

## OCD-ARTESIA

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

DI  
B  
APPLICATIO

If earthen pits are used in association with the drilling of this well, an OCD pit permit must be obtained prior to pit construction<sup>R</sup>

5. Lease Serial No.  
**NM-25494**

6. If Indian, Allottee or Tribe Name

1a. Type of work: ☒ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.  
**135504**

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

8. Lease Name and Well No.  
**Shell Federal #2**

2. Name of Operator **162055**  
**B.C. OPERATING, INC.**

9. API Well No.  
**30-015-34679**

3a. Address  
**P.O. Box 50820, Midland, TX 79710**

3b. Phone No. (include area code)  
**(432) 683-2950 74640**

10. Field and Pool, or Exploratory  
**Cemetery - Morrow**

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

At surface **1980' FNL & 660' FWL**  
At proposed prod. zone **same**

11. Sec., T. R. M. or Bk. and Survey or Area  
**Section 6, T-21-S, R-24-E, N.M.P.M.**

14. Distance in miles and direction from nearest town or post office\*  
**28 mi. NW Carlsbad, NM**

12. County or Parish  
**Eddy**

13. State  
**NM**

15. Distance from proposed\* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)  
**660'**

16. No. of acres in lease  
**562.39**

17. Spacing Unit dedicated to this well  
**Lots 13, 21, 22, 23, 24, 29, 30 & 31 - 322.79 ac**

18. Distance from proposed location\* to nearest well, drilling, completed, applied for, on this lease, ft.  
**4850'**

19. Proposed Depth  
**11,000'**

20. BLM/BIA Bond No. on file  
**432564**

21. Elevations (Show whether DF, KDB, RT, GL, etc.)  
**3677' GL**

22. Approximate date work will start\*  
**3/1/06**

23. Estimated duration  
**60 days**

24. Attachments **Carlsbad Controlled Water Rights**

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall 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 shall 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 authorized officer.

25. Signature

Name (Printed/Typed)

**Kevin Widner**

Date

**12-29-05**

Title

**Operations Manager**

Approved by (Signature)

**/s/ Tony J. Herrell**

Name (Printed/Typed)

**/s/ Tony J. Herrell**

Date

**MAR 06 2006**

Title

**FIELD MANAGER**

Office

**CARLSBAD FIELD 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 1 YEAR**

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)

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MAR 08 2006

OCD-ARTESIA

**APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS AND  
SPECIAL STIPULATIONS  
ATTACHED**

ShellFederal/APDR

DISTRICT II  
P.O. Drawer DD, Artesia, NM 88211-0719DISTRICT III  
1000 Rio Brazos Rd., Artec, NM 87410DISTRICT IV  
2040 South Pacheco, Santa Fe, NM 87505OIL CONSERVATION DIVISION  
2040 South Pacheco  
Santa Fe, NM 87505☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

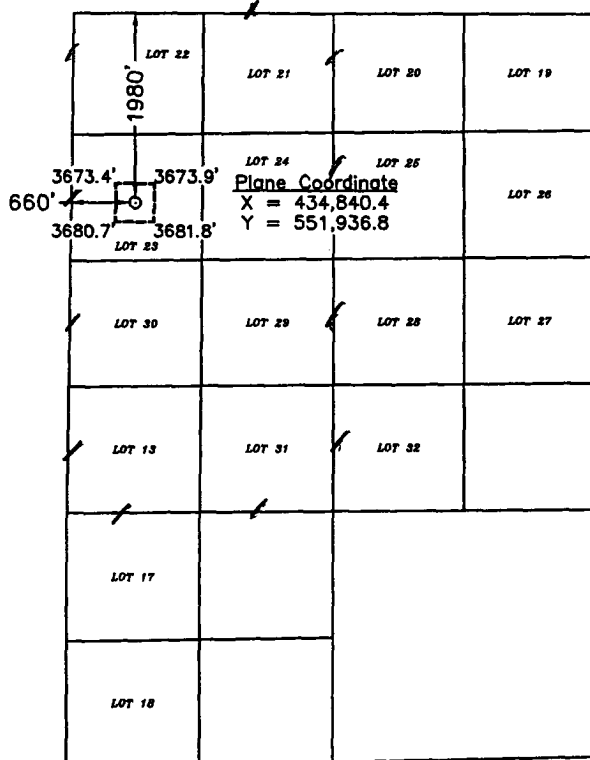
API Number	Pool Code 74640	Pool Name Cemetery; Monrow
Property Code	Property Name SHELL FEDERAL	Well Number 2
OGRID No.	Operator Name BC OPERATING, INC.	Elevation 3677'

## Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
23	6	21 S	24 E		1980	NORTH	660	WEST	EDDY

## 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
Dedicated Acres 320	Joint or Infill	Consolidation Code	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

## NOTE:

- 1) Plane Coordinates shown hereon are Transverse Mercator Grid and Conform to the "New Mexico Coordinate System", New Mexico East Zone, North American Datum of 1927. Distances shown hereon are mean horizontal surface values.

## OPERATOR CERTIFICATION

I hereby certify the the information  
contained herein is true and complete to the  
best of my knowledge and belief.

Signature

Printed Name

Title

Date

## 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  
upervision and that the same is true and  
correct to the best of my belief.

November 4, 2005

Date Surveyed

Signature & Seal of  
Professional Surveyor

LVA

W.O. Num. 2005-1043

Certificate No. MACON McDONALD 12185

DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised August 15, 2000  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

DISTRICT II  
P.O. Drawer DD, Artesia, NM 88211-0719

DISTRICT III  
1000 Rio Brazos Rd., Artec, NM 87410

DISTRICT IV  
2040 South Pacheco, Santa Fe, NM 87505

OIL CONSERVATION DIVISION  
2040 South Pacheco  
Santa Fe, NM 87505

RECEIVED

MAR 14 2006

OCC-ARTESIA

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
Property Code	Property Name SHELL FEDERAL	Well Number 2
OGRID No.	Operator Name BC OPERATING, INC.	Elevation 3677'

Surface Location

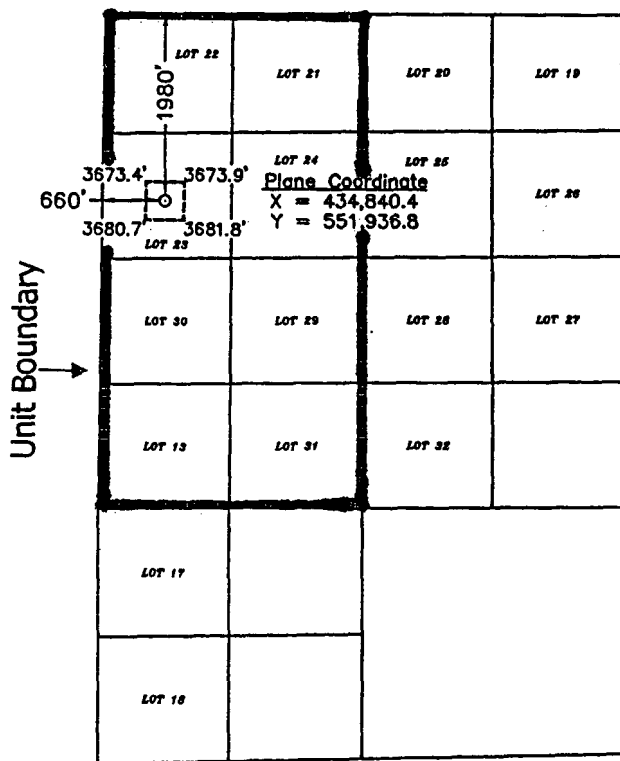
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
23	6	21 S	24 E		1980	NORTH	660	WEST	EDDY

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

Dedicated Acres	Joint or Infill	Consolidation Code	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



NOTE:

- Plane Coordinates shown hereon are Transverse Mercator Grid and Conform to the "New Mexico Coordinate System", New Mexico East Zone, North American Datum of 1927. Distances shown hereon are mean horizontal surface values.

