Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NMOCD Artesia

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2

5. Lease Serial No.
NMNM41645

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
FEDERAL 13 COM 4

2. Name of Operator
CIMAREX ENERGY CO. OF COLORADO

Contact: AMITHY CRAWFORD
E-Mail: acrawford@cimarex.com

9. API Well No.
30-015-34199

3a. Address
202 S. CHEYENNE AVE STE 1000
TULSA, OK 74103

3b. Phone No. (include area code)
Ph: 432.620.1909

10. Field and Pool or Exploratory Area
CISCO CANYON; WOLFCAMP

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 13 T25S R26E 1620FNL 1400FEL

11. County or Parish, State
EDDY COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☒ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☒ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Federal 13 Com #4
Plugback/Recompletion Ops

Accepted for record - NMOCD 7-6-17

NM OIL CONSERVATION
ARTESIA DISTRICT
JUL 03 2017
RECEIVED

11/17/2016- Set CIPB @ 11443' mix and pump 45' on top of CIPB.
11/18/2016- Ran in hole with 5 1/2" CIBP set at 11162' with 25 sacks on top.
12/16/2016- Pressure test casing to 8500 psi. Chart for 30 min. Saw 250 psi drop after 30 min from 8500psi to 8250 psi. Good Test.
12/23/2016- Perforate Shoot Cisco Canyon perfs from 10143'-10351' 37 Total shots. Acidize and Frac Stage 1 with 2000 gal 15% HCL acid, 471157 gal slickwater, and 551019 # sand.
12/29-30/2016- Perforate wolfcamp perfs @ 10086'-9894'. 203 Total Shots. Acidize and frac with 10000 gal 15% HCL Acid, 2108748 gal slickwater, and 2523726# sand.
12/31/2016- Dig out plugs and Co to PBTD at 10865'

Submit new Completion report if not done already.

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #373054 verified by the BLM Well Information System
For CIMAREX ENERGY CO. OF COLORADO, sent to the Carlsbad
Committed to AFMSS for processing by DEBORAH MCKINNEY on 04/20/2017 ()

Name *(Printed/Typed)* AMITHY CRAWFORD — Title REGULATORY ANALYST

Signature (Electronic Submission) — Date 04/17/2017

ACCEPTED FOR RECORD
JUN 26 2017
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By _____ Title _____ Date _____

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

Additional data for EC transaction #373054 that would not fit on the form

32. Additional remarks, continued

1/11/2017- RIH with On/Off tool overshot, 2 3/8" tubing with GLVs set at 8598'

NM OIL CONSERVATION
ARTESIA DISTRICT
JUL 03 2017

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

RECEIVED

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-015-34199	87280	White City; Penn (G)

[4] Property Code	[5] Property Name	[6] Well Number
33622	Federal 13 Com	4

[7] OGRID No.	[8] Operator Name	[9] Elevation
162683	Cimarex Energy Co. of Colorado	3240'

[10] Surface Location

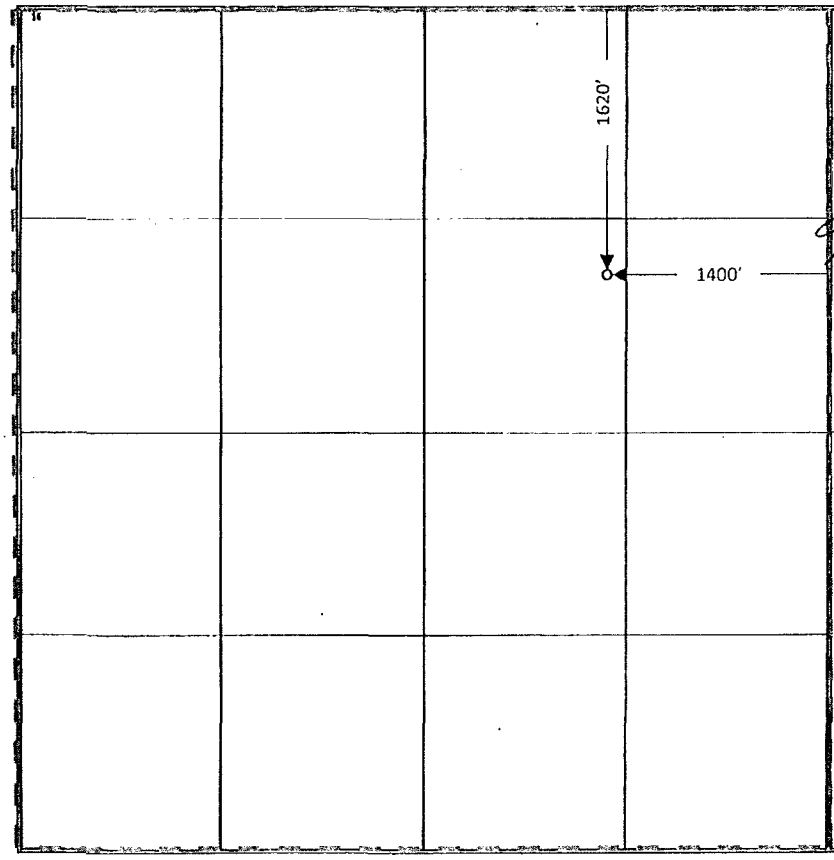
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	13	25S	26E		1620	North	1400	East	Eddy

