

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

David R. Catanach Division Director
Oil Conservation Division



New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-3 APD form.

Operator Signature Date: 7-18-15

Well information;

Operator Dugan, Well Name and Number Cartwright Com # 91

API# 30-045-35699, Section 19, Township 23 (N/S), Range 10 (E/W)

Conditions of Approval:

(See the below checked and handwritten conditions)

- Notify Aztec OCD 24hrs prior to casing & cement.
- Hold C-104 for directional survey & "As Drilled" Plat
- Hold C-104 for NSL, NSP, DHC
- Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- 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
- 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
- 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.

Chad Ben
NMOCD Approved by Signature

1130-2015
Date KC

NOV 24 2015

JUL 24 2015

FORM APPROVED OMB No 1004-0137 Expires October 31, 2014

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT Farmington Field Office Bureau of Land Management

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. NM-86485 If Indian, Allottee or Tribe Name

1a. Type of work: [X] DRILL [] REENTER 1b. Type of Well: [] Oil Well [X] Gas Well [] Other [X] Single Zone [] Multiple Zone

7. If Unit or CA Agreement, Name and No. NMNM119327 8. Lease Name and Well No. Cartwright Com #91

2. Name of Operator Dugan Production Corp.

9. API Well No. 30-045-35699

3a. Address 709 East Murray Drive Farmington, New Mexico 87401 3b. Phone No. (include area code) 505-325-1821

10. Field and Pool, or Exploratory Basin Fruitland Coal

4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 1500' FSL & 1200' FEL Lat. 36.20905 N, Long. 107.93308 W At proposed prod. zone Same as above. NAD 1983

11. Sec., T. R. M. or Blk. and Survey or Area Sec. 19, T23N, R10W NMPM

14. Distance in miles and direction from nearest town or post office* Approx. 40-miles southeast of Bloomfield, New Mexico

12. County or Parish San Juan 13. State NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1200-Feet 16. No. of acres in lease 1080.32

17. Spacing Unit dedicated to this well W/2 - 323.89 Acres 3/2 320.00

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 2,325-ft. 19. Proposed Depth 800-Feet

20. BLM/BIA Bond No. on file On File NM0140

21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6466-GL 22. Approximate date work will start* ASAP

23. Estimated duration 5-days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, must be attached to this form:

- 1. Well plat certified by a registered surveyor. 2. A Drilling Plan. 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). 5. Operator certification 6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature Kurt Fagrelius Name (Printed Typed) Kurt Fagrelius Date 7/18/2015

Title Vice President

Approved by (Signature) [Signature] Name (Printed Typed) Office FFO Date 11/20/15

Title AFM

Application approval 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. Conditions of approval, if any, are attached

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.

(Continued on page 2)

*(Instructions on page 2)

A water based gel-mud will be used to drill surface and production casing hole. Standard 2,000 psi BOP will be used to drill production hole. The Fruitland Coal will be completed from approximately 590' - 650'. The interval will be fracture stimulated.

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS"

THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS. This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

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

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

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 30-045-35699		² Pool Code 71629		³ Pool Name BASIN FRUITLAND COAL	
⁴ Property Code 35398		⁵ Property Name CARTWRIGHT COM			⁶ Well Number 91
⁷ OGRID No. 006515		⁸ Operator Name DUGAN PRODUCTION CORPORATION			⁹ Elevation 6466

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	19	23 N	10 W		1500	SOUTH	1200	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

