

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

OCD-ARTESIA  
MAY 29 2009

FORM APPROVED  
OMB No. 1004-0135  
Expires July 31, 1996  
Lease Serial No.

Rm

**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 reverse side**

1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
2. Name of Operator Cimarex Energy Co. of Colorado		7. If Unit or CA/Agreement, Name and/or No.
3a. Address 5215 N. O'Connor Blvd Ste 1500 Irving Tx 75039	3b. Phone No. (include area code) 972-401-3111	8. Well Name and No. Hydrus 10 Federal No. 6
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) 2310 FSL & 330 FEL 10-17S-30E		9. API Well No. 30-015-36544
		10. Field and Pool, or Exploratory Area Loco Hills; Glorieta-Yeso
		11. County or Parish, State Eddy County, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other <u>Add lateral</u>
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	<u>leg</u>
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, included estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleate 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 shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleation in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

The Hydrus 10 Federal No. 6 is currently permitted as a vertical Loco Hills; Glorieta-Yeso oil well test. Cimarex would like to change the drilling plan in order to make the well a proposed horizontal 80-acre E2SE Loco Hills; Glorieta-Yeso oil well.

Casing and cementing changes are shown on the attached page. Also attached are a revised C-102 and a preliminary directional plan for the horizontal.

**SEE ATTACHED FOR  
CONDITIONS OF APPROVAL**

14. I hereby certify that the foregoing is true and correct  
Name (Printed/Typed)

Natalie Krueger

Signature

Title

Regulatory Analyst

Date

May 22, 2009

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by

Title

Office

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.

Title 18 U.S.C. Section 1001, makes 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 reverse)

**APPROVED**

Date  
**MAY 27 2009**

WESLEY W. INGRAM

PETROLEUM ENGINEER

Revised Drilling Plan  
**Hydrus 10 Federal No. 6**  
 Cimarex Energy Co. of Colorado  
 SHL 2310 FSL & 330 FEL  
 BHL 890 FSL & 330 FEL  
 Eddy County, NM

Revised Drilling Plan (surface & intermediate remain as permitted)

Hole	Hole Size	Depth	Casing OD	Weight	Thread	Collar	Grade
<i>Surface</i>	14 $\frac{3}{4}$ "	0' to 450'	New 11 $\frac{3}{4}$ "	42#	8-R	STC	H-40
<i>Intermediate</i>	11"	0' to 1100'	New 8 $\frac{5}{8}$ "	24#	8-R	STC	J-55
<i>Pilot Hole Steel</i>	7 $\frac{7}{8}$ "	0' to 4519'	New 5 $\frac{1}{2}$ "	17#	8-R	LTC	N-80
<i>Lateral</i>	4 $\frac{3}{4}$ "	4419' to <del>6112'</del> 6118'	New 2 $\frac{7}{8}$ "	6.5#	8-R	EUE	L-80

Drill, case, and cement surface and intermediate holes as permitted.

Set 5 $\frac{1}{2}$ " 17# N-80 LTC casing to ~~4513'~~  
4519' and cement as shown below.

For Lateral, drill out of bottom of 5 $\frac{1}{2}$ " casing and kick off 4 $\frac{3}{4}$ " hole @ 4589.' Hit end of curve @ 4889' MD and drill to TD of 6118' MD and 4750' TVD. Set 2 $\frac{7}{8}$ " tubing from liner hanger @ 4419' to TD @ 6118.'

Cementing Changes

Cement for *surface* and *intermediate* casing will remain as permitted.

Production casing will be cemented with Lead 450 sx Class H + 0.1% HR-800 + 0.125# Poly-e-flake + 5# Gilsonite (wt 11.5, yld 2.8) and Tail 200 sx Permian Basin Super H + 0.5% Halad-344 + 0.25# D-Air 3000 + 0.4% CFR-3 + 1# Salt + 0.125# Poly-e-flake + 0.25% HR-800 + 5# Gilsonite (wt 13.2, yld 1.61). **TOC 900.'**

2 $\frac{7}{8}$ " *liner* will be PEAK completion liner and will not require cement.

DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II  
1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies  
Fee Lease - 3 Copies

**OIL CONSERVATION DIVISION**  
1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

☐ AMENDED REPORT

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

API Number 30-015-36544	Pool Code 96718	Pool Name Loco Hills; Glorieta, Yeso
Property Code	Property Name HYDRUS "10" FEDERAL	Well Number 6
OGRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 3733'

**Surface Location**

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	10	17 S	30 E		2310	SOUTH	330	EAST	EDDY

**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
P	10	17 S	30 E		890	SOUTH	330	EAST	EDDY
Dedicated Acres 80	Joint or Infill	Consolidation Code	Order No.						

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

<div>Hydrus 10 Fed 7 SHL &amp; PP Paddock 2310 FSL &amp; 330 FEL</div> <div>EOC - 4889' MD, 4780' TVD 2119 FSL &amp; 330 FEL</div> <div>BHL - 6118' MD, 4750' TVD 890 FSL &amp; 330 FEL</div>	<div><b>SURFACE LOCATION</b> Lat - N32°50'53.13" Long - W103°57'08.10" NMSPCEN - N 672480.3 E 658369.0 (NAD-83)</div> <div>3727.4' 3738.2' 3723.0' 3730.7' 3730' 2310'</div> <div>Hydrus 10 Fed 4 1800 FSL &amp; 990 FEL</div> <div>Hydrus 10 Fed 7 599 FSL &amp; 330 FEL</div> <div>Hydrus 10 Fed 3 330 FSL &amp; 990 FEL</div>	<div><b>OPERATOR CERTIFICATION</b> <i>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 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.</i>  Zeno Farris 5/22/2009 Signature Date  Zeno Farris Printed Name</div> <div><b>SURVEYOR CERTIFICATION</b> <i>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.</i>  MAY 19 2009 Date Surveyed Signature Professional Surveyor W.O. Jones Certificate No. Gary L. Jones 7977  BASIN SURVEYS</div>
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# Planned Wellpath Report

Plan #2  
Page 1 of 3



INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 6H SHL
Area	Eddy County, NM	Well	No. 6H
Field	(Hydrus) Sec 10, T17S, R30E	Wellbore	No. 6H PWB
Facility	Hydrus 10 Fed No. 6H		

REPORT SETUP INFORMATION			
Projection System	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect® 2.0
North Reference	Grid	User	Victor Hernandez
Scale	0.999925	Report Generated	5/22/2009 at 12:01:33 PM
Convergence at slot	0.21° East	Database/Source file	WA_Midland/No. 6H_PWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	0.00	0.00	658369.00	672480.30	32°50'53.132"N	103°57'08.098"W
Facility Reference Pt			658369.00	672480.30	32°50'53.132"N	103°57'08.098"W
Field Reference Pt			658374.74	670729.93	32°50'35.813"N	103°57'08.105"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Rig on No. 6H SHL (RT) to Facility Vertical Datum	17.00ft
Horizontal Reference Pt	Facility Center	Rig on No. 6H SHL (RT) to Mean Sea Level	3750.00ft
Vertical Reference Pt	Rig on No. 6H SHL (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 6H SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	179.81°



