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

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

Form C-101
Revised July 18, 2013

☐ AMENDED REPORT

OIL CONS. DIV DIST. 3
APR 27 2016

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address	2. OGRID Number
Dugan Production Corp. 709 East Murray Drive Farmington, NM 87401	006515
	3. API Number 30-045-35773

4. Property Code	5. Property Name	6. Well No.
315782	Sunflower Unit	1

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
I	2	24N	13W		1654	South	850	East	San Juan

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
I	2	24N	13W		1654	South	850	East	San Juan

9. Pool Information

KP

Pool Name	Pool Code
Basin Fruitland Coal	71629

Additional Well Information

11. Work Type	12. Well Type	13. Cable/Rotary	14. Lease Type	15. Ground Level Elevation
N	G	Rotary	State	6297' GL
16. Multiple	**17. Proposed Depth**	**18. Formation**	**19. Contractor**	**20. Spud Date**
No	1065	Pictured Cliffs	D & D Drilling	ASAP

Depth to Ground water	Distance from nearest fresh water well	Distance to nearest surface water
800-ft	7000-ft	1700-ft

☒ **We will be using a closed-loop system in lieu of lined pits**

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	12-1/4"	8-5/8"	24#	120-ft.	98.25-cf	Surface
Production	7-7/8"	5-1/2"	14#	1065-ft.	329-cf	Surface

Casing/Cement Program: Additional Comments

A water based gel-mud will be used to drill surface and production casing hole. Standard 2,200 psi BOP will be used to drill production casing hole. Standard 2,000 psi BOP will be used to drill production hole. Interval (approx.. 850-915) will be stimulated.

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	2,000 psi	Low Press. 250 psig for 5 mins. & Hi Press. 800 psig for 30-mins	Schafer 9" 2000 Series

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief.
I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☐, if applicable.
Signature: Kurt Fagrelius

Printed name: Kurt Fagrelius

Title: Vice President Land and Exploration

E-mail Address: kfagrelius@duganproduction.com

Date: 4/26/2016 Phone: 505-325-1821

OIL CONSERVATION DIVISION

Approved By: Charlie Perrin 5-2-16

Title: SUPERVISOR DISTRICT #3

Approved Date: MAY 02 2016 Expiration Date:

Conditions of Approval Attached

SEE ATTACHED NMOCD CONDITIONS OF APPROVAL

FV

8

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State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Drive
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-045-35773	71629	BASIN FRUITLAND COAL

