Form 3160-3
(December 1990)

N.M. Oil Cons. Division
1625 N. French Dr.
Hobbs, NM 88240

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.

POTASH

CONFIDENTIAL – TIGHT HOLE

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a TYPE OF WORK: DRILL ☒ DEEPEN ☐

b. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ Other ____ SINGLE ZONE ☐ MULTIPLE ZONE ☐

2. NAME OF OPERATOR
CHESAPEAKE OPERATING, INC. Attn. Sharon Dries

3. ADDRESS AND TELEPHONE NO.
P.O. BOX 18496 OKLAHOMA CITY, OK 73154 **405-879-7985**

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface **2310FNL 660 FEL SENE** H
At top proposed prod. zone

5. LEASE DESIGNATION AND SERIAL NO.
NMNM 77074

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME, WELL NO.
Smith Federal #1

9. API WELL NO.
30-025-36411

10. FIELD AND POOL, OR WILDCAT
W. Teas Y-7R.

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA
Section 4-20S-33E

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*	12. COUNTY OR PARISH	13. STATE
Approximately 34 miles west of Hobbs, New Mexico	**LEA**	**NM**

15. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
330	**120**	**40**
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS***
	3500	**ROTARY**
21. ELEVATIONS (Show whether DF, RT, GR, etc.)		**22. APPROX. DATE WORK WILL START***
3559		

Capitan Controlled Water Basin

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
"	"	#	'	+/-
"	"	#	'	+/-
	"	#	'	+/-

Chesapeake Operating, Inc. proposes to drill a well to 3500' to test the Yates Sands formation. If productive, casing will be run and the well completed. If dry, the well will be plugged and abandoned as per BLM and New Mexico OCD requirements.

Attached please find the Surface Use Plan and Drilling Plan as required by Onshore Order No. 1.

Please be advised that Chesapeake Operating, Inc. is considered to be the Operator of the above mentioned well. Chesapeake Operating, Inc. 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 Chesapeake Operating, Inc. under their Nationwide Bond No. NM2634.

RECEIVED
SEP 2003
OCD

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.
24.

SIGNED J. Mark Lester J. Mark Lester TITLE Sr. Vice President Exploration DATE July 2, 2003

*(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which thereon.

CONDITIONS OF APPROVAL, IF ANY:

APPROVED BY /S/ RICHARD A. WHITLEY TITLE ACTING STATE DIRECTOR DATE SEP 10 2003

See Instructions On Reverse Side

OPER. OGRID NO. 147179
PROPERTY NO. 32563
POOL CODE 59110
EFF. DATE 9-18-03
API NO. 30-025-36411

APPROVAL FOR 1 YEAR

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction

Ka

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

1. EXISTING ROADS

a. Existing county roads will be used to enter proposed access road.
b. Location, access, and vicinity plats attached hereto. See Exhibits A-1 through A-3.

2. PLANNED ACCESS ROADS

a. A new access road 858' in length and 14' in travel way width with a maximum disturbance area of 30' will be built in accordance with guidelines set forth in the BLM Onshore Orders.
b. No turnouts are expected.
c. In order to level the location, cut and fill will be required. Please see attached Well Location and Acreage Dedication Plat – Exhibit A1-A3.
d. A locking gate will be installed at the site entrance.
e. Any fences cut will be repaired. Cattle guards will be installed, if needed.
f. 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.
g. Driving directions are from the intersection of HWY 62/180 and West County Rd in Hobbs, NM go 30.5 miles west on HWY 62/180. Turn right go through cattle guard turn left and go .3 miles then turn right go .7 miles to cattle guard. Go through cattle guard, turn left go .9 miles then turn left go .6 mile to a cattle guard. Go through cattle guard, turn right go .2 miles and then turn left go .5 mile to the proposed location.

3. LOCATION OF EXISTING WELLS WITHIN A 1-MILE RADIUS OF THE PROPOSED LOCATION – see Exhibit B.

4. LOCATION OF PRODUCTION FACILITIES

It is anticipated that production facilities will be located on the well pad as product will be sold at the wellhead and/or tank battery. – See Exhibit C

5. LOCATION AND TYPE OF WATER SUPPLY

Water will be obtained from a private water source. Chesapeake Operating, Inc. will ensure all proper notifications and filings are made with the state.

6. CONSTRUCTION MATERIALS

No construction materials will be used from Section 4-20S-33E. All material (i.e. shale) will be acquired from private or commercial sources.

7. METHODS FOR HANDLING WASTE DISPOSAL

Drill cuttings will be contained and buried in an earthen reserve pit after the drilling fluids have evaporated. All wastes accumulated during drilling operations will be contained in a portable trash cage and removed from location and deposited in an approved sanitary landfill. Sanitary wastes will be contained in a chemical porta-toliet and then hauled to an approved sanitary landfill.

8. ANCILLARY FACILITIES

None

9. WELLSITE LAYOUT

The proposed site layout plat is attached showing rig orientation and equipment location. See Exhibit D. Also see Exhibit A for the size of the pad.

10. PLANS FOR RECLAMATION OF THE SURFACE

The location will be restored to as near as original condition as possible. Reclamation of the surface shall be done in strict compliance with the existing Oklahoma Corporation Commission regulations.

Backfilling leveling, and contouring are planned as soon as the drilling rig and steel tanks are removed. Wastes and spoils materials will be buried immediately after drilling is completed. If production is obtained, the unused area will be restored as soon as possible. The rehabilitation will begin after the drilling rig is removed.

11. SURFACE & MINERAL OWNERSHIP

United States of America
Department of Interior
Bureau of Land Management

GRAZING LEASE HELD BY:
Kenneth Smith, Inc.
P.O. Box 764
Carlsbad, NM 88220

12. ADDITIONAL INFORMATION

A Class III cultural resource inventory report was prepared by Boone Archaeological Services, Carlsbad, New Mexico for the proposed location. A copy of the report has been sent to the BLM office under separate cover and is also attached for reference. See Exhibit E.

13. OPERATOR'S REPRESENTATIVES

Drilling and Completion Operations
Colley Andrews
District Manager
P.O. Box 18496
Oklahoma City, OK 73154
(405) 879-9230 (OFFICE)
(405) 879-9530 (FAX)
candrews@chkenergy.com

Drilling Engineer
Rob Jones
P.O. Box 14896
Oklahoma City, OK 73154
(405) 879-9375 (OFFICE)
(405) 879-9573 (FAX)
(405) 623-5880 (MOBILE)
rjones@chkenergy.com

Regulatory Compliance
Sharon Dries
Regulatory Compliance Analyst
P.O. Box 18496
Oklahoma City, OK 73154
(405) 879-7985 (OFFICE)
(405) 879-9583 (FAX)
sdries@chkenergy.com

Field Representative
Mark Mabe
Production Superintindent
5014 Carlsbad Hwy
Hobbs, NM 88240
505-391-1462 Ext. 12 (OFFICE)
505-391-6679 (FAX)
505 390-0221 (MOBILE)
mmabe@chkenergy.com

14. CERTIFICATION

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 surface use plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed will be performed by operator (including contractors and subcontractors) submitting the APD, in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

By: J. Mark Estes

Date: 7/2/03

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

All lease and/or unit operations are to be conducted in such a manner that full compliance is made with the applicable laws, regulations (CFR 43, Part 3160) and the approved Application for Permit to Drill. The operator is considered fully responsible for the actions of his subcontractors. A copy of the approved APD must be on location during construction, drilling and completion operations.

Approval of this application 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.

