S-2046
OCS-G-2566

In Reply Refer To: FO-2-1

November 19, 1987

Mark Producing, Inc.
Attention: Ms. Susan Hatncock
675 Bering Drive
Houston, Texas 77057

Gentlemen:

Reference is made to your Supplemental Plan of Exploration received November 17, 1987, for Lease OCS-G 2566, Block 347, East Cameron Area. This plan includes the activities proposed for Wells A through D.

In accordance with 30 CFR 250.34, revised December 13, 1979, and our letter dated January 29, 1979, this plan is hereby determined to be complete and is now being considered for approval.

Your plan control number is S-2046 and should be referenced in your communication and correspondence concerning this plan.

Sincerely yours,

(Orig. Sgd.) A. Donald Giroir

For D. J. Bourgeois
Regional Supervisor
Field Operations

bcc: Lease OCS-G 2566 (O[illegible]-2) (FILE ROOM)
OPS-3-4 w/Public Info. Copy of the plan (P[illegible]BLIC RECORDS)

MJTolbert:cck:11/19/87:poecom

MARK PRODUCING, INC.

SUPPLEMENTAL PLAN OF EXPLORATION

OCS-G 2566

Block 347

East Cameron Area

Offshore, Louisiana

SECTION	ITEM
1	Introductory Letter
2	Proposed Type and Sequence of Exploration Activities and Timetable
3	Description of Drilling Vessel
4	Safety & Environmental Safeguards, Including Oil Spill Contingency Plan
5	Approximate Location of Proposed Wells and Plat
6	Structural Interpretation and Shallow Drilling Hazards Report
7	Onshore Support Base Facilities
8	Mud Components
9	Air Quality Review
10	Coastal Zone Management Statement

Mark Producing
[illegible] Berry Drive
Houston, Texas [illegible]

November 17, 1987

U.S. Department of the Interior
Minerals Management Service
1201 Elmwood Park Boulevard
New Orleans, LA 70123-2394

Attention: Mr. Daniel Bourgeois
Regional Supervisor
Office of Field Operations

Re: Supplemental Plan of Exploration
OCS-G 2566, S/2 of East Cameron Block 347
Offshore, Louisiana

Gentlemen:

In accordance with 30 CFR 250.34, as amended, Mark Producing, Inc., herein respectfully submits for approval a Supplemental Plan of Exploration for East Cameron Block 347, OCS-G 2566.

Lease OCS-G 2566 is currently held by production. Apache Corporation designated Mark Producing, Inc. operator of the south half (S/2) of this lease on November 16, 1987. Copies of the Designation of Operator Form were hand-delivered to the New Orleans Office this date. Previous activities on this lease consists of the drilling of seven (7) wells as more fully outlined on the attached Exhibit "A".

Mark Producing, Inc., submits eleven (11) copies of the proposed Supplemental Plan of Exploration. Five (5) copies are considered "Proprietary Information" and are exempt from disclosure. Six (6) copies are "Public Information". The information believed to be exempt is geological and/or geophysical.

We anticipate drilling on this lease to begin on November 20, 1987.

If there are any questions, please call.

Sincerely,

Susan Hathcock

Susan Hathcock
Supervisor, Regulatory Affairs

/lsh

Enclosures

EXHIBIT "A"

EAST CAMERON BLOCK 347

OCS-G 2566

Seven (7) wells have been drilled on this lease.

Well No.	Spud Date		Location	Total Depth	Status
1	2/13/75	Surf: BHL:	6349' FNL & 5645' FEL Same		P&A'd
2 Renamed A-3	10/2/76	Surf: BHL:	655' FNL & 5680' FEL Same		Compl.
3	3/23/78	Surf: BHL:	2983' FNL & 4255' FEL Same		P&A'd
4	4/27/79	Surf: BHL:	2133' FNL & 2606' FEL Same		P&A'd
A-1	6/5/81	Surf: BHL:	636' FNL & 5678' FEL 660' FNL & 7244' FEL		Compl.
A-2*	----	Surf: BHL:	655' FNL & 5680' FEL Unknown		Not Drld.
A-6	10/10/81	Surf: BHL:	636' FNL & 5672' FEL 1600' FNL & 6700' FEL		Compl.
A-8	8/9/81	Surf: BHL:	636' FNL & 5666' FEL 3991' FNL & 5120' FEL		P&A'd

*A permit to drill was filed on this well; however, it was not drilled.

There is one production platform (P/F "A") on the lease. Date of 1st production was 4/30/82. The platform has 8-slots.

PROPOSED TYPE AND SEQUENCE OF EXPLORATION ACTIVITIES AND TIMETABLE

SECTION 2

Mark Producing, Inc. proposes to drill four (4) additional exploratory wells in East Cameron Block 347.

Drilling operations are expected to commence November 20, 1987. Each well will take approximately 30 days to drill. Drilling will not be continuous. The total project should be complete by January, 1989.

DESCRIPTION OF DRILLING VESSEL

Section 3

The water depth on this lease is approximately 295'. The jack-up drilling rig "Rowan Juneau" will be utilized for exploratory drilling. See attached equipment list and diverter system drawing.

APPENDIX A

DOMESTIC OFFSHORE DRILLING CONTRACT

THE ROWAN COMPANIES, INC.
AND

ROWAN-JUNEAU

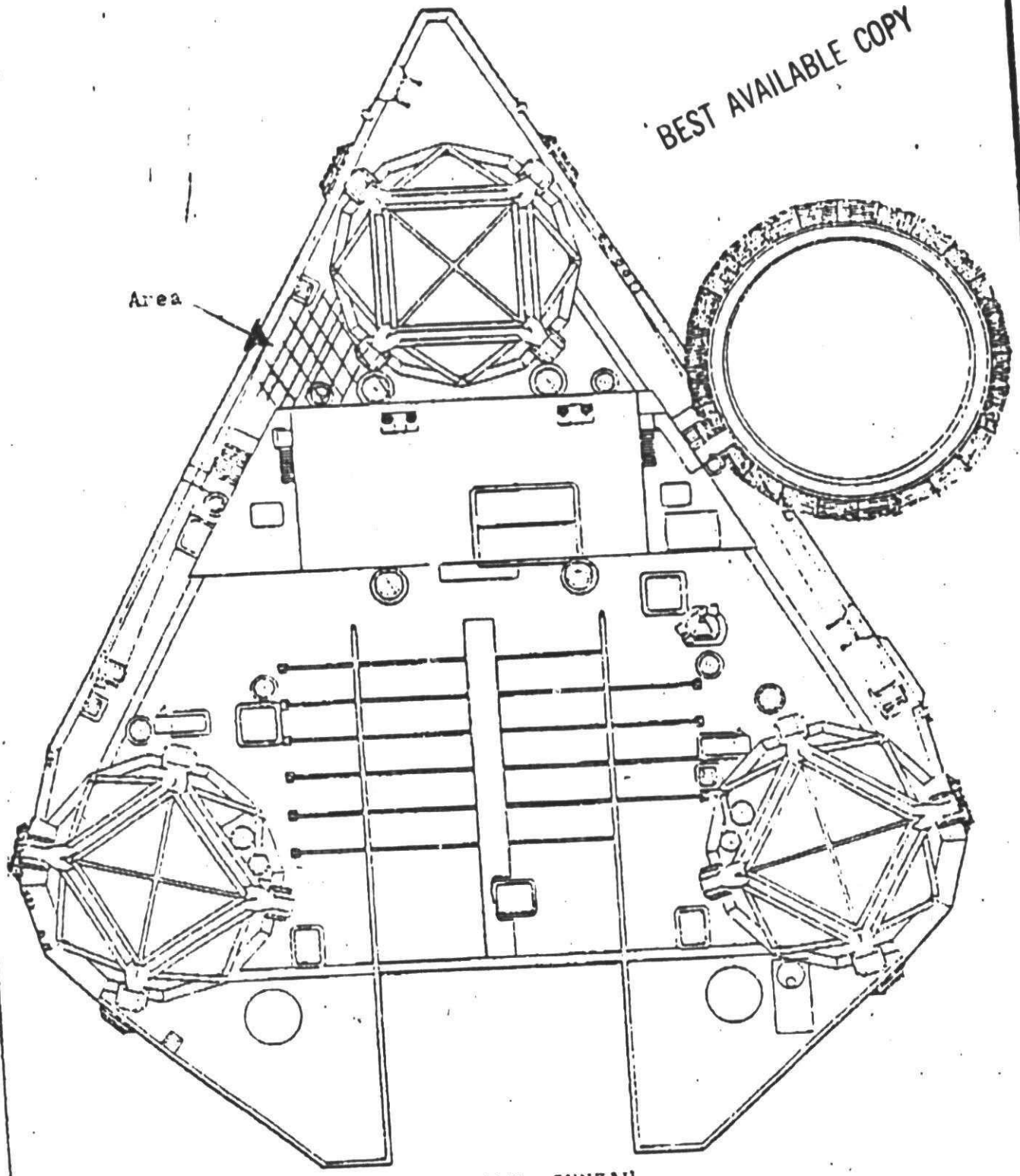
BLOWOUT PREVENTER STACK

WITH A

20" HYDRIL DIVERTER

ITEM	DESCRIPTION
1	20" HYDRIL - 2000 psi working pressure.
2	20" SPOOL - 2000 psi with 2-8", 900 psi API outlets.
3	2 - 8" GROVE BALL VALVES - 900 psi ANSI, with MH-890 hydraulic operators.
4	8" LINE - to both port and starboard of rig.
5	13-5/8" HYDRIL, ANNULAR BOP - Type "GK", 5,000 psi connection, H_2S trimmed.
6	13-5/8" CAMERON DOUBLE BOP - Type "U", 10,000 psi WP, H_2S trimmed.
7	13-5/8" CAMERON DOUBLE BOP - Type "U", 10,000 psi WP, H_2S trimmed.
8	3-1/16" MANUAL GATE VALVE - McEvoy 15,000 psi, H_2S trimmed.
9	3-1/16" REMOTE HYDRAULIC VALVE - McEvoy 15,000 psi, H_2S trimmed.
10	3-1/16" MANUAL GATE VALVE - McEvoy 15,000 psi, H_2S trimmed.
12	3" KILL LINE - 15,000 psi.
13	3" CHOKE LINE - 15,000 psi.

