DRILLING AND OPERATIONS PLAN
BC OPERATING, INC.
CAVE LION 5 FEDERAL BC #1H

Surface: 185' FSL & 330' FWL, UL M
BHL: 330' FNL & 330' FWL, UL D
Sec. 5-T26S-R35E
Lea County, New Mexico

1. Geological Surface Formation: **windblown sand and gypsum dunes (Holocene).**
2. Horizontal Oil well. No pilot hole, total depth 13,623', depth to Fresh Water: unknown no water wells found in search of state engineers office website. **Elevation 3,271'**

3. **TOPS OF IMPORTANT GEOLOGICAL MARKERS:** TVD

Rustler	1,085'
Top Salado	1,273'
Lamar	5,348
Delaware/Bell Canyon	5,400'
Cherry Canyon	6,387
Brushy Canyon	7,750'
Brushy Canyon Target	9,100' horizontal target TVD, deepest depth
Bone Spring	9,250' will not penetrate

4. **Estimated Depth of Anticipated/Possible Water, Oil or Gas:**

Rustler	0-1,085'	Possible fresh Water, no wells found
Bell Canyon – Brushy Canyon	5,400- 9,100'	Possible Oil, gas and water

No other formations are expected to yield oil, gas or water in measurable volumes. The surface fresh water will be protected by setting 13 3/8" casing at 1,085' and circulating cement back to surface, all other intervals will be isolated by the 9 5/8 intermediate and 5.5" production casing.

5. Proposed Casing Program

HOLE SIZE	CASING SIZE	WT./GRADE	THREAD/COLLAR	SETTING DEPTH	TOP CEMENT
Conductor	20"	94# H-40	8rd BTC	40'	Surface**
17.5"	13 3/8" (new)	61# J-55	8rd BTC	1,050'	Surface**
12.25"	9 5/8" (new)	40# L80	8rd BTC	5,400'	Surface**
8.75"	5.5" (new)	20# P-110	8rd BTC	13,623'	3,900'**

** Casing will be kept liquid filled and void of air while running in hole

MINIMUM SAFETY FACTORS: **BURST 1.125** **COLLAPSE 1.125** **TENSION 1.8**

ALL CASING WILL BE NEW API APPROVED

CEMENT PROGRAM-ALL CEMENT BLENDS WILL BE TESTED TO BLM MINIMUM REQUIREMENTS.

A. **13 3/8"** **SURFACE** CEMENT TO SURFACE **100% EXCESS OVER CALCULATED**

LEAD 530 SX C, 12.8 PPG, 1.82 YIELD 5% P-402, ¼ CELLO FLAKE. TAIL: 450 SX C, 14.8 PPG, 1.33 YIELD ¼#/ SACK CELLO FLAKE, 2% CACL

B. **9 5/8"** **INTERMEDIATE** CEMENT TO SURFACE **75% EXCESS LEAD, 50% TAIL**

LEAD 1030 SX 50/50 C, 11.6 PPG,2.61 YIELD 10% GEL, 5% P-402, .4% P-101, ¼ LB/SX CELLO FLAKE. TAIL: 230 SX C, 13.8 PPG, 1.60 YIELD, .3% P-101 ¼#/ SACK CELLO FLAKE

C. **5.5"** **PRODUCTION** CEMENT TO MIN OF 3,900' **50% EXCESS OVER CALCULATED.**

LEAD 800 SACKS CLASS C 50/50 +10% BENTONITE +.15% C-20 RETARDER +3# GILSONITE +.3% C-12 FLUID LOSS+3% SALT+.25% DEFOAMER, 11.8 PPG, 2.37 YIELD, 13.52 GL/SK

Tail: 1070 SX PRO-VALUE H, 13.5 PPG, 1.99 YIELD, 30% CACL

SPECIFICATIONS FOR PRESSURE CONTROL EQUIPMENT:

A 5,000# WP Double Ram BOP and 5,000 annular will be installed after running the 13-5/8" casing and used for the entire well. Pressure test will be conducted prior to drilling out under all casing strings. BOP controls will be installed prior to drilling under surface casing and will remain in use until completion of drilling operations. BOP's will be inspected and operated as recommended in Onshore Order #2. A Kelly cock and a sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position when the Kelly is not in use, float sub will be available. 13-3/8" and 9-5/8" BOP will be tested to 5000# and the annular to 5000# with a third party testing company before drilling below each shoe all test well be recorded and provided to BLM if requested. If operations last more than 30 days from 1st test, will test again as per BLM Onshore Oil and Gas order #2.