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
640	Y	C	

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature — Date: 3/16/2017

Amithy Crawford
Printed Name

acrawford@cimrex.com
E-mail Address

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number

NM OIL CONSERVATION
ARTESIA DISTRICT
JUL 03 2017
RECEIVED

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
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811 S. First St., Artesia, NM 88210
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Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-015-34199	96890	Sage Draw; Wolfcamp, East (Gas)

[4] Property Code	[5] Property Name	[6] Well Number
33622	Federal 13 Com	4

[7] OGRID No.	[8] Operator Name	[9] Elevation
162683	Cimarex Energy Co. of Colorado	3240'

[10] Surface Location

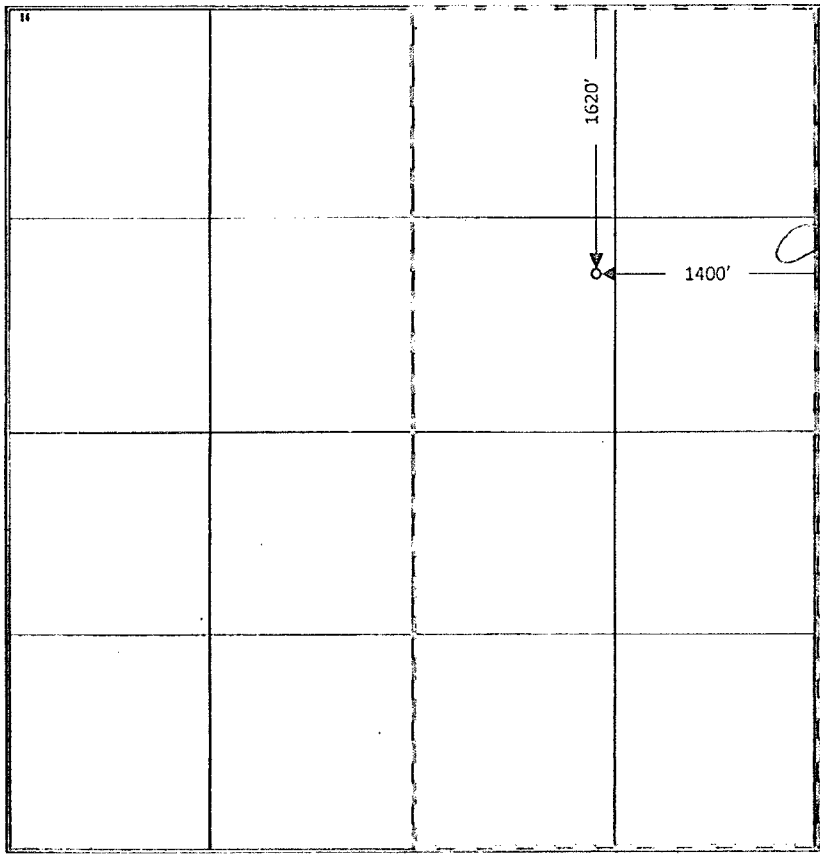
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West line	County
G	13	25S	26E		1620	North	1400	East	Eddy

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
320	Y	C	

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



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Signature — Date: 3/16/2017

Amithy Crawford
Printed Name

acrawford@cimrex.com
E-mail Address

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey

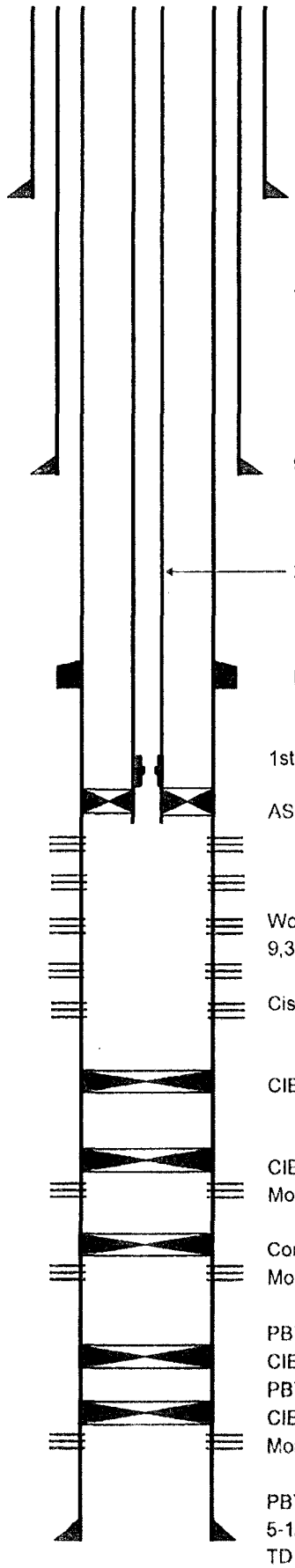
Signature and Seal of Professional Surveyor:

Certificate Number

CIMAREX

Post RC WBD
KB - 19' above GL

Cimarex Energy Co. of Colorado
Federal 13 Com #4
1620' FNL & 1400' FEL
Sec. 13, T-25-S, R-26-E, Eddy Co., NM
M. Karner 2/21/2016



13-3/8", 48# H-40 csg @ 209'
cmtd w/ 230 sx, cmt circ

TOC @ 1700' by CBL

9-5/8", 40# J-55 csg @ 3000'
cmtd w/ 940 sx, cmt circ

271 jts 2-7/8" 6.5# L-80 Tbg

DV Tool @ 8027'
cmtd w/ 1230 sx

1st stage cmt job reaches DV tool as per Radial CBL 11/30/05

AS-1X Packer @ 8,597'

Wolfcamp perfs (8,646' - 8,879', 9,084' - 9,266',
9,371' - 9,561', 9,619' - 9,835', 9,894' - 10,088')

