HOBBS OCD

OCT 31 2011

RECEIVED

SECRETARY'S POTASH

OCD Hobbs

Form 3160-3
(February 2005)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No.: **NMNM 34850**

6 If Indian, Allotee or Tribe Name:

1a. Type of work: ☑ DRILL ☐ REENTER

7 If Unit or CA Agreement, Name and No:

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8 Lease Name and Well No.: **Malachite 22 Federal** <38896>

2 Name of Operator: **Devon Energy Production Co., LP** <6137>

9. API Well No.: **1H** 30-025-40318

3a. Address: **20 North Broadway, OKC, OK 73102**

3b. Phone No. *(include area code)*: **(405)-228-8973**

10 Field and Pool, or Exploratory: TONTO; **Bone Spring** <59475>

4. Location of Well *(Report location clearly and in accordance with any State requirements *)*

At surface: **NWNW 330' FNL & 330' FWL Unit D**

At proposed prod. zone: **SESE 330' FSL & 330' FWL Unit M**

11. Sec., T. R. M. or Blk and Survey or Area: **Sec 22 T19S R33E**

14. Distance in miles and direction from nearest town or post office*: **Approximately 14.5 miles southeast of Maljamar, NM.**

12. County or Parish: **Lea**

13. State: **NM**

15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drg. unit line, if any)	16 No. of acres in lease	17 Spacing Unit dedicated to this well
330'	**1,000 ac**	**160 acres**
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft	19 Proposed Depth	20 BLM/BIA Bond No. on file
See attached map	**TVD 9,280' MD 13,619'** PH: 9,600'	**CO-1104**
21 Elevations (Show whether DF, KDB, RT, GL, etc.)	22 Approximate date work will start*	23 Estimated duration
3639' GL	**01/01/2012**	**45 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	Name *(Printed/Typed)*	Date
Spence Laird	**Spence Laird**	**06/29/2011**

Title: **Regulatory Analyst**

Approved by *(Signature)*	Name *(Printed/Typed)*	Date

Title	Office
STATE DIRECTOR	NM STATE OFFICE

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.

APPROVAL FOR TWO YEARS

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.

*(Instructions on page 2)

KZ 10/31/11

Capitan Controlled Water Basin

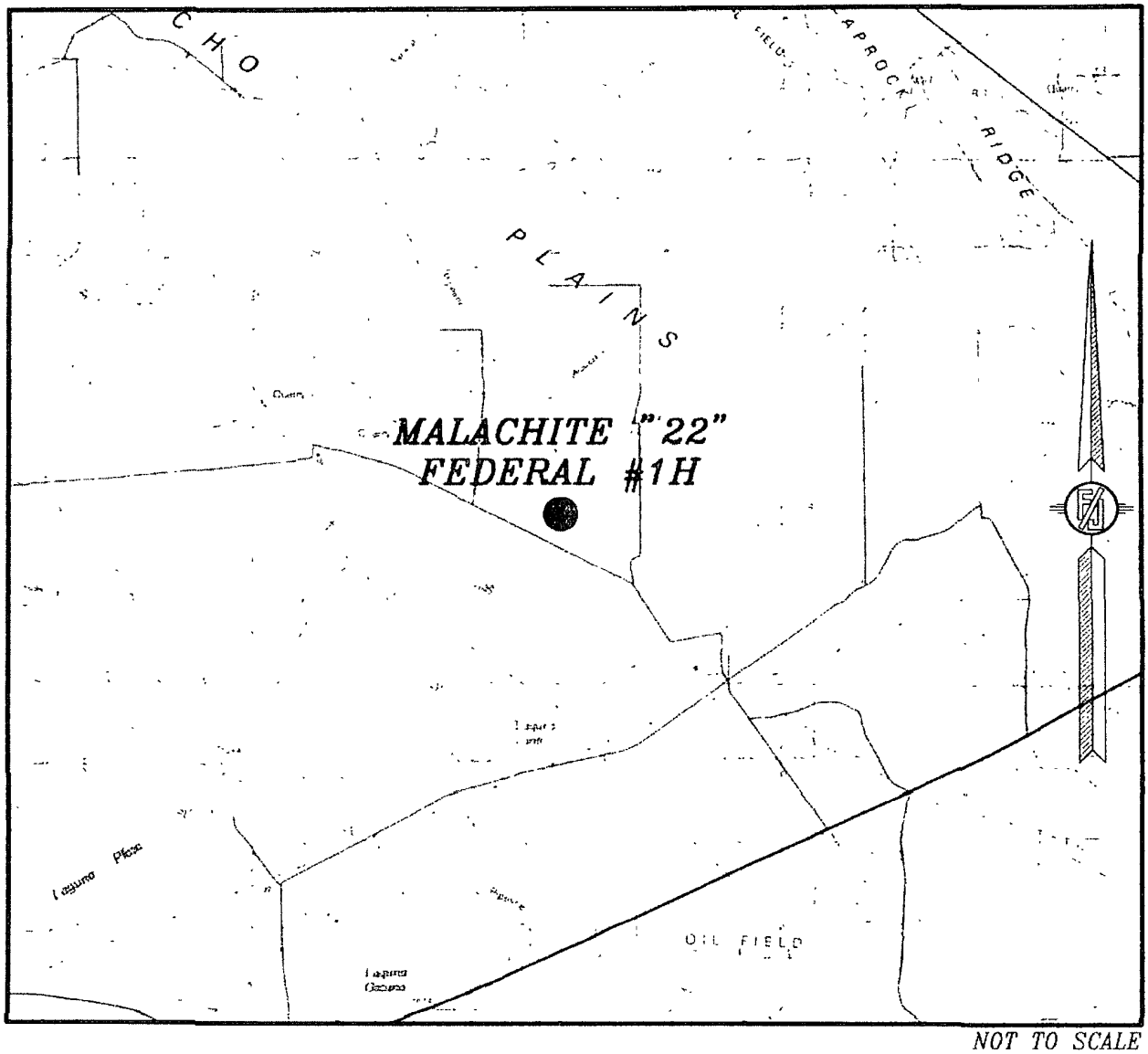
SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

NOV 02 2011

SECTION 22, TOWNSHIP 19 SOUTH, RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

VICINITY MAP



NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

MALACHITE "22" FEDERAL #1H

LOCATED 330 FT. FROM THE NORTH LINE
AND 330 FT. FROM THE WEST LINE OF
SECTION 22, TOWNSHIP 19 SOUTH,
RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