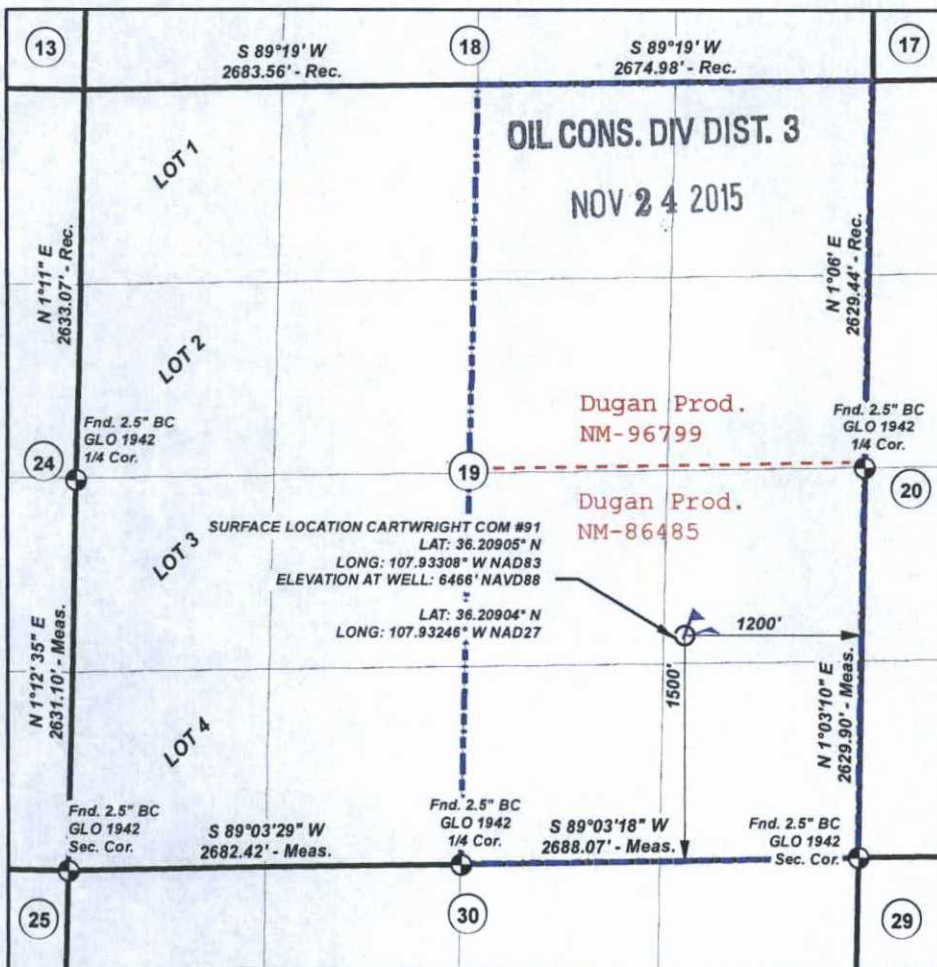
¹² Dedicated Acres
323.89 E/2
300.00

¹³ Joint or Infill

¹⁴ Consolidation Code

¹⁵ 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.



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 Fagrelis 7/18/2015
Signature Date

Kurt Fagrelis
Printed Name

kfagrelis@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.

February 11, 2015
Date of Survey

David A. Johnson
Signature and Seal of Professional Surveyor



Certificate Number

2. Following removal of all vegetation, all topsoil (uppermost 6" of soil) will be removed and stockpiled in the construction zone (See Exhibit 6). Top soil will not be used for 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 4.7-feet on the south side corners (#2, #3 and #7) and there will be a 1.5-foot fill on the northwest corner (#5). See Exhibit 5a.

4. As determined during the onsite inspection on April 8th and 9th, 2015: **a drain to collect surface runoff will be constructed on the south and east sides of the pad which will drain to the northeast (Exhibit 5a).**
 5. Construction equipment could include a chain saw, brush hog, maintainer, excavator and a dozer.
- C. Pipeline – is described in **4.B. above and shown on Exhibit 4.**
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, page 10)**
 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. Methods for Handling Wastes –

- ✓ 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.

