

Diamond 34 State 1 SWD



Inconsistencies regarding reported cement top:

7/12/96: Top of cement reported to NMOCD as 5000' (C-108)

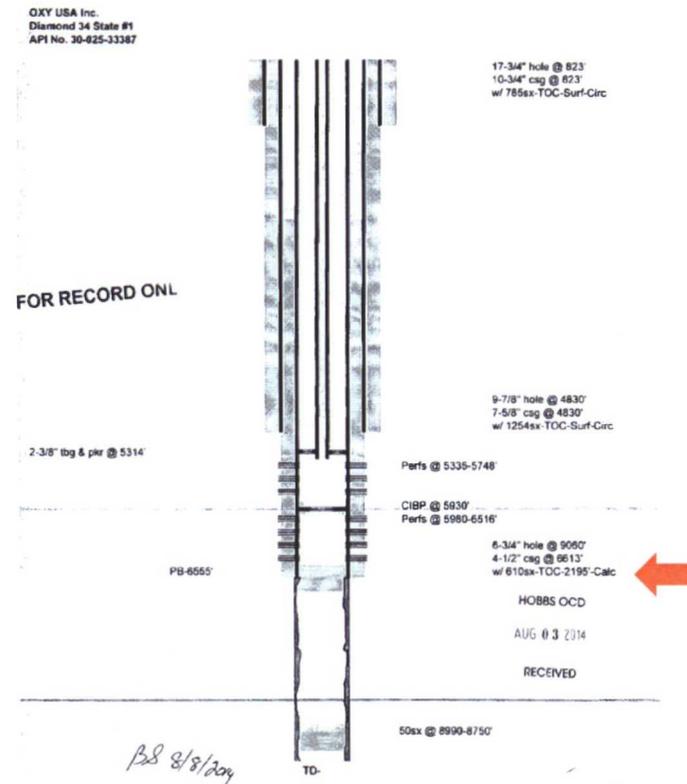
10/31/97: TOC reported as 5200' (C-105)

8/3/14: TOC reported as 2195' (C-103)

- first report of cement top by Oxy in public files
- calculated value assumes 100% placement

1/20/16: Oxy furnishes cement bond log, dated 8/19/1997, to Devon (Requested 10/14/2015)

- Estimated top of cement at **5165'**
- TOC is indicated by "good bond indicator" on log (shaded section in CBL amplitude track).



