

Well Name: MONTERA FEDERAL COM	Well Location: T25S / R35E / SEC 10 / SWSW / 32.138398 / -103.362544	County or Parish/State: LEA / NM
Well Number: 601H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM101608	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547842	Well Status: Approved Application for Permit to Drill	Operator: COG OPERATING LLC

Notice of Intent

Type of Submission: Notice of Intent

Type of Action APD Change

Date Sundry Submitted: 01/21/2021

Time Sundry Submitted: 05:47

Date proposed operation will begin: 01/14/2021

Procedure Description: COG Operating LLC respectfully requests approval for the following changes to the originally approved APD's. Formation: From: Wildcat; Bone Spring To Dogie Draw; Wolfcamp 17980 Dedicated Acres. From: 240 To: 480 BHL Change. From: 2590' FSL & 770' FWL Section 3. T25S. R35E To: 2590' FSL & 330' FWL Section 3. T25S. R35E C102 Attached

Application

Well Name: MONTERA FEDERAL COM

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Section 1 - General

APD ID: 10400054858

Tie to previous NOS?

Submission Date: 03/11/2020

BLM Office: CARLSBAD

User: MAYTE REYES

Title: Regulatory Analyst

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM101608

Lease Acres:

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? Y

Permitting Agent? NO

APD Operator: COG OPERATING LLC

Operator letter of designation:

Operator Info

Operator Organization Name: COG OPERATING LLC

Operator Address: 600 West Illinois Ave

Zip: 79701

Operator PO Box:

Operator City: Midland

State: TX

Operator Phone: (432)683-7443

Operator Internet Address: RODOM@CONCHO.COM

Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: MONTERA FEDERAL COM

Well Number: 601H

Well API Number: 3002547842

Field/Pool or Exploratory? Field and Pool

Field Name: DOGIE DRAW

Pool Name: Wolfcamp

Is the proposed well in an area containing other mineral resources? USEABLE WATER,OIL

Is the proposed well in a Helium production area? N

Use Existing Well Pad? N

New surface disturbance?

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name:

Number: 601H, 701H

Well Class: HORIZONTAL

Montera FEDERAL COM

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

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Is the proposed well in an area containing other mineral resources? USEABLE WATER,OIL

Well sub-Type: EXPLORATORY (WILDCAT)

Describe sub-type:

Distance to town: 9 Miles

Distance to nearest well: 30 FT

Distance to lease line: 275 FT

Reservoir well spacing assigned acres Measurement: 240 Acres

Well plat: Montera_Federal_Com_601H_C102_20210121171132.pdf

Well work start Date: 10/01/2020

Duration: 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number:

Reference Datum: GROUND LEVEL

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
SHL Leg #1	275	FSL	430	FW L	25S	35E	10	Aliquot SWS W	32.138398	-103.362544	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 101608	3227	0	0	Y
KOP Leg #1	275	FSL	430	FW L	25S	35E	10	Aliquot SWS W	32.138398	-103.362544	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 101608	3227	0	0	Y
PPP Leg #1-1	100	FSL	330	FW L	25S	35E	10	Aliquot SWS W	32.137918	-103.362868	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 101608	-9021	12300	12248	Y
EXIT Leg #1	2540	FSL	330	FW L	25S	35E	3	Aliquot NWS W	32.159129	-103.362846	LEA	NEW MEXICO	NEW MEXICO	F	FEE	-9066	19900	12293	Y

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Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
BHL Leg #1	2590	FSL	330	FWL	25S	35E	3	Aliquot NWSW	32.159266	-103.362846	LEA	NEW MEXICO	NEW MEXICO	F	FEE	-9066	19994	12293	Y

Drilling Plan

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1381796	UNKNOWN	3227	0	0	LIMESTONE	NONE	N
1381797	RUSTLER	2499	728	728	LIMESTONE	NONE	N
1381798	TOP SALT	2154	1073	1073	SALT	NONE	N
1381799	BOTTOM SALT	-1633	4860	4860	ANHYDRITE	NONE	N
1381800	LAMAR	-2028	5255	5255	LIMESTONE	NATURAL GAS, OIL	N
1381803	BELL CANYON	-2077	5304	5304	SILTSTONE	NONE	N
1381811	CHERRY CANYON	-3000	6227	6227	SILTSTONE	NATURAL GAS, OIL	N
1381812	BRUSHY CANYON	-4500	7727	7727	SILTSTONE	NATURAL GAS, OIL	N
1381801	BONE SPRING LIME	-5756	8983	8983	SANDSTONE	NATURAL GAS, OIL	N
1381813	---	-6186	9413	9413	SILTSTONE	NATURAL GAS, OIL	N
1381814	---	-6616	9843	9843	SILTSTONE	NATURAL GAS, OIL	N
1381808	BONE SPRING 1ST	-7046	10273	10273	HALITE	NATURAL GAS, OIL	N
1381809	BONE SPRING 2ND	-7540	10767	10767	SANDSTONE	NATURAL GAS, OIL	N
1381810	BONE SPRING 3RD	-8664	11891	11891	SANDSTONE	NATURAL GAS, OIL	Y
1381802	WOLFCAMP	-9029	12256	12256	SHALE	NATURAL GAS, OIL	N

Section 2 - Blowout Prevention

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Allottee or Tribe Name:

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Unit or CA Name:

Unit or CA Number:

US Well Number: 3002547842

Well Status: Approved Application for Permit to Drill

Operator: COG OPERATING LLC

Pressure Rating (PSI): 10M

Rating Depth: 12356

Equipment: Accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold.

Requesting Variance? YES

Variance request: Request a 5M annular variance on a 10M system. (5M variance attached in section 8). A variance is requested for the use of a flexible choke line from the BOP to the choke manifold. See attached for specs and hydrostatic test chart.

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested. Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets.

Choke Diagram Attachment:

COG_Montera_601H_10M_Choke_20200310125536.pdf

BOP Diagram Attachment:

COG_Montera_601H_10M_BOP_20200310125543.pdf

COG_Montera_601H_Flex_Hose_20200310125551.pdf

Pressure Rating (PSI): 5M

Rating Depth: 11445

Equipment: Annular, Blind Ram, Pipe Ram. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP to the choke manifold. See attached for specs and hydrostatic test chart.

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested. Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets.

Choke Diagram Attachment:

COG_Montera_601H_5M_Choke_20200310125641.pdf

BOP Diagram Attachment:

COG_Montera_601H_5M_BOP_20200310125648.pdf

COG_Montera_601H_Flex_Hose_20200310125655.pdf

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Unit or CA Number:

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Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	14.75	10.75	NEW	API	N	0	1170	0	1170	3227	2057	1170	N-80	45.5	OTHER - BTC	4.61	1.67	DRY	19.54	DRY	20.1
2	INTERMEDIATE	8.75	7.625	NEW	API	Y	0	8500	0	11445	-9411	-8218	8500	HCP-110	29.7	OTHER - TL-FJ	1.32	1.11	DRY	2.77	DRY	1.1
3	PRODUCTION	6.75	5.0	NEW	API	Y	0	19994	0	12293	-9411	-9066	19994	P-110	18	OTHER - BTC	1.81	1.86	DRY	3.28	DRY	3.3

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

COG_Montera_601H_Casing_Plan_20210121174058.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

COG_Montera_601H_Casing_Plan_20210121173959.pdf

Casing Design Assumptions and Worksheet(s):

COG_Montera_601H_Casing_Plan_20210121174011.pdf

Well Name: MONTERA FEDERAL COM

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Well Number: 601H

Type of Well: OIL WELL

Allottee or Tribe Name:

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Unit or CA Number:

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Casing Attachments

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

COG_Montera_601H_Casing_Plan_20210121174034.pdf

Casing Design Assumptions and Worksheet(s):

COG_Montera_601H_Casing_Plan_20210121174042.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1170	558	1.75	13.5	976	50	Class C	4% Gel + 1% CaCl2
SURFACE	Tail		0	1170	250	1.34	14.8	335	50	Class C	2% CaCl2
INTERMEDIATE	Lead		0	1144 5	830	3.3	10.3	2739	50	Halliburton tunded light	As needed
INTERMEDIATE	Tail		0	1144 5	250	1.35	14.8	337	50	Tail: Class H	As needed
PRODUCTION	Lead		8000	1996 7	522	2	12.7	1044	35	Lead: 50:50:10 H BLEND	As needed
PRODUCTION	Tail		8000	1996 7	1104	1.24	14.4	1368	35	Tail: 50:50:2 Class H Blend.	As needed

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Well Number: 601H

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Allottee or Tribe Name:

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Unit or CA Number:

US Well Number: 3002547842

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Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Describe the mud monitoring system utilized: PVT/Pason/Visual Monitoring

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1170	OTHER : FW Gel	8.6	8.8							FW Gel
1170	1144 5	OTHER : Diesel Brine Emulsion	8.4	9							Diesel Brine Emulsion
1144 5	1996 7	OIL-BASED MUD	9.6	12.5							OBM

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

None planned

List of open and cased hole logs run in the well:

COMPENSATED NEUTRON LOG,GAMMA RAY LOG,

Coring operation description for the well:

None planned

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 8035

Anticipated Surface Pressure: 5330

Anticipated Bottom Hole Temperature(F): 180

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

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Type of Well: OIL WELL

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Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

COG_Montera_601H_H2S_Schem_20200310140348.pdf

COG_Montera_601H_H2S_SUP_20200310140355.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

COG_Montera_601H_Directional_Plan_20200310140411.pdf

COG_Montera_601H_AC_RPT_20200310140417.pdf

Other proposed operations facets description:

Drilling Program attached.

