

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

30-045-22056

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/>			5. LEASE DESIGNATION AND SERIAL NO. 14-20-5249		
b. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER <input type="checkbox"/> SINGLE ZONE <input type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>			6. IF INDIAN, ALLOTTEE OR TRIBE NAME Navajo		
2. NAME OF OPERATOR Ludwick Explorations Company			7. UNIT AGREEMENT NAME		
3. ADDRESS OF OPERATOR P.O. Box 2614, Farmington, NM 87401			8. FARM OR LEASE NAME Ko Sa		
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)* At surface <input checked="" type="checkbox"/> 870' FSL, 1850' FWL, Section 23-T25N-R11W At proposed prod. zone <input type="checkbox"/>			9. WELL NO. 1		
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* 28 miles from Farmington			10. FIELD AND POOL, OR WILDCAT Wildcat		
15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)			11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA 23-25N-11W		
16. NO. OF ACRES IN LEASE 160			12. COUNTY OR PARISH San Juan		
17. NO. OF ACRES ASSIGNED TO THIS WELL 160			13. STATE NM		
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.			20. ROTARY OR CABLE TOOLS rotary		
21. ELEVATIONS (Show whether DF, RT, GR, etc.) 6496' GL			22. APPROX. DATE WORK WILL START* July 15, 1978		

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
7-7/8"	5-1/2"	14#	85'	50 sacks
4-3/4"	2-7/8"	6.5#	1500' x	200 sacks

We propose to test the Pictured Cliffs formation at this location by drilling a 4-3/4" slimhole to a TD of 1500' using a portable rotary rig and mud. Low bottom hole pressure is anticipated and a BOP will not be used. The well will be completed on the basis of open hole resistivity and porosity logs and a master casing valve and stripper head will be used during completion.

RECEIVED

MAY 30 1978

U. S. GEOLOGICAL SURVEY
FARMINGTON, N. M.

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 Mildred Libnes Kuchera TITLE Chemical Engineer DATE _____

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions On Reverse Side

**NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT**

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

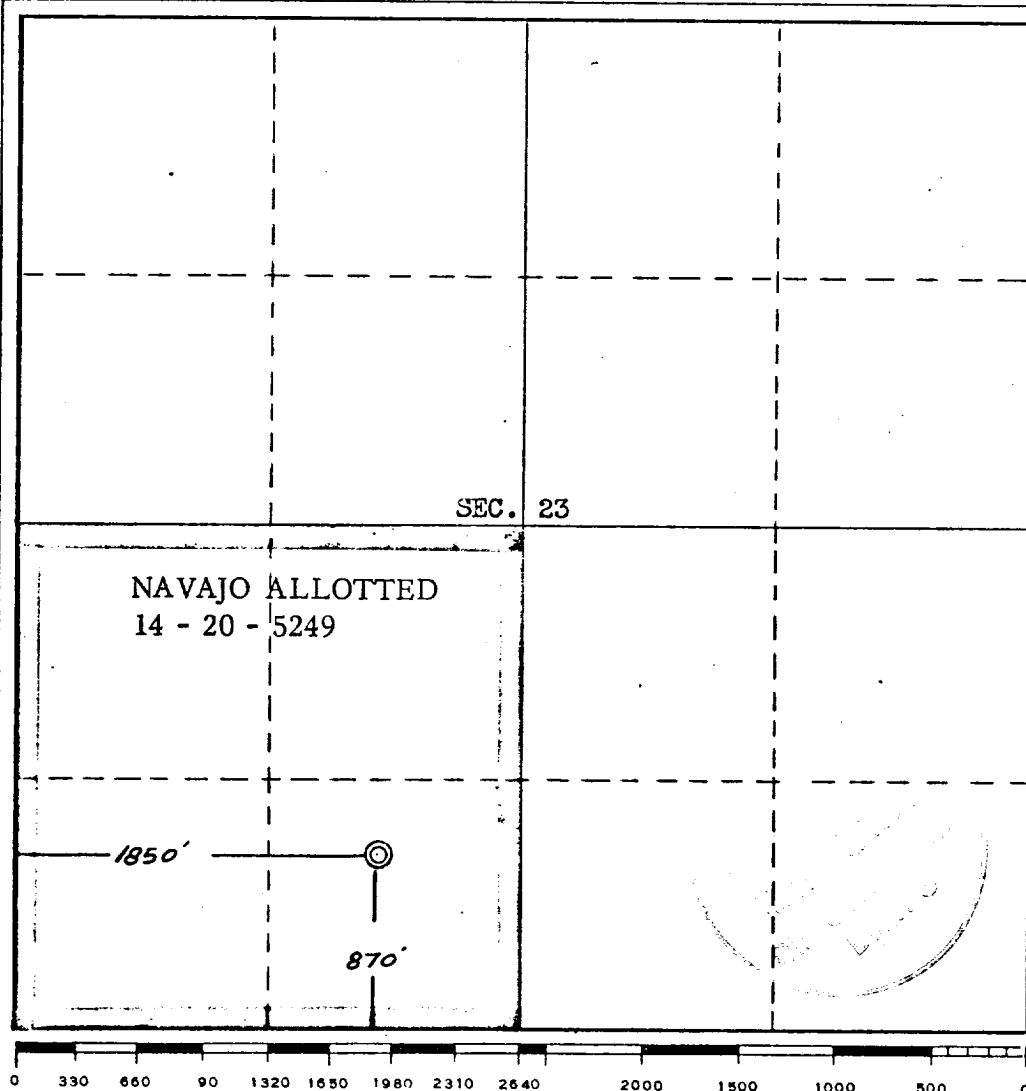
Operator Ludwick Exploration Company			Lease KO SA.		Well No. 1
Unit Letter M	Section 23	Township 25 North	Range 11 West	County San Juan	
Actual Footage Location of Well: 870 feet from the South line and 1850 feet from the West line					
Ground Level Elev. 6496	Producing Formation PICTURED CLIFFS		Pool WILDCAT		Dedicated Acreage: 160 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☒ No If answer is "yes," type of consolidation 1 - owner lease