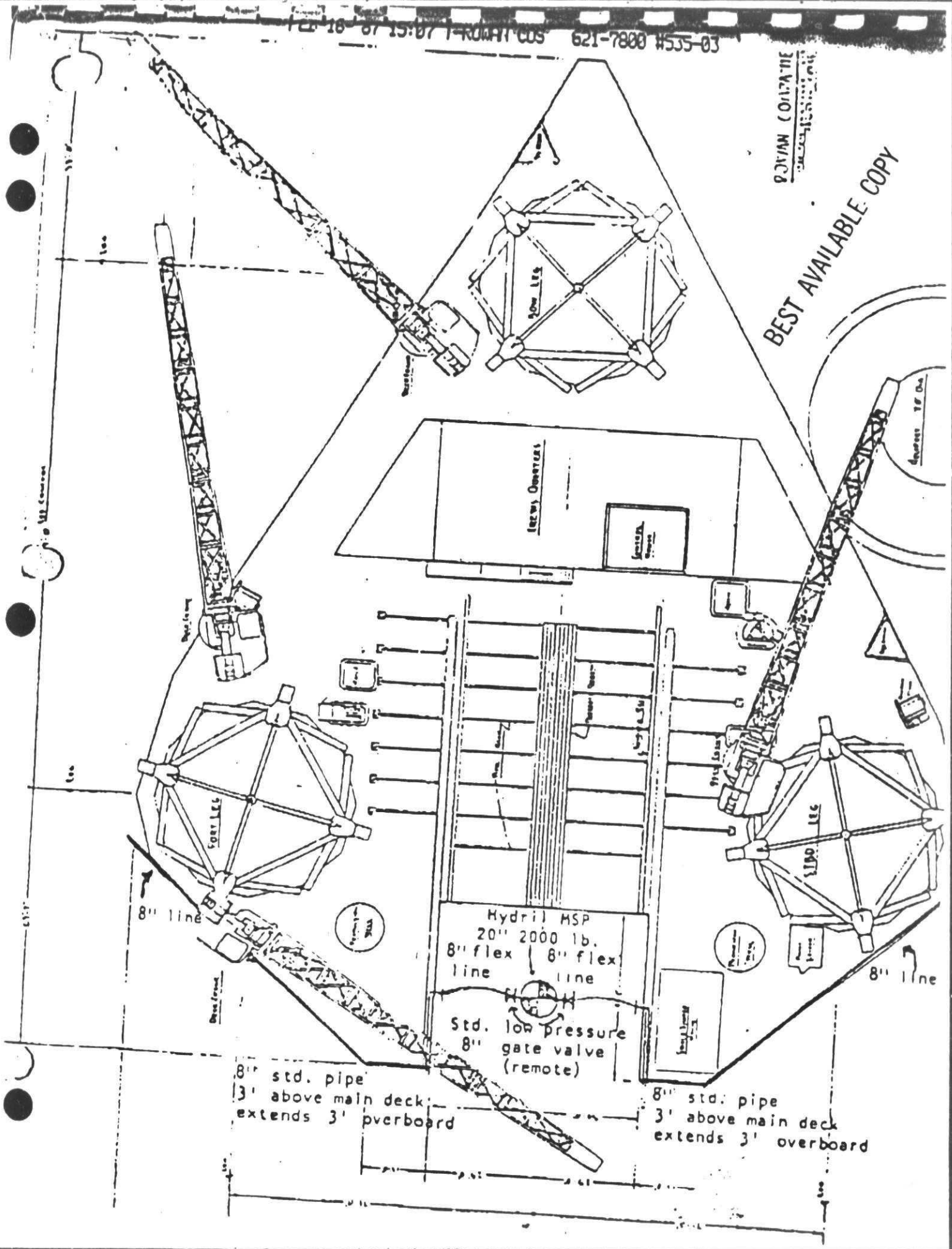
MAIN DECK LAY OUT



ROWAN JUNEAU

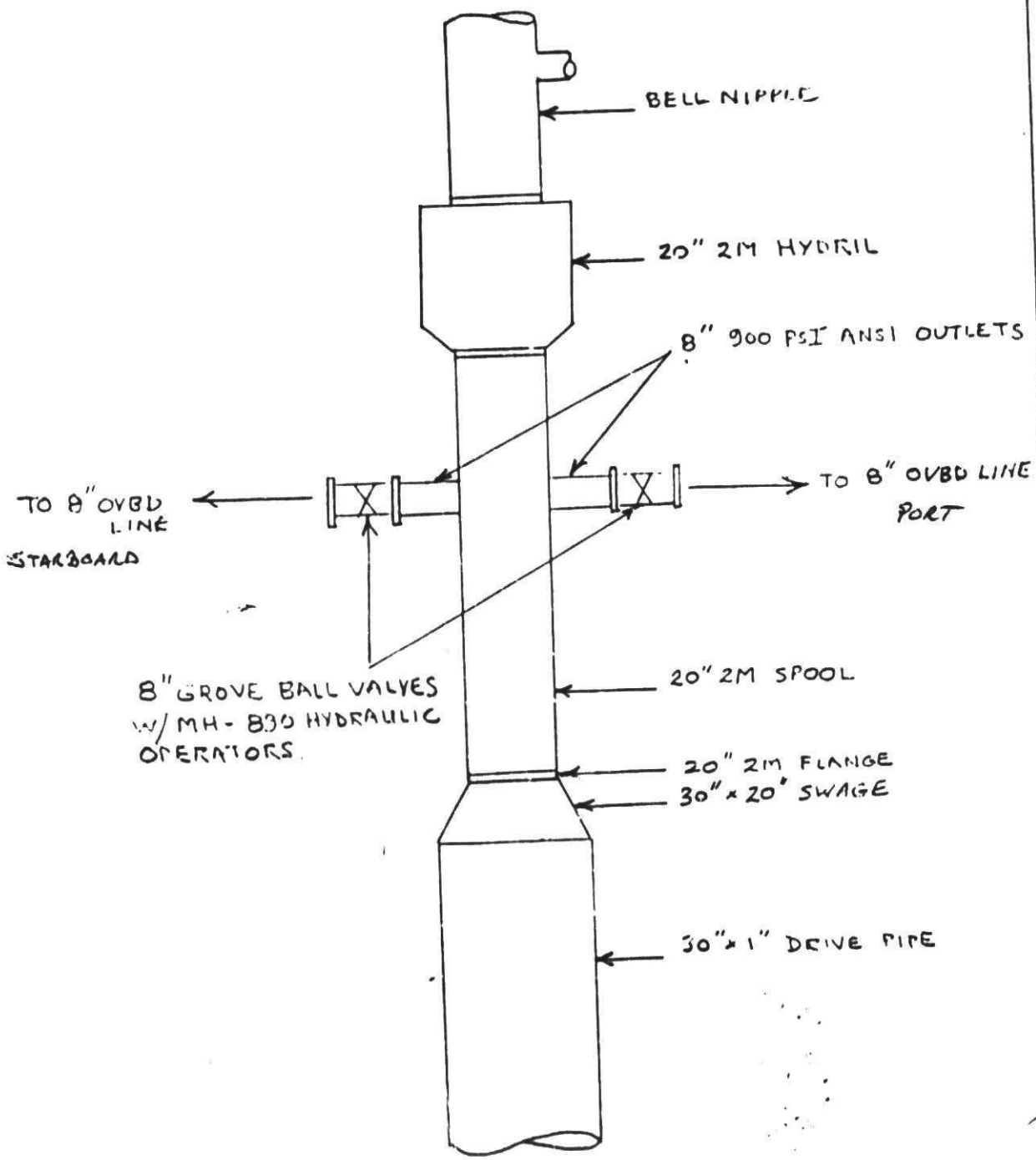
PLATFORM 84

SAFE WELDING & BURNING AREA



ROWAN JUNEAU

DIVERTOR INSTALLATION ON STRUCTURAL CASING



MOBILE OFFSHORE DRILLING PLATFORM

ROWAN-JUNEAU

A. GENERAL DESCRIPTION AND CAPACITIES

1. Type:

LeTourneau Seal - elevating for exploration and development drilling. 24.' long x 200' wide x 26' deep hull with three 467' legs.

2. DESIGN CRITIERIA:

Weather:	100 knot maximum wind gust simultaneous with 44' miximum wave.
Maximum Loading:	8,000,000 pounds total fixed and variable load.
Elevating Speed:	90' per hour

3. TOWING THRUSTERS:

Two 90' diameter Kort Nozzle Thrusters capable of delivering a total bollard pull of 82,500 pounds, each unit driven by General Electric Model 752 motor.

4. CRANES:

4 - LeTourneau deckcranes rated 45 tons at 25' radius w' 100 ft booms.

5. HELIPORT:

Circular 60' diameter with a 5' skirt around entire heliport to accommodate a load imposed by S-61 helicopter.

6. QUARTERS:

Three level with accommodations for 78 men including 5 men hospital room, dual galley, dining a recreation facilities. Year round air-conditioning. Top mounted barge control with internal and external access.

7. DIMENTIONS AND STORAGE FEATURES:

General Platform LAta

Hull Length	247 ft
Hull Width	200 ft
Hull Depth	26 ft
Slot Width	52 ft
Slot Depth	41 ft
Spud Height	24 ft
Spud Diameter	46 ft
Leg Length	467 ft x 30 ft sq

Storage and Capacities

Liquid Mud	1440 bbl
Bulk Mud	5400 cubic ft
Bulk Cement	5400 cubic ft
Sack Storage	1500 square f
Drill Water	5000 bbls
Diesel Fuel	3000 bbls
Potable Water	2000 bbls
Total Variable Load	2300 tons (approx.) elevated
	1450 tons (approx.) afloat

B. DRILLING MACHINERY AND EQUIPMENT

1. DERRICK & SUBSTRUCTURE:

Lee C. Moore 147' x 30' x 30' bolted, T-leg, dynamic derrick; designed for 1,200,000# hook load.

LeTourneau substructure and subbase, 19' high allows a 1,250,000# total oad; 950,000# hook load, and simultaneous 350,000# setback. Fore and aft movement of subbase, and transverse movement of substructure enable relocating of rotary in nine different drilling positions.

2. DRAWWORKS:

National Type 1625 DE driven by two (2) GE 752 electric motors; equipped with an Elmagco standard model 7838 Current Brake, a Blaylor BC-7898 Control System, Koomey TCF Crown-O-Matic, National Model 6BX Micromatic Drilling Control, National "EB" Wireline Anchor, and National type "A" Air Catheads. Sand Reel complete with capacity of 18,000' 9/16" line, in drawworks.

3. ENGINES AND DRIVE:

Prime Movers: Four (4) Caterpillar Model D399 Turbocharged After-Cooled Diesel Engines, rated @ 14[illegible] HP each @ 1200 RPM continuous, V-16, driving four (4) GE 930 KW 600 AC Generators. All engines with high temperature, low oil pressure, and over-speed alarms, and MSA-2 Spark arresting silences.

AC-DC Systems: Baylor four Unit SCR. AC to DC units each capable of 750 volts, 4600 amps continuously with multiple assignment feature.

Switch BOARD: Baylor Marine Type.

Emergency Generator: Caterpillar D3306 150 KW with energency switch board.

4. TRAVELING EQUIPMENT:

Traveling Block: Six (6) sheaves National Type [illegible]-H-500 grooved for 1-1/2" line.

Hook: National Type H-500.

Swivel: National P-650 Swivel.

Crown Block: National Type 760-FA with 7 sheaves grooved for 1-1/2" line.

5. ROTARY:

National Type C-375 Rotary Machine with 37-1/2" table opening, chain driven off Drawworks.

6. MUD SYSTEM AND SERVICE:

Mud Pumps: Two (2) National 12-P Triplex each driven by two (2) mud lines, manifold, etc., encluding two (2) 5-9/16" mud lines to rig floor, and 5-9/16" each 160 dual stand pipes, (2) GE 752 electric motors. Mud pumps to be charged by two (2) 6 x 8 50 HP centrifugal pumps with TEFC motors.

Mixing Pumps: Two (2) Mission 6 x 8 R 75 HP centrifugal pumps, in conjuction 300 GPM.

Shale Shaker: One Swaco super Screens with vibrating decks. Each deck to be complete with necessary screens as required by Operator. Two Derrick "Flo-Line Cleaner".

? SCREENS

Desander: Demco 12". Volume master with 100 1700 RPM 6 x 8 Mission Pump with necessary piping.

Desilter: Demco 418H. Siltmaster with 100 1700 R.P.M. 6 x 8 Mission pump with necessary piping.

Degasser: Swaco total Mud Degasser.

Cementing Unit: One (1) Halliburton Twin HT400 Cementing Unit with electric slurry blender, complete with high pressure stand pipe to rig floor and including chicksan hose. 10 loops Howco 15,000 PSI W.P. chicksan lines.

Mud Pits Active Reserve: Three (3) steel pits of 1400 barrels capacity equipped with three (3) Brandt Mud Mixers; also included is a 50 barrel slugging pit. Pits to be equipped with necessary piping for mud mixing and circulating.

Bulk Mud & Cement:

8 - 1350 cubic foot bulk P-tanks
1 - 220 cubic foot - pressurized
1 - 70 cubic foot - non-pressurized
3 - Howco 175 SCFM x 40 PSI air compressors
1 - Airdyne Model AD900 refrigerated air dryer
System to included all necessary manifolding.

Sack Mud Storage: Sufficient covered storage area for 3500 sacks.

Mud Testing Equipment: One (1) complete set of mud testing equipment for checking viscosity, mud weight and API water loss

C. DRILLING TOOLS AND SPECIAL EQUIPMENT

1. DRILL STRING:

Drill Pipe: 12,000' - 5" OD 19.5# Grade E, Range 2, drill pipe internally coated with 6-3/8" OD x 4-1/2" IF tool joints 1" longer than standard.