Cementing Plan attached.

Gas Capture Plan attached.

Other proposed operations facets attachment:

COG_Montera_601H_Cement_Plan_20200310140433.pdf

COG_Montera_601H_GCP_20200310140444.pdf

COG_Montera_601H_Drilling_Plan_20210121174129.pdf

Other Variance attachment:

COG_5M_Variance_Well_Plan_20190211080830.pdf

COG_6.75_5M_Variance_WCP_20210121174659.pdf

SUPO

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

COG_Montera_601H_Existing_Road_20200310140635.pdf

Existing Road Purpose: ACCESS

Row(s) Exist? NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Well Name: MONTERA FEDERAL COM

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Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

COG_Montera_601H_Road_Plats_Maps_20200310140716.pdf

New road type: TWO-TRACK

Length: 958 Feet

Width (ft.): 30

Max slope (%): 33

Max grade (%): 1

Army Corp of Engineers (ACOE) permit required? N

ACOE Permit Number(s):

New road travel width: 14

New road access erosion control: Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns.

New road access plan or profile prepared? N

New road access plan attachment:

Access road engineering design? N

Access road engineering design attachment:

Turnout? N

Access surfacing type: OTHER

Access topsoil source: ONSITE

Access surfacing type description: Caliche

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: Blading

Access other construction information: No turnouts are planned. Re-routing access road around proposed well location.

Access miscellaneous information:

Number of access turnouts:

Access turnout map:

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: None necessary.

Road Drainage Control Structures (DCS) description: None needed.

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

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Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

COG_Montera_601H_1_Mile_Data_20200310140809.pdf

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: The Montera Federal 10 M CTB is located in section 10. T25S. R35E. This CTB will be built to accommodate the Montera Federal Com #601H and #701H. We plan to install (1) buried 4 FP 601HT production flowline from each wellhead to the inlet manifold of the proposed CTB (2 lines total); the route for these flowlines will follow the flowlines route as shown in the diagram below. We will install (2) buried 4 gas lines for gas lift supply from the CTB to each well pad (2 lines total); the route for the gas lift lines will follow the gas lift route as shown in the attached layout.

Production Facilities map:

COG_Montera_601H_CTB_Flowlines_Powerlines_20200311122540.pdf

Montera_Federal_10_M_CTB_Facility_Layout_20200311122549.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source type: OTHER

Describe type: Fresh Water

Water source use type: STIMULATION
SURFACE CASING

Source latitude: **Source longitude:**

Source datum:

Water source permit type: PRIVATE CONTRACT

Water source transport method: PIPELINE

Source land ownership: PRIVATE

Source transportation land ownership: PRIVATE

Water source volume (barrels): 450000

Source volume (acre-feet): 58.001892

Source volume (gal): 18900000

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Water source type: OTHER

Describe type: Brine water

Water source use type: INTERMEDIATE/PRODUCTION CASING

Source latitude:

Source longitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Water source transport method: TRUCKING

Source land ownership: COMMERCIAL

Source transportation land ownership: COMMERCIAL

Water source volume (barrels): 30000

Source volume (acre-feet): 3.866793

Source volume (gal): 1260000

Water source and transportation map:

COG_Montera_601H_Fresh_H2O_20200310140926.pdf

COG_Montera_601H_Brine_H2O_20200310141000.pdf

Water source comments: Fresh water will be obtained from the Fez Frac Pond located in Section 8. T25S, R35E. Brine water will be obtained from the Malaga II Brine station in Section 12. T23S. R28E.

New water well? N

New Water Well Info

Well latitude:

Well Longitude:

Well datum:

Well target aquifer:

Est. depth to top of aquifer(ft):

Est thickness of aquifer:

Aquifer comments:

Aquifer documentation:

Well depth (ft):

Well casing type:

Well casing outside diameter (in.):

Well casing inside diameter (in.):

New water well casing?

Used casing source:

Drilling method:

Drill material:

Grout material:

Grout depth:

Casing length (ft.):

Casing top depth (ft.):

Well Production type:

Completion Method:

Water well additional information:

State appropriation permit:

Additional information attachment:

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Section 6 - Construction Materials

Using any construction materials: YES

Construction Materials description: Caliche will be obtained from the actual well site if available. If not available onsite, caliche will be obtained from Quail Ranch LLC (CONCHO) caliche pit located in Section 6, T24S, R35 Phone # (432) 221-0342.

Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Drilling fluids and produced oil and water during drilling and completion operations

Amount of waste: 6000 barrels

Waste disposal frequency : One Time Only

Safe containment description: All drilling waste will be stored safely and disposed of properly

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Trucked to an approved disposal facility

Waste type: SEWAGE

Waste content description: Human waste and gray water

Amount of waste: 250 gallons

Waste disposal frequency : Weekly

Safe containment description: Waste will be properly contained and disposed of properly at a state approved disposal facility

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Trucked to an approved disposal facility

Waste type: GARBAGE

Waste content description: Garbage and trash produced during drilling and completion operations

Amount of waste: 125 pounds

Waste disposal frequency : Weekly

Safe containment description: Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly at a state approved disposal facility

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

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Disposal type description:

Disposal location description: Trucked to an approved disposal facility

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit? NO

Reserve pit length (ft.)

Reserve pit width (ft.)

Reserve pit depth (ft.)

Reserve pit volume (cu. yd.)

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? Y

Description of cuttings location Roll off cuttings containers on tracks

Cuttings area length (ft.)

Cuttings area width (ft.)

Cuttings area depth (ft.)

Cuttings area volume (cu. yd.)

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: N

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

COG_Montera_601H_Layout_20200310141351.pdf

Comments:

Well Name: MONTERA FEDERAL COM

Well Location: T25S / R35E / SEC 10 / SWSW / 32.138398 / -103.362544

County or Parish/State: LEA / NM

Well Number: 601H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM101608

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002547842

Well Status: Approved Application for Permit to Drill

Operator: COG OPERATING LLC

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: Montera FEDERAL COM

Multiple Well Pad Number: 601H, 701H

Recontouring attachment:

COG_Montera_601H_Reclamation_20200310141407.pdf

Montera_Federal_10_M_CTB___Facility_Layout_20200311122957.pdf

Drainage/Erosion control construction: Immediately following construction, straw waddles will be placed as necessary at the well site to reduce sediment impacts to fragile/sensitive soils.

Drainage/Erosion control reclamation: West 50'

Well pad proposed disturbance (acres): 3.67	Well pad interim reclamation (acres): 0.06	Well pad long term disturbance (acres): 2.81
Road proposed disturbance (acres): 0.31	Road interim reclamation (acres): 0.31	Road long term disturbance (acres): 0.31
Powerline proposed disturbance (acres): 1.03	Powerline interim reclamation (acres): 1.03	Powerline long term disturbance (acres): 1.03
Pipeline proposed disturbance (acres): 0.4	Pipeline interim reclamation (acres): 0.4	Pipeline long term disturbance (acres): 0.4
Other proposed disturbance (acres): 3.67	Other interim reclamation (acres): 3.67	Other long term disturbance (acres): 3.67
Total proposed disturbance: 9.08	Total interim reclamation: 5.47	Total long term disturbance: 8.22

Disturbance Comments:

Reconstruction method: New construction of pad.

Topsoil redistribution: West 50'

Soil treatment: None

Existing Vegetation at the well pad: Shinnery Oak/Mesquite grassland

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Shinnery Oak/Mesquite grassland

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: Shinnery Oak/Mesquite grassland

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: N/A

Existing Vegetation Community at other disturbances attachment:

Non native seed used? N

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? N

Well Name: MONTERA FEDERAL COM

Well Location: T25S / R35E / SEC 10 / SWSW / 32.138398 / -103.362544

County or Parish/State: LEA / NM

Well Number: 601H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM101608

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002547842

Well Status: Approved Application for Permit to Drill

Operator: COG OPERATING LLC

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? N

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre
-----------	-------------

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name:

Last Name:

Phone:

Email:

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? N

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: N/A

Weed treatment plan attachment:

Monitoring plan description: N/A

Monitoring plan attachment:

Success standards: N/A

Pit closure description: N/A

Pit closure attachment:

COG_Montera_601H_Closed_Loop_20200310141512.pdf

Section 11 - Surface Ownership

Well Name: MONTERA FEDERAL COM

Well Location: T25S / R35E / SEC 10 / SWSW / 32.138398 / -103.362544

County or Parish/State: LEA / NM

Well Number: 601H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM101608

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002547842

Well Status: Approved Application for Permit to Drill

Operator: COG OPERATING LLC

Disturbance type: WELL PAD

Describe:

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Fee Owner: Tap Rock NM10 Minerals, LLC

Fee Owner Address: 602 Park Point Drive, Suite 200

Phone: (720)772-5090

Email:

Surface use plan certification: NO

Surface use plan certification document:

Surface access agreement or bond: AGREEMENT

Surface Access Agreement Need description: Special Warranty Deed signed on January 23rd 2020.