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Plan #2  
Page 2 of 3



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## WELLPATH DATA (22 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
0.00	0.000	180.000	0.00	0.00	0.00	0.00	0.00	TIE ON
4589.00	0.000	180.000	4589.00	0.00	0.00	0.00	0.00	EST. KOP
4689.00†	29.998	180.000	4684.49	25.59	-25.59	0.00	30.00	
4789.00†	59.996	180.000	4754.40	95.49	-95.49	0.00	30.00	
4889.00†	89.993	180.000	4780.00	190.98	-190.98	0.00	30.00	
4889.02	90.000	180.000	4780.00	191.00	-191.00	0.00	30.00	END OF CURVE
4952.69	91.894	179.751	4778.95	254.66	-254.66	0.14	3.00	END OF BUILD
4989.00†	91.894	179.751	4777.75	290.95	-290.95	0.30	0.00	
5089.00†	91.894	179.751	4774.44	390.89	-390.89	0.73	0.00	
5189.00†	91.894	179.751	4771.14	490.84	-490.83	1.17	0.00	
5253.72	91.894	179.751	4769.00 <sup>1</sup>	555.52	-555.52	1.45	0.00	TGT #1
5275.16	91.252	179.788	4768.41	576.95	-576.95	1.53	3.00	HOLD
5289.00†	91.252	179.788	4768.11	590.79	-590.79	1.58	0.00	
5389.00†	91.252	179.788	4765.92	690.77	-690.76	1.95	0.00	
5489.00†	91.252	179.788	4763.74	790.74	-790.74	2.32	0.00	
5589.00†	91.252	179.788	4761.56	890.72	-890.71	2.69	0.00	
5689.00†	91.252	179.788	4759.37	990.69	-990.69	3.06	0.00	
5789.00†	91.252	179.788	4757.19	1090.67	-1090.66	3.43	0.00	
5889.00†	91.252	179.788	4755.00	1190.65	-1190.64	3.80	0.00	
5989.00†	91.252	179.788	4752.82	1290.62	-1290.62	4.17	0.00	
6089.00†	91.252	179.788	4750.63	1390.60	-1390.59	4.54	0.00	
6118.03	91.252	179.788	4750.00 <sup>2</sup>	1419.62	-1419.61	4.65	0.00	No. 6H PBHL

## HOLE & CASING SECTIONS Ref Wellbore: No. 6H PWB Ref Wellpath: Plan #2

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
5.5in Casing	0.00	4570.00	4570.00	0.00	4570.00	0.00	0.00	0.00	0.00
4.75in Open Hole	4570.00	6118.03	1548.03	4570.00	4750.00	0.00	0.00	-1419.61	4.65



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Plan #2  
Page 3 of 3



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TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
2) No. 6H PBHL	6118.03	4750.00	-1419.61	4.65	658373.65	671060.80	32°50'39.087"N	103°57'08.104"W	point
1) TGT #1	5253.72	4769.00	-555.52	1.45	658370.45	671924.83	32°50'47.636"N	103°57'08.105"W	point

SURVEY PROGRAM Ref Wellbore: No. 6H PWB Ref Wellpath: Plan #2				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	6118.03	NaviTrak (Standard)		No. 6H PWB

## PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Cimarex Energy Co
LEASE NO.:	NM-074937
WELL NAME & NO.:	6-Hydrus 10 Federal (horizontal)
SURFACE HOLE FOOTAGE:	2310' FSL & 330' FEL
BOTTOM HOLE FOOTAGE	Same
LOCATION:	Section 10, T. 17 S., R 30 E., NMPPM
COUNTY:	Eddy County, New Mexico

### I. DRILLING

#### A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

- a. Spudding well
- b. Setting and/or Cementing of all casing strings
- c. BOPE tests

☒ **Eddy County**

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822

1. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan should be activated 500 feet prior to drilling into the **Grayburg** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

#### B. CASING

**Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.**

**Centralizers required on surface casing per Onshore Order 2.III.B.1.f.**



**Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.**

**No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.**

**Possible high pressure air pockets above the Rustler.**

**Possible lost circulation in the Grayburg and San Andres formations.**

**Possible water flows in the Salado and Artesia Groups.**

1. The 13-3/8 inch surface casing shall be set at **approximately 450 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
  - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial action will be done prior to drilling out that string.
2. The minimum required fill of cement behind the 8-5/8 inch intermediate casing is:
  - ☒ Cement to surface. If cement does not circulate see B.1.a-d above.  
**Intermediate casing to be set below the salt in the Tansill formation at approximately 1100 feet.**
3. The minimum required fill of cement behind the 5-1/2 inch production casing is:
  - ☒ Cement should tie-back at least 200 feet into previous casing string. **Operator shall provide method of verification.**

4. The minimum required fill of cement behind the **2-7/8** inch production casing is:
  - ☒ Cement not required – using PEAK completion liner. Liner must be set a minimum of 100 feet inside the 5-1/2” casing.
5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

#### **C. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. The tests shall be done by an independent service company.
  - b. The results of the test shall be reported to the appropriate BLM office.
  - c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
  - d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.
  - e. **Effective November 1, 2008, no variances will be granted on reduced pressure tests on the surface casing and BOP/BOPE. Onshore Order 2 requirements will be in effect.**

#### **D. DRILL STEM TEST**

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

**WWI 052709**