8,000' - 5" OD 19.5# Grade G, Range 2, drill pipe internally coated with 6-3/8" OD X 4-1/2" IF tool joints 1" longer than standard.

50 joints - 5" OD, Range 2, Drilco "Hevi-Wate" heavy wall drill pipe with 6-3/8" OD x 5" HX box and pin, complete with center upset, weight approximately 1550# per joint.

Drill Collars: 4 - 9" OD x 2-3/4" ID x 30' long drill collars zip grooved (100,000#).

18 - 8" OD x 2-13/16" x 30' long, zip grooved drill collars.

36 - 6-1/2" OD x 2-1/4" ID x 30' long drill collars, zip grooved (100,000#)

6 - 4 3/4" OX x 2" ID drill collars with 3-1/2 API IF connections

Kelly: Drilco 5-1/4" Hex x 40' long.

Kelly Spinner: Varco 6600 series power-sub.

Kelly Stop: Hydril 10,000 psi for 5" drill pipe.

Kelly Valve: Omsco 15,000 psi.

Safety Valve. Hydril Safety Valve MSP 5,000 with 5" X-hole connections.

Subs: All necessary bit subs, bored for float, and cross-over subs for Contractor furnished drill pipe and drill collars. Also included are the following:

LIFT NIPPLES

1 - 7 5/8 REG
3 - 6 5/8 H-90
2 - 4 1/2H-90
1 - 3 1/2 IF

JUNK SUBS

2 - 6 5/8 REG x 6 5/8 REG
1 - 4 1/2 REG x 4 1/2 REG
1 - 3 1/2 REG x 3 1/2 REG

BIT SUBS

2 - 7 5/8 REG x 7 5/8 REG
2 - 7 5/8 REG x 6 5/8 REG
2 - 6 5/8 REG x 6 5/8 H-90
2 - 4 1/2 REG x 4 1/2 H-90
2 - 3 1/2 REG x 3 1/2 IF

CROSSOVER SUBS

2 - 7 5/8 REG x 6 5/8 H-90
1 - 7 5/8 REG x 4 1/2 IF
1 - 6 5/8 H-90 x 6 5/8 REG
1 - 4 1/2 IF x 6 5/8 H-90
3 - 6 5/8 H-90 x 4 1/2 IF
1 - 6 5/8 H-90 x 4 1/2 H-9
2 - 4 1/2 H-90 x 4 1/2 IF
1 - 4 1/2 IF x 4 1/2 H-90
2 - 3 1/2 IF x 4 1/2 IF
1 - 7 5/8 REG x 4 1/2 IF - less than 1 ft long for stabbing valve
1 - 6 3/8 H-90 x 4 1/2 IF - less than 1 ft long for stabbing valve
1 - 4 1/2 H-90 x 4 1/2 IF - less than 1 ft long for stabbing valve.

2. INSTRUMENTATION:

Drilling Instruments: Martin-Decker Type "EB" Weight Indicator with National Wireline Anchor; pump pressure mud gauge; tong torque gauge; rotary table tachometer; pump stroke tachometer; mud volume and deviation; mud flow fill system with indicating and alarm console; two (2) channel electric heat trace recorde for percentage of mud flow and pump stroke; ton-mile counter (one (1) constant and one (1) resettable); Record-O-Graph 5-channel drill floor recorder for weight, pump pressure, electric torque, RPM, rate of penetration.

Barge Instruments: Barometer, compass, two (2) inclinometers.

3. HANDLING TOOLS:

Casing Tools:

3 - Varco 14" 500 ton spider/elevator with 13-3/8", 9-5/8", and 7" inserts with guide set and adapter plate.

Varco CMS-XL 20" Casing Slips

Varco solid pin drive master casing bushing and insert bowel for 20" casing.

20" side door elevators.

20" EX heavy casing tongs.

Elevator Links: 1 - Byron-Jackson (2-3/4" x 132") 350 ton
1 - set 500 ton bails

Tongs: 1 set of 2 Byron-Jackson with heads and adjustable for 4" to 15" pipe.

1 set of 2 type TAX Baash Ross with jaws for 7" - 24" casing.

Elevators:

2 - BJ 5" type GG
1 - BJ 3-1/2" type MGG
1 - BJ Drill Collar Lift Assembly
1 - TA 150 for 9" Drill Collar
1 - TA 150 for 8" Drill Collar
1 - TA 150 for 6 1/2" Drill Collar
1 - TA 100 for 4 3/4" Drill Collar
Necessary slips, tong heads to handle 5" drill pipe.
10 - 3-1/2" IF Lift Subs

Slips: 3 - 1/2" SDL
2 - 5" SDXL
1 - DCS 4 1/2 - 6"
1 - CMS-XL 7 5/8"
1 - Barco L 8 - 9 1/2"

4. BLOWOUT PREVENTER EQUIPMENT:

1 - Hydril Type MSP 2000 Annular Preventer

1 - Hydril Type GK 13-5/8" 10,000 Blowout Preventer with 13-5/8" API 10,000 bl top and bottom connections, bottom connecting flange drilled for through-bolts, with stainless steel weld lined ring grooves, top and bottom 10,000 psi maximum service pressure, 13-5/8" full open vertical bore, 13-5/8" to 0" pack-off range.

2 - Blowout Preventer, Cameron Type "U" Single Unit, 13-5/8" vertical bore, 15,000 lb. W.P., top and bottom flanged 13-5/8" 15,000 lb. W.P. with two (2) 4-1/16" 15,000 lb. W.P. flanged outlets. All ring grooves stainless steel lined, with one set of 5" OD rams installed.

1 - Blowout Preventer, Cameron Type "U" Double Unit, 13-5/8" vertical bore, 15,000 bl. W.P., top and bottom flanged 13-5/8" 15,000 lb. W.P. with two (2) 4-1/16" 15,000 lb. W.P. flanged outlets below each set of rams, all ring grooved stainless steel lined, with one set of 5" OD rams and one set shear rams installed. Spare rams for 9-5/8" and 7" and 5".

6 - McEvoy "EZ" Hydraulic operated 3-1/16" 15,000 PSI W.P. valve

Accumulator: Koomey Model 360-115 Type 80 3000 PSI consisting of the following:

- Thirty-Six (36) eleven gallon size bladder type separator accumulators.

- Model - VET 40B electric powered triplex plunger pump.

- 540 gallon fluid reservoir.

- 3500 PSI pressure relief valve for accumulator, filters, valves, fittings and connections.

- Koomey Model S62KB55, "S" series manifold 7 outlets.

- Koomey Model ARC-5 auxiliary air remote control panel.

- Koomey Model U-7-A36 pump package.

Choke Manifold: 15,000 PSI W.P. manifold similar to Cameron Iron Works Drawing # 948448 attached, and 15,000 PSI W.P. choke and kill lines and valves.

5. FISHING TOOLS:

Bowen series 150 10 5/8" O.D. Overshot and accessories

1 - Top Sub 10 5/8" O.D. 4 1/2" IF Box
1 - Bowl 10 5/8" O.D. x 20 3/4" Long
1 - Extension Sub 10 5/8" O.D. x 36"
1 - Standard Guide 10 5/8" O.D.
1 - Oversize Guide 10 5/8" O.D. x 15" O.D.
2 - 9" Spiral grapples complete with packers and control
2 - 8 7/8" Spiral grapples complete with packers and control
2 - 8" Basket grapples complete with mill control and seals
2 - 7 7/8" Basket grapples complete with mill control and seals
2 - 7 3/4" Basket grapples complete with mill control and seals

Bowel series 150 7 5/8" O.D. overshot and accessories

1 - Top Sub 7 5/8" O.D. x 4 1/2" IF Box
1 - Bowl 7 5/8" O.D. x 21 Long
1 - Extension Sub 7 5/8" O.D. x 36" Long
1 - Standard Guide 7 5/8" O.D.
1 - Oversize Guide 7 5/8" O.D. x 11 5/8"
1 - Oversize Guide 7 5/8" O.D. x 15 1/4"
2 - 6 1/2" Spiral grapples complete with packer and control
2 - 6 3/8" Spiral grapples complete with packer and control
2 - 6 1/4" Spiral grapples complete with packer and control
2 - 5" Basket grapples complete with mill control and seal

1 - Overshot Bushing 7 5/8" O.D. x 9 3/16" long for milling 6 3/8" O.D. tool joints

1 - Overshot Bushing 7 5/8" x 9 3/16" long for milling 5" O.D. drill pipe.

Bowen series 150 5 3/4" O.D. Overshot and accessories

1 - Top Sub 5 3/4" O.D. x 3 1/2" IF Box
1 - Bowl 5 3/4" O.D. x 18 1/2" Long
1 - Extension Sub 5 3/4" O.D. x 33" Long
1 - Standard Guide 5 3/4" O.D.
2 - 4 3/4" Spiral grapples complete with control and seal
2 - 4 5/8" Spiral grapples complete with control and seal
2 - 3 1/2" Spiral grapples complete with control and seal

Bowen Mills and Other Fishing Equipment

1 - Taper Tap 6 3/8" O.D. 4 1/2" Box Tapered from 3 1/2" to 1 3/4"
1 - Junk Mill 5 3/4" O.D. 3 1/2" Reg Pin
1 - Junk Mill 8 1/8" O.D. 4 1/2" Reg Pin
1 - Junk Mill 9 5/8" O.D. 6 5/8" Reg Pin

6. COMMUNICATIONS:

One (1) CAI CA-35 MS single Sidebank Transceiver, one (1) Konel MR-201 Transceiver and VHF Antenna.

Portable Radios:

1. One (1) ITT MacKay Model 403A with channels 500 KHz, 2182 KHz, and 8364 KHz.

2. Three (3) each Motorola Model #H24FFN3104D-N (PL114.8) UHF Transceiver, Frequency 456.75 MHz.

3. Two (2) each standard Model #830S-515 VHF-FM with channels 6, 16, and three private channels.

4. Four (4) each Standard Model HX500S.(AA) VHF-FM Marine Radio.

7. OTHER EQUIPMENT:

Water Maker: One (1) Distillation unit, capable of making 5000 GPD.

Wireline Unit: Halliburton Model ZLC-XT 3UC1E20HY1, Power Driven Measuring Reel assembly. Unit complete with 14,500' of .092 line on a 20,000' capacity drum, measuring devise and clutch. The unit is powered by a 20 HP explosion proof motor.

Welding Machine: Two (2) Lincloln DC Motor-Generaltor Type. One (1) complete set of oxy-acetylene welding equipment.

Rotary Hose: Two (2) 3" x 55' 10,000 PSI test.

Air Hoists: Two (2) Ingersoll-Rand ODR 60A20 rig floor; one (1) tandem mount Ingersoll-Rand HUL system mounted on sub-structure below rig floor; one (1) Intersoll-Rand HU utility hoist mound on bow for handling towing bridle; one (1) EUAB/PT Ingersoll-Rand on Monkey Board; one (1) 1R mounted at end of catwalk.

Anchors: Two (2) 10,000 Bldt Stockless Anchors, A.B.S. certified.

Disposal Unit: Red Fox 45,000 gallon per day marine type unit, USCG approved.

Miscellaneous: Nets, baskets, slings, two (2) cargo baskets, burning basket, and other equipment necessary to load and unload equipment supplies, and personnel at the well site. Tie up lines for marine equipment to be for the account of Operator. Separate hoses and piping for unloading and loading fuel (fuel hoses to have valve on boat end of hose), water and dry bulk materials from either side of the drilling barge.

8. SAFETY:

Fire and Gas Detection:

Fixed H2S Detection: Rexnord Model 740 with control panel in Contractor's office with digital readout and visual and audible alarms. Detector heads located at: rig floor, bell nipple and shaker.

Fixed Fire Detection: Pyrotronics Model CP30 with control panel in radio room with audible and visual alarm. Fire sensors located in mud pit room, each steam generator, tool room and cement mix room. Smoke detectors located in accommodation sleeping quarters.