OPERATOR CERTIFICATION

I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.

*Kevin Widner*  
Signature  
Kevin Widner  
Printed Name  
Operations Mgr.  
Title  
2-8-06  
Date

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.

November 4, 2005

Date Surveyed  
Signature & Seal of  
Professional Surveyor LVA

W.O. Num. 2005-1043

Certificate No. MACON McDONALD 12185

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Form C-144  
June 1, 2004

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

For drilling and production facilities, submit to appropriate NMOCD District Office.  
For downstream facilities, submit to Santa Fe office

**Pit or Below-Grade Tank Registration or Closure**

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☒

Type of action: Registration of a pit or below-grade tank ☒ Closure of a pit or below-grade tank ☐

Operator: <b>B.C. OPERATING, INC.</b> Telephone: <b>(432) 683-2950</b> e-mail address: <b>kwidner@usaonline.net</b>		
Address: <b>P.O. Box 50820, Midland, TX 79705</b>		
Facility or well name: <b>Shell Federal #2</b>	API #: _____	U/L or Qtr/Qtr <b>23</b> Sec <b>6</b> T <b>21S</b> R <b>24E</b>
County: <b>Eddy</b>	Latitude <b>434,840.4</b>	Longitude <b>551,936.8</b> NAD: 1927 <input checked="" type="checkbox"/> 1983 <input type="checkbox"/>
Surface Owner: Federal <input type="checkbox"/> State <input type="checkbox"/> Private <input type="checkbox"/> Indian <input type="checkbox"/>		
<b>Pit</b> Type: Drilling <input checked="" type="checkbox"/> Production <input type="checkbox"/> Disposal <input type="checkbox"/> Workover <input type="checkbox"/> Emergency <input type="checkbox"/> Lined <input checked="" type="checkbox"/> Unlined <input type="checkbox"/> Liner type: Synthetic <input checked="" type="checkbox"/> Thickness <b>14</b> mil Clay <input type="checkbox"/> Pit Volume <b>24,000</b> bbl	<b>Below-grade tank</b> Volume: _____ bbl Type of fluid: _____ Construction material: _____ Double-walled, with leak detection? Yes <input type="checkbox"/> If not, explain why not. _____ <div style="text-align: right;">RECEIVED FEB 13 2006 OCD-ARTESIA</div>	
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) (10 points) ( 0 points)
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) ( 0 points)
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) ( 0 points)
<b>Ranking Score (Total Points)</b>		<b>10 points</b>

**If this is a pit closure:** (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if you are burying in place) onsite ☐ offsite ☐ If offsite, name of facility \_\_\_\_\_. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☐ Yes ☐ If yes, show depth below ground surface \_\_\_\_\_ ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments:

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Date: **2/8/06**

Printed Name/Title **Kevin Widner, Operations Manager**

Signature 

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval: **Gerry Guye**

Printed Name/Title **Compliance Officer**

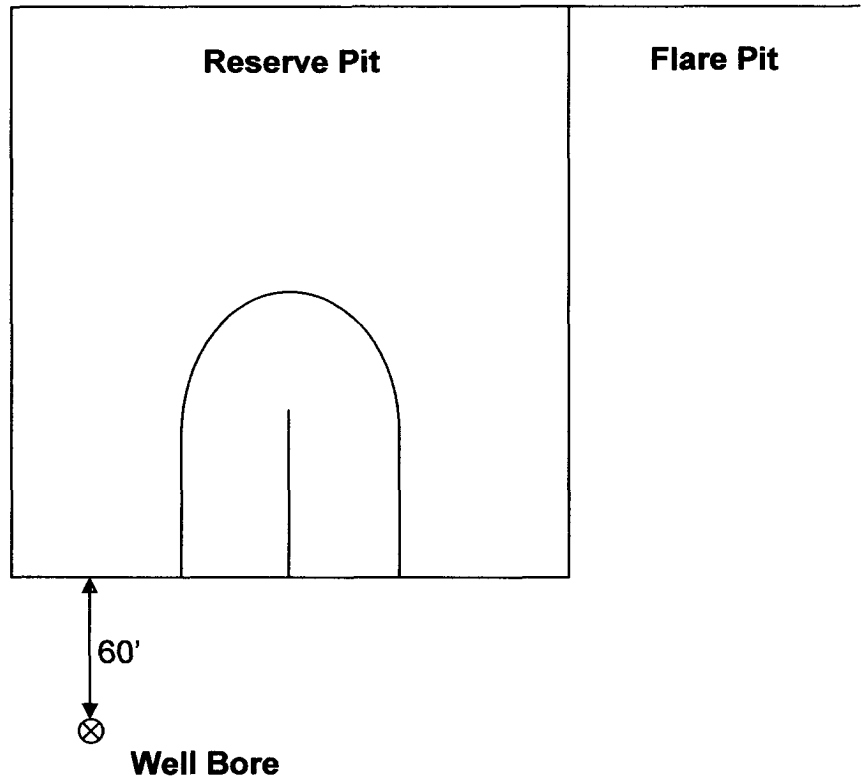
Signature 

Date: **2-17-06**

**Shell Federal #2**  
B.C. OPERATING, INC.

*The reserve pit will be to the North. The Southwest corner of the pit will be approximately 60' North of the well bore. The pit will be 150' x 150' and 6' deep with a capacity of 24,000 bbls.*

*Standard reserve pit. All reserve pits that are horse shoe size vary with the depth of the well.*

