MERIDIAN OIL



August 5, 1992

Mr. William LeMay New Mexico Oil Conservation Division Post Office Box 2088 Santa Fe, New Mexico 87501

Re: Meridian Oil Inc. Howell K #304 695'FNL, 840'FEL, Section 15, T-30-N, R-8-W San Juan County, New Mexico

Dear Mr. LeMay:

Sincerely,_

Meridian Oil Inc. is applying for administrative approval of a non-standard location for the above location in the Fruitland Coal formation.

This application for the referenced location is due to terrain features. The Bureau of Reclamation, Bureau of Land Management, and New Mexico Park Service would not accept a standard location at 790'FNL and 1000'FEL due to 30'+ cuts on the pit side of the location. A location at 790'FNL and 1425'FEL is too close to the existing Howell K #3 well and would require moving the EPNG main gas line, along with two laterals.

The following attachments are for your review:

- 1. Application for Permit to Drill.
- 2. Completed C-102 at referenced location.
- Offset operators/owners plat.
- 4. 7.5 minute topographic map showing the orthodox windows for the east half dedication, and enlargement of the map to define topographic features.
- 5. If the well were directionally drilled to a standard bottom hole location, the economics would be severely burdened due to the incremental directional drilling costs of \$50,000.
- 6. Archaeological Report # 092 from Arboles Contract Archaeology.

A copy of this application is being submitted to all offset owners/ operators by certified mail with a request that they furnish you with a Waiver of Objection, and return one copy to this office.

Pegg	Bradfield
01105	WATVER
	<u> </u>
	hereby waives objection to Meridian Oil Inc.'s applicatio
for	a non-standard location for their Howell K #304 as proposed above.
By:	Date:

MERIDIAN OIL

Re: Meridian Oil Inc. Howell K #304 695'FNL, 840'FEL, Section 15, T-30-N, R-8-W San Juan County, New Mexico

I hereby certify that the following offset operators/owners have been mailed notification of our application for non-standard location to drill the referenced well.

Amoco Production Co PO Box 800 Denver, Colorado 80201

Cindy B. Hamillton 2222 Flat Creek Richardson, TX 75080

Derrick J. Turnbull 5847 Lakehurst Avenue Dallas, TX 75230-5031

Dawn Turnbull Trust 5847 Lakehurst Avenue Dallas, TX 75230-5031

Denise Turnbull Williams 5847 Lakehurst Avenue Dallas, TX 75230-5031

Sylvia A. McLand Turnbull 5847 Lakehurst Avenue Dallas, TX 75230-5031

David G. McLane PO Box 214430 Dallas, TX 75221-4430

Kathleen M. McLane Trust PO Box 214430 Dallas, TX 75221-4430

Michael S. McLane Trust PO Box 214430 Dallas, TX 75221-4430

Peggy A. Bradfield San Juan County State of New Mexico

My commission expires August 17, 1992

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

la.	TYPE OF WORK	5. LEASE NUMBER
1b.	DRILL TYPE OF WELL GAS	SF-078578A 6. IF INDIAN, ALL. OR TRIBE NAME
2.	OPERATOR MERIDIAN OIL INC.	7. UNIT AGREEMENT NAME
3.	ADDRESS & PHONE NO. OF OPERATOR P O BOX 4289 FARMINGTON, NM 87499	8. FARM OR LEASE NAME HOWELL K 9. WELL NO. 304
4.	LOCATION OF WELL 695'FNL 840'FEL	10. FIELD, POOL, OR WILDCAT BASIN FRUITLAND COAL 11. SEC. T. R. M OR BLK. SEC. 15 T30N R08W NMPM
14.	DISTANCE IN MILES FROM NEAREST TOWN 12 MI NE OF BLANCO	12. COUNTY 13.STATE SAN JUAN NM
15.	DISTANCE FROM 16. ACRE PROPOSED LOCATION 695' TO NEAREST PROPERTY OR LEASE LINE.	S IN LEASE 17. ACRES ASSIGNED TO WEL 312.42
18.	=======================================	OSED DEPTH 20. ROTARY OR CABLE TOOLS 2735' ROTARY
21.	ELEVATIONS (DF, FT, GR, ETC.) 5857'GL	22. APPROX. DATE WORK WILL START
23.	PROPOSED CASING AND	CEMENTING PROGRAM
	*SEE OPERATIONS F	PLAN
24.	AUTHORIZED BY: REG. DRILLING ENGR.	7/20/92 DATE
PERM	MIT NO APPROVA	AL DATE
APPF	ROVED BYTITLE	DATE
NOTE	E: THIS FORMAT IS ISSUED IN LIEU OF U	JS BLM FORM 3160-3.