Fixed Combustible GAs Detection: Rexnord Model 820 with control panel on drill floor with audible and visual alarm and meter display. Detectors location on drill floor, at bell nipple, shale shaker and mud pit room.

Emergency Shutdowns: In the event of fire in the quarters or or machinery spaces, or of a need to shut down main engine power, the "ROWAN-JUNEAU" is equipped with two emergency shutdown stations. One is located on the drill floor. In the event of an emergency, these shutdowns should be operated by responsible personnel only.

The Stations consist of:

"Quarters Shutdown" - Designed to shut down all electrical power to quarters. This is done by tripping the shunt-trip circuit breaker on the quarters 480 volt distribution panel, which bills all 120 B.A.C. and two shunt-trip circuit breakers on "Ship SErvice A & B", which bills power to air conditioning unit and stoves.

"Ventilation and fuel Oil Shutdown" - Designed to shut down all ventilation fans from machinery spaces and fuel oil pumps by tripping "Master Fan" circuit breaker located in motor control center.

"Main Engine Shutdown" - Designed to shut down main generator engines by eliminating 24 V.D.C. power to engine governors.

"Emergency Generator shutdown" - If it is desired to completel kill all power, then the engines are shutdown, then the emergency generator shutdown must also be activated. This prevents the emergency generator engine from starting.

Portable Detectors:
1. H2S - Two (2) each Drager Model 31
2. Combustible Gas and Oxygen Detectors - Two (2) each MSA Model 250

Personnel Protective Equipment and Clothing:

- Firemen's Clothing - Two (2) each "Fyrepel" "Approach Suit"
- Firemen's Boots - Two (2) pair
- Firemen's Helmets - Two (2)
- Self contained breathing apparatus - Nine (9) Scott Air-Pac model "Presur Pak II", thirty minute.

Life Saving Appliances and Rescue Equipment

	No. On Board	
Life Preservers	150	
Work Vests	24	
Abandonment (Survival) Suits	160	Type - Seawolf "Mark II"
Ring Buoys - with smoke	4	
- with light	6	
- with both	4	

Rescue Craft: Zodiac Model 2355, 1500 lb capacity, 35 HP Evi outboard with remote steering.

- Two oars.
- Length of rope
- Four life jackets
- Tool kit
- Repair kit
- Bailor
- Flashlight

Escape Capsules:

- Whitaker "WSS5400" 50 man capacity
- Whitaker "WSS28" 28 man capacity
- Whitaker "WSS50" 50 man capacity
- Whitaker "WSS3600" 36 man capacity

Fire Suppression Equipment:

Hand Held Portable Extinguisher:

Type	No. On Board
Dry Chemical	61
Carbon Dioxide	7

Fixed Fire Extinguisher System:

1. Fire main system consisting of sixteen (16) hose stations (1,350 ft. hose) with a "peerless" 10 lb. four stage 40 HP fire pump.

2. "Halon 1301" Engine and Generator Room
"Halon 1301" Paint and Grease Room
"Halon" Steam Generators - Two (2)
Dry Chemical: "HDR-25-DC Galley exhaust".

3. "Foam" - Two (s) Hose stations at heliport and heli-fuel pump with 60 gal. foam container with "Peerless" PH75-1032-1 20 HP pump.

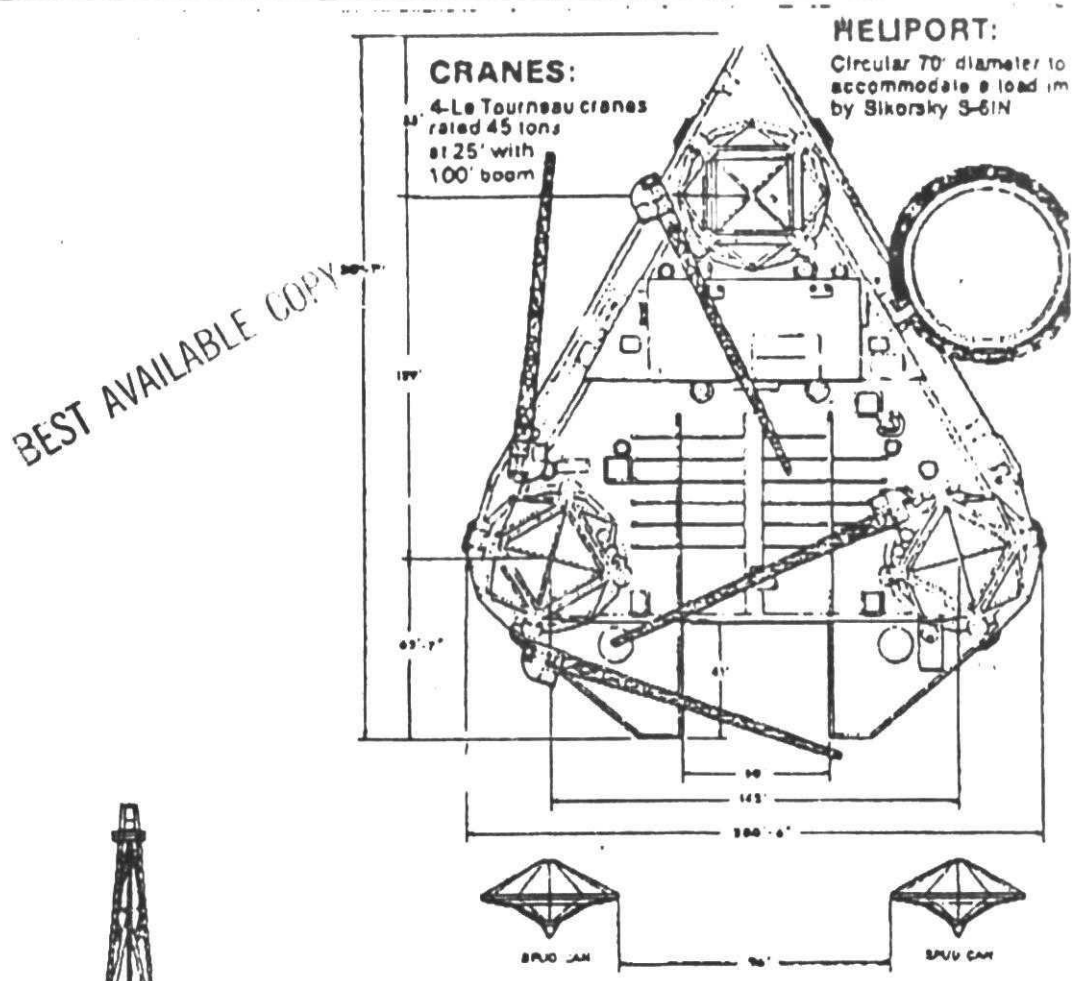
9. WINTERIZING:

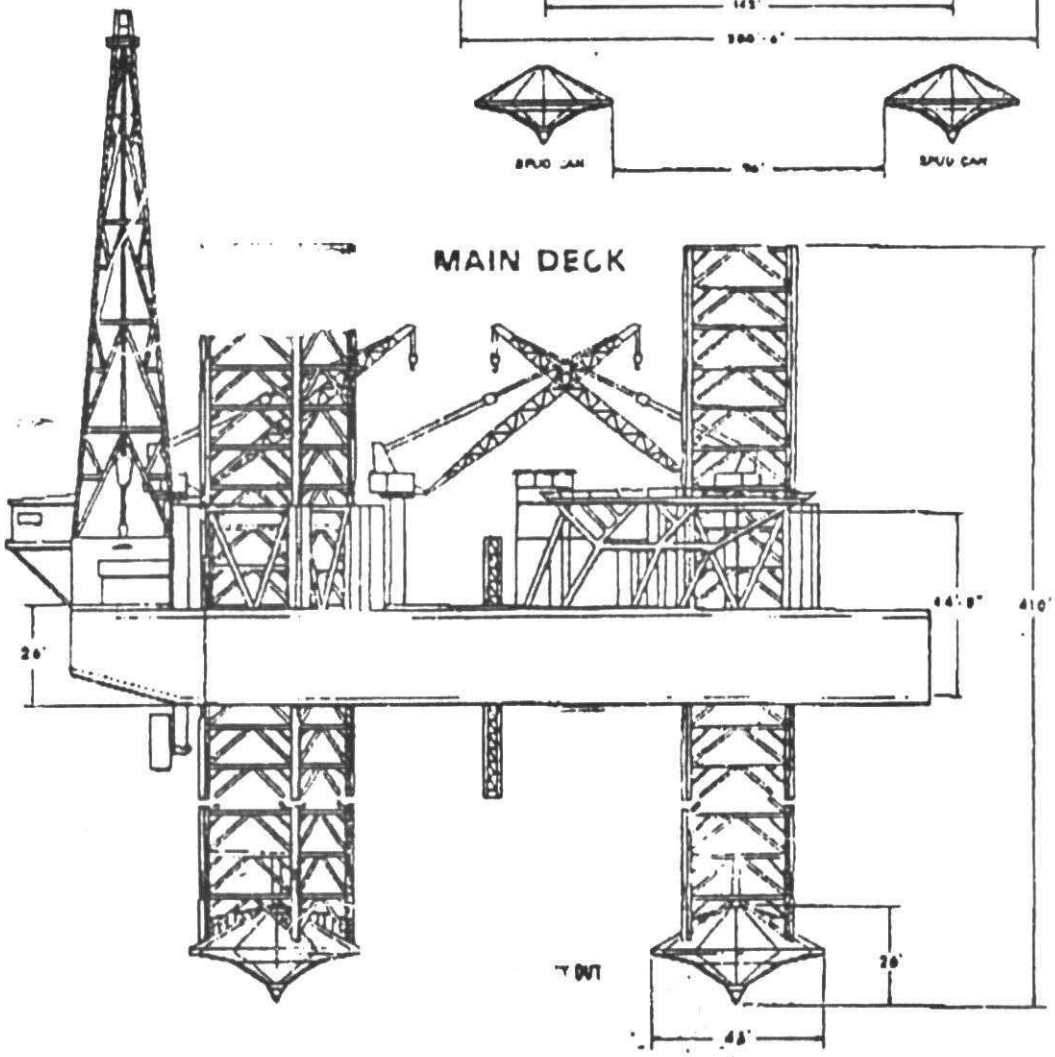
(A) Windwalls: The windwalls consist of 20 ft. wall at the rig floor; a 20 ft. wall at the monkey board level and a removable wall and roof around the shale shaker sand trap and substructure areas.

(B) General Rig Heating: One (1) TIOGA KA 3,000,000 BTU indirect diesel fired air heaters. The units will supply hot air to the inner hall work areas, the drill floor and the subbase area.

(C) Steam Generators: One (1) 100 HP Clayton E02 diesel fired steam generator. This system will have outlets at the rig floor and the port-aft knee. (Where test equipment will be located).

(D) Piping: All exterior piping to either heat traced and insulated or fitted with internal hull shut off valves to restrict liquid movement into area of sub zero weather.

