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NORTHERN TERRITORY
BONAPARTE GULF BASIN
WEEBER NO. 1
DRILLING PROGRAMME

OP 6/82

M. IMBERT
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I INTRODUCTION
1. SUMMARY

Alliance Petroleum International Limited, Australian Aquitaine Petroleum Pty Limited (Operator) and Vamgas Limited, the permittees of OP 186 in Northern Territory propose to drill an exploration well on this permit to evaluate the hydrocarbon potential of the Ningbing Limestone. Sandstone interbeds in the Bonaparte Beds constitute a secondary objective.

The following drilling programme was designed to secure the necessary data for this evaluation whilst controlling the different drilling difficulties encountered in previous reference wells and to establish the safety factors and procedures to be followed.

Should encountered conditions be different than forecast this programme will be altered accordingly after consultation with Aquitaine Drilling Manager (save emergency) and will be reported to the Department of Mines and the permittees as soon as possible.
2) GEOLOGICAL PROGNOSIS
WEAVER No1
PROPOSED LOCATION
Line BNT 80-207, SP 245

TWT CONTOUR MAP
To the Base of Hilligan Beds
(Purple Marker)
G.C. 200 ft (TWT)
(Scale = 1/50,000)

OP 186
WEAVER PROSPECT
WEABER No.1
PREDICTED SECTION

Permit
OP 186

Location
SP 245 line BNT 80-207

Latitude
15° 21' 14.22" S

Longitude
129° 07' 46.53"

Rig
ATCO Al Nat 610

K.B. 6m approx.

G.L. 17.6m A.M.S.L

P.T.D. 2000m

Approx Spudd Date: 1/9/82

Approx Duration: 28 days

Operator
AAP

Cost
$1.1 million

Cost/ft.

Objectives
Keep River Gp. plus Ningbing (?) carbonates

Structure
Carbonate bank margin?

Comments
1. Coring on shales
   2. Testing during drilling

Author
V. DJOKIC

Date
JUNE 1982

Base Map No 9112

Reference No
20859
A. Objective

The main objective at Weaber No. 1 is reservoir in the Fammenian Ningbing Limestone. Outcrops of this formation are extensive along the western margin of the Bonaparte Gulf Basin, and are generally represented by back reef facies of reef complexes similar to those developed in the adjacent Canning Basin.

Cores from shallow mineral exploration holes of the Ningbing Limestone have given numerous examples of low maturity oil in vugs and fractures. These cores also show evidence of widespread secondary porosity development which extends more than 100m below the shale-limestone contact. The origin of the secondary porosity is uncertain.

Sandstone reservoirs in the overlying Bonaparte Beds form a secondary objective. In a nearby well Bonaparte 2, 43,600m³ of gas per day flowed from a poorly porous 4m sandstone within the Bonaparte Beds below 1437m. Although some log-derived porosities indicated a range of 9-16%, shallow core data along the basin margin have given porosities of 25% and permeabilities as high as 500 md.

B. Predicted Section

The drilling location at SP245 on line BNT80-207 falls on a structural anomaly of the orange marker considered to be near the top of the Ningbing Limestone. In depth, the top of this marker could be between 1400m and 1700m depending on the interval velocities used.

Based on the nearby Bonaparte No. 1 and 2 wells, and Ningbing Limestone outcrops, the predicted section should be the following:

Ground Level - 200m
Tanmurra Formation (equivalent) - Early Carboniferous
Sandstone, very fine to medium grained; interbeds of calcareous siltstone and occasional dolomite.
200m to 1600m

**Bonaparte Beds - Early Carboniferous**

Shale, grey, medium to hard, interbedded with argillaceous siltstone and very fine to fine grained sandstone, calcereous in parts. Possible increase in sandstone beds towards the base with increase in grain size.

1600m to TD

**Ningbing Limestone - Late Devonian**

Because the sedimentary model for the Ningbing carbonate complex is not certain, the predicted lithologies are conjectural. If there has been a process of transgression and repetitive reefal development, the numerous facies associated with fore reef, platform margin and back reef can all be expected. In outcrops, the dominant facies is back reef calcarenite with sparite cement.

If the anomaly is associated with carbonate slope adjustment model, there would be an increase in fragmented allochthonous carbonate material.

The Ningbing Limestone will be penetrated between 300m to 600m depending on where the top is encountered.
3) LOCATION AND ACCESS
WEABER No.1 PROPOSED LOCATION

COORDINATES
LAT. 15° 31' 42.22"
LONG 129° 07' 46.53"
Z = 176m A.M.S.L.

AAP 50%
ALLIANCE 25%
VAMGAS 25%

OP 186
(18-7-79 - 17-7-84)
Area: 4910km²

Australian Aquitaine Petroleum Pty Ltd.
BONAPARTE GULF BASIN
OP 186 (N.T.)
PERMIT MAP

Excluded Area (Keep R National Park).
Area of interest to Heritage Commission

PROPOSED LOCATION
WEABER No.1

SCALE
km 10 0 10 20
0 20 km
1:500000

Author: V. DJOKIC  Date: JULY 1982  Design No.: 208601
Drafted by: P. FORBES  Report No.: Base Plan: 18261
COMPRESSORS - AIR

Compressor No. 1:
Dresser Series 990-A, S/N: 4021X297, Driven by
Baldor 30 HP Electric Motor, Cat # M4104T.5
575 Volts, Spec # 10C01K28, connected to Weststeel
Rosco Air Receiver Tank No. 39927-5

Compressor No. 2:
Dresser Series 990-A, S/N: 4021-262, Driven
by a Baldor 30 HP Electric Motor, Cat # M41047-5
and Deutz 4 Cylinder Air Cooled Engine, 69.5 HP
S/N: 4L912, Model: F-4L-912 and Twin Disc Clutch,
Model: C-108HP3 with Fuel Tank and A-B Control Panel.
No. 2 Air Receiver Tank in Substructure

Air Receiver Tank
Size: 36" Dia x 7' High, Maximum WP: 150 psi
mounted in Substructure.

WELL CONTROL MANIFOLD

Including:
3" x 3" Armco Oil Master Well Control Manifold
Complete with 11 - 3" 5000 psi Armco Ball
Valves and 6 - 3x3x3x3 Block Connectors, 6000
WOG, 1 - 2" Valve Type B-1560, 6000 psi Armco
Ball Valve, 2 - Willis M-3 Multi-Orifice Choke,
S/N's: 1377 and CA 1520, Nace Trim.
Skid Mounted Base: 12'6"W x 14'L sitting on
2 - 12" "I" Beams with Double Hinged Metal
Cover, 8' Square x 3'H complete with Gaskets,
Studs and Nuts, completely assembled and tested.

FLARE LINES, FLOW NIPPLE AND CONNECTING LINES

Flare line Riser Built on 2'6" x 9' Skid
complete with 1 - 2" WKM Gate Valve,
1 - Cameron 3" x 3 1/8" Ball Valve, 3000 psi and 3'3" Riser
1 - 4" Gate Valve
17 - Joints 3 1/2" I.F. Drill Pipe Flare Line
7 - Joints 3" Line Pipe with Fig. 2000 Unions (140')
5 - Joints 3" Line Pipe with Flanged Ends (130')
4 - Joints 4" Degasser Line with Fig. 200 Unions (85')
1 - 16" Flow Nipple.
DRILL PIPE

12 Joints 4 1/2" OD "Hevi-Wate" Drill Pipe with H-90 Connections

385 Joints (12,000' approx) 4 1/2" OD Grade "E" Drill Pipe, 16.60# with 4 1/2" XH Tool Joints, Internal Coated and Hardbanded.

