

#### STATE OF NEVADA

## DEPARTMENT OF MINERALS

400 W. King Street, Suite 106 Carson City, Nevada 89710 (702) 687-5050 Fax (702) 687-3957 Las Vegas Branch 4220 S. Maryland Pkwy. Suite 304 Las Vegas, Nevada 89119 (702) 486-7250 Fax (702) 486-7252

RUSSELL A. FIELDS
Executive Director

August 5, 1993

### OIL AND GAS WELL PERMIT NOTICES

State permits for oil and gas wells have been issued by the Nevada Department of Minerals to Foreland Corporation, 1104 Country Hills Drive, 1 Suite 307, Ogden, Utah 84403 (801) 621-1035. The wells and their locations are listed below:

Permit Number 689, API Number 27-011-05274, for the Fish Creek #1-1 well. The well will be located in the NE1/4 SW1/4, Section 1, T.16N., R.53E., M.D.B.&M., Eureka County. The well will be 3543.6' from the north line and 3193.9' from the east line. The elevation is 6038.6' and the proposed depth is 7000'. The well is located approximately 27 miles southwest of Eureka, Nevada.

Permit Number 690, API Number 27-011-05275, for the Fish Creek #2-1 well. The well will be located in the SE1/4 NW1/4, Section 1, T.16N., R.53E., M.D.B.&M., Eureka County. The well will be 1893.5' from the north line and 3160.1' from the east line. The elevation is 6059.7' and the proposed depth is 7000'. The well is located approximately 18 miles south of Eureka, Nevada.

Permit Number 691, API Number 27-011-05276, for the Little Smoky #1-13 well. The well will be located in the NE1/4 SW1/4, Section 13, T.16N., R.53E., M.D.B.&M., Eureka County. The well will be 3089.3' from the north line and 3472.4' from the east line. The elevation is 6035' and the proposed depth is 7000'. The well is located approximately 30 miles southwest of Eureka, Nevada.

Permit Number 692, API Number 27-011-05277, for the Little Smoky #1-24 well. The well will be located in the NW1/4 SW1/4, Section 24, T.16N., R.53E., M.D.B.&M., Eureka County. The well will be 1873.3' from the south line and 4338.7' from the east line. The elevation is 6044' and the proposed depth is 7000'. The well is located approximately 20 miles south of Eureka, Nevada.

Permit Number 693, API Number 27-011-05278, for the Little Smoky #2-24 well. The well will be located in the NW1/4 NE1/4, Section 24, T.16N., R.53E., M.D.B.&M., Eureka County. The well will be 4330.6' from the south line and 1998.9' from the east line. The elevation is 6033.1' and the proposed depth is 7000'. The well is located approximately 19 miles south of Eureka, Nevada.

Permit Number 694, API Number 27-011-05279, for the Paiute #1-35 well. The well will be located in the NE1/4 NE1/4, Section 35, T.16N., R.53E., M.D.B.&M., Eureka County. The well will be 686.7' from the north line and 876.4' from the east line. The elevation is 6067.9' and the proposed depth is 7000'. The well is located approximately 24 miles south of Eureka, Nevada.

Permit Number 695, API Number 27-011-05280, for the Paiute #1-36 well. The well will be located in the SW1/4 NW1/4, Section 36, T.16N., R.53E., M.D.B.&M., Eureka County. The well will be 1863.1' from the north line and 416.8' from the west line. The elevation is 6069.2' and the proposed depth is 7000'. The well is located approximately 25 miles south of Eureka, Nevada.

These permits were issued on August 5, 1993.

## STATE OF NEVADA

## DIVISION OF MINERAL RESOURCES

Capitol Complex—201 South Fall Street

Carson City, Nevada 89710

Telephone (702) 885-4380

Original-Permit Dupilente-Division-Co. Tripilente-Division-Well Quadrupilente-Division-Chr. File

## APPLICATION FOR PERMIT TO DRILL OIL AND GAS WELLS

(Applications must be accompanied by \$50 permit fee.)

Company or O	perator FORELA					
Send permit to		try Hills				
Street or P.O.		C163	Ogde	n	State	UT
Zip 84403	Telephone(	<u>801)621-10</u>	35			
Lease name	Paiute			#1-35 within th		<u> </u>
			•	N, R 53 E MDBM		
	X			County E		
				feet from (N) (S) line a		
				section. (Give location fro	m section	line, cross out
2	_	wrong directi	-			
		-	•	wner is		
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		If governmen	t land, le	ase serial number is N-	4/916	********************
Address P.				ox 12000, Reno, N	<u>v 8952</u>	0
		Lessee is Do	ale W.	Christensen	***********	
		Address3	138 Ma	rguerite		******
Section	35	В:	ııııng	s, MT 59102		
	****************					+
Locate We	Il correctly.					:
The status of a b	at well, attach plate and for this well in	conformance v	with Rule	owing location.  103 of the Division is:  Of Utah. \$50,000		
If bond posted w	rith U.S. Governm	ent, what is nan	ne of sure	ty company!	********	
-	Bo	•				
I certify that I h	ave personal knowl	edge of the facts	s above st	ated and that they are true	e, correct, s	and complete.
			Name	Bruce C. Decker		t Arthur Land
			· Position	Vice-President,	<u>Operati</u>	ons
Permit number_	694		Date	July 13		
API number	27-011-05279					
Approval date	August 5, 1993			•		
By Original sig	gned by Russell A	. Fields			any v - eff	
Form 2					,	1686



#### STATE OF NEVADA

## DEPARTMENT OF MINERALS

400 W. King Street, Suite 106 Carson City, Nevada 89710 (702) 687-5050 Fax (702) 687-3957 Las Vegas Branch 4220 S. Maryland Pkwy. Suite 304 Las Vegas, Nevada 89119 (702) 486-7250 Fax (702) 486-7252

> RUSSELL A. FIELDS Executive Director

August 5, 1993

Bruce C. Decker Vice-President, Operations Foreland Corporation 1104 Country Hills Drive, Suite 307 Ogden, Utah 84403

Re: Permit #689, Fish Creek #1-1
Permit #690, Fish Creek #2-1
Permit #691, Little Smoky #1-13
Permit #692, Little Smoky #1-24
Permit #693, Little Smoky #2-24
Permit #694, Paiute #1-35
Permit #695, Paiute #1-36

Dear Mr. Decker:

With this letter, I am sending one copy each of the permits for Foreland Corporation's Fish Creek #1-1 and #2-1, Little Smoky #1-13, #1-24 and #2-24 and Paiute #1-35 and #1-36 in Eureka County, Nevada. These permits expire on August 5, 1995.