1. FORMATION TOPS

The estimated tops of important geologic markers are as follows:

Formation	Depth	Subsea
Rustler	1395	2185
Salt	1420	2160
Base Salt	3010	570
Tansill Dolomite	3020	560
Yates	3185	395
Upper Yates 1 Sand	3200	380
Lower Yates 1 Sand	3245	335
Yates 2 Carbonate	3285	295
Yates 2 Sand	3300	280
Yates 2 L Carbonate	3310	270
Yates 3 U Sand	3335	245
Yates 3 Mid Sand	3355	225
Yates 3 Lower Sand	3385	195
Seven Rivers	3400	180
TOTAL DEPTH	**3500**	

2. ESTIMATED DEPTH OF WATER, OIL, GAS & OTHER MINERAL BEARING FORMATIONS

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:

Substance	Formation	Depth
Oil	Upper Yates 1 Sand	3200
Oil	Lower Yates 1 Sand	3245

All shows of fresh water and minerals will be reported and protected.

3. BOP EQUIPMENT: 3,000# System

Chesapeake Operating, Inc.'s minimum specifications for pressure control equipment are as follows:

I. BOP, Annular, Choke Manifold, Pressure Test - See Exhibit F.

A. Equipment
1. The equipment to be tested includes all of the following that is installed on the well:
(a) Ram-type and annular preventers,
(b) Choke manifolds and valves,
(c) Kill lines and valves, and
(d) Upper and lower kelly cock valves, inside BOP's and safety valves.

B. Test Frequency
1. All tests should be performed with clear **water**,
(a) when installed,
(b) before drilling out each casing string,
(c) at any time that there is a repair requiring a pressure seal to be broken in the assembly, and
(d) at least once every **30 days** while drilling.

C. Test Pressure
1. In some drilling operations, the pressures to be used for low and high-pressure testing of preventers and casing may be different from those given below due to governmental regulations, or approved local practices.
2. If an individual component does not test at the low pressure, **do not,** test to the high pressure and then drop back down to the low pressure.
3. All valves located downstream of a valve being tested must be placed in the open position.
4. All equipment will be tested with an initial "low pressure" test at 250 psi.
5. The subsequent "high pressure" test will be conducted at the rated working pressure of the equipment for all equipment except the annular preventer.
6. The "high pressure" test for the annular preventer will be conducted at 70% of the rated working pressure.
7. A record of all pressures will be made on a pressure-recording chart.

D. Test Duration
1. In each case, the individual components should be monitored for leaks for **5 minutes,** with no observable pressure decline, once the test pressure as been applied.

II. Accumulator Performance Test

A. Scope
1. The purpose of this test is to check the capabilities of the BOP control systems, and to detect deficiencies in the hydraulic oil volume and recharge time.

B. Test Frequency
1. The accumulator is to be tested each time the BOP's are tested, or any time a major repair is performed.

C. Minimum Requirements
1. The accumulator should be of sufficient volume to supply 1.5 times the volume to close and hold all BOP equipment in sequence, **without recharging** and the **pump turned off**, and have remaining pressures of **200 PSI above the precharge pressure**.

2. Minimum precharge pressures for the various accumulator systems per **manufacturers recommended specifications** are as follows:
3.

System Operating Pressures	Precharge Pressure
1500 PSI	750 PSI
2000 PSI	1,000 PSI
3000 PSI	1,000 PSI

3. Closing times for the Hydril should be less than **20 seconds**, and for the ram-type preventers less than **10 seconds**.

4. System Recharge time should not exceed **10 minutes**.

D. Test Procedure
1. Shut accumulator pumps off and record accumulator pressure.

2. In sequence, close the annular and one set of properly sized pipe rams, and open the HCR valve.

3. Record time to close or open each element and the remaining accumulator pressure after each operation.

4. Record the remaining accumulator pressure at the end of the test sequence. Per the previous requirement, this pressure **should not be less** than the following pressures:

System Pressure	Remaining Pressure At Conclusion of Test
1,500 PSI	950 PSI
2,000 PSI	1,200 PSI
3,000 PSI	1,200 PSI

5. Turn the accumulator pumps on and record the recharge time. This time should not exceed **10 minutes.**

6. Open annular and ram-type preventers. Close HCR valve.

7. Place all 4-way control valves in **full open** or **full closed** position. **Do not leave in neutral position**.

4. CASING AND CEMENTING PROGRAM

a. The proposed casing program will be as follows:

Purpose	Interval	Hole Size	Casing Size	Weight	Grade	Thread	Condition
Surface	0-1,400'	12-1/4"	8-5/8"	24	J-55	STC	NEW
Production Casing	0-3,500'	7-7/8"	5-1/2"	15.5	J-55	LTC	NEW

b. Casing design subject to revision based on geologic conditions encountered.
c. The cementing program will be as follows:

Interval	Type	Amount	Yield	Washout	Excess
Surface	Lead: 35:65 Poz:Class C + 5% Salt + 6% Gel + 0.1 pps Celloflake Tail: Class C + 2% CC + 0.1 pps Cellofalke	Lead: 450 sx Tail: 200 sx	Lead: 1.94 Tail: 1.34	50%	Lead: 100% Tail: 100%
Production	Lead: Lead: 35:65 Poz:Class C + 5% Salt + 6% Gel + 0.1 pps Celloflake Tail: 50:50 Poz:Class C + 5% Salt + 2% Gel	Lead: 400 sx Tail: 200 sx	Lead: 2.14 Tail: 1.35	20%	Lead: 30% Tail: 30%

5. MUD PROGRAM

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

Interval	Mud Type	Mud Weight	Viscosity	Fluid Loss
0-1,400'	Water Based	8.5-9.3ppg	32-36	NC
1,400'-3,500'	Salt Water based	10.0-10.2ppg	28-30	15-20

An in-ground, lined pit will be utilized during the drilling of this well. All fluids and cuttings will be disposed of in accordance with New Mexico Oil Conservation Division rules and regulations.

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

6. TESTING, LOGGING AND CORING

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

a. Drill stem tests are not planned.
b. The logging program will consist of Natural GR, Density-Neutron, PE & Dual Laterolog from TD to surface casing; Neutron-GR surface casing to surface.
c. Cores samples are not planned.

7. ABNORMAL PRESSURES AND HYDROGEN SULFIDE

a. The estimated bottom hole pressure is 500 psi. No abnormal pressures or temperatures are anticipated.
b. Hydrogen sulfide gas is not anticipated.

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980

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

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

DISTRICT IV
P.O. BOX 2088, SANTA FE, N.M. 87504-2088

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Form C-102
Revised February 10, 1994
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
30-025-36411	59110	West Teas; Yates - 7R

Property Code	Property Name	Well Number
32563	SMITH 4 FEDERAL	1

OGRID No.	Operator Name	Elevation
147179	CHESAPEAKE OPERATING, INC.	3559'