DRILL COLLARS

28 - 6 3/4" OD with 5" H-90 Connections
4 - 9" OD with 7" H-90 Connections

SLIPS, SPIDER AND SAFETY CLAMPS

1 - Varco 5" 55 DXL Rotary Slips
1 - Baash Ross 4 1/2 Rotary slips
1 - Varco 11 Segment Drill Collar Slips

TONGS - ROTARY, PIPE SPINNER

1 - Set B.J. Type "DB" Tongs complete with Jaws 3 1/3" to 17" and Tugger Pull back. Tong Blocks and Spinning Chain.

ELEVATORS AND LINKS

2 1/4" x 108" B.J. Weldless Elevator Links

4 1/2" B.J. 18 Degree, Type "MGG" Centre Latch Drill Pipe Elevators.
1 - BJ SL-100 Drill Collar Lift System with 6 3/4" Elevators.

TOOLS

Including:
WINCHES - FLOOR AND WIREFLINE

Rucker Hydraulic Power System Driven by a 50 HP Electric Motor (Mounted in Substructure)

1 - Gearmatic Hydraulic Tugger Winch complete with 250' of 5/8" Braided Steel Cable and Mounting.
1- Mathey Wireline Survey Unit, S/N: RET-227 (made in U.S.) Mounted on 2'3" x 4' skid complete with Controls and 15000' of .092 Plow Steel Line.

INSTRUMENTATION

2 - Totco Type "G" Weight Indicators S/N's: 7815465 and 65L4647.
3 - Model "4" Totco Mud Pressure Gauges
1 - Bell Automatic Driller, Mfd. By Control Drilling Services.
   Rotary R.P.M. Gauge
   Tong Torque Gauge
   Rotary Torque Gauge

DEVIAION RECORDER

Eastman Whipstock Singleshot

TOOL HOUSE

Size 10'W x 30'L x 9'H, Mounted on 7'6" x 42' Long Skid with Triple 12" "I" Beams.
Broken Panel Steel Construction, Metal Shelves and Parts Bins. 12" "I" Beam Carrying Rail Complete with Vital Chain Hoist.
3 - Rig-A-Lite Light Fixtures.
2 - Double Doors at one end.

DOG HOUSE

Size: 10'W x 24'L x 8'H Broken Panel Construction, Mounted on 7'6"W x 30'L 3 - 12" "I" Beam Skids. Building is fabricated with 10 gauge Broken Panel Steel. Insulated, Two Single Hinged Door, Porch with 1" Square Tubing Handrails.
Contents:
Knowledge Box with Lower Cabinet, Bench, 4 - Lockers, Outside Tool Board and 2 - 48" Rig-A-Lite Light Fixtures.
Martin Decker Drilling Recorder.
PUMP HOUSE No. 1

10'W x 50'L x 9'H Built on 3 - 12" "I" Beam Skids.
Open on all sides with Checker Plated Steel Floor and
Broken Panel Steel Roof with 3 - Rig-A-Lite Light Fixtures.

PUMP HOUSE No. 2

10'W x 50'L x 9'H Built on 3 - 12" "I" Beam Skids.
Open on all sides with Checker Plated Steel Floor and
Broken Panel Steel Roof with 3 - Rig-A-Lite Light Fixtures.

BUILDINGS - STEEL

Combination Building
Accumulator/Storage Room:
12'W x 44'L x 9'H Peaked Roof, 10 Gauge Broken Panel
Construction, Mounted on Triple 12' "I" Beam Skids,
7'6"W x 46'L.

Storage Room:
12'W x 14'L x 9'H Complete with Metal Storage Bins,
Double Door Storage Compartment, Work Bench, with No.6
Record Vise, Made in England, and Bench Grinder.

Accumulator Room:
12'W x 30'L x 9'H Complete with 5 - NRL Lights
Two Single and Two Double Doors.

TANKS

Water:
10'W x 40'L x 9'H with 4' Pump Section at one end.
All mounted on 7'6" W x 46'L Triple 12" "I" Beam Skid
(640 BBL. Capacity).

Fuel:
Fuel Tank is Mounted on top of Water Tank,
7' Dia. x 30'L (8000 Gals) made to fit inside
Water Tank for moving.
SUBS

Including:
2 - 5" H-90 Box x 4 1/2" Reg. Box Bit Subs
3 - 4 1/2" XH Box x 5" H-90 Pin
1 - 4 1/2" XH Box x 4 1/2" H-90 Pin
2 - 4 1/2" XH Box x 4 1/2" XH Pin Saver Subs
2 - 5" H-90 Pick-Up Subs
1 - 4 1/2" Reg Box x 4 1/2" Reg Pin Junk Sub
1 - Stabbing valve (Lynn Ind.) 4 1/2"XH x 4 1/2" XH, 10,000 psi, Standard Trim. S/N: 2168
1 - 5" H-90 Box x 6 5/8" Reg Box Bit Sub
2 - 2" Line Pipe x 4 1/2" F.H. Pin, Cementing Heads.
1 - 2" Line Pipe x 4 1/2" XH Pin cementing Head.
1 - 2" Line Pipe Box x 4 1/2" XH Box Sub
1 - 4 1/2" H-90 Box x 5" H-90 Pin Sub.

MISCELLANEOUS RIG UP PARTS

Including:
Steam, Water and Fuel Lines, Assorted Valves and Fittings,
Assorted Rig Parts not listed, Standpipe Valves and Mud Lab.
1 - Chemical Barrell complete with Lightning Mixer and 1/3 HP Motor
1 - 8 5/8" x 40' Rathole
1 - 8 5/8" x 30' Mousehole
1 - 5" Standpipe Valve complete with 4" V-436 Oteco Gate Valve and 1 - 2" Oteco Gate Valve.
1 - Gavel Mud Saver
1 - 12' Derrick Stand
1 - Drilling Line Stand Built with 6" square tubing,
7'W x 8'L x 4'H
5 - Sets of Tumble Pipe Racks built with 4 1/2" Drill Pipe.

PUMPS - CENTRIFUGAL

Water Circulating:
No. 1 Mission 2x3R Centrifugal Pump
S/N: 21772 Driven by a 10 HP U.S. Electric Motor,
I.D. # 68-08390-379-480065 (U.S.A.)

No. 2 Mission 2 x 3R Centrifugal Pump
PUMPS - CENTRIFUGAL (Cont'd)

Rig Wash Pump:
Magikist Triplex Pump complete with Flektain Electric Motor,
S/N: E-859501 Mounted on A 2' x 2' x 4' Tank.

Fuel Transfer Pump:
2 - Only 1" x 1" Fuel Pump with 1 HP Electric Motors.

HOSES - ROTARY, VIBRATOR, SUCTION, STEAM AND WATER

1 - 3" ID x 55'L, 7500 psi Rotary Hose
2 - 3" ID x 12' L, 7500 psi Vibrator Hoses
1 - 3" ID x 12' L, 5000 psi Vibrator Hose complete with Leakproof Couplings and
2 - 4" API Type "2" Flanges
1 - 3" ID x 7' L Vibrator Hose complete with
leakproof Couplings and 1 - 4" Fig. 102 Union.

TOOL PUSH UNIT

15m x 3m Skid Mounted Unit comprising
2 Bedrooms, 2 Offices and Ablution area.
Fully furnished and airconditioned.

CAMP FACILITIES

12m x 3m Camp support Unit comprising
Generators, Fuel and Water Storage, and Camp Equipment Store Room.

12m x 3m Cooler/Freezer Unit to complement Camp facilities
with extended storage as required.

