

Cimarex Energy PERFORM System Graph

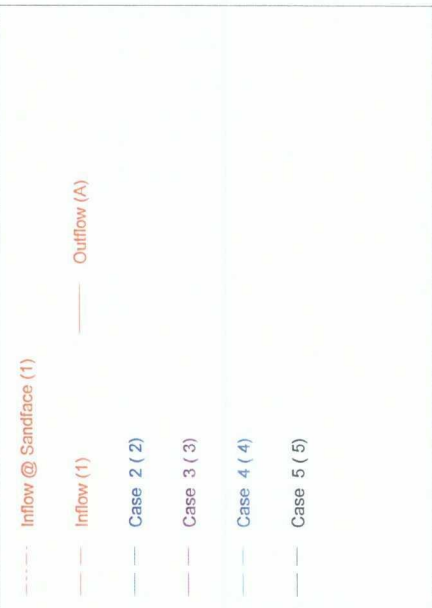
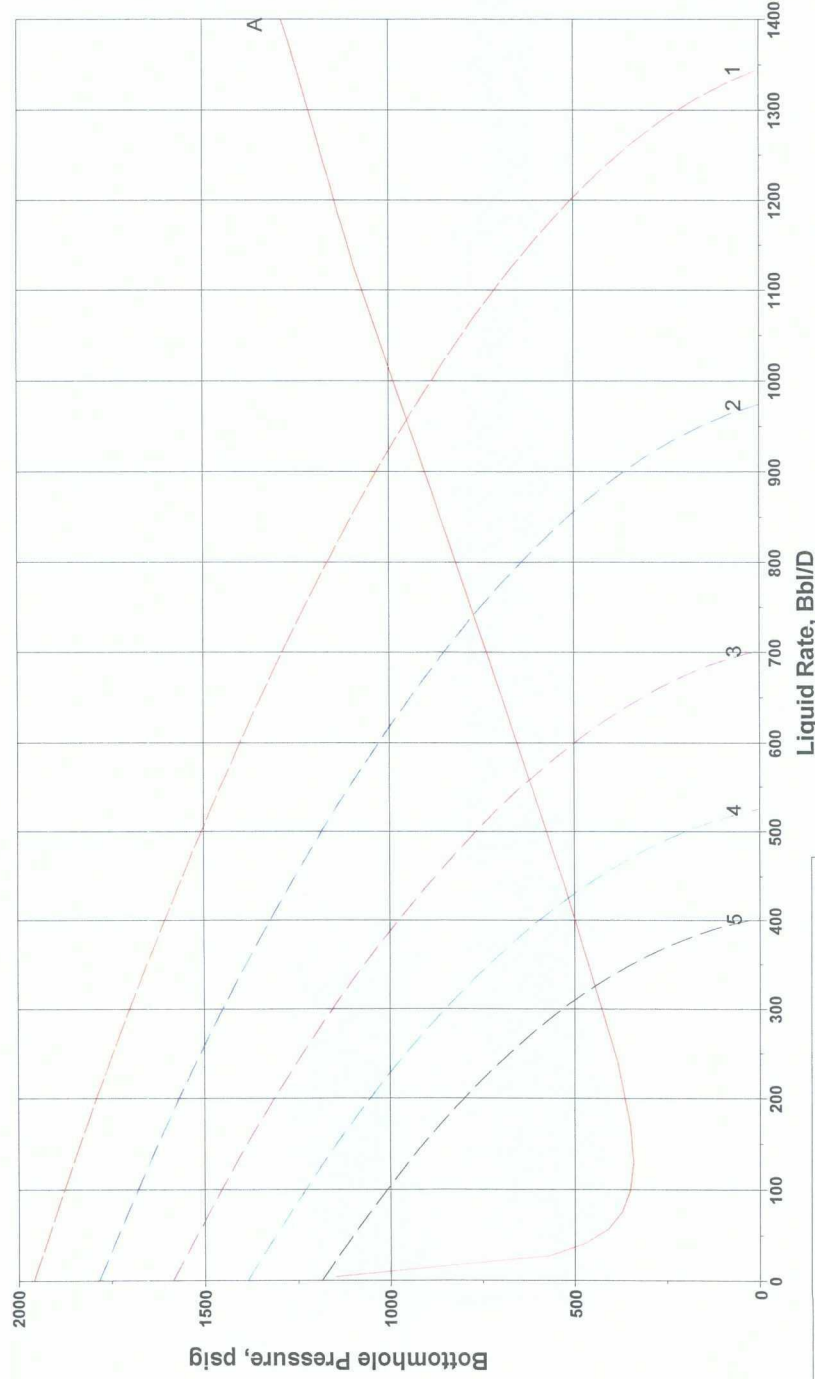
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Well: Pennzoil B 36 State #2
 Loc:
 Desc:
 File: PENN B 36 ST #2 VOGEL.pif6 Date: 06-23-2008