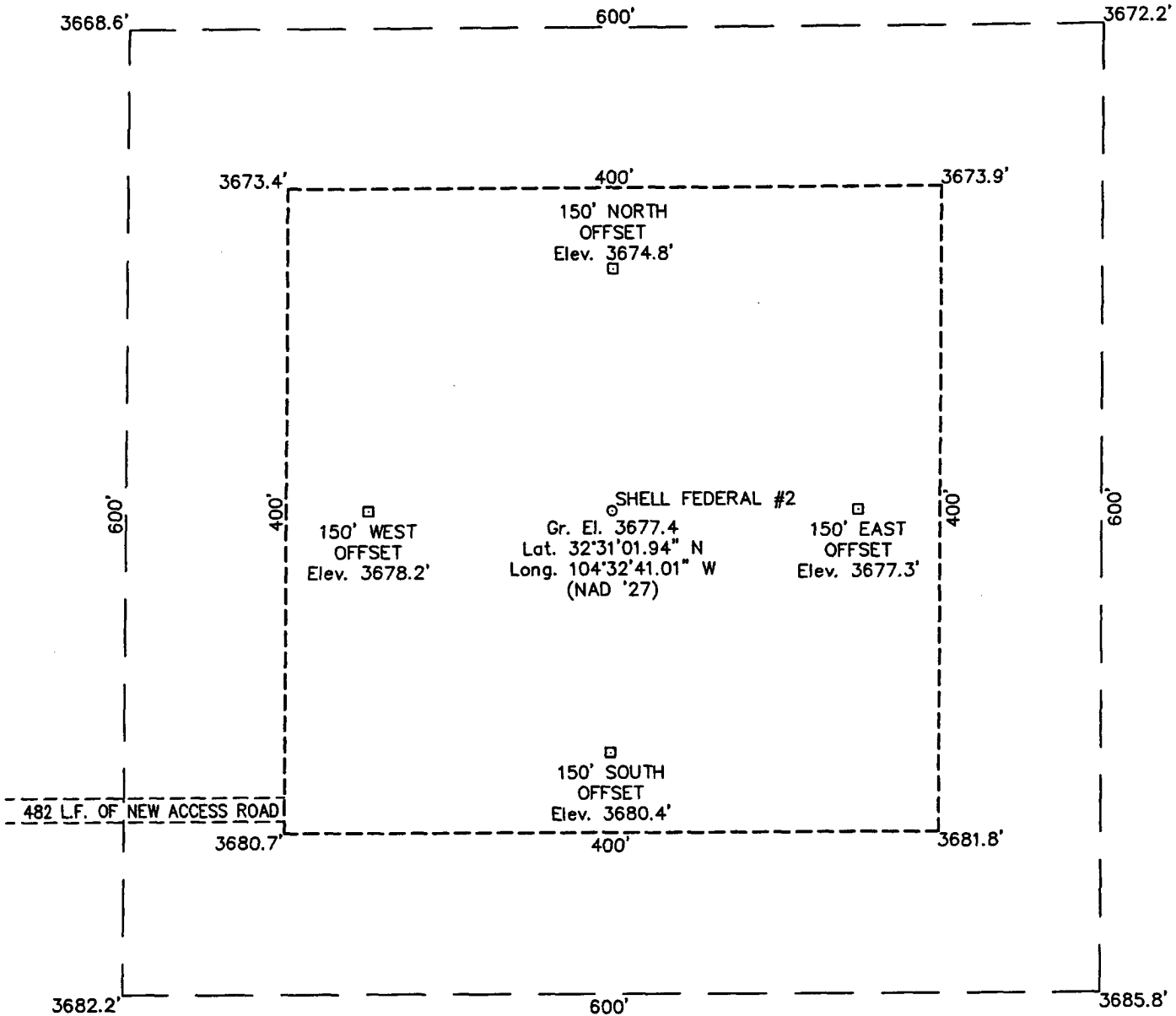


# SECTION 6, TOWNSHIP 21 SOUTH, RANGE 24 EAST, N.M.P.M.

EDDY COUNTY

NEW MEXICO

L-2005-1043-A



## DRIVING DIRECTIONS

FROM THE INTERSECTION OF STATE HIGHWAY 285 AND COUNTY ROAD 28 (A.K.A. WHITE PINE RD.) ABOUT 17 MILES NORTH OF CARLSBAD, NM GO WEST ON SAID COUNTY ROAD 28 AND FOLLOW SAID ROAD SOUTH AND WEST FOR APPROXIMATELY 7.9 MILES TO A CALICHE ROAD ON WEST SIDE OF SAID COUNTY ROAD 28 WITH SIGN MARKED "FASKEN OIL, CAMRON #1", GO WEST ON SAID CALICHE ROAD FOR APPROXIMATELY 1.1 MILES TO A TWO-TRACK ROAD ON SOUTHWEST SIDE OF SAID CALICHE ROAD, GO SOUTHWEST ALONG SAID TWO-TRACK ROAD APPROXIMATELY 0.4 MILE, THEN WEST FOR ANOTHER 0.4 MILE TO A POWER LINE, THEN SOUTHWEST ALONG SAID POWERLINE 0.6 MILE TO A NORTH-SOUTH FENCE LINE, THEN GO SOUTH ON TWO-TRACK ALONG FENCE LINE APPROXIMATELY 800 FEET TO A POINT WHICH IS APPROXIMATELY 482 FEET WEST OF PROPOSED LOCATION.



**BC OPERATING, INC.**

**SHELL FEDERAL #2**

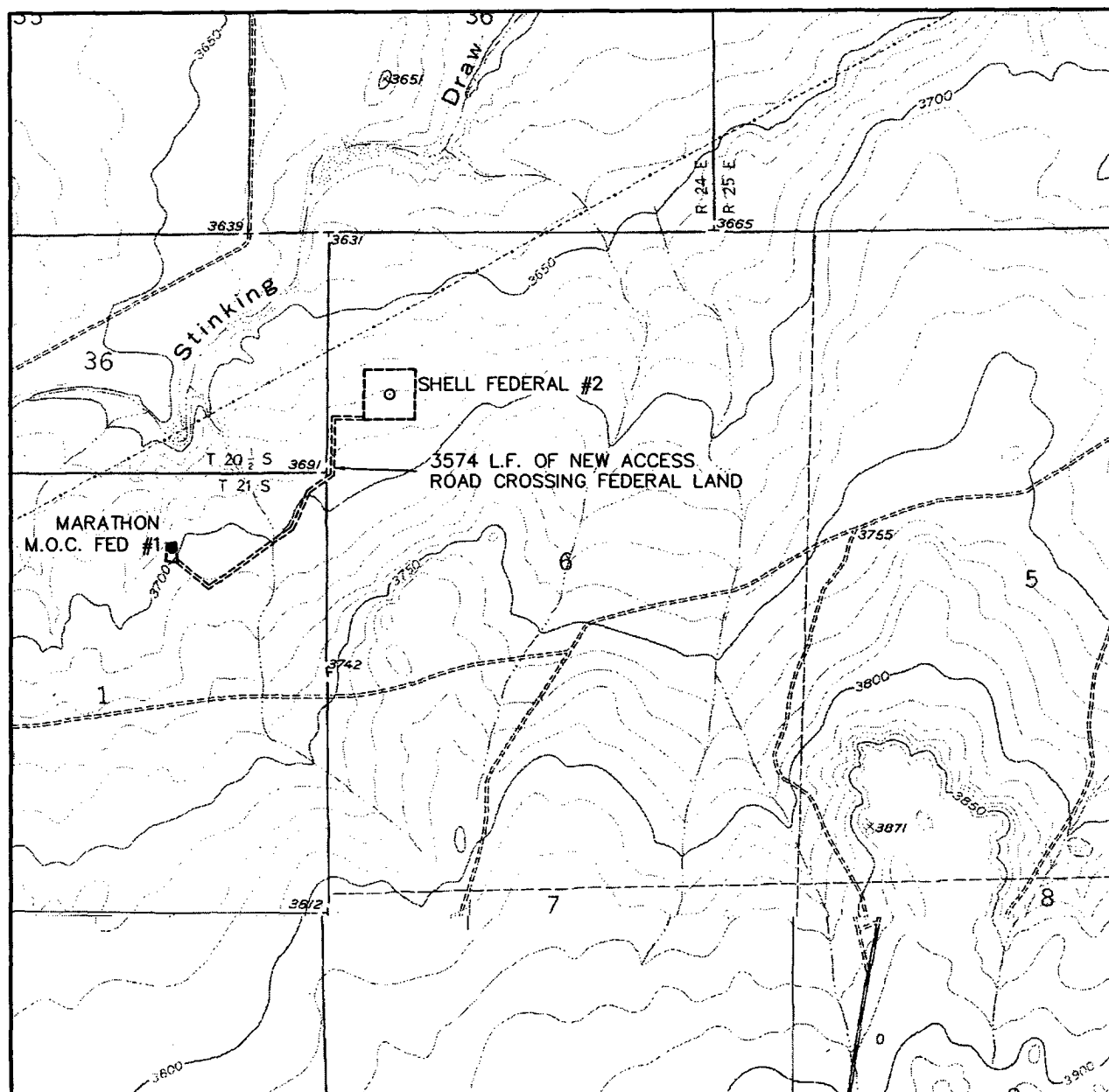
Located 1980' FNL & 660' FWL, Section 6  
Township 21 South, Range 24 East, N.M.P.M.  
Eddy County, New Mexico

**WEST  
COMPANY**  
of Midland, Inc.

110 W. LOUISIANA, STE. 110  
MIDLAND TEXAS, 79701  
(432) 687-0865 - (432) 687-0868 FAX

Drawn By: LVA	Date: November 9, 2005
Scale: 1"=100'	Field Book: 303 / 72-74
Revision Date:	Quadrangle: Foster Ranch
W.O. No: 2005-1043	Dwg. No.: L-2005-1043-A

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:  
FOSTER RANCH - 10'

SEC. 6 TWP. 21-S RGE. 24-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 1980' FNL & 660' FWL

ELEVATION 3677'

OPERATOR BC OPERATING, INC.

