

UTAH OIL AND GAS CONSERVATION COMMISSION

REMARKS: WELL LOG ELECTRIC LOGS OIL WATER SANDS LOCATION INSPECTED SUB. REPORT/abd.

000914 L.A'D, eff 9-11-00;

DATE FILED NOVEMBER 16, 1998

LAND: FEE & PATENTED STATE LEASE NO. PUBLIC LEASE NO. UTU-77270 INDIAN

DRILLING APPROVED: SEPTEMBER 13, 1999

SPUDED IN:

COMPLETED: PUT TO PRODUCING:

INITIAL PRODUCTION:

GRAVITY A.P.I.

GOR:

PRODUCING ZONES:

TOTAL DEPTH:

WELL ELEVATION:

DATE ABANDONED: 9-11-00 L.A'D

FIELD: WILDCAT

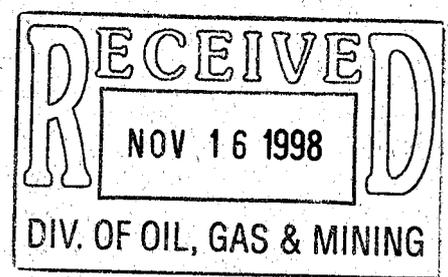
UNIT:

COUNTY: UTAH

WELL NO. HJORTH CANYON FEDERAL 16-1 API NO. 43-049-30017

LOCATION 942 FSL FT. FROM (N) (S) LINE. 1521 FWL FT. FROM (E) (W) LINE. SE SW 1/4 - 1/4 SEC. 16

TWP.	RGE.	SEC.	OPERATOR	TWP.	RGE.	SEC.	OPERATOR
11S	4E	16	BALLARD PETROLEUM LLC				



14421 Weld County Rd.10 • Ft. Lupton, Colorado 80621 • (303) 857-9999 • FAX (303) 857-0577 • E-MAIL Permitco 1@aol.com

November 11, 1998

Division of Oil, Gas & Mining
1594 West North Temple
Suite 1210
Salt Lake City, UT 84114-5801

Attn: John Baza

Re: **Ballard Petroleum LLC**
Hjorth Canyon Fed. #16-1
942' FSL and 1521' FWL
SE SW Sec. 16, T11S - R4E
Utah County, Utah

Dear John,

Enclosed please find three copies of the A.P.D. along with one copy of the Onshore Order No. 1 which has been forwarded to the BLM and U.S. Forest Service.

Please be advised that due to winter weather conditions and road improvements required by the Forest Service, drilling will not commence on this location until early summer, 1999. In addition, Ballard plans to file a water permit for use of water located in Lake Fork Creek, below the proposed drillsite. All appropriate permits will be filed with the Utah Division of Water Rights, prior to utilizing this water source.

Please forward approved copies of the A.P.D. to the address shown above. If you should need additional information, please feel free to contact me.

Sincerely,

PERMITCO INC.

Lisa L. Smith

Consultant for:

Ballard Petroleum LLC

Enc.

cc: **Ballard Petroleum LLC - Billings, MT**
Savant Resources LLC - Denver, CO
Duncan Oil Company - Denver, CO

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK **DRILL** **DEEPEN**

b. TYPE OF WELL
 OIL WELL GAS WELL OTHER SINGLE ZONE MULTIPLE ZONE

2. NAME OF OPERATOR **Ballard Petroleum LLC** Phone: **406/259-8790** P.O. Box **20174**
 Fax: **406/259-3884** Billings, MT **59104**

3. ADDRESS AND TELEPHONE NO. **Permitco Inc.** Phone: **303/857-9999** **14421 Weld County Road 10**
 Fax: **303/857-0577** **14 Ludron, CO 80621**

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)
 At Surface **942' FSL and 1521' FWL** *458 516.39*
 At proposed prod. zone *464* **SE SW Sec. 16, T11S - R4E** *4411 980.39*

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
Approximately 6.6 Miles North of Indianola, Utah

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) **1800'**

16. NO. OF ACRES IN LEASE **2436.37**

17. NO. OF ACRES ASSIGNED TO THIS WELL **40**

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. **None**

19. PROPOSED DEPTH **5,500'**

20. ROTARY OR CABLE TOOLS **Rotary**

21. ELEVATIONS (Show whether DF, RT, GR, etc.) **6,618'**

22. APPROX. DATE WORK WILL START* **July 1, 1999**

5. LEASE DESIGNATION AND SERIAL NO.
UTU-77270

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
N/A

7. UNIT AGREEMENT NAME
N/A

8. FARM OR LEASE NAME, WELL NO.
Hjorth Canyon Federal

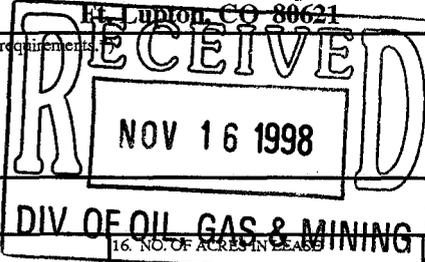
9. API WELL NO.
#16-1

10. FIELD AND POOL, OR WILDCAT
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 16, T11S - R4E

12. COUNTY OR PARISH
Utah

13. STATE
Utah



23. PROPOSED CASING AND CEMENTING PROGRAM				
SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12-1/4"	9-5/8"	36#	400'	230 sx - circulated to surface
8-3/4"	5-1/2"	15.5#	5,500'	575 sx - top of cement @ 2000'

Ballard Petroleum LLC proposes to drill a well to 5,500' to test the Nugget and Twin Creek Formations. If productive, casing will be run and the well completed. If dry, the well will be plugged and abandoned as per BLM and State of Utah requirements.

See Onshore Order No. 1 attached. **CONFIDENTIAL - TIGHT HOLE**

Please be advised that Ballard Petroleum LLC is considered to be the Operator of the above mentioned well. Ballard Petroleum LLC agrees to be responsible under the terms and conditions of the lease for the operations conducted upon the lease lands.

Bond coverage for this well is provided by Nationwide Bond No. UT-1005. The principal is Ballard Petroleum LLC via surety consent as provided for in 43 CFR 3104.2.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, 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 *[Signature]* **Lisa Smith** TITLE **Consultant For: Ballard Petroleum LLC** Date **11/11/98**

(This space for Federal or State office use)
 PERMIT NO. **43049-30017** 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 *[Signature]* **BRADLEY G. HILL** DATE **9/13/99**
RECLAMATION SPECIALIST III

*See Instructions On Reverse Side

T11S, R4E, S.L.B.&M.

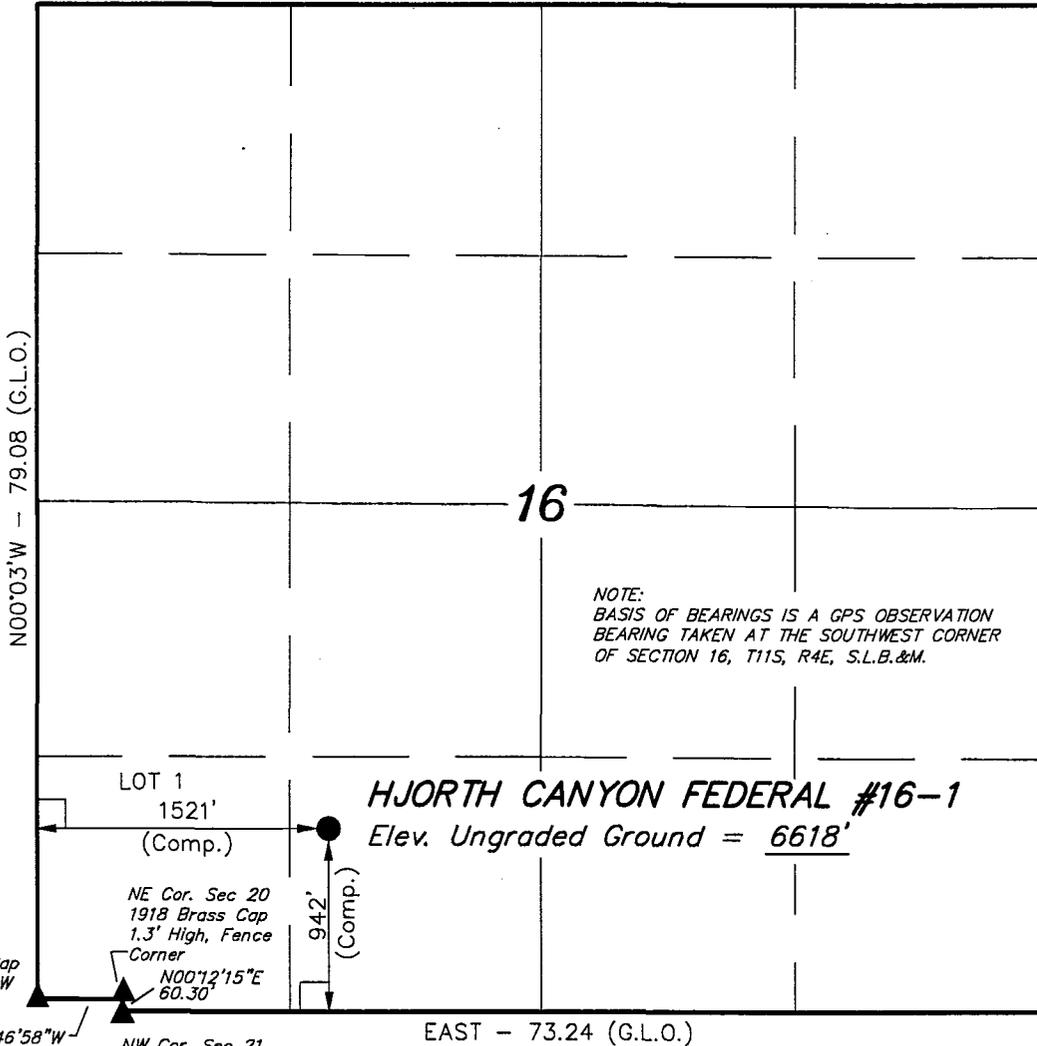
BALLARD PETROLEUM LLC

Well location, HJORTH CANYON FEDERAL #16-1, located as shown in the SE 1/4 SW 1/4 of Section 16, T11S, R4E, S.L.B.&M. Utah County, Utah.

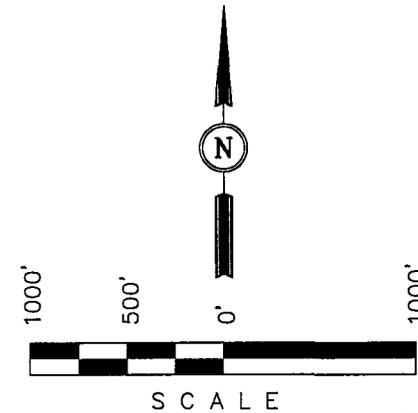
WEST - 80.00 (G.L.O.)

BASIS OF ELEVATION

SPOT ELEVATION AT A ROAD INTERSECTION LOCATED IN THE CENTER OF SECTION 19, T11S, R4E, S.L.B.&M. TAKEN FROM THE SPENCER CANYON, QUADRANGLE, UTAH, UTAH COUNTY, 7.5 MINUTE QUAD. (TOPOGRAPHIC MAP) PUBLISHED BY THE UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY. SAID ELEVATION IS MARKED AS BEING 5905 FEET.



N00°02'W - (G.L.O.)



CERTIFICATE

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED LAND SURVEYOR
ROBERT L. [Signature]
REGISTRATION NO. 161419
STATE OF UTAH

Revised: 11-09-98 D.R.B.

NOTE:
THE PROPOSED WELL HEAD BEARS N50°42'41"E 1392.91' FROM THE NORTHEAST CORNER OF SECTION 21, T11S, R4E, S.L.B.&M.

LEGEND:

- └─┘ = 90° SYMBOL
- = PROPOSED WELL HEAD.
- ▲ = SECTION CORNERS LOCATED.

UINTAH ENGINEERING & LAND SURVEYING
85 SOUTH 200 EAST - VERNAL, UTAH 84078
(435) 789-1017

SCALE 1" = 1000'	DATE SURVEYED: 10-20-98	DATE DRAWN: 10-21-98
PARTY D.A. L.L. D.R.B.	REFERENCES G.L.O. PLAT	
WEATHER WARM	FILE BALLARD PETROLEUM LLC	

ONSHORE OIL & GAS ORDER NO. 1

**Approval of Operations on Onshore
Federal and Indian Oil & Gas Leases**

**Hjorth Canyon Federal #16-1
942' FSL and 1521' FWL
SE SW Sec. 16, T11S - R4E
Utah County, Utah**

Prepared For:

BALLARD PETROLEUM LLC

By:

**PERMITCO INC.
14421 Weld County Road 10
Ft. Lupton, CO 80621
303/857-9999**

Copies Sent To:

- 3 - Bureau of Land Management - Salt Lake City, UT**
- 1 - U.S. Forest Service - Price, UT**
- 1 - Utah Division of Oil, Gas & Mining - SLC, UT**
- 1 - Duncan Oil Company - Denver, CO**
- 1 - Savant Resources LLC - Denver, CO**
- 3 - Ballard Petroleum LLC - Billings, MT**

CONFIDENTIAL - TIGHT HOLE



BALLARD

PETROLEUM LLC

November 3, 1998

Bureau of Land Management
Utah State Office
Attn: Minerals
P.O. Box 45155
Salt Lake City, UT 84145

RE: Oil Hollow Federal #5-1
Hjorth Canyon Federal #16-1
Utah County, Utah
Authorization to Act as Agent

Gentlemen:

This letter is to inform you that Permitco Inc. is authorized to act as Agent and to sign documents on behalf of Ballard Petroleum LLC when necessary for filing county, state and federal permits including Onshore Order No. 1, Right of Way applications, etc., for the above mentioned wells.

It should be understood that Permitco is acting as Agent only in those matters stated above and is not responsible for drilling, completion, production or compliance with regulations.

Ballard Petroleum LLC agrees to accept full responsibility for operations conducted in order to drill, complete and produce the above-mentioned wells.

Sincerely,



Dave McCoskery
Operations Manager

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Hjorth Canyon Federal #16-1

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ONSHORE OIL & GAS ORDER NO. 1
Approval of Operations on Onshore
Federal and Indian Oil and Gas Leases

All lease and/or unit operations will be conducted in such a manner that full compliance is made with applicable laws, regulations (43 CFR 3100), Onshore Oil and Gas Order No. 1, and the approved plan of operations. The operator is fully responsible for the actions of his subcontractors. A copy of these conditions will be furnished the field representative to insure compliance.

1. Formation Tops

The estimated tops of important geologic markers are as follows:

<u>Formation</u>	<u>Depth</u>	<u>Subsea</u>
Indianola	Surface	+6,620'
Cedar Mountain	1,200'	+5,420'
Summerville/Curtis	2,150'	+4,470'
Twin Creek	2,700'	+3,920'
Nugget	3,420'	+3,200'
Ankareh	4,850'	+1,770'
T.D.	5,500'	+1,120'

2. Anticipated Depths of Oil, Gas Water and Other Mineral Bearing Zones

The estimated depths at which the top and bottom of the anticipated water, oil, gas or other mineral bearing formations are expected to be encountered are as follows:

<u>Substance</u>	<u>Formation</u>	<u>Depth</u>
Oil/Gas	Twin Creek	2,700'
Oil/Gas	Nugget	3,420'

All fresh water and prospectively valuable minerals encountered during drilling, will be recorded by depth and adequately protected. All oil and gas shows will be tested to determine commercial potential.



All water shows and water-bearing sands will be reported to the BLM in Moab, Utah. Copies of State of Utah form OGC-8-X are acceptable. If noticeable water flows are detected, samples will be submitted to the BLM along with any water analyses conducted.

3. BOP Equipment/Requirements

Ballard Petroleum LLC's minimum specifications for pressure control equipment are as follows:

Ram Type: 10" Hydraulic double, 2000 psi w.p.

Ram type preventers and associated equipment shall be tested to approved stack working pressure if isolated by test plug or to 70 percent of internal yield pressure of casing. Pressure shall be maintained for at least 10 minutes or until requirements of test are met, whichever is longer. If a test plug is utilized, no bleed-off pressure is acceptable. For a test not utilizing a test plug, if a decline in pressure of more than 10 percent in 30 minutes occurs, the test shall be considered to have failed. Valve on casing head below test plug shall be open during test of BOP stack.

Annular type preventers (if used) shall be tested to 50 percent of rated working pressure. Pressure shall be maintained at least 10 minutes or until provisions of test are met, whichever is longer.

As a minimum, the above test shall be performed:

- a. when initially installed;
- b. whenever any seal subject to test pressure is broken
- c. following related repairs; and
- d. at 30-day intervals

Valves shall be tested from working pressure side during BOPE tests with all down stream valves open.



When testing the kill line valve(s) the check valve shall be held open or the ball removed.

Annular preventers (if used) shall be functionally operated at least weekly.

Pipe and blind rams shall be activated each trip, however, this function need not be performed more than once a day.

A BOPE pit level drill shall be conducted weekly for each drilling crew.

The BOP and related equipment shall meet the minimum requirements of Onshore Oil and Gas Order No. 2 for equipment and testing requirements, procedures, etc., and individual components shall be operable as designed. Chart recorders shall be used for all pressure tests.

Pressure tests shall apply to all related well control equipment.

All of the above described tests and/or drills shall be recorded in the drilling log. Test charts, with individual test results identified, shall be maintained on location while drilling and shall be made available to a BLM representative upon request. Pressure tests shall apply to all related well control equipment.

BOP systems shall be consistent with API RP53. Pressure tests will be conducted before drilling out from under casing strings which have been set and cemented in place. Blowout preventer controls will be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned. Preventers will be inspected and operated at least daily to ensure good mechanical working order, and this inspection will be recorded on the daily drilling report. Preventers will be pressure tested before drilling casing cement plugs.

The Price River Resource Area Office shall be notified, at least 24 hours prior to initiating the pressure test, in order to have a BLM representative on location during pressure testing.

- a. The size and rating of the BOP stack is shown on the attached diagram. Although a rig has not been chosen to drill this well, most of the equipment



for this depth of hole in the area use a 11", 2000 psi working pressure blowout preventor.

- b. A choke line and a kill line are to be properly installed. The kill line is not to be used as a fill-up line.
- c. The accumulator system shall have a pressure capacity to provide for repeated operation of hydraulic preventers.
- d. Drill string safety valve(s), to fit all tools in the drill string, are to be maintained on the rig floor while drilling operations are in progress.

4. Casing and Cementing Program

- a. The Price River Resource Area Office shall be notified at least 24 hours prior to the running and cementing of all casing strings, in order to have a BLM representative on location while running and cementing all casing strings.
- b. The proposed casing and cementing program shall be conducted as approved to protect and/or isolate all usable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. Any isolating medium other than cement shall receive approval prior to use. The casing setting depth shall be calculated to position the casing seat opposite a competent formation which will contain the maximum pressure to which it will be exposed during normal drilling operations. Determination of casing setting depth shall be based on all relevant factors, including; presence/absence of hydrocarbons; fracture gradients; usable water zones; formation pressures; lost circulation zones; other minerals; or other unusual characteristics. All indications of usable water shall be reported.
- c. Casing design shall assume formation pressure gradients of 0.44 to 0.50 psi per foot for exploratory wells (lacking better data).