During drilling, upon completion of the wells, and during production (if applicable), submission of certain forms and other actions are required as described in the Nevada Regulations and Rules of Practice and Procedure. Most of these requirements are summarized in the enclosed permit conditions. For your use and information, copies of the necessary forms are enclosed.

Thank you for your continued cooperation.

Sincerely,

Russ Fields

RAF: kl

Enclosures

cc: John Snow, BLM State Office John Stout, BLM, Ely District Office Nevada Bureau of Mines and Geology

## FORELAND CORPORATION

DRILLING PROGNOSIS
Paiute #1-35
NE NE Section 35, T16N, R53E
Proposed Total Depth: 7000'

## Location:

Located approximately 20 miles south of Eureka, Nevada.

## Estimated Formation Tops

<u>Formation</u>	<u>Depth</u>
Hay Ranch/Humboldt	Surface
Oligocene Volcanics	3000'
Devonian Carbonates	5000 <b>'</b>

## Anticipated Oil Bearing Zones

<u>Formation</u>	<u>Depth</u>
Oligocene Volcanics	30001
Devonian Carbonates	5000'

## Anticipated Pressures and Hole Problems

All available pressure data from Little Smoky Valley indicate a pressure gradient just slightly higher than hydrostatic in all zones and formations tested. No abnormal pressures are expected.

In the shallow Oligocene valley fill, some problems with hole stability may be encountered. Also, rapid rates of penetration may cause build-up of cuttings in annulus. Clays within the Oligocene volcanic sequence can rapidly build up mud weight which must be controlled. In Little Smoky Valley, minor to moderate loss of circulation has been noted, primarily in the Devonian carbonates (Devils Gate Formation) and the Oligocene volcanic sequence. All loss of circulation problems have been successfully treated with LCM. Nevada's asphaltic crude is susceptible to emulsion blocks and oil wetting of the reservoir, especially in clastic sequences. Water loss and mud weight must be controlled to prevent damage. Proper implementation of the mud program, including tight control of the hydraulics and mud properties, and a properly functioning mud cleaning system is critical to success of the drilling program.

Steeper dips which may be encountered in the Paleozoic section and occasionally in the Oligocene volcanics may create deviation problems. Sufficient deviation surveys and use of various bottom hole assemblies are required to prevent excessive deviation.

Foreland Corporation
Paiute #1-35
NE NE Section 35, T16N, R53E
Eureka County, Nevada
Page Two

## Mud Program

Depth Weight Visc. F.L. 0' - 2000' 8.7-9.0 40-55 15

Surface interval to be drilled with mud properties and hydraulics sufficient to clean hole. Viscosity will be adjusted to provide good carrying capacity. Section may be drilled with controlled rate of penetration to prevent build up of cuttings in annulus.

<u>Depth</u> <u>Weight</u> <u>Visc.</u> <u>F.L.</u> 2000' - 7000' 8.8-9 35-40 4-10

Drill below surface casing with low solids non-dispersed polymer mud. Primary concern when drilling Oligocene volcanic section is retaining low mud weight. Utilize centrifuge for solids control. Based on other Smoky Valley wells, minimal loss of circulation is expected, primarily in zones within the Devonian carbonate section. Loss of circulation to be treated with cottonseed hulls, cedar fiber, mica, etc.

A properly functioning shale shaker with ~80 mesh screens, a desander, and a desilter (probably 10 or 12 cone) capable of processing 600-800 GPM will be used for solids control. A 200 GPM centrifuge will be used for solids control.

## Logging Program

Sample Collection: Required number of samples will be caught, bagged, and dried to total depth.

Mud Logging: FID and gas chromatograph from below surface casing to total depth.

## Open Hole Logs:

- Dll-Gr-Sp-Cal from base of surface casing to TD.
- 2. GR-Sonic from base of surface casing to TD.
- 3. FDC-CNL-Cal-GR and Dipmeter as directed by on-site geologist.

No coring or DST's are anticipated during drilling.

Sidewall cores may be taken at the direction of the on-site geologist.

Foreland Corporation
Paiute #1-35
NE NE Section 35, T16N, R53E
Eureka County, Nevada
Page Three

## Casing Program

Conductor: 60' of 20" conductor to be set in 17 1/2" hole and cemented by rat hole driller prior to move in of drilling rig.

Surface Casing: 2000' of 9 5/8" OD, 36#, K-55, w/2" parasite (PAS) string with port at 1900'. Cement around shoe with sufficient cement for 250' fill up. Cement through stage collar at 500' to circulate to surface. Top out with 1" if cement fails.

Production Casing: Drill out with 8 3/4" to T.D. or intermediate, setting a 7" and 4 1/2" liner.

If hole and/or formation conditions permit and warrant, a combination packer-cementer will be set above the pay zone, and 36" external casing packers will be set in combination with slotted casing to avoid placing cement on the reservoir. Adequate bow centralizers to maintain stand-off, specifically one immediately above and below each external casing packer would be run.

## Cementing Program

Surface Casing: 17 1/2" hole with 2000' of 9 5/8" casing.