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Section 12 - Other Information

Right of Way needed? N

Use APD as ROW?

ROW Type(s):

ROW Applications

Well Name: MONTERA FEDERAL COM

Well Location: T25S / R35E / SEC 10 / SWSW / 32.138398 / -103.362544

County or Parish/State: LEA / NM

Well Number: 601H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM101608

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002547842

Well Status: Approved Application for Permit to Drill

Operator: COG OPERATING LLC

SUPO Additional Information: SUP Attached.

Use a previously conducted onsite? Y

Previous Onsite information: On-site was done by Gerald Herrera (COG); Zane Kirsch (BLM); on January 22th, 2020.

Other SUPO Attachment

- COG_Montera_601H_SUP_20200311142235.pdf
- COG_Montera_601H_C102_20200311142241.pdf
- COG_Montera_601H_CTB_Flowlines_Powerlines_20200311142258.pdf
- Montera_Federal_10_M_CTB_Facility_Layout_20200311142308.pdf
- COG_Montera_601H_Road_Plats_Maps_20200311142317.pdf
- COG_Montera_601H_Existing_Road_20200311142324.pdf
- COG_Montera_601H_Layout_20200311142330.pdf
- COG_Montera_601H_Reclamation_20200311142336.pdf

PWD

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Well Name: MONTERA FEDERAL COM

Well Location: T25S / R35E / SEC 10 / SWSW / 32.138398 / -103.362544

County or Parish/State: LEA / NM

Well Number: 601H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM101608

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002547842

Well Status: Approved Application for Permit to Drill

Operator: COG OPERATING LLC

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? N

Produced Water Disposal (PWD) Location:

PWD disturbance (acres):

PWD surface owner:

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Well Name: MONTERA FEDERAL COM

Well Location: T25S / R35E / SEC 10 / SWSW / 32.138398 / -103.362544

County or Parish/State: LEA / NM

Well Number: 601H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM101608

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002547842

Well Status: Approved Application for Permit to Drill

Operator: COG OPERATING LLC

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number:

Injection well name:

Assigned injection well API number?

Injection well API number:

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Well Name: MONTERA FEDERAL COM

Well Location: T25S / R35E / SEC 10 / SWSW / 32.138398 / -103.362544

County or Parish/State: LEA / NM

Well Number: 601H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM101608

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002547842

Well Status: Approved Application for Permit to Drill

Operator: COG OPERATING LLC

Section 6 - Other

Would you like to utilize Other PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

Operator Certification

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: MAYTE REYES

Signed on: 01/21/2021

Title: Regulatory Analyst

Street Address: 2208 West Main Street

City: Artesia

State: NM

Zip: 88210

Phone: (575)748-6940

Email address: MREYES1@CONCHO.COM

Field Representative

Representative Name: Gerald Herrera

Street Address: 2208 West Main Street

City: Artesia

State: NM

Zip: 88210

Phone: (575)748-6940

Email address: gherrera@concho.com

Well Name: MONTERA FEDERAL COM

Well Location: T25S / R35E / SEC 10 / SWSW / 32.138398 / -103.362544

County or Parish/State: LEA / NM

Well Number: 601H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM101608

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002547842

Well Status: Approved Application for Permit to Drill

Operator: COG OPERATING LLC

Operator Certification

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: REYES

Signed on: JAN 21, 2021 05:11 PM

Name: COG OPERATING LLC

Title: Regulatory Analyst

Street Address: ONE CONCHO CENTER 600 W ILLINOIS AVENUE

City: MIDLAND

State: TX

Phone: (432) 685-9158

Email address: NOT ENTERED

Field Representative

Representative Name: Gerald Herrera

Street Address: 2208 West Main Street

City: Artesia

State: NM

Zip: 88210

Phone: (575)748-6940

Email address: gherrera@concho.com

BLM Point of Contact

BLM POC Name: JENNIFER SANCHEZ

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5756270237

BLM POC Email Address: j1sanchez@blm.gov

Disposition: Approved

Disposition Date: 01/22/2021

Signature: Jennifer Sanchez

DISTRICT I
1685 N. FRENCH DR., ROBBS, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0780

DISTRICT II
811 S. FIRST ST., ARTESIA, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-8720

DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410
Phone: (505) 334-8178 Fax: (505) 334-8170

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87506
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, New Mexico 87505

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

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-025-47842	Pool Code 17980	Pool Name Dogie Draw; Wolfcamp
Property Code 329748	Property Name MONTERA FEDERAL COM	
OGRID No. 229137	Operator Name COG OPERATING, LLC	
	Well Number 601H	Elevation 3226.9'

Surface Location

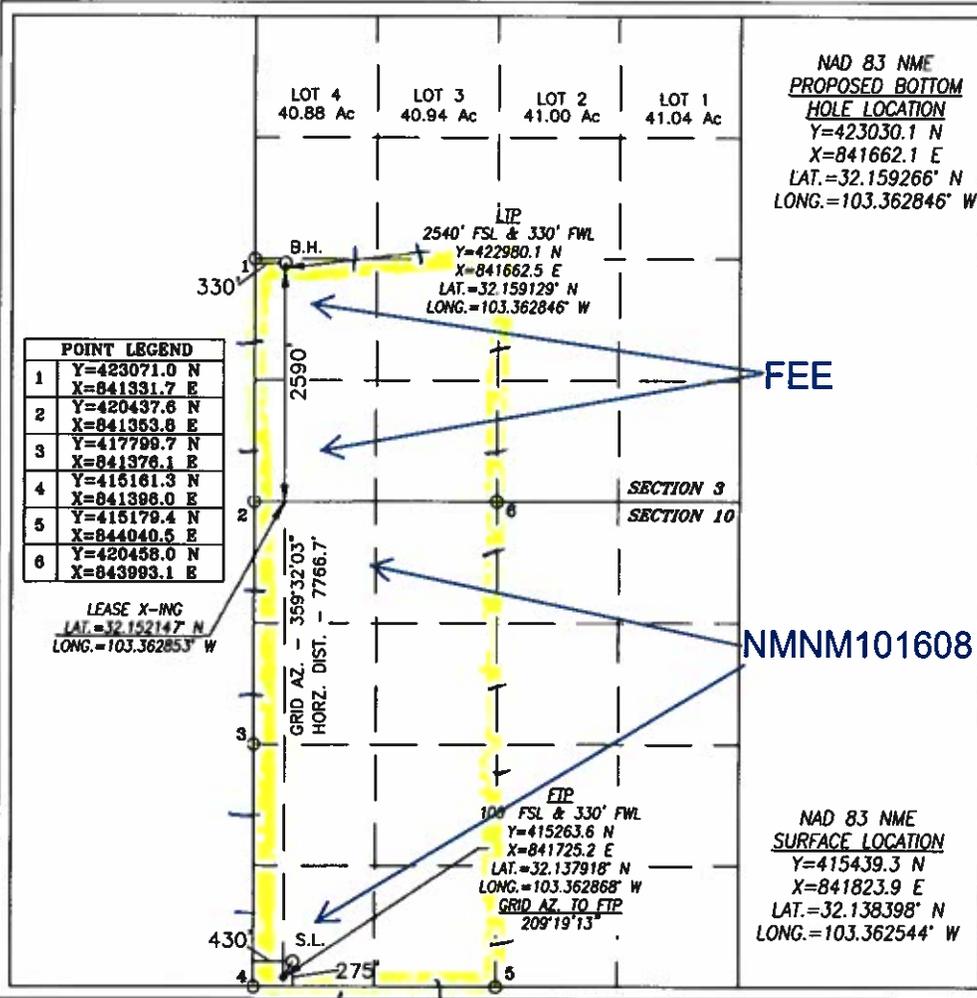
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	10	25-S	35-E		275	SOUTH	430	WEST	LEA

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
L	3	25-S	35-E		2590	SOUTH	330	WEST	LEA

Dedicated Acres 480	Joint or Infill	Consolidation Code	Order No.
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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



OPERATOR CERTIFICATION

I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Mayte Reyes
Signature Date

Mayte Reyes
Printed Name

mreyes1@concho.com
E-mail Address

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.