Cisco Canyon perfs (10,143' - 10,351')

CIBP set at 11,162' with 25 sx pumped on top

CIBP set 11,443' with 35' of cement bailed on top
Morrow perfs (11493' - 11509')

Composite BP @ 11545'
Morrow perfs (11577' - 11585')

PBTD @ 11635'
CIBP @ 11645'
PBTD @ 11680'
CIBP @ 11690'
Morrow perfs (11731' - 11754')

PBTD @ 12244'
5-1/2" 17# P-110 @ 12358' cmtd w/ 955 sx, cmt circ
TD @ 12373'

Printed 4/7/2017

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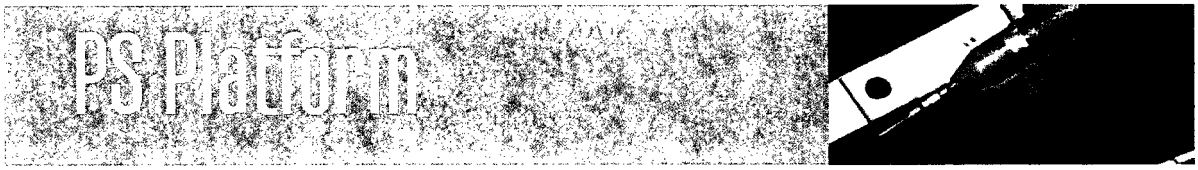


Interpretation Results - Final Report

Client: Cimarex Energy Company

Well: Federal 13 Com #4

Field: White City

County: Eddy, New Mexico

API: 30-015-34199

Log Date: 7-Mar-2017

Analyst: Leonid Kolomytsev
Daniel Amyotte
Casey Chadwick

Production logging
with confidence

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretations made by any of our officers, agents or employees.

These interpretations are also subject to Clause 4 of our General Terms and Conditions as set out in our current Price Schedule.

Cimarex Energy Company
Federal 13 Com #4
7-Mar-2017

Schlumberger

Logging Objective:

Flow contribution from each perforation.

Well Bore Information:

Production Tubing: 2-7/8" 6.5# L-80 @ 8597' MD

Production Casing: 5-1/2" 17# P-110 @ 12358' MD

Perforations: 6 Stages / 54 Perforations Clusters

Correlation: by Field Engineer to EOT.

Logging Tool: Standard PSP-DEFT-GHOST w/ 2.25" FBS on Digital Slickline (DSL)

General Logging Procedure:

RU & RIH w/ Gauge Ring. Report Tag Depth. ROH.

RU & RIH w/ PSP. Record Main Flowing Passes at variable logging speeds
(based on well conditions) from Top Log Interval (TLI) to Bottom Log Interval (BLI).

Record Main Station Stops (at least 2 minutes each) between perforations, stages, major changes in flow regime, or as directed by client or production log analyst.

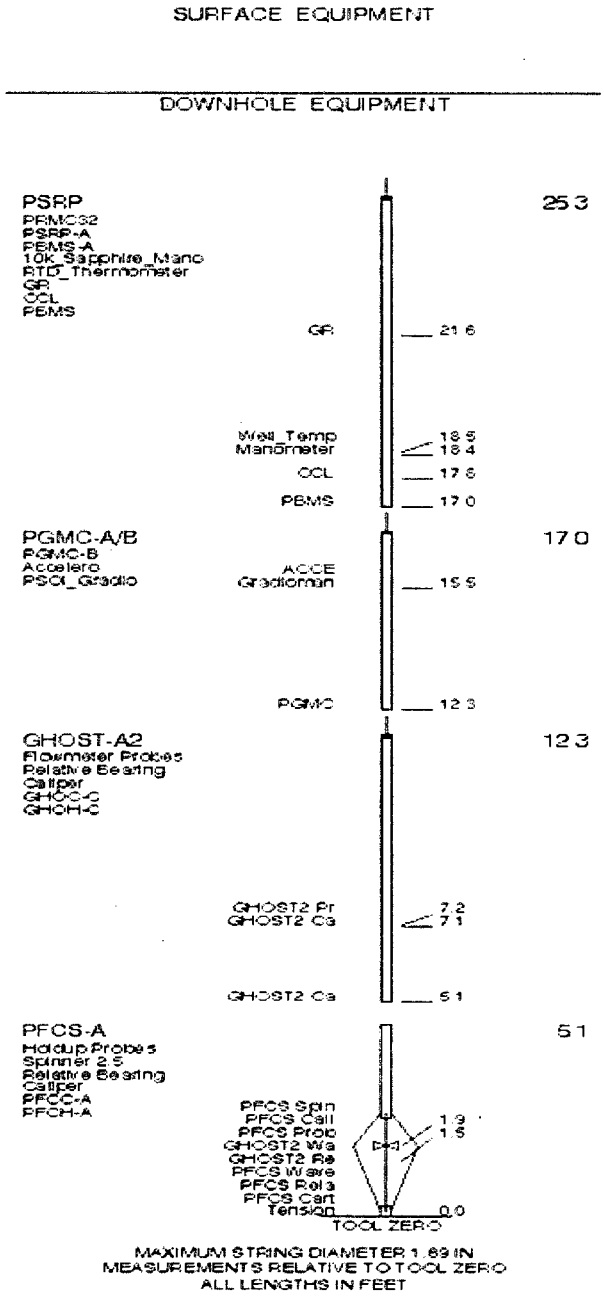
Record any addition Flowing Passes and/or Station Stops as needed or requested.