Oil Conservation Division

Case No. _____

Exhibit No. B

Diamond 34 State 1 SWD

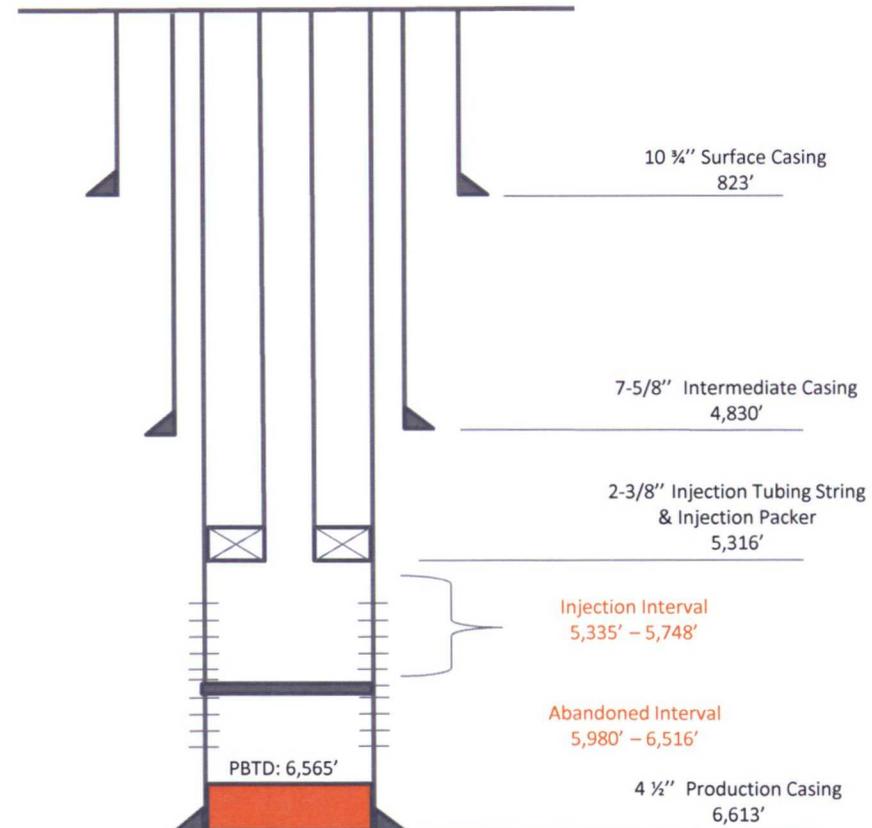


Main Points Addressing Wellbore Integrity

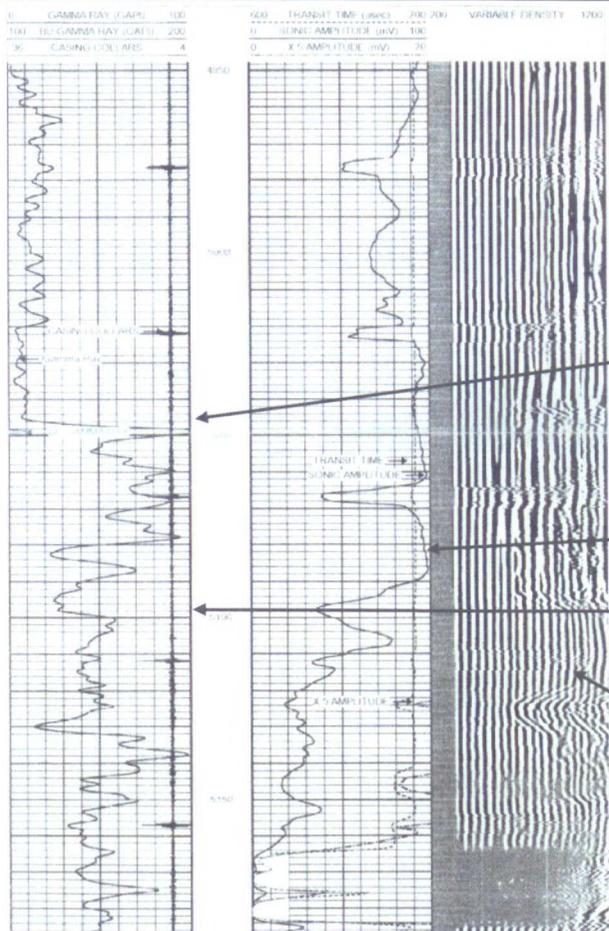
- 7-5/8" intermediate casing set above base of salt
- Bond log indicates presence of free pipe below 5100'
 - Chevron patterns and weak formation arrivals on VDL track indicate absence of cement coverage down to a depth of at least 5,115'
- Free pipe section includes both Base of Salt (5,044) & Top of Bell Canyon formation (5,098')
- Cement coverage does not extend to intermediate casing shoe, cover the top of the permitted injection zone, or cover the base of the salt section

Based on these Facts:

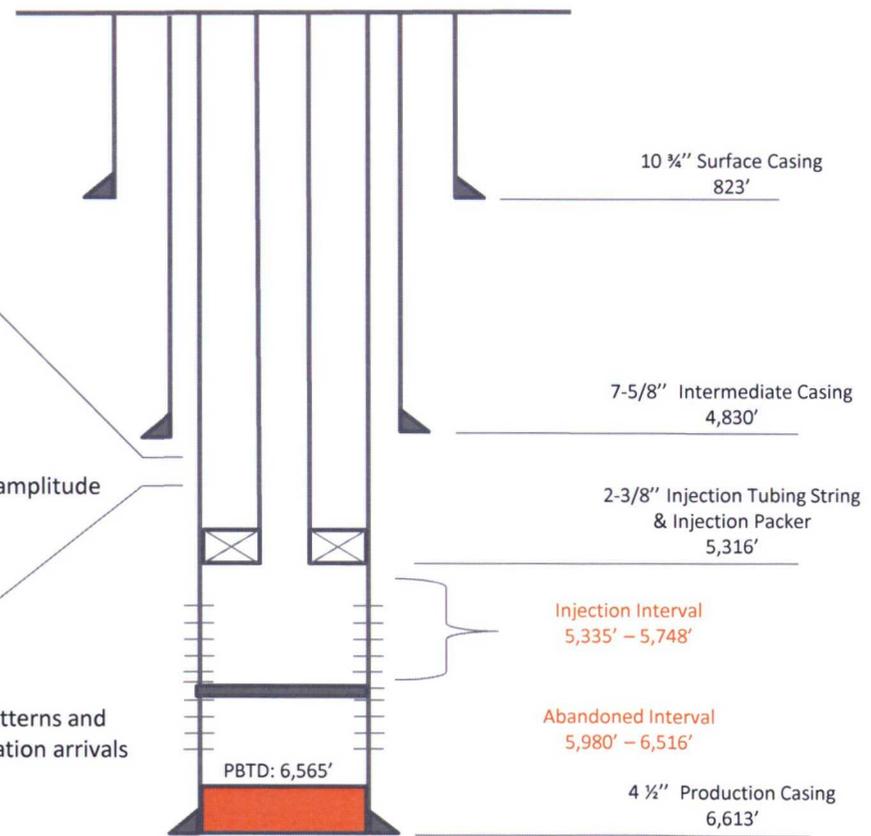
- Lack of cement bond behind production casing establishes conduit for fluid flow between permitted injection zone and base of salt section
- High likelihood of washouts in salt section provides additional path for vertical fluid migration behind intermediate casing



