

APPLICATION FOR PERMIT TO DRI

APD)

one copy marked "Public Information"

Expiration Date: August 31, 1996

1. ORIGINAL ☒ CORRECTION ☐	2. API WELL NUMBER	3. WELL NUMBER 1	11. OPERATOR NAME AND ADDRESS (Submitting Office) Hall-Houston Oil Company 700 Louisiana, Suite 2100 Houston, TX 77002	
8. FIELD NAME EC89	9. UNIT NUMBER ---	10. MMS OPERATOR NUMBER 00846		
WELL AT TOTAL DEPTH				
17. WELL LOCATION AT TOTAL DEPTH (Estimated) N03547E00912	4. LEASE NUMBER G14357	5. AREA NAME EC	6. BLOCK NUMBER 88	7. OPD NUMBER LA2
WELL AT SURFACE				
12. WELL LOCATION AT SURFACE (Estimated) N04247W01000	13. LEASE NUMBER G00935	14. AREA NAME EC	15. BLOCK NUMBER 89	16. OPD NUMBER LA2
18. WATER DEPTH (Estimated) 60'	19. ELEVATION AT KB (Estimated) 100'	20. RIG NAME ROWAN ANCHORAGE		21. RIG TYPE JU
22. TYPE OF WELL: EXPLORATORY ☐ DEVELOPMENT ☒	23. SPUD DATE (Proposed) 990601	24. TOTAL DEPTH (Proposed) MD 7277 TVD 6800		

25. ATTACHMENTS (Attach complete well prognosis and attachments required under 30 CFR 250.64(b) through (g) or 30 CFR 272(c) and (d), as appropriate)

THIS WELL WILL BE DRILLED AS LOCATION "A" UNDER A DOCD (N-6484). THE FOLLOWING INFORMATION IS ATTACHED FOR YOUR REVIEW AND APPROVAL:

- | | |
|-------------------------|---|
| 1. MMS DATA SHEET | 6. DESCRIPTION OF DRILLING FLUIDS |
| 2. WELL PROGRAM | 7. RIG INFORMATION; BOP/DIVERTER/SAFE WELD AREA |
| 3. LOCATION PLAT | 8. WORST CASE CALC OF 1001 BBLs |
| 4. PP, FG, MW CHART | 9. REQUEST FOR USE OF AIR OPERATED VALVE |
| 5. CASING DESIGN DETAIL | |

26. CONTACT NAME

BETH ATWOOD

27. TELEPHONE NUMBER

713-228-0711

28. AUTHORIZING OFFICIAL (Type Name)

BETH ATWOOD

29. TITLE

REGULATORY MANAGER

30. AUTHORIZING SIGNATURE

Beth Atwood

31. DATE

990526

THIS SPACE FOR MMS USE ONLY

APPROVED (With ~~Attached~~ Conditions ☐ BY (Orig. Sgd.) Norberto Pacheco
(Without Conditions ☐)

Elliott S. Smith
District Supervisor
TITLE Lake Charles District

DATE

6/10/99

API WELL NO. ASSIGNED TO THIS WELL

17-703-40865-00

PAPERWORK REDUCTION ACT STATEMENT: The Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.) requires us to inform you that this information is being collected to obtain knowledge of equipment and procedures to be used in drilling operations. This information will be used by MMS District Supervisors to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Response to this request is mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.18.

Public reporting burden for this form is estimated to average 1 1/2 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 2053, Minerals Management Service, 381 Elden Street, Herndon, VA 22070-4817; and Office of Management and Budget, Paperwork Reduction Project (OMB No. 1010-0044), Washington, DC 20503.

5/12/99

MMS DATA SHEET

Lease: OCS-G 14357 Well: 1 Area/Block EC 88 Field
 Operator: Hall-Houston Oil Company Estimated Startup: 1-Jun-99
 Surface Location: 1,000' FWL and 4,247' FNL of EC 88
 Bottom Hole Location: 912' FEL and 3,547' FNL of EC 88
 Rig Name: Type: JU

WD: 60' RKB: 100'

Type Wel X E or D

Hole Size	Casing String Name & Size	Weight per ft.	Burst Rating	Type Thread	MASP	Safety Factors			Casing Depth	Shoe			Wellhead Rating	BOP Size	BOP WP	Test Pressures		Cement cu.ft.	Mud Type			
		Grade	Collapse Rating			B	C	T	MD	pp	MW	FG			Annular	Annular	Casing			Shoe Test		
																					Rams	Rams
DRIVEN	Drive 48	1.5 WT							305													
								305														
20	Conductor 16	65.0	1,640	BTC	344	4.77	2.43	20.41	650	8.7	9.0	12.1	3,000	21-1/4"	2,000	250	250	N/A	2,950	Native Gel		
		H-40	630						650	9.2	9.2	N/A			N/A							
13.50	Surface 10.75	40.5	3,130	STC	1,492	2.10	1.58	5.21	2,500	9.5	9.6	13.4	5,000	13-5/8"	5,000	3,000	2,000	13.4	1,550	Native Gel		
		J-55	1,580						2,500	9.0	9.6				10,000	3,000						
9.875	Production 7.625	26.4	7,150	LTC	3,551	2.01	1.37	3.59	7,277	11.0	11.5	--	5,000	13-5/8"	5,000	3,500	3,750	--	1,600	SW LIGNO		
		S/P-95	4,850						6,800						10,000	5,000						

MINIMUM MUD QUANTITIES:

1000 SACKS OF BARITE AND 200 SACKS GEL

ZONE PROTECTION STATEMENT:

All zones that contain oil, gas, or freshwater will be fully protected by casing or cement

MUD DISPOSAL STATEMENT:

All oil contaminated mud and cuttings will be transported to shore for proper disposal.

Other mud and cuttings will be disposed of at the wellsite.

BOP FUNCTION TEST STATEMENT:

On all trips, when the drill pipe is out of the hole, the BOP'S will be function tested and recorded on IADC Tour Reports.

OIL BASE MUD WILL NOT BE USED WITH OUT PERMISSION.

Hall-Houston Oil Company

Well Program

East Cameron Area Block 88

OCS-G 14357 Well No. 1

WELL PROGRAM

WELL: OCS-G 14357 No. 1

AREA: East Cameron Area, Block 88

SURFACE LOCATION: 4247' FNL and 1000' FWL of EC 89

BOTTOM HOLE LOCATION: 3547' FNL and 912' FEL of EC 88

RKB ELEVATION: $\pm 100'$

WATER DEPTH: $\pm 60'$

PROPOSED TD: 7,277' MD / 6,800' TVD

I. GEOLOGICAL DATA

FORMATIONS	DEPTHS (TVD)	POTENTIAL PRODUCTIVE
4450' Sand – Big A Sand	4,450' – 6600'	GAS

LOGGING PROGRAM	GR-AIT-LSS	FNT-CNT	SWC
6,800' TVD	X	X	X

II. GENERAL DRILLING PROGRAM

A. CASING DESIGN AND RATIONALES

TVD DEPTH	HOLE SIZE	CSG SIZE	WT.	GRD	THRD	DESIGN FACTORS			MASP	SHOE TEST
						COL	BRST	TEN		
305'	N/A	48"	1.5"wt	--	--	----	----	----	--	--
650'	20"	16"	65.0	H-40	BTC	2.43	4.77	20.41	344	--
2500'	14.75"	10.75"	40.5	J-55	STC	1.58	2.10	5.21	1492	13.4
6800'	9.875"	7.625"	26.4	S-95	LTC	1.37	2.01	3.59	3551	--

B. CEMENTING PROGRAM

Conductor Casing : 16"

2,950 cu. ft. total volume: 2,400 cu. ft. of 40-60-8 + 5 % A-5 lead slurry at 12.4 ppg plus 550 cu. ft. of Class "H" tail slurry at 16.2 ppg. Volume calculated to circulate to surface assuming 100% washout. Casing test of 250 psi. WOC: 12 hours.

Note: In the event of lost circulation, an air-operated valve may be installed at 10' AMWL.

Surface Casing : 10-3/4"

1,550 cu. ft. total volume: 1,000 cu. ft. of 40-60-8 + 5 % A-5 lead slurry at 12.4 ppg plus 550 cu. ft. of Class "H" tail slurry at 16.2 ppg. Volume calculated to circulate to surface assuming 70% washout. Casing test of 2000 psi. WOC: 12 hours.

Production Casing: 7-5/8"

1600 cu. ft. total volume: Cement ~~1600~~ with 1600 cu. ft. of Class "H" tail slurry at 15.6 ppg. Volume calculated with 40% excess and top of cement is calculated to be at 2000'. Casing will be tested to 3,750 psi.

NOTE: The casing and cementing programs are designed to prevent movement of formation fluids to other strata. Any freshwater zones will be protected from contamination. Any porous zones containing hydrocarbons will be isolated by either casing and cement or open hole plugs, if noncommercial.

C. DRILLING MUD PROGRAM

Depth (TVD)	Mud Wt. (ppg)	Min. Barite (sx)	Min. Gel (sx)	Type
0' - 4000'	8.8 - 10.0	1000	200	Native
4000' - 5400'	10.0 - 10.4	1000	200	SW Lig
5400' - 6800'	10.4 - 11.5	1000	200	SW Lig

Mud weight, pore pressure, and fracture gradient chart are attached.

Well Program
OCS-G 14357 Well No. 1

Method of Disposal: FRESH WATER AND SALT WATER BASED CUTTINGS AND MUD WILL BE DISPOSED OF OVERBOARD AS LONG AS TOXICITY REQUIREMENTS ARE MET. ANY WHICH DO NOT MEET EPA REQUIREMENTS AND ALL OIL BASED CUTTINGS AND EFFLUENT WILL BE DISPOSED OF PROPERLY.

Time required for delivery of mud supplies: 12 hours.