18m x 15m 30-Man plus Drill Camp area is completely
airconditioned and furnished, creating a clean and pleasant
atmosphere for the rig crew and operator personnel.
ADDITIONAL EQUIPMENT ON RIG A1

Casing and Tubing Elevators:

a) 7" Type "A" B.J. Elevators
b) 13 3/8" Web Wilson Elevators
c) B.J. Type "YT" Slip Type Elevators.
   3 1/2" x 2 7/8" Inserts and Setting Plates
   1 - Set 3 3/8" x 2 7/8" Slip Inserts
d) 7" B.J. Single Joint Elevators c/w 5" Bushing.
e) 10 3/4" Web Wilson Type H-150
   Elevators c/w 9 5/8" Bushing.
f) 13 3/8" B.J. Type "B" Single Joint Elevators.
g) 9 5/8" B.J. Type "B" Single Joint Elevators.
h) 5 1/2" Web Wilson Type H-150 c/w 5" Bushing.
i) 4" B.J. Type "A" Elevator c/w 2 3/8"
   and 2 7/8" Bushing.

Casing Slips and Tubing Slip Dies:

1 - Set 13 3/8" CMSXL Casing Slips
1 - Set 2 3/8" Slip Dies
1 - Set 2 7/8" Slip Dies
1 - Set 3 1/2" Slip Dies
EQUIPMENT WITH RIG AVAILABLE FOR RENTAL

1. Swabbing Unit

2. Welder

3. Farr Power Tongs and Parts
   1 - Set 13 3/8" Farr Model "LW" Hi-Torque Casing Tongs with 5 - 7 5/8", 11 3/4" and 13 3/8" Jaws with Torque Gauge Assembly and Single Hanger Assembly

   Farr Hydraulic Power System

   B. J. Type "CTS" Hydro Torque Tongs.

   1 - Set 2 3/8" Jaws
   1 - Set 2 7/8" Jaws
   1 - Set 3 1/2" Jaws
   1 - Set 4 1/2" Jaws
   1 - Set 5" Jaws
   1 - Set 5 1/2" Jaws
   1 - 9/16" Swivel Rope Socket
   4 - 10' - 1 3/4" Sinker Bars
   1 - 2 3/8" "KJ" Guiberson Swab Mandril
   2 - 2 7/8" "KJ" Guiberson Swab Mandril
   2 - K-20 Kelco Hand Tongs
   2 - K-25 Kelco Hand Tongs

4. Fishing Tools and Parts
   155 ft. (5 Joints) 8 1/8" Hyd. Washover Pipe
   35.50#/Ft. 7 1/4" ID C.W 5 Pin Protectors and 3 Box Protectors at 99.50#/ft

   2 - 8 1/8" Hyd. Lift Nubbins screwed into Box Ends of Washpipe.

   153 Ft (5 Joints) 10 3/4" Ins. Wash Over Pipe 45.50#/ft.
   9 3/4" ID C.W 5 Pin Protectors and 3 Box Protectors.

   2 - 10 3/4" Ins. Lift Nubbins screwed into box ends of washpipe.

   1 #2567 7 7/8" OD Bowen Rev. Circ. Junk Basket c/w 4 1/2" Reg Pin Top, 7 7/8" OD Blank Show and Pick up sub with 4 1/2" Reg Box.

   1 #2574 7 7/8" OD Blank Shoe.
4. Fishing Tools and Parts (Cont'd)

1 #18725 - W Junk Catcher
1 #32310 8" OD K&G Magnet c/w 4 1/2" Reg. Pin Top and Pick Up Sub and Flush Guide.
1 #32315 8" OD Mill Guide with "A" Threads.
1 #32315 8" OD Lipped Guide with "A" Threads.
1 #52680 5 1/2" Reg x 6 3/4" OD Bowen Type "Z" Hyd. Rotary Jar with 5" Reg. Box.
1 #29796 6 3/4" OD Bowen Fishing Bumper Sub with 60" Stroke and with 5 1/2" Reg. Box and Pin, S/N: 102
1 #52500 3 1/2" FH x 4 3/4" OD Bowen Type "Z" Hyd. Rotary Jar with 3 1/2" FH Box and Pin Connection S/N: 13568.
1 #46878 4 5/8" OD Bowen Fishing Bumper Sub with 3 1/2" FH Box and Pin with 30" Stroke, S/N: 101.
1 #8060 6 3/4" OD Bowen Safety Joint with 5 1/2" Reg. Pin and Box Connection, S/N: 6373.
1 #9222 4-1/2" Basket Grapple
1 #9244 - R Mill Control Packer 4 1/2".
1 #9222 6" Basket Grapple.
1 #9224 - R 6" Mill Control Packer.
1 #9222 6 1/8" Basket Grapple
1 #9244 - R 6 1/8" Mill Control Packer
1 #9222 6 1/4" Basket Grapple
1 #9224 - R 6 1/4" Mill Control Packer
1 #9223 Spiral Grapple Control
1 #9222 6 3/4" Spiral Grapple
2 #9224 Type "A" Packers
1-8 1/8" Hyd. Shoe Sint. Bttm. 8 3/8" OD.
1 -8 1/8" Hyd. Shoe Sint. Bttm. 8 3/8" OD
1 -8 1/8" Hyd. Shoe Sint. Bttm. 8 3/8" OD
1 -8 1/8" Hyd. Shoe Sint. Bttm 8 3/8" OD
1 -8 1/8" Hyd. Shoe Sint. Tooth 8 3/8" OD
1 -8 1/8" Hyd. Shoe Sint. Tooth 8 3/8" OD
EQUIPMENT WITH RIG AVAILABLE FOR RENTAL (Cont'd)

4. 1 - 10 3/4" Ins. Shoe Sint. Bttm. 11 1/4" OD
    1 - 10 3/4" Ins. Shoe Sint. Bttm. 11 1/4" OD
    1 - 10 3/4" Ins. Shoe Sint. Bttm. 11 1/4" OD
    1 - 10 3/4" Ins. Shoe Sint. Tooth 11 1/4" OD.
    1 - Bushing 5 1/2" Reg Box with 10 3/4" Ins. Pin with Prot.
    1 - Bushing 4 1/2" FH Box x 8 1/8" Hyd. Pin with Prot.
    1 - 10 3/4" Ins. Shoe Sint. Bttm. 11 1/4" OD
    2 - Sintercut 7 7/8" Bowen Rev. Basket
        Shoes at 2.75/mm

5. Reaming Tools

1 - Drilco Ezy Change Stabilizer Body 9"
    OD c/w 7" H-90 Box to Pin with Protectors
    S/N: E-132

1 - Drilco Ezy Change Stabilizer Body
    6 3/4" OD C.W 5" H-90 Box to Pin
    with Protectors

1 - Drilco Reamer Body 6 3/4" OD 3 PT ST
    Type c/w 5" H-90 Box to Pin 2 Protectors,
    S/N: R-157

1 - Set 2 5/8" K-8 Cutters for 8 1/2" HS PROD. #3148.

1 - Drilco Ezy Change Sleeve c/w 12 1/4" HS x 9 1/4"
    Prod. # 15033-00.

1 - Drilco Ezy Change Sleeve c/w 8 1/2" HS x 6 1.2"
    ID Prod. # 14956.05.
2) **ANTICIPATED PRESSURE ESTIMATES**

A) **Estimated Maximum Surface Pressure:** (T.D.)