Lead: 500' to surface w/100% excess, 180 sacks of "Light" cement w/2% CaCl and .25 lb/sack Flocele or equivalent, weight = 12.7 lb/sack, yield = 1.84 cu. ft/sack, water = 8.8 gal/sack.

Tail: 800'-500' w/100% excess, 130 sacks of standard cement w/2% CaCl and .25 lb/sack Flocele or equivalent, weight = 12.7 lb/sack, yield = 1.84 cu. ft/sack, water = 9.9 gal/sack.

If cement column fails, a top job will be performed.

Production Casing: 8 3/4" hole with 7000' of 4 1/2" casing, actual fill-up to be determined based on reservoir depth and thickness. Location and thickness of potential reservoirs and use of packer-cementer will modify final cement design program.

Lead: ~1000', 2/15% excess, 155 sacks of "Light" x/0.6% Halad, weight = 12.7 lb/gal, yield = 1.84 cu. ft/sack, water = 8.8 gal/sack, actual volume based on caliper log.

Tail: ~500' above top zone to be tested w/15% excess, estimated w/1500': 290 sacks of premium cement w/.5% CFR-3, .30% SSA-1 and .25% HR-12, .3% Halad, weight = 15.6 lb/sack, yield = 1.50 cu. ft/sack, water = 6.4 gal/sack.

Foreland Corporation
Paiute #1-35
NE NE Section 35, T16N, R53E
Eureka County, Nevada
Page Four

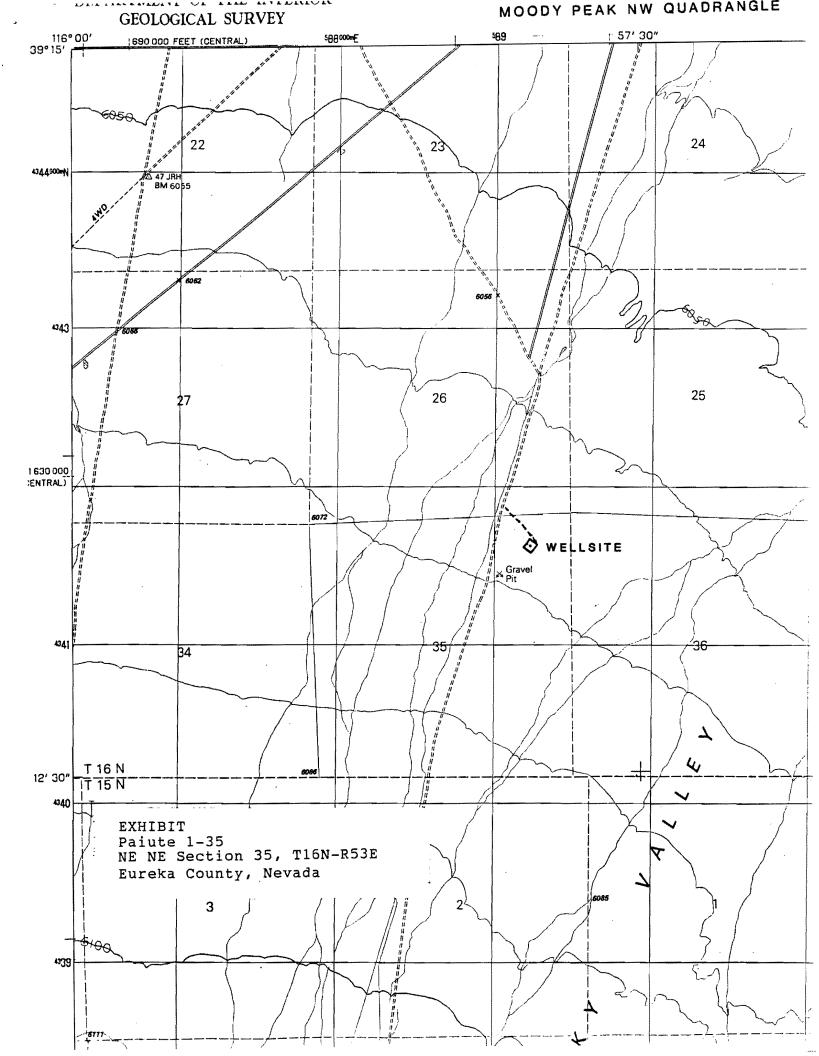
Final programs may vary as to volumes and actual well bore conditions.

## Drilling Procedure

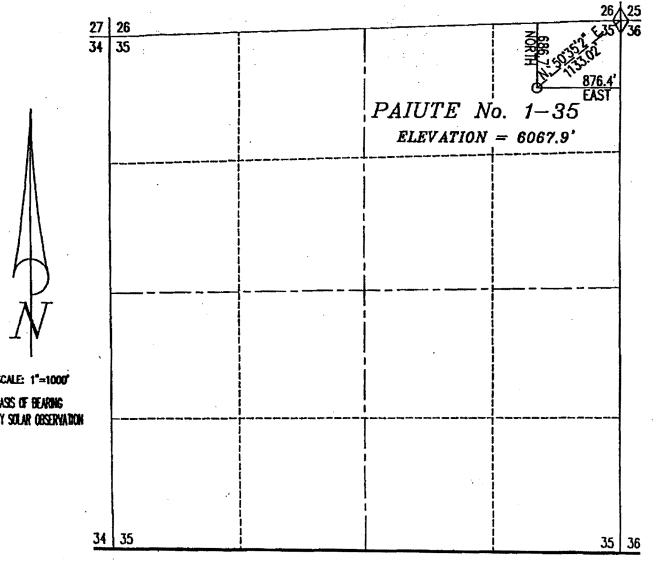
- 1. Build road and location to specs required for rig.
- 2. Drill water well, set conductor, drill rathole, mousehole, and sanitation holes.
- 3. Notify appropriate governmental authority (State of Nevada or BLM) or pending spud date.
- 4. Mi and RU rig.
- 5. Spud 17 1/2" surface hole and drill to ~2000' using recommended mud program. Catch 10' samples from surface to TD. Monitor deviation with teledrift tool. Control drill rate if necessary to avoid solids build up.
- 6. Run and cement 9 5/8", 36#, K-55, w/2" parasite (PAS) string with port at 1900'. Cement around shoe with sufficient cement for 250' fill up. Cement through stage collar at 500' to circulate to surface. Top out with 1" if cement fails.
- 7. Notify appropriate governmental authority of time for BOP test. Nipple up BOPE. Test BOP and choke manifold to 1800 psi or as directed.
- 8. Mud logger to be rigged up and operative at 2000'.
- 9. RIH with 8 3/4" J-1 bit, drill out float collar, cement, and shoe plus 100' of formation. Dump contaminated mud to reserve pit, switch to LSND polymer based mud system.
- 10. Trip to pick up stiff assembly made up with a near bit IBS, short drill collar, string IBS, 6" drill collar, string IBS and 437 type bit.
- 11. Drill 6 1/4" hole to TD at 7000', following recommended bit and mud programs. Keep solids as low as possible to provide minimum mud weight. Monitor deviation with teledrift, drop instrucment on trips to confirm. Use BHA as determined by well site personnel.