D. BLOWOUT PREVENTER PROGRAM

<u>CASING STRING</u>	<u>REQUIREMENTS</u>	<u>TEST PRESSURE**</u>
48"	Diverter	Function Test
16"	Diverter	250 psi
10-3/4"	1 Annular	250 and 3000
	1 Blind Ram	250 and 3000
	2 Pipe Rams	250 and 3000
7-5/8"	1 Annular	250 and 3500
	1 Blind Ram	250 and 5000
	2 Pipe Rams	250 and 5000

** - The ram preventers are being tested in excess of maximum anticipated surface pressure.

SPERRY-SUN DRILLING SERVICES WELL PROFILE DATA

Hall-Houston Oil Company
East Cameron 88/89 #15

Revision 1
5 May 1999 MKM

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	VERTICAL DEPTH	LATITUDE (Ft.)	DEPARTURE (Ft.)	VERTICAL SECTION	DOG LEG
0.00	0.000	0.000	0.00	0.00	0.00	0.00	
100.00	0.000	0.000	100.00	0.00	0.00	0.00	
200.00	0.000	0.000	200.00	0.00	0.00	0.00	
300.00	0.000	0.000	300.00	0.00	0.00	0.00	
400.00	0.000	0.000	400.00	0.00	0.00	0.00	
500.00	0.000	0.000	500.00	0.00	0.00	0.00	
600.00	0.000	0.000	600.00	0.00	0.00	0.00	
700.00	0.000	0.000	700.00	0.00	0.00	0.00	
800.00	0.000	0.000	800.00	0.00	0.00	0.00	
900.00	0.000	0.000	900.00	0.00	0.00	0.00	
1000.00	0.000	0.000	1000.00	0.00	0.00	0.00	
1100.00	0.000	0.000	1100.00	0.00	0.00	0.00	
1200.00	0.000	0.000	1200.00	0.00	0.00	0.00	
1300.00	0.000	0.000	1300.00	0.00	0.00	0.00	
1400.00	0.000	0.000	1400.00	0.00	0.00	0.00	
1500.00	0.000	0.000	1500.00	0.00	0.00	0.00	
1600.00	0.000	0.000	1600.00	0.00	0.00	0.00	
1700.00	0.000	0.000	1700.00	0.00	0.00	0.00	
1800.00	0.000	0.000	1800.00	0.00	0.00	0.00	
1900.00	0.000	0.000	1900.00	0.00	0.00	0.00	
2000.00	0.000	0.000	2000.00	0.00	0.00	0.00	
2100.00	0.000	0.000	2100.00	0.00	0.00	0.00	
2200.00	0.000	0.000	2200.00	0.00	0.00	0.00	
2300.00	0.000	0.000	2300.00	0.00	0.00	0.00	
2400.00	0.000	0.000	2400.00	0.00	0.00	0.00	
2500.00	0.000	0.000	2500.00	0.00	0.00	0.00	
2561.18	0.000	0.000	2561.18	0.00	0.00	0.00	0.000
2600.01	2.589	290.113	2600.00	0.30 N	0.82 W	0.88	
2700.61	9.295	290.113	2700.00	3.88 N	10.60 W	11.29	
2803.19	16.134	290.113	2800.00	11.64 N	31.78 W	33.85	
2909.45	23.218	290.113	2900.00	23.94 N	65.36 W	69.61	
2962.88	26.780	290.113	2948.41	31.70 N	86.56 W	92.18	2.000
3020.66	26.780	290.113	3000.00	40.65 N	111.01 W	118.22	
3132.68	26.780	290.113	3100.00	58.01 N	158.40 W	168.69	
3244.69	26.780	290.113	3200.00	75.36 N	205.79 W	219.16	
3356.71	26.780	290.113	3300.00	92.72 N	253.18 W	269.63	
3468.72	26.780	290.113	3400.00	110.07 N	300.57 W	320.10	
3580.74	26.780	290.113	3500.00	127.43 N	347.97 W	370.57	
3692.75	26.780	290.113	3600.00	144.78 N	395.36 W	421.03	
3804.76	26.780	290.113	3700.00	162.14 N	442.75 W	471.50	
3916.78	26.780	290.113	3800.00	179.50 N	490.14 W	521.97	
4028.79	26.780	290.113	3900.00	196.85 N	537.53 W	572.44	
4084.80	26.780	290.113	3950.00	205.53 N	561.23 W	597.68	0.000
4084.80	26.780	290.113	3950.00	205.53 N	561.23 W	597.68	2.000
4140.81	26.780	290.113	4000.00	214.21 N	584.93 W	622.91	
4252.82	26.780	290.113	4100.00	231.56 N	632.32 W	673.38	
4269.62	26.780	290.113	4115.00	234.16 N	639.43 W	680.95	0.000
4269.62	26.780	290.113	4115.00	234.16 N	639.43 W	680.95	2.000
4353.63	26.780	290.113	4190.00	247.18 N	674.97 W	718.81	0.000
4353.63	26.780	290.113	4190.00	247.18 N	674.97 W	718.81	2.000

SPERRY-SUN DRILLING SERVICES WELL PROFILE DATA

Hall-Houston Oil Company
East Cameron 88/89 #15

Revision 1
5 May 1999 MKM

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	VERTICAL DEPTH	LATITUDE (Ft.)	DEPARTURE (Ft.)	VERTICAL SECTION	DOG LEG
4364.84	26.780	290.113	4200.00	248.92 N	679.71 W	723.85	
4476.85	26.780	290.113	4300.00	266.27 N	727.10 W	774.32	
4588.86	26.780	290.113	4400.00	283.63 N	774.49 W	824.79	
4633.67	26.780	290.113	4440.00	290.57 N	793.45 W	844.98	0.000
4633.67	26.780	290.113	4440.00	290.57 N	793.45 W	844.98	2.000
4700.88	26.780	290.113	4500.00	300.98 N	821.89 W	875.26	
4812.89	26.780	290.113	4600.00	318.34 N	869.28 W	925.73	0.000
4812.89	26.780	290.113	4600.00	318.34 N	869.28 W	925.73	2.000
4812.89	26.780	290.113	4600.00	318.34 N	869.28 W	925.73	
4913.70	26.780	290.113	4690.00	333.96 N	911.93 W	971.16	0.000
4913.71	26.780	290.113	4690.00	333.96 N	911.93 W	971.16	2.000
4924.91	26.780	290.113	4700.00	335.69 N	916.67 W	976.20	
5036.92	26.780	290.113	4800.00	353.05 N	964.06 W	1026.67	
5057.08	26.780	290.113	4818.00	356.17 N	972.59 W	1035.76	0.000
5057.08	26.780	290.113	4818.00	356.17 N	972.59 W	1035.76	2.000
5148.94	26.780	290.113	4900.00	370.41 N	1011.45 W	1077.14	
5260.95	26.780	290.113	5000.00	387.76 N	1058.85 W	1127.61	
5323.68	26.780	290.113	5056.00	397.48 N	1085.38 W	1155.88	0.000
5323.68	26.780	290.113	5056.00	397.48 N	1085.38 W	1155.88	2.000
5372.96	26.780	290.113	5100.00	405.12 N	1106.24 W	1178.08	
5484.98	26.780	290.113	5200.00	422.47 N	1153.63 W	1228.55	
5596.99	26.780	290.113	5300.00	439.83 N	1201.02 W	1279.02	
5709.01	26.780	290.113	5400.00	457.18 N	1248.41 W	1329.49	
5821.02	26.780	290.113	5500.00	474.54 N	1295.80 W	1379.96	
5933.04	26.780	290.113	5600.00	491.89 N	1343.20 W	1430.43	
6045.05	26.780	290.113	5700.00	509.25 N	1390.59 W	1480.90	
6157.06	26.780	290.113	5800.00	526.60 N	1437.98 W	1531.37	
6269.08	26.780	290.113	5900.00	543.96 N	1485.37 W	1581.84	
6302.68	26.780	290.113	5930.00	549.17 N	1499.59 W	1596.98	0.000
6302.68	26.780	290.113	5930.00	549.17 N	1499.59 W	1596.98	2.000
6381.09	26.780	290.113	6000.00	561.31 N	1532.76 W	1632.31	
6493.11	26.780	290.113	6100.00	578.67 N	1580.16 W	1682.78	
6605.12	26.780	290.113	6200.00	596.03 N	1627.55 W	1733.25	
6717.14	26.780	290.113	6300.00	613.38 N	1674.94 W	1783.72	
6829.15	26.780	290.113	6400.00	630.74 N	1722.33 W	1834.19	
6941.16	26.780	290.113	6500.00	648.09 N	1769.72 W	1884.66	
7053.18	26.780	290.113	6600.00	665.45 N	1817.12 W	1935.13	
7059.90	26.780	290.113	6606.00	666.49 N	1819.96 W	1938.16	0.000
7059.90	26.780	290.113	6606.00	666.49 N	1819.96 W	1938.16	2.000
7165.19	26.780	290.113	6700.00	682.80 N	1864.51 W	1985.60	
7277.21	26.780	290.113	6800.00	700.16 N	1911.90 W	2036.07	0.000
7277.21	26.780	290.113	6800.00	700.16 N	1911.90 W	2036.07	2.000

The Dogleg Severity is in Degrees per 30.00 Feet
Vertical Section was calculated along an Azimuth of 290.113° (True)

Based upon Minimum Curvature type calculations. At a Measured Depth of 7277.21 Feet,
the Bottom Hole Displacement is 2036.07 Feet, in the Direction of 290.113° (True)

EC77

EC76

O³5₂

FOREST

B1.2

12 BH

S07° 50' 32"W 118,369.52'
From USC&GS Mon. "CON"

11 BH

FOREST

5 BH

No. 1 Prop. Well Surf.

X= 1,554,790.24'

Y= 222,930.57'

Lat. 29° 16' 20.068"N

Lon. 92° 43' 46.834"W

FOREST

B

No. 1 Prop. Bhl

X= 1,552,878.24'

Y= 223,630.57'

1 BH

N69° 53' 31"W

2,036.11'

912'

1,000'

8 BH

O²

EC88

OCS-G-14357

HALL-HOUSTON
OIL COMPANY

EC89

OCS-G-00935

HALL-HOUSTON
OIL COMPANY

A-1

FOREST

O⁷

FOREST

O¹⁰

GRID NORTH

EC95

EC94

HALL-HOUSTON OIL COMPANY

PROPOSED LOCATION
OCS-G-14357 WELL #1BLOCK 88
EAST CAMERON AREA
GULF OF MEXICOJOHN E. CHANCE
& ASSOCIATES, INC.GEODESIC DATUM: NAD 1927
PROJECTION: LOUISIANA SOUTH
GRID UNITS: FEETSCALE 0 2,000'
IN FEET

Job No.: 99-0974

Date: 5/7/99

Drwn: MCM

Chart: Of:

Dwgfile: O:\CDBASE\WPERMIT\LASOUTH\EC\PERMIT\88S89P1

1 1

I HEREBY CERTIFY THAT THE ABOVE PROPOSED
WELL LOCATION IS CORRECT.

