

CONDITIONS OF APPROVAL FOR APD NO. 158
Well #28-18
AMAX Exploration, Inc.
McCoy Unit, Churchill County, Nevada

1. A detailed drilling report shall be given by telephone to the District Geothermal Supervisor (DGS) in Reno, NV, (702) 784-5676, Monday through Friday at approximately 8:30 a.m. until subject well is completed or abandoned.
2. A copy of this permit, No. 158, the approved drilling program, blowout and noncondensable gas contingency plans, and one copy of each well survey log shall be available at the well site for the Deputy Conservation Manager for Geothermal. In addition, immediately after the completion of each well survey (including daily mud logs), field copies shall be mailed or delivered to the District Geothermal Supervisor, Kietzke Plaza, Bldg. D, Suite 137, 4600 Kietzke Lane, Reno, NV 89502, and the Deputy Conservation Manager for Geothermal, 2465 E. Bayshore Rd., Suite 400, Rm. 401, Palo Alto, CA 94303.
3. In case of emergency, the USGS District Geothermal Supervisor (Mr. Bernard Moroz) or his representative (day number: (702) 784-5676, night number: (702) 826-8780) shall be notified. In the event that the District Geothermal Supervisory staff is not available, the Deputy Conservation Manager for Geothermal's Engineering Section shall be contacted: Mr. Bruce Hellier, office - (415) 323-8111, Ext. 2845 night - (415) 948-3010 or, Mr. Ellis Hammett, office - (415) 323-8111, Ext. 2845, night - (415) 328-8679.
4. Variance from the approved well program, must be approved by the Reno, Nevada DGS or the Deputy Conservation Manager for Geothermal.
5. A kill line shall be installed below the BOPE, leading directly to the mud pumps and fitted with a valve through which cement can be pumped if necessary.
6. A blow-down line shall be installed below the BOPE. The blow-down line shall be directed in such a manner as to permit containment of produced fluids and to minimize any safety hazard to personnel.
7. Adequate supply of drilling fluid and materials shall be maintained at the drill site to cure any lost circulation problem which may be encountered.
8. Notify the DGS prior to any testing of the BOPE so that the testing may be witnessed.

9. The lessee shall be allowed to drill to mud returns temperatures of 79°C (175°F). Higher temperatures limits must be approved by the Reno District Geothermal Supervisor.
10. Inlet and outlet temperatures shall be recorded at frequent intervals during drilling operation. Normally, hourly or 9 meter (30 ft) intervals.
11. Upon completion, the tubing can be hung in the wellhead so that both the annulus and tubing are shut-in. This completion should be in lieu of the proposed 10 cement annulus plug. Also, a locked valve can be placed on the tubing in lieu of a cap.
12. Prior to the abandonment of the well, the abandonment procedure must be approved by the District Geothermal Supervisor.

T. 22N.
R. 39E.

FOUND BLM BRASS
CAP DATED 1979

T. 22N. R. 40E.

FOUND BLM BRASS
CAP DATED 1979

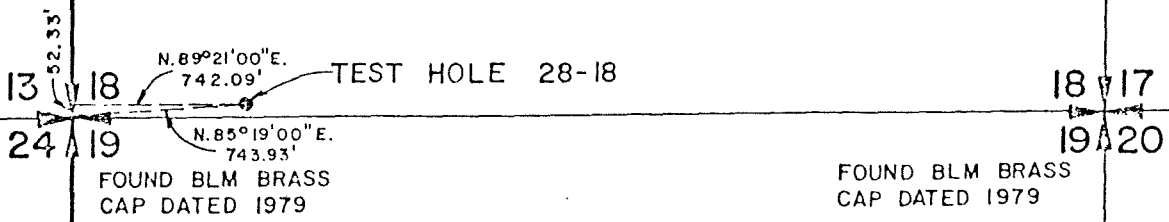
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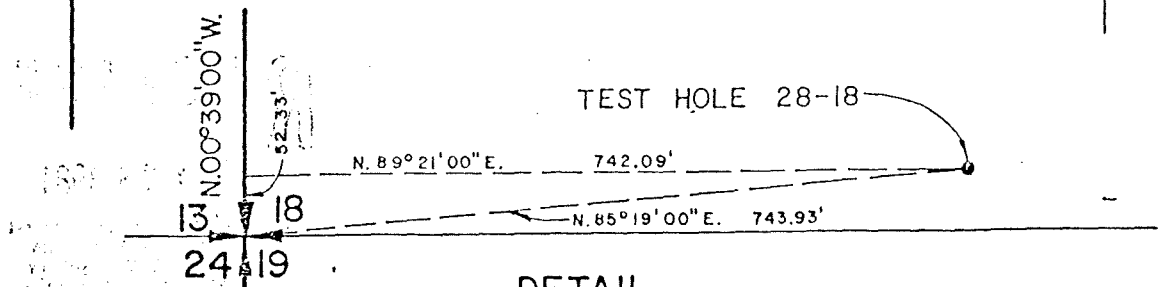
SECTION

18



FOUND BLM BRASS
CAP DATED 1979

FOUND BLM BRASS
CAP DATED 1979



DETAIL

SCALE: 1" = 200'

SCALE: 1" = 1000'

DRWN BY DLL DATE 2-12-81

CHKD BY BWH DATE 2-12-81

SHARP, KRATER & ASSOCIATES
ENGINEERS/PLANNERS/SURVEYORS
PO Box 11456
Reno, Nevada 89510 Ph. 702-329-6401

HORIZONTAL TIES TO
GRADIENT TEST HOLES FOR
AMAX EXPLORATION, INC.,
MC COY PROJECT

JOB NO.
281-20

PLATE
OF

DRILLING PROGRAM I (Thermal Gradient Wells)

Drilling Plan

1. Drill a 9-7/8 inch hole to 10% of estimated total depth.
2. Run 7 inch casing and cement.
3. Install and test BOPE.
4. Drill 6 to 6-1/2 inch hole to TD.
5. Complete as described below.

Drilling Fluids

The well will be drilled with air to total depth if possible. When drilling with air small quantities of water and biodegradable foam are added to the air.

If sufficient water is encountered down hole to prevent drilling with air then a switch will be made to drilling mud. Drilling will proceed with a fluid optimized for the hole conditions. Solids will be maintained at as low a level as practical.

Blow-Out Prevention Equipment (BOPE)

1. 0-surface casing point - none
2. Surface casing-TD - pipe rams
blind rams

The exact BOPE depends upon the rig used for a specific hole. However, the BOPE will either be a mechanical type when only a shallow cellar is required or a hydraulic type when deeper cellars are called for. In both cases a master valve with a 2-inch kill line and a 2-inch flow line will be installed on the casing before the BOPE is attached.

Directional Requirements

The hole will be maintained as nearly vertical as possible. In no case will the deviation be allowed to reach the point that drill pipe fatigue is experienced.