- d. Casing design shall assume fracture gradients from 0.70 to 1.00 psi per foot for exploratory wells (lacking better data)
- e. Casing collars shall have a minimum clearance of 0.422 inches of all sides in the hole/casing annulus, with recognition that variances can be granted for justified exceptions.
- f. All waiting on cement times shall be adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.
- g. All casing except the conductor casing, shall be new or reconditioned and tested used casing that meets or exceeds API standards for new casing.
- h. The surface casing shall be cemented back to surface either during the primary cement job or by remedial cementing.
- i. All indications of usable water shall be reported to the authorized officer prior to running the next string of casing or before plugging orders are requested, whichever occurs first.
- j. Three centralizers will be run on the bottom three joints of surface casing (minimum of one centralizer per joint starting with the shoe joint.)
- k. Top plugs shall be used to reduce contamination of cement by displacement fluid. A bottom plug or other acceptable technique, such as a suitable preflush fluid, inner string cement method, etc. shall be utilized to help isolate the cement from contamination by the mud fluid being displaced ahead of the cement slurry.
- l. All casing strings below the conductor shall be pressure tested to 0.22 psi per foot of casing string length or 1500 psi, whichever is greater, but not to exceed 70 percent of the minimum internal yield. If pressure declines more than 10 percent in 30 minutes, corrective action shall be taken.
- m. On all exploratory wells, and on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be



performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

n. The proposed casing program will be as follows:

<u>Purpose</u>	<u>Depth</u>	<u>Hole Size</u>	<u>O.D.</u>	<u>Weight</u>	<u>Grade</u>	<u>Type</u>	<u>New or Used</u>
Surface	0-400'	12-1/4"	9-5/8"	36#	J-55	ST&C	New
Production	0-5,500'*	8-3/4"	5-1/2"	15.5#	J-55	ST&C	New

* If salt sections are encountered, 20# N-80 will be run through those sections.

o. Casing design subject to revision based on geologic conditions encountered.

p. The cement program will be as follows:

<u>Surface</u>	<u>Type and Amount</u>
0-400'	230 sx Class "C" with 2% CaCL ₂ , 0.25#/sx Cello flakes. Slurry weight = 15.8 ppg. Slurry yield = 1.17 Cu. Ft./sack. (Volumes are with 100% Excess. Cement will be circulated to surface.)

<u>Production</u>	<u>Type and Amount</u>
	155 sx (28:72) poz Class "C" with 3 lbs/sx BA-90 (Silca fume), 0.25 lbs/sx Cello flakes, 2lbs/sx Kol Seal, 10% Bentonite and 0.5% Sodium Metasilicate. Slurry Weight = 11.0 ppg. Slurry Yield = 3.33 Cu. Ft./sack.

Tailed with 420 sxs Class "G" with 10% A-10 (thixotropic additive) and 10% Sodium Chloride, (Clay inhibitor. Slurry Weight = 14.4 ppg. Slurry Yield = 1.64 Cu. Ft./sk. Top of cement will be at 2000'. Actual cement volumes will be calculated for caliper logs.



- q. The Price River Resource Area Office should be notified, with sufficient lead time, in order to have a BLM representative on location while running all casing strings and cementing.
- r. After cementing but before commencing any test, the casing string shall stand cemented until the cement has reached a compressive strength of at least 500 psi at the shoe. WOC time shall be recorded in the driller's log.
- s. The following reports shall be filed with the District Manager within 30 days after the work is completed.
 - 1. Progress reports, Form 3160-5 (formerly 9-331) "Sundry Notices and Reports on Wells", must include complete information concerning:
 - a. Setting of each string of casing, showing the size, grade, weight of casing set, hole size, setting depth, amounts and type of cement used, whether cement circulated or the top of the cement behind the casing, depth of cementing tools used, casing test method and results, and the date work was done. Show the spud date on the first reports submitted.
 - b. Temperature or bond logs must be submitted for each well where the casing cement was not circulated to the surface.
- t. Auxiliary equipment to be used is as follows:
 - 1. Kelly cock
 - 2. No bit float is deemed necessary.
 - 3. A sub with a full opening valve.



5. Mud Program

- a. The proposed circulating mediums to be employed in drilling are as follows:

<u>Interval</u>	<u>Mud Type</u>	<u>Mud Wt.</u>	<u>Visc.</u>	<u>F/L</u>	<u>PH</u>
0-400'	Native	9.0	35	NC	9
400'-5,500'	LSND	9.3	43	8-10	9

There will be sufficient mud on location to control a blowout should one occur.

A mud test shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, static filtration loss, and Ph.

- b. Mud monitoring equipment to be used is as follows:

1. Periodic checks will be made each tour of the mud system. The mud level will be checked visually.

- c. Hazardous substances specifically listed by the EPA as a hazardous waste or demonstrating a characteristic of a hazardous waste will not be used in drilling, testing or completion operations.

6. Evaluation Program - Testing, Logging and Coring

The anticipated type and amount of testing, logging and coring are as follows:

- a. A drill stem test is anticipated in the Nugget formation from 3,420'-3,470'. If a DST is run, the following requirements will be adhered to:

Initial opening of drill stem test tools shall be restricted to daylight hours unless specific approval to start during other hours is obtained from the authorized officer. However, DST's may be allowed to continue at night if the test was initiated during daylight hours and the rate of flow is stabilized



and if adequate lighting is available (i.e. lighting which is adequate for visibility and vapor-proof for safe operations). Packers can be released, but tripping shall not begin before daylight, unless prior approval is obtained from the authorized officer. Closed chamber DSTs may be accomplished day or night.

A DST that flows to the surface with evidence of hydrocarbons shall be either reversed out of the testing string under controlled surface conditions or displaced into the formation prior to pulling the test tool. This would involve providing some means for reverse circulation.

Separation equipment required for the anticipated recovery shall be properly installed before a test starts.

All engines within 100 feet of the wellbore that are required to "run" during the test shall have spark arresters or water cooled exhausts.

- b. The logging program will consist of a LDT-CNL-GR, BHC-Sonic-GR, dipmeter-GR, array resistivity-SP-GR and mud log run from surface to T.D.
- c. No cores are anticipated.
- d. Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (Form 3160-4) will be submitted not later than 30 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3164. Two copies of all logs, core descriptions, core analyses, well-test data, geologic summaries, sample description, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, will be filed with form 3160-4. Samples (cuttings, fluids, and/or gases) will be submitted when requested by the authorized officer (AO).
- e. The anticipated completion program is as follows:

Perforate the Nugget Formation and possibly the Twin Creek Formation through 5-1/2" cemented casing.



7. Anticipated Pressures and H₂S

- a. The expected maximum bottom hole pressure is 2350 psi. Abnormal pressures are not anticipated.
- b. No hydrogen sulfide gas is anticipated.

8. Other Information and Notification Requirements

- a. Should the well be successfully completed for production, the AO will be notified when the well is placed in a producing status. Such notification will be sent by telegram or other written communications, not later than 5 days following the date on which the well is placed on production.
- b. Production data shall be reported to the MMS pursuant to 30 CFR 216.5 using form MMS/3160.
- c. The date on which production is commenced or resumed will be construed for oil wells as 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 first occurs; and, for gas wells as the date on which associated 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 gas is first measured through permanent metering facilities, whichever first occurs.
- d. Pursuant to NTL-4A, lessees or operators are authorized to vent/flare gas during initial well evaluation tests, not exceeding a period of 30 days or the production of 50 MMCF of gas, whichever occurs first. An application must be filed with the District Engineer and approval received, for any venting/flaring of gas beyond the initial 30 day or authorized test period.



- e. Gas produced from this well may not be vented or flared beyond an initial authorized test period of 30 days or 50 MMCF following its completion, whichever occurs first, without the prior written approval of the Authorized Officer. Should gas be vented or flared without approval beyond the authorized test period, the operator may be directed to shut-in the well until the gas can be captured or the operator shall be required to compensate the lessor for that portion of the gas vented or flared without approval which is determined to have been avoidably lost.
- f. A schematic facilities diagram as required by 43 CFR 3162.7-2, 3162.7-3 and 3162.7-4 shall be submitted to the appropriate District Office within 30 days of installation or first production, whichever occurs first. All site security regulations as specified in 43 CFR 3162.7 and Onshore Order No. 3 shall be adhered to. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed in accordance with 43 CFR 3162.7-4.
- g. Section 102(b)(3) of the Federal Oil and Gas Royalty Management Act of 1982, as implemented by the applicable provisions of the operating regulations at Title 43 CFR 3162.4-1(c), requires that "not later than the 5th business day after any well begins production on which royalty is due anywhere on a lease site or allocated to a lease site, or resumes production in the case of a well which has been off production for more than 90 days, the operator shall notify the authorized officer by letter or sundry notice, Form 3160-5, or orally to be followed by a letter or sundry notice, of the date on which such production has begun or resumed."

If you fail to comply with this requirement in the manner and time allowed, you shall be liable for a civil penalty of up to \$10,000 per violation for each day such violation continues, not to exceed a maximum of 20 days. See Section 109(c)(3) of the Federal Oil and Gas Royalty Management Act of 1982 and the implementing regulations at Title 43 CFR 3162.4-1(b)(5)(ii).

- h. Drilling is planned to commence on July 1, 1999.
- i. It is anticipated that the drilling of this well will take approximately 14 days.



- j. No location will be constructed or moved, no well will be plugged, and no drilling or workover equipment will be removed from a well to be placed in a suspended status without prior approval of the AO. If operations are to be suspended, prior approval of the AO will be obtained and notification given before resumption of operations.
- k. **Immediate Report:** Spills, blowouts, fires, leaks, accidents, or any other unusual occurrences shall be promptly reported in accordance with the requirements of NTL-3A or its revision.
- l. If a replacement rig is contemplated for completion operations, a "Sundry Notice" Form 3160-5 to that effect will be filed, for prior approval of the AO, and all conditions of this approved plan are applicable during all operations conducted with the replacement rig.
- m. Pursuant to Onshore Order No. 7, with the approval of the District Engineer, produced water may be temporarily disposed of into unlined pits for a period of up to 90 days. During the period so authorized, an application for approval of the permanent disposal method, along with the required water analysis and other information, must be submitted to the District Engineer.
- n. No well abandonment operations will be commenced without the prior approval of the AO. In the case of newly drilled dry holes or failures, and in emergency situations, oral approval will be obtained from the SO. A "Subsequent Report of Abandonment" Form 3160-5, will be filed with the AO within 30 days following completion of the well for abandonment. This report will indicate where plugs were placed and the current status of surface restoration. Final abandonment will not be approved until the surface reclamation work required by the approved APD or approved abandonment notice has been completed to the satisfaction of the AO or his representative, or the appropriate Surface Managing Agency.



BALLARD PETROLEUM LLC

Operator: BALLARD PETROLEUM LLC	Well Name: Njorth Canyon 16-1
Project ID:	Location: Utah Co., Utah

Design Parameters:

Mud weight (8.30 ppg) : 0.431 psi/ft
 Shut in surface pressure : 360 psi
 Internal gradient (burst) : 0.100 psi/ft
 Annular gradient (burst) : 0.431 psi/ft
 Tensile load is determined using air weight
 Service rating is "Sweet"

Design Factors:

Collapse : 1.125
 Burst : 1.00
 8 Round : 1.80 (J)
 Buttress : 1.60 (J)
 Body Yield : 1.50 (B)

Length (feet)	Size (in.)	Weight (lb/ft)	Grade	Joint	Depth (feet)	Drift (in.)	Cost		
1	400	9-5/8"	36.00	J-55	ST&C	400	8.765		
	Collapse Load (psi)	Strgth (psi)	S.F.	Burst Load (psi)	Min Int Strgth (psi)	Yield S.F.	Tension Load (kips)	Strgth (kips)	S.F.
1	172	2020	9.999	360	3520	9.78	14.40	394	27.36 J

Prepared by : *McCoskery, Billings, Montana*
 Date : 11-05-1998
 Remarks :

Design is for a Surface string.

Minimum segment length for the 400 foot well is 400 feet.

Additional details regarding deeper string(s):

Next string will set at 5,500 ft. with 9.30 ppg mud (pore pressure of 2,657 psi.) The frac gradient of 1.000 at the casing seat results in an injection pressure of 400 psi. Effective BHP (for burst) is 400 psi, the BHP load is 228 psi (using an annular mud of 8.00 ppg) and the differential gradient is -0.330 psi/ft.

NOTE : The design factors used in this casing string design are as shown above. As a general guideline, Lone Star Steel recommends using minimum design factors of 1.125 - collapse (with evacuated casing), 1.0 - (uniaxial) burst, 1.8 - API 8rd tension, 1.6 - buttress tension, 1.5 - body yield tension, and 1.6 - EUE 8rd tension. Collapse strength under axial tension was calculated based on the Westcott, Dunlop and Kemler curve. Engineering responsibility for use of this design will be that of the purchaser.
 Costs for this design are based on a 1987 pricing model. (Version 1.07)

BALLARD PETROLEUM LLC

Operator: BALLARD PETROLEUM LLC	Well Name: Hjorth Canyon 16-1
Project ID:	Location: Utah Co., Utah

Design Parameters:

Mud weight (9.30 ppg) : 0.483 psi/ft
 Shut in surface pressure : 2107 psi
 Internal gradient (burst) : 0.100 psi/ft
 Annular gradient (burst) : 0.483 psi/ft
 Tensile load is determined using air weight
 Service rating is "Sweet"

Design Factors:

Collapse : 1.125
 Burst : 1.00
 8 Round : 1.80 (J)
 Buttress : 1.60 (J)
 Body Yield : 1.50 (B)

Length (feet)	Size (in.)	Weight (lb/ft)	Grade	Joint	Depth (feet)	Drift (in.)	Cost		
1	5,500	5-1/2"	15.50	J-55	ST&C	5,500	4.825		
	Load (psi)	Collapse Strgth (psi)	S.F.	Burst Load (psi)	Min Int Strgth (psi)	Yield S.F.	Tension Load (kips)	Strgth (kips)	S.F.
1	2657	4040	1.521	2107	4810	2.28	85.25	202	2.37 J

Prepared by : *McCoskery, Billings, Montana*

Date : 11-04-1998

Remarks :

Design is for a Production string.

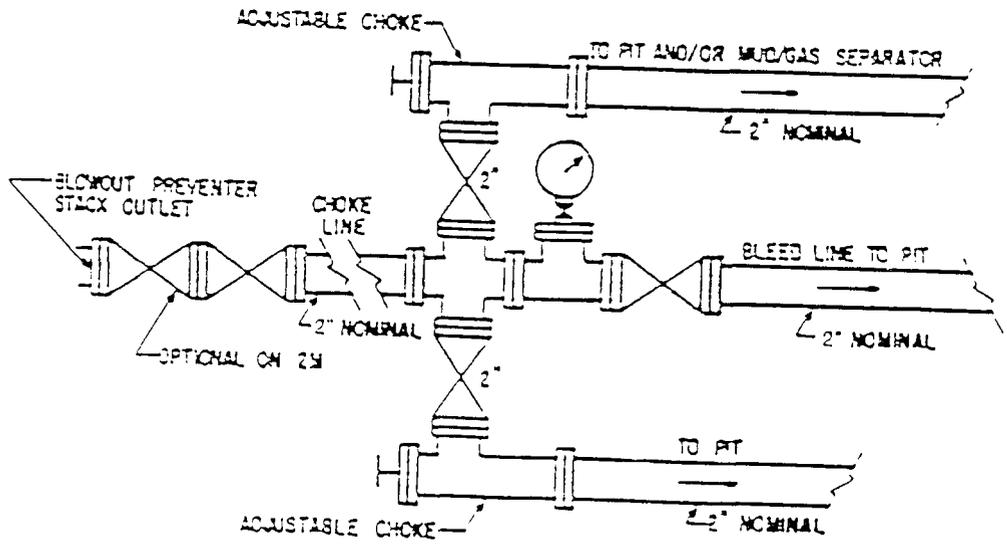
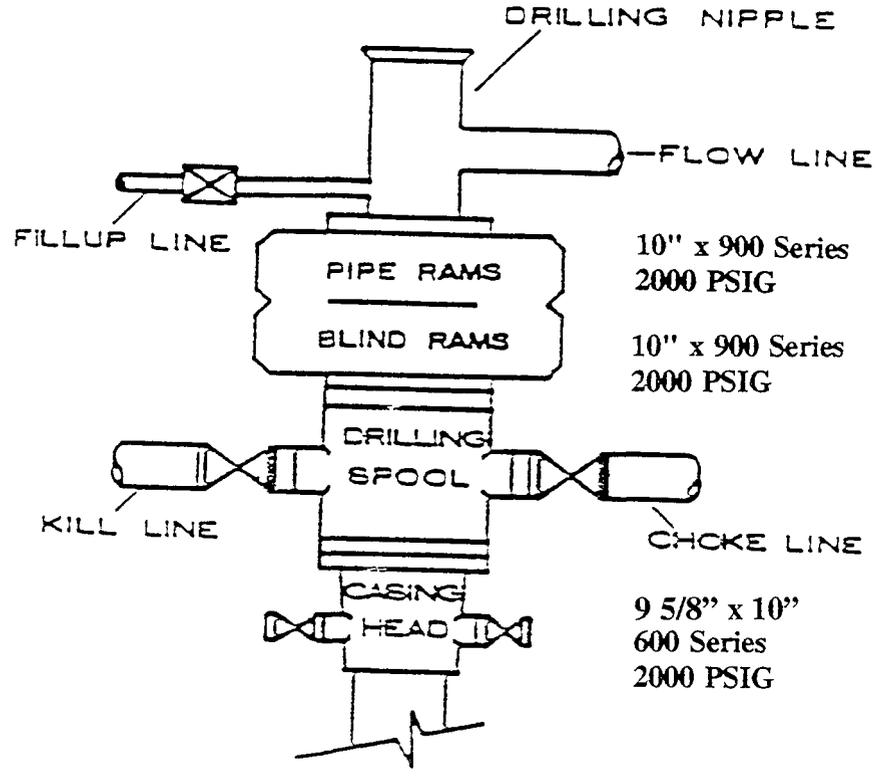
Minimum segment length for the 5,500 foot well is 400 feet.

An annular mud weight of 9.000 ppg was used for burst purposes. The differential mud gradient below any lost-circulation depth is -0.383 psi/ft and the bottom hole pressure load is 0 psi.