The pore pressure gradient is deemed to be normal at 1.05
Assuming gas is the reservoir fluid, and assuming
gas S.G. = 0.2 at 20,600 Kpa

Maximum Surface Pressure = (at TD)

\[
\begin{array}{c}
2000m 	imes 1.05 - 2000m 	imes 0.2 \\
0 \cdot 102 - 0 \cdot 102 \\
20,600 - 3,950 = 16,650 \text{ kPa}
\end{array}
\]

Maximum Surface Pressure when reaching main objective at 1600m.

\[
\begin{array}{c}
1600m 	imes 1.05 - 1600m 	imes 0.15 \\
0 \cdot 102 - 0 \cdot 102 \\
16,470 - 2,350 = 14,120 \text{ kPa}
\end{array}
\]

B) **Estimated Fracture Pressure**

At the 13-3/8" Shoe (250m)

\[
\begin{array}{c}
250m 	imes 2.3 \\
0 \cdot 102
\end{array}
\]

\[= 5,630 \text{ kPa}\]

At the 9-5/8" Shoe (1100m)

\[
\begin{array}{c}
1100m 	imes 2.3 \\
0 \cdot 102
\end{array}
\]

\[= 24,800 \text{ kPa}\]
3) **FORMATION INTEGRITY TESTS**

Following each casing job (13 3/8, 9 5/8) a leak off test will be carried out after 30 metres of formation have been drilled below the shoe. The test procedure as shown in "Australian Aquitaine Petroleum Well Safety Procedures - Onshore Drilling" will be followed - Combined effect of mud S.G. and applied pressure during each test will not exceed the Estimated Fracture Pressures as calculated for each shoe depth in part B of paragraph 3 (Anticipated pressures estimate).
4) **HOLE SIZES, MUD PROGRAMME AND MONITORING EQT.**

**A) MUD SYSTEM**

17½" Phase: 0 - 250m

High viscosity Spud mud - In case of mud losses spot
LCM Plugs (15m³ 50kg/m³ of LCM) -
Mud Properties: SG 1.10
Viscosity 60 to 80
pH 10-10.5
Use Benex to improve Viscosity
In case of total loss, use gel slugs to clean hole out, spot slugs prior to connections.
If fresh water is not available, guar gum pills will be used instead of gel slugs to complement attapulgite mud.

12½"/8½" Phase: 250m to T.D.

Gel - CMC - Lignin:

SG: 1.08 - 1.25
Viscosity: 38 - 40
WL: 6 - 8 cc API
PH: 9.5/10

If salt or brackish water only is available, salt gel shall be used to manufacture mud.

Barytes: 20 Tonnes will be kept on site as a safety stock. A further 20 Tonnes minimum will be available ex Kunnurra. At all time the SG will be kept to a minimum and all mechanical solid removal equipment will be kept in continuous use. 60/80 mesh will be used on shale shakers.
B) Estimated Mud Products Consumption:

- Salt Gel : 30T
- Caustic Soda : 1.5T
- CMC HV : 0.5T
- CMC LV : 0.25T
- Lignin (Q Broxin) : 0.25T
- Barytes: Safety Stock : 40T
- LCM : 2T
- Surfactant : 10001
- Defoamer : 4001

C) Monitoring Systems and Controls:

1. **Drilling Contractor:**
   - Recorder: Totco "G" recording pressure in DP and pumping rate.
   - Mud Characteristics and pit level measurements will be taken regularly every 1/4 hr by the derrickman

2. **Mud Logging Contractor:**
   - Pit level recorder
   - Pit Volume totaliser
   - Mud weight recorder on flow line
   - Total gas detector - gas chromatograph

3. **Mud Engineer:**
   - 24 hour on call on site
CONDUCTOR PIPE

OD = 20"
Shoe Depth = 13m
Length = 6/7m
Cemented to surface in 26" hole.

Cement "A" Class + 2% CaCl₂ SG = 1.80

- Annulus = 980 l
- Volume of Slurry = 1500 l at 50% excess
- Cement = 1,750 kg = 44 sx
- Water = 928 l
- CaCl₂ = 35 kg

13-3/8" CASING

OD and Grade = 13-3/8" - J55 - 54.5 lb/ft. STC
Shoe depth = 250m
Length = 245m
Cemented to surface in 17½" hole.

Cement "A" Class.
- Annulus = 16 m³
- Slurry SG = 1.80
- Volume Slurry = 24 m³ at 50% excess
- Cement = 28 T
- Water = 15 m³

Well Head: 3000 PSI Rating Round Thread - 2 x 2" outlets.

9-5/8" CASING

Length OD and grade: Length to be decided after hydrocarbon show
associated with reservoir properties, not less than 500m of 9-5/8" to 12½" annulus will be
cemented with a minimum of 100m of neat cement
above and around the 9-5/8" casing shoe.
N80 - 40 lbs/ft. - LTC and
N80 - 43 lbs/ft. - LTC will be continued.
Class "A" with 4% gel:

Slurry SG 1.60  Slurry:  9,750 l
Cement:  8,125 kg  205 Sx
Water:  7,000 l
Bent.:  500 kg

Spool 3,000 - 2 x 2" 3,000 PSI outlets

LINER

Should a further hydrocarbon reservoir be discovered a 7" casing 26 lb/ft, N80 LTC is available ex Aquitaine Darwin base and will be run back to surface - "G" class cement will be used with retarder to cement a minimum 300m of 7 to 8½" Annulus.
5A) CASING SAFETY COEFFICIENTS

1. 13-3/8" Casing

A) Design Parameters

Shoe Depth : 250m
Mud Density : 1.15 Max
Cement : 500m
Hydrostatic Pressure at shoe : \( \frac{250 \times 1.15}{10.2} = 2820 \text{ kPa} \)

Weight of Casing:

\( \frac{250 \times 78.56 \text{ kg/m}}{1.02} = 19.25 \times 10^3 \text{ daN (Air)} \)

\( \frac{19.25 \times 0.852}{1.02} = 16.07 \times 10^3 \text{ daN (Mud)} \)

B) Casing Properties: J55, 54.5 lbs/ft.

Collapse resistance : 78 bar = 7800 kPa
Internal Yield Pressure : 188 bar = 18800 kPa
Joint Yield Strength : \( 243 \times 10^3 \text{ daN} \)

C) Coefficients

Collapse: \( \frac{7800}{2820} = 2.76 \)

Burst: \( \frac{18800}{2820} = 6.67 \)

Tension: \( \frac{243}{19.25} = 12.62 \)

2. 9-5/8" Casing

<table>
<thead>
<tr>
<th></th>
<th>N80-43.5 LBS/FT</th>
<th>N80-40 LBS/FT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collapse Resistance</td>
<td>263 00 kPa</td>
<td>213 00 kPa</td>
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<tr>
<td>Internal Yield Pressure</td>
<td>436 00 kPa</td>
<td>396 00 kPa</td>
</tr>
<tr>
<td>Joint Yield Strength</td>
<td>367 00³ daN</td>
<td>328 00 kPa</td>
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</tbody>
</table>

Casing shoe setting depth will be decided as the Bonaparte beds are drilled.
3. **Liner (Optional) 7" - N80 - 23 # LTC**

A) **Collapse Resistance:** 373 bar = 37200 kPa  
   **Internal Yield Pressure:** 499 bar = 49900 kPa  
   **Joint Yield Strength:** 231 $10^3$ daN
6. WELLSITE GEOLOGICAL SURVEY

Logging

Logging scales: 1:200  1:500  1:1000

All logs are to be recorded on magnetic tape.

The number of runs will depend on the condition of the hole and the nature of the reservoir. For the moment, it is planned to run one suite of logs at T.D. in an 8¾" open hole.

The following logs will be run:-

- DIL-BHC-GR-SP
- DLL-MSFL (possible)
- FDC-CNT-GR-CAL
- HDT
- Velocity Survey
- CST (side wall cores)

CBL and HRT tools will be available on site.

Cuttings and Cores

Instructions regarding NT Department of Mines and Energy requirements for the collection and despatch of samples will be followed.

Cuttings will be collected at 3 metre intervals. These will be washed dried and despatched to the NT Department of Mines and Energy as well as interested partners. Additional cuttings will be collected during coring operations.