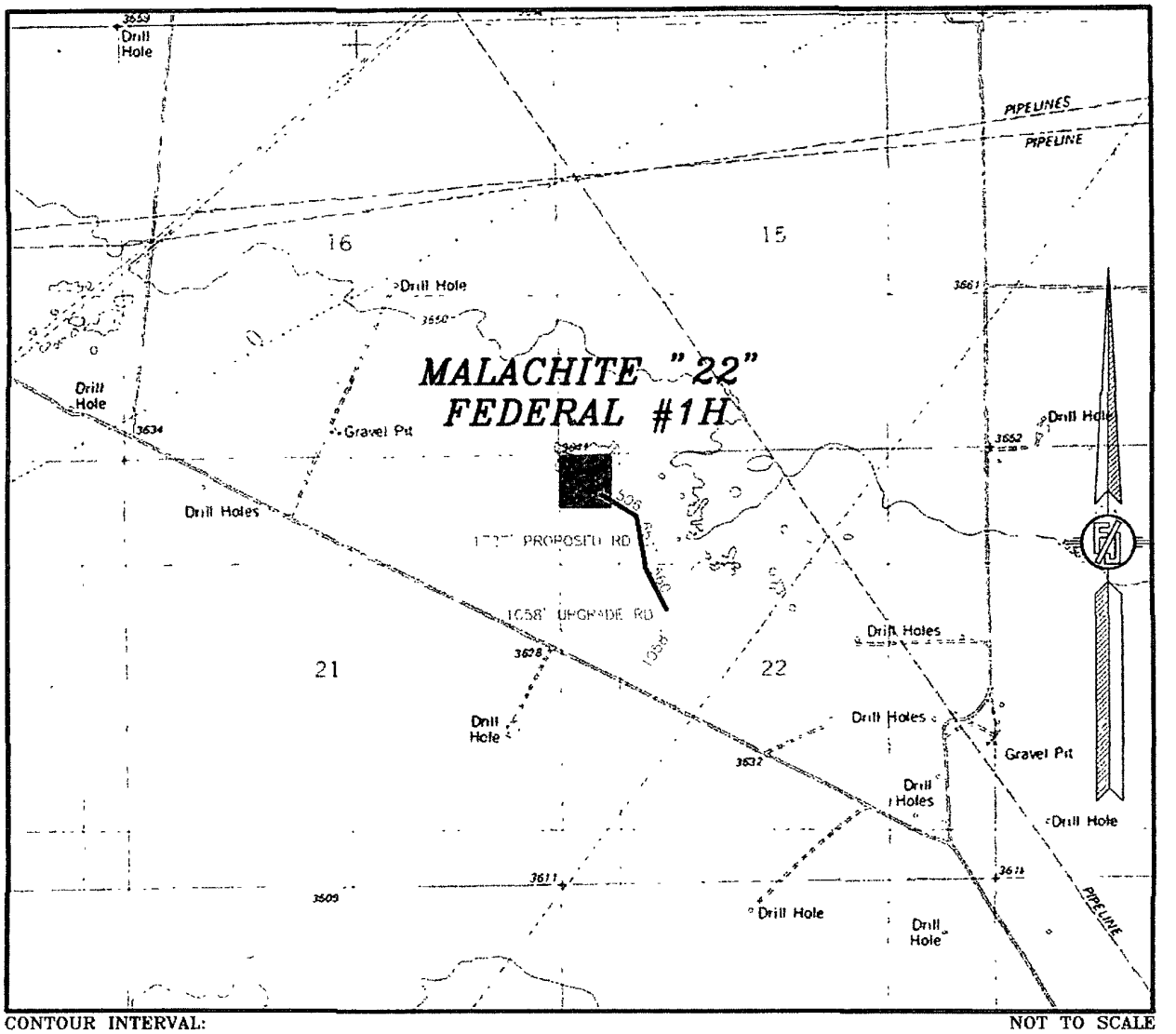
MAY 14, 2011

SURVEY NO. 463

MADRON SURVEYING, INC. 901 SOUTH CANAL (575) 887-3630 CARLSBAD, NEW MEXICO

SECTION 22, TOWNSHIP 19 SOUTH, RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

LOCATION VERIFICATION MAP



CONTOUR INTERVAL:
LAGUNA GATUNA

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

MALACHITE "22" FEDERAL #1H

LOCATED 330 FT. FROM THE NORTH LINE
AND 330 FT. FROM THE WEST LINE OF
SECTION 22, TOWNSHIP 19 SOUTH,
RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

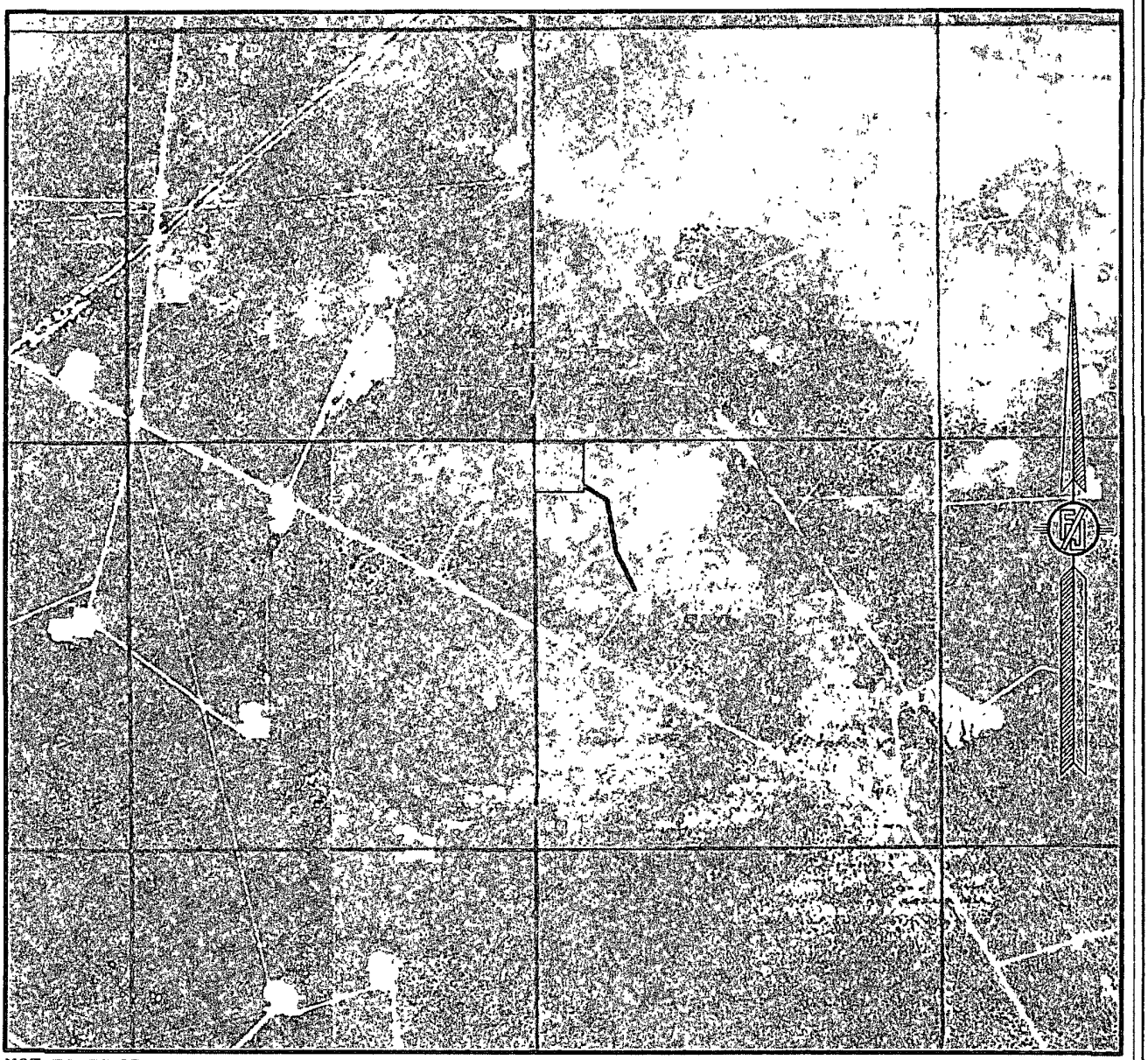
MAY 14, 2011

SURVEY NO. 463

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 887-3120 CARLSBAD, NEW MEXICO

SECTION 22, TOWNSHIP 19 SOUTH, RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
USDA – AUG, 2009

DEVON ENERGY PRODUCTION COMPANY, L.P.

MALACHITE "22" FEDERAL #1H

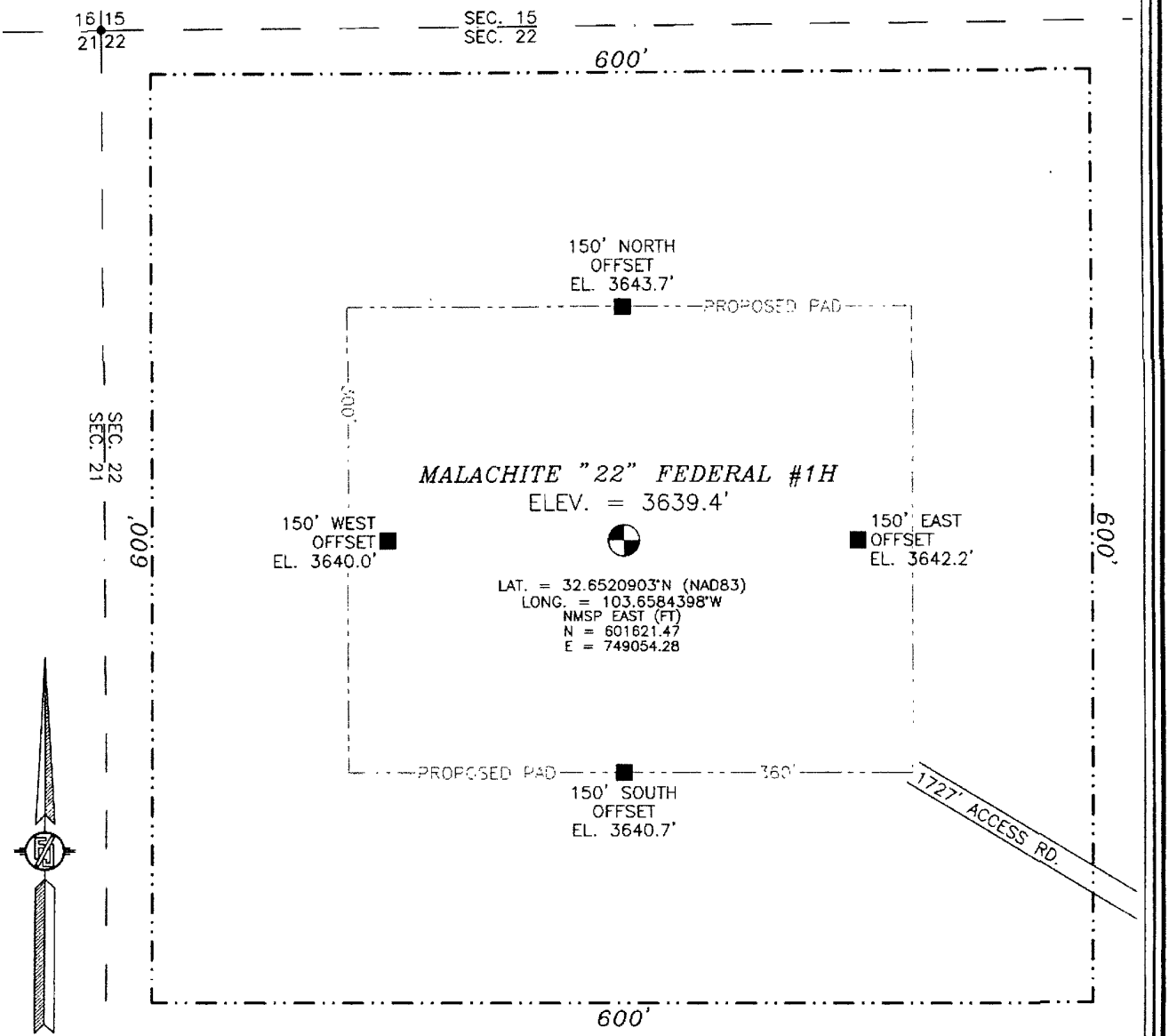
LOCATED 330 FT. FROM THE NORTH LINE
AND 330 FT. FROM THE WEST LINE OF
SECTION 22, TOWNSHIP 19 SOUTH,
RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

