Form 3160-3 (J[illegible]992)

Harvey E. Yates Company

N.M. Oil Cons. DIV-Dist. 2
1301 W. Grand Avenue
Artesia, NM 88210

SHL NM 2538

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

5. LEASE DESIGNATION AND SERIAL NO.: NM~~2537~~ / 06718 BHL

6. IF INDIAN, ALLOTEE OR TRIBE NAME: 26108

1a. TYPE OF WORK: DRILL [ ] DEEPEN [X]

7. UNIT AGREEMENT NAME: CHOLLA 1 FEDERAL

b. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] OTHER — SINGLE ZONE [X] MULTIPLE ZONE [ ]

8. FARM OR LEASE NAME, WELL NO.: 5H

2. NAME OF OPERATOR: HARVEY E. YATES COMPANY 10179

9. API WELL NO.: 30-015-26256

3. ADDRESS AND TELEPHONE NO.: P.O. BOX 1933, ROSWELL, NEW MEXICO 88202 505-623-6601 58040

10. FIELD AND POOL, OR WILDCAT: ~~Tamano~~ BONE SPRING

RECEIVED
NOV 18 2005
OCD-ARTESIA

4. LOCATION OF WELL (REPORT LOCATION CLEARLY AND IN ACCORDANCE WITH ANY STATE REQUIREMENTS)

AT SURFACE: 330' FSL & 1,930' FWL

11. SEC., T., R., M., OR BLK AND SURVEY OR AREA: SEC 1, T18S, R31E

AT PROPOSED PROD. ZONE: 990' FSL & 330' FEL

12 COUNTY OR PARISH: EDDY — 13. STATE: NM

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE: 20 MILES SE OF LOCO HILLS, NM

15. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
330	640.24	160
18. DISTANCE FROM PROPOSED LOCATION TO NEAREST WELL DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
450'	8,760' TVD	ROTARY

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3779

APPROX. DATE WORK WILL START: ASAP

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE, SIZE OF CASING	WT PER FT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13 3/8" H-40	48#	350'	IN PLACE CEMENT CIRCULATED
12 1/4"	8 5/8" J-55	32#	2,400'	IN PLACE CEMENT CIRCULATED
7 7/8"	5 1/2" J-55	17#	9060	IN PLACE TOP OF CEMENT 1,480' C/O @ 1,400'
4 3/4"	3 1/2" P-110	9.3#	8,900' TVD + 2,195' HORIZ	135 SX

ALL CASING WILL BE NEW, OR USED MEETING BLM SPECS.
CEMENT QUANTITIES AND ADDITIVES ARE SUBJECT TO CHANGE DUE TO HOLE CONDITIONS.
3 1/2" LINER CEMENT 135 SX CLASS H, W/ SODIUM METASILLICATE, DISPERSANT AND FLUID LOSS

THIS IS A RE-ENTRY OF THE P&Aed THORNBUSH FEDERAL #1. SEE ATTACHED PROCEDURE

CAPITAN CONTROLLED WATER BASIN

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

PROPOSED MUD PROGRAM

0-8,200'	FRESH WATER
8,200' TO 1,950' HORIZ.	MUD UP WITH BARAZAN D, MW 9.4-9.8 VIS 34-36

MUD PROGRAM SUBJECT TO CHANGE DUE TO HOLE CONDITIONS
SEE ATTACHED PROCEDURE FOR HORIZONTAL DRILLING

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED: Bob Williams — Bob Williams — TITLE: Drilling Superintendent — DATE: 9/26/05

(THIS SPACE FOR FEDERAL OR STATE OFFICE USE)

PERMIT NO. _____ APPROVAL DATE _____

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:

APPROVED BY: /s/ Joe G. Lara — TITLE: ACTING FIELD MANAGER — DATE: NOV 16 2005

TITLE 18 U.S.C. SECTION 1001, MAKES IT A CRIME FOR ANY PERSONS 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

APPROVAL FOR 1 YEAR

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

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

Form C-102
Revised June 10, 2003
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-015-26256	58046	Tamano BONE SPRING

[4] Property Code	[5] Property Name	[6] Well Number
	CHOLLA 1 FEDERAL	5

[7] OGRID No.	[8] Operator Name	[9] Elevation
010174	Harvey E. Yates Company	3779

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	1	18 S	31E		330	SOUTH	1,930	WEST	EDDY

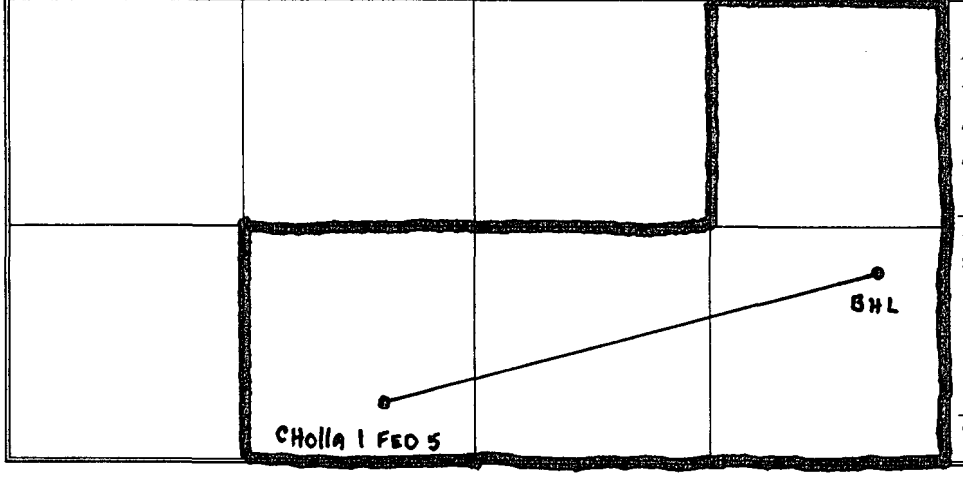
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	1	18S	31E		990	SOUTH	330	EAST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
160	N	COM AGR.	N/A

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

16



[17] OPERATOR CERTIFICATION

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

Bob Williams
Signature

Bob Williams
Printed Name

Drilling Superintendent
Title and E-mail Address

9-27-05
Date

[18] SURVEYOR CERTIFICATION

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

original - 11/5/1990
Date of Survey

Signature and Seal of Professional Surveyor:

orig by
Certificate Number

Surface Use Plan
Harvey E. Yates Company
Cholla 1 Federal #5H
Section 1, T18S, R31E
Eddy County, New Mexico

1 **Existing Roads:**
Exhibit A is a portion of a New Mexico map showing the location of the proposed location.
The location is approximately 16 miles Southeast of Loco Hills, NM. Leave Artesia on US 82
& travel 31 miles east to the junction of NM 222. Turn South and go 3.3 miles. Turn left after crossing cattle
Go 1.6 miles on main traveled road to 4-way intersection. Turn right and go 1.6 miles. Turn right and go 0.1
Turn left & go 1 mile to location.

2 **Planned Access Roads:**
No new road will be built to access this location.

3 **Location of Existing Wells:**
See EXHIBIT B

4 **Location of Tank Batteries, Electric Lines, Etc:**
In the event a producing well is drilled, a tank battery will be built on the location.

5 **Location and Type of Water Supply:**
Water will be obtained from commercial sources.

6 **Source of Construction Material:**
We will use materials from a state approved caliche pit to build the location.

7 **Methods of Handling Waste Disposal:**
Waste will be handled in an approved manner. The wellsite will be cleaned of all waste within 30 days of final completion of the well.

8 **Ancillary Facilities:**
N/A

9 **Wellsite Layout:**
a. EXHIBIT D shows the relative location and dimensions of the well pad, reserve pits, and major rig components.

b. The land is rolling and sandy

c. The pad and pit area have been staked.

Application
Harvey E. Yates Company
Cholla 1 Federal #5H
SEC 1 T18S, R31E
Eddy County, New Mexico

In conjunction with Form 3160-3, Application For Permit To Drill Or Deepen subject well, Harvey E. Yates Company submits the following ten items of pertinent information in accordance with Onshore Oil & Gas Order No 10.

1. **Geologic Name of Surface Formation:**
   Quaternary alluvium and bolson deposits.

2. **Estimated Tops of Significant Geologic Markers:**

Rustler	918	BSPG A Zone	7,350	
Yates	2,395	BSPG 1st Sand	7,589	
Seven Rivers	2,780	B-Zone	7,840	
Bowers	3,225	Kick Off Point	7,850	T.V.D.
Queen	3,484	Main Pay Carb.	8,031	8030
Penrose	3,716	BSPG 2nd Sand	8,135	8,130
Grayburg	4,006	Base A Bench	8,264	8,250
San Andres	4,542	Top B Bench	8,487	8,435
Delaware	4,821	Top C Bench	8,693	8,575
BSPG LS	5,670	1st Horz. Point	9,260	8,750
		BHL Target @TD	11,455	8,760

3. **Estimated Depths at which Water, Oil, or Gas Formations are expected:**
   Oil: 8,135
   Gas: 8,135

4. **Proposed Casing Program:**
   See Form 3160-3

5. **Pressure Control Equipment:**
   This well will be rated 2M, but actual BOP Stack will be rated 5M

6. **Drilling Fluid Program:**
   See Form 3160-3

7. **Auxiliary Equipment:**
   H2S Compliance Package

8. **Testing, Logging, and Coring Program:**
   GR-MWD (MD and TVD) Possible Thermal Neutron Type Log (Tubing)

9. **Abnormal Conditions, Pressures, Temperature, or Potential Hazards:**
   No abnormal conditions are anticapated in this wellbore
   BHST 150° F
   BHP 1,7000 psi
   Possible H2S

10. **Anticipated Starting Date & Duration of Operation:**
    Start Date: ASAP Duration of this project will be approximately
    50 days from start of construction of drilling pad until finish of completion operations.

10 **Plan for Restoration of the Surface:**

a. After drilling and completion operations are completed, all equipment and other materials not needed for further operations will be removed. Pits will be back filled and the location cleaned of all trash to leave the wellsite as pleasant in appearance as possible.

b. If the proposed operation is nonproductive, all restoration and/or vegetation requirements of the BLM will be complied with, and will be accomplished as quickly as possible. All pits will be filled and leveled within 90 days after abandonment.