At least one core will be cut in the Ningbing Limestone, irrespective of hydrocarbon shows. Coring will increase with the frequency of oil indications. Petrophysical and chemical analyses will be carried out by Core Lab in Perth.

Sidewall Cores

At least one gun of sidewall cores will be shot at the end of the logging run. Hard formation bullets will be used in the Ningbing
Limestone. The cores will be used for age dating, source and reservoir studies.

Canned Cuttings

These are to be collected every 30 metres for the Bureau of Mineral Resources, and the air space above the cuttings will be analysed for C1-C5.

One litre tins are to be used of which two thirds will be filled with unwashed cuttings barely covered with water. These will be firmly sealed, labelled and despatched to the Bureau of Mineral Resources.

Geological Control

An Aquitaine Wellsite Geologist will be present during all phases of the drilling of Weaber No. 1. He will be responsible for sample collection, description and despatching, and to see that the correct procedures of mud logging and electric logging are carried out.

A master log (scale 1:1000) will be drafted by the mudlogging company and supervised by the wellsite geologist. This will include all relevant data acquired during the drilling operations. The geologist will also keep an up-to-date wellsite log which will be semi-interpretative. Prints of both logs will be despatched to partners and the Department of Mines once a week.

The wellsite geologist will be present at the running of all electric log and testing operations.
# WEABER NO. 1

## SAMPLE AND LOG DISTRIBUTION

<table>
<thead>
<tr>
<th></th>
<th>AAP</th>
<th>SNEA(P)</th>
<th>ALLIANCE</th>
<th>N.T. MINES</th>
<th>VAMGAS</th>
<th>B.M.R.</th>
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## REPORTING PROCEDURES

1. The Secretary,  
   Department of Mines and Energy,  
   Mineral House,  
   Esplanade,  
   DARWIN NT 5794

3. Vamgas Ltd,  
   459 Collins Street,  
   MELBOURNE VIC 3000  
   Telex: AA 31595  
   Attention: Mr L.G.G.P. Pearce

2. Alliance Petroleum International Ltd,  
   15th Floor,  
   35 Collins Street,  
   MELBOURNE VIC 3000  
   Telex: AA 31955  
   Attention: Mr M. Cadart

4. SNEA(P),  
   DIG/AMA Production,  
   PAU FRANCE  
   Attention: Mr S. Guyonnet
### CORE AND CUTTINGS DISTRIBUTION

1. Australian Aquitaine Petroleum Pty Ltd,
   12th Floor,
   99 Mount Street,
   NORTH SYDNEY NSW 2060
   Attention: Mr F. Brophy

2. Officer in Charge,
   Core and Cuttings Laboratory,
   Bureau of Mineral Resources,
   Collie Street,
   FYSHWICK ACT 2609

3. The Secretary,
   Department of Mines and Energy,
   Mineral House,
   Esplanade,
   DARWIN NT 5794

### REPORT TYPE | FREQUENCY | SENT TO
---|---|---
                    |       | Alliance Petroleum Int. Ltd
                    |       | Vamgas
                    |       | SNEA(P)
Spud Advice, TD reached, Date rig released | 1 day from event | N.T. Dept of Mines & Energy
RKB elevation | When available | N.T. Dept of Mines & Energy
              |       | Alliance Petroleum Int. Ltd
              |       | Vamgas
              |       | SNEA(P)
Final location and co-ordinates | When available | As above on daily telex
Daily Drilling Reports | Weekly | As above on daily telex
Tour Reports | Weekly | As above on daily telex
Weekly Progress Reports | Weekly | As above on daily telex
Discovery Advice:-
   Verbal | As soon as possible | N.T. Dept of Mines & Energy
   Written | Three days | N.T. Dept of Mines & Energy
Blowout/Kicks | As soon as possible | N.T. Dept of Mines & Energy
Accident Report | Before 10th of month for preceding) month. Serious or }
                | death ASAP } | N.T. Dept of Mines & Energy
Test Results | 24 hour prior notice | N.T. Dept of Mines & Energy
             | Result of test on daily telex | N.T. Dept of Mines & Energy
             |                               | Alliance Petroleum Int. Ltd
             |                               | Vamgas
             |                               | SNEA(P)
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<td>Test Results</td>
<td>Written result</td>
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<td>Testing and/or</td>
<td>Verbal contact confirmed in writing accompanied by a facsimile of wireline logs</td>
<td>N.T. Dept of Mines &amp; Energy</td>
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<td>Abandonment</td>
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</table>
7) HYDRAULIC PROGRAMME

Available: 2 x National 8.P80 Pumps

PERFORMANCE CHART—NATIONAL 8-P-80

<table>
<thead>
<tr>
<th>Liner Size, Inches (mm)</th>
<th>6½ (115.8)</th>
<th>6 (152.4)</th>
<th>5½ (139.7)</th>
<th>5 (127.0)</th>
<th>4½ (114.3)</th>
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<tbody>
<tr>
<td>Max. discharge pressure, psi (kg/cm²)</td>
<td>2280 (160.3)</td>
<td>2470 (173.7)</td>
<td>2940 (206.7)</td>
<td>3560 (250.3)</td>
<td>4395 (309.0)</td>
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</table>

<table>
<thead>
<tr>
<th>Pump Speed</th>
<th>Max. Input HP</th>
<th>*Hydraulic HP</th>
<th>*GPM</th>
<th>*LPM</th>
<th>GPM (LPM)</th>
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<tr>
<td>180</td>
<td>900</td>
<td>810</td>
<td>610</td>
<td>(2308)</td>
<td>562 (2127)</td>
<td>472 (1787)</td>
<td>390 (1477)</td>
<td>316 (1195)</td>
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<tr>
<td><strong>150</strong></td>
<td><strong>800</strong></td>
<td><strong>720</strong></td>
<td><strong>542</strong></td>
<td>(2051)</td>
<td><strong>500</strong> (1890)</td>
<td><strong>420</strong> (1588)</td>
<td><strong>347</strong> (1313)</td>
<td><strong>281</strong> (1063)</td>
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<tr>
<td>140</td>
<td>700</td>
<td>630</td>
<td>474</td>
<td>(1795)</td>
<td>437 (1654)</td>
<td>357 (1393)</td>
<td>305 (1149)</td>
<td>246 (930)</td>
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<tr>
<td>120</td>
<td>500</td>
<td><strong>540</strong></td>
<td>406</td>
<td>(1536)</td>
<td>375 (1418)</td>
<td>315 (1191)</td>
<td>260 (984)</td>
<td>211 (797)</td>
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<tr>
<td>100</td>
<td>500</td>
<td>450</td>
<td>339</td>
<td>(1282)</td>
<td>312 (1182)</td>
<td>262 (953)</td>
<td>217 (782)</td>
<td>174 (655)</td>
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<tr>
<td>80</td>
<td>400</td>
<td>360</td>
<td>271</td>
<td>(1026)</td>
<td>250 (945)</td>
<td>210 (794)</td>
<td>173 (656)</td>
<td>140 (532)</td>
</tr>
<tr>
<td>Vol./Stroke, gal. (litres)</td>
<td>3.386 (12.820)</td>
<td>3.121 (11.815)</td>
<td>2.622 (9.927)</td>
<td>2.167 (8.204)</td>
<td>1.755 (6.645)</td>
<td></td>
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</tbody>
</table>

* Based on 90% mechanical efficiency and 100% volumetric efficiency.
** Rated speed and input horsepower.

RECOMMENDATIONS: Based on a MUD SG of 1.15 a Viscosity of 40 sec.