JANUARY 21, 2020
Date of Survey

Signature & Seal of Professional Surveyor

CHAD L. HARCROW
NEW MEXICO
LICENSED PROFESSIONAL SURVEYOR
17777

Chad Harcrow
9/25/20

Certificate No. **CHAD HARCROW 17777**
W.O. # **20-1272** DRAWN BY: **AH**

DELAWARE BASIN EAST

BULLDOG PROSPECT (NM-E)

MONTERA FEDERAL PROJECT (BULLDOG 2535)

MONTERA FEDERAL COM 601H

OWB

Plan: PWP2

Standard Survey Report

13 October, 2020

Concho Resources LLC Survey Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well MONTERA FEDERAL COM 601H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=30' @ 3257.0usft (SCAN QUEST)
Site:	MONTERA FEDERAL PROJECT (BULLDOG 2535)	MD Reference:	KB=30' @ 3257.0usft (SCAN QUEST)
Well:	MONTERA FEDERAL COM 601H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP2	Database:	edm

Project	BULLDOG PROSPECT (NM-E)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	MONTERA FEDERAL PROJECT (BULLDOG 2535)				
Site Position:	Northing:	398,637.10 usft	Latitude:	32° 5' 36.820 N	
From: Map	Easting:	741,887.40 usft	Longitude:	103° 33' 8.116 W	
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.42 °

Well	MONTERA FEDERAL COM 601H					
Well Position	+N/-S	0.0 usft	Northing:	415,380.90 usft	Latitude:	32° 8' 17.780 N
	+E/-W	0.0 usft	Easting:	800,637.30 usft	Longitude:	103° 21' 43.484 W
Position Uncertainty	3.0 usft	Wellhead Elevation:	usft	Ground Level:	3,227.0 usft	

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/13/2020	6.49	59.97	47,568.61676712

Design	PWP2				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	358.78	

Survey Tool Program	Date	10/13/2020			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	19,993.8	PWP2 (OWB)	MWD+IFR1+FDIR	OWSG MWD + IFR1 + FDIR Correction	

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well MONTERA FEDERAL COM 601H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=30' @ 3257.0usft (SCAN QUEST)
Site:	MONTERA FEDERAL PROJECT (BULLDOG 2535)	MD Reference:	KB=30' @ 3257.0usft (SCAN QUEST)
Well:	MONTERA FEDERAL COM 601H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP2	Database:	edm

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 2.00									
2,600.0	2.00	203.58	2,600.0	-1.6	-0.7	-1.6	2.00	2.00	0.00
2,700.0	4.00	203.58	2,699.8	-6.4	-2.8	-6.3	2.00	2.00	0.00
Start 3222.4 hold at 2700.0 MD									
2,800.0	4.00	203.58	2,799.6	-12.8	-5.6	-12.7	0.00	0.00	0.00
2,900.0	4.00	203.58	2,899.4	-19.2	-8.4	-19.0	0.00	0.00	0.00
3,000.0	4.00	203.58	2,999.1	-25.6	-11.2	-25.3	0.00	0.00	0.00
3,100.0	4.00	203.58	3,098.9	-32.0	-14.0	-31.7	0.00	0.00	0.00
3,200.0	4.00	203.58	3,198.6	-38.4	-16.7	-38.0	0.00	0.00	0.00
3,300.0	4.00	203.58	3,298.4	-44.8	-19.5	-44.3	0.00	0.00	0.00
3,400.0	4.00	203.58	3,398.1	-51.1	-22.3	-50.7	0.00	0.00	0.00
3,500.0	4.00	203.58	3,497.9	-57.5	-25.1	-57.0	0.00	0.00	0.00
3,600.0	4.00	203.58	3,597.6	-63.9	-27.9	-63.3	0.00	0.00	0.00
3,700.0	4.00	203.58	3,697.4	-70.3	-30.7	-69.7	0.00	0.00	0.00
3,800.0	4.00	203.58	3,797.2	-76.7	-33.5	-76.0	0.00	0.00	0.00
3,900.0	4.00	203.58	3,896.9	-83.1	-36.3	-82.3	0.00	0.00	0.00
4,000.0	4.00	203.58	3,996.7	-89.5	-39.1	-88.7	0.00	0.00	0.00
4,100.0	4.00	203.58	4,096.4	-95.9	-41.9	-95.0	0.00	0.00	0.00
4,200.0	4.00	203.58	4,196.2	-102.3	-44.7	-101.3	0.00	0.00	0.00
4,300.0	4.00	203.58	4,295.9	-108.7	-47.4	-107.7	0.00	0.00	0.00
4,400.0	4.00	203.58	4,395.7	-115.1	-50.2	-114.0	0.00	0.00	0.00
4,500.0	4.00	203.58	4,495.5	-121.5	-53.0	-120.3	0.00	0.00	0.00
4,600.0	4.00	203.58	4,595.2	-127.9	-55.8	-126.6	0.00	0.00	0.00
4,700.0	4.00	203.58	4,695.0	-134.3	-58.6	-133.0	0.00	0.00	0.00
4,800.0	4.00	203.58	4,794.7	-140.7	-61.4	-139.3	0.00	0.00	0.00
4,900.0	4.00	203.58	4,894.5	-147.0	-64.2	-145.6	0.00	0.00	0.00

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well MONTERA FEDERAL COM 601H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=30' @ 3257.0usft (SCAN QUEST)
Site:	MONTERA FEDERAL PROJECT (BULLDOG 2535)	MD Reference:	KB=30' @ 3257.0usft (SCAN QUEST)
Well:	MONTERA FEDERAL COM 601H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP2	Database:	edm

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,000.0	4.00	203.58	4,994.2	-153.4	-67.0	-152.0	0.00	0.00	0.00	
5,100.0	4.00	203.58	5,094.0	-159.8	-69.8	-158.3	0.00	0.00	0.00	
5,200.0	4.00	203.58	5,193.7	-166.2	-72.6	-164.6	0.00	0.00	0.00	
5,300.0	4.00	203.58	5,293.5	-172.6	-75.3	-171.0	0.00	0.00	0.00	
5,400.0	4.00	203.58	5,393.3	-179.0	-78.1	-177.3	0.00	0.00	0.00	
5,500.0	4.00	203.58	5,493.0	-185.4	-80.9	-183.6	0.00	0.00	0.00	
5,600.0	4.00	203.58	5,592.8	-191.8	-83.7	-190.0	0.00	0.00	0.00	
5,700.0	4.00	203.58	5,692.5	-198.2	-86.5	-196.3	0.00	0.00	0.00	
5,800.0	4.00	203.58	5,792.3	-204.6	-89.3	-202.6	0.00	0.00	0.00	
5,900.0	4.00	203.58	5,892.0	-211.0	-92.1	-209.0	0.00	0.00	0.00	
5,922.4	4.00	203.58	5,914.4	-212.4	-92.7	-210.4	0.00	0.00	0.00	
Start Drop -1.00										
6,000.0	3.22	203.58	5,991.8	-216.9	-94.7	-214.8	1.00	-1.00	0.00	
6,100.0	2.22	203.58	6,091.7	-221.2	-96.6	-219.1	1.00	-1.00	0.00	
6,200.0	1.22	203.58	6,191.7	-224.0	-97.8	-221.9	1.00	-1.00	0.00	
6,300.0	0.22	203.58	6,291.7	-225.2	-98.3	-223.0	1.00	-1.00	0.00	
6,322.4	0.00	0.00	6,314.1	-225.2	-98.3	-223.1	1.00	-1.00	0.00	
Start 5581.7 hold at 6322.4 MD										
6,400.0	0.00	0.00	6,391.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
6,500.0	0.00	0.00	6,491.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
6,600.0	0.00	0.00	6,591.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
6,700.0	0.00	0.00	6,691.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,791.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
6,900.0	0.00	0.00	6,891.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
7,000.0	0.00	0.00	6,991.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
7,100.0	0.00	0.00	7,091.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
7,200.0	0.00	0.00	7,191.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
7,300.0	0.00	0.00	7,291.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
7,400.0	0.00	0.00	7,391.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
7,500.0	0.00	0.00	7,491.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
7,600.0	0.00	0.00	7,591.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
7,700.0	0.00	0.00	7,691.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
7,800.0	0.00	0.00	7,791.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
7,900.0	0.00	0.00	7,891.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
8,000.0	0.00	0.00	7,991.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
8,100.0	0.00	0.00	8,091.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
8,200.0	0.00	0.00	8,191.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
8,300.0	0.00	0.00	8,291.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
8,400.0	0.00	0.00	8,391.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,491.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
8,600.0	0.00	0.00	8,591.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,691.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,791.7	-225.2	-98.3	-223.1	0.00	0.00	0.00	

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well MONTERA FEDERAL COM 601H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=30' @ 3257.0usft (SCAN QUEST)
Site:	MONTERA FEDERAL PROJECT (BULLDOG 2535)	MD Reference:	KB=30' @ 3257.0usft (SCAN QUEST)
Well:	MONTERA FEDERAL COM 601H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP2	Database:	edm

