



**Southwestern Energy
Production Company**

A subsidiary of Southwestern Energy Company

2350 N. Sam Houston Parkway East
Suite 300
Houston, Texas 77032
(281) 618-4700 FAX: (281) 618-4757

12 December 2003

New Mexico Energy, Minerals,
and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Attn: Mr. Richard Ezeanyim, Head Engineer

**RE: Injection Profile Log
Corbin-Abo SWD #G-31
Lea County, New Mexico
API No.: 30-025-01337
Administrative Order SWD-890**

RECEIVED

DEC 16 2003

Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

Dear Mr. Ezeanyim:

Pursuant to Administrative Order SWD-890, issued 23 September 2003, Southwestern Energy Production Company ran an injection profile log in the Corbin-Abo SWD #G-31, Lea County, NM, on 10 December 2003. This date was within three months of the commencement of injection operations, as directed by Administrative Order SWD-890. Injection operations commenced on 29 October 2003.

A caliper log was run in the Corbin-Abo SWD #G-31 on 09 December 2003. While running this log, a significant restriction was discovered in the casing at 4,673'. The cause of the restriction is unknown, but is probably partially collapsed casing. Due to the restriction and the threat that it posed to the injection profile log, logging operations were only conducted from 4,000' (inside the tubing) to 4,650'. This interval covered the end of the tubing at 4,037', the perforated interval of 4,530' to 4,558', and the perforated interval of 4,598' to 4,628'. We were not able to log the open hole section of 4,894' to 6,132' due to the casing restriction.

Analysis of the injection profile log indicates that the injection volumes were disposed of as follows:

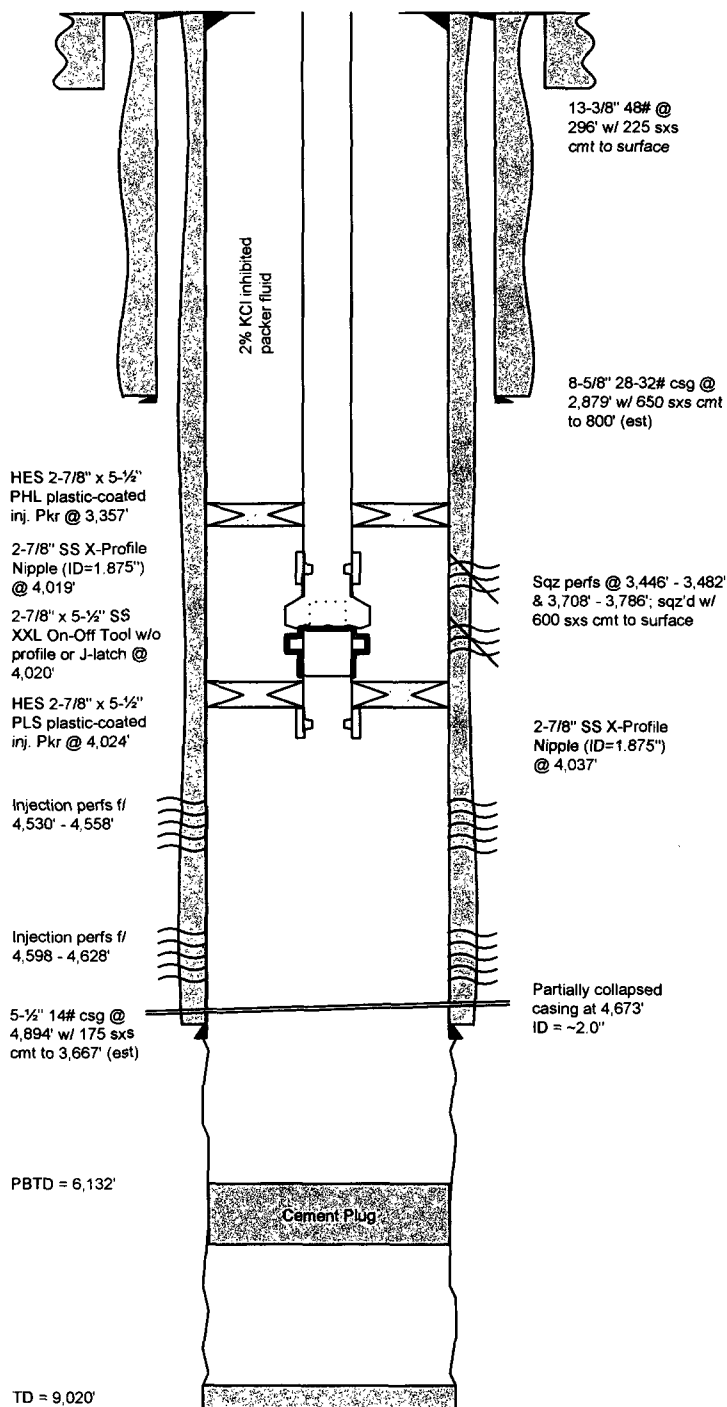
Interval	Injection Percentage
4,530' – 4,558'	6.15
4,598' – 4,628'	15.21
Below perforations	<u>78.64</u>
Total:	100.00

