

In Reply Refer To: MS 5231

January 11, 1991

ARCO Oil and Gas Company
Attention: Mr. Dennis Sustala
Post Office Box 1346
Houston, Texas 77251

NOTED -- KRAMER

Gentlemen:

Reference is made to the following plan received January 2, 1991:

Type Plan - Supplemental Development Operations Coordination Document
Lease - OCS-G 3242
Block - A-466
Area - High Island
Activities Proposed - Wells B-12 through B-14

In accordance with 30 CFR 250.34, this plan is hereby deemed submitted and is now being considered for approval.

Your control number is S-2585 and should be referenced in your communication and correspondence concerning this plan.

Sincerely,

(Orig. Sgd.) A. Donald Giroir

D. J. Bourgeois
Regional Supervisor
Field Operations

bcc: Lease OCS-G 3242 POD File (MS 5032)
MS 5034 w/public info. copy of the plan
and accomp. info.

DTrocquet:cck:01/11/91:DOGDCOM

Office of
Program Services
JAN 15 1991
Information Services
Section

ARCO Oil and Gas Company ◆

ARCO OIL AND GAS COMPANY
1201 ELMWOOD PARK BOULEVARD
NEW ORLEANS, LA 70123-2394

PUBLIC INFORMATION COPY

December 31, 1990

Mr. Dan B. Bourgeois
Regional Supervisor - Field Operations
GULF OF MEXICO OCS REGION
Minerals Management Service
U. S. Department of the Interior
1201 Elmwood Park Boulevard
New Orleans, LA 70123-2394



Re: Development Operations Coordination Documents - SUPPLEMENTAL
High Island A-466
OCS-G 3242

Dear Mr. Bourgeois:

ARCO Oil and Gas Company, a Division of Atlantic Richfield Company, herein submits five proprietary copies and four public information copies of a Supplemental Development Operations Coordination Document(DOCD) and appropriate attachments for High Island Block A-466, Well No. B-12. A Supplemental Plan of Development/Production as amended July 28, 1980, was approved on September 9, 1980, for the installation of Platform "B" and Wells B-1 through B-8. Supplemental Development Operations Coordination Plans (DOCDs) for Wells No. B-9, B-10, and B-11 were approved on February 13, 1989, April 21, 1989, and June 7, 1989, respectively. Production from High Island A-466 Well B-11 began on August 27, 1989.

This Supplemental DOCD was prepared in accordance with 30 CFR 250.34 and provides for the drilling of three additional wells from slots "N", "M" and "O" on the "B" Platform. When completed, the wells will flow through existing production equipment located on the platform. All other aspects the plan approved June 7, 1989, remain the same. The new proposed well locations and spud dates are as follows:

| Well | Surface Location | Depth PTVD | Water Depth | Drilling Days | Anticipated Spud Date |
|--------------|--------------------|------------|-------------|---------------|-----------------------|
| B-12 BHL: | 6000'FNL & 450'FEL | ' | 185' | 30 | January 15, 1991 |
| B-13 BHL: | 6000'FNL & 450'FEL | ' | 185' | 30 | March 15, 1991 |
| B-14 BHL: | 6000'FNL & 450'FEL | ' | 185' | 30 | May 15, 1991 |

A high resolution geophysical survey was conducted in October, 1975, using magnetometer, side scan sonar, fathometer, subbottom profiler, and sparker instruments. A review of the survey map indicates there are no hazards to drilling at the Platform "B" location. Wells B-12, B-13, and B-14 will be drilled from the "B" platform in approximately 185 feet of water. A map showing the well location and bathymetry is attached. Structure maps showing the zones of interest are also attached.

The High Island Block A-466 Wells No. B-12, B-13, and B-14 will be drilled using a mobile offshore drilling unit such as Telelynne Movable Offshore Inc.'s Rig No. 20. The rig is a ABS Class A-1 self-elevating Mobile Drilling Unit Designed to work in water depths to 250'. ARCO Oil and Gas Company supervisory drilling personnel are trained in blowout prevention and control procedures.

ARCO has an Oil Spill Contingency Plan which was approved by the MMS on August 11, 1988. Spill reporting procedures and a list of company personnel responsible for pollutant spill cleanup are contained in the Oil Spill Contingency Plan. ARCO's onshore base in Sabine Pass, Texas will be used for support during the proposed drilling operations and in the event of an oil spill. Clean Gulf Associates (CGA) has oil spill cleanup equipment available for use by ARCO, as a member company. The equipment is stored at Grand Isle, Venice, Cameron, Houma, Theodore, and Intercoastal City, Louisiana and at High Island, Texas City, Port Aransas, and Fulton, Texas.

Gas and associated condensate production are expected to be found on this lease. Should a spill occur a Fast Response Unit would be obtained from the Clean Gulf Associates inventory to remove oil from the ocean in order to prevent or minimize any potential shoreline impacts. As indicated in ARCO's Oil Spill Contingency Plan additional equipment for the removal of oil at sea and for shoreline cleanup would be obtained from CGA as needed for the particular situation. The nearest location for a FRU is in Galveston Texas, with an alternate location in Cameron, LA.

Response time to High Island Block A-466 is estimated at 15.5 hours. Response time is estimated as follows. All boat travel times are based on a travelling speed of 9 knots.

| | |
|-------------------------------------|---------|
| A. Locate boat | 0.0 hr |
| Boat to High Island CGA base | 4.0 hr |
| B. Contract labor to base | 3.0 hr |
| C. CGA Supervision to base | 4.0 hr |
| | |
| Total Procurement time ¹ | 4.0 hr |
| Equipment Loadout | 1.0 hr |
| Transport to spill | 10.0 hr |
| Equipment Deployment | 0.5 hr |

TOTAL RESPONSE TIME 15.5 hr

¹ Total procurement time is the maximum of categories A, B, and C.

Site-specific review of the planned activities have been conducted using the methodology employed in the Final Environmental Impact Statement for Gulf of Mexico Sales 131, 135, and 137. According to Figure IV-2 the proposed drilling location is in launch site W-17 and probability for landfall of spilled oil within 10 days is less than .5 percent. No specific landfall sites are predicted by the methodology employed in the Impact Statement for spills originating from High Island A-466.

In the event a spill threatens to reach shore, ARCO would refer to the Biological Maps included in the CGA Manual Volume II to determine the appropriate action to protect recreational beaches, biologically sensitive areas and endangered species where landfall is predicted.

Response modes for onshore protection and cleanup are referenced in the CGA Manual Volume II, on the pages immediately following the above mentioned maps of biological sensitivity. Priority for a shoreline cleanup would be given to environmentally sensitive areas which would be cleaned using these recommended methods as outlined in the CGA Manual Volume II.

No new or unusual technology is to be employed to drill or complete this well. The requirements imposed by the lease stipulations, including the archaeological survey, have been satisfied per your letter to ARCO addressed to Mr. J. F. Templeton dated march 25, 1980.

During the proposed drilling on this lease wastes likely to be generated include 2733 bbls drilling fluid and 3416 bbls cuttings estimated based on drilling a 30" hole to 450', 26" hole to 1000', 17-1/2" hole to 4500', and 12-1/4" hole to TD. If waterbased fluid is used the mud and cuttings will be discharged overboard at rates of less than 1000 BPD. ARCO Oil and Gas Company supervisory drilling personnel are trained in blowout prevention and control procedures. A list of typical mud system additives is attached.

Also generated will be an estimated 12 bbls/day sanitary waste, 160 bbls/month deck drainage from rainfall and equipment and drilling deck washings. Sanitary wastes will be treated onboard with U.S. Coast Guard approved sanitation treatment facilities. Deck drainage will be routed through a skimming system to remove any free oil. No waste will be discharged that contains free oil.

Production wastes will include as much as 1000 BPD per well of produced water. Produced water will be separated from liquid and gas production and treated in order to reduce the oil and grease content of the water to less than 48ppm. The produced water will then be discharged overboard.

Effluent waters, deck drainage, formation waters, and drilling fluids will be disposed of according to the stipulations of the U.S. Environmental Protection Agency's National Pollutant Discharge Elimination System (NPDES) General Permit GMG 280000. Water based drilling fluid and cuttings which meet the NPDES General Permit toxicity limitation of a 96 hr LC50 of greater than 30,000ppm will be discharged overboard. Other water based muds and oil based muds will either be transported back to shore for reclamation or disposal at an approved commercial

facility or will be disposed by annular injection in an offshore well on the lease. No waste products which contain oil will be disposed of into the Gulf of Mexico.

ARCO Oil and Gas Company, a Division of Atlantic Richfield Company, hereby requests that in accordance with 30 CFR 250.67(c) the above area be classified as "Zones where the absence of H₂S has been confirmed." Well log information and production data from the ARCO High Island Block A-466 Wells B-1 to B-11 indicates the absence of H₂S when drilling to similar stratigraphic horizons as proposed for the High Island Block A-466 Wells No. B-12, B-13, and B-14. The information confirms that H₂S is not present in the area in quantities greater than or equal to 20 ppm.

Air Emissions:

Source of Emissions

- MODU TELEDYNE MOVIBLE 20
- 3 - EMD SR12EW1W 1620 hp diesel engines on main generators
- 2 - GMC 8V-71N diesel engines drive cement unit
- 1 - GMC 4-71T diesel engine powers electric logging unit

Total Emissions

| | lb/day | ton/yr |
|------------------------------------|--------|--------|
| Nitrogen Oxides (NO _x) | 242 | 44.1 |
| Sulfur Oxides (SO _x) | 28 | 5.1 |
| Volatile Organic Compounds (VOC) | 64 | 11.8 |
| Particulates (TSP) | 6 | 1.2 |
| Carbon Monoxides (CO) | 24 | 4.4 |

Emission Exemptions:

As per the guidelines contained in 30 CFR 250.45(d) Exemption Formulas the activities described in this Plan are below the exemption levels. The emission exemptions are calculated as follows based on the distance of 83.0 miles from Block A-466 to the nearest point on shore at Galveston, Texas.

- NO_x, SO_x, VOC, TSP = 33.3 (83.0 miles) TPY
- = 2764 TPY
- CO = 3400 (83.0 miles)^{2/3} TPY
- = 64694 TPY

Calculation of Projected Emissions:

| | |
|------------------------------------|----------------------|
| Emission Factors ¹ - | |
| Nitrogen Oxides (NO _x) | 24.0 lb / 1000 hp-hr |
| Sulfur Oxides (SO _x) | 2.8 lb / 1000 hp-hr |
| Volatile Organic Compound (VOC) | 0.63 lb / 1000 hp-hr |
| Particulates (TSP) | 2.4 lb / 1000 hp-hr |
| Carbon Monoxide (CO) | 6.4 lb / 1000 hp-hr |

Table 3.4-1 Emissions Factors for Stationary Large Bore Diesel Fueled Engines, EPA Report AP-42

Assumptions

| | | |
|----------------------------------------------------------------------------------------------|---------|----------------|
| Drilling time per well | 30 days | |
| Percent of time with 3 generators at 25% power | 25% | |
| Total BHP-HRS for generators at 25% | | 334 M BHP-HRS |
| Percent of time with generators at 75% power | 75% | |
| Total power usage at | | 3007 M BHP-HRS |
| | | |
| Cement pump operating time at 195 BHP or less (2 hr/week testing BOP, 5 hr/casing string) | 30 hrs | |
| Cement pump power usage | | 6 M BHP-HRS |
| Logging unit operating time | | |
| GIH - idling @ 90 BHP | 30 hrs | |
| POH - variable @ 120 BHP | 30 hrs | |
| Logging unit power usage | | 328 M BHP-HRS |
| Total HP-HRS for diesel powered engines for well No. E-12 | | 3675 M BHP-HRS |

Calculation of Projected Emissions

| | |
|------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Nitrogen Oxides (NO _x) | 24 lb/ M HP-hr x 3675 M HP-hr x 0.0005 ton/lb = 44.1 T NO _x x 3 Wells = 132.3 Tons NO _x |
| Sulfur Oxides (SO _x) | 2.8 lb/ M HP-hr x 3675 M HP-hr x 0.0005 ton/lb = 5.1 T SO _x x 3 Wells = 15.3 Tons SO _x |
| Carbon Monoxides (CO) | 6.4 lb/ M HP-hr x 3675 M HP-hr x 0.0005 ton/lb = 11.76 T CO x 3 Wells = 35.28 Tons CO |
| | |
| Volatile Organic Compounds (VOC) | 0.63 lb/ M HP-hr x 3675 M HP-hr x 0.0005 ton/lb = 1.2 T VOC x 3 Wells = 3.6 Tons VOC |
| | |
| Particulates (TSP) | 2.4 lb/ M HP-hr x 3675 M HP-hr x 0.0005 ton/lb = 4.4 T TSP x 3 Wells = 13.2 Tons TSP |

Drilling operations will be supported from ARCO Oil and Gas Company's Sabine Pass shorebase located approximately 90 miles from High Island Block B-466. No new facilities are expected to be required to support the proposed operations. The frequency of helicopter flights for transportation of drilling and contract personnel to the drilling rig during drilling operations is estimated to be 10 round trips per week. During drilling activities one workboat will average about 1.5 round trips per week. Workboats are typically 160' to 200' in length and travel up to 9 knots in open waters. A utility boat may also be used to supplement the workboat as needed. Utility boats are somewhat smaller than workboats, generally only 100' to 110' in length. A crewboat will also be utilized for the weekly crew change during times when helicopter travel is restricted due to weather. Crew boats are generally 110' to 120' in length with an aluminum hull and travel at about 20 knots. A Vicinity Plat is attached for

DOCD - Supplemental

OCS-G 3242

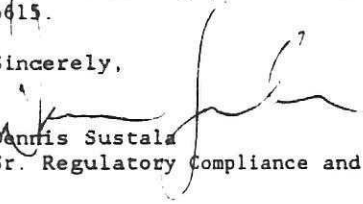
Page 6

reference which shows the likely route for travel between the shorebase and Block B-466. The "B" platform will be monitored for pollution daily or as otherwise approved by the District Supervisor.

Water depths in Block A-466 are less than 400 meters; therefore, no effect on chemosynthetic communities is likely. A Certificate for Coastal Zone Consistency is not and an Environmental report are not required for this Supplemental DOCD.

If there are any questions concerning this Supplement, please contact me at (713) 584-6615.

Sincerely,

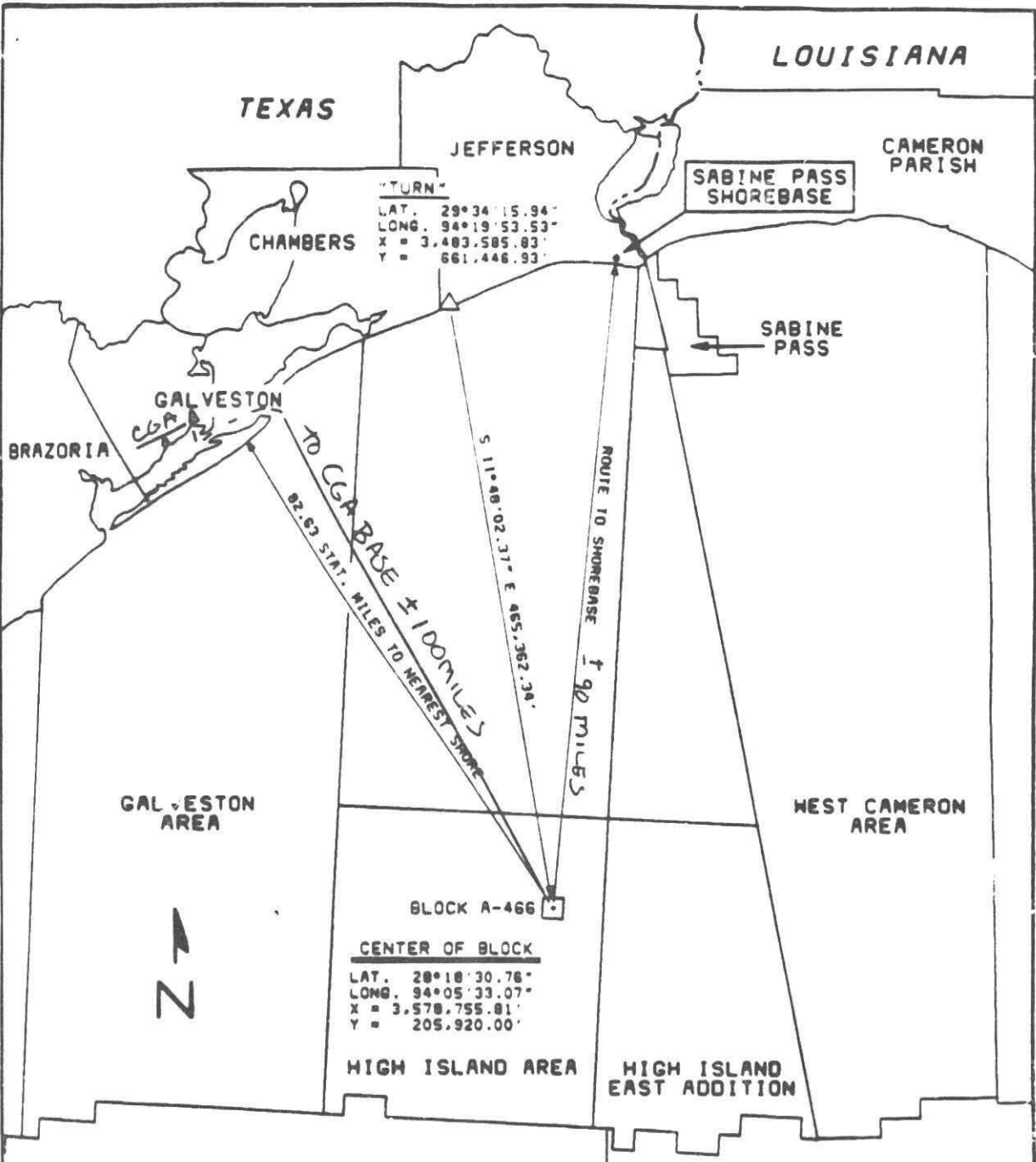


Dennis Sustala
Sr. Regulatory Compliance and Environmental Coordinator

xc: High Island Block Blk A-466 Gen. Lse File

w/E

N. Usher - D-1140 PRC



ARCO OIL AND GAS COMPANY
VICINITY PLAT
BLOCK A-466
HIGH ISLAND AREA

I CERTIFY THAT THE INFORMATION
SHOWN ON THIS PLAT IS CORRECT.

[Handwritten Signature]

SCALE: 1"=80,000' APRIL 1989

T- 213,840.00'

"B" PLATFORM LOCATION

X = 3,602,098.00'
Y = 207,836.67'
LAT 28° 18' 39.939"
LONG 94° 01' 11.263"

184'

186'

WATER DEPTH

BLOCK A-466

OSC - 3242

X = 3,566,675.81'

X = 3,602,098.00'

Y = 198,000.00'

Lizmie Justela 5/1/87

I CERTIFY THAT THE INFORMATION SHOWN ON THIS PLAT IS CORRECT



ATLANTIC RICHFIELD COMPANY

LOCATION PLAT

HIGH ISLAND AREA

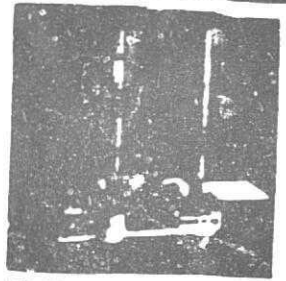
SCALE: 1" = 2000'

463

CHSVDEN

TELEDYNE 30

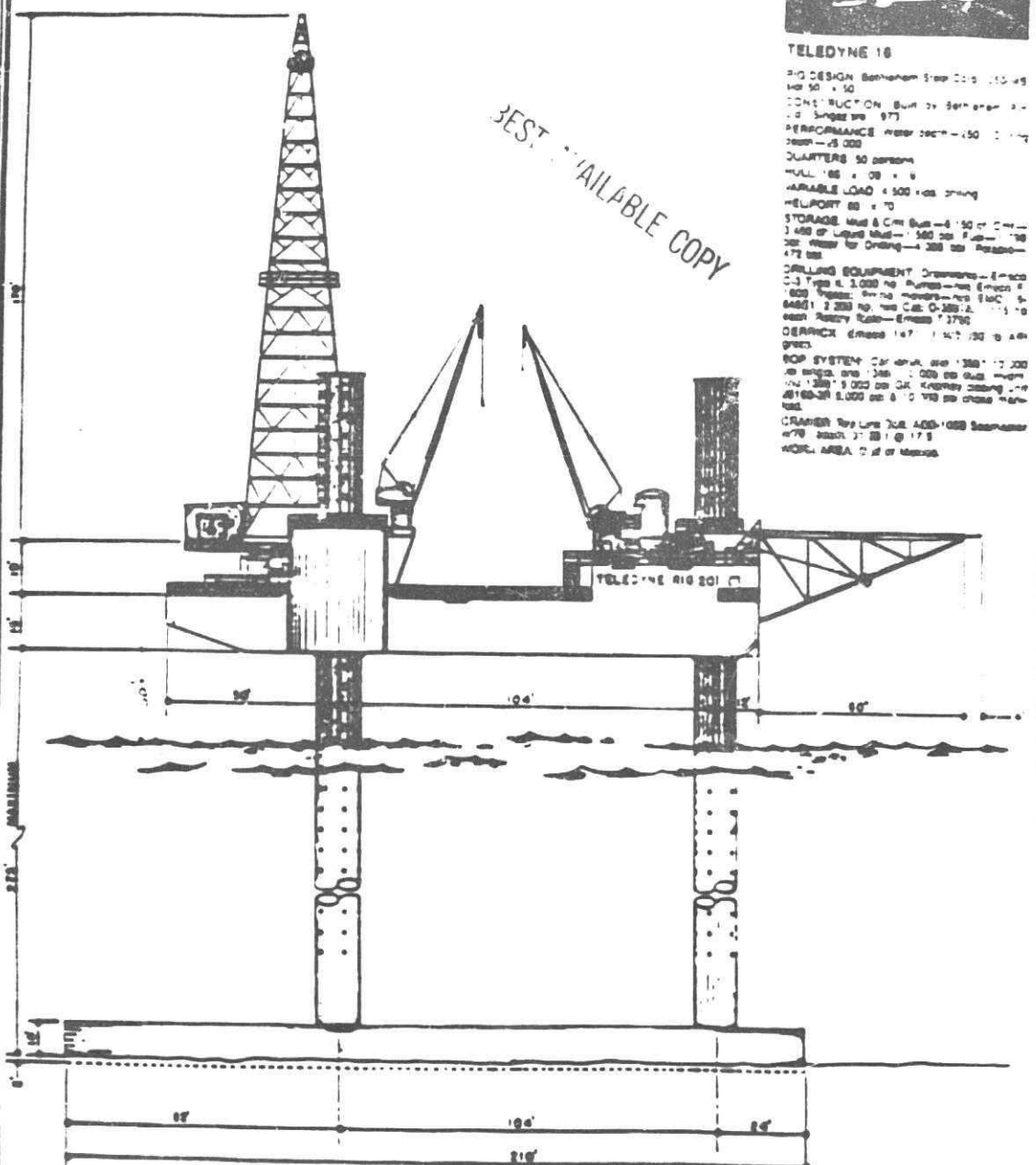
CONSTRUCTION Built by Bethlehem Steel
 Shushanberg Corp 1968
 STORAGE Mud & Core Buoy—4 400 cu Liquid
 Mud— 500 200 motor for Drilling—4 600 cu ft
 Capacity—74 cu ft
 DRILLING EQUIPMENT Drawworks—E-mech
 C-3 Type 1, 3,000 hp Pulley—E-mech 7' dia
 2-1/2" 28 400 2-1/2" dia. Motors—1 8470
 5R-2E-A 520 hp each Rotary Table—
 E-mech 7' 3/4" dia 2 4000 lb capacity
 CRANES Two Line Bell ABS-2-6A Steamcrane
 4700 lb capacity 3' 48" B 20
 OTHER DATA 1000 sq ft Deck Area
 WORK AREA 700 sq ft Deck



TELEDYNE 18

RIG DESIGN Bethlehem Steel Corp 1968
 100' x 50' x 10'
 CONSTRUCTION Built by Bethlehem Steel
 Shushanberg Corp 1977
 PERFORMANCE Motor Power—150 hp
 Capacity—5,000
 QUARTERS 50 persons
 HULL 100' x 50' x 10'
 VARIABLE LOAD 4,500 lbs drilling
 HELICOPTER 80' x 70'
 STORAGE Mud & Core Buoy—4 50 cu Core—
 3 400 cu Liquid Mud—1 500 cu Capacity—70
 cu ft motor for Drilling—4 200 cu ft Capacity—
 472 cu ft
 DRILLING EQUIPMENT Drawworks—E-mech
 C-3 Type 1, 3,000 hp Pulley—E-mech 5'
 1/2" dia Motors—1 8470 5-
 6400 1 2000 hp motor Cap. 0-2000 lb 1 1/2" dia
 each Rotary Table—E-mech 7' 3/4" dia
 capacity
 CRANES Two Line Bell ABS-2-6A Steamcrane
 4700 lb capacity 3' 48" B 20
 WORK AREA 700 sq ft Deck