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,900.0	0.00	0.00	8,891.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
9,000.0	0.00	0.00	8,991.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
9,100.0	0.00	0.00	9,091.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
9,200.0	0.00	0.00	9,191.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
9,300.0	0.00	0.00	9,291.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
9,400.0	0.00	0.00	9,391.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
9,500.0	0.00	0.00	9,491.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
9,600.0	0.00	0.00	9,591.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
9,700.0	0.00	0.00	9,691.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
9,800.0	0.00	0.00	9,791.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
9,900.0	0.00	0.00	9,891.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
10,000.0	0.00	0.00	9,991.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
10,100.0	0.00	0.00	10,091.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
10,200.0	0.00	0.00	10,191.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
10,300.0	0.00	0.00	10,291.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
10,400.0	0.00	0.00	10,391.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
10,500.0	0.00	0.00	10,491.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
10,600.0	0.00	0.00	10,591.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
10,700.0	0.00	0.00	10,691.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
10,800.0	0.00	0.00	10,791.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
10,900.0	0.00	0.00	10,891.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
11,000.0	0.00	0.00	10,991.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
11,100.0	0.00	0.00	11,091.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
11,200.0	0.00	0.00	11,191.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
11,300.0	0.00	0.00	11,291.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
11,400.0	0.00	0.00	11,391.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
11,500.0	0.00	0.00	11,491.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
11,600.0	0.00	0.00	11,591.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
11,700.0	0.00	0.00	11,691.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
11,800.0	0.00	0.00	11,791.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
11,900.0	0.00	0.00	11,891.7	-225.2	-98.3	-223.1	0.00	0.00	0.00
11,904.1	0.00	0.00	11,895.8	-225.2	-98.3	-223.1	0.00	0.00	0.00
Start DLS 12.00 TFO 359.54									
12,000.0	11.50	359.54	11,991.0	-215.6	-98.4	-213.5	12.00	12.00	0.00
12,100.0	23.50	359.54	12,086.2	-185.6	-98.6	-183.4	12.00	12.00	0.00
12,200.0	35.50	359.54	12,173.1	-136.4	-99.0	-134.3	12.00	12.00	0.00
12,300.0	47.50	359.54	12,247.8	-70.3	-99.6	-68.2	12.00	12.00	0.00
12,400.0	59.50	359.54	12,307.2	10.0	-100.2	12.1	12.00	12.00	0.00
12,500.0	71.50	359.54	12,348.6	100.8	-100.9	102.9	12.00	12.00	0.00
12,600.0	83.50	359.54	12,370.2	198.2	-101.7	200.4	12.00	12.00	0.00
12,670.4	91.95	359.54	12,373.0	268.5	-102.3	270.6	12.00	12.00	0.00
Start 2056.8 hold at 12670.4 MD									
12,700.0	91.95	359.54	12,372.0	298.1	-102.5	300.2	0.00	0.00	0.00

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well MONTERA FEDERAL COM 601H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=30' @ 3257.0usft (SCAN QUEST)
Site:	MONTERA FEDERAL PROJECT (BULLDOG 2535)	MD Reference:	KB=30' @ 3257.0usft (SCAN QUEST)
Well:	MONTERA FEDERAL COM 601H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP2	Database:	edm

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,800.0	91.95	359.54	12,368.6	398.0	-103.3	400.1	0.00	0.00	0.00
12,900.0	91.95	359.54	12,365.2	498.0	-104.2	500.1	0.00	0.00	0.00
13,000.0	91.95	359.54	12,361.8	597.9	-105.0	600.0	0.00	0.00	0.00
13,100.0	91.95	359.54	12,358.4	697.8	-105.8	699.9	0.00	0.00	0.00
13,200.0	91.95	359.54	12,355.0	797.8	-106.6	799.9	0.00	0.00	0.00
13,300.0	91.95	359.54	12,351.6	897.7	-107.4	899.8	0.00	0.00	0.00
13,400.0	91.95	359.54	12,348.2	997.7	-108.2	999.7	0.00	0.00	0.00
13,500.0	91.95	359.54	12,344.8	1,097.6	-109.0	1,099.7	0.00	0.00	0.00
13,600.0	91.95	359.54	12,341.4	1,197.5	-109.8	1,199.6	0.00	0.00	0.00
13,700.0	91.95	359.54	12,338.0	1,297.5	-110.6	1,299.5	0.00	0.00	0.00
13,800.0	91.95	359.54	12,334.6	1,397.4	-111.4	1,399.5	0.00	0.00	0.00
13,900.0	91.95	359.54	12,331.1	1,497.4	-112.3	1,499.4	0.00	0.00	0.00
14,000.0	91.95	359.54	12,327.7	1,597.3	-113.1	1,599.3	0.00	0.00	0.00
14,100.0	91.95	359.54	12,324.3	1,697.2	-113.9	1,699.3	0.00	0.00	0.00
14,200.0	91.95	359.54	12,320.9	1,797.2	-114.7	1,799.2	0.00	0.00	0.00
14,300.0	91.95	359.54	12,317.5	1,897.1	-115.5	1,899.1	0.00	0.00	0.00
14,400.0	91.95	359.54	12,314.1	1,997.1	-116.3	1,999.1	0.00	0.00	0.00
14,500.0	91.95	359.54	12,310.7	2,097.0	-117.1	2,099.0	0.00	0.00	0.00
14,600.0	91.95	359.54	12,307.3	2,196.9	-117.9	2,198.9	0.00	0.00	0.00
14,700.0	91.95	359.54	12,303.9	2,296.9	-118.7	2,298.9	0.00	0.00	0.00
14,727.2	91.95	359.54	12,303.0	2,324.1	-118.9	2,326.1	0.00	0.00	0.00
Start DLS 2.00 TFO -180.00									
14,800.0	90.49	359.54	12,301.4	2,396.8	-119.5	2,398.8	2.00	-2.00	0.00
14,805.2	90.39	359.54	12,301.4	2,402.0	-119.6	2,404.0	2.00	-2.00	0.00
Start 2702.0 hold at 14805.2 MD									
14,900.0	90.39	359.54	12,300.8	2,496.8	-120.3	2,498.8	0.00	0.00	0.00
15,000.0	90.39	359.54	12,300.1	2,596.8	-121.2	2,598.8	0.00	0.00	0.00
15,100.0	90.39	359.54	12,299.4	2,696.8	-122.0	2,698.8	0.00	0.00	0.00
15,200.0	90.39	359.54	12,298.7	2,796.8	-122.8	2,798.8	0.00	0.00	0.00
15,300.0	90.39	359.54	12,298.0	2,896.8	-123.6	2,898.8	0.00	0.00	0.00
15,400.0	90.39	359.54	12,297.4	2,996.8	-124.4	2,998.8	0.00	0.00	0.00
15,500.0	90.39	359.54	12,296.7	3,096.8	-125.2	3,098.8	0.00	0.00	0.00
15,600.0	90.39	359.54	12,296.0	3,196.8	-126.0	3,198.7	0.00	0.00	0.00
15,700.0	90.39	359.54	12,295.3	3,296.8	-126.8	3,298.7	0.00	0.00	0.00
15,800.0	90.39	359.54	12,294.6	3,396.8	-127.6	3,398.7	0.00	0.00	0.00
15,900.0	90.39	359.54	12,293.9	3,496.8	-128.4	3,498.7	0.00	0.00	0.00
16,000.0	90.39	359.54	12,293.3	3,596.8	-129.3	3,598.7	0.00	0.00	0.00
16,100.0	90.39	359.54	12,292.6	3,696.8	-130.1	3,698.7	0.00	0.00	0.00
16,200.0	90.39	359.54	12,291.9	3,796.8	-130.9	3,798.7	0.00	0.00	0.00
16,300.0	90.39	359.54	12,291.2	3,896.7	-131.7	3,898.7	0.00	0.00	0.00
16,400.0	90.39	359.54	12,290.5	3,996.7	-132.5	3,998.7	0.00	0.00	0.00
16,500.0	90.39	359.54	12,289.9	4,096.7	-133.3	4,098.6	0.00	0.00	0.00
16,600.0	90.39	359.54	12,289.2	4,196.7	-134.1	4,198.6	0.00	0.00	0.00

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well MONTERA FEDERAL COM 601H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=30' @ 3257.0usft (SCAN QUEST)
Site:	MONTERA FEDERAL PROJECT (BULLDOG 2535)	MD Reference:	KB=30' @ 3257.0usft (SCAN QUEST)
Well:	MONTERA FEDERAL COM 601H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP2	Database:	edm