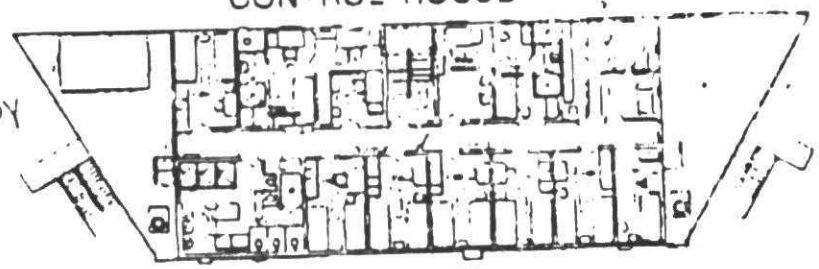




QUARTERS:

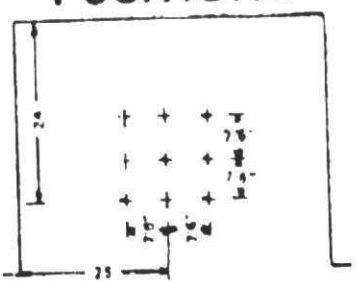
Three level with accommodations for 84 men including 5 man hospital room, dual galley dining and recreation facilities. Year round air-conditioning. Top mounted barge control house with internal and external access

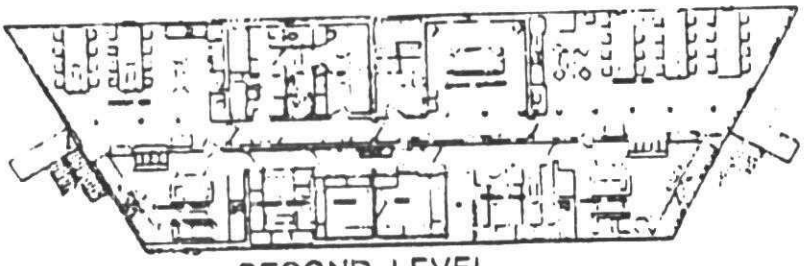
CONTROL HOUSE



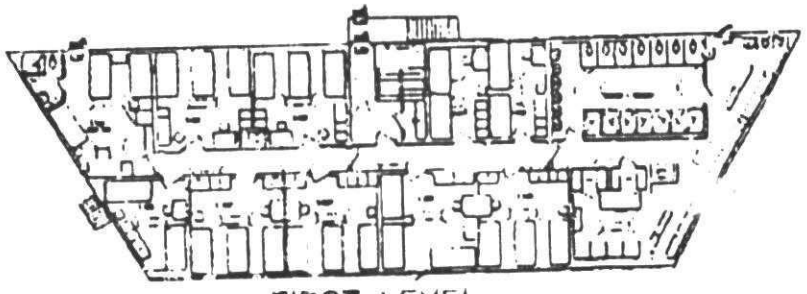
THIRD LEVEL

WELL POSITIONS

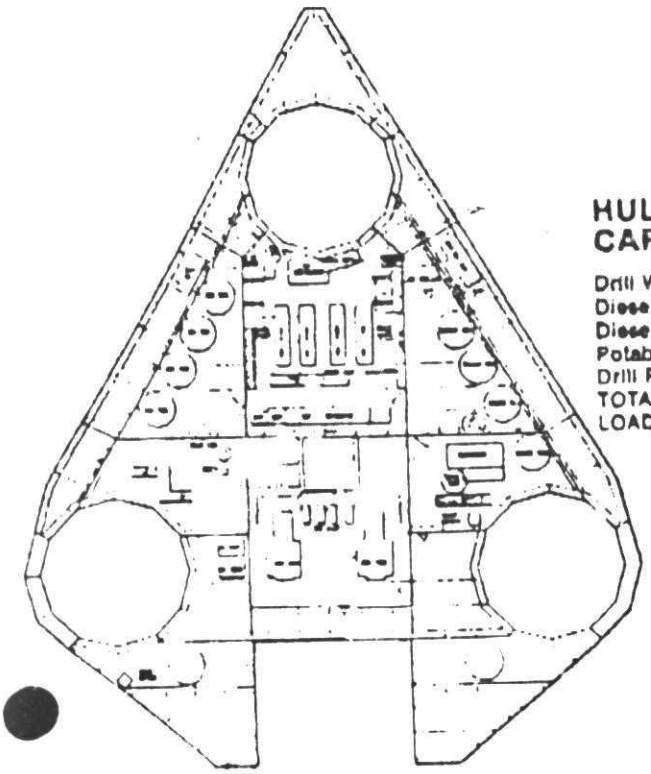




SECOND LEVEL



FIRST LEVEL



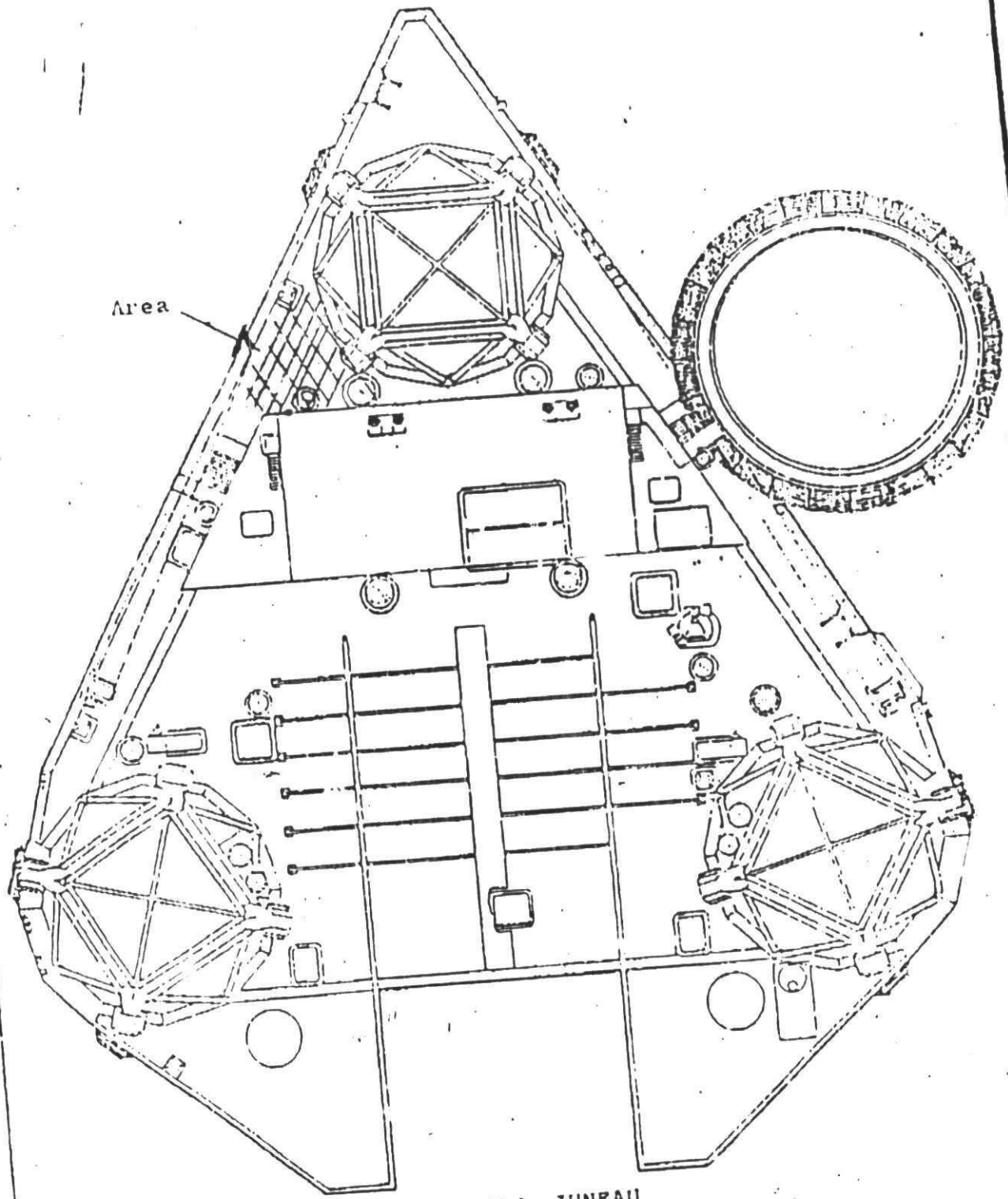
HULL STORAGE CAPACITIES:

Drill Water	5000 bbl.
Diesel Fuel (Drilling)	1000 bbl.
Diesel Fuel (Transit)	3400 bbl
Potable Water	1000 bbl
Drill Pipe, Casing	500 tons
TOTAL VARIABLE LOAD	4,600,000 lbs.

ROWAN COMPANIES, INC.

1900 Post Oak Tower
5051 Westheimer
Houston Texas 77056
713/621-7800 CABLE ROWCO
TELEX 775230

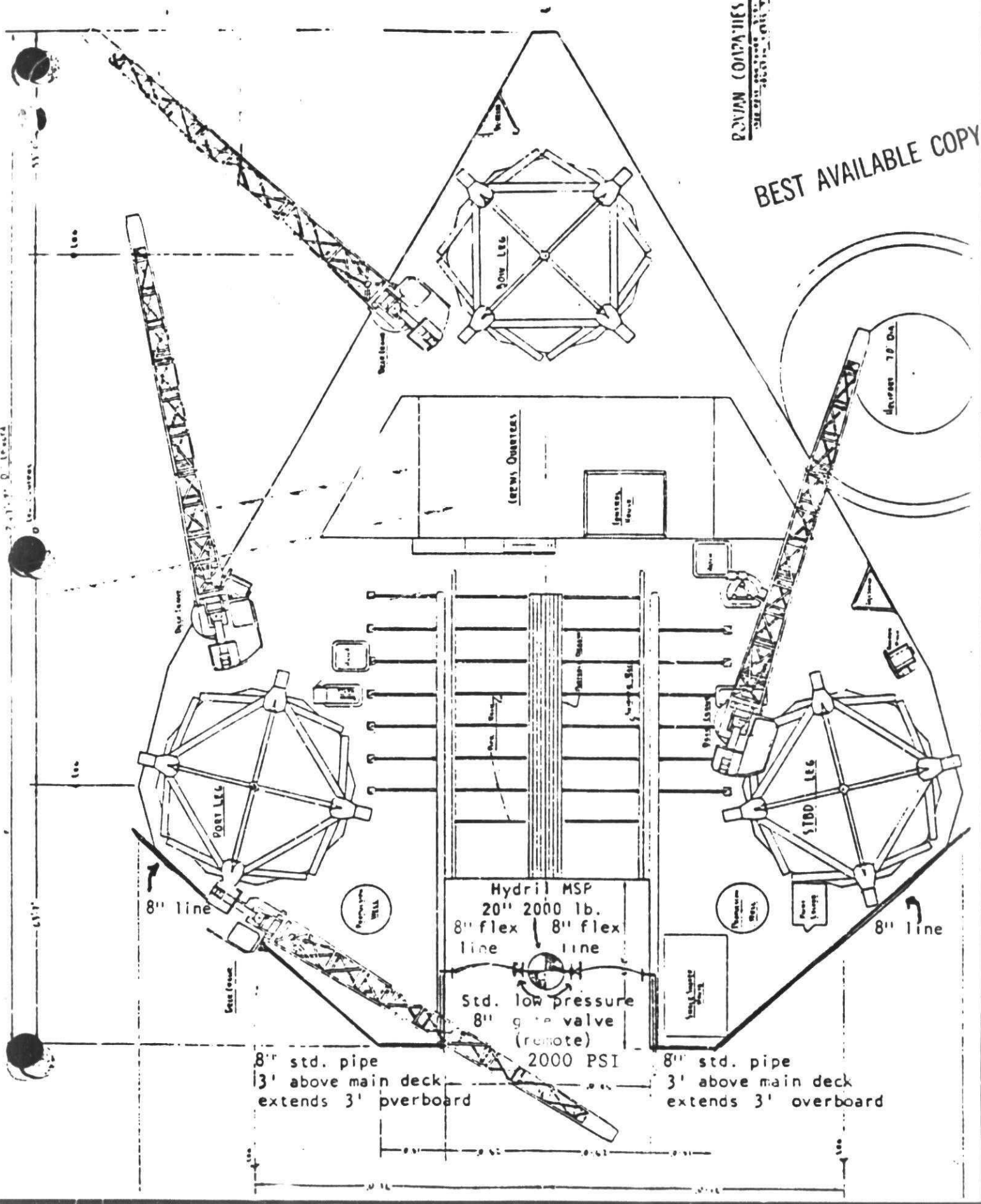
MAIN DECK LAY OUT



ROWAN JUNEAU

PLATFORM 84

SAFE WELDING & BURNING AREA



SAFETY AND ENVIRONMENTAL SAFEGUARDS

Section 4

Safety features during drilling operations will include well control and blowout prevention equipment that meets or exceeds the requirements of MMS Order No. 1.

