

2.003

TRIBUNAL MARÍTIMO

Anexo A - Processo 19489/01 - P 36

Certificados

EX SPIRIT OF COLUMBUS

ORA PETROBRAS TRINAVASHI

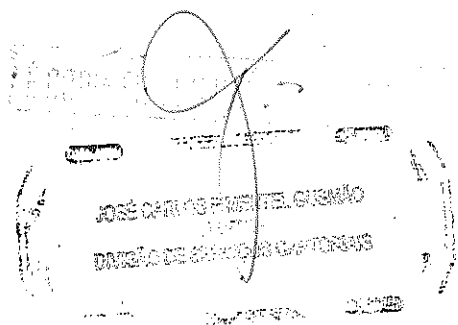
Representado(s): _____

AUTUAÇÃO

Aos 09 de Agosto de dois mil e UM

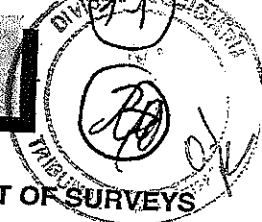
na Secretária do Tribunal Marítimo autuo os presentes autos.

Do que fiz este termo



Diretor - Geral da Secretaria

REGISTRO ITALIANO NAVALE



OFFICE/AGENCY IN QUEBEC

FACTUAL REPORT OF SURVEYS

RINA number [8] 07073	Name of ship PETROBRAS TRENTASEI	Gross Tonnage [8]	Flag of ship ITALIAN
Start of Survey 12.10.99	End of Survey 26.10.99	Place of Survey SEPT-ILES (QC.)	File [9] 97 DG 14810 IN

THIS IS TO CERTIFY THAT THE FOLLOWING SURVEYS HAVE BEEN CARRIED OUT ACCORDING TO APPLICABLE RULES AND REGULATIONS

CLASS / "NAVIGABILITA'" (*) SURVEYS [3]	Spec (Ren) Survey [1]	Ord (Ann) Survey [1]	Intermediate Survey [1]	Continuous Survey [1]	Occasional Survey [1]	First Classification "Navigabilita'" Survey [1]	Cert/Stat [4]	Expiry date of Cert/Stat
1 Hull	☒							
2 Machinery	☒			☒	☒			
3 Unmanned machinery space (IAQA/AP/IAQ+IAP) (*)				☒	☒			
4 Refrigerating Plant (IFQ)								
5 Special notations (FFQ; NAU; SCC,) (*)								
6 Diving systems								
7 Dynamic positioning system (IPD)								

Item (5)	NEW	COMP	ALT	PAR	with NDT	12 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
9 Tailshaft (centre) [6]					☐	13 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
10 Tailshaft (port) [6]					☐	14 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
11 Tailshaft (stbd) [6]					☐	15 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC

STATUTORY SURVEYS	Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat	STATUTORY SURVEYS	Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat
16 Load Line (INT/ATA) (*) [3]				29 Dangerous Goods in Road Tanks			
17 Safety Construction				30 Dangerous Goods in Tank Containers			
18 Safety Equipment				31 Dangerous Goods in Packages			
19 Safety Radio				32 Cargo Gear - Cranes (ILO) [3]			
20 Safety Passenger				33 Cargo Gear - Derricks (ILO) [3]			
21 MARPOL Annex 1 (IOPP/CONF/DICH) (*) [3]				34 Cargo Gear - Cranes (RINA) [3]			
22 Fitness Chemicals (COF/ICOF) (*)				35 Cargo Gear - Derricks (RINA) [3]			
23 Fitness Gases (COF/ICOF) (*)				36 "Idoneità" (passenger/cargo (*) ships) [3]			
24 Noxious Liquid Substances (IPPC)				37 Crude Oil Washing (COW)	AUT	OCC	
25 Sewage Pollution Prevention (ISPP)				38 Radar ascertainment	RIN	OCC	
26 Dangerous Goods in bulk (CHEM) [3]				39 Inclining test		☒	
27 Dangerous Goods in bulk (GAS) [3]				40			
28 Age of vehicles				41			

SURVEY WAS CARRIED OUT IN ACCORDANCE WITH THE RELEVANT "CHECK LIST"

THIS IS THE FINAL REPORT. ☒ THIS IS NOT THE FINAL REPORT; NARRATIVE REPORTS WITH RELEVANT ENCLOSURES WILL BE SENT LATER ☐

PARTIAL / COMPLETE (*) THICKNESS MEASUREMENTS CARRIED OUT ☐ RELEVANT REPORTS ARE ENCLOSED ☐

TOTAL ENCLOSURES No. 4 RELEVANT TO ITEM(S) 1-2-8-39

RECOMMENDATIONS / MEMO (*) were imposed / deleted / postponed / confirmed (*) as stated on page 3

Type of Certificate or Statement [7] ☒ CC ☐ DC ☐ DN ☐ DP Date of VISA 26 10 99 Certificate confirmation 01200

T E X T O F V I S A	Continuation of Special Survey no 1, bottom inspection and hull and machinery occasional survey carried out - Class confirmed until 28 February 2000, at same conditions as per previous endorsement		SURVEYORS	
			Ident. No.	Surname
				FORMENTI



Form: VISA : Date QUEBEC Place 06.10.99

Underline the appropriate word(s) or abbreviation(s)

Place and date: SEPT-ILES, 26.10.99

Form: VISITE1-Rep-EG-05/94

Surveyors' names and signatures

See Explanatory Notes [1] to [9] on page 2

[Signature]

(a) Spaces examined where no protective coating was applied from the time of construction:

(b) Spaces examined where the protective coating was found in POOR condition:

(c) Spaces examined where the protective coating was found in GOOD or FAIR condition:

FIRE FIGHTING SYSTEMS AND APPLIANCES

(a) Date of last check of CO2 bottles/vessels content:

(b) Date of last hydrotesting of CO2 bottles/vessels:

(c) Date of last check of HALON bottles/vessels content:

(d) Date of last hydrotesting of HALON bottles/vessels:

(e) Date of last check of nitrogen bottles content:

(f) Date of last hydrotesting of nitrogen bottles:

(g) Date of last renewal of foam forming liquid:

(h) Foam forming liquid sample taken for analysis (if required): ☐

SETTING UP OF SAFETY VALVES OF MAIN / AUXILIARY (*) BOILERS:

T. OUTSTANDING ITEMS FOR COMPLETION OF PART-HELD ORDINARY (ANNUAL) / INTERMEDIATE (*) HULL OR MACHINERY SURVEYS AND/OR MAIN / AUXILIARY BOILER SURVEYS (*) ARE AS STATED BELOW:

EXPLANATORY NOTES FOR FILLING IN THIS FORM:

[1] MARKS FOR SURVEY EXTENT

X or AL = Survey entirely carried out
 IN = Commencement of Survey
 CN = Continuation of Survey
 CM = Completion of Survey
 PC = Annual Survey of exhaust fired thermal oil heaters including visual inspection and tightness testing of heater tubes

[2] TYPE OF SURVEY

ANN = Annual Survey
 AUT = Survey for authorization (for COW) (Item 37)
 BIE = Biennial Survey (for Compasses)
 INT = Intermediate Survey
 LT = Load test (for Cargo Gear - Items 32 to 35)
 O = Occasional survey
 Q = Quadrennial Survey (for Cargo Gear - Items 32 to 35)
 Q = Quinquennial survey (for Cargo Gear - Items 32 to 35)
 RIL = Initial Survey
 RIN = Renewal Survey
 VAR = Survey for Loadline variations (Item 16)

[3] OTHER NOTES ON SURVEYS

N.B.: "NAVIGABILITA" SURVEYS are Surveys to be carried out for the purpose of the issue, maintenance or renewal of the "Certificato di navigabilità" (Seaworthiness Certificate) under the provisions of Italian Safety Rules
 "IDONEITA" SURVEYS are Surveys to be carried out for the purpose of the issue, maintenance or renewal of the national safety certificate called "Certificato di Idoneità" to passenger or cargo ships not subject to SOLAS under the provisions of Italian Safety Rules (Item 36)
 INT/ITA = Survey for the purpose of the International/Italian Loadline Certificate, as appropriate (Item 16)
 CONF = Certificate of compliance ("Conformità") to MARPOL Annex I (only for Italian flag ships not subject to MARPOL) (Item 21)
 DICH = Statement of compliance ("Dichiarazione") to MARPOL Annex I (only for Italian flag ships not subject to MARPOL) (Item 21)
 CHEM = Statement of compliance ("Attestazione") to Italian Statutory Regulations (only for Italian or foreign flag chemical tankers or gas carriers operating in Italy) (Items 26 and 27)
 RINA = Survey for the purpose of RINA Certificate for cargo gear (only for cargo gear of Italian ships not required to be included in ILO cargo gear booklet) (Items 34 and 35)

[4] CERTIFICATES AND STATEMENTS

PRO = Provisional (Interim) Certificate issued
 EXT = Validity of existing Certificate extended
 CND = Conditional Certificate issued
 DEF = Full term Certificate issued
 N.B.: The square is to be left blank in the case of endorsements of existing certificates

[5] BOTTOM SURVEY

NORM = Survey NOT valid on account of a Special Survey
 VS = Survey valid on account of a Special Survey
 AVA = Survey in connection with a Damage Survey
 Afloat: Mark the square with X to mean that an In-water Survey was carried out in lieu of a Docking Survey (see 3.2.3.2 of Ch. 3 of Section A of the Rules)
 N.B.: The underwater inspection of the ship's bottom to postpone the Docking Survey is to be considered as an Occasional Survey

[6] TAILSHAFT SURVEY

NEW = Tailshaft renewed
 COMP = Complete Survey
 ALT = Alternate Modified Survey
 PAR = Partial Survey
 With NDT: Mark the square with X to mean that a surface crack detection of the propeller keyed connection to the tailshaft was satisfactorily performed

[7] TYPE OF CERTIFICATE OR STATEMENT

CC = Certificate of Class
 DC = Class Statement
 DN = Statement with a view to obtaining the "Certificato di navigabilità"
 DP = Certificate of Class for Pleasure Vessels

[8] FOREIGN FLAG SHIPS NOT CLASSED WITH RINA

In the case of these ships, the value of Gross Tonnage and, in lieu of RINA number, Distinctive number or letters are to be indicated

[9] FILE

Year, Office code, File number and File code are to be specified, in the above order, according to the File Record Book of the RINA Office concerned

(*, underline the appropriate word(s) or abbreviation(s))

- Special & continuous hull and machinery surveys carried out according to the relevant enclosed report
- Complete inclining test carried out as per NOBLE DENTON report
- Bottom inspected while the Rig was raised by M/V "Righty Servant 1" for the transfer trip to Brasil

The inspection was carried out with many difficulties, as for bad weather conditions (strong wind or snow), heavy problems of transport at the Bay of Sept-Iles and communications, high level of personnel danger without any cooperation by the Owner Representatives; furthermore, the Rig was fitted transversally on the lifting vessel, and the lower hull extremities were outside for about 30 meters. Bottom found generally in order, just a small damage on port side aft zone, as well already noted during the internal inspection of ballast tanks.

This bottom inspection CANNOT BE accredited as V.S., and it must be carried out in better conditions at the arrival in Rio de Janeiro, together with the internal inspection as well as requested by H.O.

1 E COPIA DEL DOCUMENTO GENERALE

JOSE CARLOS RIVENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

(*) underline the appropriate word(s) or abbreviation(s)

Place and date: SEPT ILES, 26.10.99 Surveyors' names and signatures



REGISTRO ITALIANO NAVALE
R. Formenti

[Signature]

OF CARGO GEAR SURVEYED	TYPE OF SURVEY(S) CARRIED OUT	NUMBER OF CARGO GEAR SURVEYED AND RELEVANT SWL IN TONNES											
		SWL ≤ 10			10 < SWL ≤ 20			20 < SWL ≤ 40			SWL > 40		
		No.	SWL	Test	No.	SWL	Test	No.	SWL	Test	No.	SWL	Test
DERRICKS	First Survey / Quinquennial Survey												
	Quadrennial Survey												
	Annual Survey												
CRANES	First / Annual (*) Survey												
CARGO ELEVATORS	First / Annual (*) Survey												

DERRICKS, CRANES AND/OR CARGO ELEVATORS OUT OF SERVICE, IF ANY, ARE TO BE STATED BELOW (specify number and relevant SWL)

INFORMATION FOR INVOICING

SURVEYS CARRIED OUT IN ITALY OR ABROAD BY RINA EXCLUSIVE SURVEYORS

INFORMATION ON TONNAGE MEASUREMENTS

Tonnage measurements carried out according to Regulations of:

The ship had already been measured according to Regulations of:

Tonnage re-measurements carried out: ☐ Tonnage measurements carried out for sister ship(s) accepted ☐

INFORMATION ON SUBDIVISION AND STABILITY

Inclining test carried out: ☒ Light ship weight test carried out ☐

Subdivision and/or damage stability calculations carried out ☐

Calculations as above carried out for sister ship(s) accepted: ☐

OTHER INFORMATION

Fees for visaed or issued class documents: Fees for visaed or issued statutory documents:

Phone / Telex expenses: Miscellaneous expenses:

In the case of surveys carried out outside the RINA Branch Office area, state whether travel tickets (if any) have been supplied by the Shipowner or by RINA:

Expenses for travel tickets as above when supplied by RINA:

Survey(s) carried out together with the following RINA Agent abroad:

The invoice is to be sent to the Shipowner (yes/no): If not, the invoice is to be sent to the following address:

..... Client Code

Through Through Code

SURVEYS CARRIED OUT OUTSIDE ITALY BY RINA/GL JOINT EXCLUSIVE STATIONS OR AGENCIES ABROAD

Number of documents issued or visaed without inspections onboard being carried out: Number of Km covered by car and corresponding fees:

Total time spent on surveys (hours/min.): Other car travelling expenses (tolls, etc.):

Occasional survey time (hours/min.): Travelling expenses other than by car (thickets, etc.):

Travelling time (hours/min.): Phone/Telex expenses:

Out of office time (hours/min.): Miscellaneous expenses:

Overtime (hours/min.):

(*) underline the appropriate word(s) or abbreviation(s)

Place and date: QUEBEC, 26-10-99 Head of Office or Agent (Abroad) [Signature]

054

Porto di visita Port of survey	Data della visita Date of survey	Estremi della pratica File			
SEPT-ILES (QC.)	26.10.99	97	DC	14810	IN

Nome della nave
Name of ship

PETROBRAS TRENTASEI

Numero RINA
RINA number

67073

REMARKS & REMO

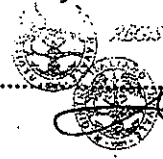
- At sailing moment, the diesel engine for the first start air compressor in Emergency Generator room was found damaged. Transport Canada required to replace it by a temporary air compressor Atlas Copco driven by electric motor and a diesel-generator to power the same one. They were fitted temporary on main deck, tested satisfactorily. The engine must be refitted and tested. The deck-generator is started by batteries.
- The exhaust gas duct VE/041 ST - XA/263 S, fitted on main deck Aft, more than 5 mt. height, has no any stiffening devices.
- In the mess room, the locker for the CO₂ bottle protecting the galley hood is closed. The relevant key must be fitted into a box with glass cover just near the locker.
- Many minor ground cables are detached or missing, they have to be refitted.
- Complete the refitting of the anti-fire passive protection in some minor zones, where removed for works. Job made at 90%.
- Locally quickly operated closing valves on deck generator fuel oil tank fitted. Refueling system must be a fixed line and a vent pipe is missing.
- The electronic controls of three watertight doors are damaged and they are not operated by CCR. Actually the doors maintained closed (only locally operated) are the lifter doors on second deck Aft, 5th & port side and the door to the Port side-Aft elevator on tank-top deck, because the elevator is temporary out of service.
- During the sea-trials in condition of rainy weather, the FIRETEX seals for piping penetration through the

we confirm the previous remarks to revise the system and to change all them because not acceptable

- Several fire doors, also with renewedaskets, are not tight because the edge eamings of the opening are bad. Where self closing appliances are required, they do not work in satisfactory way.

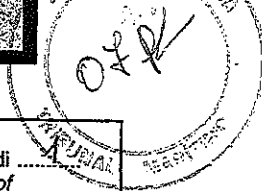


Nome e firma del Tecnico del RINA
RINA Surveyor's name and signature



REGISTRO ITALIANO NAVALE
R. Formenti
REGISTRO ITALIANO NAVALE

Data
Date Sept 11es, 26-10-99



ALLEGATO AL FORM
ATTACHED TO FORM

VISITE 1

FOGLIO
SHEET

1

di
of

Porto di visita Port of survey	Data della visita Date of survey	Estremi della pratica File			
QUEBEC	06.10.99	97	DG	14810	IN

Nome della nave
Name of ship

PETROBRAS TRENTASEI

Numero RINA
RINA number

67073

NOTE AI PIANI SCHEMATICI SCAFO E MACCHINE

- Imbarcato sul ponte di coperta, Main Deck FWD/STBD, un nuovo SKID : CAISSON PUMPS ANTI FOULING UNIT, compreso dentro un serbatoio, filtri ed apparecchiature elettriche.
- Imbarcato n. 2 pompe pneumatiche a membrana per il Production Caission su spider deck el 32000 circa Port DIAPHRAGM PUMPS FOR PRODUCTION CAISSON
- Imbarcato su ogni gruppo T/compressore NUOVA PIGNONE, una bombola aria compressa per la manovra delle dampers, (totali 3), sopra Main Deck el 51000 circa
- ESISTE una ulteriore bombola di aria compressa per aria manovra in locale Generatore di emergenza, PE 10 BAR
- ESISTE serbatoio a premiscela per avviamento automatico pompa incendio (jockey and emergency pump) in locale Fire pump sul Tank Top Deck, AFT/PORT
- Imbarcati n. 3 oil cooling systems per S.W. Caission pumps sul copertino nuovo realizzato nel Moon Pool al livello del Tank Top Deck, el 36576, CN/PORT
- I nuovi fazzoletti cotone, ord. 14-15 e SP-63, PORT & STBD, nn. 9-10-11-12, sono realmente quattro e non soltanto due, come indicato nell'elenco della visita continuativa scafo.

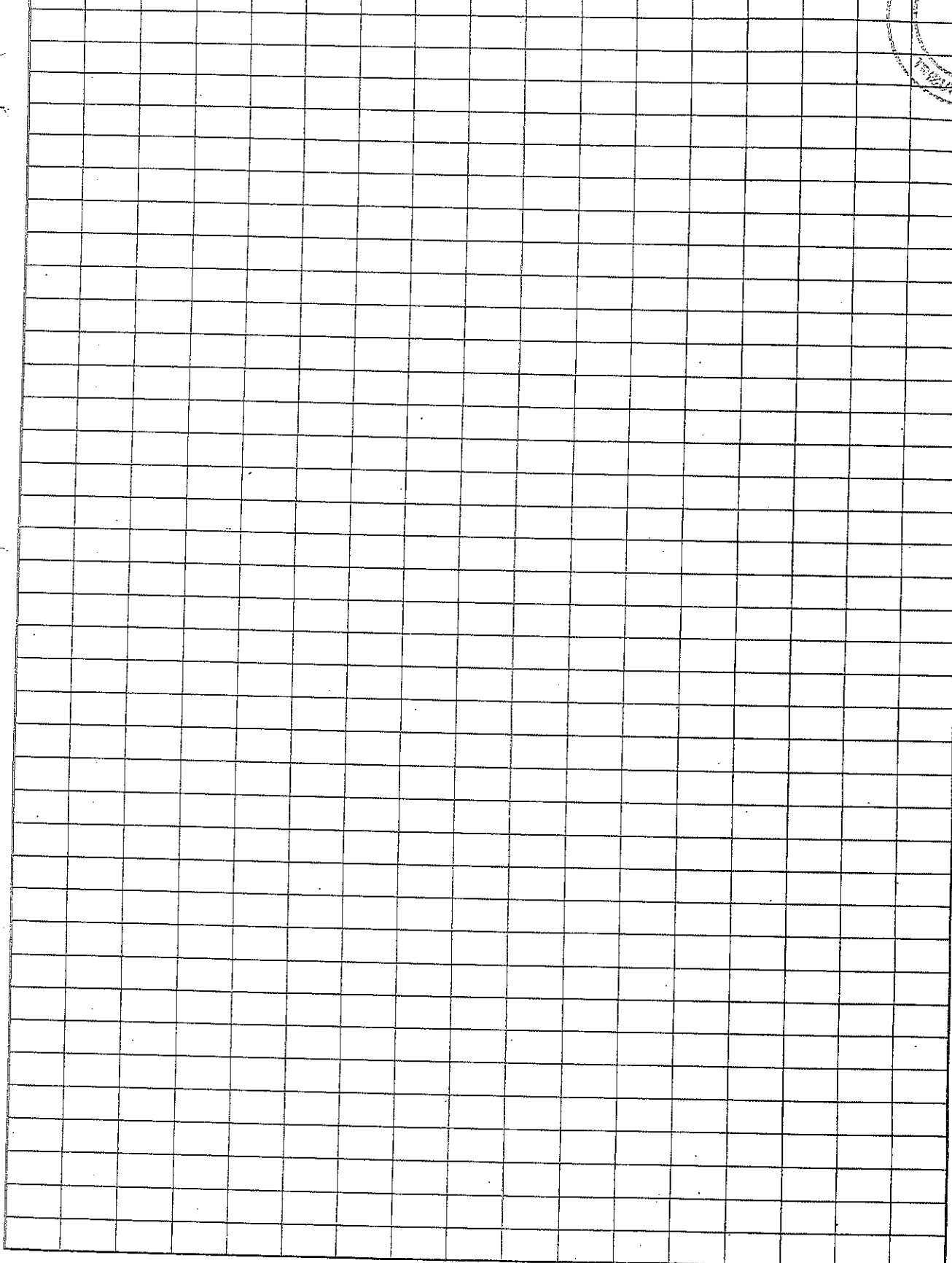
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104
105



 B. FORM
[Signature]

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100-27689-10

1954

date: 24Jul99

LISTING OF SURVEYS, CONDITIONS OF CLASS AND MEMORANDA

RINA No.: 67073 Ship's Name: SPIRIT OF COLUMBUS
GT: 34481 Flag: Italy

File No. 971 DC/14810/1N

Sheet number 1 of 19



In way of < > (left column) point out :

- = not surveyed
- X = surveyed and found satisfactory
- A = waived (dispensed with at Surveyors discretion)
- DM = survey carried out by Chief Eng.
- R = repaired and/or to be repaired (narrative report to be enclosed)
- FS = out of service
- NA = not applicable

In way of < > (right column) the coating conditions are to be indicated :

- G = coating in good condition
- P = coating in poor condition
- F = coating in fair condition
- N = not coated

Where the words 'coating unknown' are found, information on coating is to be provided

FIXED FROTH SYSTEM

Foam liquid replaced on 11Mar94
Foam liquid analyzed on May97
Foam liquid to be analyzed/replaced by May98

NOTE RELEVANT TO CONTINUOUS SURVEY ITEMS

The dates listed in continuous surveys items are those of the "FIVE years" interval since the previous survey.

CONTINUOUS HULL SURVEY

PN.SO PN=plan number / SO=survey operation

29	Survey of dry cofferdam (PORT 30/44 N.P-HULL)	Feb00	< X >	open passageway
30	Survey of dry cofferdam (STBD 30/44 N.S-HULL)	Feb00	< X >	open passageway
67	Survey of dry cofferdam (el. 12192 from B.L. FWD 17,5/19,5)	Feb00	< X >	✓
69	Survey of dry cofferdam (el. 12192 from B.L. PORT.FWD 21,5/32,5)	Feb00	< X >	✓
70	Survey of dry cofferdam (el. 12192 from B.L. STBD.FWD 21,5/32,5)	Feb00	< X >	✓
71	Survey of dry cofferdam (el. 12192 from B.L. PORT.AFT 41,5/52,5)	Feb00	< X >	✓
89	Survey of ventilation duct (el. 12192 from B.L. PORT.FWD 17/18,5)	Feb00	< >	
90	Survey of ventilation duct (el. 12192 from B.L. STBD.FWD 17/18,5)	Feb00	< >	
92	Survey of ventilation duct (el. 12192 from B.L. STBD.AFT 55,5/57)	Feb00	< >	
93	Survey of lift trunk (el. 12192 from B.L. PORT.FWD 18,5/20)	Feb00	< >	
94	Survey of lift trunk (el. 12192 from B.L. STBD.FWD 18,5/20)	Feb00	< >	
96	Survey of lift trunk (el. 12192 from B.L. STBD.AFT 54/55,5)	Feb00	< >	
123	Survey of dry cofferdam (el. 21336 from B.L. PORT.FWD 21/33 N. OBLI.PIPE)	Feb00	< >	
124	Survey of dry cofferdam (el. 21336 from B.L. STBD.FWD 21/33 N. OBLI.PIPE)	Feb00	< >	



REGISTRO ITALIANO NAVALE
R. Formenti

date: 26.10.99

Signature

RINA. REGISTRO ITALIANO NAVALE
DIREZIONE GENERALE: Via Corsica, 12 - 16128 Genova - Tel. 010-53851 - Fax 010-591877 - Telex 270022 RINAV I
PRESIDENZA: Via del Viminale, 43 - 00184 Roma - Tel. 06-4885580/4882243 - Fax 06-4825275
Cod. Fisc. 60005050101 - Part. IVA 02329480103

JOSE CARLOS RIBEIRO
DIRECTOR GENERAL
DE INSPECCION DE NAVIGACION

date: 24Jul99

LISTING OF SURVEYS, CONDITIONS OF CLASS AND MEMORANDA

RINA No.: 67073 Ship's Name: SPIRIT OF COLUMBUS
GT: 34481 Flag: Italy

File No. 99 / DE / 14810 / IN

Sheet number 2 of 19

CONTINUOUS HULL SURVEY

125	Survey of dry cofferdam (el. 21336 from B.L. PORT.AFT 41/53 N. OBLI.PIPE)	Feb00 <_>
2.2	Hydrotest of ballast tank (STBD 0/14 N.1S-HULL)	Feb00 <X>
3.2	Hydrotest of ballast tank (PORT 0/8 N.2P-HULL)	Feb00 <X>
5.2	Hydrotest of ballast tank (PORT 8/14 N.3P-HULL)	Feb00 <X>
8.2	Hydrotest of ballast tank (STBD 2/14 N.4S-HULL)	Feb00 <X>
9	Survey of dry tank (PORT 9/13 N.50P-HULL)	Feb00 <X>
10	Survey of dry tank (STBD 9/13 N.50S-HULL)	Feb00 <X>
11.2	Hydrotest of ballast tank (PORT 14/23 N.7P-HULL)	Feb00 <X>
13.2	Hydrotest of ballast tank (PORT 14/23 N.6P-HULL)	Feb00 <X>
14.2	Hydrotest of ballast tank (STBD 14/23 N.6S-HULL)	Feb00 <X>
15	Survey of chain locker tank (PORT.FWD 15/22 N.P-HULL)	Feb00 <X>
17.2	Hydrotest of ballast tank (PORT 14/23 N.5P-HULL)	Feb00 <X>
18.2	Hydrotest of ballast tank (STBD 14/23 N.5S-HULL)	Feb00 <X>
19	Survey of dry tank (PORT 21/23 N.27P-HULL)	Feb00 <X>
21.1	Survey of fresh water tank (PORT 23/30 N.9P-HULL)	Feb00 <_>
21.2	Hydrotest of fresh water tank (PORT 23/30 N.9P-HULL)	Feb00 <_>
22.1	Survey of fresh water tank (STBD 23/30 N.9S-HULL)	Feb00 <X>
22.2	Hydrotest of fresh water tank (STBD 23/30 N.9S-HULL)	Feb00 <_>
23.1	Survey of fresh water tank (PORT 23/30 N.8P-HULL)	Feb00 <X>
23.2	Hydrotest of fresh water tank (PORT 23/30 N.8P-HULL)	Feb00 <_>
24.2	Hydrotest of fresh water tank (STBD 23/30 N.8S-HULL)	Feb00 <_>
25.1	Survey of ballast (coated-Good) tank (PORT 30/37 N.11P-HULL)	Feb00 <X> <G>
25.2	Hydrotest of ballast tank (PORT 30/37 N.11P-HULL)	Feb00 <X>
26.2	Hydrotest of ballast tank (STBD 30/37 N.11S-HULL)	Feb00 <X>
27.2	Hydrotest of fuel oil tank (PORT 30/37 N.10P-HULL)	Feb00 <_>
28.2	Hydrotest of fuel oil tank (STBD 30/37 N.10S-HULL)	Feb00 <_>
31.2	Hydrotest of ballast tank (PORT 37/44 N.13P-HULL)	Feb00 <X>
32.2	Hydrotest of ballast tank (STBD 37/44 N.13S-HULL)	Feb00 <X>
34.2	Hydrotest of fuel oil tank (STBD 37/44 N.12S-HULL)	Feb00 <_>
35.2	Hydrotest of fresh water tank (PORT 44/51 N.15P-HULL)	Feb00 <_>
36.1	Survey of fresh water tank (STBD 44/51 N.15S-HULL)	Feb00 <X>
36.2	Hydrotest of fresh water tank (STBD 44/51 N.15S-HULL)	Feb00 <_>
37.2	Hydrotest of fresh water tank (PORT 44/51 N.14P-HULL)	Feb00 <_>
38.2	Hydrotest of fresh water tank (STBD 44/51 N.14S-HULL)	Feb00 <_>
39.1	Survey of fresh water tank (PORT 50/51 N.P-HULL)	Feb00 <_>
39.2	Hydrotest of fresh water tank (PORT 50/51 N.P-HULL)	Feb00 <_>
40.2	Hydrotest of fresh water tank (STBD 50/51 N.S-HULL)	Feb00 <_>
41.1	Survey of ballast (coated-Good) tank (PORT 51/60 N.18P-HULL)	Feb00 <X> <X>
41.2	Hydrotest of ballast tank (PORT 51/60 N.18P-HULL)	Feb00 <X>
42.2	Hydrotest of ballast tank (STBD 51/60 N.18S-HULL)	Feb00 <X>
43.2	Hydrotest of ballast tank (PORT 51/60 N.17P-HULL)	Feb00 <_>

E COPIA FILE DO DOCUMENTO

date: 24Jul99

LISTING OF SURVEYS, CONDITIONS OF CLASS AND MEMORANDA

RINA No.: 67073 Ship's Name: SPIRIT OF COLUMBUS.
GT: 34481 Flag: Italy

File No. 931DG1A48101IN

Sheet number 3 of 19



CONTINUOUS HULL SURVEY

44.1	Survey of ballast (coated-Good) tank (STBD 51/60 N.17S-HULL)	Feb00	<X>	<G>
44.2	Hydrotest of ballast tank (STBD 51/60 N.17S-HULL)	Feb00	<X>	
47.2	Hydrotest of bilge oily water tank (PORT 51/52 N.P-HULL)	Feb00	<X>	
48.2	Hydrotest of bilge oily water tank (STBD 51/52 N.S-HULL)	Feb00	<X>	
49	Survey of dry tank (PORT 51/53 N.28P-HULL)	Feb00	<X>	
51.2	Hydrotest of ballast tank (PORT 51/60 N.16P-HULL)	Feb00	<X>	
52.2	Hydrotest of ballast tank (STBD 51/60 N.16S-HULL)	Feb00	<X>	
53.2	Hydrotest of ballast tank (PORT 60/70 N.20P-HULL)	Feb00	<X>	
54.2	Hydrotest of ballast tank (STBD 60/70 N.20S-HULL)	Feb00	<X>	
55.1	Survey of ballast (coated-Good) tank (PORT 60/74 N.21P-HULL)	Feb00	<X>	<G>
55.2	Hydrotest of ballast tank (PORT 60/74 N.21P-HULL)	Feb00	<X>	
56.2	Hydrotest of ballast tank (STBD 60/74 N.21S-HULL)	Feb00	<X>	
57.2	Hydrotest of ballast tank (PORT 60/66 N.19P-HULL)	Feb00	<X>	
58.2	Hydrotest of ballast tank (STBD 60/66 N.19S-HULL)	Feb00	<X>	
59	Survey of dry tank (PORT 61/65 N.51P-HULL)	Feb00	<X>	
60	Survey of dry tank (STBD 61/65 N.51S-HULL)	Feb00	<X>	
61.2	Hydrotest of ballast tank (PORT 66/74 N.22P-HULL)	Feb00	<X>	
62.2	Hydrotest of ballast tank (STBD 66/74 N.22S-HULL)	Feb00	<X>	
63.1	Survey of ballast tank (el. 12192 from B.L. PORT.FWD 15/22 N. 24P-CLMN)	Feb00	<X>	<G>
63.2	Hydrotest of ballast tank (el. 12192 from B.L. PORT.FWD 15/22 N. 24P-CLMN)	Feb00	<X>	
64.2	Hydrotest of ballast tank (el. 12192 from B.L. STBD.FWD 15/22 N. 24S-CLMN)	Feb00	<X>	
66.2	Hydrotest of ballast tank (el. 12192 from B.L. STBD.AFT 52/59 N. 26S-CLMN)	Feb00	<X>	
73.2	Hydrotest of ballast tank (el. 12192 from B.L. PORT.FWD 14/23 N. 23P-CLMN)	Feb00	<X>	
74.2	Hydrotest of ballast tank (el. 12192 from B.L. STBD.FWD 14/23 N. 23S-CLMN)	Feb00	<X>	
75.2	Hydrotest of ballast tank (el. 12192 from B.L. PORT.AFT 51/60 N. 25P-CLMN)	Feb00	<X>	
76.2	Hydrotest of ballast tank (el. 12192 from B.L. STBD.AFT 51/60 N. 25S-CLMN)	Feb00	<X>	
81	Survey of chain locker tank (el. 12192 from B.L. PORT.FWD 16/18)	Feb00	<X>	
82	Survey of chain locker tank (el. 12192 from B.L. STBD.FWD 16/18)	Feb00	<X>	
99	Survey of dry tank (el. 21336 from B.L. FWD 30/37 N. 57-WELL)	Feb00	<X>	
103	Survey of Dry tank (el. 00000 from B.L. port/ext fwd 14/23 N.32P-CLMN)	Feb00	<X>	
104	Survey of Dry tank (el. 00000 from B.L. stbd/ext fwd 14/23 N.32S-CLMN)	Feb00	<X>	
106	Survey of dry tank (el. 21336 from B.L. STBD.FWD 18/23 N. 32S-CLMN)	Feb00	<X>	

date:

26.10.99

Signature

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date: 24Jul99

LISTING OF SURVEYS, CONDITIONS OF CLASS AND MEMORANDA

RINA No.: 67073 Ship's Name: SPIRIT OF COLUMBUS
 GT: 34481 Flag: Italy

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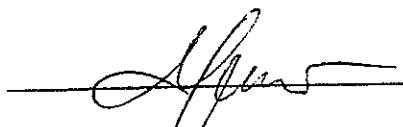
CONTINUOUS HULL SURVEY

107	Survey of dry tank (el. 21336 from B.L. PORT.AFT 51/56 N. 33P-CLMN)	Feb00 <X>
109.2	Hydrotest of drain storage tank (el. 21336 from B.L. PORT.AFT 51/60 N. 1P-CLMN)	Feb00 <_>
110.2	Hydrotest of Drains storage tank (el. 21336 from B.L. STBD.AFT 51/60 N. 1S-CLMN)	Feb00 <_>
111	Survey of dry tank (el. 21336 from B.L. PORT.AFT 52/59 N. 31P-CLMN)	Feb00 <X>
113.2	Hydrotest of dirty oil tank (el. 21336 from B.L. PORT.AFT 52/54 N. 1P-CLMN)	Feb00 <_>
114.1	Survey of dirty oil tank (el. 21336 from B.L. STBD.AFT 52/54 N. 1S-CLMN)	Feb00 <_>
114.2	Hydrotest of dirty oil tank (el. 21336 from B.L. STBD.AFT 52/54 N. 1S-CLMN)	Feb00 <_>
127	Survey of dry tank (el. 21336 from B.L. CN.PORT 35/39 N. 36-WELL)	Feb00 <X>
128	Survey of dry tank (el. 28956 from B.L. CN 30/44 N. 44-WELL)	Feb00 <_>
129.1	Survey of fresh water tank (el. 28956 from B.L. PORT.AFT 52/59 N. 1PA-CLMN)	Feb00 <X>
129.2	Hydrotest of fresh water tank (el. 28956 from B.L. PORT.AFT 52/59 N. 1PA-CLMN)	Feb00 <X>
130.2	Hydrotest of fresh water tank (el. 28956 from B.L. STBD.AFT 52/59 N. 1SA-CLMN)	Feb00 <X>
135	Survey of dry tank (el. 35052 from B.L. CN 14/23 N. 39FU-HULL)	Feb00 <X>
136	Survey of dry tank (el. 35052 from B.L. CN 23/51 N. 40FU-HULL)	Feb00 <X>
137	Survey of dry tank (el. 35052 from B.L. PORT 23/51 N. 42PU-HULL)	Feb00 <X>
138	Survey of dry tank (el. 35052 from B.L. STBD 23/51 N. 42SU-HULL)	Feb00 <X>
143.2	Hydrotest of sludge tank (el. 35052 from B.L. PORT 44/45 N. 1PU-HULL)	Feb00 <_>
144	Survey of dry tank (el. 35052 from B.L. STBD 30/44 N. 41SU-HULL)	Feb00 <X>
146.2	Hydrotest of sludge tank (el. 35052 from B.L. STBD 51/53 N. 1SU-HULL)	Feb00 <_>
147.2	Hydrotest of sludge tank (el. 35052 from B.L. PORT 51/54 N. 1PU-HULL)	Feb00 <_>
148.2	Hydrotest of sludge tank (el. 35052 from B.L. STBD 51/54 N. 1SU-HULL)	Feb00 <_>
149.2	Hydrotest of overflow tank (el. 35052 from B.L. PORT 51/53 N. PU-HULL)	Feb00 <_>
150.2	Hydrotest of overflow tank (el. 35052 from B.L. STBD 51/53 N. SU-HULL)	Feb00 <_>
163.2	Hydrotest of diesel oil tank (el. 36576 from B.L. PORT.OUT 46/51 N. 2P-TT)	Feb00 <X>
164.2	Hydrotest of diesel oil tank (el. 36576 from B.L. STBD.FWD 51/53 N. 4S-TT)	Feb00 <X>
165.2	Hydrotest of diesel oil tank (el. 36576 from B.L. PORT.IN 46/51 N. 1P-TT)	Feb00 <X>

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LISTING OF SURVEYS, CONDITIONS OF CLASS AND MEMORANDA

RINA No.: 67073 Ship's Name: SPIRIT OF COLUMBUS
 GT: 34481 Flag: Italy

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CONTINUOUS HULL SURVEY

166.2	Hydrotest of diesel oil tank (el. 36576 from B.L. STBD.AFT 53/55 N. 3S-TT)	Feb00	<X>
169.2	Hydrotest of Soluble oil tank (el. 36576 from B.L. STBD.IN. 50/51 N. S-TT)	Feb00	< >
170.2	Hydrotest of Soluble oil tank (el. 36576 from B.L. STBD.OUT 50/51 N. S-TT)	Feb00	< >
171.1	Survey of fresh water tank (el. 36576 from B.L. STBD 51/53 N. S-TT)	Feb00	<X>
171.2	Hydrotest of fresh water tank (el. 36576 from B.L. STBD 51/53 N. S-TT)	Feb00	<X> ✓
176.2	Hydrotest of diesel oil tank (el. 42672 from B.L. PORT 30/33)	Feb00	<X> ✓
172	Survey of crew accomodation below main deck (el. 39624 from B.L. FWD 14/23)	Feb00	<X>
174	Survey of crew accomodation below main deck (el. 39624 from B.L. PORT 23/37)	Feb00	<X> ✓
175	Survey of crew accomodation below main deck (el. 39624 from B.L. PORT 44/51)	Feb00	<X> ✓
177	Survey of crew accomodation below main deck (el. 42672 from B.L. PORT.FWD 30/34)	Feb00	<X> ✓
154.1	Above flooring survey of storage space (el. 36576 from B.L. STBD 23/30)	Feb00	<NA>
154.2	Under flooring survey of storage space (el. 36576 from B.L. STBD 23/30)	Feb00	<X>
155.1	Above flooring survey of storage space (el. 36576 from B.L. STBD.FWD 31/34)	Feb00	<NA> NA
155.2	Under flooring survey of storage space (el. 36576 from B.L. STBD.FWD 31/34)	Feb00	<NA> X
156.1	Above flooring survey of storage space (el. 36576 from B.L. STBD.AFT 40/43)	Feb00	<NA> NA
156.2	Under flooring survey of storage space (el. 36576 from B.L. STBD.AFT 40/43)	Feb00	<NA> X
167.1	Above flooring survey of storage space (el. 36576 from B.L. PORT 51/60)	Feb00	<NA> NA
167.2	Under flooring survey of storage space (el. 36576 from B.L. PORT 51/60)	Feb00	<NA> X
168.1	Above flooring survey of storage space (el. 36576 from B.L. CN 48/51)	Feb00	<NA> NA
168.2	Under flooring survey of storage space (el. 36576 from B.L. CN 48/51)	Feb00	<NA> X
173.1	Above flooring survey of food store storage space (el. 39624 from B.L. STBD 23/30)	Feb00	<NA> NA
173.2	Under flooring survey of food store storage space (el. 39624 from B.L. STBD 23/30)	Feb00	<NA> X
178.1	Above flooring survey of boatswain storage space (el. 42672 from B.L. STBD.FWD 30/34)	Feb00	<NA> NA
178.2	Under flooring survey of boatswain storage space (el. 42672 from B.L. STBD.FWD 30/34)	Feb00	<NA> X
180.1	Above flooring survey of paints storage space (el. 42672 from B.L. STBD.AFT 40/44)	Feb00	<NA> NA

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LISTING OF SURVEYS, CONDITIONS OF CLASS AND MEMORANDA

RINA No.: 67073 Ship's Name: SPIRIT OF COLUMBUS
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CONTINUOUS HULL SURVEY

180.2	Under flooring survey of paints storage space (el. 42672 from B.L. STBD.AFT 40/44)	Feb00	<X>	
131.2	Hydrotest of cement vessel (el. 28956 from B.L. PORT.FWD 15,5/17,5 N. PF-CLMN)	Feb00	< >	OUT OF SERVICE
132.2	Hydrotest of cement vessel (el. 28956 from B.L. STBD.FWD 15,5/17,5 N. SF-CLMN)	Feb00	< >	OUT OF SERVICE
133.2	Hydrotest of cement vessel (el. 28956 from B.L. PORT.IN.FWD 17,5/19,5 N. PF-CLMN)	Feb00	< >	OUT OF SERVICE
134.2	Hydrotest of cement vessel (el. 28956 from B.L. STBD.IN.FWD 17,5/19,5 N. SF-CLMN)	Feb00	< >	OUT OF SERVICE
851	Survey of Chain lockers port/stbd (el.12192 fwd -fr. 11/15) 11P / 9S	Feb00	<X>	TWO SEPARATED
852	Survey of Chain lockers port/stbd (el.12192 aft -fr. 59/63) 10S / 12P	Feb00	<X>	TWO SEPARATED
866	Above flooring survey of mud pump room (el. 36576 from B.L. STBD)	Feb00	<X>	CHEM. INJECT. RO
871	Survey of machinery tween deck	Feb00	<X>	
872	Survey of storage tween deck	Feb00	<X>	
873	Survey of crew accommodation tween deck	Feb00	<X>	
MISC	HULL MISCELLANEOUS			
MISC.45	Deck open spaces survey	Feb00	<X>	
MISC.46	Sounding and air pipes survey	Feb00	<X>	
MISC.48	Side scuttles survey	Feb00	<X>	
MISC.49	Scuppers and sanitary discharge and valves survey	Feb00	<X>	
MISC.50	Galley flooring survey	Feb00	<X>	
MISC.51	Flooring main and/or aux. boilers survey	Feb00	<X>	BOILERS REMOVE
68	Survey of dry cofferdam (el. 12192 from B.L. AFT 54,5/56,5)	Jun02	<X>	
72	Survey of dry cofferdam (el. 12192 from B.L. STBD.AFT 41,5/52,5)	Jun02	<X>	
91	Survey of ventilation duct (el. 12192 from B.L. PORT.AFT 55,5/57)	Jun02	< >	
95	Survey of lift trunk (el. 12192 from B.L. PORT.AFT 54/55,5)	Jun02	< >	
126	Survey of dry cofferdam (el. 21336 from B.L. STBD.AFT 41/53 N. OBLI.PIPE)	Jun02	< >	
24.1	Survey of fresh water tank (STBD 23/30 N.8S-HULL)	Jun02	<X>	
31.1	Survey of ballast (coated-Good) tank (PORT 37/44 N.13P-HULL)	Jun02	<X>	<G>
33.2	Hydrotest of fuel oil tank (PORT 37/44 N.12P-HULL)	Jun02	< >	
40.1	Survey of fresh water tank (STBD 50/51 N.S-HULL)	Jun02	< >	
45	Survey of chain locker tank (PORT 52/59 N.P-HULL)	Jun02	<X>	
53.1	Survey of ballast (coated-Good) tank (PORT 60/70 N.20P-HULL)	Jun02	<X>	<G>
83	Survey of chain locker tank (el. 12192 from B.L. PORT.AFT 56/58)	Jun02	< >	
84	Survey of chain locker tank (el. 12192 from B.L. STBD.AFT 56/58)	Jun02	< >	
97	Survey of dry tank (el. 12192 from B.L. FWD 30/37 N. 34F-WELL)	Jun02	<X>	
98	Survey of dry tank (el. 12192 from B.L. AFT 37/44 N. 35A-WELL)	Jun02	<X>	
100	Survey of dry tank (el. 21336 from B.L. AFT 37/44 N. 57-WELL)	Jun02	<X>	
105	Survey of dry tank (el. 21336 from B.L. PORT.FWD 18/23 N. 32P-CLMN)	Jun02	<X>	

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LISTING OF SURVEYS, CONDITIONS OF CLASS AND MEMORANDA

RINA No.: 67073 Ship's Name: SPIRIT OF COLUMBUS
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112	Survey of dry tank (el. 21336 from B.L. STBD.AFT 52/59 N. 31S-CLMN)	Jun02	<X>
130.1	Survey of fresh water tank (el. 28956 from B.L. STBD.AFT 52/59 N. 1SA-CLMN)	Jun02	<X>
151	Survey of crew accomodation below main deck (el. 36576 from B.L. PORT 14/23)	Jun02	<_>
152	Survey of crew accomodation below main deck (el. 36576 from B.L. STBD 14/23)	Jun02	<_>
153	Survey of crew accomodation below main deck (el. 36576 from B.L. PORT 23/30)	Jun02	<_>
85	Survey of escape trunk cofferdam (el. 12192 from B.L. PORT.FWD 17/20)	Dec02	<_>
86	Survey of escape trunk cofferdam (el. 12192 from B.L. STBD.FWD 17/20)	Dec02	<_>
87	Survey of escape trunk cofferdam (el. 12192 from B.L. PORT.AFT 54/57)	Dec02	<_>
88	Survey of escape trunk cofferdam (el. 12192 from B.L. STBD.AFT 54/57)	Dec02	<_>
27.1	Survey of fuel oil tank (PORT 30/37 N.10P-HULL)	Dec02	<_>
28.1	Survey of fuel oil tank (STBD 30/37 N.10S-HULL)	Dec02	<_>
34.1	Survey of fuel oil tank (STBD 37/44 N.12S-HULL)	Dec02	<_>
131.1	Survey of cement vessel (el. 28956 from B.L. PORT.FWD 15,5/17,5 N. PF-CLMN)	Dec02	<_>
132.1	Survey of cement vessel (el. 28956 from B.L. STBD.FWD 15,5/17,5 N. SF-CLMN)	Dec02	<_>
133.1	Survey of cement vessel (el. 28956 from B.L. PORT.IN.FWD 17,5/19,5 N. PF-CLMN)	Dec02	<_>
134.1	Survey of cement vessel (el. 28956 from B.L. STBD.IN.FWD 17,5/19,5 N. SF-CLMN)	Dec02	<_>
856	Above flooring survey of main engine room (el. 36576 from B.L. PORT.FWD)	Dec02	<_>
857	Above flooring survey of main engine room (el. 36576 from B.L. PORT.AFT)	Dec02	<_>
858	Above flooring survey of main engine room (el. 36576 from B.L. STBD.FWD)	Dec02	<_>
863	Above flooring survey of aux. machinery room	Dec02	<X>
1.1	Survey of ballast (coated-Good) tank (PORT 0/14 N.1P-HULL)	Apr03	<X> <X>
1.2	Hydrotest of ballast tank (PORT 0/14 N.1P-HULL)	Apr03	<X>
3.1	Survey of ballast (coated-Good) tank (PORT 0/8 N.2P-HULL)	Apr03	<X> <G>
4.1	Survey of ballast (coated-Good) tank (STBD 0/8 N.2S-HULL)	Apr03	<X> <G>
4.2	Hydrotest of ballast tank (STBD 0/8 N.2S-HULL)	Apr03	<X>
5.1	Survey of ballast (coated-Good) tank (PORT 8/14 N.3P-HULL)	Apr03	<X> <G>
6.1	Survey of ballast (coated-Good) tank (STBD 8/14 N.3S-HULL)	Apr03	<X> <G>
6.2	Hydrotest of ballast tank (STBD 8/14 N.3S-HULL)	Apr03	<X>
7.1	Survey of ballast (coated-Good) tank (PORT 2/14 N.4P-HULL)	Apr03	<X> <X>
7.2	Hydrotest of ballast tank (PORT 2/14 N.4P-HULL)	Apr03	<X>

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LISTING OF SURVEYS, CONDITIONS OF CLASS AND MEMORANDA

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CONTINUOUS HULL SURVEY

8.1	Survey of ballast (coated-Good) tank (STBD 2/14 N.4S-HULL)	Apr03	<X>	<X>
11.1	Survey of ballast (coated-Good) tank (PORT 14/23 N.7P-HULL)	Apr03	<X>	<G>
12.1	Survey of ballast (coated-Good) tank (STBD 14/23 N.7S-HULL)	Apr03	<X>	<G>
12.2	Hydrotest of ballast tank (STBD 14/23 N.7S-HULL)	Apr03	<X>	
13.1	Survey of ballast (coated-Good) tank (PORT 14/23 N.6P-HULL)	Apr03	<X>	<G>
14.1	Survey of ballast (coated-Good) tank (STBD 14/23 N.6S-HULL)	Apr03	<X>	<G>
16	Survey of chain locker tank (STBD.FWD 15/22 N.S-HULL)	Apr03	<X>	
17.1	Survey of ballast (coated-Good) tank (PORT 14/23 N.5P-HULL)	Apr03	<X>	<G>
18.1	Survey of ballast (coated-Good) tank (STBD 14/23 N.5S-HULL)	Apr03	<X>	<G>
26.1	Survey of ballast (coated-Good) tank (STBD 30/37 N.11S-HULL)	Apr03	<X>	<G>
32.1	Survey of ballast (coated-Good) tank (STBD 37/44 N.13S-HULL)	Apr03	<X>	<G>
37.1	Survey of fresh water tank (PORT 44/51 N.14P-HULL)	Apr03	<X>	
38.1	Survey of fresh water tank (STBD 44/51 N.14S-HULL)	Apr03	<X>	
42.1	Survey of ballast (coated-Good) tank (STBD 51/60 N.18S-HULL)	Apr03	<X>	<G>
43.1	Survey of ballast (coated-Good) tank (PORT 51/60 N.17P-HULL)	Apr03	<X>	<F>
46	Survey of chain locker tank (STBD 52/59 N.S-HULL)	Apr03	<X>	
51.1	Survey of ballast (coated-Good) tank (PORT 51/60 N.16P-HULL)	Apr03	<X>	<X>
52.1	Survey of ballast (coated-Good) tank (STBD 51/60 N.16S-HULL)	Apr03	<X>	<G>
54.1	Survey of ballast (coated-Good) tank (STBD 60/70 N.20S-HULL)	Apr03	<X>	<G>
56.1	Survey of ballast (coated-Good) tank (STBD 60/74 N.21S-HULL)	Apr03	<X>	<G>
57.1	Survey of ballast (coated-Good) tank (PORT 60/66 N.19P-HULL)	Apr03	<X>	<G>
58.1	Survey of ballast (coated-Good) tank (STBD 60/66 N.19S-HULL)	Apr03	<X>	<G>
61.1	Survey of ballast (coated-Good) tank (PORT 66/74 N.22P-HULL)	Apr03	<X>	<G>
62.1	Survey of ballast (coated-Good) tank (STBD 66/74 N.22S-HULL)	Apr03	<X>	<G>
64.1	Survey of ballast tank (el. 12192 from B.L. STBD.FWD 15/22 N. 24S-CLMN)	Apr03	<X>	<G>
65.1	Survey of ballast tank (el. 12192 from B.L. PORT.AFT 52/59 N. 26P-CLMN)	Apr03	<X>	<F>
65.2	Hydrotest of ballast tank (el. 12192 from B.L. PORT.AFT 52/59 N. 26P-CLMN)	Apr03	<_>	
66.1	Survey of ballast tank (el. 12192 from B.L. STBD.AFT 52/59 N. 26S-CLMN)	Apr03	<X>	<F>
73.1	Survey of ballast tank (el. 12192 from B.L. PORT.FWD 14/23 N. 23P-CLMN)	Apr03	<X>	<F>
74.1	Survey of ballast tank (el. 12192 from B.L. STBD.FWD 14/23 N. 23S-CLMN)	Apr03	<X>	<F>
75.1	Survey of ballast tank (el. 12192 from B.L. PORT.AFT 51/60 N. 25P-CLMN)	Apr03	<X>	<F>
76.1	Survey of ballast tank (el. 12192 from B.L. STBD.AFT 51/60 N. 25S-CLMN)	Apr03	<X>	<F>
108	Survey of dry tank (el. 21336 from B.L. STBD.AFT 51/56 N. 33S-CLMN)	Apr03	<X>	
162.1	Survey of Glycole tank 36576 from B.L. STBD 33/37 N. S-TT)	Apr03	<_>	
162.2	Hydrotest of Glycole tank 36576 from B.L. STBD 33/37 N. S-TT)	Apr03	<X>	

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LISTING OF SURVEYS, CONDITIONS OF CLASS AND MEMORANDA

RINA No.: 67073 Ship's Name: SPIRIT OF COLUMBUS
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113.1	Survey of dirty oil tank (el. 21336 from B.L. PORT.AFT 52/54 N. 1P-CLMN)	Jun03 <__>
143.1	Survey of sludge tank (el. 35052 from B.L. PORT 44/45 N. 1PU-HULL)	Jun03 <__>
145	Survey of dry tank (el. 35052 from B.L. CN 44/60 N. 43AU-HULL)	Jun03 <X>
146.1	Survey of sludge tank (el. 35052 from B.L. STBD 51/53 N. 1SU-HULL)	Jun03 <__>
147.1	Survey of sludge tank (el. 35052 from B.L. PORT 51/54 N. 1PU-HULL)	Jun03 <__>
148.1	Survey of sludge tank (el. 35052 from B.L. STBD 51/54 N. 1SU-HULL)	Jun03 <__>
149.1	Survey of overflow tank (el. 35052 from B.L. PORT 51/53 N. PU-HULL)	Jun03 <__>
150.1	Survey of overflow tank (el. 35052 from B.L. STBD 51/53 N. SU-HULL)	Jun03 <__>
165.1	Survey of diesel oil tank (el. 36576 from B.L. PORT.IN 46/51 N. 1P-TT)	Jun03 <__>
166.1	Survey of diesel oil tank (el. 36576 from B.L. STBD.AFT 53/55 N. 3S-TT)	Jun03 <__>
176.1	Survey of diesel oil tank (el. 42672 from B.L. PORT 30/33)	Jun03 <__>
47.1	Survey of bilge oily water tank (PORT 51/52 N.P-HULL)	Oct03 <__>
48.1	Survey of bilge oily water tank (STBD 51/52 N.S-HULL)	Oct03 <__>
109.1	Survey of drain storage tank (el. 21336 from B.L. PORT.AFT 51/60 N. 1P-CLMN)	Oct03 <X>
110.1	Survey of Drains storage tank (el. 21336 from B.L. STBD.AFT 51/60 N. 1S-CLMN)	Oct03 <X>
163.1	Survey of diesel oil tank (el. 36576 from B.L. PORT.OUT 46/51 N. 2P-TT)	Oct03 <__>
164.1	Survey of diesel oil tank (el. 36576 from B.L. STBD.FWD 51/53 N. 4S-TT)	Oct03 <__>
2.1	Survey of ballast (coated-Good) tank (STBD 0/14 N.1S-HULL)	Mar04 <X> <4>
33.1	Survey of fuel oil tank (PORT 37/44 N.12P-HULL)	Mar04 <__>
181.1	Survey of Port pontoon stability box (n.61.port fr.42/51)	Mar04 <__> <__>
181.2	Hydrotest of Port pontoon stability box (n.61.port fr.42/51)	Mar04 <__> <__> → DRY TA
182.1	Survey of Stbd pontoon stability box (n.61.stbd fr.42/51)	Mar04 <__> <__>
182.2	Hydrotest of Stbd pontoon stability box (n.61.stbd fr.42/51)	Mar04 <__> <__> → DRY TA
20	Survey of dry tank (STBD 21/23 N.27S-HULL)	Jun04 <X>
35.1	Survey of fresh water tank (PORT 44/51 N.15P-HULL)	Jun04 <X>
50	Survey of dry tank (STBD 51/53 N.28S-HULL)	Jun04 <X>
101	Survey of Dry tank (el. 00000 from B.L. port/in fwd 14/23 N.32P-CLMN)	Jun04 <X>
102	Survey of Dry tank (el. 00000 from B.L. port/ext fwd 14/23 N.32P-CLMN)	Jun04 <X>
139	Survey of dry tank (el. 35052 from B.L. PORT.FWD 30/34 N. 37PU-HULL)	Jun04 <X>

date: 26.10.99Signature [Signature]