Foreland Corporation
Paiute #1-35
NE NE Section 35, T16N, R53E
Eureka County, Nevada
Page Five

- 12. At 7000', condition mud and hole. Run open hole logging program and evaluate for completion or P&A.
- 13. If well is to be completed, run and cement 4 1/2" casing following casing and cementing programs.
- 14. If well is dry, notify all concerned parties and appropriate government personnel. P&A according to government requirements.



CORNER FOUND: CEDAR STAKE



## CERTIFICATION

Ean Rembauer

I. Dean Neubauer, do hereby certify that this plat is a true and accurate map of a survey made by me on the 7th day of July, 1993.

> DEAN NEUBAUER P.L.S. NEVADA No. 9392



FORELAND CORPORATION APPLEWOOD TECH CENTER **28**01 YOUNGFIELD ST., SUITE 310 GOLDEN, CO. 80401

MAP SHOWING PAIUTE No. 1-35 OIL WELL LOCATION EUREKA COUNTY. NEVADA

ASS OF BEARING

JOB #93071020 PREPARED BY BOUNDY & FORMAN, INC. ELY, NEVADA JULY, 1993

TYPICAL PAD AND RESERVE PIT LAYOUT



## United States Department of the Interior

### BUREAU OF LAND MANAGEMENT

Nevada State Office 850 Harvard Way P.O. Box 12000 Reno, Nevada 89520-0006



IN REPLYREFER TO:

Paiute
Well No. 1-35
N-47916
3160-1 (NV-921)

SEP 2 1 1993

Mr. Bruce C. Decker Foreland Corporation 1104 Country Hills Drive, Suite 307 Ogden, UT 84403

Dear Mr. Decker:

Enclosed is an approved copy of your Application for Permit to Drill (APD): Paiute, Well No. 1-35, section 35, T. 16N., R. 53E., MDBM, Federal oil and gas lease no. N-47916, Eureka County, Nevada. Submitted with the APD are conditions of approval which were developed as the result of the drilling program review and from the environmental assessment prepared by the Battle Mountain District Office. Please ensure all personnel responsible for construction, drilling and reclamation of this location are familiar with the conditions of approval.

Should you have any questions regarding these permits, please contact John Snow, Division of Mineral Resources, at (702) 785-6573.

Sincerely, (Sgd) Thomas V. Leshondak

Thomas V. Leshendok Deputy State Director, Mineral Resources

### 3 Enclosures

- 1. BLM Conditions of Approval
- 2. BLM Minimum BOPE Requirements
- 3. Approved APD

cc: /Mr. Russ Fields, State DOM 400 W. King St., Suite 106 Carson City, NV 89710 (w/encls.)

> Mr. L. H. Dodgion, State DEP Capitol Complex 123 W. Nye Lane Carson City, NV 89710 (face page)

DM, Battle Mountain (w/encls.)
J. Stout, Ely (w/encls.)
NV-943 (face page)

## BLM Conditions of Approval

All correspondence shall be mailed to the following address:

Bureau of Land Management Nevada State Office 850 Harvard Way P.O. Box 12000 Reno, Nevada 89520-0006

Attn: Division of Mineral Rescurces, Fluids Branch (NV-921)

Oral requests via telephone shall be directed to the individuals at the following numbers:

John Stout, Oil and Gas Inspector (702) 289-4722 (24-hour) John Snow, Petroleum Engineer (702) 785-6573

- 1. A copy of the approved Application for Permit to Drill (APD), Form 3160-3, the attached set of conditions of approval, and the minimum Blow Out Prevention Equipment (BOPE) requirements <u>must be posted at the well site</u> prior to commencing operations.
- 2. The BLM must be notified at least 48 hours prior to spudding and within 24 hours after well is actually spudded. These notifications should be oral with written follow up. This is necessary to schedule the witnessing of BOPE tests.
- 3. You cannot deviate from your approved APD without prior approval. If you want to change your operations in any way, you must first receive approval from BLM.
- 4. Any information you desire to be held confidential <u>must be clearly marked</u> "CONFIDENTIAL INFORMATION" on each page. The regulations at 43 CFR 3162.8 require the submitter to mark the documents. Any pages marked confidential will be held confidential for a period of 12 months.
- 5. A copy of the completion report and all test information and logs obtained from this well shall be submitted to this office within 30 days after the well is completed.