MAY 14, 2011

SURVEY NO. 463

MADRON SURVEYING, INC. [illegible] CARLSBAD, NEW MEXICO

SECTION 22, TOWNSHIP 19 SOUTH, RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

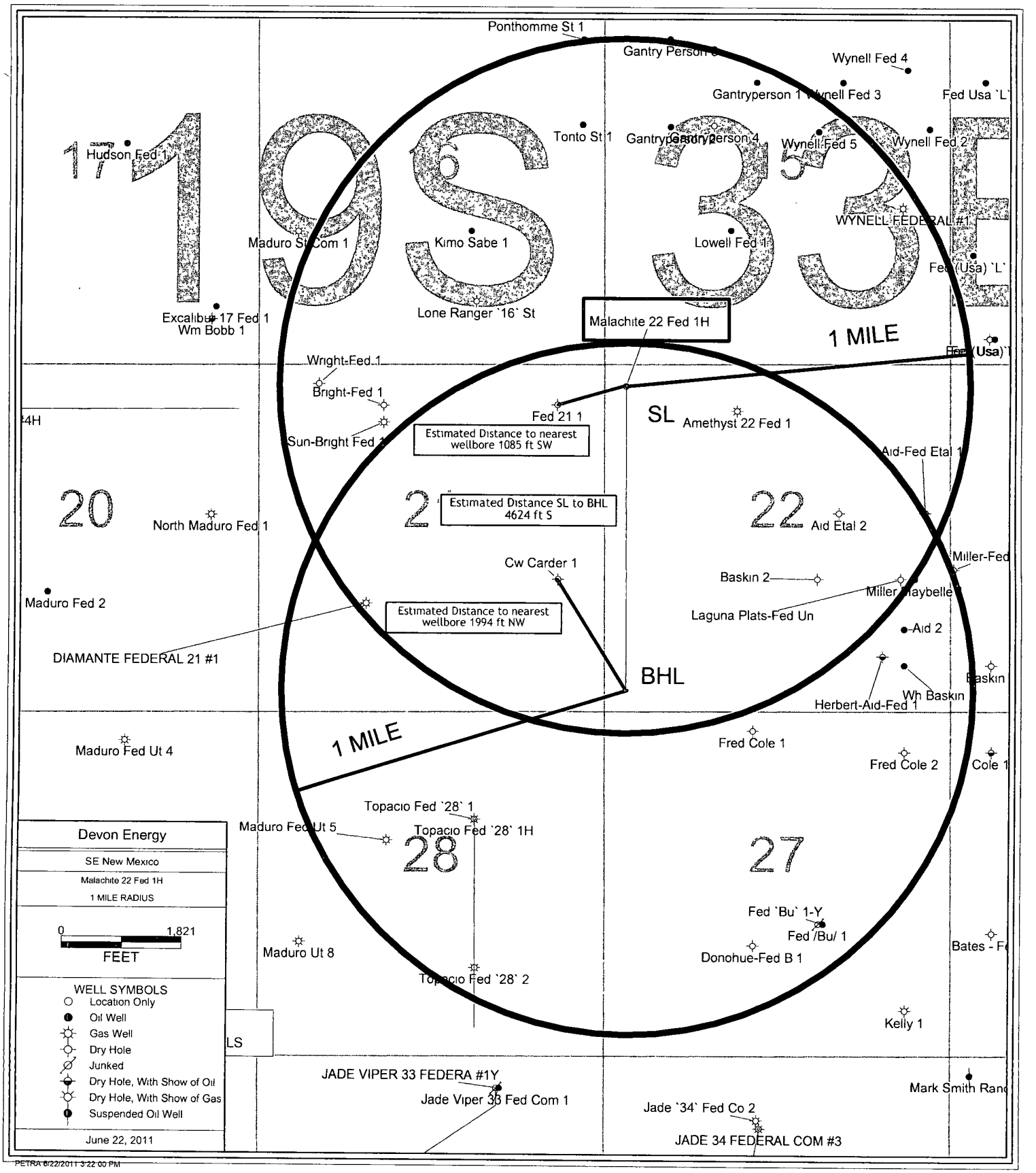


DIRECTIONS TO LOCATION
FROM US HWY. 62-180 AND ST HWY. 243 GO EAST ON 62-180 7.4 MILES, TURN LEFT ON PAVED SMITH RANCH ROAD AND GO NORTH 2.1 MILES, WHERE PAVEMENT ENDS TURN LEFT ON CALICHE ROAD AND GO WEST 0.53 MILES, TURN RIGHT AND GO NORTH 1.1 MILES, TO A "Y" IN ROAD AND STAY LEFT AND GO NORTHWEST 0.83 MILES, TURN RIGHT ON OLD LEASE ROAD AND GO NORTHEAST 0.2 MILES, TO A PROPOSED ROAD SURVEY FOLLOW FLAGS NORTH-NORTHWEST 1727' TO THE SE CORNER OF THE PROPOSED PAD FOR THIS LOCATION

DEVON ENERGY PRODUCTION COMPANY, L.P.
MALACHITE "22" FEDERAL #1H
LOCATED 330 FT. FROM THE NORTH LINE
AND 330 FT. FROM THE WEST LINE OF
SECTION 22, TOWNSHIP 19 SOUTH,
RANGE 33 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

MAY 14, 2011

SURVEY NO. 463
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 887-5830 *CARLSBAD, NEW MEXICO*


Ponthomme St 1
Gantry Person 3
Wynell Fed 4
Gantryperson 1
Wynell Fed 3
Fed Usa `L`
17
19S
33E
Hudson Fed 1
Tonto St 1
Gantryperson 4
Wynell Fed 5
Wynell Fed 2
WYNELL FEDERAL #1
Maduro St Com 1
Kimo Sabe 1
Lowell Fed 1
Fed (Usa) `L`
Excalibur 17 Fed 1
Wm Bobb 1
Lone Ranger `16` St
Malachite 22 Fed 1H
1 MILE
Wright-Fed 1
Bright-Fed 1
Fed 21 1
SL
Amethyst 22 Fed 1
Sun-Bright Fed 1
Estimated Distance to nearest wellbore 1085 ft SW
Aid-Fed Etal 1
20
North Maduro Fed 1
2
Estimated Distance SL to BHL 4624 ft S
22
Aid Etal 2
Cw Carder 1
Baskin 2
Miller-Fed
Miller Maybelle
Maduro Fed 2
Estimated Distance to nearest wellbore 1994 ft NW
Laguna Plats-Fed Un
Aid 2
DIAMANTE FEDERAL 21 #1
BHL
Herbert-Aid-Fed 1
Wh Baskin
Maduro Fed Ut 4
1 MILE
Fred Cole 1
Fred Cole 2
Topacio Fed `28` 1
Maduro Fed Ut 5
Topacio Fed `28` 1H
28
27
Fed `Bu` 1-Y
Fed /Bu/ 1
Maduro Ut 8
Donohue-Fed B 1
Topacio Fed `28` 2
Kelly 1
JADE VIPER 33 FEDERA #1Y
Jade Viper 33 Fed Com 1
Jade `34` Fed Co 2
JADE 34 FEDERAL COM #3
Devon Energy
SE New Mexico
Malachite 22 Fed 1H
1 MILE RADIUS
0
1,821
FEET
WELL SYMBOLS
Location Only
Oil Well
Gas Well
Dry Hole
Junked
Dry Hole, With Show of Oil
Dry Hole, With Show of Gas
Suspended Oil Well
June 22, 2011
PETRA 6/22/2011 3:22:00 PM