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Cod. fisc. 80005050101 Part. IVA 02329480103

date: 24Jul99

LISTING OF SURVEYS, CONDITIONS OF CLASS AND MEMORANDA

RINA No.: 67073 Ship's Name: SPIRIT OF COLUMBUS
 GT: 34481 Flag: Italy

File No. 971 DC 148101 INSheet number 10 of 19CONTINUOUS HULL SURVEY

140	Survey of dry tank (el. 35052 from B.L. STBD.FWD 30/34 N. 37SU-HULL)	Jun04 < X >
141	Survey of dry tank (el. 35052 from B.L. PORT.AFT 40/44 N. 38PU-HULL)	Jun04 < >
142	Survey of dry tank (el. 35052 from B.L. STBD.AFT 40/44 N. 38SU-HULL)	Jun04 < >
169.1	Survey of Soluble oil tank (el. 36576 from B.L. STBD.IN. 50/51 N. S-TT)	Jun04 < >
170.1	Survey of Soluble oil tank (el. 36576 from B.L. STBD.OUT 50/51 N. S-TT)	Jun04 < >
183	Survey of Dry tank (el.12192 port/fwd -fr.11/14) 29 P	Jun04 < >
184	Survey of Dry tank (el.12192 port/fwd -fr.11/14) 29 S	Jun04 < X >
185	Survey of Dry tank (el.12192 port/aft -fr.60/63) 30 P	Jun04 < >
186	Survey of Dry tank (el.12192 stbd/aft -fr.60/63) 30 S	Jun04 < >
187	Survey of Dry tank (el.12192 port/fwd -fr.15/22) 62 P	Jun04 < >
188	Survey of Dry tank (el.12192 stbd/fwd -fr.15/22) 62 S	Jun04 < >
189	Survey of Dry tank (el.12192 port/aft -fr.52/59) 63 P	Jun04 < >
190	Survey of Dry tank (el.12192 stbd/aft -fr.52/59) 63 S	Jun04 < >
191	Survey of Dry tank (el.18288 port/fwd -fr.11/14) 46 P	Jun04 < >
192	Survey of Dry tank (el.18288 stbd/fwd -fr.11/14) 46 S	Jun04 < X >
193	Survey of Dry tank (el.18288 port/aft -fr.60/63) 45 P	Jun04 < >
194	Survey of Dry tank (el.18288 stbd/aft -fr.60/63) 45 S	Jun04 < >
195	Survey of Dry tank (el.18288 port/fwd -fr.11/15) 46a P	Jun04 < >
196	Survey of Dry tank (el.18288 stbd/fwd -fr.11/15) 46a S	Jun04 < X >
197	Survey of Dry tank (el.18288 port/aft -fr.59/63) 45a P	Jun04 < >
198	Survey of Dry tank (el.18288 stbd/aft -fr.59/63) 45a S	Jun04 < >
199	Survey of Dry tank (el.18288 port/fwd -fr.15/22) 29a P	Jun04 < >
200	Survey of Dry tank (el.18288 stbd/fwd -fr.15/22) 29a S	Jun04 < >
201	Survey of Dry tank (el.18288 port/aft -fr.52/59) 30a P	Jun04 < >
202	Survey of Dry tank (el.18288 stbd/aft -fr.52/59) 30a S	Jun04 < >
203	Survey of Dry tank (el.19812 port/fwd -fr.15/22) 64 P	Jun04 < >
204	Survey of Dry tank (el.19812 stbd/fwd -fr.15/22) 64 S	Jun04 < X >
205	Survey of Dry tank (el.19812 port/aft -fr.52/59) 65 P	Jun04 < >
206	Survey of Dry tank (el.19812 stbd/aft -fr.52/59) 65 S	Jun04 < >
207	Survey of Central caisson - void space (el. 10688 - 36576) 60	Jun04 < X >
208	Survey of Dry tank (el.9144 port/aft -fr.41/51) 61 P	Jun04 < >
209	Survey of Dry tank (el.9144 stbd/aft -fr.41/51) 61 S	Jun04 < >
210	Survey of Drains sump tank (el. 35376 stbd/aft -fr 62)	Jun04 < >

date: 20.10.99Signature [Signature]

ELEMCO X DATA DI SCADENZA

date: 24Jul99

LISTING OF SURVEYS, CONDITIONS OF CLASS AND MEMORANDA

RINA No.: 67073 Ship's Name: SPIRIT OF COLUMBUS
 GT: 34481 Flag: Italy

File No. 97109 / 14810 / INSheet number 11 of 19CONTINUOUS MACHINERY SURVEY

PN.SO PN=plan number / SO=survey operation

31	MAIN GAS TURBINE (EL. 36576 FROM B.L. PORT.FWD)	Feb00 <X>
31.2	Alarm and safety protection devices	Feb00 <X>
32	MAIN GAS TURBINE (EL. 36576 FROM B.L. PORT.AFT)	Feb00 <X>
32.2	Alarm and safety protection devices	Feb00 <X>
33	MAIN GAS TURBINE (EL. 36576 FROM B.L. STBD.FWD)	Feb00 <X>
33.2	Alarm and safety protection devices	Feb00 <X>
209	Aux. engine air starting bottle (emerg. generator room)	Feb00 <X>
179	Sprinkler plant receiver (el. 39624 from B.L. STBD)	Feb00 <X>
243	Aux. engine air starting receiver (el. 51816 from B.L. PORT.UP)	Feb00 <X>
2	Bilge pump (prop. thruster room PORT.AFT)	Feb00 <X>
3	Thruster lube oil pump (prop. thruster room PORT.AFT)	Feb00 <X>
4	Bilge pump (aft pump room PORT.AFT)	Feb00 <X>
7	Drilling salt water pump (aft pump room PORT)	Feb00 <X>
8	Ballast pump (aft pump room PORT)	Feb00 <X>
9	Bilge pump (aft pump room PORT.FWD)	Feb00 <X>
10	Diesel oil transfer pump (aft pump room PORT)	Feb00 <X>
16	Diesel oil transfer pump (fwd pump room PORT)	Feb00 <X>
18	Drilling salt water pump (fwd pump room PORT)	Feb00 <X>
24	Thruster lube oil pump (prop. thruster room STBD.FWD)	Feb00 <X>
25	Bilge pump (prop. thruster room STBD.FWD)	Feb00 <X>
26	Bilge pump (fwd pump room STBD.FWD)	Feb00 <X>
28	Ballast pump (fwd pump room STBD)	Feb00 <X>
29	Drilling salt water pump (fwd pump room STBD)	Feb00 <X>
30	Bilge pump (fwd pump room STBD.AFT)	Feb00 <X>
100	Diesel oil transfer pump (fwd pump room STBD)	Feb00 <X>
106	Diesel oil transfer pump (aft pump room STBD)	Feb00 <X>
107	Bilge pump (aft pump room STBD.FWD)	Feb00 <X>
108	Ballast pump (aft pump room STBD)	Feb00 <X>
109	Drilling salt water pump (aft pump room STBD)	Feb00 <X>
110	Heeling salt water pump (aft pump room STBD)	Feb00 <X>
112	Bilge pump (aft pump room STBD)	Feb00 <X>
113	Bilge pump (prop. thruster room STBD.AFT)	Feb00 <X>
118	Fresh water transfer pump (el. 21336 from B.L. PORT.AFT)	Feb00 <X>
122	Dirty oil transfer pump (el. 21336 from B.L. PORT.AFT)	Feb00 <X>
123	Dirty oil transfer pump (el. 21336 from B.L. STBD.AFT)	Feb00 <X>
126	Fire pump (el. 36576 from B.L. PORT.IN)	Feb00 <X>
127	Fire pump (el. 36576 from B.L. PORT.OUT)	Feb00 <X>
131	Diesel oil pump (el. 36576 from B.L. PORT.OUT)	Feb00 <X>
134	Diesel oil pump (el. 36576 from B.L. PORT.IN)	Feb00 <X>
135	Diesel oil pump (el. 36576 from B.L. PORT.OUT)	Feb00 <X>

date: 26.10.99Signature [Signature]

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LISTING OF SURVEYS, CONDITIONS OF CLASS AND MEMORANDA

RINA No.: 67073 Ship's Name: SPIRIT OF COLUMBUS
 GT: 34481 Flag: Italy

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CONTINUOUS MACHINERY SURVEY

149	Soluble oil pump (el. 36576 from B.L. stbd)	Feb00	<__>
150	Diesel oil pump (el. 36576 from B.L. STBD.FWD)	Feb00	<__>
151	Diesel oil pump (el. 36576 from B.L. STBD.AFT)	Feb00	<X> ✓
153	Fire pump (el. 36576 from B.L. STBD)	Feb00	<__>
155	Fresh water pump (el. 36576 aft/stbd -fr 58)	Feb00	<__>
158	Hot fresh water pump (el. 36576 from B.L. stbd.fwd)	Feb00	<__>
159	Hot fresh water pump (el. 36576 from B.L. stbd.aft)	Feb00	<__>
168	Auxiliary boiler diesel oil pump (el. 36576 from B.L. PORT.FWD)	Feb00	<__> STRIPPED OUT
169	Auxiliary boiler diesel oil pump (el. 36576 from B.L. PORT.AFT)	Feb00	<__> STRIPPED OUT
170	Aux. boiler feed water pump (el. 36576 from B.L. PORT.OUT)	Feb00	<__> STRIPPED OUT
171	Aux. boiler feed water pump (el. 36576 from B.L. PORT.IN)	Feb00	<__> STRIPPED OUT
173	Aux. boiler chemical treatment introducing pump (el. 36576 from B.L. PORT)	Feb00	<__> STRIPPED OUT
178	Fire pump (el. 39624 from B.L. STBD.FWD)	Feb00	<__>
181	Sprinkler plant pump (el. 39624 from B.L. STBD)	Feb00	<__>
210	Fire pump (el. 42672 from B.L. PORT)	Feb00	<__>
215	Helyfuel transfer pump (el. 42672 from B.L. PORT.FWD)	Feb00	<__>
216	Helyfuel transfer pump (el. 42672 from B.L. PORT.AFT)	Feb00	<__>
232	Sea water feed pump (aux E.R. Stbd.Aft.Out)	Feb00	<__>
180	Sprinkler plant air compressor (el. 39624 from B.L. STBD)	Feb00	<__>
208	Aux. engine air starting compressor (emerg. generator room)	Feb00	<X> ✓
1	C.p.p. hydraulic oil hydraulic unit (prop. thruster room PORT.AFT)	Feb00	<__>
23	C.p.p. hydraulic oil hydraulic unit (prop. thruster room STBD.FWD)	Feb00	<__>
115	Hydraulic power package (UQ/121003) el. 36576 cl/aft fr. 46/48	Feb00	<__>
120	Steering control hydraulic unit (el. 5514) thruster room port/aft	Feb00	<__>
121	Steering control hydraulic unit (el. 5514) thruster room stbd/fwd	Feb00	<__>
136	Gas turbine starting hydraulic unit (el. 36576 from B.L. PORT.AFT)	Feb00	<__>
137	Gas turbine starting hydraulic unit (el. 36576 from B.L. PORT.FWD)	Feb00	<__>
138	Gas turbine starting hydraulic unit (el. 36576 from B.L. STBD.FWD)	Feb00	<__>
132	Diesel oil purification unit (el. 36576 from B.L. PORT.IN)	Feb00	<__>
133	Diesel oil purification unit (el. 36576 from B.L. PORT.OUT)	Feb00	<__>
152	Diesel oil purification unit (el. 36576 from B.L. STBD)	Feb00	<__>
160	Fresh water heater (el. 36576 from B.L. STBD)	Feb00	<__>
161	Fresh water heater (el. 36576 from B.L. PORT.IN)	Feb00	<__>
128	Fresh water cooler (el. 36576 aft/port)	Feb00	<__>
154	Fresh water cooler (el. 36576 aft/stbd)	Feb00	<__>
156	Evaporator (el. 36576 from B.L. STBD.OUT)	Feb00	<__>
157	Evaporator (el. 36576 from B.L. STBD.IN.)	Feb00	<__>
212	Foam non-structural tank (el. 42672 from B.L. PORT.FWD)	Feb00	<X>
213	Foam non-structural tank (el. 42672 from B.L. PORT.CN)	Feb00	<X>
214	Foam non-structural tank (el. 42672 from B.L. PORT.AFT)	Feb00	<X>

date: 26-10-99Signature [Signature]

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Cod. fisc. 80005050101 Part. IVA 02329480103

date: 24Jul99

LISTING OF SURVEYS, CONDITIONS OF CLASS AND MEMORANDA

RINA No.: 67073 Ship's Name: SPIRIT OF COLUMBUS
 GT: 34481 Flag: Italy

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CONTINUOUS MACHINERY SURVEY

217	Helyfuel non-structural tank (el. 42672 from B.L. PORT.FWD)	Feb00 < >
218	Helyfuel non-structural tank (el. 42672 from B.L. PORT.AFT)	Feb00 < >
219	Incinerator diesel oil tank (el. 42672 from B.L. STBD)	Feb00 < >
172	Hot well (el. 36576 from B.L. PORT)	Feb00 < > STRIPPED OUT
PIPE	ENG. ROOM AND DECK PIPING	
PIPE.2	Cargo-pipings inspection	Feb00 < >
PIPE.3	Cargo piping test	Feb00 < >
PIPE.4	Steel steam-piping inspection (temp. < 455 c)	Feb00 < > OUT OF SERVICE
PIPE.5	Steel steam-piping hydr.test(temp. < 455 c)	Feb00 < > OUT OF SERVICE
PIPE.11	Compressed-air piping inspection	Feb00 < X >
PIPE.12	Compressed-air piping hydrostatic test	Feb00 < X >
PIPE.15	Bilge-pipings inspection	Feb00 < X >
PIPE.16	Bilge piping system operational test	Feb00 < X >
PIPE.17	Ballast-pipings inspection	Feb00 < X >
PIPE.18	Ballast piping system operational test	Feb00 < X >
PIPE.28	Windlass engine	Feb00 < X >
PIPE.29	Warping capstan or winch engines	Feb00 < X >
PIPE.30	Cargo-winch engines	Feb00 < X >
12	Survey of drilling module SWI booster pumps (aux. engine room PORT.IN.AFT)	Feb00 < > NOT EXISTING
13	Survey of drilling module special plant (aux. engine room PORT.AFT)	Feb00 < > NOT EXISTING
105	Survey of drilling module special plant (aux. engine room STBD.OUT.AFT)	Feb00 < > NOT EXISTING
116	Survey of deareator vacuum package (el. 5514 from B.L. PORT.AFT)	Feb00 < >
117	Survey of deareator vacuum package (el. 5514 from B.L. STBD.AFT)	Feb00 < >
191	Survey of seal gas nitrogen generating package (el. 42672 from B.L. STBD)	Feb00 < >
199	Survey of Chemical injection (water) package (el. 42672 from B.L. port.in)	Feb00 < >
200	Survey of Chemical injection (oil) package (el. 42672 from B.L. port.out)	Feb00 < >
206	Survey of chloropac unit (el. 42672 from B.L. PORT)	Feb00 < X >
234	Survey of chloropac unit (el. 42672 from B.L. STBD)	Feb00 < X >
17	Bilge pump (fwd pump room PORT.AFT)	Jun02 < >
19	Ballast pump (fwd pump room PORT)	Jun02 < >
21	Bilge pump (fwd pump room PORT.FWD)	Jun02 < >
22	Bilge pump (prop. thruster room PORT.FWD)	Jun02 < >
130	Diesel oil pump (el. 36576 from B.L. PORT.IN)	Jun02 < >
211	Foam pump (el. 42672 from B.L. PORT)	Apr03 < >
124	Survey of deareator tower (el. 28956 from B.L. PORT)	Apr03 < >
125	Survey of deareator tower (el. 28956 from B.L. STBD)	Apr03 < >
163	Hull service air receiver (el. 36576 from B.L. STBD)	Oct03 < X >

date: 26.10.99Signature [Signature]

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LISTING OF SURVEYS, CONDITIONS OF CLASS AND MEMORANDA

RINA No.: 67073 Ship's Name: SPIRIT OF COLUMBUS
 GT: 34481 Flag: Italy

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164	Automatism air receiver (el. 36576 from B.L. CN)	Oct03 <X>	✓
119	Fresh water transfer pump (el. 21336 from B.L. STBD.FWD)	Oct03 < >	
31	MAIN GAS TURBINE (EL. 36576 FROM B.L. PORT.FWD)		
31.3	Compressor assembly	Dec03 < >	
31.4	Combustion chamber assembly	Dec03 < >	
32	MAIN GAS TURBINE (EL. 36576 FROM B.L. PORT.AFT)		
32.3	Compressor assembly	Dec03 < >	
32.4	Combustion chamber assembly	Dec03 < >	
33	MAIN GAS TURBINE (EL. 36576 FROM B.L. STBD.FWD)		
33.3	Compressor assembly	Dec03 < >	
33.4	Combustion chamber assembly	Dec03 < >	
27	Heeling salt water pump (fwd pump room STBD)	Dec03 < >	
31	MAIN GAS TURBINE (EL. 36576 FROM B.L. PORT.FWD)		
31.5	Turbine assembly	Mar04 < >	
31.6	Reduction gear	Mar04 < >	
32	MAIN GAS TURBINE (EL. 36576 FROM B.L. PORT.AFT)		
32.6	Reduction gear	Mar04 < >	
33	MAIN GAS TURBINE (EL. 36576 FROM B.L. STBD.FWD)		
33.6	Reduction gear	Mar04 < >	
40	DIESEL ENGINE FOR EMERG. ALTERNATOR (EMERG. GENERATOR ROOM)		
40.2	Base, frame	Mar04 < >	
40.3	Control and manoeuvring devices	Mar04 < >	
40.4	Coupling	Mar04 < >	
40.17	Number 1 main & crankshaft journal bearings	Mar04 < >	
40.18	Number 2 main & crankshaft journal bearings	Mar04 < >	
40.19	Number 3 main & crankshaft journal bearings	Mar04 < >	
40.20	Number 4 main & crankshaft journal bearings	Mar04 < >	
40.21	Number 5 main & crankshaft journal bearings	Mar04 < >	
40.22	Number 6 main & crankshaft journal bearings	Mar04 < >	
40.23	Number 7 main & crankshaft journal bearings	Mar04 < >	
40.31	Fuel injection devices	Mar04 < >	
40.32	Turbo blowers	Mar04 < >	
40.33	Superchargers air-coolers	Mar04 < >	
40.34	Cooling fresh-water driven pumps	Mar04 < >	
40.35	Cooling salt-water driven pumps	Mar04 < >	
40.37	Lubricating oil driven pump	Mar04 < >	
40.38	Turboblower lubricating oil driven pump	Mar04 < >	
40.40	Oil cooler	Mar04 < >	
40.41	Water cooler	Mar04 < >	
40.42	Booster driven pump	Mar04 < >	
40.46	V" engine n. 1 port cylinder on completion	Mar04 < >	
40.47	V" engine n. 1 stbd. cylinder on completion	Mar04 < >	
40.48	V" engine n. 2 port cylinder on completion	Mar04 < >	
40.49	V" engine n. 2 stbd. cylinder on completion	Mar04 < >	
40.50	V" engine n. 3 port cylinder on completion	Mar04 < >	
40.51	V" engine n. 3 stbd. cylinder on completion	Mar04 < >	
40.52	V" engine n. 4 port cylinder on completion	Mar04 < >	
40.53	V" engine n. 4 stbd. cylinder on completion	Mar04 < >	

date: 26-10-99Signature [Signature]

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date: 24Jul99

LISTING OF SURVEYS, CONDITIONS OF CLASS AND MEMORANDA

RINA No.: 67073 Ship's Name: SPIRIT OF COLUMBUS
 GT: 34431 Flag: Italy

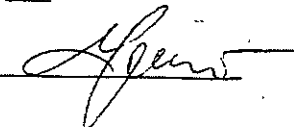
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CONTINUOUS MACHINERY SURVEY

40.54	V" engine n. 5 port cylinder on completion	Mar04 < >
40.55	V" engine n. 5 stbd. cylinder on completion	Mar04 < >
40.56	V" engine n. 6 port cylinder on completion	Mar04 < >
40.57	V" engine n. 6 stbd. cylinder on completion	Mar04 < >
41	Diesel generator (el. 48768 fwd/stbd)	Mar04 < >
42	Motor diesel for air compressor (Emerg. Gen. room)	Mar04 < >
221	Water injection pump (aux E.R. Port.Fwd.In)	Mar04 < >
222	Water injection pump (aux E.R. Port.Fwd.Out)	Mar04 < >
223	Water injection pump (aux E.R. Stbd.Fwd.In)	Mar04 < >
224	Water injection pump (aux E.R. Stbd.Fwd.Out)	Mar04 < >
225	Water injection booster pump (aux E.R. Port.Aft.In)	Mar04 < >
226	Water injection booster pump (aux E.R. Port.Aft.Out)	Mar04 < >
227	Water injection booster pump (aux E.R. Stbd.Aft.In)	Mar04 < >
228	Water injection booster pump (aux E.R. Stbd.Aft.Out)	Mar04 < >
229	Sea water feed pump (aux E.R. Port.Aft.In)	Mar04 < >
230	Sea water feed pump (aux E.R. Port.Aft.Out)	Mar04 < >
231	Sea water feed pump (aux E.R. Stbd.Aft.In)	Mar04 < >
165	Hull service air compressor (el. 36576 from B.L. PORT.FWD)	Mar04 < >
166	Hull service air compressor (el. 36576 from B.L. PORT.CN)	Mar04 < >
167	Hull service air compressor (el. 36576 from B.L. PORT.AFT)	Mar04 < >
189	Survey of Drains TPS drilling module (el. 36576. aft port in)	Mar04 < >
190	Survey of Drains TPS drilling module (el. 36576. aft port out)	Mar04 < >
193	Survey of Gas booster compressor (el. 42676 stbd aft - fr. 42/43)	Mar04 < >
205	Survey of HP flare KO drums skid (el. 42672 from B.L. PORT)	Mar04 < >
233	Survey of methanol injection package (el. 42672 from B.L. STBD)	Mar04 < >
235	Survey of Flash gas LP scrubber cooler (el. 42672 from B.L. stbd out)	Mar04 < >
236	Survey of Fuel gas treatment package (el. 36576 aft stbd.out)	Mar04 < >
237	Survey of Gas booster compressor-process pack. (el. 42676 stbd cn -fr. 35/39)	Mar04 < >
32	MAIN GAS TURBINE (EL. 36576 FROM B.L. PORT.AFT)	
32.5	Turbine assembly	Jun04 < >
33	MAIN GAS TURBINE (EL. 36576 FROM B.L. STBD.FWD)	
33.5	Turbine assembly	Jun04 < >
5	Stripping pump (aft pump room PORT)	Jun04 < >
6	Heeling salt water pump (aft pump room PORT)	Jun04 < >
20	Heeling salt water pump (fwd pump room PORT)	Jun04 < >
111	Stripping pump (aft pump room STBD)	Jun04 < >
129	F.W. pump (el. 36576 aft/port.out -fr.53)	Jun04 < >
139	Aux F.W. pump (el. 36576 aft/port.in -fr.53)	Jun04 < >
162	Fresh water heater (el. 36576 from B.L. PORT.OUT)	Jun04 < >
11	Survey of S.W. filtration package (el. 3000 aft port -fr.45/50)	Jun04 < X >

date: 26.10.99

Signature 

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LISTING OF SURVEYS, CONDITIONS OF CLASS AND MEMORANDA

RINA No.: 67073 Ship's Name: SPIRIT OF COLUMBUS
 GT: 34481 Flag: Italy

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14	Survey of S.W. filtration package (el.3000 aft stbd -fr.45/50)	Jun04 <X>
174	Survey of S.W. injection pump (el.3000 fwd.stbd.in - fr.25)	Jun04 <X>
175	Survey of S.W. injection pump (el.3000 fwd.stbd.out- fr.25)	Jun04 <X>
176	Survey of S.W. injection pump (el.3000 fwd.port.in - fr.25)	Jun04 <X>
177	Survey of S.W. injection pump (el.3000 fwd.port.out- fr.25)	Jun04 <X>
182	Survey of S.W. injection booster pump (el.3000 aft stbd.in- fr.49)	Jun04 <X>
183	Survey of S.W. injection booster pump (el.3000 aft stbd.out-fr.49)	Jun04 <X>
184	Survey of S.W. injection booster pump (el.3000 aft port.in -fr.49)	Jun04 <X>
185	Survey of S.W. injection booster pump (el.3000 aft port.out-fr.49)	Jun04 <X>
186	Survey of S.W. feed pump (el.3000 aft stbd.in -fr.46)	Jun04 <X>
187	Survey of S.W. feed pump (el.3000 aft stbd.out-fr.46)	Jun04 <X>
188	Survey of S.W. feed pump (el.3000 aft port.in -fr.46)	Jun04 <X>
192	Survey of S.W. feed pump (el.3000 aft stbd.out-fr.46)	Jun04 <X>
195	Survey of S.W. supply caisson pump (el.8000 central caisson fwd)	Jun04 <X>
196	Survey of S.W. supply caisson pump (el.8000 central caisson cn)	Jun04 <X>
197	Survey of S.W. supply caisson pump (el.8000 central caisson aft)	Jun04 <X>

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RECEIVED
 2004/10/26 14:00
 DIREZIONE GENERALE

date: 26.10.99Signature [Signature]

RINA REGISTRO ITALIANO NAVALE
 DIREZIONE GENERALE: Via Corsica, 12 - 16128 Genova - Tel. 010-53851 - Fax 010-591877 - Telex 270022 RINAV I
 PRESIDENZA: Via del Virinale, 42 - 00134 Roma - Tel. 06-4885580/4882243 - Fax 06-4825275
 Cod. fisc. 80005050101 Part. IVA 02329480103

LISTING OF SURVEYS, CONDITIONS OF CLASS AND MEMORANDA

Sheet number 11 of 19

CHECK LIST FOR "HULL SPECIAL SURVEY"

PN.SO PN=plan number / SO=survey operation

EQUI	EQUIPMENT
EQUI.2	Hatchways, skylights, air ducts
EQUI.3	Superstructure doors and ports
EQUI.4	Hawses, chain-pipes, bollards etc.
EQUI.5	Masts, rigging & lightning conductors
EQUI.6	Bow anchors
EQUI.7	Spare anchor
EQUI.8	Anchor-chains
EQUI.9	Tow and mooring lines equipment
EQUI.10	Windlass inspection
EQUI.11	Windlass test
EQUI.12	Warping capstans and winches inspection
EQUI.13	Warping capstans and winches test
EQUI.14	Fire subdivision inspection
EQUI.19	Loading electronic instrument check & control

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JOSÉ CARLOS PIMENTEL GUSMÃO
INSPECTOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Signature

RINA. REGISTRO ITALIANO NAVALE
DIREZIONE GENERALE: Via Corsica, 12 - 16128 Genova - Tel. 010-53851 - Fax 010-591877 - Telex 270022 RINAV I
PRESIDENZA: Via del Viminale, 43 - 00184 Roma - Tel. 06-4885580/4882243 - Fax 06-4825275
Cod. fisc. 80006050101 Part. IVA 02329480103

date: 24Jul99

LISTING OF SURVEYS, CONDITIONS OF CLASS AND MEMORANDA

RINA No.: 67073 Ship's Name: SPIRIT OF COLUMBUS
 GT: 34481 Flag: Italy

File No. 97109 14810 11NSheet number 10 of 18

CHECK LIST FOR "MACHINERY SPECIAL SURVEY"

PN.SO PN=plan number / SO=survey operation

FIRE	FIREFIGHTING APPLIANCE	
FIRE.2	Machin.shut-off & remote control devices inspec.	< >
FIRE.3	Machin. shut-off & remote control devices test	< >
FIRE.4	Piping cut-off & remote control devices inspec.	< >
FIRE.5	Piping cut-off & remote control devices test	< >
FIRE.6	Fire-detection system inspection	< >
FIRE.7	Fire-detection system test	< >
FIRE.10	Carbon dioxide plant inspection	< >
FIRE.11	Carbon dioxide plant test	< >
FIRE.12	Foam plant inspection	< >
FIRE.13	Foam plant test	< X >
FIRE.14	Pressure water spraying plant inspection	< X >
FIRE.15	Pressure water spraying plant test	< X >
FIRE.16	Sprinkler plant inspection	< X >
FIRE.17	Sprinkler plant test	< X >
FIRE.18	Fire water service plant inspection	< X >
FIRE.19	Fire water service plant test	< X >
FIRE.20	Portable fire exting. hydrost. test & service	< X >
FIRE.21	Portable fire extinguishers partial test	< X >
FIRE.22	Non-portable fire exting. hydr. test & service	< X >
FIRE.23	Extinguishers spare charges inspection	< X >
FIRE.24	Fire equipment inspection	< >
FIRE.25	Accident prevention equipment	< >
FIRE.29	Dry powder plant inspection	< >
FIRE.30	Dry powder plant test	< >
ELEP	LIGHT/POWER ELECTRICAL PLANT	
ELEP.2	Electric generators	< >
ELEP.3	Main switchboard	< >
ELEP.4	Emergency switchboard	< X >
ELEP.5	Distribution boards	< X >
ELEP.6	Electric motors	< X >
ELEP.7	Electric cables	< X >
ELEP.8	Electric equipment control	< X >
ELEP.9	Electric spare parts	< >
ELEP.10	Insulation test	< >
ELEP.11	Automatic circuit-breakers test	< X >
ELEP.12	Generators running test	< >
ELEP.13	System unit test	< >
ELPS	ELECTRICAL PROPULSION SYSTEM	
ELPS.2	Electric generators	< >
ELPS.3	Exciters	< >
ELPS.4	Main switchboard	< >
ELPS.5	Distribution boards	< >
ELPS.6	Propulsion electric motors	< >
ELPS.7	Main electric cables & auxiliary circuits	< >
ELPS.8	Electric equipment	< >
ELPS.9	Electric spare parts	< >
ELPS.10	Insulation test	< >
ELPS.11	Automatic circuit-breakers test	< >

date: 26.10.99Signature [Signature]

FINA No.:	67073	Ship's Name:	SPIRIT OF COLUMBUS
GT:	34481	Flag:	Italy

Sheet number 19 of 19

ELPS.12	Generators running test
ELPS.13	System unit test
MISC	WATER TIGHT DOORS, ETC.
MISC.2	Watertight doors inspection and test
MISC.3	Watertight doors manoeuv. devices
MISC.4	Machinery fixed equipment
MISC.5	Machinery spare equipment
MISC.6	Sanitary water service plant
MISC.7	Fresh water service plant
MISC.8	Drinking water service plant
MISC.9	Special purpose plant
MISC.10	Unqualified refrigerating plant
MISC.11	Air-conditioning plant
MISC.12	Supply and exhaust ventilation plant
MISC.15	Accommodation heating plant
MISC.20	Non-structural lube oil tanks
MISC.21	Non-structural compensation tanks
MISC.22	Main-aux engines-essential plants worktest
MISC.23	Gas vent, press-vac valves, flame arrestors nets
MISC.24	Controlled air system inspection
MISC.25	Hydraulic oil system worktest
MISC.26	Autom. plant inspection (to fill in relev. report)

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~~O.O.S.~~ R

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JOSE DE CASTILLO, GUANO
1914
UNION DE GUANO GUANO

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RINA. REGISTRO ITALIANO NAVALE
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Cod. fisc. 80005050101 Part. IVA 02329480103



REGISTRO ITALIANO NAVALE

Québec, 26 Ottobre 1999

TO RINA

DIREZIONE GENERALE

→ C.a. by T. ZARBO

c.p.c. Sig MAGGIANI - NAV

Via Corsica, 12

16128 GENOVA - ITALIE

Prot.: QUE/209/RFO

Oggetto: PETROBRAS TRENTASEI - RI. 67073

Proseguimento lettera QUE 207/RFO del 19.10.99

Si invia in allegato il terzo rapporto 97 DG 14810 IN relativo alla unità in oggetto e alle visite eseguite a Sept Iles (QC.) prima del trasferimento della stessa a Rio de Janeiro.

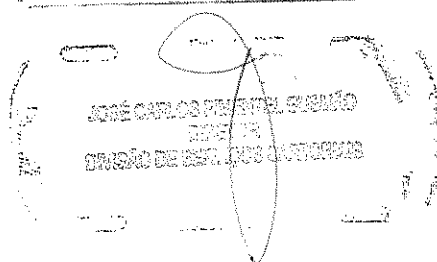
Si allega altresì una busta per il sig Maggiari contenente l'elenco delle operazioni di visita continuativa esecuite con gli estremi di reportazione (dette visite sono riportate negli allegati al form VISITE 1 entro le varie frazioni della pratica 97 DG 14810 IN) e una nota circa i piani schematici.

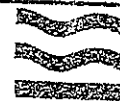
Gli stessi rapporti sono inviati anche all'Ufficio RINA di Rio de Janeiro.

Molti cordiali saluti

ROBERTO FORMENTI

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Ship Data

Length Between Perpendiculars (Fr 74 - Fr 0)	LBP:	112.776 m
Breadth Between Pontoons at Ends	BP:	77.75 m
Height to Main Deck at Centreline	DM:	42.980 m
Breadth of Deck	BD:	68.580 m

Data of Inclining Test

Date of Experiment	Sunday 17th October 1999		
Place of Test	Sept Îles, Canada		
Start of Test	1130hrs		
Finish of Test	0010hrs		
Wind	Speed	4.5 m/s	Hdg (T): 0 Deg
Tide	Speed:	0 m/s	Hdg (T): 0 Deg
Waves/Swell	HS:	0.15 m	Hdg (T): 0 Deg
Mean Water Density	$\rho_{\text{sea water}}$	1.0255 tonnes/m ³	

Unit Status

Location of Unit	50°11.14N	66°27.8W	Unit Heading (T): 321°
Movable Weights	Free Hanging		Water Depth 32.00 m
Situation of Bilges	Clean		
Mooring Anchors	Slackened		
Mooring Ropes	None		

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JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

By:

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Determination of Displacement After 4th Shift

Average Water Density in Test Place = 1.0255 tonnes/m³
Length Between Perpendiculars (LBP) = 112.776 m
Distance Between Draft Marks (LM) = 79.25 m (See sketch attached)

DRAFTS FROM U.S.K. (metres)

	Aft	Midships	Fore
Starboard	18.860	18.940	18.920
Port	18.870	18.950	18.950
Average	18.865	18.945	18.935
	(T _{aft})	(T _{mid})	(T _{Fwd})

Draft calculations on perpendiculars

C1, C2, C3 values *
*(see sketch attached)

$$T_{AP} = T_{aft} + C1 \cdot (T_{aft} - T_{fwd}) / LM \quad T_{AP} = 18.85 \text{ m} \quad C1 = 16.76 \text{ m}$$

$$T_{\oplus} = T_{mid} - C2 \cdot (T_{aft} - T_{fwd}) / LM \quad T_{\oplus} = 18.95 \text{ m} \quad C2 = 0.70 \text{ m}$$

$$T_{FP} = T_{fwd} - C3 \cdot (T_{aft} - T_{fwd}) / LM \quad T_{FP} = 18.95 \text{ m} \quad C3 = 16.76 \text{ m}$$

Average Draft from USK: $T_{MEAN} = (T_{AP} + 4 \cdot T_{\oplus} + T_{FP}) / 6 = 18.93 \text{ m}$

Draft Correction of SW Density $T'_{MEAN} = T_{MEAN} \cdot (SW_{actual} / 1.025) = 18.94 \text{ m}$

Unit's Trim $Trim = T_{fwd} - T_{aft} = -0.10 \text{ m}$

Longitudinal Centre of Flotation $LCF \text{ (from } \oplus) = -0.04 \text{ m}$

Layer Correction $t = LCF / LBP \times Trim = 0.000 \text{ m}$

Draft at LCF (inc Layer Correction) $Draft \text{ at LCF } (T'_{LCF}) = 18.940 \text{ m}$

Displacement (at Draft T'_{LCF}) $Displacement (\Delta) = 51820.4 \text{ Tonnes}$

Hydrostatic Properties of Unit

DRAFT (m)	DISPL. (tonnes)	LCB (m)	TCB (m)	VCB (m)	WPA (m ³)	LCF (m)	TCF (m)	KMT (m)	KML (m)
18.94	51820.4	-0.72	-0.02	7.92	1485.1	-0.04	-0.04	27.30	27.80

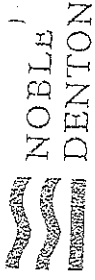
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Inclining Test Results & Determination of GM F (without Wind)



Pendulum Lengths	P1	P2	P3
	17665	19677	19595

Δ (MT)	51820.4 Tonnes
--------	----------------

	Weight Shift	Shift from Origin (mm)	Tangent *1000	Mean Tangent *1000	Shifted Weight (tonnes)	Lever Arm (m)	Heeling Moment (tonne - m)	Moment Causing Trim (tonne-m)	GM Fluid (m)			
1st Shift	P1	147.0	8.322	8.342	17.49	78.49	1372.8	2932.1	6.783			
	P2	155.0	8.385		26.71	58.37	1559.2					
	P3	163.0	8.318		49.48	67.17	3323.5					
2nd Shift	P1	311.5	17.634	17.600	17.49	-78.49	-1372.8	6255.6	6.859			
	P2	346.0	17.584							26.71	-58.37	-1559.2
	P3	344.5	17.581							49.48	-67.17	-3323.5
3rd Shift	P1	170.0	9.624	9.616	17.49	-78.49	-1372.8	3323.5	6.670			
	P2	189.0	9.605		26.71	-58.37	-1559.2					
	P3	188.5	9.620		49.48	-67.17	-3323.5					
4th Shift	P1	7.0	0.396	0.387	15.92	-78.49	-1249.1	0.0	7.180			
	P2	8.0	0.407							24.70	-58.37	-1441.7
	P3	7.0	0.357							53.07	-67.17	-3564.4
5th Shift	P1	-126.0	-7.133	-7.233	15.92	78.49	1249.1	-6255.3	6.903			
	P2	-143.0	-7.267							24.70	58.37	1441.7
	P3	-143.0	-7.298							53.07	67.17	3564.4
6th Shift	P1	-303.5	-17.181	-17.202	15.92	78.49	1249.1	-3564.4	-			
	P2	-339.0	-17.228							24.70	58.37	1441.7
	P3	-337.0	-17.198							53.07	67.17	3564.4
7th Shift	P1	-174.5	-9.878	-9.964	15.92	78.49	1249.1	-3564.4	-			
	P2	-197.0	-10.012							24.70	58.37	1441.7
	P3	-196.0	-10.003							53.07	67.17	3564.4
8th Shift	P1	7.0	0.396	0.319	15.92	78.49	1249.1	0.0	-			
	P2	6.0	0.305							24.70	58.37	1441.7
	P3	5.0	0.255							53.07	67.17	3564.4

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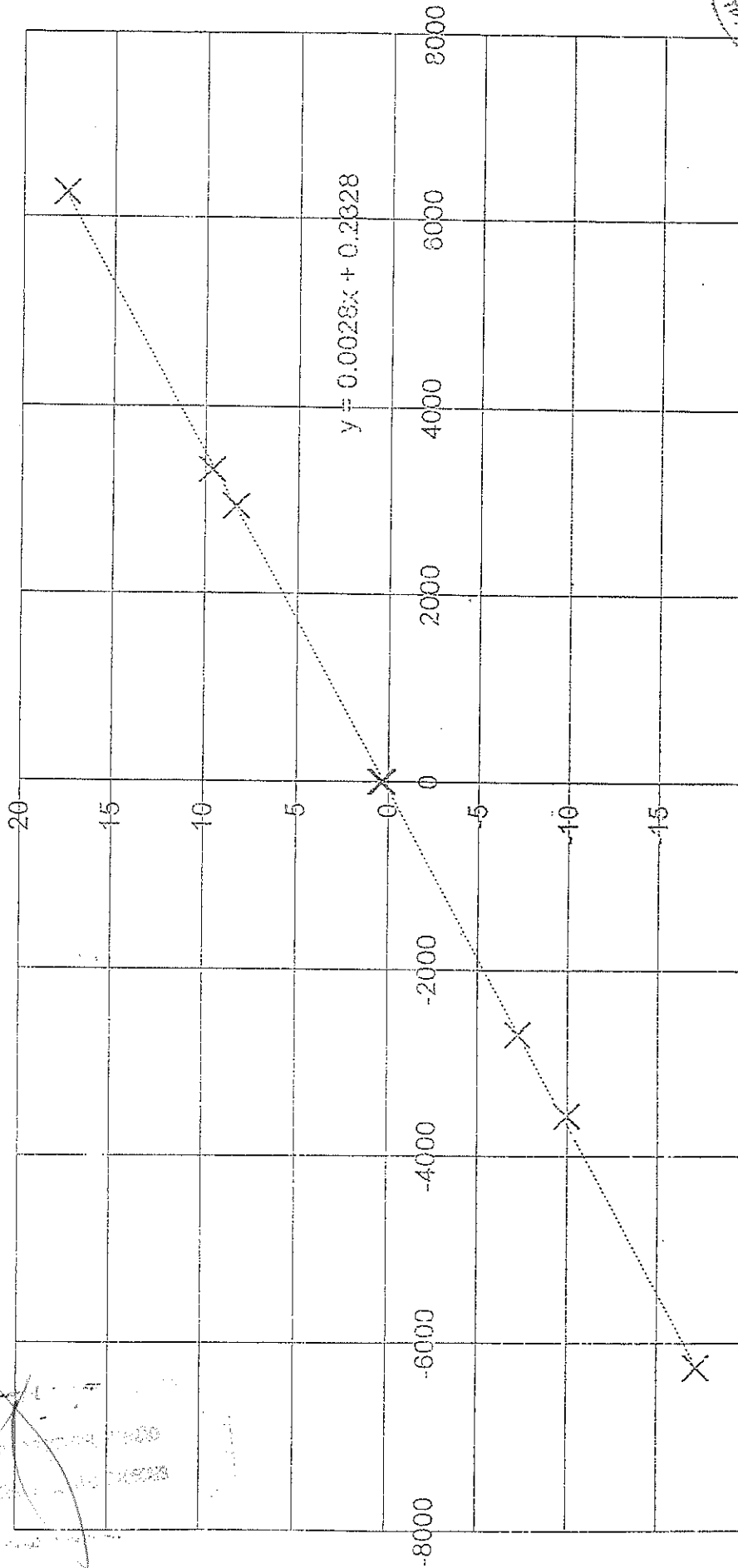


ET-3010.36-1320-974-NBD-943

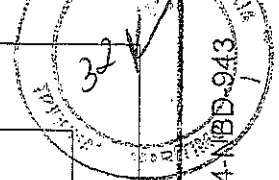
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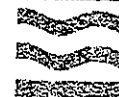
Graphical Control Results & Centre of Gravity

Mean Tangent Plot for Inclining Test



Handwritten signatures and initials





Determination of Unit Centre of Gravity & Stability Properties

Hydrostatic Properties of Unit

DRAFT (m)	DISPL. (tonnes)	LCB (m)	TCB (m)	VCB (m)	WPA (m ²)	LCF (m)	TCF (m)	KMT (m)	KML (m)
18.95	51835.6	-0.72	-0.02	7.92	1485.1	-0.04	-0.04	27.30	27.80

Stability Properties of Unit

Free Surface effect		11278.9 t-m
Transverse Metacentric Radius	$BM_T = KM_T - VCB$	19.38 m
Longitudinal Metacentric Radius	$BM_L = KM_L - VCB$	19.88 m
GM_{fluid} from Inclining Test		6.9 m
Layer Correction	$t = (d - d_0)/LBP$	0.00 m
Mean Tangent at Start of Test	Tang	0.00
Corrected BM_L	$BM_{L fluid} = BM_{L solid} - FS/\Delta$	19.66 m
VCG from VCB	$BG = BM_{L fluid} - GM_{fluid}$	12.76 m

Centre of Gravity from Inclining Test

Vertical Centre of Gravity	$VCG = VCB + BG$	29.68 m from USK
Longitudinal Centre of Gravity	$LCG = LCB + [(KM_L - BG) \times t]$	-0.72 m from ©
TCG from cl	$TCG = TCB + Tang \times (BMT - FS/\Delta) - BG$	-0.02 m from CL

By:

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JOSE CARLOS COSTA GEMO
INGENHEIRO
ORGÃO DE REGISTRO CIVIL

Determination of Lightship

Description	Weight	LCG	TCG	VCG	Tran	Long
Liquids						
SW Ballast	-19269.20	51.15	0.71	5.74	3046.3	10703.6
Oils	-261.20	75.91	-4.67	38.11	0.0	0.0
PW, Misc	-292.50	84.45	0.57	25.38	127.8	575.3
Packages	-16.20	89.71	-5.45	49.25	0.0	0.0
Additions	50.53	72.67	9.06	42.38	0.0	0.0
Solids						
Deductions	-941.85	40.78	-4.18	28.37	0.0	0.0
Additions	93.86	70.48	3.70	52.21	0.0	0.0
Displacement	51820.40	57.10	-0.02	20.68	0.0	0.0
Lightship	31183.83	60.910	-0.291	29.609	3174.1	11278.9

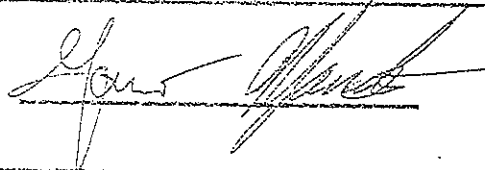
Summary of Lightship on the 17th October 1993

Lightship	31183.83 Tonnes
LCG (Fr Fpp)	60.910 m
TCG (+ve Stbd)	-0.291 m
VCG (Fr USK)	29.609 m

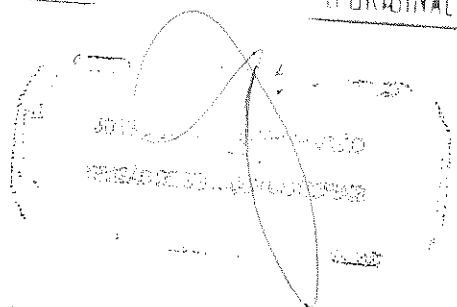
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REGISTRO ITALIANO NAVALE

Nave: PETROBRAS TRENTASEI
ShipNumero Registro
Register Number

67073

35

- (2) ☒ ALLEGATO AL RAPPORTO N. 97 DG 14810 IN
Enclosed to survey report
- ☐ PROMEMORIA DI SERVIZIO
Memorandum

(1) VISITA: Continuous & Special MACHINERY Survey
Survey

OPERAZIONI E LAVORI ESEGUITI - OSSERV. — Items and repairs carried out - Remarks

GRUPPO			ELEMENTO				*			(3)
15	16	17	18	19	20	O	R	D	77	

- ACCOMODATION HEATING PLANT MISC
STEAM SYSTEM REMOVED - ELECTRIC GENERAL SYSTEM IS STILL
RUNNING WITHOUT ANY LOCAL ADJUSTMENT BECAUSE NOT
CONSIDERED USEFUL FOR BRASILIAN WATERS (*)
INSTEAD, AIR CONDITIONING PLANT MIGHT BE IMPROVED
(*) PREVIOUSLY: EL. REHEATERS FOR ACCOMODATION ROOMS

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Porto/Place: Sept-Isles (OC) Data/Date: 26.10.99 I tecnici/The surveyors:

- (1) Il foglio potrà essere utilizzato quale rapporto di visita solo nel caso di Visita Speciale e/o continuativa scafo, macchina, I.F. riempiendo le caselle alle colonne 15+77.
In questo caso dovranno essere utilizzati fogli separati per lo scafo, la macchina e l'I.F. rispettivamente.
The sheet can be used as survey report only for Special Survey and/or continuous hull, machinery, refrigerating plant filling the boxes in way of the number 15+77.
In such case separate sheets will be used for hull, machinery and refrigerating plant.
- (2) Porre "X" nella casella corrispondente alla voce che indica come si intende utilizzare il modulo.
Mark "X" in way of the box showing the kind it is intention to use the form.
- (3) Porre "1" quando gruppo visitato al completo riscontrato in ordine.
Mark "1" when the group is thoroughly surveyed and found in order.



REGISTRO ITALIANO NAVALE

374

CHECK LIST FOR DOCKING AND/OR SCREWSHAFT SURVEYS ELENCO DEGLI ACCERTAMENTI DA ESEGUIRE IN OCCASIONE DELLE VISITE DI CARENA CON NAVE A SECCO E/O DEGLI ALBERI PORTAELICA

Port of survey Porto di visita	Date of survey Data della visita	File Estremi della pratica			
SEPT ILES (QC.)	26.10.98	97	DG	14810	IN

Name of ship
Nome della nave

PETROBRAS TRENTASEI

RINA number
Numero RINA

67073

PART A: DOCKING SURVEY/ Parte A: Visita di carena

GENERAL INFORMATION / Dati generali	
1	State the material of sea chests / Indicare il materiale delle casse delle prese a mare: Steel / Acciaio ☒ Bronze / Bronzo ☐ Nodular cast iron / Ghisa sferoidale ☐ Cast iron / Ghisa * ☐
2	State rule diameter and actual original diameter of chain cables: / Indicare il diametro regolamentare e quello originario delle catene per ancore: Rule / regolamentare: Original / Originario: 90 (actual)
3	Propellers / Eliche (removed) No. of blades / N. pale Solid blades / A pale fisse ☐ Controllable pitch / A pale orientabili ☐
4	Special propellers / Propulsori di tipo particolare Voith - Schneider ☐ Schottel ☒ Hydrojet(s) / Idrogetto(i) ☐

* To be opened and examined in connection with any docking survey / Da smontare ed esaminare ad ogni visita di carena

CHECK LIST / Accertamenti da eseguire	
The ship was placed on drydock and the following items were cleaned as necessary, examined and considered satisfactory: / La nave è stata immessa in bacino a secco e le sottoelencate parti sono state esaminate, previa pulizia delle stesse, e trovate in condizioni soddisfacenti:	
5	Keel, bottom plating and side plating - Bilge keels - Stern and sternframes / Chiglia, fasciame del fondo e del fianco - Alette di rollio - Dritto di prora e dritto o telaio di poppa ☒
6	Foils of hydrofoil boats / Sistema alare degli aliscali with NDT / con controlli non distruttivi ☐ without NDT / senza controlli non distruttivi ☐ NA
7	Cathodic protection system / Sistema di protezione catodica ☒
8	Rudder, pintles and gudgeons / Timone e relativi agugliotti e femminelle ☒
9	Propellers / Eliche NA
10	Special propellers (See item 4 above) / Propulsori di tipo particolare (ved. precedente voce 4) NA
11	Thrusters / Eliche di manovra ☐ Stabilizers / Stabilizzatori ☐ NA
12	The underwater body was: / L'opera viva è stata: washed / lavata ☐ highpressure washed / lavata sotto pressione ☐ sandblasted / sabbiata ☐ recoated / ripitturata ☐ (Sandblasting and/or recoating details are to be given on the remarks page / I dettagli sulla sabbiatura e/o pitturazione devono essere indicati nella pagina delle note) NO
13	Sea chests strainer plates / Griglie delle prese a mare ☒
14	The inboard and outboard (+) oil seal assembly(ies) was(were) examined in place and considered satisfactory / Il(i) sistema(i) prodiero e poppiero (+) di tenuta dell'olio dell'astuccio è (sono) stato(i) esaminato(i) in posto e riscontrato(i) in ordine NA

NOTES / NOTE:

- (1) The squares are to be marked with: X, to mean that the item examined was found satisfactory, with N, to mean that the item was not examined, with R, to mean that remarks concerning the item examined are to be given and with -, to mean that the item is not applicable to the ship surveyed / Le caselle devono essere marcate con: X, per indicare che l'elemento è stato esaminato e trovato in ordine, con N, per indicare che l'elemento non è stato esaminato, con R, per indicare che vi sono osservazioni da fare in merito all'elemento esaminato e con -, per indicare che la voce non è applicabile per la nave visitata.
- (2) Where (+) appears, delete as appropriate / Dove è indicato (+), cancellare quanto non pertinente.

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REGISTRO ITALIANO NAVALE

38 ✓

CHECK LIST FOR DOCKING AND/OR SCREWSHAFT SURVEYS ELENCO DEGLI ACCERTAMENTI DA ESEGUIRE IN OCCASIONE DELLE VISITE DI CARENA CON NAVE A SECCO E/O DEGLI ALBERI PORTAELICA

Port of survey Porto di visita	Date of survey Data della visita	File Estremi della pratica			
SEPT ILES (QC.)	26.10.99	97	DG	14810	IN

Name of ship
Nome della nave

PETROBRAS TRENTASEI

RINA number
Numero RINA

67073

PART A: DOCKING SURVEY/ Parte A: Visita di carena

GENERAL INFORMATION / Dati generali	
1	State the material of sea chests / Indicare il materiale delle casse delle prese a mare: Steel / Acciaio ☒ Bronze / Bronzo ☐ Nodular cast iron / Ghisa sferoidale ☐ Cast iron / Ghisa * ☐
2	State rule diameter and actual original diameter of chain cables: / Indicare il diametro regolamentare e quello originario delle catene per ancore: Rule / regolamentare: Original / Originario: 90 (actual)
3	Propellers / Eliche (removed) No. of blades / N. pale Solid blades / A pale fisse ☐ Controllable pitch / A pale orientabili ☐
4	Special propellers / Propulsori di tipo particolare Voith - Schneider ☐ Schottel ☒ Hydrojet(s) / Idrogetto(i) ☐

* To be opened and examined in connection with any docking survey / Da smontare ed esaminare ad ogni visita di carena

CHECK LIST / Accertamenti da eseguire	
The ship was placed on drydock and the following items were cleaned as necessary, examined and considered satisfactory: / La nave è stata immessa in bacino a secco e le sottoelencate parti sono state esaminate, previa pulizia delle stesse, e trovate in condizioni soddisfacenti:	
5	Keel, bottom plating and side plating - Bilge keels - Stern and sternframes / Chiglia, fasciame del fondo e del fianco - Alette di rollio - Dritto di prora e dritto o telaio di poppa ☒
6	Foils of hydrofoil boats / Sistema alare degli aliscafi with NDT / con controlli non distruttivi ☐ without NDT / senza controlli non distruttivi ☐ NA
7	Cathodic protection system / Sistema di protezione catodica ☒
8	Rudder, pintles and gudgeons / Timone e relativi agugliotti e femmine ☒
9	Propellers / Eliche NA
10	Special propellers (See item 4 above) / Propulsori di tipo particolare (ved. precedente voce 4) —
11	Thrusters / Eliche di manovra ☐ Stabilizers / Stabilizzatori ☐ NA
12	The underwater body was: / L'opera viva è stata: washed / lavata ☐ highpressure washed / lavata sotto pressione ☐ sandblasted / sabbiata ☐ recoated / ripitturata ☐ NO (Sandblasting and/or recoating details are to be given on the remarks page / I dettagli sulla sabbiatura e/o pitturazione devono essere indicati nella pagina delle note)
13	Sea chests strainer plates / Griglie delle prese a mare ☒
14	The inboard and outboard (+) oil seal assembly(ies) was(were) examined in place and considered satisfactory / Il(I) sistema(i) prodiero e poppiero (+) di tenuta dell'olio dell'astuccio è (sono) stato(i) esaminato(i) in posto e riscontrato(i) in ordine NA

NOTES / NOTE:

- (1) The squares are to be marked with: X, to mean that the item examined was found satisfactory, with N, to mean that the item was not examined, with R, to mean that remarks concerning the item examined are to be given and with -, to mean that the item is not applicable to the ship surveyed / Le caselle devono essere marcate con: X, per indicare che l'elemento è stato esaminato e trovato in ordine, con N, per indicare che l'elemento non è stato esaminato, con R, per indicare che vi sono osservazioni da fare in merito all'elemento esaminato e con -, per indicare che la voce non è applicabile per la nave visitata.
- (2) Where (+) appears, delete as appropriate / Dove è indicato (+), cancellare quanto non pertinente.