LEASE SHELL FEDERAL

U.S.G.S. TOPOGRAPHIC MAP  
FOSTER RANCH



**WEST  
COMPANY**  
of Midland, Inc.

110 W. LOUISIANA, STE. 110  
MIDLAND TEXAS, 79701  
(432) 687-0865 - (432) 687-0868 FAX

## DRILLING PROGRAM

B.C. OPERATING, INC.

**Shell Federal #2**

1980' FNL & 660' FWL, Section 6, T-21-S, R-24-E,

Eddy County, New Mexico

Lease No: NM-25494

(Development Well)

The following items supplement Form 3160-3 in accordance with instructions contained in Onshore Oil and Gas Orders #1 and #2, and all other applicable federal and state regulations.

1. Estimated tops of geological markers:

San Andres	800'
Glorietta	2,400'
Wolfcamp	6,900'
Cisco	7,700'
Strawn	8,500'
Morrow	9,500'
TD	11,000'

2. Estimated depths to water, oil or gas formations:

Fresh water	above 200'
Oil, gas & water	Wolfcamp, Cisco, Strawn, Morrow

3. Pressure control equipment: The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a 3,000 psi double ram type preventer for drilling the intermediate hole. The blowout preventer stack for the production hole will consist of at least a double-ram blowout preventer and annular preventer rated to 5,000 psi working pressure. A diagram of the BOPs and choke manifold is attached. All BOPs and accessory equipment will be tested according to Onshore Order No 2 before drilling out.

4. Proposed casing program:

HOLE SIZE	INTERVAL	CASING SIZE	WEIGHT	GRADE, JOINT
12.25"	0-1250' 1400'	9-5/8"	36#	K-55, LT&C
7-7/8"	0-11,000'	5-1/2"	17#	N-80, LT&C

5. Proposed cementing program:

- 20" conductor
- 9-5/8" surface                      700 SX Class "H" Lite followed by 800 SX Class "C" Poz



- 5-1/2" production 500 sx Class "C" followed by 600 sx 50/50 poz. TOC 6,000'

6. Proposed mud system:

DEPTH	DESCR.	MUD WEIGHT	VISCOSITY	WATERLOSS
0-1250'	Fresh water	8.6-8.8 ppg	28	NC
1250-6,000'	Brine water	10.0-10.2 ppg	40-45	NC
6,000-11,000'	Cut brine mud	9.0-9.3 ppg	28-36	8 cc

7. Testing, logging and coring programs:

Samples 1250-11,000'  
DSTs Morrow possible  
Logging Gamma Ray, CNL, FDC, DLL  
Coring *No coring planned.*

8. Abnormal pressures and temperatures: *None anticipated.* Maximum bottom hole pressure should not exceed 5460 psi.

*This area has a potential H<sub>2</sub>S hazard. An H<sub>2</sub>S Drilling Plan is attached including a diagram of the drilling rig layout with H<sub>2</sub>S monitors and wind direction indicators shown.*

9. Anticipated starting date and duration of operations: Drilling will commence about **March 1, 2006**. Drilling should be completed within 40 days followed by completion operations.

BOP Schematic for  
12 1/4" Hole

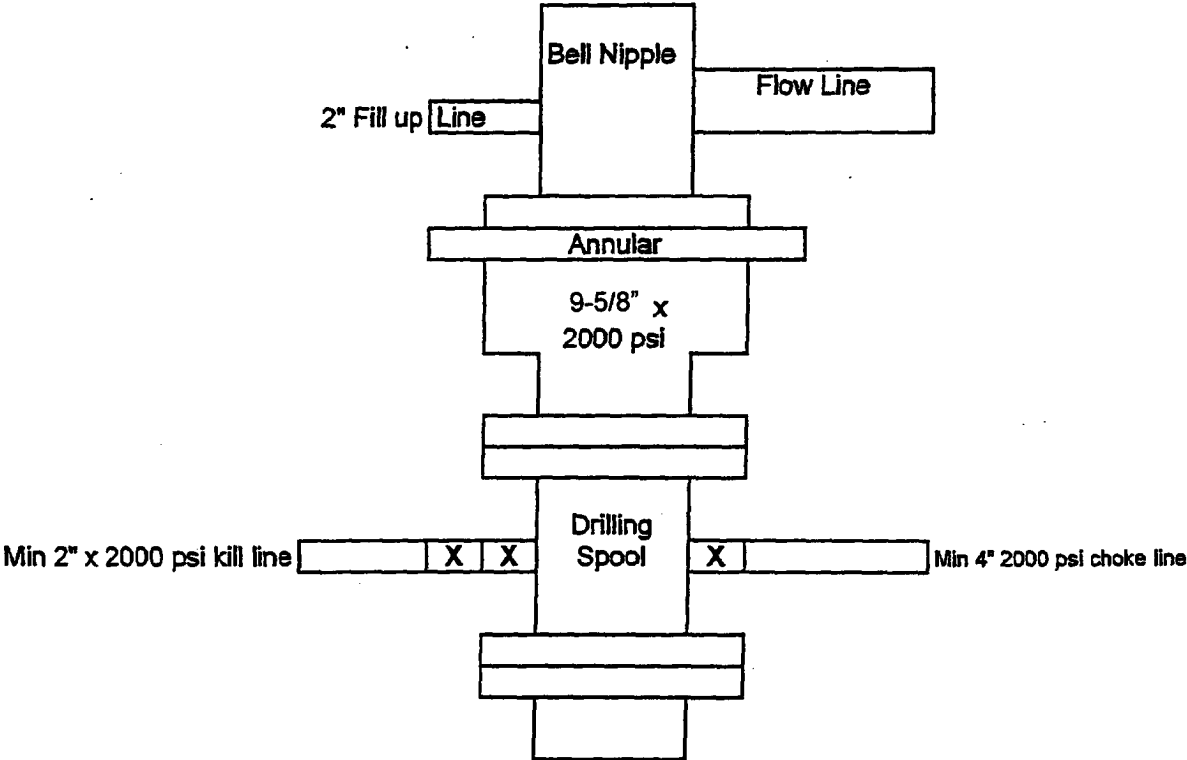
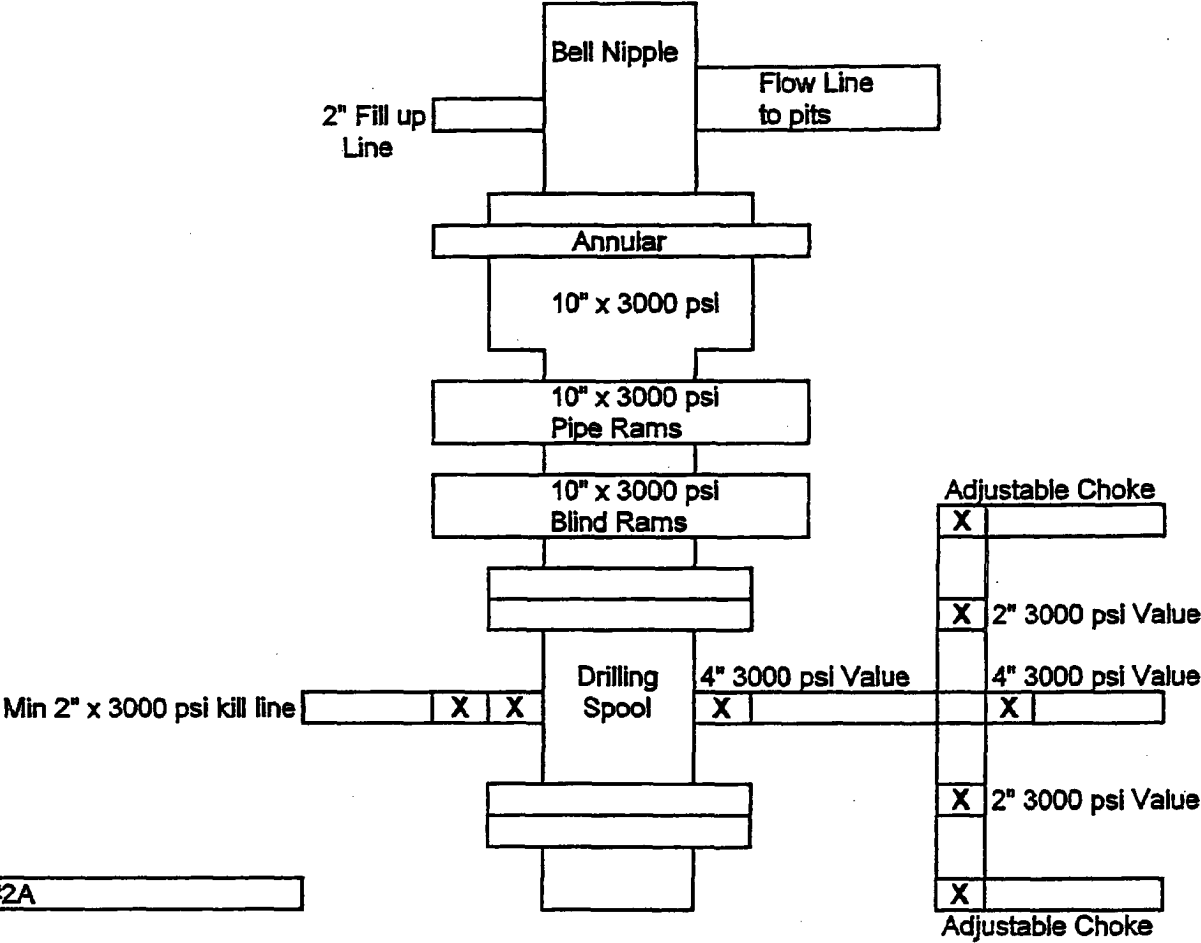