DRILLING PROGRAM

Devon Energy Production Company, LP
Malachite 22 Federal 1H
Surface Location: 330' FNL & 330' FWL, Unit D, Sec 22 T19S R33E, Lea, NM
Bottom hole Location: 330' FSL & 330' FWL, Unit M, Sec 22 T19S R33E, Lea, NM

1. Geologic Name of Surface Formation

a. Quaternary Alluvium

2. Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:

	Geologic Formation	Depth (TVD)	O/G/W	Penetration Point
a.	Fresh Water	300'	Water	330' FNL & 330' FWL
b.	Rustler	1410'	Water	330' FNL & 330' FWL
c.	Top of Salt	1600'	Water	330' FNL & 330' FWL
d.	Base Salado Salt	3100'	Barren	330' FNL & 330' FWL
e.	Yates SS	3270'	Barren	330' FNL & 330' FWL
f.	Seven Rivers	3510'	Oil	330' FNL & 330' FWL
g.	Queen SS	4265'	Oil	330' FNL & 330' FWL
h.	Graysburg	4720'	Oil	330' FNL & 330' FWL
i.	Cherry Canyon	6080'	Oil	330' FNL & 330' FWL
j.	Brushy Canyon	7500'	Oil	330' FNL & 330' FWL
k.	1st Bone Spring LM	7910'	Oil	330' FNL & 330' FWL
l.	1st Bone Spring SS	9160'	Oil	330' FNL & 330' FWL
m.	1st Bone Spring SS Target	9240'	Oil	
n.	2nd Bone Spring LM	9510'	Oil	
o.	Pilot Hole TD	9600'	Oil	330' FNL & 330' FWL

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 13 3/8" casing at 1460' and circulating cement back to surface. The fresh water sands will be protected by setting 9 5/8" casing at 5300' and circulating cement to surface. The pay intervals will be isolated by setting 5 ½" casing to total depth and circulating cement above the base of the 9 5/8" casing. All casing is new and API approved.

3. Casing Program:

See COA

Hole Size	Hole Interval	OD Csg	Casing Interval	Weight	Collar	Grade
17-1/2"	0 – 1460	13-3/8"	0 – 1460 /500	54.5#	~~LTC~~ STC	K-55
12-1/4"	1460 – 5300	9-5/8"	0 – 5300	40#	BTC	HCK-55
8-3/4"	5300 – 9600 (PH)		NA			
8-3/4"	5300 – 13619	5-1/2"	0 – 8500 8100 – 13619	17# 17#	LTC BTC	HCP-110 HCP-110

Design Parameter Factors:

Casing Size	Collapse Design Factor	Burst Design Factor	Tension Design Factor
13 3/8"	1.6	3.8	6.3
9 5/8	1.4	2.3	4.7
5 ½"	1.3	1.7	2.3

4. Cement Program: (Cement volumes based on at least 25% excess)

Regarding the Pilot Hole: A Whipstock with ~1100' of 2 7/8" tubing tailpipe will be cemented in place at ~8500'. The plug back cement will be 530 sacks Class H with 1.18 cuft/sk yield.

Cementing Program

13 3/8" Surface

Lead: 850 sacks (35:65) Poz (Fly Ash):Premium Plus C Cement + 0.125 lbs/sack Cello Flake + 4% bwoc Bentonite + 5% bwow Sodium Chloride + 0.8% bwoc Sodium Metasilicate + 5% bwoc MPA-5 + 101.1% Fresh Water
Yield: 1.97 cf/sack. TOC @ surface.

Tail: 300 sacks Premium Plus C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 56.3% Fresh Water
Yield: 1.35 cf/sack.

9 5/8" Intermediate

Lead: 1265 sacks (50:50) Poz (Fly Ash):Premium Plus C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 6% bwoc Bentonite + 107.8% Fresh Water
Yield: 2.24 cf/sack. TOC @ surface.

Tail: 300 sacks (60:40) Poz (Fly Ash):Premium Plus C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.4% bwoc Sodium Metasilicate + 4% bwoc MPA-5 + 64.7% Water
Yield: 1.38 cf/sack.

5 ½ Production

Lead: 500 sacks (35:65) Poz + 0.2% bwoc Sodium Metasilicate + 1.4% bwoc FL-62 + 0.4% bwoc
Yield: 2.01 cf/sack.

Tail
Lead: 1315 sacks (50:50) Poz (Fly Ash):Premium Plus C Cement + 1% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 6% bwoc Bentonite + 0.4% bwoc FL-52A + 0.4% bwoc R-3 + 103.1% Fresh Water
Yield: 1.28 cf/sack.

DV TOOL at ~6500'

2nd Stage

Lead: 210 sacks Class C+ 0.125 lbs/sack Cello Flake + 3
6% bwoc Bentonite + 0.4% bwoc FL-52A + 99.3% Fresh Water
Yield: 2.88 cf/sk

Tail: 100 sacks (60:40) Poz (Fly Ash):Class H Cement + 1% bwow Sodium Chloride + 0.15% bwoc + 63.2% Fresh Water
Yield: 1.35 cf/sk

TOC for All Strings:

Surface:	0'
Intermediate:	0'
Production	4700'

ACTUAL CEMENT VOLUMES WILL BE ADJUSTED BASED ON FLUID CALIPER AND CALIPER LOG DATA.

5. Pressure Control Equipment:

The blow out prevention system will consist of a bag type (hydril) preventer, a double ram preventer stack, and a rotating head. Both the hydril and ram stack will be hydraulically operated. Both BOP systems will be rated at 5000psi. **The hydril will be tested to 1000psi (high) and 250psi (low).** The Hydril preventer on the 13 3/8" surface casing will be tested as a 2000 psi preventer. Prior to drilling out the 9 5/8" intermediate shoe, the ram stack will be nippled up with 4.5" pipe rams installed and will be used in the BOP. **Tests on the 5000psi BOP will be conducted per the BLM Drilling Operations Order #2.**

The ram system will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and hydril, other BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 5000 psi WP.

6. Proposed Mud Circulation System

Depth	Mud Wt.	Visc.	Fluid Loss	Type System
0' – ~~1460'~~ 500'	8.4 – 9.0	32 – 34	N/C	FW/Gel
~~1460'~~ – 5300'	10	28 – 30	N/C	Brine
5,300' – 13,619'	8.6 – 9.0	28	NC	FW

The necessary mud products for weight addition and fluid loss control will be on location at all times.

7. Auxiliary Well Control and Monitoring Equipment:

a. A Kelly cock will be in the drill string at all times.
b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.

c. Hydrogen Sulfide detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the 5 1/2" casing is cemented. Breathing equipment will be on location upon drilling the 13 3/8" shoe until total depth is reached.

8. Logging, Coring, and Testing Program: See COA

a. Drill stem tests will be based on geological sample shows.
b. If a drill stem test is anticipated; a procedure, equipment to be used and safety measures will be provided via sundry notice to the BLM.
c. The open hole electrical logging program will be:
   i. Total Depth to Intermediate Casing Dual Laterolog-Micro Laterolog with SP and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.
   ii. Total Depth to Surface Compensated Neutron with Gamma Ray
   iii. No coring program is planned
   iv. Additional testing will be initiated subsequent to setting the 5 ½" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

9. Potential Hazards:

a. No abnormal pressures or temperatures are expected. There is no known presence of H2S in this area; therefore, no H2S is anticipated to be encountered. If H2S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 4000 psi and Estimated BHT 175°.

10. Anticipated Starting Date and Duration of Operations:

a. Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 32 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.

Devon Energy Production Co, LP

Lea Co., New Mexico (Nad 83)
Malachite 22 Fed #1H
Malachite 22 Fed #1H

Lateral #1

Plan: Design #1

Standard Survey Report

31 May, 2011

CUDD
DRILLING & MEASUREMENT
SERVICES

Company:	Devon Energy Production Co LP	**Local Co-ordinate Reference:**	Site Malachite 22 Fed #1H
Project:	Lea Co New Mexico (Nad 83)	**TVD Reference:**	WELL @ 3660 00ft (Original Well Elev)
Site:	Malachite 22 Fed #1H	**MD Reference:**	WELL @ 3660 00ft (Original Well Elev)
Well:	Malachite 22 Fed #1H	**North Reference:**	Grid
Wellbore:	Lateral #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Design #1	**Database:**	EDM 2003 21 Single User Db

Project Lea Co New Mexico (Nad 83)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Malachite 22 Fed #1H Sec 22 R-19S T-33E

Site Position:		**Northing:**	601,621 47 ft	**Latitude:**	32° 39' 7 525 N
From:	Map	**Easting:**	749,054 28 ft	**Longitude:**	103° 39' 30 383 W
Position Uncertainty:	0 00 ft	**Slot Radius:**	"	**Grid Convergence:**	0 36 °

Well Malachite 22 Fed #1H

Well Position	**+N/-S**	0 00 ft	**Northing:**	601,621 47 ft	**Latitude:**	32° 39' 7 525 N
	+E/-W	0 00 ft	**Easting:**	749,054 28 ft	**Longitude:**	103° 39' 30 383 W
Position Uncertainty		0 00 ft	**Wellhead Elevation:**	3,660 00 ft	**Ground Level:**	3,640 00 ft