Type: Oil Well
 Analysis: System Analysis
 Node: Bottomhole

Case 1 Input Data

Fluids
 Water Cut 0.0000 %
 Oil Grav 43.0 °API
 SG Gas 0.700
 GOR/Yield 3311.0 scf/bbl
 SG Water 1.070
 Bubble Pnt 3337.0 psia
 Resv - Vogel/Harrison (1968)
 Resv BHP 1974.0 psia
 Resv Temp 135 °F
 Standing FE 1.000
 Vogel Rate 300 Bbl/D
 Vogel Press 1700.0 psig
 Compl- Open Hole
 Tbg - ~~Economides et al (1991)~~ *Gray*
 WH Pressure 100.0 psig
 Perf Top 9424 ft
 Csg ID 4.892 in
 Tbg ID 2.441 in
 WB Heat - Linear Gradient
 WH Temp 80 °F



Oil Conservation Division
 Case No. *18*
 Exhibit No. *18*

Cimarex Energy

PERFORM

Inflow Sensitivity Graph

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Well: Pennzoil B 36 State #2

Loc:

Desc:

File: PENN B 36 ST #2 VOGEL.pif

Date: 06-23-2008

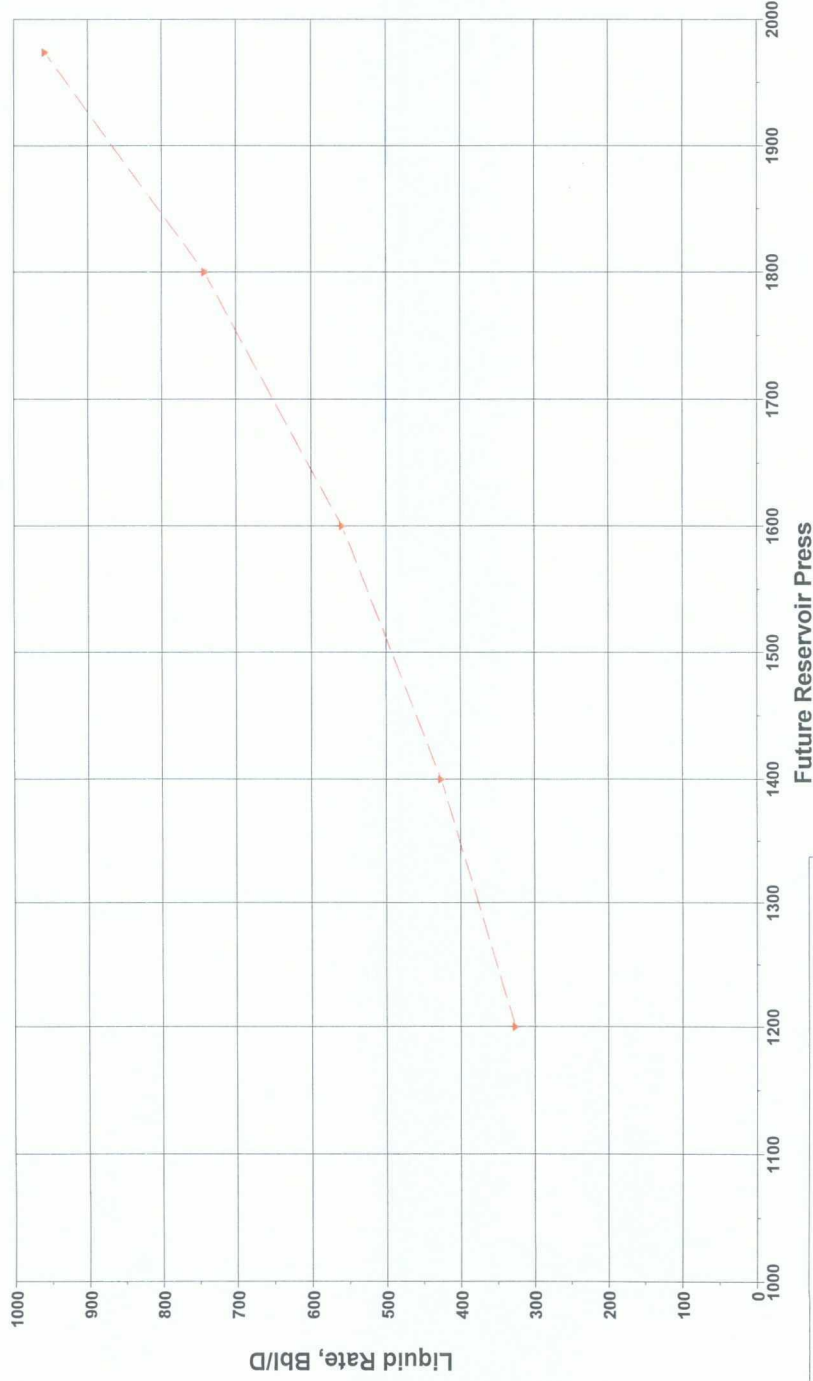
Type: Oil Well

