

7 POINT DRILLING PLAN

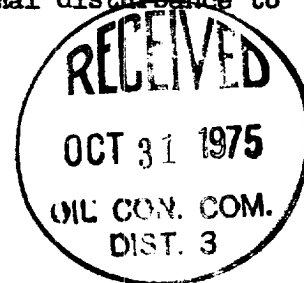
HORSESHOE GALLUP UNIT - WELL # 288

1. Surface Casing: 8-5/8" OD 24# J-55 ST&C SH 120'
2. Casing Head: 8-5/8" x 10", Ser. 600 (2000#WP, 4000#T) OCT C-22 or equivalent, w/2 - 2" LP outlets w/1 - 2000#WP valve.
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3. Intermediate Casing: None
4. Blowout Preventer:
 - Type - Ram Type
 - Series - Ser. 600 (2000#WP, 4000#T) or greater
 - No. of Rams - Two; one blind ram and one pipe ram for size drill pipe in use.
 - Manufacturer - Cameron or Shaffer, hydraulic operated
 - Fill, kill and choke line will be 2000#WP, or greater, connected below rams on BOP.
 - Blowout Equipment - Will be pressure tested to 800 psi before drilling out of casing and operational checks will be made daily.
5. Auxiliary Equipment: Kelly Cock
Sub with full opening valve on floor for use when kelly not in hole.
6. Anticipated Bottom Hole or Maximum Expected Pressure: 700 psi
7. Drilling Fluids:
 - Surface - Water & gel w/lime to maintain clean hole for running casing
 - Below Surface - Water w/necessary gel and chemicals to maintain drillable hole. 9.0 \pm ppg, viscosity as required, 10 \pm water loss, LCM if required. Maintain stock weight material on location.



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1. Existing Roads: Attached are the Chimney Rock (1934), Heifer Point (1963) and Water-flow (1963) topographic maps, and a Unit Area "Road Detail" map.
2. Planned Access Roads: The main access road extends northeastward from a "turn off" from Highway 550, approximately 3 miles east from Shiprock, New Mexico. This road is marked in "red" on the attached Chimney Rock topographic map to the south line of Section 31-31N-16W. From this point, please refer to the attached "Road Detail". Road construction will be kept to a minimum and will consist of only roads from existing lease roads to the proposed location. Roads to be constructed are highlighted in "yellow" on the "Road Detail" map. **No new road will be required to this location.**
3. Existing Wells: All known wells are shown on both the "Road Detail" and "Line Detail" maps.
4. Lateral Roads to Well Locations: Lateral roads from existing lease roads to proposed locations are shown on the "Road Detail" map, highlighted in "yellow".
5. Location of Tank Batteries and Flowlines: The attached "line Detail" map shows the location of existing tank batteries, flowlines and injection lines. Proposed location and flowlines are marked in "yellow".
6. Location and Type of Water Supply: Water supply for drilling will be from Water Supply Well #2-W (Green on "Line Detail" map). Water for cementing operations will be from ditch at turnoff of access road from Highway 550 (Green on topography map).
7. Methods for Handling Waste Disposal: Cuttings to be disposed of in reserve pit, a burn pit to be used for disposal of trash, garbage, etc., and covered on cleanup of location.
8. Location of Camps: None
9. Location of Airstrips: None
10. Rig Layout: Per the attached drawing. Also see No. 12.
11. Restoration of Surface: Upon completion of drilling operations, the disturbed surface area will be restored as near as practical to its original contours. If sufficient top soil is encountered, it will be stockpiled for restoration of surface. Restoration will be to the satisfaction of the United States Geological Survey.
12. Well location is near a small ridge which runs in a northwesterly direction. The ridge appears to be shale. Vegetation is primarily sparse scrub brush. Location leveling will require little disturbance to the ground contour. Estimate a 3' cut on the northwest edge of location and a 1' fill on the southeast edge. No new road will be required to reach the site, so there should be only minimal disturbance to wildlife and vegetation and this disturbance will be temporary.



Horseshoe Gallup Unit
Well No. 288