Surface Location

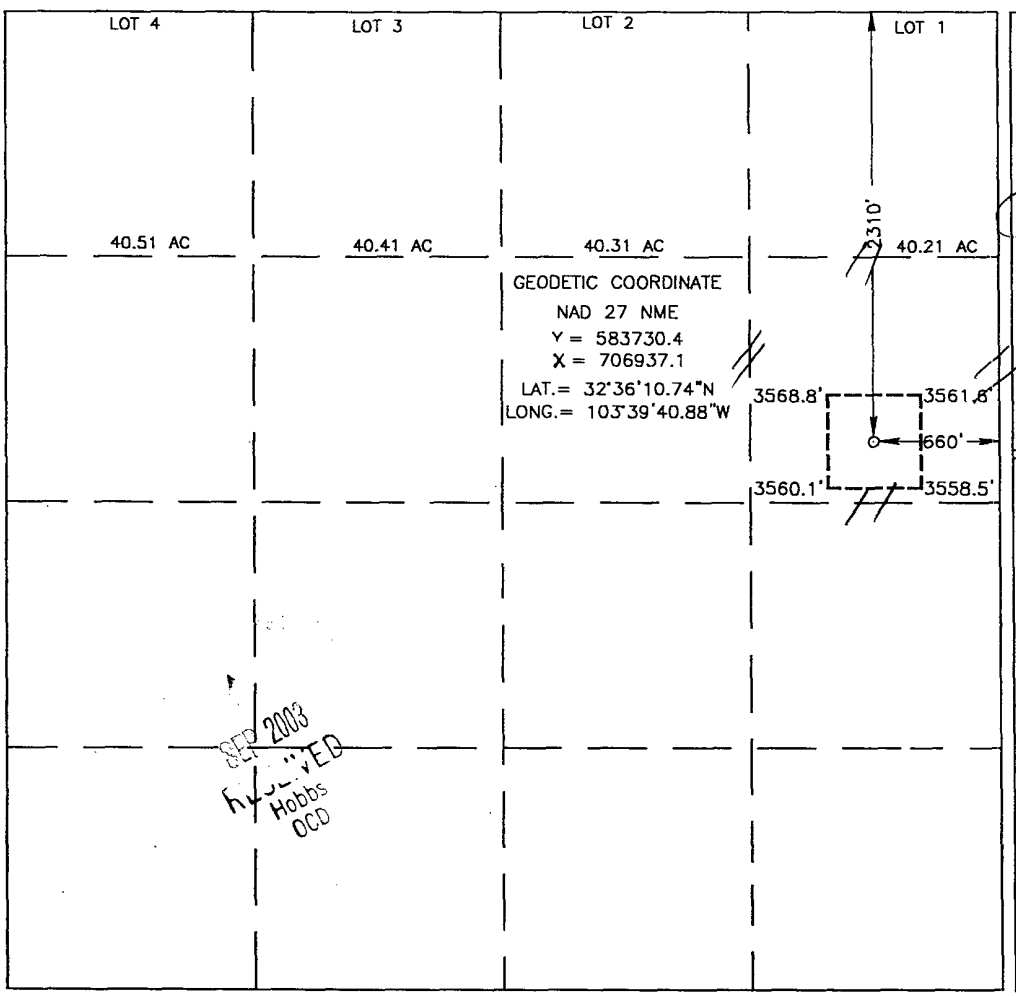
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	4	20-S	33-E		2310'	NORTH	660'	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



SEP 2003
RECEIVED
Hobbs
OCD

OPERATOR CERTIFICATION

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

Signature

Linda F. Townsend
Printed Name

Landman
Title

5-23-03
Date

SURVEYOR CERTIFICATION

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

May 19, 2003
Date Surveyed AWB

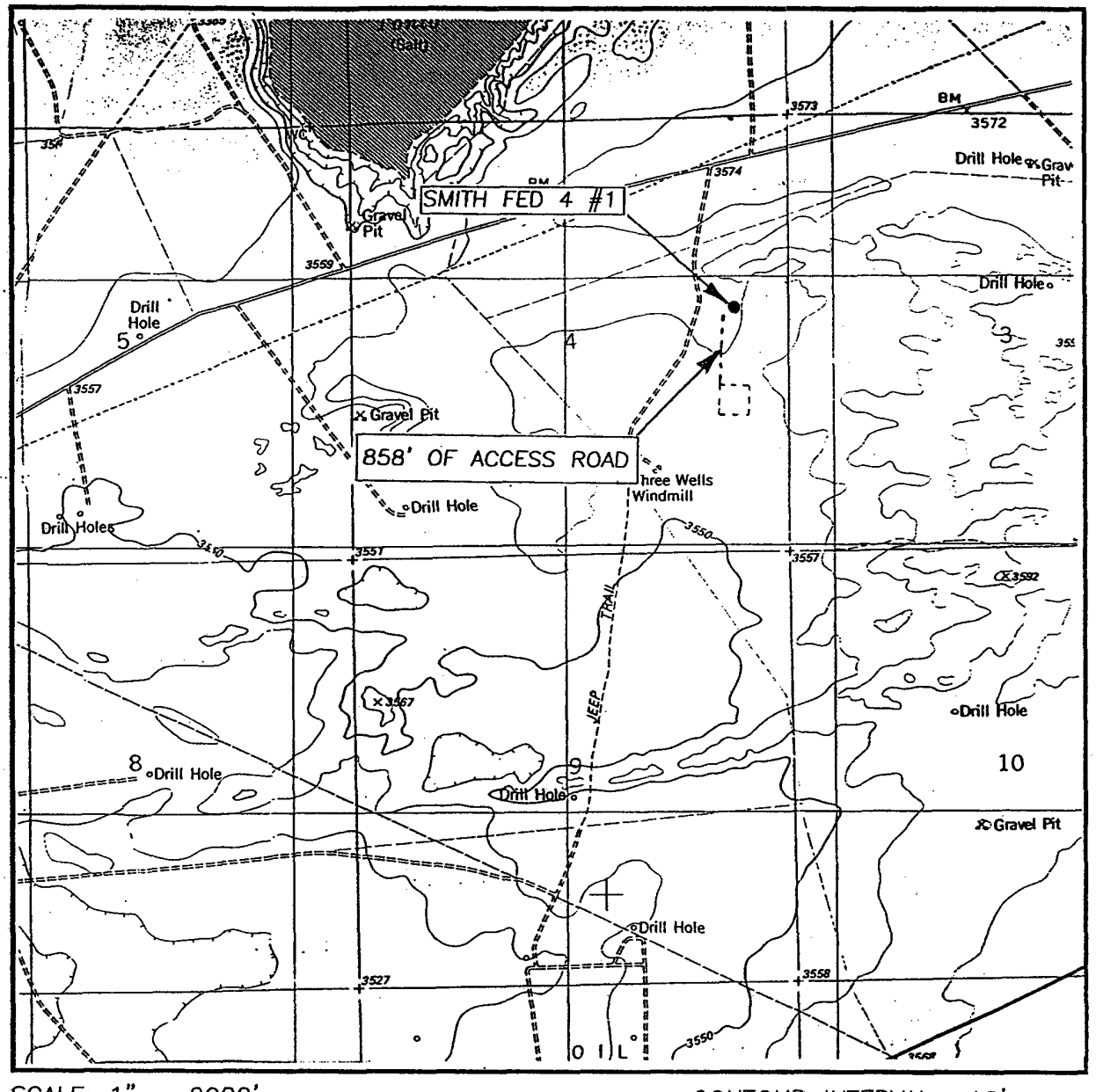
Signature & Seal of Professional Surveyor:

Gary Eidson 5/22/03

03.11.0530

Certificate No. RONALD J. EIDSON 3239
GARY EIDSON 12641

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL: 10'
LAGUNA GATUNA

SEC. 4 TWP. 20-S RGE. 33-E

SURVEY N.M.P.M.

COUNTY LEA

DESCRIPTION 2310' FNL & 660' FEL

ELEVATION 3559'

OPERATOR CHESAPEAKE OPERATING, INC.