ARCH REPORT SUBMITTED 07/10/92

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Characteristic
September 1 company

State of Nov Manige Energy, Minneis and Henric Represent Department

Pencille

P.O. Sex 1980, Heaten 1844 25240

OIL CONSERVATION DIVISION P.O. Box 2008

P.O. Desert CD. Assess NM 25766

Same Fe. New Mexico 87504-2088

COSTRUCT III

WELL LOCATION AND ACREAGE DEDICATION PLAT

Howell K 304 Meridian Oil Inc. 15 30 North Α 8 West San Juan - TE 840 695 North East feet from the Cottons loves Ser. 312.42 53571 Basin Fruitland Coal 1. Online the agreem definition to the extrest well by external present or hardens mustin on the past below. n groundije is definited to the well, have the internet of the countries at executions in our If anyther to "yes" type of on detect. (Use severes see of net to the well used all unstrate have been equicolidated (by communications, unstrance, forces-pooling, or exhaustes) g such amorest, has been approved by the Diversion. 5458.20 OPERATOR CERTIFICATION I hareby carrily that the inferen of my mornades and balish. ear Drodhell 840 Peggy Bradfield Regulatory Affairs Meridian Oil Inc. USA SF 078578-A 7-17-92 Date SURVEYOR CERTIFICATION 2 - (INCIA) 4 3

OPERATIONS PLAN

Well Name: Howell K #304

Location: 695'FNL, 840'FEL Section 15, T-30-N, R-8-W

San Juan County, New Mexico

Formation: Basin Fruitland Coal

Elevation: 5857'GL

Formation:	Top	Bottom	Contents
Surface	San Jose	1624'	aquifer
Ojo Alamo	1624'	1746'	aquifer
Kirtland	1746'	2454'	shale
Fruitland	2454'	2535'	gas
Fruitland Coal Top	2535'	2725'	gas & salt water
Pictured Cliffs	2744'		gas
Total Depth	2735'		-

Logging Program: Mud logs from intermediate to Total Depth.

Mud Program:

Interval	Type	Weight	Vis.	Flui	d Loss
0- 200'	Spud	8.4-8.9	40-50	no	control
200-2505'	Non-dispersed	8.4-9.1	30-60	no	control
2505-2735'	Formation Water	8.4		no	control

Casing Program:

Ho]	le Size	Depth Interval	Csg.Size	Wt.	Grade
12	1/4"	0' - 200'	9 5/8"	32.3#	K-40
8	3/4"	0' - 2505'	7"	20.0#	K-55
6	1/4"	2355' - 2735'	5 1/2"	15.5#	K-55
Tubing	Program:				
_	_	0' - 2735'	2 3/8"	4.7#	J-55

Float Equipment: 9 5/8" surface casing - saw tooth guide shoe. Centralizers will be run in accordance with Onshore Order #2.

7" intermediate casing - guide shoe and self-fill insert float valve. Three centralizers run every other joint above shoe. Run insert float one joint above guide shoe. Two turbolizing type centralizers - one below and one into the base of the Ojo Alamo @ 1746'. Standard centralizers thereafter every fourth joint up to the base of the surface pipe.

5 1/2" production casing - float shoe on bottom and pre-drilled liner run to the 7" casing with a minimum 50' overlap. Liner hanger is a double slip grip type.

Wellhead Equipment: 9 5/8" x 7" x 2 7/8" x 11" 3000 psi xmas tree assembly.

Cementing:

9 5/8" surface casing - cement with 160 sx Class "B" cement with 1/4# flocele/sx and 3% calcium chloride (189 cu.ft. of slurry, 200% excess to circulate to surface). WOC 12 hrs. Test casing to 600#/30 minutes.

7" intermediate casing - lead w/359 sacks 65/35 Class "B" Pozmix with 6% gel, 2% calcium chloride, and 1/4#/sack flocele. Tail with 100 sacks Class "B" neat or 2% calcium chloride (753 cu.ft., 100% excess to circulate to surface).

Page 2 Howell K #304

BOP and tests:

Surface to intermediate TD - 11" 2000 psi (minimum) double gate BOP stack (Reference Figure #1). Prior to drilling out surface casing, test rams to 600#/30 min.

Intermediate TD to Total Depth - 7 1/6" 2000 psi (minimum) double gate BOP stack (Reference Figure #2). Prior to drilling out intermediate casing, test blind rams and casing to 2500 psi for 30 minutes; all pipe rams and casing to 2500 psi for 30 minutes each.