I have enclosed one copy of the Production Analysis Log Flow Analysis Report, two copies of the Baker Atlas S.I.P. injection profile log, two copies of the Baker Atlas 3-Arm Caliper log, and an updated well bore diagram. All attachments are for the Corbin-Abo SWD #G-31. If you have any questions, please do not hesitate to call me at (281) 618-4788 (office) or (713) 213-5909 (cellular).

Sincerely,

A handwritten signature in black ink, appearing to read "L. I. Williams", with a long horizontal flourish extending to the right.

Lee I. Williams
Production Engineer
Permian Basin Asset Team



Casing Detail

1. 13-3/8" 48# @ 296' w/ 225 sxs cmt to surface (17-1/2" hole)
2. 8-5/8" 28-32# @ 2,879' w/ 650 sxs cmt to 800' (estimated) (12-1/2" hole)
3. 5-1/2" 14# J-55 @ 4,894' w/ 175 sxs cmt to 3,667' (estimated); squeezed w/ 600 sxs to surface in 1992, 07-26-2003 CBL showed good bond (unable to see TOC between 5-1/2" & 8-5/8") (7-7/8" hole)
4. 4-1/2" openhole to 9,020' w/ cmt plug set @ 6,132'

Tubing Detail

Item	OD	ID	Length	Depth
1. KB correction			12.00'	0'
2. 2-7/8" Duo Line 20 tubing	3.660"	2.195"	31.33'	12.00'
3. 2-7/8" Duo Line 20 subs	3.660"	2.195"	20.84'	43.33'
4. 2-7/8" Duoline-20 tbg (105 jts)	3.660"	2.195"	3,292.90'	64.17'
5. 5-1/2" x 2-7/8" 13-17# PHL pkr (nickle plated & plastic coated)	4.700"	2.360"	5.02'	3,357.07"
6. 2-7/8" Duoline-20 tbg (21 jts)	3.660"	2.195"	657.22'	3,362.09'
7. 2-7/8" S/S 'X' Profile Nipple	3.625"	1.875"	0.82'	4,019.31'
8. 5-1/2" x 2-7/8" 'XXL' On-Off Tool (no profile or J-latch)	4.380"	2.375"	3.50'	4,020.13'
9. 5-1/2" x 2-7/8" PLS 10k pkr (nickle plated & plastic coated)	4.700"	2.360"	3.99'	4,023.63'
10. 2-7/8" EUE plastic coated tbg sub	3.440"	2.441"	10.14'	4,027.62'
11. 2-7/8" S/S 'X' Profile Nipple	3.625"	1.875"	0.82'	4,037.76'
12. 2-7/8" EUE plastic coated tbg sub	3.440"	2.441"	10.12'	4,038.58'
13. Re-entry guide	3.625"	2.500"		4,048.70'

Well Information

Well: Corbin-Abo SWD #G-31
 Field: Maljamar
 Location: 1,980' FNL & 1,980' FEL, Sec. 31, T 17 S, R 33 E
 Lea County, New Mexico
 Elevation: GL = 3,983', KB = 3,994.8'
 Operator: Southwestern Energy Production Company
 API #: 35-025-01337
 Spud Date: 12-27-1959
 Com. Date: 12-10-1968
 Engineer: Lee I. Williams, Office PH#: 281-618-4788
 Update: 10-17-2003

Date of last successful MIT: 10-14-2003

Perforations

Top Perf	Bottom Perf	Interval	Description
1. 4,530'	4,558'	28'	Grayburg perforations
2. 4,598'	4,628'	30'	Grayburg perforations
3. 4,894'	6,132'	1,238'	San Andres openhole
		Total:	1,296'
4. 3,446'	3,482'	36'	Squeeze perforations
5. 3,708'	3,786'	78'	Squeeze perforations