NOTE : The design factors used in this casing string design are as shown above. As a general guideline, Lone Star Steel recommends using minimum design factors of 1.125 - collapse (with evacuated casing), 1.0 - (uniaxial) burst, 1.8 - API 8rd tension, 1.6 - buttress tension, 1.5 - body yield tension, and 1.6 - EUE 8rd tension. Collapse strength under axial tension was calculated based on the Westcott, Dunlop and Kemler curve. Engineering responsibility for use of this design will be that of the purchaser.
 Costs for this design are based on a 1987 pricing model. (Version 1.07)

BOP STACK

2,000 PSI



2,000 PSI CHOKER MANIFOLD

ONSHORE OIL & GAS ORDER NO. 1

Thirteen Point Surface Use Plan

The onsite inspection for the subject well was conducted on Thursday, October 15, 1998 at approximately 1:305 p.m. Weather conditions were cool and cloudy. In attendance at the onsite inspection were the following individuals:

Robert Kay	Land Surveyor	Uintah Eng. & Land Surveying
Lisa Smith	Permitting Agent	Permitco Inc.
Dave McCoskery	Operations Manager	Ballard Petroleum LLC
Pat Shaw	Manager	Savant Resources LLC
Ned Sterne	Geologist	Savant Resources LLC
Jeff DeFreest	District Geologist	U.S. Forest Service
Brent Barney	Transportation Eng.	U.S. Forest Service
Bob Thompson	Botanist	U.S. Forest Service
Carter Reed	Geologist	U.S. Forest Service
Kevin Draper	Landscape Architect	U.S. Forest Service
Stan Anderson		U.S. Forest Service
Tom Shore	District Ranger	U.S. Forest Service
Al McKee	Petroleum Engineer	Bureau of Land Management
Cheryl Martinez	Geologist	Bureau of Land Management
Michael Johnson	Geologist	Bureau of Land Management

1. Existing Roads

- a. The proposed well site is located approximately 6.6 miles north of Indianola, Utah.
- b. Directions to the location from Indianola, Utah are as follows:

From Indianola proceed west for 0.7 miles to the intersection of Highway 89. Turn right and proceed northerly on Highway 89 for 3.3 miles. Turn right onto an existing two-track trail, proceed through the highway fence/gate and continue easterly 1.9 miles to the beginning of the new access road. Turn left and proceed northeasterly up the sidehill until reaching the site, a distance of approximately 0.7 miles.



- c. For location of access roads within a 2-Mile radius, see Maps "A" & "B".
- d. Arrangements will be made with the Utah Division of Wildlife for improvements to the first 1.8 miles of access road after leaving Highway 89. The remaining access (after reaching the Forest Boundary between Sections 20 and 21) will be improved as per the approved road design.
- e. All existing roads will be maintained and kept in good repair during all drilling and completion operations associated with this well.
- f. Existing roads and newly constructed roads on surface under the jurisdiction of any Surface Managing Agency shall be maintained in accordance with the standards of the SMA.
- g. Vehicle operators will obey posted speed restrictions and observe safe speeds commensurate with road and weather conditions.

2. Planned Access Roads

- a. The last 0.7 miles of access road is new access. The road will have a subgrade of 14 feet with a running surface of 12 feet. Four inches of gravel will be placed on portions of the access road. The road will be constructed as per the approved road design to be submitted by Uintah Engineering and Land Surveying.
- b. The maximum grade will be shown on the approved road design.
- c. Any turnouts needed along the new access route will be shown on the approved road design.
- d. Culverts, low water crossings and drainage dips will be installed as shown in the approved road design.
- e. The new access road was centerline flagged at the time of staking.
- f. No cattleguards will be necessary.



- g. Surface disturbance and vehicular travel will be limited to the approved location and approved access route. Any additional area needed will be approved in advance. Unauthorized off-road vehicular travel is prohibited.
- h. Adequate signs will be posted along Forest Development Roads to warn the public of project related traffic.

3. Location of Existing Wells Within a 1-Mile Radius of the Proposed Location.

- a. Water wells -none
- b. Injection wells -none
- c. Producing wells - none
- d. Drilling wells - none

4. Location of Tank Batteries and Production Facilities.

- a. All permanent structures (onsite for six months or longer) constructed or installed (including oil well pump jacks) will be painted a neutral color to blend with the surrounding environment. The proposed color for this site is Juniper Green unless otherwise stipulated by the Forest Service. Facilities required to comply with the Occupational Safety and Health Act (OSHA) will be excluded.
- b. If storage facilities/tank batteries are constructed on this lease, the facility/battery or the wellpad will be surrounded by a containment dike of sufficient capacity to contain at a minimum, the entire content of the largest tank within the facility/battery, unless more stringent protective requirements are deemed necessary by the authorized officer.
- c. All loading lines will be placed inside the berm surrounding the tank battery.



- d. Gas meter runs for each well will be located within 500 feet of the wellhead. The gas flowline will be buried or anchored down from the wellhead to the meter and 500 feet downstream of the meter run or any production facilities. Meter runs will be housed and/or fenced.
- e. The oil and gas measurement facilities will be installed on the well location. The oil and gas meters will be calibrated in place prior to any deliveries. Tests for meter accuracy will be conducted monthly for the first three months on new meter installations and at least quarterly thereafter. The AO will be provided with a date and time for the initial meter calibration and all future meter proving schedules. A copy of the meter calibration reports will be submitted to the BLM in Price, Utah. All meter measurement facilities will conform with Onshore Oil and Gas Order No. 4 for liquid hydrocarbons and Onshore Oil and Gas Order No. 5 for natural gas measurement.
- f. A production facility diagram is attached showing placement of all proposed production facilities. If the facilities should change from that submitted, a revised production diagram will be submitted. Production facilities will be subject to further environmental analyses and approval by the Forest Service.
- g. Installation of any oil or gas flow lines will be done along the proposed access routes.
- h. Any necessary pits will be properly fenced to prevent any wildlife entry.
- i. All site security guidelines identified in 43 CFR 3162.7 regulations will be adhered to.
- j. All off-lease storage, off-lease measurement, or commingling on-lease or off-lease will have prior written approval from the Authorized Officer.
- k. All access roads will be maintained as necessary to prevent erosion and accommodate year-round traffic. The road will be maintained in a safe useable condition.
- l. The site will require periodic maintenance to ensure that drainages are kept open and free of debris, ice, and snow, and that surfaces are properly treated to reduce erosion, fugitive dust, and impacts to adjacent areas.



- m. All gasoline, diesel and steam-powered equipment will be equipped with effective spark arresters or mufflers. Spark arresters will meet Forest Service specifications discussed in the USDA Forest Service Spark Arrester Guide. In addition, all electrical equipment must be properly insulated to prevent sparks.

5. Location and Type of Water Supply

- a. All water needed for drilling purposes will be obtained from *
- b. A copy of the approved water permit will be submitted under separate cover.
- c. Water needed for operations will be properly and legally obtained according to State water laws. the location of diversion, if on National Forest System lands, is subject to Forest Service approval.

6. Source of Construction Material

- a. Surface and subsoil materials in the immediate area will be utilized.
- b. Any gravel used will be obtained from a private or commercial source unless other arrangements are made with the forest service.
- c. The use of materials under BLM jurisdiction will conform with 43 CFR 3610.2.3. Construction material will not be located on lease.
- d. No construction materials will be removed from Federal land.

7. Methods of Handling Waste Disposal

- a. The reserve pit will be constructed so as not to leak, break, or allow discharge. The reserve pit will be lined with a minimum 10 mil plastic liner.



- b. The reserve pit will be constructed of sufficient size and capacity for the necessary fluids for drilling and to contain any runoff from the drill site. Pits will not be constructed within intermittent or perennial stream channels.**
- c. No trash, scrap pipe, etc., that could puncture the liner will be disposed of in the pit.**
- d. The reserve pit will be constructed in undisturbed material and below the natural ground level.**
- e. All drilling fluids will be contained in the reserve pit. All appropriate measures will be taken to assure that leakage through the reserve pit does not occur and that fluids are not allowed to overflow. A minimum 2-foot freeboard will be maintained in the pit at all times during the drilling operation and the pit will be fenced during drilling and completion operations.**
- f. Burning of garbage and debris is prohibited. All trash will be contained in a trash cage and its contents periodically disposed of off the Forest at an approved refuse facility.**
- g. After first production, produced waste water will be confined to a unlined pit or storage tank for a period not to exceed ninety (90) days. During the 90-day period, in accordance with Onshore Order No. 7, an application for approval of a permanent disposal method and location, along with the required water analysis, will be submitted for the AO's approval. Failure to file an application within the time allowed will be considered an incident of noncompliance.**
- h. Drill cuttings are to be contained and buried in the reserve pit.**
- i. Any salts and/or chemicals which are an integral part of the drilling system will be disposed of in the same manner as the drilling fluid.**
- j. Sanitary facilities are required on site at all times during operations. Sewage will be placed in a portable chemical toilet or holding tank and disposed of in accordance with state and county regulations. The installation of facilities,**



other than self contained chemical toilets, is subject to State and Forest Service approval.

- k. The produced fluids (other than water) will be produced into a test tank until such time as construction of production facilities is completed. Any spills of oil, gas salt water or other produced fluids will be cleaned up and removed.

8. Ancillary Facilities

There are no airstrips, camps, or other facilities planned during the drilling of the proposed well.

9. Well Site Layout

- a. Section corners, survey markers and claim corners in the project area will be located and flagged by Ballard Petroleum LLC prior to operations. The removal or disturbance of identified markers will be approved by the proper authority.
- b. The pad and road designs will be consistent with Forest Service specifications as outlined in the Region 4 Oil and Gas Roding Guidelines (Attachment 1) and the Manti-La Sal National Forest Oil and Gas Well Site Guidelines (Attachment 2) and are subject to Forest Service approval. No construction operations may begin prior to approval. any modifications to approved plans are also subject to review and approval.
- c. A pre-construction meeting including the responsible company representative(s), contractors, and the Forest Service must be conducted at the project site prior to commencement of surface-disturbing activities. The pad and road work must be construction-staked prior to this meeting. Site-specific requirements will be discussed at that time.
- d. The operator shall submit for approval, a maintenance plan for the site, the project road and that portion of nay Forest Development Road to be used for project access. A road use permit must be obtained from the Forest Service



authorizing commercial use of Forest Development Roads. Requirements listed in the road-use permit must be followed. In the event of a discovery, an undated maintenance plan will be required.

- e. The operator will acquire appropriate permission to use non-Forest Service Roads.
- f. The project engineer and surveyors are certified by the State in which they reside or maintain their business.
- g. All surface disturbing activities, including reclamation, will be supervised by a qualified, responsible official or representative of Ballard Petroleum LLC who is aware of the terms and conditions of the APD and specifications in the approved plans.
- h. All cut and fill slopes will be such that stability can be maintained for the life of the activity. Cut and fill slopes will be constructed as follows:

<u>Height of Slope</u>	<u>Slope</u>
0-5 feet	3:1
6-10 feet	2:1
over 10 feet	1-1/2:1

- i. All fills will be free from vegetative materials and will be compacted in lifts no greater than 12 inches in thickness to a minimum of 90 percent Proctor dry density sufficient to prevent excessive settlement.
- j. If the well is productive, the working surface of the drill site will be surfaced with crushed gravel to a depth sufficient to support anticipated loads throughout the life of the well. Usually a depth of 12 inches of gravel is anticipated.
- k. A diversion ditch having the minimum dimensions of 3 feet horizontal to 1 foot vertical (3:1 ditch), will be constructed around the site to divert surface waters from flowing onto the site. The ditch will be located at the base of the cut slope and around the toe of the fill slopes (see Drawing No. 1 - Construction Requirements for Typical Well Sites). A straw dike will be



constructed in the ditch outflow to trap any sediment produced from the raw slopes. A culvert will be necessary where the access road enters the site.

- l. A berm will be constructed around the perimeter of the site to contain all precipitation, spills, and other fluids from leaving the site. The berm will be a minimum of 18 inches high, 12 inches wide at the top, and having 1-1/2:1 side slopes. The site surface will be graded to drain to the reserve pit. The drainage pattern to be constructed will be modified for each site, depending on the site specific conditions.
- m. The reserve pit will be located on the west side of the location.
- n. The stockpiled topsoil (first 12 inches or maximum available) will be stored along the northeast side of the location as shown on the rig layout. All topsoil must be stripped from areas to be disturbed and stockpiled for reclamation in such a way as to prevent soil loss and contamination.
- o. See Location Layout for orientation of rig, cross section of drill pad and cuts and fills.
- p. The location of mud tanks; reserve pit, trash cage; pipe racks; living facilities and soil stockpiles will be shown on the Location Layout.
- q. All pits will be fenced to prevent wildlife entry.
- r. The reserve pit fencing (5 strand barbed wire) will be on three sides during drilling operations and on the fourth side when the rig moves off the location. Pits will be fenced and maintained until cleanup.

10. Plans for Restoration of Surface

Dry Hole

- a. Rehabilitation of the entire site will be required and will commence immediately after the drilling is complete. The site will be restored as nearly practical to its original condition. Cut and fill slopes will be reduced and graded to conform to the adjacent terrain.



- b. Drainages will be reestablished and temporary measures will be required to prevent erosion to the site until vegetation is established.
- c. Generally speaking, the standpipe for well identifications will be removed on National Forest lands. A final determination will be made on a case-by-case basis.
- d. After final grading and before the replacement of topsoil, the entire surface of the site shall be scarified to eliminate slippage surfaces and to promote root penetration. Topsoil will then be spread over the site to achieve an approximate uniform, stable thickness consistent with the established contours.
- e. A temporary fence (let down fence) will be constructed around the site to prevent continued use until the required reclamation standards are successfully achieved. The fence will then be removed.
- f. In general, the disturbed areas will be considered adequately revegetated when at least 90 percent of the original ground cover is re-established over 90 percent of the seeded area, within three years of planting, consisting of seeded and desirable species. Maximum allowable non-noxious weeds is 10 percent of the total ground cover at any time. No noxious weeds will be allowed on the site; they must be treated as they occur. The operator is responsible for maintenance of reclamation facilities such as fences, barricades and temporary drainage structures until the desired reclaimed conditions are achieved. If the desired ground cover is not established at the end of each 3 year period, an analysis of why the areas has not recovered will be performed by the operator and additional treatment and seeding will be required based on the results of the analysis.
- g. Straw, hay, feed, or pellets used on the National Forests of Utah must be certified weed-free by the State of Utah.
- h. At such time as the well is plugged and abandoned, the operator shall submit a subsequent report of abandonment.



Producing Location

- i. Site reclamation for producing wells will be accomplished for portions of the site not required for the continued operation of the well. All disturbed surface will be treated to prevent erosion and to complement the esthetics of the area. A new site plan will be required encompassing the facilities required for operation and interim reclamation measures.
- j. Immediately upon well completion, the location and surrounding area will be cleared of all unused tubing, equipment, debris, materials, trash and junk not required for production.
- k. Immediately upon well completion, any hydrocarbons on the pit shall be removed in accordance with 43 CFR 3162.7-1.
- l. The plastic nylon reinforced liner shall be torn and perforated before backfilling of the reserve pit.
- m. At the end of drilling operations, drilling fluids will be hauled to an approved disposal site. All polluting substances or contaminated materials, such as oil, oil-saturated soils, and gravel, will be buried with a minimum of 2 feet of clean soil as cover or be removed from the Forest.
- n. The reserve pit must be dry before it is backfilled and reclaimed. Once the reserve pit is dry, the reserve pit and that portion of the location not needed for production facilities/operations will be recontoured to the approximate natural contours. Methods for drying the pit, other than natural evaporation, are subject to prior Forest Service approval.
- o. The cut and fill slopes and all other disturbed areas not needed for the production operation will be topsoiled and revegetated. The berm will be removed and the site graded to drain.
- p. Stockpiled topsoil will be redistributed evenly over the disturbed area upon reclamation.



- q. The site will be seeded and/or planted as prescribed by the Forest Service. Nutrients and soil amendments will be applied to the redistributed surface soil later as necessary to meet the revegetation requirements. The seed mix is as follows:

<u>Species</u>	<u>#'s PLS/Acre</u>
Smooth Brome grass	2
Crested Wheatgrass	2
Intermediate Wheatgrass	2
Sweet Clover	1
Alfalfa (Ladak)	1

11. Surface Ownership

Access Roads - All access roads located off the Highway are on lands managed by the Utah Division of Wildlife or are within the Manti-La Sal National Forest.

Wellpad - The well pad is located on lands managed by the Manti-La Sal National Forest (San Pete District).

12. Other Information

- a. Move-in and move-out of the drill rig will not be allowed during major national holiday weekends and will be restricted during the big game hunting seasons as specified by the Forest Service as conditions for approval of the Surface-Use Plan of Operations.
- b. A Class III archeological survey was conducted by Senco-Phenix. No significant cultural resources were found and clearance has been recommended. A copy of this report is attached.
- c. The operator is responsible for informing all persons in the areas who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during



construction, the operator is to immediately stop work that might further disturb such materials, and contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

-whether the materials appear eligible for the National Register of Historic Places;

-the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary); and

-a time frame for the AO to complete and expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate. If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation costs. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that required mitigation has been completed, the operator will then be allowed to resume construction.

- d. All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, Onshore Oil and Gas Orders, the approved plan of operations, and any applicable Notice to Lessees. The operator is fully responsible for the actions of his subcontractors. A copy of these conditions will be furnished the field representative to insure compliance.
- e. A complete copy of the approved APD shall be on location during construction of the location and drilling activities.
- f. There will be no deviation from the proposed drilling and/or workover program without prior approval from the AO. Safe drilling and operating practices must be observed. All wells, whether drilling, producing, suspended, or abandoned will be identified in accordance with 43 CFR 3162.h.



- g. "Sundry Notice and Report on Wells" (From 3160-5) will be filed for approval for all changes of plans and other operations in accordance with 43 CFR 3162.3-2.**
- h. This permit will be valid for a period of one year from the date of approval. An extension period may be granted, if requested, prior to the expiration of the original approval period.**
- i. The operator or his contractor shall contact the U.S. Forest Service at 801/637-2817 48 hours prior to construction activities.**
- j. Fire suppression equipment must be available to all personnel on the project site. Equipment will include a minimum of one hand tool per crew member consisting of shovels, pulaskis, and chainsaws and one properly rated fire extinguisher per vehicle and/or internal combustion engine.**
- k. Ballard Petroleum LLC will be held responsible for damage and suppression costs for fires started as a result of operations. Fires must be reported to the Forest Service as soon as possible.**
- l. All accidents or mishaps resulting in resource damage and/or serious personal injury must be reported to the Forest Service as soon as possible.**
- m. Harassment of wildlife and livestock is prohibited.**
- n. All merchantable timber removed or destroyed by construction or other project related activities will be purchased by the operator at fair market value. The Forest Service will conduct a timber cruise and appraisal after the final clearing limits have been staked. Slash burning will be conducted only at locations approved by the Forest Service under authorization or a burning permit.**



ONSHORE ORDER NO
Ballard Petroleum LLC
Hjorth Canyon Federal #16-1
942' FSL and 1521' FWL
SE SW Sec. 16, T11S - R4E
Utah County, Utah

CONFIDENTIAL - TIGHT HOLE

Lease No. UTU-77270

SURFACE USE PLAN
Page 15

13. Lessee's or Operator's Representative and Certification

Permit Matters

PERMITCO INC.
Lisa L. Smith
14421 Weld County Road 10
Ft. Lupton, CO 80621
303/857-9999

Drilling & Completion Matters

Ballard Petroleum LLC
845 12th Street West
Billings, MT 59102
Dave McCoskery - Operations Manager
406/259-8790 - (W)
406/248-3864 - (H)
406/698-3732 - (C)

Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Ballard Petroleum LLC and its contractors and subcontractors in conformity with the 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.