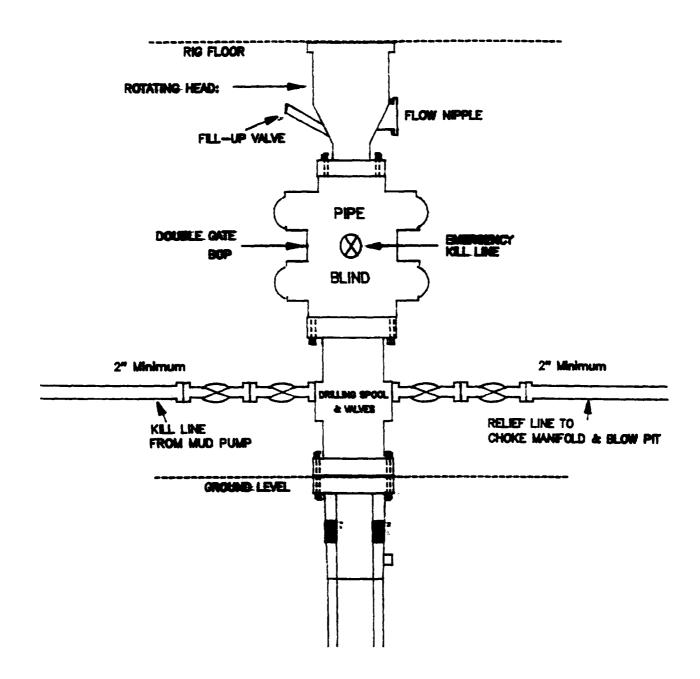
From surface to TD - choke manifold (Reference Figure #3).

Pipe rams will be actuated at least once each day and blind rams actuated once each trip to test proper functioning. An upper kelly cock valve with handle and drill string safety valves to fit each drill string will be maintained and available on the rig floor.

Additional information:

- * The Fruitland Coal formation will be completed.
- * Anticipated pore pressure for the Fruitland is 1100 psi.
- * This gas is dedicated.
- * The East half of the section is dedicated to the Fruitland Coal.
- * New casing will be utilized.
- * Cementing contractor will provide BLM with a chronological log including the pump rate and pressure, and the slurry density and volume for all cement jobs.
- * Pipe movement (either rotation or reciprocation) will be done if hole conditions permit.

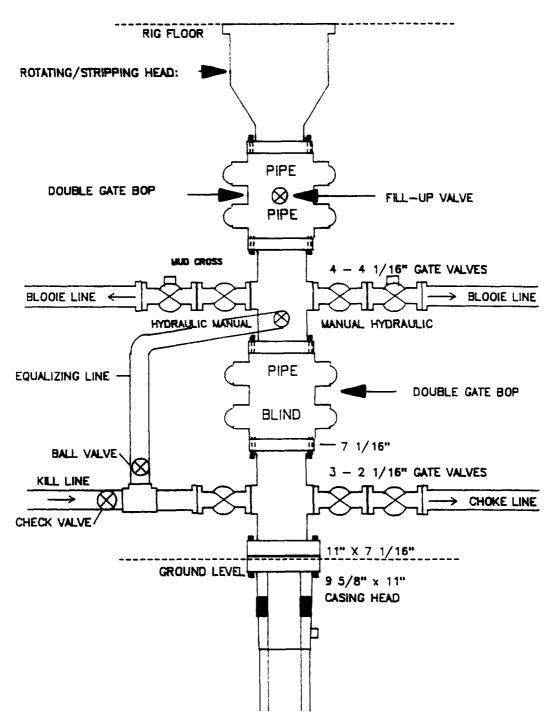
MERIDIAN OIL INC. Drilling Rig BOP Configuration



Minimum BOP installation for a typical Fruitland Coal well from surface to Intermediate casing point. 11" Bore (10" Nominal), 2000psi minimum working pressure double gate BOP to be equipped with blind and pipe rams. A Schaffer Type 50 equivalent rotating head to be installed on the top of BOP. All equipment is 2000psi working pressure/or greater.

MERIDIAN OIL INC.

Completion Rig BOP Configuration

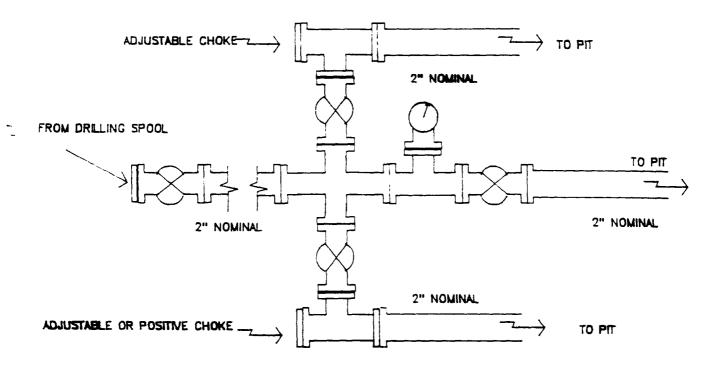


Minimum BOP installation for a typical open—hole Fruitland Coal well from intermediate TD-to TD. 7 1/16" Bore (6" Nominal), 2000psi working pressure/ or greater double stack double gate BOP equipped with three pipe and one blind ram.



MERICHOL CILING.