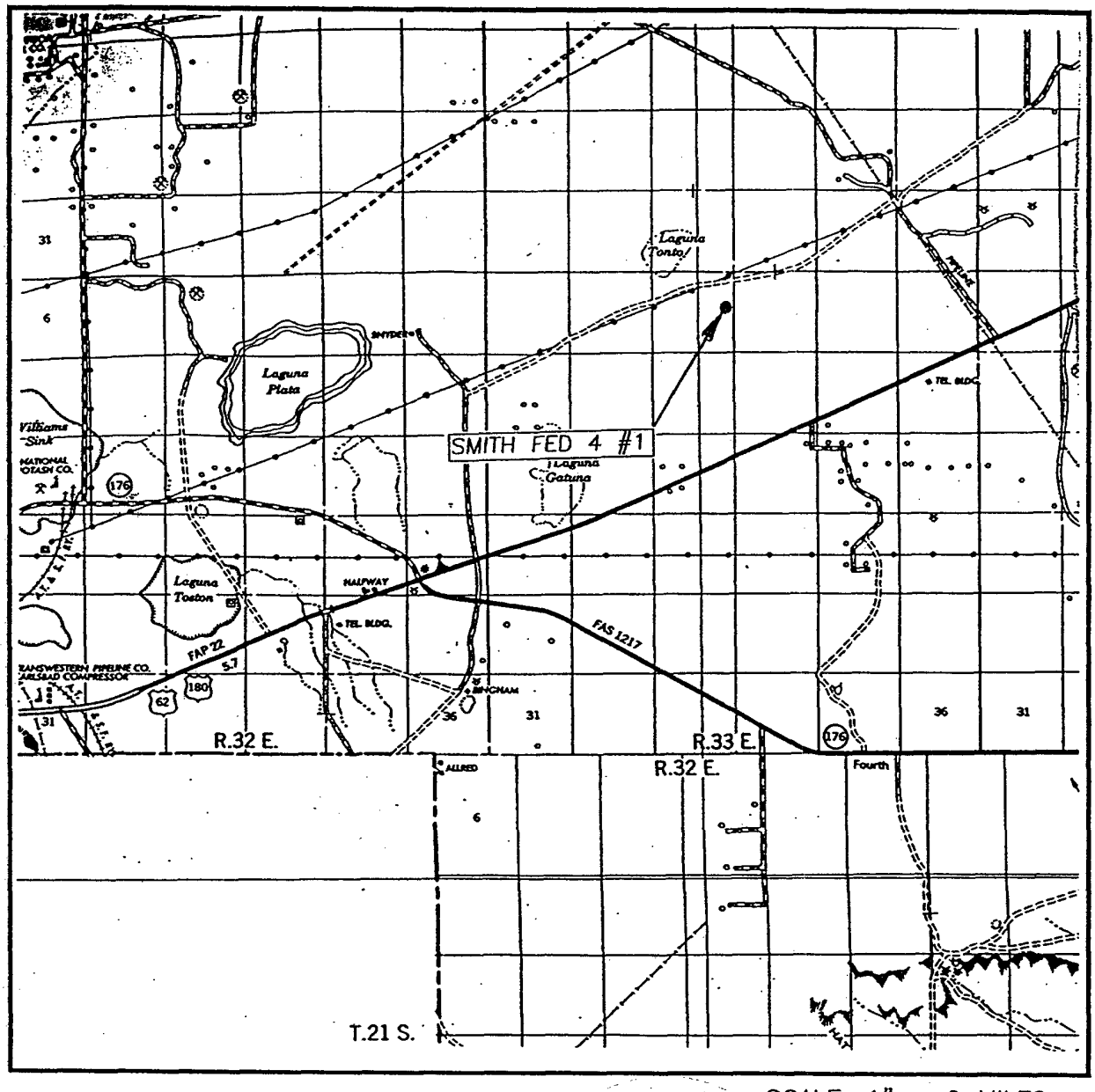
LEASE SMITH FEDERAL 4

U.S.G.S. TOPOGRAPHIC MAP
LAGUNA GATUNA

JOHN WEST SURVEYING
HOBBS, NEW MEXICO
(505) 393-3117

Exhibit A-2

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 4 TWP. 20-S RGE. 33-E

SURVEY N.M.P.M.

COUNTY LEA

DESCRIPTION 2310' FNL & 660' FEL

ELEVATION 3559'

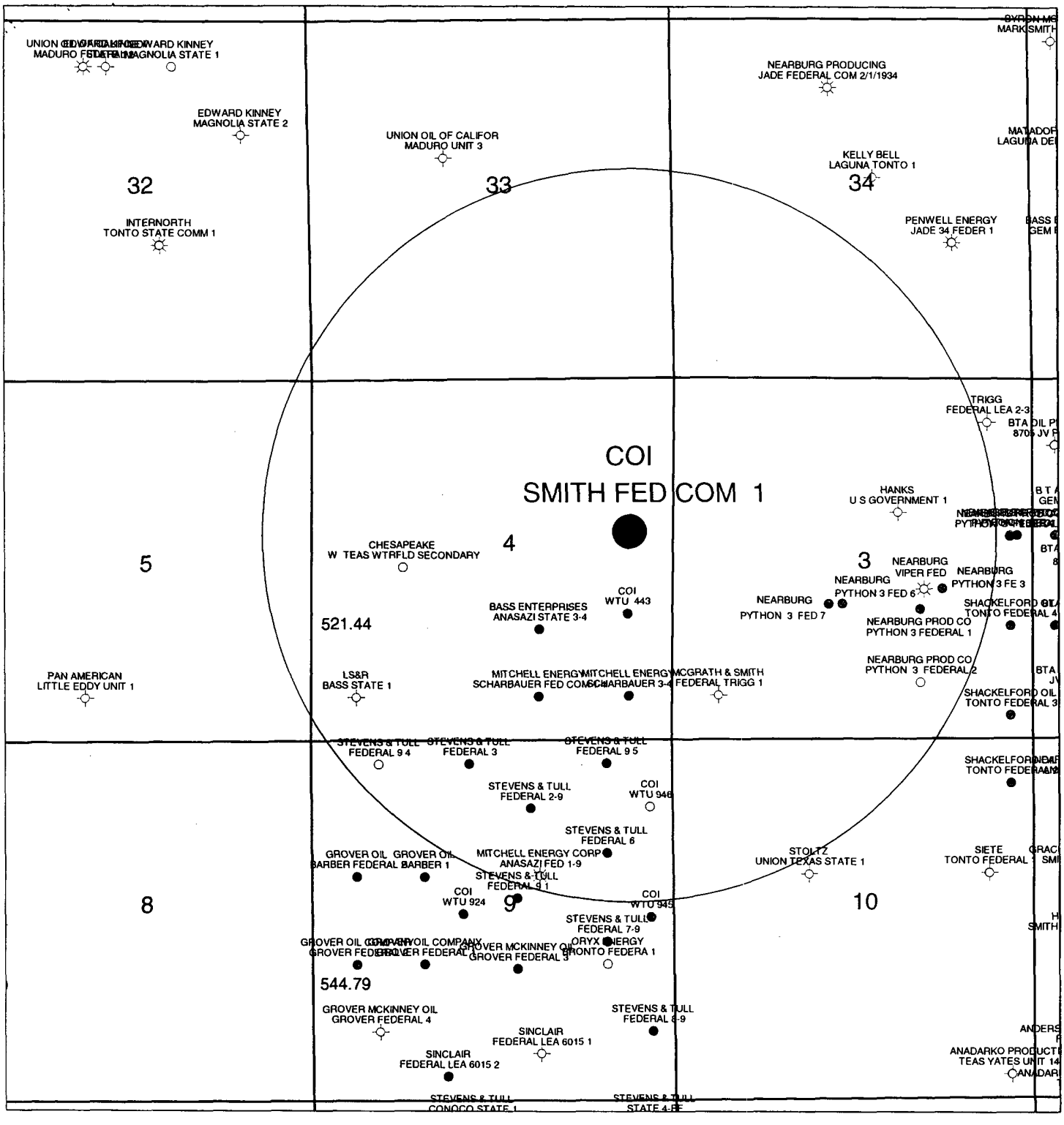
OPERATOR CHESAPEAKE OPERATING, INC.