Southwestern Energy Production Company

2350 N. Sam Houston Parkway E., Suite 300
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 Office: 281-618-4700 Fax: 281-618-4755

WELL: Corbin-Abo SWD #G-31

DATE: 12-09-2003
 BY: LIW

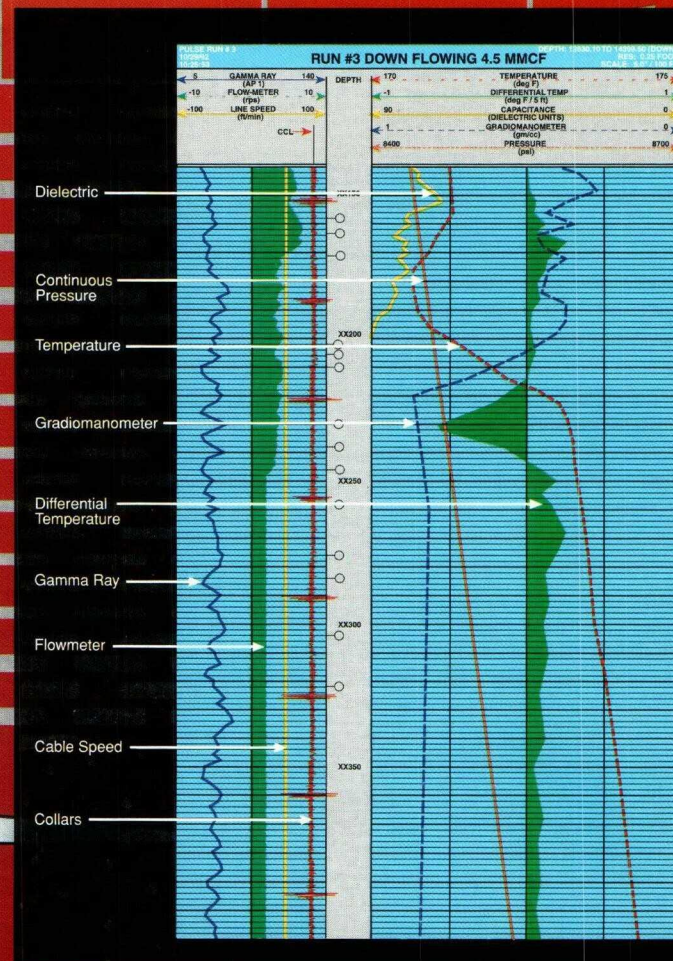
LOCATION: Lea County, New Mexico

CURRENT

PRA

(Production Analysis L

Flow Analysis





Job Information

Corbin-Abo G-31

Company: Southwestern Energy Production Co.
Field: Maljamar
Well: Corbin-Abo SWD #G-31

Test: SIP
Date: 12-10-03
Survey: Survey 1

Baker Atlas

Survey date 12-10-03
Service company Baker Atlas

Interpretation date 12-11-03
Done by B. Gardner

SURVEY Survey 1
Surface rates:
Oil 0 STB/D

Gas 0 Mscf/D
Water 1152 STB/D

TOOLS
String O.D. 1.375 in
Spinner blade O.D. 3. in
Density None

Capacitance None

INTERPRETATION Interpretation # 1

Flow type Single-phase
Vpcf mult. 1.1091

Comments

Injection Rate at Time Of Survey : 1152 BBL/D Water

Due to hole conditions log was not ran in open hole section.

Perforations: 4530-4558
4598-4628

Open Hole from 4894-6132

Zone from 4650-52 used to calculate water injection below perms

 BAKER HUGHES Baker Atlas	PVT		Corbin-Abo G-31
	Company: Southwestern Energy Production Co.		Test: SIP
	Field: Maljamar		Date: 12-10-03
	Well: Corbin-Abo SWD #G-31		Survey: Survey 1
FLUID TYPE Water Salinity, ppm 10000 Rsw Katz cw Dodson and Standing Muw Van-Wingen+Frick			
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Baker Atlas

Calibration

Corbin-Abo G-31

Company: Southwestern Energy Production Co.