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15*	Sea valves and onboard discharges were examined externally and internally (+) / Le valvole di presa dal mare e gli scarichi fuoribordo sono stati esaminati esternamente ed internamente (+)	X																																				
16*	Anchors (number onboard ...) were examined and considered satisfactory / Le ancore (N. sistemate a bordo) sono state esaminate e riscontrate in ordine (actually)	X																																				
17*	Chain cables were ranged, measured and complement verified / Le catene per le ancore sono state abbisciate e ne sono stati verificati il calibro e le lunghezze disponibili	X																																				
18*	State the lengths of chain cables available onboard / Indicare le lunghezze di catena disponibili a bordo: Port / Sinistra: Starboard / Dritta: (old equipment)																																					
19*	State the mean minimum diameter measured for chain cables / Indicare il minimo calibro medio misurato per le catene: <table border="0"> <tr> <td>Port:</td> <td>1 : mm</td> <td>2 : mm</td> <td>3 : mm</td> <td>4 : mm</td> <td>5 : mm</td> </tr> <tr> <td>Sinistra</td> <td>6 : mm</td> <td>7 : mm</td> <td>8 : mm</td> <td>9 : mm</td> <td>10 : mm</td> </tr> <tr> <td></td> <td>11 : mm</td> <td>12 : mm</td> <td>13 : mm</td> <td>14 : mm</td> <td>15 : mm</td> </tr> <tr> <td>Starboard :</td> <td>1 : mm</td> <td>2 : mm</td> <td>3 : mm</td> <td>4 : mm</td> <td>5 : mm</td> </tr> <tr> <td>Dritta</td> <td>6 : mm</td> <td>7 : mm</td> <td>8 : mm</td> <td>9 : mm</td> <td>10 : mm</td> </tr> <tr> <td></td> <td>11 : mm</td> <td>12 : mm</td> <td>13 : mm</td> <td>14 : mm</td> <td>15 : mm</td> </tr> </table>	Port:	1 : mm	2 : mm	3 : mm	4 : mm	5 : mm	Sinistra	6 : mm	7 : mm	8 : mm	9 : mm	10 : mm		11 : mm	12 : mm	13 : mm	14 : mm	15 : mm	Starboard :	1 : mm	2 : mm	3 : mm	4 : mm	5 : mm	Dritta	6 : mm	7 : mm	8 : mm	9 : mm	10 : mm		11 : mm	12 : mm	13 : mm	14 : mm	15 : mm	
Port:	1 : mm	2 : mm	3 : mm	4 : mm	5 : mm																																	
Sinistra	6 : mm	7 : mm	8 : mm	9 : mm	10 : mm																																	
	11 : mm	12 : mm	13 : mm	14 : mm	15 : mm																																	
Starboard :	1 : mm	2 : mm	3 : mm	4 : mm	5 : mm																																	
Dritta	6 : mm	7 : mm	8 : mm	9 : mm	10 : mm																																	
	11 : mm	12 : mm	13 : mm	14 : mm	15 : mm																																	

* The internal examination required in item 15 and the examination required in item 16 are compulsory only in connection with any Hull Special Survey. The checks required in items 17 to 19 are compulsory only in connection with any Hull Special Survey of ships over 5 years old / L'esame interno di cui alla voce 15 e l'esame di cui alla voce 16 sono obbligatori solo in occasione di ogni Visita Speciale Scafo. Le verifiche di cui alle voci da 17 a 19 sono applicabili solo per visite di carena aventi effetto per la Visita Speciale Scafo di navi di età superiore a 5 anni.

RUDDER READINGS / Rilievi sui timoni (mm) NA

RUDDER TIMONE		Centre Centrale	Port Sinistro	Starboard Destro	RUDDER TIMONE		Centre Centrale	Port Sinistro	Starboard Destro
LIFTED (yes / no) SOLLEVATO (sì / no)					NECK BEARING CLEARANCES LASCHI NELLA LOSCA				
RUDDER PINTLES CLEARANCES LASCHI NEGLI AGUGLIOTTI	Upper / Superiore				VERTICAL WEARDOWN ABBASSAMENTO				
	Middle / Centrale								
	Lower / Inferiore								

SCREWSHAFT READINGS / Rilievi sugli alberi portaelica (mm) NA

SHAFT ALBERO	Last wear down readings Calibro precedente		New wear down readings Calibro attuale		Stern tube clearances Laschi astuccio	Aft bracket clearances Laschi braccio poppiere
	Lower/Inf.	Upper/Sup.	Lower/Inf.	Upper/Sup.		
Centre / Centrale						
Port / Sinistro						
Starboard / Destro						

THICKNESS MEASUREMENTS CARRIED OUT (YES/NO) / ESEGUITE MISUREAZIONI DI SPESSORE (SI/NO)	NO
---	----

SCREWSHAFT SURVEY CARRIED OUT (YES / NO) / ESEGUITA VISITA ALBERO(I) PORTAELICA (SI / NO) (In the affirmative Part B is to be completed / In caso affermativo deve essere compilata la Parte B)	NA
--	----

Completed at Sept 16 (Q.C.)
Compilato a

on 26.10.88
il

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RINA Surveyor name and signature
Nome e firma del tecnico del RINA
K. Formenti



[Signature]

Spider Decks Structure

Painting Specification

1- SPIDER DECKS STRUCTURE.- (EXCEPT GRATING)

PRECONSTRUCTION SURFACE PREPARATION & COATING

All structural steel shall be wheelabrated to SA 2-1/2 and primed with Zinc Inorganic Ethyl silicate shop primer, 15-20 microns DFT (NIPPE-CERAMO (NQA993/996 SW)) as approved by Classification Society.
Or sandblasted and coated with zinc epoxy primer 52 HS.

FINAL SURFACE PREPARATION AND COATINGS

After assembly, the spider deck assembly shall have disturbed areas mechanically cleaned to ST 3 or spot blast, degreased and sharp edges to be manually stripe coated (with ENA301/303) prior to:

1 st coat	International Paint Organic Zinc Epoxy Primer 52HS Green/Gray	75 mc
2 nd coat	International Paint H.B. Epoxy Intershiel ENA301/303 Aluminum	150 mc
3 rd coat	International Paint H.B. Epoxy Intershiel ENA300/303 Bronze	150 mc
4 th coat	International Paint Interthane CC,covercoat ensign red B-295	75 mc

2- RISER PULL-IN BEAMS.-

PRECONSTRUCTION SURFACE PREPARATION & COATING

All structural steel shall be wheelabrated to SA 2-1/2 and primed with Zinc Inorganic Ethyl silicate shop primer, 15-20 microns DFT (NIPPE-CERAMO (NQA993/996 SW)) as approved by Classification Society.

FINAL SURFACE PREPARATION AND COATINGS.- (exposed areas, under shell)

After assembly, the Structure shall have disturbed areas mechanically cleaned to ST 3 or spot blast, degreased and sharp edges to be manually stripe coated prior to:

1 st coat	International Paint Organic Zinc Epoxy Primer 52HS Green/Gray	75 mc
2 nd coat	International Paint H.B. Epoxy Intershiel ENA301/303 Aluminum	150 mc
3 rd coat	International Paint H.B. Epoxy Intershiel ENA300/303 Bronze	150 mc
4 th coat	International Paint Interthane CC,covercoat ensign red B-295	75 mc

(topside, in double bottom)

1 st coat	International Paint Organic Zinc Epoxy Primer 52HS Green/Gray	75 mc
2 nd coat	International Paint Intergard KBA400/KBA403 Buff	150 mc
3 rd coat	International Paint Intergard KBA402/KBA403 Grey	150 mc

3- INTERIOR OF DOUBLE BOTTOM.

Areas disturbed by Davie during welding operation of riser pull-in beams shall be mechanically cleaned to ST 3 or spot blast and degreased prior coating in accordance with above. (Except for 52 HS)

NOTE: All paint to be applied in accordance with International Paint recommendations.

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NOTA: O COPIA FIEL DO DOCUMENTO ORIGINAL
DEVE SER ENTREGUE AO
PROPRIETARIO DO VESICULO

06/07/98

Cooling Dump Line 48 in.

Painting Specification

1- COOLING DUMP LINE.-

PRECONSTRUCTION SURFACE PREPARATION & COATING

All structural steel shall be wheelabrated to SA 2-1/2 and primed with Zinc Inorganic Ethyl silicate shop primer, 15-20 microns DFT (NIPPE-CERAMO (NQA993/996 SW)) as approved by Classification Society.

FINAL SURFACE PREPARATION AND COATINGS (Interior and exterior of pipe up to 27,432 m. (8,132 m.))

After assembly, the cooling dump line assembly shall have disturbed areas mechanically cleaned to ST 3 or spot blast, degreased and sharp edges to be manually stripe coated prior to:

1 st coat	International Paint Iron Oxide Epoxy EGA088/089 red	50 mc
2 nd coa	International Paint H.B. Epoxy Intertuf JXA708HS 780/ 785 Black	200 mc
3 rd coat	International Paint H.B. Epoxy Intertuf JXA708HS 780/ 785 Black	250 mc
4 th coat	International Paint Epoxy Tiecoat (Intergard FAJ034)	100 mc
5 th coat	International Paint Antifouling Intersmooth BFA 256 Pink	150 mc
6 th coat	International Paint Antifouling Intersmooth BFA 254 Plum	150 mc

FINAL SURFACE PREPARATION AND COATINGS (Interior of pipe from 27,432 m. to 43,000 m. (15,568 m.))

After assembly, the cooling dump line assembly shall have disturbed areas mechanically cleaned to ST 3 or spot blast and degreased prior to:

1 st coat	International Paint Iron Oxide Epoxy EGA088/089 red	50 mc
2 nd coat	International Paint H.B. Epoxy Intertuf JXA708HS 780/ 785 Black	200 mc
3 rd coat	International Paint H.B. Epoxy Intertuf JXA708HS 780/ 785 Black	250 mc

FINAL SURFACE PREPARATION AND COATINGS (Exterior of pipe from 27,432 m. to 43,000 m. (15,568 m.))

After assembly, the cooling dump line assembly shall have disturbed areas mechanically cleaned to ST 3 or spot blast and degreased prior to:

1 st coat	International Paint Organic Zinc Epoxy Primer 52HS Green/Gray	75 mc
2 nd coat	International Paint H.B. Epoxy Intershield ENA301/303 Aluminum	150 mc
3 rd coat	International Paint H.B. Epoxy Intershield ENA300/303 Bronze	150 mc
4 th coat	International Paint Interthane CC,covercoat ensign red B-295	75 mc

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Caisson Plug**Painting Specification****PRECONSTRUCTION SURFACE PREPARATION & COATING**

All structural steel shall be wheelabrated to SA 2-1/2 and primed with Zinc Inorganic Ethyl silicate shop primer, 15-20 microns DFT (NIPPE-CERAMO (NQA993/996 SW)) as approved by Classification Society.

PART A- NEW PORTION

1- EXTERNAL SURFACE OF CAISSON PLUG, EXTERIOR OF PUMP CAISSONS
(below Caisson Plug) AND INTERIOR OF PUMP CAISSONS UP TO TOP PLATES.

FINAL SURFACE PREPARATION AND COATINGS

After assembly, the Caisson Plug shall have disturbed areas mechanically cleaned to ST3 or spot blast, degreased and coated in accordance with existing SANA Paint Specification, page 6, as follows:

1 st coat	International Paint H.B. Epoxy Intertuf JXA708HS 780/ 785 Black	250 mc
2 nd coat	International Paint H.B. Epoxy Intertuf JXA708HS 780/ 785 Black	250 mc
3 rd coat	International Paint Epoxy Tiecoat (Intergard FAJ034)	100 mc
4 th coat	International Paint Antifouling Intersmooth BFA 256 Pink	150 mc
5 th coat	International Paint Antifouling Intersmooth BFA 254 Plum	150 mc

2- INTERNAL SURFACE OF CAISSON PLUG AND EXTERIOR OF PUMP CAISSONS
(inside Moon Pool).

FINAL SURFACE PREPARATION AND COATINGS

After assembly, the Caisson Plug shall have disturbed areas mechanically cleaned to ST 3 or spot blast, degreased and sharp edges to be manually stripe coated prior to:

1 st coat	International Paint Iron Oxide Primer EGA 088/089 Red	50 mc
2 nd coat	International Paint Vinyl JVA203 Bronze	100 mc
3 rd coat	International Paint Vinyl JVA202 Alum.	100 mc

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PART B- EXISTING MOON POOL AREA.

Before Erection of Caisson Plug, Inside Pool Existing Coating to be Removed to Permit Welding of New Structure.

One Coat of EGA 088/089 to be Applied to Protect Bare Steel During Erection.

NOTE:

After erection, the Caisson Plug shall have disturbed areas mechanically cleaned to ST 3 or spot blast, degreased and sharp edges to be manually stripe coated with EGA 088/089 prior to:

1 st coat	International Paint Vinyl JVA203 Bronze	100 mc
2 nd coat	International Paint Vinyl JVA202 Alum.	100 mc

PART C- INTERIOR OF DOUBLE WALL AROUND MOON POOL.

Areas disturbed by Davie during welding operation of Caisson Plug shall be mechanically cleaned to ST 3 or spot blast and degreased prior to:

1 st coat	International Paint Intergard KBA400/KBA403 Buff	150 mc
2 nd coat	International Paint Intergard KBA402/KBA403 Grey	150 mc

NOTE:

All paint to be applied in accordance with International Paints recommendations.

Prepared by: Andre Breton Industries Davie

Approved by: Robert Perreault International Paint

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NOTA: OBRAS DE REPARAÇÃO
E MANUTENÇÃO
DE EQUIPAMENTOS
E INSTALAÇÕES

Riser Supports on Pontoon and Forward Riser Supports

Blocks no. 141, 142, 471 and 472

Painting Specification

PRECONSTRUCTION SURFACE PREPARATION & COATING

All structural steel shall be wheelabrated to SA 2-1/2 and primed with Zinc Inorganic Ethyl silicate shop primer, 15-20 microns DFT (NIPPE-CERAMO (HQA993/996 SW)) as approved by Classification Society.

FINAL SURFACE PREPARATION AND COATINGS

After assembly, the Riser Supports shall have disturbed areas mechanically cleaned to ST 3 or swept blast, degreased and coated in accordance with existing SANA Paint Specification, page 6, as follows:

Shipyard:

1 st coat	International Paint H.B. Epoxy Intertuf 708 HS JXA780/ 785 Black	250 mc
2 nd coat	International Paint H.B. Epoxy Intertuf 708 HS JXA780/ 785 Black	250 mc
3 rd coat	International Paint Epoxy Tiecoat (Intergard FAJ034)	100 mc
4 th coat	International Paint Antifouling Intersmooth BFA 256 Pink	150 mc
5 th coat	International Paint Antifouling Intersmooth BFA 254 Plum	150 mc

Areas disturbed by Davie inside Pontoon and/or Column, during welding operation of Riser Supports shall be mechanically cleaned to ST 3 or spot blast and degreased prior to:

1 st coat	International Paint Intergard KBA400/KBA403 Buff	150 mc
2 nd coat	International Paint Intergard KBA402/KBA403 Grey or Intergard 475, depending of actual coating.	150 mc

NOTES

All paint to be applied in accordance with International Paints recommendations.

Prepared by: Andre Breton Industries Davie _____
Approved by: Robert Perreault International Paint _____

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Painting Specification for existing compartments on Rig.

PART A.-Machinery spaces and stores (actually coated with epoxy) (chemical injection comp't and deluge comp't.

1- DECK SURFACES.

Prior to painting disturbed areas shall be mechanically cleaned to ST3 or spot blast and degreased.

1 st coat	International Paint Iron Oxide Epoxy Primer EGA088/089 Red	50 mc
2 nd coat	International Paint H.B. Epoxy Intergard 475 Green	125 mc
3rd coat	International Paint H.B. Epoxy Intergard 475 Green (out of seat areas)	125 mc

2-EXPOSED STEEL BULKHEAD SURFACES :

1 st coat	International Paint Iron Oxide Epoxy Primer EGA088/089 Red	50 mc
2 nd coat	International Paint H.B. Epoxy Intergard 475 White	125 mc

2A.NON-EXPOSED STEEL BULKHEAD SURFACES :

1 st coat	International Paint Iron Oxide Epoxy Primer EGA088/089 Red	50 mc
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3.- GALV. HVAC DUCTING (fab. In Davie) : (total coating in shop)

Prior to painting, galv. Components to be washed with solvent and coated with wash primer VTA528 (15-20 mc).

On damaged areas, one coat of Interprime 004 60-75 mc to be applied.

1 st full coat	International Paint Interlac 820 White	50 mc
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3A.- GALV. HVAC DUCTING, (received coated with Iron Oxide Primer)

1 st coat	International Paint H.B. Epoxy Intergard 475 White	125 mc
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3B.- GALV. CABLE TRAYS: (total coating in shop)

Prior to painting, galv. Components to be washed with solvent and coated with wash primer VTA528 (15-20 mc).

1 st coat	International Paint Interlac 820 Light grey N 6.5	50 mc
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4.- GALV. PIPES :

Prior to painting, galv. pipes to be washed with solvent. Damaged surfaces to be repaired with galvacon and coated with wash primer VTA528 prior to receive:

1 st coat	International Paint H.B. Epoxy Intergard 475 White	125 mc
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5.- PIPES (other than galv.):

- 1st coat International Organic Zinc Epoxy 52HS Green/Gray (applied in shop)
 2nd coat International Paint H.B. Epoxy Intergard 475 White

75 mc
125 mc**PART B.-Machinery spaces and stores (actually coated with alkyd)**

1- DECK SURFACES.

Prior to painting disturbed areas shall be mechanically cleaned to ST3 or spot blast and degreased.

1 st coat	International Paint Interprime	CPA004	Yellow	60-75 mc
2 nd coat	International Paint Interprime	CPA004	Yellow	60-75 mc
3 rd coat	International Paint Interlac 820		Green	40 mc

2.-EXPOSED STEEL BULKHEAD SURFACES :

1 st coat	International Paint Interprime	CPA004	Yellow	50 mc
2 nd coat	International Paint Interprime	CPA004	Yellow	50 mc
3 rd coat	International Paint Interlac 820		white	50 mc

2A.-NON-EXPOSED STEEL BULKHEAD SURFACES :

1 st coat	International Paint Interprime	CPA004	Yellow	50 mc
2 nd coat	International Paint Interprime	CPA004	Yellow	50 mc

3.- GALV. HVAC DUCTING (fab. in Davie) : (total coating in shop)

Prior to painting, galv. Components to be washed with solvent and coated with wash primer VTA528 (15-20 mc).

On damaged areas, one coat of Interprime 004 60-75 mc to be applied.

1 st full coat	International Paint Interlac 820	White	50 mc
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3A.- GALV. HVAC DUCTING, (received coated with Iron Oxide Primer)

1 st coat	International Paint Interlac 820	White	50 mc
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3B.- GALV. CABLE TRAYS: (total coating in shop)

Prior to painting, galv. Components to be washed with solvent and coated with wash primer VTA528 (15-20 mc).

1 st coat	International Paint Interlac 820	Light grey N 6.5	50 mc
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4.- GALV. PIPES :

Prior to painting, galv. pipes to be washed with solvent. Damaged surfaces to be repaired with galvacon and coated with wash primer VTA528 (15-20 mc) prior to receive:

1 st coat	International Paint Interlac 820	White	40 mc
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5.- PIPES (other than galv.):

1st coat International Organic Zinc Epoxy 52HS Green/Gray (applied in shop)
3rd coat International paint Tie coat vta528/vta529
2nd coat International Paint Interlac 820 White

75 mc
15-20 mc
50 mc

C.- STAIRS AND HANDRAILS :

1 st coat	International Paint Interprime	CPA004	Yellow
2 nd coat	International Paint Interprime	CPA004	Yellow
3 rd coat	International Paint Interlac 820		white
Total minimum to be			

60-75 mc
60-75 mc
50 mc
200 mc

NOTE:

All paint to be applied in accordance with International Paints recommendations.

Prepared by: Andre Breton Industries Davie _____
Approved by: Robert Perrault International Paint _____

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Winch Deck Extension

Painting Specification

1- NEW WINCH DECK EXTENSION.- (UPPER SURFACE OF WINCH DECK)

PRECONSTRUCTION SURFACE PREPARATION & COATING

All structural steel shall be wheelabrated to SA 2-1/2 and primed with Zinc Inorganic Ethyl silicate shop primer, 15-20 microns DFT (NIPPE-CERAMO (NQA993/996 SW)) as approved by Classification Society.

FINAL SURFACE PREPARATION AND COATINGS

After assembly and Erection, the upper surface of winch deck extension shall have disturbed areas mechanically cleaned to ST 3 or spot blast, degreased and sharp edges to be manually stripe coated prior to:

- 1st coat International Paint Organic Zinc Epoxy Primer 52HS Green/Gray
- 2nd coat International Paint H.B. Epoxy Intershiel ENA301/303 Aluminum
- 3rd coat International Paint H.B. Epoxy Intershiel ENA300/303 Bronze
- 4th coat International Paint Epoxy Intergard 475 Red

60 Mc
150 mc
150 mc
100 mc

2- NEW WINCH DECK EXTENSION STRUCTURE.- (NEW STRUCTURE BELOW UPPER SURFACE OF WINCH DECK.)

PRECONSTRUCTION SURFACE PREPARATION & COATING

All structural steel shall be wheelabrated to SA 2-1/2 and primed with Zinc Inorganic Ethyl silicate shop primer, 15-20 microns DFT (NIPPE-CERAMO (NQA993/996 SW)) as approved by Classification Society.

FINAL SURFACE PREPARATION AND COATINGS

After assembly and Erection, the Structure shall have disturbed areas mechanically cleaned to ST 3 or spot blast, degreased and sharp edges to be manually stripe coated prior to:

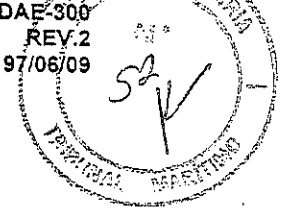
- 1st coat International Paint Organic Zinc Epoxy Primer 52HS Green/Gray
- 2nd coat International Paint H.B. Epoxy Intershiel ENA301/303 Aluminum
- 3rd coat International Paint H.B. Epoxy Intershiel ENA300/303 Bronze
- 4th coat International Paint Epoxy Intergard 475 Red

60 Mc
150 mc
150 mc
100 mc

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APPROVED FOR THE PROJECT
DATE: 05/06/98

05/06/98



Main Deck Structure

Painting Specification

1- NEW MAIN DECK STRUCTURE.- (UPPER SURFACE OF MAIN DECK)

PRECONSTRUCTION SURFACE PREPARATION & COATING

All structural steel shall be wheelabrated to SA 2-1/2 and primed with Zinc Inorganic Ethyl silicate shop primer, 15-20 microns DFT (NIPPE-CERAMO (NQA993/996 SW)) as approved by Classification Society.

FINAL SURFACE PREPARATION AND COATINGS

After assembly and Erection, the upper surface of main deck shall have disturbed areas mechanically cleaned to ST 3 or spot blast, degreased and sharp edges to be manually stripe coated prior to:

1 st coat	International Paint Organic Zinc Epoxy Primer 52HS Green/Gray	60 Mc
2 nd coat	International Paint H.B. Epoxy Intershield ENA301/303 Aluminum	150 mc
3 rd coat	International Paint H.B. Epoxy Intergard 475 Green	100 mc

2- NEW MAIN DECK STRUCTURE.- (NEW STRUCTURE BELOW UPPER SURFACE OF MAIN DECK.)

PRECONSTRUCTION SURFACE PREPARATION & COATING

All structural steel shall be wheelabrated to SA 2-1/2 and primed with Zinc Inorganic Ethyl silicate shop primer, 15-20 microns DFT (NIPPE-CERAMO (NQA993/996 SW)) as approved by Classification Society.

FINAL SURFACE PREPARATION AND COATINGS

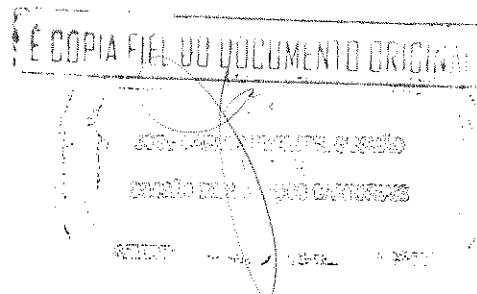
After assembly and Erection, the Structure shall have disturbed areas mechanically cleaned to ST 3 or spot blast, degreased and sharp edges to be manually stripe coated prior to:

1 st coat	International Paint Organic Zinc Epoxy Primer 52HS Green/Gray	60 Mc
2 nd coat	International Paint H.B. Epoxy Intershield ENA301/303 Aluminum	150 mc
3 rd coat	International Paint Epoxy Intergard 475 Red (on Tank Top)	100 mc
3 rd coat	International Paint Interthane CC, covercoat (Elsewhere)	75 mc

3- EXISTING MAIN DECK.

FINAL SURFACE PREPARATION AND COATINGS

09/06/98



The upper surface of main deck shall have disturbed areas mechanically cleaned to ST 3 or spot blast, degreased and coated as follows:

1 st coat	International Paint Iron Oxide Epoxy Primer EGA088/089 Red	50 mc
2 nd coat	International Paint H.B. Epoxy Intershield ENA301/303 Aluminum	150 mc
3 rd coat	International Paint H.B. Epoxy Intershield ENA300/303 Bronze	150 mc
4th coat	International Paint Epoxy Intergard 475 Green	100 mc

4-EXTERIOR OF EXISTING BULKHEAD 60.

The exterior of existing bulkhead shall have disturbed areas mechanically cleaned to ST 3 or spot blast, degreased and coated as follows:

1 st coat	International Paint Organic Zinc Epoxy Primer 52HS Green/Gray	60 Mc
2 nd coat	International Paint H.B. Epoxy Intershield ENA301/303 Aluminum	150 mc
3 rd coat	International Paint H.B. Epoxy Intershield ENA300/303 Bronze	150 mc
4th coat	International Paint Epoxy Intergard 475 Red	100 mc

5- INTERIOR OF COMPARTMENTS AND COLUMNS.

Areas disturbed by Davie during welding operation of Main Deck Extension Platform shall be mechanically cleaned to ST 3 or spot blast and degreased prior coating in accordance with Sana spec. Sheets 19, 21, 22 or 25, (depending of existing coating.)

6- SUMP TANK UNDER DECK EXTENSION. (INTERIOR OF TANK)

After assembly and Erection, the Structure shall have disturbed areas mechanically cleaned to ST 3 or spot blast, degreased and sharp edges to be manually stripe coated prior to:

1 st coat	International Paint Iron Oxide Epoxy Primer EGA088/089 Red	50 mc
2 nd coat	International Paint Interline 604 660/665 white	150 mc
3 rd coat	International Paint Interline 604 661/665 grey	150 mc

6a- SUMP TANK UNDER DECK EXTENSION. (EXTERIOR OF TANK)

1 st coat	International Paint Organic Zinc Epoxy Primer 52HS Green/Gray	60 Mc
2 nd coat	International Paint H.B. Epoxy Intershield ENA301/303 Aluminum	150 mc
3 rd coat	International Paint Interthane CC,covercoat (Elsewhere)	75 mc

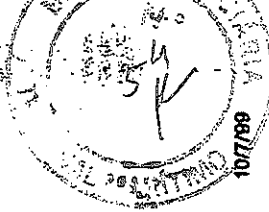
NOTE:All paint to be applied in accordance with International Paint recommendations.

Prepared by: Andre Breton Industries Davie _____
Approved by: Robert Perreault International Paint _____

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09/06/98

ALL



DAVIDE INDUSTRIES		Operations & Trials - P36 Roncador Spirit Of Columbus Consolidated Punch List Entry				System: VAC		System: 52		Originator: B. Broderick	
This Form to be used for the field registration of non-conforming items or items that have work to be completed. The following guidelines are issued for the allocation of categories -		System: VAC		System: 52		Signature: 08-07-99		Date: 5/10/99		Rev.: 04	
A - An item that prevents the equipment being powered up/ operated in a safe manner		Sys Group: DI-052-50		Petromec		Davie		Brasol		RINA/ABS	
B - A minor item which does not affect safe power up/operation		Detail and reference drawings numbers		Location Area		Material Required Y/N		Responsibility for close out Vend/Davie/Comm		To be cleared for SMA/TTSA1/TTSA2/ SODA	
Item	Tag Number/ P.O. No.	Category A & B	Associated ITP / Parent tag/DAR's								

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OPERATIONS & TRIALS GROUP
P. 36
DAVIDE INDUSTRIES



Operations & Trials - P36 Roncador Spirit Of Columbus Consolidated Punch List Entry

System: VAC

System: 52

This Form to be used for the field registration of non-conforming items, or items that have work to be completed. The following guidelines are issued for the allocation of categories -

A - An item that prevents the equipment being powered up/ operated in a safe manner

B - A minor item which does not affect safe power up/operation

Item	Tag Number/ P.O. No.	Category A & B	Associated ITP / Parent tag/DAR's	Detail and reference drawings numbers		Location Area	Material Required Y/N	Responsibility for close out	Discipline	To be cleared for SMA/TSA1/TSA2/ SODA
------	-------------------------	-------------------	---	---------------------------------------	--	------------------	-----------------------------	---------------------------------	------------	---

119	XA-263R				Fan demonstration shown at later date	Mn dk Stbd	No	Davle	T&T	
122	XA-276A				Control board identification plates to fix with rivets	Mn dk port fwd	Yes	Davle	Mech	
123					Cancelled					
124	VE-097ST				Indicator to adjust (XA-274A)	Mn dk port fwd	No	Davle	Mech	
125	EFD-8				Indicator to adjust (XA-684D)	2nd dk fwd	No	Davle	Mech	
126	EFD-11				Open/closed identification tags to install on actuator cover	S002	Yes	Davle		
127	VE-070ST				Indicator to adjust (XA-265G)	S002	No	Davle	Mech	
128	FDC-11	A			Electrical damper does not operate (YM/684CH)	S085				
129	FDC-13	A			Electrical damper does not operate (YM/684CH)	M009				
130	FDC-14	A			Red light does not come on (YM/684 C-J)	M009				
131	FDC-16	A			Electrical damper does not operate (YM/684C-J)	M017				
132	FDD-1	A			Electrical damper does not operate (YM/684C-J)	S082				
133	FDD-2	B			Damper very slow to open (YM/684DF)	S082				
132	FDHJ-6	A			Electrical damper does not operate (YM/684 HM)	S002				
134	FDG-1	A			Electrical damper not operating and to be changed	S050				
135			DAR 1278		Flexible joint problem			Brasoll		
136			DAR 1279		Flexible joint problem			Brasoll		
137			DAR 1280		Flexible joint problem			Brasoll		
138			DAR 1281		Flexible joint problem			Brasoll		
139			DAR 1282		Actuator problem			Brasoll		

Added after Punch list was signed...

JOSE CARLOS PINHEIRO GUSMÃO
DATE: 10/7/99
DIVISÃO DE SERVIÇOS CARTOGRAF

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Operations & Trials - P36 Roncador Spirit Of Columbus

Consolidated Punch List Entry

Originator: B. Broderick
 Signature: _____
 Date: 08-07-99
 Rev.: 04
 Date: 5/10/99

System: VAC System: 52
 This form to be used for the field registration of non-conforming items, or items that have work to be completed.
 The following guidelines are issued for the allocation of categories -
 A - An item that prevents the equipment being powered up/ operated in a safe manner
 B - A minor item which does not affect safe power up/operation

Item	Tag Number/ P.O. No.	Category A & B	Associated ITP / Parent tag/DAR's	Detail and reference drawings numbers	Location Area	Material Required Y/N	Responsibility for close out Vend/Davie/ Comm	Discipline	To be cleared for SMA/TTSA1/TTSA2/ SODA
140	XA-264Q	B		Electrical wiring to be installed and connected			Davie		

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 08/10/99

PETROBRAS TRENTASEI - 67043
 Aed 9/1

DAVIE INDUSTRIES		Operations & Trials - P36 Roncador Spirit Of Columbus					Originator: B. Coulombe		
		Consolidated Punch List Entry					Signature:		
		System: Fire (& Gas) Detection					Date:		
		System: 23					Rev.: 0		
		This Form to be used for the field registration of non-conforming items, or items that have work to be completed.					Davie		
		The following guidelines are issued for the allocation of categories -					Petromec		
		A - An item that prevents the equipment being powered up/ operated in a safe manner					Brasol		
		B - A minor item which does not affect safe power up/operation					RINA/ABS		
Item	Tag Number/ P.O. No.	Category A & B	Associated ITP / Parent tag/DAR's	Detail and reference drawings numbers	Location Area	Material Required Y/N	Reponsability for close out Vnd/Davie/ Comm	Discipline	To be cleared for SMA/TTSA1/TTSA2/ SODA
1	SD 06059	B	AMK-232	New cable pulling, no instrument (coil face welding shop) not connected. Circ; K/11106050/9	Port aft column vent in 2nd dk warehouse	Y			- closed -
2	SD 07095	B	AMK-233	Need head detector. Circ; K/1H07090/5	Port aft column vent in 2nd dk warehouse	Y			
3	MA 07140	B	AMK-239	Not tested - no instrument; new cable pulling. Circ; K/1H07140/0	Mn dk fuel trtmnt pkge	Y			
4	MA 07141	B	AMK-239	Not tested - no instrument; new cable pulling. Circ; K/1H07140/1	Mn dk LP comp skid	Y			
5	MA 07143	B	AMK-239	Not tested - no instrument; new cable pulling. Circ; K/1H07140/3	Mn dk glycol regen pkge	Y			
6	SD 07146	B	AMK-237	Not tested - no instrument; new cable pulling. Circ; K/1H07140/6	Mn dk vent in mach space AHU	Y			
7	MA 13020	B	AMK-224 ✓	Not tested - no instrument; new cable pulling. Circ; MA 13020	Spider deck	Y			- closed -
8	MA 13021	B	AMK-225	Not tested - no instrument; new cable pulling. Circ; MA 13020	Spider deck	Y			- closed -

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DAVIE INDUSTRIES		Operations & Trials - P36 Roncador Spirit Of Columbus					Consolidated Punch List Entry		Originator: B. Coulombe
System: Fire (& Gas) Detection		System: 23		Date: 2 Oct 1999		Signature: Davie		Rev.: 0	
This Form to be used for the field registration of non-conforming items, or items that have work to be completed.		The following guidelines are issued for the allocation of categories -		Sys Group:		Petromec		Discipline	
A - An item that prevents the equipment being powered up/ operated in a safe manner		B - A minor item which does not affect safe power up/operation		PANEL 2		Brasol		To be cleared for SMA/TTS1/TTS2/SODA	
Item	Tag Number/ P.O. No.	Category A & B	Associated (TP / Parent tag/DAR's	Detail and reference drawings numbers	Location Area	Material Required Y/N	Responsibility for close out Vnd/Davie/Comm	Discipline	
1	SD-07107	B	AMK-232	Need head detector. Circ; K/1H07100	2ND DK MMC 1	Y			
2	MA 16000	B	AMK-229	No instrument; not tested; new cable pulling. Circ; K/1H09010	Chem. Injection rm tank top	Y		closed	
3	MA 16001	B	AMK-233	No instrument; not tested; new cable pulling. Circ; K/1H09010	Chem. Injection Rm 2nd dk	Y		closed	
4	MA 16002	B	AMK-233	No instrument; not tested; new cable pulling. Circ; K/1H09010	Chem. Injection rm tank top	Y		closed	
5	MA 23001	B	AMK-241	No instrument; not tested; new cable pulling. Circ; K/1H09030	Drill floor mn dk	Y			
6	MA 23002	B	AMK-241	No instrument; not tested; new cable pulling. Circ; K/1H09030	Drill floor mn dk	Y			
7	MA 23003	B	AMK-241	No instrument; not tested; new cable pulling. Circ; K/1H09030	Drill floor mn dk	Y			
8	MA 24000	B	AMK-239	No instrument; not tested; new cable pulling. Circ; K/1H09030	Sibd Process mn dk	Y			
9	MA 07026	B	AMK	Not tested. Deleted. Now MA 23000. Circ. K/1H07020/6		N		closed	

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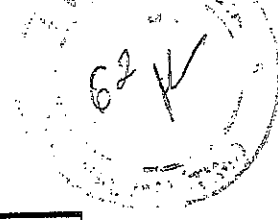
Operations & Trials - P36 Roncador Spirit Of Columbus
Consolidated Punch List Entry

System: Fire (& Gas) Detection		System: 23	Originator: B. Coulombe
This Form to be used for the field registration of non-conforming items, or items that have work to be completed.			Signature:
The following guidelines are issued for the allocation of categories -			Date:
A - An item that prevents the equipment being powered up/ operated in a safe manner			Rev.: 0
B - A minor item which does not affect safe power up/operation			Davie
			Petromec
			Brasol
			RINA/ABS
PANEL 1			To be cleared for SMA/TTS A1/TTS A2/ SODA

Item	Tag Number/ P.O. No.	Category A & B	Associated ITP / Parent tag/DAR's	Detail and reference drawings numbers	Location Area	Material Required Y/N	Reponsability for close out Vnd/Davie/ Comm	Discipline
9	MA 13022	B	AMK-224	Not tested - no instrument; new cable pulling. Circ; MA 13020	Spider deck	Y		
10	MA 13023	B	AMK-226	Not tested - no instrument; new cable pulling. Circ; MA 13020	Spider deck	Y		
11	MA 17000	B	AMK-236	Not tested - new cable pulling. Circ; 29000	Mn dk port aft	N		
12	MA 17001	B	AMK-236	Not tested - new cable pulling. Circ; 29000	Mn dk port aft	N		
13	MA 17002	B	AMK-236	Not tested - new cable pulling. Circ; K/1H09020	Mn dk port aft	N		
14	MA 18000	B	AMK-238	Not tested - new cable pulling. Circ; K/1H09020	Mn dk port fwd	N		
15	MA 19000	B	AMK-237	Not tested - no instrument; new cable pulling. Circ; K/1H09020	Mn dk stbd aft	Y		
16	MA 20000	B	AMK-237	Not tested - no instrument; new cable pulling. Circ; K/1H09020	Mn dk stbd aft	Y		
17	MA 21000	B	AMK-237	Not tested - no instrument; new cable pulling. Circ; K/1H09020	Mn dk stbd aft	Y		
18	MA 28000	B	AMK-238	Not tested - no instrument; new cable pulling. Circ; K/1H09020	Mn dk port fwd	Y		
19	MA 29000	B	AMK-237	Not tested - no instrument; new cable pulling. Circ; MA 29000	Mn dk stbd aft	Y		

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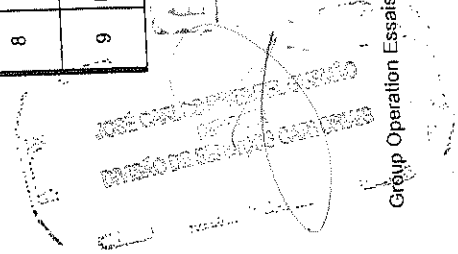
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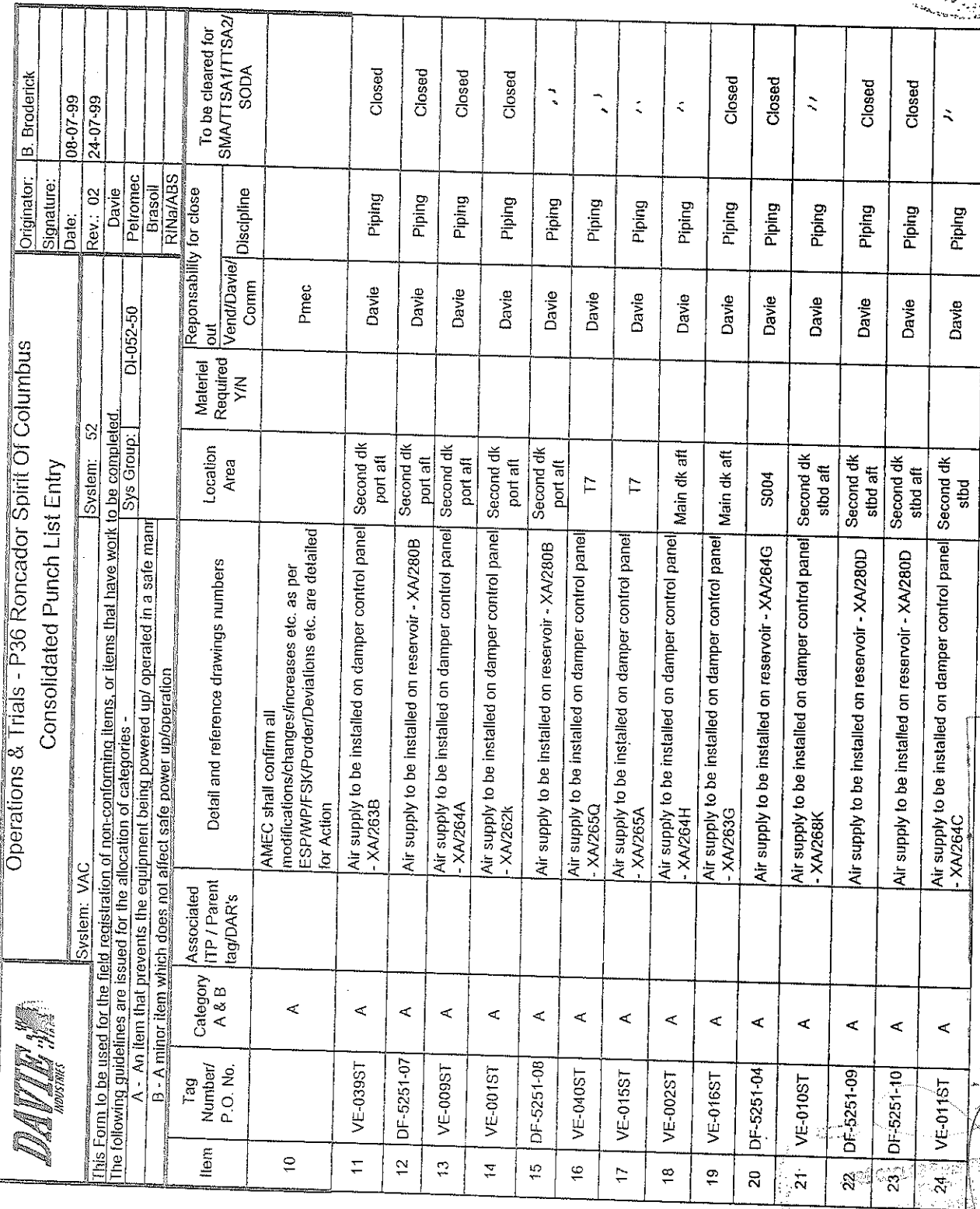


9/28/99

Operations & Trials - P36 Roncador Spirit Of Columbus				System: VAC		System: 52		To be cleared for SMA/TTS1/TTS2/SODA	
Consolidated Punch List Entry				Sys Group: DI-052-50		Discipline		Reponsability for close	
This Form to be used for the field registration of non-conforming items, or items that have work to be completed.				Sys Group: DI-052-50		Discipline		Reponsability for close	
The following guidelines are issued for the allocation of categories -				Sys Group: DI-052-50		Discipline		Reponsability for close	
A - An item that prevents the equipment being powered up/ operated in a safe manner				Sys Group: DI-052-50		Discipline		Reponsability for close	
B - A minor item which does not affect safe power up/operation				Sys Group: DI-052-50		Discipline		Reponsability for close	
Item	Tag Number/ P.O. No.	Category A & B	Associated ITP / Parent tag/DAR's	Detail and reference drawings numbers	Location Area	Material Required Y/N	Vend/Davie/ out Comm	Discipline	To be cleared for SMA/TTS1/TTS2/SODA
1	VE-017ST	B		Damper actuator housing clips broken - XA/265F	S002	No	Davie	Mech.	Closed
2	EFD-12	A		Damper fuse broken - to be changed - YA/604/JH	S002	Yes	Davie	Mech.	Closed
3	VE-040ST	A		Control air lines and air supply to install - XA/265G	T7	Yes	Davie	Piping	Closed
4	VE-015ST	A		Control air lines and air supply to install - XA/265a	T7	Yes	Davie	Piping	Closed
5	VE-010ST	A		Air supply to install XA/268K	Second dk Stbd aft	Yes	Davie	Piping	Closed
6	DF-5251-09	A		Air supply to install XA/280D	Second dk Stbd aft	Yes	Davie	Piping	Closed
7	VE-016ST	A		Control air lines and air supply to install - XA/263G	Main dk aft	Yes	Davie	Piping	Closed
8	VE-002ST	A		Control air lines and air supply to install - XA/264H	Main dk stbd aft	Yes	Davie	Piping	Closed
9	DF-5251-04	A		Air supply to install - XA/264G	Main dk stbd aft	Yes	Davie	Piping	Closed

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[The following section contains faint, illegible markings and symbols.]



Operations & Trials - P36 Roncador Spirit Of Columbus
Consolidated Punch List Entry

Originator: B. Broderick

Signature:

Date: 08-07-99

Rev: 02 24-07-99

Petromec

Brasol

RINA/ABS

System: 52

DI-052-50

Sys Group:

System: VAC

This Form to be used for the field registration of non-conforming items, or items that have work to be completed.

The following guidelines are issued for the allocation of categories -

A - An item that prevents the equipment being powered up/ operated in a safe manner

B - A minor item which does not affect safe power up/operation

Item	Tag Number/ P.O. No.	Category A & B	Associated ITP / Parent tag/DAR's	Detail and reference drawings numbers	Location Area	Material Required Y/N	Responsibility for close		To be cleared for SMA/TTS/SA1/TTS/SA2/ SODA
							out Vend/Davie/ Comm	Discipline	
25	VE-071ST	B		Damper control panel nameplate to be switched with damper control panel (VE-002GS) XA/263D - XA/263C	S004		Davie	Piping	Closed
26	XA-266A	A		Ducting to complete outside	Second deck stbd		Davie	Piping	Closed
27	VE-228GA	B		Insulation to complete outside	T7		Davie	Piping	Closed
28	VE-036ST	A		End of ducting to complete - XA/262A	Second deck port aft		Davie	Piping	Closed
29	VE-005ST	A		Air supply to be installed on damper control panel - XA/263T	Second deck port aft		Davie		Closed
30	XA-263T	A		Complete installation of inlet ductings	Second deck port aft		Davie		Closed
31	VE-006ST	A		Damper control air panel to be installed - XA/265S	Main deck stbd		Davie		' '
32	VE-006ST	A		Control air lines to be installed - XA/265S	Main deck stbd		Davie		' '
33	VE-006ST	A		Air supply to be installed on damper control panel - XA/265S	Main deck stbd		Davie		' '
34	VE-042ST	A		Damper control air panel to be installed - XA/266B	Main deck stbd		Davie		' '
35	VE-042ST	A		Control air lines to be installed - XA/266B	Main deck stbd		Davie		' '
36	VE-042ST	A		Air supply to be installed on damper control panel - XA/266B	Main deck stbd		Davie		' '
37	VE-028ST	A		Damper control air panel to be installed - XA/263P	Main deck stbd		Davie		' '
38	VE-028ST	A		Control air lines to be installed - XA/263P	Main deck stbd		Davie		' '

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Operations & Trials - P36 Roncador Spirit Of Columbus
Consolidated Punch List Entry

System: VAC

System: 52

Originator:	B. Broderick
Signature:	
Date:	08-07-99
Rev:	02
Rev:	24-07-99
Petromec	Davie
Brasol	
RINA/ABS	

This Form to be used for the field registration of non-conforming items, or items that have work to be completed.
The following guidelines are issued for the allocation of categories -
A - An item that prevents the equipment being powered up/ operated in a safe manner
B - A minor item which does not affect safe power up/operation

Item	Tag Number/ P.O. No.	Category A & B	Associated ITP / Parent tag/DAR's	Detail and reference drawings numbers	Location Area	Material Required Y/N	Responsibility for close		To be cleared for SMA/TTS/TTSA2/ SODA
							Vend/Davie/ Comm	Discipline	
39	VE-028ST	A		Air supply to be installed on damper control panel - XA/263P	Main deck stbd		Davie		Closed
40	VE-020ST	A		Damper control air panel to be installed - XA/265C	Main deck stbd		Davie		"
41	VE-020ST	A		Control air lines to be installed - XA/265C	Main deck stbd		Davie		"
42	VE-020ST	A		Air supply to be installed on damper control panel - XA/265C	Main deck stbd		Davie		"
43	VE-086ST	A		Damper control air panel to be installed - XA/264D	Second dk stbd		Davie		Closed
44	VE-086ST	A		Control air lines to be installed - XA/264D	Second dk stbd		Davie		Closed
45	VE-086ST	A		Air supply to be installed on damper control panel - XA/264D	Second dk stbd		Davie		Closed
46	VE-086ST	A		Electrical wiring to be connected on damper - XA/264D	Second dk stbd		Davie		"
47	EFD - 10	A		Air supply to be installed on damper control panel - YK/684LM	Main deck port aft		Davie		"
48	EFD - 10	A		Control air line missing on control panel air reservoir - YK/684LM	Main deck port aft		Davie		"
49	VE-022ST	B		Damper static earth bonding strap to be connected - XA/263R	Main deck stbd		Davie	Elect.	"
50	VE-022ST	A		Electrical wiring to be connected on damper - XA/263R	Main deck stbd		Davie	Elect.	"
51	VE-022ST	A		Control air lines to be reinstalled on damper - XA/263R	Main deck stbd		Davie		Closed
52	VE-022ST	A		Damper control air panel to be installed - XA/263R	Main deck stbd		Davie		Closed
53	VE-022ST	A		Air supply to be installed on damper control panel - XA/263R	Main deck stbd		Davie		Closed
54	VE-021ST	B		Damper static earth bonding strap to be connected - XA/263Q	Main deck stbd		Davie	Elect.	"

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9/28/99



Operations & Trials - P36 Roncador Spirit Of Columbus
Consolidated Punch List Entry

Originator: B. Broderick

Signature:

Date:

Rev.: 02

Davie

Petromec

Brasoli

RINA/ABS

System: 52

Sys Group: DI-052-50

System: VAC

This form to be used for the field registration of non-conforming items, or items that have work to be completed.

The following guidelines are issued for the allocation of categories -

A - An item that prevents the equipment being powered up/operated in a safe manner

B - A minor item which does not affect safe power up/operation

Item	Tag Number/ P.O. No.	Category A & B	Associated ITP / Parent tag/DAR's	Detail and reference drawings numbers	Location Area	Material Required Y/N	Responsibility for close out Vend/Davie/ Comm	Discipline	To be cleared for SMA/TTS/TT/SA2/ SODA
55	VE-021ST	A		Electrical wiring to be connected on damper - XA/263Q	Main deck stbd		Davie	Elect.	Closed
56	VE-021ST	A		Control air lines to be reinstalled on damper - XA/263Q	Main deck stbd		Davie	Piping	Closed
57	VE-021ST	A		Damper control air panel to be installed - XA/263Q	Main deck stbd		Davie	Piping	Closed
58	VE-021ST	A		Air supply to be installed on damper control panel - XA/263Q	Main deck stbd		Davie	Piping	Closed
59	VE-024ST	B		Damper static earth bonding strap to be connected - XA/263Q	Main deck stbd		Davie	Elect.	"
60	VE-024ST	A		Electrical wiring to be connected on damper - XA/265K	Main deck stbd		Davie	Elect.	"
61	VE-024ST	A		Control air lines to be reinstalled - XA/265K	Main deck stbd		Davie	Piping	Closed
62	VE-024ST	A		Damper control air panel to be installed - XA/265K	Main deck stbd		Davie	Piping	Closed
63	VE-024ST	A		Air supply to be installed on damper - XA/265K	Main deck stbd		Davie	Piping	Closed
64	XA-265K	B		Gas detection system to verify on inlet of fan	Main deck stbd		Davie	Elect.	
65	VE-023ST	B		Damper static earth bonding strap to be connected - XA/265J	Main deck stbd		Davie	Elect.	Closed
66	VE-023ST	A		Electrical wiring to be connected on damper - XA/265J	Main deck stbd		Davie	Elect.	"
67	VE-023ST	A		Control air lines to be reinstalled - XA/265J	Main deck stbd		Davie	Piping	Closed
68	VE-023ST	A		Damper control air panel to be installed - XA/265J	Main deck stbd		Davie	Piping	Closed
69	VE-023ST	A		Air supply to be installed on damper - XA/265J	Main deck stbd		Davie	Piping	Closed
70	XA-265G	A		Complete installation of ductings and dampers	Main deck aft S002		Davie	Piping	Closed

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Operations & Trials - P36 Roncador Spirit Of Columbus
Consolidated Punch List Entry

Originator: B. Broderick

Signature:

Date: 08-07-99

System: 52

Rev.: 02

Davie

Pelromec

Brasoll

RINa/ABS

To be cleared for
SMAVTTSA1/TTSA2/
SODA

System: VAC

This Form to be used for the field registration of non-conforming items, or items that have work to be completed.