Analysis: System Analysis

Node: Bottomhole

Case 1 Input Data

Fluids	
Water Cut	0.0000 %
Oil Grav	43.0 °API
SG Gas	0.700
GOR/Yield	3311.0 scf/bbl
SG Water	1.070
Bubble Pnt	3337.0 psia
Resv - Vogel/Harrison (1968)	
Resv BHP	1974.0 psia
Resv Temp	135 °F
Standing FE	1.000
Vogel Rate	300 Bbl/D
Vogel Press	1700.0 psig
Compl- Open Hole	
<i>Gray Economides et al (1991)</i>	
Tbg - BHP	100.0 psig
WH Pressure	9424 ft
Perf Top	4.892 in
Csg ID	2.441 in
Tbg ID	
WB Heat - Linear Gradient	
WH Temp	80 °F



Outflow (A)

Inflow

- (1) 1974.0
- (2) 1800.0
- (3) 1600.0
- (4) 1400.0
- (5) 1200.0

Inflow

Future Reservoir Press, psia

Reg: Cimarex - Cimarex

Cimarex Energy
PERFORM
Gradient Graph

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Well: Pennzoil B 36 State #2
Loc:
Desc:
File: PENN B 36 ST #2 FLWG GRAD.pf6 Date: 06-23-2008