Typical Fruitland Coal Well Choke Manifold Configuration



Minimum choke manifold installation for a typical Fruitland Coal well from surface to Total Depth. 2", 2000psi working pressure equipment with two chokes.

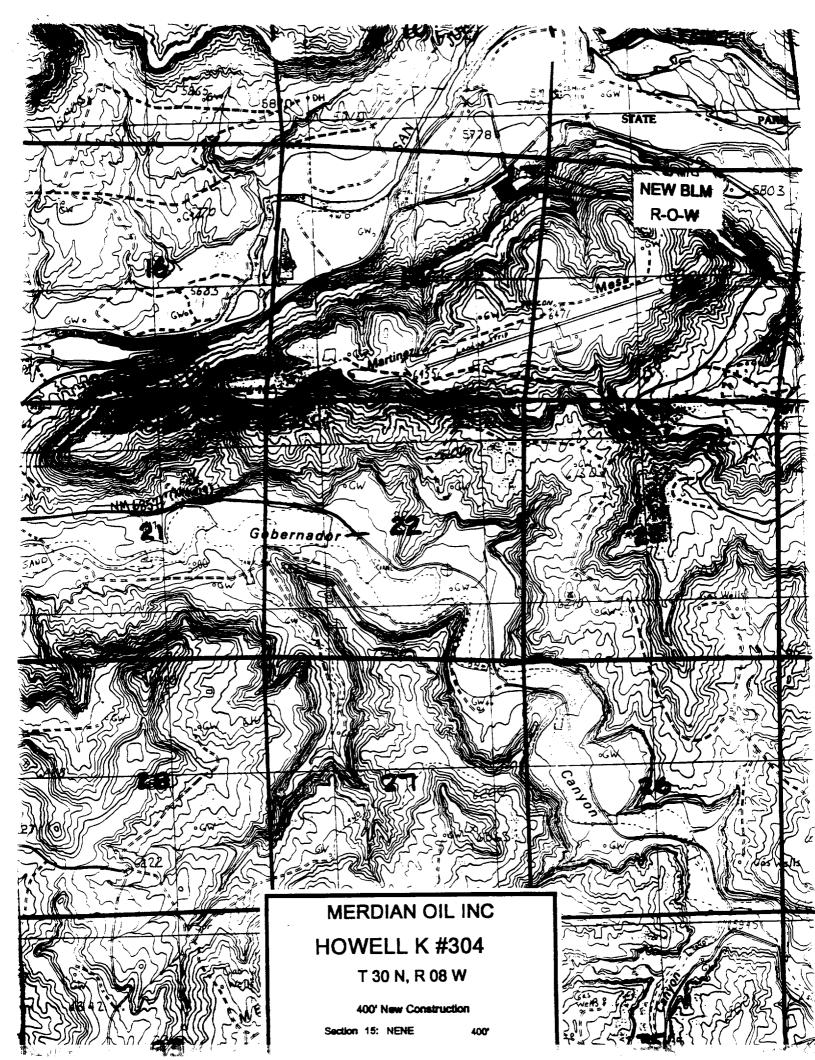
Multi-Point Surface Use Plan Meridian Oil Inc. Howell K #304