The following guidelines are issued for the allocation of categories -

A - An item that prevents the equipment being powered up/operated in a safe manner

B - A minor item which does not affect safe power up/operation

Item	Tag Number/ P.O. No.	Category A & B	Associated ITP / Parent tag/DAR's	Detail and reference drawings numbers	Location Area	Material Required Y/N	Responsibility for close out Vend/Davie/ Comm	Discipline	To be cleared for SMAVTTSA1/TTSA2/ SODA
71	VE-018ST	A		Control air system to be installed on damper - XA/265G	Main deck aft		Davie	Piping	Closed
72	VE-018ST	A		Electrical wiring to be connected on damper - XA/265G	Main deck aft		Davie	Elect.	Closed
73	XA-272A	A		Complete installation of ductings and dampers	Main deck aft		Davie	Piping	Closed
74	VE-099ST	A		Electrical wiring to be connected on damper - XA/272A	Main deck aft		Davie	Elect.	' '
75	VE-099ST	A		Control air system to be installed on damper - XA/272A	Main deck aft		Davie	Piping	Closed
76	XA-273A	A		Complete installation of ductings and dampers	Main deck aft		Davie	Piping	Closed
77	VE-100ST	A		Electrical wiring to be connected on damper - XA/273A	Main deck aft		Davie	Elect.	Closed
78	VE-100ST	A		Control air system to be installed on damper - XA/273A	Main deck aft		Davie	Piping	Closed
79		A		Complete installation of ductings in UCP Room	S004		Davie	Piping	Closed
80	VE-046ST	A		Air leak at control air line (hole in line) - XA/268F	Main dk stbd fwd		Davie	Piping	' '
81	VE-023GS	A		Control air system to be installed on damper - XA/262H	M003		Davie	Piping	' '
82	VE-023GS	A		Air supply to be installed on damper - XA/262H	M003		Davie	Piping	' '
83	VE-024GS	A		Control air system to be installed on damper - XA/262J	M003		Davie	Piping	' '
84	VE-024GS	A		Air supply to be installed on damper - XA/262J	M003		Davie	Piping	' '
85	XA-265U	A		Complete installation of ductings and dampers	M003		Davie	Piping	Closed

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Operations & Trials - P36 Roncador Spirit Of Columbus Consolidated Punch List Entry

System: VAC		System: 52		Originator: B. Broderick	
This Form to be used for the field registration of non-conforming items, or items that have work to be completed.				Signature:	
The following guidelines are issued for the allocation of categories -				Date: 08-07-99	
A - An item that prevents the equipment being powered up/ operated in a safe manner				Rev.: 02	
B - A minor item which does not affect safe power up/operation				Davie	
		Sys Group: DI-052-50		Petromec	
				Brasol	
				RINA/ABS	

Item	Tag Number/ P.O. No.	Category A & B	Associated ITP / Parent tag/DAR's	Detail and reference drawings numbers	Location Area	Material Required Y/N	Responsibility for close out		To be cleared for SMA/TTS/SA1/TTS/SA2/ SODA
							Vend/Davie/ Comm	Discipline	
86	VE-019ST	A		Damper control air panel to be installed - XA/265U	M003		Davie	Piping	Closed
87	VE-019ST	A		Control air system to be installed on damper - XA/265U	M003		Davie	Piping	Closed
88	VE-019ST	A		Air supply to be installed on damper control panel - XA/265U	M003		Davie	Piping	Closed
89	VE-019ST	A		Electrical wiring to be connected on damper - XA/265U	M003		Davie	Elect.	Closed
90	VE-030ST	A		Control air system to be installed on damper - XA/265M	Main deck stbd		Davie	Piping	" "
91	VE-030ST	A		Air supply to be installed on damper control panel - XA/265M	Main deck stbd		Davie	Piping	" "
92	VE-012ST	A		Control air system to be installed on damper - XA/264E	Main deck stbd		Davie	Piping	Closed
93	VE-012ST	A		Air supply to be installed on damper control panel - XA/264E	Main deck stbd		Davie	Piping	Closed
94	VE-012ST	A		Electrical wiring to be connected on damper - XA/264E	Main deck stbd		Davie	Elect.	Closed
95	VE-012ST	B		Damper static earth bonding to be connected - XA/264E	Main deck stbd		Davie	Elect.	Closed
96	VE-013ST	A		Control air system to be installed on damper - XA/264F	Main deck stbd		Davie	Piping	Closed
97	VE-013ST	A		Air supply to be installed on damper control panel - XA/264F	Main deck stbd		Davie	Piping	Closed
98	VE-013ST	A		Electrical wiring to be connected on damper - XA/264F	Main deck stbd		Davie	Elect.	Closed
99	VE-013ST	B		Damper static earth bonding to be connected - XA/264F	Main deck stbd fwd		Davie	Elect.	Closed
100	XA-265G			Air supply to control panel not completed					" "
101	XA-272A			Air supply to control panel not completed					" "

COPIA FIELD DOCUMENT ORIGINAL

DAVIE INDUSTRIES		Operations & Trials - P36 Roncador Spirit Of Columbus				Consolidated Punch List Entry		Originator: B. Broderick	
System: VAC		System: 52		System: 50		Signature: 08-07-99		Date: 24-07-99	
This Form to be used for the field registration of non-conforming items, or items that have work to be completed. The following guidelines are issued for the allocation of categories -		Sys Group: DI-052-50		Sys Group: DI-052-50		Rev.: 02		Rev.: 02	
A - An item that prevents the equipment being powered up/ operated in a safe manner		B - A minor item which does not affect safe power up/operation		C - A major item which does not affect safe power up/operation		D - A major item which does not affect safe power up/operation		E - A major item which does not affect safe power up/operation	
Item	Tag Number/ P.O. No.	Category A & B	Associated ITP / Parent tag/DAR's	Detail and reference drawings numbers	Location Area	Material Required Y/N	Responsibility for close out Vnd/Davie/Comm	Discipline	To be cleared for SMA/TTSA1/TTSA2/ SODA
102	XA-273A			Air supply to control panel not completed					CLOSED
103				Installation of 39 gas detectors					
104	XA-263Q	A		Support and attachment not yet complete on ventilation towers	Main deck Stbd	Struc. WP			
105	XA-263R	A		Support and attachment not yet complete on ventilation towers	Main deck Stbd	Struc. WP			
106	XA-265J	A		Support and attachment not yet complete on ventilation towers	Main deck Stbd	Struc. WP			
107	XA-265K	A		Support and attachment not yet complete on ventilation towers	Main deck Stbd	Struc. WP			
108	XA-264E	A		Support and attachment not yet complete on ventilation towers	Main deck Stbd	Struc. WP			
109	XA-264F	A		Support and attachment not yet complete on ventilation towers	Main deck Stbd	Struc. WP			
110	XA-263S	A		Support and attachment not yet complete on ventilation towers	Main deck Aft Ft. 60	Struc. WP			
111	VE-150ST	B		Open/closed tags to relocate on actuator cover of XA-263E	M-001	Yes	Davie	Mech	
112	VE-021ST	B		Identification tag missing on control air panel XA-263Q	Mn. DK. STBD	Yes	Davie	Davie	
113	VE-023ST	B		Identification tag missing on control air panel XA-265J	Mn. DK. STBD	Yes	Davie	Davie	
114	VE-012GS	A		Extension attachment to install on control panel					
115	VE-012GS	B		Change-over valve (XA-269A)	M002	Yes	Davie	Davie	
116	VE-012GS	B		Open/closed identification tags to install on extension handle outside the compartment	M002				
117	DF-5251-08	A		Solenoid to be changed on fire damper of XA-260B	2nd deck port aft				

COPIA FOLLOWED ORIGINAL



Operations & Trials - P36 Roncador Spirit Of Columbus Consolidated Punch List Entry

System: VAC		System: 52	
This Form to be used for the field registration of non-conforming items, or items that have work to be completed.			
The following guidelines are issued for the allocation of categories -			
A - An item that prevents the equipment being powered up/ operated in a safe manner			
B - A minor item which does not affect safe power up/operation			
Originator:		B. Broderick	
Signature:		Davie	
Date:		08-07-99	
Rev.:		02	
Petromec		Brasol	
RINa/ABS		To be cleared for SMA/TTSa1/TTSa2/SODA	

Item	Tag Number/ P.O. No.	Category A & B	Associated ITP / Parent tag/DAR's	Detail and reference drawings numbers	Location Area	Material Required Y/N	Responsibility for close		To be cleared for SMA/TTSa1/TTSa2/ SODA
							Vend/Davie/ Comm	Discipline	
102	XA-273A			Air supply to control panel not completed					Closed
103				Installation of 39 gas detectors					
104	XA-263Q	A		Support and attachment not yet complete on ventilation towers	Main deck Sbld	Struc. WP			
105	XA-263R	A		Support and attachment not yet complete on ventilation towers	Main deck Sbld	Struc. WP			
106	XA-265J	A		Support and attachment not yet complete on ventilation towers	Main deck Sbld	Struc. WP			
107	XA-265K	A		Support and attachment not yet complete on ventilation towers	Main deck Sbld	Struc. WP			
108	XA-264E	A		Support and attachment not yet complete on ventilation towers	Main deck Sbld	Struc. WP			
109	XA-264F	A		Support and attachment not yet complete on ventilation towers	Main deck Sbld	Struc. WP			
110	XA-263S	A		Support and attachment not yet complete on ventilation towers	Main deck Alt Fr. 60	Struc. WP			
111	VE-150ST	B		Open/closed tags to relocate on actuator cover of XA-263E	M-001	Yes	Davie	Mech	
112	VE-021ST	B		Identification tag missing on control air panel XA-263Q	Mn. DK. STBD	Yes	Davie		
113	VE-023ST	B		Identification tag missing on control air panel XA-265J	Mn. DK. STBD	Yes	Davie		
114	VE-012GS	A		Extension attachment to install on control panel					
115	VE-012GS	B		Change-over valve (XA-269A)	M002	Yes	Davie		
116	VE-012GS	B		Open/closed identification tags to install on extension handle outside the compartment	M002				
117	DF-5251-08	A		Solenoid to be changed on fire damper of XA-280B	2nd deck port aft				
118	XA-263Q	B		Fan demonstration shown at later date	Mn dk Sbld	No	Davie	T&T	

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Operations & Trials - P36 Roncador Spirit Of Columbus Consolidated Punch List Entry

System: VAC

System: 52

Originator: B. Broderick

Signature:

Date: 08-07-99

Rev.: 02 24-07-99

Petromec

Brasoll

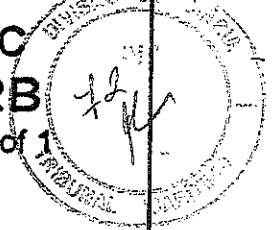
RINA/ABS

Item	Tag Number/ P.O. No.	Category A & B	Associated ITP / Parent tag/DAR's	Detail and reference drawings numbers	Location Area	Material Required Y/N	Responsibility for close out Vand/Davie/ Comm	Discipline	To be cleared for SMA/TISA1/TISA2/ SODA
119	XA-263R			Fan demonstration shown at later date	Mn dk Sld	No	Davie	T&T	
120	XA-263R			Control board identification plate missing	Mn dk Sld	No	Davie	Engineering	
121	XA-265J			Control board identification plate missing	Mn dk Sld	No	Davie	Engineering	
122	XA-276A			Control board identification plates to fix with rivets	Mn dk port fwd	Yes	Davie	Mech	
123	XA-280B			Solenoid valve to be change d - DF-5251-08	2nd dk port aft	Yes	Davie	Elect.	
124	VE-097ST			Indicator to adjust (XA-274A)	Mn dk port fwd	No	Davie	Mech	
125	EFO-6			Indicator to adjust (XA-684D)	2nd dk fwd	No	Davie	Mech	
126	EFD-11			Open/closed identification tags to install on actuator cover	S002	Yes	Davie		
127	VE-070ST			Indicator to adjust (XA-265G)	S002	No	Davie	Mech	
128	FDC-11	A		Electrical damper does not operate (YM/684CH)	S085				
129	FDC-13	A		Electrical damper does not operate (YM/684CH)	M009				
130	FDC-14	A		Rad light does not come on (YM/684 C.J)	M009				
131	FDC-16	A		Electrical damper does not operate (YM/684C.J)	M017				
132	FDD-1	A		Electrical damper does not operate (YM/684C.J)	S082				
133	FDD-2	B		Damper very slow to open (YM/684DF)	S082				
132	FDHJ-6	A		Electrical damper does not operate (YM/684 HM)	S002				
134	FDG-1	A		Electrical damper not operating and to be changed	S050				

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Pre-Operations Procedures Fire Dampers & Panel (Test)

HVAC
H002B
Sheet 1 of 1



Item	Description of Check
1	Check Fire Damper Panel filter regulator is set to provide 5.5 - 8.5 barg to Dampers and black start override HOV (Hand Operated Valves) are padlocked in closed position.
2	With System fan running check operation of damper from the following, checking open and closed status at local pointer and remote control panel indication.
2.1	With ECOS / F&G signal to damper - Does damper fully OPEN - Does Damper fully CLOSE in 1 second on loss of signal
2.2	From Fire Damper Panel - Does Damper fully CLOSE on opening of HVC (Hand Control Valve) to remove air supply - Does Damper fully OPEN on provision of bottled air supply to Panel and operation of Black Start override HOV (Hand Operated Valves) (remove padlocks to open)
2.3	Simulate fracture of Frangible bulb (unscrew valve or switch) Does Damper fully CLOSE
3	Damper reset to normal operating mode after test.

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2010-01-01 10:00:00

FIRE DAMPER APPROBATION

MACHINERY AREA

ITEM	FAN	SUP. or EXH.	LOCATION	PNEUMATIC	LOCATION	SPRING LOADED	LOCATION	RINA APPR.	REMARK	DATE
1	XA-262A	SUP..	WELD. SHOP	VE-036ST	SEC. DK. P. A.					
2	XA-262B	SUP..	MN. DK. P. A.	VE-026ST	MN. DK. P. A.					
3	XA-262C	SUP..	GEN. RM. # 1	VE-006GS	T-043					
4	XA-262D	SUP..	MN. DK. P. F.	VE-027ST	MN. DK. P. F.					
5	XA-262E	SUP..	GEN. RM. # 2	VE-007GS	T-043					
6	XA-262F	SUP..	S-001	VE-066ST	S-001	VE-052ST	T-005			
7	XA-262H	SUP..	ABOVE M-003	VE-023GS	ABOVE M-003	VE-084ST	T-005			
8	XA-262J	SUP..	ABOVE M-003	VE-024GS	ABOVE M-003	VE-087ST	S-001			
				DF-5251-01	MN. DK. CENT. CAISSON					
9	XA-262K	SUP..	T-011	VE-001ST	SEC. DK. P. A.	VE-065ST	T-037			
						VE-102ST	P. A. COL. LEVEL 3			
						VE-106ST	P. A. COL. LEVEL 3.5			
						VE-107ST	P. A. LEVEL #5			
						VE-108ST	P. A. WATER INJ.			
						VE-109ST	P. A. WATER INJ.			
						VE-110ST	P. A. LEVEL #5			
						VE-128ST	P. F. COL. LEVEL 4			
10	XA-262L	SUP..	C-007	VE-003ST	MN. DK. P. F.	VE-129ST	P. F. LEVEL 5			
						VE-130ST	P. F. WATER INJ.			
						VE-131ST	P. F. WATER INJ.			
						VE-132ST	P. F. LEVEL 5			
11	XA-262M	SUP..	DRY STORE	VE-076ST	U-012					
12	XA-263B	EXH.	WELD. SHOP	VE-039ST	SEC. DK. P. A.					
13	XA-263C	SUP..	T-008	VE-071ST	S-004	VE-055ST	T-008			
14	XA-263D	EXH.	T-006	VE-002GS	S-004	VE-054ST	T-008			
15	XA-263E	EXH.	M-001	VE-150ST	M-001	VE-058ST	T-031			
16	XA-263G	EXH.	MN. DK. AFT.	VE-016ST	MN. DK. AFT.					
17	XA-263J	EXH.	MN. DK. P. A.	VE-032ST	MN. DK. P. A.					
18	XA-263K	EXH.	MN. DK. PORT	VE-033ST	MN. DK. PORT					

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DAMPER PANEL TEST
HVAC H002B

FIRE DAMPER APPROBATION

MACHINERY AREA

ITEM	FAN	SUP. or EXH.	LOCATION	PNEUMATIC	LOCATION	SPRING LOADED	LOCATION	RINA APPR.	REMARK	DATE
19	XA-263L	EXH.	MN. DK. PORT	VE-034ST	MN. DK. PORT					
20	XA-263M	EXH.	MN. DK. PORT	VE-035ST	MN. DK. PORT					
21	XA-263N	EXH.	S-003	VE-001GS	S-003	VE-051ST	T-003			
22	XA-263P	EXH.	MN. DK. STBD	VE-028ST	MN. DK. S.A.	VE-088ST	T-003			
23	XA-263Q	EXH.	MN. DK. STBD	VE-021ST	MN. DK. STBD.					
24	XA-263R	EXH.	MN. DK. STBD	VE-077ST	S-032					
25	XA-263S	EXH.	MN. DK. STBD	VE-022ST	MN. DK. STBD					
			MN. DK. S.A.	VE-078ST	S-032					
			COMP. U.C.P. RM.	VE-041ST		VE-074ST				
				DF-5251-03	COMP. U.C.P. RM.					
26	XA-263T	EXH.	T-011	VE-005ST	MN. DK. P.A.	VE-103ST	P.A. COL. LEVEL 3			
						VE-111ST	P.A. COL. LEVEL 3.5			
						VE-112ST	P.A. LEVEL 5			
						VE-113ST	P.A. LEVEL 5			
						VE-114ST	P.A. THRUSTER			
						VE-115ST	P.A. WATER INJ.			
						VE-116ST	P.A. WATER INJ.			
						VE-133ST	P.F. LEVEL 3			
						VE-134ST	P.F. LEVEL 5			
						VE-135ST	P.F. LEVEL 5			
						VE-136ST	P.F. THRUSTER			
						VE-137ST	P.F. WATER INJ.			
						VE-138ST	P.F. WATER INJ.			
27	XA-263U	EXH.		VE-007ST	M-031					
28	XA-263V	SUP.	CEMENT ROOM	VE-025GS						
29	XA-264A	SUP.	MN. DK. P.A.	VE-049ST	P.A. COL.					
30	XA-264B	SUP.	T-039	VE-062ST	T-039					
31	XA-264C	SUP.	MN. DK. STBD	VE-011ST		VE-089ST	T-026			
32	XA-264D	SUP.	S-034	VE-086ST						
33	XA-264E	SUP.	MN. DK. S.F.	VE-012ST	MN. DK. S.F.					
34	XA-264F	SUP.	MN. DK. S.F.	VE-013ST	MN. DK. S.F.					
35	XA-264G	SUP.	MN. DK. S.A.	VE-037ST		VE-073ST	S-024			

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DAMPER PANEL TEST
HVAC H002B

FIRE DAMPER APPROBATION

MACHINERY AREA

MACHINERY AREA										
ITEM	FAN	SUP. or EXH.	LOCATION	PNEUMATIC	LOCATION	SPRING LOADED	LOCATION	RINA APPR.	REMARK	DATE
			COMP. U.C.P. RM.	DF-5251-04	COMP. U.C.P. RM.					
36	XA-264H	SUP.	T-016	VE-002ST	MN. DK. AFT.	VE-104ST VE-118ST VE-119ST VE-120ST VE-121ST VE-139ST VE-140ST VE-141ST VE-142ST VE-143ST VE-050ST	S. A. LEVEL 3 S. A. LEVEL 5 S. A. WATER INJ. S. A. WATER INJ. S. A. LEVEL 5 S. F. LEVEL 4 S. F. LEVEL 5 S. F. WATER INJ. S. F. WATER INJ. S. A. LEVEL 5 T-007			
37	XA-264J	SUP.	C-008	VE-004ST	MN. DK. S. F.	VE-015ST VE-063ST VE-020ST VE-075ST VE-064ST VE-017ST VE-018ST VE-070ST VE-023ST VE-024ST VE-005GS VE-030ST VE-031ST VE-067ST VE-040ST VE-075ST	MN. DK. P. A. T-039 MN. DK. STBD. MN. DK. STBD. MN. DK. STBD. MN. DK. AFT. S-002 MN. DK. STBD. MN. DK. STBD. GEN. RM. # 3 MN. DK. STBD. MN. DK. STBD. S-001 S-003 M-006			
38	XA-265A	EXH.								
39	XA-265B	EXH.								
40	XA-265C	EXH.								
41	XA-265D	SUP.								
42	XA-265E	EXH.								
43	XA-265F	EXH.								
44	XA-265G	EXH.								
45	XA-265J	EXH.								
46	XA-265K	EXH.								
47	XA-265L	SUP.								
48	XA-265M	EXH.								
49	XA-265N	EXH.								
50	XA-265P	SUP.								
51	XA-265Q	EXH.								
52	XA-265R	EXH.								
53	XA-265S	EXH.	T-016	VE-006ST		VE-105ST VE-117ST VE-123ST VE-124ST VE-125ST	S. A. LEVEL 3 S. A. LEVEL 3.5 S. A. LEVEL 5 S. A. LEVEL 5 S. A. THRUSTER			

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HVAC H002R

MACHINERY AREA

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99-09-14

FIRE DAMPER APPROBATION

MACHINERY AREA

ITEM	FAN	SUP. OF EXH.	LOCATION	PNEUMATIC	LOCATION	SPRING LOADED	LOCATION	RINA APPR.	REMARK	DATE
78	XA-274A	EXH.	M-035	VE-101ST	MN. DK. P. F.					
79	XA-274B	EXH.		VE-157ST	MN. DK. P. F.					
80	XA-276A	EXH.	MN. DK. P. F.	VE-159ST	MN. DK. P. F.					
81	XA-276B	EXH.	M-021	VE-160ST	M-021					
82	XA-280A	EXH.								
83	XA-280B	EXH.	SEC. DK. P. A.	DF-5251-07	SEC. DK. P. A.					
84	XA-280C	EXH.		DF-5251-08						
85	XA-280D	EXH.	SEC. DK. S. A.	DF-5251-09	SEC. DK. S. A.					
86	NATURAL	SUP.		DF-5251-10						
87	NATURAL	SUP.		VE-060ST	U-012					
88	NATURAL	SUP.		VE-092ST	U-012					
89	NATURAL	SUP.		VE-093ST	U-012					
90	NATURAL	SUP.		VE-094ST	U-012					
91	NATURAL	SUP.		VE-095ST						
92	NATURAL	SUP.		VE-096ST						
93	NATURAL	SUP.		VE-097ST						
94	NATURAL	SUP.		VE-156ST	MN. DK. P. F.					
95	NATURAL	SUP.		VE-158ST	MN. DK. P. F.					
96	YA-684A	EXH.	T-039	VE-161ST	M-021					
97	YA-684AA	SUP.		EFD-3						
98	YA-684B	EXH.	T-039	EFD-1						
99	YA-684BA	SUP.	T-039	EFD-2						
100	YA-684C	EXH.	T-039	EFD-9						
101	YA-684CA	SUP.		EFD-7						
102	YA-684D	EXH.		EFD-4						
103	YA-684HA	SUP.		EFD-8						
104	YA-684JA	SUP.		EFD-10-11						
105	YA-684NA	EXH.		EFD-10-11						
106	YA-684TA	SUP.		EFD-5						
107	YD-684J	SUP.	ELECTR. STORE	EFD-6	ELECTR. STORE					
				DF-5251-05	ELECTR. STORE					

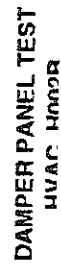
DAMPER PANEL TEST (E COPIA FVL DO DOCUMENTO ORIGINAL)

HVAC H002B

MACHINERY AREA

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MISCELLANEOUS SURVEY REPORT

Page 1 of 1

SURVEY OF:		
REVIEW OF MANUFACTURING REPORT		
Report No.: 99RO67239	Date: 6 MAY 1999	Port: ROTTERDAM
Vessel's Name: P36 - RONCADOR FIELD DEVELOPMENT	PID: P18689	
Manufacturer: DEMAG DELAVAL TURBOMACHINERY	Mfg.No.: LC04075 / LC0686	
Purchaser: PETROMEC INC. FOR SANA S.P.A.	PO No.: 360 1824	
Location: HENGELO NETH.	Rating (WP/HP/KW):	
Serial Number:	Weight:	Test Pressure:
Material Test Report No.:	Service Use: UNKNOWN	
Drawing No.	Date Approved:	ABS Markings ✱

THIS IS TO CERTIFY that the undersigned Surveyor to this Bureau attended for the above survey and reports as follows:

Manufacturing report (data book) concerning " Upgrade for the LP turbocompressor 8BK26" was reviewed against manufacturer specifications as per document no.C407505A000 rev.0 page 2 of 2 and drawings no:

C 407525A000 Sheet no. 01/01 ROTOR ASS'Y

C 407520B000 Sheet no. 01/01 COMPRESSOR ASS'Y.

Documents presented were found in accordance with above mentioned documents except:

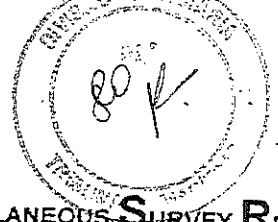
- Shrink measures of impellers on rotor shaft deviates from drawing req. as per drawing C407525A000.
- Diameter clearances at assembly deviates from drawing req. as per drawing C407520B000.

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K.Sabasov Surveyor, American Bureau of Shipping

Surveyor, American Bureau of Shipping

NOTE: This Report 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. This Report is a representation only that the vessel, structure, item of material, equipment, machinery or any other item covered by the Report has met one or more of the Rules, guides, standards or other criteria of American Bureau of Shipping as of the date of issue. Parties are advised to consult the Rules, guides, standards or other criteria of classification and to review the survey reports for a full understanding of the survey results.



Report No. 99RO67239
Date: 6 MAY 1999

MISCELLANEOUS SURVEY RE

Page 2 c

Details of Survey (continued)

Surveyor, American Bureau of Shipping

Surveyor, American Bureau of Shipping

- | | YES | NO | N/A |
|---|--------------------------|--------------------------|-------------------------------------|
| 1. Manufacture or finishing carried out according to: | | | |
| a) approved plans and to the Rules | ☐ | ☐ | ☒ |
| b) _____ specifications. | ☐ | ☐ | ☒ |
| 2. Testing carried out as required by Rules/Specifications and as reported herein | ☐ | ☐ | ☒ |
| 3. Calibration of testing/measuring equipment confirmed, with records maintained at facility or located _____ | ☐ | ☐ | ☒ |
| 4. Components stamped with report number and ABS markings | ☐ | ☐ | ☒ |

AB 113 Distribution

Purchaser	2
ABS Office @ Destination	1
ABS Houston CDC	1
Local	1
Other	—

REVIEWED By:

Signature

Date

Port

COPIA FIEL DO DOCUMENTO ORIGINAL

Telefax



Delaval Stork V.o.f.

P.O. Box 329 • 7550 AH Hengelo • The Netherlands

Turbomachinery

To Company : Petromec Inc.

Date : 1999-07-15

Attention : Bill O'Brien

From : Michel Trienen

Dept. : TMS-Contracts

Fax no. : ~~1~~ 1. 418 694 7160

Phone : +31(74) 2402288

Copy to : ---

Fax : +31(74) 2402440

Subject : Exceptions ABS report

Page 1 of 1

Copy to : G. Nijmeijer

C. Laarhuis

Your ref. : 3601824

Our ref. : LC4075 / LC0686

Dear Bill,

With reference to your fax dated 24 June 1999, we herewith like to confirm the following:

We like to explain the deviations on the referenced ABS report as follows:

C4075 25 A000 / Impeller shrink.

The protocols indicate a measured shrink, which is for 7 of the 8 impellers above the indicated maximum of the drawing. The drawing indicates a shrink requirement of 0.293 – 0.341 mm

The actual measured shrink rates vary between 0.31 and 0.37.

This is not a problem, the most important item is the minimum value, to ensure that the impeller stays securely in place during all anticipated (transient) conditions.

The maximum figure is based upon our normal machining tolerance band a shrink rate which is 10 % too high will not give a stress problem in the impeller, only assembly of the rotor will be more difficult, but this stage is already passed and the assembly did not cause any problem.

C4075 20 B000 / Labyrinth clearance.

The clearance is only low by 0.02 mm. As the labyrinths are made of aluminium this deviation will not cause any problems during operation and is therefore is accepted by engineering.

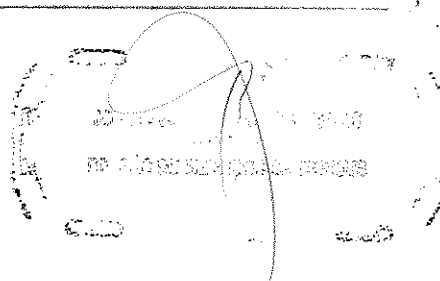
We trust the above information is sufficient though should you have any questions please do not hesitate to contact me.

Kind regards,
DELAVAL STORK VOF

Michel Trienen
Turbo Machinery Services

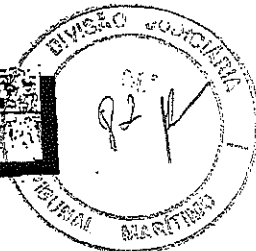
1000 Rev. 5

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4865
JUL 16 1999
General In
IP

COPY REGISTRO ITALIANO NAVALE



TEST CERTIFICATE

2077.

Np. 98/DG/16411/IN.

Inspection request N. 98/0705/UK/NA. 15.07.98.

Manufacturer or Supplier Wormald Engineering, Manchester.

Work order No. WA 886159.

Purchaser Petromec.

Order N. 3602827.

Intended for

P36 Roncador Field Development.

This is to certify that the items, particulars of which are given below, have been tested and found to be in compliance with the requirements of the RINA rules.

Description of material and tests carried out 1 off - Central Bank CO₂ System.

Equipment No. UQ-542501.

Reference Drawings:- GA:

WA886159/002/001.

P&ID:

WA886159/019/001, 002 and 003.

Electrical:

WA886159/011/001, 002 and 003.

TESTS

1. Calibration and Test of Discharge pressure switches.
2. Nitrogen Leak Test - Instrumentation and Pilot Lines.
3. Calibration and Test of Pilot Line pressure regulators, pilot line relief valve and system discharge manifold relief valve.
4. Calibration and Test of low pressure regulator and low pressure relief valve.
5. Electric cable continuity and insulation resistance checks.
6. Operation of cylinder release solenoid valves.
7. Operation of area selector valves.
8. Operation of area selector valve status indicators.
9. Package Function Test.
10. Part Documentation Review.

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Markings



Testing date 20/21.07.98. & 15.10.98.

Issued at

LIVERPOOL

on

23.12.98.



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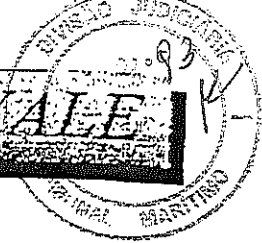


REGISTRO ITALIANO NAVALE

Emilio C. [Signature]

RINA comes out its duties through officers or other persons it considers possess of the requirements of suitability and competence for the tasks which have been assigned to them. In its capacity as expert RINA only expresses opinions and evaluations of compliance with its own rule requirements and does not, in any case whatsoever, (even if its opinions are requested on matters not expressly covered by Rules) assume the liabilities pertaining to the designers, employers, builders, test inspectors, shipyards or any person or organization responsible by law or contractually for providing guarantees for all of which the respective liabilities remain unchanged even in the case of consultative actions by RINA. For what concerns the tasks taken on and carried out directly, other than those delegated, dealt with in the following sentence, RINA is answerable in law terms. Within the confines of the tasks under the responsibility of RINA as delegate of the Italian Merchant Marine Ministry, liability can only be recognized in the case of fraud or gross negligence by the officers or the persons entrusted. In no case shall the liability, regardless of the amount of damage reported, exceed a value equal to 3 times the total of the fees received by RINA as consideration of the services rendered from which the damage reported derived.

REGISTRO ITALIANO NAVALE



CERTIFICATO DI COLLAUDO

N. 98 DG 2622 IN

Frank Mohn Flatøy A/S

62 33 51

AMEC Process and Energy, Brasil

OFD/97/023-01

Flatøy, Norway

P-36

28.5- 3.6 - 4.6.1998

Si certifica che gli oggetti/apparecchi, le cui caratteristiche sono di seguito indicate, sono stati sottoposti agli accertamenti ed alle prove di collaudo previste dalle norme e documenti di riferimento applicabili con esito soddisfacente.

This is to certify that the items, particulars of which are given below, have been tested in compliance with the applicable reference rules and documents with satisfactory results.

Materiali, componenti o attrezzature collaudati:

Tested material, components or equipment:

THREE - 3 - SEAWATER SUPPLY CAISSON PUMPS

TYPE : SE 300 H

SERIAL NOS.: 200164 - 200165 - 200166.

E COPIA FIEL DO DOCUMENTO ORIGINAL

Prove eseguite:

Test carried out:

PRESSURE TESTS

CAPACITY RUNNING TESTS

REVIEW OF COMPLETE DATA BOOK



208. BRG. 98

Bergen,

12.04.99

[Signature]
for L.H. Abrahamsen



REGISTRO ITALIANO NAVALE

RINA carries out its duties through officers or other persons it considers possess all the requirements of suitability and competence for the tasks which have been assigned to them. In its capacity as expert RINA only expresses opinions and evaluations of compliance with its own rule requirements and does not, in any case whatsoever, even if its opinions are requested on matters not expressly covered by Rules assume the liabilities pertaining to the designers, shipowners, builders, test inspectors, shipyards or any person or organization responsible by law or contractually for providing guarantees for all of whom the respective liabilities remain unchanged even in the case of consultative activities by RINA. For what concerns the tests taken on and carried out directly other than those delegated, dealt with in the following sentence, RINA is answerable in law terms. Within the context of the tests delegated to RINA by the Italian Administration, liability can only be recognized in the case of fraud or gross negligence by the officers or the persons engaged. In no case shall the liability, regardless of the amount of damage reported, exceed a value equal to 5 times the total of the fees received by RINA as consideration of the services rendered from which the damage reported derived.

N. 1855 MB

9B/LN/147/CO

Ingersoll-Dresser Pumps (U.K) Ltd., Gateshead, England

7515019 8 7515009

Petromec/Brasoil - SANA Project

3610721

Description of material and tests carried out

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CONFIDENTIAL

Four (4) - cartridge rotor assemblies for multi-stage centrifugal pump type 4X12CB-6, comprised of inner assembly, discharge head, suction head and bearing housings.
Pump Nos: 7515009/1/2/3 & 4.

Witnessing performance tests (for purposes of test, rotating assemblies installed in spare pump casings).

Refer to attached individual pump performance test certificates, performance curves and vibration/temperature test certificates.

12.5.98/13.7.98

Newcastle/Tyne

on 17th December, 1998.

REGISTRO ITALIANO NAVALE



[Handwritten signature]

[illegible]

CERTIFICATE OF TEST OF WIRE ROPE
EN 10204 DOCUMENT 3.1B
Z51109A/W1805620/99 01

Test Certificate Number

Purchaser Name and Address
 CUSTOM FABRICATORS & MACHINISTS
 GIFFORD ROAD
 PO BOX 3038
 STATION 8
 SAINT JOHN N.B
 E2M 4XY

Supplier Name and Address
 BRIDON INTERNATIONAL LTD
 ORDSALL
 RETFORD
 NOTTINGHAMSHIRE
 DN22 7TG

Tel: 01777 706706
 Fax: 01777 706023

Purchase Order Number
 62643

Bridon International Order Number
 F1855163/18

DESCRIPTION OF WIRE ROPE

BSX 14 MM DF 18X7WSC 1960 BT RHO ZL212006 MBL 17.00t

Rope Number
 Quantity and Rope Length

Z51109A
 1 x 52

Date of Manufacture

05/01/99

(m)
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DETAILS OF TEST

Method of Test
 Date of Test
 Breaking Load
 Safe Working Load
 at a Coefficient of Utilisation of 5 *

ISO3108
 05/01/99
 > 17
 3.4

(t)
 (t)

DECLARATION

I certify that the above particulars are correct.

Name K. Johnson

Signed

Date 14/07/99

OTHER INFORMATION

Testing machine calibrated to BS EN10002-2
 BRIDON Product Code : 14.018074WK104
 Actual Diameter : 14.43 mm
 Actual Breaking Load : 17.98 (t)
 2 rope(s) supplied in total

WITNESSED
 16/07/99

67
 REGISTERED

- * If the rope is required to be used at a coefficient of utilisation different from the example above, it should be re-rated by a competent person.
- * The above complies with all the applicable requirements of the Machinery Directive. Before use, read our publication 'Instructions and warnings on the use of steel wire rope'.



BRIDON International Limited

Oilerton Road Ordsall Retford Nottinghamshire DN22 7TG United Kingdom Tel: +44(0)1777 706706 Fax: +44(0)1777 706023
 Registered in England Number 416671 Registered Office West House King Cross Road Halifax West Yorkshire HX1 1EB England

Part of the FKI Group of Companies

CERTIFICATE OF TEST OF WIRE ROPE
EN 10204 DOCUMENT 3.1B
Z51157G/W1605055/99

Test Certificate Number

Purchaser Name and Address
 CUSTOM FABRICATORS & MACHINISTS
 GIFFORD ROAD
 PO BOX 3038
 STATION 8
 SAINT JOHN N.B
 E2M 4XY

Supplier Name and Address
 BRIDON INTERNATIONAL LTD
 ORDSALL
 RETFORD
 NOTTINGHAMSHIRE
 DN22 7TG

Tel: 01777 706706

Fax: 01777 706023

Purchase Order Number
 62643

Bridon International Order Number
 F1603272/18

DESCRIPTION OF WIRE ROPE

BSX 22 MM 6X36IWRC 1960GAL RHO ZL302002 MBL 34.4t

Rope Number

Z51157G

Quantity and Rope Length

2 x 61

Date of Manufacture

07/01/99

DETAILS OF TEST

Method of Test

ISO3108

Date of Test

07/01/99

Breaking Load

> 34.4

Safe Working Load

(t)

at a Coefficient of Utilisation of 5 *

6.88

(t)

DECLARATION

I certify that the above particulars are correct.

Name B. Wallace

Signed

Date 14/07/99

OTHER INFORMATION

Testing machine calibrated to BS EN10002-2

BRIDON Product Code : 22.00636WIKARC

Actual Diameter : 22.30 mm

Actual Breaking Load : 37.83 (t)

WITNESSED

16/07/99



REGISTRO ITALIANO INVALE

- * If the rope is required to be used at a coefficient of utilisation different from the example above, it should be re-rated by a competent person.
- * The above complies with all the applicable requirements of the Machinery Directive. Before use, read our publication 'Instructions and warnings on the use of steel wire rope'.



BRIDON International Limited

Offerton Road Ordsall Retford Nottinghamshire DN22 7TG United Kingdom Tel: +44(0)1777 706706 Fax: +44(0)1777 706023
 Registered in England Number 416671 Registered Office: West House King Cross Road Halifax West Yorkshire HX1 1EB England

Part of the **FKI** Group of Companies

CERTIFICATE OF TEST OF WIRE ROPE
EN 10204 DOCUMENT 3.1B
 Z51157G/W1605056/99

Test Certificate Number

Purchaser Name and Address
 CUSTOM FABRICATORS & MACHINISTS
 GIFFORD ROAD
 PO BOX 3038
 STATION 8
 SAINT JOHN N.B
 E2M 4XY

Supplier Name and Address
 BRIDON INTERNATIONAL LTD
 ORDSALL
 RETFORD
 NOTTINGHAMSHIRE
 DN22 7TG

Tel: 01777 706706

Fax: 01777 706023

Purchase Order Number
 62643

Bridon International Order Number
 F1603272/18

DESCRIPTION OF WIRE ROPE

BSX 22 MM 6X36IWRC 1960GAL RHO ZL302002 MBL 34.4t

Rope Number

Z51157G

Quantity and Rope Length

4 x 70

Date of Manufacture

07/01/99

DETAILS OF TEST

Method of Test

ISO3108

Date of Test

07/01/99

Breaking Load

> 34.4

Safe Working Load

(t)

at a Coefficient of Utilisation of 5 *

6.88

(t)

DECLARATION

I certify that the above particulars are correct.

Name B. Wallace

Signed

Date 14/07/99

OTHER INFORMATION

Testing machine calibrated to BS EN10002-2

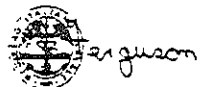
BRIDON Product Code : 22.00636WIKARC

Actual Diameter : 22.30 mm

Actual Breaking Load : 37.83 (t)

WITNESSED

16/07/99


 T. J. Gibson

ITALIANO NAVALE

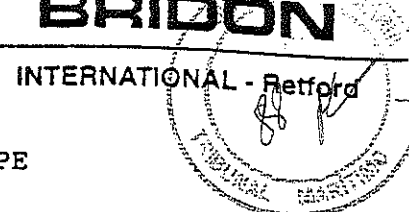
- * If the rope is required to be used at a coefficient of utilisation different from the example above, it should be re-rated by a competent person.
- * The above complies with all the applicable requirements of the Machinery Directive. Before use, read our publication 'Instructions and warnings on the use of steel wire rope'.



BRIDON International Limited

Ollerton Road Ordsall Retford Nottinghamshire DN22 7TG United Kingdom Tel: +44(0)1777 706706 Fax: +44(0)1777 706023
 Registered in England Number 418871 Registered Office West House King Cross Road Halifax West Yorkshire HX1 1EB England

Part of the  FKI Group of Companies



CERTIFICATE OF TEST OF WIRE ROPE
EN 10204 DOCUMENT 3.1B
Z50542C/W1605055/99

Test Certificate Number

Purchaser Name and Address
CUSTOM FABRICATORS & MACHINISTS
GIFFORD ROAD
PO BOX 3038
STATION 8
SAINT JOHN N.B
E2M 4XY

Supplier Name and Address
BRIDON INTERNATIONAL LTD
ORDSALL
RETFORD
NOTTINGHAMSHIRE
DN22 7TG

Tel: 01777 706706
Fax: 01777 706023

Purchase Order Number
62643

Bridon International Order Number
F1603272/18

DESCRIPTION OF WIRE ROPE

BSX 22 MM 6X36IWRC 1960GAL RHO ZL302002 MBL 34.4t

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Rope Number

Z50542C

Quantity and Rope Length

2 x 61

Date of Manufacture

02/11/98

ORIGINAL DOCUMENT
(m)

DETAILS OF TEST

Method of Test

ISO3108

Date of Test

02/11/98

Breaking Load

> 34.4

(t)

Safe Working Load

at a Coefficient of Utilisation of 5 *

6.88

(t)

DECLARATION

I certify that the above particulars are correct.

Name B. Wallace

Signed

Date 14/07/99

OTHER INFORMATION

Testing machine calibrated to BS EN10002-2

BRIDON Product Code : 22.00636WIKARC

Actual Diameter : 22.40 mm

Actual Breaking Load : 37.11 (t)

WITNESSED
16/07/99

STATION ITALIANO NAVALE

- * If the rope is required to be used at a coefficient of utilisation different from the example above, it should be re-rated by a competent person.
- * The above complies with all the applicable requirements of the Machinery Directive. Before use, read our publication 'Instructions and warnings on the use of steel wire rope'.



BRIDON International Limited

Ollerton Road Ordsall Retford Nottinghamshire DN22 7TG United Kingdom Tel: +44(0)1777 706706 Fax: +44(0)1777 706023

Registered in England Number 416671 Registered Office West House King Cross Road Halifax West Yorkshire HX1 1EB England

Part of the FKI Group of Companies

CERTIFICATE OF TEST OF WIRE ROPE
EN 10204 DOCUMENT 3.1B
Z51109A/W1805620/99

Test Certificate Number

Purchaser Name and Address
 CUSTOM FABRICATORS & MACHINISTS
 GIFFORD ROAD
 PO BOX 3038
 STATION 8
 SAINT JOHN N.B
 E2M 4XY

Supplier Name and Address
 BRIDON INTERNATIONAL LTD
 ORDSALL
 RETFORD
 NOTTINGHAMSHIRE
 DN22 7TG

Tel: 01777 706706

Fax: 01777 706023

Purchase Order Number
 62643

Bridon International Order Number
 F1855163/18

DESCRIPTION OF WIRE ROPE

BSX 14 MM DF 18X7WSC 1960 BT RHO ZL212006 MBL 17.00t

Rope Number

Z51109A

Quantity and Rope Length

1 x 52

Date of Manufacture

05/01/99

DETAILS OF TEST

Method of Test

ISO3108

Date of Test

05/01/99

Breaking Load

> 17

Safe Working Load

(t)

at a Coefficient of Utilisation of 5 *

3.4

(t)

DECLARATION

I certify that the above particulars are correct.

Name K. Johnson

Signed

Date 14/07/99

OTHER INFORMATION

Testing machine calibrated to BS EN10002-2

BRIDON Product Code : 14.018074WK104

Actual Diameter : 14.43 mm

Actual Breaking Load : 17.98 (t)

WITNESSED

16/07/99

REGISTERED

- * If the rope is required to be used at a coefficient of utilisation different from the example above, it should be re-rated by a competent person.
- * The above complies with all the applicable requirements of the Machinery Directive. Before use, read our publication 'Instructions and warnings on the use of steel wire rope'.



BRIDON International Limited

Ollerton Road Ordsall Retford Nottinghamshire DN22 7TG United Kingdom Tel: +44(0)1777 706706 Fax: +44(0)1777 706023

Registered in England Number 416671 Registered Office West House King Cross Road Halifax West Yorkshire HX1 1EB England

Part of the FKI Group of Companies

CERTIFICATE OF TEST OF WIRE ROPE
EN 10204 DOCUMENT 3.1B
 Z51978A/W1805619/99

Test Certificate Number

Purchaser Name and Address
 CUSTOM FABRICATORS & MACHINISTS
 GIFFORD ROAD
 PO BOX 3038
 STATION 8
 SAINT JOHN N.B
 E2M 4XY

Supplier Name and Address
 BRIDON INTERNATIONAL LTD
 ORDSALL
 RETFORD
 NOTTINGHAMSHIRE
 DN22 7TG

Tel: 01777 706706
 Fax: 01777 706023

Purchase Order Number
 62643

Bridon International Order Number
 F1855163/18

DESCRIPTION OF WIRE ROPE

BSX 16 MM DF 18X7WSC 1960 BT RHO ZL016014 MBL 22.30t

Rope Number
 Quantity and Rope Length

Z51978A
 1 x 60

Date of Manufacture

23/03/99

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DETAILS OF TEST

Method of Test
 Date of Test
 Breaking Load
 Safe Working Load
 at a Coefficient of Utilisation of 5 *

ISO3108
 23/03/99
 > 22.3
 4.46

WITNESSED
 16/07/99

(t)

(t)

DECLARATION

I certify that the above particulars are correct.

Name K. Johnson

Signed

Date 13/07/99

OTHER INFORMATION

Testing machine calibrated to BS EN10002-2
 BRIDON Product Code : 16.018074WK103
 Actual Diameter : 16.44 mm
 Actual Breaking Load : 23.04 (t)

WITNESSED
 16/07/99

b. Ferguson
 REGISTRO ITALIANO NAVALI

- * If the rope is required to be used at a coefficient of utilisation different from the example above, it should be re-rated by a competent person.
- * The above complies with all the applicable requirements of the Machinery Directive. Before use, read our publication 'Instructions and warnings on the use of steel wire rope'.



BRIDON International Limited

Olverton Road Ordsall Retford Nottinghamshire DN22 7TG United Kingdom Tel: +44(0)1777 706706 Fax: +44(0)1777 706023
 Registered in England Number 416671 Registered Office West House King Cross Road Halifax West Yorkshire HX1 1EB England

Part of the FKI Group of Companies



ABS

COPY

MISCELLANEOUS SURVEY REPORT



Page 1 of 2

SURVEY OF:		
HPU AND WELL CONTROL SYSTEM		
Report No.: 98-YM7245	Date: 16th FEBRUARY 1999	Port: GREAT YARMOUTH
Vessel's Name: PETROBRAS 36 RINA REF 98DG4420		PID: P36692RP
Manufacturer: WORMALD LINTOTT OIL AND GAS		Mfg.No.: 887169
Purchaser: PETROMEC		PO No.: VERBAL
Location: MANUFACTURERS PREMISES		Rating (WPA/P/KW): AS SPECIFICATION
Serial Number: REF REPORT		Weight: NOT STATED
Material Test Report No.: MANUFACTURERS AFFIDAVIT		Test Pressure: AS REPORT
Drawing No.: AS TEST REPORT		Service Use: HPU AND WELL CONTROL SYSTEM
Date Approved:		ABS Markings: *98-YM7245 805

THIS IS TO CERTIFY that the undersigned Surveyor to this Bureau attended for the above survey and reports as follows:

HPU AND WELL CONTROL SYSTEM

Comprising:

Well Control Skid	Tag No. PN-121001-05
Well Control Skid	Tag No. PN-121001-04
Well Control Skid	Tag No. PN-121001-03
Well Control Skid	Tag No. PN-121001-02
Well Control Skid	Tag No. PN-121001-01
Accumulator Skid	Tag No. BA-UH-121001
HPU	Tag No. PN-UH-121001
Tank Skid	Tag No. RE-UH-121001
23 Production Stab Plates	
7 Water Injection Stab Plates	

The above equipment manufactured in accordance with the manufacturers drawings and specifications was generally examined and found satisfactory.

I, Brown Surveyor, American Bureau of Shipping

Surveyor, American Bureau of Shipping

(If additional space is required, use other side of this form)

NOTE:

This Report 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. This Report is a representation only that the vessel, structure, item of material, equipment, machinery or any other item covered by the Report has met one or more of the Rules, guides, standards or other criteria of American Bureau of Shipping as of the date of issue. Parties are advised to review the Rules for the scope and conditions of classification and to review the survey records for a fuller description of any restrictions or limitations on the vessel's service or surveys. The validity, applicability and interpretation of this Report is governed by the Rules and Standards of American Bureau of Shipping who shall remain the sole judge thereof. Nothing contained in this Report or in any notation made in connection with this Report shall be deemed to relieve any designer, builder, owner, manufacturer, seller, supplier, repairer, operator or other entity of any warranty express or implied.

AB 113

Revision 5

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12-15-01
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COPY

Report No. 98-YM7245
Date: 16th FEBRUARY 1999

MISCELLANEOUS SURVEY REPORT

Page 2 of 2

Details of Survey (continued)

The equipment was witness tested in accordance with the Wormald Lintott test procedure document 887169/101 the results being recorded therein.

The documentation package with regard to material and calibration certification, Hydraulic system flushing to NAS 1638 Class 6 and Electrical circuit testing, was reviewed with satisfactory results.

The onboard installation and final testing to be to the satisfaction of the attending Surveyor.

Since this unit is classed with the Registro Italiano Navale, this report is also valid for surveys carried out on behalf of Registro Italiano Navale.

Surveyor, American Bureau of Shipping

Surveyor, American Bureau of Shipping

1. Manufacture or finishing carried out according to:

a) approved plans and to the Rules

b) Manufactures

specifications.

2. Testing carried out as required by Rules/Specifications and as reported herein

3. Calibration of testing/measuring equipment confirmed, with records maintained at facility or located

4. Components stamped with report number and ABS markings

YES NO N/A

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AB 113 Distribution

Purchaser 2

ABS Office @ Destination 1

ABS Houston CDC 1

Local 1

Other London OED 1

REVIEWED BY:

Signature

Date

Port

AB 113

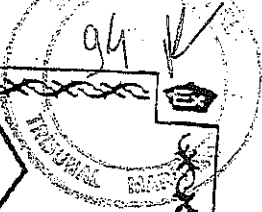
Revision 5

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JOSE ROBERTO DE ALMEIDA
DIRECTOR DE REGISTRO



British Approvals Service for Electrical
Equipment in Flammable Atmospheres



Certificate BAS No Ex 95C1028X

8. The manufacturer of the electrical apparatus referred to in this certificate, has the responsibility to ensure that the apparatus conforms to the specification laid down in the Schedule to this certificate and has satisfied routine verifications and tests specified therein.
9. This apparatus may be marked with the Distinctive Community Mark specified in Annex II to the Council Directive of 16 January 1984 (Doc. 84/47/EEC). A facsimile of this mark is printed on sheet 1 of this certificate.

ZELLWEGER ANALYTICS LIMITED
FOR CUSTOMER INFORMATION ONLY.
NOT FOR RE-CERTIFICATION WITH
OTHER TEST HOUSES.

Sheet 2/3

This certificate is granted subject to conditions applicable to the Approval Service, it does not necessarily indicate that the apparatus may lawfully be used in particular industries or circumstances.



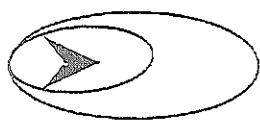
Electrical Equipment Certification Service
Health and Safety Executive
Harpur Hill, Burton, Derbyshire, SK17 9JN, United Kingdom
Tel: 0298 26211 Fax: 0298 79514 Telex 668113 RLSD G



CERT\APP\B\COMP ISSUE 1 DATED APRIL 94

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PALPRO



CLIENT : FLOWTRONEX
ORDER NO. : 401656
PROJECT TITLE : RONCADOR
PROJECT NUMBER : 1136-001
TEST PROCEDURE : F/1136-001/TPX-01

CERTIFICATE OF PRESSURE TEST

ITEM NO. PN-682503-01 GAS HYDRATE IRCD PANEL

We certify that the above referenced system was fully pressure tested at 439.5 Barg for 30 minutes using calibrated pressure gauges.

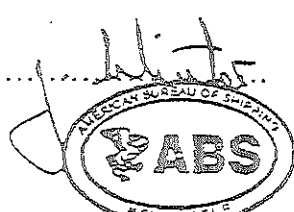
A copy of the gauge calibration certificate is attached.

SIGNED.

PALPRO LTD

DATE ..31-5-98.....

RINA / ABS

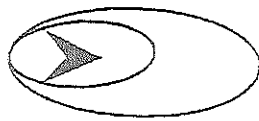


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PALPRO



CLIENT : FLOWTRONEX
ORDER NO. : 401656
PROJECT TITLE : RONCADOR
PROJECT NUMBER : 1136-001
TEST PROCEDURE : F/1136-001/TPX-01

CERTIFICATE OF PRESSURE TEST

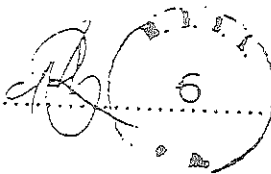
ITEM NO. PN-682501-01 DEMULSIFIER IRCD PANEL

We certify that the above referenced system was fully pressure tested at 439.5 Barg for 30 minutes using calibrated pressure gauges.

A copy of the gauge calibration certificate is attached.

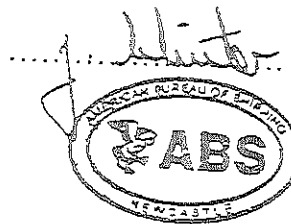
SIGNED.

PALPRO LTD



DATE 31-5-98

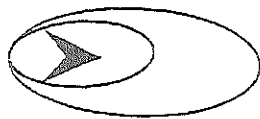
RINA / ABS



DATE 31.5.98

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Attestation of the copy
of the original document



PALPRO



CLIENT : FLOWTRONEX
ORDER NO. : 401656
PROJECT TITLE : RONCADOR
PROJECT NUMBER : 1136-001
TEST PROCEDURE : F/1136-001/TPX-01

CERTIFICATE OF PRESSURE TEST

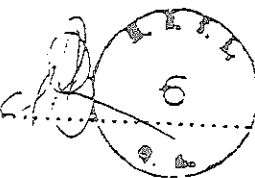
ITEM NO. PN-682503-02 GAS CORROSION INHIBITOR
IRCD PANEL

We certify that the above referenced system was fully pressure tested at 376.5 Barg for 30 minutes using calibrated pressure gauges.

A copy of the gauge calibration certificate is attached.

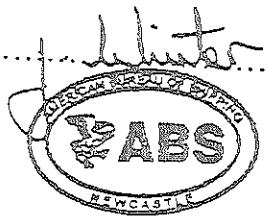
SIGNED.