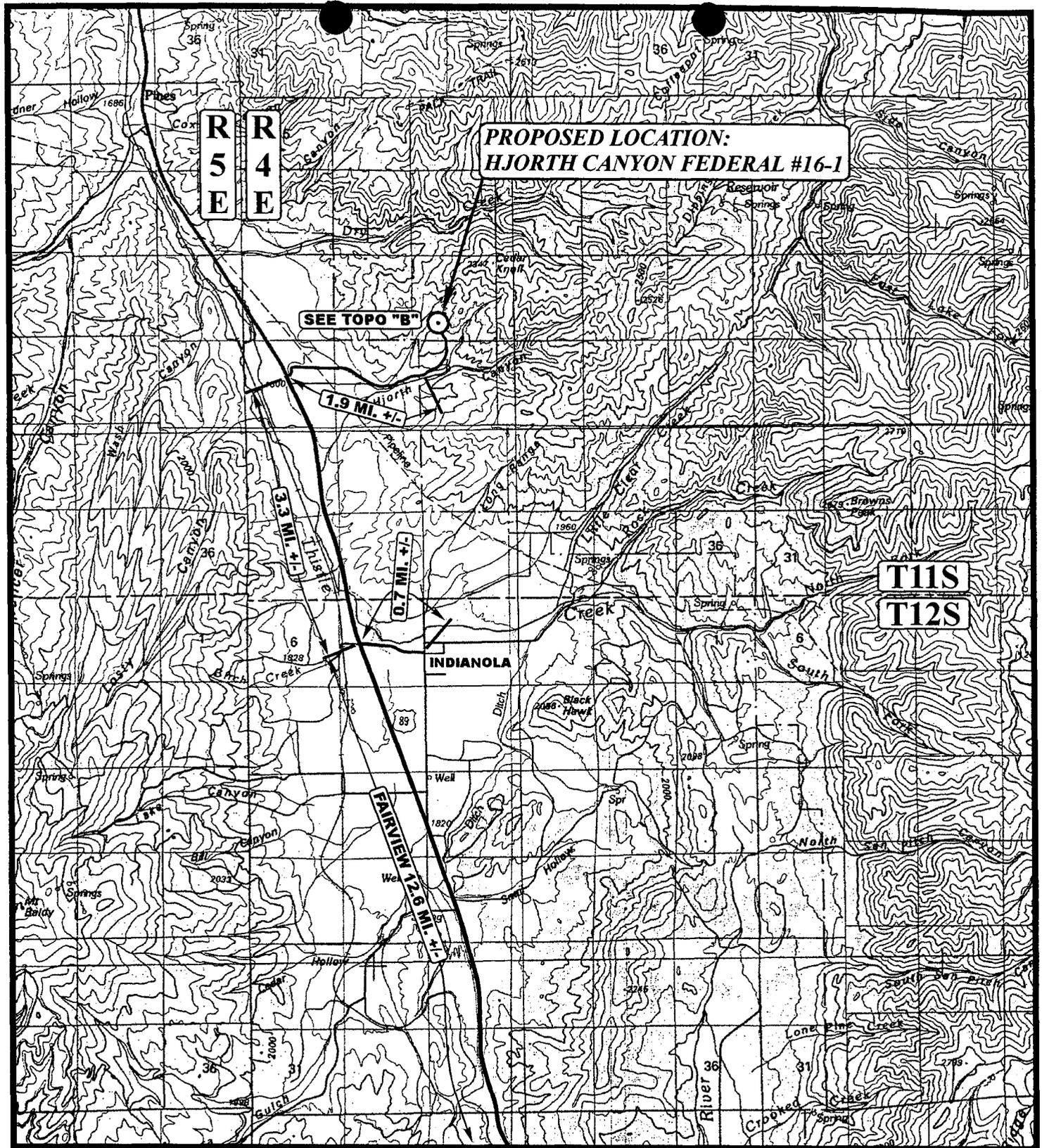
November 11, 1998

Date:



Lisa L. Smith - PERMITCO INC.
Authorized Agent for:
Ballard Petroleum LLC





**PROPOSED LOCATION:
HJORTH CANYON FEDERAL #16-1**

**R
R
E
E**

SEE TOPO "B"

1.9 MI. +/-

3.3 MI. +/-

0.7 MI. +/-

FAIRVIEW 12.6 MI. +/-

**T11S
T12S**

INDIANOLA

LEGEND:

⊙ PROPOSED LOCATION

BALLARD PETROLEUM LLC

**HJORTH CANYON FEDERAL #16-1
SECTION 16, T11S, R4E, S.L.B.&M.
942' FSL 1521' FWL**



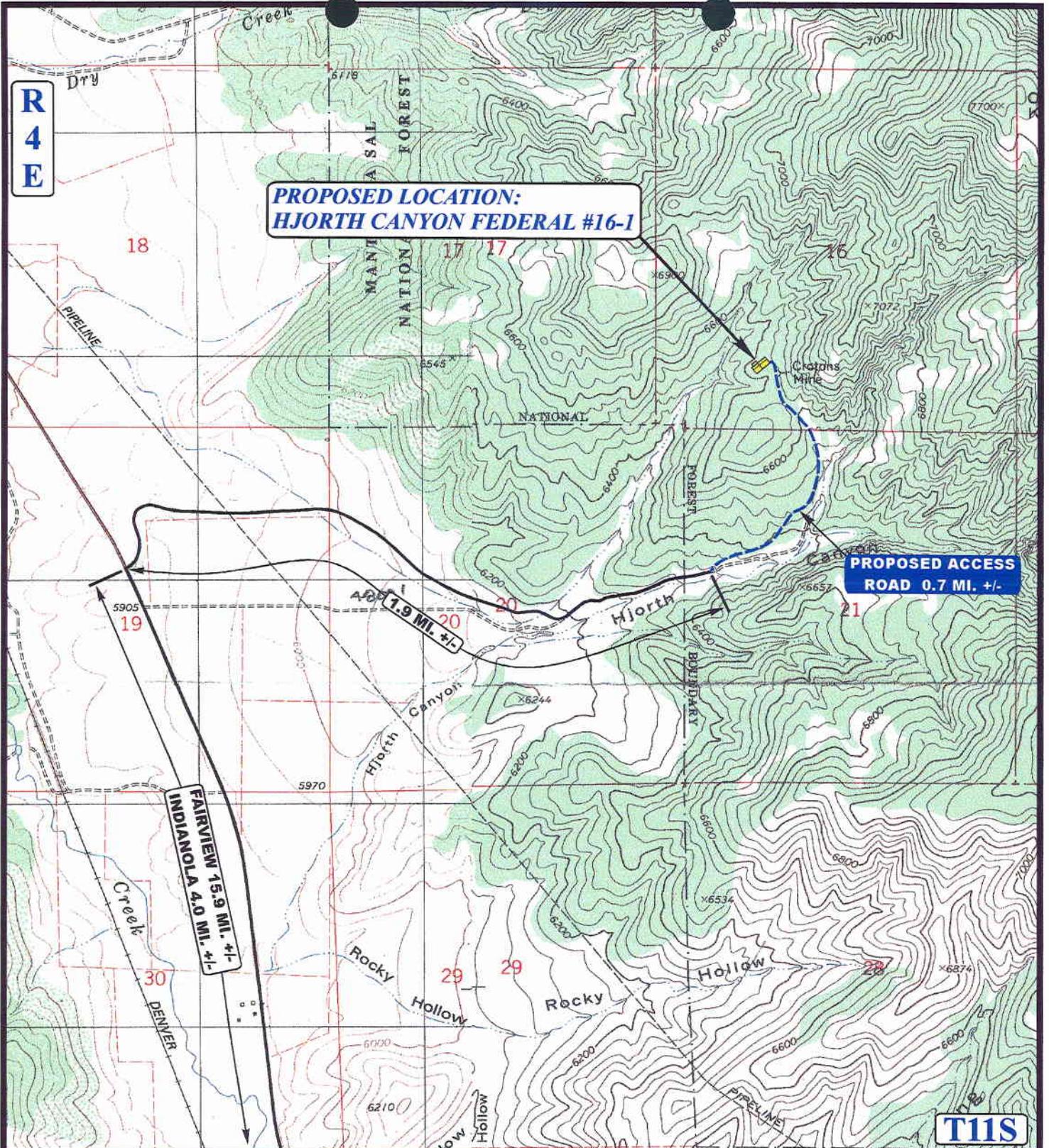
Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
(435) 789-1017 * FAX (435) 789-1813

**TOPOGRAPHIC
MAP**

10 21 98
MONTH DAY YEAR

SCALE: 1:100,000 | DRAWN BY: D.COX | REV: 11-9-98 D.COX





**R
4
E**

**PROPOSED LOCATION:
HJORTH CANYON FEDERAL #16-1**

**PROPOSED ACCESS
ROAD 0.7 MI. +/-**

**FAIRVIEW 15.9 MI. +/-
INDIANOLA 4.0 MI. +/-**

T11S

LEGEND:

- - - - - PROPOSED ACCESS ROAD
- EXISTING ROAD



BALLARD PETROLEUM LLC

**HJORTH CANYON FEDERAL #16-1
SECTION 16, T11S, R4E, S.L.B.&M.
942' FSL 1521' FWL**

UEIS Utah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
(435) 789-1017 * FAX (435) 789-1813

TOPOGRAPHIC MAP 10 21 98
MONTH DAY YEAR
SCALE: 1" = 2000' DRAWN BY: D.COX REV: 11-9-98 D.COX

B
TOPO

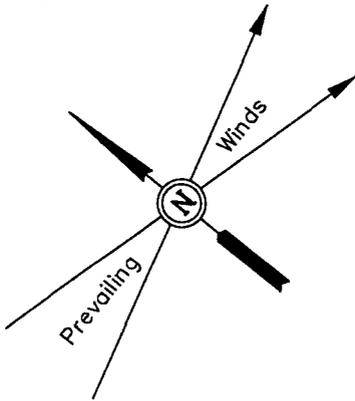
BALLARD PETROLEUM LLC

LOCATION LAYOUT FOR

HJORTH CANYON FEDERAL #16-1

SECTION 16, T11S, R4E, S.L.B.&M.

942' FSL 1521' FWL



SCALE: 1" = 50'

DATE: 10-21-98

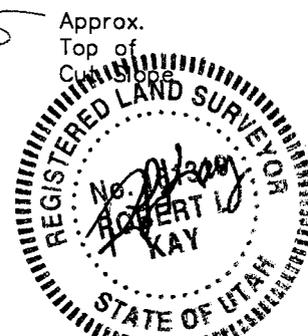
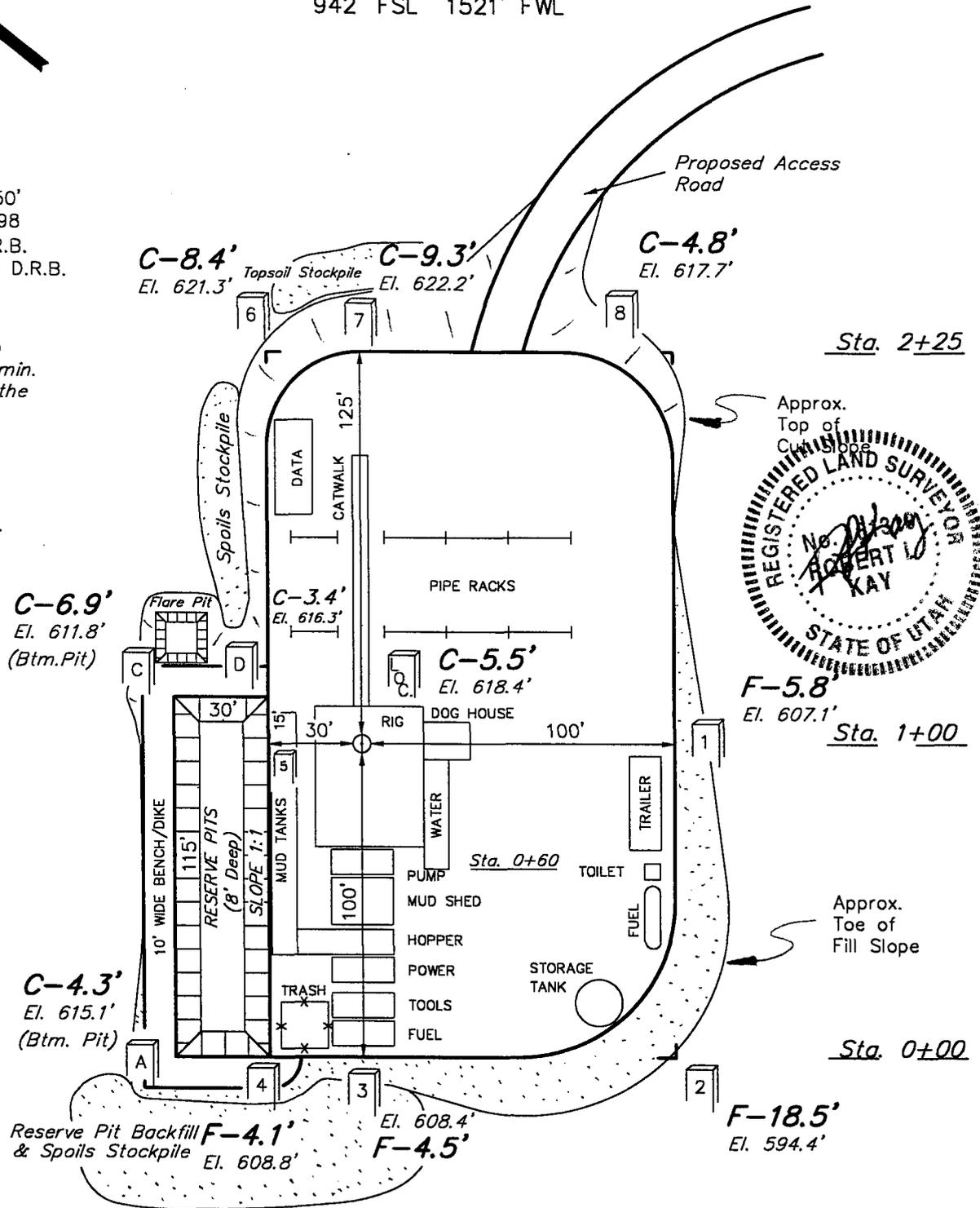
DRAWN BY: D.R.B.

Revised: 11-06-98 D.R.B.

NOTE:

Flare Pit is to be located a min. of 100' from the Well Head.

Pit Capacity With 2' of Freeboard is ± 2,260 Bbls.



Elev. Ungraded Ground at Location Stake = **6618.4'**
 Elev. Graded Ground at Location Stake = **6612.9'**

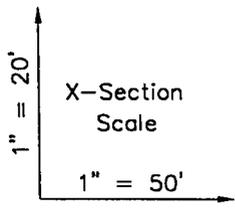
UINTAH ENGINEERING & LAND SURVEYING
 85 So. 200 East • Vernal, Utah 84078 • (435) 789-1017

BALLARD PETROLEUM LLC

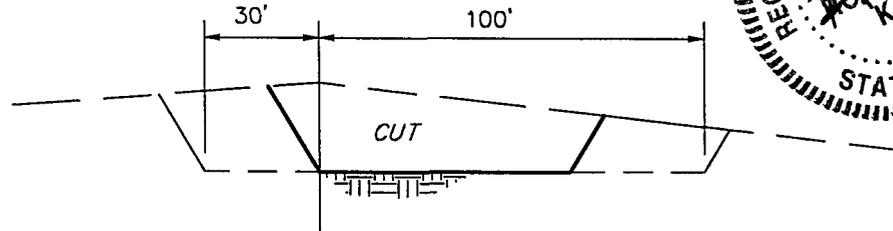
TYPICAL CROSS SECTIONS FOR

HJORTH CANYON FEDERAL #16-1
SECTION 16, T11S, R4E, S.L.B.&M.

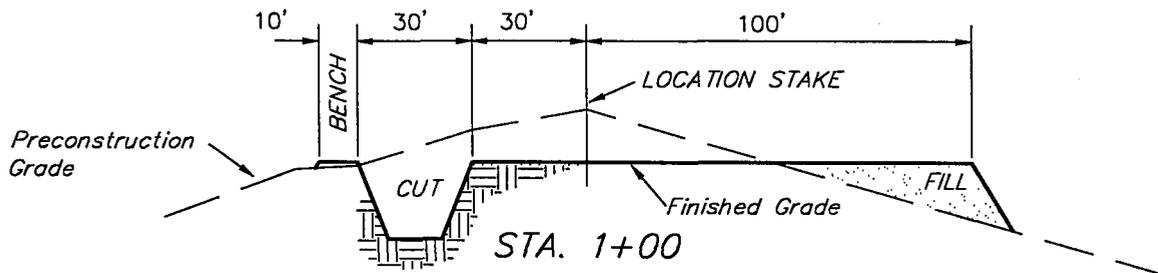
942' FSL 1521' FWL



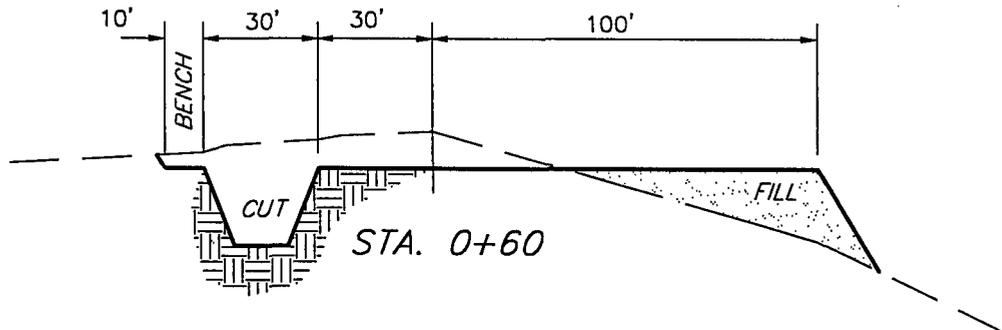
DATE: 10-21-98
DRAWN BY: D.R.B.
Revised: 11-06-98 D.R.B.