LEASE SMITH FEDERAL 4

SEP 2003
RECEIVED
HOBBS
OCD

JOHN WEST SURVEYING
HOBBS, NEW MEXICO
(505) 393-3117

Exhibit A-3



Chesapeake Natural Gas. Natural Advantages.	**CHESAPEAKE OPERATING, INC.**
SMITH FEDERAL 1-4 Location WEST TEAS PROSPECT With 1 mile radius Lea County, New Mexico	
Date: 25 June, 2003	**Geol/Eng:** DG
Scale: 1" = 4000'	

Exhibit B

SMITH FEDERAL 1-4

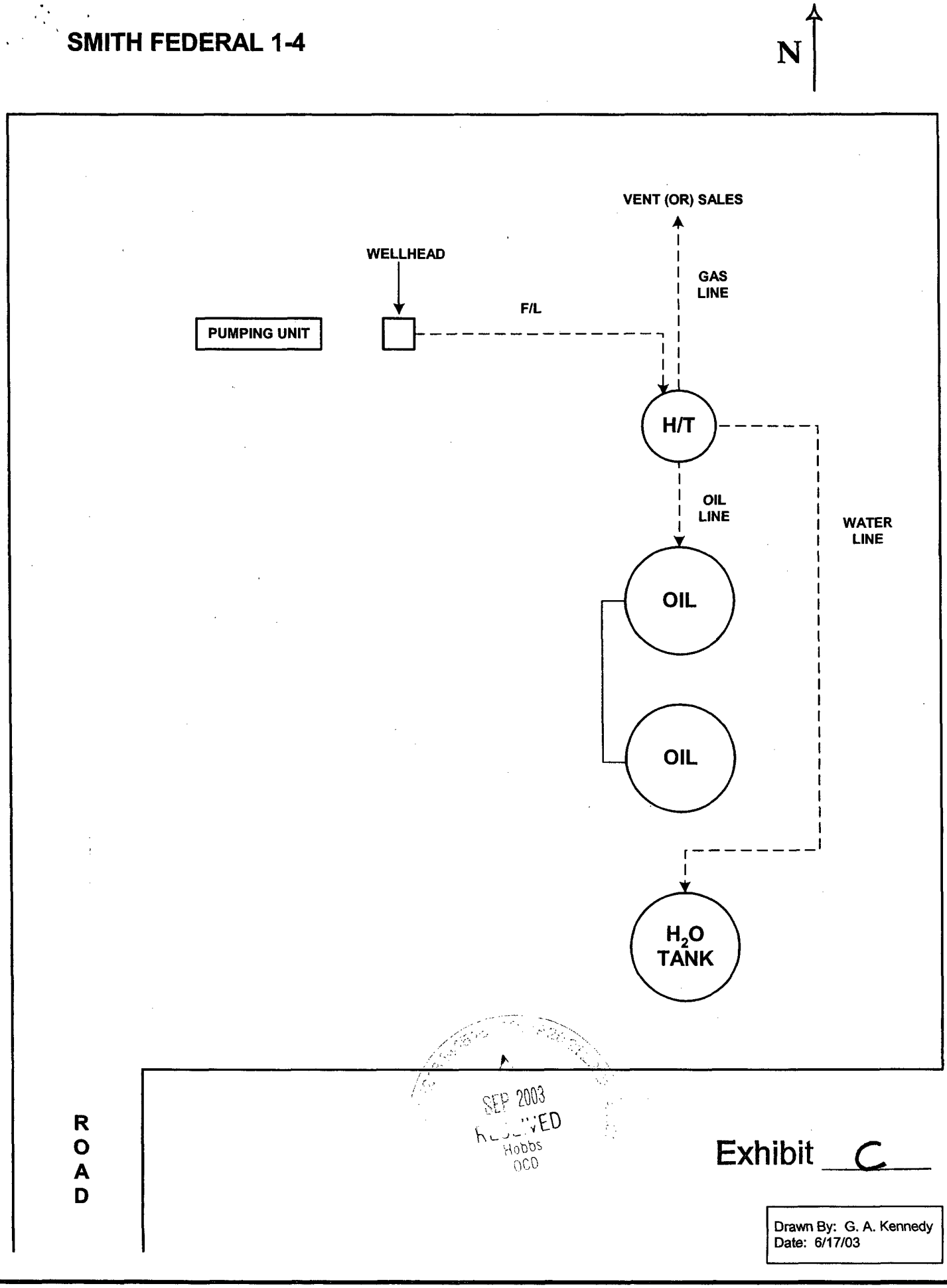
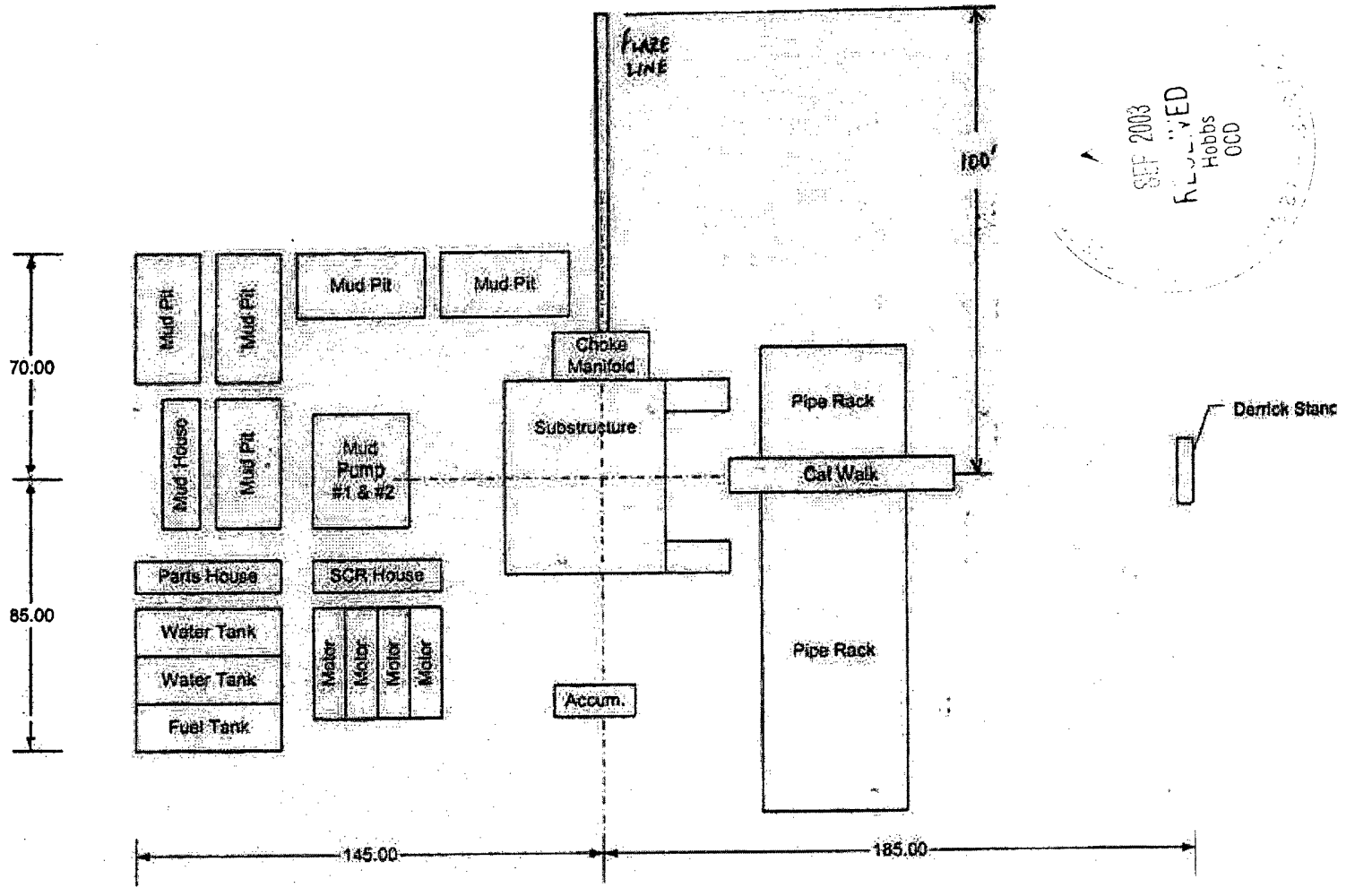