BEST AVAILABLE COPY



BLOWOUT PREVENTION EQUIPMENT

The Teledyne 20 jacking drilling unit will be used to conduct drilling on High Island Block A-466. The following is a list of BOP equipment:

Divorter: 30", 1000 psi WP with 30" divorter spool with two 8" outlets and two 8" hydraulic valves.

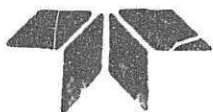
Surface: A 20-3/4" stack with three 20-3/4", 3000 psi WP Cameron Type 'U' single rams and one 21-1/4", 2000 psi WP annular. A 13-5/8" stack with two 13-5/8" 10000 psi WP Cameron Type 'U' single rams, one 13-5/8" 10000 psi WP Cameron Type 'U' double ram, one 13-5/8" 5000psi WP Hydril-GL annular with 13-5/8" 5000 psi WP flanged outlet and one 2-9/16" 10000 psi WP choke manifold. The accumulator system is a Koomey 315 gallon closing unit with 10 outlets and consoles located at the driller's station.

BY RL
THRO. BY

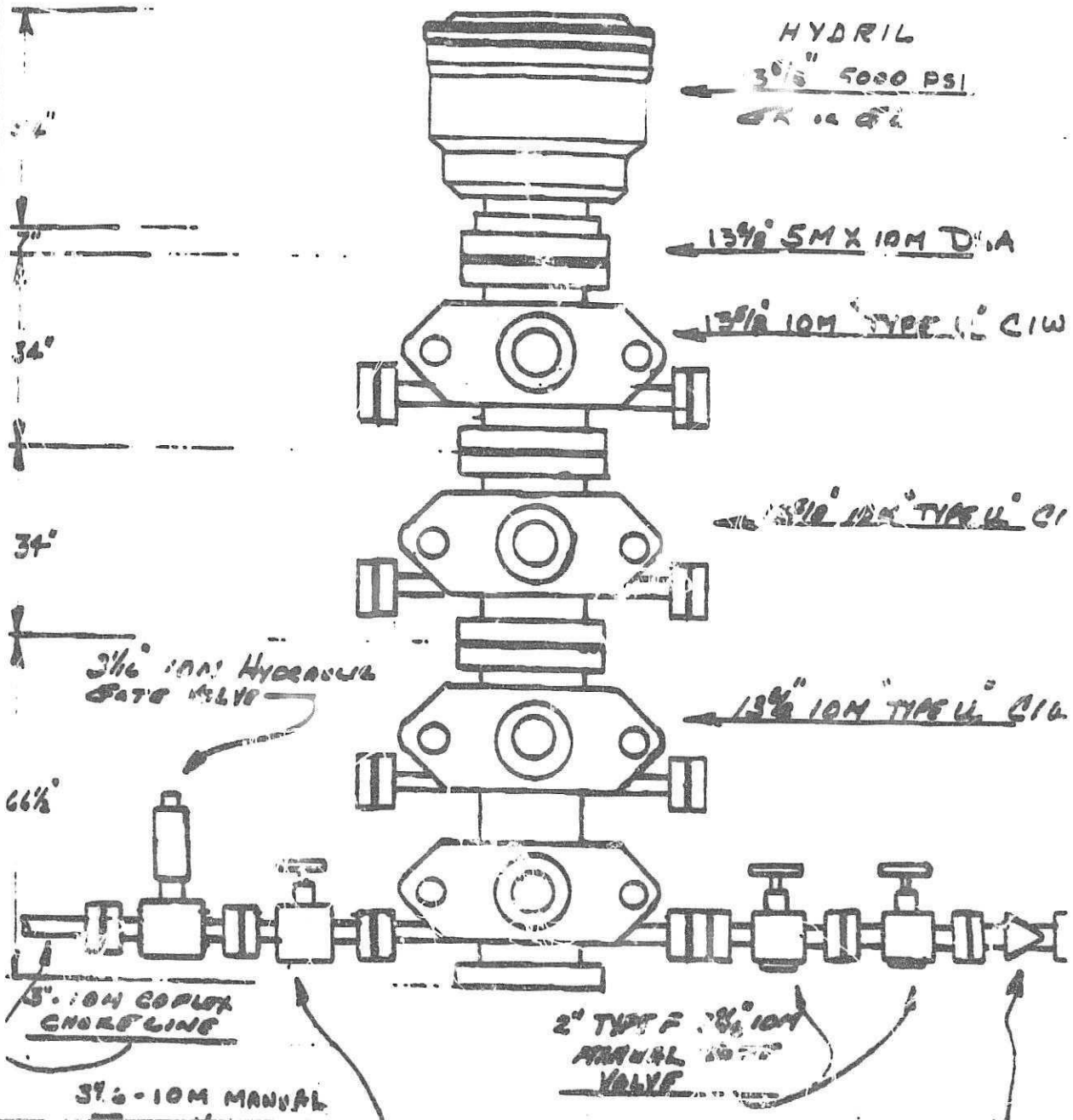
DATE 6/2/88
DATE

SUBJECT RIS 20 B.O.P
STACK ARRANGEMENT

DRAWING NO. L-100-1
JOB NO.



TELEDYNE
MOVIBLE OFFSHORE



MUD PRODUCTS FOR USE OFFSHORE

PRIMARY

| <u>Mud Component Description</u> | <u>Chemical Name</u> | <u>Application</u> |
|----------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------------|
| Barite* | Barium sulfate | For increasing mud weight up to 20 ppg. |
| Bentonite* | Naturally occurring clay | Viscosity and filtration control in water-base muds. |
| Attapulgit* | Naturally occurring clay | Viscosifier in salt-water muds. |
| Phosphate | Sodium tetraphosphate | Thinner for low pH fresh-water muds. |
| Mined Lignite* | Lignite | Dispersant, emulsifier and supplementary additive for fluid loss control. |
| Causticized Lignite | NaOH treated Lignite | 1-6 ratio caustic-lignite-dispersant, emulsifier and supplementary fluid loss additive. |
| Modified Lignosulfonate | Sodium Lignosulfonate | Dispersant and fluid loss control additive for water-base muds. |