PALPRO LTD



DATE 31-5-98

RINA / ABS



DATE 31-5-98

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TESTPACK REGISTER

Revision	1	06-10-99
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Petrobras - 36 - R67073

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RONCADOR FIELD DEVELOPMENT

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TEST PACK No.		SPEC. No.		P & ID No.		RATING		FSK No.		HYDRO TESTED		FLUSHED		REINSTATED		DATE OF COMPLETION		REMARKS	
BILGE AND BALLAST																			
12-001	AG(Aker)	5331-944-AMK-540.07	150	P-044	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	22-07-99		Satisfactory		
12-002	A8	5331-944-AMK-540.06	150	P-218	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	27-05-99		Satisfactory		
12-002	A8	5331-944-AMK-540.06	150	P-220	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	27-05-99		Satisfactory		
12-003	A5	5331-944-AMK-500	150	P-336	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	12-06-99		Satisfactory		
12-004	A5 AG(Aker)	5331-944-AMK-500	150	P-285	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99		Satisfactory		
12-004	A5 AG(Aker)	5331-944-AMK-500	150	P-321	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99		Satisfactory		
12-004	A5 AG(Aker)	5331-944-AMK-500	150	P-322	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99		XV-5331-003 manual operating handle. Satisfactory		
12-004	A5 AG(Aker)	5331-944-AMK-500	150	P-323	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99		Satisfactory		
12-004	A5 AG(Aker)	5331-944-AMK-500	150	P-327	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99		Satisfactory		
12-005	A5 AG(Aker)	5331-944-AMK-500	150	P-290	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	08-07-99		Satisfactory		
12-005	A5 AG(Aker)	5331-944-AMK-500	150	P-291	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	08-07-99		Satisfactory		
12-005	A5 AG(Aker)	5331-944-AMK-500	150	P-292	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	08-07-99		Satisfactory		
12-005	A5 AG(Aker)	5331-944-AMK-500	150	P-329	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	08-07-99		Satisfactory		
12-006	A5 AG(Aker)	5331-944-AMK-500	150	P-286	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	22-07-99		Satisfactory		
12-006	A5 AG(Aker)	5331-944-AMK-500	150	P-293	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	22-07-99		Satisfactory		
12-006	A5 AG(Aker)	5331-944-AMK-500	150	P-294	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	22-07-99		Line found with internal coating damaged. Satisfactory		

TEST PACK No.		SPEC No.		P & ID No.		RATING		FSK No.		HYDRO TESTED		FLUSHED		REINSTATED		DATE OF COMPLETION		REMARKS	
12-006	A5 AG(Aker)		5331-944-AMK-500	150	P-295	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	22-07-99	22-07-99	Satisfactory	
12-006	A5 AG(Aker)		5331-944-AMK-500	150	P-331	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	22-07-99	22-07-99	Satisfactory	
12-007	A5 AG(Aker)		5331-944-AMK-500	150	P-287	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	24-07-99	24-07-99	Satisfactory	
12-007	A5 AG(Aker)		5331-944-AMK-500	150	P-288	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	24-07-99	24-07-99	XV-5331-003 manual operating handle. Satisfactory	
12-007	A5 AG(Aker)		5331-944-AMK-500	150	P-289	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	24-07-99	24-07-99	Satisfactory	
12-007	A5 AG(Aker)		5331-944-AMK-500	150	P-325	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	24-07-99	24-07-99	Satisfactory	
12-008	A5		5331-944-AMK-500	150	P-822	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	09-08-99	09-08-99	Satisfactory - 1069 ITR pending	
12-008	A5		5331-944-AMK-500	150	P-823	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	09-08-99	09-08-99	Satisfactory - 1069 ITR pending	
12-009	A5		5331-944-AMK-500	150	P-820	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	22-07-99	22-07-99	Satisfactory - 1069 ITR pending	
12-009	A5		5331-944-AMK-500	150	P-821	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	22-07-99	22-07-99	Satisfactory - 1069 ITR pending	
12-010	A8		5331-944-AMK-540.06	150	P-680	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	27-07-99	27-07-99	Satisfactory	
12-010	A8		5331-944-AMK-540.06	150	P-682	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	27-07-99	27-07-99	Line found with internal coating damaged. Satisfactory	
12-011	A5		5331-944-AMK-500	150	P-742	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	23-07-99	23-07-99	Line found with internal coating damaged. Satisfactory	
12-011	A5		5331-944-AMK-500	150	P-743	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	23-07-99	23-07-99	Line found with internal coating damaged. Satisfactory	
12-011	A5		5331-944-AMK-500	150	P-833	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	23-07-99	23-07-99	Line found with internal coating damaged. Satisfactory	
12-012	A5		5331-944-AMK-500	150	P-740	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	23-07-99	23-07-99	Line found with internal coating damaged. Satisfactory	
12-012	A5		5331-944-AMK-500	150	P-741	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	23-07-99	23-07-99	Line found with internal coating damaged. Satisfactory	

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TEST PACK No.		SPEC No.		P & ID No.		RATING		FSK No.		HYDRO TESTED		FLUSHED		REINSTATED		DATE OF COMPLETION		REMARKS	
TANK VENT AND SOUNDING																			
19-001	A8 / B10	5412-944-AMK-551.04 5412-944-AMK-551.05	150	P-001	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	24-05-99	Satisfactory			
19-001	A8 / B10	5412-944-AMK-551.04 5412-944-AMK-551.05	150	P-002	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	24-05-99	Satisfactory			
19-001	A8 / B10	5412-944-AMK-551.04 5412-944-AMK-551.05	150	P-006	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	24-05-99	Satisfactory			
19-001	A8 / B10	5412-944-AMK-551.04 5412-944-AMK-551.05	150	P-010	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	24-05-99	Satisfactory			
19-002	AG(Aker)	5412-944-AMK-551.06	150	P-036	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	11-05-99	Satisfactory			
19-002	AG(Aker)	5412-944-AMK-551.06	150	P-037	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	11-05-99	Satisfactory			
19-003	AG(Aker)	5412-944-AMK-551.06	150	P-034	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	11-05-99	Satisfactory			
19-003	AG(Aker)	5412-944-AMK-551.06	150	P-035	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	11-05-99	Satisfactory			
19-004	AG(Aker)	5412-944-AMK-551.06	150	P-038	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	22-07-99	Satisfactory			
19-004	AG(Aker)	5412-944-AMK-551.06	150	P-039	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	22-07-99	Satisfactory			
19-005	AG(Aker)	5412-944-AMK-551.06	150	P-088	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	10-05-99	Satisfactory			
19-005	AG(Aker)	5412-944-AMK-551.06	150	P-089	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	10-05-99	Satisfactory			
19-006	AG(Aker)	5412-944-AMK-551.06	150	300-PJ-034	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	10-05-99	Satisfactory			
19-006	AG(Aker)	5412-944-AMK-551.06	150	300-PJ-031	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	13-08-99	Satisfactory			
19-006	AG(Aker)	5412-944-AMK-551.06	150	300-PJ-026	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	13-08-99	Satisfactory			
19-006	AG(Aker)	5412-944-AMK-551.06	150	300-PJ-033	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	13-08-99	Satisfactory			

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TEST PACK No.		SPEC No.		P & ID No.		RATING		FSK No.		HYDRO TESTED		FLUSHED		REINSTATED		DATE OF COMPLETION		REMARK	
19-007	AG(Aker)	5412-944-AMK-551.07	150	300-PJ-083	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	10-08-99	Satisfactory		
19-007	AG(Aker)	5412-944-AMK-551.07	150	300-PJ-081	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	10-08-99	Satisfactory		
19-007	AG(Aker)	5412-944-AMK-551.07	150	300-PJ-076	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	10-08-99	Satisfactory		
19-007	AG(Aker)	5412-944-AMK-551.07	150	300-PJ-087	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	10-08-99	Satisfactory		
19-008	AG(Aker)	5412-944-AMK-551.07	150	P-043	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	19-05-99	Satisfactory		
19-008	AG(Aker)	5412-944-AMK-551.07	150	P-085	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	19-05-99	Satisfactory		
19-008	AG(Aker)	5412-944-AMK-551.07	150	P-092	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	19-05-99	Satisfactory		
19-009	AG(Aker)	5412-944-AMK-551.07	150	P-083	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-05-99	Satisfactory		
19-010	A8	5120-944-AMK-517.01 5131-944-AMK-519.01	150	P-003	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	04-06-99	Satisfactory		
19-010	A8	5120-944-AMK-517.01 5131-944-AMK-519.01	150	P-005	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	04-06-99	Satisfactory		
19-011	AG(Aker)	5412-944-AMK-551.07	150	P-117	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-05-99	Satisfactory		
19-011	AG(Aker)	5412-944-AMK-551.07	150	P-118	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-05-99	Satisfactory		
19-012	AG(Aker)	5412-944-AMK-551.06	150	P-119	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	17-06-99	Satisfactory		
19-013	AG(Aker)	5412-944-AMK-551.06	150	P-243	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	20-05-99	Satisfactory		
19-014	A8	5412-944-AMK-551.02 5412-944-AMK-551.04 5133-944-AMK-523	150	P-422	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	07-06-99	Satisfactory		
19-014	A8	5412-944-AMK-551.02 5412-944-AMK-551.04 5133-944-AMK-523	150	P-421	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	07-06-99	Satisfactory		
19-015	AG(Aker)	5412-944-AMK-551.07	150	P-351	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-05-99	Satisfactory		

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TEST PACK No.	SPEC No.	P & ID No.	RATING	FSK No.	HYDRO TESTED	FLUSHED	REINSTATED	DATE OF COMPLETE N	REMARKS
19-016	AG(Aker)	5412-944-AMK-551.06	150	P-315	OK	OK	OK	28-05-99	Satisfactory
19-016	AG(Aker)	5412-944-AMK-551.06	150	P-317	OK	OK	OK	28-05-99	Satisfactory
19-017	AG(Aker)	5412-944-AMK-551.05	150	P-093	OK	OK	OK	14-06-99	Satisfactory
19-018	AG(Aker)	5412-944-AMK-551.04 5412-944-AMK-551.05	150	P-378	OK	OK	OK	31-05-99	Satisfactory
19-018	AG(Aker)	5412-944-AMK-551.04 5412-944-AMK-551.05	150	P-386	OK	OK	OK	31-05-99	Satisfactory
19-018	AG(Aker)	5412-944-AMK-551.04 5412-944-AMK-551.05	150	P-384	OK	OK	OK	31-05-99	Satisfactory
19-019	B10 AG(Aker)	5331-944-AMK-500	150	P-362	OK	OK	OK	05-07-99	Satisfactory
19-019	B10 AG(Aker)	5331-944-AMK-500	150	P-486	OK	OK	OK	05-07-99	Satisfactory
19-019	B10 AG(Aker)	5331-944-AMK-500	150	P-488	OK	OK	OK	05-07-99	Satisfactory
19-019	B10 AG(Aker)	5331-944-AMK-500	150	P-597	OK	OK	OK	05-07-99	Satisfactory
19-020	B10 AG(Aker)	5331-944-AMK-500	150	P-364	OK	OK	OK	05-07-99	Satisfactory
19-020	B10 AG(Aker)	5331-944-AMK-500	150	P-482	OK	OK	OK	05-07-99	Satisfactory
19-020	B10 AG(Aker)	5331-944-AMK-500	150	P-484	OK	OK	OK	05-07-99	Satisfactory
19-020	B10 AG(Aker)	5331-944-AMK-500	150	P-595	OK	OK	OK	05-07-99	Satisfactory
19-021	B10 AG(Aker)	5331-944-AMK-500	150	P-490	OK	OK	OK	08-07-99	Satisfactory
19-021	B10 AG(Aker)	5331-944-AMK-500	150	P-492	OK	OK	OK	08-07-99	Satisfactory
19-021	B10 AG(Aker)	5331-944-AMK-500	150	P-601	OK	OK	OK	08-07-99	Satisfactory

TEST PACK No.	SPEC No.	P & ID No.	RATING	FSK No.	HYDRO TESTED	FLUSHED	REINSTATED	DATE OF COMPLETION	REMARKS
19-022	B10 AG(Aker)	5331-944-AMK-500	150	P-494	OK	OK	OK	15-07-99	Satisfactory
19-022	B10 AG(Aker)	5331-944-AMK-500	150	P-496	OK	OK	OK	15-07-99	Satisfactory
19-022	B10 AG(Aker)	5331-944-AMK-500	150	P-599	OK	OK	OK	15-07-99	Satisfactory
19-023	AG(Aker)	5412-944-AMK-551.04	150	P-915	OK	OK	OK	19-08-99	Satisfactory
19-023	AG(Aker)	5412-944-AMK-551.04	150	P-916	OK	OK	OK	19-08-99	Satisfactory
19-023	AG(Aker)	5412-944-AMK-551.04	150	P-917	OK	OK	OK	19-08-99	Satisfactory
19-023	AG(Aker)	5412-944-AMK-551.04	150	P-918	OK	OK	OK	19-08-99	Satisfactory
19-023	AG(Aker)	5412-944-AMK-551.04	150	P-919	OK	OK	OK	19-08-99	Satisfactory
19-023	AG(Aker)	5412-944-AMK-551.04	150	P-920	OK	OK	OK	19-08-99	Satisfactory
19-024	AG(Aker)	5412-944-AMK-551.05	150	P-911	OK	OK	OK	03-08-99	Satisfactory
19-024	AG(Aker)	5412-944-AMK-551.05	150	P-912	OK	OK	OK	03-08-99	Satisfactory
19-024	AG(Aker)	5412-944-AMK-551.05	150	P-913	OK	OK	OK	03-08-99	Satisfactory
19-024	AG(Aker)	5412-944-AMK-551.05	150	P-914	OK	OK	OK	03-08-99	Satisfactory
19-025	B10	5331-944-AMK-500	150	P-827	OK	OK	OK	04-08-99	Satisfactory
19-026	B10	5331-944-AMK-500	150	P-826	OK	OK	OK	04-08-99	Satisfactory
19-027	B10	5331-944-AMK-500	150	P-825	OK	OK	OK	08-07-99	Satisfactory
19-028	B10	5331-944-AMK-500	150	P-824	OK	OK	OK	12-07-99	Satisfactory

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TEST PACK No.		SPEC No.	P & ID No.		RATING		FSK No.	HYDRO TESTED	FLUSHED	REINSTATED	DATE OF COMPLETION	REMARKS
OPEN DRAIN												
30-001	AA		5336-944-AMK-549.05	150	P-090		OK	OK	OK		26-05-99	Satisfactory
30-002	B10		5336-944-AMK-549.05	150	P-244		OK	OK	OK		07-06-99	Satisfactory
30-003	AA		5336-944-AMK-549.05	150	P-094		OK	OK	OK		26-05-99	Satisfactory
30-004	B10		5336-944-AMK-547.04 5336-944-AMK-547.05	150	P-427		OK	OK	OK		18-06-99	Satisfactory
30-004	B10		5336-944-AMK-547.04 5336-944-AMK-547.05	150	P-444		OK	OK	OK		18-06-99	Satisfactory
30-005	N/A		5336-944-AMK-393 Aft Deck Extension Atmospheric Sump Tank	150	V-533605		OK	N/A	OK		16-07-99	Satisfactory
30-006	B10		5113-944-AMK-339	150	SC-079		OK	OK	OK		27-05-99	Satisfactory
30-007	A8		5336-944-AMK-548.02	150	P-544		OK	OK	OK		16-06-99	Satisfactory
30-007	A8		5336-944-AMK-548.02	150	P-545		OK	OK	OK		16-06-99	Satisfactory
30-008	B10		5336-944-AMK-549.05	150	P-375		OK	OK	OK		06-08-99	Satisfactory
30-009												
30-010	B10		5336-944-AMK-547.02A	150	P-1159		OK	OK	OK		28-08-99	Satisfactory
30-011	B10		5336-944-AMK-548	150	P-1087		OK	OK	OK		20-08-99	Satisfactory
30-011	B10		5336-944-AMK-548	150	P-1088		OK	OK	OK		20-08-99	Satisfactory
30-011	B10		5336-944-AMK-548	150	P-1089		OK	OK	OK		20-08-99	Satisfactory
30-011	B10		5336-944-AMK-548	150	P-1204		OK	OK	OK		20-08-99	Satisfactory

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TEST PACK No.		SPEC No.		P & ID No.		RATING		FSK No.		HYDRO TESTED		FLUSHED		REINSTATED		DATE OF COMPLETION		REMARKS	
CLOSED DRAIN																			
31-001	B10		5336-944-AMK-398	150	P-216	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	11-08-99		Satisfactory	
31-001	B10		5336-944-AMK-398	150	P-815	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	11-08-99		Satisfactory	
31-001	B10		5336-944-AMK-398	150	P-1126														
31-002	B10		5336-944-AMK-398	150	P-214	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	11-08-99		Satisfactory	
31-002	B10		5336-944-AMK-398	150	P-816	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	11-08-99		Satisfactory	
31-002	B10		5336-944-AMK-398	150	P-1124														
31-003	B10		5336-944-AMK-398	150	P-815	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	11-08-99		Satisfactory	
31-003	B10		5336-944-AMK-398	150	P-816	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	11-08-99		Satisfactory	
31-003	B10		5336-944-AMK-398	150	P-214	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	11-08-99		Satisfactory	
31-003	B10		5336-944-AMK-398	150	P-284	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	11-08-99		Satisfactory	
31-003	B10		5336-944-AMK-398	150	P-298	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	11-08-99		Satisfactory	
31-003	B10		5336-944-AMK-398	150	P-1125														
31-003	B10		5336-944-AMK-398	150	P-1127														
31-004	B10		5250-944-AMK-532-01	150	P-004	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	03-06-99		Satisfactory	
31-005	B10		5336-944-AMK-390	110	P-695	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	20-08-99		Satisfactory	

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TEST PACK No.		SPEC No.	P & ID No.		RATING		FSK No.	HYDRO TESTED	FLUSHED	REINSTATED	DATE OF COMPLETION	REMARK
SEA WATER												
45-001	A6 AG(After)		5111-944-AMK-335.02	150	P-041	OK	OK	OK	OK	OK	19-07-99	Satisfactory
45-001	A6 AG(After)		5111-944-AMK-335.02	150	P-042	OK	OK	OK	OK	OK	19-07-99	Satisfactory
45-002	A6		5121-944-AMK-342 Axsla Serck Baker Cooling Medium Skid	150	713 A	OK	OK	OK	OK	OK	06-06-99	Satisfactory - ABS Surveyor acceptance test
45-003	A6		5000-944-AMK-452	150	P-302	OK	OK	OK	OK	OK	05-08-99	Satisfactory
45-004	A6		5111-944-AMK-339	150	P-311	OK	OK	OK	OK	OK	11-06-99	Satisfactory
45-005	A6		5111-944-AMK-335.01	150	P-024	OK	OK	OK	OK	OK	19-06-99	Satisfactory
45-006	A6		5111-944-AMK-335.02	150	P-649	OK	OK	OK	OK	OK	02-09-99	Satisfactory
45-007												
45-008	B10		5111-944-AMK-335.01 & 02 SW RING MAIN	220	SC-001	OK	OK	OK	OK	OK	19-08-99	Satisfactory
45-008	B10		5111-944-AMK-335.01 & 02 SW RING MAIN	220	SC-002	OK	OK	OK	OK	OK	19-08-99	Satisfactory
45-009	A6		1210-944-AMK-141	150	P-179	OK	OK	OK	OK	OK	07-09-99	Satisfactory
45-009	A6		5111-944-AMK-336.01	150	SW-1-1	OK	OK	OK	OK	OK	07-09-99	Satisfactory
45-010	C8		5111-944-AMK-336.02	300	P-1588							

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FRESH WATER																			
46-001	A4		5133-944-AMK-441	150	P-269	OK	OK	OK	OK	OK	OK	OK	OK	OK	27-07-99	Satisfactory			
46-001	A4		5133-944-AMK-441	150	P-271	OK	OK	OK	OK	OK	OK	OK	OK	OK	27-07-99	Satisfactory			
46-002	A4		1100-944-AMK-512.04	150	P-241	OK	OK	OK	OK	OK	OK	OK	OK	OK	17-06-99	Satisfactory			
46-003	A6		5124-944-AMK-348	150	P-425	OK	OK	OK	OK	OK	OK	OK	OK	OK	19-06-99	Satisfactory			
46-003	A6		5124-944-AMK-348	150	P-426	OK	OK	OK	OK	OK	OK	OK	OK	OK	19-06-99	Satisfactory			
46-004	A4		1100-944-AMK-512.03 5423-947-AMK-146.01	150	P-252	OK	OK	OK	OK	OK	OK	OK	OK	OK	01-07-99	Satisfactory			
46-004	A4		1100-944-AMK-512.03 5423-947-AMK-146.01	150	P-350	OK	OK	OK	OK	OK	OK	OK	OK	OK	04-08-99	Satisfactory			
46-005	A4		1100-944-AMK-512.03	150	P-232	OK	OK	OK	OK	OK	OK	OK	OK	OK	10-06-99	Satisfactory			
46-006	AG (Aker)		5124-944-AMK-347	150	P-546	OK	OK	OK	OK	OK	OK	OK	OK	OK	19-07-99	Satisfactory			
46-006	AG (Aker)		5124-944-AMK-347	150	P-347	OK	OK	OK	OK	OK	OK	OK	OK	OK	19-07-99	Satisfactory			
46-007	A8		5124-944-AMK-345	150		OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99	Satisfactory			
46-008	A8		5120-944-AMK-517.02	19 bar	P-1059	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99	Satisfactory			
46-008	A8		5120-944-AMK-517.02	19 bar	P-1060	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99	Satisfactory			
46-008	A8		5120-944-AMK-517.02	19 bar	P-1061	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99	Satisfactory			
46-008	A8		5120-944-AMK-517.02	19 bar	P-1062	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99	Satisfactory			
46-008	A8		5120-944-AMK-517.02	19 bar	P-1063	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99	Satisfactory			

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TEST PACK No.		SPEC No.		P & ID No.		RATING		FSK No.		HYDRO TESTED		FLUSHED		REINSTATED		DATE OF COMPLETION		REMARKS	
FIRE FIGHTING WATER																			
47-001	AG(Aker)	5423-947-AMK-146.01	150	P-021	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	14-06-99	Satisfactory			
47-002	A6	5423-947-AMK-146.01	150	P-147	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	29-07-99	Satisfactory			
47-003	A6	5423-947-AMK-146.02 Fire Station Line	150	P-471	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99	Satisfactory - ISO Dwg. Transferred to Tespacks 004	47-		
47-003	A6	5423-947-AMK-146.02 Fire Station Line	150	P-472	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99	Satisfactory			
47-003	A6	5423-947-AMK-146.02 Fire Station Line	150	P-473	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99	Satisfactory			
47-003	A6	5423-947-AMK-146.02 Fire Station Line	150	P-474	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99	Satisfactory			
47-003	A6	5423-947-AMK-146.02 Fire Station Line	150	P-475	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99	Satisfactory			
47-003	A6	5423-947-AMK-146.02 Fire Station Line	150	P-480	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99	Satisfactory			
47-003	A6	5423-947-AMK-146.02 Fire Station Line	150	P-497	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99	Satisfactory			
47-003	A6	5423-947-AMK-146.02 Fire Station Line	150	P-498	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99	Satisfactory			
47-003	A6	5423-947-AMK-146.02 Fire Station Line	150	P-499	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99	Satisfactory			
47-003	A6	5423-947-AMK-146.02 Fire Station Line	150	P-500	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	25-08-99	Satisfactory			

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TEST PACK No.	SPEC No.	P & ID No.	RATING			FSK No.	HYDRO TESTED	FLUSHED	REINSTATED	DATE OF COMPLETION	REMARKS
			150	P-447	OK						
47-003	A6	5423-947-AMK-146.02 Deluge System C	150	P-447	OK	OK	OK	OK	OK	02-09-99	Satisfactory
47-004	A6	5423-947-AMK-146.02	150	P-471	OK	OK	OK	OK	OK	25-08-99	Satisfactory
47-005	A6	5420-944-AMK-554.02	150	P-353	OK	OK	OK	OK	OK	29-06-99	Satisfactory
47-006	A6	5423-947-AMK-146.02	150	P-433	OK	OK	OK	OK	OK	26-06-99	Satisfactory
47-006	A6	5423-947-AMK-146.02	150	P-434	OK	OK	OK	OK	OK	26-06-99	Satisfactory
47-007	A6	5423-947-AMK-146.01	150	P-346	OK	OK	OK	OK	OK	04-08-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-559	OK	OK	OK	OK	OK	01-09-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-560	OK	OK	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-561	OK	OK	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-562	OK	OK	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-563	OK	OK	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-564	OK	OK	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-565	OK	OK	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-566	OK	OK	OK	OK	OK	01-10-99	Satisfactory

TEST PACK No.	SPEC No.	P & ID No.	RATING			FSK No.			HYDRO TESTED	FLUSHED	REINSTATED	DATE OF COMPLETION	REMARKS
			150	P-567	OK	OK	OK	OK					
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-567	OK	OK	OK	OK	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-568	OK	OK	OK	OK	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-569	OK	OK	OK	OK	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-570	OK	OK	OK	OK	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-571	OK	OK	OK	OK	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-572	OK	OK	OK	OK	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-573	OK	OK	OK	OK	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-574	OK	OK	OK	OK	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-575	OK	OK	OK	OK	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-576	OK	OK	OK	OK	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-577	OK	OK	OK	OK	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-578	OK	OK	OK	OK	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-612	OK	OK	OK	OK	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-691	OK	OK	OK	OK	OK	OK	OK	01-10-99	Satisfactory

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TEST PACK No.	SPEC. No.	P & ID No.	RATING	FSK No.	HYDRO TESTED	FLUSHED	REINSTATED	DATE OF COMPLETION	REMARKS
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-644	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-645	OK	OK	OK	01-10-99	Satisfactory
47-008	A6	5423-947-AMK-141.01 Fwd Lifeboat Deluge System	150	P-646	OK	OK	OK	01-10-99	Satisfactory
47-009	A6	5423-947-AMK-146.01 5423-947-AMK-146.02 Fire Station Line	150	P-501	OK	OK	OK	25-08-99	Satisfactory
47-009	A6	5423-947-AMK-146.01 5423-947-AMK-146.02 Fire Station Line	150	P-502	OK	OK	OK	25-08-99	Satisfactory
47-009	A6	5423-947-AMK-146.01 5423-947-AMK-146.02 Fire Station Line	150	P-584	OK	OK	OK	25-08-99	Satisfactory
47-010	AG(Aker)	5423-947-AMK-146.01	150	P-678	OK	OK	OK	04-08-99	Satisfactory
47-011	AG(Aker)	5423-947-AMK-142 Fire Pump C	150	P-128	OK	OK	OK	03-09-99	Satisfactory
47-012	A6	5423-947-AMK-142 Fire Pump A	150	P-121	OK	OK	OK	28-08-99	Satisfactory
47-012	A6	5423-947-AMK-142 Fire Pump A	150	P-122	OK	OK	OK	28-08-99	Satisfactory
47-013	A6	5423-947-AMK-146.01 Fire Station Line	150	P-687	OK	OK	OK	25-08-99	Satisfactory
47-013	A6	5423-947-AMK-146.01	150	P-1027	OK	OK	OK	03-09-99	Satisfactory
47-014	AG(Aker)	5423-947-AMK-142 Fire Pump B	150	P-124	OK	OK	OK	28-08-99	Satisfactory
47-015	A6	5423-947-AMK- 140.01/140.02/146.01 Fire Station Line	150	P-382	OK	OK	OK	28-08-99	Satisfactory
47-015	A6	5423-947-AMK- 140.01/140.02/146.01 Fire Station Line	150	P-387	OK	OK	OK	28-08-99	Satisfactory

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TEST PACK No.	SPEC No.	P & ID No.	RATING			FSK No.	HYDRO TESTED	FLUSHED	REINSTATED	DATE OF COMPLETION	REMARKS
47-016	AG(Aker)	5423-947-AMK-142 Fire Pump E	150			P-126	OK	OK	OK	28-08-99	Satisfactory
47-017		5423-947-AMK-146.01				P-894	OK	OK	OK	13-09-99	Satisfactory
47-017		5423-947-AMK-146.01				P-895	OK	OK	OK	13-09-99	Satisfactory
47-017		5423-947-AMK-146.01				P-896	OK	OK	OK	13-09-99	Satisfactory
47-017		5423-947-AMK-146.01				P-897	OK	OK	OK	13-09-99	Satisfactory
47-018	A6	Fire Main Port/Fwd 5423-947-AMK-146.01	18 bar TP			P-505	OK	OK	OK	07-09-99	Satisfactory
47-018	A6	Fire Main Spider Deck 5423-947-AMK-146.01	18 bar TP			P-922	OK	OK	OK	07-09-99	Satisfactory
47-019	A6	5423-947-AMK-146.01	18 bar TP			P-389	OK	OK	OK	18-11-99	Satisfactory - The line has been tested by ABS & RINA
47-019	A6	5423-947-AMK-146.01	18 bar TP			P-390	OK	OK	OK	18-11-99	Satisfactory - The line has been tested by ABS & RINA
47-020	A6	5423-947-AMK-146.01	150			P-654					
47-020	A6	5423-947-AMK-146.01	150			P-698					
47-021	A6	Stbd Riser Deluge Spray System 5423-947-AMK-146.02.0	18 bar TP			FW-1A	OK	OK			Spray head to be installed
47-021	A6	Stbd Riser Deluge Spray System 5423-947-AMK-146.02.0	18 bar TP			FW-1-2B	OK	OK			Spray head to be installed
47-021	A6	Stbd Riser Deluge Spray System 5423-947-AMK-146.02.0	18 bar TP			FW-1-3B	OK	OK			Spray head to be installed
47-021	A6	Stbd Riser Deluge Spray System 5423-947-AMK-146.02.0	18 bar TP			FW-1-5B	OK	OK			Spray head to be installed
47-021	A6	Stbd Riser Deluge Spray System 5423-947-AMK-146.02.0	18 bar TP			FW-1-6B	OK	OK			Spray head to be installed

TEST PACK No.	SPEC. No.	P & ID No.	RATING		FSK No.	HYDRO TESTED	FLUSHED	REINSTATED	DATE OF COMPLETION	REMARKS
47-022	A6	Aft Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-2-1	OK	OK				Spray head to be installed
47-022	A6	Aft Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-2-1A	OK	OK				Spray head to be installed
47-022	A6	Aft Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-2-2	OK	OK				Spray head to be installed
47-022	A6	Aft Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-2-2A	OK	OK				Spray head to be installed
47-022	A6	Aft Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-2-2B	OK	OK				Spray head to be installed
47-022	A6	Aft Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-3-3	OK	OK				Spray head to be installed
47-022	A6	Aft Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-3-3A	OK	OK				Spray head to be installed
47-022	A6	Aft Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-3-3B	OK	OK				Spray head to be installed
47-022	A6	Aft Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-2-4	OK	OK				Spray head to be installed
47-022	A6	Aft Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-2-4A	OK	OK				Spray head to be installed
47-022	A6	Aft Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-2-4B	OK	OK				Spray head to be installed
47-022	A6	Aft Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-2-4C	OK	OK				Spray head to be installed
47-023	A6	Port Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-3-1	OK	OK				Spray head to be installed
47-023	A6	Port Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-3-1A	OK	OK				Spray head to be installed

TEST PACK No.	SPEC No.	P & ID No.	RATING	FSK No.	HYDRO TESTED	FLUSHED	REINSTATED	DATE OF COMPLETION	REMARKS
47-023	A6	Port Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-3-2	OK	OK			Spray head to be installed
47-023	A6	Port Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-3-2A	OK	OK			Spray head to be installed
47-023	A6	Port Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-3-3	OK	OK			Spray head to be installed
47-023	A6	Port Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-3-3A	OK	OK			Spray head to be installed
47-023	A6	Port Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-3-3B	OK	OK			Spray head to be installed
47-023	A6	Port Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-3-4	OK	OK			Spray head to be installed
47-023	A6	Port Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-3-4A	OK	OK			Spray head to be installed
47-023	A6	Port Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-3-4B	OK	OK			Spray head to be installed
47-024	A6	Port Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-4-1	OK	OK			Spray head to be installed
47-024	A6	Port Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-4-1A	OK	OK			Spray head to be installed
47-024	A6	Port Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-4-2A	OK	OK			Spray head to be installed
47-024	A6	Port Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-4-2B	OK	OK			Spray head to be installed
47-024	A6	Port Riser Deluge Spray System 5423-947-AMK-146.01&02	18 bar TP	FW-4-2	OK	OK			Spray head to be installed
47-025	A6	5133-944-AMK-441	150	P-334	OK	OK	OK	02-09-99	Satisfactory - SP-09-08 to be installed. Fix International Shore Connection

JOSE CARLOS RIBEIRO GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIS

TEST PACK No.		SPEC No.		P & ID No.		RATING		FSK No.		HYDRO TESTED		FLUSHED		REINSTATED		DATE OF COMPLETION		REMARKS	
INSTRUMENT AIR																			
50-001	B3	5134-944-AMK-484.01	150	P-025	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	29-06-99	Satisfactory			
50-001	B3	5134-944-AMK-484.01	150	P-026	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	29-06-99	Satisfactory			
50-001	B3	5134-944-AMK-484.01	150	P-141	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	01-10-99	Satisfactory			
50-001	B3	5134-944-AMK-484.01	150	P-155	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	29-06-99	Satisfactory			
50-001	B3	5134-944-AMK-484.01	150	P-156	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	29-06-99	Satisfactory			
50-001	B3	5134-944-AMK-484.01	150	P-198	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	29-06-99	Satisfactory			
50-001	B3	5134-944-AMK-484.01	150	P-012	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	29-06-99	Satisfactory			
50-002	B3	5134-944-AMK-528.03 5134-944-AMK-528.04	150	P-203	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	29-06-99	Satisfactory			
50-002	B3	5134-944-AMK-528.03 5134-944-AMK-528.04	150	P-204	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	29-06-99	Satisfactory			
50-002	B3	5134-944-AMK-528.03 5134-944-AMK-528.04	150	P-205	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	29-06-99	Satisfactory			
50-002	B3	5134-944-AMK-528.03 5134-944-AMK-528.04	150	P-206	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	29-06-99	Satisfactory			
50-003	B3	5134-944-AMK-528.03 5134-944-AMK-528.04	150	P-208	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	23-06-99	Satisfactory			
50-003	B3	5134-944-AMK-528.03 5134-944-AMK-528.04	150	P-209	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	23-06-99	Satisfactory			
50-004	B3	5134-944-AMK-528.04	150	P-437	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	23-06-99	Satisfactory			
50-004	B3	5134-944-AMK-528.04	150	P-438	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	23-06-99	Satisfactory			
50-005	B3	5134-944-AMK-484.01	150	P-394	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	23-06-99	Satisfactory			

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TEST PACK No.	SPEC No.	P & ID No.	RATING			FSK No.	HYDRO TESTED	FLUSHED	REINSTATED	DATE OF COMPLETION	REMARKS
50-005	B3	5134-944-AMK-484.01	150	P-393	OK	OK	OK	OK	OK	25-08-99	Satisfactory
50-005	B3	5134-944-AMK-484.01	150	P-395	OK	OK	OK	OK	OK	25-08-99	Satisfactory
50-006		Cancelled									
50-007	B3	5134-944-AMK-484.01	150	P-1108	OK	OK	OK	OK	OK	20-07-99	Satisfactory
50-008	B3	1210-944-AMK-141	150	P-307	OK	OK	OK	OK	OK	13-09-99	Satisfactory - Connected to testpack 50-010
50-008	B3	1210-944-AMK-141	150	P-307	OK	OK	OK	OK	OK	13-09-99	Satisfactory
50-009	B3	Distribution to process equipment 5134-944-AMK-484-02 B31-8000 GEN-01 ADF.01	150	P-1273							
50-009	B3	Distribution to process equipment 5134-944-AMK-484-02 B31-8000 GEN-01 ADF.01	150	P-1274							
50-009	B3	Distribution to process equipment 5134-944-AMK-484-02 B31-8000 GEN-01 ADF.01	150	P-1275							
50-009	B3	Distribution to process equipment 5134-944-AMK-484-02 B31-8000 GEN-01 ADF.01	150	P-1280							
50-009	B3	Distribution to process equipment 5134-944-AMK-484-02 B31-8000 GEN-01 ADF.01	150	P-1285							
50-009	B3	Distribution to process equipment 5134-944-AMK-484-02 B31-8000 GEN-01 ADF.01	150	P-1286							
50-009	B3	Distribution to process equipment 5134-944-AMK-484-02 B31-8000 GEN-01 ADF.01	150	P-1287							

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DIESEL OIL												REMARKS
TEST PACK No.	SPEC No.	P & ID No.	RATING	FSK No.	HYDRO TESTED	FLUSHED	REINSTATED	DATE OF COMPLETION				
55-001	AA	5133-944-AMK-523 5133-944-AMK-524	150	D-027	OK	OK	OK	01-06-99	Satisfactory			
55-002	B10	5133-944-AMK-475	150	P-194	OK	OK	OK	20-07-99	Satisfactory			
55-002	B10	5133-944-AMK-475	150	SC-006	OK	OK	OK	20-07-99	Satisfactory			
55-003	B10	5133-944-AMK-441	150	P-267	OK	OK	OK	31-07-99	Satisfactory - Install SP 09-05			
55-003	B10	5133-944-AMK-441	150	P-270	OK	OK	OK	05-08-99	Satisfactory			
55-004	B10	5133-944-AMK-525.03	150	P-300	OK	OK	OK	21-06-99	Satisfactory			
55-005	B10	5133-944-AMK-523 5133-944-AMK-524	150	P-361	OK	OK	OK	29-06-99	Satisfactory			
55-006	B10	5133-944-AMK-475	150	SC-005	OK	OK	OK	26-06-99	Satisfactory			
55-007	B10	5133-944-AMK-525.01	150	P-959	OK	OK	OK	17-06-99	Satisfactory			
55-008	B10	5133-944-AMK-525.01	150	P-1024	OK	OK	OK	17-06-99	Satisfactory			
55-008	B10	5133-944-AMK-525.01	150	P-1025	OK	OK	OK	17-06-99	Satisfactory			
55-009	B10	5133-944-AMK 525.01	150	P-1461	OK	OK	OK	28-08-99	Satisfactory			

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TEST PACK No.		SPEC No.		P & ID No.		RATING		FSK No.		HYDRO TESTED		FLUSHED		REINSTATED		DATE OF COMPLETION		REMARKS	
WATER INJECTION																			
77-001	B10	1251-944-AMK-353	150	P-189	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	18-08-99	Satisfactory - Install micro-biological sampler (type B5SA)			
77-002	B10	1251-944-AMK-353	150	P-190	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	04-08-99	Satisfactory - Install micro-biological sampler (type B5SA)			
77-003	AG(After)	1251-944-AMK-351	150	P-262	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	01-10-99	Satisfactory			
77-004	AG(After)	1251-944-AMK-359	150	P-263	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	01-10-99	Satisfactory			
77-005	AG(After)	1251-944-AMK-367	150	P-951															
77-005	AG(After)	1251-944-AMK-367	150	P-952															
77-005	AG(After)	1251-944-AMK-367	150	P-953															

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[illegible]

1. ☐ *Very good*
 2. ☐ *Good*
 3. ☐ *Fair*
 4. ☐ *Poor*
 5. ☐ *Very poor*
 6. ☐ *Not applicable*
 7. ☐ *Other*
 8. ☐ *Don't know*
 9. ☐ *Refuse to answer*
 10. ☐ *Other*
 11. ☐ *Don't know*
 12. ☐ *Refuse to answer*
 13. ☐ *Other*
 14. ☐ *Don't know*
 15. ☐ *Refuse to answer*
 16. ☐ *Other*
 17. ☐ *Don't know*
 18. ☐ *Refuse to answer*
 19. ☐ *Other*
 20. ☐ *Don't know*
 21. ☐ *Refuse to answer*
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 25. ☐ *Other*
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 84. ☐ *Refuse to answer*
 85. ☐ *Other*
 86. ☐ *Don't know*
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 88. ☐ *Other*
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 90. ☐ *Refuse to answer*
 91. ☐ *Other*
 92. ☐ *Don't know*
 93. ☐ *Refuse to answer*
 94. ☐ *Other*
 95. ☐ *Don't know*
 96. ☐ *Refuse to answer*
 97. ☐ *Other*
 98. ☐ *Don't know*
 99. ☐ *Refuse to answer*
 100. ☐ *Other*

CONFIDENTIAL
SECRET
CONFIDENTIAL

SUR 222(REV 4/94)



Certificate of Inspection and Tests

This is to certify that

specimens of Fire Hoses - Brigadier, Ribbelite, Highlander 500 series,
Commando 500 series and Marine 500 series,

manufactured by Richards Hose Limited,
Unit 7,
Roman Way Centre,
Longridge Road,
Ribblesdale, Preston,
Lancs, UK. PR2 5BB

and described in the attached schedule have been examined and tested. The Secretary of State is satisfied that the specimens examined and tested are acceptable for the purpose of complying with the requirements of:-

1. The Merchant Shipping (Fire Protection) Regulations 1984.
2. The Merchant Shipping (Fire Appliances) Regulations 1980.
3. The Merchant Shipping (Fire Appliances) (Ships Built Before 25th May 1980) Regulations 1985.
4. International Convention for the Safety of Life at Sea consolidated text of the 1974 SOLAS Convention, the 1978 SOLAS Protocol and SOLAS amendments to date.

provided that the conditions attached to the schedule are fulfilled and the items remain satisfactory in service.

Signed

K. J. E. Ross

Issued by the Marine Safety Agency this 25th day of October 1994

Note This Certificate does not apply to equipment which has been varied or modified from the specimen tested. The manufacturer must submit modified equipment for consideration by the Department, if they wish to obtain for it a valid Certificate of Inspections and Tests.

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An executive agency of
**THE DEPARTMENT
OF TRANSPORT**

Safe Ships Clean Seas



Certificate of inspection and Tests

The Schedule

1. Fire Hose Descriptions

Ribblelite

1 $\frac{3}{4}$ " and 2 $\frac{1}{2}$ " hoses having average short length bursting pressures of 48 bar and 35 bar respectively. The jacket is polyester warp and weft, whilst the lining is smooth rubber with an option of a polyurethane coating.

Highlander 500 Series

1 $\frac{3}{4}$ ", 2", and 2 $\frac{1}{2}$ " hoses having average short length bursting pressures of 44.8 bar, 41.4 bar and 34.5 bar respectively. The jacket is polyester warp and weft, whilst the lining is extruded rubber tube with a polyurethane coating.

Commando 500 Series

1 $\frac{3}{4}$ ", 2", and 2 $\frac{1}{2}$ " hoses having average short length bursting pressures of 44.8 bar, 41.4 bar and 34.5 bar respectively. The jacket is polyester warp and weft, whilst the lining is extruded polyurethane tube with a polyurethane coating.

Marine 500 Series

1 $\frac{3}{4}$ ", 2", and 2 $\frac{1}{2}$ " hoses having average short length bursting pressures of 44.8 bar, 41.4 bar and 34.5 bar respectively. The jacket is polyester warp and weft, whilst the lining is extruded rubber tube.

Brigadier

1 $\frac{3}{4}$ ", 2", and 2 $\frac{1}{2}$ " hoses having average short length bursting pressures of 44.8 bar, 41.4 bar and 34.5 bar respectively. The jacket is polyester warp and weft, whilst the lining and outer covering are extruded rubber tube.

2. Tests

Manufactured and tested to BS 6391:1983 with test pressures as per above.

3. Conditions

The fire hoses should be effectively connected to the end couplings.

Signed

K. Y. E. Ross
K. Y. E. Ross

Issued by the Marine Safety Agency this 25th day of October 1994

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An executive agency of
THE REGIMENT
TOTAL P.03

FROM 01-OCT-1999 16:04



**BUREAU
VERITAS**

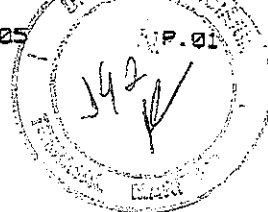
The British Committee

Page 1 of 3

Certificate No: 5771.8646.AO.O.MSA

File No: AC157001/1

Published in NC253



CERTIFICATE OF TYPE APPROVAL

THIS IS TO CERTIFY THAT:

The British Committee of BUREAU VERITAS, specified as a "person" under the terms of the Merchant Shipping (Delegation of Equipment Approval) Regulation 1996, did undertake the relevant Type approval procedures of the equipment identified below which was found to be in compliance with the essential Safety requirements subject to any conditions in the schedule hereto.

PRODUCER: AMEREX FIRE INTERNATIONAL Ltd.

ADDRESS: UNIT 54, Springvale Industrial Estate, CWMBRAN, GWENT NP 44 5BB, the United Kingdom.

EQUIPMENT DESCRIPTION: Portable fire extinguishers

TYPE:

Model 240, 9.5 litre water stored pressure stainless steel type.

SPECIFIED REGULATIONS & STANDARDS

The International Convention for the Safety at Sea 1974 (SOLAS 74), as amended, Reg.II.2/6.

The Merchant Shipping (Fire Protection) Regulations 1984.

Survey of Fire Protection arrangements in Merchant Ships, Instructions for the guidance of Surveyors, Section 7.1.

The attached schedule of 2 page(s) forms part of this Certificate.

This Certificate remains valid until the date stated on, hereunder, unless cancelled or revoked, provided the conditions in the attached schedule are complied with and the equipment remains satisfactory in service.

This Certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested.

The manufacturer should notify the British Committee of BUREAU VERITAS of any modification or changes to the equipment in order to obtain a valid Certificate.

The latest published Regulations and/or Standards referred to, above, and the Marine Division General Conditions stated overleaf are applicable.

The Approval is valid until: 30/09/2001

At Paris la Défense, on: 30/09/96



J. SENOR
FOR THE BRITISH COMMITTEE OF BUREAU VERITAS

MSA
MARINE SAFETY AGENCY

JOSÉ CARLOS PINHEIRO GUSMÃO
DIRECTOR
DIVISÃO DE SERVIÇOS CARTORÁRIOS

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This Certificate is issued under the authority given in Merchant Shipping Notice No. M 1845

The British Committee of Bureau Veritas: Capital House, 42 Weston Street, LONDON, SE1 3QL Tel: (44) 171 403 6256 Fax: (44) 171 403 1590
Bureau Veritas: 1/bis Place des reflets - La Défense 2 - 92400 Courbevoie - Tel 33 (1) 42 91 92 91 - Fax 33 (1) 42 91 28 04



**BUREAU
VERITAS**



Page 3

Certificate No: 5771.8645.AO.O.MSA

8. MARKING FOR IDENTIFICATION

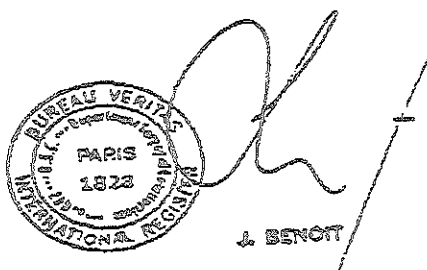
Each extinguisher shall be marked with the following :

- (a) the Manufacturer's name and address
- (b) the type of fires for which the extinguisher is suitable
- (c) the type and quantity of extinguishing medium
- (d) MSA (UK) Approval N° 5771/8645/AO/O-MSA
- (e) instructions for use and recharge
- (f) year of manufacture
- (g) temperature range on which the extinguisher will operate satisfactorily
- (h) test pressure.

9. This Approval is given on the understanding that the Society reserves the right to require check tests to be carried out at any time and that AMEREX FIRE INTERNATIONAL Ltd, U.K., will accept full responsibility for informing Shipowners of proper methods of use, storing and maintenance of the extinguishers and the conditions of this Approval.

End of document

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OCT 1999



Certificate No: 5771.6646.AO.O.MSA
File No : ACU/5700/001/001

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

The Model 240 is a 9.5 litre water stored pressure type stainless steel portable rechargeable fire extinguisher.
Propellant : air
Filling density : no limitation
Duration of discharge : 45 seconds at a minimum.

2. DESIGN DRAWINGS and/or SPECIFICATIONS

- Extinguisher assembly, as per AMEREX Corp. drawing N° 09428, dated 4/06/90.
- Extinguisher head, as per AMEREX Corp. drawing N° 00127, rev.S, dated 12/21/89.

3. TYPE TEST REPORTS/LABORATORY RECOGNITION STATUS

The AMEREX portable fire extinguisher model 240 has been type assessed by the BSI as per BS 5750, Part 2 : 1987, according to BSI "Kitemark" N° KM 09594, dated 1/11/90, and as per BS 5423 : 1987, according to BSI "Kitemark" N° KM 28225, dated 19.02.98.

4. MATERIALS and/or COMPONENTS REQUIRED TO BE TYPE APPROVED

None

5. RESTRICTION(S) OF USE

- 5.1. As per requirements of Regulations stated on page 1 of this Certificate and IMO Resolution A802(15)
- 5.2. More specifically intended for fighting Wood, Paper, Textile and similar class A Fires (as defined by ISO Standard 3941)

6. PRODUCTION SURVEY REQUIREMENTS

- 6.1. As long as the BSI Kitemark licence granted to AMEREX FIRE INTERNATIONAL LTD will remain valid, the production survey carried out by a Society's Surveyor will consist in product audits to be performed at regular intervals not exceeding one year.
- 6.2. Every portable fire extinguisher shall be pressure tested at 1.35 Ps (where Ps is the working pressure).

7. ON BOARD INSTALLATIONS REQUIREMENTS

As per requirements of Regulations stated on page 1 of this Certificate and IMO Resolution A802(15). The charges of the portable fire extinguishers shall, in general, be checked for condition annually and the maintenance shall be carried out at intervals not exceeding four (4) years by a Servicing Station which is authorized for that purpose by AMEREX FIRE INTERNATIONAL Ltd and which is recognized by the Society.

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JOSÉ CARLOS FERNANDES
DIRETOR
DIVISÃO DE SERVIÇOS TÉCNICOS

FROM 16:05 99014186947162 01-OCT-1999

CERTIFICAT

SYSTÈME D'EXTINCTION ☒ CO2
SYSTÈME D'ALARME FEU ☐
AUTRES _____

Le dispositif de sécurité

Protégeant _____

Situé à _____

a été vérifié en vertu des normes reconnues et acceptées pour de telles vérifications.

Le dispositif de sécurité était en bonne condition de fonctionnement lorsque l'inspection a été complétée en _____

Inspection semi-annuelle en _____

Ce dispositif de sécurité doit être inspecté à nouveau en _____

L'inspection fut faite par _____

signature du technicien de S.E.N.

Ce certificat doit être affiché
près du système et peut être
sujet à certaines recommandations
énumérées au rapport de vérification

D'INSPECTION

Certificat # _____

Approuvé
ULC-C-1058-18

Modèle _____

Protégeant _____ (Système de Colonnes)

Situé à _____ (Rue de la Liberté)

SERVICE D'EXTINCTEURS NEUFCHÂTEL INC.

269, Boul. Bastien

Loretteville (Québec) G2B 1B1

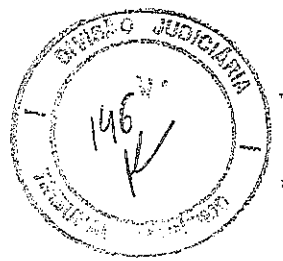
Téléphone: (418) 842-2942 • Fax: (418) 842-3413

É COPIA FIEL DO DOCUMENTO ORIGINAL

S.E.N. inc.

Entrepreneur spécialisé
en protection incendie

269, boul. Bastien, Loretteville (Québec) G2B 1B1
Téléphone : (418) 842-2942 • Télécopieur : (418) 842-3413



RAPPORT D'INSPECTION SYSTÈME

☐ HALON ☒ CO2

Nom : Spirit of Columbus
Adresse : Port de Québec
Québec (QC)
Personne ressource : Monsieur Dupont
Nom de la salle : Turbine # 1
Modèle du cylindre : Kidde
Nombre de cylindre : 4

QUANTITÉ	ITEMS VÉRIFIÉS	CONDITIONS
4	Vérification de la ligne de distribution et des gicleurs	x
	Vérifier que les gicleurs soient bien orientés	x
	Vérification des valves directionnelles et de leur mécanisme d'opération	n/a
2	Vérification de toutes les stations de déclenchement manuel	x mécanique
	Vérification de la sirène pneumatique et de la ligne de tuyau	n/a
2	Vérification de l'activation de la tête de décharge mécanique	x
	Vérification des contacts de pression (arrêt de ventilation)	n/a
	Vérification du délai pneumatique	n/a sec.
	Température de la pièce où se trouve le cylindre	72 F
	Pression du cylindre	900 P.S.I.
4	S'assurer que le cylindre soit bien fixé	x
	Vérification de l'étanchéité des portes	x
	S'assurer qu'il n'y a aucune ouverture apparente dans les murs, plafonds et planchers	x
	Réinstallation des têtes de décharge sur les cylindres	x

REMARQUES :

- (3) pressure operated switch pour la fermeture des volets : OK
- Tous les cylindres ont subi un test hydrostatique
- # série + poids des cylindres :
- 018553AA (207 lbs)
- 018542AA (216 lbs)
- 018588AA (214 lbs)
- 018575AA (217 lbs)
- Poids vide 132 lbs au lieu de ce qui est indiqué sur les cylindres soit 141 lbs



REGISTRE D'ALLIANCE NAVALE

3 F. 1000000

[Signature]

SIGNATURE TECHNICIEN :

[Signature]

DATE :

8 juillet 1999

COPIA FIEL DO DOCUMENTO ORIGINAL

QUÉBEC

QUÉBEC

QUÉBEC

CERTIFICAT

SYSTÈME D'EXTINCTION
SYSTÈME D'ALARME FEU

☒ CO₂
☐

AUTRES

Le dispositif de sécurité

Protégeant

Situé à

a été vérifié en vertu des normes reconnues et acceptées pour de telles vérifications.

Le dispositif de sécurité était en bonne condition de fonctionnement lorsque l'inspection a été complétée

en

Inspection semi-annuelle en

Ce dispositif de sécurité doit être inspecté à nouveau en

L'inspection fut faite par

signature du technicien de S.E.N.

Ce certificat doit être affiché
près du système et peut être
sujet à certaines recommandations
énumérées au rapport de vérification

D'INSPECTION

Certificat #

Modèle

Approuvé
ULC-C-1058-18

SERVICE D'EXTINCTEURS NEUFCHÂTEL INC.
269, Boul. Bastien
Loretteville (Québec) G2B 1B1
Téléphone: (418) 842-2942 • Fax: (418) 842-3413

S.E.N. inc.Entrepreneur spécialisé
en protection incendie269, boul. Bastien, Loretteville (Québec) G2B 1B1
Téléphone : (418) 842-2942 • Télécopieur : (418) 842-3413**RAPPORT D'INSPECTION SYSTÈME**☐ HALON ☒ CO2

Nom : Spirit of Columbus Nom de la salle : Turbine # 2
Adresse : Port de Québec Modèle du cylindre : Kidde
Québec (OC) Nombre de cylindre : 4
Personne ressource : Monsieur Dupont

QUANTITÉ	ITEMS VÉRIFIÉS	CONDITIONS
	Vérification de la ligne de distribution et des gicleurs	x
4	Vérifier que les gicleurs soient bien orientés	x
	Vérification des valves directionnelles et de leur mécanisme d'opération	n/a
2	Vérification de toutes les stations de déclenchement manuel	x mécanique
	Vérification de la sirène pneumatique et de la ligne de tuyau	n/a
2	Vérification de l'activation de la tête de décharge mécanique	x
	Vérification des contacts de pression (arrêt de ventilation)	n/a
	Vérification du délai pneumatique	n/a sec.
	Température de la pièce où se trouve le cylindre	72 F
	Pression du cylindre	900 P.S.I.
4	S'assurer que le cylindre soit bien fixé	x
	Vérification de l'étanchéité des portes	x
	S'assurer qu'il n'y a aucune ouverture apparente dans les murs, plafonds et planchers	x
	Réinstallation des têtes de décharge sur les cylindres	x

REMARQUES :

- (3) pressure operated switch pour la fermeture des volets : OK

- Tous les cylindres ont subi un test hydrostatique

- # série + poids des cylindres :

- 018574AA (218 lbs)

- 018572AA (217 lbs)

- 018530AA (218 lbs)

- 018569AA (218 lbs)

REGISTRO ITALIAZIONALE
R. Formenti

SIGNATURE TECHNICIEN :

DATE : 8 juillet 1993

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTA
CHIEF OF DEPT.

CERTIFICAT

SYSTÈME D'EXTINCTION
SYSTÈME D'ALARME FEU

☒ CO₂
☐

AUTRES _____

Approuvé
ULC-G-1058-18

Certificat # _____

Modèle _____

Kidde

Le dispositif de sécurité

Protégeant _____

Salle Machines #3 (Spirit of Columbus)

Situé à _____

Industries Dore, Port de Québec

a été vérifié en vertu des normes reconnues et acceptées pour de telles vérifications.

Le dispositif de sécurité était en bonne condition de fonctionnement lorsque l'inspection a été complétée

en _____

juillet 99

Inspection semi-annuelle en _____

oct

Ce dispositif de sécurité doit être inspecté à nouveau en _____

juillet 2000

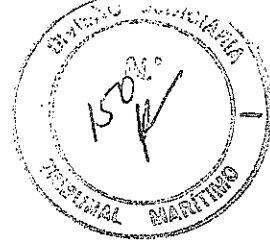
L'inspection fut faite par _____

Jean-Pierre Gauthier

signature du technicien de S.E.N.

Ce certificat doit être affiché
près du système et peut être
sujet à certaines recommandations
énumérées au rapport de vérification

SERVICE D'EXTINCTEURS NEUFCHÂTEL INC.
269, Boul. Bastien
Loretteville (Québec) G2B 1B1
Téléphone: (418) 842-2942 • Fax: (418) 842-3413

S.E.N. inc.Entrepreneur spécialisé
en protection incendie269, boul. Bastien, Loretteville (Québec) G2B 1B1
Téléphone : (418) 842-2942 • Télécopieur : (418) 842-3413**RAPPORT D'INSPECTION SYSTÈME**☐ HALON ☒ CO2

Nom : Spirit of Columbus Nom de la salle : Turbine # 3
Adresse : Port de Québec Modèle du cylindre : Kidde
Québec (QC) Nombre de cylindre : 4
Personne ressource : Monsieur Dupont

QUANTITÉ	ITEMS VÉRIFIÉS	CONDITIONS
	Vérification de la ligne de distribution et des gicleurs	x
4	Vérifier que les gicleurs soient bien orientés	x
	Vérification des valves directionnelles et de leur mécanisme d'opération	n/a
2	Vérification de toutes les stations de déclenchement manuel	x mécanique
	Vérification de la sirène pneumatique et de la ligne de tuyau	n/a
2	Vérification de l'activation de la tête de décharge mécanique	x
	Vérification des contacts de pression (arrêt de ventilation)	n/a
	Vérification du délai pneumatique	n/a sec.
	Température de la pièce où se trouve le cylindre	72 F
	Pression du cylindre	900 P.S.I.
4	S'assurer que le cylindre soit bien fixé	x
	Vérification de l'étanchéité des portes	x
	S'assurer qu'il n'y a aucune ouverture apparente dans les murs, plafonds et planchers	x
	Réinstallation des têtes de décharge sur les cylindres	x

REMARQUES :

- (3) pressure operated switch pour la fermeture des volets : OK

- (1) gicleur manquant à installer

- - Tous les cylindres ont subi un test hydrostatique

- # série + poids des cylindres :

- 018585AA (219 lbs)

- 018573AA (218 lbs)

- 018586AA (214 lbs)

- 018499AA (215 lbs)

REGISTRO ITALIANO N. 111111
R. FormentiSIGNATURE TECHNICIEN : *Leon J. Gauthier*

DATE : 8 juillet 1999

COPIA FIEL DO DOCUMENTO ORIGINAL

CERTIFICAT

SYSTÈME D'EXTINCTION ☒ CO₂
SYSTÈME D'ALARME FEU ☐
AUTRES _____

Approuvé
ULC-C-1058-18

D'INSPECTION

Certificat # _____

Modèle ULC-C-1058-18

Le dispositif de sécurité

Protégéant Cuisine (spirit of Columbus)

Situé à Industries Davie, Port de Québec

a été vérifié en vertu des normes reconnues et acceptées pour de telles vérifications.

Le dispositif de sécurité était en bonne condition de fonctionnement lorsque l'inspection a été complétée en juillet 99 Inspection semi-annuelle en juillet 99

Ce dispositif de sécurité doit être inspecté à nouveau en juillet 2000

L'inspection fut faite par Lucien Gauthier signature du technicien de S.E.N.

Ce certificat doit être affiché
près du système et peut être
sujet à certaines recommandations
énumérées au rapport de vérification

SERVICE D'EXTINCTEURS NEUFCHÂTEL INC.
269, Boul. Bastien
Loretteville (Québec) G2B 1B1
Téléphone: (418) 842-2942 • Fax: (418) 842-3413

PLANIS EN PROTECTION INCENDIE

VIPOND

CERTIFICATE D'INSPECTION

PROTECTION INCENDIE VIPOND
2022, La Visserie, suite 202, Ste-Foy (Québec) G1M 4L6

LA PRESENTE ATTESTATION CERTIFIE QUE LES
EXTINCTEURS PORTABLES, EXTINCTEURS CO2,
EXTINCTEURS A MOUSSE SUR CHARIOT, EXTINCTEURS PORTABLES A
POUDRE SUR CHARIOT, EXTINCTEURS PORTABLES A
MOUSSE, BOMBONNES RESPIRATOIRES, CYLINDRE
D'AZOTE, EXTINCTEURS PORTABLES A CARTOUCHE

INSTALLER SUR

PETROBRASS 36

a été vérifié et inspecté par un technicien qualifié.