17½" Phase

Optimum Annular Velocity: 12m/min
Jet Nozzles: 16-16-16
Pump Rate: 3500 l/min or 1750 l/min per pump

12½" Phase

Optimum Annular Velocity: 31m/min
Jet Nozzles: 11-11-12
Pump Rate: 2100 l/m or 1050 l/m each pump

8½" Phase

Optimum Annular Velocity: 43m/min
Jet Nozzles: 11-11-10
Pump Rate: 1100 to 1200 l/m

The above recommendations will not apply in potential washout zones where impact/flow will be reduced to suit.
8) BIT PROGRAMME

Numerical code refers to IADC classification.

17\(\frac{1}{8}\)" Hole: 0.500m
1 x 1 - 2 - 4
1 x 1 - 3 - 1

12\(\frac{1}{8}\)" Hole: 500 - 1000m
2 x Al Bicone (Smith)
1 x 1 - 3 - 4
2 x 5 - 2 - 7
1 x 5 - 3 - 7

8\(\frac{1}{2}\)" Hole: Optional
1 x 1 - 2 - 6 FDT
1 x 1 - 3 - 6 FDGH
1 x 5 - 2 - 5 F2
1 x 5 - 2 - 7 F3
1 x 5 - 3 - 7 F3

6" Hole: 1 x 1 - 3 - 5 (To clean liner)

NOTE: Core heads C-20 and C-21 available on site.
4) APPLICATION TO DRILL.
APPLICATION FOR PERMISSION
TO DRILL (COPY)

To: The Secretary,
Department of Mines & Energy,
Mineral House,
Esplanade
DARWIN N.T. 5790.

Australian Aquitaine Petroleum Pty. Limited of Elf Aquitaine Centre,
99 Mount Street, North Sydney N.S.W. 2060, being the Operator for the
permittees; Alliance Petroleum International Limited, Australian
Aquitaine Petroleum Pty. Limited, Vamgas Limited, of Exploration Permit
No. OP 186 situated in the Bonaparte Gulf Basin in the State of Northern
Territory hereby applies for permission to drill a well within the said
OP 186.

The following information is submitted in support of the application.

Name of Well : Weaber No. 1
Well Type : Wildcat
Location : Latitude : 15°21'14.22"
           Longitude : 129°07'46.53"
           Elevation : 17.6m AMSL

Well site and access roads are shown on the attached Drilling Programme.

Scheduled commencement date : Late August, 1982
Estimated duration of drilling : 28 days
Proposed total depth : 2000 Metres
Estimated Cost : $1,250,000
Name and Address of Contractor : ATCO-APM Drilling Pty. Ltd.,
                                35 Barfield Crescent,
                                ELIZABETH S.A. 5112.
Name and type of Drilling Rig : Rig A1 - National 610

Copy of the technical details of the drilling rig and drilling equipment
including details of blowout prevention is included in the attached
Drilling Programme.

Proposed water source : Waterwell on site or tidal creek water.
II DRILLING PROGRAMME
Drilling Programme

Weaber No. 1 will be drilled 17½" diameter to 250m. A 13-3/8" casing will then be cemented back to surface.

Below the 13-3/8" casing, 8½" hole will be drilled through the Bonaparte beds, so as to be able to core and drill stem test possible reservoirs. If no reservoir is encountered before, the hole will be enlarged to 12½" when 1000m is reached and 9-5/8" casing will be run prior to continue drilling in 8½" diameter.

Reference Wells Bonaparte No. 1 and No. 2 and Keep River No. 1 in the area disclosed the following drilling problems:

1. Fluid losses in the porous sandstones of the Tanmurra Formation and the Bonaparte beds.

2. Deviation tendency at the base of the Bonaparte beds.

The same reference wells seem to indicate that pressure and temperature gradients are normal.

1. The control of lost circulation will be attempted using LCM of the nut shell or fibre type.
   The losses are expected to appear at shallow depth in the 17½" hole. If spotting lost circulation material proves unsuccessful the hole will be drilled blind spotting high viscosity mud pills at connections and when necessary. At depth Mud weight will be maintained as low as possible (1.15 SG Maximum) by using de-sillters and dessanders, chemical treatment and dilution if necessary. Cellophane and nut shells LCM will be spotted across thief zones.

2. To counter deviation stiff bottom hole assemblies of the packed hole type will be used, extra stabilizers and short Drill Collars will be available on site to convert to "packed hole assembly" when the survey indicate a deviation tendency. Deviation survey interval will not be longer than 75 metres.

Further routine precautions, limit parameters and procedures are shown in the Annexed Drilling Programme Chart and Aquitaine Well Safety Procedure.
1) **DRILLING RIG DESCRIPTION**

See page 9 and 10 for BOP and Safety Equipment

**DRAWWORKS**

National Type 610.E Single Drum Drawworks  
Serial Number : 111-C, Mfg. California  
Horsepower Rating : 750 1000 Input  
Hoisting Drum Size : 20" x 46 3/4"  
Brake Rim Size : 42" x 8 3/4"  
Drum Drive Chain : 2" Double  
Transmission Chain : 1 3/4" Double  
Hoisting Speed : 4  
Rotary Speed : 2  
Catshaft Speed : 2  
Low Drum Clutch : Air-Flex 28 VC 1000  
High Drum Clutch : Air-Flex 28 VC 650  
Rotary Drive Clutch : Air-Flex 24 E-475  
Catheads : National Type B-2  
Hydromatic : Parmac 281  
  Assy. No. D-63 1866  
S/N: 53357

Including Rotary Drive Chain and Oilbath Guard and Wireline Turnback.

Drawworks Motor Skid Size: 7'10" W x 19' L  
(2 16" "I" Beams)

Second Skid to include Drawworks, Motor and Rotary Table.  
Size:  7' 10" W x 27' L  
(2 - 16" "I" Beams)

Drive:  
General Electric Model 5GE752AR1 D.C. Traction  
Type Electric Motor, S/N: 7500255 Mounted on  
the Drawworks main frame and directly connected to  
Drive Shaft extensions with National Gear Tooth Couplings  
and a 5 HP General Electric Blower Motor

**S.C.R.**

General Electric 7700 Line Control Centre  
Cat # 435X894L03, Diagram No. 212B9100,  
AMP Supply 800, 600 Volts, 3 phase, 3 wire  
60 HZ, S.H. 1,2,3 and 4.  
Three Transformers: Model 9T23 C9 101-C62  
Three Generators and Metering Panels for 500 KW Generators.  
Thyristor Drilling Control System for Series Wound Drilling Motors including S.C.R. Units, Plug Compartment,  
Drillers Console with Foot Throttle.
S.C.R. (Cont'd)

Diagnostic Test Module
1 - Lot Cables and Connectors
600 volt Motor Control Centre with starters
Size: 10' W x 38' L x 9' H Built On 7'6" W x 45' 6" L - SCR Buildings
Skid with Triple 12" "I" beams with stand at rear of
building for two Borg Warner Air Conditioners,
Model MC60-258, S/N: 184854 and 184851, 208/230 volts.
S.C.R. Building Size: 10' W x 29'6" L x 9' H.
Transformer Room size 10' W x 8'6" L x 9' H.

GENERATORS A.C.