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Est. Base of Salt
 "Free-pipe" CBL amplitude
 Est. Top of Bell Canyon
 Chevron patterns and weak formation arrivals



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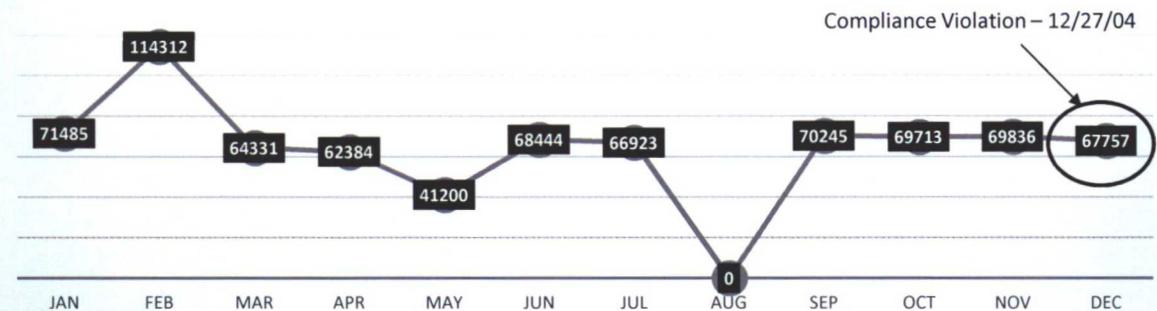
Facts:

- Overpressure compliance violation cited in December, where reported volumes were similar to average volumes injected throughout the year (NMOCD record)
- Reported monthly injection volumes in 2004 greatly exceeded average injection volumes of any other year since 2002
- As late as September 2015, Oxy continued to inject above permitted pressures (ref: Oxy-257)

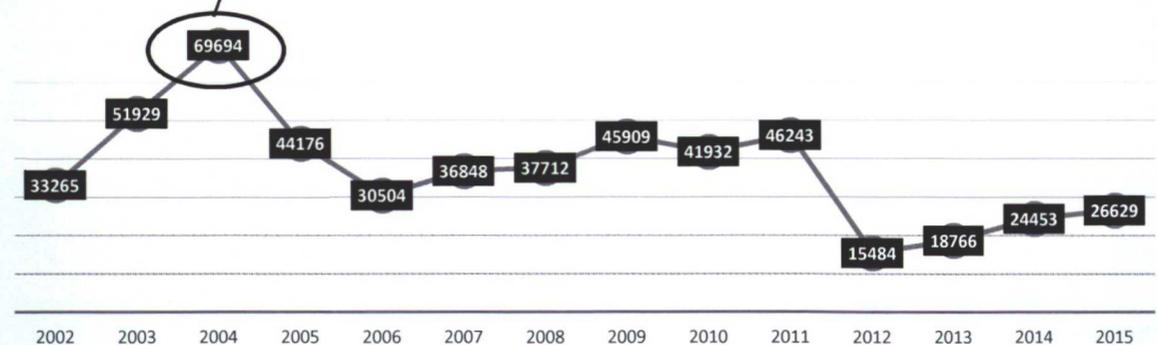
Based on these facts:

- Fracture gradient likely was exceeded, which could have established a vertical path into the production casing annulus
- This far-wellbore path would be unidentifiable by RA-tracer survey data if communication was established beyond the tool's depth of investigation

2004 Monthly Injection Volumes



2002-2015 Average Monthly Volumes



Diamond 34 State 1 SWD



From: Keith_Sevin@oxy.com
Sent: Thursday, September 17, 2015 4:16 PM
To: Sebastian_Millan@oxy.com
Cc: Van_Barton@oxy.com; Charles_Wagner@oxy.com; Gary_Morrison@oxy.com; Donna_Havins@oxy.com; Laura_Drum@oxy.com; Thomas_Clifford@oxy.com; Keith_Murphy@oxy.com
Subject: Re: Devon well offset to our Diamond 34 State 1

All - Thoughts/recommendations?