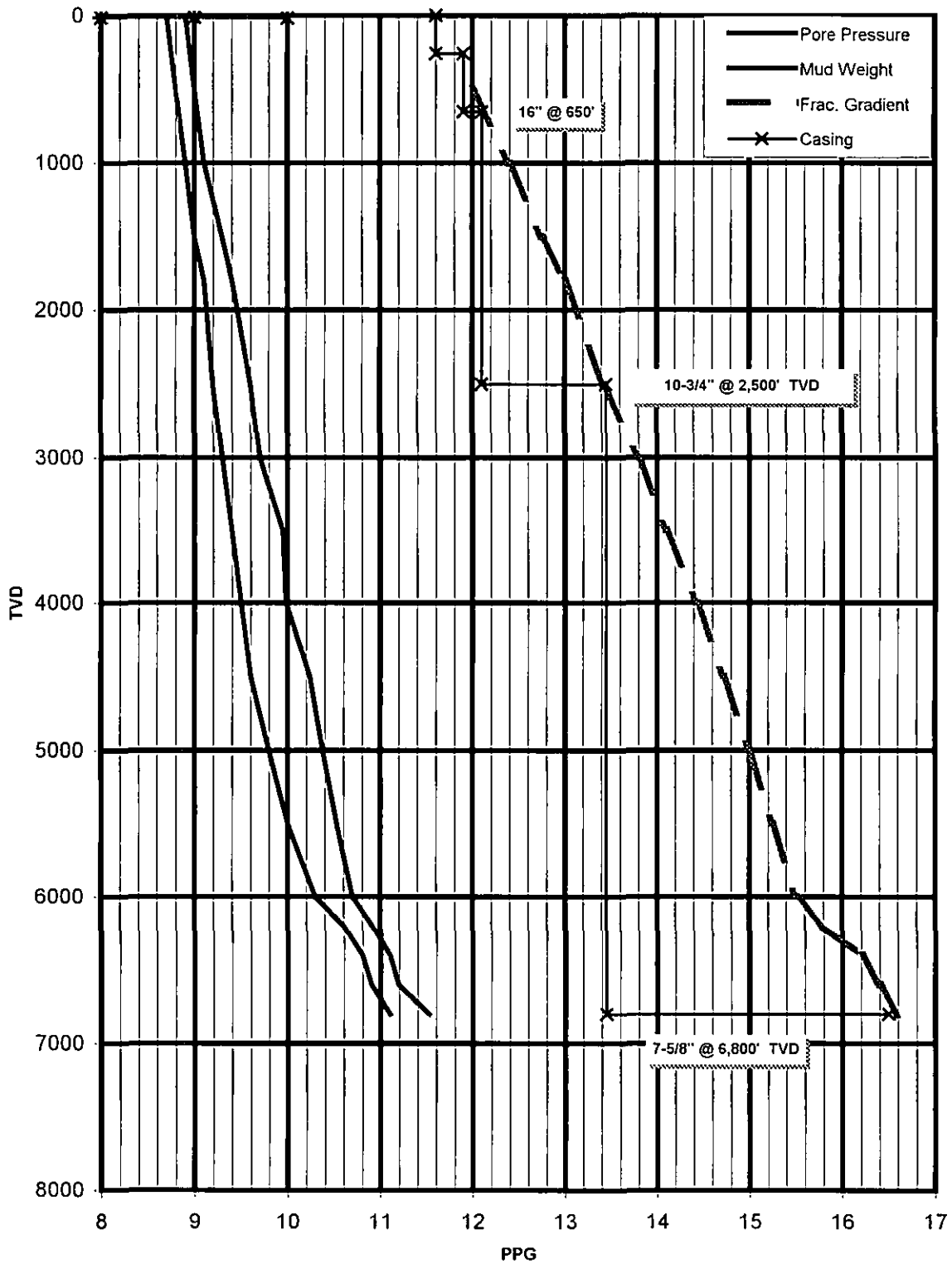
REG. PROFESSIONAL LAND SURVEYOR NO. 4401
STATE OF LOUISIANA

Printed: 5/7/99

DRILLING MUD COMPONENTS

<u>COMMON CHEMICAL OR CHEMICAL TRADE NAME</u>	<u>DESCRIPTION OF MATERIAL</u>
Aluminum Stearate	Aluminum Stearate
Am-Spot	Coastal Spot, surfactant blend
"AXTAFLO-S"	Nonionic Surfactant
Barite	Barium Sulfate (BaSO_4)
Bio-Base	Internal Olefin
Calcium Carbonate	Aragonite (CaCO_3)
Calcium Chloride	Hydrophilite (CaCl_2)
Calcium Oxide	Lime (Quick)
Calcium Sulfate	Anhydrite (CaSO_4)
Carboxymethyl Cellulose	Carboxymethyl Cellulose
Caustic Potash	Potassium Hydrate
Caustic Soda	Sodium Hydroxide (NaOH)
Chrome Lignite	Chrome Lignite
Chrome Lignosulfonate	Chrome Lignosulfonate
Drilling Detergent	Soap
"E-Pal"	Non-toxic, biodegradable defoamer
Ferrochrome Lignosulfonate	Derived from wood pulp
Gel	Sodium montmorillonite, bentonite, attapulgite $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$
Gypsum	Lignite
Lignite	Lignosulfonate
Lignosulfonate	Cement Pre-Flush
"Mud Sweep"	Hydrolyzed Cereal solid
"MOR-REX"	Organo-aluminum complex
"Shale-Trol"	Sodium Acid Pyrophosphate
Sapp	Sodium Carbonate
Soda Ash	NaHCO_3
Sodium Bicarbonate	Sodium Carboxymethyl Cellulose
Sodium Carboxymethyl Cellulose	NaCl
Sodium Chloride	$\text{Na}_2\text{CrO}_4 \cdot 10\text{H}_2\text{O}$
Sodium Chromate	Corn Starch
Starch	Biodegradable drilling lubricant
"TX-9010"	Biodegradable drilling lubricant
"TORQ-Trim"	Oil Base mud conc.
"Black Magic"	Sacked concentrated oil base mud
"Black Magic Supermix"	Used to mix certain loss-circulation pills
Diesel	Plastic foil, shredded cellophane
"Jelflake"	Loss-circulation material
MICA	Surfactant mixed with diesel
"Pipe-Lax"	Ground walnut shells
"Wall-Nut"	Loss-circulation material
Wood Fiber	
Xanvis	Bio-polymer

East Cameron Block 88
OCS-G-14357 #1
Pore Pressure vs. Depth



East Cameron 88 No. 1**Conductor Casin** 16" 65 # H-40 BTC

<u>BURST</u>	<u>COLLAPSE</u>	<u>TENSION</u>
1,640	630	736,000

$$\text{Burst} = (\text{FG} \times \text{TVD} \times 0.052) - (0.1 \times \text{TVD})$$

$$\text{Burst} \quad (0.052 \quad 650' \times \quad 12.1 \text{ ppg}) - (0.1 \times \quad 650') = \quad 344 \text{ psi}$$

$$\text{BSF} = \quad 1,640 \text{ psi} \quad / \quad 344 \text{ psi} \quad = \quad 4.77$$

$$\text{Collapse} = (\text{MW} \times \text{TVD} \times 0.052) - (0.1 \times \text{TVD})$$

$$\text{Coll.} \quad (0.052 \quad 650' \times \quad 9.6 \text{ ppg}) - (0.1 \times \quad 650') = \quad 259 \text{ psi}$$

$$\text{CSF} = \quad 630 \text{ psi} \quad / \quad 259 \text{ psi} \quad = \quad 2.43$$

$$\text{Tension} = \text{Wt./ft.} \times \text{MD} \times [1 - (\text{MW} / 65.6)]$$

$$\text{Tension} \quad 650' \times [1 - \quad 9.6 \quad / \quad 65.6)] \times \quad 65 \# \quad 36,067 \#$$

$$\text{TSF} = \quad 736,000 \text{ pounds} \quad / \quad 36,067 \text{ pounds} \quad = \quad 20.41$$

Surface Casing: 10-3/4" 40.5 # K-55 STC

<u>BURST</u>	<u>COLLAPSE</u>	<u>TENSION</u>
3,130	1,580	450,000

$$\text{Burst} = (\text{FG} \times \text{TVD} \times 0.052) - (0.1 \times \text{TVD})$$

$$\text{Burst} \quad (0.052 \quad 2,500' \times \quad 13.4 \text{ ppg}) - (0.1 \times \quad 2,500') = \quad 1,492 \text{ psi}$$

$$\text{BSF} = \quad 3,130 \text{ psi} \quad / \quad 1,492 \text{ psi} \quad = \quad 2.10$$

$$\text{Collapse} = (\text{MW} \times \text{TVD} \times 0.052) - (0.1 \times \text{TVD})$$

$$\text{Coll.} \quad (0.052 \quad 2,500' \times \quad 9.6 \text{ ppg}) - (0.1 \times \quad 2,500') = \quad 998 \text{ psi}$$

$$\text{CSF} = \quad 1,580 \text{ psi} \quad / \quad 998 \text{ psi} \quad = \quad 1.58$$

$$\text{Tension} = \text{Wt./ft.} \times \text{MD} \times [1 - (\text{MW} / 65.6)]$$

$$\text{Tension} \quad 2,500' \times [1 - \quad 9.6 \quad / \quad 65.6)] \times \quad 40.5 \# \quad 86,433 \#$$

$$\text{TSF} = \quad 450,000 \text{ pounds} \quad / \quad 86,433 \text{ pounds} \quad = \quad 5.21$$

Production Casing 7-5/8" 26.4 #/ft. S-95 LTC

<u>BURST</u>	<u>COLLAPSE</u>	<u>TENSION</u>
7,150	4,850	568,000

$$\text{Burst} = (\text{PP} \times \text{TVD} \times 0.052) - (0.055 \times \text{TVD})$$

$$\text{Burst} \quad (0.052 \quad 6,800' \times \quad 11.1 \text{ ppg}) - (0.055 \quad 6,800') = \quad 3,551 \text{ psi}$$

$$\text{BSF} = \quad 7,150 \text{ psi} \quad / \quad 3,551 \text{ psi} \quad = \quad 2.01$$

$$\text{Collapse} = (\text{PP} \times \text{TVD} \times 0.052) - (0.055 \times \text{TVD})$$

$$\text{Coll.} \quad (0.052 \quad 6,800' \times \quad 11.1 \text{ ppg}) - (0.055 \quad 6,800') = \quad 3,551 \text{ psi}$$

$$\text{CSF} = \quad 4,850 \text{ psi} \quad / \quad 3,551 \text{ psi} \quad = \quad 1.37$$

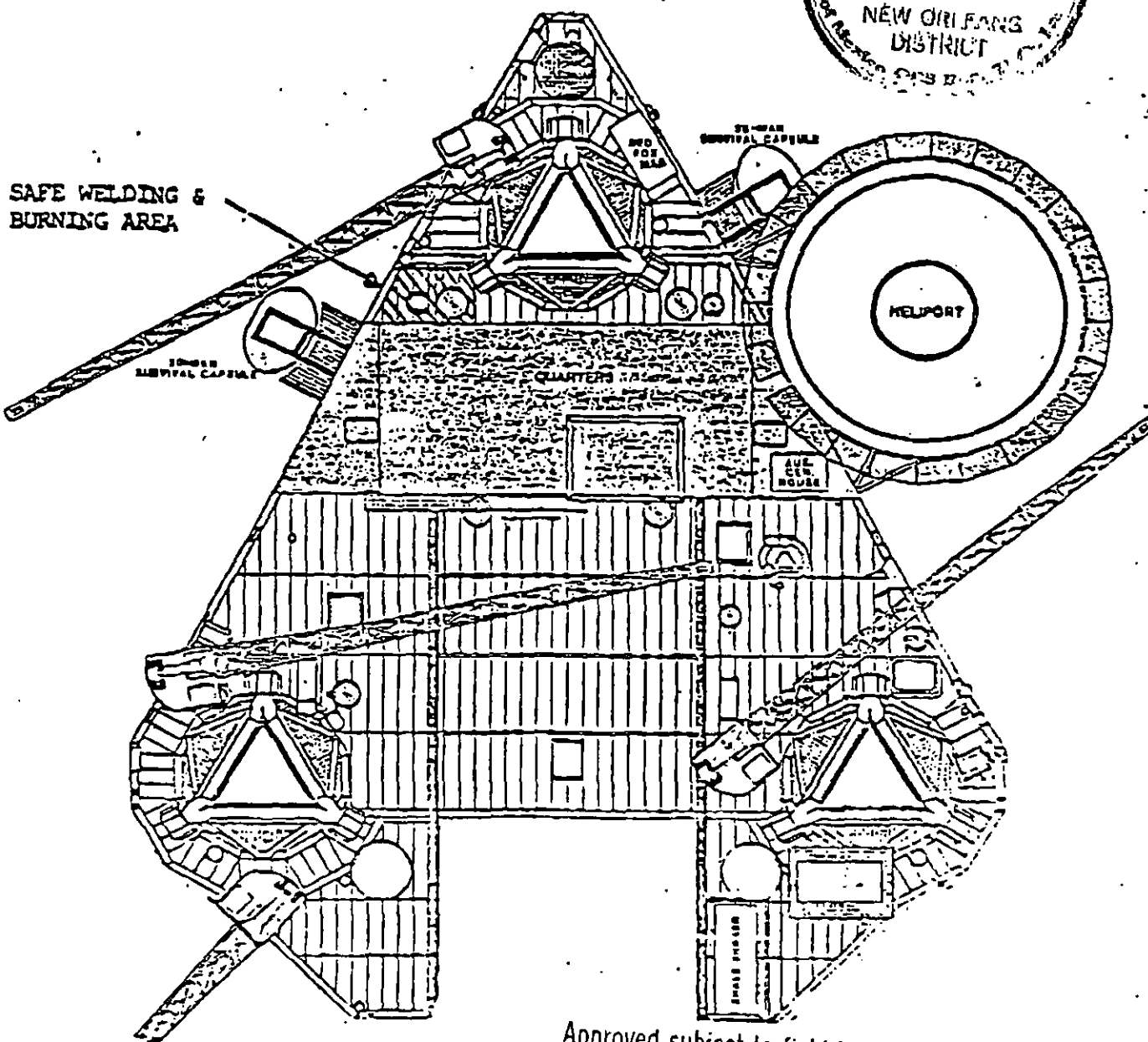
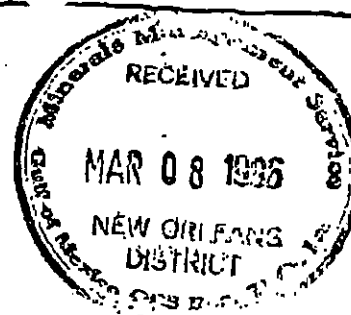
$$\text{Tension} = \text{Wt./ft.} \times \text{MD} \times [1 - (\text{MW} / 65.6)]$$