Wellbore Lateral #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	05/31/11	7 65	60 59	48,903

Design Design #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0 00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0 00	0 00	0 00	179 79

Survey Tool Program Date 05/31/11

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0 00	8,600 00	Design #1 (Lateral #1)	NS-GYRO-MS	North sensing gyrocompassing m/s
8,600 00	13,619 42	Design #1 (Lateral #1)	CUDD MWD	MWD - Standard CUDD MWD

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
20 00	0 00	0 00	20 00	0 00	0 00	0 00	0 00	0 00	0.00
Quaternary									
1,410 00	0 00	0 00	1,410 00	0 00	0 00	0 00	0 00	0 00	0 00
Rustler Dol									
3,100 00	0 00	0 00	3,100 00	0 00	0 00	0 00	0 00	0 00	0 00
Base Salado Salt									
3,270 00	0 00	0 00	3,270 00	0 00	0 00	0 00	0 00	0 00	0 00
Yates SS									
3,510 00	0 00	0 00	3,510 00	0 00	0 00	0 00	0 00	0 00	0 00
Seven Rivers									

Company:	Devon Energy Production Co, LP	**Local Co-ordinate Reference:**	Site Malachite 22 Fed #1H
Project:	Lea Co., New Mexico (Nad 83)	**TVD Reference:**	WELL @ 3660.00ft (Original Well Elev)
Site:	Malachite 22 Fed #1H	**MD Reference:**	WELL @ 3660.00ft (Original Well Elev)
Well:	Malachite 22 Fed #1H	**North Reference:**	Grid
Wellbore:	Lateral #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Design #1	**Database:**	EDM 2003.21 Single User Db

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,265.00	0 00	0 00	4,265 00	0 00	0 00	0.00	0 00	0 00	0 00
Queen SS									
4,720 00	0 00	0 00	4,720 00	0 00	0 00	0 00	0 00	0 00	0.00
Grayburg									
5,000 00	0 00	0 00	5,000 00	0 00	0 00	0 00	0 00	0.00	0 00
9 5/8"									
6,080 00	0 00	0 00	6,080 00	0 00	0 00	0 00	0 00	0 00	0 00
Cherry Canyon									
7,500 00	0 00	0 00	7,500 00	0 00	0 00	0 00	0 00	0 00	0 00
Brushy Canyon									
7,910 00	0 00	0 00	7,910 00	0 00	0.00	0 00	0 00	0 00	0.00
1st Bone Spring LM									
8,672 02	0.00	0 00	8,672 02	0 00	0 00	0.00	0.00	0 00	0 00
KOP - Build 10°/100'									
8,700 00	2 80	179 79	8,699 99	-0 68	0 00	0 68	10 00	10.00	0 00
8,800 00	12 80	179 79	8,798 94	-14 23	0 05	14 23	10 00	10 00	0 00
8,900 00	22 80	179 79	8,894 03	-44 76	0 16	44 76	10 00	10 00	0.00
9,000 00	32 80	179 79	8,982.38	-91 34	0 33	91 34	10 00	10 00	0 00
9,100.00	42 80	179.79	9,061 30	-152 55	0 55	152 55	10 00	10 00	0 00
9,200 00	52 80	179 79	9,128 39	-226 53	0 82	226 53	10 00	10 00	0 00
9,260 61	58 86	179 79	9,162 41	-276 66	1 00	276.66	10 00	10 00	0 00
1st Bone Spring SS									
9,300 00	62 80	179 79	9,181 61	-311 04	1 13	311 04	10 00	10 00	0 00
9,400 00	72 80	179 79	9,219.35	-403 51	1 46	403 51	10 00	10 00	0 00
9,500 00	82 80	179 79	9,240 46	-501 12	1 82	501.13	10.00	10 00	0 00
9,567 02	89 50	179.79	9,244 96	-567 95	2.06	567 96	10 00	10 00	0 00
EOC - Hold I: 89.5° @ A: 179.79°									
9,600 00	89 50	179 79	9,245 24	-600 93	2 18	600 94	0 00	0 00	0 00
9,700 00	89 50	179 79	9,246 12	-700 93	2 54	700 93	0 00	0 00	0 00
9,800 00	89 50	179 79	9,246.99	-800.92	2 90	800 93	0 00	0 00	0 00
9,900 00	89 50	179 79	9,247 86	-900 92	3 26	900 93	0 00	0 00	0.00
10,000 00	89 50	179 79	9,248 74	-1,000 91	3 63	1,000.92	0 00	0 00	0 00
10,100 00	89 50	179.79	9,249 61	-1,100 91	3 99	1,100 92	0.00	0 00	0 00
10,200 00	89 50	179 79	9,250 48	-1,200 91	4 35	1,200 91	0 00	0 00	0 00
10,300 00	89 50	179 79	9,251 35	-1,300 90	4 71	1,300 91	0 00	0 00	0 00
10,400 00	89 50	179 79	9,252 23	-1,400 90	5 08	1,400 91	0 00	0 00	0 00
10,500 00	89 50	179 79	9,253 10	-1,500 89	5 44	1,500 90	0 00	0 00	0 00
10,600 00	89 50	179 79	9,253 97	-1,600 89	5 80	1,600 90	0 00	0 00	0 00
10,700 00	89 50	179 79	9,254 84	-1,700 88	6 16	1,700 89	0.00	0 00	0 00
10,800 00	89 50	179 79	9,255 72	-1,800 88	6 53	1,800 89	0 00	0 00	0 00
10,900 00	89 50	179 79	9,256 59	-1,900.87	6 89	1,900 89	0 00	0 00	0 00
11,000 00	89 50	179 79	9,257 46	-2,000 87	7 25	2,000 88	0 00	0 00	0 00
11,100 00	89 50	179 79	9,258 33	-2,100 87	7 61	2,100 88	0 00	0 00	0 00
11,200 00	89 50	179 79	9,259 21	-2,200 86	7 97	2,200 88	0 00	0 00	0 00
11,300 00	89 50	179 79	9,260 08	-2,300 86	8 34	2,300 87	0 00	0 00	0 00
11,400 00	89 50	179 79	9,260 95	-2,400 85	8 70	2,400 87	0 00	0 00	0.00
11,500 00	89 50	179 79	9,261 82	-2,500 85	9 06	2,500 86	0 00	0 00	0 00
11,600 00	89 50	179 79	9,262 70	-2,600 84	9 42	2,600 86	0 00	0 00	0 00
11,700 00	89 50	179 79	9,263 57	-2,700 84	9 79	2,700 86	0 00	0 00	0.00
11,800 00	89 50	179 79	9,264.44	-2,800.83	10 15	2,800.85	0 00	0 00	0.00
11,900 00	89.50	179 79	9,265 32	-2,900 83	10 51	2,900 85	0 00	0 00	0 00
12,000 00	89 50	179 79	9,266 19	-3,000.83	10 87	3,000 85	0 00	0 00	0 00
12,100 00	89 50	179 79	9,267 06	-3,100.82	11 24	3,100 84	0 00	0 00	0.00

devon

Cudd Drilling & Measurement Services

Survey Report

CUDD DRILLING & MEASUREMENT SERVICES

Company:	Devon Energy Production Co, LP	Local Co-ordinate Reference:	Site Malachite 22 Fed #1H
Project:	Lea Co, New Mexico (Nad 83)	TVD Reference:	WELL @ 3660 00ft (Original Well Elev)
Site:	Malachite 22 Fed #1H	MD Reference:	WELL @ 3660 00ft (Original Well Elev)
Well:	Malachite 22 Fed #1H	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM 2003 21 Single User Db

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,200 00	89 50	179 79	9,267 93	-3,200 82	11.60	3,200 84	0 00	0 00	0 00
12,300 00	89 50	179 79	9,268 81	-3,300 81	11 96	3,300 83	0 00	0 00	0 00
12,400 00	89 50	179 79	9,269 68	-3,400 81	12 32	3,400 83	0 00	0 00	0 00
12,500 00	89 50	179.79	9,270 55	-3,500 80	12 68	3,500 83	0 00	0 00	0 00
12,600 00	89 50	179 79	9,271 42	-3,600 80	13 05	3,600 82	0 00	0 00	0.00
12,700 00	89 50	179 79	9,272 30	-3,700 79	13 41	3,700 82	0 00	0 00	0 00
12,800 00	89 50	179 79	9,273 17	-3,800 79	13 77	3,800 81	0 00	0 00	0 00
12,900 00	89 50	179 79	9,274 04	-3,900 79	14 13	3,900 81	0 00	0 00	0 00
13,000 00	89 50	179 79	9,274 91	-4,000 78	14 50	4,000 81	0 00	0 00	0.00
13,100 00	89 50	179 79	9,275 79	-4,100 78	14 86	4,100 80	0 00	0 00	0 00
13,200 00	89 50	179 79	9,276 66	-4,200.77	15 22	4,200 80	0 00	0 00	0 00
13,300 00	89 50	179 79	9,277 53	-4,300 77	15 58	4,300 80	0 00	0 00	0 00
13,400 00	89 50	179 79	9,278 41	-4,400 76	15 95	4,400 79	0 00	0 00	0 00
13,500 00	89 50	179 79	9,279 28	-4,500 76	16 31	4,500 79	0 00	0 00	0 00
13,600 00	89 50	179 79	9,280 15	-4,600 75	16 67	4,600 78	0 00	0 00	0 00
13,619 42	89 50	179 79	9,280 32	-4,620 17	16 74	4,620 20	0 00	0 00	0 00
PBHL - TD (M22F#1H)									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL - TD (M22F#1H) - plan hits target center - Point	0 00	0 00	9,280 32	-4,620 17	16 74	597,001 31	749,071 02	32° 38' 21 809 N	103° 39' 30 531 W