Date de l'inspection:
5 octobre 1999

Bon de travail :
22-7524

Représentant:
M. Pierre Tremblay

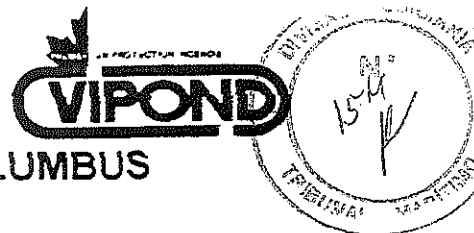
CONFORME A N.F.P.A. 10

153 ✓

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PROTECTION INCENDIE VIPOND INC

REGISTRE DES EXTINCTEURS SPIRIT OF COLUMBUS



LEGENDE DES PIECES

B= BOYAU

C=CADRAN

K=COURROIE DE RETENUE

P=PEINTURE

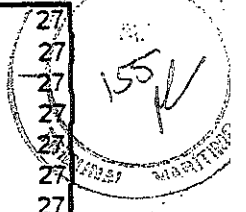
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1	5	O.K.	O.K.	B	27
2	11	O.K.	O.K.	B	27
3	12	O.K.	O.K.	B	27
4	17	O.K.	O.K.	B, K, P	27
5	23	O.K.	O.K.	B, P	27
6	25	O.K.	O.K.	B, P	27
7	40	O.K.	O.K.	B	27
8	42	O.K.	O.K.	B	27
9	45	O.K.	O.K.	B, K, P	27
10	55	O.K.	O.K.	B, C	27
11	62	O.K.	O.K.	B, K, P	27
12	64	O.K.	O.K.	B	27
13	68	O.K.	O.K.	B	27
14	70	O.K.	O.K.	B, K, P	27
15	71	O.K.	O.K.	B	27
16	72	O.K.	O.K.	B	27
17	90	O.K.	O.K.	B, K, P	27
18	106	O.K.	O.K.	B	27
19	110	O.K.	O.K.	B, K, P	27
20	120	O.K.	O.K.	B, K, P	27
21	128	O.K.	O.K.	B	27
22	133	O.K.	O.K.	B	27
23	136	O.K.	O.K.	B	27
24	142	O.K.	O.K.	B	27
25	145	O.K.	O.K.	B, K, P	27
26	151	O.K.	O.K.	B	27
27	154	O.K.	O.K.	B	27
28	156	O.K.	O.K.	B	27
29	168	O.K.	O.K.	B, K, P	27
30	173	O.K.	O.K.	B, K, P	27
31	180	O.K.	O.K.	B, K, P	27
32	181	O.K.	O.K.	B	27
33	183	O.K.	O.K.	B	27
34	185	O.K.	O.K.	B, C	27
35	192	O.K.	O.K.	B, K, P	27
36	196	O.K.	O.K.	B	27
37	204	O.K.	O.K.	B	27
38	209	O.K.	O.K.	B	27
39	213	O.K.	O.K.	B	27
40	224	O.K.	O.K.	B, K, P	27
41	226	O.K.	O.K.	B, C	27
42	228	O.K.	O.K.	B	27
43	238	O.K.	O.K.	B	27
44	240	O.K.	O.K.	B	27
45	241	O.K.	O.K.	B, K, P	27
46	244	O.K.	O.K.	B	27
47	248	O.K.	O.K.	B	27
48	260	O.K.	O.K.	B	27
49	263	O.K.	O.K.	B, C, P	27
50	265	O.K.	O.K.	B	27

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RECEBUE
15/11/87
15/11/87

himig
BC Kg
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51	267	O.K.	O.K.	B	27
52	269	O.K.	O.K.	B	27
53	272	O.K.	O.K.	B	27
54	291	O.K.	O.K.	B	27
55	303	O.K.	O.K.	B, C	27
56	307	O.K.	O.K.	B	27
57	309	O.K.	O.K.	B	27
58	311	O.K.	O.K.	B	27
59	315	O.K.	O.K.	B	27
60	318	O.K.	O.K.	B, K, P	27
61	327	O.K.	O.K.	B, K, C, P	27
62	330	O.K.	O.K.	B	27
63	335	O.K.	O.K.	B	27
64	336	O.K.	O.K.	B	27
65	338	O.K.	O.K.	B, K, P	27
66	343	O.K.	O.K.	B, K, C, P	27
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68	345	O.K.	O.K.	B	27
69	350	O.K.	O.K.	B, C, K, P	27
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71	357	O.K.	O.K.	B	27
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75	375	O.K.	O.K.	B	27
76	378	O.K.	O.K.	B	27
77	379	O.K.	O.K.	B	27
78	381	O.K.	O.K.	B, K, C, P	27
79	382	O.K.	O.K.	B, K, P	27
80	383	O.K.	O.K.	B, K, P	27
81	394	O.K.	O.K.	B	27
82	395	O.K.	O.K.	B	27
83	396	O.K.	O.K.	B	27
84	400	O.K.	O.K.	B	27
85	403	O.K.	O.K.	B, K, P	27
86	404	O.K.	O.K.	B, C, P	27
87	408	O.K.	O.K.	B	27
88	514	O.K.	O.K.	B, K, P	27
89	5008	O.K.	O.K.	B	27
90	5009	O.K.	O.K.	B	27
91	5014	O.K.	O.K.	B, C	27
92	5032	O.K.	O.K.	B	27
93	5033	O.K.	O.K.	B	27
94	5035	O.K.	O.K.	B	27
95	5049	O.K.	O.K.	B	27
96	5062	O.K.	O.K.	B	27
97	5073	O.K.	O.K.	B, C	27
98	5110	O.K.	O.K.	B	27
99	5204	O.K.	O.K.	B	27
100	5219	O.K.	O.K.	B, C	27
101	5238	O.K.	O.K.	B	27
102	5244	O.K.	O.K.	B	27
103	5314	O.K.	O.K.	B, C	27
104	5410	O.K.	O.K.	B, C	27
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107					
108					
109					
110					



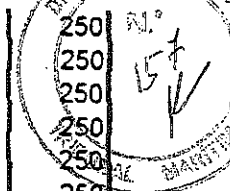
E COPIA FIEL DO DOCUMENTO ORIGINAL

REGISTRO ITALIANO
[Signature]
[Stamp]

	# SERIE	RECHARGE	TEST HYDRO	PIECES	Bar
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2	93212005	O.K.	O.K.		250
3	93212007	O.K.	O.K.		250
4	93212016	O.K.	O.K.		250
5	93212018	O.K.	O.K.		250
6	93212020	O.K.	O.K.		250
7	93212021	O.K.	O.K.		250
8	93212022	O.K.	O.K.		250
9	93212024	O.K.	O.K.		250
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53	93212110	O.K.	O.K.		250
54	93212111	O.K.	O.K.		250

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55	93212118	O.K.	O.K.	250
56	93212120	O.K.	O.K.	250
57	93212122	O.K.	O.K.	250
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62	93212134	O.K.	O.K.	250
63	93212138	O.K.	O.K.	250
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73	93212160	O.K.	O.K.	250
74	93212161	O.K.	O.K.	250
75	93212163	O.K.	O.K.	250
76	93212164	O.K.	O.K.	250
77	93212168	O.K.	O.K.	250
78	93212169	O.K.	O.K.	250
79	93212170	O.K.	O.K.	250
80	93212174	O.K.	O.K.	250
81	93212175	O.K.	O.K.	250
82	93212179	O.K.	O.K.	250
83	93212180	O.K.	O.K.	250
84	93212182	O.K.	O.K.	250
85	93212183	O.K.	O.K.	250
86	93212188	O.K.	O.K.	250
87	93212189	O.K.	O.K.	250
88	93212190	O.K.	O.K.	250
89	93212191	O.K.	O.K.	250
90	93212192	O.K.	O.K.	250
91	93212193	O.K.	O.K.	250
92	93212194	O.K.	O.K.	250
93	93212195	O.K.	O.K.	250
94	93212196	O.K.	O.K.	250
95	93212198	O.K.	O.K.	250
96	93212198	O.K.	O.K.	250
97	93212199	O.K.	O.K.	250
98	93212200	O.K.	O.K.	250
99	93213026	O.K.	O.K.	250
100	93213136	O.K.	O.K.	250
101	93213154	O.K.	O.K.	250
102	93302066	O.K.	O.K.	250
103	94053148	O.K.	O.K.	250
104	94144002	O.K.	O.K.	250
105	94149006	O.K.	O.K.	250
106	94149007	O.K.	O.K.	250
107	94149010	O.K.	O.K.	250
108	94149017	O.K.	O.K.	250
109	94149021	O.K.	O.K.	250
110	94149026	O.K.	O.K.	250
111	94149029	O.K.	O.K.	250



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JOSÉ CARLOS
DIVISÃO DE SER

112	94149052	O.K.	O.K.	250
113	94153021	O.K.	O.K.	250
114	94153031	O.K.	O.K.	250
115	94153032	O.K.	O.K.	250
116	94153033	O.K.	O.K.	250
117	94153034	O.K.	O.K.	250
118	94153041	O.K.	O.K.	250
119	94153042	O.K.	O.K.	250
120	94153043	O.K.	O.K.	250
121	94153049	O.K.	O.K.	250
122	94153051	O.K.	O.K.	250
123	94153053	O.K.	O.K.	250
124	94153058	O.K.	O.K.	250
125	94153060	O.K.	O.K.	250
126	94153107	O.K.	O.K.	250
127	94153110	O.K.	O.K.	250
128	94153111	O.K.	O.K.	250
129	94153112	O.K.	O.K.	250
130	94153114	O.K.	O.K.	250
131	94153120	O.K.	O.K.	250
132	94153121	O.K.	O.K.	250
133	94153124	O.K.	O.K.	250
134	94153126	O.K.	O.K.	250
135	94153128	O.K.	O.K.	250
136	94153131	O.K.	O.K.	250
137	94153132	O.K.	O.K.	250
138	94153135	O.K.	O.K.	250
139	94153137	O.K.	O.K.	250
140	94153138	O.K.	O.K.	250
141	94153139	O.K.	O.K.	250
142	94153142	O.K.	O.K.	250
143	94153142	O.K.	O.K.	250
144	94153143	O.K.	O.K.	250
145	94153149	O.K.	O.K.	250
146	94153151	O.K.	O.K.	250
147	94153161	O.K.	O.K.	250
148	94153165	O.K.	O.K.	250
149	94153167	O.K.	O.K.	250
150	94153171	O.K.	O.K.	250
151	94153172	O.K.	O.K.	250
152	94153178	O.K.	O.K.	250
153	94153179	O.K.	O.K.	250
154	94153180	O.K.	O.K.	250
155	94153184	O.K.	O.K.	250
156	94153185	O.K.	O.K.	250
157	94153186	O.K.	O.K.	250
158	94153191	O.K.	O.K.	250
159	94153193	O.K.	O.K.	250
160	94153194	O.K.	O.K.	250
161	94153197	O.K.	O.K.	250
162	94154106	O.K.	O.K.	250
163	94212015	O.K.	O.K.	250
164	94320132	O.K.	O.K.	250
165	94330104	O.K.	O.K.	250
166	94330111	O.K.	O.K.	250
167	94330120	O.K.	O.K.	250
168	94330123	O.K.	O.K.	250

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2500
2500
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169	94330127	O.K.	O.K.	250
170	94330128	O.K.	O.K.	250
171	94330131	O.K.	O.K.	250
172	94330133	O.K.	O.K.	250
173	94330135	O.K.	O.K.	250
174	94330152	O.K.	O.K.	250
175	94330155	O.K.	O.K.	250
176	94330159	O.K.	O.K.	250
177	94330164	O.K.	O.K.	250
178	94330165	O.K.	O.K.	250
179	94330167	O.K.	O.K.	250
180	94330171	O.K.	O.K.	250
181	94330174	O.K.	O.K.	250
182	94330176	O.K.	O.K.	250
183	94330179	O.K.	O.K.	250
184	94330182	O.K.	O.K.	250
185	94330190	O.K.	O.K.	250
186	94330196	O.K.	O.K.	250
187	94330197	O.K.	O.K.	250
188	94330200	O.K.	O.K.	250
189	94330310	O.K.	O.K.	250
190	95212131	O.K.	O.K.	250



REGISTRO ITALIANO NAVALE

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É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PUENTE GUSMÃO
DENTISTA
UNIDADE DE SERVIÇOS ODONTOLÓGICOS

	# SERIE	RECHARGE	TEST HYDRO	PIECES	Bar
1	10185	O.K.	O.K.		27
2	10407	O.K.	O.K.		27
3	10587	O.K.	O.K.		27
4	10613	ECHEC	ECHEC		27
5	10653	O.K.	O.K.		27
6	10685	O.K.	O.K.		27
7	10692	O.K.	O.K.		27
8	10800	O.K.	O.K.		27
9	10812	O.K.	O.K.		27
10	10814	O.K.	O.K.		27
11	10819	O.K.	O.K.		27
12	10882	O.K.	O.K.		27
13	10976	O.K.	O.K.		27
14	11129	O.K.	O.K.		27
15	11189	O.K.	O.K.		27
16	11379	O.K.	O.K.		27
17	11428	O.K.	O.K.		27
18	11442	O.K.	O.K.		27
19	11461	O.K.	O.K.		27
20	11471	O.K.	O.K.		27
21	11475	O.K.	O.K.		27
22	11476	O.K.	O.K.		27
23	11495	O.K.	O.K.		27
24	11496	O.K.	O.K.		27
25	11500	O.K.	O.K.		27
26	11508	O.K.	O.K.		27
27	11512	O.K.	O.K.		27
28	11540	O.K.	O.K.		27
29	11638	O.K.	O.K.		27
30	18353	O.K.	O.K.		27
31	?	O.K.	O.K.		27
32	?	O.K.	O.K.		27
33					



	# SERIE	RECHARGE	TEST HYDRO	PIECES	Bar
1	001	O.K.	O.K.		32
2	002	O.K.	O.K.		32
3	011	O.K.	O.K.		32
4	030	O.K.	O.K.		32
5	032	O.K.	O.K.		32
6	034	O.K.	O.K.		32
7	035	O.K.	O.K.		32
8	039	O.K.	O.K.		32
9	041	O.K.	O.K.		32
10	047	O.K.	O.K.		32
11	050	O.K.	O.K.		32
12	051	O.K.	O.K.		32
13	060	O.K.	O.K.		32
14	061	O.K.	O.K.		32
15	062	O.K.	O.K.		32
16	065	O.K.	O.K.		32
17	066	O.K.	O.K.		32
18	067	O.K.	O.K.		32
19					

COPIA FIEL DO DOCUMENTO ORIGINAL

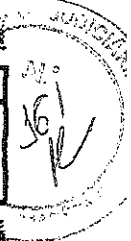
JOSE CARLOS FERNANDES
DESE
DIVISAO DE SERVICO

REGISTRO ITALIANO



		TESTER A 32 bar	
	# SERIE	RECHARGE	TEST HYDRO
1	171	O.K.	O.K.
1	117	O.K.	O.K.
3			

PIECES	Bar
P	32
P, B	32



		TESTER A 32 bar	
	# SERIE	RECHARGE	TEST HYDRO
1	005	O.K.	O.K.
2	006	O.K.	O.K.
3	007	O.K.	O.K.
4	008	O.K.	O.K.
5	010	O.K.	O.K.
6	018	O.K.	O.K.
7	046	O.K.	O.K.
8	049	O.K.	O.K.
9	071	O.K.	O.K.
10	008	O.K.	O.K.

PIECES	Bar
	32
	32
	32
	32
	32
	32
	32
	32
	32
	32



REGISTO ITALIANO NAVALE

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JOSÉ CARLOS ROBERTO OLIVEIRA
 DIRETOR
 CENTRO DE SERVIÇOS CANTINEIS

	# SERIE	RECHARGE	TEST HYDRO	PIECES
1	BS12	O.K. 1999		Cartouche Co2 / O.K.
2	BS12	O.K. 1999		Cartouche Co2 / O.K.
3	BS12	O.K. 1999		Cartouche Co2 / O.K.
4	BS12	O.K. 1999		Cartouche Co2 / O.K.
5	BS12	O.K. 1999		Cartouche Co2 / O.K.
6	BS12	O.K. 1999		Cartouche Co2 / O.K.
7	BS12	O.K. 1999		Cartouche Co2 / O.K.
8	BS12	O.K. 1999		Cartouche Co2 / O.K.
9	BS12	O.K. 1999		Cartouche Co2 / O.K.
10	BS12	O.K. 1999		Cartouche Co2 / O.K.
11	BS12	O.K. 1999		Cartouche Co2 / O.K.
12	BS12	O.K. 1999		Cartouche Co2 / O.K.
13	BS12	O.K. 1999		Cartouche Co2 / O.K.
14	BS12	O.K. 1999		Cartouche Co2 / O.K.
15	BS12	O.K. 1999		Cartouche Co2 / O.K.
16	BS12	O.K. 1999		Cartouche Co2 / O.K.
17	BS12	O.K. 1999		Cartouche Co2 / O.K.
18	BS12	O.K. 1999		Cartouche Co2 / O.K.
19	BS12	O.K. 1999		Cartouche Co2 / O.K.
20	BS12	O.K. 1999		Cartouche Co2 / O.K.
21	BS12	O.K. 1999		Cartouche Co2 / O.K.
22	BS12	O.K. 1999		Cartouche Co2 / O.K.
23	BS12	O.K. 1999		Cartouche Co2 / O.K.
24	BS12	O.K. 1999		Cartouche Co2 / O.K.
25	BS12	O.K. 1999		Cartouche Co2 / O.K.
26	BS12	O.K. 1999		Cartouche Co2 / O.K.
27	BS12	O.K. 1999		Cartouche Co2 / O.K.
28	BS12	O.K. 1999		Cartouche Co2 / O.K.
29	BS12	O.K. 1999		Cartouche Co2 / O.K.
30	BS12	O.K. 1999		Cartouche Co2 / O.K.
31	BS12	O.K. 1999		Cartouche Co2 / O.K.
32	BS12	O.K. 1999		Cartouche Co2 / O.K.
33	BS12	O.K. 1999		Cartouche Co2 / O.K.
34	BS12	O.K. 1999		Cartouche Co2 / O.K.
35	BS12	O.K. 1999		Cartouche Co2 / O.K.
36	BS12	O.K. 1999		Cartouche Co2 / O.K.
37	BS12	O.K. 1999		Cartouche Co2 / O.K.
38	BS12	O.K. 1999		Cartouche Co2 / O.K.
39	BS12	O.K. 1999		Cartouche Co2 / O.K.
40	BS12	O.K. 1999		Cartouche Co2 / O.K.
41	BS12	O.K. 1999		Cartouche Co2 / O.K.
42	BS12	O.K. 1999		Cartouche Co2 / O.K.
43	BS12	O.K. 1999		Cartouche Co2 / O.K.
44	BS12	O.K. 1999		Cartouche Co2 / O.K.
45	BS12	O.K. 1999		Cartouche Co2 / O.K.
46	BS12	O.K. 1999		Cartouche Co2 / O.K.
47	BS12	O.K. 1999		Cartouche Co2 / O.K.
48	BS12	O.K. 1999		Cartouche Co2 / O.K.
49	BS12	O.K. 1999		Cartouche Co2 / O.K.
50	BS12	O.K. 1999		Cartouche Co2 / O.K.
51	BS12	O.K. 1999		Cartouche Co2 / O.K.
52	BS12	O.K. 1999		Cartouche Co2 / O.K.
53	BS12	O.K. 1999		Cartouche Co2 / O.K.
54	BS12	O.K. 1999		Cartouche Co2 / O.K.

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS FARIAS DE OLIVEIRA
Diretor
Divisão de Serviços Cartográficos

55	BS12	O.K. 1999	Cartouche Co2 / O.K.
56	BS12	O.K. 1999	Cartouche Co2 / O.K.
57	BS12	O.K. 1999	Cartouche Co2 / O.K.
58	BS12	O.K. 1999	Cartouche Co2 / O.K.
59	BS12	O.K. 1999	Cartouche Co2 / O.K.
60	BS12	O.K. 1999	Cartouche Co2 / O.K.
61	BS12	O.K. 1999	Cartouche Co2 / O.K.
62	BS12	O.K. 1999	Cartouche Co2 / O.K.
63	BS12	O.K. 1999	Cartouche Co2 / O.K.
64	BS12	O.K. 1999	Cartouche Co2 / O.K.
65	BS12	O.K. 1999	Cartouche Co2 / O.K.
66	BS12	O.K. 1999	Cartouche Co2 / O.K.
67	BS12	O.K. 1999	Cartouche Co2 / O.K.
68			
69			
70			
71			
72			
73			
74			
75			

Fitted new on board



REGISTRO ITALIANO NAVALE

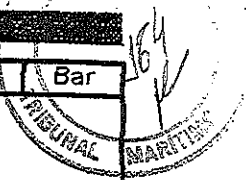
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JOSE CARLOS PEREZ GARCIA
DIRECTOR GENERAL DE VIGILANCIA

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	# SERIE	RECHARGE	TEST HYDRO	PIECES	Bar
1	228162	O.K.	O.K.	Fitted new on board -	
2	228163	O.K.	O.K.		
3	228164	O.K.	O.K.		
4	228165	O.K.	O.K.		
5	228166	O.K.	O.K.		
6	228167	O.K.	O.K.		
7	228168	O.K.	O.K.		
8	228169	O.K.	O.K.		
9	228170	O.K.	O.K.		
10	228171	O.K.	O.K.		
11	228172	O.K.	O.K.		
12	228173	O.K.	O.K.		
13	228174	O.K.	O.K.		
14					
15					



	# SERIE	RECHARGE	TEST HYDRO	PIECES	Bar
1	G-44665	NIL	O.K.		250
2	G-44664	NIL	O.K.		250
3	G-44667	NIL	O.K.		250
4					
5					

A NOTER QUE LE SYSTEME D'EXTINCTION A POUDRE CHIMIQUE DE L'HELIDECK NE PEUT PAS ETE CERTIFIE, PAR CE QUE HORS FONCTION DU A L'ABSENCE DES BONBONNES D'AZOTES.

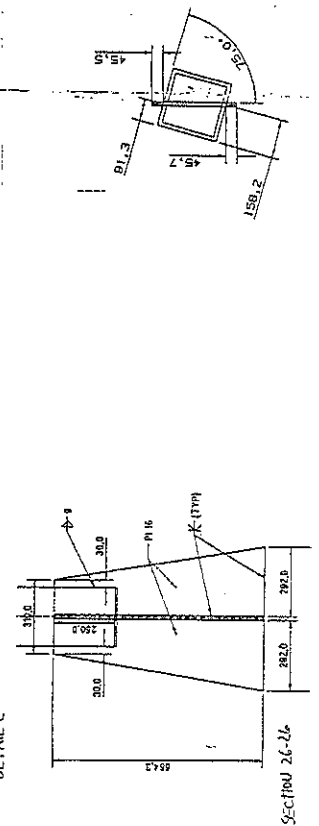
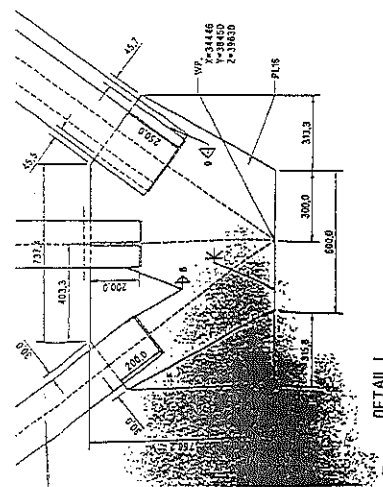
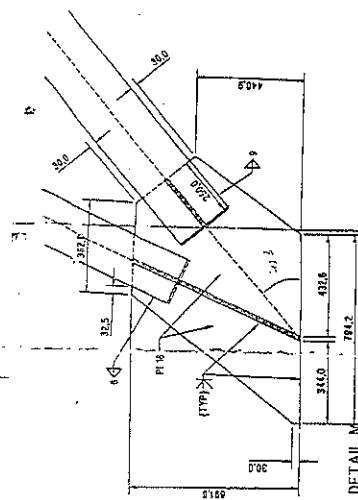
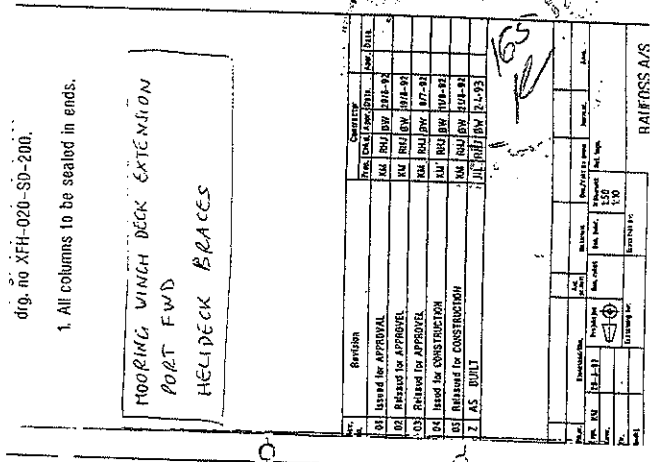
PAR CONTRE LA POUDRE DU CYLINDRE DU SYSTEME FIX A ETE REMPLACER.

	# SERIE	RECHARGE	TEST HYDRO	PIECES	Bar
1	92330008	O.K.	O.K.		300
2	92330074	O.K.	O.K.		300
3	92330025	O.K.	O.K.		300
4	92330066	O.K.	O.K.		300
5	92330076	O.K.	O.K.		300
6	92330043	O.K.	O.K.		300
7	94114010	NIL	NIL	Sand Blast	300
8	94114032	O.K.	O.K.	Sand Blast	300
9	94114021	O.K.	O.K.	Sand Blast	300
10	94114013	O.K.	O.K.	Sand Blast	300
11	92330067	O.K.	O.K.		300
12	92330082	O.K.	O.K.	Sand Blast	300
13	92330086	O.K.	O.K.		300
14	92330096	O.K.	O.K.		300
15	92330057	O.K.	O.K.		300
16	92330070	O.K.	O.K.		300
17	92330093	O.K.	O.K.		300
18	92330094	O.K.	O.K.		300
19	92330036	O.K.	O.K.		300
20	92330098	O.K.	O.K.		300
21	92330061	O.K.	O.K.		300
22	92330080	O.K.	O.K.		300
23	92330102	O.K.	O.K.		300
24	94114106	O.K.	O.K.	Sand Blast	300
25					



REGISTRO ITALIANO NAVALE

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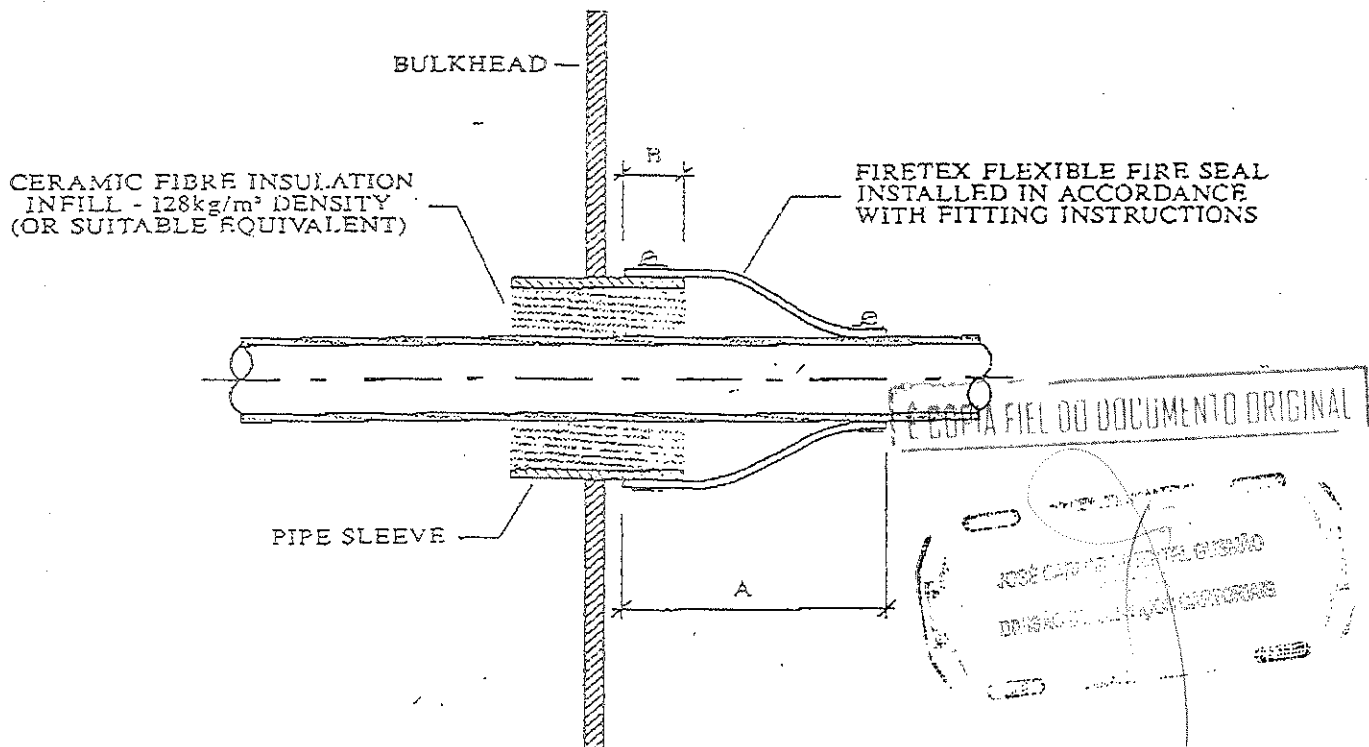


XFH-020-SD-204
AS BUILT 2/4/93
WDITP #1210064-3
FSK-D5H102 SH:1

COPIA FIEL DO DOCUMENTO ORIGINAL

FIRETEX PIPE PENETRATION SEAL

EXTERNAL AND INTERNAL PROTECTION FOR A0 AND H0 FIRE AND BLAST RATED BULKHEADS



PIPE DIAMETER

Up to 100mm	(4" NB)
125mm to 250mm	(5" NB to 10" NB)
300mm and above	(12" NB and above)

STANDARD SEAL LENGTH 'A'

150mm
200mm
250mm

SLEEVE DIAMETER

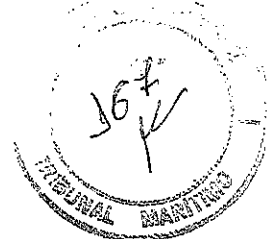
Up to 300mm	(12" NB)
350mm and above	(14" and above)

STANDARD CLIPPING LENGTH 'B'

25mm
45mm

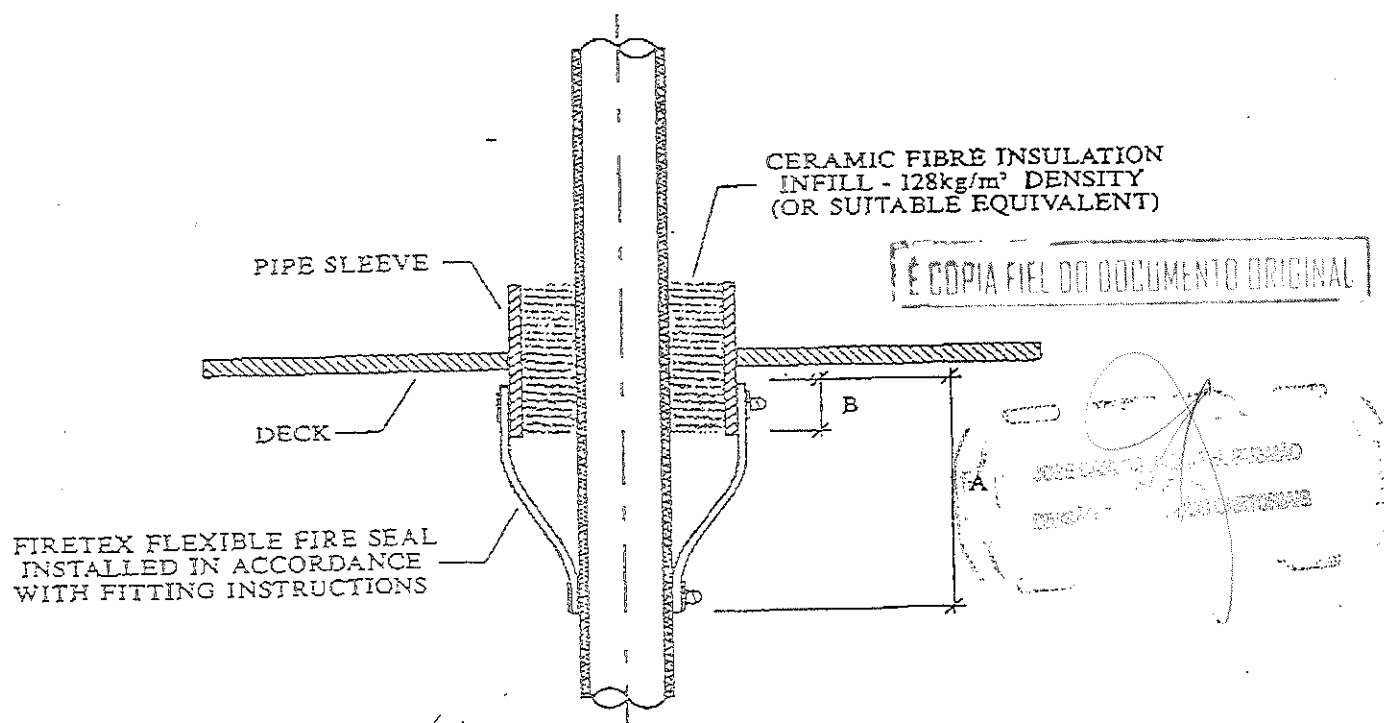
The standard Firetex seal provides for movement of up to 25mm in any direction. For design movements in excess of 25mm, contact our technical department for advice.

Each seal is supplied complete with fitting instructions, adhesive and stainless steel worm drive clips to suit pipe and sleeve diameters. For sleeve diameters of 350mm and above, double clipping is required. (Note: The manufacturers may supply a number of clips to be used in tandem for very large diameters.)



FIRETEX PIPE PENETRATION SEAL

EXTERNAL AND INTERNAL PROTECTION FOR A0 AND H0 FIRE AND BLAST RATED DECKS



PIPE DIAMETER

Up to 100mm	(4" NB)
125mm to 250mm	(5" NB to 10" NB)
300mm and above	(12" NB and above)

STANDARD SEAL LENGTH 'A'

150mm
200mm
250mm

SLEEVE DIAMETER

Up to 300mm	(12" NB)
350mm and above	(14" and above)

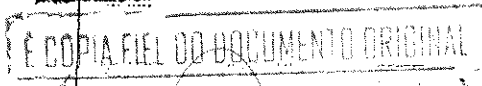
STANDARD CLIPPING LENGTH 'B'

25mm
45mm

The standard Firetex seal provides for movement of up to 25mm in any direction. For design movements in excess of 25mm, contact our technical department for advice.

Each seal is supplied complete with fitting instructions, adhesive and stainless steel worm drive clips to suit pipe and sleeve diameters. For sleeve diameters of 350mm and above, double clipping is required. (Note: The manufacturers may supply a number of clips to be used in tandem for very large diameters.)

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INTELL. MARITIME



The standard Firetex seal provides for movement of up to 25mm in any direction. For design movements in excess of 25mm, contact our technical department for advice.

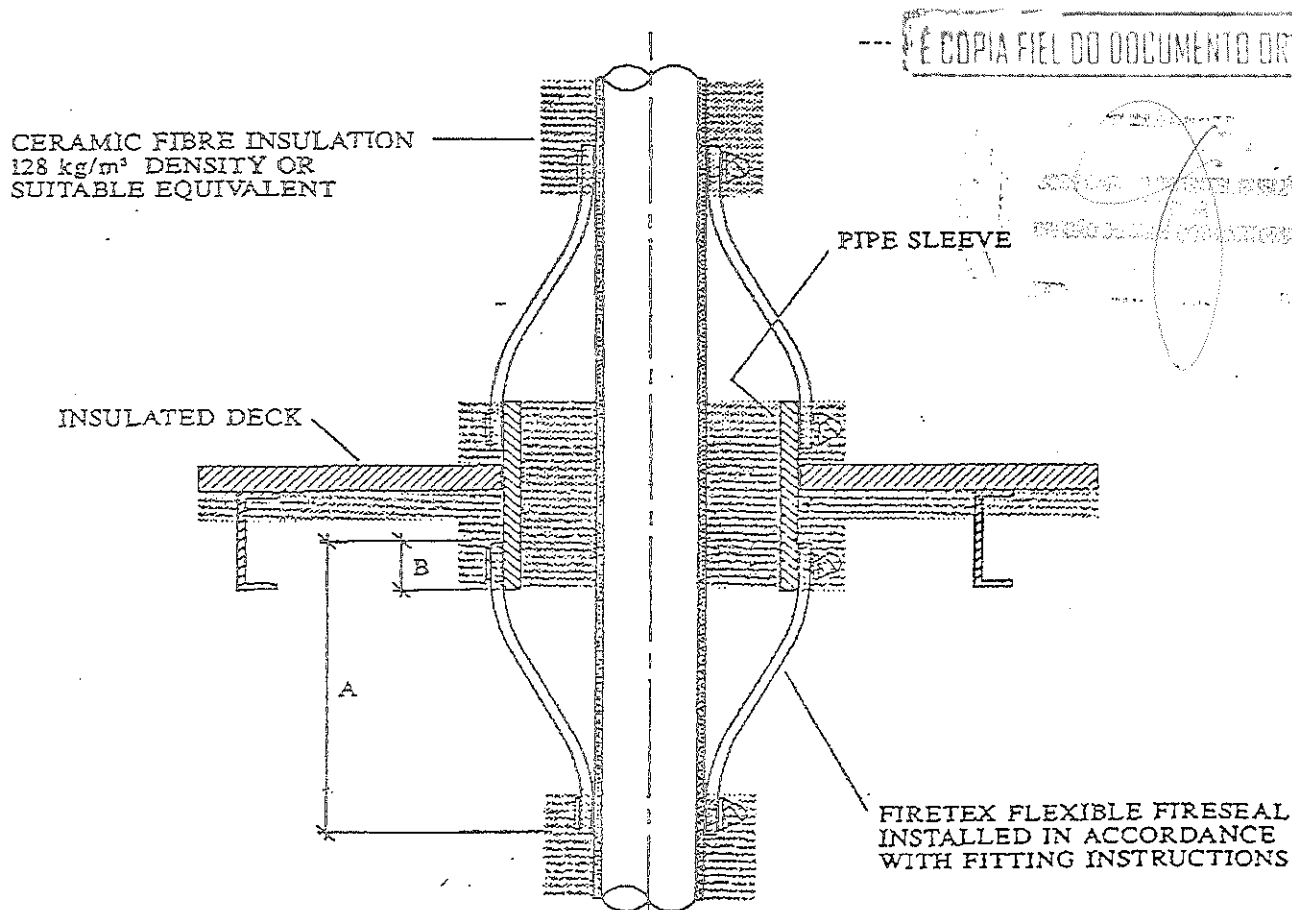
Each seal is supplied complete with fitting instructions, adhesive and stainless steel worm drive clips to suit pipe and sleeve diameters. For sleeve diameters of 350mm and above, double clipping is required. (Note: The manufacturers may supply a number of clips to be used in tandem for very large diameters.)

A Division of MCL Unitex Ltd



FIRETEX PIPE PENETRATION SEAL

EXTERNAL AND INTERNAL PROTECTION FOR A60, H60 AND H120 FIRE AND BLAST RATED DECKS



PIPE DIAMETER

Up to 100mm (4" NB)
125mm to 250mm (5" NB to 10" NB)
300mm and above (12" NB and above)

STANDARD SEAL LENGTH 'A'

150mm
200mm
250mm

SLEEVE DIAMETER

Up to 300mm (12" NB)
350mm and above (14" and above)

STANDARD CLIPPING LENGTH 'B'

25mm
45mm

The standard Firetex seal provides for movement of up to 25mm in any direction. For design movements in excess of 25mm, contact our technical department for advice.

Each seal is supplied complete with fitting instructions, adhesive and stainless steel worm drive clips to suit pipe and sleeve diameters. For sleeve diameters of 350mm and above, double clipping is required. (Note: The manufacturers may supply a number of clips to be used in tandem for very large diameters.)

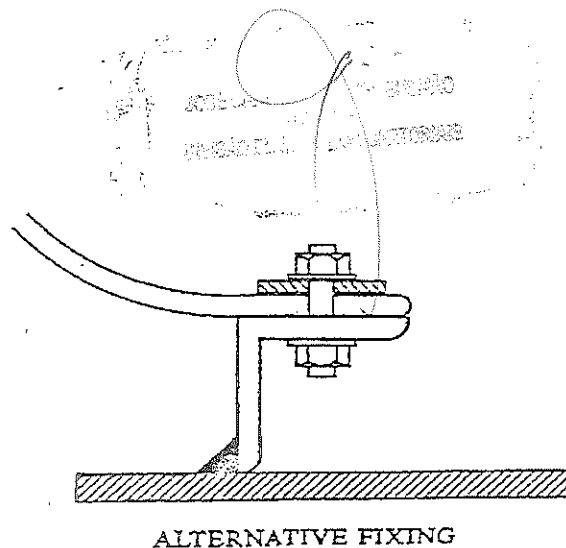
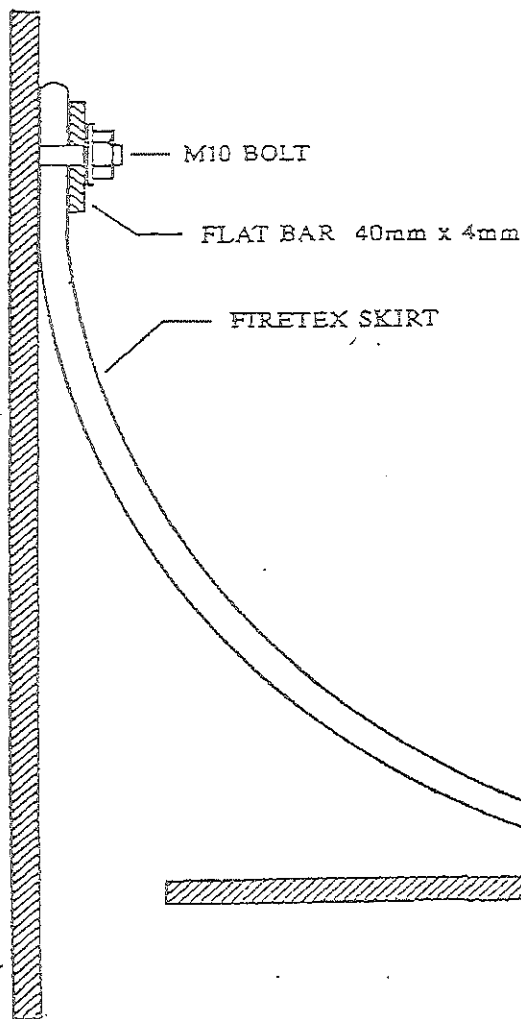
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FIRETEX SKIRT SEAL - SUITABLE FOR A0 AND H0 FIRE RATED MODULE TO MODULE/DECK SEALS

The illustration below details a typical A0/H0 Firetex skirt seal system. Methods of attachment may vary in accordance with physical site constraints or choice. In the example shown, fixing is by M10 stud bolts welded to both bulkhead and deck. Another suitable alternative is to create a stand-off with toe welded steel angle as shown.

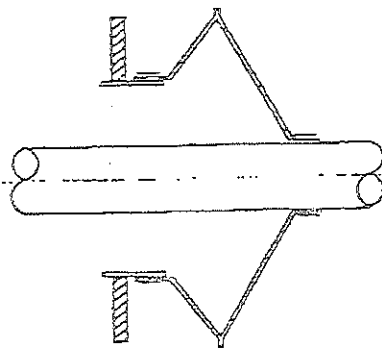
The Firetex system has been independently tested and is certified by Lloyd's Register. Skirts are manufactured to suit and are supplied in straight lengths with ends prepared for jointing. Corners, bends and T-pieces may be supplied where required with ends similarly prepared.

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To accommodate those situations where space is restricted, where hot work is prohibited for sleeve installation, where excessive movements are anticipated, where pipe/sleeve eccentricity is unavoidable or where pipe bends are installed close to the penetration sleeve, the Firetex seal may be designed to suit.

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A diagram showing a horizontal beam supported by two inclined struts. The beam is represented by a thick horizontal line with rounded ends. Two struts, shown as double lines, support the beam from below. Each strut is inclined at an angle to the horizontal. The top ends of the struts are attached to a vertical wall, represented by a hatched rectangular area. The bottom ends of the struts are attached to the beam. The struts are labeled with '1' and '2' at their top ends, and '3' and '4' at their bottom ends. The beam is labeled with '5' at its left end and '6' at its right end. The wall is labeled with '7' at its top and '8' at its bottom.

The standard Firetex pipe penetration seal is designed to accommodate movements of up to 25mm in any direction. Should design movements be greater than these, contact our technical staff for advice. The above illustrations are typical only. Our sales engineering team will welcome the opportunity of discussing your particular applications.

Lloyd's Register Fire Approval Certificate



AUTHENTICATED COPY

SIG *G. G. W. H.*

Certificate Number : SAS/F99/123

Issue Date : 27 February 1996

Expiry Date : 26 February 2001

Product : SINGLE PIPE PENETRATION - TYPE: "BESTOBELL SINGLE FIREFLEX
PIPE PENETRATION"

Producer : Bestobell Aviation
127/135 Farnham Road
Slough
Berkshire SL1 4UY
United Kingdom

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Place of Production : Meggitt Composites
New Road
Netherton
Dudley
West Midlands DY2 9AF
United Kingdom

Standard complied with : UK Department of Energy Hydrocarbon Time/Temperature Relationship and
IMO Resolution A.754(18) Performance Criteria

Test Report : The Loss Prevention Council (LPC), Borehamwood, Report No. TE85892
dated 23 June 1995 and Assessment Ref. CC 86743/RHE dated
27 September 1995.

Drawing No. : Meggitt Composites Drawing No. BFT1500/02 Issue 1 dated
11 January 1996

This is to certify that the product manufactured in strict conformity with the prototype described in the above test reports will be accepted for compliance with the applicable Lloyd's Register's Classification Rules and Regulations for use on offshore installations classed with Lloyd's Register, and for use on offshore installations when authorised by contracting governments to issue the relevant certificates, licences, permits, etc., as a :

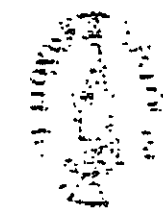
PIPE PENETRATION (HYDROCARBON FIRE TEST)

Conditions of Certification :

1. When used in conjunction with a "H-60" Class bulkhead.
2. For use on single steel pipes up to 1068mm outside diameter.

Robert H. H. H.
Surveyor to Lloyd's Register of Shipping

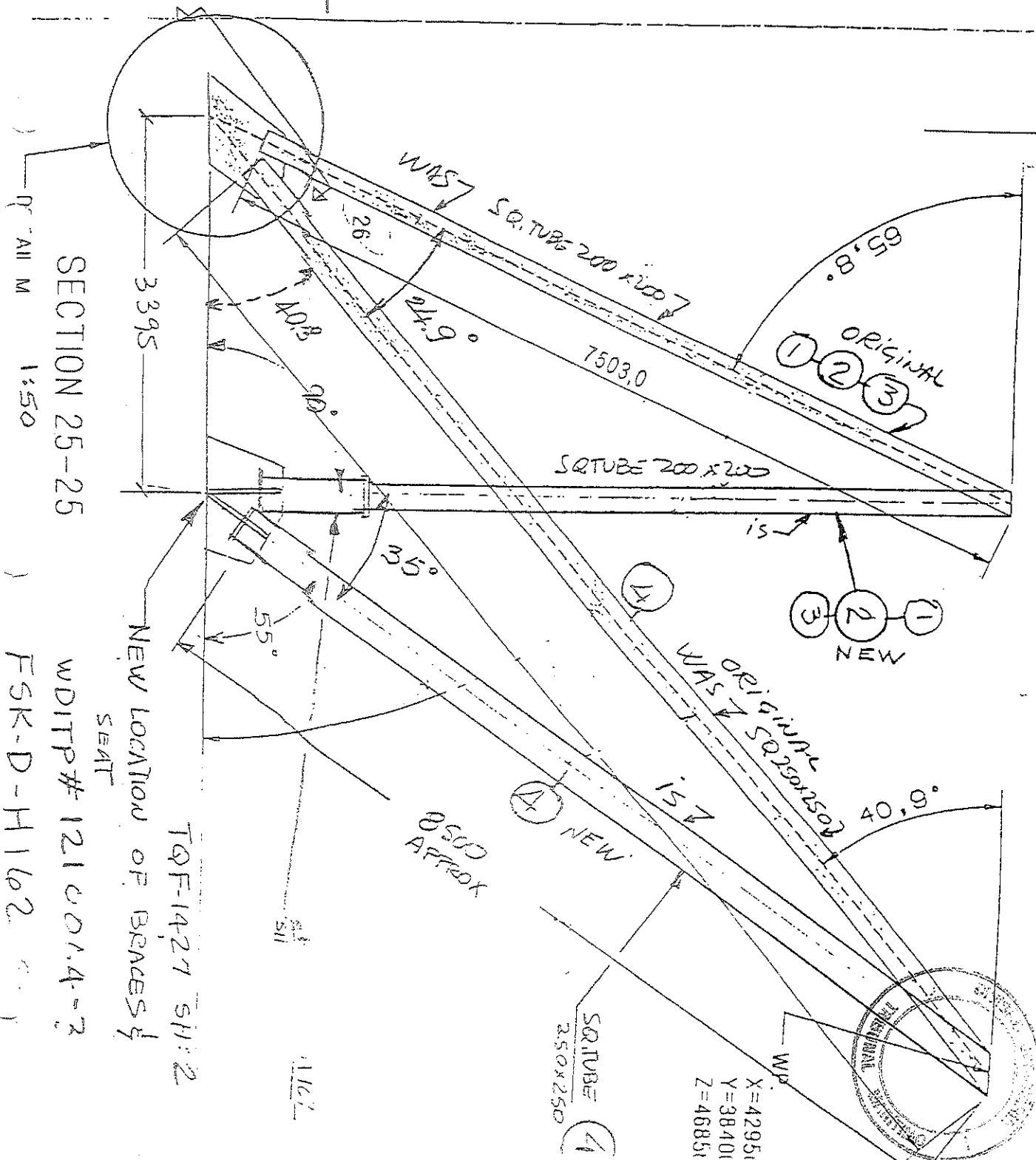
NOTICE - This certificate is subject to the terms and conditions overleaf, which form part of this certificate.

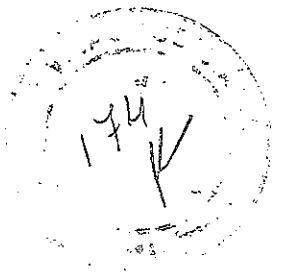


123

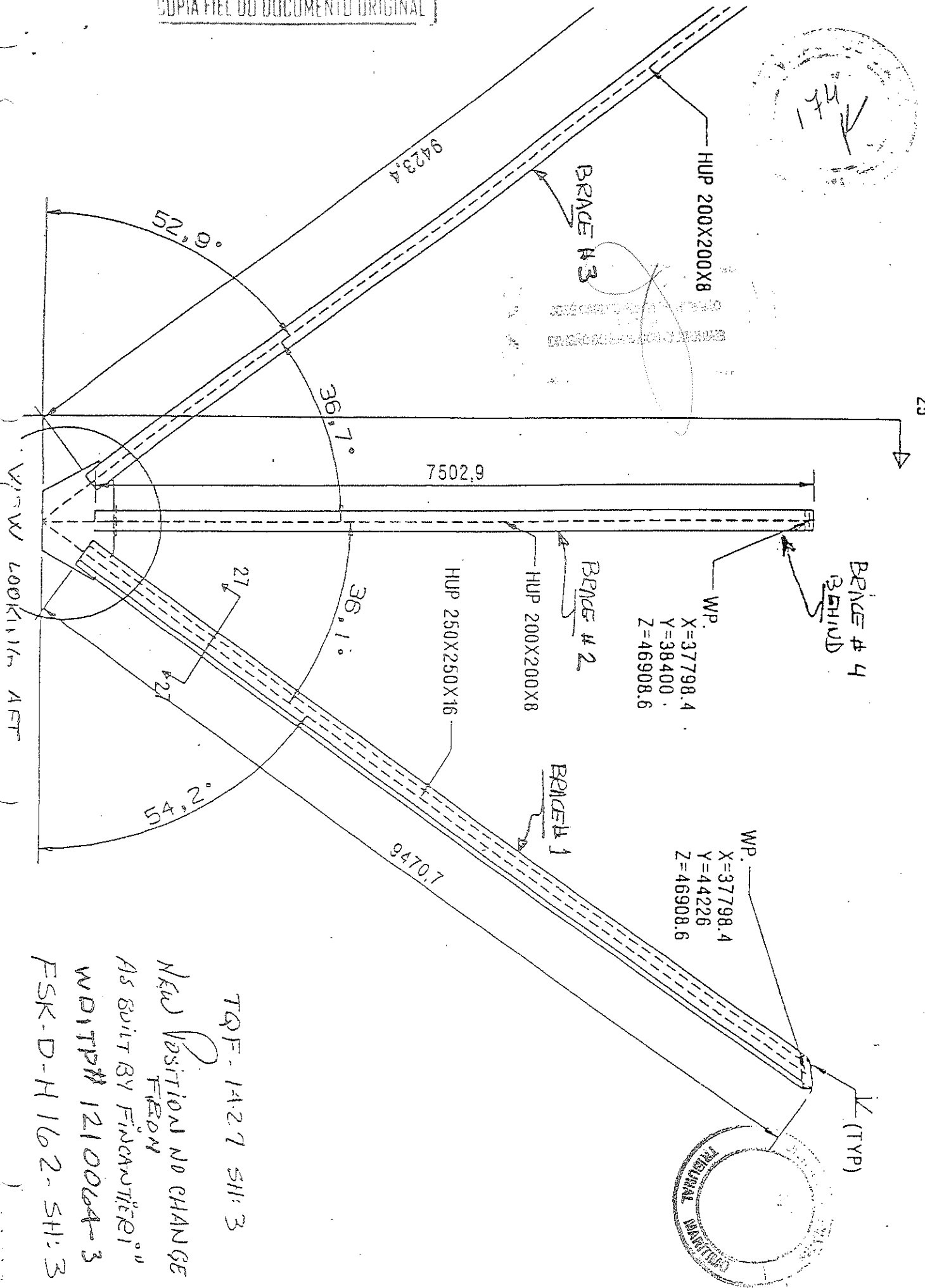
ORIGINAL
AS BUILT BY
FINCAUTIER

26





25



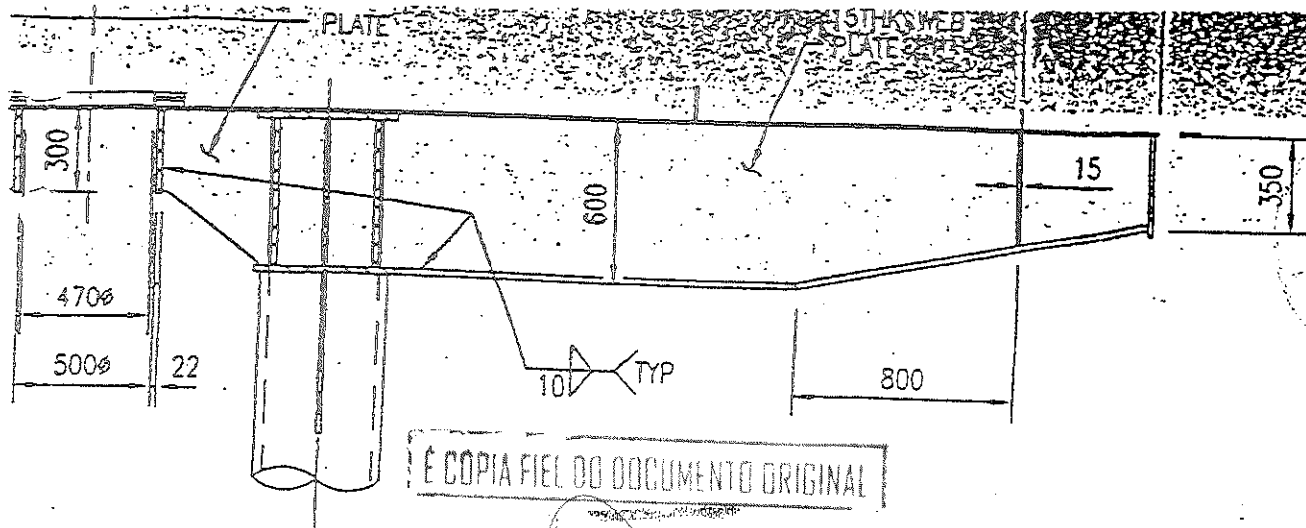
TQF-1427 SH:3

NEW POSITION NO CHANGE FROM

AS BUILT BY FINCAUTIERE

WDITP# 1210064-3

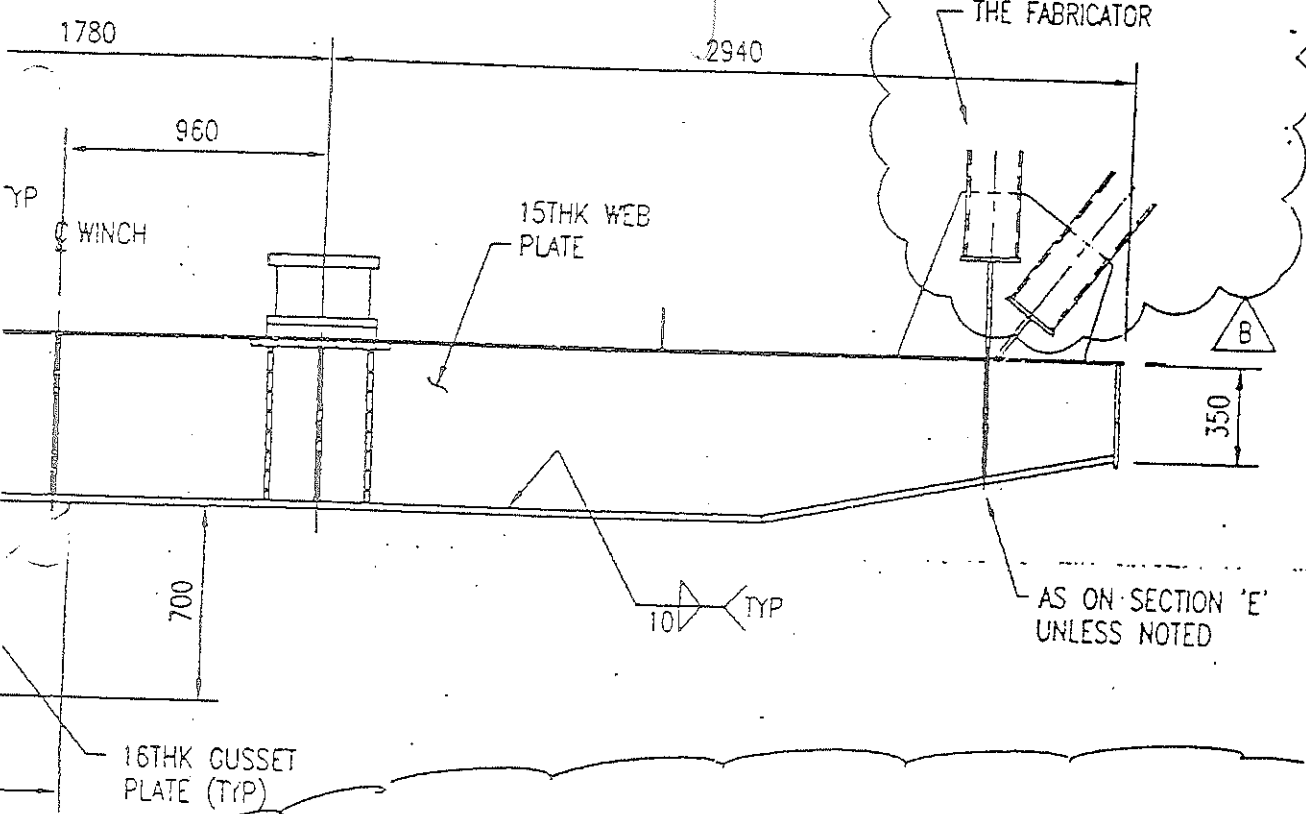
FSK-D-H 162-SH:3



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SECTION E
138-18

SCIE CARLOS ANTONIO GUSMÃO
DIRETOR
DEPARTAMENTO DE SERVIÇOS GERAIS

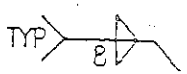
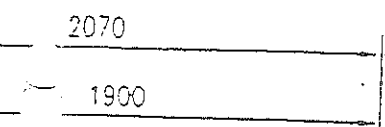


NOTES

1. THIS DRAWING NOTES DRAWING
2. ALL STEEL PRIMARY STRUCTURE
3. ALL RADIUS PRIOR TO HOLE RADIUS

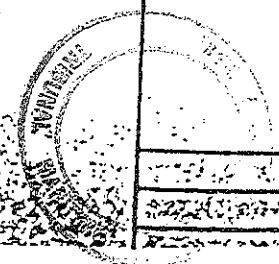
FROM DWG: DE 3010,38-1320-140 NBD-338-22

FSK-D-H162 SH: 4
TQF-1427 SH: 4
2345

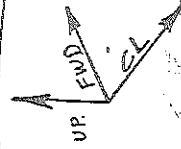
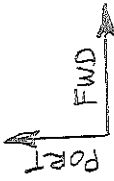


420x12THK SKIRT PLT

15011715
COAM159



STRATEGIE



Assemblage: 8679-AS51-5E1
Description: PRE-PRE ERACY
Operation: 202

Item	Material
38	15.0
37	15.0
36	15.0
35	15.0
34	15.0
33	15.0
32	15.0
31	15.0
30	15.0
29	15.0
28	15.0
27	15.0
26	15.0
25	15.0

Grade
EH36
EH36
EH36
EH36
EH36
EH36
EH36
EH36
EH36
EH36
EH36
EH36

TYP 12

PLAN

10 mm - 4 pieces

6/4mm/4

200x200 50 TUBE

45°

45°

6/4mm/4

FWD

SECOND DK.