ROH. Delivery data to interpreter.

Cimarex Energy Company
Federal 13 Com #4
7-Mar-2017

Schlumberger

PL Tool Diagram:



Cimarex Energy Company
Federal 13 Com #4
7-Mar-2017

Schlumberger

Interpretation Results: Surface Flowrate Results - Stage

Formation	Stage	Perforations		Gas (mcfpd)	Oil (bpd)	Water (bpd)	Gas (%)	Oil (%)	Water (%)
Wolfcamp	6	8646	8879	145	--	70	8.0%	--	9.2%
	5	9084	9266	145	--	240	8.0%	--	31.6%
	4	9371	9561	85	--	80	4.7%	--	10.5%
	3	9619	9835	880	--	370	48.5%	--	48.7%
	2	9894	10088	160	--	0	8.8%	--	0.0%
	1	10143	10351	400	--	0	22.0%	--	0.0%
Total				1815	--	760	100.0%	--	100.0%

Cimarex Energy Company
Federal 13 Com #4
7-Mar-2017

Schlumberger

Interpretation Results: Surface Flowrate Results - Detail

Formation	Stage	Perforations		Gas (mcfpd)	Oil (bpd)	Water (bpd)	Gas (%)	Oil (%)	Water (%)
Wolfcamp	6	8646	8647	120	--	40	6.6%	--	5.3%
		8689	8690	0	--	0	0.0%	--	0.0%
		8715	8717	15	--	0	0.8%	--	0.0%
		8742	8743	0	--	0	0.0%	--	0.0%
		8760	8761	0	--	0	0.0%	--	0.0%
		8783	8784	10	--	10	0.6%	--	1.3%
		8804	8806	0	--	0	0.0%	--	0.0%
		8830	8832	0	--	10	0.0%	--	1.3%
		8849	8851	0	--	0	0.0%	--	0.0%
		8877	8879	0	--	10	0.0%	--	1.3%
Wolfcamp	5	9084	9085	trace	--	0	trace	--	0.0% **
		9110	9111	0	--	0	0.0%	--	0.0%
		9131	9132	0	--	0	0.0%	--	0.0%
		9147	9148	0	--	0	0.0%	--	0.0%
		9186	9187	50	--	40	2.8%	--	5.3%
		9203	9204	0	--	0	0.0%	--	0.0%
		9217	9219	35	--	40	1.9%	--	5.3%
		9245	9247	50	--	80	2.8%	--	10.5%
		9264	9266	10	--	80	0.6%	--	10.5%
Wolfcamp	4	9371	9372	35	--	30	1.9%	--	3.9%
		9391	9392	0	--	10	0.0%	--	1.3%
		9416	9417	10	--	20	0.6%	--	2.6%
		9432	9433	0	--	0	0.0%	--	0.0%
		9466	9467	40	--	20	2.2%	--	2.6%
		9484	9485	0	--	0	0.0%	--	0.0%
		9504	9506	0	--	0	0.0%	--	0.0%
		9524	9526	0	--	0	0.0%	--	0.0%
		9542	9544	0	--	0	0.0%	--	0.0%
		9559	9561	0	--	0	0.0%	--	0.0%
Wolfcamp	3	9619	9620	450	--	0	24.8%	--	0.0%
		9643	9644	20	--	50	1.1%	--	6.6%
		9665	9666	25	--	50	1.4%	--	6.6%
		9693	9694	10	--	40	0.6%	--	5.3%
		9712	9714	35	--	80	1.9%	--	10.5%
		9750	9752	295	--	0	16.3%	--	0.0%
		9784	9786	45	--	90	2.5%	--	11.8%
		9833	9835	0	--	60	0.0%	--	7.9%

continued on next page

Interpretation Results: Surface Flowrate Results - Detail (Continued)

Wolfcamp	2	9894	9895	45	--	0	2.5%	--	0.0%	
		9923	9924	0	--	0	0.0%	--	0.0%	
		9941	9942	45	--	0	2.5%	--	0.0%	
		9961	9962	35	--	0	1.9%	--	0.0%	
		9985	9986	trace	--	0	trace	--	0.0%	**
		10035	10036	35	--	0	1.9%	--	0.0%	
		10050	10051	trace	--	0	trace	--	0.0%	**
		10068	10070	trace	--	0	trace	--	0.0%	**
		10086	10088	0	--	0	0.0%	--	0.0%	
Wolfcamp	1	10143	10144	115	--	0	6.3%	--	0.0%	
		10157	10158	trace	--	0	trace	--	0.0%	**
		10208	10209	trace	--	0	trace	--	0.0%	**
		10229	10230	285	--	0	15.7%	--	0.0%	
		10244	10246	0	--	0	0.0%	--	0.0%	
		10263	10265	0	--	0	0.0%	--	0.0%	
		10306	10308	0	--	0	0.0%	--	0.0%	
		10349	10351	0	--	0	0.0%	--	0.0%	
Total				1815	--	760	100.0%	--	100.0%	

Cimarex Energy Company
Federal 13 Com #4
7-Mar-2017

Schlumberger

Interpretation Remarks

This interpretation is based on PSP Production Log data recorded on 07-Mar-2017 in memory on slickline. The Field Engineer (FE) is Blake Melcher. Five down and four up main logging passes were recorded over the main logging interval under flowing conditions. Color coding is as follows: D1/U1-Red, D2/U2-Dk Blue, D3/U3-Green, D4/U4-Lt Blue, D5-Violet. Down pass curves have solid coding. Up pass have dashed coding. Station stops are presented as circles at their respective depths.