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
5,000 00	5,000 00	9 5/8"	9-5/8	12-1/4

Company:	Devon Energy Production Co, LP	**Local Co-ordinate Reference:**	Site Malachite 22 Fed #1H
Project:	Lea Co , New Mexico (Nad 83)	**TVD Reference:**	WELL @ 3660 00ft (Original Well Elev)
Site:	Malachite 22 Fed #1H	**MD Reference:**	WELL @ 3660 00ft (Original Well Elev)
Well:	Malachite 22 Fed #1H	**North Reference:**	Grid
Wellbore:	Lateral #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Design #1	**Database:**	EDM 2003 21 Single User Db

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
20.00	20 00	Quaternary		0 50	179 79
1,410 00	1,410 00	Rustler Dol		0 50	179 79
3,100.00	3,100 00	Base Salado Salt		0 50	179 79
3,270 00	3,270 00	Yates SS		0 50	179 79
3,510 00	3,510 00	Seven Rivers		0 50	179 79
4,265 00	4,265 00	Queen SS		0 50	179.79
4,720 00	4,720 00	Grayburg		0 50	179 79
6,080 00	6,080 00	Cherry Canyon		0 50	179.79
7,500 00	7,500 00	Brushy Canyon		0 50	179 79
7,910 00	7,910 00	1st Bone Spring LM		0 50	179 79
9,260 61	9,160 00	1st Bone Spring SS		0 50	179 79
	9,510 00	2nd Bone Spring LM		0 50	179 79

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
8,672 02	8,672 02	0 00	0 00	KOP - Build 10°/100'
9,567 02	9,244 96	-567 95	2 06	EOC - Hold I 89 5° @ A 179 79°

Checked By _____ Approved By: _____ Date: _____

devon

Project Lea Co , New Mexico (Nad 83)
Site Malachite 22 Fed #1H
Well Malachite 22 Fed #1H
Wellbore Lateral #1
Design Design #1

CUDD DRILLING & MEASUREMENT SERVICES

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
2	8672 02	0 00	0 00	8672 02	0 00	0 00	0 00	0 00	0 00	
3	9567 02	89 50	179 79	9244 96	-567 96	2 06	10 00	179 79	567 96	
4	13619 42	89 50	179 79	9280 32	-4620 17	16 74	0 00	0 00	4620 20	PBHL - TD (M22F#1H)

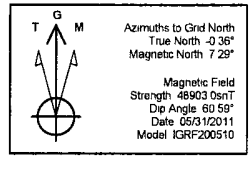
ANNOTATIONS	
TVD	MD	Annotation
8672 02	8672 02	KOP - Build 10°/100'
9244 96	9567 02	EOC - Hold I 89 5° @ A 179 79°

PROJECT DETAILS Lea Co , New Mexico (Nad 83)	
Geodetic System	US State Plane 1983
Datum	North American Datum 1983
Ellipsoid	GRS 1980
Zone	New Mexico Eastern Zone
System Datum	Mean Sea Level

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL - TD (M22F#1H)	9280 32	-4620 17	16 74	597001 31	749071 02	32° 38' 21 809 N	103° 39' 30 531 W	Point

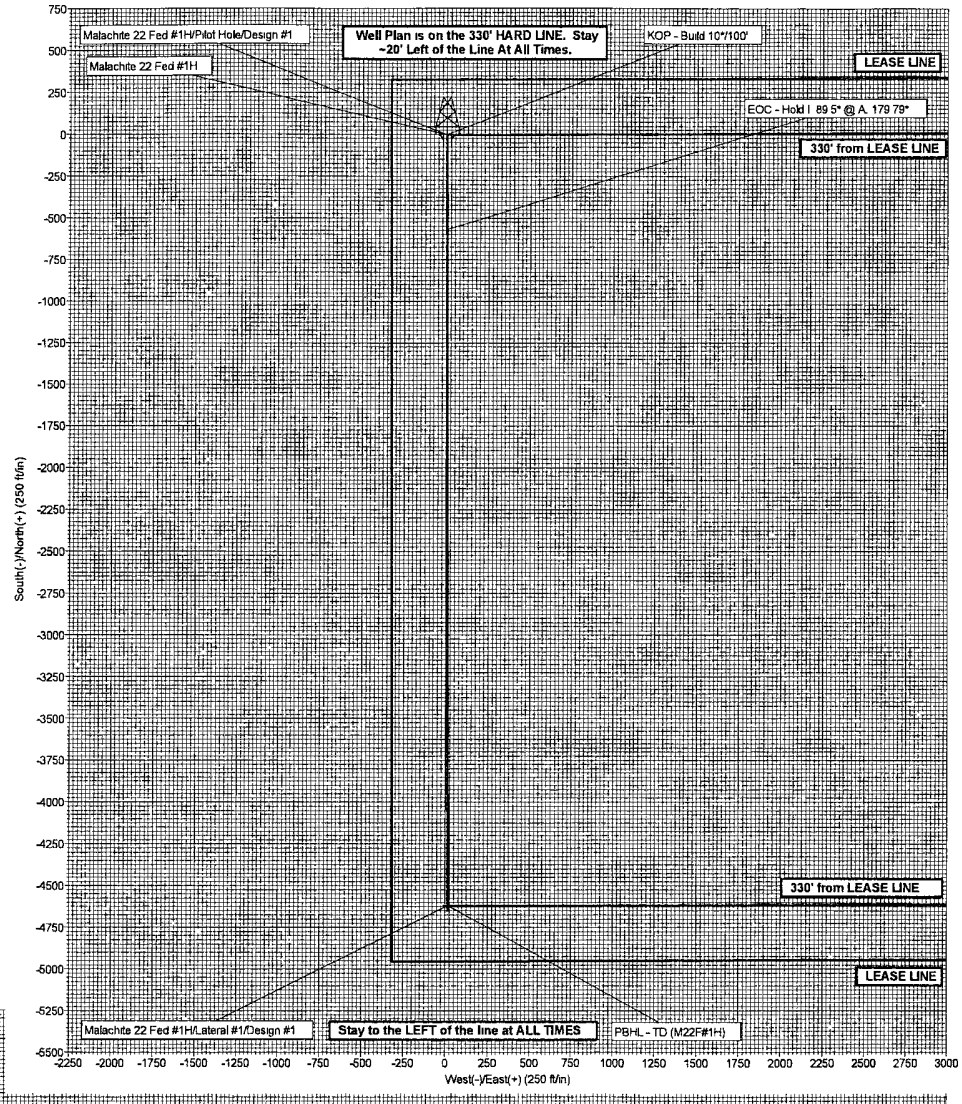
WELL DETAILS Malachite 22 Fed #1H						
Ground Level 3640 00						
WELL @ 3660 00ft (Original Well Elev)						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0 00	0 00	601621 47	749054 28	32° 39' 7 525 N	103° 39' 30 383 W	

