPM
Section 4: SW/4, S/2 NW/4, W/2 SE/4, and SW/4 NE/4

(3) Injection into each of said proposed wells shall be through internally coated tubing, set in a packer which shall be located as near as practicable to the uppermost perforation; that the casing-tubing annulus of each injection well shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.

(4) The operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing or packer in any of said injection wells, the leakage of water or oil from or around any producing wells, or the leakage of water or oil from any plugged and abandoned well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.

(5) The proposed injection wells herein authorized and/or the injection pressurization system shall be so equipped as to limit injection pressure at the wellhead to no more than 750 psi, provided however, the Division Director may authorize a higher surface injection pressure upon satisfactory showing that such pressure will not result in fracturing of the confining strata.

(6) The subject waterflood project is hereby designated the North Seven Rivers Queen Waterflood Project and shall be governed by the provisions of Rules 701 through 708 of the Division Rules and Regulations.

(7) Monthly progress reports of the waterflood project herein authorized shall be submitted to the Division in accordance with Rules 706 and 1115 of the Division Rules and Regulations.

(8) 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.

LOCO HILLS POOL
(Ballard Grayburg-San Andres Unit Waterflood Project Expansion)
Eddy County, New Mexico

Order No. R-7773, Authorizing Anadarko Production Company to Expand its Ballard Grayburg-San Andres Unit Waterflood Project in the Loco Hills Pool, Eddy County, New Mexico, January 8, 1985.

Application of Anadarko Production Company for a Waterflood Expansion, Eddy County, New Mexico.

CASE NO. 8381
Order No. R-7773

ORDER OF THE DIVISION

BY THE DIVISION: This cause came on for hearing at 8 a.m. on October 17, 1984, at Santa Fe, New Mexico, before Examiner Gilbert P. Quintana.

NOW, on this 8th day of January, 1985, 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.

(LOCO HILLS (BALLARD GRAYBURG-SAN ANDRES UNIT WATERFLOOD PROJECT EXPANSION) POOL - Cont'd.)

(2) The applicant, Anadarko Production Company, seeks authority to expand its Ballard Grayburg-San Andres Unit (GSA) Waterflood Project by drilling two new injection wells located at unorthodox locations and by converting to water injection eight wells, all located as described in Exhibit "A" attached to this order.

(3) The Ballard GSA Unit producing wells in the expansion area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(4) The proposed waterflood expansion should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(5) Three wells directly offsetting the proposed waterflood expansion may not be plugged in such a manner as to confine the injected fluids in the waterflood interval.

(6) The three wells are identified as the Ballard GSA Unit Tract 10 Well No. 3, the Ballard GSA Unit Tract 26 Well No. 2, and the Ballard GSA Unit Tract 10 Well No. 2, all in Section 4, Township 18 South, Range 29 East.

(7) Prior to the commencement of injection into said waterflood expansion, the operator should demonstrate that the wells described in Finding No. (6) above have either been re-plugged or have been previously plugged and abandoned in such a manner as to ensure that they do not provide an avenue of escape for fluids from the proposed injection zone and are in accordance with a program satisfactory to the supervisor of the Division's Artesia district office.

(8) The operator should otherwise take all steps necessary to ensure that the injected water enters only 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.

(9) Prior to the commencement of injection into the Ballard GSA Unit leaseline injectors Tract 10 Well No. 9 and Tract 26 Well No. 4, an executed leaseline agreement between the applicant and offset operators to these wells should be submitted to the Division's office in Santa Fe.

(10) Said injection wells or system should be so equipped as to limit injection pressure at the wellhead to no more than 0.2 pounds per foot of depth but the Division Director shall have authority to increase said pressure limitation upon application should circumstances warrant.

(11) The subject application should be approved and the project should be governed by the provisions of Rules 701 through 708 of the Division Rules and Regulations.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Anadarko Production Company, is hereby authorized to expand its Ballard Grayburg-San Andres Unit Waterflood Project by completing two and converting eight wells to water injection, all located as described in Exhibit "A" attached to this order.

(2) Injection into each of said wells shall be through internally coated tubing, set in a packer which shall be located at a maximum of 100 feet from the uppermost perforation; the casing-tubing annulus of each injection well shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.

(3) The operator shall immediately notify the supervisor of the Division's Artesia district office of the failure of the tubing or packer in any of said injection wells, the leakage of water or oil from or around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.

(4) Prior to the commencement of injection into said waterflood expansion, the operator shall demonstrate that the wells described in Finding No. (6) above have either been re-plugged or have been previously plugged and abandoned in such a manner as to ensure that they do not provide an avenue of escape for fluids from the proposed injection zone and are in accordance with a program that is satisfactory to the supervisor of the Division's Artesia district office.

(5) Prior to the commencement of injection into the Ballard GSA Unit leaseline injectors Tract 10 Well No. 9 and Tract 26 Well No. 4, an executed leaseline agreement between the applicant and offset operators to these wells must be submitted to the Division office in Santa Fe.

(6) The injection wells herein authorized and/or the injection system shall be so equipped as to limit injection pressure at the wellhead to no more than 0.2 pounds per foot of depth, provided however, the Division Director may authorize a higher surface injection pressure upon satisfactory showing that such pressure will not result in fracturing of the confining strata.

(7) The subject waterflood project is hereby and shall continue to be governed by the provisions of Rules 701 through 708 of the Division Rules and Regulations.

(8) 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.

BALLARD GRAYBURG-SAN ANDRES UNIT
WATERFLOOD PROJECT EXPANSION

TRACT NO.	WELL NO.	WELL LOCATIONS
* 10	9	approximately 1980' FNL & 1310' FWL in Sec. 4
* 26	4	approximately 800' FSL & 1310' FWL in Sec. 4
5	9	1980' FNL & 990' FEL in Sec. 8
5	14	990' FSL & 1310' FEL in Sec. 8
8	4	660' FNL & 1980' FEL in Sec. 5
9	2	1980' FNL & 1980' FWL in Sec. 5
10	1	1980' FNL & 660' FEL in Sec. 5
11	1	2310' FNL & 330' FEL in Sec. 6
13	2	660' FNL & 660' FWL in Sec. 5
24	2	660' FSL & 990' FEL in Sec. 5

All wells are located in Township 18 South, Range 29 East, Loc Hills Pool, Eddy County, New Mexico.

* New wells to be drilled as unorthodox leaseline wells and nc to be located closer than 10 feet to any leaseline boundary c quarter-quarter section line.

CASE NO. 8381
ORDER NO. R-7773
EXHIBIT "A"