Exhibit #2

BOP Schematic for  
 8 3/4" or 7 7/8" Hole



# **MULTI POINT SURFACE USE AND OPERATIONS PLAN**

B.C. OPERATING, INC.

**Shell Federal #2**

1980' FNL & 660' FWL, Section 6, T-21-S, R-24-E,

Eddy County, New Mexico

Lease No: NM-25494

(Development Well)

This plan is submitted with the Application for Permit to Drill the above described well. The purpose of the plan is to describe the location of the proposed well, the proposed construction activities and operations plan to be followed in rehabilitating the surface and environmental effects associated with the operations.

## **1. EXISTING ROADS**

A. Exhibit "A" is a portion of a BLM topo map showing the location of the proposed well as staked. The well site location is approximately 28 road miles northwest of Carlsbad, NM. Traveling northwest of Carlsbad on Hwy 285 there will be approximately 25 miles of existing paved and 3 miles of oil field roads.

B. *Driving directions:*

- i. From the intersection of state highway 285 and County Road 28 (a.k.a. White Pine Road) about 17 miles north of Carlsbad, NM, go west on said county road and follow said road south and west for approximately 7.9 miles to a caliche road on west side of said county road with sign marked "Fasken Oil, Camron #1"
- ii. Go west on said caliche road for approximately 1.1 miles to a two-track road on southwest side of said caliche road
- iii. Go southwest along said two-track road approximately 0.4 mile, then west for another 0.4 mile to a power line
- iv. Then southwest along said powerline 0.6 mile to a north-south fence line
- v. Then go south on two-track along fence line approximately 800 feet to a point which is approximately 482 feet west of proposed location.

## **2. PLANNED ACCESS ROAD**

- A. Length and Width: The proposed access road will be approximately 8925 feet long. The proposed and existing roads are identified on Exhibit "A".
- B. Construction: The proposed access road will be constructed by grading and topping with compacted caliche. The surface will be properly drained.
- C. Turnouts: As required.
- D. Culverts: As required.
- E. Cuts and Fills: As required
- F. Gates, Cattle guards: As required.
- G. Off lease right of way: As required.

### **3. LOCATION OF EXISTING WELLS**

- A. Existing wells within a two-mile radius are shown on Exhibit "C".

### **4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES**

- A. B.C. OPERATING, INC. has no production facilities for this well at this time.
- B. If the well proves to be commercial, the necessary production facilities, gas separation-process equipment and tank battery, if required, will be installed on the drilling pad.

### **5. LOCATION AND TYPE OF WATER SUPPLY**

- A. It is planned to drill the proposed well with fresh water that will be obtained from private or commercial sources and will be transported over the existing and proposed access roads.

### **6. SOURCE OF CONSTRUCTION MATERIALS**

- A. Caliche for surfacing the proposed access road and well site pad will be obtained from the location, if available, or from an approved Federal pit in the area. No surface materials will be disturbed except those necessary for actual grading and leveling of the drill site and access road.

### **7. METHODS OF HANDLING WASTE DISPOSAL**

- A. Drill cuttings will be disposed of in the reserve pits.
- B. Drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry.
- C. All pits will be fenced with normal fencing materials to prevent livestock from entering the area.
- D. Water produced during operations will be collected in tanks until hauled to an approved disposal system, or a separate disposal application will be submitted to the BLM for approval.
- E. Oil produced during operations will be stored in tanks until sold.
- F. Current laws and regulations pertaining to the disposal of human waste will be complied with.
- G. Trash, waste paper, garbage and junk will be contained in trash bins to prevent scattering by the wind and will be removed for deposit in an approved sanitary landfill within 30 days after finishing drilling and/or completion operations.

### **8. ANCILLARY FACILITIES**

- A. None required.

### **9. WELL SITE LAYOUT**

- A. Exhibit "D" shows the relative location and dimensions of the well pad, reserve pits, and major rig components. The pad and pit area has been staked and flagged, 400' x 400'.
- B. Mat Size: 255' x 160', plus 120' x 120' reserve pits on the North.
- C. Cut & Fill: Only if required. None anticipated.

- D. The surface will be topped with compacted caliche and the reserve pits will be plastic lined.

## **10. PLANS FOR RESTORATIONS OF THE SURFACE**

- A. After completion of drilling and/or completion operations, all equipment and other material not required for operations will be removed. Pits will be filled and the location cleaned of all trash and junk to leave the well site in an aesthetically pleasing a condition as possible.
- B. Any unguarded pits containing fluids will be fenced until they are filled.
- C. If the proposed well is non-productive, all rehabilitation and/or vegetation requirements of the Bureau of Land Management will be complied with and will be accomplished as expeditiously as possible. All pits will be filled and leveled as soon as they are dry enough to be worked.