Oil in any form shall not be disposed of into the water of the Gulf.

Liquid waste materials containing substances which may be harmful to aquatic life or wildlife, or injurious in any manner to life or property shall be treated to avoid disposal of harmful substances into the waters of the Gulf.

Drilling muds containing oil are not disposed of into the Gulf. This type material is loaded and barged to shore for proper disposal. Drilling mud containing toxic substances are neutralized prior to disposal.

Drill cuttings, sand, and solids containing oil are not disposed of into the Gulf unless the oil has been removed.

The subject offshore mobile drilling unit is equipped with drip pans under the rig floor. All oil from diesel engines is pumped to a sump and then pumped into barrels for return to an onshore site.

Operator personnel are instructed in the techniques and methods necessary to prevent pollution. Non-operator personnel are instructed and supervised to insure that non-pollution practices are adhered to. The facilities are inspected daily.

OIL SPILL CONTINGENCY PLAN

Mark Producing, Inc.'s, Oil Spill Contingency Plan was approved on August 25, 1987, by the MMS. This plan designates and Oil Spill Team consisting of Mark Producing personnel and contract personnel. This team's duties are to eliminate the source of the oil spill, remove all sources of possible ignition, deploy the most viable means of available transportation to monitor the movement of this slick, and contain and remove the slick, if possible.

Mark Producing is a member of the Clean Gulf Associates (CGA). The CGA has four permanent bases in Louisiana at Venice, Grand Isle, Intercoastal City, and Cameron, and two bases in Texas at Galveston and Rockport. Each base is equipped with fast response skimmers and there is a barge mounted high volume sea skimmer based at Grand Isle. In addition to providing equipment, the CGA also supplies advisors for cleanup operations.

Deployment time to East Cameron Block 347 is approximately 12 hours from Morgan City, Louisiana.

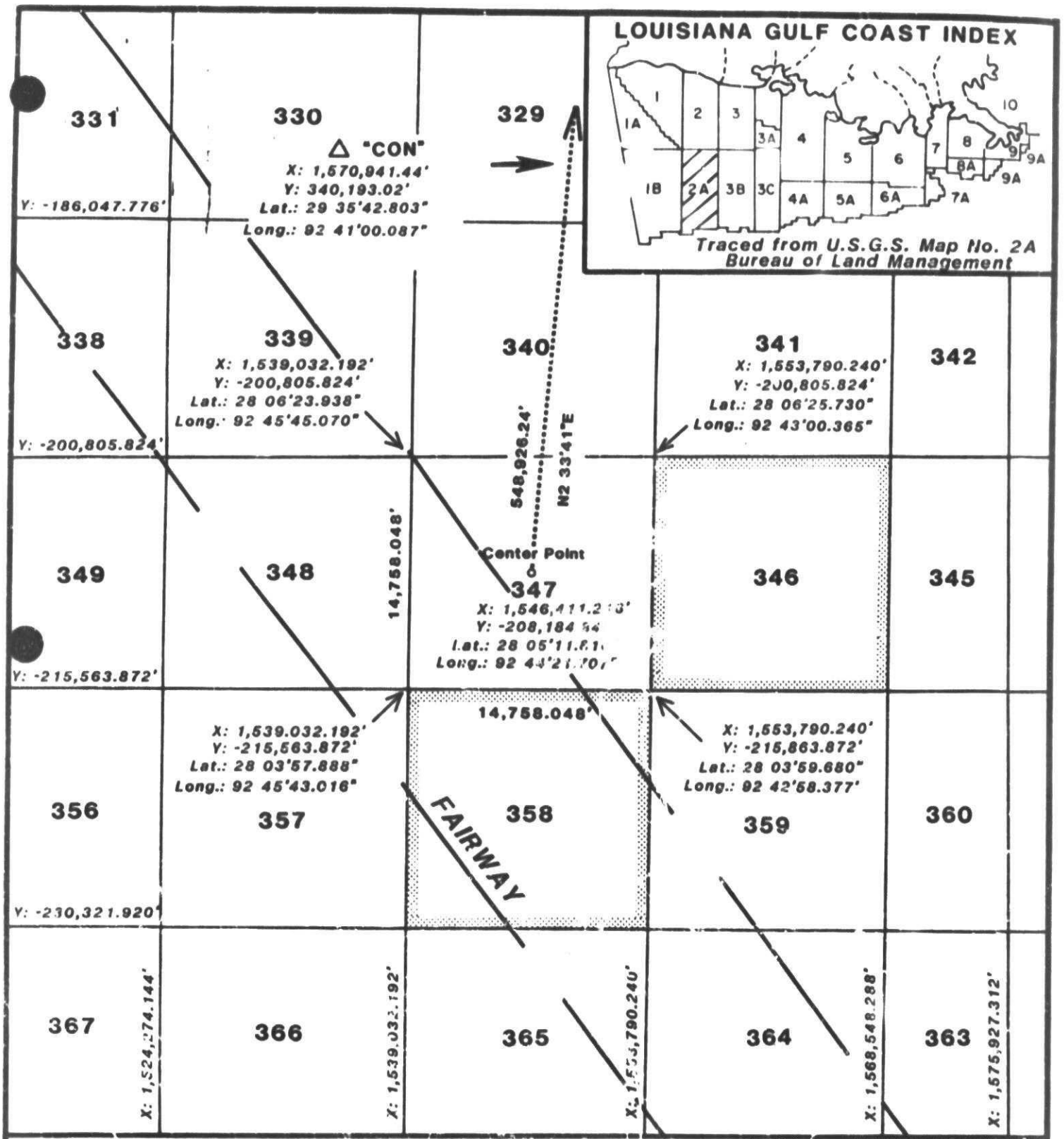
APPROXIMATE LOCATION OF PROPOSED WELLS AND PLAT

Section 5

East Cameron Block 347 is approximately 120 miles from the nearest shore.

EAST CAMERON BLOCK 347

WELLS		LOCATIONS	DEPTH
A	Surf: BHL:	5350' FSL & 4480' FEL	
B	Surf: BHL:	5350' FSL & 4480' FEL	
C	Surf: BHL:	5350' FSL & 4480' FEL	
D	Surf: BHL:	5350' FSL & 4480' FEL	

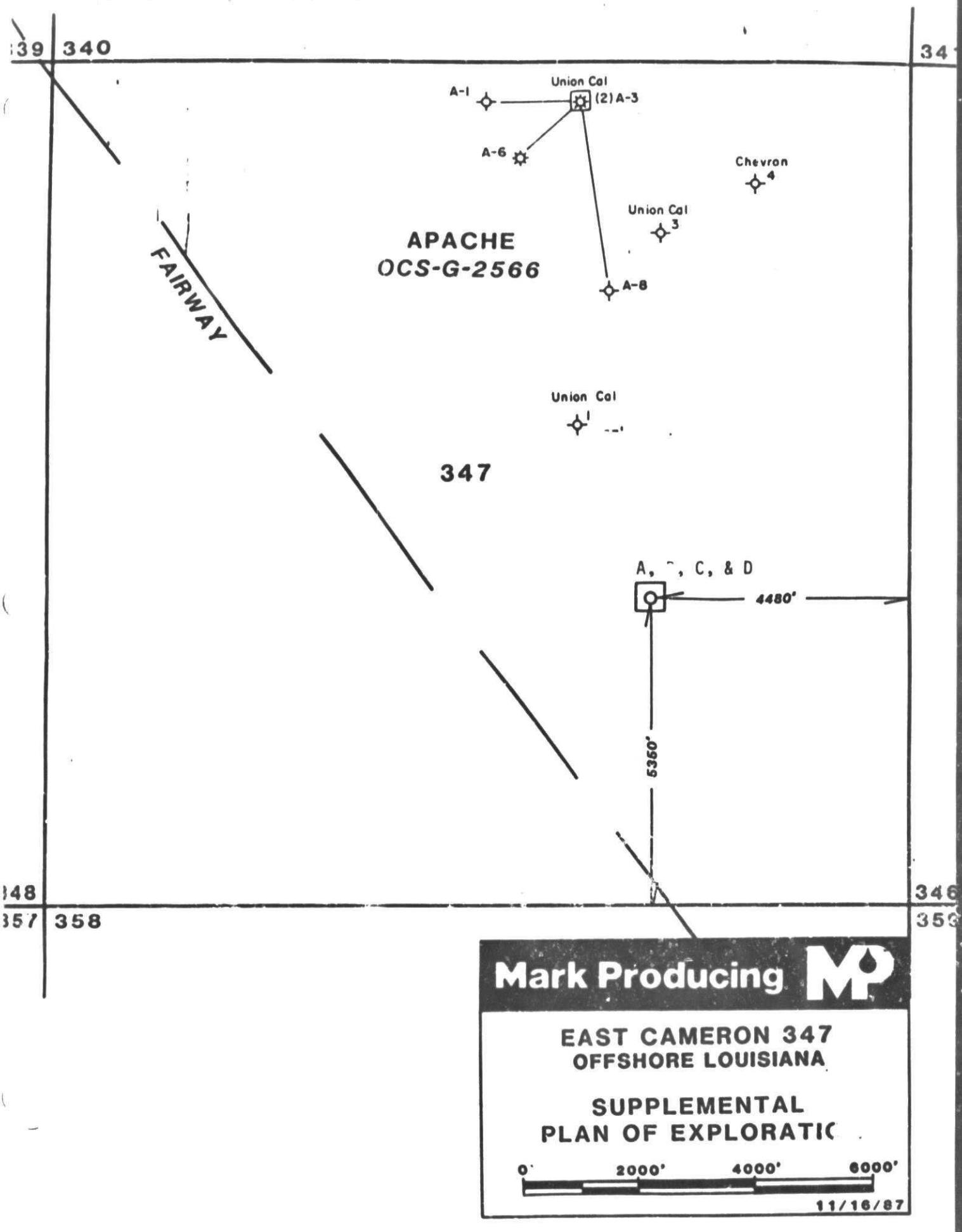


PROPOSED MINERAL DEVELOPMENT
GULF OF MEXICO - EAST CAMERON AREA - SO. ADDITION
OFFSHORE LOUISIANA

MARK PRODUCING, INC.

1" : 8000'

10/87



Mark Producing

EAST CAMERON 347
OFFSHORE LOUISIANA

SUPPLEMENTAL
PLAN OF EXPLORATIC

0' 2000' 4000' 6000'

11/16/87

STRUCTURAL INTERPRETATION AND SHALLOW HAZARDS REPORT

Section 6

Review of our 3-D data set has revealed no shallow hazards for the proposed location 5350' FSL and 4480' FEL of East Cameron block 347. Comparative review with the Union #1 location has been spotted on line 7075 at shotpoint 813. Reviewing the Relative Amplitude and the Automatic Gain Control processed data, which has been displayed at 10 inches per second, show no shallow hazardous structures or gas indications at the proposed location above .65 seconds. An event at .7 seconds has been noted and precautionary steps will be planned. We have also noted the presense of a 16" trunkline running NW to SE 1290' SW of the proposed location.

Review of the data, which has been supplied for perusal by the MMS, show no extraordinary shallow hazards. Drilling with the precautions customary for this area should result in a successfully drilled well.

Joseph Canales
Geophysicists

JC/dac

ONSHORE SUPPORT BASE FACILITIES

Section 7

Magcobar's dock in Morgan City, Lousiana, will serve as the onshore support base facility during the exploratory drilling in East Cameron Block 347. This will serve as port of debarkation for supplies and crews. No expansion or construction is anticipated with respect to this activity.

Listed below are the services and facilities at Magcobar's dock that will be utilized in support of this activity.

1. 31,000 sack bulk barite storage
2. 3,000 lb. liquid calcium chloride capacity
3. Twenty-four (24) hour service
4. Radio tower with phone patche
5. Parking Lot - 100 cars
6. Drinking water
7. Drill water
8. 300 ft. dock space
9. 20 ton crane
10. Office space available, if needed.
11. Bulk delivery barges, liquid mud barges, rig bulk tank (land and inland water), tugs, offshore boats and bulk trucks are readily available when needed.