Main logging passes are correlated by Field Engineer. Top Log Interval (TLI) is observed @ 8400' MD. Bottom Log Interval (BLI) is observed @ 10462' MD.

EOT is observed on the averaged X-Y caliper measurement (C1C2) @ 8603" MD. The average X-Y caliper measurement (C1C2) is consistent and agrees with nominal ID. A nominal ID of 4.892" is used in the interpretation calculations.

Downhole pressure (WPRE) is stable during the main passes. Down and Up passes are used in the interpretation calculations.

Downhole temperature (WTEP) trends are repeatable. Down pass temperatures are used preferentially in the interpretation calculations.

All DEFT (electrical) probes are functioning properly and the basis of the water holdup (Yw) image. DEFT (electrical) probe measurements are most consistent on down passes which are used preferentially in the interpretation calculations. DEFT (electrical) probes provide a confident measurement of water holdup, independent of PVT information, by counting the hydrocarbon bubbles during a dominate water flow regime or water droplets during a dominate gas or oil flow regime.

* GHOST (optical) probes measurements were not consistent between individual probes and passes, and are not used in the interpretation calculations.

The gradiomanometer density measurement (WFDE) is confident and used in the interpretation calculations.

Spinner response is consistent and provides a confident slope and liquid threshold for downhole in-situ spinner calibrations. All spinner passes are used in the spinner calibrations and apparent velocity calculations.

Total downhole rates (QZT) are calculated using the apparent spinner velocity, a nominal casing ID, averaged water holdup (Yw), fluid density (WFDE) and an established water-hydrocarbons flow model. Rates are calculated downhole and presented in downhole barrels on the log snapshots. Calculated downhole rates are then converted to surface rates at standard conditions and presented in the above table.

PVT Information: Oil gravity of 52 API, Gas gravity of 0.7178 s.g. Water salinity 63000 ppm was provided by Cimarex .

** A report of "trace" gas production is based on temperature, water holdup and density but does not appear to be of sufficient volume to observed on the spinner. Therefore, "trace" gas suggests minimal or negligible gas production, if any, into the wellbore.

Overall, data quality is high (except for the GHOST optical probes) and the downhole environment is stable resulting in a high level of confidence in gas/water interpretation calculations and results.

Leonid Kolomytsev, Production Engineer
Schlumberger, Houston, TX, USA

Casey Chadwick, Production Logging Domain Champion,
North America Wireline, Houston, TX, USA