11 **Other Information:**

a. The surface and mineral owner is the Federal Government. The grazing Lesee is Williams & Son Cattle Company, and they will be contacted regarding operations.

b. The topography consists of sandy soil with native grasses. No wildlife was observed, but the usual inhabitants of this region are Jackrabbits, Reptiles, Coyotes, etc.

c. There are no ponds, lakes, or rivers in this area.

d. An Archaeological Survey will be done and a copy sent to the Carlsbad BLM office. There are no occupied dwellings or windmills in the area.

e. Should any incidental oil be recovered during testing of this well, this oil will be considered waste oil and not sellable due to contamination by drilling and/or completion fluids.

12 **Operator's Representative:**

I certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which currently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; that the work associated with operations proposed herein will be performed by Harvey E. Yates Company 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 provisions of 18 U.S.C. 1001 for the filing of a false statement.

09/27/05

Bob Williams

Bob Williams Drilling Superintendent
Harvey E. Yates Company
P.O. Box 1933
Roswell, NM
505-623-6601

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Roswell Resource Area
P.O. Drawer 1857
Roswell, New Mexico 88202-1857

Statement Accepting Responsibilities for Operations

Operator Name: Harvey E. Yates Company
Street or Box: P.O. Box 1933
City, State: Roswell, New Mexico
Zip Code: 88202

The undersigned accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof, as described below.

Lease No.:

Lease Name: Cholla 1 Federal #5H

Legal description of land: Sec 1, T18S, R31E, Eddy County, New Mexico

Formation(s) (if applicable): Bone Springs 2nd Sand

Bond Coverage: (State if individually bonded or another's bond): Blanket Bond

BLM Bond File No.:

Authorized Signature: Bob Wilson

Title: Drilling Superintendent

DATE: 9/27/05

EXHIBIT "C" BOP STACK

Cholla 1 Fed #5H
330' FSL & 1,930' FWL
Sec 1, T18S, R31E
Eddy County, NM

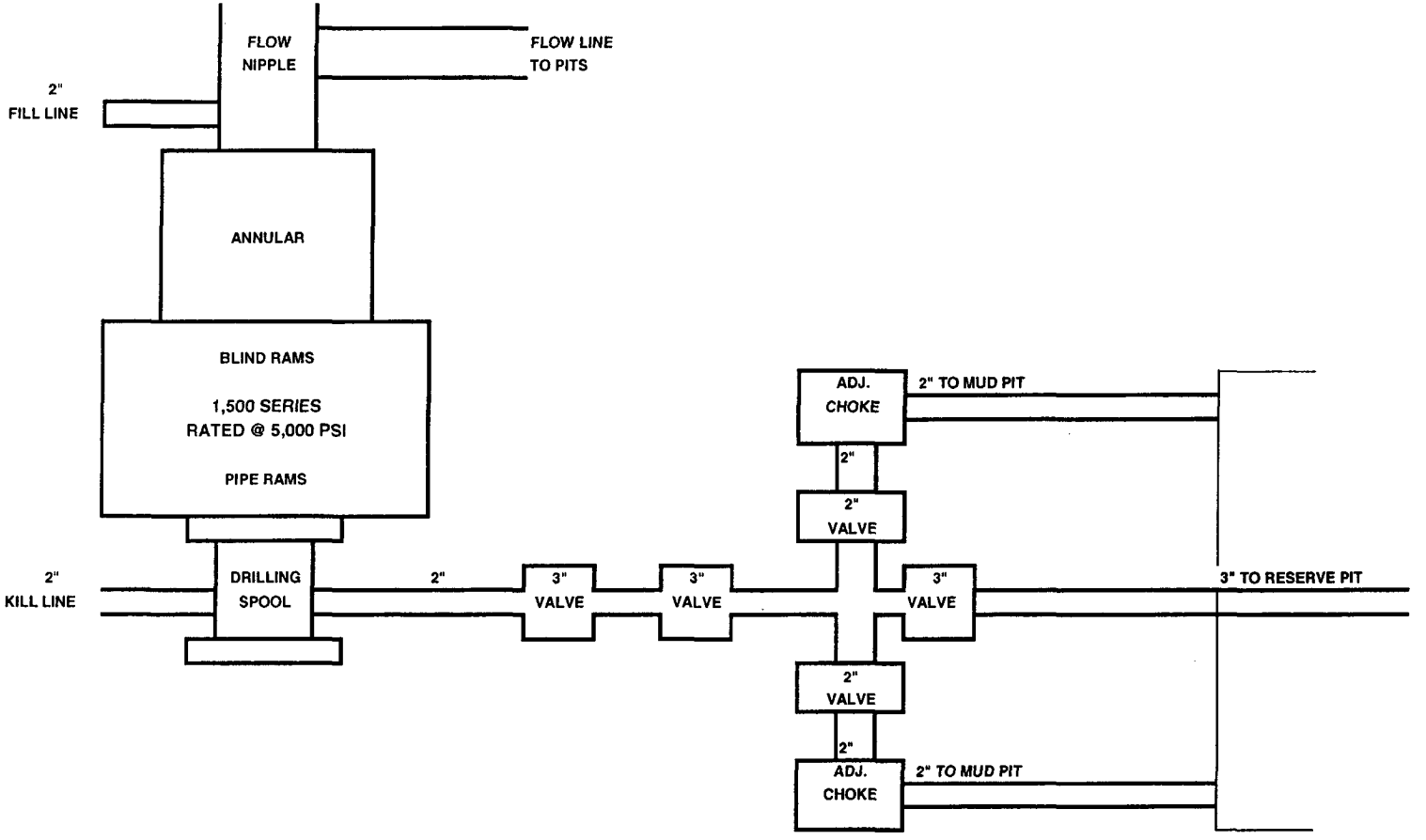
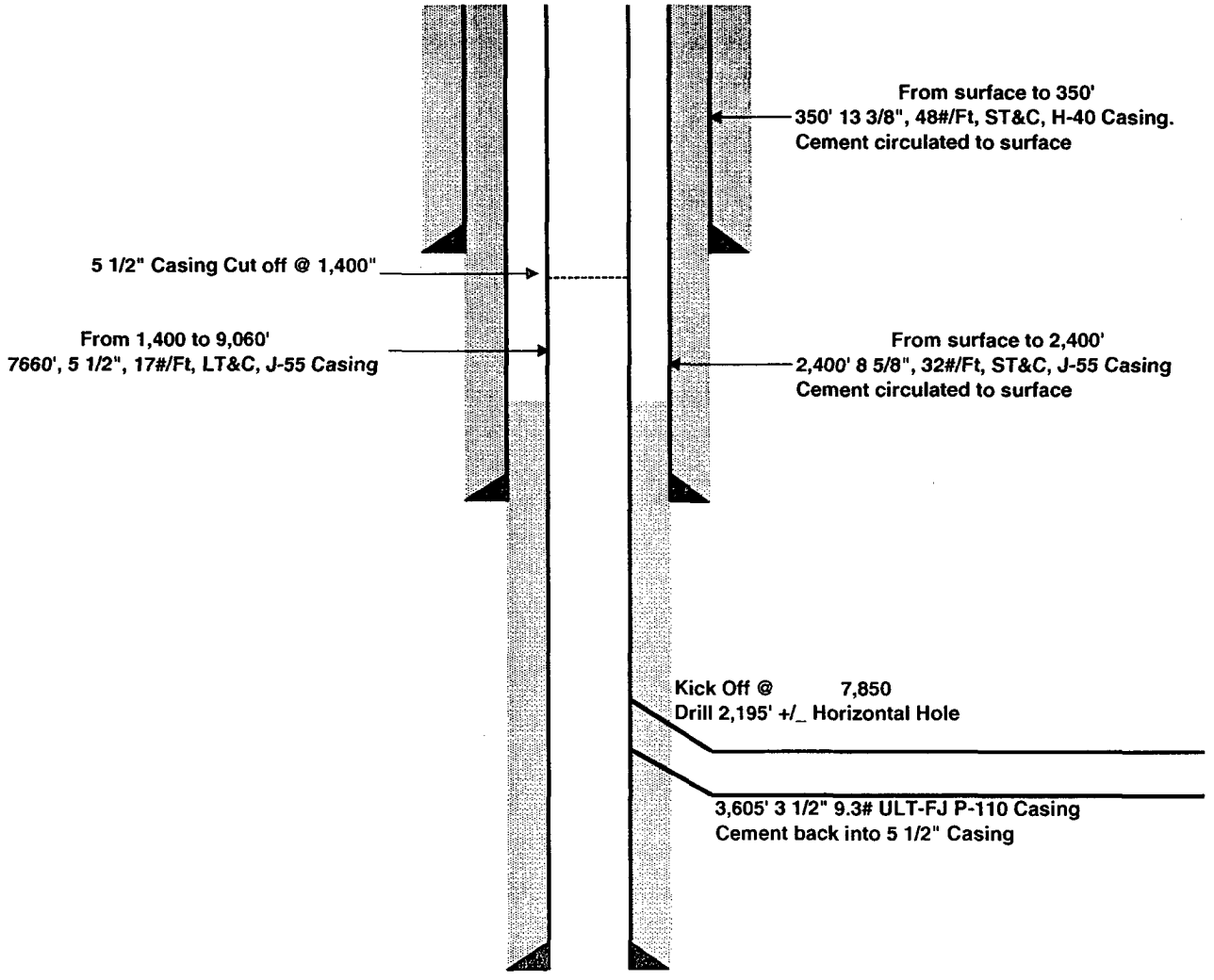


EXHIBIT "E" CASING DESIGN

Cholla 1 Fed #5H
330' FSL & 1,930' FWL
Sec 1, T18S, R31E
Eddy County, NM

13 3/8" and 8 5/8" Casings are in place and cemented.



Cholla 1 Fed. #5 – Horizontal Drilling Procedure

Prior to Drilling

1. Once approved APD is received, build location.

2. Dig out around dry hole marker to csg cutoff. Remove dry hole marker and install wellhead (8-5/8" SOW X 11" 3000# starting head). Space out wellhead so that flange is at ground level. Deliver 8000' of 2-7/8" 6.5# EUE N-80 tbg.

3. MIRU PU. RU BOP, PU 7-7/8" bit and drill out surface plug. Continue in hole and drill out cmt plugs at 288' – 403' & 1358' – 1400'.
   Note: 5-1/2" csg stub at 1400' +/-.

4. Test 8-5/8" csg to 1000 psi. If OK, POOH. GIH w/ 4-3/4" bit and try to enter 5-1/2" csg stub. Call office w/ results. POOH.

5. GIH w/ impression block. POOH and check impression block in order to determine type of mill to run in hole. Call office w/ results.

6. GIH w/ mill & mill csg to depth determined by office. POOH.

7. GIH w/ impression block. POOH and check impression block. Call office w/ results.
   Note: May need to RIH w/ a skirted mill to make sure we can get over the outside of the csg stub. May need to RIH w/ jt of washover pipe.