| Blended Lignosulfonate Compound | Compound of chemicals | Blended multi-purpose dispersant, fluid loss agent and inhibitor for unique mud systems. |
| CMC | Sodium Carboxymethyl Cellulose | For fluid loss control and barite suspension in water-base muds. |
| Detergent (Biodegradable) | Compound of vegetable oil | Used in water-base muds to aid in dropping sand. Emulsifies oil, reduces torque and minimizes bit-balling. |
| Caustic Soda | Sodium Hydroxide NaOH | For pH control in water-base muds. |
| Soda Ash | Sodium Carbonate | For treating out calcium sulfate in low pH muds. |
| Sodium Bicarbonate | Sodium Bicarbonate | For treating out calcium sulfate or cement in high pH muds. |

*Mined Minerals

MUD PRODUCTS FOR USE OFFSHORE
Page - Two

SECONDARY

| <u>Mud Component Description</u> | <u>Chemical Name</u> | <u>Application</u> |
|-------------------------------------------------------------------------------------|----------------------|---------------------------------------------------------------|
| Asbestos Fibers* | Asbestos | Viscosifier for fresh or salt-water muds |
| Nut Shells: Fine | Natural Material | Mos. often used to prevent lost circulation. |
| Ground Mica* | Mica | Used for prevention of lost circulation. |
| Combination of granules, flakes, and fibrous materials of various sizes in one sack | None | Used where large crevices or fractures are encountered. |
| Sodium Chromate | Sodium Chromate | Used in water-base muds to prevent high temperature gelation. |

TERTIARY

| | | |
|---------------------------------------------------------|------|---------------------------------------------------------------------------------------------------------|
| Oil Soluble Surfactants | None | Non-weighted fluid for spotting to free differentially stuck pipe. |
| Blend of Fatty Acids Sulfonates and Asphaltic Materials | None | Invert emulsion that may be weighted to desired density for spotting to free differentially stuck pipe. |

*Mined Minerals