4 Property Code	5 Property Name	6 Well Number
315782	SUNFLOWER UNIT	1

7 OGRID No.	8 Operator Name	9 Elevation
006515	DUGAN PRODUCTION CORPORATION	6297'

10 Surface Location

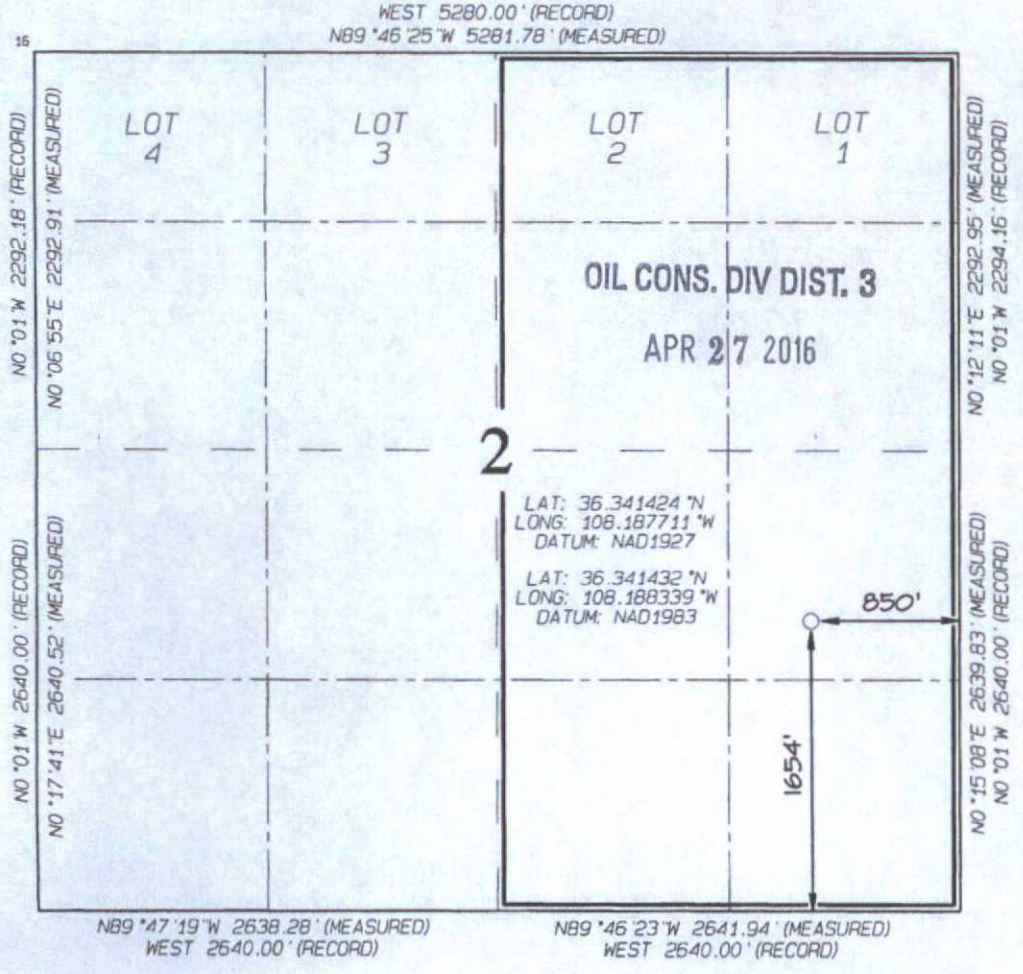
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	2	24N	13W		1654	SOUTH	850	EAST	SAN JUAN

11 Bottom Hole Location If Different From Surface

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

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
299.01 Acres - (E/2)			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



17 OPERATOR CERTIFICATION

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

Kurt Fagrelius 4/26/2016
Signature Date

Kurt Fagrelius
Printed Name

kfagrelius@duganproduction.com
E-mail Address

18 SURVEYOR CERTIFICATION

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

Date Revised: APRIL 22, 2016
Date of Survey: APRIL 9, 2016

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

any construction related activity. The top soil will be segregated to prevent mixing with sub-surface soils. Stock piles will be shallow enough to prevent sterilization of the soil. Topsoil may contain small pieces of brush-hogged material (grasses, brush and sage). Compaction of the top soil will be minimized by keeping vehicle and equipment traffic from crossing over the stock piles. Sediment, erosion control devices (wattles or fences) or "best management practices" will be used to prevent wind and water erosion of the topsoil until it has been redistributed during reclamation.

3. Construction materials for well pad will be obtained on-site. If additional material is needed, it will be obtained from existing private or approved permitted sources (providing it does not contain any noxious weeds) and will be transported to the construction site with trucks over existing roads in the area.

   The maximum cut will be 1-foot on the east (corners #3 and 5) and there will be a 1-foot fill on the southeast (corner #5). **See Exhibit 5.**

4. As determined during the onsite inspection on January 21, 2016: a drain to collect and divert surface runoff will be constructed on the west side of the pad draining to the east along the south and north sides of the pad **(Exhibit 5).**

5. Construction equipment could include a brush hog, maintainer, excavator and a dozer.

C. Pipeline – is described in **4.B. above and shown on Exhibits 3, 4a and 4b.** There will be no construction activity when soils are water saturated or frozen.
   1. Prior to ground disturbance, brush, grasses and sage will be brush-hogged to ground level.

   2. Following removal of all vegetation, all topsoil (uppermost 6" of soil) will be removed and stockpiled. The top soil may contain small pieces of brush-hogged material (grasses, brush and sage). The top soil will be segregated to prevent mixing with the sub-surface soil. The top soil will be stacked on the working side and at the greatest distance from the pipe ditch. The sub-surface soil will be stacked on the inside of the topsoil on the working side and closest to the ditch. Once construction of the pipeline is complete, the subsurface soil will be mopped back into the ditch over the pipe. After all of the subsurface soil has been placed over the pipe, the top soil will then be brought in over the top and spread as layer uniform in thickness over the top of the subsurface soil. All necessary precautions to prevent mixing of the top soil and subsurface soil will be taken. (**See Appendix A**).