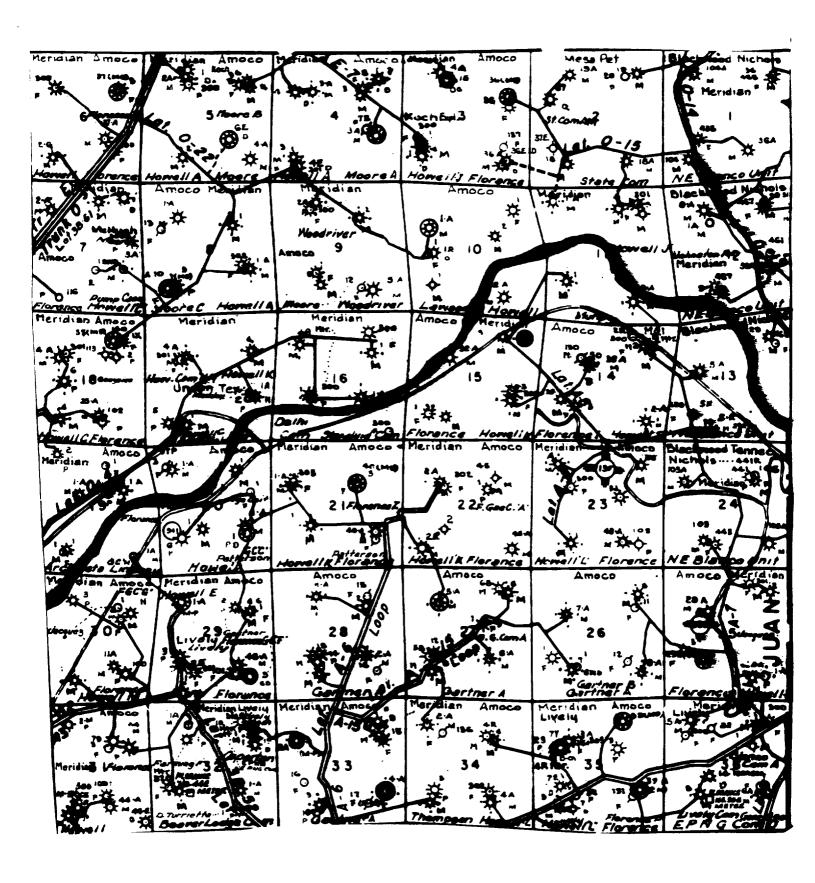
- 1. Existing Roads Refer to Map No. 1. Existing roads used to access the proposed location will be properly maintained for the duration of the project. Bureau of Land Management right-of-way has been applied for as shown on Map No. 1.
- 2. Planned Access Road Refer to Map No. 1. The required new access road is shown on Map No. 1. The gradient, shoulder, crowning and other design elements will meet or exceed those specified by the responsible government agency. The new access road surface will not exceed twenty feet (20') in width. No additional turnarounds or turnouts will be required. Upon completion of the project, the access road will be adequately drained to control soil erosion. Approximately 400' of access road will be constructed. Pipelines ae indicated on Map No. 1A.
- 3. Location of Existing Wells Refer to Map No. 1A.
- 4. Location of Existing and/or Proposed Facilities if Well is Productive
 - a. On the Well Pad Refer to Plat No. 1, anticipated production facilities plat.
 - b. Off the Well Pad Anticipated facilities off the well pad will be applied for as required.
- 5. Location and Type of Water Supply Water will be hauled by truck for the proposed project and will be obtained from San Juan River (South Jacquez) located in NW/4 Section 30, T-30-N, R-08-W, New Mexico.
- 6. Source of Construction Materials If construction materials are required for the proposed project, such materials will be obtained from a commercial quarry.
- 7. Methods of Handling Waste Materials All garbage and trash materials will be removed from the site for proper disposal. A portable toilet will be provided for human waste and serviced in a proper manner. If liquids are left in the reserve pit after completion of the project, the pit will be fenced until the liquids have had adequate time to dry. The location clean-up will not take place until such time as the reserve pit can be properly covered over to prevent run-off

from carrying waste materials into the watershed. All earthen pits will be so constructed as to prevent leakage from occurring; no earthen pit will be located on natural drainage. Hazardous waste will be disposed of in accordance with Federal Regulations.

- 8. Ancillary Facilities None anticipated.
- 9. Wellsite Layout Refer to the location diagram and to the wellsite cut and fill diagram (Figure No. 4). The Blow Pit will be constructed with a 2'/160' grade to allow positive drainage to the Reserve Pit and prevent standing liquids in the Blow Pit.
- 10. Plans for Restoration of the Surface After completion of the proposed project, the location will be cleaned and leveled. The location will be left in such a condition that will enable reseeding operations to be carried out. Seed mixture as designated by the responsible government agency will be used. The reseeding operations will be performed during the time period set forth by the responsible government agency. The permanent location facilities will be painted as designated by the responsible government agency.
- 11. Surface Ownership Bureau of Reclamation.
- 12. Other Information Environmental stipulations as outlined by the responsible government agency will be adhered to. Refer to the archaeological report for a description of the topography, flora, fauna, soil characteristics, dwellings, historical and cultural sites.
- 13. Operator's Representative and Certification Meridian Oil Regional Drilling Manager, Post Office Box 4289, Farmington, NM 87499, telephone (505) 326-9700. I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which 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 Meridian Oil Inc. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