## **11. OTHER INFORMATION**

- A. Topography: The proposed well site and access road are located on a 2-2.5% slope to the southwest toward Stinking Draw that runs east/west. The location has an elevation of 3677' GL.
- B. Soil: The topsoil at the well site is comprised of earthy gypsum soils.
- C. Flora and Fauna: The location has a fair grass cover of grama, along with plants of mesquite, yucca, snake weed, creosote bush, cacti and miscellaneous weeds and wildflowers. The wildlife consists of rabbits, coyotes, antelope, deer, rattlesnakes, lizards, dove, quail and other wildlife typical of the semi-arid desert land.
- D. Ponds and Streams: None except intermittent running draws when it rains, such as Stinking Draw one mile to the west.
- E. Residences and Other Structures: None in the immediate vicinity.
- F. Land Use: Cattle grazing.
- G. Surface Ownership: The proposed well site and access road is on Federal surface and minerals.
- H. There is no evidence of archaeological, historical or cultural sites in the staked area. Southern New Mexico Archaeological Services, Inc., P.O. Box 1, Bent, NM 88314, has conducted an archaeological survey and their report has been submitted to the appropriate government agencies.

## **12. OPERATOR'S REPRESENTATIVE**

- A. The field representative for assuring compliance with the approved use and operations plan is as follows:
  - Kevin Widner
  - B.C. OPERATING, INC.
  - P.O. Box 50820
  - Midland, TX 79710
  - Office Phone: (432) 683-2950

### **13. CERTIFICATION**

I hereby certify that I have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in the plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by B.C. OPERATING, INC. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provision of 18 U.S.C. 1001 for the filing of a false statement.

*December 29, 2005*

A handwritten signature in black ink, appearing to read 'KW', is written over a horizontal line.

**Kevin Widner**  
B.C. OPERATING, INC.

## CONDITIONS OF APPROVAL - DRILLING

Operator's Name: B.C. Operating Incorporated

Well Name & No: Shell Federal No. 02

Location: Surface: 1980' FNL & 660' FWL, Sec.06, T. 21 S., R. 24 E.

Lease: NMNM 25494

Lea County, New Mexico

.....

### I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Roswell Field Office, 2909 West Second St., Roswell, NM 88201, (505) 627-0272 for wells in Chaves and Roosevelt Counties; the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 for wells in Eddy County; and the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (505) 393-3612 for wells in Lea County, in sufficient time for a representative to witness:

A. Spudding

B. Cementing casing: 20 inch; 9 5/8 inch; 5 1/2 inch.

C. BOP Tests

2. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan shall be in operations three days or 500 feet prior to drilling into the Top of the Upper Penn formation estimated to be at 9000 ft.

3. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

4. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing (size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15 day time frame.

5. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.

### II. CASING:

1. The 9 5/8 inch shall be set at 1400 Feet with cement circulated to the surface. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

2. The minimum required fill of cement behind the 9 5/8 inch Intermediate casing is to circulate to surface.

3. The minimum required fill of cement behind the 5 1/2 inch Production casing is to circulate to surface.

### III. PRESSURE CONTROL:

1. All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling below the 13 5/8 inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.



2. Minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 5 M psi for the drilling of the 7.875 inch production hole from 1400 ft to TD of 11,000 ft. A 3M BOPE shall be in operations for the surface string and tested as such.

3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the test.

- The test shall be done by an independent service company
- The results of the test shall be reported to the appropriate BLM office.
- Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures.
- Use of drilling mud for testing is not permitted since it can mask small leaks.
- Testing must be done in safe workman-like manner. Hard line connections shall be required.
- Both low pressure and high pressure testing of BOPE is required.

G Gourley 01/25/2006 BLM Roswell

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# H<sub>2</sub>S Contingency Plan

B.C. OPERATING, INC.  
*Shell Federal #2*

Section 6, Township 21 South, Range 24 East,  
EDDY COUNTY, NM

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## SCOPE

This plan establishes the B.C. OPERATING, INC. guidelines for all company and contract employees whose duties may involve exposure to hydrogen sulfide gas (H<sub>2</sub>S) on the *Shell Federal #2* location. This well is located 1980 feet from the north line, 660 feet from the west line in Section 6 of Township 21 South, Range 24 East, Lot 23, Eddy County, New Mexico. This plan also establishes procedure for isolation of the work site and evacuating the public on the condition that:

- A. There is a release of H<sub>2</sub>S that encompasses the radius of exposure (ROE) in this plan and,
- B. There are persons and/or rods within the ROE and,
- C. There is the endangerment of human and/or animal life within the ROE.

*\*\*There are no homes located within one (1) mile either direction of this particular location. \*\**

## OBJECTIVE

The objective of B.C. OPERATING, INC. is to:

- A. Prevent any and all accidents, and to prevent the uncontrolled release of H<sub>2</sub>S into the atmosphere and,
- B. Provide proper evacuation procedures to cope with emergencies and,
- C. Provide immediate and adequate medical attention should an injury occur.

*It should be noted that B.C. OPERATING, INC. does not expect there to be any release of H<sub>2</sub>S into the atmosphere but has taken the necessary steps to react properly to and control any hazards encountered on any of our facilities.*

## **GENERAL EMERGENCY ACTION**

*In the event of an emergency, the following action should be initiated:*

1. All personnel shall immediately evacuate to an upwind and uphill “safe breathing” area.
  2. Those who must enter the hazard area must wear positive pressure self-containing breathing apparatus and must use other appropriate safety equipment as outlined on Page 10.
  3. Isolate the well, if possible.
  4. Use the “Buddy System” at all times.
  5. Account for all personnel and take appropriate action as necessary for personnel safety.
  6. Display the appropriate color warning flag to describe the type of emergency.
  7. Contact B.C. OPERATING, INC. personnel at the earliest time available according to the emergency call out list on Page 4.
- 
- The B.C. OPERATING, INC. supervisor will assess the situation and assign duties to various persons to bring the situation under control.
  - Notification of local emergency response agencies and residents will be assigned by the B.C. OPERATING, INC. supervisor.
  - Media inquiries are to be referred to:  
B.C. OPERATING, INC.  
P.O. Box 50820  
Midland, TX 79710