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
16,700.0	90.39	359.54	12,288.5	4,296.7	-134.9	4,298.6	0.00	0.00	0.00
16,800.0	90.39	359.54	12,287.8	4,396.7	-135.7	4,398.6	0.00	0.00	0.00
16,900.0	90.39	359.54	12,287.1	4,496.7	-136.5	4,498.6	0.00	0.00	0.00
17,000.0	90.39	359.54	12,286.5	4,596.7	-137.4	4,598.6	0.00	0.00	0.00
17,100.0	90.39	359.54	12,285.8	4,696.7	-138.2	4,698.6	0.00	0.00	0.00
17,200.0	90.39	359.54	12,285.1	4,796.7	-139.0	4,798.6	0.00	0.00	0.00
17,300.0	90.39	359.54	12,284.4	4,896.7	-139.8	4,898.6	0.00	0.00	0.00
17,400.0	90.39	359.54	12,283.7	4,996.7	-140.6	4,998.5	0.00	0.00	0.00
17,500.0	90.39	359.54	12,283.0	5,096.7	-141.4	5,098.5	0.00	0.00	0.00
17,507.1	90.39	359.54	12,283.0	5,103.8	-141.5	5,105.7	0.00	0.00	0.00
Start DLS 2.00 TFO 180.00									
17,538.4	89.77	359.54	12,283.0	5,135.1	-141.7	5,136.9	2.00	-2.00	0.00
Start 2455.6 hold at 17538.4 MD									
17,600.0	89.77	359.54	12,283.2	5,196.7	-142.2	5,198.5	0.00	0.00	0.00
17,700.0	89.77	359.54	12,283.6	5,296.7	-143.0	5,298.5	0.00	0.00	0.00
17,800.0	89.77	359.54	12,284.0	5,396.7	-143.8	5,398.5	0.00	0.00	0.00
17,900.0	89.77	359.54	12,284.4	5,496.7	-144.6	5,498.5	0.00	0.00	0.00
18,000.0	89.77	359.54	12,284.8	5,596.7	-145.5	5,598.5	0.00	0.00	0.00
18,100.0	89.77	359.54	12,285.3	5,696.7	-146.3	5,698.5	0.00	0.00	0.00
18,200.0	89.77	359.54	12,285.7	5,796.6	-147.1	5,798.5	0.00	0.00	0.00
18,300.0	89.77	359.54	12,286.1	5,896.6	-147.9	5,898.5	0.00	0.00	0.00
18,400.0	89.77	359.54	12,286.5	5,996.6	-148.7	5,998.4	0.00	0.00	0.00
18,500.0	89.77	359.54	12,286.9	6,096.6	-149.5	6,098.4	0.00	0.00	0.00
18,600.0	89.77	359.54	12,287.3	6,196.6	-150.3	6,198.4	0.00	0.00	0.00
18,700.0	89.77	359.54	12,287.7	6,296.6	-151.1	6,298.4	0.00	0.00	0.00
18,800.0	89.77	359.54	12,288.1	6,396.6	-151.9	6,398.4	0.00	0.00	0.00
18,900.0	89.77	359.54	12,288.5	6,496.6	-152.7	6,498.4	0.00	0.00	0.00
19,000.0	89.77	359.54	12,288.9	6,596.6	-153.5	6,598.4	0.00	0.00	0.00
19,100.0	89.77	359.54	12,289.3	6,696.6	-154.4	6,698.4	0.00	0.00	0.00
19,200.0	89.77	359.54	12,289.8	6,796.6	-155.2	6,798.4	0.00	0.00	0.00
19,300.0	89.77	359.54	12,290.2	6,896.6	-156.0	6,898.4	0.00	0.00	0.00
19,400.0	89.77	359.54	12,290.6	6,996.6	-156.8	6,998.4	0.00	0.00	0.00
19,500.0	89.77	359.54	12,291.0	7,096.6	-157.6	7,098.3	0.00	0.00	0.00
19,600.0	89.77	359.54	12,291.4	7,196.6	-158.4	7,198.3	0.00	0.00	0.00
19,700.0	89.77	359.54	12,291.8	7,296.6	-159.2	7,298.3	0.00	0.00	0.00
19,800.0	89.77	359.54	12,292.2	7,396.6	-160.0	7,398.3	0.00	0.00	0.00
19,900.0	89.77	359.54	12,292.6	7,496.6	-160.8	7,498.3	0.00	0.00	0.00
19,994.0	89.77	359.54	12,293.0	7,590.6	-161.6	7,592.3	0.00	0.00	0.00
TD at 19994.0									

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well MONTERA FEDERAL COM 601H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=30' @ 3257.0usft (SCAN QUEST)
Site:	MONTERA FEDERAL PROJECT (BULLDOG 2535)	MD Reference:	KB=30' @ 3257.0usft (SCAN QUEST)
Well:	MONTERA FEDERAL COM 601H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP2	Database:	edm

Design Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
5280' F/FTP (MONTE - plan hits target center - Rectangle (sides W100.0 H2,778.0 D20.0)	0.39	179.52	12,283.0	5,103.8	-141.5	420,484.72	800,495.84	32° 9' 8.295 N	103° 21' 44.594 W
LTP (MONTERA FED - plan misses target center by 44.0usft at 19900.0usft MD (12292.6 TVD, 7496.6 N, -160.8 E) - Point	0.00	0.00	12,293.0	7,540.6	-161.2	422,921.50	800,476.10	32° 9' 32.409 N	103° 21' 44.568 W
PBHL (MONTERA FE - plan hits target center - Rectangle (sides W100.0 H2,490.0 D20.0)	-0.23	179.54	12,293.0	7,590.6	-161.6	422,971.50	800,475.70	32° 9' 32.904 N	103° 21' 44.567 W
2500' F/FTP (MONTE - plan hits target center - Rectangle (sides W100.0 H2,552.0 D20.0)	1.95	179.52	12,303.0	2,324.1	-118.9	417,704.96	800,518.35	32° 8' 40.787 N	103° 21' 44.624 W
FTP (MONTERA FED - plan misses target center by 163.6usft at 12300.0usft MD (12247.8 TVD, -70.3 N, -99.6 E) - Circle (radius 50.0)	0.00	0.00	12,373.0	-175.7	-98.7	415,205.20	800,538.60	32° 8' 16.050 N	103° 21' 44.650 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2500	2500	0	0	Start Build 2.00
2700	2700	-6	-3	Start 3222.4 hold at 2700.0 MD
5922	5914	-212	-93	Start Drop -1.00
6322	6314	-225	-98	Start 5581.7 hold at 6322.4 MD
11,904	11,896	-225	-98	Start DLS 12.00 TFO 359.54
12,670	12,373	268	-102	Start 2056.8 hold at 12670.4 MD
14,727	12,303	2324	-119	Start DLS 2.00 TFO -180.00
14,805	12,301	2402	-120	Start 2702.0 hold at 14805.2 MD
17,507	12,283	5104	-141	Start DLS 2.00 TFO 180.00
17,538	12,283	5135	-142	Start 2455.6 hold at 17538.4 MD
19,994	12,293	7591	-162	TD at 19994.0

Checked By: _____ Approved By: _____ Date: _____



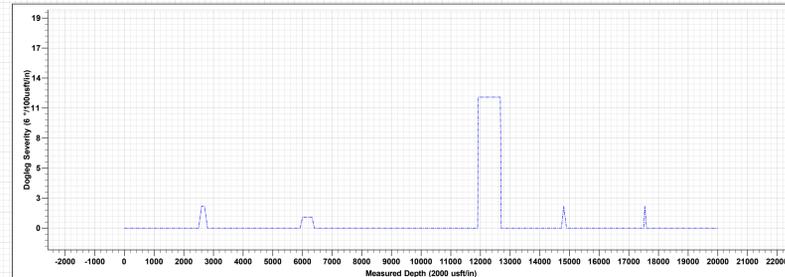
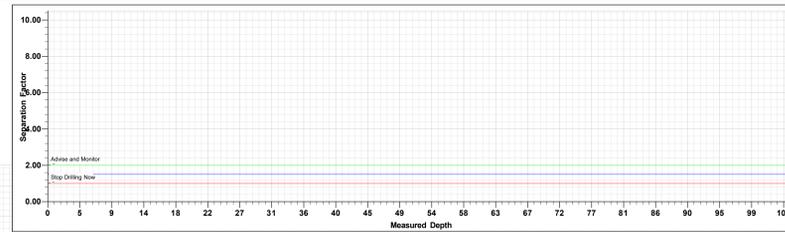
Project: BULLDOG PROSPECT (NM-E)
 Site: MONTERA FEDERAL PROJECT (BULLDOG 2535)
 Well: MONTERA FEDERAL COM 601H
 Wellbore: OWB
 Design: PWP2
 GL: 3227.0
 KB=30' @ 3257.0usft (SCAN QUEST)

WELL DETAILS: MONTERA FEDERAL COM 601H

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	415380.90	800637.30	32° 8' 17.780 N	103° 21' 43.484 W