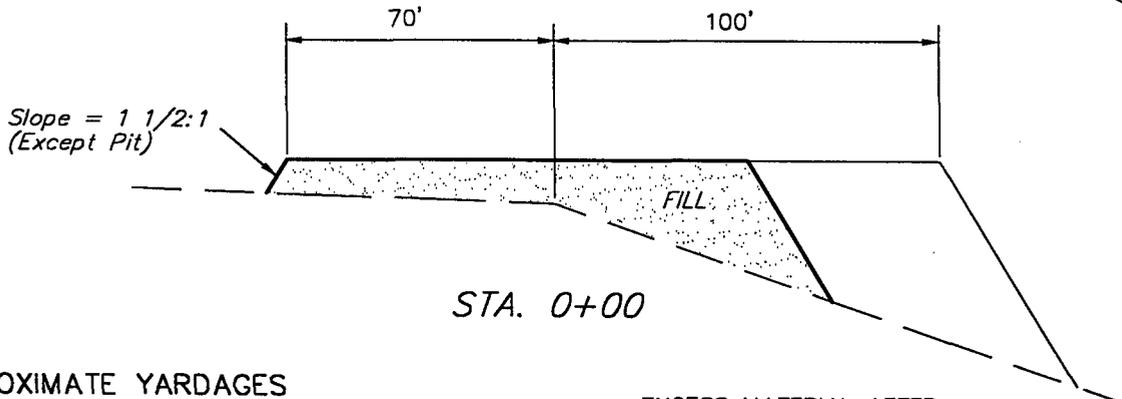
STA. 2+25



STA. 1+00



STA. 0+60



STA. 0+00

APPROXIMATE YARDAGES

CUT		
(6") Topsoil Stripping	=	610 Cu. Yds.
Remaining Location	=	3,730 Cu. Yds.
TOTAL CUT	=	4,340 CU.YDS.
FILL	=	3,210 CU.YDS.

EXCESS MATERIAL AFTER 5% COMPACTION	=	960 Cu. Yds.
Topsoil & Pit Backfill (1/2 Pit Vol.)	=	960 Cu. Yds.
EXCESS UNBALANCE (After Rehabilitation)	=	0 Cu. Yds.

BALLARD PETROLEUM LLC

PRODUCTION FACILITY LAYOUT

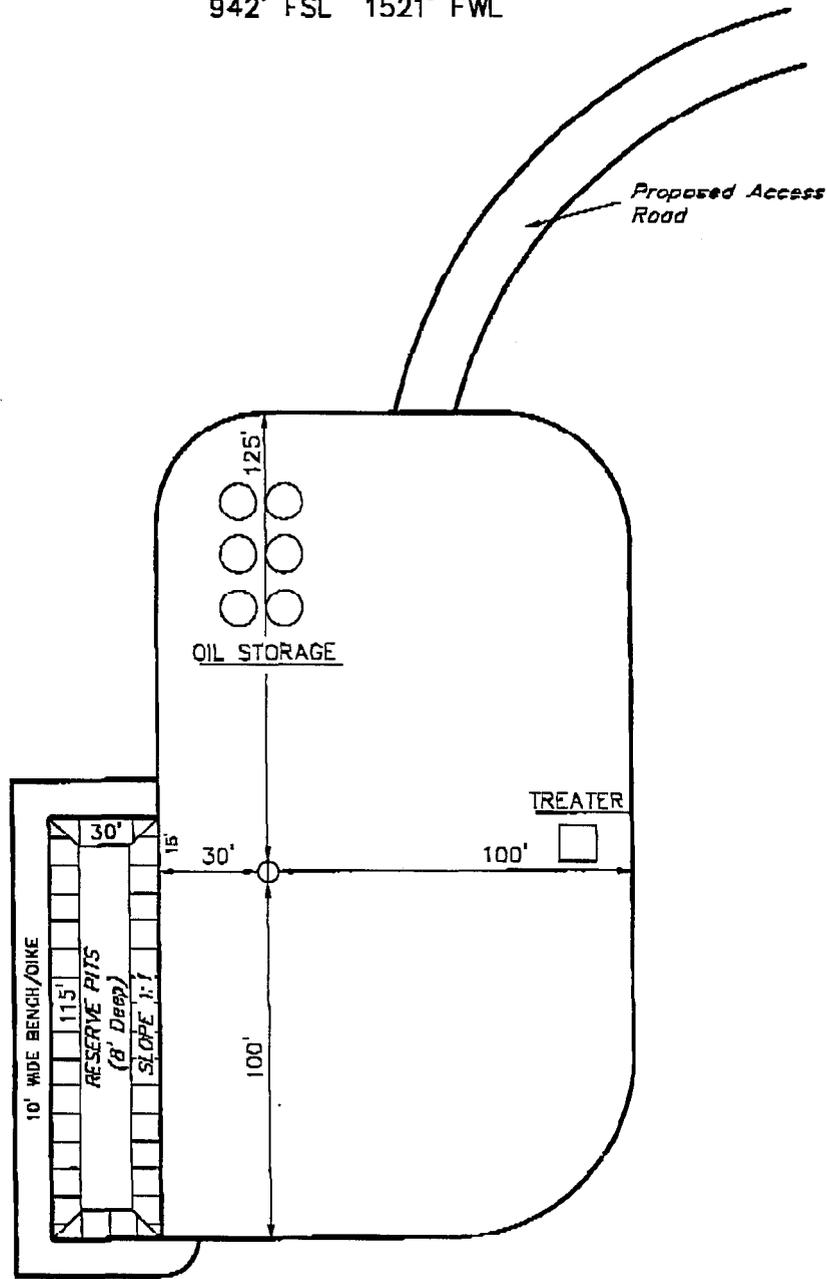
HJORTH CANYON FEDERAL #16-1
SECTION 16, T11S, R4E, S.L.B.&M.

942' FSL 1521' FWL



SCALE: 1" = 50'
DATE: 11-11-98
DRAWN BY: D.R.B.

Pit Capacity With
2' of Freeboard is
± 2,260 Bbls.



UINTAH ENGINEERING & LAND SURVEYING
85 So. 200 East • Vernal, Utah 84078 • (435) 789-1017

All federal stipulations previously supplied by the Forest Service have been incorporated into this application.



A Class III Archeological Study was completed by Senco-Phenix. No significant cultural resources were found and clearance has been recommended. A copy of this report will be submitted directly to the appropriate agencies by Senco-Phenix.



WORKSHEET
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 11/16/98

API NO. ASSIGNED: 43-049-30017

WELL NAME: HJORTH CANYON FED 16-1
 OPERATOR: BALLARD PETROLEUM LLC (N2310)
 CONTACT: Lise Smith (303)857-9999

PROPOSED LOCATION:
 SESW 16 - T11S - R04E
 SURFACE: 0942-FSL-1521-FWL
 BOTTOM: 0942-FSL-1521-FWL
 UTAH COUNTY
 WILDCAT FIELD (001)

INSPECT LOCATION BY: / /		
TECH REVIEW	Initials	Date
Engineering		
Geology		
Surface		

LEASE TYPE: FED
 LEASE NUMBER: UTU-77270
 SURFACE OWNER: Federal

PROPOSED FORMATION: NGSD

RECEIVED AND/OR REVIEWED:

Plat

Bond: Federal State Fee
 (No. KT-1005)

Potash (Y/N)

Oil Shale (Y/N) *190-5(B)

Water Permit
 (No. Indianate/Municipal)

RDCC Review (Y/N)
 (Date: _____)

N/A Fee Surf Agreement (Y/N)

LOCATION AND SITING:

R649-2-3. Unit _____

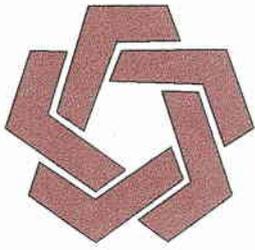
R649-3-2. General

R649-3-3. Exception

Drilling Unit
 Board Cause No: _____
 Date: _____

COMMENTS: * Need add'l info. "Except. Loc." (Rec'd 1-4-99)
Blm Aprv. 9-3-99.

STIPULATIONS: ① FEDERAL APPROVAL



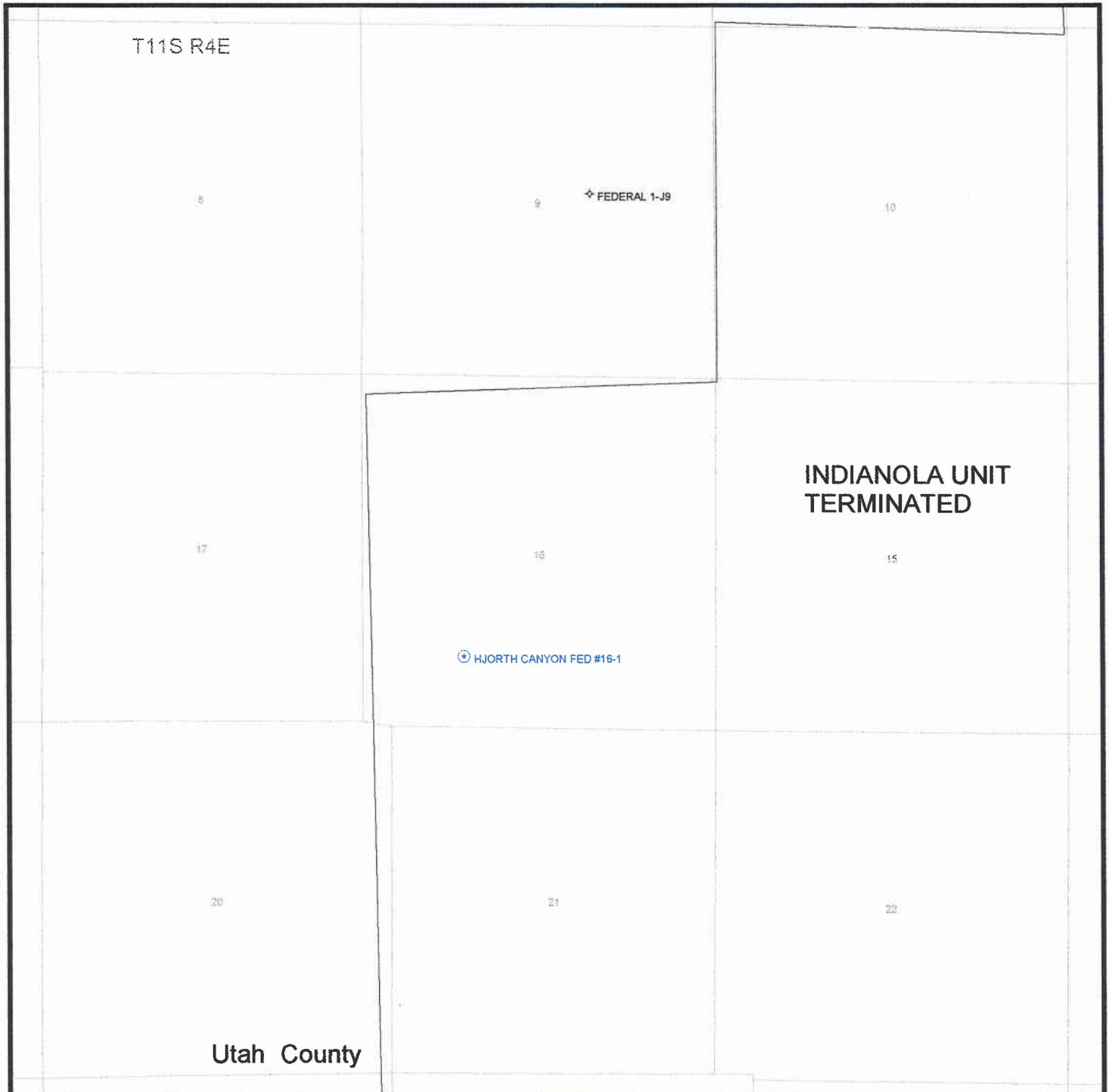
DIVISION OF OIL, GAS & MINING

OPERATOR: BALLARD PETROLEUM LLC (N2310)

FIELD: WILDCAT (001)

SEC: 16, TWP 11S, RNG 4E

COUNTY: UTAH

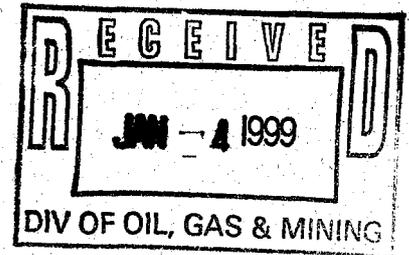


DATE PREPARED:
18-NOV-1998



14421 Weld County Rd.10 • Ft. Lupton, Colorado 80621 • (303) 857-9999 • FAX (303) 857-0577 • E-MAIL Permitco 1@aol.com

December 30, 1998



Division of Oil, Gas & Mining
1594 W. North Temple, Suite 1210
Box 145801
Salt Lake City, UT 84114-5801

Attn: Lesha Cordova

Re: **Ballard Petroleum LLC**
Hjorth Canyon Federal #16-1
942' FSL and 1521' FWL
SE SW Sec. 16, T11S - R4E
Utah County, Utah

Dear Lesha,

This letter is to serve as our request for an exception to spacing on the above mentioned location.

The above location was staked at non-standard footages in accordance with the rules and regulations of the Division of Oil, Gas & Mining based on topography, seismic data and geologic interpretation. Please be advised, however, that Ballard Petroleum LLC is the lease holder of all acreage within a 460 foot radius of the subject location. Therefore, we request administrative approval for this exception location.

Thank you for your cooperation.

Sincerely,

PERMITCO INC.

A handwritten signature in cursive script that reads 'Lisa L. Smith'.

Lisa L. Smith
Consultant for:
Ballard Petroleum LLC

cc: **Ballard Petroleum LLC - Billings, MT**
Savant Resources LLC - Denver, CO



File Code: 2820-2

Date: August 12, 1999

Dear Participant:

Enclosed is a copy of the Decision Notice/Finding of No Significant Impact (DN/FONSI) for Ballard Petroleum LLC's proposed Oil Hollow #5-1 and Hjorth Canyon Federal #16-1 Exploratory oil and gas wells on the Manti-La Sal National Forest. You were sent a copy because you commented during the public review and comment periods or have specific interest in the project.

Based on the project Environmental Assessment (EA), the Forest Supervisor of the Manti-La Sal National Forest has approved the Surface Use Plans of Operations (SUPOs) for the two wells with stipulations designed to minimize adverse environmental effects and allow the proposed drilling consistent with the rights granted by the respective oil and gas leases, the Forest Plan, and Best Management Practices (BMPs). Approval of the SUPOs involved consenting to the Bureau of Land Management (BLM) regarding exceptions to certain lease stipulations as described in the EA and DN/FONSI. In addition, the Forest Service does not object to approval of the associated Applications for Permit to Drill (APD) by BLM subject to mitigations incorporated into the SUPO by the operator and Forest Service stipulations. Copies of the EA are available at the Forest Supervisor's Office in Price, Utah at the address on the letterhead.

Appeal opportunities are described in the DN/FONSI. The project can be implemented immediately following publication of the Forest Service decision in the Sun Advocate of Price, Utah on August 12, 1999.

If you have any questions, contact Will Wilson at the Ferron-Price Ranger District Office, P. O. Box 310, Ferron, Utah 84523 (435-384-2372) or Carter Reed at the Forest Supervisor's Office, 599 West Price River Drive, Price, Utah 84501 (435-637-2817).

Sincerely,

for
JANETTE S. KAISER
Forest Supervisor

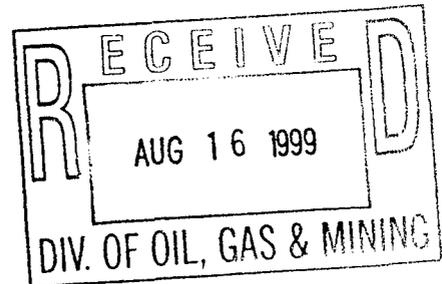
Enclosure

cc:

D-1

D-2/3

Glenn Carpenter, BLM, Salt Lake District (w/o enclosures)



Decision Notice And Finding Of No Significant Impact

Environmental Assessment For Ballard Petroleum LLC Oil Hollow #5-1 and Hjorth Canyon Federal #16-1 Applications for Permit to Drill

(T. 11 S., R. 4 and 5 E., Salt Lake Base & Meridian)

USDA Forest Service, Intermountain Region
Manti-La Sal National Forest
Sanpete Ranger District
Utah County, Utah

I. INTRODUCTION

An Environmental Assessment (EA) entitled, Environmental Assessment for Ballard Petroleum LLC Oil Hollow #5-1 and Hjorth Canyon Federal #16-1 Applications for Permit to Drill, discusses a proposal by Ballard Petroleum LLC to drill two wildcat oil wells on the Manti-La Sal National Forest, was released for public review and comment on June 30, 1999. In November 1998, the Forest Service received two Applications for Permit to Drill (APDs) and Surface Use Plans of Operation (SUPOs) to conduct drilling on National Forest System lands administered by the Manti-La Sal National Forest. The Forest Service (FS) is the surface management agency responsible for administration and approval of surface operations and the Bureau of Land Management (BLM) is responsible for lease administration, and approval/administration of underground operations. The FS and BLM jointly conducted the environmental analysis and prepared the EA.

The FS and BLM evaluated these two APDs and the associated Surface Use Plans of Operations (SUPO) to conduct exploratory oil/gas drilling within the Lake Fork watershed 9.3 miles northeast of Indianola and in Hjorth Canyon 6.6 miles north of Indianola, Utah County, Utah. Both drill holes are located in the Sanpete North Oil and Gas Potential Area as delineated in the Final Environmental Impact Statement for Oil and Gas Leasing and Lands Administered by the Manti-La Sal National Forest, 1992. The proposed drilling would take place in Section 5 of Township 11 South, Range 5 East, and in section 16, Township 11 South, Range 4 East, Salt Lake Baseline and Meridian, respectively. Location maps for the project are contained in Appendix A of the EA. The two proposed wells are identified as Oil Hollow #5-1 (Lease # UTU-77275) and Hjorth Canyon Federal #16-1 (Lease # UTU-77270).

Drilling of the wells would be during the 1999 and 2000 field seasons, commencing in July/August 1999.

II. DECISION

I have decided to implement **Alternative 3, "Drilling of Oil Hollow #5-1 with Alternate Pad Access and Additional Mitigation"** as described in the Environmental Assessment (EA, pp.13-15, Appendix A, Location Map, and Appendix B, Stipulations) and summarized as follows:

The Forest Service approves the two SUPOs and does not object to the BLM approving the APDs for Oil Hollow #5-1 (Lease # UTU-77275) and Hjorth Canyon Federal #16-1 (Lease # UTU-77270), with about 0.8 miles of temporary road access on National Forest System Land and authorizes the no surface occupancy stipulation attached to Lease #UTU-77275 be excepted as discussed. Access routes to the wells would be constructed, maintained or upgraded as necessary, and properly signed during activity. Hjorth Canyon #16-1 access would require 0.7 miles of new temporary road construction and Oil Hollow #5-1 access would require 0.1 miles of new temporary road construction. Main access for the Oil Hollow site would be from Indianola on Forest Development Road #50070 for approximately 6.5 miles. Approximately 0.7 miles of this road will be improved with a gravel

surface aggregate to offset sediment produced by project activities during weather. If project activities extend beyond October 1st, the length of road requiring gravel surface aggregate will be 3.2 miles. Access for the Hjorth drill hole would be from State Highway 89 along Forest Development Road #FDR 51171 for approximately 1.5 miles. This road crosses non-Federal lands then onto National Forest System lands in Hjorth Canyon to the location where the pad access road would be constructed. Forest Service stipulations will be applied from the Forest Plan and EA project design features (Attachment 1). Monitoring will be conducted as required to address issues and anticipated environmental effects.