Generator No. 1:
500 KW Bemac Generator- S/N: 578 235131
600 Volts, 1200 RPM, 601 AMPS, 625 KVA,
Driven by a Caterpillar Model D-379B-PC Engine
S/N: 68B5101 complete with Turbo Charger,
Barber Rig Saver, Ingersoll-Rand Air Starter
mounted on 3'6" x 15' Skid (10" x 12" "I" Beam)
with:
Modine remote heat exchanger, Model: HK3-10
S/N: 0480-24748-04 driven by a 10 HP Toshiba
electric motor, S/N: 104321451

Generator No. 2:
Brown Boveri Generator, Model 717
S/N: C36-M037-001, powered by a Caterpillar engine,
model D.379B-PC, S/N: 68B1898 complete with Turbo Charger,
Barber Rig Saver, Air Starter and Mounted on 3'6" x 15' Skid.
(12" "I" Beam).
with:
Remote Modine Heat Exchanger

Generator No. 3:
Brown Boveri Generator, Model 717
S/N: L36-M128-103 powered by a Caterpillar engine,
Model D379-B-PC, S.N.6805100
complete with Turbo Charger, Barber Rig Saver,
Ingersoll-rand Air Starter, mounted on
3'6" x 15' Skid (12" "I" Beam)
with:
Modine Remote Heat Exchanger, Model HK3-10
S/N: 0480-24748-05 driven by a Toshiba 10 HP motor,
S/N: 10432146.
GENERATOR BUILDING NO. 1

12'W x 44'L x 9'H Broken Panel construction roof with 3 hatches, open sided construction, Steel Checker Floor with 3 - 48" Rig-A-Lite Light Fixtures, mounted on 3 - 12" "I" Beam Skids. (For Generator No. 1 and No. 2)

GENERATOR BUILDING NO. 2 WITH CHANGE ROOM

Overall Size: 12'W x 44'L x 9'H
Generator Section:
12'W x 29'L x 9'H Broken Panel Roof Construction, Open sided, 3 - Roof Hatches.
Change Room:
12'W x 15'L x 9'H Broken Panel Construction Roof and sides with 15 - steel lockers and bench. Building has 5 - 48" NRL light fixtures.

TABLE ROTARY MACHINE

National Model C-205 Rotary Table, S/N: 3632
Size: 20 1/2" x 53 1/4" Complete with Split Master Bushings, Double Pitch Chain Sprocket.
1 Set 13 3/8" Pin Type casing Bushing Part No. 1902

SUBSTRUCTURE

Four Section Box style Dreco Substructure S/N: 85.
Maximum Pipe set back capacity: 300,000 lbs.
Maximum Rotary Table capacity: 400,000 lbs.
Four Sections: 7'8" W x 45' L x 9' H each.
Overall Size: 29' W x 45' L x 18' H.
Substructure is complete with Checker Plated Steel Floor, 1" square tubing handrails, Dog House support, Stairs to Ground level and V-Door Ramp. Both sides sheathed with 1/8" steel siding. One electric exhaust fan.

Matting - Rig:
10 - 8'W x 40'L x 6"H Rig Mats

Prefabs:
Canvas Shelter with square tubing frame.
SUBSTRUCTURE (Cont'd)

Catwalk:
2 - 7'8" x 40'L Catwalks with Steel Deck
Ramp and Stairway to ground level at the end of one
Catwalk. Built with 4" square tubing and 4" x 6"
rectangular base skid reinforced with 4 1/2" drill pipe.

MAST

Dreco Cantilever Type 133' Mast
S/N: 106, G.N.C: 700,000 lbs, leg spread 21'
Maximum Hook Load with 10 lines: 500,000 lbs.
Crown Blocks:
Cross Sheaves: 5 - 36" Grooved 1 1/8"
Fast Sheave : 1 - 42" Grooved 1 1/8"
Crown Safety Platform, Racking Platform, Catline, Coreline,
Slingline and Tugger Sheaves, Tong Counter Weights and Ladder.
41' - 5" Standpipe with 5" 5000 psi Unions
20' - Catline Boom complete with Line.

DRILLING LINE

7500' - 1 1/8", 6x9x9x1, I.P. IWRC-OTL Drilling Line.

RIG LIGHTING

Including:
Mast Light String, Flood Lights, Building Wiring, Panel Boards,
Motor Starters, Transformers and Mud Tank Wiring.
Mast Light String: 10 - 48" Rig-A-Lite Fixtures
1 - 24"
1 - Red Safety Beacon
5 - 48" Rig-A-Lite Fixtures on Two Mud Tanks

BLOCKS AND HOOK

Model 540 G 250 National Block Hook combination with
5 - 40" Dia. Sheaves, Capacity 250 tons.

SWIVEL

National N-69 Swivel, made in Japan, complete with Foster Kelly
Spinner, S/N: 27L-574
KELLY, KELLY BUSHING, KELLY COCK AND STABBING VALVE

1 - 4 1/4" x 40' Square Kelly
1 - Varco HDP-20 Roller Drive Kelly Bushings, Pin Type Drive.
1 - Shaffer Upper Kelly Cock, 10,000 psi
6 5/8" API Reg (C55-66-90)
1 - Griffith 4 1/2" XH Lower Kelly Cock,
5000 psi, No. 4841 and No. 484-13
1 - Hydriil 4 1/2" XH Lower Kelly Guard,
10,000 psi, No. C-8510-6.

PUMP - SLUSH NO. 1

National 8P-80H with fluid end
S/N: 6153, 6644, 6641, 6405, 6614, 6493
Size: 6 1/4" x 8 1/2" Single Acting Triplex Pump,
S/N: 9810 driven by a 6 Pitch Oilbath Chain with
B/S No. 3 Lubricating Pump powered by a 3 HP U.S. Electric Motor.
I.D. # 68-02572-308-C2410-236
Hydriil Pulsation Damper K20-3000
S/N: 66083, Built in U.S.A. complete with Strainer Cross,
Suction Damper, 3" Demco Relief Valve, S/N: 2404-50222.
Pump Rod Lubricator:
Mission 1" x 1 1/2" C. Centrifugal Pump.
S/N: 13736 driven by a 3 HP Reliance Electric Motor,
Frame: 182-T, I.D. # P18GS 11C-AZ.
Pump Electric Drive Motor
Gulf Electroquip, Houston - Texas. Make: G.E.
Model 752-R.S.I.A., 850 volts, phase: D.C.
S/N: 7169-761, Type: "Series"

Precharge Pump No. 1:
Mission Magnum 6" x 5" x 14", S/N: 1721
Belt Driven by 50 HP U.S. Electric Motor
I.D. # 980-2167-384-D0480064-S

PUMP - SLUSH NO. 2

National Model 8P-80 H Triplex Pump Fluid End
S/N: 6631, 6650, 6454, 6491, 6508, 6503
Size: 6 1/4" x 8 1/2", Power End S/N: 9812
(U.S.A.) Driven by 6 Pitch Oilbath Chain Drive
With B/S No. 3 Lubricating Pump powered by a
3 H.P. U.S. Electric Motor.
I.D. # 6806454-353-C3350127
Hydriil Pulsation Damper K20-3000, S/N: 66071
Strainer Cross, Suction Damper and 3" Relief Valve.
PUMP - SLUSH NO. 2 (Cont'd)

Pump Rod Lubricator:
Mission 1" x 1 1/2" C. Centrifugal Pump
S/N: N13735 driven by a Reliance Electric Motor,
Frame: 182-T, ID. # P186511C AZ.

Pump Electric Drive Motor
Gulf Electroquip, Houston - Texas, Make: G.E.
Model 752-R. S.I.A., 850 volts, phase: D.C.
S/N: 705542, Type: "Series" complete with
Blower Driven by 5 HP G.E. Electric Motor
3500 RPM, 575 volts, S.N.: DPF, Pump and Motor
Mounted on 5'W x 18'6"L Skid.

Precharge Pump No. 2:
Mission Magnum 6" x 15" x 14" Pump, S/N: N1718
Belt Driven by 50 HP Electric Motor
I.D. # 9802167-384-D0480064-S

TANKS - MUD AND MUD SYSTEM

Two Tank Mud System with a total capacity of
740 BBLS. With sloped bottoms and desilter room.