MUD COMPONENTS

Section 8

Attached is a list of mud components and additives, including the common and chemical trade name of each which will be used in Mark Producing, Inc.'s, operations.

SAFETY AND ENVIRONMENTAL

NO 6

Date Issued 18 Aug. 1977

ISSUED BY THE SAFETY AND ENVIRONMENTAL CONTROL DEPARTMENT

ENVIRONMENTAL INFORMATION SUMMARY
MAGCOBAR PRODUCTS

The information contained in this summary is a compilation of data generated by OPG Environmental Engineering as well as independent testing laboratories. In certain cases the information has been provided by the product supplier.

This summary is intended to be used as a quick reference guide, as more specific information is available through Environmenta. Engineering. There are eight data columns included; an explanation of each follows:

Column 1 – Product Name: Self explanatory.

Column 2 – Physical or Chemical Composition: Description of the major chemistry involved in the product.

Column 3 – Concentration Normally Used in Drilling Mud (#/bbl and ppm): This column describes the use concentrations in both pounds per barrel (on top), and parts per million (on bottom)

Column 4 – TL_m or LD_{50}: This is toxicity data generally for aquatic organisms. Fresh or salt water tests will be so indicated. If data represents other test species it will be so noted. TL_m and LD_{50} represent that concentration of material tested that caused fatalities is 50% of the test population. Natural dilutions are not taken into account during these tests. Concentrations are expressed in ppm.

Column 5 – Water Solubility: Descriptive wording found in the column designates if the product is soluble in water, and if so, to what extent.

Column 6 – TLV: This is the Threshold Limit Value established by OSHA (Occupational Safety and Health Administration). This represents an airborne concentration of a substance, under which it is believed that nearly all workers may be repeatedly exposed day after day, without adverse effect. The (*) designates that this material is considered as a nuisance particulate only.

Column 7 – DOT Hazard Class: The Department of Transportation has promulgated very specific regulations pertaining to the transportation of hazardous substances. This column will describe that hazard.

Column 8 – Special Comments: Found here will be any special comments concerning items such as disposal, handling precautions, etc.

OILFIELD PRODUCTS GROUP, DRESSER INDUSTRIES, INC. P.O. BOX 6504, HOUSTON, TEXAS 77005
PRINTED IN U.S.A.

(1) PRODUCT NAME	(2) PHYSICAL OR CHEMICAL COMPOSITION	(3) CONCENTRATION NORMALLY USED IN DRILLING MUD	(4) 96 HR. TL_m OR LD_{50}	(5) WATER SOLUBILITY	(6) TLV *NUISANCE DUST ONLY	(7) D.O.T. HAZARD CLASS	(8) SPECIAL COMMENTS NOTES
ALUMINUM STEARATE	Aluminum Stearate	.01 - .1 #/bbl 30 - 300 ppm	N/A	Negligibl.	None	None	Allowed in the manufacture of food containers.
BENEX	Anhydride Copolymer	.05 #/bbl 150 ppm	Saltwater 690 ppm	Appreciable	*10mg/m^3	None	Avoid prolonged exposure to dust.
BIT LUBE	Reacted and Neutralized Phenolics	3 - 6 #/bbl 9,000 - 18,000 ppm	Fresh - 97 ppm Salt - 80 ppm	Insoluble	None	None	Avoid prolonged exposure to vapors.
CALCIUM CHLORIDE	Calcium Chloride	0 - 210 #/bbl 0 - 630,000 ppm	Fresh>1,000 ppm	Soluble to Saturation	None	None	Completion fluids
CALCIUM BROMIDE	Calcium Bromide	0 - 210 #/bbl 0 - 630,000 ppm	N/A	Soluble to Saturation	None	None	Completion fluids
CAUSTIC SODA	Sodium Hydroxide	.25 - 2 #/bbl 750 - 6,000 ppm	Toxicity well documented	Complete	.2mg/m^3	Corrosive	Should not be a pH change in natural waters. Materials are corrosive to skin, and should be handled according
CAUSTIC POTASH	Potassium hydroxide	.25 - 2 #/bbl 750 - 6,000 ppm	Toxicity well documented	Complete	2mg/m^3	Corrosive	
CEASTOP	Calcium Carbonates and lignosulfates	25 #/bbl 14,000 - 75,000 ppm	Fresh - 8,400 ppm Salt > 30,000 ppm	Slight	*10mg/m^3	None	Avoid prolonged dust exposure
CEASCAL	Calcium Carbonates and lignosulfates	5 - 10 #/bbl 15,000 - 30,000 ppm	Fresh - 28,000 ppm Salt > 30,000 ppm	Appreciable	*10mg/m^3	None	Basically non-toxic
CELLOSEAL	Cellophane	2 - 15 #/bbl 6,000 - 45,000 ppm	N/A	Insoluble	*10mg/m^3	None	Cellophane is normally considered inert.

(1) PRODUCT NAME	(2) PHYSICAL OR CHEMICAL COMPOSITION	(3) CONCENTRATION NORMALLY USED IN DRILLING MUD	(4) 96 HR. TL_m OR LD_{50}	(5) WATER SOLUBILITY	(6) TLV *NUISANCE DUST ONLY	7) D.O.T HAZARD CLASS	(8) SPECIAL COMMENTS NOTES
CHIP SEAL	Cedar fiber	2 - 15 #/bbl 6,000 - 45,000 ppm	N/A	Insoluble	5mg/m^3	None	Toxicity of wood chips is of no consequence
COTTONSEED HULLS	Cottonseed Hulls	2 - 15 #/bbl 6,000 - 45,000 ppm	N/A	Insoluble	*10mg/m^3	None	There should be no Byssinosis exposure with this product
CYPAN	Sodium Polyacrylate	.25 - 5 #/bbl 750 - 1,500 ppm	Fresh water - 768 mg/l	Appreciable	None	None	Very low order toxicity to rats and rabbits. Tested by American Cyanamid
D.D.	Detergent alkylates	.1 #/bbl 300 ppm	Fresh - 245 ppm Salt - 140 ppm	Appreciable	None	None	Should easily biodegrade
DESCO	Sulfomethylated Tannins	2 - 5 #/bbl 6,000 - 15,000 ppm	N/A	Complete	.05/mg/m^3	None	No toxicity data available - Toxicity should be comparable to Quebracho.
DG-55	Bentonites & Silica Flour	2 - 6 #/bbl 6,000 - 18,000 ppm	N/A	Insoluble	<10mg/m^3 Depending on percent of free silica	None	Toxicity comparable to Magcogel
DIASEAL M	Diatomaceous earth	Depends on spotting application	N/A	Insoluble	2 Fibers/cc for Asbestos content.	None	Material contains asbestos, and must be handled accordingly
DOS-3	Cosmetic Diesel Oil	3% Injection	Salt >1,000 ppm	Insoluble	None	None	Seawater mud with 5% DOS - 3 Toxicity = > 10,000 ppm
DRISPAC	Cellulose Ether polymer	.25 - 5 #/bbl 750 - 15,000 ppm	N/A	Complete	*10mg/m^3	None	Toxicity on product is unknown. Drilling fluid with Drispac added has a toxicity of 45,000 - 74,000 ppm
DRILLAID 420 RAPIDRILL FLO-FLO	Polymer	Depends on application	N/A	Appreciable	None	None	Avoid eye contact and long term dust exposure

(1) PRODUCT NAME	(2) PHYSICAL OR CHEMICAL COMPOSITION	(3) CONCENTRATION NORMALLY USED IN DRILLING MUD	(4) 96 HR. TL_m OR LD_{50}	(5) WATER SOLUBILITY	(6) TLV *NUISANCE DUST ONLY	(7) D.O.T. HAZARD CLASS	(8) SPECIAL COMMENTS NOTES
DOUVIS	Polysaccharide	3 - 1 #/bbl 900 - 3,000 ppm	Fresh > 1,000 ppm	Hygroscopic	None	None	Should easily biodegrade
DV-22	Blend of metallic oxides and asphalt	25 #/bbl 750 ppm	N/A	Insoluble	5mg/m^3	None	Long term dust exposure should be controlled
DV-33	Detergent alkylates in a hydrocarbon carrier	5 - 6 #/bbl 1,500 - 18,000 ppm	Fresh - 32 ppm Salt - 5.2 ppm	Slight	None	Flammable	Used in oil mud systems which are not disposed of by conventional methods.
FLOXIT	Copolymer of acrylamics and Acrylic Acid	01 - .04 #/bbl 30 - 120 ppm	N/A	Appreciable	None	None	Avoid prolonged dust exposure.
GEO-GEL	Sepiolite	to *5 #/bbl to 45,000 ppm	Fresh > *6,428 ppm	Insoluble	None	None	Naturally occurring ore. Basically inert.
INHIBITOR 201	Formulated amines in a naphtha base	1 - 4 #/bbl 3,000 - 12,000 ppm	Fresh - 34 ppm Salt - 61 ppm	Dispersible only	10 ppm	None	Dispose of only in approved areas, or as local laws dictate.
INHIBITOR 202	Formulated amines with an organic salt in a hydrocarbon carrier	1 - 4 #/bbl 3,000 - 12,000 ppm	Fresh - 3? ppm Salt - 29 ppm	Dispersible only	400 ppm	Flammable	Dispose of only in approved areas, or as local laws dictate.
INHIBITOR 303	Formulated morpholine compounds in alcohol carrier	1 - 4 #/bbl 3,000 - 12,000 ppm	Fresh - 7,300 ppm Salt - 13,750 ppm	Appreciable	20 ppm	None	Dispose of only in approved areas, or as local laws dictate.
KLEEN-UP	Detergent and degreaser	Varies	Fresh - 70 ppm Salt - 30 ppm	Appreciable	None	None	Should easily biodegrade.
KWIK SEAL	Cane fiber, nut shells, mica	Depends on severity of lost circulation	Fresh - 17,000 ppm	Insoluble	*10mg/m^3	None	Avoid prolonged exposure to dust.

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KWIK-THIK	Peptized Bentonite	5 - 20 #/bbl 15,000 - 60,000 ppm	Fresh ≃ 14,500 ppm Salt ≃ 100,000 ppm	Insoluble	<10mg/m^3	None	TLV depends on percent of free silica
LIME	Calcium oxide	.5 - 2 #/bbl 1,500 - 6,000 ppm	N/A	Forms solution	5mg/m^3	Air and water shipments only	Irritating to skin and eyes, handle accordingly
LO-WATE	Limestone	8 - 12 lbs/gal. oil d	Fresh > 100,000 ppm Salt > 100,000 ppm	Negligible	*10/mg/m^3	None	Used to weight oil muds.
MC QUEBRACHO	Tannin	2 - 5 #/bbl 6,000 - 15,000 ppm	Fresh - 135 ppm Salt - 158 ppm	Moderately	*10mg/m^3	None	Should easily biodegrade.
MAGCO-POLY-SAL	Polysaccharide	Up to 12 #/bbl Up to 36,000 ppm	Fresh - 31.5 ppm	Appreciable	*10mg/m^3	None	Should easily biodegrade with time.
MAGCO CMC	Carboxymethyl-cellulose	25 - 2 #/bbl 750 6,000 ppm	N/A	Appreciable	None	None	Biodegradable. Toxicity is unknown, however it is a food additive.
MAGLUBE	Paraffinic hydrocarbons in an alkanolamide	.5 - 2 #/bbl 1,500 - 6,000 ppm	Fresh - 167 ppm Salt - 477 ppm	Appreciable only in fresh water	None	None	Should easily biodegrade
MAGCOBAR	Barium sulfate	Depends on mud weight desired	Fresh > 100,000 ppm Salt > 100,000 ppm	Insoluble	*10mg/m^3	None	Natural mineral ore. Basically inert
MAGCOGEL	Bentonite	5 - 35 #/bbl 15,000 - 105,000 ppm	Fresh - 14,500 ppm Salt > 100,000 ppm	Insoluble	<10mg/m^3 Depends on percent of free silica	None	Natural mineral ore
MAGCONATE	Formulated petroleum sulfonate	.5 - 2 #/bbl 1,500 - 6,000 ppm	Fresh - 7.4 ppm Salt - 6,800 ppm	Insoluble	None	None	Almost totally nondispersible in salt water.