SOUDEURE

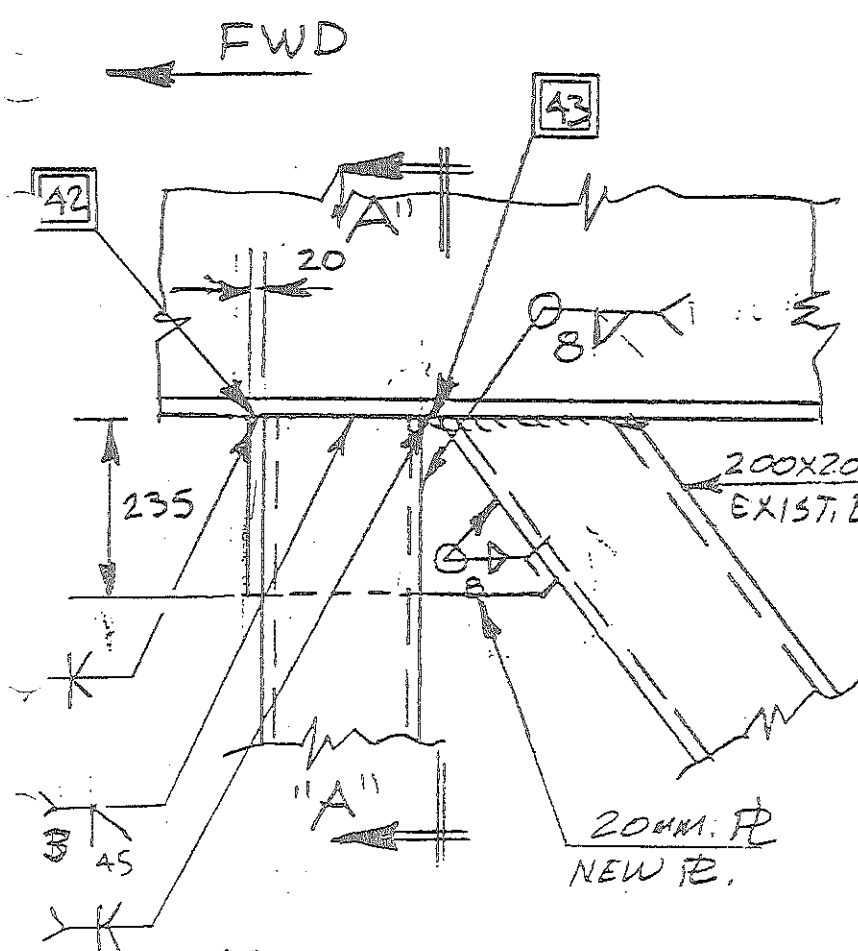
SAUF INDICATION

SIDE VIEW
(LOOKING TO PORT)

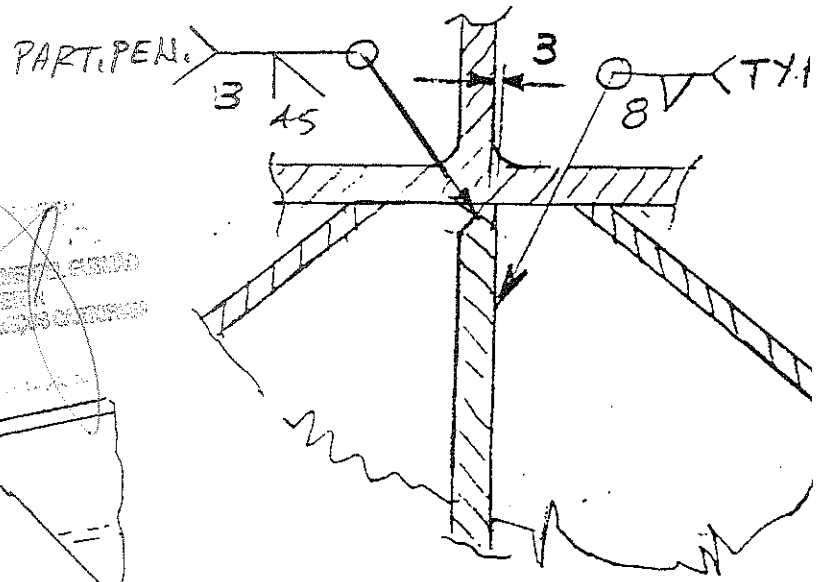
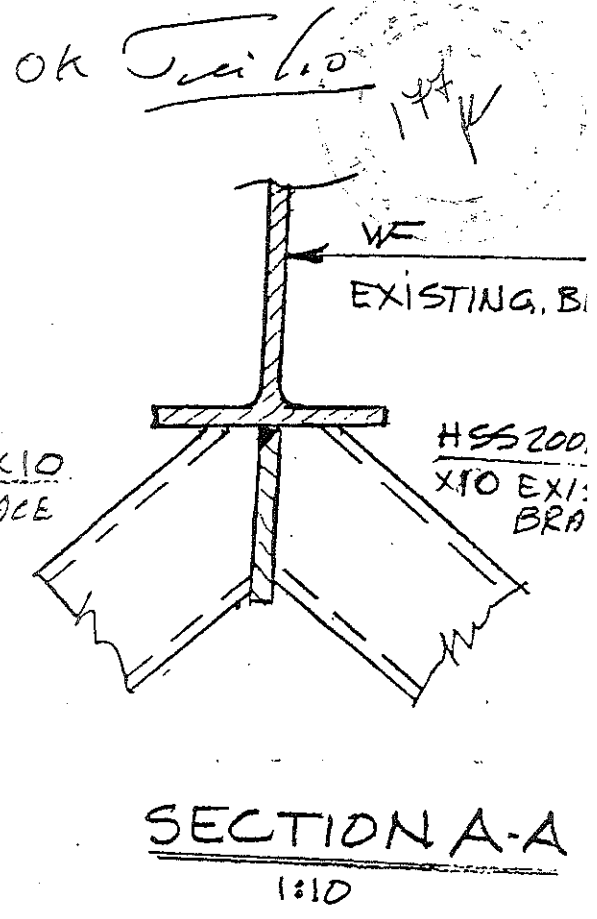
ELEVATION
(LOOKING FWD)

NO. ZONE	MODIFICATIONS	DATE	PAR
CE DOCUMENT EST LA PROPRIETE DE INDUSTRIES DAVIE LEVIS, QUEL ET NE DOIT PAS ETRE COPIE OU UTILISE EN AUCUN CAS SANS LEUR PERMISSION ECRITE.			
THIS DOCUMENT IS THE SOLE PROPERTY OF INDUSTRIES DAVIE LEVIS, QUEL ET NE DOIT NOT BE COPIED OR USED IN ANY WAY WITHOUT THEIR EXPRESS PERMISSION.			
DESSINE ACOUT VERIFIE JH		OPERATION : 202 DATE : 1998-04-08 CONTRAT : R2800 N° DESSIN : FSK-D-H162SH5	

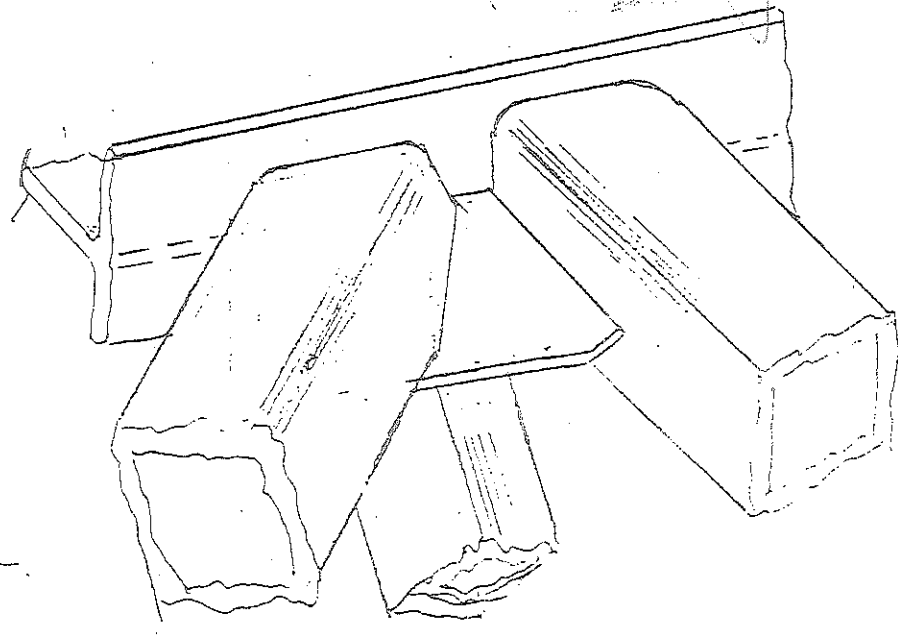
TOT 1433 411



ELEVATION
(LOOKING TO STB)



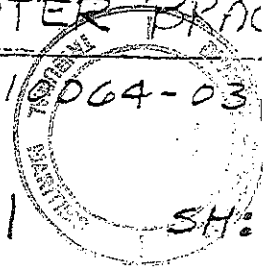
CONNECTION DETAIL
1:5

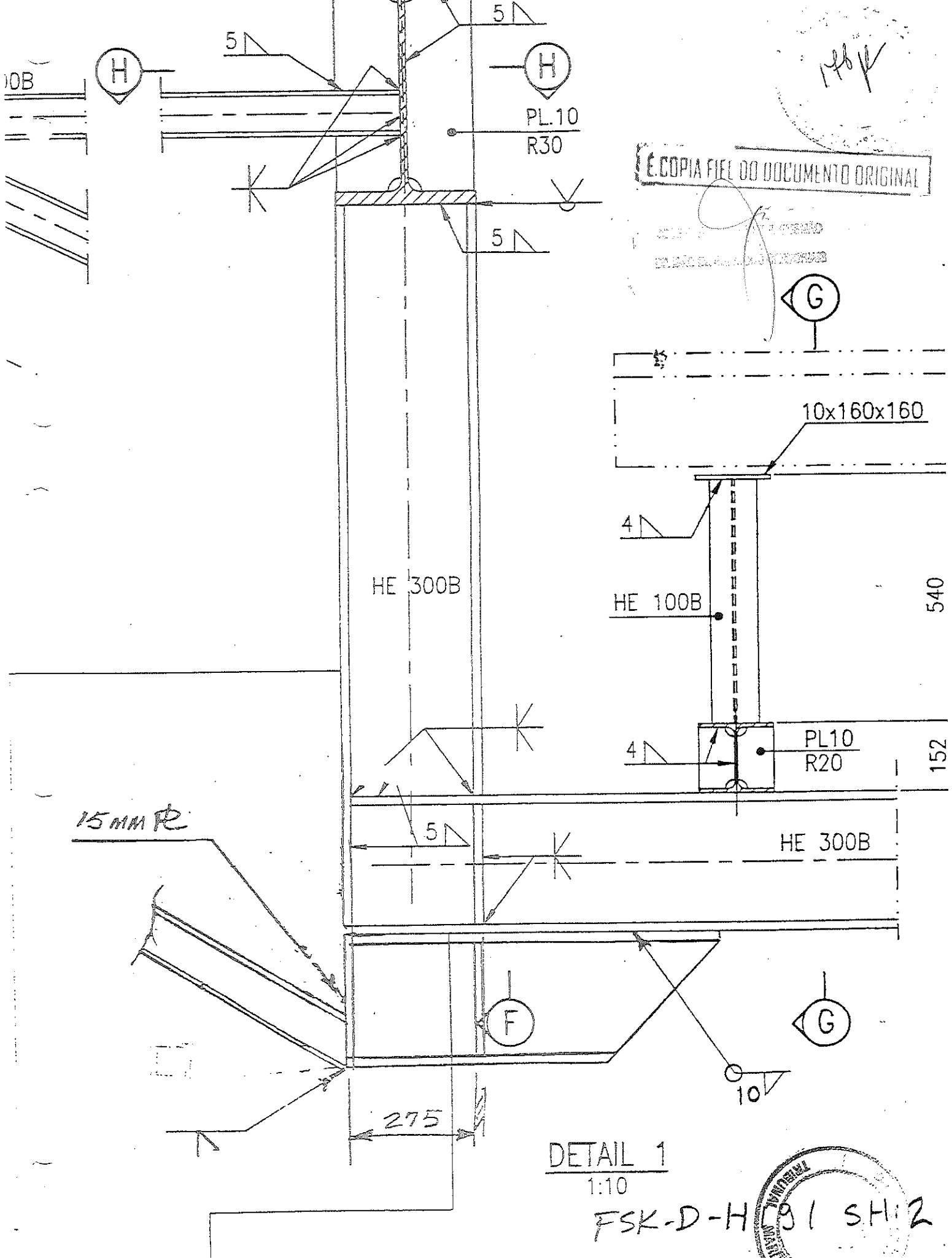


ISOMETRIC VIEW

HELICOPTER BRACE
WDITP# 1210064-03

FSK-D-H 191

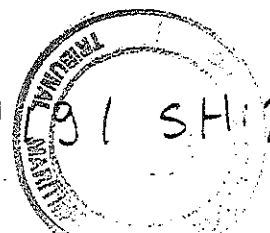




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DETAIL 1
1:10

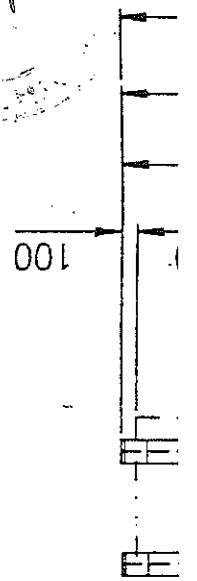
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SECRETARIA DE OBRAS E TRANSPORTES

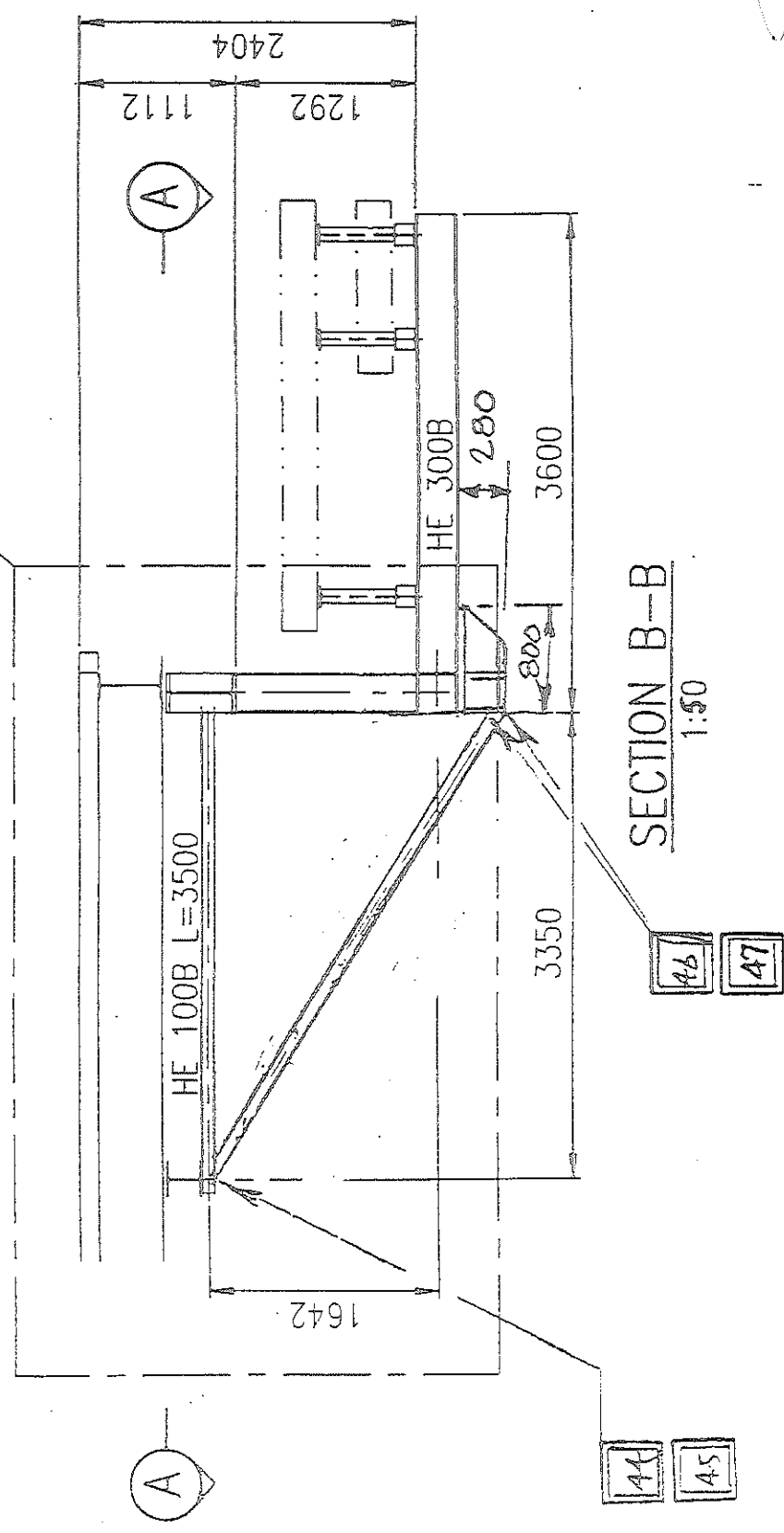
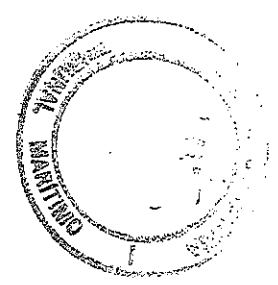
15/9/1



D

C

FSK-D-H191SH13



raychem

EPKJ 3241- GB01

QTY : 1 PC

6.6 KV STRAIGHT JOINT FOR
3 CORE 95MM2 FLAME RETARDANT
CABLE

CABLE SPLICE
KIT - 9 SHEETS.

KIT TABLE OF CONTENTS

1	X	ESD-0965-GB-10/94
3	X	EXRM-0917-BT-95CS
3	X	CICM-50/18-310/U
3	X	MWJS-40/16-340-05/U
3	X	JSCR-36/14-340-05/U
3	X	S1189-3-600(A3)
1	X	EPPA-002
2	X	EPPA-007
3	X	EPPA-009-2000
4	X	EXRM-0765-2000
1	X	EXRM-0915-90-1000
2	X	EPPA-034-H
4	X	S1085-1-600
1	X	FCSM-120/40-1350/U

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Raychem GmbH
Haidgraben 6
D-85521 Ottobrunn

Telefon: (089) 6089-0
Telex: 5212897
Telefax: (089) 6096345

MFG # : KIT35026
RPN : 351625-00011
LOT : 3548480201
DATE : 25.11.98
PAGE : 1 / 1

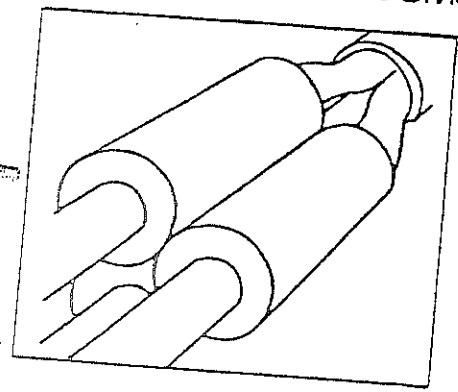
w/p 561100-004
SH 9/27



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JOSÉ CARLOS PRINTELL GUIMÃO
DIRETOR
UNIDADE DE SERVIÇOS GERAIS

ELECTRICAL PRODUCTS DIVISION



Installation Instruction

ESD 0965 GB 10/94

Joints for Offshore

Platforms

3 CORE EPR/CSP/GSWB/CSP

SCREENED

Flame Retardant to IEC 332

Conductor size 25mm-240mm

6.6kV - 11kV

JI/VB/117

RAYCHEM

W/P 561100-004

SH 10/27

JI/VB/117 ESD 0965

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GENERAL INSTRUCTIONS

1. Use a propane (preferred) or butane gas torch.
2. Adjust the torch to obtain a soft blue flame with a yellow tip.
3. Keep the torch aimed in the shrink direction to preheat the material.
4. Keep the flame moving continuously to avoid scorching the material.
5. Clean and degrease all parts that will come into contact with adhesive.
6. Start shrinking the tubing at the position recommended in the instructions.
7. Ensure that the tubing is shrunk smoothly all round before continuing along the cable.
8. Tubing should be smooth and wrinkle free with inner components clearly defined.

- BASIC STEPS

1. Ensure that the cable ends are clean and dry.
2. Position over the cable ends, the following items from the kit:
 - a) The large outer shrinkable sleeve.
 - b) The metallised braid stocking. (for cables up to 50mm² only).
3. Strip the cables to conductor level.
4. Cut, crimp and insulate cores.
5. Apply glass fibre tape.
6. Position and secure metallised braid stocking (or wrap as applicable — see 9).
7. Apply mastic tape to outer cable jacket.
8. Shrink outer sleeve and shrink.
9. Allow to cool before applying any mechanical strain.

W/P 561100-006



Overlap the cables to be jointed by about 150mm.

Mark the reference line (the middle of the overlap).

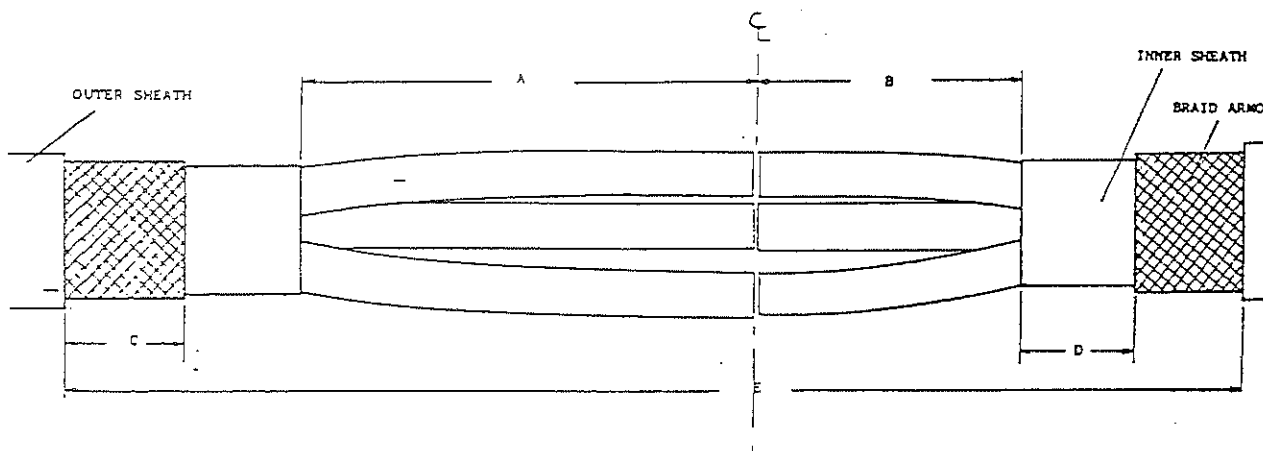
Remove the oversheath to the dimensions given in drawing A.

Cables with metal tape shields

Remove the metal tape shield to dimension c as shown in drawing C.

Shape and position the cores as in drawing A and cut them at the reference line.

DRAWING A

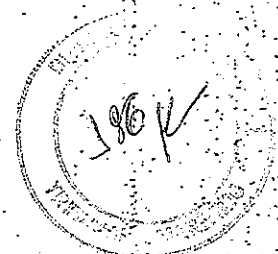


Size Conductor (mm ²)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
7.2kV					
25-50	600	350	50	50	1150
70-120	600	350	50	50	1150
150-185	700	400	50	50	1300
240	750	400	50	50	1350

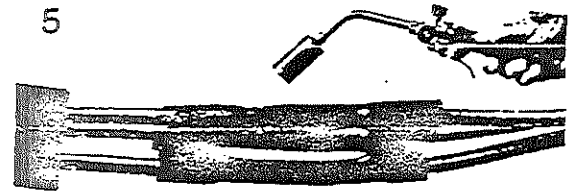
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JOSÉ CARLOS FERNANDES GOMES
DIRETOR
UNIDADE DE SERVIÇOS TÉCNICOS

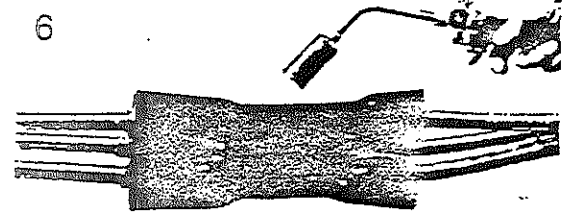
W/P 561100-004
SH 12/27



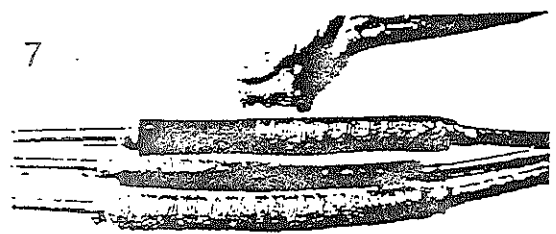
Pull the insulating tubing (red) from the inside of the screened tubing (black and red) and position it centrally over the stress control tubing. Start shrinking in the centre working towards the ends.
NOTE: Continue immediately with step 6 while the insulating tubing is still hot.



Position the screened tubing centrally over the hot insulating tubing. Start shrinking in the centre working towards the ends.



Cables with metal tape shields
Wrap two layers of copper braid with a 50% overlap round each joint area, continuing for 20mm onto the metal tape shield.
Attach the copper braid to the metal tape shield on both sides of the connection area by soldering or any other equivalent method.
Relay the cores as far as possible.



8. Now wrap the entire joint with the rolls of silicone glass tape provided*, at approx. half lap. Inner jacket across the joint to the other side backwards and forwards until used up.

*Remove the clear backing film from the tape and apply the tape face down i.e. Pink/Red side innermost.

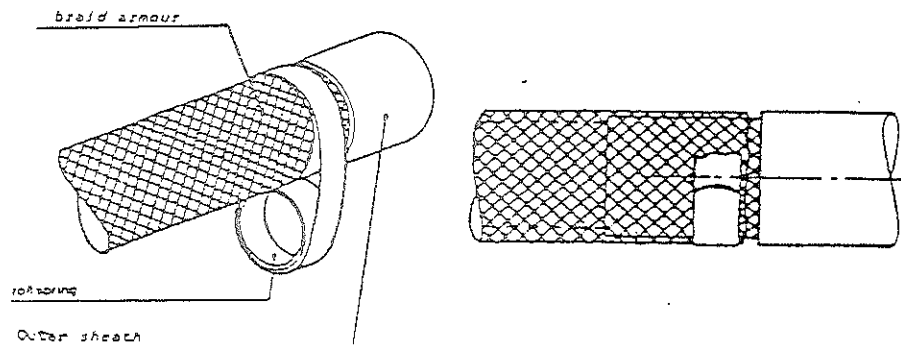


9. Position the galvanised braid stocking over the joint and secure one side to the cable braid armour, with the roll spring (EPPA 034 type) as shown below, or wrap the joint with the galvanised mesh as applicable. (Cables up to 50mm² use stocking).

Stretch the braid over the joint until it fits closely over the underlying components and over the other cable braid. Trim the ends of the tubular braid so that it does not overlap onto the cable oversheath. For joints which use the galvanised mesh wrap, use all of the wrap until used up.

10. Secure the braid with the roll springs provided as shown. Tighten the springs with a twisting action.
11. Clean/abrade the outer cable jacket for a distance of 150mm at both ends of the joint. Apply with a slight tension one half lap layer of the red mastic tape over the cleaned areas of the outer jacket, and position the outer sleeve equidistant over the joint area and overlapping the mastic tape at each end.
12. Shrink the outer tubing into place starting at the centre and working towards each end in turn following the general instruction. Prolong the heat application at the tube ends to ensure a good moisture seal.

The joint is now complete. Allow to cool before applying any mechanical strain.





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MAY 1994

At Raychem we are committed to continuous quality improvements in every aspect of our business. If you have any comments on the installation instruction please contact your local Raychem Office.

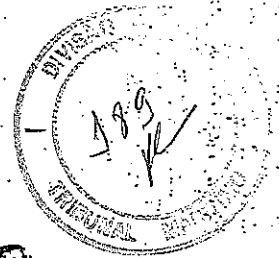
ESD 0965 GB 10/94

Raychem is a trademark of Raychem Corporation

Raychem

Raychem Ltd
Electrical Products Division
Faraday Road
Dorcan, Swindon
Wiltshire, SN3 5HH, UK
0793 526171 TWX 449409
Fax 0793 482403

w/p 561100-004



EPKT-24C3X IH4

QTY: 1 PC

CABLE TERMINATIONS FOR
3-CORE PLASTIC CABLE
24 KV INDOOR
70 - 185 MM2
TAILLENGTH 1200 MM

CABLE TERMINATION
KIT - 7 SHEETS
+ ADDENDUM - 3 SHEETS.

KIT TABLE OF CONTENTS

1	X	EPP-0277-8/92
3	X	HVOT-50/16-1200-01/89(S3)
1	X	402R248-18/89
3	X	205W325-103/89
3	X	SCTM-38/16-260/U
3	X	S1189-1-100(A3)
6	X	S1085-1-300

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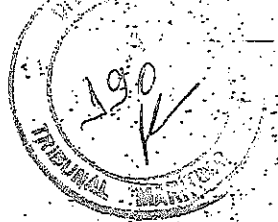
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ALGODONAL ALVARES

Raychem GmbH
Haidgraben 6
D-85521 Otterbrunn

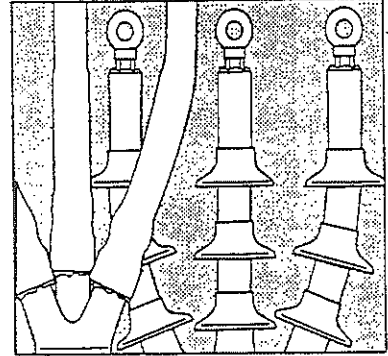
Telefon: (089) 6099-0
Telex: 5212897
Telefax: (089) 6096345

MFG # : KIT35179
RPN : 773849-00045
LOT : 3548480901
DATE : 25.11.98
PAGE : 1 / 1

W/P 561100-004
SH. 18/2-



ELECTRICAL
PRODUCTS DIVISION



Installation Instruction
EPP 0277 8/92

Terminations for
Screened 3-Core
Polymeric Insulated
Cables
7.2 kV to 36 kV

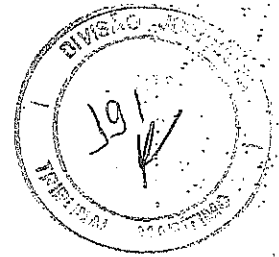
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FEBRUARY 1993

Raychem

W/P 561100-00

SH. 19/27



Before Starting

Check to ensure that the kit you are going to use fits the cable.

Refer to the kit label and the title of the installation instruction.

Components or work steps may have been improved since you last installed this product.

Carefully read and follow the steps in the installation instruction.

General Instructions

Use a propane (preferred) or butane gas torch.

Adjust the torch to obtain a soft blue flame with a yellow tip.

Pencil-like blue flames should be avoided.

Keep the torch aimed in the shrink direction to preheat the material.

Keep the flame moving continuously to avoid scorching the material.

Clean and degrease all parts that will come into contact with adhesive.

If a solvent is used follow the manufacturer's handling instructions.

Tubing should be cut smoothly with a sharp knife leaving no jagged edges.

Start shrinking the tubing at the position recommended in the instruction.

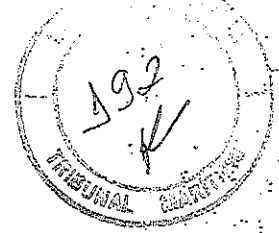
Ensure that the tubing is shrunk smoothly all round before continuing along the cable.

Tubing should be smooth and wrinkle free with inner components clearly defined.

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The information contained in these installation instructions is intended to describe the correct method of installation for this product. However, Raychem has no control over the field conditions which influence product installation. It is the user's responsibility to determine the suitability of the installation method in the user's field conditions. Raychem's only obligations are those in Raychem's standard Conditions of Sale for this product and in no case will Raychem be liable for any other incidental, indirect or consequential damages arising from the use or misuse of the products.

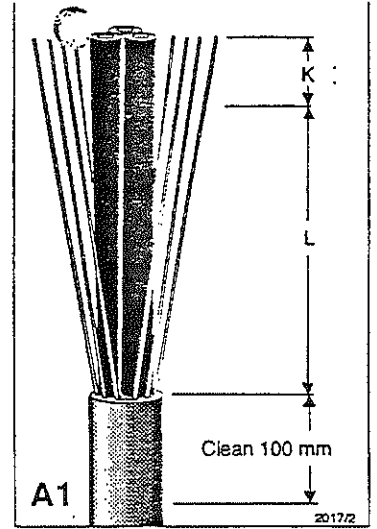


Cable Preparation
 • a. Cable with wire shield

Table 1

Max. system voltage (kV)	*L Indoor straight connection [mm]	*L Indoor crossed connection [mm]	*L outdoor [mm]	a [mm]	K
7.2	250	450	450	150	according to depth of cable lug barrel hole + 5 mm
12	300	450	650	150	
17.5	350	500	650	150	
24	450	550	800	200	
36	600	800	800	250	

*L = min. length required.
 The actual length will be determined by the overall geometry of the equipment.

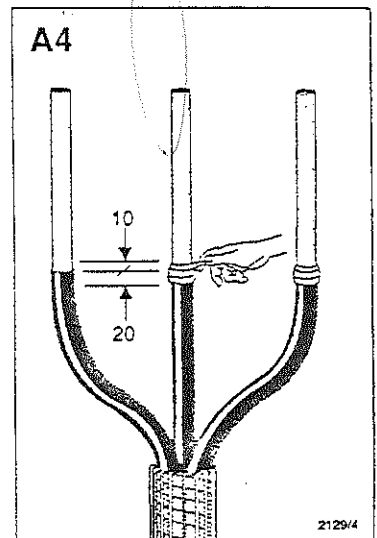
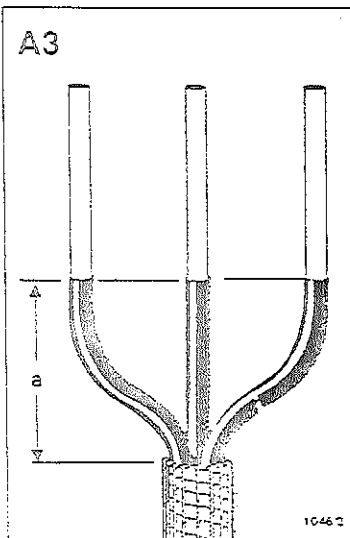
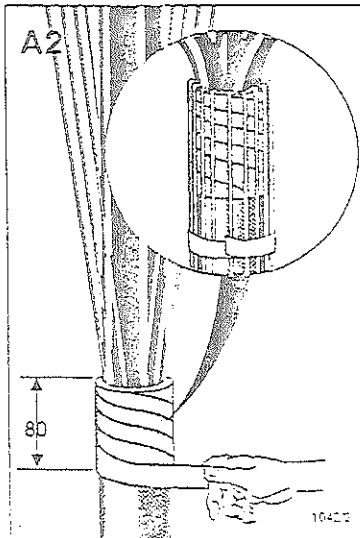


Cut the cable to the required length and remove the oversheath. Leave enough length to set the cores into their final position. Clean and degrease the end of the oversheath for about 100 mm. Note: The minimum termination length (L) is given in Table 1.

Remove the release paper and wrap one layer of sealant tape (red) with a small overlap and slight tension around the end of the oversheath for 80 mm. Bend the shielding wires back onto the oversheath. Avoid crossing individual wires. Temporarily fix the shielding wires well below the red sealant tape to the oversheath. For cables with tape armour also connect the earth lead to the armour. For cables with wire armour follow the instruction as supplied in separate armour earthing kit.

Bend and shape the cores into their final position. Cut the cores to the required length. Thoroughly remove the core screen according to dim. a (see Table 1). The surface of the insulation should be free from all traces of conductive material. Smooth out any irregularities. Note: Do not nick the insulation!

Remove the release paper and wrap the void filling strip (yellow) around the end of the core screen. Cover 20 mm of the core screen and continue onto the insulation for 10 mm. Stretch the strip to half of its original width to achieve a fine, thin edge onto the insulation.



W/P 561100-00

JOSÉ CARLOS FERNANDES GOMES
ENGENHEIRO
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Cable Preparation

b. Cable with metal tape shield

Table 2

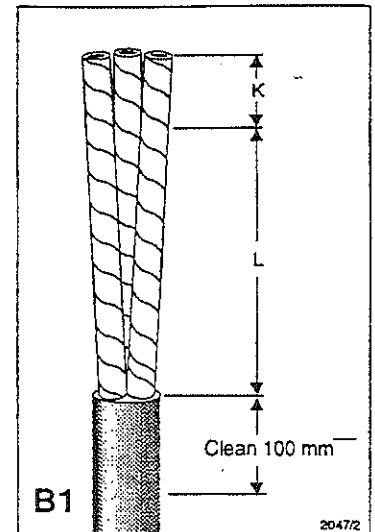
Max. system voltage	*L Indoor straight connection [mm]	*L Indoor crossed connection [mm]	*L outdoor [mm]	b [mm]	K
(kV)					
7.2	250	450	450	130	according to depth of cable lug barrel hole + 5 mm
12	300	450	650	130	
17.5	350	500	650	130	
24	450	550	800	180	
36	600	800	800	210	

*L = min. length required.

The actual length will be determined by the overall geometry of the equipment.

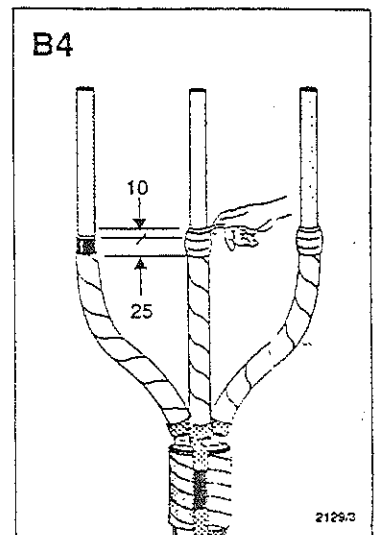
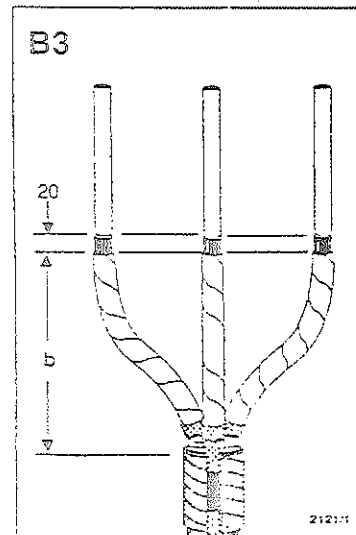
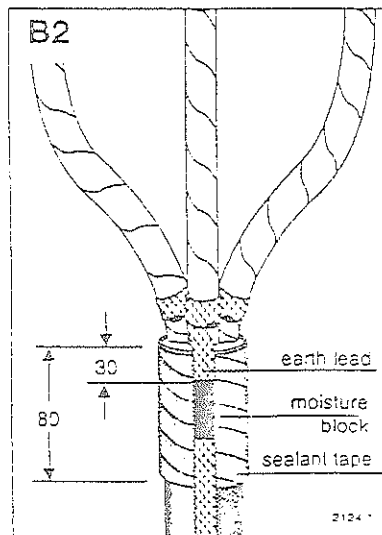
Separate the cores. Wrap an earth lead round each core and solder it to the metal tape shield (or attach the earth lead by any other equivalent method). Fill the earth lead with solder to form a 30 mm moisture block 30 mm from the oversheath end. Remove the release paper and wrap one layer of sealant tape (red) round the oversheath end for 80 mm underneath the earth lead. For cables with tape armour also connect the earth lead to the armour. For cables with wire armour follow the instruction as supplied in separate armour earthing kit.

Bend and shape the cores into their final position. Cut the cores to the required length. Place a temporary wire binder around the cores at the position shown in the drawing. Tear off the tape shield against the wire binder. Remove the metal tape shield according to dimension b (see table 2). Thoroughly remove the core screen to 20 mm above the metal tape shield cut. The surface of the insulation should be free from all traces of conductive material. Smooth out any irregularities. Note: Do not nick the insulation.

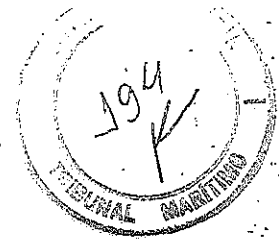


Cut the cable to the required length and remove the oversheath. Leave enough length to set the cores into the final position. Clean and degrease the end of the oversheath for about 100 mm. Note: The minimum termination length (L) is given in Table 2.

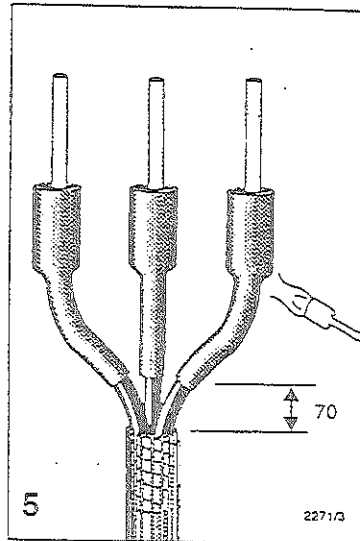
Remove the wire binder from the end of the metal tape shield. Remove the release paper and wrap the void filling strip (yellow) for 5 mm onto the metal tape shield, continuing over the core screen and 10 mm onto the insulation. Stretch the strip to half of its original width to achieve a fine, thin edge onto the insulation.



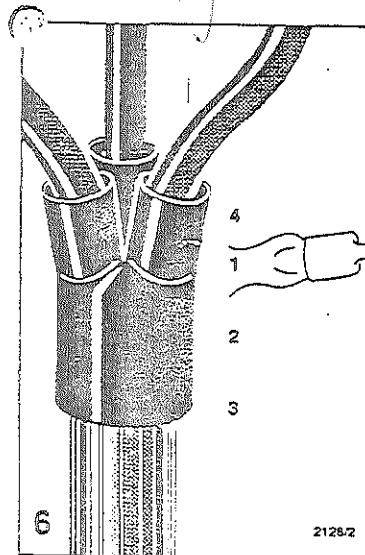
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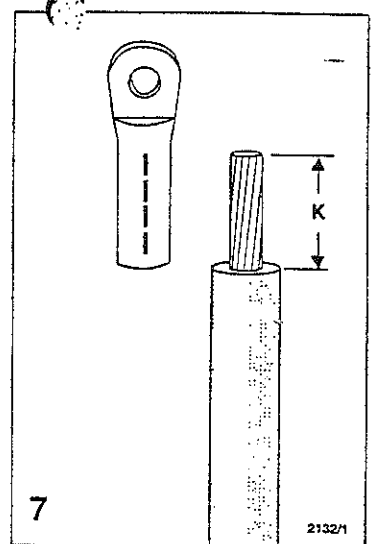
Completion of Termination



Place the stress control tubing (black) over the cores and position them 70 mm above the end of the oversheath cut. Shrink down the tubing starting at the bottom and working upwards.



Remove the release paper and slide the breakout over the cores. Pull the breakout as far down the crutch as possible. Shrink the breakout into place starting at the centre. Work first towards the lower end and then shrink the turrets onto the cores. The numbers in the drawing indicate the shrinking sequence.

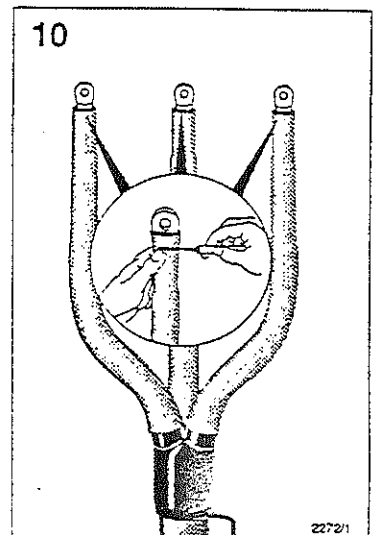
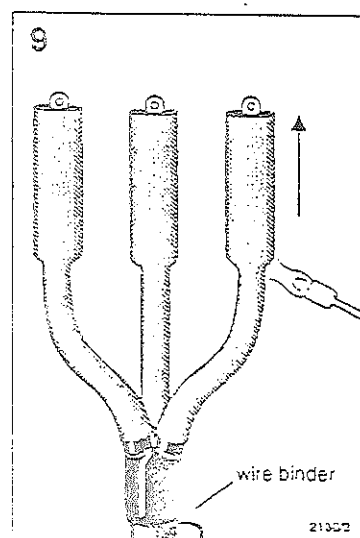
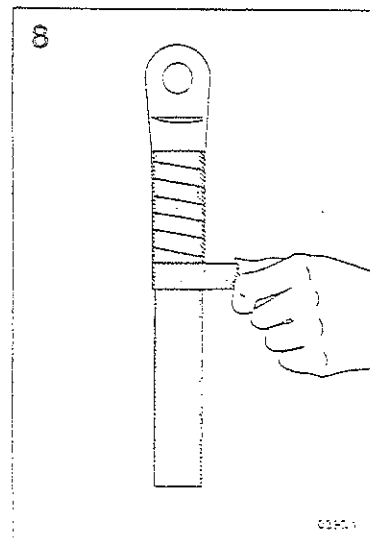


Cut back the insulation according to dimension K = depth of cable lug barrel hole + 5 mm. Install the cable lugs. Clean and degrease the insulation and the lugs.

Remove the release paper and wrap the sealant tape (red) around the barrel of the cable lug with a small overlap and slight tension. Note: Use the remaining sealant tape (red) to fill any remaining gap between the core insulation and the cable lug.

Remove the release paper from the red tubing. Place the tubing over the cores with the sealant coated end downwards. Push the tubing over the breakout turrets as far as possible and shrink it down starting at the crutch and working upwards. Tie the shielding wires or the earth lead with a wire binder to the oversheath below the breakout. Gather the shielding wires together to form an earth lead.

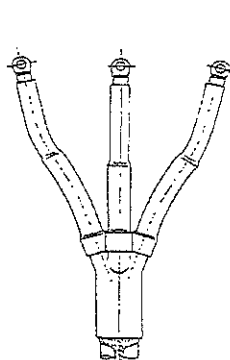
Cut the tubing back onto the connector barrel if necessary. Postheat the palm of the lug until a bead of mastic appears around the top of the tubing. Indoor termination up to 17.5 kV completed. Allow the terminations to cool before applying any mechanical strain. For indoor terminations above 17.5 kV and outdoor terminations shrink the skirts into place as shown on the next page.



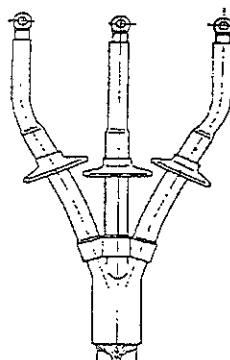


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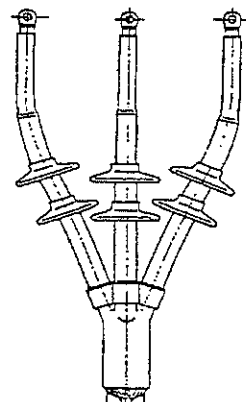
Indoor



7.2, 12 and 17.5 kV

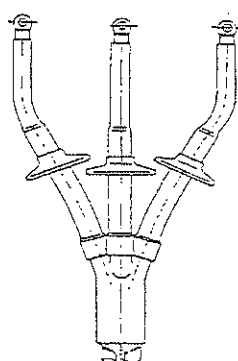


24 kV

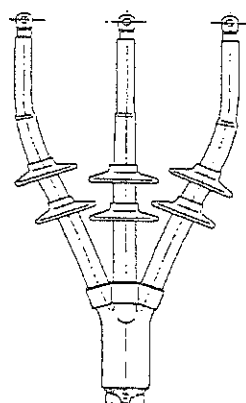


36 kV

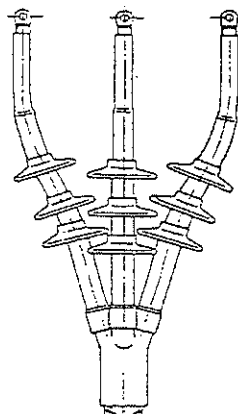
Outdoor



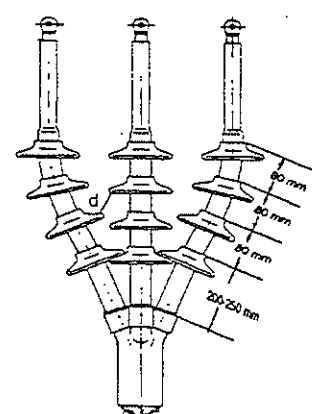
7.2 kV



12 kV and 17.5 kV

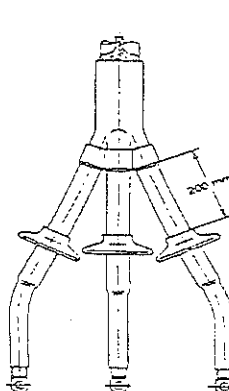


24 kV

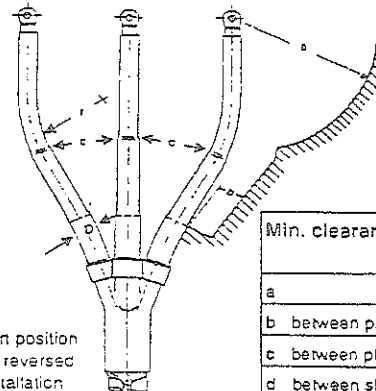


36 kV

Note: Maintain minimum distance between skirts (see table below) by staggering skirts between cores.



skin position for reversed installation



Min. clearances	Max. system voltage (kV)				
	7.2	12	17.5	24	36
a	according to local specifications				
b between ph/ground [mm]	10	15	20	25	35
c between ph/ph [mm]	15	20	30	40	50
d between skirts [mm]	10	10	15	20	25
r min. bending radius 15xD, before bending heat cores up to approx. 70° C					

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If you have comments on the installation instruction please contact your local Raychem office.

Please dispose of all waste according to environmental regulations.



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Instruction Sheet Addendum for Roncador Project

1. Medium Voltage (6.6kV and above) Terminations

Note: When making a three core termination the chances are that it will be necessary to cross cores. This practice can lead to premature failure if the cores are short and adequate clearance is not possible.

The solution to this potential problem is to not cross short terminations and carry out the cross either at the other end of the cable, if it is long enough, or if not, to use a joint and cross in the joint.

In this project, one end of the cable is terminated into a cable box allowing long cores and the cross can be carried out in a screened area of the cores.

Cable Preparation

a) Short termination

Follow the instruction sheet exactly.

b) Long termination

Remove the outer cable jacket and separate the cores. Now offer the cores to the equipment and set them in their final position. Mark the position of the bottom end of the lug on each core and this then becomes the reference line from which the point of screen removal is defined. The screens can now be removed to the dimensions given on the attached diagram.

Installation of the Termination

a) Short termination

Follow the instructions exactly. Make sure that there is at least 25mm (1") separation between the cores at the top of the stress control tubes when the termination is completed. Cut the excess



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red tubing from the cores to enable the lugs to be connected to the equipment.

b) Long termination

The stress control tubes should be installed overlapping the screen by 50mm (2"). Do not install the stress control tubes near the bottom of the termination as shown on the main instruction sheet. Trim the red outer tube after installation to allow the lugs to be connected to the equipment. Make sure that if the cores are to be crossed, the cross is in the screened area of the cores.

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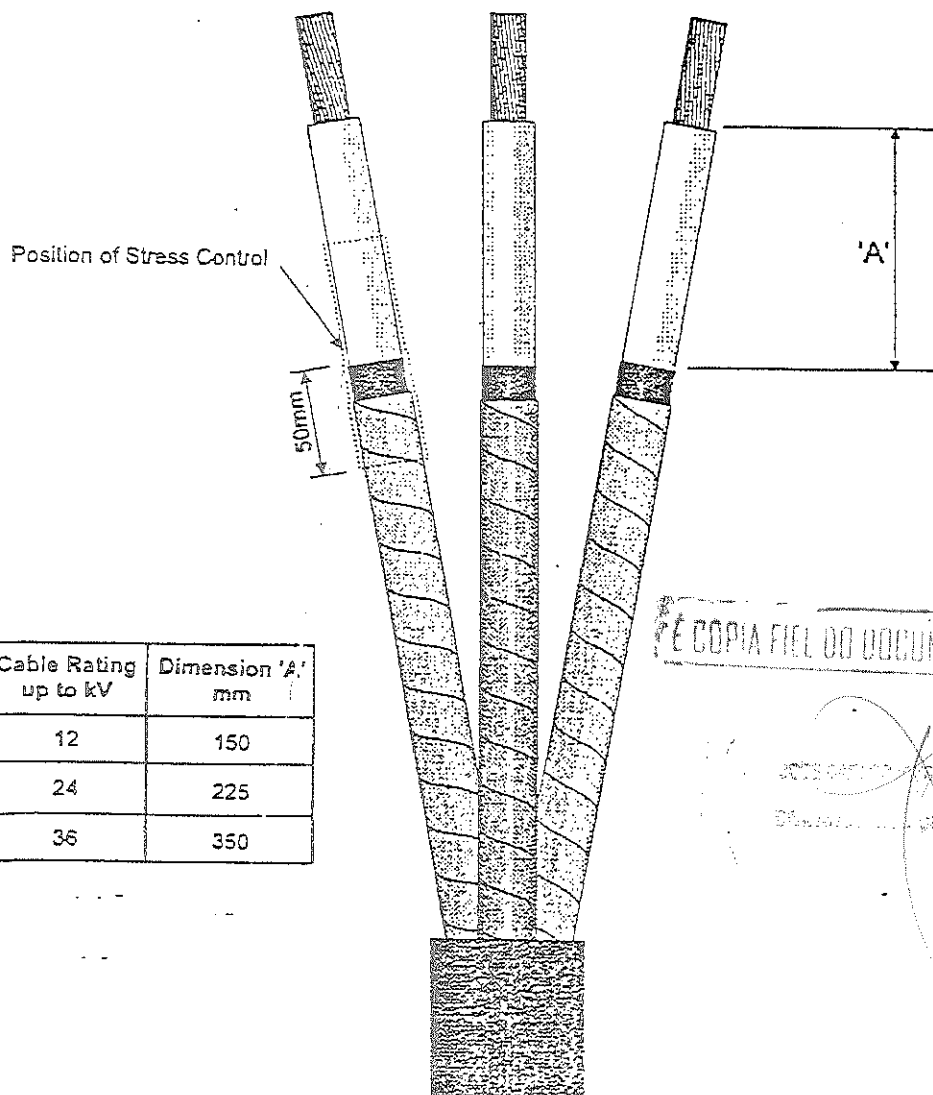
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Recommended stripping dimensions for 3 core screened cables to enable core crossing



Cable Rating up to kV	Dimension 'A' mm
12	150
24	225
36	350

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JOSE CARLOS DE LIMA OLIVEIRA
ENGENHEIRO DE PROJETOS

drg-10/6/98

drg/6/98-roncador project 1.

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Instrument and Loop List Status per Skid

Ab. 7
PETROBRAS TRENTAJE
R.L. 67073

Associated Skid: UQ-512401 Process Cooling Medium Package Location: M2

1 ⁵² Loop No: P511110001

Function Description	Tag No	Local	Cal OK	Defect	P and ID Ref	Service Description
Pressure Indicator	PI 5111 0001	SM		# 99 - 103 - Wrong range	944-AMK-342	PRESS. OF S-Water Supply - PROCESS COOLING EXCHANGERS

2 Loop No: P511110002

Function Description	Tag No	Local	Cal OK	Defect	P and ID Ref	Service Description
Pressure Indicator	PI 5111 0002	CCR			944-AMK-342	PRESS. OF S-Water Supply TO PROCESS COOLING EXCHANGERS
Pressure Transmitter	PT 5111 0002	SM		# 214 - NO AMEC #342 OK	944-AMK-342	PRESS. OF S-Water Supply TO PROCESS COOLING EXCHANGERS

3 Loop No: P51240004

Function Description	Tag No	Local	Cal OK	Defect	P and ID Ref	Service Description
Pressure Alarm High	PAH 5124 0004	CCR			944-AMK-342	PRESS. OF COOLING WATER (BLEED TO PUMP SUCT.S)
Pressure Alarm Low	PAL 5124 0004	CCR			944-AMK-342	PRESS. OF COOLING WATER (BLEED TO PUMP SUCT.S)
Pressure Indicator Controller	PIC 5124 0004	CCR			944-AMK-342	PRESS. OF COOLING WATER (BLEED TO PUMP SUCT.S)
Pressure Transmitter	PT 5124 0004	SM			944-AMK-342	PRESS. OF COOLING WATER (BLEED TO PUMP SUCT.S)
Pressure Control Valve (On/Off)	PV 5124 0004	SM			944-AMK-342	PRESS. OF COOLING WATER (BLEED TO PUMP SUCT.S)
Pressure Converter Element	PY 5124 0004	SM			944-AMK-342	PRESS. OF COOLING WATER (BLEED TO PUMP SUCT.S)

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Instrument and Loop List Status per Skid

Associated Skid: UQ-512401 Process Cooling Medium Package Location: M2

Loop No: P51240005

Function Description Tag No Local Cal OK Defect

Pressure Alarm Low Low PALL 5124 0005 CCR M # 108 repaired

P and ID Ref Service Description

944-AMK-342 LO-LO PRESS. OF COOLING WATER IN EXCHANGER DISC.