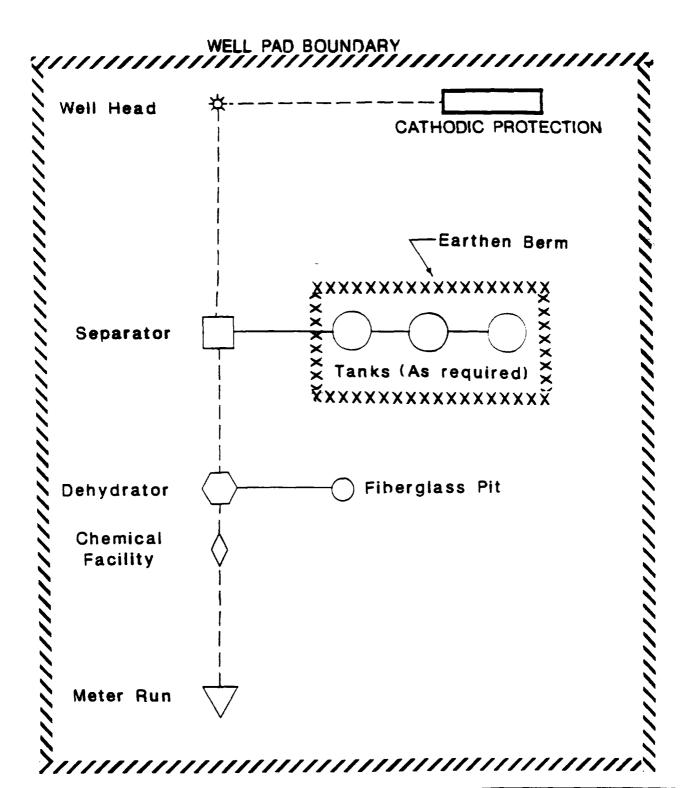
Regional Drilling Engineer





MERIDIAN OIL INC.
Pipeline Map
T-30-N, R-08-W
San Juan County, New Mexico

Howell K #304 Map #1A



PLAT #1

MERIDIAN CIL

ANTICIPATED
PRODUCTION FACILITIES
FOR A
FRUITLAND WELL

KFR 2/90

MERIDIAN OIL Plat 2 3 <u>A</u> C9 Z deep è LAYDOWN **①** 5-50-W 170 30. F12 В' CONSTRUCTION ZONE C/L 5867 5857 5847 C/L B - 8' 5867 5857 5847 C-C C/L 5867 5857

5847

Shoul to Appropriate Discourt Office State Language For Language

Stan of New Manipe. Energy, Minusis and Human Researce: Department

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OIL CONSERVATION DIVISION
P.O. Box 2088
Sama Fe, New Mexico 87504-2088

P.O. Disseer DD. Astona, NM 18210

DISTRICT III
1000 Rio Bonnes Rd., Amer. NM 57410

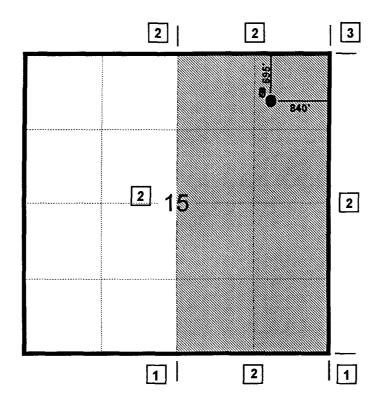
WELL LOCATION AND ACREAGE DEDICATION PLAT

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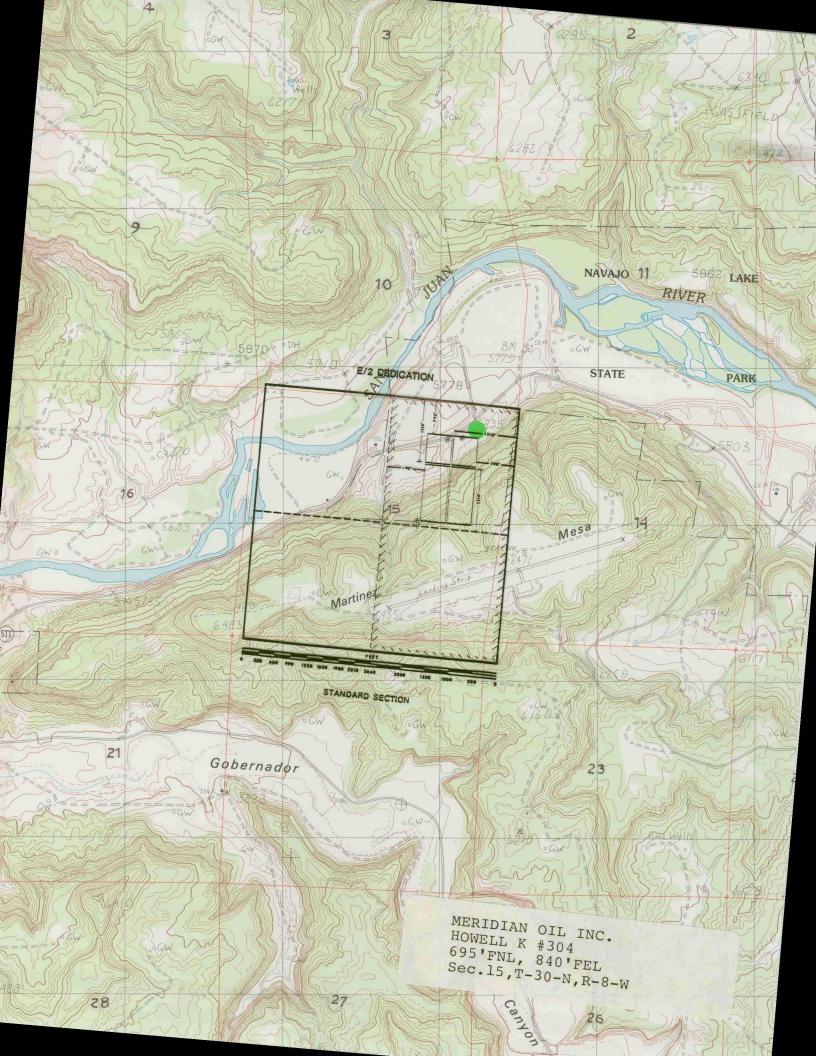
MERIDIAN OIL INC