8. POOH w/ tbg and rig up to run 5-1/2" csg.

9. RIH w/ 7" 20# X 5-1/2" 17# short joint and 5-1/2" 17# csg. Get over 5-1/2" with the short joint and stack out to weight determined by office.

10. RU BJ and cement 5-1/2" csg.

11. GIH w/ 4-3/4" bit, collars and tbg. Drill out float collar and cmt. Work bit through csg stub. POOH.

12. GIH w/ taper mill and work through top of stub. Test csg to 2000 psi and call office with results. POOH.

13. GIH w/ bit & collars. Drill out cmt plug at 2330' – 2465'. Continue in hole and drill out CIBP at 4595' with 100' +/- of cmt on top. POOH.

14. GIH w/ pkr and tbg. Set pkr at 4570' and test to 500 psi. Establish injection rate & pressure into sand cut perfs at 4637'. POOH and call Bill Caperton with results.

15. GIH w/ cmt retainer and test tbg to 5000 psi. Set retainer at 4600' +/-, establish injection rate through retainer and cmt squeeze perfs at 4637' to 3000 psi. Sting out of retainer and reverse tbg clean. POOH and shut in over night.

16. GIH w/ bit, collars and tbg. Drill out cmt retainer & cement, and test squeezed perfs to 2500 psi for 15 min. Call office w/ results.

17. Continue in hole and drill out CIBP at 7600' with 35' +/- of cmt above. Continue in hole to PBTD of 7815' +/- (CIBP at 7850' with 35' +/- cmt above). Circ hole clean and call office with PBTD. Close BOP and establish injection rate into perfs at 7678' – 7692'. POOH and call Bill Caperton with results.

18. GIH w/ cmt retainer and test tbg to 5000 psi. Set retainer at 7630' +/-, establish injection rate through retainer and cmt squeeze perfs at 7678' – 7692' to 3000 psi. Sting out of retainer and reverse tbg clean. POOH and shut in over night.

19. GIH w/ bit, collars and tbg. Drill out cmt retainer & cement, and test squeezed perfs to 2500 psi for 15 min. Call office w/ results. Continue in hole and drill out to 7870' (CIBP at 7850' with 35' of cmt above).
Note: Do not drill through CIBP.

20. Call office with PBTD. POOH and lay down tbg and collars. Have tbg hauled to Yard. RDMO.

Drilling Procedure

1. MIRU drilling contractor and equipment. Bring out 12,000' of 10.4# S-135 2-7/8" AOH DP, handling tools, subs, kelly valve, TIW valve and install stripper head.

2. RU Suttles Mudloggers and Pason digital geolograph.

3. Install wear bushing and NU the 7-1/16", 5M BOP Equipment and choke manifold as follows:
   - 7-1/16", 5M Annular Preventer
   - 7-1/16", 5M Blind Rams
   - 7-1/16", 5M Pipe Rams
   - 7-1/16", 5M x 7-1/16", 5M mudcross
   - RU 5M Choke Manifold

4. Test BOP Equipment:
   - Test BOP to 2000 psi (annular preventer to 1200 psi): with a low test of 250 psi, bleed off to 0 psi (test w/ independent BOP tester).

5. Rig up scientific drilling and run gyro survey to PBTD of 7870'.

6. Tally in hole w/ dummy mill and tag 7870' PBTD. POOH and lay down mill.

7. Prior to picking up whipstock assembly, ensure that the gyro will seat into the orienting lug. TIH w/ Weatherford's 4-1/2" OD whipstock. Stop 5' above 7870' PBTD and run gyro to determine the direction of the whipstock face. Rotate the pipe as needed to achieve the required direction (azimuth of 77.67 degrees). Lower the pipe to within one foot of PBTD and take another gyro reading. If necessary, rotate pipe to obtain required orientation. Confirm azimuth setting w/ 5 consistent readings.

8. Set whipstock w/ 3-5k. Keep gyro tool in orientation tool while lowering and adjust as necessary. After setting the slips, confirm settings with 5 consecutive readings. If the orientation is correct, shear the starting mills of the whipstock.

9. Pick up swivel and begin cutting window. Continue until the whole assembly has cleared the casing. Drill 5' of rathole, pumping sweeps as necessary. Circulate hole clean and TOH.

10. Inspect the mill on the surface. If mills are 1/8" or less out of gauge, run drilling assembly instead of making an extra mill run.

11. Rig up Inteq, Suttles Mudloggers and Pason Unit. TIH w/ Inteq's bottomhole assembly. RU and run gyro. Orient motor and drill w/ gyro until able to use MWD readings.

12. Build curve to estimated target depths and angles as follows:
    True Vertical Depth ..... 8,750'
    Measured Depth ..... 9,259'
    Final Angle ..... 89.74 degrees
    Target Azimuth ..... 77.67 degrees
    Build Rate ..... 6.37 degrees/100'

13. Drill the curve sliding as necessary to stay on target (Note: After each slide, pull back bit and wash through the slide). When the curve is built, rotate through the curve section and record tight spots and fill. Make at least one short trip prior to tripping out of hole.

14. TIH w/ Inteq's lateral assembly (4-3/4" bit, 3-3/4" motor, float sub/orienter combo, 2 – flexible monel collars and 2-7/8" drill pipe).

15. Drill 2196' +/- lateral. The end point will be 11,455' MD, 8760' TVD and 3091' of vertical section per the attached well plan. Azimuth will be held at 77.67 degrees and inclination at 89.74 degrees.

16. Sweep hole on connections with E-Z Mud as necessary for hole cleaning and lubricity. Use Bara-Lube or EPL-50 for torque reduction if necessary in lateral. Loss circulation material is not to be used.

17. Short trip above KOP for hole cleaning at any time as recommended by directional driller. Sweep and condition hole at TD of lateral and short trip to above KOP to insure that no cuttings remain. Circ lateral from TD until hole is clean.

18. TOH w/ drill string and LD all directional drilling tools, release Inteq equipment.

19. PU reamers and TIH. Ream lateral in preparation for running 3-1/2" liner. TOH.

20. PU and run 3-1/2" liner as described in liner and cementing schedules.

21. Retrieve wear bushing.

22. Rig down and release rig.

Liner & Cementing Schedules

Csg Size: **3-1/2", 9.3 ppf, P-110, ULT-FJ**
Depth: **7650' MD / 7650' TVD to 11,455' MD / 8760' TVD**

A. String Running Order From Bottom to Top

Item	Description	Approx. Length
1	3-1/2" Down Jet Guide Shoe, ULT-FJ	1'
2	1 jt 3-1/2" O.D., 9.3 ppf, P-110, ULT-FJ	31'
3	Float Shoe	5'
4	1 jt 3-1/2" O.D., 9.3 ppf, P-110, ULT-FJ	31'
5	All Catcher Sub (Landing Sub)	1'
6	3-1/2" O.D., 9.3 ppf, P-110, ULT-FJ	3704'
7	Weatherford X-Over Bushing	6'
8	5-1/2" X 3-1/2" Weatherford HCM Hydraulic Liner Hanger	10'
9	5-1/2" CSPH-15 Liner Top Packer w/ hold down slips and 15' tie back sleeve	16'

B. Casing Hardware Placement

Item	Description	Location
1	Rigid Rotating Centralizer	1 per jt f/ TD up to liner hanger

C. Casing Specifications: 3-1/2", 9.3 ppf, P-110, ULT-FJ

Make up Torque	Min = 2,700; Opt = 3,000; Max = 3,300
OD (Inches)	3.5
ID (Inches)	2.897
Drift ID (Inches)	2.867
Collapse (SF_C = 1.1)	12,300
Burst (SF_B = 1.25)	11,176
Tension (SF_T = 1.6)	123,000
Capacity (bbls/ft)	0.0087
Total String Weight in 8.3 ppg mud (BF = 0.8733)	22,000
Allowable Overpull (SF_T = 1.6)	101,000

D. Cement Specifications: 3-1/2" Liner

Cement Service	BJ Services
Excess Volume	30%
TOC	Liner Top – 8040'
Temp. Gradient	1
BHST (^{0}F)	131
BHCT (^{0}F)	125
Mud Weight (ppg)	8.3 to 8.8
Mud Type	Polymer
Frac Gradient @ Csg Point (EMW)	14.5 PPG
Fluid Loss (cc/30min)	130
Free Water (%) – 45^0 Slope Test	0
Gas Check Additive Required	NO
Strength Retrogression	NA
Pumping Time	5:00
48 HR Compressive Strength	1105 psi
Pump Rate Limits (bpm)	2.5
Temperature/CBL	NO
Cement Spacer	24 bbls of Mud Clean

E. Cement Slurries: 3-1/2" Liner

Stage	Description	Sacks	Weight	Cf/sx	H20/sx	TOC
	Class H Cmt + 1% bwoc FL-62 + 0.4% bwoc CD-32 + 0.2% bwoc Sodium Metasilicate + 45.7% Fresh Water	225	15.6	1.19	5.15	TOL

F. Cementing Procedure

1. Insure that all necessary items are on location and have been thoroughly checked.

2. Notify the BLM office in Carlsbad, NM (505-361-2822) twelve hours prior to running liner.

3. RU and run the 3-1/2" production liner as noted in Section "A" above. **(Drift all DP while running in hole w/ liner)**

4. Perform the following:
   a) RIH to 5-1/2" whipstock filling pipe and breaking circulation every 1000'. **(DO NOT exceed 500 psi. This may cause liner hanger to set)**
   b) Make up cementing head and stand back in derrick. RU cementing manifold. Circulate through liner. Get PU, SO, and rotating weights. **(DO NOT exceed 500 psi. This may cause liner hanger to set)**
   c) RIH to TD, filling pipe and breaking circulation every 1000'. If washing down is required in openhole, do not slack off more than theoretical liner weight.
   d) At TD, tag btm and mark pipe. Install cementing head. Note pick up and slack off weights. PU 5' +/- and circulate hole, limiting pressures to 500 psi..
   e) Test cementing lines to 5000 psi. When circulation is complete, drop the setting ball and pump at a slow rate to the Ball Seat Sub. **(Do not allow ball to slam into the seat, and do not exceed 500 psi.**
   f) When ball lands, slowly increase pressure to 2000 psi in 500 psi increments to set the liner hanger. Shut off pumps and slack off running string. The liner weight should be lost. When the liner is hung off, set down to the mark pipe.
   g) Bleed off pressure and pick up (leave 20,000 lbs. on the running tool). Release running tool w/ eight RH rotations and record torque. PU to check that tool is released. Do not pick up high enough to expose pkr setting dogs.
   h) After tool is released – apply 30,000 lbs. of drill pipe weight down. Pressure up to 2500 psi +/- to shear ball seat.
   i) Establish circulation and prepare to cmt.
   j) Cement as per the attached recommendation.
   k) Release drill pipe dart. Displace w/ fresh wtr. Ensure that all displacement goes through the cement pump truck displacement tanks. Slow down pump rate while displacing the last 10 bbls to 1.0-1.2 bpm.
   l) Do not over displace. When displacement is pumped, bleed off pressure and check for flow back.
   m) If there is full circ. during cmt job, slowly pick up the pkr setting dogs out of the pkr setting sleeve. Slowly lower the string down to position the packer setting dog sub on top of the setting sleeve. Slack off a minimum of 50,000 lbs. at the pkr (a shear will occur at approximately 25,000 lbs.).
   n) If returns are lost during the cmt job, contact the office.