- 6. No later than the fifth business day after any well begins production on which royalty is due anywhere on a lease site or allocated to a lease site, the operator must notify the BLM by letter or sundry notice of the date on which such production The date is defined as follows: the date on which liquid hydrocarbons are first sold or shipped from a temporary storage facility, such as a test tank, and for which a run ticket is required to be generated, or the date on which liquid hydrocarbons are first produced into a permanent storage facility, whichever occurs first. If you intend to sell from a test tank, it must be calibrated as specified in Onshore Order Number 4, Part C, and sealed in accordance with Onshore Order Number 3. You can initially notify orally, but you must followup with a letter or sundry notice. Reference is made to 43 CFR 3162.4-1(c). As a minimum, such notice must provide the following information:
  - a. Operator's name, address and telephone number.
  - b. Well name and number.

  - d. Date well placed in a producing status.
  - e. The nature of the well's production, i.e., crude oil, natural gas, or both.
  - f. The lease, communitization, or unit number applicable.
- 7. Hydrogen Sulfide Contingency Plan. A contingency plan will be submitted when required by this office. However, minimum safety precautions must be taken at all times. Personal safety equipment, including a portable hydrogen sulfide detector situated in a position to detect gas from the well, and two or more OSHA-approved protective breathing apparatii must be on location. If company policy requires more than this, please supply this office with a copy of the company plan or requirement, if not already submitted.
- 8. Abandonment program approval must be obtained prior to plugging the well. Following an oral approval, a sundry notice titled "Notice of Intent to Abandon" will be submitted to this office within five business days. Failure to obtain approval prior to commencement of abandonment operations shall result in immediate assessment under 43 CFR 3163.1(b)(3). Notice: if no logs are run (mud or electric), all open sections of hole will be filled with cement in a manner which precludes interzonal migration of fluids.
- 9. Directional surveys (inclination and azimuth) shall be run on the well wherever the inclination exceeds 10 degrees or the projected bottom hole location is within 200 feet of the spacing unit or lease or unit boundary.
- 10. Pursuant to 43 CFR 3162.7-1(b), production testing will be permitted into test tanks only. No oil will be permitted into the reserve pit except in emergency situations.

- 11. No trash will be left on or adjacent to the sites. All refuse must be disposed of in a licensed land fill. No trash will be buried on the project area.
- 12. The reserve pit will be fenced on three sides during drilling. Upon removal of the drill rig, the fourth side of the pit shall be fenced. The pit shall remain fenced until reclaimed.
- 13. The pad base and reserve mud pits must be designed to prevent ground water contamination. A plastic or other impermeable liner (such as bentonite) may be required to prevent fluid loss into the subsurface.
- 14. Foreland Corporation must obtain and maintain all necessary State of Nevada and local permits applicable to the drilling and production of this well.
- 15. Portable chemical toilets must be used for human waste. The latter may not be chemically treated and buried on site.
- 16. If any oil is spilled, it shall be <u>immediately</u> cleaned up to prevent contact with avian life. Any oil that is exposed to the environment and approved through lease operations shall be netted to preclude avian life.
- 17. Production facilities shall be painted natural earth tones to blend with the surrounding environment.
- 18. If the well is a producer, the pad must be reduced in size to that which is necessary for production operations.
- 19. Access, construction and excavation activities by Foreland or their contractors will be conducted in a manner that will limit fugitive dust generation and emissions. Measures may include, but are not limited to, watering of roads and pads, applying gravel or other material where needed to minimize dust.
- 20. Topsoil/growth medium will be salvaged and stockpiled from roads and pads, so as to be available for respreading over the reclaimed, disturbed areas.
- 21. The pad base and reserve mud pit must be designed to prevent ground water contamination. A plastic or other impermeable liner (such as bentonite) may be required to prevent fluid loss into the subsurface.
- 22. A BLM seed mixture will be applied to all disturbed areas after reshaping of the surface. The seeding should be done in the fall before the first snow fall to ensure that the seed is set in contact with the mineral soil.

- 23. All operations will be conducted in compliance with all applicable State and Federal laws and regulations.
- 24. All range improvements must be protected, and if damaged repaired as soon as possible.
- 25. Reclamation of the sites will include the reshaping of the surface to a natural appearance. The mud or reserve pit will, when dry, be reshaped to a natural appearing surface. Stockpiles of topsoil/growth medium will be spread over the reclaimed surface to a minimum depth of nine inches and seeded with the BLM approved seed mix. Seed will be applied with a drill, or other BLM approved method.
- 26. All reclamation of the disturbed areas must be completed within one (1) year from the date of proper plugging and abandonment of the well. The Authorized Officer of the Bureau of Land Management must be notified in writing when reclamation operations commence and when reclamation is completed.
- 27. All roads and drill pads must be ripped to a depth of 12 inches to reduce compaction before reshaping and top soil applications.

BLOW	OUT PREVENTER EQUIPMENT FOR WELL No. 1-35 SEC. 35 T.16 N R.	_53 E
WILD	CAT YES FIELD WELL Paiute LEASE NO. N	-47916
OPER.	ATOR <u>Foreland Corporation</u> COUNTY <u>Eureka</u> STA	TE <u>NV</u>
1.	API 3M ARRANGEMENT SRRA	
2.	KILL LINE SIZEWITH APPROPRIATE VALVES	X
3.	CHOKE LINE SIZE 3" WITH APPROPRIATE VALVES	X
4.	IF THE PRESSURE FOR THE TEST IS TO BE SUPPLIED BY THE RIG PUMP THE MAXIMUM REQUIRED PRESSURE SHALL BE 1000 PSI	X
	A. PRIMARY CONTROLS (MANUAL OPERATION OPTION)	X
	B. REMOTE CONTROLS (WITHIN 10' OF DRILLER)	X
5.	UPPER KELLY COCK W/WRENCH ON RIG FLOOR	X
6.	LOWER KELLY COCK W/WRENCH ON RIG FLOOR	
7.	FULL OPENING SAFETY VALVE AND WRENCH ON RIG FLOOR	X
8.	INTERNAL PREVENTER OR FLOAT IN STRING, OR ON RIG FLOOR, OPERABLE	
9.	PRESSURE GAUGES: RIG PUMP, STAND PIPE, AND CHOKE LINE	X
10.	RAM-TYPE PREVENTER(S) TO BE TESTED TO 70% OF INTERNAL YIELD PRESSURE OF CASING	X
11.	ANNULAR-TYPE PREVENTER TO BE TESTED TO 50% OF WORKING PRESSURE	X
12.	GAS DETECTOR	X
13.	PIT LEVEL INDICATOR	X
14.	TRIP TANK	
15.	FLOW NO FLOW INDICATOR	
17. 18.	H <sub>2</sub> S MONITORING EQUIPMENT (See BLM CONDITIONS OF APPROVAL) H <sub>2</sub> S SAFETY EQUIPMENT (See BLM CONDITIONS OF APPROVAL) H <sub>2</sub> S CONTINGENCY PLAN (See BLM CONDITIONS OF APPROVAL) ALL TESTS, DRILLS, AND SAFETY MEETINGS MUST BE POSTED IN THE DRILLER'S LOG BOOK	X X X