$$\text{Tension} \quad 7,277' \times [1 - (\quad 11.5 \quad / \quad 65.6)] \times \quad 26.4 \# \quad 158,434 \#$$

$$\text{TSF} = \quad 568,000 \text{ pounds} \quad / \quad 158,434 \text{ pounds} \quad = \quad 3.59$$

5/12/99

ROWAN ANCHORAGE
MAIN DECK LAYOUT



Approved subject to field inspection

For *[Signature]*
LARS T. HERBST
District Supervisor

New Orleans District

Date: 7/3/96

SAFE BURNING AREA LAYOUT

CONDITIONS OF APPROVAL FOR DESIGNATED SAFE WELDING AND BURNING AREAS

1. If a diesel intake point and diesel exhaust vents are located within 35 feet of the designated safe welding and burning area, the following must be adhered to:

a. Welding and burning operations will not be performed while diesel loading or off loading operations are being performed due to the close proximity of the fuel line.

b. A sign will be posted at the diesel intake point, indicating welding and burning will be shut down on the safe welding and burning area during diesel loading and off loading operations.

2. If a paint locker is located within 35 feet of the designated safe welding and burning area, the following must be adhered to:

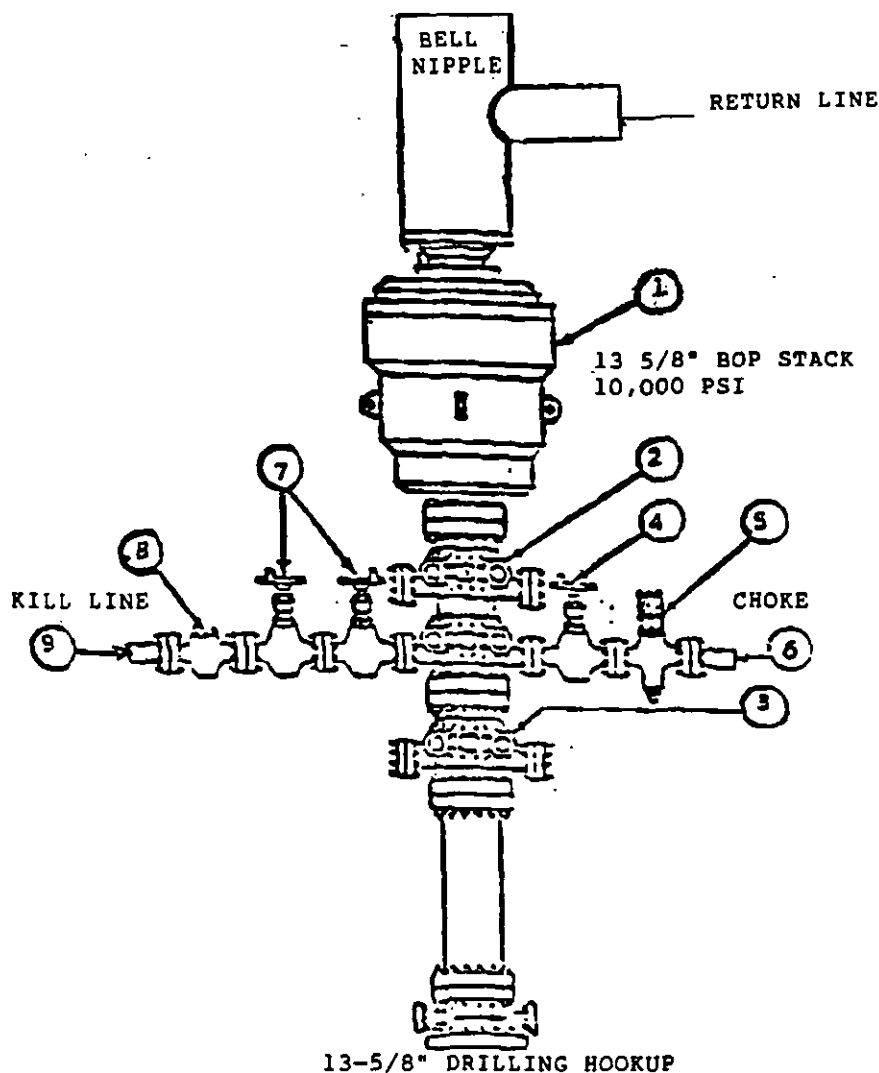
a. Welding and burning operations will not be performed while the paint locker door is in an open position or any paint mixing operations in process.

b. A sign will be posted on all sides visible indicating welding and burning will be shut down in the safe welding and burning area when the paint locker door is open and paint mixing operation is in process.

3. If a mud room hatch is located within 35 feet of the designated safe welding area, the hatch must be closed when welding and burning operations are being performed.

4. The designated safe welding and burning area will be clearly marked and identified.

ROWAN ANCHORAGE
 13 5/8" BLOWOUT PREVENTER STACK
 10,000 P.S.I. W.P. 15,000 P.S.I. TEST



1. 13-5/8" HYDRIL, ANNULAR BOP - TYPE "GK", 5,000 PSI WITH A 5000 PSI 6BX TOP CONNECTION AND 10,000 PSI 6BX BOTTOM CONNECTION, H₂S TRIMMED.
2. 13-5/8" CAMERON DOUBLE BOP - TYPE "U", 10,000 PSI WP, H₂S TRIMMED.
3. 13-5/8" CAMERON SINGLE BOP - TYPE "U", 10,000 PSI WP, H₂S TRIMMED.
4. 4-1/16" MANUAL GATE VALVE - CAMERON TYPE "F", 10,000 PSI, H₂S TRIMMED.
5. 4-1/16" REMOTE HYDRAULIC VALVE - CAMERON TYPE "F", 10,000 PSI, H₂S TRIMMED.
6. 3" 10,000# CHOKE LINE - FROM CHOKE MANIFOLD, H₂S SERVICE.
7. 2-1/6" MANUAL GATE VALVE - CAMERON TYPE "F", 10,000 PSI, H₂S TRIMMED.
8. 2-1/6" CHECK VALVE - CAMERON TYPE "R", 10,000 PSI.
9. 3" KILL LINE - FROM CHOKE MANIFOLD, H₂S SERVICE.
10. CONTROL SYSTEM - (1) KOOMEY 160-GALLON 3000 OB WP FLANGED, PLUS VALVES WITH HANDLE ADAPTER.

ROWAN ANCHORAGE

RIG 005

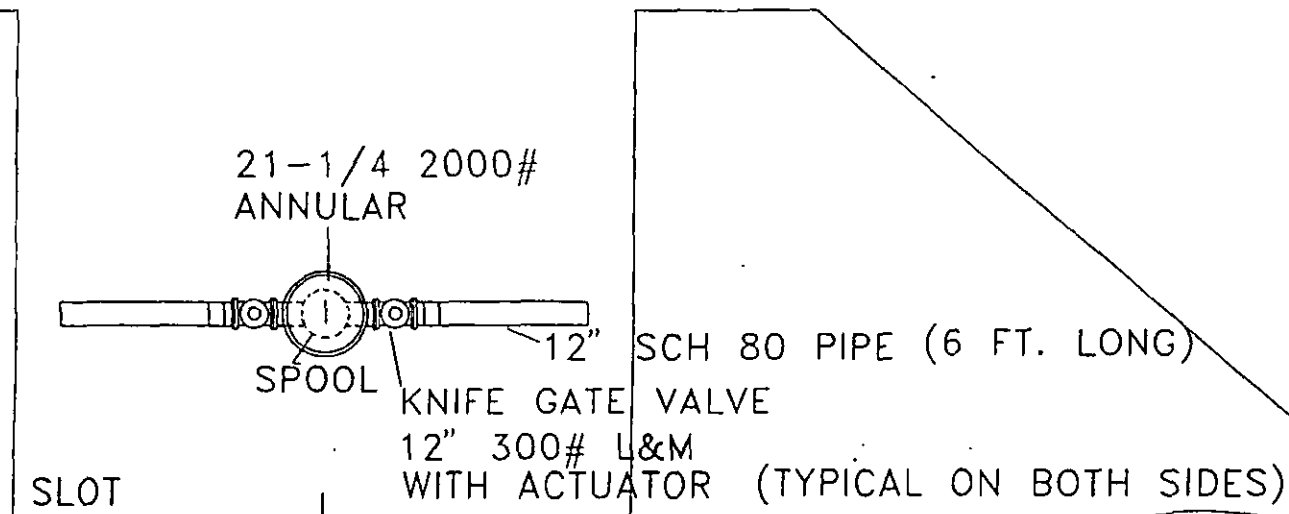
BILL OF MATERIALS

DIVERTOR SYSTEM

	RATING
1 - HYDRIL 2000 MSP - 21½ BORE	2000 P.S.I. W.P.
1 - CAMERON 2000 P.S.I. W.P. SPOOL - 21½ BORE	2000 P.S.I. W.P.
2 - 12" WAFER STYLE L&M KNIFE GATE VALVE	300 P.S.I. W.P.
2 - 8" x 12" ADAPTER SPOOLS	600 P.S.I. W.P.
2 - 12" SCH. 80 45 DEGREE WELD ELS, L.R. R=12"	600 P.S.I. W.P.
12'-12" SCH 80 LINE PIPE	600 P.S.I. W.P.