The decisions also grant exceptions to the lease stipulations which prohibit surface occupancy on unstable lands and within 200 feet of a riparian zone for the Oil Hollow #5-1 well.

The responsible official of the Bureau of Land Management will issue a separate decision document regarding the BLM decisions.

III. RATIONALE FOR THE DECISION

This decision was made after careful consideration of the contents of the Environmental Assessment, public involvement, and the entirety of the supporting record. No one fact or single piece of information led to my decision. Rather, a combination of factors contributed to it. I have summarized some of my key considerations in the following sub-parts.

Relationship to the Purpose and Need:

The general purpose and need for this project is to accomplish the following goal of the Forest Plan: "Provide appropriate opportunities for and manage activities related to locating, leasing, development, and production of mineral and energy resources." (Forest Plan, p. III-4).

The project-specific purpose and need of the proposed action is to allow Ballard Petroleum their exclusive right to drill for and remove oil/gas reserves consistent with the Federal Leases.

Relationship to Other Alternatives Considered:

I have reviewed the alternatives analyzed in the Environmental Assessment (EA, pp. 11-17).

The Alternative 1 (no action) would not meet Forest Plan direction to "Provide appropriate opportunities for and manage activities related to locating, leasing, development, and production of mineral and energy resources." (Forest Plan, p. III-4).

Alternative 2 was considered but not selected largely because Alternative 3 would meet the project objectives and adequately protect the resources. Alternative 2 did not provide for the stabilization of the earth flow nor provide measures to minimize effects from the earth flow on the drilling equipment nor minimize effects to Lake Fork Creek.

Relationship to Existing and Potential Resource Conditions:

I have considered existing resource conditions and potential environmental effects in making this decision (EA, pp. 34-55, project record). The design of Alternative 3 and included stipulations will adequately protect the resources. The exceptions to lease stipulations for the Oil Hollow #5-1 well are consistent with Forest Plan objectives for resource management. I have determined through the environmental analysis that the well, under the selected alternative, would have a low risk of causing renewed movement of the earthflow and would have a low-moderate risk of being damaged by natural landslide movement. If natural movement should occur, appropriate measures have been taken to prevent impacts to water quality in Lake Fork Creek. A near perpendicular crossing of Lake Fork Creek and the associated riparian zone would be accomplished in accordance with Forest Plan direction and the riparian vegetation removed for operations could be replaced after project completion through reclamation. The disturbance to the creek would be minimized by appropriate design of the structures. The pad would lie just within the 200-foot No Surface Occupancy buffer distance for RPN (Riparian) Management Units required by a lease stipulation. The exception to this lease stipulation is consistent with Forest Plan direction because appropriate measures would be taken to prevent construction materials and sediment from entering the creek and associated riparian area and the temporary loss of riparian habitat would be minimal.

Relationship to Public Involvement

Public comments were sought and considered throughout the planning process for this project (refer to Section V of this document for a summary of public involvement). I have reviewed and considered the issues and concerns identified during the scoping and EA review comment periods. My decision considers all public comments received.

Relationship to Laws and Regulations:

My decision is consistent with applicable laws, regulations, and policies (refer to Section VII of this document).

IV. SUMMARY OF ALTERNATIVES CONSIDERED

Several alternatives were considered as part of this project. While some alternatives were dropped from consideration (EA, p. 15), three alternatives were considered in detail and analyzed in the Environmental Assessment (EA, pp.11-17). A summary of the alternatives are considered in detail as follows:

Alternative 1 - No Action (EA, p. 11)

The Forest Service would not approve Ballard Petroleum's two proposed SUPOs. The BLM who is the subsurface regulatory authority, would not approve the APD for these drilling activities where the Forest Service is the surface management agency.

Alternative 2 - Consent/Approval of Project as Proposed (EA, pp. 11-12)

The two proposed wells are identified as Oil Hollow #5-1 (Lease #UTU-77275) and Hjorth Canyon Federal #16-1 (Lease #UTU-77270). Drilling for both wells would be during the 1999 Field Season, commencing in July/August 1999. The Oil Hollow drill hole would be the first to be drilled. Access routes to the wells would be constructed, maintained or upgraded as necessary, and properly signed during activity.

Primary access for the Hjorth Canyon #16-1 drill site would be from State Highway 89 along Forest Development Road (FDR) #51171 to the east across non-Federal lands to National Forest System lands in Hjorth Canyon for approximately 1.5 miles. Access to the site would require 0.7 miles of new road construction (pad access road) from FDR #51171 to the pad site. The road would traverse the south slope of the ridge between the two forks of Hjorth Canyon in an easterly direction, gaining elevation to the ridge top. It would then turn back to the west along the ridge to the well site (Maps 1 and 2, Appendix A).

Primary access for the Oil Hollow #5-1 site would be from Indianola on Forest Development Road #50070 for approximately 6.5 miles. Access would require less than 0.2 miles of new road construction (pad access road) from the Lake Fork-Indianola Road (FDR #50070) to the pad site. The road would cross Lake Fork Creek just northeast of the pad site, traverse the toe of the earthflow in a southwesterly direction, gaining elevation. It would then turn north to the well site (Maps 1 and 3, Appendix A). Pad sites would require approximately 1 acre each of disturbance. In addition, General Forest Service well pad and project road design features, a SPCC Plan, and water monitoring would be required.

Alternative 3 - Drilling of Oil Hollow #5-1 with Alternate Pad Access and Additional Mitigation (EA, pp. 13-14)

Alternative #3 describes drilling of the proposed (Oil Hollow #5-1) well at the Lake Fork location with additional mitigation measures to address key issues of land instability, visuals, and fisheries at the site. The remaining proposals are the same as in Alternative #2. Under this alternative the pad would be oriented differently and shifted slightly to the south to better fit the topography, decrease the highwall height, and better screen the pad from view from dispersed recreation sites and the adjacent Lake Fork Road. Under this alternative Ballard has proposed to decrease the pad size by eliminating the reserve pit and using a closed mud system. With a closed system all drilling fluids would be enclosed in tanks. The access road would be located differently than under Alternative #2 to avoid crossing the steep sideslope on the toe of the earthflow, to better screen it from dispersed recreation sites, and locate the Lake Fork Creek crossing to provide for fish passage. The length of the new road would be (0.1 mile) slightly less than under Alternative #2 and enter the pad at the same location as in Alternative #2 (Maps 3 and 4, Appendix A). In addition, this alternative would require construction of the stream crossing

using a culvert system or a bridge which would minimize disturbance of the streambed and provide for fish passage.

Proposed drilling actions and activities would be the same as in Alternative #2 for the Hjorth Canyon Drillhole. Additional features particular to the Oil Hollow #5-1 Well for Alternative #3 are as follows:

- Geotechnical report would be developed to address concerns of drilling on this unstable site and would include the following:
 - a) The pad access road route would be changed to avoid crossing the toe of the earthflow and the pad would be reoriented to decrease the height of the highwall.
 - b) The well head would have 4 different layers of casing and cement.
 - c) The well head would have an emergency automatic shut-off valve located down hole above the highest producing hydrocarbon zone.
 - d) Protection of the toe of the landslide from the stream by placement of rip-rap. Design for the exploratory well (short-term) would be for a 25-year/24-hour storm event. Design for a producing well (long-term) would be for a 100-year/24-hour storm event.
 - e) A monitoring program to track movement of the site and implementation of a more comprehensive contingency spill plan for the well site and for the access route in the event that natural earthflow movement occurs.
 - f) Implementation of a water monitoring program for exploration and production phases as necessary, see Appendix D.
 - g) Replacement of ballast (rip-rap) in the cut/fill sections of disturbance for slope support.
 - h) If the pad remains unreclaimed over the winter, construction of a lined waste water collection pit or sump on the pad to prevent saturation of the pad and discharge of contaminated water from the site.
 - i) Provision for preventing spills from tanks and flowlines, and other facilities on the pad in the event that the earthflow moves.
- A barrier or sediment control structure consisting of suitable materials would be required to be constructed below the pad, between the pad/pad access road and Lake Fork Creek, to prevent construction materials and sediment from reaching Lake Fork Creek.
- Approximately 0.7 miles of the 3.2 miles of the Lake Fork-Indianola Road (FDR 50070) which is not already gravel surfaced would be gravelled with a 5-inch column to meet required Best Management Practices by reducing sediment production to 0 over existing conditions. If operations extend beyond October 1, the entire 3.2 miles of this road segment not presently gravelled would be gravelled with an 8-inch column.
- Maintenance of the site and production facilities would be by snowmobile in winter.
- A screen of trees would be planted to minimize visuals if the well produces long-term.
- A pull-out along the road near Side Canyon (dispersed recreation site) would not be used by drillers to allow continued use for dispersed recreation.
- If the well does not produce, salvage any uncontaminated gravel/roadbase installed for drilling operations and place in Side Canyon as designated. Install appropriate barriers as necessary to keep vehicles on the gravelled surface. If the well does produce, provide similar improvements in Side Canyon. Roadbase would then be hauled to harden the site.
- Crossing of Lake Fork stream would be by an approved culvert system or a bridge. The structure(s) must provide for flow from a 25-year/24-hour storm event, with a flow velocity during the mean annual flow of less than 4 feet/second. Within the structure(s) span, at least a 4-foot wide gravel/cobble bottom (similar to natural channel substrate) must be provided to facilitate fish passage.
- The pad access road route would be changed to reduce impacts to visual quality, land stability, and fish passage in Lake Fork Creek. The pad orientation would be changed to reduce the highwall and minimize impacts to land stability and visual quality.

V. PUBLIC INVOLVEMENT

External scoping consisted of legal notices in the Sun Advocate and The Pyramid (both December 22, 1998), listing in the Forest's *Schedule of Proposed Actions*, and by letter to a 40-person mailing list for 30 days response. Internal review for this project included various Forest Service resource specialists (2/5/99, 2/8/99, 2/10/99, 2/12/99). The Surface Use Plan of Operations (SUPO) for both drilling projects were posted at the Manti-La Sal National Forest Supervisor's Office from February 24, 1999, through March 26, 1999. Those individuals to whom letters were mailed included: Federal, State, and local governmental or land management entities; environmental and interest groups or businesses; adjacent landowners; range permittees; and others known to be potentially interested or affected. Two letters were received in response to external scoping. The comments contained in the received letters helped identify the issues to be addressed, alternatives and alternative features, and the scope of analysis.

When the EA was completed, a 30 day public review and comment period from June 29 through July 29th and was published in the Sun Advocate (Price, Utah) and the Pyramid, as well as, mailed to 12 interested individuals/agencies on the same date. Three comments were received during the comment period. These comments from the Bureau of Land Management, Navajo Nation Historical Preservation Department, and the US Fish and Wildlife Service are noted and reflected in my decision.

The BLM provided editorial comments via e-mail dated 7-27-99, regarding misspellings. Specific comments were to:

Change Glen Carpenter's first name to Glenn. Rewrite that the BLM Salt Lake Field Office Manager not State Director will be making the APD approval decision, page 3. Change "San Rafael Proposed" to "Pony Express," page 3;. Change the Price and Moab Offices to "BLM Salt Lake Field Office." Revise the last sentence under the issue of Safety to include "and impacts to subsurface resources." Change Hunt spill to diesel spill, page 53 and reference "... Pony Express Resource Management Plan. Salt Lake Field Office," on page 62.

The Navajo Nation Historic Preservation Department sent a letter dated July 29, 1999 with comments on the EA. Essentially, they replied that "...the Navajo Nation has no reason to voice any concerns or qualms concerning the project. But would like to be notified if any anthropological discoveries/sites (advertent or inadvertent) are made on both project sites." The NNHPD went on to recommend that a "certified anthropologist" be on site to oversee construction and periodically monitor drilling activities to protect any unknown or newly discovered anthropological sites.

The Forest Service contacted the NNHPD on 8-5-99 and explained that a survey had already been conducted by a qualified archaeologist and that nothing was found. In addition, a geologist would inspect the site often during the construction and operations phase of the project. He responded that this should be adequate. It was also explained that the agencies plan to go forward with their respective decisions and forego the 45-day appeal period under 36 CFR 215 because scoping and the EA review did not result in substantive comments which would indicate that the appeal period was necessary. He responded that he had no objection.

The U.S. Fish and Wildlife Service responded in a letter dated 7-29-99. In the letter they concurred with the "no effect" determination of the Biological Assessment regarding Federally listed threatened and endangered species. The letter also reminded the USFS that they, as well as, the BLM are signatories on the Conservation Agreement and Strategy for Bonneville Cutthroat Trout (Agreement) to minimize and eliminate threats to the Bonneville Cutthroat Trout that could affect and eventually warrant listing under the Endangered Species Act. The letter went on to mention that in general, the EA cited drilling on an unstable landform could trigger movement and cause soil and water contamination of Lake Fork Creek. Likewise, fish habitat, water quality and spawning could be affected from increased sedimentation due from road construction/maintenance and culvert installation, especially, when combined with moderate to heavy cattle grazing in the area. The EA also identified Leatherside Chub (Utah Dept. of Wildlife Resources species of concern) present in Lake Fork Creek and affected the same as BCT.

The USFWS letter further provided specific comments that the EA does not address cumulative effects to aquatic resources from past and current activities and recommended the EA evaluate potential cumulative impacts to aquatic resources, as well as, provide scientific names of the seed mix species listed and provide a rationale for the selected species. They further recommended the use of non-natives seed species for reclamation.

The Forest Service contacted the USFWS on 8-09,10-99 and discussed the above items. The mitigation measures within the SUPO, stipulations from the conditions of approval, and design features all contribute to reduce sedimentation and effects to fisheries and water quality. The EA documented that there could be some sediment

produced during construction operations but overall the project would result in sediment increase over existing conditions. Water quality monitoring would be conducted during all stages of operations by the operator and FS to provide for detection of impacts and remediation should unforeseen impacts occur. The seed mixture was developed by a FS Biologist and Botanist to quickly stabilize soils, be consistent with existing vegetation in the adjacent area, and balance the reclamation needs of the site versus the long-term management needs of the area. The Forest Service feels that the project would not have cumulative detrimental long-term effects to the fish population viability and habitat quality. The stream crossing would be constructed to minimize short-term effects. The Lake Fork Road would be gravelled to decrease existing sediment levels, and measures would be taken to decrease sediment yield from the toe of the existing landslide. The short-term impact to aquatic resources from construction would be localized, while design features provide for no long-term sediment increases. If efforts to stabilize the toe of the earthflow are successful as planned, there could be an overall reduction of sediment in the project area.

VI. FINDING OF NO SIGNIFICANT IMPACT

Based on my review of the EA and supporting record, I have determined that this decision does not constitute a major Federal action significantly affecting the quality of the human environment, as defined in the Code of Federal Regulations title 40 part 1508, section 27 (40 CFR 1508.27) in either context or intensity. Therefore, it is my decision that an Environmental Impact Statement is not necessary, and will not be prepared. My rationale for this determination is summarized below.

Project design features and Forest Service stipulations will minimize the level of effects consistent with Forest Plan standards, guidelines and objectives and BLM Onshore Oil and Gas Orders. Monitoring will be performed by the operator and Forest Service to determine the effectiveness of design features and stipulations. Inspections will be conducted by the Forest Service (surface operations) and BLM (down-hole operations) to assure compliance with the SUPO and APD.

Context

Locality. Implications of this decision are primarily for the Hjorth Canyon and Lake Fork area. The effects on public land use and users would remain consistent with that which is currently occurring. (EA, Project Record)

Affected Interests. Affected interests for this project are primarily recreation enthusiasts, State resource management agencies, and other entities with interests in wildlife and water management. (EA, Project Record)

Affected Region. The decision is a site-specific action with impacts primarily to the local area. The context of this decision is comparable to many projects on the Manti-La Sal National Forest and would not measurably affect the region.

Society. No effects are anticipated to society as a whole.

Intensity

1. Consideration Of Beneficial And Adverse Impacts. Consideration of beneficial and adverse impacts has been made in the EA (pp.34-59). Impacts of this decision will be similar to that of past drilling projects involving road access. Although both beneficial and adverse effects are disclosed, none are severe enough to be considered significant.

2. Consideration Of Public Health And Safety. No public health or safety issues concerning this decision were raised. Although no health and safety were raised, there are several Forest Plan directed project stipulations included in this decision to ensure public health and safety (EA, Appendix B).

3. Consideration Of Unique Characteristics Such As Proximity To Historic Or Cultural Resources, Park Lands, Prime Farmlands, Wetlands, Wild And Scenic Rivers, Or Ecologically Critical Areas. Historic and cultural resources are addressed in the following Item 8. There are no prime farmlands, rangeland, or forest land as defined in the Secretary of Agriculture's Memorandum Number 1827, Supplement 1, identified on the Forest (Forest Plan, p. II-57). Wetlands would not be affected as this decision requires avoidance of the wetlands as described in the EA. There are no parklands or wild and scenic rivers identified in the Forest Plan. The area of my decision has not been identified by any source as an ecologically critical area (Project File - Biological Assessment and Evaluation).

4. Consideration Of The Degree To Which The Effects On The Quality Of The Human Environment Are Likely To Be Highly Controversial. This decision is not unique, as several other minerals related drilling projects are conducted each year. Effects on the quality of the human environment are understood and are not highly controversial. Scoping on the proposed action and solicitation of comments on the Environmental Assessment and pre-decision demonstrated that there is not much public controversy over potential effects. No information or data has been presented to demonstrate that the effects are highly controversial.
5. Consideration Of The Degree To Which The Possible Effects On The Human Environment Are Highly Uncertain Or Involve Unique Or Unknown Risks. This decision is not unique, as there are numerous natural gas well on the Forest which are currently producing. The Forest has experience in implementing and monitoring similar projects, the effects of which have been found to be reasonably predictable. No effects from this decision would be classified as highly uncertain or involving unique or unknown risks.
6. Consideration Of The Degree To Which The Action May Establish A Precedent For Future Actions With Significant Effects Or Represents A Decision In Principle About A Future Consideration. This decision is not precedent setting. The Forest generally considers and analyzes the permitting of several exploration projects each year. Any future proposals would have to be evaluated on their own merits based on the issues and effects related to the location, timing and intensity of each action. This decision is separable from and not dependent upon any other likely foreseeable projects for future consideration.
7. Consideration Of The Action In Relation To Other Actions With Individually Insignificant But Cumulatively Significant Impacts. No reasonably foreseeable future projects have been identified that would in connection with this decision produce cumulative effects beyond those currently occurring. The limited scale of activity creates minimal individual effects, as well as minimal cumulative effects when added to the existing situation and other potential activities.
8. Consideration Of The Degree To Which The Action May Adversely Affect Areas Or Objects Listed In Or Eligible For Listing In The National Register Of Historic Places Or May Cause Loss Or Destruction Of Significant Scientific, Cultural, Or Historical Resources. Record and field reviews support that no cultural or historic sites would be affected by this decision (Project Record). When implementing the decision, any previously unidentified sites inadvertently discovered would be avoided or mitigated so there would be no effect upon them. (EA, Appendix B-Stipulation 11)
9. Consideration Of The Degree To Which The Action May Adversely Affect An Endangered Or Threatened Species Or Its Habitat Has Been Determined Not To Be Critical Under The Endangered Species Act. The US Fish and Wildlife Service has been included in the process. A Biological Assessment has been conducted for this decision (Project Record -Biological Assessment and Evaluation). All known endangered or threatened species were considered. The Biological Evaluation concludes that this decision will have "no effect" to listed or proposed species. (EA, Appendix C).
10. Consideration Of Whether The Action Threatens A Violation Of Law Or Requirement Imposed For The Protection Of The Environment. To the best of my knowledge, this decision does not threaten violation of any laws and regulations imposed for the protection of the environment (refer to Section VII of this document).