BLM MINIMUM BOPE REQUIREMENTS

OTHER REQUIREMENTS NOT SPECIFIED ABOVE: SO THAT BOPE TESTS MAY BE WITNESSED, PLEASE NOTIFY JOHN STOUT (702) 289-4722 AND/OR JOHN SNOW (702) 785-6573 WITH SUFFICIENT LEAD TIME.

- A. ANY WAIVER FROM THE APPROVED BOPE MUST BE AUTHORIZED BY THE BLM.
- B. COPIES OF APPROVED APD AND THIS NOTICE AND BLM CONDITIONS OF APPROVAL MUST BE POSTED ON THE RIG.
- C. COPIES OF ALL CONTINGENCY PLANS MUST BE KEPT AT THE WELL SITE.

  APPROVED SUBJECT TO THE ATTACHED CONDITIONS

Form 3160-3 (December 1990)

CONDITIONS OF APPROVAL

# UNITED STATES

SUBMIT IN TRIPLIO (Other instructions on reverse side)

Form approved. Budget Bureau No. 1004-0136 Expires: December 31, 1991

	DEPARTMEN	T OF THE	INTER	RIOR		1	5. LEASE DESIGNATI	ON AND SERIAL NO.
	BUREAU OF	E LAND MANA	GEMEN	VT.			N-47916	
APPL	ICATION FOR F	PERMIT TO	DRIL	L OR DEE	PEN		6. IF INDIAN, ALLOT	TER OR TRIBE NAME
la. TYPE OF WORK						_	N/A	
	NILL 🔯	DEEPEN					7. UNIT AGREEMENT	' NAMB
	AS			NGLE	MULTIP	LE [	8. FARM OR LEASE NAME	TARE I NO
2. NAME OF OPERATOR	VELL OTREE		20	NE L	ZONE		Paiute	WELL NO.
FORELAND CO	RPORATION						9. AR WELL NO.	
3. ADDRESS AND TELEPHONE NO.	Tel: (801)6	521-1035					#1-35	
1104 Countr	y Hills Drive	e, Ste. 30	07, O	gden, U	г 84	403	10. FIELD AND POOL	OR WILDCAT
4. LOCATION OF WELL (E At surface	Report location clearly and	d in accordance wi	th any S	tate requiremen	's.*)	4	Wildcat _	
NE NE Sec.	35, T16N, R53	BE, 686.7	FNL,	876.4 I	PEL	1	11. SEC., T., R., M., O AND SURVEY OR	ARBA
At proposed prod. so:	e Eureka Co	ounty, Nev	vada			:	Sec. 35, T	116N, R53E
14. DISTANCE IN MILES	AND DIRECTION PROM NEA	REST TOWN OF POS	T OFFICE	: 0			NE NE	- W   10 am.ms
	ly 20 miles s			-	ia.		Eureka	NV
13. DISTANCE FROM PROP	USED*	JOUCH OF I		OF ACRES IN I		1	ACRES ASSIGNED	
LOCATION TO NEARER PROPERTY OR LEASE	LINE, FT.	376.4'		8880		TO THE	WELL 40	
(Also to nearest dri 18. DISTANCE FROM PROI	POSED LOCATION*	770.4	1.	POSED DEPTH	<del></del> -	20. BOTARY	OR CABLE TOOLS	
TO NEAREST WELL, D OR APPLIED FOR, ON TH	ORILLING, COMPLETED,	I/A		7000'			Rotary	
21. ELEVATIONS (Show wh	ether DF, RT, GR, etc.)					-	22. APPROX. DATE 1	WORK WILL START
6067.9							August 15	. 1993
23.		PROPOSED CASE	NG AND	CEMENTING P	ROGRAM			
SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FO	00Т	SETTING DE	РТН		QUANTITY OF CEM	ENT
17 1/2"	20"	***		60'		Pushed	1	
17 1/2"	9 5/8"			2000'		570 ct	ı/ft.	
8 3/4"	7"			7000'		720 ct	1/ft.	
<pre>0'. A 17 1/ ud to 2000'. OPs will be ny potential il productio</pre>	e will be dri 2" hole will 2000' of 9 nippled up an oil bearing n is indicate nd cemented,	be drille 5/8" casi d tested. zones wiled, a stri	ed [w. .ng w. An .l be .ng o	/2" para ill be r 8 3/4" appropr f 7" pro	site un al hole iate: ducti	(PAS) nd ceme will h ly test ion cas	with Gelented to so be drilled ted. If e sing w/4 l	/Polymer urface. to T.D. conomic /2" liner
							ráid <b>V</b> I	•
							JUL 1.4.199	<b>9</b> 5
							ADA STATE OF	
	E PROPOSED PROGRAM: If pent data on subsurfabe location							proposal is to drill or
STENED THE	us Che	<u> </u>	v.	Pres.,	Opera	tions	DATE 07	13.93
(This space for Feder	ral or State office use)				9	SEP 2 1	1993	
PERMIT NO. NV-3	58		А	PPROVAL DATE	<u> </u>	)L1	1999	
			<del></del>		سدا جسابطون	الداد مرور طورتوارو هو	anitle the analisant to a	made we assume these decimal

\*See Instructions On Reverse Side SIBJECT TO THE ATTACHED CONDITIONS

Title 18 U.S.C. Section 1001, makes 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.