Tank No. 1:
Three compartment tank with sand trap
Overall size: 10'W x 48'L x 8'H, mounted on
7'6"W x 50'L Triple "I" beam skid with three clean out gates.
Settling Compartment size: 10'W x 4'6"L x 8'H
(50 BBLS.)
Degasser Compartment Size: 10'W x 10'6"L x 8'H
(135 BBLS.)
Reserve Compartment Size: 10'W x 11'L x 8'H
(145 BBLS.)
Overall Tank Size: 10'W x 26'L x 8'H
(330 BBLS.)

Tank is complete with Steel Grating Walkways,
1 1/4" square Tubing Handrails and Stairways
to Rig Floor and Ground Level.
Three 3" Subsurface Guns complete with 3" Demco
150 psi Butterfly Valves.
Three 10 3/4" Tank Equalizers-equipped with Hand Winches.
Two Brandt Agitators, S/N: 10-7847 and 10-7851
with 10 HP U.S. electric motors
I.D. # R-3475-01-381-S, situated in Degasser and Reserve compartments.

Two Shale Shakers:
No. 1 - Swaco Super Screen Shale Shaker
S/N: 448 driven by a 5 HP Pacemaker motor
Model: 8J53989003 (used)
TANKS - MUD AND MUD SYSTEM (Cont'd)

Desilter:
10 Cone Drilco Desilter on top of Tank with 6" Header and 4" Inlet and Outlet.

Desilter Pump:
Mission Magnum 5" x 6" x 11" pump, S/N: M1613
Driven by a 50 HP U.S. Electric Motor
I.D. # 9802167-384, Frame: 326-T. Also consisting of
3 - 6" Unilock Butterfly valves connecting System to Desilter.

Desander:
5 Cone - 6" Desander Built on Top of Tank No. 1

Desander Pump:
Mission Magnum 5" x 6" x 11" pump powered by a
60 HP Electric Motor.

No. 2 Swaco Super Screen Shale Shaker.
S/N: 7655, Unit No. 30472, powered by a Toshiba
5 HP electric motor, Frame: 184-T, S/N: 00869707,
Model B-0054YLFP200 (Unit New)

Both Shakers connected together with 10' line.

Tank No. 2
Four compartment Mud Tank complete with Steel Grated Walkways,
Square Tubing Handrails and Walkway to adjoining Tank, sloped
Bottom and Four Clean-Out Gates. Total Capacity 410 BBLs.
Reserve Tank Size: 10'W x 10'L x 8'H (128 BBLs)
Reserve Tank Size: 10'W x 10'L x 8'H (128 BBLs)
Suction Tank Size: 10'W x 9'L x 8'H (116 BBLs)
Pill Tank Size: 10'W x 3'L x 8'H (38 BBLs)
Mud Mix Room Size: 10'W x 16'L x 8'H
Overall Tank Size: 10'W x 48'L x 8'H, mounted
on 7'6" x 50' Triple 12" "I" Beam Skid.
Mud System consists of three 3" Subsurface Guns,
Three - 3" 150 LB Butterfly Valves,
Two - 10 3/4" Tank Equalizers equipped with
Hand Winches, Six - 8" Bridge Built Suction Valves,
Three - Brandt Agitators, S/N: 10-7848, 10-7849, and
10-7850 powered by 3 - 10 HP U.S. electric motors,
I.D. # D-3475-01-3815,
Situated in each Reserve Compartments and Suction Compartment.

One Brandt Agitator, S/N: MA5-7824 Powered by
a 5 HP U.S. Electric Motor, I.D. # F6059-01-345
(in Pill Tank).
TANKS - MUD AND MUD SYSTEM (Cont'd)

Mud Mix Pumps:
Pump No. 1:
Mission Magnum 5" x 6" x 14", S/N: 1609 (U.S.)
powered by a 50 HP Toshiba Motor
S/N: 4167 3508 (Made in Japan)

Pump NO. 2:
Mission Magnum 5" x 6" x 14", S/N: 10684 (New)
Powered by a 50 HP U.S. Electric Motor
I.D. # 980 2165-384-D04700245
One Standard Mud Mix Hopper and Piping to include
7 - 6" Demco and 1 - 4" Demco 150 psi Butterfly valves.
6 Channel PVT System with floor mounted Readout, Alarm,
6 Pen Recorder and 4 Tank Sensors with Readout in Mud
Loggers shack.
1 - Flow Line Indicator complete with Alarm System

PUMP - MUD VALVES, UNIONS, LINES AND MANIFOLD

Manifold complete with 2 - 4" model V-450
Oteco Gate Valves, 5000 psi, 3 - 2" Oteco
V-250 Gate Valves, Mounted on Cradle with
connecting lines to Substructure and Standpipe
from Mud Pumps.
Oteco 4" Gate Valve and Oteco 2" Gate Valve
on Mud Line leading to Standpipe and Hole Fill Line
in Substructure

BLOWOUT AND WELL CONTROL EQUIPMENT

Hydrl 13 5/8" Type "GK", 5000# Sperical
Blowout Preventer, S/N: 572. Top Connection:
Studded, Bottom Connection: Flanged.
Model No. 1002-200. Made in U.S.A.

Hydrl 13 5/8" Single Gate Rams Preventer
Maximum WP: 5000#
Maximum OP: 3000#
Assembly No: 310 1126-08675
Serial No.: 310 1123-066, With Automatic Locks
Studded Top and Bottom connections.

Hydrl 13 5/8" Single Gate Rams Preventer
Maximum WP: 5000#
Maximum OP: 3000#
Assembly NO: 310 1123-07075
Serial No.: 311123-043, with Automatic Locks
Studded Top and Bottom connections
B.O.P. SPOOL AND VALVES

Including:
1 - Shafco 13 5/8" x 13 5/8", 5000 psi Spacer Spool complete with 2 - 3000 psi flanged outlets, 3 1/8" Bore
1 - Barber 13 5/8" x 13 5/8", 6B x 5000 M.S.P.
   BY-160SS Spool, Model No. 39246
   S/N: 38192, complete with 2 - .3" Flanged Outlets, 3 1/8" Bore.
8 - 3" F.E. McEvoy Fig 129, 5000 psi Gate Valves.
1 - 3" F.E. McEvoy, 5000 psi Gate Valve with Erickson Actuator with Over-ride Handle
4 - 3" x 3" x 3" Block Connectors
2 - 3" x 3" x 4" Block Connectors
8 - 3" x 3" Flanged Connector Spools
1 - 4" x 4" x 4" Flanged Tee
All Nace Trim and including connecting Lines
1 - Set Hydril Ram Blocks for 2 3/8"
1 - Set Hydril Ram Blocks for 2 7/8"
1 - Set Hydril Ram Blocks for 3 1/2"
1 - Set Hydril Ram Blocks for 5 1/2"
1 - Set Hydril Ram Blocks for 7"
1 - Set Hydril Ram Blocks for 9 5/8"

HYDRAULIC FLUID ACCUMULATOR

Wagner Model 25-120-3BN Electric Hydraulic Accumulator,
S/N: 0578401, mounted on Heavy Duty Oilfield Type skid.
8 - 15 Gal. Separator, Type 30000 psi Buna N Bladder,
Forged Steel Bottles (120 Gal. Cap.)
5 - Station Model Mar-50-2-4 Barksdale Valves.
3 - Nitrogen Bottle Back-up System
1 - Triplex Pump Driven by 25 HP U.S. Electric Motor
Frame: 284-T, 575 Volts.
I.D. # 9708-493-303-C3190-273-S, mounted on Steel Skid with A-B Starter.
Remote Drillers Control Panel, Wagner
Cat #: X JB24248.

HYDRAULIC PIPE AND CONNECTIONS OR BOXED LINES

2 - 6'W x 29'L and 6'W x 33'L Piping Racks
With Checker Steel Protective Walkways
Complete with Hydraulic, Water and Fuel Lines.