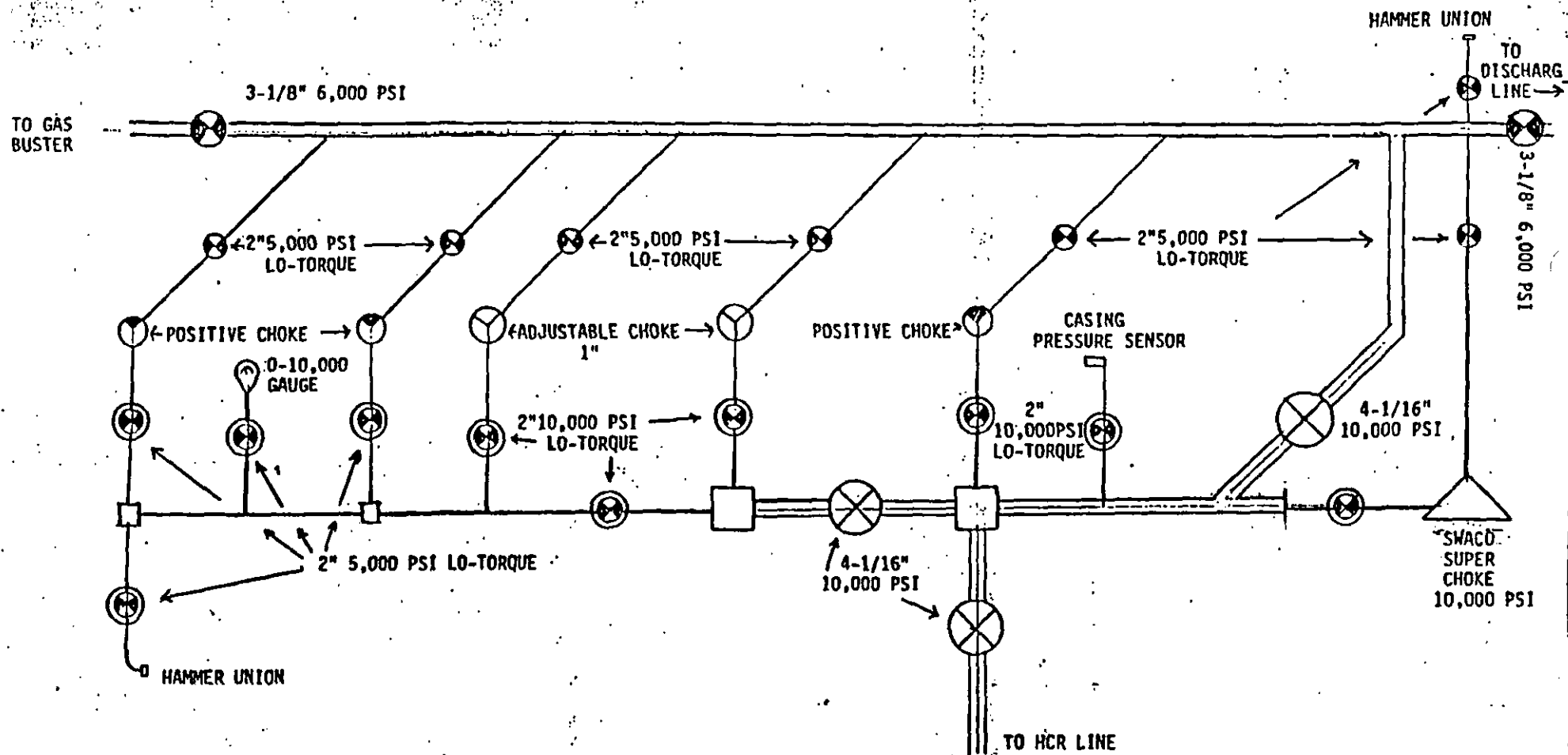
DIVERTOR LAYOUT
ROWAN ANCHORAGE

DIVERTOR LAYOUT FOR ROWAN ANCHORAGE



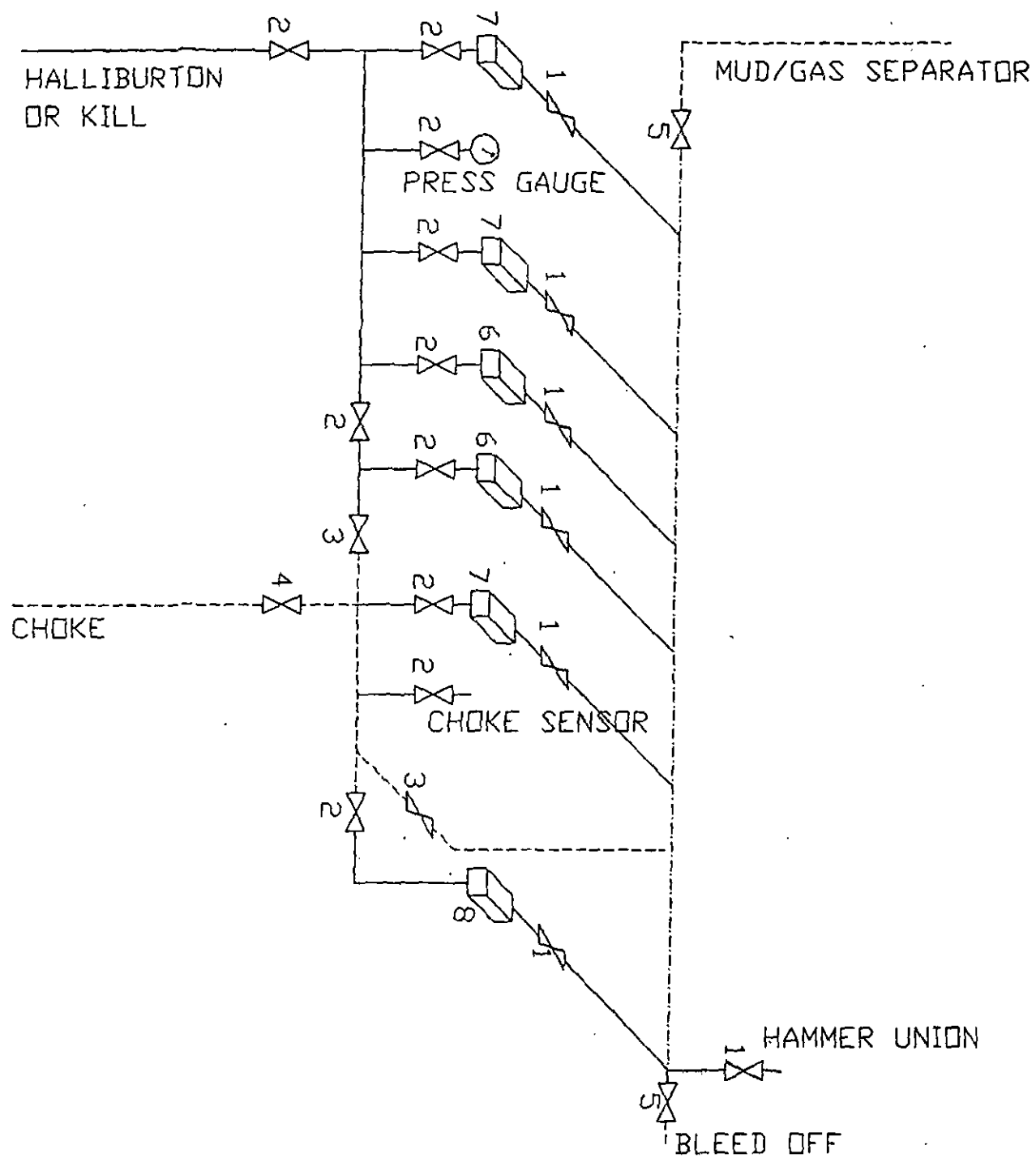
RIG ROWAN ANCHORAGE

PROCEDURE: DIVERTOR VALVES (KNIFE TYPE GATE VALVES) ARE NORMALLY IN CLOSED POSITION. VALVES OPEN AUTOMATICALLY WHEN HYDRIL IS CLOSED YOU MAY THEN MANUALLY SELECT EITHER PORT OR STARBOARD SIDE GATE VALVE TO DIVERT. THE CONTROL PANEL TO SELECT THE OPENING IS LOCATED ON THE DRILLFLOOR.



CHOKE MANIFOLD FOR ROWAN ANCHORAGE RIG 005

ROWAN ANCHORAGE RIG #005
CHDKE MANIFOLD



ROWAN ANCHORAGE

<u>VALVE#</u>	<u>TYPE</u>	<u>PRESS RATING</u>	<u>SIZE</u>
1	HALLIBURTON LOW TORQUE	5,000 PSI	2-1/16"
2	HALLIBURTON LOW TORQUE	10,000 PSI	2-1/16"
3	CAMERON GATE	10,000 PSI	4-1/16"
4	SHAFFER GATE	10,000 PSI	4-1/16"
5	HALLIBURTON LOW TORQUE	6,000 PSI	3-1/8"
6	CAMERON MANUAL CHOKE	10,000 PSI	1"
7	CAMERON POSITIVE CHOKE	10,000 PSI	
8	SWACO SUPER CHOKE	10,000 PSI	1-9/16"

SYMBOL

LINE SIZE

————— 2"

----- 4"

----- 4" TARGETED BUFFER TANK

NOTE: ALL EQUIPMENT IS H2S TRIMMED

U.S. Department
of Transportation

United States
Coast Guard



Officer in Charge
Marine Inspection
United States Coast Guard

2875 Jimmy Johnson Blvd.
Port Arthur, TX 77640-2099
Phone: (409) 723-6509
FAX: (409) 723-6534

16710

Issued: 10 March 1999

Expires: 10 March 2000

LETTER OF COMPLIANCE
FOREIGN MOBILE OFFSHORE DRILLING UNIT

MODU ROWAN ANCHORAGE, Non-self propelled, self-elevating, Independent Leg, Mobile Offshore Drilling Unit, O.N. L7207378, Panamanian registry, gross tons 4088, built 1972.

Owner: Rowan Companies, Inc.
5450 Transco Tower
2800 Post Oak Blvd.
Houston, TX 77056

Operator: Rowan Companies, Inc.
5450 Transco Tower
2800 Post Oak Blvd.
Houston, TX 77056

The MODU ROWAN ANCHORAGE has been inspected in accordance with 33 CFR 140.101, 143.207(b), and 146.205(b), and found to be in compliance with design and standards requirements of the documenting nation that have been determined by Commandant, U.S. Coast Guard to provide a level of safety generally equivalent to that provided under 46 CFR 108 and the operating requirements of 46 CFR 109.

MAXIMUM PERSONS ALLOWED:	78
MINIMUM LIFEBOATMEN REQUIRED:	04
LIFEBOAT WEIGHT TESTED:	27 March 1996
DATE DRY-DOCKED:	18 June 1996
PRESSURE VESSEL EXAMINED:	13 March 1998
RELIEF VALVES TESTED:	13 March 1998

This Letter of Compliance is valid only for operations on the Outer Continental Shelf (OCS) of the United States and so long as the vessel is maintained in accordance with the standards applied at the time of issuance, including 33 CFR 151, 155, and 156. If the vessel enters the U.S. contiguous zone and these regulations are not met, the vessel may be in violation of U.S. law. If the vessel enters the U.S. ports or territorial waters additional requirements may apply.

This Letter of Compliance is valid for one year after the date of issue or until the unit departs the OCS, whichever comes first. This Letter of Compliance shall be posted under glass in the pilothouse, control center, or other suitable location. This Letter of Compliance must be surrendered to the U.S. Coast Guard upon expiration or departure from the United States OCS.

A handwritten signature in cursive script that reads "B. E. Graham".