MUD PROGRAM:

Spud and drill 17 ½" surface hole with **fresh water (8.4 to 8.7 ppg)** to a depth of approx 1,150'. Control lost circulation with paper and LCM pills. Viscosity 28-55, no fluid loss control. Fresh water gel sweeps.

Drill 12 ¼" hole to 5,400' with **Brine (10.0 ppg).** Control lost circulation with paper and LCM pills. Viscosity 28-36, no fluid loss control. Salt water gel sweeps.

Drill 8 ¾" production hole to 13,750' **cut brine (8.8 to 10.0 ppg)**. Control lost circulation with paper and LCM pills. Clean hole with salt water sweeps as necessary. System properties: viscosity 28-32, fluid loss <30 ml/30min.

All necessary mud products for weight addition and fluid loss control will be on location at all times. Mud program subject to change due to hole conditions.

Mud monitoring system: Mud will be maintained and checked daily for mud weight, viscosity, API water loss, pH, etc. Additional electronic monitoring will include a pit volume totalizer to monitor mud volume in active system, pump rate, and mud return flow percentage. H2S monitors and alarms will be located on rig floor, shale shakers, and mud tanks (see rig plat). Gas chromatograph with monitor hydrocarbon gas content of mud from 5,400' to TD. Third party corrosion company will utilize H2S/oxygen scavengers to monitor for corrosion and limit damage to tubulars.

Auxiliary 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 ½" casing is run and set with the floats holding and rigging down operations have begun.

TESTING, LOGGING & CORING PROGRAM:

a. Testing: No DST's will be conducted.

b. Cased hole Gamma and Cement bond log for 5.5" casing
c. Mud logging will take place from 5,400ft to TD 10ft samples
d. Gyro survey will be run at 1,150'
e. MWD (directional surveys) and LWD (gamma) surveys will be taken from KOP (8,527') to TD 13,623ft

POTENTIAL HAZARDS:

No significant hazards are expected. Slightly above normal pressure gradient expected. Normal temperature gradient is expected, **estimated pressure gradient of .43 psi/ft. 3,913 psi at 9,100 ft.** Expected temperature

at 9,100 TVD is **145 deg F** based on data from area wells. No H_2S is expected, but the operator will utilize a 3rd party H_2S monitoring package from 1,150' to TD. No losses or H2s occurred in the drilling of the offset Mammoth #1H. If H2S is encountered the operator will comply with the provisions of onshore oil and gas order no 6. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well.

ANTICIPATED STARTING DATE & DURATION:

BC Operating, Inc. anticipates drilling operations to begin around June 15, 2017 and completed in approximately 25 days. An additional 15 days will be needed for completion activities. Road and location construction will begin after the BLM has approved the APD.

Casing calculations assumptions:

Casing will be run assuming liquid filled and void of air

Assume normal pressure gradient and fracture gradient: .44 psi/ft pore pressure, .7 psi/ft fracture gradient

All casing is new and meets API standards for new casing.