2. Stockpile top-soil prior to leveling well pad and digging depression. The top-soil will be kept separate from sub-soil and used as a final cover for interim reclamation of the depression and well pad.
 3. A depression approximately 45-feet long by 12-feet wide and 3-feet deep with vertical sidewalls will be constructed. The depression will be constructed with a firm foundation and interior slopes, smooth and free of rocks or sharp edges.
 4. An open-top steel tank approximately 40-feet long by 10-feet wide and 4-feet deep with internal baffles will be set in the depression and used to separate solids from the drilling fluids.
 5. An upright, 400-bbl tank will be set adjacent to the open top steel tank and used for circulation and storage of drilling fluids.
 6. An upright, 400-bbl tank will be set adjacent to the circulation/storage tank and used for storage of fresh water.
 7. Diversionary berms, ditches or sloping will be constructed as necessary to prevent surface run-off from flowing into depression.
 8. Sub-surface soil will be used to construct a 1-foot tall berm around the perimeter of the depression to prevent surface run-off water from entering the depression.
- B. Solids – all accumulated solids (cuttings) in the open-top steel tank and circulating tank will be removed by a vacuum truck and hauled daily to the Industrial Ecosystem Inc. (IEI) land farm for disposal.
- C. Liquids – all liquids (drilling fluids) from the closed loop system will be transferred to the next well in the drilling program for re-use or hauled to Basin Disposal for disposal. All flow back water recovered during completion operations will be collected in a steel storage tank and disposed of at either Basin Disposal or IEI waste disposal facilities.
- D. Spills – any spills of non-freshwater liquid will be reported to the Farmington Field Office of the BLM and the New Mexico Oil Conservation District office within 48-hours. The spill will be cleaned up immediately and transferred to either Basin Disposal or the IEI waste disposal facilities.
- E. Sewage – portable, toilets will be used to collect and contain human sewage. Toilets will be onsite during drilling and completion activity. The toilet holding tanks will be pumped as needed and the contents will be disposed at an approved sewage disposal facility.
- F. Trash – portable dumpsters will be used to collect and contain garbage and other waste material and will be onsite during drilling and completion activity. The contents of the dumpsters will be removed as needed and disposed of at an approved waste disposal facility.
- G. After the drilling and completion rigs and the portable toilet and dumpsters are removed

EXHIBIT B.

Operations Plan
Cartwright Com #91
Lease #NM-86485
NESE of Section 19, T23N, R10W
1500' FSL and 1200' FEL
San Juan County, New Mexico

1. **APPROXIMATE FORMATION TOPS:**

Kirtland	Surface
Fruitland	350'
Pictured Cliffs	650'
Total Depth	800'

Catch samples every 10 feet from 500-feet to total depth.

2. **LOGGING PROGRAM:**

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

3. **CASING PROGRAM:**

<u>Hole Size</u>	<u>Casing Size</u>	<u>Wt./ft.</u>	<u>Setting Depth</u>	<u>Grade and Condition</u>
12-1/4"	8-5/8"	24#	120'	J-55
7-7/8"	5-1/2"	15.5#	800'	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 CaCl₂ + 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/ 57 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 - 121 cu.ft slurry). Tail w/ 88 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 - 121 cu.ft). Total slurry for the job - 242 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 of the leak.

9. **Contacts:** Dugan Prod. Corp. Office & Radio Dispatch:

(505) 325-1821

Gerald Wright

Kurt Fagrelus

John Alexander

(505) 632-5150 (H)

(505) 325-4327 (H)

(505) 325-6927 (H)

(505) 330-9585 (M)

(505) 320-8248 (M)

(505) 320-1935 (M)

**Vicinity Map & Driving Directions
Dugan Production Corporation
CARTWRIGHT COM #91
1500' FSL, 1200' FEL
Section 19, T-23-N R-10-W, N.M.P.M.
San Juan County, New Mexico**

EXHIBIT 2.