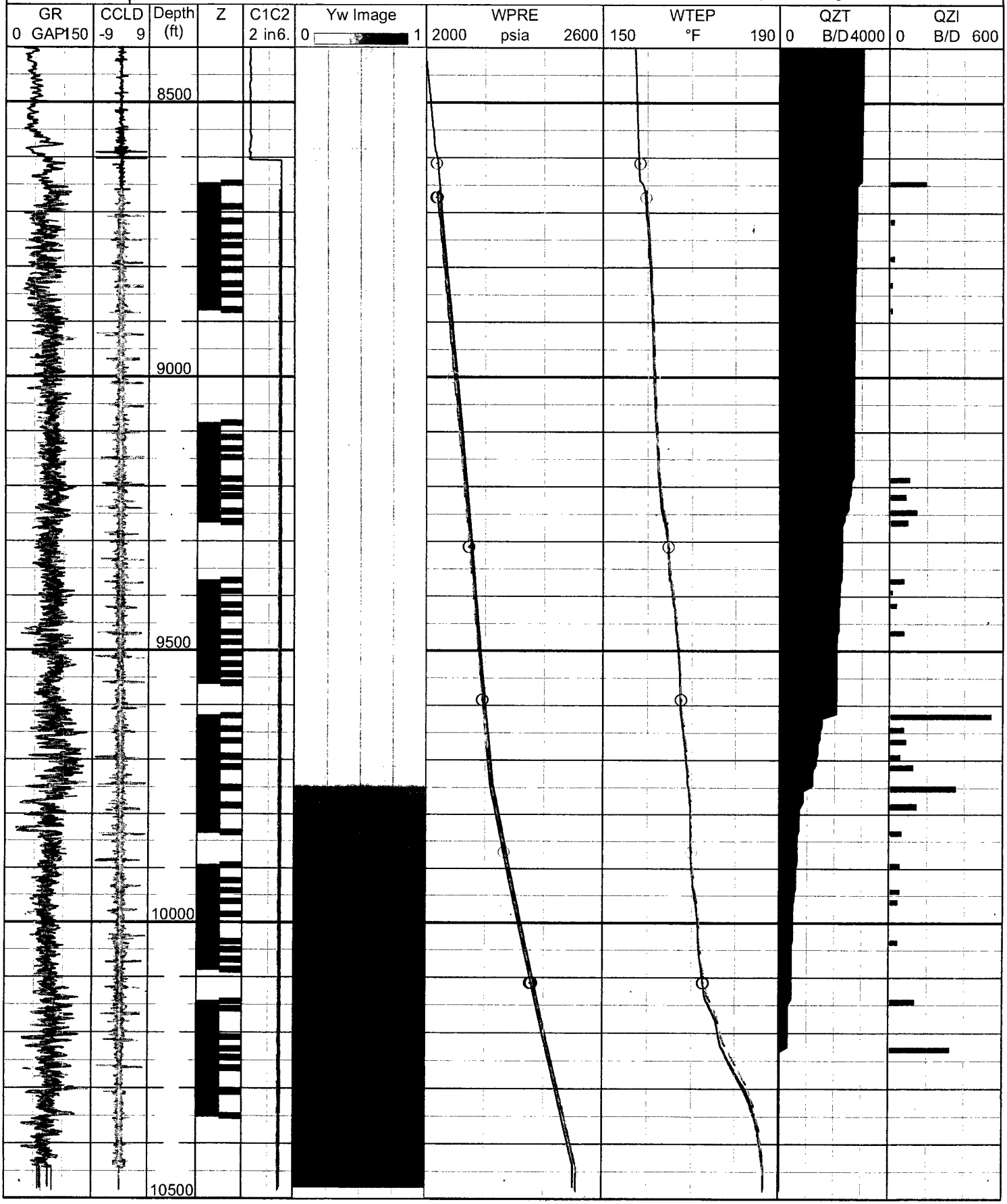
Schlumberger

PSP Production Log - Interpretation Results

Cimarex_Federal 13 Com4 Interp_new

Company: Cimarex Energy Company
Field: White City
Well: Federal 13 Com #4

Test: PSP Production Log
Date: 07-Mar-2017
Survey: Flowing



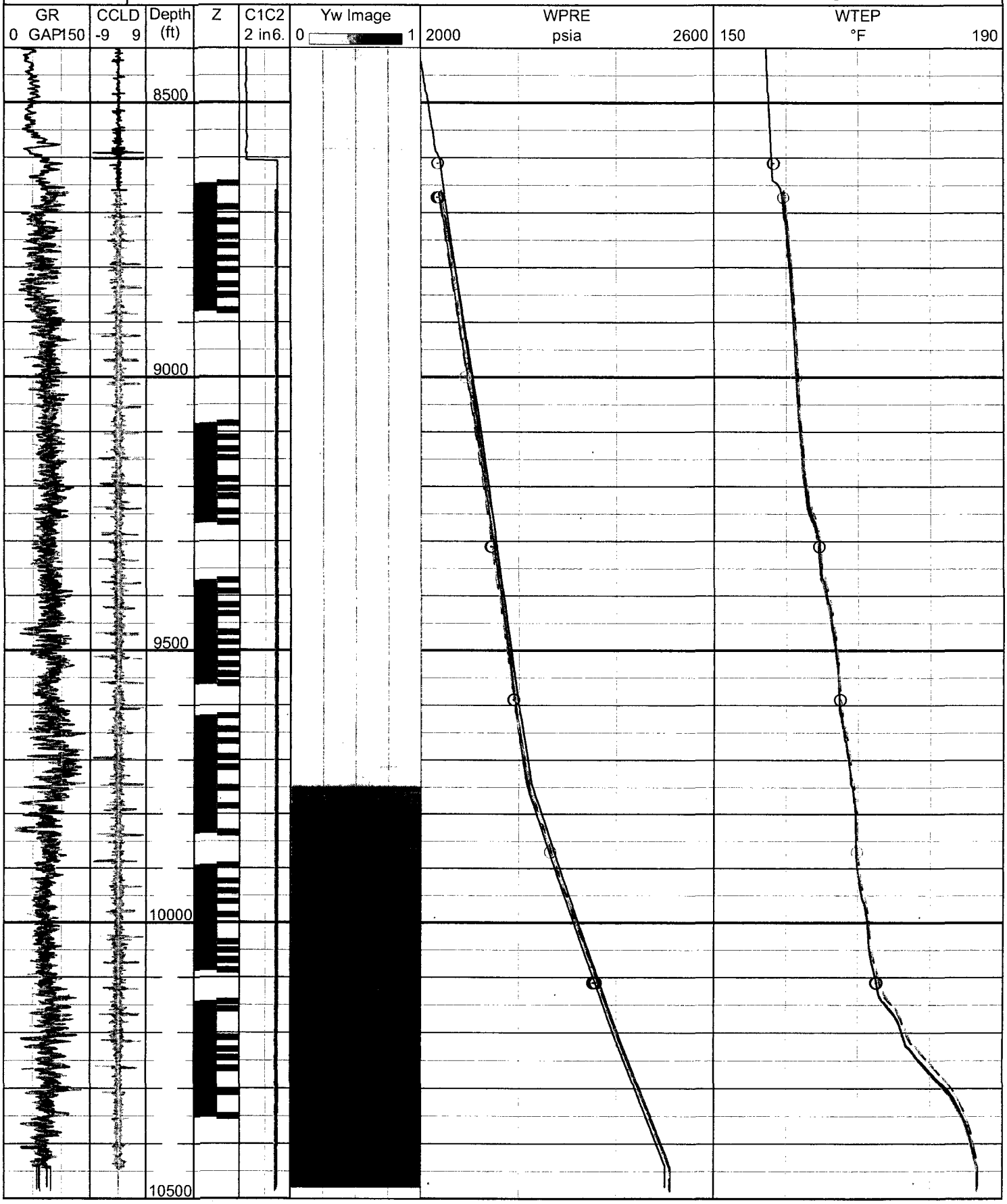
Schlumberger

PSP Production Log - Pressure & Temperature

Cimarex_Federal 13 Com4 Interp_ne...