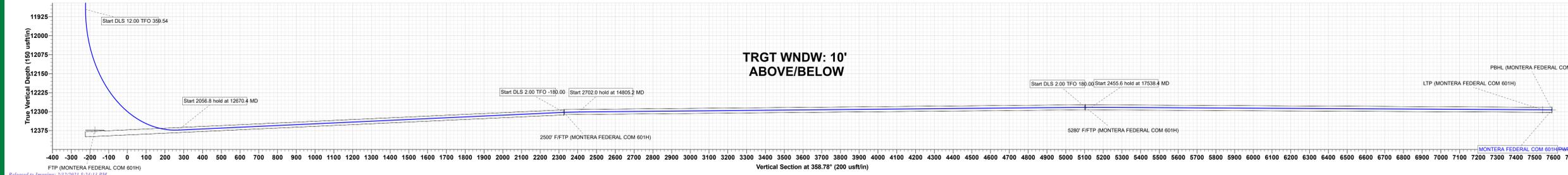
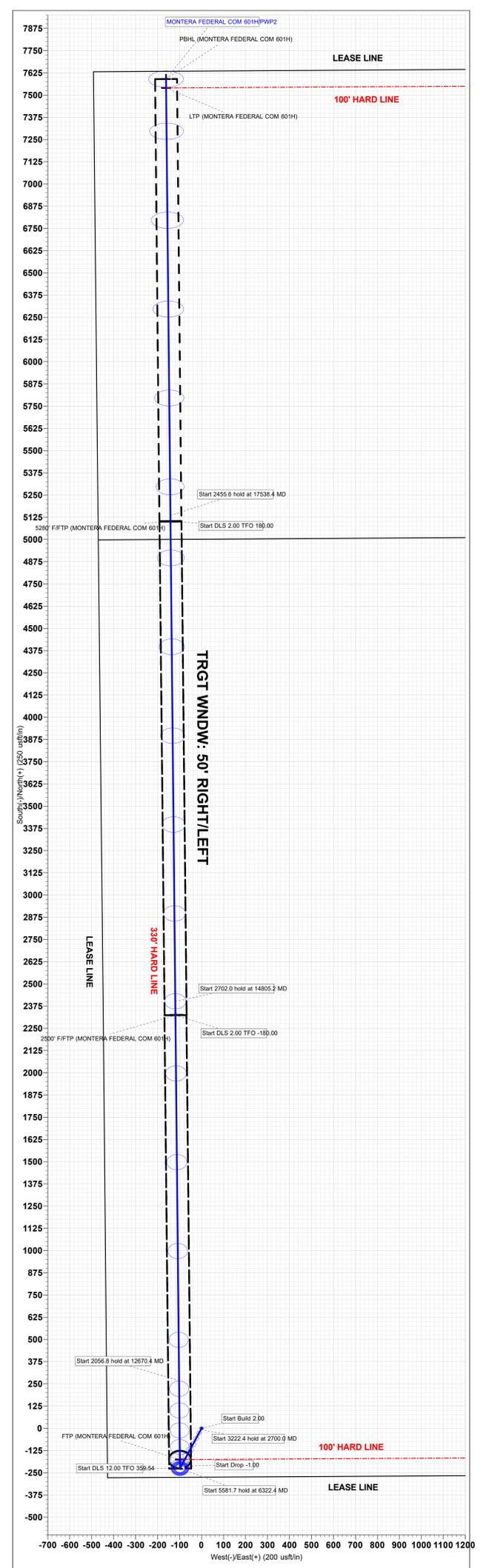
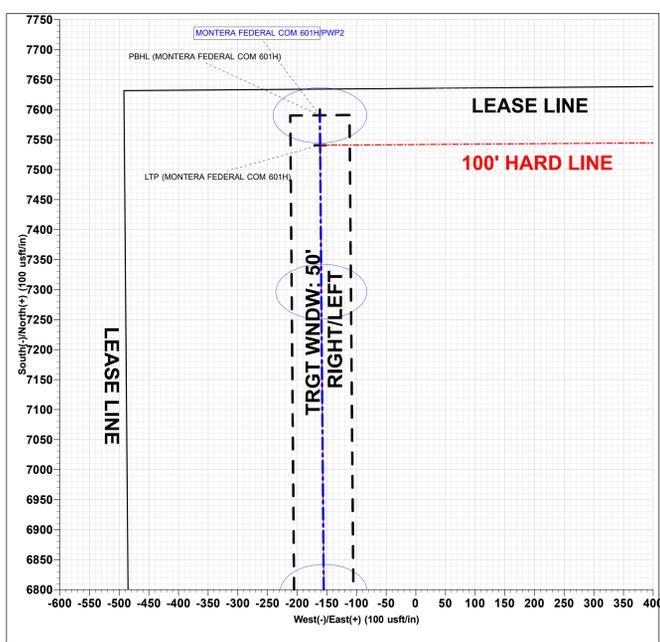
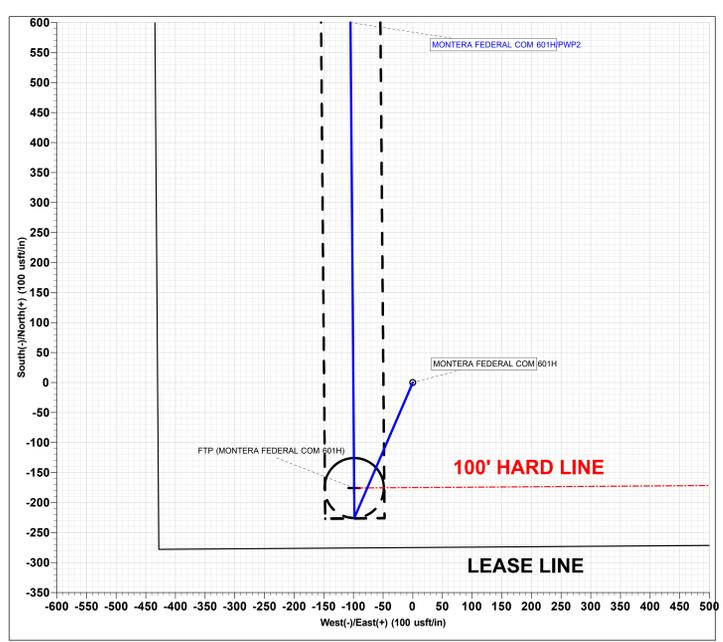
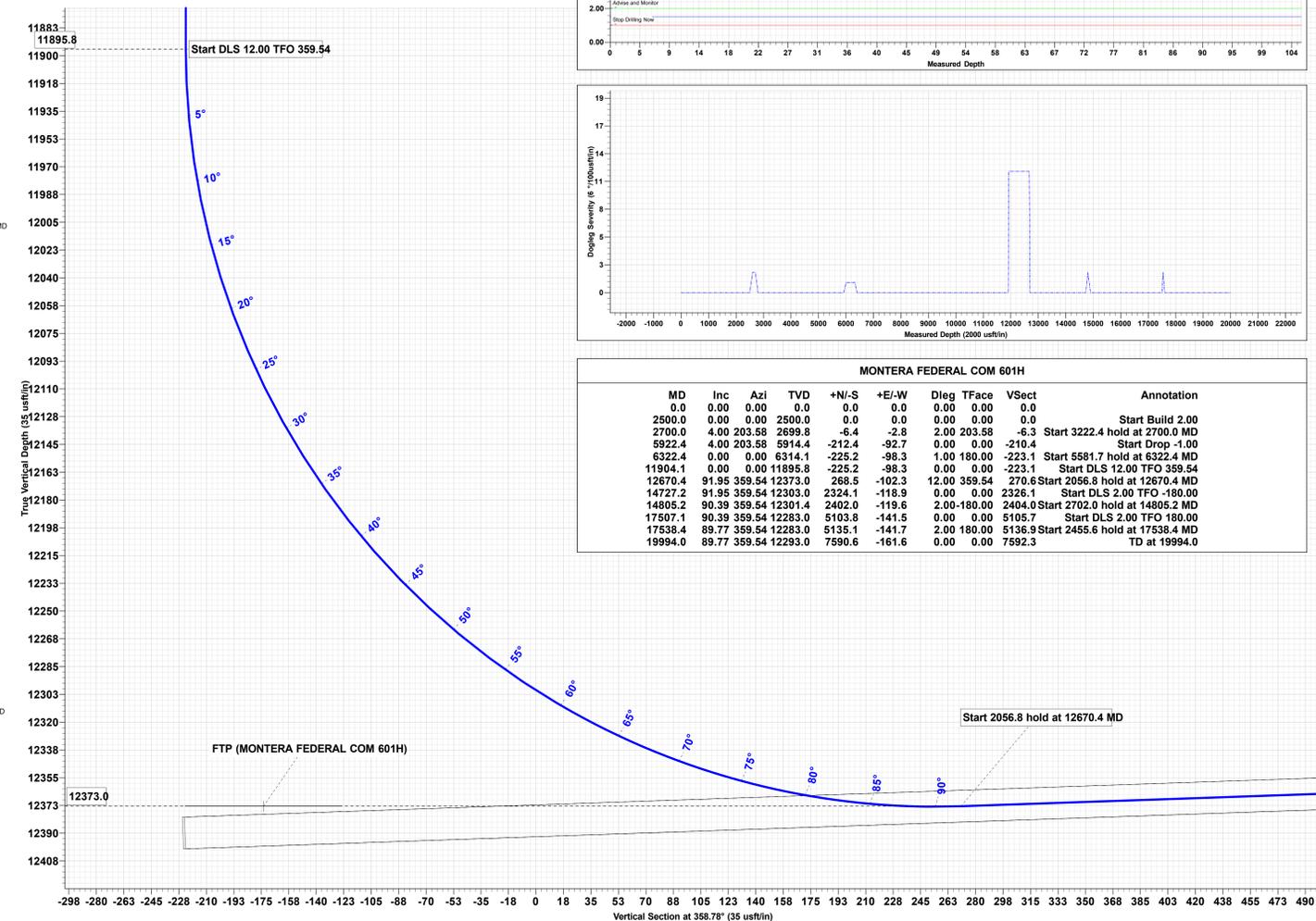
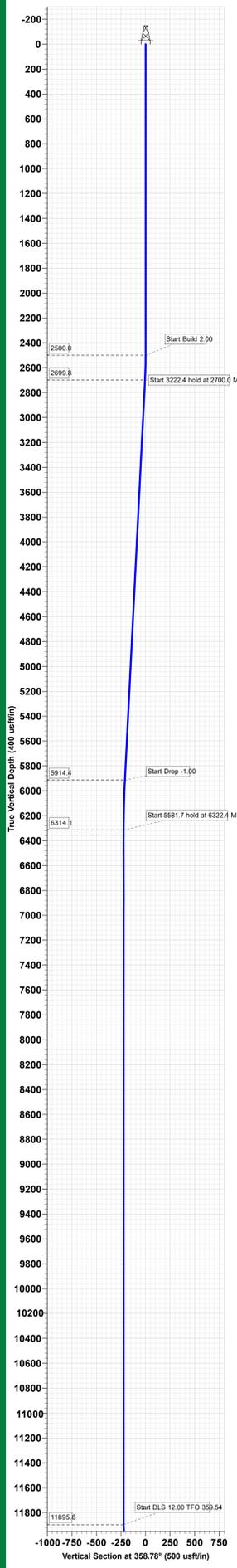
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
5280' F/FTP (MONTERA FEDERAL COM 601H)	12283.0	5103.8	-141.5	420484.72	800495.84	32° 9' 8.295 N	103° 21' 44.594 W
LTP (MONTERA FEDERAL COM 601H)	12293.0	7540.6	-161.2	422921.50	800476.10	32° 9' 32.904 N	103° 21' 44.567 W
PBHL (MONTERA FEDERAL COM 601H)	12293.0	7590.6	-161.5	422971.50	800475.70	32° 9' 32.904 N	103° 21' 44.567 W
2500' F/FTP (MONTERA FEDERAL COM 601H)	12303.0	2324.1	-118.9	417704.96	800518.35	32° 8' 40.787 N	103° 21' 44.624 W
FTP (MONTERA FEDERAL COM 601H)	12373.0	-175.7	-98.7	415205.20	800538.60	32° 8' 16.050 N	103° 21' 44.650 W