Stimulation Procedure

1. MIRU PU and reverse unit. NU BOP. PU 4-3/4" mill and RIH to liner top. Drill out cmt and clean out liner top. POOH and inspect mill. PU Landing Sub Clean Out mill and mill out cmt in Landing Sub. POOH and inspect mill.

2. Pick up mill and GIH w/ CS-Hydril X-Over, and 2-7/8" tbg. Take mill to toe of liner (TD of 11,455'). Test csg and liner to pressure determined by office. Roll hole w/ fresh wtr. Pickle entire tbg string w/ 1000 gals 15% NEFE HCl acid. Spot 750 gals of 15% NEFE HCl acid. POOH w/ tbg and mill.

3. RU to perforate at depths determined by office. Pressure up backside to 2000 psi and perforate. Watch fluid level to see if formation takes acid. POOH and lay down guns.

4. PU pkr w/ by-pass and tbg. Test in the hole to 6000 psi. Set pkr @ 7600' (Liner Hanger @ 7650') and break down formation w/ spotted acid. RU BJ, open by-pass, and displace wtr out of tbg w/ acid. Close by-pass and acidize according to BJ acidizing schedule. RD BJ, RU swab and swab back spent acid.

5. RD swab. POOH and stand back 2-7/8" tbg. Change out BOP rams to accommodate 3-1/2" tbg. PU liner stinger and 3-1/2" tbg. Test in the hole to 12,000 psi and sting into liner top. Test stinger assembly by pressuring up back side to 1500# for 5 min. with tbg open.

6. MI, set frac tanks and prepare to fracture stimulate well. Fracture stimulate well according to BJ schedule.

7. RD BJ, and flow well back according to BJ flow back schedule. When FTP is zero, POOH and stand back 3-1/2" tbg. Change out BOP rams to accommodate 2-7/8" tbg. GIH w/ CS-Hydril X-Over and 2-7/8" tbg to check for fill. Reverse out any fill and POOH.

8. RIH w/ 3-1/2" composite BP, CS-Hydril X-Over, and 2-7/8" tbg. Set BP at depth determined by office. Spot 250 gals of 15% NEFE HCl acid. POOH.

9. RU to perforate at depths determined by office. Pressure up backside to 2000 psi and perforate. Watch fluid level to see if formation takes acid. POOH and lay down guns.

10. PU pkr w/ by-pass and tbg. Test in the hole to 6000 psi. Set pkr @ 7600' (Liner Hanger @ 7650') and break down formation w/ spotted acid. RU BJ, open by-pass, and displace wtr out of tbg w/ acid. Close by-pass and acidize according to BJ acidizing schedule. RD BJ, RU swab and swab back spent acid.

11. RD swab. POOH and stand back 2-7/8" tbg. Change out BOP rams to accommodate 3-1/2" tbg. PU liner stinger and 3-1/2" tbg. Test in the hole to 12,000 psi and sting into liner top. Test stinger assembly by pressuring up back side to 1500# for 5 min. with tbg open.

12. Fill up frac tanks and prepare to frac well. Fracture stimulate well according to BJ schedule.

13. RD BJ, and flow well back according to BJ flow back schedule. When FTP is zero, POOH and lay down 3-1/2" tbg. Change out BOP rams to accommodate 2-7/8" tbg.

14. RIH w/ bit, CS-Hydril X-Over, and 2-7/8" tbg. Drill out composite BP and check for fill. Reverse out any fill, POOH and lay down CS-Hydrill X-Over.

15. RU mud anchor and GIH w/ downhole equipment. Run pump and set production equipment.

16. Place on production.

Cholla 1 Federal #5H
330' FSL & 1,930' FWL
Sec 1, T18S, R31E
Eddy County, NM

Emergency Contact Numbers:

Heyco Office	**505-623-6601**
Well Site Drilling Office	**505-626-8866**
Drilling Foreman...Keith Cannon	**505-746-7771**
Drilling Supt...Bob Williams	**505-390-9035 (Cellular)** **505-396-3235 (Home)**
Eddy County Sheriff's Office	**505-746-9888**
New Mexico State Police	**505-748-9718**

HYDROGEN SULFIDE CONTINGENCY PLAN

SCOPE

THIS CONTINGENCY PLAN ESTABLISHES GUIDELINES FOR THE PUBLIC, ALL COMPANY EMPLOYEES WHO'S WORK ACTIVITIES MAY INVOLVE EXPOSURE TO HYDROGEN SULFIDE (H2S) GAS.

OBJECTIVE

1. PREVENT ANY AND ALL ACCIDENTS, AND PREVENT THE UNCONTROLLED RELEASE OF HYDROGEN SULFIDE INTO THE ATMOSPHERE.

2. PROVIDE PROPER EVACUATION PROCEDURES TO COPE WITH EMERGENCIES.

3. PROVIDE IMMEDIATE AND ADEQUATE MEDICAL ATTENTION SHOULD AN INJURY OCCUR.

H2S CONTINGENCY PLAN

DISCUSSION

GEOLOGICAL PROGNOSIS

IMPLEMENTATION:	THIS PLAN WITH ALL DETAILS IS TO BE FULLY IMPLEMENTED AFTER DRILLING TO INTERMEDIATE CASING POINT.
EMERGENCY RESPONSE PROCEDURE:	THIS SECTION OUTLINES THE CONDITIONS AND DENOTES STEPS TO BE TAKEN IN THE EVENT OF AN EMERGENCY.
EMERGENCY EQUIPMENT PROCEDURE:	THIS SECTION OUTLINES THE SAFETY AND EMERGENCY EQUIPMENT THAT WILL BE REQUIRED FOR THE DRILLING OF THIS WELL.
TRAINING PROVISIONS:	THIS SECTION OUTLINES THE TRAINING PROVISIONS THAT MUST BE ADHERED TO PRIOR TO DRILLING TO INTERMEDIATE CASING POINT.
DRILLING EMERGENCY CALL LISTS:	INCLUDED ARE THE TELEPHONE NUMBERS OF ALL PERSONS TO BE CONTACTED SHOULD AN EMERGENCY EXIST.
BRIEFING:	THIS SECTION DEALS WITH THE BRIEFING OF ALL PEOPLE INVOLVED IN THE DRILLING OPERATION.
PUBLIC SAFETY:	PUBLIC SAFETY PERSONNEL WILL BE MADE AWARE OF THE DRILLING OF THIS WELL.
CHECK LISTS:	STATUS CHECK LISTS AND PROCEDURAL CHECK LISTS HAVE BEEN INCLUDED TO INSURE ADHERENCE TO THE PLAN.
GENERAL INFORMATION:	A GENERAL INFORMATION SECTION HAS BEEN INCLUDED TO SUPPLY SUPPORT INFORMATION.

EMERGENCY PROCEDURES

A. IN THE EVENT OF ANY EVIDENCE OF H2S LEVEL ABOVE 10 PPM, TAKE THE FOLLOWING STEPS:

1. SECURE BREATHING EQUIPMENT.

2. ORDER NON-ESSENTIAL PERSONNEL OUT OF DANGER ZONE.

3. TAKE STEPS TO DETERMINE IF THE H2S LEVEL CAN BE CORRECTED OR SUPPRESSED AND, IF SO, PROCEED IN NORMAL OPERATION.

B. IF UNCONTROLLABLE CONDITIONS OCCUR:

1. TAKE STEPS TO PROTECT AND/OR REMOVE ANY PUBLIC IN THE DOWN-WIND AREA FROM THE RIG – PARTIAL EVACUATION AND ISOLATION. NOTIFY NECESSARY PUBLIC SAFETY PERSONNEL AND THE BUREAU OF LAND MANAGEMENT OF THE SITUATION.

2. REMOVE ALL PERSONNEL TO SAFE BREATHING AREA.

3. NOTIFY PUBLIC SAFETY PERSONNEL TO SAFE BREATHING AREA.

4. PROCEED WITH BEST PLAN (AT THE TIME) TO REGAIN CONTROL OF THE WELL. MAINTAIN TIGHT SECURITY AND SAFETY PROCEDURES.

C. RESPONSIBILITY:

1. DESIGNATED PERSONNEL.

a. SHALL BE RESPONSIBLE FOR THE TOTAL IMPLEMENTATION OF THIS PLAN.

b. SHALL BE IN COMPLETE COMMAND DURING ANY EMERGENCY.

c. SHALL DESIGNATE A BACK-UP.

EMERGENCY PROCEDURES

*(Procedures are the same for both Drilling and Tripping)

ALL PERSONNEL:

1. ON ALARM, DON ESCAPE UNIT AND REPORT IN UP WIND BRIEFING AREA.
2. CHECK STATUS OF PERSONNEL (BUDDY SYSTEM).
3. SECURE BREATHING EQUIPMENT.
4. AWAIT ORDERS FROM SUPERVISOR.

DRILLING FOREMAN:

1. REPORT TO UP WIND BRIEFING AREA.
2. DON BREATHING EQUIPMENT AND RETURN TO POINT OF RELEASE WITH TOOL PUSHER OR DRILLER (BUDDY SYSTEM).
3. DETERMINE H2S CONCENTRATIONS.
4. ASSESS SITUATION AND TAKE CONTROL MEASURES.

TOOL PUSHER:

1. REPORT TO UP WIND BRIEFING AREA.
2. DON BREATHING EQUIPMENT AND RETURN TO POINT OF RELEASE WITH DRILLING FOREMAN OR DRILLER (BUDDY SYSTEM).
3. DETERMINE H2S CONCENTRATION.
4. ASSESS SITUATION AND TAKE CONTROL MEASURES.