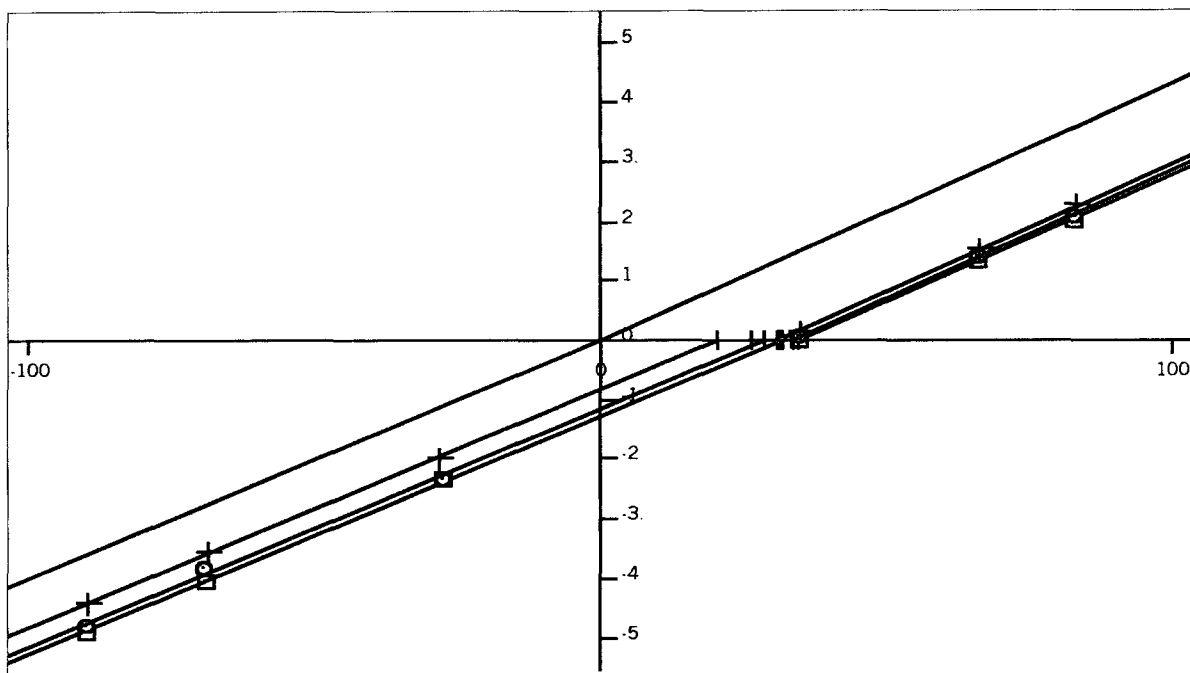
Field: Maljamar

Well: Corbin-Abo SWD #G-31

Test: SIP

Date: 12-10-03

Survey: Survey 1



rps versus ft/min

Thresh/Int 0.5833

	Calib. Zone ft	Slope (+)	Slope (-)	Int (+) ft/min	Int (-) ft/min	Int. Diff. ft/min
□	4507.0-4513.0	0.043	0.040	34.81	31.74	3.07
○	4566.0-4574.0	0.043	0.040	33.58	28.61	4.97
+	4636.0-4642.0	0.043	0.040	30.74	20.53	10.21
×	4657.0-4660.0	0.043	0.040	0.00	0.00	0.00



Zone Contributions; S.C.

Corbin-Abo G-31

Company: Southwestern Energy Production Co.

Test: SIP

Field: Maljamar

Date: 12-10-03

Well: Corbin-Abo SWD #G-31

Survey: Survey 1

Baker Atlas

Zones ft	Water STB/D
4530.0-4558.0	-70.84
4598.0-4628.0	-175.19
4650.0-4652.0	-905.97
Total	-1152.00



Baker Atlas

Zone Contributions; Res. Cond.

Corbin-Abo G-31

Company: Southwestern Energy Production Co.
Field: Maljamar
Well: Corbin-Abo SWD #G-31

Test: SIP
Date: 12-10-03
Survey: Survey 1

Zones ft	Qt res. B/D	Production %	
4530.0-4558.0	-70.85	6.15	
4598.0-4628.0	-175.23	15.21	
4650.0-4652.0	-906.16	78.64	



Total Zone Rates; Res. Cond.

Corbin-Abo G-31

Company: Southwestern Energy Production Co.