Type: Oil Well
Analysis: Gradient Analysis
Node: Bottomhole

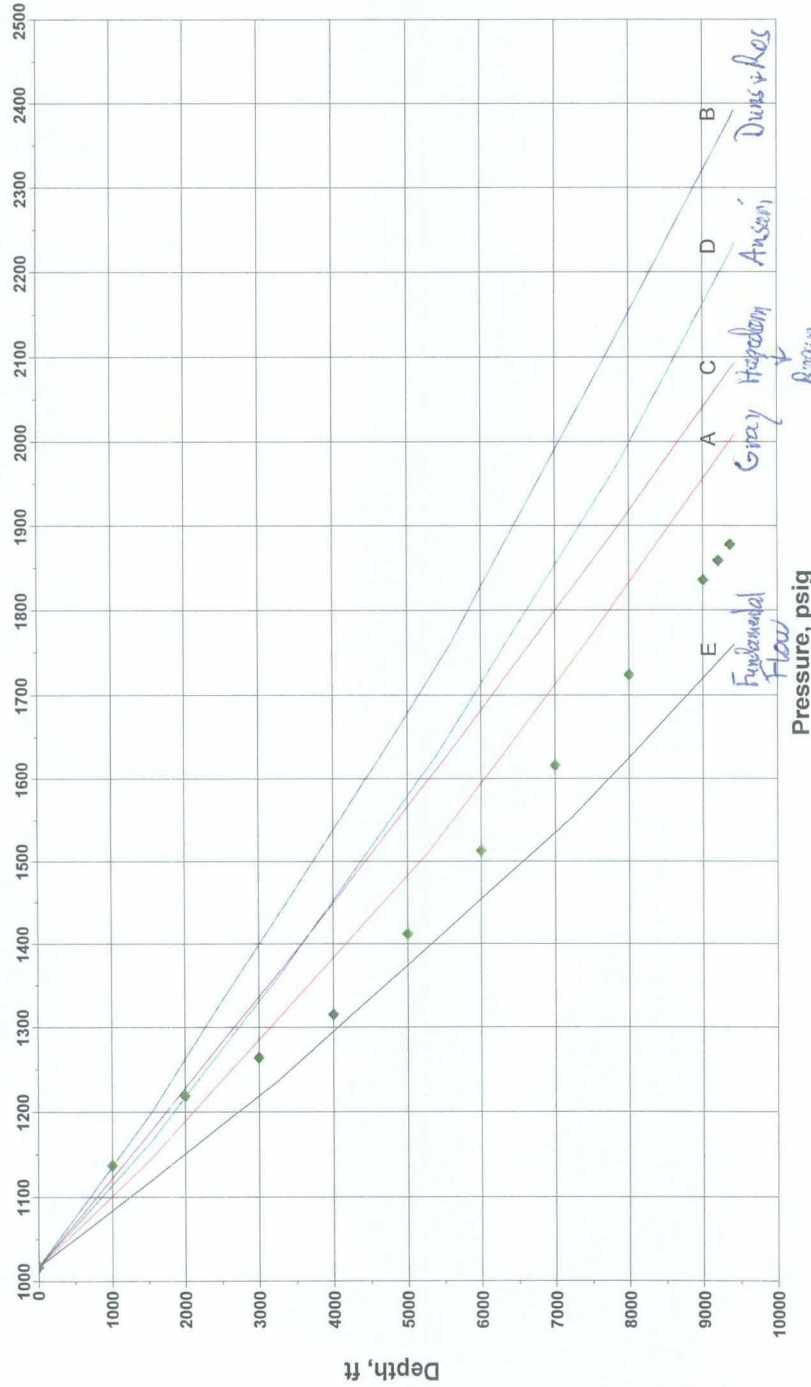
Case 1 Input Data

Fluids
Water Cut 0.0000 %
Oil Grav 43.0 °API
SG Gas 0.700
GOR/Yield 3500.0 scf/bbl
SG Water 1.070
Bubble Pnt 3327.0 psia

Gradient
Resv Temp 135 °F
Gradient Rate 428 Bbl/D

Tbg - Economics et al (1991)
WH Pressure 1018.0 psig
Perf Top 9424 ft
Csg ID 4.892 in
Tbg ID 2.441 in

WB Heat - Linear Gradient
WH Temp 80 °F



Gradient (A) Case 2 (B)

Case 3 (C) Case 4 (D)

Case 5 (E) PermB36S121fwgrad.txt

Outflow

Multiple Sensitivities
Reg: Cimarex - Cimarex