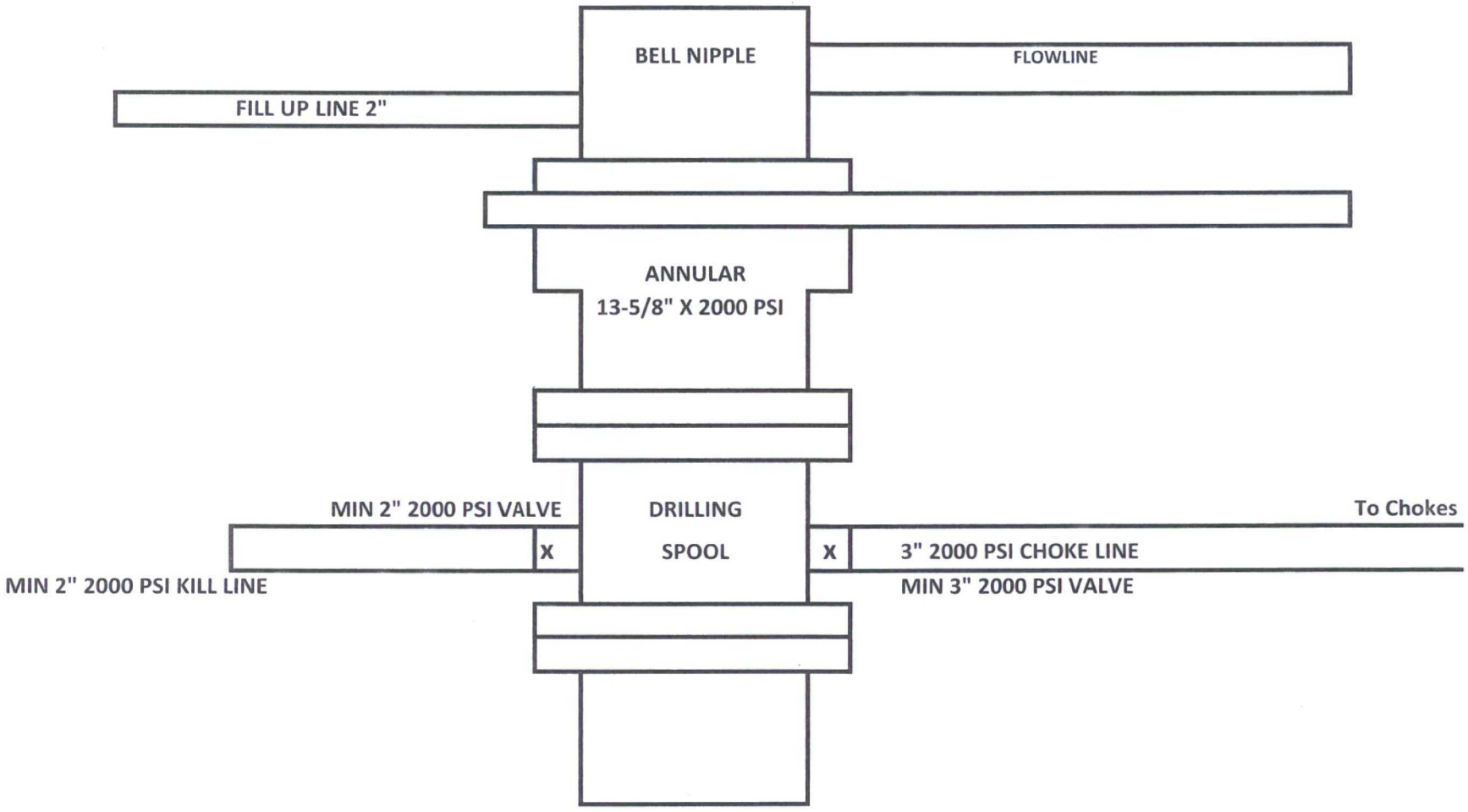
Well: Cave Lion 5 Federal BC #1H

SHL: 185' FSL & 330' FWL, Sec. 5-T26S-R35E

BHL: 330' FNL & 330' FWL, Sec. 5-T26S-R35E

Lea County, New Mexico

BC Operating, Inc.
BOP Scematic 17.5" hole



CLOSED-LOOP SYSTEM

Design Plan:

Cave Lion 5 Federal BC #1H
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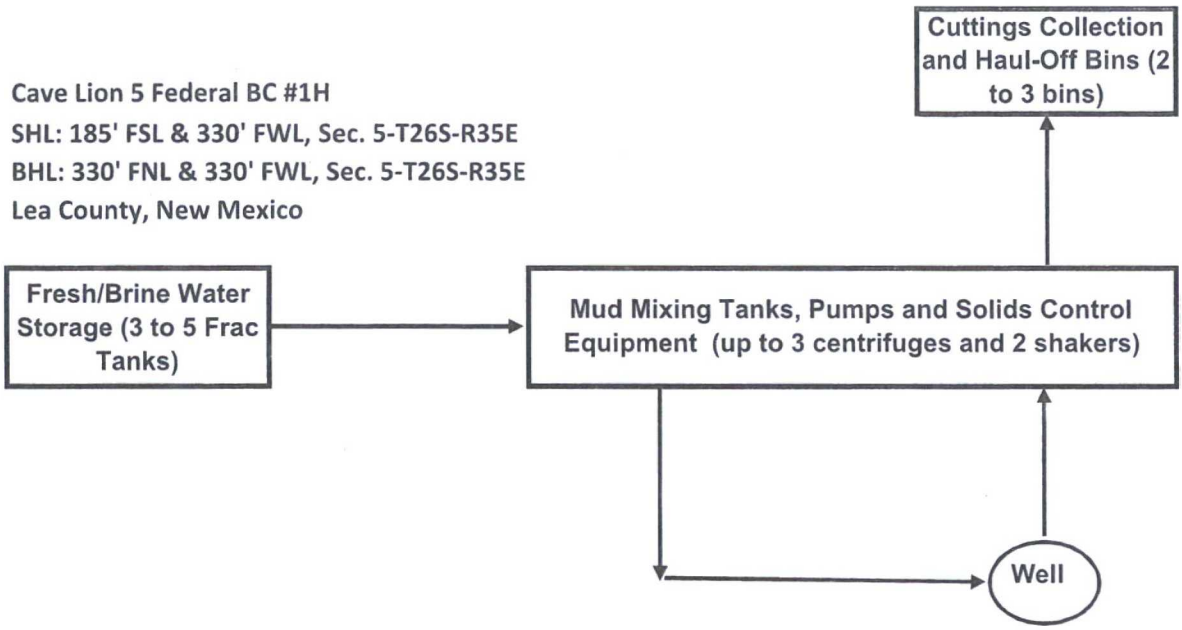
Lea County, New Mexico



Operating and Maintenance Plan:

During drilling operations, third party service companies will utilize solids control equipment to remove cuttings from the drilling fluid and collect it in haul-off bins. Equipment will be closely monitored at all times while drilling by the derrick man and the service company employees.

Closure Plan:

During drilling operations, third party service companies will haul-off drill solids and fluids to an approved disposal facility. At the end of the well, all closed loop equipment will be removed from the location.

BC Operating, Inc.