#### FORELAND CORPORATION

DRILLING PROGNOSIS

Paiute #1-35

NE NE Section 35, T16N, R53E

Proposed Total Depth: 7000'

## Location:

Located approximately 20 miles south of Eureka, Nevada.

## Estimated Formation Tops

## Anticipated Oil Bearing Zones

## Anticipated Pressures and Hole Problems

All available pressure data from Little Smoky Valley indicate a pressure gradient just slightly higher than hydrostatic in all zones and formations tested. No abnormal pressures are expected.

In the shallow valley fill, some problems with hole stability may be encountered. Also, rapid rates of penetration may cause build-up of cuttings in annulus. Clays within the

sequence can rapidly build up mud weight which must be controlled. In Little Smoky Valley, minor to moderate loss of circulation has been noted, primarily in the

loss of circulation problems have been successfully treated with LCM. Nevada's asphaltic crude is susceptible to emulsion blocks and oil wetting of the reservoir, especially in clastic sequences. Water loss and mud weight must be controlled to prevent damage. Proper implementation of the mud program, including tight control of the hydraulics and mud properties, and a properly functioning mud cleaning system is critical to success of the drilling program.

Steeper dips which may be encountered in the section and occasionally in the may create deviation problems. Sufficient deviation surveys and use of various bottom hole assemblies are required to prevent excessive deviation.

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## Mud Program

<u>Depth</u> <u>Weight</u> <u>Visc.</u> <u>F.L.</u> 0' - 2000' 8.7-9.0 40-55 15

Surface interval to be drilled with mud properties and hydraulics sufficient to clean hole. Viscosity will be adjusted to provide good carrying capacity. Section may be drilled with controlled rate of penetration to prevent build up of cuttings in annulus.

<u>Depth</u> <u>Weight</u> <u>Visc.</u> <u>F.L.</u> 2000' - 7000' 8.8-9 35-40 4-10

Drill below surface casing with low solids non-dispersed polymer mud. Primary concern when drilling section is retaining low mud weight. Utilize centrifuge for solids control. Based on other Smoky Valley wells, minimal loss of circulation is expected, primarily in zones within the section. Loss of circulation to be treated with cottonseed hulls, cedar fiber, mica, etc.

A properly functioning shale shaker with ~80 mesh screens, a desander, and a desilter (probably 10 or 12 cone) capable of processing 600-800 GPM will be used for solids control. A 200 GPM centrifuge will be used for solids control.

## Logging Program

Sample Collection: Required number of samples will be caught, bagged, and dried to total depth.

Mud Logging: FID and gas chromatograph from below surface casing to total depth.

Open Hole Logs:

- 1. Dll-Gr-Sp-Cal from base of surface casing to TD.
- 2. GR-Sonic from base of surface casing to TD.
- 3. FDC-CNL-Cal-GR and Dipmeter as directed by on-site geologist.

No coring or DST's are anticipated during drilling.

Sidewall cores may be taken at the direction of the on-site geologist.

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## Casing Program

Conductor: ~60' of 20" conductor to be set in 17 1/2" hole and cemented by rat hole driller prior to move in of drilling rig.

Surface Casing: 2000' of 9 5/8" OD, 36#, K-55, w/2" parasite (PAS) string with port at 1900'. Cement around shoe with sufficient cement for 250' fill up. Cement through stage collar at 500' to circulate to surface. Top out with 1" if cement fails.

Production Casing: Drill out with 8 3/4" to T.D. or intermediate, setting a 7" and 4 1/2" liner.

If hole and/or formation conditions permit and warrant, a combination packer-cementer will be set above the pay zone, and 36" external casing packers will be set in combination with slotted casing to avoid placing cement on the reservoir. Adequate bow centralizers to maintain stand-off, specifically one immediately above and below each external casing packer would be run.

## Cementing Program

Surface Casing: 17 1/2" hole with 2000' of 9 5/8" casing.

Lead: 500' to surface w/100% excess, 180 sacks of "Light" cement w/2% CaCl and .25 lb/sack Flocele or equivalent, weight = 12.7 lb/sack, yield = 1.84 cu. ft/sack, water = 8.8 gal/sack.

Tail: 800'-500' w/100% excess, 130 sacks of standard cement w/2% CaCl and .25 lb/sack Flocele or equivalent, weight = 12.7 lb/sack, yield = 1.84 cu. ft/sack, water = 9.9 gal/sack.

If cement column fails, a top job will be performed.

Production Casing: 8 3/4" hole with 7000' of 4 1/2" casing, actual fill-up to be determined based on reservoir depth and thickness. Location and thickness of potential reservoirs and use of packer-cementer will modify final cement design program.

Lead: ~1000', 2/15% excess, 155 sacks of "Light" x/0.6% Halad, weight = 12.7 lb/gal, yield = 1.84 cu. ft/sack, water = 8.8 gal/sack, actual volume based on caliper log.

Tail: 500' above top zone to be tested w/15% excess, estimated w/1500': 290 sacks of premium cement w/.5% CFR-3, .30% SSA-1 and .25% HR-12, .3% Halad, weight = 15.6 lb/sack, yield = 1.50 cu. ft/sack, water = 6.4 gal/sack.

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Final programs may vary as to volumes and actual well bore conditions.