   3. Construction materials for pipeline will be obtained on-site. If additional material is needed, it will be obtained from existing private or approved permitted sources (providing it does not contain any noxious weeds) and will be transported to the construction site with trucks over existing roads in the area.

7. <u>Methods for Handling Wastes</u> –

A. Closed loop drilling system will be used to contain all liquids and solids waste associated with drilling operations is shown in **Exhibit 6**.
   1. System will be designed and maintained to prevent contamination of fresh water and protect wildlife, public health and the environment.

EXHIBIT B.

Operations Plan
Sunflower Unit #1
Lease #NM-V-8294-1
NESE of Section 2, T24N, R13W
1654' FSL and 850' FEL
San Juan County, New Mexico

1. **APPROXIMATE FORMATION TOPS:**

Kirtland	Surface
Fruitland	505'
Pictured Cliffs	915'
Total Depth	**1065'**

Catch samples every 10 feet from 650-feet to total depth.

2. **LOGGING PROGRAM:**

Run cased hole GR-CCL-CNL from total depth to surface.

3. **CASING PROGRAM:**

Hole Size	Casing Size	Wt./ft.	Setting Depth	Grade and Condition
12-1/4"	8-5/8"	24#	120'	J-55
7-7/8"	5-1/2"	15.5#	1065'	J-55

Plan to drill a 12-1/4" hole and set 120' of 8-5/8" OD, 24#, J-55 surface casing. Then plan to drill a 7-7/8" hole to total depth with gel-water mud program to test the Fruitland Coal. 5-1/2", 15.5#, J-55 production casing will be run and cemented. Cased hole GR-CCL-CNL log will be run. Productive zone will be perforated and fractured. After frac, the well will be cleaned out and production equipment will be installed.

4. **CEMENTING PROGRAM:**

Surface: Cement to surface with 75 sks (98.25 Cu.ft) Type III cement w/ 2 % bwoc $CaCl_2$ + 0.25 lbs/sk Celloflake + 53.6% Fresh Water (15.00 lbs/gal, 1.31 Cu.ft/sk). Circulate cement to surface.

Production: Cement w/ 95 sks Premium Lite FM + 8% bwoc Bentonite + 3% bwoc Calcium Chloride + 0.25 lbs/sk Cello Flake + 5 lbs/sack LCM-1 + 0.4% bwoc Sodium Metasilicate + 0.4 % bwoc FL-52A + 112.3% Fresh Water (12.1 lbs/gal, 2.13 cu.ft/ft - 202 cu.ft slurry). Tail w/ 92 sks Type III Cement + 1% bwoc Calcium Chloride + 0.25 lbs/sk Cello flake + 0.2% bwoc FL-52A + 59% Freshwater (14.6 lbs/gal, 1.38 cu.ft/ft - 127 cu.ft). Total slurry for the job-329 Cu.ft. Circulate cement to surface.

An adequate spacer will be pumped ahead of the cement slurry to help prevent mud contamination of the cement. An adequate number of casing centralizers will be run through useable water zones to ensure that casing is centralized through these zones. The adequate number of centralizers will be determined based on API standards. Centralizers to impart a swirling action around the casing will be used just below and into the base of the lowest usable water zone. These devices will assist mud displacement, increase cement bonding potential and create an effective hydraulic seal. A chronological log will be kept which records the pump rate, pressure, slurry density, and slurry volume for the cement job. The log will be sent to the BLM after completion of the job.

5. **Maximum Anticipated Bottom Hole Pressure** - 300 psi.

6. **Drilling Fluid** - will be fresh water with bentonite 8.9#/gal.

7. **WELLHEAD EQUIPMENT:**
   Huber 8-5/8"x5-1/2" casing head, 1000# WP, tested to 2000#. Huber 5-1/2"x2-7/8" tubing head, 1000# WP, tested to 2000#.