Cave Lion 5 Federal BC 1H

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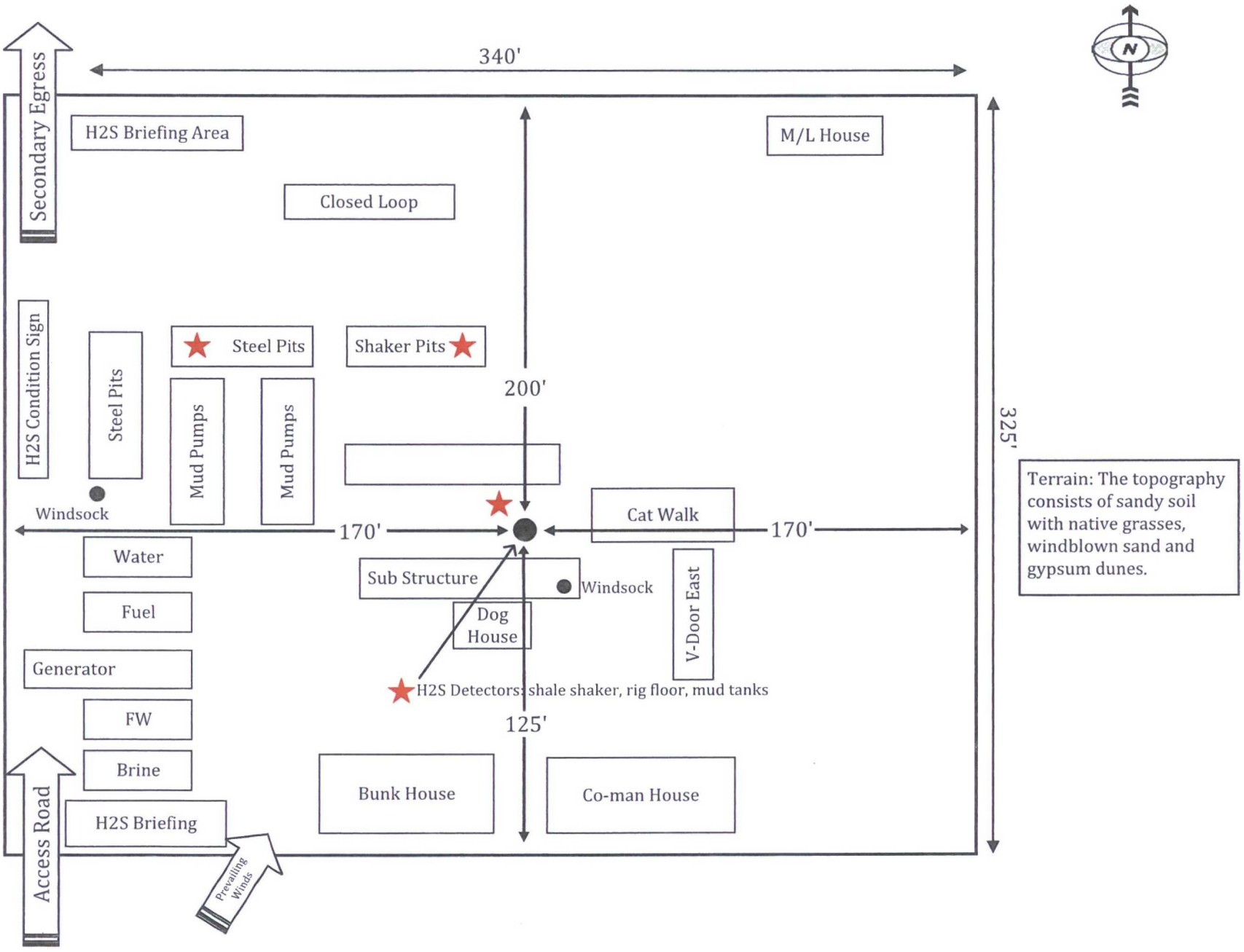

Terrain: The topography consists of sandy soil with native grasses, windblown sand and gypsum dunes.

PUBLIC PROTECTION PLAN FOR EMERGENCY CONTACTS

BC OPERATING, INC. 432-684-9696

Company Personnel

Jason Goss	Drilling Engineer	512-784-2613
Bruce Madden	Field Sup Int.	432-894-0721

ARTESIA N.M.

Ambulance	911
State Police	575-748-9718
City Police	575-746-5000
Sheriff's Office	575-746-9888
Fire Department	575-746-5050 or 575-746-5051
N.M.O.C.D	575-748-1283

CARLSBAD N.M.

Ambulance	911
State Police	575-885-3138
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-885-3125 or 575-885-2111
Carlsbad BLM	575-234-5972

HOBBS N.M.

Ambulance	911
State Police	575-392-5580
City Police	575-397-9265
Sheriff's Office	575-396-3611
Fire Department	575-397-9308
N.M.O.C.D	575-393-6161
Hobbs BLM	575-393-3612

Flight for Life (Lubbock Tx)	806-743-9911	
Aerocare (Lubbock Tx)	806-747-8923	
Med flight air Ambulance (Albuq NM)	505-842-4433	
SB air Med Services (Albuq NM)	505-842-4949	
Wild Well Control	281-784-4700	Emergency Number 24 Hour
Boots & Coots IWC	281-931-8884	Emergency Number 24 Hour
Cudd Pressure Control	713-849-2769	Emergency Number 24 Hour
BJ Services (Artesia NM)	575-746-3569	
(Hobbs NM)	575-392-5556	

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
24 Hour	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635