Test: SIP

Field: Maljamar

Date: 12-10-03

Well: Corbin-Abo SWD #G-31

Survey: Survey 1

Baker Atlas

Zone ft	Corr. factor	Vm ft/min	Q downhole B/D	Contrib. %	Q @ s.c. STB/D
4530.0-4558.0	0.94	-31.67	-1152.25	6.15	-1152.00
4598.0-4628.0	0.94	-29.72	-1081.39	15.21	-1081.16
4650.0-4652.0	0.94	-24.91	-906.16	78.64	-905.97

Zone ft	ID in	Deviation °	T °F	P psia	FVF	Viscosity cp
4530.0-4558.0	5.100	0.00	78.66	2584.990	1.00	0.9800
4598.0-4628.0	5.100	0.00	79.08	2613.480	1.00	0.9800
4650.0-4652.0	5.100	0.00	79.75	2646.810	1.00	0.9700



Log

Corbin-Abo G-31

Company: Southwestern Energy Production Co.

Field: Maljamar

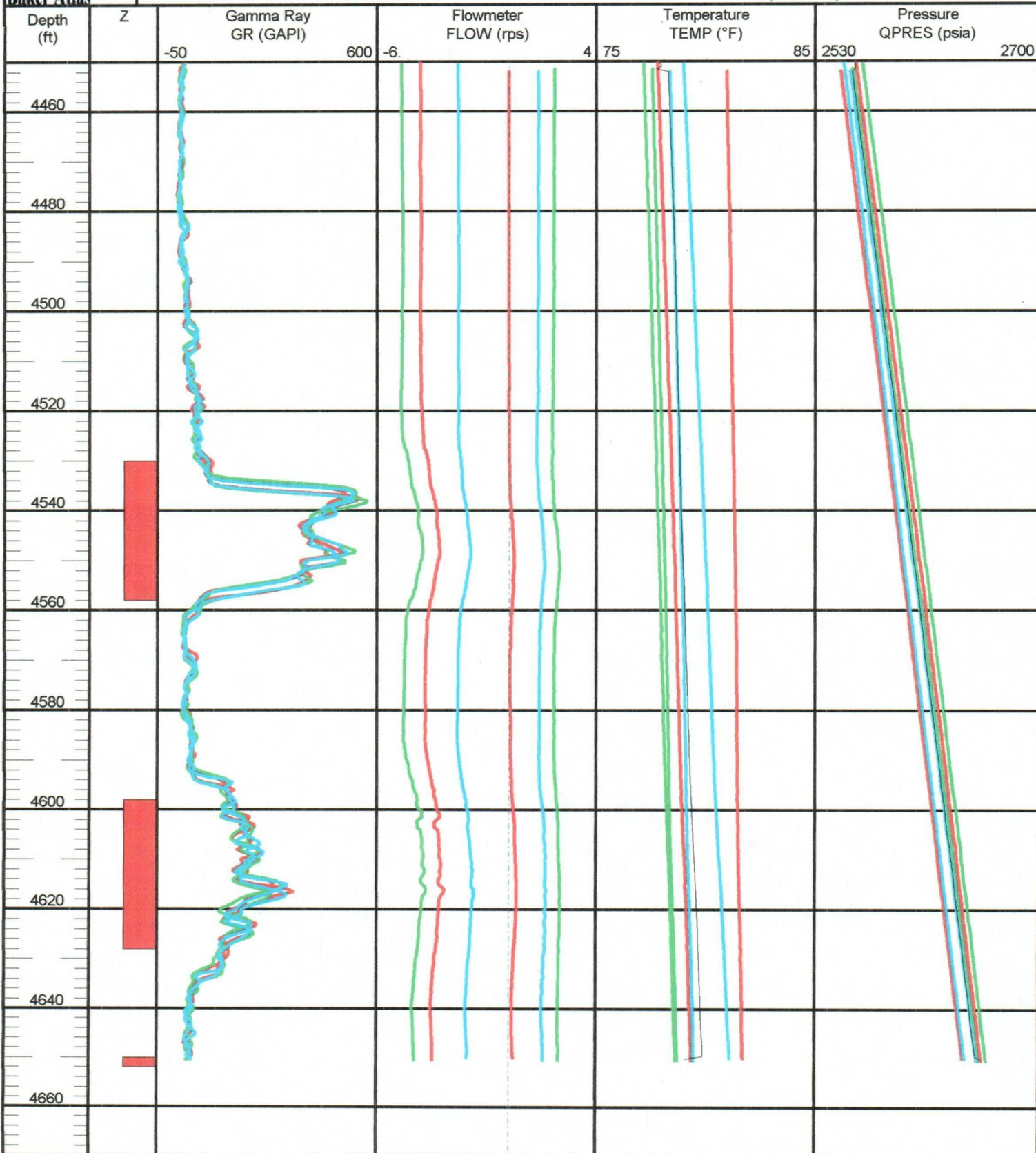
Well: Corbin-Abo SWD #G-31

Test: SIP

Date: 12-10-03

Survey: Survey 1

Baker Atlas





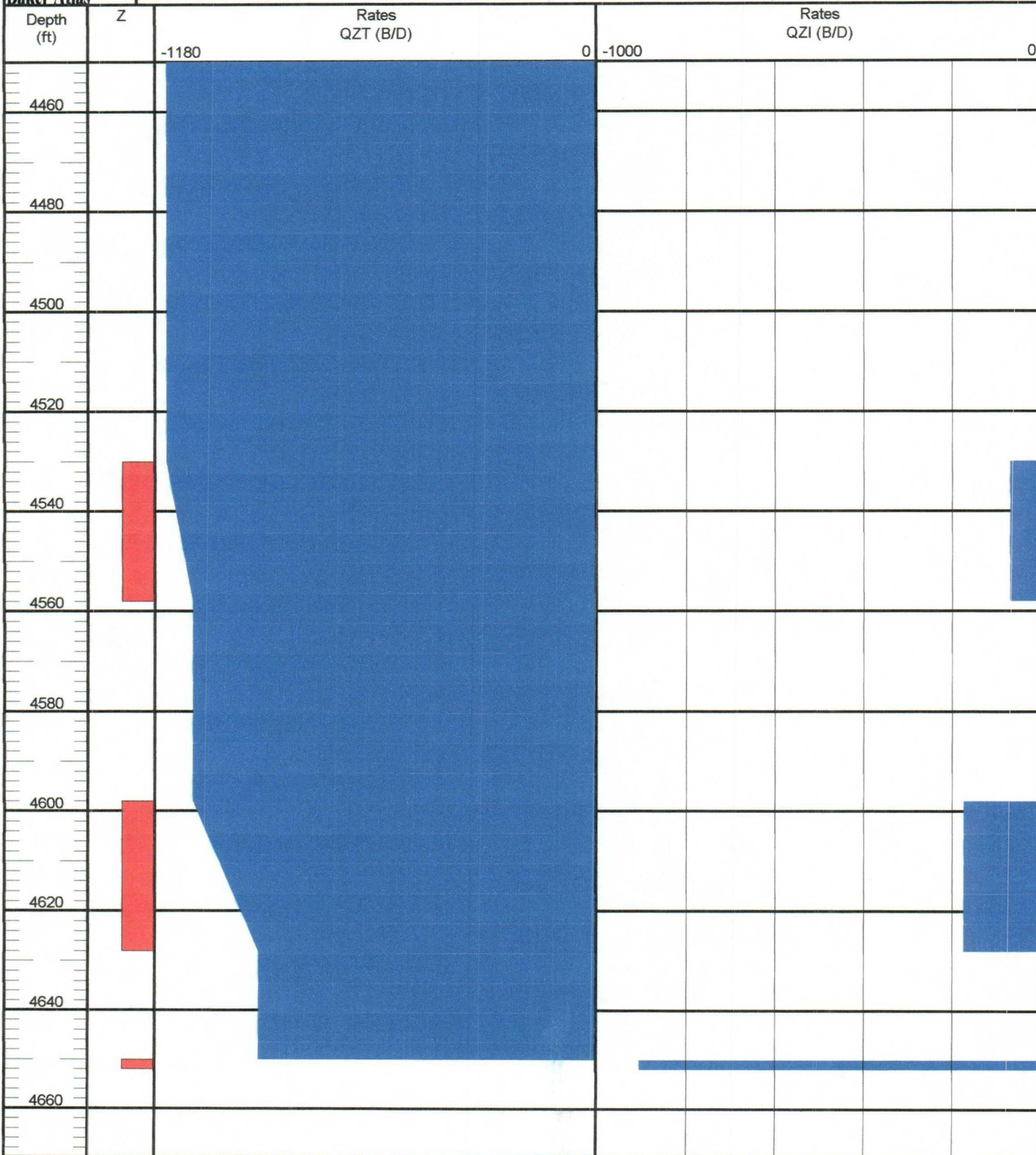
Log

Corbin-Abo G-31

Company: Southwestern Energy Production Co.
Field: Maljamar
Well: Corbin-Abo SWD #G-31

Test: SIP
Date: 12-10-03
Survey: Survey 1

Baker Atlas





Baker Atlas

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