Exhibit C

Drawn By: G. A. Kennedy
Date: 6/17/03

Exhibit D



Chesapeake Operating, Inc			
General Rig Layout			
SIZE	FSCM NO	DWG NO Generic	REV

1/03

TITLE PAGE/ABSTRACT/ NEGATIVE SITE REPORT CFO/RFO

1. BLM Report No.	2. Reviewer's Initials/Date_____ ACCEPTED ( ) REJECTED ( )	3. NMCRIS No.: 84099

4. Type of Report: Negative( ) Positive (X)

5. Title of Report:
Class III archaeological survey of a well pad and access road for the Smith Federal "4" well No. 1

Author(s): Ann Boone

6. Fieldwork Date(s) from 24 June 2003 to

7. Report Date 30 June, 2003

8. Consultant Name & Address:
Boone Archaeological Services
2030 North Canal
Carlsbad, NM 88220
Direct Charge: Danny Boone
Field Personnel Names: Danny Boone
Phone: (505) 558-1352

9. Cultural Resource Permit No.
190-2920-03-C
NM-03-157

10. Consultant Report No.
BAS 06-03-06

11. Customer Name: Chesapeake Operating, Inc.
Responsible Individual: Sharon Dries
Address: P.O. Box 18496
Oklahoma City, Oklahoma 73154-0496
Phone: (405) 848-8000

12. Customer Project No.:
None

13. Land Status	BLM	STATE	PRIVATE	OTHER	TOTAL
a. Area Surveyed (acres)	8.26 (-/+)	1.94 (+/-)	0	0	10.2 (-/+
b. Area of Effect (acres)	3.78 (-/+)	0.48 (+/-)	0	0	4.26 (+/-)

14. Linear: Length; 850' Width; 130'
Block; 600' x 600'

15. Location: (Maps Attached if Negative Survey)
a. State: New Mexico
b. County: Lea
c. BLM Office: Carlsbad
d. Nearest City or Town: Maljamar, New Mexico
e. Legal Location: T 20S, R 33E, Sec. 4; Pad SE NE; Access road SE NE, NE SE
f. Well Pad Footages: 2310' FNL 660' FEL
g. USGS 7.5 Map Name(s) and Code Number(s): LAGUNA GATUNA, NM (1984) 32103-E6

Exhibit E

16. Project Data:

a. Records Search: Date(s) of BLM File Review: 17 June, 2003 Name of Reviewer (s): Danny Boone

Date(s) of ARMS Data Review: 17 June, 2003 Name of Reviewer (s): Ann Boone

Findings (see Field Office requirements to determine area to be reviewed during records search):

LA 100721 and LA 100722 are within 500' of the pad survey area.

b. Description of Undertaking:

The pad is staked as a 500' x 500' and a 50' buffer was added resulting in a 600' x 600' (8.26 ac.) pad survey area. A portion of the pad area was surveyed in 1993 as BLM Project No. 93-763. This area was resurveyed because of the nature of the sandy dune environment and inability to determine the original survey area in the field. The staked access road begins at the northwest edge of the pad impact area for the WTU well 443, crosses a buried pipeline trending north for 858' to a point approximately 200' inside of the southwest portion of the proposed pad survey area. This proposed road was surveyed at a width of 130' and new survey footage of 650' (1.94 ac) which is on State of New Mexico Land.

c. Environmental Setting (NRCS soil designation; vegetative community; etc.):

Topography: Featurless sandy rolling plain with deflation basins up to 15 meters in length and 1-2 meters deep.

Vegetation: Overall groundcover is approximately 40 %, shinoak, mesquite, sage brush, broom snakeweed, various grasses and other flora.

NRCS: Peyote-Maljamar-Kermit association: Gently undulating and rolling, deep, sandy soils

d. Field Methods: (transect intervals; crew size; time in field, ect.):

Transects: For the pad a grid of parallel transects spaced 15 meters of less, for the road 2 parallel zig-zag transects spaced up to 10 meters apart on each side of staked centerline.

Crew Size: One

Time in Field: 3.5 hrs.

e. Artifacts Collected (?): None

17. Cultural Resource Findings:

a. Identification and description: One new BLM Category II archaeological site, LA 139915 was encountered and recorded.

b. Evaluation of significance of Each Resource: See attachments

18. Management Summary (Recommendations):

Archaeological clearance of the Smith Federal "4" well No. 1 for Chesapeake Operating, Inc. as presently staked is recommended. If cultural resources are encountered at any time all activity should cease and the BLM Archaeologist notified immediately.

19.

I certify that the information provided above is correct and accurate and meets all appreciable BLM standards.

Responsible Archaeologist Danny Boone 2 July 2003

Signature Date

Class III archaeological survey of a pad and access road for the Smith Federal "4" well No. 1 for Chaesapeake Operating, Inc.
Boone Archaeological Services, LLC Report No.: 06-03-06
BLM Permit No.: 190-2920-03-C
State Of New Mexico Permit No.: NM-03-157
NMCRIS No.: 84099

Chesapeake Operating, INC
P. O. Box 18496
Oklahoma City, OK. 73154

Attention:
Ms Sharon Dries;

1. Introduction:

Ms. Sharon Dries of Chesapeake Operating, Inc. contacted Boone Archaeological Services, LLC on 9 June 2003 requesting an archaeological survey of a pad and access road for the Smith Federal "4" well No. 1. On 21 June 2003 Danny Boone Field Supervisor / Principal Investigator for Boone Archaeological Services, LLC conducted an intensive class III pedestrian cultural survey of the affected area and required buffer zones. During the cultural survey of the access road portion of the proposed project LA 139915, a new BLM Category II archaeological site was recorded. Location plats for the project area were provided by Chesapeake Operating, Inc. and a copy is attached to this report.

2. Project Description:

The pad is staked as a 500' x 500' and a 50' buffer was added resulting in a 600' x 600' (8.26 ac.) pad survey area. A portion of the pad area was surveyed in 1993 as BLM Project No. 93-763. This area was resurveyed because of the nature of the sandy dune environment and in ability to determine the original survey in the field. The staked access road begins at the northwest edge of the pad impact area for the WTU well 943, crosses a buried pipeline trending north for 858' to a point approximately 200' inside of the southwest portion of the proposed pad survey area. This proposed road was surveyed at a width of 130' and new survey footage of 650' (1.94 ac), which is on State of New Mexico Land. No plats with with engineered stations and footage were available for the proposed road, therefore location was established with a hand held GPS Unit.

3. Legal Description:

T 20S, R 33E, Section 4, Pad, Pad SE¼ NE¼; Access road SE¼ NE¼, NE¼ SE¼, NMPM, Lea County, New Mexico.
USGS 7.5' Series: LAGUNA GATUNA, NM (1984) 32103-E6
Land Status: Pad and approximately 200 ft. of access road is Fedral lands adminstrated by the Bureau Of Land Management, Carlsbad Field Office, approximately 650 ft. of the access road is on State of New Mexico Lands.