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

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

Mildred Liknes Kuchera

Name

Mildred Liknes Kuchera

Position

Chemical Engineer

Company

Ludwick Exploration Co.

Date

May 15, 1978

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

Date Surveyed

May 13, 1978

Registered Professional Engineer
and/or Land Surveyor

Edgar L. Risenhoover

Certificate No. **5979**

Edgar L. Risenhoover, L.S.

LUDWICK EXPLORATION COMPANY

P. O. Box 2614

FARMINGTON, NEW MEXICO 87401

May 24, 1978

Mr. P.T. McGrath
District Engineer
U.S. Geological Survey
P.O. Box 959
Farmington, New Mexico 87401

Subject: Surface Use Development Plan
Ko. Sa No. 1
Wildcat Pictured Cliffs Test
SW/4 of Section 23-T25N-R11W
San Juan County, New Mexico

Dear Mr. McGrath:

The subject development plan for the proposed Ludwick Exploration Company Ko Sa No. 1 is as follows:

1. Per the attached plat, there is an existing road leading to this well.
2. No new access roads will be necessary.
3. A map is attached showing offset existing wells.
4. Location of tank batteries and production facilities are shown on the attached plat. The well is located in East Bisti Unit with extensive surrounding production facilities.
5. Water for drilling and completion work will be hauled in from Bloomfield.
6. Materials necessary for the construction of a drilling pad will be obtained from the location.
7. Waste materials will be collected in the unlined earthen drilling mud pit. These materials will be buried upon completion of the well.
8. No permanent campsites or airstrips are anticipated.
9. Refer to the attached Well Site Layout plat. No major earth cuts are anticipated.

10. The proposed wellsite is located in a sandy, sparsely vegetated desert type area. There are no Indian habitations or artifacts in the immediate vicinity.
11. Please refer to the Archeological Report to be submitted to your office.
12. Ludwick Exploration Company's representative is:
James Ludwick Telephone 505 325-1079
Mildred L. Kuchera Telephone 505 325-3448

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 Ludwick Exploration Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

May 24, 1978

Mildred L. Kuchera
Mildred L. Kuchera
Chemical Engineer

SUPPLEMENT TO FORM 9-331C

WELL: Ko Sa No. 1

SURFACE FORMATION OF DRILL SITE: Animas Sandstone

ESTIMATED FORMATION TOPS:

Ojo Alamo	420'
Fruitland Coal	1320'
Pictured Cliffs	1365'

WATER AND HYDROCARBON BEARING FORMATIONS:

Fresh Water	42- 560'
Gas	1335'-1450'

MUD PROGRAM:

Surface-85' Water-85'-1500' Gel-Chemical Mud, 15cc water loss or less, 8.7#/gallon to 9.2#/gallon mud weight. Bottom hole pressure gradient in this area is about 0.148 psi/ft or 2.84#/gallon. We do not foresee any drilling hazards based on extensive offset drilling data.