B. E. GRAHAM
Lieutenant Commander, U.S. Coast Guard
Chief, Prevention Department
By direction of the
Officer in Charge, Marine Inspection

**Department of Transportation
United States Coast Guard
National Pollution Funds Center
Arlington VA 22203-1804**



No. 105372-13

**VESSEL CERTIFICATE OF FINANCIAL RESPONSIBILITY
(WATER POLLUTION)**

Vessel Operator
ROWAN COMPANIES, INC.

has established evidence of financial responsibility, in accordance with 33 CFR 138, to meet liability under section 1002 of the Oil Pollution Act of 1990, and under section 107 of the Comprehensive Environmental Response, Compensation, and Liability Act, which may result from the operation of the vessel named below:

Name of Vessel
ROWAN ANCHORAGE

Effective Date: 15JUN98

Expiration Date: 15JUN01

The use of this certificate is subject to the provisions of Part 138 of Title 33 of the Code of Federal Regulations, as it is or may be amended, and the conditions on the reverse side of this certificate. This certificate is invalid if there are any erasures or alterations hereon (except permitted by 33 CFR 138), and is void if the operator named hereon is not the party responsible for operating the vessel.



Edmund C. Armstrong

Chief, Vessel Certification
National Pollution Funds Center
By Direction



**CERTIFICADO INTERNACIONAL
DE PREVENCIÓN DE LA
CONTAMINACIÓN POR HIDROCARBUROS
INTERNATIONAL OIL POLLUTION PREVENTION CERTIFICATE
REPUBLICA DE PANAMA**

(Nota: Este Certificado debe ser complementado por un documento de Construcción Y Equipo)
(Note: This Certificate shall be supplemented by a Record of Construction and Equipment)

Expedido en virtud de lo dispuesto en el Convenio Internacional para Prevenir la Contaminación por los Buques, 1973 modificado por el Protocolo de 1978 en relación con aquello (de aquí en adelante es referido como "el Convenio") bajo la autoridad conferida por el Gobierno de la REPUBLICA DE PANAMA por American Bureau of Shipping.

Issued under the provisions of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (hereafter referred to as "the Convention") under the authority of the Government of the REPUBLIC OF PANAMA by the American Bureau of Shipping.

Nombre del Buque <i>Name of Ship</i>	Numero o Letras Distintivas <i>Distinctive Numbers or Letters</i>	Puerto de Matricula <i>Port of Registry</i>	Arqueo Bruto <i>Gross Tonnage</i>
ROWAN ANCHORAGE	HO9206	PANAMA	4,088

Tipo de Buque:
Type of Ship:

Petrolero*
*Oil-Tanker**

Buque no petrolero equipado con tanques de carga sujetos a la Regla 2(2) del Anexo del Convenio*
*Ship other than an oil tanker with cargo tanks coming under Regulation 2(2) of Annex I of the Convention**

Buque distinto de los arriba mencionados
*Ship other than any of the above**

CERTIFICO:
THIS IS TO CERTIFY:

1. Que este buque ha sido objeto de reconocimiento, de conformidad con las disposiciones de la Regla 4 del Anexo I del Convenio; y
That the ship has been surveyed in accordance with Regulation 4 of Annex I of the Convention; and
2. Que el reconocimiento ha puesto de manifiesto que la estructura, el equipo, los sistemas, los accesorios y los materiales del buque y el estado de todos ellos son satisfactorios en todos los sentidos y que el buque cumple con las prescripciones aplicables del Anexo I del Convenio.
That the survey shows that the structure, equipment, systems, fittings, arrangement and material of the ship and the condition thereof are in all respects satisfactory and that the ship complies with the applicable requirements of Annex I of the Convention.

El presente Certificado sera valido hasta 31 JULY 2002 sujeto a la realizacion del (de los) reconocimientos de conformidad con las disposiciones de la Regla 4 del Anexo I del Convenio.

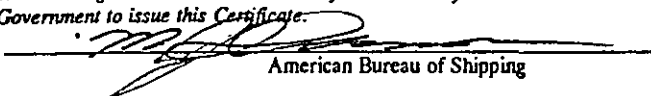
This Certificate is valid until 31 JULY 2002 subject to surveys in accordance with Regulation 4 of Annex I of the Convention.

Expedido en HOUSTON, TEXAS el 31 de JULY Año 2002
Issued at HOUSTON, TEXAS the 31 day of JULY Year 2002

Valido solo cuando el Suplemento Numero 1562 esta disponible para inspeccion.
Valid only when the Supplement No. 1562 is available for inspection.

* Delete as appropriate.

El infrascrito declara que esta debidamente autorizado por el expresado Gobierno para expedir el presente Certificado.
The undersigned declares that he is duly authorized by the said Government to issue this Certificate.


American Bureau of Shipping

AMERICAN BUREAU OF SHIPPING



CHARTERED
1862

NUMBER
7207378

CERTIFICATE OF CLASSIFICATION

ROWAN ANCHORAGE

of Panama, Panama

Description Steel Barge Drilling Platform

Dimensions, Length 61.996M Breadth 51.206M Depth 6.705M

Tonnage, Gross 2,526 Net 2,525

Owner ROWAN INTERNATIONAL INC.

Shipbuilder MARATHON LETOURNEAU OFFSHORE PTE

Engine Builder

Year of Build 1972 Hull Number 60

This is to Certify that the above has been surveyed in accordance with the Rules of this Bureau and entered in the Record with the Class

*A1 Self Elevating Drilling Unit

13 February 1998

Issue Date

Chief Surveyor/Director
of Classification

31 July 2002

Expiration Date

Assistant Secretary

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of American Bureau of Shipping and is issued solely for the use of the Bureau, its committees, its clients or other authorized entities. The classification certificate is a representation only that the vessel, structure, item of material, equipment or machinery or any other item covered by this certificate has met one or more of the Rules of American Bureau of Shipping. The certificate is governed by the terms and conditions on the reverse side hereof, and governed by the Rules and standards of American Bureau of Shipping who shall remain the sole judge thereof.

Certificado de Seguridad de Unidad Movil de Perforación Mar Adentro

Mobile Offshore Drilling Unit Safety Certificate

REPUBLICA DE PANAMA
REPUBLIC OF PANAMA

EXPEDIDO EN VIRTUD DE LO DISPUESTO EN EL CODIGO DE LA OCMI PARA LA CONSTRUCCION Y EL EQUIPO DE UNIDADES MOVILES DE PERFORACION MAR ADENTRO
ISSUED IN PURSUANCE OF THE IMCO CODE FOR THE CONSTRUCTION AND EQUIPMENT OF MOBILE OFFSHORE DRILLING UNITS
CON AUTORIDAD CONFERIDA POR EL GOBIERNO DE LA REPUBLICA DE PANAMA
UNDER THE AUTHORITY OF THE GOVERNMENT OF THE REPUBLIC OF PANAMA

POR/BY: THE AMERICAN BUREAU OF SHIPPING

Identificación distintiva (Nombre o número) Distinctive identification (Name or number)	Tipo (Sección 1.3 del Código) Type (Section 1.3 of the Code)	Puerto de matrícula Port of registry
ROWAN ANCHORAGE	SELF ELEVATING DRILLING UNIT	PANAMA

Fecha en que se colocó la quilla o en que la construcción de la unidad su hallaba en una fase equivalente o en que empezó una transformación importante

Date on which keel was laid or unit was at a similar stage of construction or on which major conversion was commenced

1972

CERTIFICO:
THIS IS TO CERTIFY:

1. Que la unidad arriba mencionada ha sido objeto de reconocimiento, de conformidad con las disposiciones aplicables del Código para la construcción y el equipo de unidades móviles de perforación mar adentro.

1. That the above-mentioned unit has been duly surveyed in accordance with the applicable provisions of the Code for the Construction and Equipment of Mobile Offshore Drilling Units. AS MODIFIED BY THE GUIDELINES OF THE ADMINISTRATION FOR ITS APPLICATION TO EXISTING UNITS.

2. Que el reconocimiento ha revelado que la estructura, el equipo, los accesorios, la estación radioeléctrica, la disposición y los materiales de la unidad, y el estado en que todo ello se encuentra, son satisfactorios en todo los aspectos y que la unidad cumple con las pertinentes disposiciones del Código.

2. That the survey showed that the structure, equipment, fittings, radio station arrangements and materials of the unit and the condition thereof are in all respects satisfactory and that the unit complies with the relevant provisions of the Code.

AS MODIFIED BY THE GUIDELINES OF THE ADMINISTRATION FOR ITS APPLICATION TO EXISTING UNITS.

3. Que los dispositivos de salvamento bastan para un total, que no podrá ser excedido, de 85 personas; consisten en:

3. That the life-saving appliances provide for a total number of persons and no more as follows:

TWO (2) RIGID ENCLOSED SURVIVAL CRAFT CAPABLE OF ACCOMMODATING A TOTAL OF 85 PERSONS.

FOUR (4) INFLATABLE LIFERAFTS ACCOMMODATING A TOTAL OF 85 PERSONS

EIGHT (8) RING BUOYS

125 LIFEJACKETS

4. Que, de conformidad con la sección 1.4 del Código, se han modificado las disposiciones del Código en lo que respecta a la unidad, del modo siguiente:

4. That, in accordance with section 1.4 of the Code, the provisions of the Code are modified in respect of the unit in the following manner:

El presente certificado es válido hasta el día 31 de JULY 19 2002

This Certificate is valid until the day of 19

Expedido en: HOUSTON, TEXAS el 24 FEBRUARY 19 98

Issued at the 19

El infrascrito declara que esta debidamente autorizado por el expresado Gobierno para expedir el presente certificado.
The undersigned declares that he is duly authorized by the said Government to issue this certificate.

M. J. Davison, Supervisor

INSPECTOR DE/SURVEYOR TO THE AMERICAN BUREAU OF SHIPPING



CERTIFICADO INTERNACIONAL DE LINEAS DE CARGA (1966)

INTERNATIONAL LOAD LINE CERTIFICATE (1966)

Expedido en virtud de las disposiciones de la Convención de Líneas de Carga de 1966, bajo la autoridad del Gobierno de la
Issued under the provisions of the International Convention on Load Lines, 1966, under the authority of the Government of the

REPUBLIC OF PANAMA

por el / by the American Bureau of Shipping

Nombre del Buque Name of Ship	Número o Letras Distintivas Distinctive Number or Letters	Puerto de Matricula Port of Registry	Largo (L) conforme a la definición en el Artículo 2(8) Length (L) as defined in Article 2(8)
ROWAN ANCHORAGE	2747-72-B	PANAMA, R.P.	61.96 M

Franco-bordo

asignado como:

Freeboard

Assigned as:

• (Buque nuevo

A new Ship

• (Buque previamente construido

An Existing Ship

Tipo de

Buque:

Type of

Ship:

• (Tipo "A"

Type "A"

• (Tipo "B"

Type "B"

• (Tipo "B" con franco-bordo reducido

Type "B" with reduced freeboard

• (Tipo "B" con franco-bordo aumentado

Type "B" with increased freeboard

• Tache a línea que no se aplique al caso

• Delete whatever is inapplicable

Franco-bordo desde la línea de cubierta

Freeboard from deck line TO CENTER OF RING 2677 mm

Línea de Carga

Load Line

Tropical

Tropical

Verano

Summer

Invierno

Winter

Invierno en el Atlántico del Norte

Winter North Atlantic

Tropical (Madera)

Timber Tropical

Verano (Madera)

Timber Summer

Invierno (Madera)

Timber Winter

Invierno en el Atlántico del Norte (Madera)

Timber Winter North Atlantic

N/A mm (T)

N/A mm (V)

N/A mm (I)

N/A mm (IAN)

N/A mm (MT)

N/A mm (MV)

N/A mm (MI)

N/A mm (MIAN)

N/A mm encima de (V)

above

N/A borde superior de la línea a través del centro del disco

Upper edge of line through center of ring

N/A mm debajo de (V)

below

N/A mm debajo de (V)

below

N/A mm encima de (MV)

above

N/A mm encima de (V)

above

N/A mm debajo de (MV)

below

N/A mm debajo de (MV)

below

Nota: Franco-bordo y líneas de carga que no se aplican no necesitan ser entrados en el certificado.