VII. FINDINGS REQUIRED BY OTHER LAWS AND REGULATIONS

To the best of my knowledge, this decision complies with all applicable laws and regulations. In the following, I have summarized the association of my decision to some pertinent legal requirements.

Federal Land Policy and Management Act of 1976: This Act allows the granting of land use permits on National Forest System lands. The regulations at Code of Federal Regulations Title 36 part 251 (36 CFR 251) guide the issuance of permits under this Act. Land use permits are granted on National Forest System lands when the need for such is consistent with planned uses.

National Forest Management Act of 1976: The Forest Plan was approved November 5, 1986, as required by this Act. This long-range land and resource management plan provides guidance for all resource management activities in the Forest. The National Forest Management Act requires all projects and activities to be consistent with the Forest Plan. The Forest Plan has been reviewed in consideration of this project. This decision will be consistent with the Forest Plan.

Mineral Leasing Act of 1920: The Bureau of Land Management (BLM) is the responsible agency for permitting, under the Mineral Leasing Act of 1920, as amended. The Forest Service, as the surface management agency, must consent to the BLM decisions pertaining to leasing actions or exploration activities. This decision document constitutes my consent on behalf of the agency.

Federal Onshore Oil and Gas Leasing Reform Act of 1987: On National Forest lands, consent must be obtained from the Forest Service, as the surface management agency, prior to approval of activities, including exploration drilling. This decision document constitutes my consent on behalf of the agency.

National Historic Preservation Act: Compliance with this Act and the American Indian Religious Freedom Act are addressed in Section VI of this document.

Endangered Species Act: Compliance with this Act is addressed in Section VI of this document.

National Environmental Policy Act: The entirety of documentation for this project supports that the project complies with this Act.

VIII. IMPLEMENTATION DATE AND APPEAL OPPORTUNITY

Implementation of this decision may occur immediately upon publication of the notice of this decision in the Sun Advocate (Price, Utah).

This decision is not subject to appeal by the public in accordance with the Code of Federal Regulations Title 36 part 215, section 8 (36 CFR 215.8 - Actions for which notice and opportunity to comment have been published and on which no expression of interest has been received during the comment period, and the proposal is not changed) and 215.10(c).

This decision is subject to appeal by the applicant under Code of Federal Regulations Title 36 part 251.

IX. CONTACT PERSON

For additional information concerning this decision, please contact Will Wilson at the Ferron/Price Ranger District (address: 115 West Canyon Road, P.O. Box 310, Ferron, UT 84523; telephone: 435-384-2372).

X. SIGNATURE AND DATE


JANETTE S. KAISER
Forest Supervisor (Responsible Official)
Manti-La Sal National Forest

8/12/99
Date

ATTACHMENT 1

CONDITIONS FOR APPROVAL OF SUPO/APD BALLARD PETROLEUM LLC OIL HOLLOW #5-1 AND HJORTH CANYON FEDERAL #16-1 WELLS

General Manti-La Sal National Forest Requirements For Oil and Gas Drilling

The following are general requirements to be applied by the operator as conditions for approval to the Surface-Use Plan of Operations as part of the Application for a Permit to Drill (APD). They are further refined by stipulations 34-56 based on the environmental analysis.

- 1) The pad and road designs must be consistent with Forest Service specifications as outlined in the Region 4 Oil and Gas Rooding Guidelines and the Manti-La Sal National Forest Oil and Gas Well Site Guidelines and are subject to Forest Service approval. No construction operations may begin prior to approval. Any modifications to approved plans are also subject to review and approval.
- 2) A pre-construction meeting including the responsible company representative(s), contractors, and the Forest Service must be conducted at the project site prior to commencement of surface-disturbing activities. The pad and road work must be construction-staked prior to this meeting. Site-specific requirements will be discussed at this time.
- 3) The operator shall submit for approval, a maintenance plan for the site, the project road and that portion of any Forest Development Road to be used for project access. A road-use permit must be obtained from the Forest Service authorizing commercial use of Forest Development Roads. Requirements listed in the road-use permit must be followed. In the event of a discovery, an updated maintenance plan will be required.
- 4) The operator must acquire appropriate permission to use non-Forest Service Roads.
- 5) The project engineer and surveyors must be certified by the State in which they reside or maintain their business.
- 6) All surface-disturbing activities, including reclamation, must be supervised by a qualified, responsible official or representative of the designated operator who is aware of the terms and conditions of the APD and specifications in the approved plans.
- 7) Adequate signs must be posted along Forest Development Roads to warn the public of project related traffic.
- 8) Move-in and move-out of the drill rig will not be allowed during holiday weekends and will be restricted during the big game hunting seasons as specified by the Forest Service as conditions for approval of the Surface-Use Plan of Operations.
- 9) In the event of a discovery, a revised surface-use plan must be submitted to the Forest Service showing all needed production facilities. Production facilities will be subject to further environmental analyses and approval by the Forest Service.
- 10) Establishment of campsites on the pad or at other locations on National Forest System lands by the operator or his contractors is subject to Forest Service approval.
- 11) A cultural resources survey and clearance by a qualified archeologist is required under a Forest Service special-use permit prior to approval of the Surface-Use Plan of Operations. If cultural or

paleontological resources are discovered during operations, all operations which may result in disturbance to the resource must cease and the Forest Service must be notified of the discovery as soon as possible.

- 12) The Forest Service will conduct a survey of the project area for Threatened, Endangered and Sensitive plant and animal species. The operator will be notified of the results of the survey with any special requirements for protecting them, if any are present.
- 13) Unauthorized off-road vehicular travel is prohibited.
- 14) Section corners, survey markers and claim corners in the project area must be located and flagged by the operator prior to operations. The removal or disturbance of identified markers must be approved by the proper authority.
- 15) Water needed for operations must be properly and legally obtained according to State water laws. The location of diversion, if on National Forest System lands, is subject to Forest Service approval.
- 16) Fire suppression equipment must be available to all personnel on the project site. Equipment must include a minimum of one hand tool per crew member consisting of shovels, pulaskis, and chainsaws and one properly rated fire extinguisher per vehicle and/or internal combustion engine.
- 17) All gasoline, diesel and steam-powered equipment must be equipped with effective spark arresters or mufflers. Spark arresters must meet Forest Service specifications discussed in the USDA Forest Service Spark Arrester Guide. In additions, all electrical equipment must be properly insulated to prevent sparks.
- 18) The operator will be held responsible for damage and suppression costs for fires started as a result of operations. Fires must be reported to the Forest Service as soon as possible.
- 19) All accidents or mishaps resulting in resource damage and/or serious personal injury must be reported to the Forest Service as soon as possible.
- 20) Vehicle operators must obey posted speed restrictions and observe safe speeds commensurate with road and weather conditions.
- 21) All drilling fluids must be contained in the reserve pit. All appropriate measures must be taken to assure that leakage through the reserve pit does not occur and that fluids are not allowed to overflow. A minimum of 2 feet of freeboard is required.
- 22) Sanitary facilities are required on site at all times during operations. The installation of facilities other than self-contained chemical toilets is subject to State and Forest Service approval.
- 23) Harassment of wildlife and livestock is prohibited.
- 24) All merchantable timber removed or destroyed by construction or other project related activities will be purchased by the operator at fair market value. The Forest Service will conduct a timber cruise and appraisal after the final clearing limits have been staked. Slash burning will be conducted only at locations approved by the Forest Service under authorization or a burning permit. Burning of garbage and debris is prohibited.
- 25) All Topsoil must be stripped from areas to be disturbed and stockpiled for reclamation in such a way as to prevent soil loss and contamination.
- 26) Following completion of the project, the pad and project area must be replaced to the approximate original contour unless otherwise specified in the Forest Service conditions for approval of the Surface-Use Plan of Operations.

- 27) The reserve pit must be dry before it is backfilled and reclaimed. The pit must be fenced (5 strand barbed wire) at all times until it is reclaimed. Methods for drying the pit, other than natural evaporation, are subject to prior Forest Service approval.
- 28) Unless otherwise specified in the Forest Service conditions for approval the Surface-Use Plan of Operations, contaminated soils and gravel in the project area and the contents of the reserve pit and/or closed mud system will be removed from the National Forest and disposed of at an approved facility. Exceptions may be granted if the operator can demonstrate non-toxicity through testing or isolation through encapsulation.
- 29) Stockpiled topsoil must be redistributed evenly over the disturbed area upon reclamation.
- 30) The seed mix and other planting requirements will be specified in the Forest Service conditions for approval of the Surface-Use Plan of Operations. The pad area must be fenced (let-down fence) and the project road must be adequately closed off to prevent continued use until the required reclamation standards are successfully achieved, refer to Stipulation #38.
- 31) All trash, garbage and other refuse must be properly contained on the site during operations and periodically disposed of off-Forest at an approved refuse facility. Following completion of operations, all unnecessary equipment, materials and refuse must be removed from the Forest as soon as possible.
- 32) In general, the disturbed areas will be considered adequately revegetated when at least 90 percent of the original ground cover is re-established over 90 percent of the seeded area, within three years of planting, consisting of seeded and desirable species. Maximum allowable non-noxious weeds is 10 percent of the total ground cover at any time. No noxious weeds will be allowed on the site; they must be treated as they occur. The operator is responsible for maintenance of reclamation facilities such as fences, barricades and temporary drainage structures until the desired reclaimed conditions are achieved. If the desired ground cover is not established at the end of each 3 year period, an analysis of why the area has not recovered will be performed by the operator and additional treatment and seeding will be required based on the results of the analysis.
- 33) Straw, hay, feed, or pellets used on the National Forest's of Utah must be certified weed-free by the State of Utah.

Additional Stipulations Specific to the Project for Both Drill Sites

These stipulations further clarify and refine the general stipulations 1-33 provided above based in the project Environmental Assessment.

- 34) All fluids and waste water will be contained in a lined reserve pit and/or tanks. Containment dikes or berms will be built around the drilling pads to contain any run-off and spills.
- 35) If the well is a dry hole, rehabilitation will begin right after drilling is complete with appropriate drainage structures constructed and recontouring of the terrain to approximate original condition.
- 36) If the well(s) produces, rehabilitation will begin immediately after drilling to the extent possible for that portion not needed for production. Production pad designs are subject to FS approval.
- 37) Revegetation will be accomplished after scarification and topsoiling with approved weed free seed mixtures consistent with the Utah Seed Act.

HJORTH CANYON - REVEGETATION SEED MIX

<u>GRASS SPECIES</u>	<u>lbs/acre</u>	
Great Basin Wildrye (Trailhead)	1.0	
Bluebunch Wheatgrass (Goldar)	1.5	
Indian Ricegrass (Nezpar)	1.5	
Western Wheatgrass (Rosanna)	2.5	
Needle and Threadgrass	1.0	
Sandberg Bluegrass	0.5	

<u>FORB SPECIES</u>		
Small Burnet	1.5	
Alfalfa	1.5	
Utah Sweetvetch (hedysarum boreale)	1.0	
Palmer Penstemon	0.5	
Western Yarrow	0.5	
Lewis Flax	0.5	

<u>BROWSE SPECIES</u>		
Winterfat	1.5	
Wyoming Big Sagebrush	0.5	
Bitterbrush	1.0	
Fourwing Saltbush	1.0	
Birchleaf Mahogany	1.0	

TOTAL = 18.5 lbs/acre

Remarks: The area will reclaim better if the mix is seeded using a rangeland drill. However there are the following exceptions. The sagebrush, yarrow and winterfat should be broadcast seeded on top of the disturbed surface. If possible, the bitterbrush, fourwing saltbush and mahogany should be seeded using a dribbler.

OIL HOLLOW - REVEGETATION SEED MIX

<u>GRASS SPECIES</u>	<u>lbs/acre</u>	
Great Basin Wildrye (Trailhead)	2.0	
Thickspike Wheatgrass	2.0	
Mtn. Brome	1.5	
Sherman Big Bluegrass	0.5	
Slender Wheatgrass	2.0	

<u>FORB SPECIES</u>		
Small Burnet	2.0	
Alfalfa	2.0	
Utah Sweetvetch (hedysarum boreale)	1.0	
Rocky Mtn. Penstemon	0.5	
Western Yarrow	0.5	
Pacific Aster	0.5	

<u>BROWSE SPECIES</u>		
Mtn. Big Sage	0.5	
Bitterbrush	1.5	
Woods Wild Rose	1.0	

TOTAL = 17.5 lbs/acre

Remarks: The area will reclaim better if the mix is seeded using a rangeland drill. However there are the following exceptions. The sagebrush and yarrow should be broadcast seeded on top of the disturbed surface. If possible, the bitterbrush should be seeded using a dribbler.

Grass species from each list will be used as an interim seedmix.

38) A fence will be placed around the reclaimed site to allow for successful revegetation and stabilization.

39) Drillers will be housed off Forest.

- 40) A reserve pit and/or closed mud system will be constructed of sufficient size to handle all necessary drill fluids and prevent overflow or leaking onto the drill site. Pits will be fenced and a minimum 2 feet of free-board will be maintained at all times. After first production, waste water will be confined to a pit for a period not to exceed 90 days.
- 41) Heavy truck traffic and move-in and move-out of the drill rig will not be allowed during holiday weekends, including the prior Friday and actual holiday, or during the opening weekend of the regular big game hunting seasons, including the day before the opening day. If the elk hunt starts earlier than the Friday before the weekend, this restriction will start on the day before the first official day of the hunt and last through the first weekend.
- 42) Operations other than normal maintenance of producing wells is not allowed from May 15th to July 15th to protect elk calving and deer fawning habitat.

SPECIAL STIPULATIONS SPECIFIC TO THE HJORTH CANYON FEDERAL #16-1

- 43) Except normal maintenance of producing wells, no operations are allowed between December 1 and April 15 to protect wintering big-game.

SPECIAL STIPULATIONS IDENTIFIED IN ALTERNATIVE #3 for OIL HOLLOW #5-1

These stipulations further clarify and refine the general stipulations 1-33 provided above based in the project Environmental Assessment and selection of Alternative 3.

- 44) The pad for Oil Hollow #5-1 will be oriented differently and shifted slightly to the south to better fit the topography.
- 45) All drilling fluids will be contained within a closed mud system.
- 46) Road Location: the length of the new road will be (0.1 mile) will cross Lake Fork Creek further upstream to the south where the channel is narrower/deeper and better defined by the banks than originally proposed. The road will traverse the gentle slope south of the earthflow in a northwestern direction and enter the pad at the same general location as proposed (EA Maps 3 and 4, Appendix A).
- 47) A Geotechnical report will be developed to address concerns of drilling on this unstable site and will include the following:
- a) Design for the exploratory well (short-term) will be for a 25-year/24-hour storm event. Design for a producing well (long-term) will be for a 100-year/24-hour storm event.
 - b) The pad access road route will avoid crossing the toe of the earthflow as much as possible and the pad will be reoriented to decrease the height of the highwall.
 - c) The well head will have 4 different layers of casing and cement.
 - d) The well head will have an emergency automatic shut-off valve located down hole above the highest producing hydrocarbon zone.
 - e) Rip-rap will be placed at the toe of the landslide to prevent continued erosion of the toe by the stream, stabilize the earthflow, and decrease sediment production to the stream associated with the earthflow.
 - f) A monitoring program will be implemented to track earthflow movement of the site and if necessary, implementation of a more comprehensive contingency spill plan for the well site and for the access route in the event that natural earthflow movement occurs.
 - g) A water monitoring program will be required for exploration and production phases, see Appendix D of Ballard EA.
 - h) Minimize detrimental changes to landslide equilibrium.
 - i) If the pad remains unreclaimed over the winter, a lined waste water collection pit or sump will be constructed on the pad to prevent saturation of the pad and to prevent discharge of contaminated water.

- j) Provisions will be developed for preventing spills from tanks and flowlines, and other facilities on the pad in the event that the earthflow moves.
- 48) A barrier or sediment control structure consisting of suitable materials will be constructed downslope below the pad between the pad/pad access road and Lake Fork Creek, in order to prevent construction materials and sediment from reaching Lake Fork Creek.
- 49) Approximately 0.7 miles of the 3.2 miles of the Lake Fork-Indianola Road (FDR 50070) which is not already gravel surfaced will be gravelled with a 5-inch column to meet required Best Management Practices by reducing sediment production to 0 over existing conditions. If operations extend beyond October 1, the entire 3.2 miles of this road segment not presently gravelled will be gravelled with an 8-inch column.
- 50) Maintenance of the site and production facilities will be by snowmobile in winter.
- 51) In the event that the well becomes a producer, a screen of trees will be planted by the operator to minimize visibility of the pad and production facilities from adjacent dispersed recreation sites and the Lake Fork-Indianola Road.
- 52) A pull-out along the road near Side Canyon (dispersed recreation site) will not be used by drillers to allow continued use for dispersed recreation.
- 53) If the well does not produce, uncontaminated gravel/roadbase installed for drilling operations will be salvaged and placed in Side Canyon as designated. Appropriate barriers will be installed as necessary to keep vehicles on the gravelled surface. If the well does produce, provide similar improvements in Side Canyon. Roadbase will then be hauled to harden the site.
- 54) Crossing of Lake Fork stream will be by an approved culvert system, bridge, or bottomless arch. The structure(s) must provide for flow from a 25-year/24-hour storm event, with a flow velocity during the mean annual flow of less than 4 feet/second. Within the structure(s) span, at least a 4-foot wide gravel/cobble bottom (similar to natural channel substrate) must be provided for fish passage.
- 55) A gate must be constructed on the project access road for each site to exclude public access. The locking mechanism must be capable of using multiple locks, including a Forest Service lock to be provided by the Forest Service. The location, design, and signing of the gates must meet Forest Service specifications are subject to Forest Service approval.
- 56) Pad site development plans must include an acceptable method of draining the wet area on the earthflow above the pad by diverting it to Lake Fork Creek to the north for the purpose of stabilizing the earthflow. The designs are subject to FS approval.