CASING AND CEMENT PROGRAM:

New 5-1/2" 15.5# K-55 and 2-7/8" 6.5# K-55 casing will be used and pressure tested to 500 psi for 30 minutes prior drilling out and perforating. Regular cement will be used to cement surface casing. A light 50-50 Pozmix cement slurry followed by a neat cement w/2% CaCl will be used for production casing.

LOGGING PROGRAM:

CNL-FDC	-TD to surface
IES	-TD to surface

PRESSURE CONTROLS:

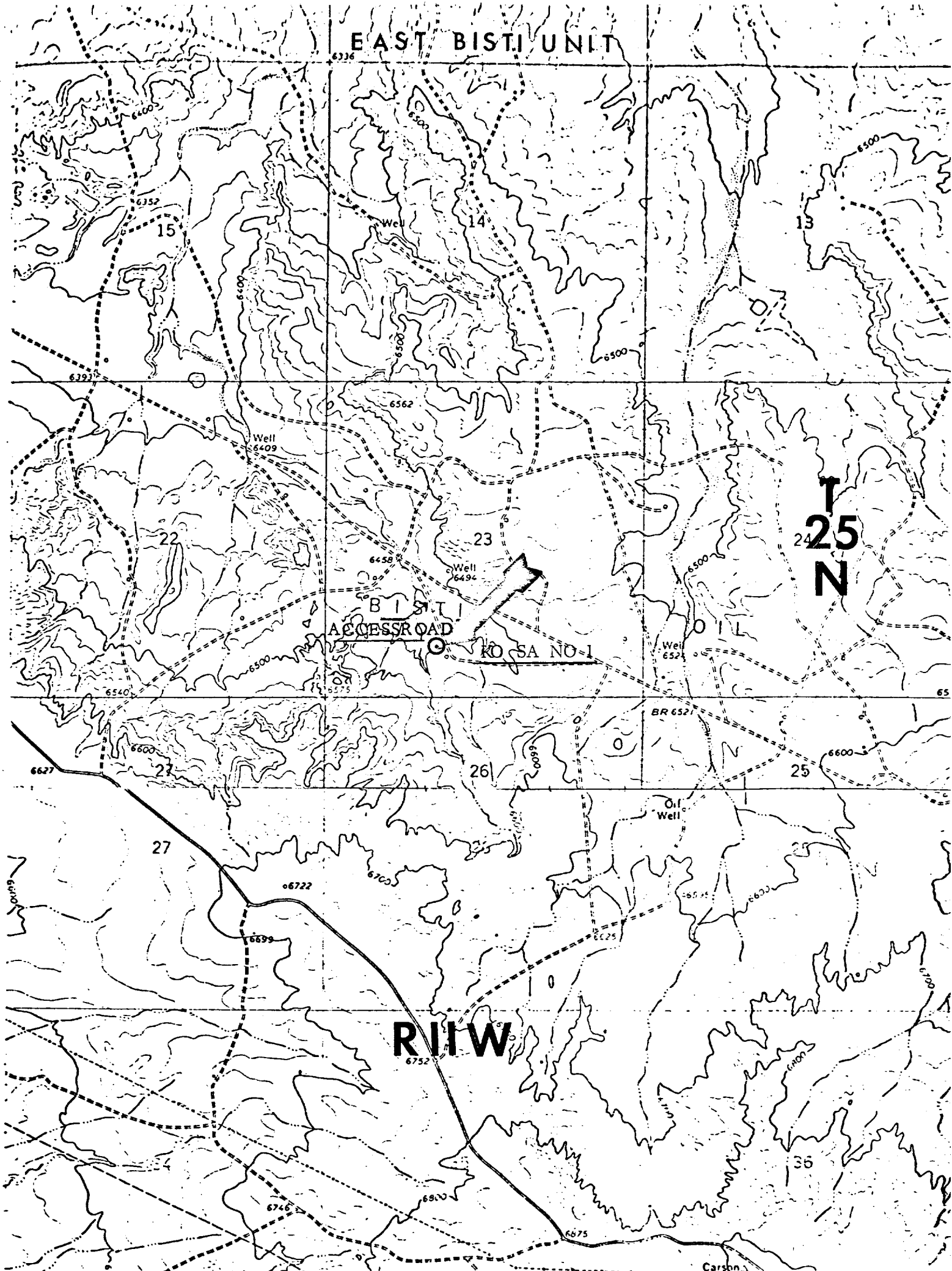
Because of low bottom hole pressure, a BOP stack will not be used while drilling. A stripper head and master casing valve will be utilized for well control.