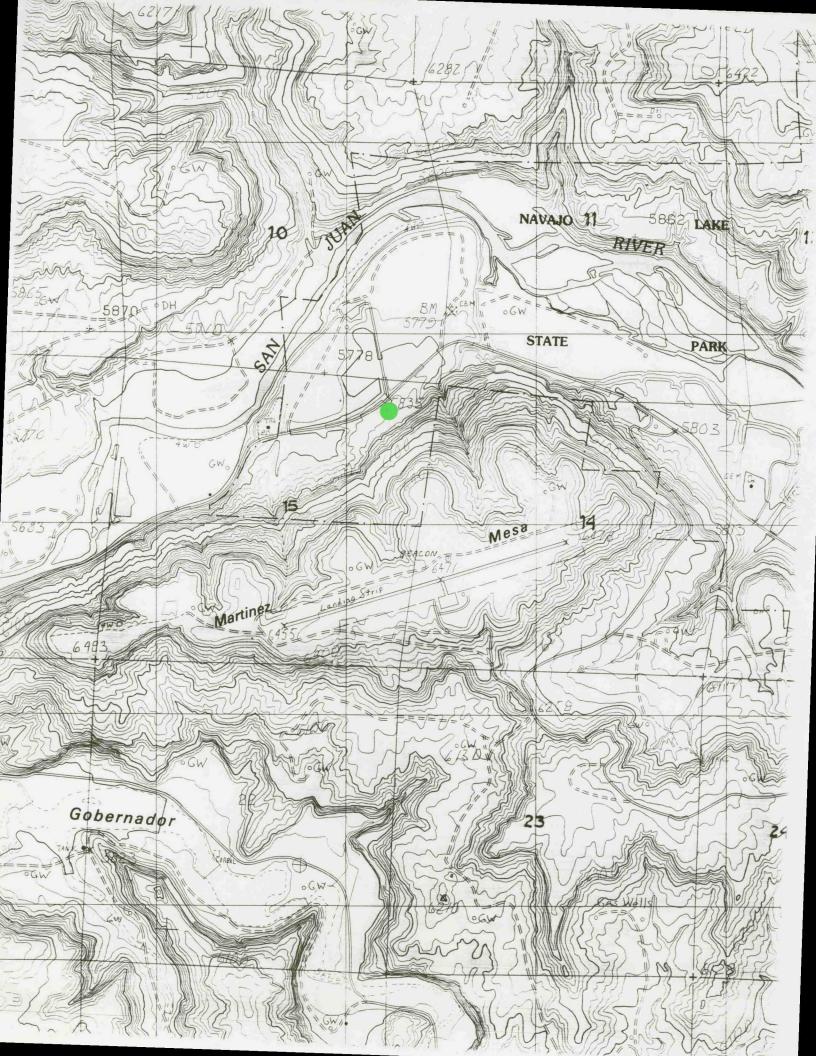
OFFSET OPERATOR PLAT HOWELL K #304

Unorthrodox Location
Township 30 North, Range 08 West



Amoco Production Company	PO Box 800, De	enver, CO 8020)1
) Amoco Production Compay			
Cindy B. Hamillton	2222 Flat Creek	. Richardson.	TX 75080-
Derrick J. Turnbull	5847 Lakehurst	Ave, Dallas, 1	X 75230-5031
Dawn Turnbull Trust	"	01	**
Denise Turnbull Williams		**	"
Sylvia A. McLand Turnbull	*1	10	••
David G. McLane	PO Box 214430	Dallas, TX 7	5221-4430
Kathleen M. McLane Trust	**	11	11
Michael S. McLane Trust	••	11	**





Project no. 028-92

Cultural Resource Use Permit 97-2920-92-C (NM BLM)



An Archaeological Survey of the Proposed Well Pad and Access Road Howell K#304 San Juan County, New Mexico T30N, R8W, Section 15 695'FNL 840'FEL

> for Meridian Oil Inc.

prepared and submitted

by John M. Kershner

Arboles Contract Archaeology

June 25, 1992

Technical report No. 092

Abstract

On June 17, 1992, Arboles Contract Archaeology completed a cultural resources survey of the proposed Howell A#304 well pad for Meridian Oil Inc. The survey is located in the San Juan River Valley, San Juan County, New Mexico and is under the jurisdiction of the Bureau of Land Management. Approximately 14.7 acres were closely inspected for cultural resources.

John Kershner, ACA archaeologist, surveyed the project area for archaeological material.