DRILLER:

1. DON ESCAPE UNIT.
2. CHECK MONITOR FOR POINT OF RELEASE.
3. REPORT TO BRIEFING AREA.
4. CHECK STATUS OF PERSONNEL (IN AN ATTEMPT TO RESCUE, USE THE BUDDY SYSTEM).
5. ASSIGNS LEAST ESSENTIAL PERSON TO NOTIFY DRILLING FOREMAN AND TOOL PUSHER BY QUICKEST MEANS IN CASE OF THEIR ABSENCE.
6. ASSUMES THE RESPONSIBILITIES OF THE DRILLING FORMAN AND TOOL PUSHER UNTIL THEY ARRIVE SHOULD THEY BE ABSENT.

EMERGENCY PROCEDURES

DERRICK MAN FLOOR MAN #1 FLOOR MAN #2	1. WILL REMAIN IN BRIEFING AREA UNTIL INSTRUCTED BY SUPERVISOR.
MUD ENGINEER:	1. REPORT TO BRIEFING AREA. 2. WHEN INSTRUCTED, BEGIN CHECK OF MUD FOR PH AND H2S LEVEL. (GARETT GAS TRAIN.)
SAFETY PERSONNEL:	1. MASK UP AND CHECK STATUS OF ALL PERSONNEL AND SECURE OPERATIONS AS INSTRUCTED BY DRILLING FOREMAN AND REPORT TO BRIEFING AREA.

TAKING A KICK

WHEN TAKING A KICK DURING AN H2S EMERGENCY, ALL PERSONNEL WILL FOLLOW STANDARD BOP PROCEDURES AFTER REPORTING TO BRIEFING AREA AND MASKING UP.

OPEN-HOLE LOGGING

ALL UNNECESSARY PERSONNEL OFF FLOOR. DRILLING FOREMAN AND SAFETY PERSONNEL SHOULD MONITOR CONDITION, ADVISE STATUS AND DETERMINE NEED FOR USE OF AID EQUIPMENT.

RUNNING CASING OR PLUGGING

FOLLOWING THE SAME "TRIPPING" PROCEDURE AS ABOVE. DRILLING FOREMAN AND SAFETY PERSONNEL SHOULD DETERMINE IF ALL PERSONNEL HAVE ACCESS TO PROTECTIVE EQUIPMENT.

IGNITION PROCEDURES

THE DECISION TO IGNITE THE WELL IS THE RESPONSIBILITY OF COMPANY FOREMAN. IN THE EVENT HE IS INCAPACITATED, IT BECOMES THE RESPONSIBILITY OF THE CONTRACT RIG TOOL PUSHER. THE DECISION SHOULD BE MADE ONLY AS A LAST RESORT AND IN A SITUATION WHERE IT IS CLEAR THAT:

1. HUMAN LIFE AND PROPERTY ARE ENDANGERED.
2. THERE IS NO HOPE CONTROLLING THE BLOWOUT UNDER THE PREVAILING CONDITIONS AT THE WELL.

NOTIFY THE DISTRICT OFFICE IF TIME PERMITS, BUT DO NOT DELAY IF HUMAN LIFE IS IN DANGER.

INITIATE FIRST PHASE OF EVACUATION PLAN.

IGNITION PROCEDURES

INSTRUCTIONS FOR IGNITING THE WELL

1. TWO PEOPLE ARE REQUIRED FOR THE ACTUAL IGNITING OPERATION. THEY MUST WEAR SELF-CONTAINED BREATHING UNITS AND HAVE SAFETY ROPE ATTACHED. ONE MAN (TOOL PUSHER OR SAFETY ENGINEER) WILL CHECK THE ATMOSPHERE FOR EXPLOSIVE GASES WITH THE EXPLOSIMETER. THE OTHER MAN (DRILLING FOREMAN) IS RESPONSIBLE FOR IGNITING THE WELL.
2. PRIMARY METHOD TO IGNITE: 25 MM FLARE GUN WITH RANGE OF APPROXIMATELY 500 FEET.
3. IGNITE UP WIND AND DO NOT APPROACH ANY CLOSER THAN IS WARRANTED.
4. SELECT THE IGNITION SITE BEST FOR PROTECTION, AND WHICH OFFERS AN EASY ESCAPE ROUTE.
5. BEFORE FIRING, CHECK FOR PRESENCE OF COMBUSTIBLE GAS.
6. AFTER LIGHTING, CONTINUE EMERGENCY ACTION AND PROCEDURE AS BEFORE.
7. ALL UNASSIGNED PERSONNEL WILL LIMIT THEIR ACTIONS TO THOSE DIRECTED BY THE DRILLING FOREMAN.

REMEMBER: AFTER WELL IS IGNITED, BURNING HYDROGEN SULFIDE WILL CONVERT TO SULFUR DIOXIDE, WHICH IS ALSO HIGHLY TOXIC. DO NOT ASSUME THE AREA IS SAFE AFTER THE WELL IS IGNITED.

TRAINING REQUIREMENTS

WHEN WORKING IN AN AREA WHERE HYDROGEN SULFIDE GAS (H2S) MIGHT BE ENCOUNTERED, DEFINITE TRAINING REQUIREMENTS MUST BE CARRIED OUT. ALL COMPANIES WILL INSURE THAT ALL PERSONNEL AT THE WELL SITE WILL HAVE HAD ADEQUATE TRAINING IN THE FOLLOWING:

1. HAZARDS AND CHARACTERISTICS OF H2S.
2. PHYSICAL EFFECTS OF HYDROGEN SULFIDE ON THE HUMAN BODY.
3. TOXICITY OF HYDROGEN SULFIDE AND SULFUR DIOXIDE.
4. H2S DETECTION.
5. EMERGENCY RESCUE.
6. RESUSCITATORS.
7. FIRST AID AND ARTIFICIAL RESPIRATION.
8. EFFECTS OF H2S ON METALS.
9. LOCATION SAFETY.

SERVICE COMPANY AND VISITING PERSONNEL

A. EACH SERVICE COMPANY THAT WILL BE ON THIS WELL WILL BE NOTIFIED IF THE ZONE CONTAINS H2S.

B. EACH SERVICE COMPANY MUST PROVIDE FOR THE TRAINING AND EQUIPMENT OF THEIR EMPLOYEES BEFORE THEY ARRIVE AT THE WELL SITE.

C. EACH SERVICE COMPANY WILL BE EXPECTED TO ATTEND A WELL SITE BRIEFING.

EMERGENCY EQUIPMENT REQUIREMENTS

1. SIGNS

   A. ONE SIGN LOCATED AT LOCATION ENTRANCE WITH THE FOLLOWING LANGUAGE:

(LEASE)
CAUTION – POTENTIAL POISON GAS
HYDROGEN SULFIDE
NO ADMITTANCE WITHOUT AUTHORIZATION

2. WIND SOCK – WIND STREAMERS

   A. ONE 36" (IN LENGTH) WIND SOCK LOCATED AT PROTECTION CENTER, AT HEIGHT VISIBLE FROM RIG FLOOR.
   B. ONE 36" (IN LENGTH) WIND SOCK LOCATED AT HEIGHT VISIBLE FROM PIT AREAS.

3. HYDROGEN SULFIDE DETECTOR AND ALARMS

   A. H2S MONITORS WITH ALARMS WILL BE LOCATED ON THE RIG FLOOR, AT THE BELL NIPPLE, AND AT THE FLOW LINE. THESE MONITORS WILL BE SET TO ALARM AT 10 PPM WITH RED LIGHT, AND TO ALARM AT 15 PPM WITH RED LIGHT AND AUDIBLE ALARM.
   B. HAND OPERATED DETECTORS WITH TUBES.
   C. H2S MONITOR TESTER.

4. CONDITION FLAGS

   A. ONE EACH OF GREEN, YELLOW, AND RED CONDITION FLAGS TO BE DISPLAYED TO DENOTE CONDITIONS.

GREEN – NORMAL CONDITIONS
YELLOW – POTENTIAL DANGER
RED – DANGER, H2S PRESENT

   B. CONDITION FLAG SHALL BE POSTED AT LOCATION SIGN ENTRANCE.

EMERGENCY EQUIPMENT REQUIREMENTS

5. AUXILIARY RESCUE EQUIPMENT

   A. STRETCHER
   B. 100' LENGTH OF 5/8" NYLON ROPE.

6. MUD INSPECTION DEVICES

   GARRETT GAS TRAIN OR HACH TESTER FOR INSPECTION OF SULFIDE CONCENTRATION IN MUD SYSTEM.

7. FIRE EXTINGUISHER

   ADEQUATE FIRE EXTINGUISHERS SHALL BE LOCATED AT STRATEGIC LOCATIONS.

8. BLOW OUT PREVENTION EQUIPMENT

   THE WELL SHALL HAVE HYDRAULIC BOP EQUIPMENT FOR THE ANTICIPATED BHP OF 1500 PSI. EQUIPMENT IS TO BE TESTED ON INSTALLATION.

9. COMBUSTIBLE GAS DETECTOR

   THERE SHALL BE ONE COMBUSTIBLE GAS DETECTOR ON LOCATION AT ALL TIMES.

10. BOP TESTING

    BOP AND CHOKE LINE AND KILL LINE WILL BE TESTED.

11. AUDIO SYSTEM

    RADIO COMMUNICATION WILL BE AVAILABLE AT THE RIG.
    A. RIG FLOOR OR TRAILER
    B. VEHICLE

12. SPECIAL CONTROL EQUIPMENT

    A. HYDRAULIC BOP EQUIPMENT WITH REMOTE CONTROL ON GROUND.
    B. ROTATING HEAD

EMERGENCY EQUIPMENT REQUIREMENTS

13. EVACUATION PLAN

EVACUATION ROUTES SHOULD BE ESTABLISHED PRIOR TO SPUDDING EACH WELL AND DISCUSSED WITH ALL RIG PERSONNEL.

14. DESIGNATED AREA

A. PARKING AND VISITOR AREA: ALL VEHICLES ARE TO BE PARKED AT A PREDETERMINED SAFE DISTANCE FROM THE WELLHEAD. THIS WILL BE THE DESIGNATED SMOKING AREA.

B. TWO BRIEFING AREAS ON EITHER SIDE OF THE LOCATION AT THE MAXIMUM ALLOWABLE DISTANCE FROM THE WELL BORE SO THEY OFFSET PREVAILING WINDS PERPENDICULARLY, OR AT A 45-DEGREE ANGLE IF WIND DIRECTION TENDS TO SHIFT IN THE AREA.