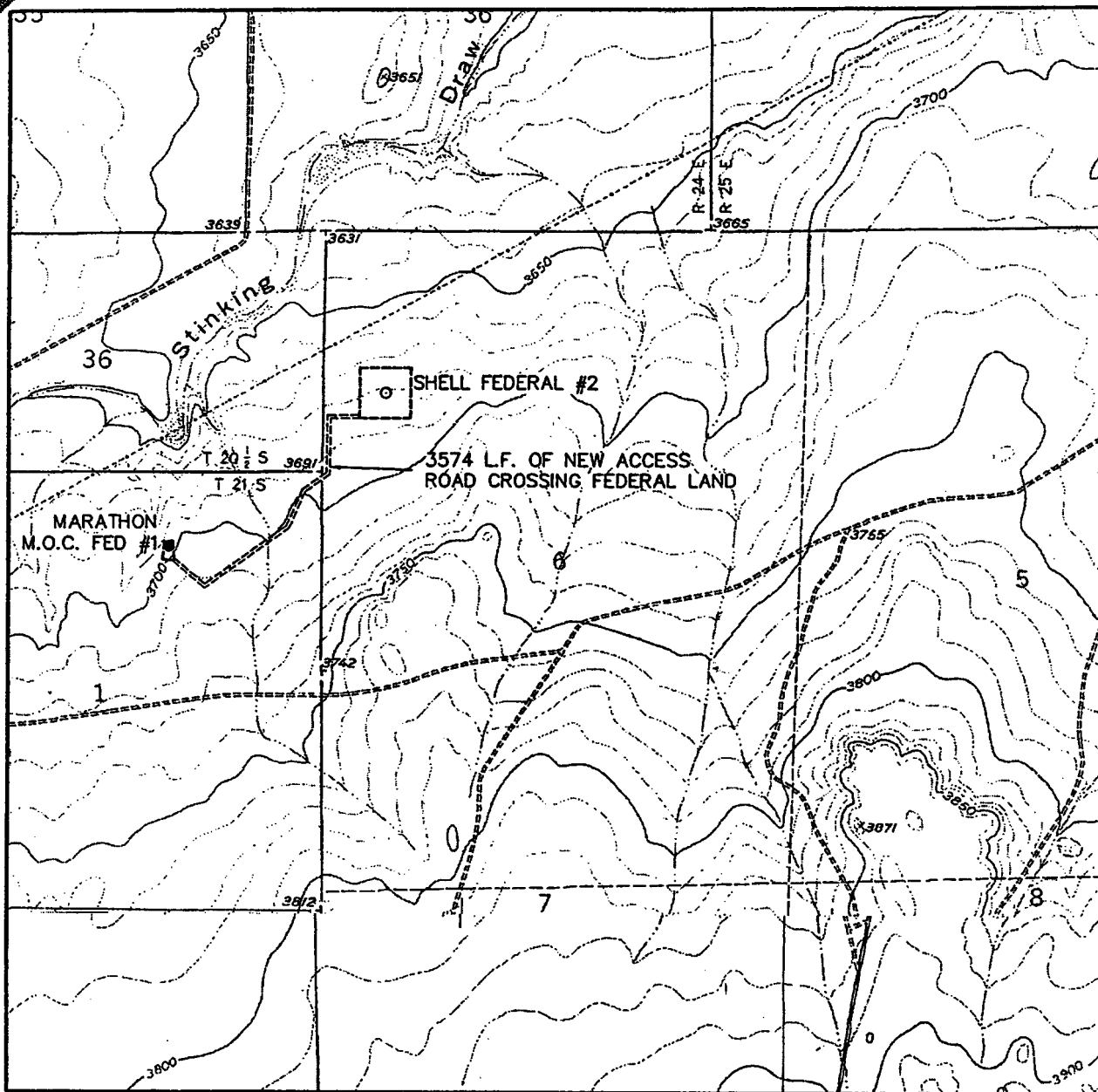
**BC OPERATING - EMERGENCY CALL OUT NUMBERS**

<b>NAME</b>	<b>TITLE</b>	<b>OFFICE NUMBER</b>	<b>CELL NUMBER</b>	<b>HOME NUMBER</b>
Jerry Livingston	Drilling Foreman	(432) 684-9696	(432) 664-3189	(432) 523-3755
Kevin Widner	Operations Manager	(432) 684-9696	(432) 425-4829	(432) 520-3557

**Emergency Notification Numbers  
Eddy, County**

<b>Organization or Agency</b>	<b>Phone Number</b>
<b>New Mexico State Police</b>	<b>(505) 885-3137</b>
<b>Eddy County Sheriff's Department</b>	<b>(505) 887-7551</b>
<b>Emergency Medical Service (Ambulance)</b>	<b>911</b>
<b>Eddy County Emergency Management</b>	<b>(505) 887-9511</b>
<b>State Emergency Response Center (SERC) Max Johnson (Chairman)</b>	<b>(505) 476-9620</b>
<b>Carlsbad Fire Department</b>	<b>911 or (505) 885-3125</b>
<b>Oil Conservation Division (District II)</b>	<b>(505) 748-1283</b>
<b>National Response Center (NRC)</b>	<b>(800) 424-8802</b>

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:  
FOSTER RANCH - 10'

SEC. 6 TWP. 21-S RGE. 24-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 1980' FNL & 660' FWL

ELEVATION 3677'

OPERATOR BC OPERATING, INC.

LEASE SHELL FEDERAL

U.S.G.S. TOPOGRAPHIC MAP  
FOSTER RANCH



**WEST  
COMPANY**  
of Midland, Inc.

110 W. LOUISIANA, STE. 110  
MIDLAND TEXAS, 79701  
(432) 687-0865 - (432) 687-0868 FAX



## **EMERGENCY PROCEDURES FOR UNCONTROLLABLE RELEASE OF HYDROGEN SULFIDE GAS (H<sub>2</sub>S)**

1. Secure and don self-contained breathing apparatus.
2. Remove all personnel to an upwind and uphill "safe breathing" zone.
3. Contact all concerned employees and immediate supervisor for instructions.
4. Take steps to protect and/or remove the general public to an upwind area away from the source of H<sub>2</sub>S.
5. Deny entry to unnecessary personnel.
6. Notify necessary public safety personnel (for assistance in the evacuation of the general public and to help maintain roadblocks):
  - a. State Police if on or near a **state road**
  - b. Sheriff's Department if on or near a **county road**
7. Contact the Oil Conservation Division (OCD).
8. While attempting to control the release, maintain tight security and safety procedures.
9. Use the "Buddy System" when entering any hazardous areas.

*The responsibility of this plan is with the B.C. OPERATING, INC. supervisor(s) who shall be in complete command during the emergency.*

## **IGNITION PROCEDURES FOR UNCONTROLLABLE WELL CONDITIONS**

The decision to ignite the well is the decision of the company supervisor(s). This decision should be made only as a last resort and in a situation where it is determined that:

- Human life and/or property are endangered
- There is no hope of controlling the blowout under the prevailing conditions at the well.

## **INSTRUCTIONS FOR IGNITING THE RELEASE**

1. Two personnel are required for the ignition operation. They **must** wear positive pressure self-contained breathing apparatus and a D-ring style full body safety harness with a non-flammable safety rope attached. (Must be an OSHA approved body harness)
2. One (safety) person will test the atmosphere for explosive gases with an approved Triple-range ( $H_2S$ ,  $O_2$ , LFL) monitor. The other person (company supervisor) is responsible for igniting the well.
3. Primary method of ignition shall be with the 25mm flare gun with range of approximately 500 feet.
4. Ignite up-wind and do not approach any closer than is warranted.
5. Select a safe ignition site which offers ultimate egress.
6. Before activating flare gun, check for presence of combustible gas.
7. After ignition, continue emergency action and procedure as before.
8. All unassigned personnel will limit their actions to those directed by the company supervisor.

After the well is ignited, burning  $H_2S$  will produce  $SO_2$ , which is also highly toxic. Do not assume the area is safe after the well is ignited.

A NO SMOKING POLICY shall be strictly enforced on location at all times.



# **EMERGENCY EQUIPMENT REQUIREMENTS**

## **1. Respiratory Protection**

- **Rescue Units (SCBA's) :** One (1) unit shall be placed at each briefing area and 2 shall be stored in the safety trailer.
- **Work/EscapE Units:** Four (4) units shall be stored on the rig floor connected to the safety trailer with sufficient hose to allow workers to adequately perform duties with minimal restriction.
- **Emergency Escape Units:** Four (4) units shall be stored in the top dog house for emergency evacuation purposes.

## **2. Signs and Flags**

- **One (1) Condition Sign shall be placed at location entrance with the following language:**

**DANGER  
H<sub>2</sub>S**

**POTENTIAL DANGER (Green)**

**MODERATE DANGER (Yellow)**

**EXTREME DANGER (Red)**

- **Condition Flags shall be displayed at the sign in one of the following designations:**

**Green / normal conditions      Yellow / potential danger      Red/ danger, H<sub>2</sub>S Present**

- 3. Briefing Area:** Two (2) briefing areas, designated by signs, shall be located perpendicular to each other and be easily visible and readily accessible.
- 4. Windsocks:** Two (2) windsocks shall be strategically placed where they are easily visible from all points.

## **5. Hydrogen Sulfide Detectors and Alarms:**

- One (1) stationary H<sub>2</sub>S monitor with three sensors shall be located on the rig in the top dog house. The H<sub>2</sub>S monitor shall be calibrated to alarm at 10PPM for the low alarm (visual alarm) and 15 PPM for the high alarm (audible alarm). Calibrations shall be checked every 30 days or as needed. The sensors shall be located as follows:

#1 – Rig floor

#2 – Bell Nipple

#3 – Flow line or where the well bore fluid is discharged

- A gas sampling pump, with detector tubes capable of measuring H<sub>2</sub>S gas, shall be located in the safety trailer.