Archaeological material encountered during the survey included three isolated loci consisting of a sherd, a flake and a name pecked into a rock. Inventory requirements for the IL's have been fulfilled and their information potential has been exhausted. Archaeological clearance is recommended for the proposed well pad and access road.

Introduction

On June 17, 1992 Arboles Contract Archaeology (ACA) conducted an archaeological survey for Meridian Oil Inc. of Farmington, New Mexico. Odell Farley of Meridian Oil requested the survey on June 16, 1992 and administered the project for Meridian Oil Inc. John Kershner administered the project for ACA.

Because of the finite and nonrenewable extent of archaeological remains, the Federal government of the United States has enacted legislation that will conserve and protect these resources. Key legislative enactments consist of the Antiquities Act of 1906 (PL 52-209), the Historic Preservation Act of 1966 (PL 89-655) and as amended (PL 96-515), the National Environmental Act of 1969 (PL 91-852), the 1971 Executive Order No. 11593, the Archaeological and Historical Conservation Act of 1974 (PL 93-291), and the Archaeological Resources and Protection Act of 1979 (PL 96-95). To ensure compliance with federal legislation within specific jurisdictional areas, the Navajo Nations and the states of New Mexico, Arizona, Colorado and Utah have enacted legislation to protect cultural resources.

Methods

The project area was completely surveyed employing straight line transects spaced 5-8m apart. Each transect was aligned with a Brunton compass and a topographic or vegetational point to ensure complete coverage of the project area. The project consisted of a primary impact area around the well head detailed on the plat map (figure 2), a construction zone of 50 feet around the primary impact area and a cultural resource buffer zone of 100 feet around the construction zone. The access road was surveyed, based on a 35' impact swath and, on either side, a 50' cultural resource zone. All archaeological and relevant environmental data were recorded under the guidelines defined by the lead agency on the project area.

Previously Recorded Sites

Prior to the cultural resources survey of the project area, a records search was conducted at the Bureau of Land Management (BLM) Farmington Resource Area office to identify sites that may have been previously recorded within the project area.

The records search on June 16, 1992 produced 36 previously recorded sites within one mile of the project area, and of those sites, none is within 1000 feet of the project area. BLM supplement map 1-a delineates the project area on the appropriate U.S.G.S. topographical map on which previously recorded sites have been located.

PROJECT DESCRIPTION

Proposed Howell K#304 well pad **Legal Description:**

T30N, R8W, Section 15

all of NW1/4 NE1/4

N.M.P.M., San Juan County, New Mexico

Map Source: U.S.G.S. 7.5' Archuleta, New Mexico-Prov. Ed. 1985

Land Jurisdiction: Surface-Bureau of Reclaimation; mineral-Bureau of Land Management

Project Area:

	330′ 2	X 380′	(proposed well pad and construction zone)
	330′ 2	X 380′	(abandoned well pad and construction zone)
	150′ >	(135 ′	(proposed access road)
Surveyed Area:	530´ X	580′	(Proposed well pad, construction zone and buffer zone)
	530′ 2	X 5801	(Abandoned well pad, construction zone and buffer zone)
	150′	X 135′	(proposed access road and buffer zone)
•]	4.7 tota	al acres surveyed

Project Environment: The proposed and abandoned well pads are located at the base of Martinez Mesa in the San Juan River Valley. The location consists of a rolling sage flat with scattered junipers and pinyon and, on the upper slope, dense pinyon and juniper. Soils are sandy clay, clay and gravel sediments grading to exposed sandstone on the upper slopes. The proposed access road takes off from Highway 511.

Cultural resources: Archaeological material encountered during the survey consisted of three isolates (IL): IL 1 is a chalcedony flake found on the upper end of the abandoned well pad on a gravel slope; IL 2 is a name, Alorio Martinez, inscribed on a large sandstone boulder (see photo); IL 3 is an Arboles B/W sherd found in a shallow wash on the sage flat.

IL 2 is inscribed on the west side of a large sandstone boulder. The eastern side of the boulder has a large reddened area interspersed with patches of black. The red appears to be natural iron oxide coloring and the black a dark lichen. The ground surface beneath this area was trowel tested. No charcoal or evidence of a hearth was found. Two trowel tests along the wash above IL 3, the sherd, yielded no archaeological material.

T301	N, R8W, S 15	UTM Zone 13	Size-cm	Description
IL1	NE SW NE	E262980 N4077290	3x2x2	chalcedony secondary flake
IL2	SW NE NE	E263120 N4077440	44x28	inscribed name on boulder
IL3	SE NE NE	E263220 N4077530	9x4.5x1	Arboles B/W sherd

A borrow test cut in the NE portion of the buffer zone is recent, probably 1950's and is outside the impact area.

Recommendations: Inventory requirements for the IL's have been fulfilled and their information potential has been exhausted. Archaeological clearance is recommended for the proposed well pad and access road.