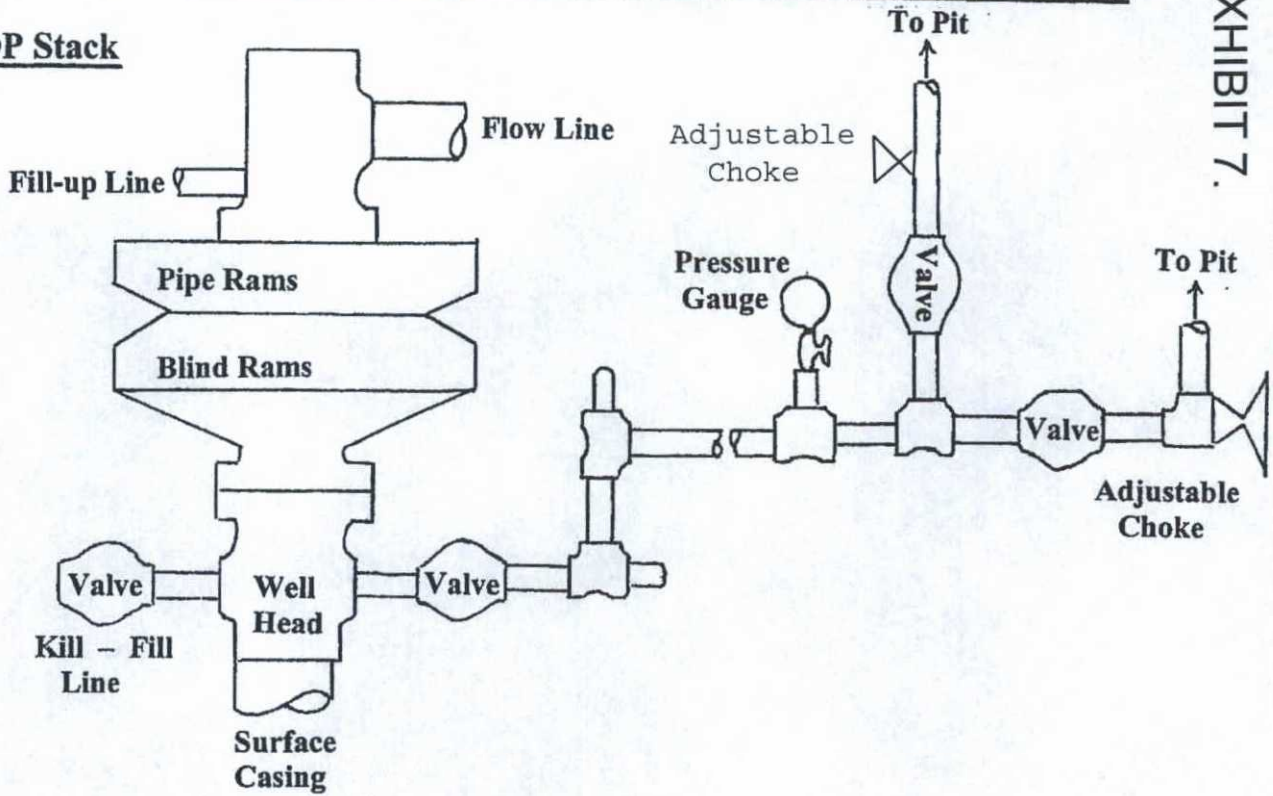
Driving Directions

1. From the intersection of Hwy 64 & Hwy 550 in Bloomfield, NM go South on Hwy 550, 28.3 miles to NM-57 at the Blanco Trading Post turnoff.
2. Turn right/West on NM-57, go 10 miles to the intersection of CR7650 (Indian Services Route 7023).
3. Turn right/West onto CR7650 (Indian Services Route 7023), go 3.1 Miles.
4. Turn left/South onto field road passing Dugan Ben Com #90 and onto Dugan Cartwright Com #90 location, approx. 0.7 Mile to staked new access.

Well Control Equipment Schematic for 2,000 psi BOP

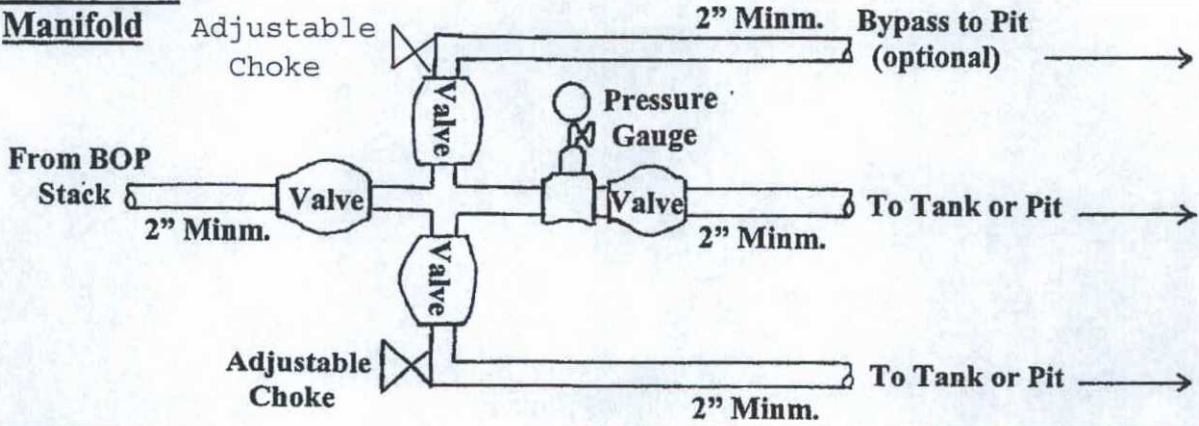
EXHIBIT 7.

BOP Stack



Choke & Kill

Manifold



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

DUGAN PRODUCTION CORP.

Cartwright Com #91