C. PROTECTION CENTERS OR IF A MOVABLE TRAILER IS USED, IT SHOULD BE DEPT UPWIND OF EXISTING WINDS. WHEN WIND IS FROM THE PREVAILING DIRECTIONS, BOTH PROTECTION CENTERS SHOULD BE ACCESSIBLE.

H2S CONTINGENCY PLAN

STATUS CHECK LIST

NOTE: ALL ITEMS ON THIS LIST MUST BE COMPLETED BEFORE DRILLING TO 2,000'.

1. SIGN AT LOCATION ENTRANCE.

2. TWO (2) WIND SOCKS LOCATED AS REQUIRED.

3. TWO (2) 30-MINUTE PRESSURE DEMAND AIR PACKS ON LOCATION FOR ALL RIG PERSONNEL AND MUD LOGGERS.

4. AIR PACK INSPECTED FOR READY USE.

5. CASCADE SYSTEM AND HOSE LINE HOOK-UP.

6. CASCADE SYSTEM FOR REFILLING AIR BOTTLES.

7. SAFE BREATHING AREAS SET UP.

8. CONDITION FLAG ON LOCATION AND READY FOR USE.

9. H2S DETECTION SYSTEM HOOKED UP.

10. H2S ALARM SYSTEM HOOKED UP AND READY.

11. OXYGEN RESUSCITATOR ON LOCATION AND TESTED FOR USE.

12. STRETCHER ON LOCATION AT SAFETY TRAILER.

13. 1 – 100' LENGTH OF NYLON ROPE ON LOCATION.

14. ALL RIG CREW AND SUPERVISORS TRAINED AS REQUIRED.

15. ALL OUTSIDE SERVICE CONTRACTORS ADVISED OF POTENTIAL H2S HAZARD ON WELL.

16. NO SMOKING SIGN POSTED.

17. HAND OPERATED H2S DETECTOR WITH TUBES ON LOCATION.

CHECKED BY:_____DATE:_____

PROCEDURAL CHECK LIST

PERFORM EACH TOUR:

1. CHECK FIRE EXTINGUISHERS TO SEE THAT THEY HAVE THE PROPER CHARGE.

2. CHECK BREATHING EQUIPMENT TO ENSURE THAT IT HAS NOT BEEN TAMPERED WITH.

3. MAKE SURE ALL THE H2S DETECTION SYSTEM IS OPERATIVE.

PERFORM EACH WEEK:

1. CHECK EACH PIECE OF BREATHING EQUIPMENT TO MAKE SURE THAT DEMAND REGULATOR IS WORKING. THIS REQUIRES THAT THE BOTTLE BE OPENED AND THE MASK ASSEMBLY BE PUT ON TIGHT ENOUGH SO THAT WHEN YOU INHALE, YOU RECEIVE AIR.

2. BLOW OUT PREVENTER SKILLS.

3. CHECK SUPPLY PRESSURE ON BOP ACCUMULATOR STAND BY SOURCE.

4. CHECK ALL SKA-PAC UNITS FOR OPERATION: DEMAND REGULATOR, ESCAPE BOTTLE AIR VOLUMES, SUPPLY BOTTLE OF AIR VOLUME.

5. CHECK BREATHING EQUIPMENT MASK ASSEMBLY TO SEE THAT STRAPS ARE LOOSENED AND TURNED BACK, READY TO PUT ON.

6. CHECK PRESSURE ON BREATHING EQUIPMENT AIR BOTTLES TO MAKE SURE THEY ARE CHARGED TO FULL VOLUME.

7. CONFIRM PRESSURE ON ALL SUPPLY AIR BOTTLES.

8. PERFORM BREATHING EQUIPMENT DRILLS WITH ON-SITE PERSONNEL.

9. CHECK THE FOLLOWING SUPPLIES FOR AVAILABILITY.

   A. EMERGENCY TELEPHONE LIST.
   B. HAND OPERATED H2S DETECTORS AND TUBES.

GENERAL EVACUATION PLAN

THE DIRECT LINES OF ACTION PREPARED BY **INDIAN FIRE & SAFETY, INC.** TO PROTECT THE PUBLIC FROM HAZARDOUS GAS SITUATIONS ARE AS FOLLOWS:

1. WHEN THE COMPANY APPROVED SUPERVISOR (DRILLING FOREMAN, CONSULTANT, RIG PUSHER, OR DRILLER) DETERMINES THE H2S GAS CANNOT BE LIMITED TO THE WELL LOCATION AND THE PUBLIC WILL BE INVOLVED, HE WILL ACTIVATE THE EVACUATION PLAN. ESCAPE ROUTES ARE NOTED ON AREA MAP.

2. "COMPANY MAN" OR DESIGNEE WILL NOTIFY LOCAL GOVERNMENT AGENCY THAT A HAZARDOUS CONDITION EXISTS AND EVACUATION NEEDS TO BE IMPLEMENTED.

3. COMPANY SAFETY PERSONNEL THAT HAVE BEEN TRAINED IN THE USE OF H2S DETECTION EQUIPMENT AND SELF-CONTAINED BREATHING EQUIPMENT WILL MONITOR H2S CONCENTRATIONS, WIND DIRECTIONS, AND AREA OF EXPOSURE. THEY WILL DELINEATE THE OUTER PERIMETER OF THE HAZARDOUS GAS AREA. EXTENSION TO THE EVACUATION AREA WILL BE DETERMINED FROM INFORMATION GATHERED.

4. LAW ENFORCEMENT PERSONNEL (STATE POLICE, POLICE DEPT., FIRE DEPT., AND SHERIFF'S DEPT.) WILL BE CALLED TO AID IN SETTING UP AND MAINTAINING ROAD BLOCKS. ALSO, THEY WILL AID IN EVACUATION OF THE PUBLIC IF NECESSARY.

IMPORTANT: LAW ENFORCEMENT PERSONNEL WILL NOT BE ASKED TO COME INTO A CONTAMINATED AREA. THEIR ASSISTANCE WILL BE LIMITED TO UNCONTAMINATED AREAS. CONSTANT RADIO CONTACT WILL BE MAINTAINED WITH THEM.

5. AFTER THE DISCHARGE OF GAS HAS BEEN CONTROLLED, COMPANY SAFETY PERSONNEL WILL DETERMINE WHEN THE AREA IS SAFE FOR RE-ENTRY.

EMERGENCY ACTIONS

WELL BLOWOUT – IF EMERGENCY

1. EVACUATE ALL PERSONNEL IF POSSIBLE.

2. IF SOUR GAS – EVACUATE RIG PERSONNEL.

3. IF SOUR GAS – EVACUATE PUBLIC WITHIN 1 HOUR RADIUS OF EXPOSURE.

4. DON SCBA AND RESCUE.

5. CALL 911 FOR EMERGENCY HELP (FIRE DEPT AND AMBULANCE) AND NOTIFY SR. DRILLING FOREMAN AND DISTRICT FOREMAN.

6. GIVE FIRST AID.

PERSON DOWN LOCATION/FACILITY

1. IF IMMEDIATELY POSSIBLE, CONTACT 911. GIVE LOCATION AND WAIT FOR CONFIRMATION.

2. DON SCBA AND RESCUE.

TOXIC EFFECTS OF HYDROGEN SULFIDE

HYDROGEN SULFIDE IS EXTREMELY TOXIC. THE ACCEPTABLE CEILING CONCENTRATION FOR EIGHT-HOUR EXPOSURE IS 10 PPM, WHICH IS .001% BY VOLUME. HYDROGEN SULFIDE IS HEAVIER THAN AIR (SPECIFIC GRAVITY – 1.192) AND COLORLESS. IT FORMS AN EXPLOSIVE MIXTURE WITH AIR BETWEEN 4.3 AND 46.0 PERCENT BY VOLUME. HYDROGEN SULFIDE IS ALMOST AS TOXIC AS HYDROGEN CYANIDE AND IS BETWEEN FIVE AND SIX TIMES MORE TOXIC THAN CARBON MONOXIDE. TOXICITY DATA FOR HYDROGEN SULFIDE AND VARIOUS OTHER GASES ARE COMPARED IN TABLE I. PHYSICAL EFFECTS AT VARIOUS HYDROGEN SULFIDE EXPOSURE LEVELS ARE SHOWN IN TABLE II.

TABLE I
TOXICITY OF VARIOUS GASES

COMMON NAME	CHEMICAL FORMULA	SPECIFIC GRAVITY (SC=1)	THRESHOLD LIMIT (1)	HAZARDOUS LIMIT (2)	LETHAL CONCENTRATION (3)
HYDROGEN CYANIDE	HCN	0.94	10 PPM	150 PPM/HR	300 PPM
HYDROGEN SULFIDE	H2S	1.18	10 PPM	250 PPM/HR	600 PPM
SULFUR DIOXIDE	SO2	2.21	5 PPM	-	1000 PPM
CHLORINE	CL2	2.45	1 PPM	4 PPM/HR	1000 PPM
CARBON MONOXIDE	CO	0.97	50 PPM	400 PPM/HR	1000 PPM
CARBON DIOXIDE	CO2	1.52	5000 PPM	5%	10%
METHANE	CH4	0.55	90,000 PPM	COMBUSTIBLE ABOVE 5% IN AIR	

1) THRESHOLD LIMIT – CONCENTRATION AT WHICH IT IS BELIEVED THAT ALL WORKERS MAY BE REPEATEDLY EXPOSED DAY AFTER DAY WITHOUT ADVERSE EFFECTS.

2) HAZARDOUS LIMIT – CONCENTRATION THAT WILL CAUSE DEATH WITH SHORT-TERM EXPOSURE.

3) LETHAL CONCENTRATION – CONCENTRATION THAT WILL CAUSE DEATH WITH SHORT-TERM EXPOSURE.

TOXIC EFFECTS OF HYDROGEN SULFIDE

TABLE II
PHYSICAL EFFECTS OF HYDROGEN SULFIDE

PERCENT (%)	PPM	CONCENTRATION GRAINS 100 STD. FT3*	PHYSICAL EFFECTS
0.001	10	00.65	Obvious and unpleasant odor.
0.002	20	01.30	Safe for 8 hours of exposure.
0.010	100	06.48	Kill smell in 3 – 15 minutes. May sting eyes and throat.
0.020	200	12.96	Kills smell shortly; Stings eyes and throat.
0.050	500	32.96	Dizziness; Breathing ceases in a few minutes; Needs prompt artificial respiration.
0.070	700	45.36	Unconscious quickly; Death will result if not rescued promptly.
0.100	1000	64.30	Unconscious at once; Followed by death within minutes.

*AT 15.00 PSIA AND 60'F.