Company: Cimarex Energy Company
Field: White City
Well: Federal 13 Com #4

Test: PSP Production Log
Date: 07-Mar-2017
Survey: Flowing



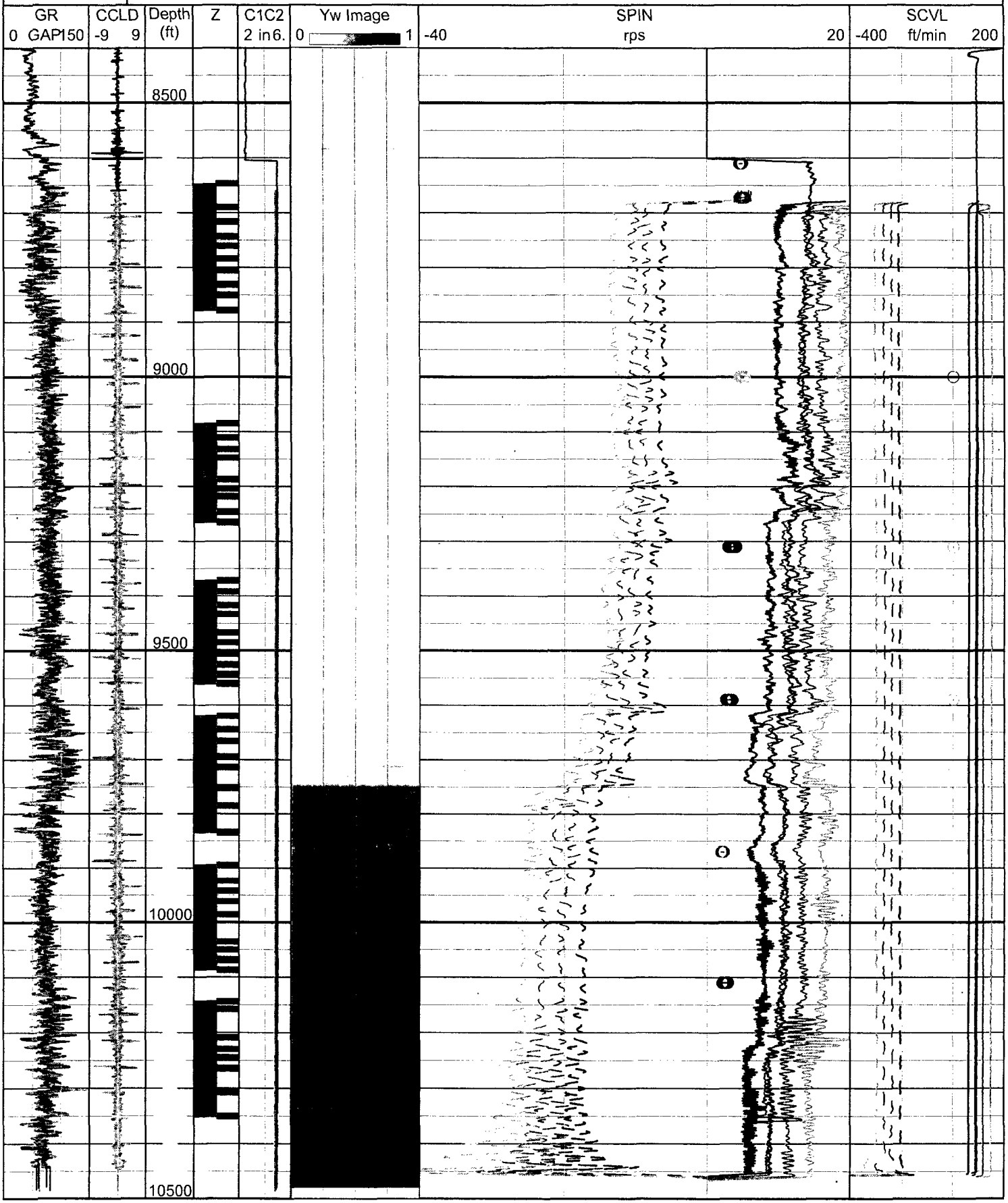
Schlumberger

PSP Production Log - Spinner & Cable Velocity

Cimarex_Federal 13 Com4 Interp_ne...