8. **Blow-Out Preventer Equipment (BOPE): Exhibit 8.**
   Annular preventer, double ram, or 2 rams with one being blind and one being a pipe ram.
   Kill line (2" minimum)
   1 kill line valve (2" minimum)
   1 choke line valve
   2 adjustable chokes
   Upper kelly cock valve with handle available.
   Safety valve and subs to fit all drill string connections in use.
   Pressure gauge on choke manifold.
   2" minimum choke line.
   Fill-up line.

Working pressure for all BOPE will be 2,000 psi or greater. Will test BOPE (blind rams, pipe rams, choke manifold and surface casing) separately. Each test will include a low pressure test to 250-psig held for five minutes and a high pressure test to 800-psig held for thirty minutes (with no more than a 10-percent pressure drop during the duration of the tests). If a 10-percent or greater pressure drop occurs; a packer will be run to isolate the surface casing and BOPE to locate the source

Exhibit 2.

Directions from the Intersection of US Hwy 64 & State Hwy 371

in Farmington, NM to Dugan Production Corporation Sunflower Unit #1

1654' FSL & 850' FEL, Section 2, T24N, R13W, N.M.P.M., San Juan County, NM

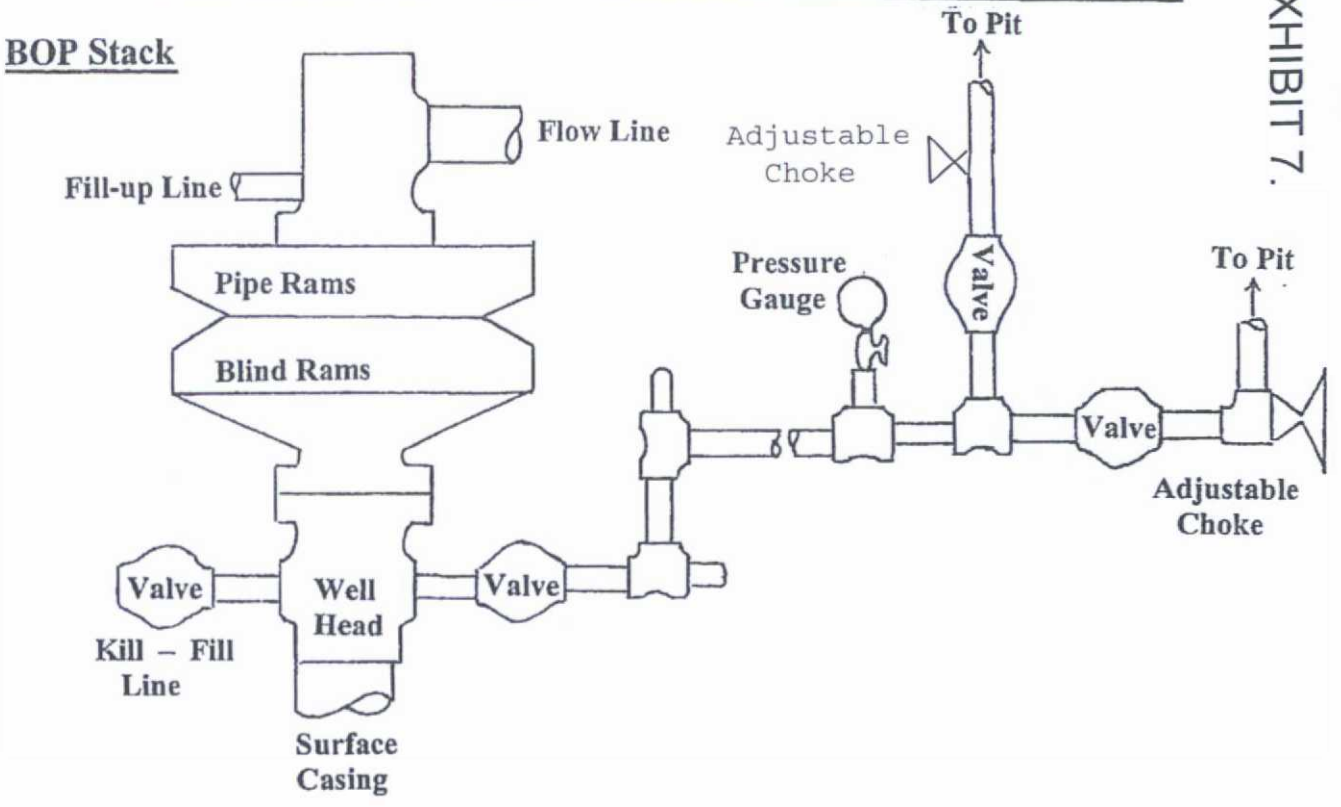
Latitude: 36.341432°N Longitude: 108.188339°W Datum: NAD1983