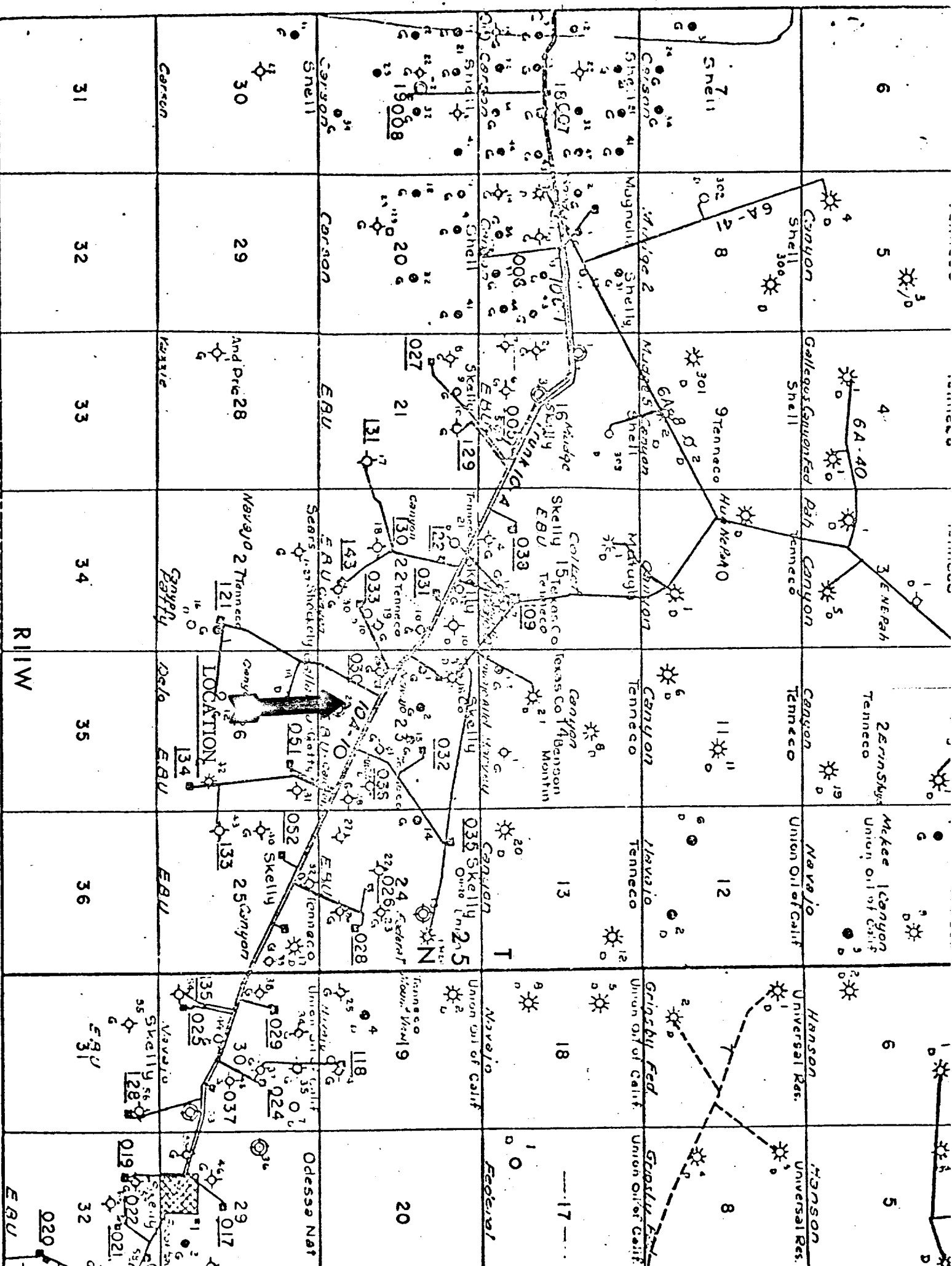
EAST BISTI UNIT

T
25
N

RIIW

BISTI
ACCESS ROAD
KO SA NO-1



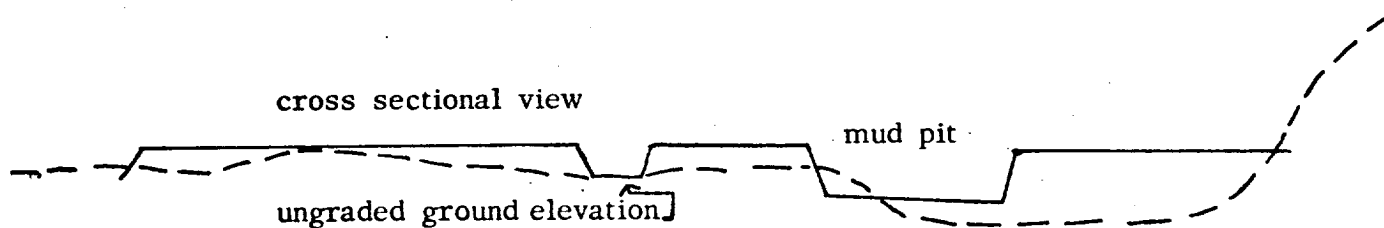
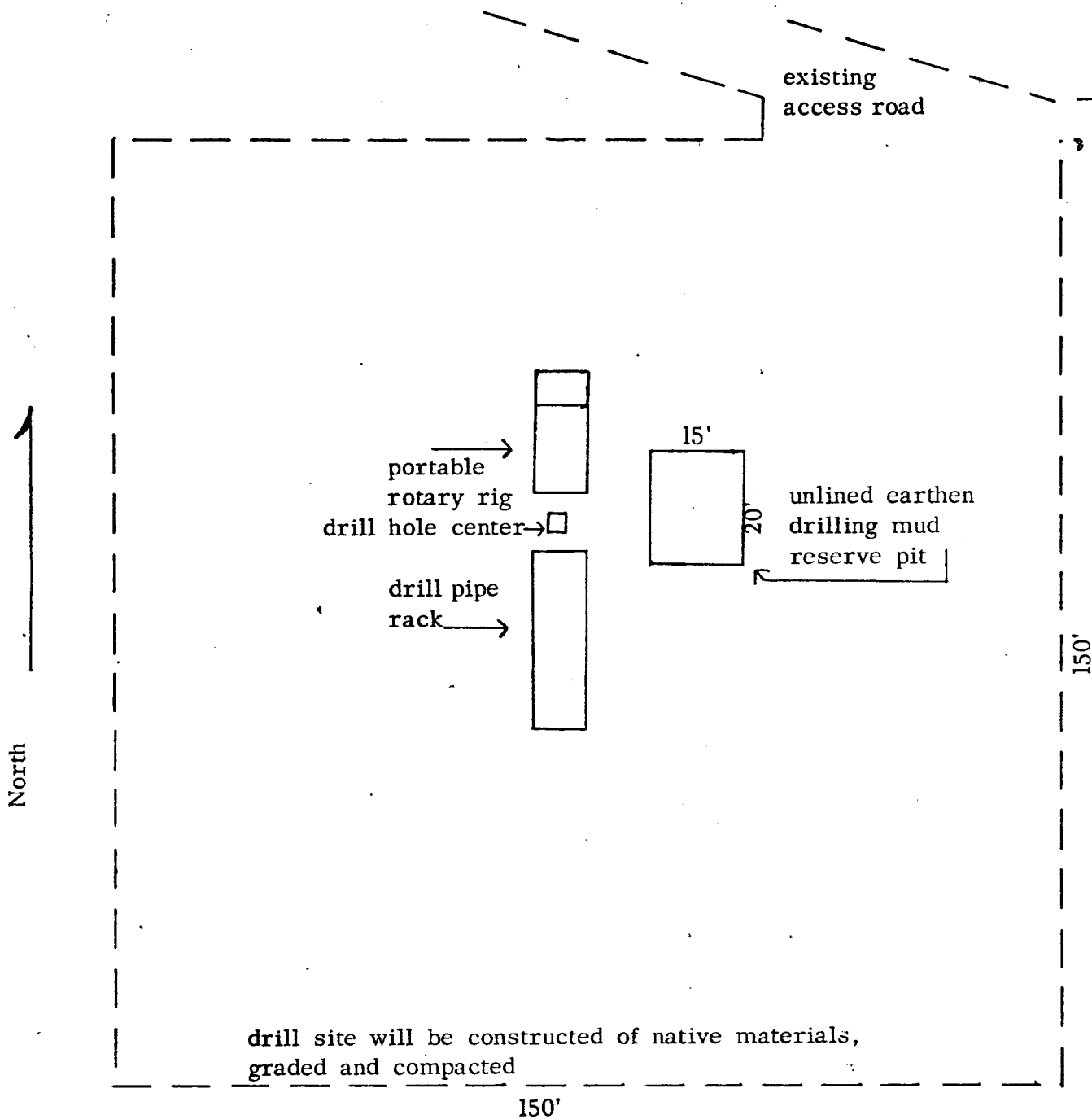


WELL STATUS AND PRODUCTION FACILITY PLAT

LUDWICK EXPLORATION COMPANY

KO SA NO. 1

LUDWICK EXPLORATION COMPANY
DRILL SITE LAYOUT & CROSS SECTION
KO SA NO. 1



by: MLK