Company: Cimarex Energy Company
Field: White City
Well: Federal 13 Com #4

Test: PSP Production Log
Date: 07-Mar-2017
Survey: Flowing



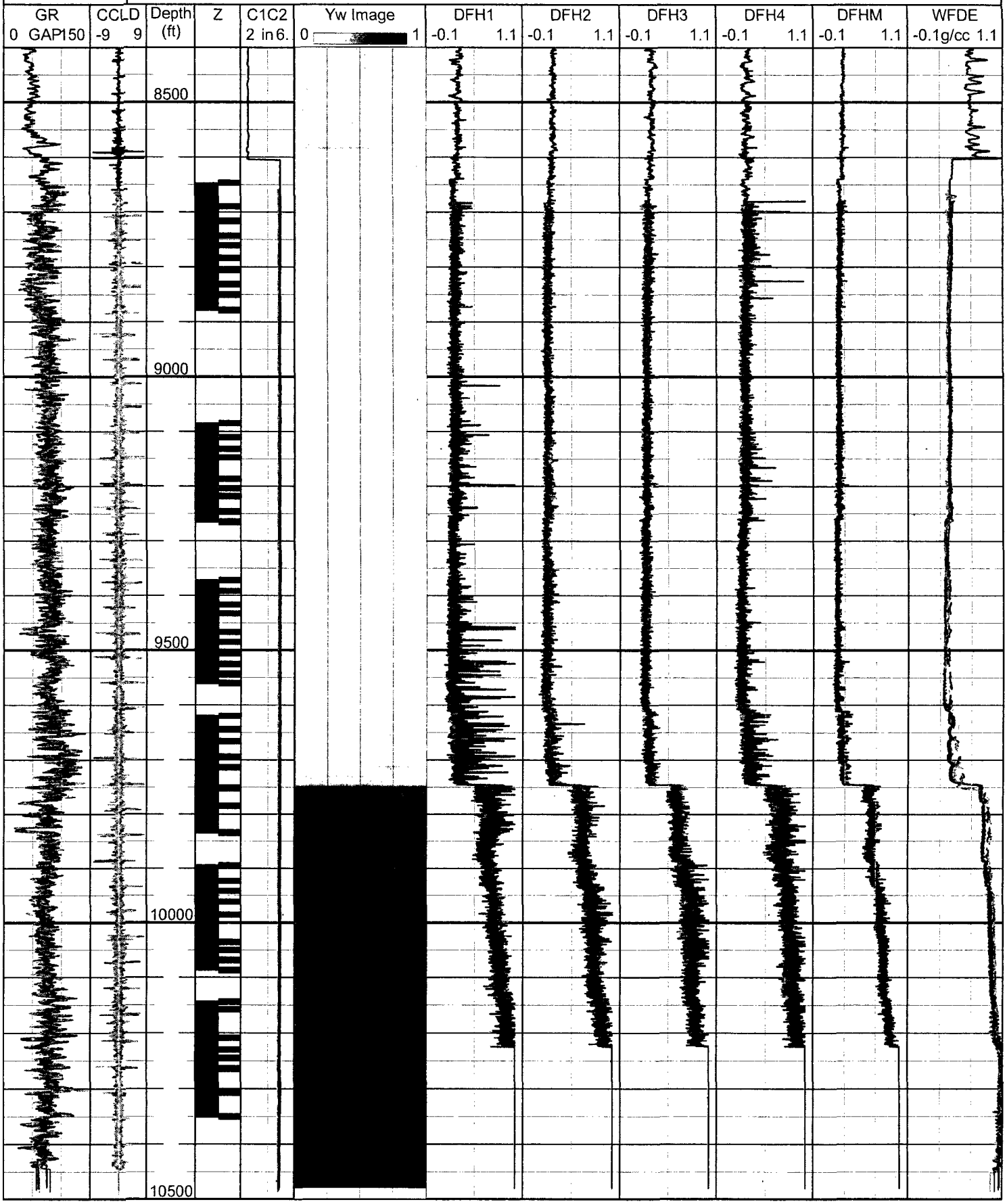
Schlumberger

PSP Production Log - DEFT Water Holdup & Density

Cimarex_Federal 13 Com4 Interp_ne...

Company: Cimarex Energy Company
Field: White City
Well: Federal 13 Com #4

Test: PSP Production Log
Date: 07-Mar-2017
Survey: Flowing



PSP & FSI Interpretation Mnemonics

CALI_FSI	Flow Scanner Caliper
CCLC/CCLD	Casing Collar Locator
CVEL/SCVL	Cable Velocity
D1RB	DEFT Relative Bearing Probe 1
DFBFx_FSI (0-5)	FSI Vertical DEFT Bubble Count Array (0-Bot, 5-Top)
DFBM	PSP Mean DEFT Bubble Count
DFBx (1-4)	PSP Individual Probe DEFT Bubble Count
DFHFx_FSI (0-5)	FSI Vertical DEFT Water Holdup Array (0-Bot, 5-Top)
DFHM	PSP Mean DEFT Water Holdup
DFHx (1-4)	PSP Individual Probe DEFT Water Holdup
GHBFx_FSI (0-5)	FSI Vertical GHOST Bubble Count Array (0-Bot, 5-Top)
GHBM2	PSP Mean GHOST Bubble Count
GHBx (5-8)	PSP Individual Probe GHOST Bubble Count
GHHFx_FSI (0-5)	FSI Vertical GHOST Gas Holdup Array (0-Bot,5-Top)
GHHM2	PSP Mean GHOST Gas Holdup
GHHx (5-8)	PSP Individual Probe GHOST Gas Holdup
GR	Gamma Ray
HTEN	Head Tension/Compression
MWFD	Pressure Derived Density
PFC1	PSP Caliper 1 (X)
PFC2	PSP Caliper 2 (Y)
RB_FSI	FSI Relative Bearing
SPIN/SPI1	Full Bore Spinner / Inline Spinner
SPIFx_FSI (0-4)	FSI Vertical Micro-Spinner Array (0-Bot, 4-Top)
WFDE	Gradio Well Fluid Density
WPRE	Well Pressure
WTEP	Well Temperature

Color Coding is typically the same for all the curves that belong to the same pass
RED – Pass One / Dk Blue – Pass Two / Green – Pass Three / Lt Blue – Pass Four

VAFV/VAPP	Apparent fluid velocity (gas, water & oil)
QGI, QOI, QWI	Interval Gas, Oil, Water Rates (down hole unless stated otherwise)
QGT, QOT, QWT	Cumulative Gas, Oil, Water Rates (down hole unless stated otherwise)

Tool Mnemonics List

DEFT	Digital Fluid Entry Tool (Resistivity Probes)
GHOST	Gas Holdup Optical Sensor Tool (Optical Probes)
FSI	Flow Scanner Imager
PSP	Production Services Platform
PBMS	Production Basic Measurement Sonde (Temperature, Pressure, CCL, GR)
PCMS	Production Compression Measurement Sonde
PGMC	Production GradioManometer Carrier (Density)
PFCS	Production Flowmeter Caliper Sonde (Holdup, Caliper, Full Bore Spinner)
PILS	Production In-Line Spinner