Note: Freeboard and load lines which are not applicable need not be entered on the certificate.

Reducción para agua dulce en todos los franco-bordos sin Madera

Allowance for Fresh Water for all freeboards other than timber.

N/A mm.

Reducción para agua dulce, en todos los franco-bordos para cargamentos de Madera

Allowance for Fresh Water for timber freeboards.

N/A mm.

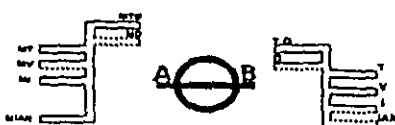
El borde superior de la línea de cubierta, desde el cual se miden estos franco-bordos está

The upper edge of the deck line from which these freeboards are measured is

OPPOSITE TOP OF STEEL UPPER

al costado de la cubierta

deck at side



Fecha inicial o inspección periódica 31 JULY 1997

Date of Initial or periodical survey

POR LA PRESENTE SE CERTIFICA que este buque ha sido inspeccionado y que los franco-bordos han sido asignados y las líneas de carga arriba señaladas ha sido marcadas de acuerdo con la Convención Internacional de las Líneas de Carga de 1966.

THIS IS TO CERTIFY that this ship has been surveyed and that the freeboards have been assigned and load lines shown above have been marked in accordance with the International Convention on Load Lines, 1966.

Este certificado es válido hasta el 31 JULY 2002 sujeto a inspecciones periódicas conforme con el Artículo (14)(1)(c) de la Convención.

This certificate is valid until (date) subject to periodical inspections in accordance with Article 14(1)(c) of the Convention.

Expedido en: HOUSTON, TEXAS

18 FEBRUARY 1998

Issued at:

El infrascrito declara que está debidamente autorizado por dicho Gobierno para expedir este Certificado.

The undersigned declares that he is duly authorized by the said Government to issue this certificate.

POR LA PRESENTE SE CERTIFICA que en la inspección periódica requerida en el Artículo



ABS

Surveyor, American Bureau of Shipping

BY DIRECTION OF MANAGER

CLASSIFICATION AND DOCUMENTATION CENTER

14(1)(c) de la convención, este buque se ha encontrado que cumple con las disposiciones pertinentes a la Convención.

THIS IS TO CERTIFY that at a periodical inspection required by Article 14(1)(c) of the Convention, this ship was found to comply with the relevant provisions of the Convention.



IMO No.

DISTINTIVO DE LLAMADA
CALL LETTERS

HO-9206

REPUBLICA DE PANAMA

MINISTERIO DE HACIENDA Y TESORO
DIRECCION GENERAL CONSULAR Y DE NAVES
MARINA MERCANTIL INTERNACIONAL
PATENTE REGLAMENTARIA DE NAVEGACION
SERVICIO INTERNACIONALNUMERO OFICIAL
REGISTRATION No.:

No. 2747-72-D

De acuerdo al cumplimiento de los requisitos estipulados en la Ley 2 de 17 de enero de 1980, aprobados por Resuelto No. 906 de 21 de Abril del año 1999 expedido

por esta Oficina SE AUTORIZA Y CONCEDE a la nave cuyas características se detallan a continuación, la presente PATENTE REGLAMENTARIA DE NAVEGACION, para todos los fines respectivos que otorga el Registro de la Marina Mercante de la República de Panamá.

In accordance with the requirements established by the Statute No. 2 dated the 17th of January 1980, the registration requested in Resolution No. 906 dated the 21st of April of 1999, has been approved by this office. Therefore, the Panama Merchant Marine Registry hereby GRANTS AND AUTHORIZES this Reglamentary Registration of Navigation Certificate to the vessel, whose particulars are described below.

DATOS DE IDENTIFICACION DE LA NAVE
PARTICULARS OF THE VESSEL

NOMBRE DE LA NAVE: NAME OF THE VESSEL: ROWAN ANCHORAGE		PROPIETARIO: OWNER'S NAME: ROWAN INTERNATIONAL, INC.	
NOMBRE ANTERIOR: PREVIOUS NAME: NUEVA CONSTRUCCION			
CONSTRUIDO EN: BUILT IN: SINGAPUR		REPRESENTANTE LEGAL: NAME OF LEGAL REPRESENTATIVE: JOSE E. EHRMAN	
CONSTRUCTORES: BUILDERS: MARATHON LETOURNEAU OFFSHORE PTE. LTD.		AUTORIDAD ENCARGADA DE LAS CUENTAS DE RADIO: RADIO ACCOUNTING AUTHORITY: CORRESPONDENCIA PRIVADA	
AÑO DE CONSTRUCCION: DATE OF CONSTRUCTION: 1972		TONELAJE TONNAGE	
MATERIAL DEL CASCO: MATERIAL OF HULL: ACERO		ESLORA LENGTH 59.53 MTS.	
		MANGA BREADTH 51.21 MTS.	
		PUNTAL DEPTH 6.71 MTS.	
		BRUTO: GROSS: 4,088.00	
		NETO: NET: 1,226.00	
SERVICIO A QUE SE DEDICA LA NAVE KIND OF SERVICE GIVEN BY THE VESSEL			
CARGA SECA: DRY CARGO:	CARGA LIQUIDA: LIQUID CARGO:	DE SERVICIO DE: TYPE OF SERVICE: PERFORADORA	

SISTEMA DE PROPULSION
PROPULSION SYSTEM

CLASE Y NUMERO DE MAQUINAS O MOTORES: SIN PROPULSION PROPIA

TYPE AND NUMBER OF MACHINES:

NUMERO Y TIPO DE CILINDROS:

NUMBER AND TYPE OF CYLINDERS:

MARCA Y NUMERO DE LOS FABRICANTES:

BRAND OR NAME OF MANUFACTURERS:

VELOCIDAD DE LA NAVE:

SPEED OF THE VESSEL:

CABALLOS DE FUERZA:

HORSE POWER:

La presente Patente Reglamentaria debe ser cancelada y sustituida por otra en los casos que se describen al reverso de este documento.

The present Reglamentary Registration Certificate International Service should be cancelled and substituted by another one in cases described on the reverse of this document.

EXPEDIDA EN PANAMA EL: VEINTIUNO (21) DE ABRIL DE 1999

FIRMADA Y SELLADA POR EL SUSCRITO DIRECTOR GENERAL DE LA DIRECCION GENERAL CONSULAR Y DE NAVES.

SIGNED AND SEALED BY THE UNDERSIGNED GENERAL DIRECTOR OF DIRECTORATE GENERAL OF CONSULAR AND MARITIME AFFAIRS

FECHA DE EXPIRACION: VEINTICINCO (25) DE ABRIL DEL 2003

VALID UNTIL: APRIL 25th, 2003

DERECHOS: LIQ. 35580-A del 22/3/99

FEES:

mgt

LICDO: FERNANDO SOLORIZANO

NOMBRE Y FIRMA DEL FUNCIONARIO
NAME AND SIGNATURE OR OFFICER

OBSERVACIONES
NOTES

- 1.- **ESTA PATENTE DE NAVEGACION DEBE SER PORTADA A BORDO EN TODO MOMENTO, Y PRESENTADA ANTE LAS AUTORIDADES MARITIMAS NACIONALES E INTERNACIONALES, QUE ASI LO SOLICITEN, PARA COMPROBAR SU NACIONALIDAD.**

THIS NAVIGATION LICENSE MUST BE ON BOARD AT ALL TIME, AND SHALL BE PRESENTED ON REQUEST, TO NATIONAL OR FOREIGN MARITIME AUTHORITIES TO VERIFY ITS NATIONALITY

- 2.- **LA NAVE PORTADORA DE ESTA PATENTE DE NAVEGACION, NO PODRA EFECTUAR CAMBIOS, NI SER TRANSFERIDA DE PROPIETARIOS O DE REGISTRO, SIN LA DEBIDA AUTORIZACION DE LA DIRECCION GENERAL CONSULAR Y DE NAVES, DEL MINISTERIO DE HACIENDA Y TESORO.**

THIS SHIP HOLDING THIS NAVIGATION LICENSE, WILL NOT BE ABLE TO MAKE ANY CHANGES OR BE TRANSFERRED FROM OWNERSHIP OR REGISTER, WITHOUT BEING DULY AUTHORIZED BY THE DIRECTORATE GENERAL OF CONSULAR AND MARITIME AFFAIRS OF THE MINISTER OF FINANCE AND TREASURE.

- 3.- **ESTA PATENTE DE NAVEGACION DEBE SER CANCELADA Y SUSTITUIDA POR OTRA, EN LOS CASOS SIGUIENTES:**

THIS NAVIGATION LICENSE MUST BE CANCELLED AND REPLACED BY ANOTHER IN FOLLOWING CASES:

- A) **POR CAMBIO DE PROPIETARIO DE LA NAVE;**
DUE TO CHANGE OF OWNERSHIP OF VESSEL;
- B) **POR CAMBIO DE NOMBRE DE LA NAVE;**
DUE TO CHANGE OF NAME OF VESSEL;
- C) **POR DETERIORO O EXTRAVIO DE LA PATENTE;**
DUE TO DETERIORATION OR MISLAD OR SAID LICENSE;
- D) **POR CAMBIOS O ALTERACIONES EN LA ESTRUCTURA DE LA NAVE;**
DUE TO CHANGES OR MODIFICATIONS IN THE STRUCTURE OF SHIP;
- E) **POR CAMBIOS EN LOS DATOS EXPRESADOS EN LA PATENTE.**
DUE TO CHANGES IN REGISTERED DATA UNDER THIS LICENSE.

- 4.- **ESTA PATENTE DE NAVEGACION DEBE SER REMITIDA A LA DIRECCION GENERAL CONSULAR Y DE NAVES, AL SER SUSTITUIDA POR OTRA, CUANDO SE SUSCITEN LOS CASOS QUE SEÑALA EL PUNTO 3, O PARA SER ANULADA, AL CANCELARSE DEFINITIVAMENTE EL REGISTRO DE LA MISMA, SEGUN EL PUNTO 2º.**

THIS NAVIGATION LICENSE MUST BE RETURNED TO THE DIRECTORATE GENERAL OF CONSULAR AND MARITIME AFFAIRS, ONCE REPLACED BY ANOTHER ACCORDING TO POINT 3, OR FOR ANNULMENT, WHEN CANCELLED FROM REGISTER AS PER POINT 2.



REPUBLICA DE PANAMA
AUTORIDAD MARITIMA DE PANAMA
DIRECCION GENERAL DE MARINA MERCANTE

RESUELTO No. 976

PANAMA, 21 de abril de 1999

NOMBRE DE LA NAVE:	ROWAN ANCHORAGE		
DISTINTIVO DE LLAMADA:	18J-9206	TONELADAS BRUTAS:	4,036.00
PROPIETARIO:	ROWAN INTERNATIONAL, INC.		

EL SUSCRITO,
DIRECTOR GENERAL,
en uso de las facultades que le confiere la Ley,

CONSIDERANDO:

Que en cumplimiento de lo dispuesto en el Artículo 5, de la Ley 2 del 17 de Enero
1980 del año 1980, se ha solicitado la renovación de la Patente de Navegación
para la nave identificada anteriormente.