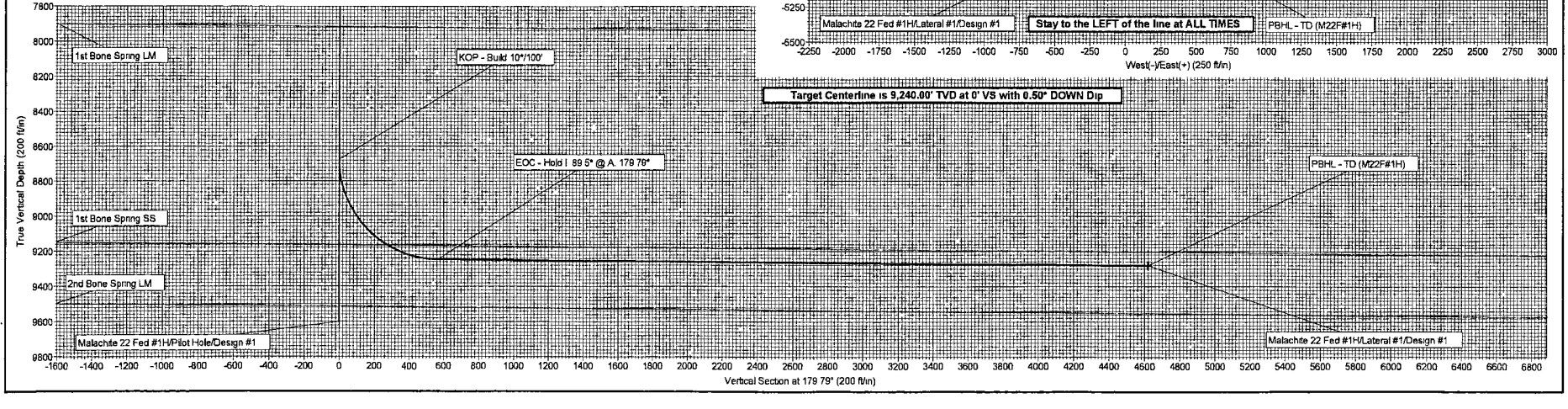
Plan Design #1 (Malachite 22 Fed #1H/Lateral #1)			
Created By	Mike Starkey	Date	15 01, May 31 2011
Checked	_____	Date	_____
Reviewed	_____	Date	_____
Approved	_____	Date	_____



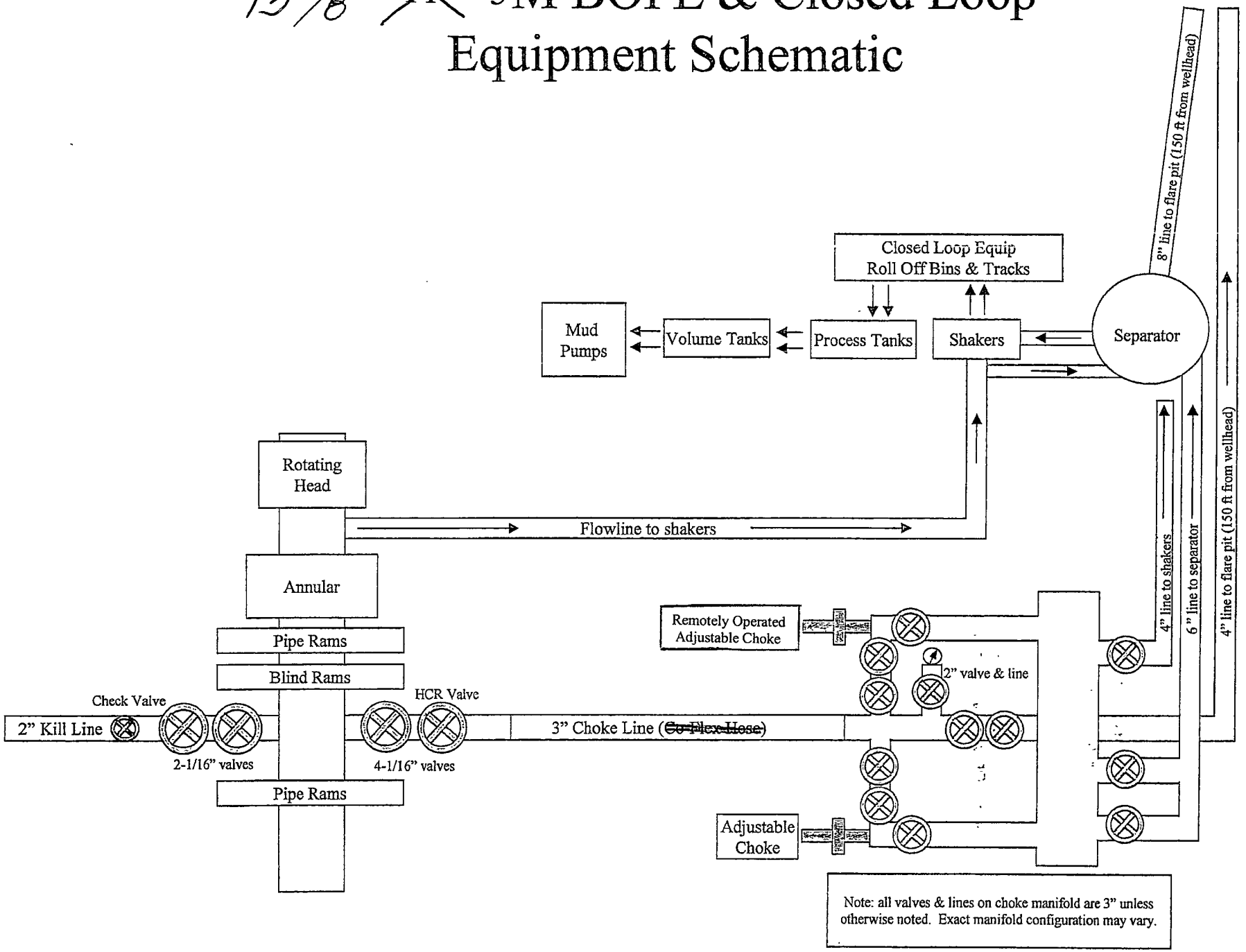
Azimuths to Grid North
True North -0 36°
Magnetic North 7 29°

Magnetic Field
Strength 48903 0snT
Dip Angle 60 59°
Date 05/31/2011
Model IGRF200510

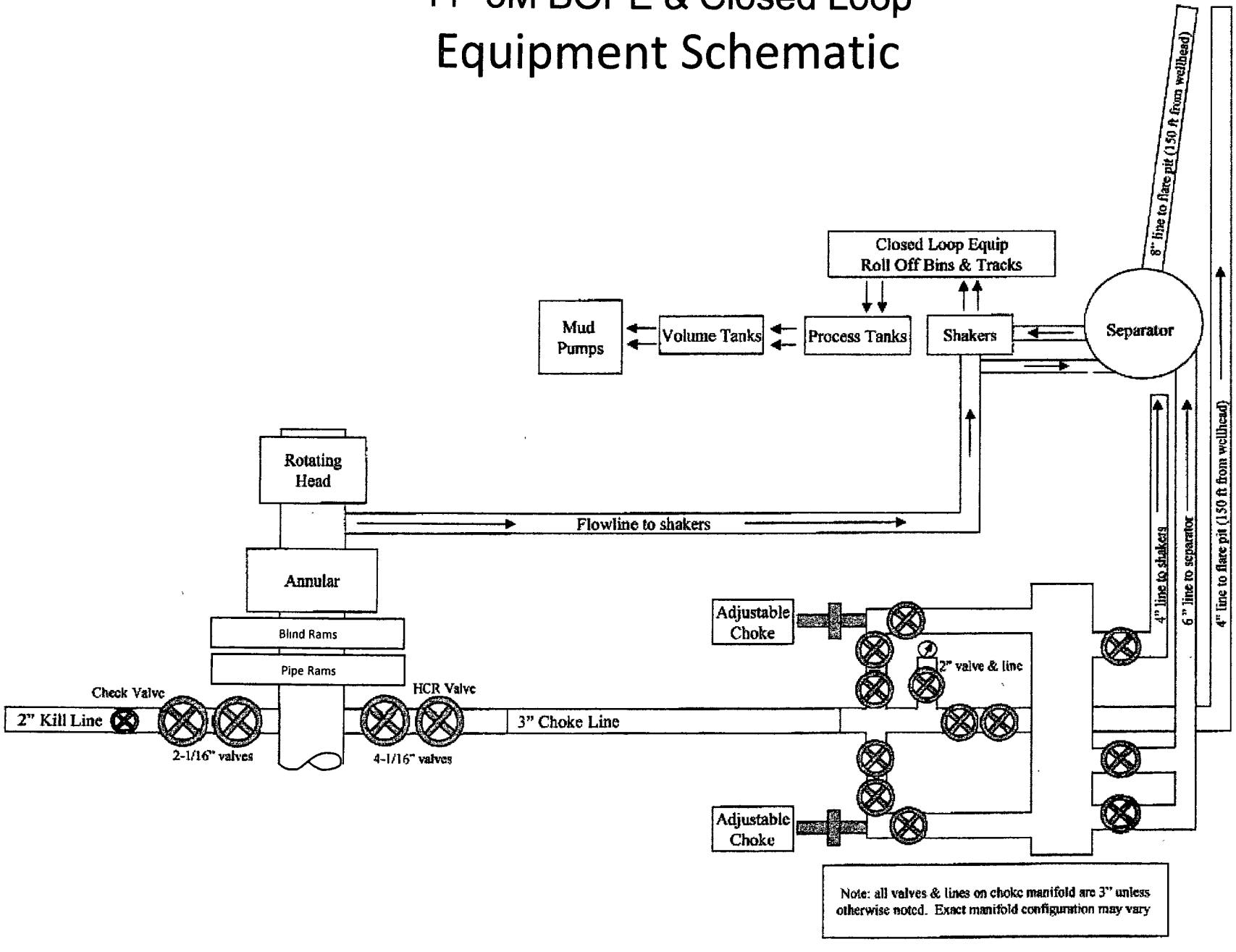




13 5/8" ~~11"~~ 5M BOPE & Closed Loop Equipment Schematic



11" 5M BOPE & Closed Loop
Equipment Schematic



Attachment to Exhibit #1
NOTES REGARDING BLOWOUT PREVENTERS
Devon Energy Production Company, LP
Malachite 22 Federal 1H
Surface Location: 330' FNL & 330' FWL, Unit D, Sec 22 T19S R33E, Lea, NM
Bottom hole Location: 330' FSL & 330' FWL, Unit M, Sec 22 T19S R33E, Lea, NM

1. Drilling nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.

2. Wear ring will be properly installed in head.

3. Blowout preventer and all associated fittings will be in operable condition to withstand a minimum 3000 psi working pressure.