4. Enviromental Setting:

Topography: The project is situated on the Quercho Plains in slightly rolling sandy dunes with deflation basins ranging is size up to 15 meters long and 1-2 meters deep.
Visibility: Overall ground cover approximately 40 % and consists primarily of shinoak, mesquite, sage brush, broom snakeweed, various grasses and other flora.
NRCS: Peyote-Maljamar-Kermit association: Gently undulating and rolling, deep, sandy soils.
Aspect: 360 degrees
Elevation: 3559 ft. at drill hole
Lithic Resources: Chert and quartzite occur in the local gravels
Water Sources: (potential) Possible springs near the Mescalero Ridge (Caprock) approximately 9 miles

northeast.
(permanent) Pecos River, approximately 38 miles west

5. Examination Procedure:

For the pad a grid of parallel transects spaced 15 meters of less, for the road 2 parallel zig-zag transects spaced up to 10 meters apart on each side of staked centerline.
Visibility: 40 % (+/-) due to vegetation
Weather: Clear, sunny, hot
Lighting Conditions: Good
Work Hours on the Ground: 4.5
Crew Size: One

6. Findings:

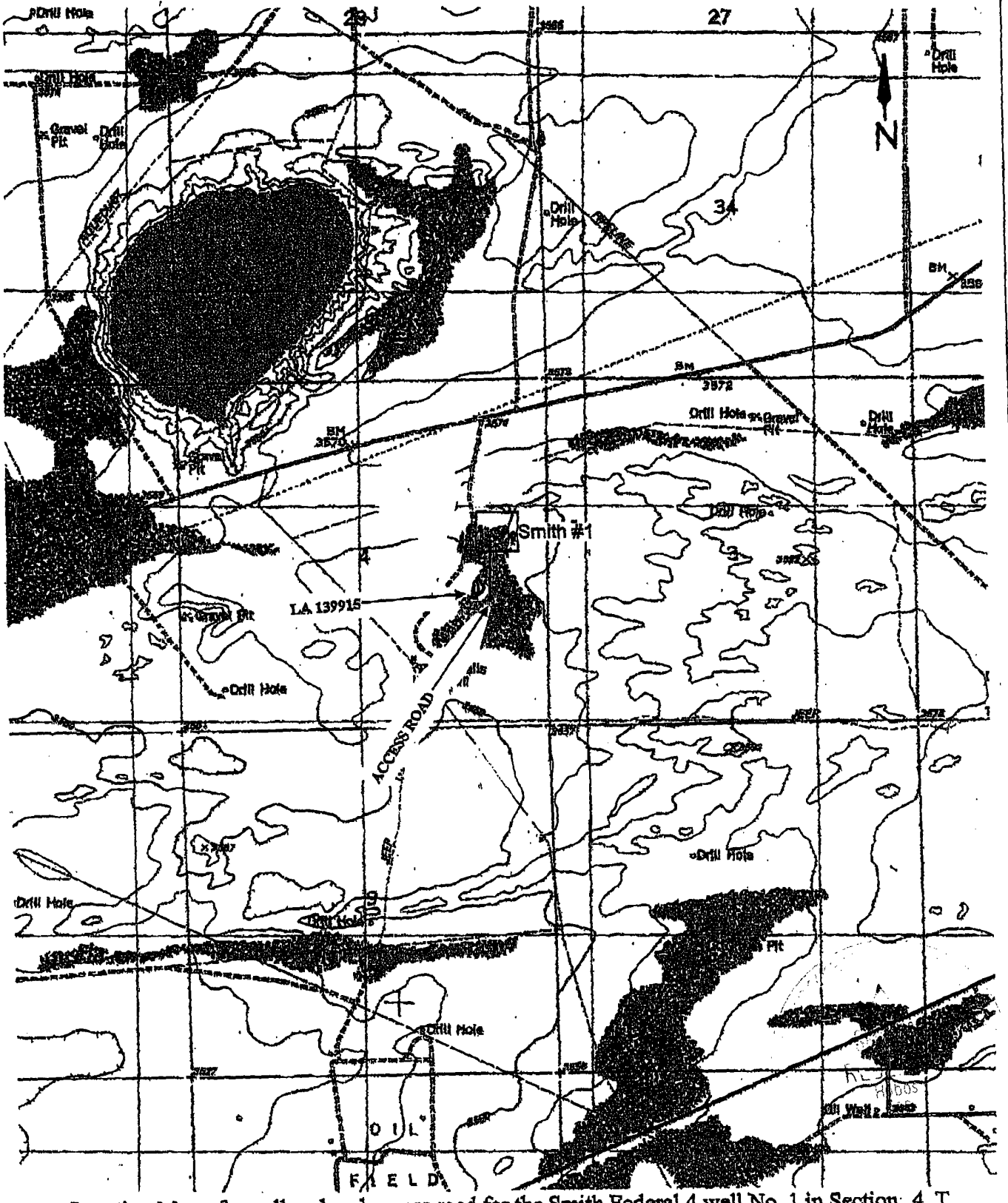
During a check of the New Mexico Laboratory of Anthropology survey and site records search conducted by Ann Boone on 17 June 2003 it was found that LA 100721 and LA 100722 were within 500 ft. of the proposed well pad. Additional research was done by Danny Boone on 19 June 2003 in person at the Carlsbad Bureau Of Land Management. These records revealed that the portions of the proposed well pad had been surveyed in 1993 under BLM Project No. 93-763.

Field survey resulted in the recording of new a BLM Category II site, LA 139915, historic, non-structural, not recommended for the National Register.

LA 139915 is a BLM Category II site at UTM cordinates, Zone 13, 625539E, 3607617N.
All of the glass and ceramics are broken into small fragments randomly dispersed across the landscape. Ceramics and glass appear to be trash that was thrown into the air and used for target practice. There is a buried pipeline of some age in the southwest portion of the site and this may be related to the manner in which the artifacts are scattered and fractured into small pieces.

7. Recommendations:

Archaeological clearance of a pad and access road for the Smith Federal "4" well No. 1 for Chaesapeake Operating, Inc. in Section 4, T 20S, R 33E, NMPM, Lea County, NM as presently staked is recommended.



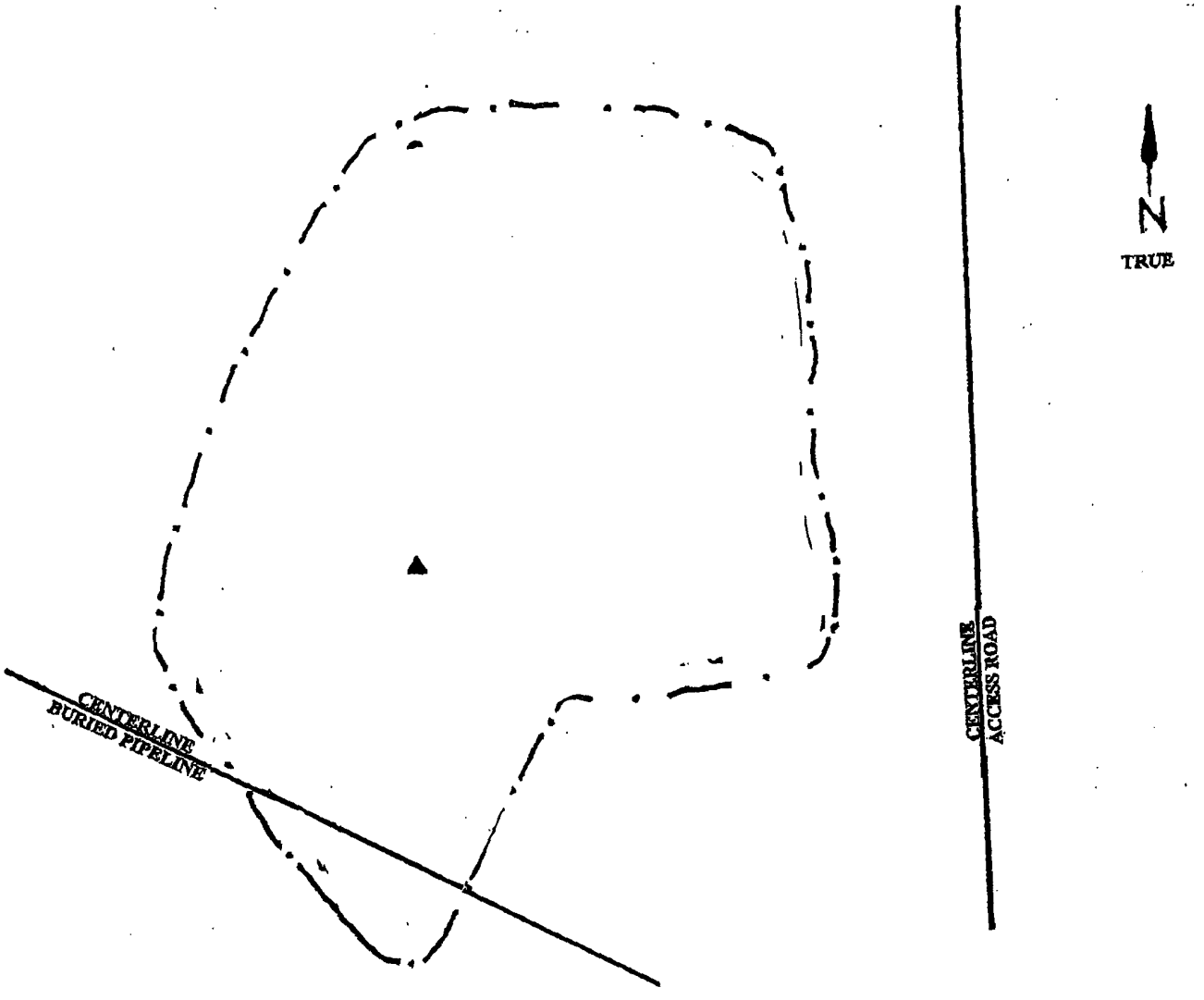
Location Map of a well pad and access road for the Smith Federal 4 well No. 1 in Section 4, T 20S, R 33E, NMPM, Lea County, New Mexico.
Map Reference USGS 7.5' Series: LAGUNA GATUNA, NM (1984) 32103-E6

BAS

LA 139915
T 20S, R 33E, Sec. 4

BAS 06-03-06A

1 INCH = 40 FT.



KEY

- ♠ — DATUM 6
- V — SHOVEL TEST
- Q — AQUA GLASS
- A — AMETHYST GLASS
- P — PURPLE GLASS
- S — STOVE PARTS
- W — WHITE GLAZE WARE
- C — BROWN / GREEN CROCKERY PIECES
- B — BLUE GLASS
- X — BROWN GLASS
- U — UNKNOWN METAL FRAGMENTS
- O — COIL SPRING
- —.—.— SITE BOUNDARY

2003

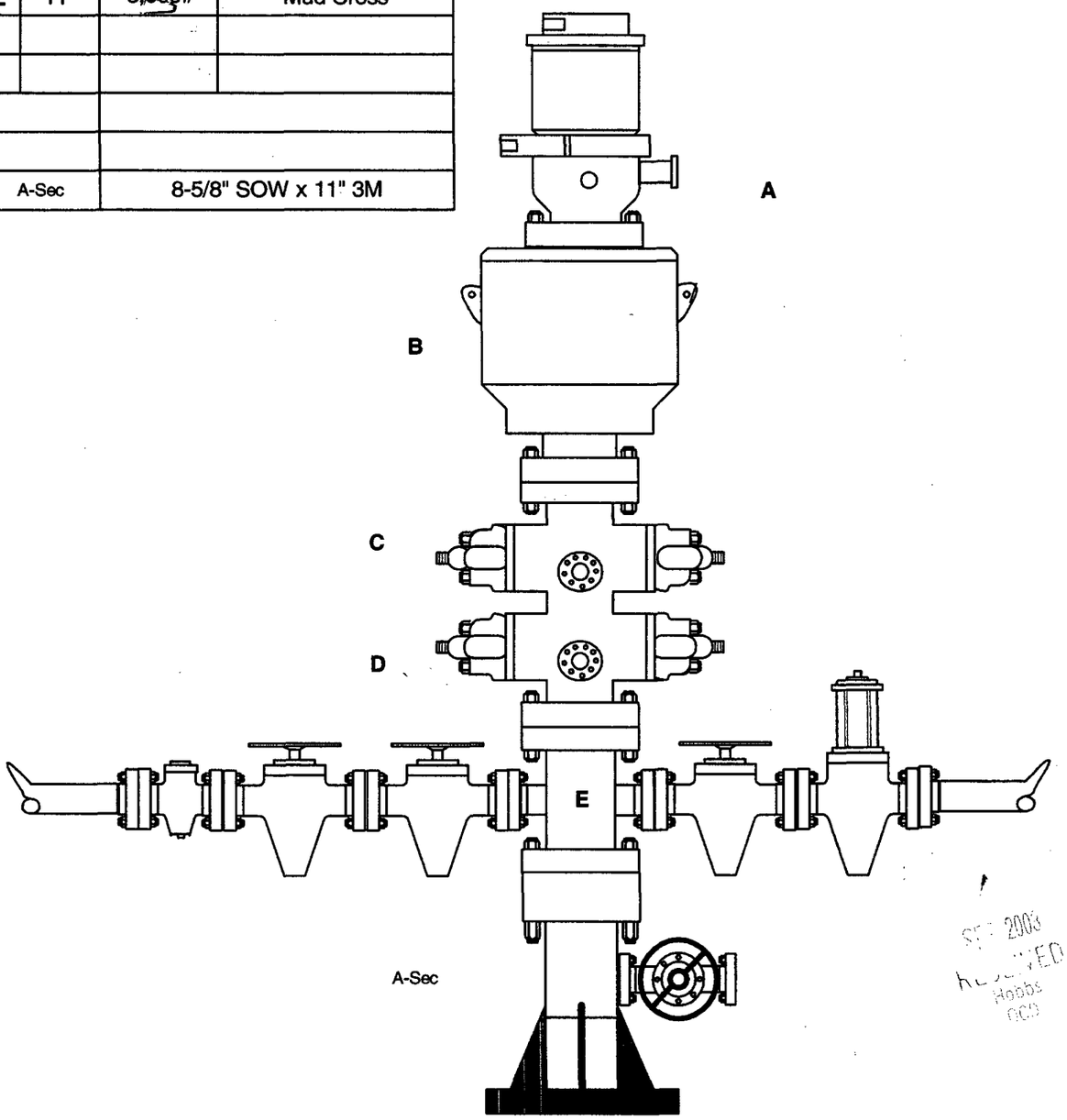
BAS

BLOWOUT PREVENTOR SCHEMATIC

CHESAPEAKE OPERATING INC

WELL : **Smith Federal 1-4**
FIELD : **WTU**
RIG : **Unknown**
COUNTY : **Lea** **STATE: New Mexico**
OPERATION: Drill out below 8-5/8" Casing

	SIZE	PRESSURE	DESCRIPTION
A	11"	500#	Rot Head
B	11"	3,000#	Annular
C	11"	3,000#	Pipe Rams
D	11"	3,000#	Blind Rams
E	11"	3,000#	Mud Cross
A-Sec	8-5/8" SOW x 11" 3M		



Kill Line

SIZE	PRESSURE	DESCRIPTION
2"	3,000#	Check Valve
2"	3,000#	Gate Valve
2"	3,000#	Gate Valve

Choke Line

SIZE	PRESSURE	DESCRIPTION
3"	3,000#	Gate Valve
3"	3,000#	HCR Valve

Exhibit E