## **6. Additional Rescue Equipment**

- One Hundred Feet (100') of 5/8" OSHA approved rope.
- Two (2) OSHA approved full body harness
- One (1) Stretcher

## **7. Fire Extinguishers:**

- One (1) 20#, Class ABC fire extinguisher shall be located in the safety trailer.

## **8. Communication:**

- Cellular Phones/Mobile Phones or two- way radios shall be available via the vehicles on location and on the rig floor.

## **TOXIC EFFECTS OF HYDROGEN SULFIDE**

Hydrogen sulfide (H<sub>2</sub>S) is extremely toxic. The acceptable ceiling concentration for an eight (8) hour exposure is 10 PPM, which is .001% by volume. Hydrogen sulfide (H<sub>2</sub>S) is colorless. Hydrogen Sulfide (H<sub>2</sub>S) is heavier than air, the specific gravity is equal to 1.19 which is 20% heavier than ambient temp air which is 1.00. Hydrogen sulfide (H<sub>2</sub>S) can form an explosive mixture with air between 4.3% and 46.0%. By volume hydrogen sulfide (H<sub>2</sub>S) is as toxic as hydrogen cyanide and is between 5-6 times more toxic than carbon monoxide.

### **TOXICITY OF VARIOUS GASES**

<i>Common Name</i>	<i>Chemical Formula</i>	<i>Specific Gravity</i>	<i>Threshold Limit<sup>1</sup></i>	<i>Hazardous Limit<sup>2</sup></i>	<i>Lethal Concentration<sup>3</sup></i>
Hydrogen Cyanide	HCN	0.94	10 PPM	150 PPM/Hr	300 PPM
Hydrogen Sulfide	H <sub>2</sub> S	1.189	10 PPM <sup>4</sup> 15 PPM <sup>5</sup>	100 PPM/Hr	600 PPM
Sulfur Dioxide	SO <sub>2</sub>	2.21	2 PPM	N/A	100 PPM
Chlorine	CL <sub>2</sub>	2.45	1 PPM	4 PPM/Hr	1000 PPM
Carbon Monoxide	CO	0.97	50 PPM	400 PPM/Hr	1000 PPM
Carbon Dioxide	CO <sub>2</sub>	1.52	5000 PPM	5%	10%
Methane	CH <sub>4</sub>	0.55	90,000 PPM	Combustible @ 5%	N/A

- (1) Threshold limit – Concentration at which it is believed that all workers may be repeatedly exposed, day after day with out adverse effects also referred to as Time Weighted Average (TWA).
- (2) Hazardous limit – Concentration that may cause death
- (3) Lethal concentration – Concentrations that will cause death with short-term exposure
- (4) Threshold limit – 10PPM – NIOSH guide to chemical hazards
- (5) Short- term threshold limit – Concentration higher than Threshold limit with limits placed on time one can be exposed. Exposure time is limited to 15 minutes followed by one (1) hour in fresh air. This cycle can be repeated for (4) times during a normal eight (8) hour work day.

## **PHYSICAL EFFECTS OF HYDROGEN SULFIDE (H<sub>2</sub>S)**

*(Concentrations are calculated @ 15.00 psia and 60 degrees F.)*

Concentrations		Physical Effects
0.001%	10 PPM	Obvious & unpleasant odor. Safe for an eight (8) hour exposure
0.005%	50 PPM	Can cause some flu-like symptoms and can cause pneumonia.
0.01%	100 PPM	IDLH <sup>1</sup> . Kills the sense of smell in 3 to 15 minutes. May irritate eyes and throat.
0.02%	200 PPM	Kills the sense of smell rapidly. Severely irritates eyes and throat. Severe flu-like symptoms after 4 or more hours may cause lung damage and/or death.
0.06%	600 PPM	Loss of consciousness quickly, death will result if not rescued promptly.

(1) Immediately dangerous to life or health

# TOXICITY OF HYDROGEN SULFIDE

H <sub>2</sub> S Per Cent (PPM)	0-2 Minutes	0-15 Minutes	15-30 Minutes	30 Minutes to 1 Hour	1-4 Hours	4-8 Hours	8-48 Hours
0.005 (50 ppm) 0.010 (100 ppm)				Mild Conjunctivitis; Respiratory Tract Irritation			
0.010 (100 ppm) 0.015 (150 ppm)		Coughing; Irritation of Eyes; Loss of Sense of Smell	Disturbed Respiration; Pain in Eyes; Sleepiness	Throat	Salivation & Mucous Discharge; Sharp Pain in Eyes; Coughing	Increased Symptoms*	Hemorrhage & Death *
0.015 (150 ppm) 0.020 (200 ppm)		Loss of Sense of Smell	Throat & Eye Irritation	Throat & Eye Irritation	Difficult Breathing; Blurred Vision; Light & Shy	Serious Irritating Effects	Hemorrhage & Death *
0.025 (250 ppm) 0.035 (350 ppm)	Irritation of Eyes; Loss of Sense of Smell	Irritation of Eyes	Painful Secretion of Tears; Weariness	Light & Shy; Nasal Catarrh; Pain in Eyes; Difficult Breathing	Hemorrhage & Death		
0.035 (350 ppm)		Irritation of Eyes; Loss of Sense of Smell	Difficult Respiration Coughing; Irritation of Eyes	Increased Irritation of Eyes & Nasal Tract; Dull Pain Head; Weariness; Light & Shy	Dizziness Weakness; Increased Irritation; Death	Death *	
0.050 (500 ppm)	Coughing Collapse & Unconsciousness	Respiratory Disturbances; Irritation of Eyes; Collapse	Serious Eye Irritation; Palpitation of Heart; Few Cases of Death*	Severe Pain in Eyes and Head Dizziness; Trembling of Extremities; Great Weakness & Death *			
0.060 (600 ppm) 0.070 (700 ppm) 0.080 (800 ppm) 0.100 (1000 ppm) 1.150 (1500 ppm)	Collapse * Unconsciousness Death *	Collapse * Unconsciousness Death *					

\* Data secured from experiments of dogs, which have susceptibility similar to men/women. \*\*PPM parts per million



## **THE USE OF SELF-CONTAINED BREATHING AIR EQUIPMENT**

SCBA should be worn when:

- Working near the top or on top of any tank.
- Disconnecting any line where H<sub>2</sub>S can reasonably be expected.
- Sampling air in the area to determine if toxic concentrations of H<sub>2</sub>S exist.
- Working in areas where over 10 PPM of H<sub>2</sub>S has been detected.
- At any time there is a doubt as to the H<sub>2</sub>S level in the area to be entered.

Air quality testing shall be continuous throughout the entire operation if a container is breeched or in a hazardous location.

All personnel shall be trained in the use of SCBA prior to working in a potentially hazardous location.

Facial hair and standard eyeglasses are not allowed with SCBA use.

Contact lenses are never allowed with the use of SCBA.

The SCBA shall be inspected monthly.

After each use, the SCBA shall be cleaned, disinfected, serviced, inspected and refilled to proper specifications.

## **RESCUE & FIRST AID FOR VICTIMS OF HYDROGEN SULFIDE (H<sub>2</sub>S) POISONING**

Do not panic!

Remain calm and think with your head and not your heart.

Don breathing apparatus.

Protect yourself, then remove victim to fresh air as quickly as possible.  
When evacuating: walk not run, upwind and uphill from the source or crosswind to achieve upwind.

Notify emergency response personnel

Provide artificial respiration and /or CPR, as necessary.

Remove all contaminated clothing to avoid further exposure.

A minimum of two (2) personnel on location shall be trained in CPR and First Aid.