MONTERA FEDERAL COM 601H

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	Start Build 2.00
2500.0	0.00	0.00	2500.0	0.0	0.0	0.00	0.00	0.0	Start 3222.4 hold at 2700.0 MD
2700.0	4.00	203.58	2699.8	-6.4	-2.8	2.00	203.58	-6.3	Start Drop -1.00
5922.4	4.00	203.58	5914.4	-212.4	-92.7	0.00	0.00	-210.4	Start 5581.7 hold at 6322.4 MD
6322.4	0.00	0.00	6314.1	-225.2	-98.3	1.00	180.00	-223.1	Start DLS 12.00 TFO 359.54
11904.1	0.00	0.00	11895.8	-225.2	-98.3	0.00	0.00	-223.1	Start 2056.8 hold at 12670.4 MD
12670.4	91.95	359.54	12373.0	268.5	-102.3	12.00	359.54	270.6	Start DLS 2.00 TFO -180.00
14727.2	91.95	359.54	12303.0	2324.1	-118.9	0.00	0.00	2324.1	Start 2702.0 hold at 14805.2 MD
14805.2	90.39	359.54	12301.4	2402.0	-119.6	2.00	-180.00	2404.0	Start DLS 2.00 TFO 180.00
17507.1	90.39	359.54	12283.0	5103.8	-141.5	0.00	0.00	5103.7	Start 2455.6 hold at 17538.4 MD
17538.4	89.77	359.54	12283.0	5135.1	-141.7	2.00	180.00	5136.9	TD at 19994.0
19994.0	89.77	359.54	12293.0	7590.6	-161.6	0.00	0.00	7592.3	



1. Geologic Formations

TVD of target	12293'	Pilot hole depth	NA
MD at TD:	19994'	Deepest expected fresh water:	207'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	728	Water	
Top of Salt	1073	Salt	
Base of Salt	4860	Salt	
Lamar	5255	Salt Water	
Bell Canyon	5304	Salt Water	
Cherry Canyon	6227	Oil/Gas	
Brushy Canyon	7727	Oil/Gas	
Bone Spring Lime	8983	Oil/Gas	
M. Avalon Shale	9413	Oil/Gas	
L. Avalon Shale	9843	Oil/Gas	
1st Bone Spring Sand	10273	Oil/Gas	
2nd Bone Spring Sand	10767	Oil/Gas	
3rd Bone Spring Sand	11891	Oil/Gas	
Wolfcamp	12256	Oil/Gas	

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Body	SF Joint
	From	To								
14.75"	0	1170	10.75"	45.5	N80	BTC	4.61	1.67	19.54	20.61
9.875"	0	8500	7.625"	29.7	HCL80	BTC	1.56	1.08	2.88	2.90
8.750"	8500	11445	7.625"	29.7	HCP110	TL-FJ	1.32	1.11	2.77	1.94
6.75"	0	11245	5.5"	23	P110	BTC	1.81	1.86	3.28	3.26
6.75"	11245	19,994	5"	18	P110	BTC	1.81	1.86	3.28	3.26
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet

Intermediate casing will be kept at least 1/3 full while running casing to mitigate collapse. Surface burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface and All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

The 5" casing will be run back 200' into the intermediate casing to ensure the coupling OD clearance is greater than .422" for the cement bond tie in.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	Y
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary?	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	558	13.5	1.75	9	12	Lead: Class C + 4% Gel + 1% CaCl ₂
	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl ₂
Intermed	830	10.3	3.3	22	24	Halliburton tunded light
	250	14.8	1.35	6.6	8	Tail: Class H
Prod	522	12.7	2	10.7	72	Lead: 50:50:10 H Blend
	1104	14.4	1.24	5.7	19	Tail: 50:50:2 Class H Blend

If losses are encountered in the intermediate section a DV/ECP tool will be run ~50' above the Lamar Lime top, cement will be adjusted accordingly if this contingency is necessary.

Volumes Subject to Observed Hole Conditions and/or Fluid Caliper Results

Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
Surface	0'	50%
Intermediate	0'	50%
Production	8,000'	35% OH in Lateral (KOP to EOL)

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
---	---

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	x	Tested to:
9-7/8"	13-5/8"	5M	Annular	x	2500psi
			Blind Ram	x	5000psi
			Pipe Ram	x	
			Double Ram	x	
			Other*		
6-3/4"	13-5/8"	10M	5M Annular	x	5000psi
			Blind Ram	x	10000psi
			Pipe Ram	x	
			Double Ram	x	
			Other*		

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart. N Are anchors required by manufacturer?
Y	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surf. Shoe	FW Gel	8.6 - 8.8	28-34	N/C
Surf csg	9-5/8" Int shoe	Brine Diesel Emulsion	8.4 - 9	28-34	N/C
7-5/8" Int shoe	Lateral TD	OBM	9.6 - 12.5	35-45	<20

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
---	-----------------------------

6. Logging and Testing Procedures

Logging, Coring and Testing.	
Y	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
Y	No Logs are planned based on well control or offset log information.
N	Drill stem test? If yes, explain.
N	Coring? If yes, explain.

Additional logs planned		Interval
N	Resistivity	Pilot Hole TD to ICP
N	Density	Pilot Hole TD to ICP
Y	CBL	Production casing (If cement not circulated to surface)
Y	Mud log	Intermediate shoe to TD
N	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	8035 psi at 12356' TVD
Abnormal Temperature	NO 180 Deg. F.

No abnormal pressure or temperature conditions are anticipated. Sufficient mud materials to maintain mud properties and weight increase requirements will be kept on location at all times.

Sufficient supplies of Paper/LCM for periodic sweeps to control seepage and losses will be maintained on location.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S Plan attached

8. Other Facets of Operation

Y	Is it a walking operation?
Y	Is casing pre-set?

x	H2S Plan.
x	BOP & Choke Schematics.
x	Directional Plan

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 Rd., Aztec, NM 87410
 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
 1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 17720

CONDITIONS OF APPROVAL

Operator: COG OPERATING LLC	600 W Illinois Ave	Midland, TX79701	OGRID: 229137	Action Number: 17720	Action Type: C-103A
OCD Reviewer pkautz			Condition None		