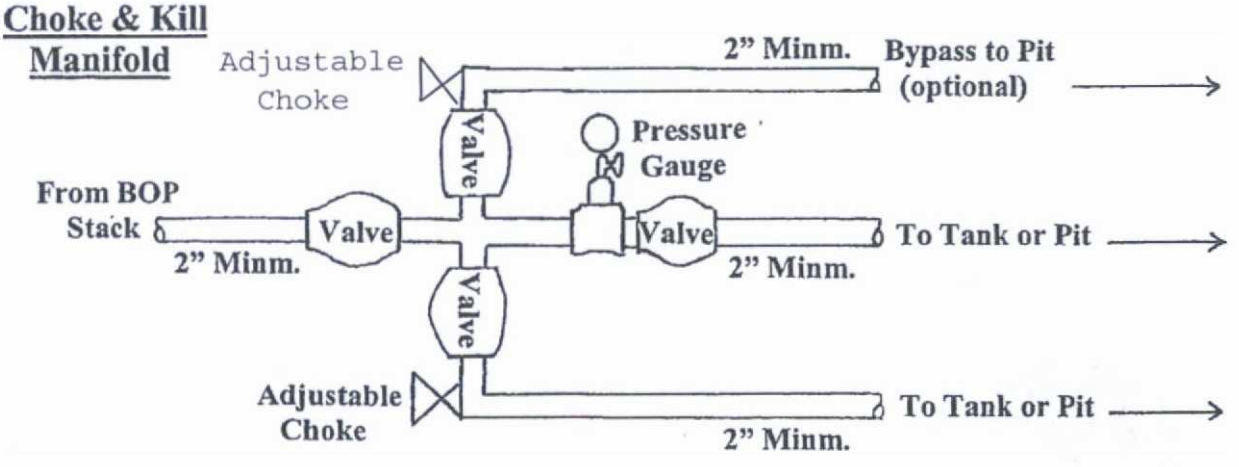
From the intersection of US Hwy 64 & State Hwy 371 in Farmington, NM, travel Southerly on State Hwy 371 for 28.5 miles to County Road #7250 @ Mile Marker 77.4;

Go Left (Easterly) on County Road #7250 for 3.7 miles to new access on right-hand side of roadway which continues for 1717.2' to staked Dugan Sunflower Unit #1 location.

EXHIBIT 7.

Well Control Equipment Schematic for 2,000 psi BOP





Working Pressure for all equipment is 2,000 psi or greater

DUGAN PRODUCTION CORP.
Sunflower Unit #1

State of New Mexico
Energy, Minerals and Natural Resources Department

New Mexico Oil Conservation Division Conditions of Approval (C-101 Application for permit to drill)

- ✓ Notify Aztec OCD 24hrs prior to casing & cement.
- o Hold C-104 for directional survey & "As Drilled" Plat
- o Hold C-104 for NSL, NSP, DHC
- o Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- o Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
  - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
  - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
  - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- o Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- ✓ Submit Gas Capture Plan form prior to spudding or initiating recompletion operations
- ✓ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84
- ✓ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.
- ✓ Well-bore communication is regulated under 19.15.29 NMAC. This requires well-bore Communication to be reported in accordance with 19.15.29.8.

1220 South St. Francis Drive • Santa Fe, New Mexico 87505
Phone (505) 476-3460 • Fax (505) 476-3462 • www.emnrd.state.nm.us/ocd