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MAGCONOL	2-ethylhexanol	.1 - .2 #/bbl 300 - 600 ppm	Fresh - 41.5 ppm Salt - 26 ppm	Negligible	None	None	Avoid prolonged exposure to vapors
MAGCO-PHOS	Sodium Metaphosphate	1 - 25 #/bbl 300 - 750 ppm	Fresh - 1,200 ppm Salt - 7,100 ppm	Appreciable	*10mg/m^3	None	Avoid prolonged exposure to vapors
MAGCO MICA	Mica flakes	2 - 30 #/bbl 6,000 - 90,000 ppm	N/A	Insoluble	*10mg/m^3	None	Toxicity should be nil as these flakes are insoluble
MIXICAL	Calcium carbonate	5 - 25 #/bbl 1500 - 75,000 ppm	N/A	Nil	*10mg/m^3	None	There should be no toxicity with calcium carbonate
MUD FIBER	Bagasse - Cane fiber	2 - 15 #/bbl 6,000 - 45,000 ppm	N/A	Negligible	None	None	Should be of no consequence. Dust exposures should be controlled
MY-LO-JEL	Starch	1 - 8 #/bbl 3,000 - 24,000 ppm	N/A	Appreciable	*10mg/m^3	None	Non-toxic. No restriction as a food operator
MY-LO-JEL PRESERVA-TIVE	Paraformal-dehyde	.3 - .5 #/bbl 900 - 1,500 ppm	N/A	Partially: temperature and pH dependent	3mg/m^3	None	Toxicity: Oral-Rat = LD_{50} 800 mg/kg body weight
NUT PLUG	Ground walnut shells	2 - 30 #/bbl 6,000 - 90,000 ppm	N/A	Negligible	None	None	Toxicity should be of little consequence
OILFAZE	Blend of dry materials, including clays and Gilsonite	22 - 40 #/bbl 66,000 - 120,000 ppm	Fresh 2,676 ppm Salt - 3,500 ppm	Insoluble	*10mg/m^3	None	Disposal is no problem, as this is an oil mud product and is not discharged.
OS-1	Sodium Sulfite	Maintain excess Sulfite at 20 - 300 ppm	Fresh - 450 ppm Salt - 175 ppm	Complete	None	None	This is an O^2 scavenger.

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OS-1L	Ammonium Bisulfite	Maintain excess sulfite at 100 - 300 ppm	Fresh - 135 ppm Salt - 185 ppm	Complete	None	None	This is an O^2 scavenger.
PIPE-LAX	Surfactants in a Naphtha base	1 - 1 5 #/bbl 3,000 - 4,500 ppm	Fresh - 2,800 ppm Salt - 15,000 ppm	Insoluble	400 ppm for Naphtha	Flammable	Used for spot treatments. Emulsifies readily in seawater.
POLYBRINE	Formulated polymers and carbonates	3 - 6 #/bbl 9,000 - 18,000 ppm	Fresh - 2,250 ppm Salt - 6,100 ppm	Insoluble	*10mg/m^3	None	Dry, inert material
POTASSIUM CHLORIDE	Potassium Chloride	Used to build the KCl/Polymer mud systems	N/A	Soluble to saturation	None	None	Toxicity is well established in literature.
RESINEX	Sulfonated lignites and resins	2 - 5 #/bbl 6,000 - 15,000 ppm	Fresh - 5,400 ppm Salt - 6,800 ppm	Complete	None	None	Avoid prolonged exposure to dust.
SALINEX	An alcohol ether sulfate	1 - 3 #/bbl 3,000 - 9,000 ppm	Fresh - 16 ppm Salt - 6.7 ppm	Appreciable	None	Flammable	Avoid prolonged exposure to vapors.
SALT GEL	Attipulgite clays	Depends on viscosity treatment	N/A	Insoluble	*10mg/m^3	None	This material is known as Fuller's Earth; a basically inert material.
SE-11	Dodecyl Benzene Sulfonates in a hydrocarbon carrier	5 - 4 #/bbl 1,500 - 12,000 ppm	Fresh - 165 ppm Salt - 100 ppm	Insoluble	None	None	Control long term vapor exposure. Not discharged in oil mud product.
SI-1000	Organic phosphates	Maintain excess phosphate at 5 - 10 ppm	Fresh - 2,830 ppm Salt - 7,000 ppm	Complete	None	None	Used as a scale inhibitor.
SODA ASH	Sodium Carbonate	.25 - 2 #/bbl 750 - 6,000 ppm	N/A	Moderate	*10mg/m^3	None	Toxicity Oral - Rat 4200 mg/kg Basically non-toxic

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SODIUM BICARBONATE	Sodium Bicarbonate	.25 - 2 #/bbl 750 - 6,000 ppm	N/A	Appreciable	*10mg/m^3	None	Toxicity: Oral - Rat 5gm/kg Not an irritant Basically non-toxic.
SODIUM CHROMATE	Sodium Chromate	.25 - 2 #/bbl 750- - 6,000 ppm	N/A	Complete	.5mg/m^3	Corrosive	Chromate treated muds must not be discharged to the natural environment
SODIUM DICHROMATE	Sodium Dichromate	25 - 2 #/bbl 750 - 6,000 ppm	N/A	Complete	.5mg/m^3	Corrosive	Chromate treated muds must not be discharged to the natural environment
SPERSENE	Chrome Lignosulfonate	Average 4 #/bbl 12,000 ppm	Fresh - 7,800 ppm Salt - 12,200 ppm	Complete	*10mg/m^3	None	Control long term dust exposures.
STABIL-HOLE	Blended clays and asphalts	5 - 10 #/bbl 15,000 - 30,000 ppm	Fresh >25,000 ppm Salt >25,000 ppm	Insoluble	5mg/m^3	None	Long term exposure to skin may produce photosensitization.
SURFAK-E	Ethylene oxide nonylphenol	.1 #/bbl 300 ppm	Fresh - 23,000 ppm Salt - 37,500 ppm	Appreciable	50 ppm	Flammable	Control long term vapor exposure.
SURFAK-M	Nonionic Phenol Ethylene oxide	.5 - 1 #/bbl 1,500 - 3,000 ppm	Fresh - 110 ppm Salt - 115 ppm	Appreciable	50 ppm	None	Control long term vapor exposure.
TANNATHIN	Lignite	2 - 5 #/bbl 6,000 - 15,000 ppm	Fresh - 24,500 ppm Salt > 20,000 ppm	Negligible	*10mg/m^3	None	Avoid prolonged dust exposure.
UNISTEAM	Dibasic acid with an amine salt	Dependent of rate of steam produced.	Fresh >2,143 ppm	Complete	None	None	For use in geothermal environments to reduce corrosion
VERTOIL	Blend of dry materials, including fatty acid soaps and Gilsonite	22 - 40 #/bbl 66,000 - 120,000 ppm	Fresh - 570 ppm Salt - 140 ppm	Insoluble	*10mg/m^3	None	Used in oil muds which are not disposed of in the conventional methods.

(1) PRODUCT NAME	(2) PHYSICAL OR CHEMICAL COMPOSITION	(3) CONCENTRATION NORMALLY USED IN DRILLING MUD	(4) 96 HR. TL_m OR LD_{50}	(5) WATER SOLUBILITY	(6) TLV *NUISANCE DUST ONLY	(7) D.O.T. HAZARD CLASS	(8) SPECIAL COMMENTS NOTES
VG-69	Organophylic Clay	.5 - 2 #/bbl 1,500 - 6,000 ppm	Fresh >15,000 ppm Salt >20,000 ppm	Dispersible	*10mg/m^3	None	Gelling agent for oil muds
VISQUICK VISBESTOS	Asbestos	5 - 10 #/bbl 15,000 - 30,000 ppm	N/A	Insoluble	2 fibers/cc	None	Toxicity well documented for inhalation. Handle with caution. Do not breathe dust.
XP-20	Chrome lignite	3 - 4 #/bbl 9,000 - 12,000 ppm	Fresh - 3,000 ppm Salt - 8,600 ppm	Appreciable	.5mg/m^3	None	Avoid prolonged exposures to dust.

J. Connor Consulting

P.O. Box 218753 Houston, Texas 77218 713-558-0607

November 16, 1987

PROJECTED AIR EMISSION SCHEDULE FOR EXPLORATION PROJECT

GENERAL INFORMATION

Location of Facility:	East Cameron 347 OCS-G 2560
Distance Offshore:	120 miles
Name of Rig:	Jackup
Operator:	Mark Producing, Inc. 675 Bering Drive Houston, Texas 77057
Contact Person:	Mrs. Susan Hathcock
Well Footage to be Drilled in 1987:	7100'
Well Footage to be Drilled in 1988:	20,906'
Date Drilling Will Begin:	November 20, 1987

MAJOR SOURCE (OFFSHORE)

Power used aboard drilling vessel; approximate footage drilled 28006'.*

Emitted Substance	Projected Emissions (lbs/day)**	tons/year 1987	Projected Emissions (lbs/day)**	tons/year 1988
CO	(94)	1.41	(92)	4.14
SO_2	(30)	.45	(29)	1.32
NOx	(440)	6.60	(432)	19.44
VOC	(35)	.53	(35)	1.57
TSP	(31)	.47	(31)	1.38

* Based on 60 hphr/ft. from Table 4-3, "Atmospheric Emissions from Offshore Oil and Gas Development and Production", EPA No. 450/3-77-026, June, 1977.

** Emission factors from Table 3.3.3-1, "Compilation of Air Pollutant Emission Factors", Third Edition, EPA Report AP-42, August, 1977.

MINOR SOURCES (OFFSHORE)*

Including helicopter landing and take-off (10 trips/week); supply and crew boats (7 trips/week each); loading and unloading operations; and incineration of waste paper (average 750 pounds of waste per month).

Emitted Substance	Projected Emissions (tons/year) 1987	Projected Emissions (tons/year) 1988
CO	.24	.74
SO_2	.01	.02
NOx	.04	.14
VOC	.02	.07
TSP	.01	.03

* Tables 3.2.1-3, 3.2.3-1 and 2.1-1, "Compilation of Air Pollutant Emission Factors", Third Edition, EPA Report AP-42, August, 1977.

TOTAL ALL SOURCES (tons/year)

	CO	SO_2	NOx	VOC	TSP
1987					
Major	1.41	.45	6.60	.53	.47
Minor	.24	.01	.04	.02	.01
TOTAL	1.65	.46	6.64	.55	.48
1988					
Major	4.14	1.32	19.44	1.57	1.38
Minor	.74	.02	.14	.07	.03
TOTAL	4.88	1.34	19.58	1.64	1.41

ONSHORE SOURCES

These should be about the same as minor sources unless new facilities are installed at the onshore base. No additional facilities are required or planned at this time.

EMISSION EXEMPTION DETERMINATION

$$\text{For CO: } E = 3400^{2/3} = 3400(120)^{2/3} = 82\,718 \text{ tons/year}$$

$$\text{For NOx, VOC, TSP \& SO}_2\text{: } E = 33.3D = 33.3(120) = 3,996 \text{ tons/year}$$

As per DOI/MMS regulations, this facility is exempt from further air quality review as it has been determined that its operations will not have a significant adverse environmental impact on air quality.

COASTAL ZONE MANAGEMENT

CONSISTENCY CERTIFICATION

Supplemental Plan of Exploration
Type of Plan

East Cameron Block 347
Area and Block

OCS-G 2566
Lease Number

The proposed activities described in detail in this Plan comply with Louisiana approved Coastal Management Program(s) and will be conducted in a manner consistent with such Program(s).

Mark Producing, Inc.
Lessee or Operator

L. Susan Hathcock
Certifying Official

November 16, 1987
Date