USE OF SELF-CONTAINED BREATHING EQUIPMENT

1. WRITTEN PROCEDURES SHALL BE PREPARED COVERING SAFE USE OF SCBA'S IN DANGEROUS ATMOSPHERE, WHICH MIGHT BE ENCOUNTERED IN NORMAL OPERATIONS OR IN EMERGENCIES. PERSONNEL SHALL BE FAMILIAR WITH THESE PROCEDURES AND THE AVAILABLE SCBA.

2. SCBA'S SHALL BE INSPECTED FREQUENTLY AT RANDOM TO INSURE THAT THEY ARE PROPERLY USED, CLEANED, AND MAINTAINED.

3. ANYONE WHO MAY USE THE SCBA'S SHALL BE TRAINED IN HOW TO INSURE PROPER FACE-PIECE TO FACE SEAL. THEY SHALL WEAR SCBA'S IN NORMAL AIR AND THEN WEAR THEM IN A TEST ATMOSPHERE. (NOTE: SUCH ITEMS AS FACIAL HAIR {BEARD OR SIDEBURNS} AND EYEGLASSES WILL NOT ALLOW PROPER SEAL.) ANYONE THAT MAY BE REASONABLY EXPECTED TO WEAR SCBA'S SHOULD HAVE THESE ITEMS REMOVED BEFORE ENTERING A TOXIC ATMOSPHERE. A SPECIAL MASK MUST BE OBTAINED FOR ANYONE WHO MUST WEAR EYEGLASSES OR CONTACT LENSES.

4. MAINTENANCE AND CARE OF SCBA'S:

   A. A PROGRAM FOR MAINTENANCE AND CARE OF SCBA'S SHALL INCLUDE THE FOLLOWING:
      1. INSPECTION FOR DEFECTS, INCLUDING LEAK CHECKS.
      2. CLEANING AND DISINFECTING.
      3. REPAIR.
      4. STORAGE.

   B. INSPECTION; SELF-CONTAINED BREATHING APPARATUS FOR EMERGENCY USE SHALL BE INSPECTED MONTHLY FOR THE FOLLOWING PERMANENT RECORDS KEPT OF THESE INSPECTIONS.
      1. FULLY CHARGED CYLINDERS.
      2. REGULATOR AND WARNING DEVICE OPERATION.
      3. CONDITION OF FACE PIECE AND CONNECTIONS.
      4. ELASTOMER OR RUBBER PARTS SHALL BE STRETCHED OR MASSAGED TO KEEP THEM PLIABLE AND PREVENT DETERIORATION.

   C. ROUTINELY USED SCBA'S SHALL BE COLLECTED, CLEANED AND DISINFECTED AS FREQUENTLY AS NECESSARY TO INSURE PROPER PROTECTION IS PROVIDED. (22)

USE OF SELF-CONTAINED BREATHING EQUIPMENT

5. PERSONS ASSIGNED TASKS THAT REQUIRES USE OF SELF-CONTAINED BREATHING EQUIPMENT SHALL BE CERTIFIED PHYSICALLY FIT FOR BREATHING EQUIPMENT USAGE BY THE LOCAL COMPANY PHYSICIAN AT LEAST ANNUALLY.

6. SCBA'S SHOULD BE WORN WHEN:

   A. ANY EMPLOYEE WORKS NEAR THE TOP OR ON TOP OF ANY TANK UNLESS TEST REVEALS LESS THAN 10 PPM OF H2S.

   B. WHEN BREAKING OUT ANY LINE WHERE H2S CAN REASONABLY BE EXPECTED.

   C. WHEN SAMPLING AIR IN AREAS TO DETERMINE IF TOXIC CONCENTRATIONS OF H2S EXISTS.

   D. WHEN WORKING IN AREAS WHERE OVER 10 PPM H2S HAS BEEN DETECTED.

   E. AT ANY TIME THERE IS A DOUBT AS TO THE H2S LEVEL IN THE AREA TO BE ENTERED.

RESCUE
FIRST AID FOR H2S POISONING

) NOT PANIC!

MAIN CALM – THINK!

HOLD YOUR BREATH. (DO NOT INHALE FIRST; STOP BREATHING.)

PUT ON BREATHING APPARATUS.

REMOVE VICTIM(S) TO FRESH AIR AS QUICKLY AS POSSIBLE. (GO UP-WIND FROM SOURCE OR AT RIGHT ANGLE TO THE WIND. NOT DOWN WIND.)

BRIEFLY APPLY CHEST PRESSURE – ARM LIFT METHOD OF ARTIFICIAL RESPIRATION TO CLEAN THE VICTIM'S LUNGS AND TO AVOID INHALING ANY TOXIC GAS DIRECTLY FROM THE VICTIM'S LUNGS.

PROVIDE FOR PROMPT TRANSPORTATION TO THE HOSPITAL, AND CONTINUE GIVING ARTIFICIAL RESPIRATION IF NEEDED.

HOSPITAL(S) OR MEDICAL FACILITIES NEED TO BE INFORMED, BEFORE-HAND, OF THE POSSIBILITY OF H2S GAS POISONING – NO MATTER HOW REMOTE THE POSSIBILITY IS.

NOTIFY EMERGENCY ROOM PERSONNEL THAT THE VICTIM(S) HAS BEEN EXPOSED TO H2S GAS.

ES BASIC FIRST AID, EVERYONE ON LOCATION SHOULD HAVE A WORKING KNOWLEDGE OF ARTIFICIAL RESPIRATION, AS WELL AS AID FOR EYES AND SKIN CONTACT WITH LIQUID H2S. EVERYONE TO MASTER THESE NECESSARY SKILLS.

Heyco Energy
Cholla 1 Federal #5

slot #1

Eddy County New Mexico

P R O P O S A L L I S T I N G

by
Baker Hughes INTEQ

Your ref : Plan 1
Our ref : prop4717
License :

Date printed : 6-Sep-2005
Date created : 6-Sep-2005
Last revised : 6-Sep-2005

Field is centred on n32 40 29.200,w103 55 30.8
Structure is centred on n32 46 13.980,w103 49 28.74

Slot location is n32 46 13.980,w103 49 28.740
Slot Grid coordinates are N 644412.741, E 656357.048
Slot local coordinates are 0.00 N 0.00 E

Projection type: mercator - New Mexico East (3001), Spheroid: Clarke - 1866

Reference North is Grid North

Heyco Energy
Cholla 1 Federal #5,slot #1
,Eddy County New Mexico

PROPOSAL LISTING Page 1
Your ref : Plan 1
Last revised : 6-Sep-2005

Measured Depth	Inclin Degrees	Azimuth Degrees	True Vert Depth	RECTANGULAR COORDINATES		Dogleg Deg/100ft	Vert Sect	GRID COORDS Easting	Northing
0.00	0.00	0.00	0.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
100.00	0.00	77.67	100.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
200.00	0.00	77.67	200.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
300.00	0.00	77.67	300.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
400.00	0.00	77.67	400.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
500.00	0.00	77.67	500.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
600.00	0.00	77.67	600.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
700.00	0.00	77.67	700.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
800.00	0.00	77.67	800.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
900.00	0.00	77.67	900.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
1000.00	0.00	77.67	1000.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
1100.00	0.00	77.67	1100.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
1200.00	0.00	77.67	1200.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
1300.00	0.00	77.67	1300.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
1400.00	0.00	77.67	1400.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
1500.00	0.00	77.67	1500.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
1600.00	0.00	77.67	1600.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
1700.00	0.00	77.67	1700.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
1800.00	0.00	77.67	1800.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
1900.00	0.00	77.67	1900.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
2000.00	0.00	77.67	2000.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
2100.00	0.00	77.67	2100.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
2200.00	0.00	77.67	2200.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
2300.00	0.00	77.67	2300.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
2400.00	0.00	77.67	2400.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
2500.00	0.00	77.67	2500.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
2600.00	0.00	77.67	2600.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
2700.00	0.00	77.67	2700.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
2800.00	0.00	77.67	2800.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
2900.00	0.00	77.67	2900.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
3000.00	0.00	77.67	3000.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
3100.00	0.00	77.67	3100.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
3200.00	0.00	77.67	3200.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
3300.00	0.00	77.67	3300.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
3400.00	0.00	77.67	3400.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
3500.00	0.00	77.67	3500.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
3600.00	0.00	77.67	3600.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
3700.00	0.00	77.67	3700.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
3800.00	0.00	77.67	3800.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
3900.00	0.00	77.67	3900.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
4000.00	0.00	77.67	4000.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
4100.00	0.00	77.67	4100.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
4200.00	0.00	77.67	4200.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
4300.00	0.00	77.67	4300.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
4400.00	0.00	77.67	4400.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
4500.00	0.00	77.67	4500.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
4600.00	0.00	77.67	4600.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
4700.00	0.00	77.67	4700.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
4800.00	0.00	77.67	4800.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
4900.00	0.00	77.67	4900.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74

All data in feet unless otherwise stated. Calculation uses minimum curvature method.
Coordinates from structure and TVD from rotary table.
Bottom hole distance is 3091.28 on azimuth 77.67 degrees from wellhead.
Vertical section is from N 0.00 E 0.00 on azimuth 77.67 degrees.
Grid is mercator - New Mexico East (3001).
Grid coordinates in FEET and computed using the Clarke - 1866 spheroid
Presented by Baker Hughes INTEQ