Sent from my iPhone

On Sep 17, 2015, at 1:58 PM, "Millan, Sebastian" <Sebastian_Millan@oxy.com> wrote:

> As per my previous note we were injecting above the permitted pressure
> on the Diamond 34 State 1 roughly 2500 bbl of fluid per day, we expect
> to be able to put down close to 1100 BWPD after the workover is
> finished, so if we decide to keep the well shut until Devon finishes
> their new well we would be looking at a total trucking cost of around
> 60M Thanks and best regards, Sebastian



> Sebastian Millan
> Leader Production Ops Engineer
> Permian Resources Delaware
> Direct: (713) 350 - 4950
> Mobile: (832) 528 - 3268
> Sebastian_Millan@oxy.com<mailto:Sebastian_Millan@oxy.com>

> <Picture (Device Independent Bitmap)>
> <Picture (Device Independent Bitmap)>

Date	Tubing Pressure
09/20/2015	0
09/19/2015	0
09/18/2015	0
09/17/2015	0
09/16/2015	0
09/15/2015	0
09/14/2015	855
09/13/2015	855
09/12/2015	855
09/11/2015	855
09/10/2015	855
09/09/2015	855
09/08/2015	855
09/07/2015	855
09/06/2015	855
09/05/2015	855
09/04/2015	855
09/03/2015	855
09/02/2015	855
09/01/2015	855

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NMOCDCASE NO. 15397: OXY-357

NMOCDCASE NO. 15397: OXY-442

Diamond 34 State 1 SWD



NMOCD CASE NO. 15397: OXY-443

Remarks

9/09/15 DIAMOND 34-1 KEY 172 BEN SANCHEZ DC: 4,878 CC: 4,878 ROAD PULLING UNIT FROM THE VILLA A 2H TO LOCATION. HTGSM AND HAZARD HUNT SPOTTED IN THE PULLING UNIT AND REVERSE EQUIPMENT RIGGED UP OVER THE WELL. TUBING AND CASING WERE EQUALIZED AT 480 PSI. OPENED THE CASING TO THE FRAC TANK AND TRIED TO BLEED DOWN. TUBING AND CASING BOTH DROPPED 10 PSI TO 470 PSI. CLOSED CASING VALVE AND BOTH TUBING AND CASING EQUALIZED. SECURED THE WELL AND SHUT DOWN FOR THE DAY.



NMOCD CASE NO. 15397: OXY-446

9/11/15 DIAMOND 34-1 KEY 172 MARIO P SANCHEZ DC: 9254 CC: 14,132.00 ARRIVED ON LOCATION TGSM HAZARD HUNT TP- 400PSI CP- 600PSI RIGGED UP RENAGADE SLICKLINE RJH DID VARIUS GAUGE RUNS TO TRY AND DETERMINE PROFILE SIZE TO SET A BLANKING PLUG SET A 1.56 PLUG AND TRIED TO PRESSURE TEST TUBING COULD NOT GET A TEST SEEMED PUMPING PAST PLUG @ 1 BBL/MIN 1000PSI AND NOT COMMUNICATING TO CASING RETRIEVED PLUG AND RJH WITH A 1.43" BLANKING PLUG SET IT AND TRIED TO TEST AGAIN SAME THING HAPPNED RETRIEVED PLUG RIGGED DOWN SLICKLINE SECURED WELL AND RIG SHUT DOWN FORCAST 9-14-15 SHOT HOLES IN TBG PUMP MUD WELL CONTROL NIPPLE UP BOP POOH SCANNING TUBING



NMOCD CASE NO. 15397: OXY-450

9/15/15 DIAMOND 34-1 KEY 172 BEN SANCHEZ DC: 10,760 CC: 31,419 ROAD CREW TO LOCATION HTGSM AND HAZARD HUNT. WELL HAD 400 PSI ON THE TUBING AND 500 PSI ON THE CASING. PUMPED 20 BBL OF 14 POUND MUD DOWN THE CASING AND 9 BBL DOWN THE TUBING FOR WELL CONTROL. FUNCTION TESTED B.O.P. NIPPLED DOWN WELLHEAD AND NIPPLED UP B.O.P. FOUND PACKER FREE W RIGGED UP STEALTH TUBING SCANNER. PULLED AND SCANNED 2-3/8" IPC TUBING OUT OF THE HOLE. SCANNED A TOTAL OF 166 JOINTS FOUND 166 YELLOW 1 GREEN AND 1 RED. PACKER LOOKED TO BE IN GOOD CONDITION FOUND SLICK LINE WIRE INSIDE THE PROFILE NIPPLE. SECURED THE WELL AND SHUT DOWN FOR THE DAY.



Date	Tubing Pressure
09/20/2015	0
09/19/2015	0
09/18/2015	0
09/17/2015	0
09/16/2015	0
09/15/2015	0
09/14/2015	855
09/13/2015	855
09/12/2015	855
09/11/2015	855
09/10/2015	855
09/09/2015	855
09/08/2015	855
09/07/2015	855
09/06/2015	855
09/05/2015	855
09/04/2015	855
09/03/2015	855
09/02/2015	855
09/01/2015	855

NMOCD CASE NO. 15397: OXY-442