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Salt Lake Field Office
2370 South 2300 West
Salt Lake City, Utah 84119

SEP 8 1999

IN REPLY REFER TO:

UTU-77270
UTU-77275
3160
(UT-020)

CONFIDENTIAL

Jim Thompson
Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, Utah 84114-5801

Dear Mr. Thompson:

43-049-30017

On September 3, 1999, we approved Ballard Petroleum Company's Applications for Permit to Drill (APDs) for exploratory oil and gas wells, Oil Hollow Federal #5-1 in T. 11 S., R. 5 E., Section 5 and Hjorth Canyon Federal #16-1 in T. 11 S., R. 4 E., Section 16, SLB&M. The wells are located on lands jointly managed by the Manti-La Sal National Forest, United States Forest Service (surface), and the Salt Lake Field Office, Bureau of Land Management.

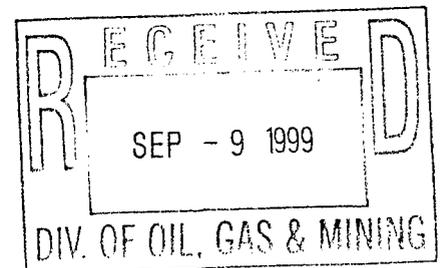
The Surface Use Plan of Operations (SUPO) was approved by the Forest Service on August 12, 1999. We have enclosed a copy of the APDs with site location maps for your records.

If you have any questions, or require additional information, please feel free to contact me at (801) 977-4371, or Carter Reed of the Manti-La Sal National Forest Supervisor's Office at (435) 637-2817.

Sincerely,

Cheryl Martinez
Geologist

Enclosures



**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK **DRILL** **DEEPEN**

b. TYPE OF WELL
OIL WELL GAS WELL OTHER SINGLE ZONE MULTIPLE ZONE

2. NAME OF OPERATOR **Ballard Petroleum LLC** Phone: **406/259-8790** P.O. Box **20174**
Fax: **303/782-0649** Billings, MT **59104**

3. ADDRESS AND TELEPHONE NO. **Permitco Inc.** Phone: **303/857-9999** **14421 Weld County Road 10**
Fax: **303/857-0577** Ft. Lupton, CO **80621**

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements*)
At Surface **2627' FSL and 1015' FWL**

At proposed prod. zone **NW SW Sec. 5, T11S - R5E**

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
Approximately 9.3 Miles northeast of Indianola, Utah

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) **1785'**

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. **None**

21. ELEVATIONS (Show whether DF, RT, GR, etc.) **6,700'**

5. LEASE DESIGNATION AND SERIAL NO.
UTU-77275

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
N/A

7. UNIT AGREEMENT NAME
N/A

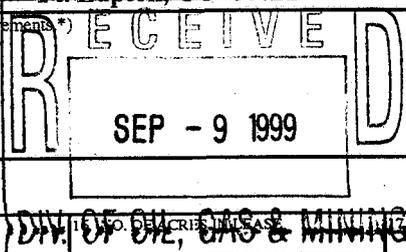
8. FARM OR LEASE NAME, WELL NO.
Oil Hollow Federal

9. API WELL NO.
#5-1

10. FIELD AND POOL, OR WILDCAT
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 5, T11S - R5E

12. COUNTY OR PARISH **Utah** 13. STATE **Utah**



16. NO. OF ACRES IN LEASE TO THIS WELL **40 Acres**

19. PROPOSED DEPTH **5,500'** 20. ROTARY OR CABLE TOOLS **Rotary**

22. APPROX. DATE WORK WILL START*
July 1, 1999

23. PROPOSED CASING AND CEMENTING PROGRAM				
SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12-1/4"	9-5/8"	36#	400'	230 sxs - circulated to surface
8-3/4"	5-1/2"	15.5#	5,500'	575 sx - top of cement @ 2000'

Ballard Petroleum LLC proposes to drill a well to 5,500' to test the Nugget and Twin Creek Formations. If productive, casing will be run and the well completed. If dry, the well will be plugged and abandoned as per BLM and State of Utah requirements.

See Onshore Order No. 1 attached. **CONFIDENTIAL - TIGHT HOLE**

Please be advised that Ballard Petroleum LLC is considered to be the Operator of the above mentioned well. Ballard Petroleum LLC agrees to be responsible under the terms and conditions of the lease for the operations conducted upon the lease lands.

Bond coverage for this well is provided by Statewide Bond No. UT-1005. The principal is Ballard Petroleum LLC via surety consent as provided for in 43 CFR 3104.2.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, 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.

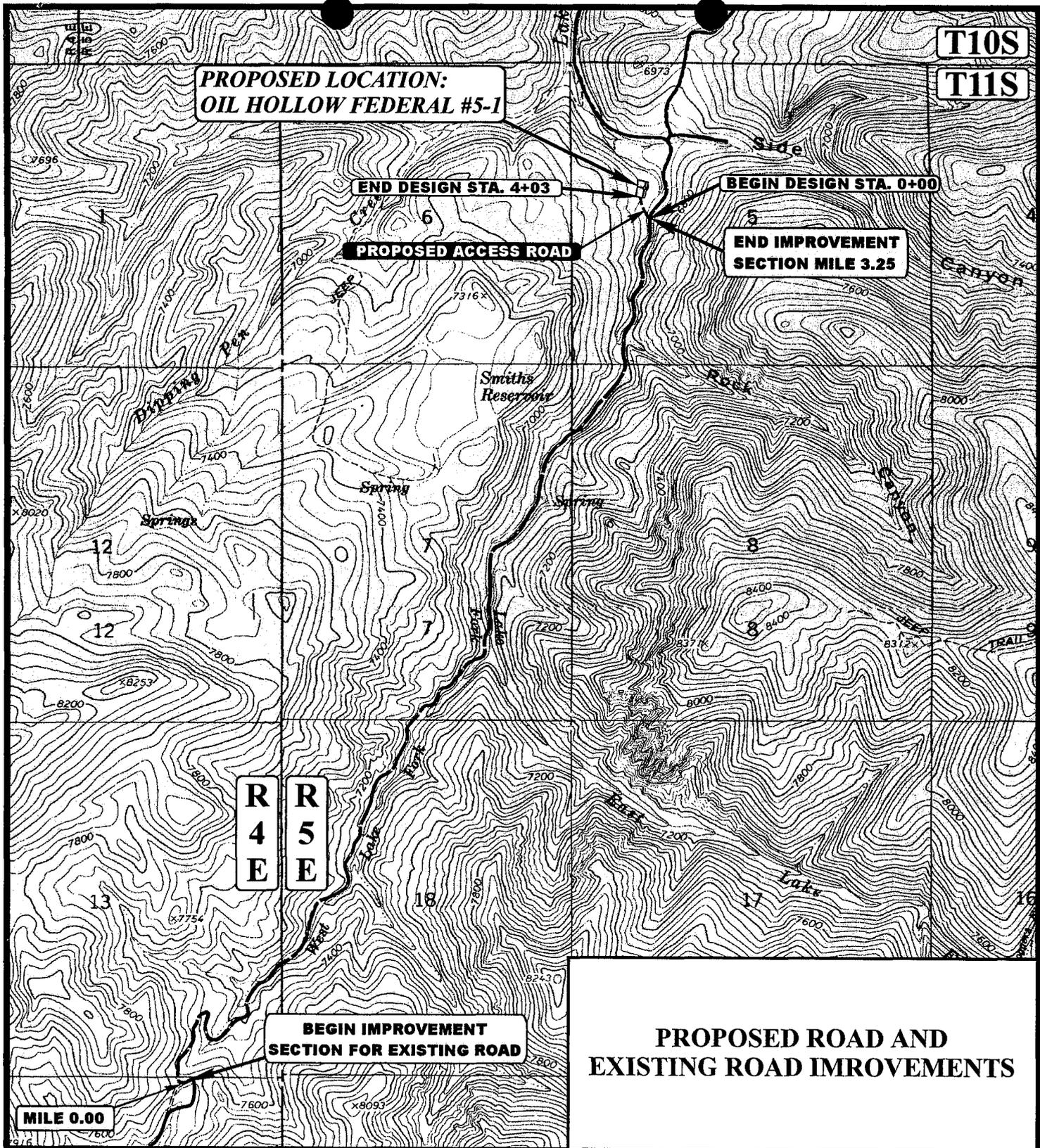
24. SIGNED [Signature] TITLE Consultant For: Ballard Petroleum LLC Date 11/10/98

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: ATTACHED
APPROVED BY [Signature] TITLE Field Office Mgr DATE 9/3/99

*See Instructions On Reverse Side



PROPOSED ROAD AND EXISTING ROAD IMPROVEMENTS

LEGEND:

- PROPOSED ACCESS ROAD
- EXISTING ROAD TO BE IMPROVED
- EXISTING ROAD



BALLARD PETROLEUM LLC

**OIL HOLLOW FEDERAL #5-1
SECTION 5,7,8, & 18, T11S, R5E, S.L.B.&M.
SECITON 13 & 24, T11S, R4E, S.L.B.&M.**

U E L S
Uintah Engineering & Land Surveying
 85 South 200 East Vernal, Utah 84078
 (435) 789-1017 * FAX (435) 789-1813

TOPOGRAPHIC **6** **29** **99** **ROAD**
MAP **MONTH** **DAY** **YEAR** **TOPO**
 SCALE: 1" = 2000' DRAWN BY: C.G. REVISED: 00-00-00

BALLARD

PETROLEUM, LLC

FAX MEMO

DATE:

TO: *LISHA CORDOVA*

FAX #:

801-359-3940

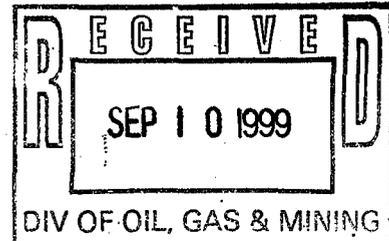
FROM:

DAVE McCOSKERY

PAGES:

2

RE:



845 12th Street West • Billings, Montana 59102
phone: (406) 259-8790 • fax: (406) 259-0178

BALLARD

PETROLEUM LLC

September 10, 1999

US Forest Service
115 West Canyon Road
P.O.Box 310
Ferron, Utah 84523
Attn: Will Wilson

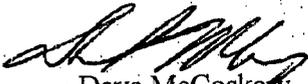
Utah Division of Oil, Gas, and Mining
P.O.Box 145801
Salt Lake City, Utah 84114-5801
Attn: Lisha Cordova

RE: Hjorth Canyon Federal #16-1
SE SW Section 16, Twn. 11S Rge. 4E
Utah County, Utah

Ballard Petroleum plans to purchase water from the Indianola Irrigation Company in Indianola, Utah. This water will be used for road and site construction, drilling, and completion operations. The water will be trucked from this purchased site to location using 100 BBL capacity water trucks.

If you have any questions or concerns, please feel free to contact me at (406) 259-8790.

Thank You



Dave McCoskey
Operations Manager



State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor

Kathleen Clarke
Executive Director

Lowell P. Braxton
Division Director

1594 West North Temple, Suite 1210

PO Box 145801

Salt Lake City, Utah 84114-5801

801-538-5340

801-359-3940 (Fax)

801-538-7223 (TDD)

September 13, 1999

Ballard Petroleum, LLC
P.O. Box 20174
Billings, Montana 59104

Re: Hjorth Canyon Federal 16-1 Well, 942' FSL, 1521' FWL, SE SW, Sec. 16, T. 11 S.,
R. 4 E., Utah County, Utah

Gentlemen:

Pursuant to the provisions and requirements of Utah Code Ann. 40-6-1 et seq., Utah Administrative Code R649-3-1 et seq., and the attached Conditions of Approval, approval to drill the referenced well is granted.

Appropriate information has been submitted to DOGM by the operator and administrative approval of the requested exception location is hereby granted.

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date. The API identification number assigned to this well is 43-049-30017.

Sincerely,

A handwritten signature in cursive script that reads "John R. Baza".

John R. Baza
Associate Director

lwp

Enclosures

cc: Utah County Assessor
Bureau of Land Management, Salt Lake Field Office

Operator: Ballard Petroleum, LLC

Well Name & Number: Hjorth Canyon Federal 16-1

API Number: 43-007-30577

Lease: Federal **Surface Owner:** Federal

Location: SE SW **Sec.** 16 **T.** 11 S. **R.** 4 E.

Conditions of Approval

1. General

Compliance with the requirements of Utah Admin. R649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for Permit to Drill.

2. Notification Requirements

Notify the Division within 24 hours of spudding the well. Contact Carol Daniels at (801)538-5284.

Notify the Division prior to commencing operations to plug and abandon the well. Contact Dan Jarvis at (801) 538-5338 or Robert Krueger at (801) 538-5274.

3. Reporting Requirements

All required reports, forms and submittals shall be promptly filed with the Division, including but not limited to the Entity Action Form (Form 6), Report of Water Encountered During Drilling (Form 7), Weekly Progress Reports for drilling and completion operations, and Sundry Notices and Reports on Wells requesting approval of change of plans or other operational actions.

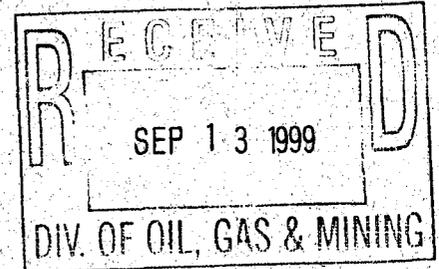
4. State approval of this well does not supersede the required federal approval which must be obtained prior to drilling.

BALLARD

PETROLEUM LLC

September 10, 1999

CONFIDENTIAL



US Forest Service
115 West Canyon Road
P.O.Box 310
Ferron, Utah 84523
Attn: Will Wilson

Utah Division of Oil, Gas, and Mining
P.O.Box 145801
Salt Lake City, Utah 84114-5801
Attn: Lisha Cordova

RE: Hjorth Canyon Federal #16-1
SE SW Section 16, Twn. 11S Rge. 4E
Utah County, Utah
43-049-30017

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If you have any questions or concerns, please feel free to contact me at (406) 259-8790.

Thank You


Dave McCoskey
Operations Manager



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Salt Lake Field Office
2370 South 2300 West
Salt Lake City, Utah 84119

IN REPLY REFER TO:

3162.3
U-77270
(UT-023)

SEP 08 2000

Ballard Petroleum LLC
P.O. Box 20174
Billings, Montana 59104

Re: Hjorth Canyon No.16-1
SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 16, T.11 S., R. 4E., SLB&M
Lease UTU-77270
Utah County, Utah

Ladies and Gentlemen:

43-049-30017

The Application for Permit to Drill (APD) the referenced well was approved on September 9, 1999. Since that date no known activity has transpired at the approved location. As noted in the Conditions of Approval, the APD was approved for a period of one year. In view of the foregoing, this office is rescinding the approval of the referenced application without prejudice. If you intend to drill at this location at a future date, a new APD must be submitted.

This office requires a letter confirming that no surface disturbance has been made for this drill site. Any surface disturbance associated with the approved location for this well must be rehabilitated. A schedule of this rehabilitation must be submitted to this office and the USFS. Your cooperation in this matter is appreciated.

Sincerely,

Glenn A. Carpenter
Field Office Manager

cc: Manti-LaSal Forest Service
Attn: Janette S. Kaiser
599 West Price River Drive
Price, Utah 84501

Utah DOGM
PO Box 145801
Salt Lake City, Utah 84114-5801

DOGm
'LA'
DATE

RECEIVED

SEP 11 2000

DIVISION OF
OIL, GAS AND MINING



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Salt Lake Field Office
2370 South 2300 West
Salt Lake City, Utah 84119

IN REPLY REFER TO:

3162.3
U-77270
(U-020)

NOV 03 2000

Ballard Petroleum LLC
P.O. Box 20174
Billings, MT 59104

CONFIDENTIAL

Re: Hjorth Canyon No.16-1
SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 16, T.11 S., R. 4E., SLB&M
Lease UTU-77270
Utah County, Utah

Ladies and Gentlemen:

In a letter dated September 8, 2000, this office rescinded the Application for Permit to Drill (APD) for the subject well. Subsequently, we received a letter dated October 16, 2000 from Elaine J. Zieroth, Forest Supervisor of the Manti-La Sal National Forest, stating that the USFS did not object to extending approval of your APD.

As stated on page 1 of the Conditions of Approval, a one-time one year extension may be granted. Therefore your APD is reinstated and extended for a period of one year (from the original expiration date of September 3, 2000) to September 3, 2001. Our September 8th letter misquoted the original approval date. There are no further provisions for additional extensions.

If you have any questions in this matter, please contact Al McKee at (801) 539-4045 or Cheryl Martinez at (801) 977-4371.

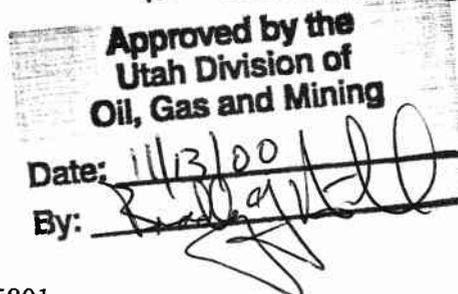
Sincerely,

Michael Steuber

ACTING
for Glenn A. Carpenter
Field Office Manager

cc: Manti-La Sal Forest Service
599 West Price River Drive
Price, Utah 84501
Attn: Janette S. Kaiser

Utah DOGM
PO Box 145801
Salt Lake City, Utah 84114-5801



COPY SENT TO OPERATOR
Date: 11-15-00
Initials: CHD

RECEIVED
NOV 06 2000
DIVISION OF
OIL, GAS AND MINING



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Salt Lake District Office
2370 South 2300 West
Salt Lake City, Utah 84119

IN REPLY REFER TO:

3162.3
UTU 77270
(U-020)

OCT 24 2001

Ballard Petroleum LLC
P.O. Box 20174
Billings, MT 59104

Re: Hjorth Canyon No.16-1
SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 16, T.11 S., R. 4E., SLB&M
Lease UTU-77270
Utah County, Utah

RECEIVED

OCT 25 2001

**DIVISION OF
OIL, GAS AND MINING**

Ladies and Gentlemen:

The Application for Permit to Drill (APD) the referenced well was originally approved on September 9, 1999 for a period of one year. The APD allowed a one-time extension, which Ballard requested and was approved, effectively extending the approval date through September 3, 2001. No known activity has transpired at the approved location. There are no further provisions for additional extensions. In view of the foregoing, this office is rescinding the approval of the referenced application. If you intend to drill at this location at a future date, a new APD must be submitted.

This office requires a letter confirming that no surface disturbance has been made for this drill site. Any surface disturbance associated with the approved location for this well must be rehabilitated. A schedule of this rehabilitation must be submitted to this office and the USFS. Your cooperation in this matter is appreciated.

If you have any questions in this matter, please contact Al McKee at (801) 539-4045 or Cheryl Martinez at (801) 977-4371.

*DoSm LA eff. 9-3-01.
jc

Sincerely,

Glenn A. Carpenter
Field Office Manager

cc: Carter Reed