Measured Depth	Inclin Degrees	Azimuth Degrees	True Vert Depth	RECTANGULAR COORDINATES		Dogleg Deg/100ft	Vert Sect	GRID COORDS Easting	Northing
5000.00	0.00	77.67	5000.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
5100.00	0.00	77.67	5100.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
5200.00	0.00	77.67	5200.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
5300.00	0.00	77.67	5300.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
5400.00	0.00	77.67	5400.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
5500.00	0.00	77.67	5500.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
5600.00	0.00	77.67	5600.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
5700.00	0.00	77.67	5700.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
5800.00	0.00	77.67	5800.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
5900.00	0.00	77.67	5900.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
6000.00	0.00	77.67	6000.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
6100.00	0.00	77.67	6100.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
6200.00	0.00	77.67	6200.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
6300.00	0.00	77.67	6300.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
6400.00	0.00	77.67	6400.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
6500.00	0.00	77.67	6500.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
6600.00	0.00	77.67	6600.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
6700.00	0.00	77.67	6700.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
6800.00	0.00	77.67	6800.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
6900.00	0.00	77.67	6900.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
7000.00	0.00	77.67	7000.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
7100.00	0.00	77.67	7100.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
7200.00	0.00	77.67	7200.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
7300.00	0.00	77.67	7300.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
7400.00	0.00	77.67	7400.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
7500.00	0.00	77.67	7500.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
7600.00	0.00	77.67	7600.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
7700.00	0.00	77.67	7700.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
7800.00	0.00	77.67	7800.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
7840.00	0.00	77.67	7840.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
7850.00	0.00	77.67	7850.00	0.00N	0.00E	0.00	0.00	656357.05	644412.74
7950.00	6.37	77.67	7949.79	1.18N	5.42E	6.37	5.55	656362.47	644413.93
8031.22	11.54	77.67	8030.00	3.88N	17.76E	6.37	18.18	656374.81	644416.62
8050.00	12.73	77.67	8048.36	4.72N	21.62E	6.37	22.13	656378.67	644417.47
8134.73	18.13	77.67	8130.00	9.54N	43.63E	6.37	44.66	656400.68	644422.28
8150.00	19.10	77.67	8144.48	10.58N	48.40E	6.37	49.54	656405.44	644423.32
8250.00	25.46	77.67	8236.96	18.67N	85.42E	6.37	87.43	656442.46	644431.41
8264.50	26.39	77.67	8250.00	20.02N	91.61E	6.37	93.77	656448.66	644432.76
8350.00	31.83	77.67	8324.68	28.90N	132.23E	6.37	135.35	656489.28	644441.64
8450.00	38.20	77.67	8406.54	41.14N	188.25E	6.37	192.70	656545.30	644453.88
8486.82	40.54	77.67	8435.00	46.13N	211.07E	6.37	216.05	656568.12	644458.87
8550.00	44.56	77.67	8481.53	55.25N	252.80E	6.37	258.77	656609.85	644467.99
8650.00	50.93	77.67	8548.74	71.04N	325.07E	6.37	332.74	656682.12	644483.78
8692.94	53.66	77.67	8575.00	78.29N	358.26E	6.37	366.71	656715.31	644491.04
8750.00	57.29	77.67	8607.33	88.33N	404.18E	6.37	413.72	656761.23	644501.07
8850.00	63.66	77.67	8656.58	106.90N	489.14E	6.37	500.69	656846.19	644519.64
8950.00	70.03	77.67	8695.89	126.52N	578.92E	6.37	592.58	656935.97	644539.26
9050.00	76.39	77.67	8724.76	146.95N	672.40E	6.37	688.27	657029.45	644559.69
9150.00	82.76	77.67	8742.85	167.94N	768.43E	6.37	786.57	657125.48	644580.68
9250.00	89.12	77.67	8749.92	189.22N	865.83E	6.37	886.27	657222.88	644601.96

All data in feet unless otherwise stated. Calculation uses minimum curvature method.
Coordinates from structure and TVD from rotary table.
Bottom hole distance is 3091.28 on azimuth 77.67 degrees from wellhead.
Vertical section is from N 0.00 E 0.00 on azimuth 77.67 degrees.
Grid is mercator - New Mexico East (3001).
Grid coordinates in FEET and computed using the Clarke - 1866 spheroid
Presented by Baker Hughes INTEQ

Measured Depth	Inclin Degrees	Azimuth Degrees	True Vert Depth	RECTANGULAR COORDINATES		Dogleg Deg/100ft	Vert Sect	GRID COORDS Easting	Northing
9259.67	89.74	77.67	8750.02	191.29N	875.28E	6.37	895.94	657232.33	644604.03
9500.00	89.74	77.67	8751.11	242.60N	1110.07E	0.00	1136.26	657467.11	644655.34
10000.00	89.74	77.67	8753.38	349.35N	1598.53E	0.00	1636.26	657955.58	644762.09
10500.00	89.74	77.67	8755.66	456.10N	2087.00E	0.00	2136.25	658444.05	644868.84
11000.00	89.74	77.67	8757.93	562.85N	2575.46E	0.00	2636.25	658932.51	644975.59
11455.03	89.74	77.67	8760.00	660.00N	3020.00E	0.00	3091.28	659377.05	645072.74

All data in feet unless otherwise stated. Calculation uses minimum curvature method.
Coordinates from structure and TVD from rotary table.
Bottom hole distance is 3091.28 on azimuth 77.67 degrees from wellhead.
Vertical section is from N 0.00 E 0.00 on azimuth 77.67 degrees.
Grid is mercator - New Mexico East (3001).
Grid coordinates in FEET and computed using the Clarke - 1866 spheroid
Presented by Baker Hughes INTEQ

MD	TVD	Rectangular Coords.		Comments in wellpath Comment
7840.00	7840.00	0.00N	0.00E	Top BSPG 'B Zone' Dolo.
8031.22	8030.00	3.88N	17.76E	Top BSPG 'Main Pay' Dolo.
8134.73	8130.00	9.54N	43.63E	Top BSPG 2nd Sand
8264.50	8250.00	20.02N	91.61E	Base BSPG2 'A' Sand
8486.82	8435.00	46.13N	211.07E	Top BSPG2 'B' Sand
8692.94	8575.00	78.29N	358.26E	Top BSPG2 'C' Sand
11455.03	8760.00	660.00N	3020.00E	TD

BAKER HUGHES

INTEQ

Heyco Energy

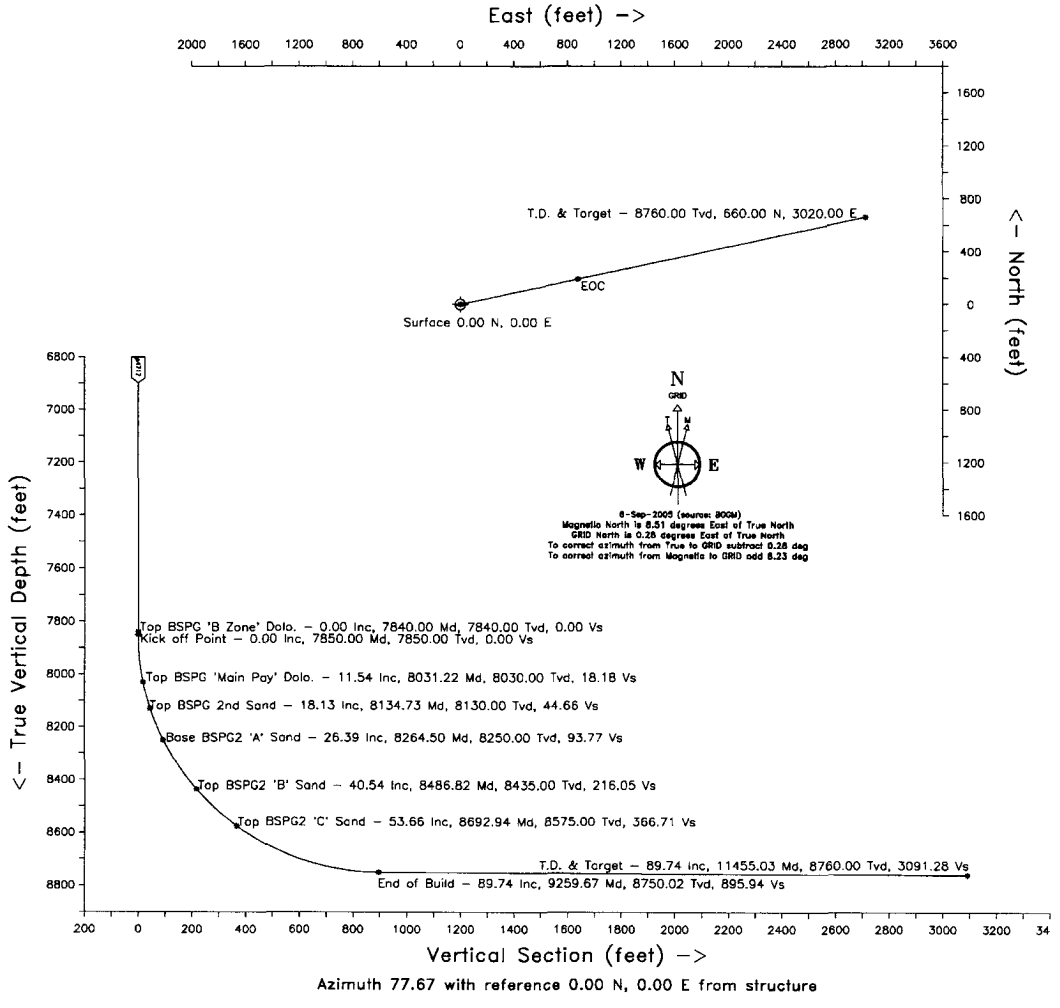
Structure : Cholla 1 Federal #5 Slot : slot #1

Field : Location : Eddy County New Mexico

Created by troy
Date plotted : 8-Sep-2005
Plot Reference is Plan 1.
Coordinates are in feet reference structure.
True Vertical Depths are reference structure.
--- Baker Hughes INTEQ ---

---- WELL PROFILE DATA ----

Point	MD	Inc	Dir	TVD	North	East	V. Sect	Deg/100
Tie on	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP	7850.00	0.00	77.67	7850.00	0.00	0.00	0.00	0.00
End of Build	9259.67	89.74	77.67	8750.02	191.29	875.28	895.94	6.37
T.D. & Target TD	11455.03	89.74	77.67	8760.00	660.00	3020.00	3091.28	0.00



CONDITIONS OF APPROVAL - DRILLING

Well Name & No.	**5H – CHOLLA 1 FEDERAL**
Operator's Name:	**HARVEY E. YATES COMPANY**
Location:	**330' FSL & 1930' FWL – SEC 1 – T18S – R31E – EDDY COUNTY (SHL)**
	990' FSL & 330' FEL – SEC 1 – T18S – R31E – EDDY COUNTY (BHL)
Lease:	**NM-106718**

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) 234-5909 or (505) 361-2822 (After hours) - 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:

THIS IS A RE-ENTRY OF A P&A'd WELL – A 2195' HORIZONTAL LATERAL WILL BE DRILLED FROM A KOP @ 8900'

A. Spudding

B. Casing in place: **13-3/8** inch **8-5/8** inch **5-1/2** inch

C. BOP tests

2. A Hydrogen Sulfide (H2S) Drilling Plan should be activated prior to drilling into the **Queen** Formation at approximately **3500** feet. A copy of the plan shall be posted at the drilling site.

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 minimum required fill of cement behind the **3-1/2** inch production liner is **cement shall extend upward to the top of the liner hanger at approximately 8900 feet.**

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 **8-5/8** 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) is **3000** psi.

3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.
- The tests 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 a safe workman-like manner. Hard line connections shall be required.

(ORIG. SGD.) LES BABYAK