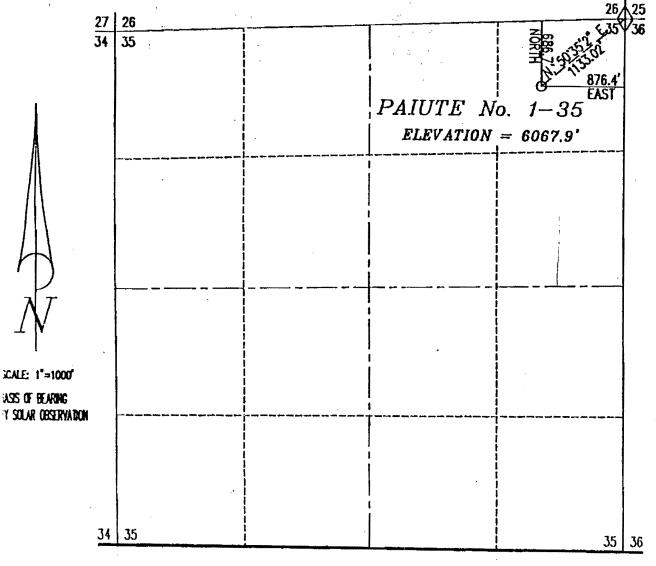
## Drilling Procedure

- 1. Build road and location to specs required for rig.
- 2. Drill water well, set conductor, drill rathole, mousehole, and sanitation holes.
- 3. Notify appropriate governmental authority (State of Nevada or BLM) or pending spud date.
- 4. Mi and RU rig.
- 5. Spud 17 1/2" surface hole and drill to ~2000' using recommended mud program. Catch 10' samples from surface to TD. Monitor deviation with teledrift tool. Control drill rate if necessary to avoid solids build up.
- 6. Run and cement 9 5/8", 36#, K-55, W/2" parasite (PAS) string with port at 1900'. Cement around shoe with sufficient cement for 250' fill up. Cement through stage collar at 500' to circulate to surface. Top out with 1" if cement fails.
- 7. Notify appropriate governmental authority of time for BOP test. Nipple up BOPE. Test BOP and choke manifold to 1800 psi or as directed.
- 8. Mud logger to be rigged up and operative at 2000'.
- 9. RIH with 8 3/4" J-1 bit, drill out float collar, cement, and shoe plus 100' of formation. Dump contaminated mud to reserve pit, switch to LSND polymer based mud system.
- 10. Trip to pick up stiff assembly made up with a near bit IBS, short drill collar, string IBS, 6" drill collar, string IBS and 437 type bit.
- 11. Drill 6 1/4" hole to TD at following recommended bit and mud programs. Keep solids as low as possible to provide minimum mud weight. Monitor deviation with teledrift, drop instrucment on trips to confirm. Use BHA as determined by well site personnel.

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- 12. At 7000', condition mud and hole. Run open hole logging program and evaluate for completion or P&A.
- 13. If well is to be completed, run and cement 4 1/2" casing following casing and cementing programs.
- 14. If well is dry, notify all concerned parties and appropriate government personnel. P&A according to government requirements.



## CERTIFICATION

I. Dean Neubauer, do hereby certify that this plat is a true and accurate map of a survey made by me on the 7th day of July, 1993.

> DEAN NEUBAUER P.L.S. NEVADA No. 9392

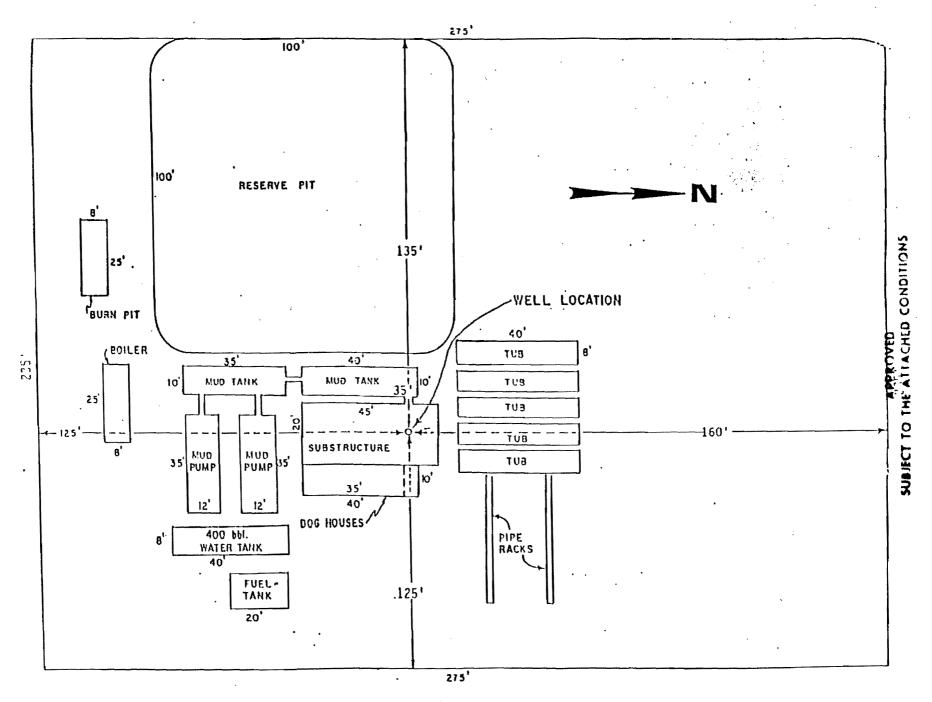


FORELAND CORPORATION APPLEWOOD TECH CENTER **28**01 YOUNGFIELD ST., SUITE 310 COLDEN. CO. 80401

MAP SHOWING PAIUTE No. 1-35 OIL WELL LOCATION EUREKA COUNTY, NEVADA

XCALE: 1"=1000" ASS OF BEARING

> JOB #93071020 PREPARED BY BOUNDY & FORMAN, INC. ELY, NEVADA JULY, 1993



TYPICAL PAD AND RESERVE PIT LAYOUT