4. All fittings will be flanged.

5. A full bore safety valve tested to a minimum 3000 psi WP with proper thread connections will be available on the rotary rig floor at all times.

6. All choke lines will be anchored to prevent movement.

7. All BOP equipment will be equal to or larger in bore than the internal diameter of the last casing string.

8. Will maintain a kelly cock attached to the kelly.

9. Hand wheels and wrenches will be properly installed and tested for safe operation.

10. Hydraulic floor control for blowout preventer will be located as near in proximity to driller's controls as possible.

11. All BOP equipment will meet API standards and include a minimum 40 gallon accumulator having two independent means of power to initiate closing operation.

SURFACE USE PLAN
Devon Energy Production Company, LP
Malachite 22 Federal 1H
Surface Location: 330' FNL & 330' FWL, Unit D, Sec 22 T19S R33E, Lea, NM
Bottom hole Location: 330' FSL & 330' FWL, Unit M, Sec 22 T19S R33E, Lea, NM

1. **Existing Roads:**
   a. The well site and elevation plat for the proposed well are reflected on the well site layout; Form C-102. The well was staked by Madron Surveying.
   b. All roads into the location are depicted on the surveyor plats.
   c. Directions to Location: From US HWY 62-180 and State HWY 243, go east on 62-180 7.4 miles, turn left on paved Smith Ranch Rd and go north 2.1 miles where pavement ends, turn left on caliche road and go west 0.53 miles, turn right and go north 1.1 miles to a "Y" in the road, stay left, and go northwest 0.83 miles, turn right on old lease road and go northeast 0.2 miles to a proposed road survey, follow flags north/northwest 1727' to the SE corner of the proposed well pad for this location.
   d. Routine grading and maintenance of existing roads will be conducted as necessary to maintain their condition as long as any operations continue on this lease.
   e. If existing road is shared with other operators, Devon will share in its cost to maintain the road as required by the BLM.

2. **New or Reconstructed Access Roads:**
   a. The well site layout, Form C-102 shows approximately 1727' of new access road will be constructed as follows:
   b. The maximum width of the road will be 14'. It will be crowned and made of 6" of rolled and compacted caliche. Water will be deflected, as necessary, to avoid accumulation and prevent surface erosion.
   c. Surface material will be native caliche. This material will be obtained from a BLM approved pit nearest in proximity to the location. The average grade will be approximately 2%.
   d. No cattle guards, grates or fence cuts will be required. No turnouts are planned.

3. **Location of Existing Wells:**
   1 Mile Radius Plat shows all existing and proposed wells within a one-mile radius of the proposed location. See attached plat. This well will be the only well located on the pad.

4. **Location of Existing and/or Proposed Production Facilities:**
   a. In the event the well is found productive, the Malachite 22 Federal 1H's production will be processed at a tank battery located on the well site.
   b. If necessary, the well will be operated by means of an electric prime mover. Electric power poles will be set along side of the access road.
   c. All flowlines will adhere to API standards.
   d. If the well is productive, rehabilitation plans are as follows:
      i. A closed loop system will be utilized.
      ii. The original topsoil from the well site will be returned to the location. The drill site will then be contoured as close as possible to the original state.

4. **Location and Types of Water Supply:**
This location will be drilled using a combination of water mud systems (outlined in the Drilling Program). The water will be obtained from commercial water stations in the area and hauled to location by transport truck using the existing and proposed roads shown in the C-102. On occasion, water will be obtained from a pre-existing water well, running a pump directly to the drill rig. In these cases where a poly pipeline is used to transport water for drilling purposes, proper authorizations will be secured. If a poly pipeline is used, the size, distance, and map showing route will be provided to the BLM via sundry notice.

5. **Construction Materials:**
The caliche utilized for the drilling pad and proposed access road will be from minerals that are located onsite or will be used onsite. If minerals are not available onsite, then an established mineral pit will be used to build the location and stem road.

6. **Methods of Handling Waste Material:**
   a. Drill cuttings will be disposed of in a closed loop system.
   b. All trash, junk and other waste material will be contained in trash cages or trash bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary landfill.
   c. The supplier, including broken sacks, will pick up salts remaining after completion of well.
   d. A Porto-john will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.
   e. Remaining drilling fluids will be sent to a closed loop system. Water produced during completion will be put into a closed loop system. Oil and condensate produced will be put into a storage tank and sold.
   f. Disposal of fluids to be transported by the following companies:
      i. American Production Service Inc, Odessa TX
      ii. Gandy Corporation, Lovington NM
      iii. I & W Inc, Loco Hill NM
      iv. Jims Water Service of Co Inc, Denver CO

7. **Ancillary Facilities:** No campsite or other facilities will be constructed as a result of this well.

8. **Well Site Layout**
   a. The rig layout diagram shows the proposed well site layout with dimensions of the pad layout.
   b. This exhibit indicated proposed location of reserve and sump pits and living facilities.
   c. A closed loop system will be utilized.
   d. If a pit or closed loop system will be utilized, Devon will comply with the NMOCD requirements 19.15.17 and submit form C-144 CLEZ to the appropriate NMOCD District Office. An unapproved copy is provided within the APD.
   e. Topsoil Stockpiling:
      i. Standard practice is topsoil will be pushed to the high side of location to prevent water from running across location to control erosion. If a cut out is done and there are two or three high sides, we will use those there.

9. Plans for Surface Reclamation Include Both Final & Interim:

a. After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and used for other drilling locations, repair existing roads, repair existing locations, etc. The road will be reclaimed as directed by the BLM. The original top soil will again be returned to the pad and contoured, as close as possible, to the original topography. We will use a closed loop system.
b. The location and road will be rehabilitated as recommended by the BLM.
c. If the well is deemed commercially productive, caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography.
d. All disturbed areas not needed for active support of production operations will undergo interim reclamation. The portions of the cleared well site not needed for operational and safety purposes will be recontoured to a final or intermediate contour that blends with the surrounding topography as much as possible. Topsoil will be respread over areas not needed for all-weather operations.

10. Surface Ownership

a. The surface is owned by the US Government and is administered by the Bureau of Land Management. The surface is multiple use with the primary uses of the region for the grazing of livestock and the production of oil and gas.
b. The proposed road routes and the surface location will be restored as directed by the BLM.

11. Other Information:

a. The area surrounding the well site is grassland. The topsoil is very sandy in nature. The vegetation is moderately sparse with native prairie grass, sagebush, yucca and miscellaneous weeds. No wildlife was observed but it is likely that deer, rabbits, coyotes, and rodents traverse the area.
b. There is no permanent or live water in the general proximity of the location.
c. There are no dwellings within 2 miles of location.
d. A Cultural Resources Examination will be completed by Southern New Mexico Archaeological Services, Inc. and forwarded to the BLM office in Carlsbad, New Mexico.

13. Bond Coverage:

Bond Coverage is Nationwide; Bond # is CO-1104

Operators Representative:

The Devon Energy Production Company, L.P. representatives responsible for ensuring compliance of the surface use plan are listed below.

Ron Hays
Operations Engineer

Devon Energy Production Company, L.P.
20 North Broadway, Suite 153H0
Oklahoma City, OK 73102-8260

(405) 552-8150 (office)
(405) 464-4214 (cell)

Don Mayberry
Superintendent

Devon Energy Production Company, L.P.
Post Office Box 250
Artesia, NM 88211-0250

(505) 748-0164 (office)
(505) 748-5235 (cell)

Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal Commercial 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 Devon Energy Production Company, L.P. 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.

I hereby also certify that I, or Devon Energy Production Company, L.P. have made a good faith effort to provide the surface owner with a copy of the Surface Use Plan of Operations and any Conditions of Approval that are attached to the APD.

Executed this 29th day of June, 2011.
Printed Name: Spence Laird
Signed Name: _____
Position Title: Regulatory Analyst
Address: 20 North Broadway, OKC OK 73102
Telephone: (405)-228-8973
Field Representative (if not above signatory): Don Mayberry (see above)
Address (if different from above):
Telephone (if different from above):
E-mail (optional):