Que se han cumplido con todos los requisitos exigidos para conceder dicha Renovación de Patente.

Que los derechos que causa tal solicitud han sido pagados según liquidación 35580-A del
22 de marzo de 1999

RESUELVE:

CANCELAR la Patente de Navegación No. 2747-72-CH

CONCEDER la Renovación de la Patente de Navegación para la nave arriba descrita.

AUTORIZAR la expedición de la nueva Patente REGLEMENTARIA de Navegación bajo el
Número 2747-72-B

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COPIESE Y CUMPLASE



ES COPIA AUTENTICA DE SU ORIGINA.

APR 21 1999

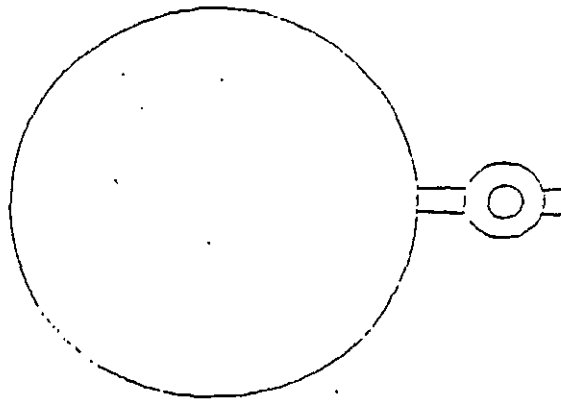
DIRECCION GENERAL DE CONSULADO
Y DE NAVES

ELENA C. de OLMEDO

LICDO. FERNANDO SOLORZANO

DIRECTOR GENERAL

PLAN VIEW

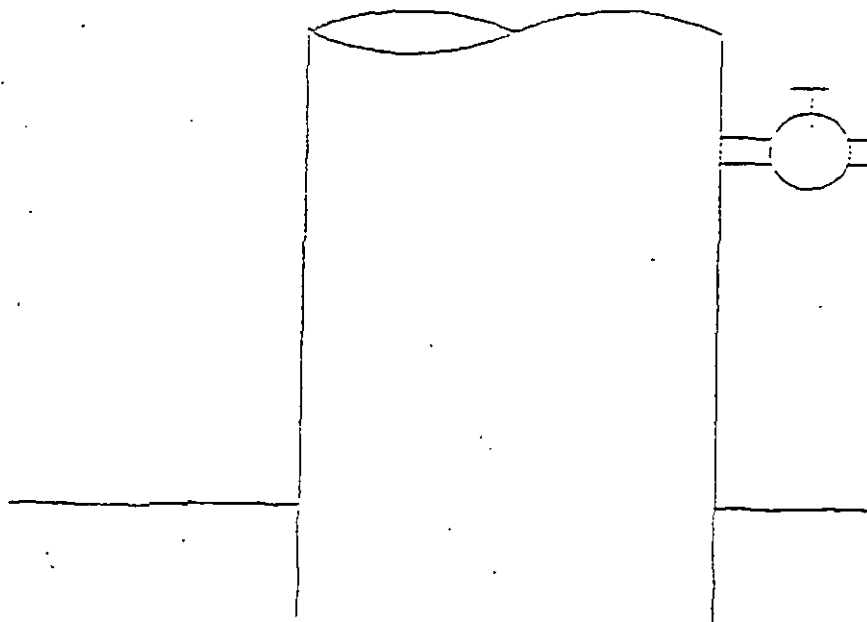


6" Ball Valve
Series 600 (2000 psi)
Pneumatically Actuated

SCHEMATIC AND OPERATION OF PNEUMATIC VALVE:

In the event the valve is utilized, it will be controlled from the drilling floor and continuously monitored when in use. The person monitoring will have direct contact with rig floor personnel.

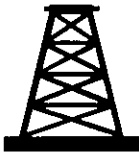
ELEVATION VIEW



6" Ball Valve
Series 600 (2000 psi)
Pneumatically Actuated

+/- 10'

Mens Sea Level



DERRKS APD Checklist

10-Jun-99

Field Operations
Gulf of Mexico
District No : 5

API NUMBER:

APD APPROVAL DATE:

LEASE OPERATOR: Hall-Houston Oil Company

LEASE NUMBER: G14357

AREA/BLOCK: EC 88

WELL: 001 ST: 00

RIG INFO:

RIG NAME: ROWAN ANCHORAGE

RIG ID NUM: 91316

RIG TYPE: JU

WATER DEPTH: 54

OIL BASE MUD: N

DRIVE SIZE: 48

PLAN NUMBER: N - 6484

RKB ELEVATION: 100

SUBSEABOP: N

DRIVE DEPTH: 305

PLAN APPROVAL DATE:

A. CASING INFORMATION

1. Casing Production : MASP = 3210 psi

Size (in)	Casing Type	Casing Burst (psi)	Casing Test (psi)	70% Casing (psi)
✓ 7.625	Production Casing	7150	3750	4121

2. Casing Burst Pressure (Surface MASP from next Drilling Interval)

Size (in)	Casing Type	Casing Burst (psi)	MAASP @ Surface BHP (psi)	FG at Shoe (psi)
✓ 16	Conductor Casing	1640	621	344
✓ 10.75	Surface Casing	3130	2194	1492

3. Casing Test Pressure

Size (in)	Casing Type	Test Pressure	70% MIYP (psi)	Test Pressure Req'd Casing / Liner Test
✓ 10.75	Surface Casing	2000	2113	1492 N/A
✓ 7.625	Production Casing	3750	4121	N/A N/A

4. Size of Casings

Size (in)	Casing Type	Preventer Size (in)
✓ 10.75	Surface Casing	21.25
✓ 7.625	Production Casing	13.625

B. CEMENT PROGRAM

Size (in)	Casing Type	Operator	Cement in cu. ft. MMS
✓ 16	Conductor Casing	2950	vs. 1958

✓ 10.75

Surface Casing

1550

vs.

826

C. FORMATION INTEGRITY TEST

✓ Size (in) Casing Type MW (ppg) FIT (ppg) FIT - MW (ppg)
7.625 Production Casing 11.5 vs. 13.4 1.9

D. MUD PROGRAM

✓ Minimum mud requirements

✓ 1000 sx Barite ✓ 200 sx Gel

✓ Number sx to raise system weight by 0.5 ppg

✓ Mud disposal statement

✓ Will oil base mud be used

E. PLAT INFORMATION

✓ Drawn to scale of 2000 feet to the inch

✓ Show surface and subsurface location of well to be drilled

✓ Show surface and subsurface location of previously drilled well

✓ Locations indicated in feet from block line

? ✓ Producing zone 500 feet from property line

F. RIG INFORMATION

✓ If already on file proceed to Part G.

✓ Mobile units

7/31/2002

ABS or other appropriate classification society

documentation of operational limitations Load Line Certificate

3/10/2000

Either USGS Certificate of Inspection or letter of compliance

✓ Identification of the maximum environmental and operational conditions the rig is designated to withstand

✓ All Units

✓ Rated capacities of the proposed drilling unit and of major drilling equipment

G. DIVERter DRAWING

✓ Plan View

✓ Elevation

Spool Outlet

- ☒ 10-inch Platform or Jack-up Rig
☐ 12-inch Semi-Submersible

Diverter Lines

- ☒ Test diverter to 200 psi
☒ Length
☒ Diameter
☒ Burst Strength
☒ Radius of Curvature
☒ Are 90 degree turns targeted
☒ One 90 degree turn on a jack-up

Valves

- ☒ Type (no manual or butterfly valves allowed)
☒ Size
☒ Working pressure rating
☒ Valve location
☒ Control instrumentation logic
☒ Operating procedure

H. BOP STACK INFORMATION

BOP Working Pressure vs. ASP

		Working Pressure (psi)			Surface Pressure (psi)	
		Annular	Ram	Wellhd	BHP	FG at Shoe
☒	Casing Type					
	Surface Casing	5000	10000	5000	2194	1492
	Production Casing	5000	10000	5000	N/A	N/A

☒ Well control procedure for annular where ASP > WP annular preventer

☐ Description of BOP accumulator system or other type of closing system proposed for use (activation)

Schematic of BOP stack

- ☒ Does BOP stack have one annular?
☒ Does BOP stack have two pipe rams?

☒ If using a tapered drillstring, does the stack have two sets of pipe rams capable of sealing around the larger size drillstring and one set of pipe rams capable of sealing around the smaller drillstring or a variable bore pipe ram in lieu of one of the larger pipe rams?

☒ Does the stack have one blind ram for a surface stack?

☒ Does the stack have one blind ram/shear ram for a subsea stack?

☒ Kill line with a remote controlled valve or two manual valves

☒ Fillup line above uppermost preventer

☒ Choke line with remote controlled valve

BOP Test Pressures

Casing Type	Test Pressures (psi)		MASP + 500 (psi)
	Annular /	Ram	
☒ Surface Casing	3000	3000	1992
☒ Production Casing	3500	5000	1992

I. OTHER

- ☒ Pore pressure, mud weight, and fracture gradient plot
- ☐ Logging program
- ☐ Coring program
- ☒ Zone protection statement
- ☒ Directional program
- ☐ Floater evacuation plan
- ☐ H2S Contingency Plan, if applicable

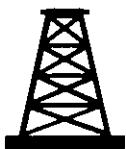
J. PUBLIC INFORMATION COPY

- ☒ Do they have one?
- ☐ 8G Lease?

K.

Remarks: _____

Reviewed by: _____



GEO REVIEWS

Minerals Management Service
Gulf of Mexico Region
Field Operations

Geological Review

Completed: 5/28/99

API WELL NUMBER :

Reviewer: MILLERF

LEASE : G14357

WELL NAME : 001

OPERATOR : Hall-Houston Oil Company

REMARKS :

Is the information in the APD sufficient to perform a geological review?

Company Contact: Beth Atwood (713) 228-0711.

Potential oil and/or gas bearing horizons:

Target: Upper Miocene (Big A) gas-prone sand @ 6600'tvd. Source: Operator

Shallow Hazards:

Soft bottom sediment and biogenic gas. Source: Geophysicist's review 8-29-94

Domal material: (cap rock, false cap rock, salt, shale, etc.)

None. Source: Operator data

Possible lost circulation zones:

None known. Operator data and Geophysicist's review 8-29-94

Possible abnormal pressure zones:

Abnormal pressures are not anticipated. Sources: surrounding well data and operator data

Distance from nearest well or platform:

SHL same as SHL G-00935#6. BHL 200'N BHL G-14357#A-2. Source: F&A map

Relationship of surface location(s) to geologic structure:

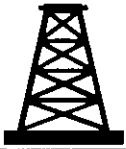
Trap: Southeast plunging anticline. Source: Operator data

Remarks:

Casing: DrivePipe(48") @ 305'tvd; Conductor(16") @ 650'tvd; Surface(10-3/4") @ 2500'tvd. H2S: No H2S was found in surrounding wells drilled thru correlative sections. Source: surrounding well data

Recommendation:

Approval.



OSFR Report

Oil Spill Financial Responsibility

**Minerals Management Service
Gulf of Mexico Region
Field Operations**

SURFACE LEASE :

Coverage Operator :

BOTTOM LEASE :

WELL :

OSFR Approval Date :

OSFR Expiration Date: