OCS-G-3164
S-1219

NOV 09 1983

In Reply Refer To: RP-2-1

ODECO Oil & Gas Company
Attention: Mr. E. S. Rreda
Post Office Box 61780
New Orleans, Louisiana 70161

Gentlemen:

Reference is made to your Supplemental Plan of Exploration received October 26, 1983, for Lease OCS-G 3164, Block 135, Ship Shoal Area. This plan includes the drilling of Wells Nos. 13 and 14.

In accordance with 30 CFR 250.34, revised December 13, 1979, and our letter dated January 29, 1979, this plan has been determined to be complete as of November 9, 1983, and is now being considered for approval.

Your plan control number is S-1219 and should be referenced in your communication and correspondence concerning this plan.

Sincerely yours,

(Orig. Sgd.) D.W. Solanas

D. W. Solanas
Regional Supervisor
Rules and Production

bcc: Lease OCS-G 3164 (OPS-4)
OPS-4 w/Public Info. Copy of the plan (Public Records)
DO-6

MDJoseph:gtj:10/26/83 Disk 3b

ODECO OIL & GAS COMPANY

Supplemental Plan of Exploration

Ship Shoal Block 135

OCS G 3164

Wells #13 & #14

SUBMITTED BY: E. S. Breda

E. S. Breda
Oil & Gas Supervisor

DATE: OCT 24 1983

INDEX

ODECO OIL & GAS COMPANY
SUPPLEMENTAL PLAN OF EXPLORATION
SHIP SHOAL BLOCK 135

I. General Plan

In accordance with 30 CFR 250.34, revised December 13, 1979 this updated Supplemental Plan of Exploration is being submitted. Our plans are to drill two additional Exploratory wells on this lease. They will be designated as OCS G 3164 wells #13 and #14. Should the proposed wells have no commercial production, they will be plugged and abandoned with casings removed 15' below mud line.

II. Tenative starting and completion dates, surface and bottom hole locations, total depths and objectives of proposed wells.

A. Well No: OCS G 3164 #13
Estimated Commencement date: 12/15/83, Complete 1/1/84
Surface location: 4660' FSL and 590' FWL of Block 135 Ship Sho
Bottom hole location: Straight hole
Total Depth: 3000' SS
Objective: Pleistocene sand - see geological program

B. Well No: OCS G 3164 #14
Estimated Commencement date: 1/1/84, Complete 1/15/84
Surface location: 6900' FNL and 3800' FWL of Block 135, Ship Shoal
Bottom hole location: Straight hole
Total Depth: 4000' SS
Objective: Pleistocene sand - see geological program

III. Facility

A. Drill Barge - ODECO's "Ocean Liberty"

See attachment for rig specifications, pollution control and diverter system.

B. No additional facilities will be added offshore or onshore as a result of the exploration activities.

IV. Oil Spill Contingency Plan

Odeco Oil & Gas Company fulfills its oil spill contingency plan by being a member of Clean Gulf associates, P. O. Box 51239, New Orleans, Louisiana 70151, an agency which handles clean up operations in the event of an oil spill. Fast Response Service can be obtained by calling Halliburton Services in Harvey, Louisiana (504) 366-1735.

A. Estimated deployment time of the equipment to this area is 12 hours.

B. Description of clean up equipment.

1. Fast Response System Model I consists of:
   a. Primary and auxilliary skid with 180 bbl. tank on each skid
   b. One "Don Wilson" skimmer.
   c. One basket and one lot of Bennet oil boom section
   d. Fire extinguisher skid

IV. Oil Spill Contingency Plan (Cont'd.)

B. Description of clean up equipment (Cont'd.)

2. Fast Response Model II consists of:
   a. Section of floating oil boom
   b. Skimmer
   c. Outrigger
   d. Pump
   e. Two skid mounted storage tanks of 180 bbls. each
3. High volume open sea skimmer system (HOSS Barge).
4. Shallow water skimmer system.
5. Auxilliary shallow water skimmer and booms.
6. Helicopter spray system (HUSS Units).
7. Waterfowl rehabilitation units and bird scarers.
8. Miscellaneous Material
9. Radio systems.

V. Fuel Consumption - Drilling Operations

Drilling rig uses an average of 50 bbls. of diesel fuel per day during drilling operations. Each supply boat uses approximately 25 bbls. (42 gal/bbl.) of diesel per day. Two boats service drilling rig daily.

	BOATS	RIG
Approx. Rig days	30	30
Bbls/Day Consumption	x50	x50
Total Fuel Consumption	1500 bbls.	1500 bbls.

VI. Safety Standards and Programs - Drilling Operations

Odeco believes the safety of its employees is directly proportional to each employee's skills and knowledge of the work to be performed. To improve these skills and increase this knowledge, a "Rig Crew Training Program" has been instituted. This program provides the necessary on-the-job training to enable each employee to make a planned progression from roustabout to driller. It consists of on-site video cassette programs, International Association Drilling Contractors approved "Home Study Courses". United States Mineral Management Service required Crane Operating and Blow Out Prevention Training and United States Coast Guard's Seamen's Training. All employees must pass required testing in each of these courses. A pay incentive is included to encourage participation. In addition, this program is supported by generally accepted methods of rig instpections, drills and safety meetings which are in compliance with U.S.C.G. and MMS standards, which, we believe, will ultimately enhance the safe work performance of our employees.

VII. Base of Operation

A. Marine service to service drilling operations is provided from LAMCO dock in Dulac, Louisiana.

B. Air Service (helicopter) is provided from Houma, Louisiana.

VIII. Type Drill Mud Used and Chemical Components

A. Bariod

B. Chemical Components

Aktaflo-S	Mixed oxyethylated phenols
Aluminum Stearate	$(CH_3(CH_2)_{16}\ COO)_3AL$
Aquagel	Sodium montmorillonite
Bariod	Bariod sulfate
Bicarbonate of Soda	$NA\ NCO_3$
Carbonox	Lignitic humic acid powder
Caustic Soda	Sodium Hydroxide
CC-16	Caustized Carbonox
Cellex	Sodium Carboxymethylcellulose
Dextrid	Dextrinized polysaccharide powder
HME	Selective, noionic surfactant - Chemco product
Impermex	Starch
Lime	Calcium Hydroxide
Micatex	Mica flakes
Q-Broxin	Ferrochrome lignosulfonate
Sapp	Sodium acid pyrophosphate
Soda Ash	Sodium Carbonate
Sodium Chromate	Sodium Chromate
Soltex	Hydrocarbon powder
Superdril	Gilsonte
Torq-Trim	Biodegradable, non toxic lubricant
Wall-Nut	Nut Hulls

IX. Archeological & Shallow Hazards Survey

See shallow drilling hazards report - attached. An archeological survey was run by John C. Chance and Associates in conjunction with Robert J. Floyd - archeologist on the entire block on October 10, 1975. Reports show that no magnemoles nor shallow hazards prevail in the area in which work is to be performed.

X. Gaseous Emission Data

A. Emissions: Drill barge "Ocean Liberty" will be used. Estimated total rig days for drilling these wells will be 30 days.

X. Gaseous Emission Data

1, Rig; Drill barge "Ocean Liberty" will be used. Estimated total rig days for drilling these wells will be 30 days. Emission calculated for 30 days - stated in (lbs/day) Tons/30 days. See attachment for emission summary by rig and basis for calculation of Summary.

Drill Barge Ocean Liberty
(1 lbs./day) Tons 30/days

a. CO (581.42) 8.72
b. Hydrocarb(.125.04) 1.88
c. NO_x (369) 55,41
d. SO_2 (30 4.51
e. Particul 40.33) .60

2. Helicopters: Estimate 5 round trips in 30 days, two and one half hours per round trip = 12.5 hours operating time. Stated in (lbs./day) Tons per 30 days, averaged to 30 days. See attached for emissions per hour of use.

a. CO (.20) .00
b. Hydrocarbon (.04) .00
c. NO_x (.88) .01
d. SO_2 (5.68) .08
e. Particules (.08) .00

3. Boats (crew) Twenty Two (22) trips in 30 days at 5 hours per round trip = 110 hours. (Supply) Twelve (12) trips in 30 days at 11 hours round trip = 132 hours. 110 + 132 = 242 operating hours. Stated in (lbs/day) Tons per 30 days, averaged to 30 days. See attached for emissions per hour of use.

a. CO (54.94) .82
b. Hydrocarbon (20.20) .30
c. NO_x (253.71) 3.81
d. SO_2 (16.97) .25
e. Particules (18.58) .28

4. Supply Base - 30 ton crane. Estimated use in 30 days - 100 hours. Stated in (lbs./day) Tons/30 days. Averaged for 30 days. See attached for emission per hour..

a. CO (12.51) .19
b. Hydrocarbon (1.16) .02
c. NO_x (30.48) .46
d. SO_2 (1.56) .02
e. Particules (1.66) .02

B. Exemptions: Distance from shore 28 slatute miles.

1. Hydrocarbons, NO_x, SO_2, particules 33.3 x 28 = 932.4 tons/365 days for each or 932.4 x 4 = 3729.6 tons/365 days.

2. CO $(3400 \times 28)^{2/3}$ or 1931 tons/365 days

XI. Attachments

A. Vicinity Map Block 135

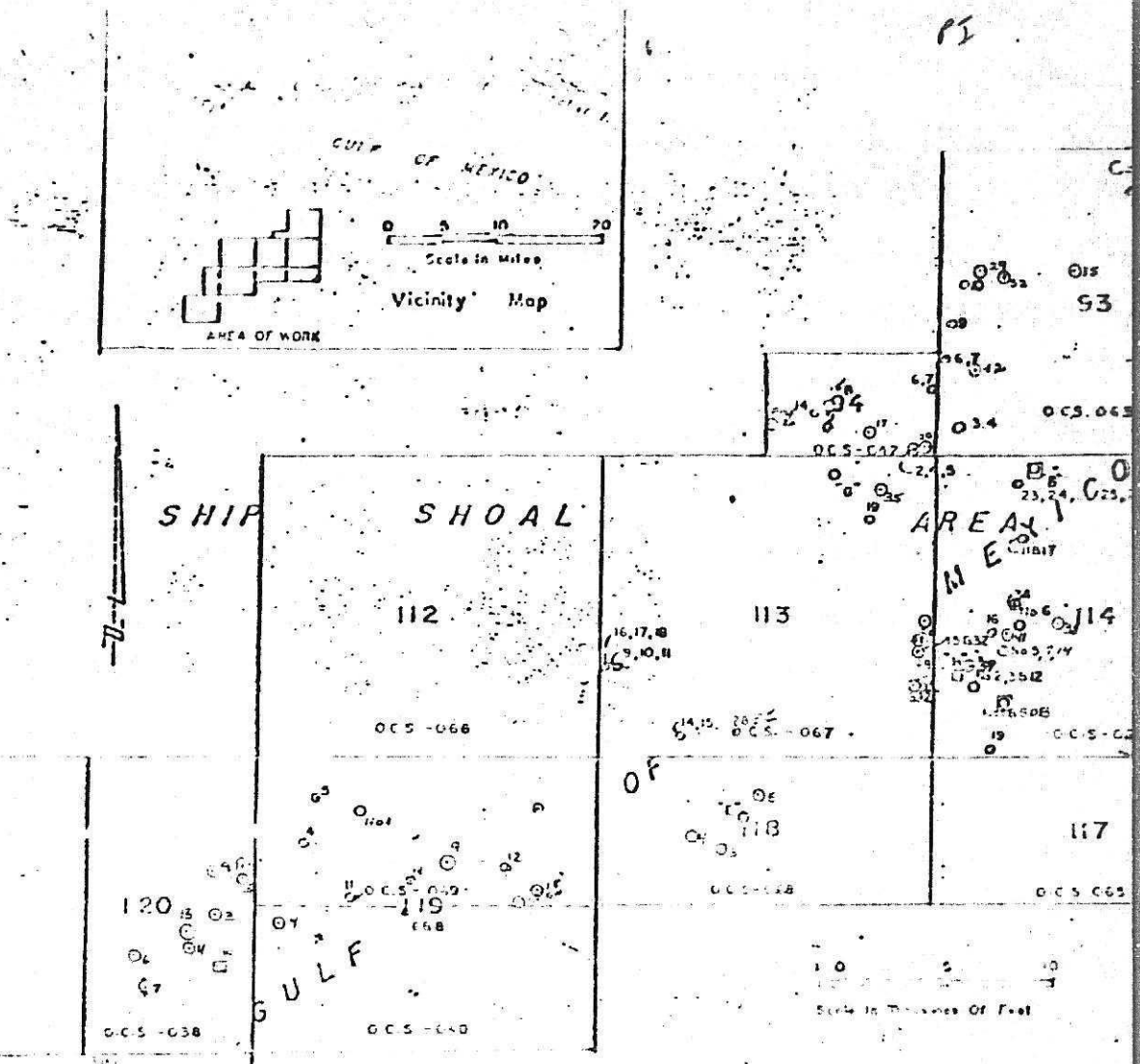
B. Geological Programs with structure map and shallow hazards letter for each well

C. Drill Barge Data - "Ocean Liberty" including schematic of diverter and statement on pollution control.

D. Emission Summary with basis of calculations for drill barge.

E. Emission hourly rates for boats, helicopter, and crane.

P1



ODECO OIL & GAS CO.

BLOCKS 93, 94, 112, 113, 114, 117, 118, 119, 120
OCS - 063, 042, 066, 067, 064, 065, 068, 069, 040, 038

BLOCK 135 OCS 316-

SHIP SHOAL

ODECO OIL AND GAS COMPANY

SEPTEMBER 23, 1983

GEOLOGICAL PROGRAM AND WELL RECOMMENDATION
OCS-G-3164 WELL NO. 13 - SHIP SHOAL BLOCK 135

LOCATION: 4660' FSL; 590' FWL of Block 135, Ship Shoal Area.

TOTAL DEPTH: 3000'ss Straight Hole.

WELL CLASSIFICATION: Exploratory.

LOGGING SERVICES:

1.) ISF/Sonic-Induction Spherically Focused/ Sonic Log:

Run #1-Base of conductor pipe 600'± ss - 2000'± ss.

Run #2 - 2000'± ss - 3000' ss

2.) FDC/CNL/GR-Formation Density Compensated/ Compensated Neutron Log/Gamma Ray:

Over potential hydrocarbon bearing zones as indicated by the ISF/Sonic.

3.) SWS-Sidewall Samples:

In porous and resistive zones as indicated by the other services.

GEOLOGICAL PROGNOSIS: 0' ss - 3000' ss Pleistocene

Geological Program and Well Recommendation
OCS-G-3164 Well No. 13 - Ship Shoal Block 135

WELL OBJECTIVES: This well is designed to evaluate mid-Pleistocene sands for production as seen by seven wells in Ship Shoal Block 134, and by eight wells in Ship Shoal Block 135. This well twins the Ship Shoal Block 135, OCS-G-3164 No. 4 well which has 16' net gas in the P-10. Productive gas is expected in the P-10 pay sand at 2660'ss. Neither salt nor abnormal pore pressure are anticipated at this location.

Submitted by: R. P. Hutchinson
R. P. Hutchinson
Dev. Geologist

Approved by: C. Krauss 9-20-83
C. Krauss
Manager
Dev. Geology

Approved by: H. A. Vallas
H. A. Vallas
Sr. Vice President

TELEX: 58-4174
PHONE: 504-581-2811

ODECO

ODECO OIL & GAS COMPANY

ODECO BUILDNG - 1600 CANAL STREET
MAIL TO: P.O. BOX 61780, NEW ORLEANS, LA. 70161

October 7, 1983

Mr. John D. Borne
District Supervisor
Minerals Management Service
1700 - Grand Caillou Rd.
Post Office Box 10145
Houma, Louisiana 70502-3288

RE: SHALLOW DRILLING HAZARD REPORT
SHIP SHOAL BLOCK 135
OCS-G-3164 WELL #13

Dear Sir:

Geophysical data on the vicinity of the subject ODECO Oil & Gas Company proposed location has been reviewed and no shallow drilling hazards are apparent on fair to good quality data.

Seismic lines OS-318, 820 and 824, 1303, 1304, and SS 82-7 were reviewed for this well proposal and are indicated on the attached plat.

In addition to the seismic data, logs of the following wells were reviewed with no evidence of shallow drilling hazards noted:

Ocean Drilling & Exploration Co.
No. 4 OCS-3164

Ocean Drilling & Exploration Co
No. 6 OCS-3164

Very truly yours,

Emil S. Johansen

E. S. Johansen
Serior Geophysicist

ESJ/cgs

OXECO OIL AND GAS COMPANY

SEPTEMBER 21, 1983

GEOLOGICAL PROGRAM AND WELL RECOMMENDATION
OCS-G-2164 WELL NO. 14 - SHIP SHOAL BLOCK 135

LOCATION: 6900' FNL; 3800' FWL of Block 135, Ship Shoal Area.

TOTAL DEPTH: 4000'ss Straight Hole.

WELL CLASSIFICATION: Exploratory.

LOGGING SERVICES:

1.) ISF/Sonic-Induction Spherically Focused/Sonic Log:

Run #1 - Base of conductor pipe 600'± ss - 2000'± ss.

Run #2 - 2000'± - 4000'ss.

2.) FDC/CNL/GR - Formation Density Compensated/Compensated Neutron Log/Gamma Ray:

Over potential hydrocarbon bearing zones as indicated by the ISF/Sonic.

3.) SWS - Sidewall Samples:

In porous and resistive zones as indicated by the other services.

GEOLOGICAL PROGNOSIS: 0'ss - 4000'ss Pleistocene

Geological Program and Well Recommendation
OCS-G-3164 Well No. 14 - Ship Shoal Block 135

WELL OBJECTIVES: This well is designed to evaluate mid-Pleistocene sands for production as seen by eight wells in Ship Shoal Block 135, and by seven wells in Ship Shoal Block 134. This well is located on shot point 115 on seismic line LD-154A, which displays favorable reflections that tie to local production on Ship Shoal Blocks 134 and 135. Productive gas is expected in the P-15 pay sand at 3730 ss. Neither salt nor abnormal pore pressure are anticipated at this location.

Submitted by: R. P. Hutchinson
R. P. Hutchinson
Dev. Geologist

Approved by: Courtney Krauss
C. Krauss
Manager
Dev. Geology
9-21-83

Approved by: H. A. Vallas
H. A. Vallas
Sr. Vice President

TELEX: 58-4124
PHONE: 504-561-2811

ODECO

ODECO OIL & GAS COMPANY

ODECO BUILDNG • 1600 CANAL STREET
MAIL TO: P.O. BOX 61780, NEW ORLEANS, LA. 70161

October 7, 1983

Mr. John B. Borne
District Supervisor
Minerals Management Service
1700 - Grand Caillou Rd.
Post Office Box 10145
Houma, Louisiana 70361

RE: SHALLOW DRILLING HAZARD REPORT
SHIP SHOAL BLOCK 135
OCS-G-3164 NO. 14

Dear Sir:

Geophysical Data in the vicinity of the ODECO Oil & Gas Company proposed location has been reviewed and no shallow drilling hazards are apparent on fair to good quality seismic data.

Seismic lines OS 817, OS 824, OS 1303, OS 1304 and LD 154A were reviewed for this proposal and are indicated on the attached plat.

In addition, logs of well OCS-G-3164 No. 2 were checked and no hazardous conditions.

Drilling in this field is based on seismic amplitude anomalies ranging from 1850' to 6000'. Gas zones are expected within their interval and are not expected to be hazardous. In general, sands in the shallower section are thin and have not been dangerous.

Very truly yours,

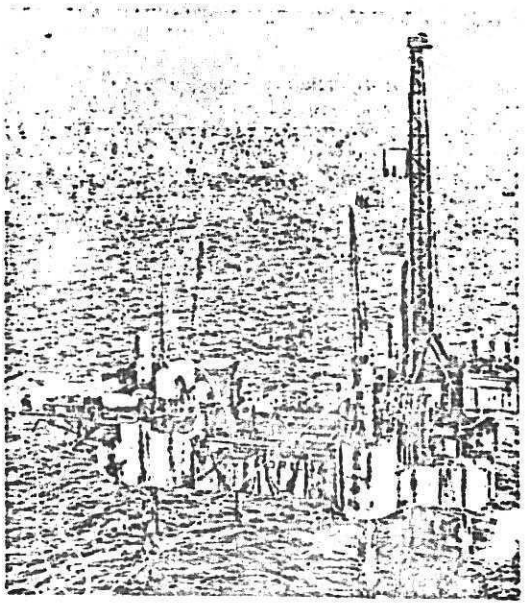
Emil S. Johansen

E. S. Johansen
Senior Geophysicist

ESJ/cgs

OCEAN LIBERTY

BETHLEHEM MAT SUPPORTED JACK-UP

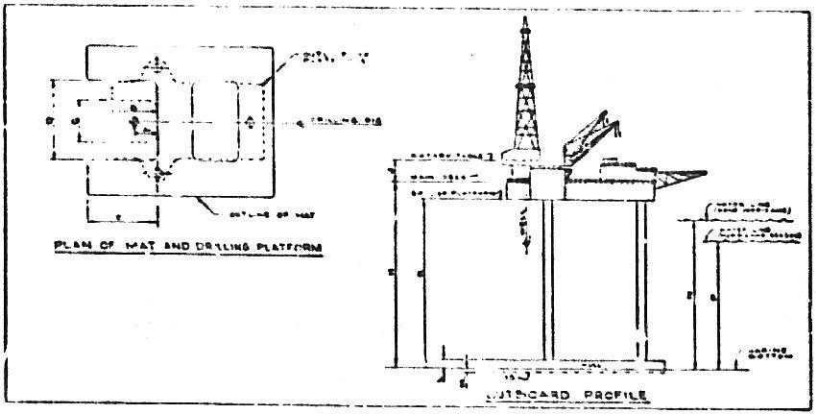


BARGE DATA

MAT —— 170' Long x 108' Wide x 10' Deep with 2' scouring skirt. Slot in Mat is 80' Long x 60' Wide

PLATFORM —— Contains all living and working areas 142' Long x 84' Wide x 14' Deep. Slot in Platform is 42' x 40'

QUARTERS —— For 84 men



CLEARANCES & DIMENSIONS

	DIMENSIONS												OPERATING DEPTH		
	A	B	C	D	E	H	J	K	L	M	N	P	Maximum Normal	Hurricane Season	Minimum
Ocean Pioneer	14'	42'	40'	61'	67'	120'	16'	105'	10'	2'	70'	60'	80'	70'	20'

EQUIPMENT

1 ---------- Lee C. Moore 136' mast w/620,000 pound capacity
1 ---------- National 80 double drum drawworks powered by three (3) each GM 12V71 diesel engines.
1 ---------- National 27 1/2 Rotary w/Varco KMPC pin drive unit.
1 ---------- Emsco 250 ton Traveling Block grooved for 1 1/4' Line.
1 ---------- BJ 250 Ton Hook.
1 ---------- Lee C. Moore 132-6 Sheaves Crown Block grooved for 1 1/4' line.
1 ---------- Koomey 160 gallon accumulator
1 ---------- 20" Hydril 2000 # Flanged Bag type Preventer
1 ---------- 13-5/8" Hydril 5000 # Hub Type Bag Preventer
1 ---------- 13-5/8" Shaffer LWS 5,000 # double ram type BOP w/Hub connections.
1 ---------- 13-5/8" Shaffer LWS 5000 # Single BOP w/hub connections
2 ---------- Gardner Denver PZ9 1000HP mud pumps each powered by EMD 12-567 diesel engines
2 ---------- 6x8 Centrifugal mud mixing pumps powered by 60 HP AC motors
1 ---------- Rhumba double screen shale shaker.
12,000' ---------- 5" OD 19.50 Range 2 Grade E Drill Pipe with 6-3/8" OD tool joints.
2000' ---------- 5" OD 19.50 Range 2 Grade G Drill Pipe with 6-3/8" OD tool joints.
24 ---------- 6 1/2" OD with 4 1/2" IF Box & Pin drill collars.
24 ---------- 7-3/4" OD w/6-5/8" API Reg box & pin Drill Collars.
1 ---------- 35 Ton Unit Crane
1 ---------- 30 Ton Unit Crane
1 ---------- Halliburton cementing Unit
1 ---------- Schlumberger Unit
1 ---------- Demco Desander
1 ---------- Demco Desilter
1 ---------- Well Control degasser
2 ---------- 600 KW AC generators, 480 V 3 phase driven by model 122 149 diesel engines.
1 ---------- 60' x 60' Heliport
1 Set ---------- Casing tools for 20", 13-3/8", 9-5/8" & 7" with Hydraulic tongs for up to 16" OD casing.

STORAGE CAPACITIES

Dry mud	1,000 Sxs	Diesel Fuels	790 Bbls.
Active mud	580 Bbls.	Drill water	1,820 Bbls.
Reserve mud	220 Bbls.	Potable water	400 Bbls.
Bulk Cement	1,760 cu. ft.	Bulk mud	1,150 cu. ft.

BLOWOUT PREVENTER ACTIVATION

The Blowout Preventers on the drilling rig OCEAN LIBERTY are HYDRAULICALLY activated from controls located on the rig floor and the living quarters.

DIVERTER SYSTEM OPERATIONAL PROCEDURE

The Diverter System as shown in Attachment 1 is installed to that the HCR Valve (s) will open automatically when the Hydril is closed. The diverting valves will remain open and be used to divert wellbore fluids downwind when necessary.

Prior to drilling the Hydril shall be closed and seawater pumped through the system. The diverting valves shall be function tested at this time. In the event it is necessary to use the diverter system for well control, the following sequence is recommended:

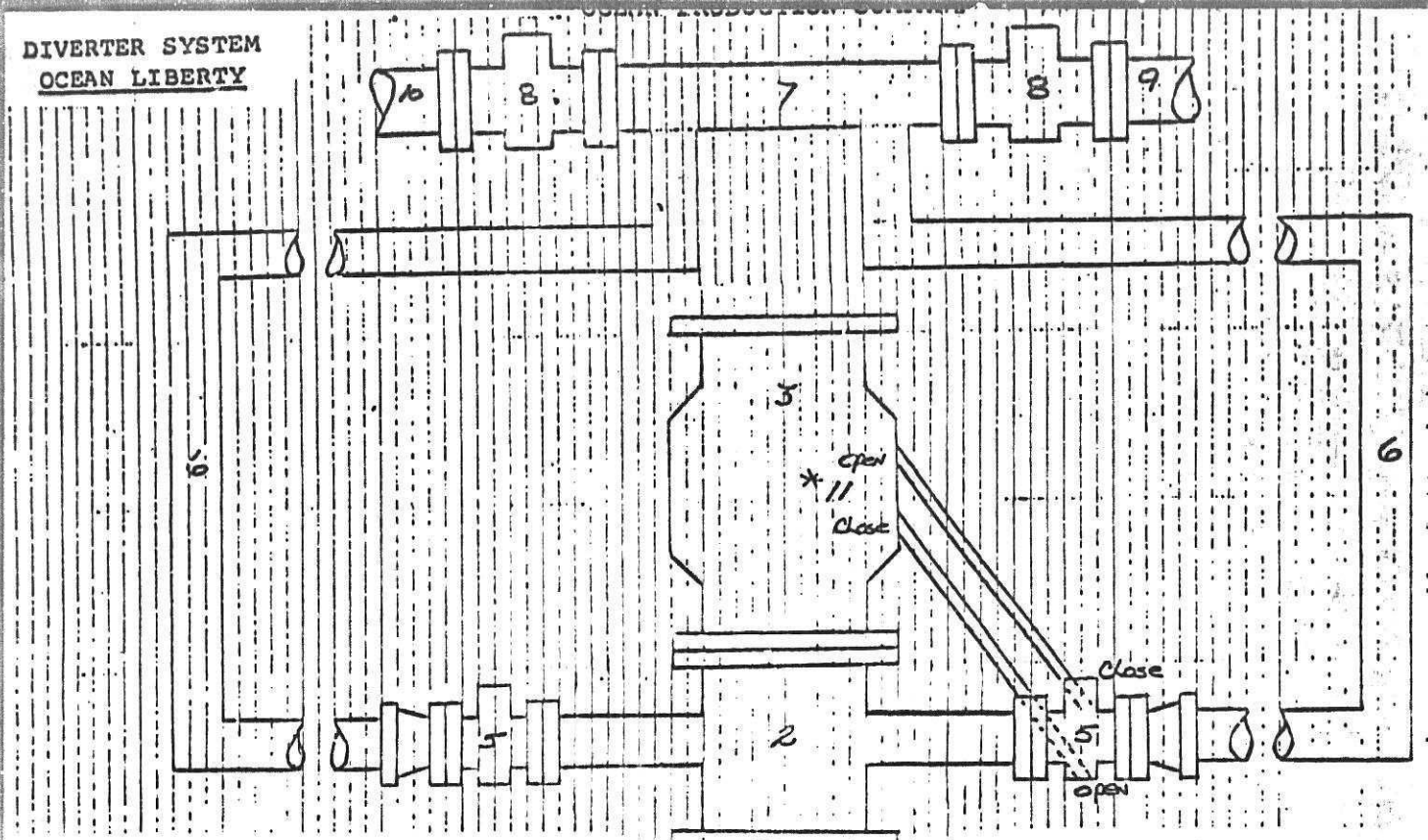
A) Clear Kelly from Hydril.

B) Close Hydril.

C) Use diverting valves to direct well fluids downwind.

D) Pump mud in hole as fast as possible. Pump Seawater if mud is expended.

DIVERTER SYSTEM
OCEAN LIBERTY



1-36",30" x 24" swedge w/ 20" s/600 flange
2-20" s/600 x 20" s/600 drilling spool w/ 2-4" s/1500 outlets
3-20" Hydril

5-4" s/1500 hydraulically operated valves

6-4" Diverter hose
7-6" Diverter line
8-6" air operated gate valves
9-6" Diverter line to side of rig
10-6" Diverter line to side of rig
11-Note: Manifold to both hydraulically operated valves

ODECO

INTER-OFFICE CORRESPONDENCE

TO: R. S. Gloger LOC.: N. O. DATE:

CARBONS TO:

FROM: W. J. Wilkinson LOC.: N. O.

SUBJECT: Pollution and Waste Disposal from D/B OCEAN LIBERTY

The D/B OCEAN LIBERTY was constructed with certain features which were incorporated specifically to stop any pollutant likely to be found during normal drilling operations. It is equipped with drip pans and/or drians under floor and other machinery to retain all oil spills.

Provisions have been made for the collection, storage, and later transfer to shore base of all used oil from machinery on the drilling platform.

Containers have been provided to transfer solid waste, such as boxes, cartons, cans, etc., which cannot be incinerated to a shore base.

Copies of OCS Order Nos. 1 through 10 which are applicable to the contract drilling operations have been furnished the toolpushers. Rig supervisory personnel have been shown the seriousness of control of pollutants.

Should it come to your attention that any liquids or solids have escaped into the Gulf without our knowledge, I sincerely ask that you bring this to my attention.

W. J. Wilkinson

WJW/ggt

"OCEAN LIBERTY"

EMISSIONS SUMMARY

SOURCE NO.	SOURCE	STACK HT. (Ft.)	STACK DIA. (Ft)	EMISSIONS (TONS/YEAR) CO	HYDROCARBON	NO_x	PARTICULATE	SO_2
1	GM 149 12 cyl	68	1.33	16.5	3.55	104.8	1.14	8.54
2	GM 149 12 cyl	68	1.33	16.5	3.55	104.8	1.14	8.54
3	Unit Model 500 (3-71)	66	.25	0.22	0.05	1.39	0.02	0.11
4	Unit Model 350 (3-71)	66	.25	0.09	0.02	0.57	0.01	0.05
5	Emg Power (Lister SL-4)	68	.42	0.03	0.01	0.19	Neg	0.02
6	Cold Start (Dietz Mag Diesel 210)	68	.17	0.06	0.01	0.38	Neg	0.03
7	Mud Pumps (EMD 12-567)	68	.5	22.9	4.93	145.5	1.59	11.85
8	Mud Pump (EMD 12-567)	68	.5	22.9	4.93	145.5	1.59	11.85
9	Drawworks (GM 12V71)	79	.67	8.76	1.88	55.6	0.61	4.53
10	Drawworks (GM 12V71)	79	.67	8.76	1.88	55.6	0.61	4.53
11	Drawworks (GM 12V71)	79	.67	8.76	1.88	55.6	0.61	4.53
12	Halliburton (GM 8V71)	56	.5	0.29	0.06	1.84	0.02	0.15
13	Halliburton (GM 8V71)	56	.5	0.29	0.06	1.84	0.02	0.15
14	Schlumberger (4-71)	68	.13	0.05	0.01	0.37	Neg	0.03
			Total	106.11	22.82	673.93	7.36	54.91
	× 2000 = lbs./yr.			212,220	45,640	1,347,860	14,720	109,820
	÷ 365 = lbs./Day			581.42	125.04	3692.77	40.33	300.88

Pollutant from diesel engines on drilling rigs were calculated using the following:

$$\frac{\text{TONS}}{\text{YR}} = .0096563 \times C \times P \times (\text{BHP})$$

where

- .0096563 = conversion from Grams/hr. to Tons/yr.
- C = Grams/BHP-Hr of pollutant - see (1)
- P = Average % useage in a yr. - see (2)
- BHP = Rated HP of engine

(1) Available data from manufacturers of diesel engines and theoretical combustion data was surveyed, and the following values chosen:

Pullutant	Grams/BHP-HR
NO_x	18.3
SO_2	1.49
Hydrocarbon	0.62
CO	2.88
Particulate	0.20

(2) Operation of equipment data from several rigs was reviewed to obtain % usage. Based on this review, the following data was utilized in preparing emissions estimates. This data is probably conservative, because it was assumed that engines were operating at all times at rated horsepower:

Engine Application	Average Yearly % Use
Main Engine	74
Emerg. Engine	.0.5
Primary Crane	7
Back Up Crane	3
Fork Lift	3
Cement Unit	3
Logging Unit	1
Welding Unit	2
Desander/Desilter	10
Cold Start Air Comp.	2
Rig Air Comp.	10
Main Mud Pump	50
Mud Mix Unit	10
Draw works	60
Bulk Air Comp.	3

Basis For Calculations of Gaseous emissions of
Boats - Helicopters and Crane at Supply Base
for Rig Related Operations

I. Boats: Equiped with two V 12 marine engines and two generators

Lbs/Hour

CO	Hydrocarbon	No_x	SO_2	Particules
6.8	2.5	31.4	2.1	2.3

II. Helicopter: For transportation of [illegible] Size 206

Lbs/Hour

CO	Hydrocarbon	No_x	SO_2	Particules
.5	.1	2.2	14.2	.2

III. Supply Base - Crane - with GM 6-71 diesel engine with 228 BHP driving a 30 ton crane

Lbs/Hour

CO	Hydrocarbon	No_x	SO_2	Particules
3.77	.35	9.18	.47	.5