Pressure Switch Low Low PSL 5124 0005 SM M # 108 repaired

944-AMK-342 LO-LO PRESS. OF COOLING WATER IN EXCHANGER DISC.

Loop No: P51240006

Function Description Tag No Local Cal OK Defect

Pressure Alarm High High PAHH 5124 0006 CCR M

P and ID Ref Service Description

944-AMK-342 HI-HI PRESS. OF COOLING WATER IN EXCHANGER DISC.

Pressure Switch High High PSHH 5124 0006 SM M # 109 repaired

944-AMK-342 HI-HI PRESS. OF COOLING WATER IN EXCHANGER DISC.

Loop No: P51240007

Function Description Tag No Local Cal OK Defect

Pressure Indicator PI 5124 0007 SM M

P and ID Ref Service Description

944-AMK-342 PRESS. OF COOLING WATER IN EXCHANGER DISC. LOCAL GAUGE

Loop No: P51240008

Function Description Tag No Local Cal OK Defect

Pressure Indicator PI 5124 0008 SM I I # 95 - Wrong range

P and ID Ref Service Description

944-AMK-342 PRESS. ON PUMP (B-512401/ABC) DISC. MANHOLE

Loop No: P51240009

Function Description Tag No Local Cal OK Defect

Pressure Indicator PI 5124 0009 SM M # 98 repaired

P and ID Ref Service Description

944-AMK-342 PRESS. OF COOLING WATER PUMPS B-512401/ABC SHUT. MANHOLE

Date: 4/20/99

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Instrument and Loop List Status per Skid

Associated Skid: UQ-512401 Process Cooling Medium Package Location: M2

9 Loop No: P51240011

Function Description	Tag No	Local	Cal OK	Defect
Pressure Indicator	PI 5124 0011	SM	M	

P and ID Ref Service Description

944-AMIK-342 PRESS. OF PUMP B-512401A COOLING WATER DISC, LOCAL GAUGE

10 Loop No: P51240012

Function Description	Tag No	Local	Cal OK	Defect
Pressure Alarm High	PAH 5124 0012	CCR	M	

P and ID Ref Service Description

944-AMIK-342 PRESS. OF PUMP B-512401A COOLING WATER DISC.

Pressure Alarm Low	PAL 5124 0012	CCR	M	
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944-AMIK-342 PRESS. OF PUMP B-512401A COOLING WATER DISC.

Pressure Indicator	PI 5124 0012	CCR	M	
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944-AMIK-342 PRESS. OF PUMP B-512401A COOLING WATER DISC.

Pressure Transmitter	PT 5124 0012	SM	M	
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944-AMIK-342 PRESS. OF PUMP B-512401A COOLING WATER DISC.

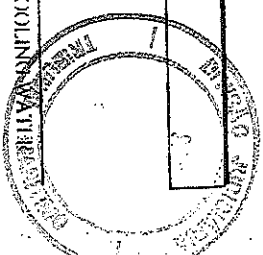
11 Loop No: P51240021

Function Description	Tag No	Local	Cal OK	Defect
Pressure Indicator	PI 5124 0021	SM	M	# 97 repaired

P and ID Ref Service Description

944-AMIK-342 PRESS. OF PUMP B-512401B COOLING WATER DISC.

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Brasqu: *Wes*

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Septent 1999

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Instrument and Loop List Status per Skid

Associated Skid: UQ-512401 Process Cooling Medium Package Location: M2

19 Loop No: TS1110005

Function Description	Tag No	Local	Cal OK	Defect	P and ID Ref	Service Description
Temperature Indicator	TI 5111 0005	SM	☒		944-ANIK-342	TEMP. OF S-WATER EXITING EXCHANGER P-512401D
Thermowell	TV 5111 0005	SM	☒	# 294 Brass, waiting answer	944-ANIK-342	TEMP. OF S-WATER EXITING EXCHANGER P-512401D

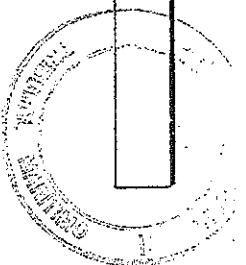
20 Loop No: TS1240001

Function Description	Tag No	Local	Cal OK	Defect	P and ID Ref	Service Description
Temperature Alarm High	TAH 5124 0001	CCR	☒		944-ANIK-342	TEMP. OF COOLING WATER IN EXCHANGER DISC. HEADER
Temperature Indicator	TI 5124 0001	CCR	☒		944-ANIK-342	TEMP. OF COOLING WATER IN EXCHANGER DISC. HEADER
Temperature Transmitter	TT 5124 0001	SM	☒	# 295 No data sheet	944-ANIK-342	TEMP. OF COOLING WATER IN EXCHANGER DISC. HEADER
Thermowell	TV 5124 0001	SM	☒		944-ANIK-342	TEMP. OF COOLING WATER IN EXCHANGER DISC. HEADER

21 Loop No: TS1240002

Function Description	Tag No	Local	Cal OK	Defect	P and ID Ref	Service Description
Temperature Indicator	TI 5124 0002	SM	☐	# 153 Sticking Axia Not Installed	944-ANIK-342	TEMP. OF COOLING WATER DISC. D FROM EXCHANGER P-512401A
Thermowell	TV 5124 0002	SM	☒		944-ANIK-342	TEMP. OF COOLING WATER DISC. D FROM EXCHANGER P-512401A

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Instrument and Loop List Status per Skid

Associated Skid: UQ-512401 Process Cooling Medium Package Location: M2

22 Loop No: TS1240003

Function Description Tag No Local Cal OK Defect

Temperature Indicator TI 5124 0003 SM M

P and ID Ref Service Description

944-AMIK-342 TEMP. OF COOLING WATER DISC. D FROM EXCHANGER P-512401B

Thermowell TW 5124 0003 SM M

944-AMIK-342 TEMP. OF COOLING WATER DISC. D FROM EXCHANGER P-512401B

23 Loop No: TS1240004

Function Description Tag No Local Cal OK Defect

Temperature Indicator TI 5124 0004 SM M

P and ID Ref Service Description

944-AMIK-342 TEMP. OF COOLING WATER DISC. D FROM EXCHANGER P-512401C

Thermowell TW 5124 0004 SM M

944-AMIK-342 TEMP. OF COOLING WATER DISC. D FROM EXCHANGER P-512401C

24 Loop No: TS1240007

Function Description Tag No Local Cal OK Defect

Temperature Indicator TI 5124 0007 SM M

P and ID Ref Service Description

944-AMIK-342 TEMP. OF COOLING WATER DISC. D FROM EXCHANGER P-512401D

Thermowell TW 5124 0007 SM M

944-AMIK-342 TEMP. OF COOLING WATER DISC. D FROM EXCHANGER P-512401D

25 Loop No: TS1240013

Function Description Tag No Local Cal OK Defect

Temperature Indicator TI 5124 0013 SM I I # 319 WRONG TYPE

P and ID Ref Service Description

944-AMIK-342 TEMP. ON PUMP (B-512401 A/B/C) DISC MANIFOLD

Thermowell TW 5124 0013 SM M

944-AMIK-342 TEMP. ON PUMP (B-512401 A/B/C) DISC MANIFOLD

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Dave: *Van Le* Petromec: *Brasol*

Brasol *Brasol*

Rim *Brasol*

ABS *Brasol*

April 1999

Instrument and Loop List Status per Skid

Associated Skid: UQ-512401 Process Cooling Medium Package Location: M2

26 Loop No: X51240011

Function Description	Tag No	Local	Cal OK	Defect	P and ID Ref	Service Description
Hand Switch	HS 5124 0012A	CCR	☒		944-AMIK-342	ECOS CONTROL TO START B-512401A
Hand Switch	HS 5124 0012B	CCR	☒		944-AMIK-342	ECOS CONTROL TO STOP B-512401A
Hand Switch	HS 5124 0013	CCR	☒		944-AMIK-342	LOCAL/ECOS SELECTION TO START/STOP B-512401A
Unspecified Alarm Signal	XA 5124 0012	CCR	☒		944-AMIK-342	MOTOR RUNNING STATUS FOR PUMP B-512401A
Unspecified Status Signal	NL 5124 0012	CCR	☒		944-AMIK-342	MOTOR TRIPPED STATUS FOR PUMP B-512401A
Safety, escape and fire fighting package	XS 5124 0012	CCR	☒		944-AMIK-342	SHUTDOWN MOTOR FOR PUMP B-512401A
Safety, escape and fire fighting package	XS 5124 0013	CCR	☒		944-AMIK-342	ECOS CONTROL TO START/STOP GLYCOL PUMP B-512401A
Position Switch Open	Z1.11 5124 0011	CCR	☒		944-AMIK-342	POSITION OF XV51240011
Position Switch Closed	Z1.1.1 5124 0011	CCR	☒		944-AMIK-342	POSITION OF XV51240011
Hand Switch	HS 5124 0012C	SM	☒		944-AMIK-342	MANUAL CONTROL TO START B-512401A
Hand Switch	HS 5124 0012D	SM	☒		944-AMIK-342	MANUAL CONTROL TO STOP B-512401A
Vessel and column package	XV 5124 0011	SM	☒	# 125 repaired	944-AMIK-342	SHUTDOWN OF PUMP B-512401A DISC.
Solenoid Valve	XY 5124 0011	SM	☐	# 122 Pressure range	944-AMIK-342	SHUTDOWN OF PUMP B-512401A DISC.
Position or Limit Switch High (Open)	ZSH 5124 0011	SM	☒	# 106 - 113 repaired	944-AMIK-342	POSITION OF XV51240011
Position or Limit Switch Low (Closed)	ZSL 5124 0011	SM	☒	# 106 - 113 repaired	944-AMIK-342	POSITION OF XV51240011

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septemb/ 1999

Instrument and Loop List Status per Skid

Associated Skid: UQ-512401 Process Cooling Medium Package Location: M2

27 Loop No: X51240021

Function Description	Tag No	Local	Cal OK	Defect	P and ID Ref	Service Description
Hand Switch	HS 5124 0022A	CCR	☒		944-AMIK-342	ECOS CONTROL TO START B-512401B
Hand Switch	HS 5124 0022B	CCR	☒		944-AMIK-342	ECOS CONTROL TO STOP B-512401B
Hand Switch	HS 5124 0023	CCR	☒		944-AMIK-342	LOCAL/ECOS SELECTION TO START/STOP B-512401B
Unspecified Alarm Signal	XA 5124 0022	CCR	☒		944-AMIK-342	MOTOR RUNNING STATUS FOR PUMP B-512401B
Unspecified Status Signal	XL 5124 0022	CCR	☒		944-AMIK-342	MOTOR TRIPPED STATUS FOR PUMP B-512401B
Safety, escape and fire fighting package	XS 5124 0022	CCR	☒		944-AMIK-342	SHUTDOWN MOTOR FOR PUMP B-512401B
Safety, escape and fire fighting package	XS 5124 0023	CCR	☒		944-AMIK-342	ECOS CONTROL TO START/STOP GLYCOL PUMP B-512401B
Position Switch Open	ZLH 5124 0021	CCR	☒		944-AMIK-342	POSITION OF XV51240021
Position Switch Closed	ZLL 5124 0021	CCR	☒		944-AMIK-342	POSITION OF XV51240021
Hand Switch	HS 5124 0022C	SM	☒		944-AMIK-342	MANUAL CONTROL TO START B-512401B
Hand Switch	HS 5124 0022D	SM	☒		944-AMIK-342	MANUAL CONTROL TO STOP B-512401B
Vessel and column package	XV 5124 0021	SM	☒		944-AMIK-342	SHUTDOWN OF PUMP B-512401B DISC.
Solenoid Valve	XV 5124 0021	SM	☒	# 122 Pressure range	944-AMIK-342	SHUTDOWN OF PUMP B-512401B DISC.
Position or Limit Switch High (Open)	ZSH 5124 0021	SM	☒	# 106 repaired	944-AMIK-342	POSITION OF XV51240021
Position or Limit Switch Low (Closed)	ZSL 5124 0021	SM	☒	# 106 repaired	944-AMIK-342	POSITION OF XV51240021

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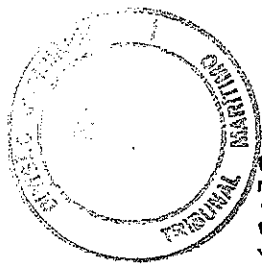
Instrument and Loop List Status per Skid

Associated Skid: UQ-512401 Process Cooling Medium Package Location#: M2

28 Loop No: X51240031

Function Description	Tag No	Local	Cal OK	Defect	P and ID Ref	Service Description
Hand Switch	HS 5124 0032A	CCR	☒		944-AMIK-342	ECOS CONTROL TO START B-512401C
Hand Switch	HS 5124 0032B	CCR	☒		944-AMIK-342	ECOS CONTROL TO STOP B-512401C
Hand Switch	HS 5124 0033	CCR	☒		944-AMIK-342	LOCAL/ECOS SELECTION TO START/STOP B-512401C
Unspecified Alarm Signal	XA 5124 0032	CCR	☒		944-AMIK-342	MOTOR RUNNING STATUS FOR PUMP B-512401C
Unspecified Status Signal	XL 5124 0032	CCR	☒		944-AMIK-342	MOTOR TRIPPED STATUS FOR PUMP B-512401C
Safety, escape and fire fighting package	NS 5124 0032	CCR	☒		944-AMIK-342	SHUTDOWN MOTOR FOR PUMP B-512401C
Safety, escape and fire fighting package	NS 5124 0033	CCR	☒		944-AMIK-342	ECOS CONTROL TO START/STOP GLYCOL PUMP B-512401C
Position Switch Open	ZLH 5124 0031	CCR	☒		944-AMIK-342	POSITION OF XV51240031
Position Switch Closed	ZLL 5124 0031	CCR	☒		944-AMIK-342	POSITION OF XV51240031
Hand Switch	HS 5124 0032C	SM	☒		944-AMIK-342	MANUAL CONTROL TO START B-512401C
Hand Switch	HS 5124 0032D	SM	☒		944-AMIK-342	MANUAL CONTROL TO STOP B-512401C
Vessel and column package	XV 5124 0031	SM	☐	# 114 Valve Jammed	944-AMIK-342	SHUTDOWN OF PUMP B-512401C DISC.
Solenoid Valve	XV 5124 0031	SM	☐	# 122 Pressure range	944-AMIK-342	SHUTDOWN OF PUMP B-512401C DISC.
Position or Limit Switch High (Open)	ZSH 5124 0031	SM	☒	# 106 repaired	944-AMIK-342	POSITION OF XV51240031
Position or Limit Switch Low (Closed)	ZSL 5124 0031	SM	☒	# 106 - 126 repaired	944-AMIK-342	POSITION OF XV51240031

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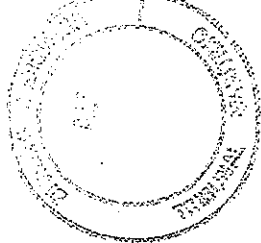
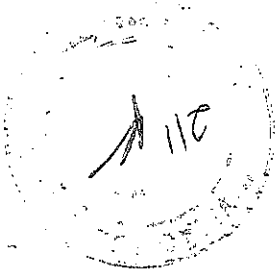
SOFT REF	TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT DWG. DE- 3010.38- 5400-B55- AMK	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
1016	MA01010	PORT AFT LOWER PUMP ROOM	1	1	0	A	22		K/H01000					
1018	SI01001	PORT AFT WATER INJECTION	1	0	A	01			K/H01000					
1019	SI01002	PORT AFT WATER INJECTION	1	0	A	02			K/H01000					
1020	MA01003	PORT SIDE PONTOON CORRIDOR	1	0	A	23			K/H01000					
1021	SI01004	PORT SIDE PONTOON CORRIDOR	1	0	A	03			K/H01000					
1022	SI01005	PORT SIDE PONTOON CORRIDOR	1	0	A	04			K/H01000					
1023	SI01006	PORT SIDE PONTOON CORRIDOR	1	0	A	05			K/H01000					
1024	MA01007	PORT SIDE PONTOON CORRIDOR	1	0	A	24			K/H01000					
1025	SI01008	PORT AFT COLUMN TOP	1	1	A	01			K/H01020					
1026	MA01009	PORT AFT COLUMN TOP	1	1	A	22			K/H01020					
1027	SI01010	PORT AFT COLUMN MIDDLE	1	1	A	02			K/H01020					
1028	MA01011	PORT AFT COLUMN MIDDLE	1	1	A	23			K/H01020					
1029	SI01012	PORT AFT COLUMN MIDDLE	1	1	A	03			K/H01020					
1030	SI01013	PORT FORWARD COLUMN TOP	1	2	A	01			K/H02010					
1031	MA01014	PORT FORWARD COLUMN TOP	1	2	A	31			K/H02010					
1032	SI01015	PORT FORWARD COLUMN TOP	1	2	A	02			K/H02010					
1033	SI01016	PORT FORWARD COLUMN MIDDLE	1	2	A	03			K/H02010					
1034	MA01017	PORT FORWARD COLUMN MIDDLE	1	2	A	32			K/H02010					
1035	SI01018	PORT FORWARD COLUMN MIDDLE	1	2	A	04			K/H02010					
1036	SI01019	STARBOARD FORWARD COLUMN STAIRWELL	1	2	A	05			K/H02010					
1037	SI01020	STARBOARD FORWARD COLUMN STAIRWELL	1	3	A	01			K/H03000					
1038	MA01021	STARBOARD FORWARD COLUMN STAIRWELL	1	3	A	27			K/H03000					
1039	SI01022	STARBOARD FORWARD THRUSTER ROOM	1	3	A	02			K/H03000					

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AUTRONICA PANEL No. 1

SOFT REF	TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT DWG. DE- 3010-38- 5400-855- AMK	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
110	SD00003	STARBOARD FORWARD UPPER PUMP ROOM	1	3	A	03			K/H03000					
111	SD00004	STARBOARD FORWARD UPPER PUMP ROOM	1	3	A	04			K/H03000					
115	MA00005	STARBOARD FORWARD LOWER PUMP ROOM	1	3	A	28			K/H03000					
113	SD00006	STARBOARD FORWARD WATER INJECTION	1	3	A	05			K/H03000					
112	SD00007	STARBOARD FORWARD WATER INJECTION	1	3	A	06			K/H03000					
114	SD00008	STARBOARD FORWARD WATER INJECTION	1	3	A	07			K/H03000					
115	SD00009	STARBOARD FORWARD WATER INJECTION	1	3	A	08			K/H03000					
116	SD00010	STARBOARD AFT COLUMN STAIRWELL	1	4	A	01			K/H04010					
119	MA00011	STARBOARD AFT COLUMN STAIRWELL	1	4	A	23			K/H04010					
117	SD00012	STARBOARD AFT UPPER THRUSTER ROOM	1	4	A	02			K/H04010					
118	SD00013	STARBOARD AFT UPPER PUMP ROOM	1	4	A	03			K/H04010					
1171	SD00014	STARBOARD AFT UPPER PUMP ROOM	1	4	A	04			K/H04010					
1172	SD00015	STARBOARD AFT WATER INJECTION	1	4	A	05			K/H04010					
112	SD00016	STARBOARD AFT WATER INJECTION	1	4	A	06			K/H04010					
1174	SD00017	STARBOARD AFR COLUMN STAIR	1	4	A	07			K/H04010					
126	SD00018	TANK TOP ACCOMMODATION PORT SIDE	1	5	A	01			K/H05000					
126	SD00019	TANK TOP ACCOMMODATION PORT SIDE	1	5	A	02			K/H05000					
1210	SD00020	TANK TOP ACCOMMODATION PORT SIDE	1	5	A	03			K/H05000					
1211	SD00021	TANK TOP ACCOMMODATION PORT SIDE	1	5	A	04			K/H05000					
1212	SD00022	TANK TOP ACCOMMODATION PORT SIDE	1	5	A	05			K/H05000					
1213	SD00023	TANK TOP ACCOMMODATION PORT SIDE	1	5	A	06			K/H05000					
1214	SD00024	TANK TOP PORT FORWARD FAN ROOM	1	5	A	07			K/H05000					
1215	SD00025	TANK TOP PORT FORWARD FAN ROOM	1	5	A	08			K/H05000					

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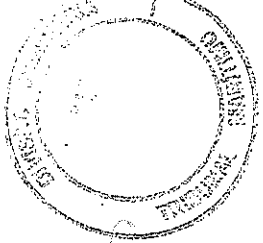
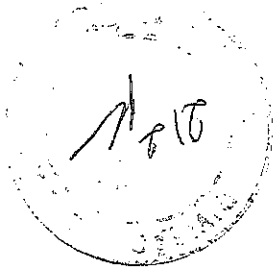


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AUTRONICA PANEL No. 1

SOFT REF	TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT DWG.DE- 3010.38- 5400-855- AMK	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
1216	SEP0009	TANK TOP ACCOMMODATION PORT SIDE	1	5	A	09			K/H05000					
1217	SEP0009	TANK TOP ACCOMMODATION PORT SIDE	1	5	A	10			K/H05000					
1248	SEP0020	TANK TOP ACCOMMODATION PORT SIDE	1	6	A	01			K/H05020					
1249	SEP0021	TANK TOP ACCOMMODATION PORT SIDE	1	6	A	02			K/H05020					
1250	SEP0022	TANK TOP ACCOMMODATION PORT SIDE	1	6	A	03			K/H05020					
1251	SEP0023	TANK TOP ACCOMMODATION PORT SIDE	1	6	A	04			K/H05020					
1252	SEP0024	TANK TOP ACCOMMODATION PORT SIDE	1	6	A	05			K/H05020					
1253	SEP0025	TANK TOP CORRIDOR BY LINEN LOCKER	1	6	A	06			K/H05020					
1254	SEP0026	TANK TOP ACCOMMODATION PORT SIDE	1	6	A	07			K/H05020					
1255	SEP0027	TANK TOP ACCOMMODATION PORT SIDE	1	6	A	08			K/H05020					
1256	SEP0028	TANK TOP ACCOMMODATION PORT SIDE	1	6	A	09			K/H05020					
1257	SEP0029	TANK TOP ACCOMMODATION PORT SIDE	1	6	A	10			K/H05020					
1208	SEP0040	TANK TOP CENTRAL CONTROL ROOM	1	7	A	01			K/H05040					
1215	MAR0041	TANK TOP CORRIDOR OUTSIDE CCR	1	7	A	28			K/H05040					
1209	SEP0042	TANK TOP CENTRAL CHANGING ROOMS	1	7	A	02			K/H05040					
1240	SEP0043	TANK TOP ACC. COMPRESSOR & MCC ROOM	1	7	A	03			K/H05040					
1201	SEP0044	TANK TOP ACCOMMODATION PORT SIDE	1	7	A	04			K/H05040					
1202	SEP0045	TANK TOP PORT CORRIDOR BY SAUNA	1	7	A	05			K/H05040					
1203	SEP0046	TANK TOP PORT CHANGING ROOMS	1	7	A	06			K/H05040					
1204	SEP0047	TANK TOP GYMNASIUM	1	7	A	07			K/H05040					
1205	SEP0048	TANK TOP CORRIDOR PORT BY GYM	1	7	A	08			K/H05040					
1206	SEP0049	TANK TOP CORRIDOR PORT BY BATH	1	7	A	09			K/H05040					
1208	SEP0070	TANK TOP ACCOMMODATION STARBOARD	1	8	A	01			K/H05070					

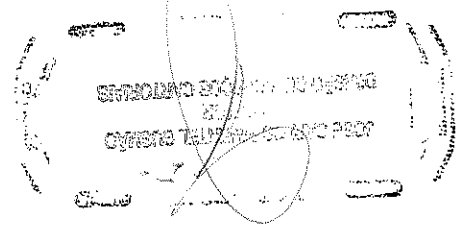
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AUTRONICA PANEL No. 1

SOFT REF	TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT DWG.DE- 3010.38- 5400-855- AMK	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
1329	SD05071	TANK TOP ACCOMMODATION STARBOARD	1	8	A	02			K/IH05070					
1330	SD05072	TANK TOP STARBOARD FAN ROOM	1	8	A	03			K/IH05070					
1331	HD05073	TANK TOP STARBOARD FAN ROOM	1	8	A	04			K/IH05070					
1332	SD05074	TANK TOP ACCOMMODATION STARBOARD	1	8	A	05			K/IH05070					
1333	SD05075	TANK TOP ACCOMMODATION STARBOARD	1	8	A	06			K/IH05070					
1344	MA05076	TANK TOP STRD FWD ACCOMMODATION STAIR	1	8	A	17			K/IH05070					
1334	SD05077	TANK TOP STBD ACCOMMODATION CORRIDOR	1	8	A	07			K/IH05070					
1335	SD05078	TANK TOP ACCOMMODATION STARBOARD	1	8	A	08			K/IH05070					
1013	SD05090	SECOND DECK PORT ACCOM CORRIDOR	1	0	B	06			K/IH05090					
1014	SD05091	SECOND DECK HOSPITAL	1	0	B	07			K/IH05090					
1022	MA05092	SECOND DECK PORT ACCOM CORRIDOR	1	0	B	25			K/IH05090					
1015	SD05093	SECOND DECK PORT ACCOM CORRIDOR	1	0	B	08			K/IH05090					
1016	SD05094	SECOND DECK PORT ACCOM CORRIDOR	1	0	B	09			K/IH05090					
1017	SD05095	SECOND DECK PORT ACCOM CORRIDOR	1	0	B	10			K/IH05090					
1023	MA05096	SECOND DECK PORT ACCOM CORRIDOR	1	0	B	26			K/IH05090					
1034	MA05097	SECOND DECK PORT FORWARD CORNER	1	0	B	27			K/IH05090					
1018	SD05098	2ND DECK PORT FORWARD WINCH CABIN	1	0	B	11			K/IH05090					
1035	MA05099	SECOND DECK PORT FORWARD WINCH CABIN	1	0	B	28			K/IH05090					
1051	SD05110	SECOND DECK PORT ACCOMMODATION	1	1	B	04			K/IH05110					
1052	SD05111	SECOND DECK MESS ROOM	1	1	B	05			K/IH05110					
1053	SD05112	SECOND DECK DAY ROOM (NON SMOKERS)	1	1	B	06			K/IH05110					
1071	MA05113	SECOND DECK STAIRWELL BY DAY ROOMS	1	1	B	24			K/IH05110					
1054	114	SECOND DECK PORT TOILETS	1	1	B	07			K/IH05110					

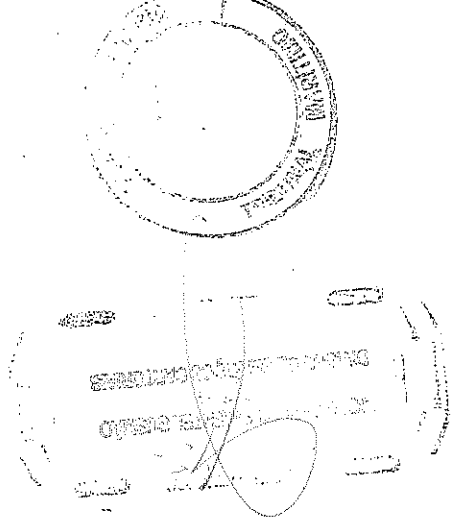
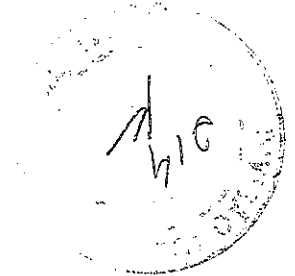
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AUTONICA PANEL No. 1

SOFT REF	TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT DWG. DE- 3010.38- 5400-855- AMK	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
1045	SD05115	SECOND DECK PORT TOILETS	1	1	1	B	06		K/H05110					
1046	SD05116	SECOND DECK CORRIDOR BY PORT TOILETS	1	1	1	B	08		K/H05110					
1047	SD05117	SECOND DECK CHANGING ROOMS	1	1	1	B	10		K/H05110					
1048	SD05118	SECOND DECK CONFERENCE ROOM	1	1	1	B	11		K/H05110					
1049	SD05119	SECOND DECK CONFERENCE ROOM	1	1	1	B	12		K/H05110					
1050	SD05120	SECOND DECK STBD ACCOMMODATION	1	2	2	B	06		K/H05130					
1051	SD05131	SECOND DECK STBD ACCOMMODATION	1	2	2	B	07		K/H05130					
1052	SD05132	SECOND DECK STBD ACCOMMODATION	1	2	2	B	08		K/H05130					
1053	SD05133	SECOND DECK STBD ACCOMMODATION	1	2	2	B	09		K/H05130					
1054	SD05134	SECOND DECK STBD ACCOMMODATION	1	2	2	B	10		K/H05130					
1055	SD05135	SECOND DECK DRY STORE 2	1	2	2	B	11		K/H05130					
1056	SD05136	SECOND DECK DRY STORE 1	1	2	2	B	12		K/H05130					
1100	HD05137	SECOND DECK GALLEY	1	2	2	B	13		K/H05130					
1101	HD05138	SECOND DECK GALLEY	1	2	2	B	14		K/H05130					
1106	SD05150	SECOND DECK STBD ACCOMMODATION	1	3	3	B	09		K/H05150					
1107	SD05151	SECOND DECK STBD ACCOMMODATION	1	3	3	B	10		K/H05150					
1108	SD05152	SECOND DECK STBD ACCOMMODATION	1	3	3	B	11		K/H05150					
1109	SD05153	SECOND DECK STBD FORWARD FAN ROOM	1	3	3	B	12		K/H05150					
1140	HD05154	SECOND DECK STBD FORWARD FAN ROOM	1	3	3	B	13		K/H05150					
1141	SD05155	SECOND DECK STBD ACCOMMODATION	1	3	3	B	14		K/H05150					
1142	SD05156	SECOND DECK STBD ACCOMMODATION	1	3	3	B	15		K/H05150					
1156	MA05157	ST COND DECK STBD ACCOM CORRIDOR	1	3	3	B	29		K/H05150					
1143	SD05158	SECOND DECK STBD ACCOM CORRIDOR	1	3	3	B	16		K/H05150					

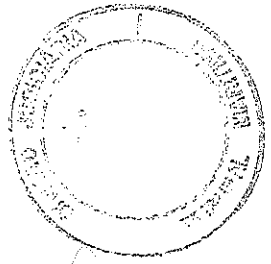
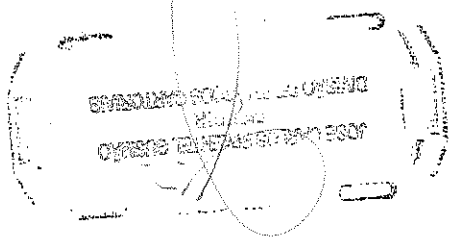
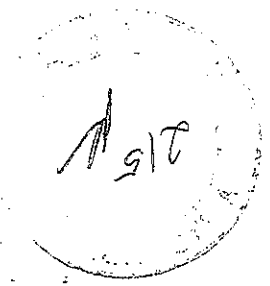
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AUTRONICA PANEL No. 1

SOFT REF	TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT DWG. DE- 3010-38- 5400-855- AMK	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
1144	SD05159	STBD COLUMN RM VENT IN	1	3	B	17			K/IH05150					
1191	MA05170	HELIDECK	1	4	B	24			K/IH05170					
1192	MA05171	HELIDECK	1	4	B	25			K/IH05170					
1193	MA05172	HELIDECK	1	4	B	26			K/IH05170					
1230	SD05180	MAIN DECK PORT BATTERY RM 4	1	5	D	23			K/IH05180					
1231	SD05181	MAIN DECK PORT TELECOMM UPS A	1	5	D	24			K/IH05180					
1232	SD05182	MAIN DECK PORT VEST ROOM	1	5	D	25			K/IH05180					
1233	SD05183	MAIN DECK TELECOMMS EQ	1	5	D	26			K/IH05180					
1234	SD05184	MAIN DECK BATTERY ROOM 3	1	5	D	27			K/IH05180					
1235	SD05185	MAIN DECK TELECOMMS UPS B	1	5	D	28			K/IH05180					
1181	SD05190	SECOND DECK PORT ACCOMM STAIR	1	4	D	14			K/IH05190					
1182	SD05191	SECOND DECK PORT ACCOMM LOCKER	1	4	D	15			K/IH05190					
1183	SD05192	SECOND DECK PORT LINEN LOCKER	1	4	D	16			K/IH05190					
1184	SD05193	SECOND DECK FWD ACCOMM CORR	1	4	D	17			K/IH05190					
1185	SD05194	SECOND DECK STAIR TO CCR	1	4	D	18			K/IH05190					
1186	SD05195	SECOND DECK STBD LINEN LOCKER	1	4	D	19			K/IH05190					
1187	SD05196	SECOND DECK STBD ACCOMM LOCKER	1	4	D	20			K/IH05190					
1188	SD05197	SECOND DECK STAIR STRD FWD ACCOMM.	1	4	D	21			K/IH05190					
1189	SD05198	TANK TOP PORT LINEN LOCKER	1	4	D	22			K/IH05190					
1236	MA05000	TANK TOP SWITCH ROOM 1	1	5	B	29			K/IH05000					
1218	SD05001	TANK TOP SWITCH ROOM 1	1	5	B	11			K/IH05000					
1219	SD05002	TANK TOP SWITCH ROOM 1	1	5	B	12			K/IH05000					
1220	SD05003	TANK TOP SWITCH ROOM 1	1	5	B	13			K/IH05000					

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AUTRONICA PANEL No. 1

SOFT REF	TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT DWG. DE- 3010.3B- 5400-855- AMK	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
1247	MAH0004	TANK TOP CORRIDOR BY ENGINE CONTROL ROOM	1	5	B	30			K/I/H06000					
1251	SDH0005	TANK TOP FWD PUMP ROOM 1	1	5	B	14			K/I/H06000					
1252	SDH0006	TANK TOP FIRE PUMP A	1	5	B	15			K/I/H06000					
1238	MAH0007	DELETE	1	5	B	31			K/I/H06000					
1260	MAH0020	TANK TOP ENGINE CONTROL ROOM	1	6	B	22			K/I/H06020					
1268	SDH0021	TANK TOP ENGINE CONTROL ROOM	1	6	B	11			K/I/H06020					
1270	MAH0022	TANK TOP MACHINE SHOP CORR	1	6	B	23			K/I/H06020					
1269	SDH0023	TANK TOP MACHINE SHOP CORR	1	6	B	12			K/I/H06020					
1260	SDH0024	TANK TOP MACHINE SHOP	1	6	B	13			K/I/H06020					
1271	MAH0025	TANK TOP STAIRWELL BY MECHANICAL STORES	1	6	B	24			K/I/H06020					
1261	SDH0026	TANK TOP STAIRWELL BY MECHANICAL STORES	1	6	B	14			K/I/H06020					
1262	SDH0027	TANK TOP MACHINE STORES	1	6	B	15			K/I/H06020					
1297	SDH0040	SECOND DECK GENERATOR 2	1	7	B	10			K/I/H06040					
1295	HDH0041	SECOND DECK GENERATOR 2	1	7	B	11			K/I/H06040					
1299	SDH0042	SECOND DECK GENERATOR 2	1	7	B	12			K/I/H06040					
1300	SDH0043	SECOND DECK GENERATOR 1	1	7	B	13			K/I/H06040					
1301	HDH0044	SECOND DECK GENERATOR 1	1	7	B	14			K/I/H06040					
1302	SDH0045	SECOND DECK GENERATOR 1	1	7	B	15			K/I/H06040					
1345	MAH0050	SECOND DECK CORRIDOR BY MCC ROOM 1	1	8	B	18			K/I/H06050					
1336	SDH0051	SECOND DECK MCC ROOM 1	1	8	B	09			K/I/H06050					
1337	SDH0054	SECOND DECK CLEAN LAUNDRY ROOM	1	8	B	10			K/I/H06050					
1338	SDH0055	SECOND DECK COFFEE SHP	1	8	B	11			K/I/H06050					
1339	SDH0056	SECOND DECK OFFICE	1	8	B	12			K/I/H06050					

COPIA FILE DO DOCUMENTO ORIGINAL

AUTRONICA PANEL No. 1

SOFT REF	TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT DWG. DE- 3010.38- 5400-855- AMIK	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
1240	SD06057	SECOND DECK WELD SHOP	1	8	B	13			K/H06050					
1241	SD06058	SECOND DECK DRILLING WAREHOUSE	1	8	B	14			K/H06050					
1242	SD06059	PORT AFT COLUMN VENT IN	1	8	B	15			K/H06050					
1243	SD06070	MAIN DECK DRILLING WHSE	1	6	D	18			K/H06070					
1244	SD06071	MAIN DECK DRILLING WHSE	1	6	D	19			K/H06070					
1247	SD06072	2nd DECK WELDING SHOP	1	6	D	20			K/H06070					
1272	MA06073	2nd DECK WELDING SHOP	1	6	D	25			K/H06070					
1273	MA06074	ESCAPE FROM WELDING SHOP	1	6	D	26			K/H06070					
1248	SI06075	PORT AFT WINCH CABIN	1	6	D	21			K/H06070					
1274	MA06076	PORT AFT WINCH CABIN	1	6	D	27			K/H06070					
1019	SD07010	TANK TOP SACK STORAGE	1	0	C	12			K/H07010					
1020	SI07011	TANK TOP SACK STORAGE	1	0	C	13			K/H07010					
1026	MA07012	TANK TOP SACK STORAGE	1	0	C	29			K/H07010					
1037	MA07013	TANK TOP GENERATOR 3	1	0	C	30			K/H07010					
1021	SI07014	TANK TOP MCC POWER DISTRIBUTION ROOM	1	0	C	14			K/H07010					
1022	SD07015	TANK TOP DRILLING TRANSFER AREA	1	0	C	15			K/H07010					
1023	SD07016	TANK TOP DIVERTER CONTROL	1	0	C	16			K/H07010					
1024	SD07017	TANK TOP BY ACCUMULATOR & CONTROL	1	0	C	17			K/H07010					
1038	MA07018	TANK TOP CORR BY DRILLING TRANS	1	0	C	31			K/H07010					
1025	SI07019	TANK MUD PUMP STORE	1	0	C	18			K/H07010					
1060	SI07020	TANK TOP PRODUCTION WAREHOUSE	1	1	C	13			K/H07030					
1072	MA07031	TANK TOP PRODUCTION WAREHOUSE CORR	1	1	C	25			K/H07030					
1061	SD07032	TANK TOP PRODUCTION WAREHOUSE	1	1	C	14			K/H07030					

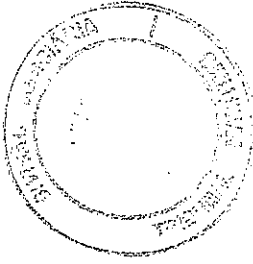
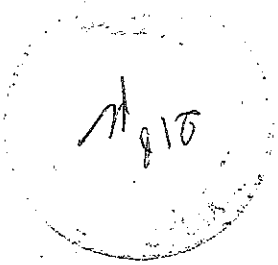
AUTRONICA PANEL No. 1

SOFT REF	TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT DWG. DE- 3010-38- 6400-855- AMK	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
1062	SD07033	TANK TOP PRODUCTION WAREHOUSE CORR	1	1	1	C	15		K/H07030					
1063	SD07034	TANK TOP PRODUCTION WAREHOUSE CORR	1	1	1	C	16		K/H07030					
1064	SD07035	TANK TOP FW PUMP ROOM B	1	1	1	C	17		K/H07030					
1065	SD07036	TANK TOP FW PUMP ROOM	1	1	1	C	18		K/H07030					
1072	MA07037	TANK TOP CORRIDOR BY FIRE PUMP ROOM	1	1	1	C	26		K/H07030					
1066	SD07038	TANK TOP CORRIDOR BY DO DAY TANK	1	1	1	C	49		K/H07030					
1075	SD07039	TANK TOP CORRIDOR BY FIRE PUMP ROOM	1	1	1	C	28		K/H07030					
1102	SD07050	TANK TOP SWITCHGEAR ROOM 2	1	2	2	C	15		K/H07050					
1103	SD07051	TANK TOP SWITCHGEAR ROOM 2	1	2	2	C	16		K/H07050					
1104	SD07052	TANK TOP SWITCHGEAR ROOM 2	1	2	2	C	17		K/H07050					
1105	SD07053	TANK TOP CORRIDOR BY SWITCHGEAR ROOM 2	1	2	2	C	48		K/H07050					
1120	MA07054	TANK TOP SWITCHGEAR ROOM 2	1	2	2	C	33		K/H07050					
1106	SD07055	TANK TOP DRILLING STORE	1	2	2	C	19		K/H07050					
1121	MA07056	TANK TOP CORRIDOR BY ELECTRICAL STORES	1	2	2	C	34		K/H07050					
1107	SD07057	TANK TOP ELECTRICAL WORKSHOP	1	2	2	C	20		K/H07050					
1108	SD07058	TANK TOP ELECTRICAL STORES	1	2	2	C	21		K/H07050					
1109	SD07059	TANK TOP BOP WSHOP	1	2	2	C	22		K/H07050					
1145	SD07070	SECOND DECK GENERATOR 3	1	3	3	C	18		K/H07070					
1146	HD07071	SECOND DECK GENERATOR 3	1	3	3	C	19		K/H07070					
1147	SD07072	SECOND DECK GENERATOR 3	1	3	3	C	20		K/H07070					
1148	SD07073	SECOND DECK GENERATOR 4	1	3	3	C	21		K/H07070					
1149	HD07074	SECOND DECK GENERATOR 4	1	3	3	C	22		K/H07070					
1150	SD07075	SECOND DECK GENERATOR 4	1	3	3	C	23		K/H07070					

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

2nd deck by prod whse? (new del.) - see AMEC

COPIA DO DOCUMENTO ORIGINAL

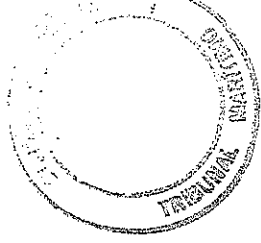
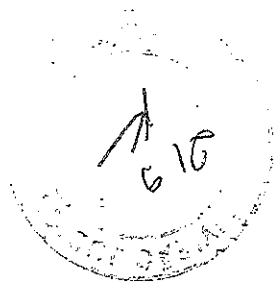


JOSE CARLOS PRINTEL GUSMANO
C-1308
COMANDO DE SISTEMAS CANTONAL

AUTRONICA PANEL No. 1

SOFT REF	TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT DWG. DE- 3010.38- 5400-855- AMK	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
1157	MA07076	SECOND DECK CORR BY BATTERY RM 2	1	3	C	30			K/H06070					
1154	SD07077	SECOND DECK CORR BY BATTERY RM 2	1	3	C	24			K/H07070					
1152	SD07078	SECOND DECK CORR BY A/C CS	1	3	C	25			K/H07070					
1153	SD07079	SECOND DECK AUX MACH SPACE	1	3	C	26			K/H07070					
1175	SD07090	SECOND DECK STBD AFT WINCH CABIN	1	4	C	08			K/H07090					
1164	MA07091	SECOND DECK STBD AFT WINCH CABIN	1	4	C	27			K/H07090					
1195	MA07092	SECOND DECK STBD AFT CORNER	1	4	C	28			K/H07090					
1176	SD07093	SECOND DECK WHSE OFFICE	1	4	C	09			K/H07090					
1177	SD07094	SECOND DECK WHSE	1	4	C	10			K/H07090					
1178	SD07095	SECOND DECK WHSE	1	4	C	11			K/H07090					
1179	SD07096	SECOND DECK WHSE	1	4	C	12			K/H07090					
1180	SD07097	STBD AFT COLUMN VENT IN	1	4	C	13			K/H07090					
1223	SD07110	SECOND DECK MCC ROOM 2	1	5	C	16			K/H07110					
1239	MA07111	SECOND DECK TROLLEY BEAM BY MCC 2	1	5	D	32			K/H07110					
1224	SD07112	SECOND DECK OPEN STORAGE AREA	1	5	C	17			K/H07110					
225	SD07113	SECOND DECK ESD RTU 1 ROOM	1	5	C	18			K/H07110					
226	SD07114	SECOND DECK PROCESS GAS COMPRESSOR ROOM	1	5	C	19			K/H07110					
227	SD07115	SECOND DECK DRILLING MCCS ROOM	1	5	C	20			K/H07110					
228	SD07116	SECOND DECK BATTERY ROOM 2	1	5	C	21			K/H07110					
229	SD07117	SECOND DECK ESD RTU 2 ROOM	1	5	C	22			K/H07110					
240	MA07118	DELETE	1	5	D	33			K/H07110					
263	SD07130	MAIN DECK LABORATORY	1	6	C	16			K/H07130					
264	SD07131	MAIN DECK LABORATORY	1	6	C	17			K/H07130					

COPIA DEL DOCUMENTO ORIGINAL



JOSE GUERRA
DMSA

AUTRONICA PANEL No. 1

SOFT P/F	TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT DWG. DE- 3010-38- 5400-855- AMK	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
1317	MA07140	MAIN DECK FUEL TREAT PACKAGE	1	7	D	30			K/IH07140					
1318	MA07141	MAIN DECK LP COMP SKID	1	7	D	31			K/IH07140					
1319	SD07142	MAIN DECK PAINT LOCKER	1	7	D	24			K/IH07140					
1319	MA07143	MAIN DECK GLYCOL REGEN PACKAGE	1	7	D	32			K/IH07140					
1312	SD07144	MAIN DECK PORT AFT VOID	1	7	D	25			K/IH07140					
1320	MA07145	MAIN DECK HEATING MEDIUM PACKAGE	1	7	D	33			K/IH07140					
1313	SD07146	MAIN DECK VENT IN TO MACH SPACE AHU	1	7	D	26			K/IH07140					
1314	SD07147	MAIN DECK PORT LIFEBOAT NO 3	1	7	D	27			K/IH07140					
1303	SD09000	SECOND DECK CORR BY MUD PP RM	1	7	C	16			K/IH09000					
1316	MA09001	SECOND DECK MUD DUST FILTER RM	1	7	C	29			K/IH09000					
1304	SD09002	SECOND DECK MUD DUST FILTER RM	1	7	C	17			K/IH09000					
1305	SD09003	SECOND DECK MUD PUMP ROOM	1	7	C	18			K/IH09000					
1306	SD09004	SECOND DECK MUD PUMP ROOM	1	7	C	19			K/IH09000					
1307	SD09005	SECOND DECK MUD PUMP ROOM	1	7	C	20			K/IH09000					
1308	SD09006	SECOND DECK MUD PIT RM	1	7	C	21			K/IH09000					
1309	SD09007	SECOND DECK MUD PIT RM	1	7	C	22			K/IH09000					
1310	SD09008	SECOND DECK MUD PIT RM	1	7	C	23			K/IH09000					
1346	MA09020	DELETE NOW MA 21000	1	8	C	19			K/IH09020					
1343	SD09021	DELETE	1	8	C	16			K/IH09020					
1347	MA09022	DELETE NOW MA 20000	1	8	C	20			K/IH09020					
1026	SD10000	MAIN DECK INCIN ROOM	1	0	D	19			K/IH10000					
1039	MA10001	ESCAPE FROM INCIN ROOM	1	0	D	32			K/IH10000					
1027	SD10002	VENT TO STARBOARD ACCOMM	1	0	D	20			K/IH10000					

COPIA FIELD DOCUMENT ORIGINAL

AUTRONICA PANEL No. 1

SOFT REF	TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT DWG. DE- 3010.38- 5400-855- AMK	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
1028	SD10003	VENT INLET TO GALLEY	1	0	D	21			K/H10000					
1067	SD12000	SECOND DECK FIRE PP RM C	1	1	D	20			K/H12000					
1068	SD12001	SECOND DECK FIRE PP RM C	1	1	D	21			K/H12000					
1074	MA12002	ESCAPE FROM FORWARD FIRE PP RM	1	1	D	27			K/H12000					
1110	SD13000	UPPER DECK PORT CRANE ENG RM	1	2	D	23			K/H13000					
1111	HD13001	UPPER DECK PORT CRANE ENG RM	1	2	D	24			K/H13000					
1112	SD13002	UPPER DECK PORT CRANE ENG RM	1	2	D	25			K/H13000					
1113	HD13003	UPPER DECK PORT CRANE ENG RM	1	2	D	26			K/H13000					
1114	HD13004	UPPER DECK PORT CRANE SWGEAR	1	2	D	27			K/H13000					
1115	HD13005	UPPER DECK PORT CRANE SWGEAR	1	2	D	28			K/H13000					
1122	MA13006	UPPER DECK PORT CRANE CABIN	1	2	D	35			K/H13000					
1116	SD13007	UPPER DECK PORT CRANE CABIN	1	2	D	29			K/H13000					
1117	SD13008	UPPER DECK PORT CRANE CABIN	1	2	D	30			K/H13000					
1352	MA13020	SPIDER DECK	1	8	D	25			MA13020					(NEW)
1353	MA13021	SPIDER DECK	1	8	D	26			MA13020					(NEW)
1354	MA13022	SPIDER DECK	1	8	D	27			MA13020					(NEW)
1355	MA13023	SPIDER DECK	1	8	D	28			MA13020					(NEW)
1372	MA17000	MAIN DECK - AFT/PORT	1	9	A	05			MA29000					(NEW)
1373	MA17001	MAIN DECK - AFT/PORT	1	9	A	06			MA29000					(NEW)
1349	MA17002	MAIN DECK - AFT/PORT	1	8	C	22			K/H09020					(NEW)
1350	MA18000	MAIN DECK - FORWARD/PORT	1	8	C	23			K/H09020					(NEW)
1348	MA19000	MAIN DECK - AFT/STARBOARD	1	8	C	21			K/H09020					(NEW)
1347	MA20000	MAIN DECK - AFT/STARBOARD	1	8	C	20			K/H09020					(NEW)

COPIA FIEL DO ORIGINAL

JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CATEGÓRICOS



JOSE CARLOS PILATEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CATASTRALIS

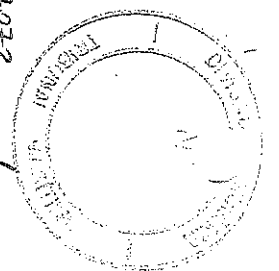
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UTRONICA PANEL No. 2

DETROITAS TRIDENTE - 21.67073

AE-4



SOFT	TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
								DWG. DE-3010.38-5400-865-AMK						

408	SD01010	PORT AFT COLUMN STAIRWELL	2	0	A	01	KIH01010							
432	MA01011	PORT AFT COLUMN STAIRWELL	2	0	A	25	KIH01010							
409	SD01012	PORT AFT UPPER PUMP ROOM	2	0	A	02	KIH01010							
410	SD01013	PORT AFT UPPER PUMP ROOM	2	0	A	03	KIH01010							
411	SD01014	PORT AFT UPPER PUMP ROOM	2	0	A	04	KIH01010							
412	SD01015	PORT AFT WATER INJECTION	2	0	A	05	KIH01010							
413	SD01016	PORT AFT WATER INJECTION	2	0	A	06	KIH01010							
414	SD01017	PORT AFT COLUMN STAIR	2	0	A	07	KIH01010							
448	SD02000	PORT FORWARD COLUMN STAIRWELL	2	1	A	01	KIH02000							
476	MA02001	PORT FORWARD COLUMN STAIRWELL	2	1	A	29	KIH02000							
449	SD02002	PORT FORWARD THRUSTER ROOM	2	1	A	02	KIH02000							
450	SD02003	PORT FORWARD UPPER PUMP ROOM	2	1	A	03	KIH02000							
451	SD02004	PORT FORWARD UPPER PUMP ROOM	2	1	A	04	KIH02000							
477	MA02005	PORT FORWARD LOWER PUMP ROOM	2	1	A	30	KIH02000							
452	SD02006	PORT FORWARD WATER INJECTION	2	1	A	05	KIH02000							
453	SD02007	PORT FORWARD WATER INJECTION	2	1	A	06	KIH02000							
454	SD02008	PORT FORWARD WATER INJECTION	2	1	A	07	KIH02000							
455	SD02009	PORT FORWARD WATER INJECTION	2	1	A	08	KIH02000							
488	SD03010	STARBOARD FORWARD COLUMN TOP	2	2	A	01	KIH03010							
410	MA03011	STARBOARD FORWARD COLUMN STAIRWELL	2	2	A	23	KIH03010							
489	SD03012	STARBOARD FORWARD COLUMN TOP	2	2	A	02	KIH03010							
490	SD03013	STARBOARD FORWARD COLUMN MIDDLE	2	2	A	03	KIH03010							
411	MA03014	STARBOARD FORWARD COLUMN MIDDLE	2	2	A	24	KIH03010							

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JOSE CARLOS TAVARES GUSMAO
DIRETOR
DIVISAO DE SERVICOS CAPOES

200

AUTRONICA PANEL No. 2

SOFT	TAG No	SERVICE	SPACE	PANEL	LOOP	SPUR	ADDR.	LAYOUT	CABLE	Disabled	Fault	INT.	FIELD	REMARKS
REF			No.					DWG. DE- 3010.38- 5400-855- ADMK				TEST	TEST	

491	SD03015	STARBOARD FORWARD COLUMN MIDDLE	2	2	A	04	K/IH03010							
492	SD03016	STARBOARD FORWARD COLUMN STAIR	2	2	A	05	K/IH03010							
552	MA04000	STARBOARD AFT LOWER PUMP ROOM	2	3	A	25	K/IH04000							
526	SD04001	STARBOARD AFT WATER INJECTION	2	3	A	01	K/IH04000							
529	SD04002	STARBOARD AFT WATER INJECTION	2	3	A	02	K/IH04000							
533	MA04003	STARBOARD SIDE PONTOON CORRIDOR	2	3	A	26	K/IH04000							
530	SD04004	STARBOARD SIDE PONTOON CORRIDOR	2	3	A	03	K/IH04000							
531	SD04005	STARBOARD SIDE PONTOON CORRIDOR	2	3	A	04	K/IH04000							
532	SD04006	STARBOARD SIDE PONTOON CORRIDOR	2	3	A	05	K/IH04000							
554	MA04007	STARBOARD SIDE PONTOON CORRIDOR	2	3	A	27	K/IH04000							
558	SD04020	STARBOARD AFT COLUMN TOP	2	4	A	01	K/IH04020							
559	MA04021	STARBOARD AFT COLUMN TOP	2	4	A	25	K/IH04020							
569	SD04022	STARBOARD AFT COLUMN TOP	2	4	A	02	K/IH04020							
570	SD04023	STARBOARD AFT COLUMN MIDDLE	2	4	A	03	K/IH04020							
593	MA04024	STARBOARD AFT COLUMN MIDDLE	2	4	A	26	K/IH04020							
508	SD05010	TANK TOP CORRIDOR OUTSIDE CCR	2	5	A	01	K/IH05010							
539	MA05011	TANK TOP CORRIDOR OUTSIDE CCR	2	5	A	32	K/IH05010							
509	SD05012	TANK TOP ACCOMMODATION PORT CORRIDOR	2	5	A	02	K/IH05010							
540	MA05013	TANK TOP ACCOMMODATION PORT CORRIDOR	2	5	A	33	K/IH05010							
510	SD05014	TANK TOP ACCOMMODATION PORT CORRIDOR	2	5	A	03	K/IH05010							
511	SD05015	TANK TOP ACCOMMODATION PORT CORRIDOR	2	5	A	04	K/IH05010							
512	SD05016	TANK TOP ACCOMMODATION PORT CORRIDOR	2	5	A	05	K/IH05010							
541	MA05017	TANK TOP ACCOMMODATION PORT STAIR	2	5	A	34	K/IH05010							

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CATERING

CÓPIA RECIBIDA DO DOCUMENTO ORIGINAL



UTRONICA PANEL No. 2

OFF TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT DWG. DE- 3010.30- 5400-855- AMK	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
SD05018	TANK TOP ACCOMMODATION CORR.	2	5	A		06	K/I/H05010						
SD05019	TANK TOP ACCOMMODATION PORT SIDE	2	5	A		07	K/I/H05010						
SD05030	TANK TOP ACCOMMODATION PORT SIDE	2	6	A		01	K/I/H05030						
SD05031	TANK TOP ACCOMMODATION PORT SIDE	2	6	A		02	K/I/H05030						
SD05032	TANK TOP ACC. COMPRESSOR & MCC ROOM	2	6	A		03	K/I/H05030						
SD05033	TANK TOP ACCOMMODATION PORT SIDE	2	6	A		04	K/I/H05030						
SD05034	TANK TOP ACCOMMODATION PORT SIDE	2	6	A		05	K/I/H05030						
MA05035	TANK TOP PORT STAIRWELL BY SAUNA	2	6	A		31	K/I/H05030						
SD05036	TANK TOP PORT CORR. BY SAUNA	2	6	A		06	K/I/H05030						
SD05037	TANK TOP ACCOMMODATION PORT SIDE	2	6	A		07	K/I/H05030						
SD05038	TANK TOP ACCOMMODATION PORT SIDE	2	6	A		08	K/I/H05030						
SD05039	TANK TOP PORT STAIR BY SAUNA	2	6	A		09	K/I/H05030						
SD05050	TANK TOP CORRIDOR OUTSIDE CCR	2	5	D		23	K/I/H05050						
MA05051	TANK TOP CORRIDOR OUTSIDE CCR	2	5	D		39	K/I/H05050						
SD05052	TANK TOP ACCOMMODATION STARBOARD STAIR	2	5	D		24	K/I/H05050						
SD05053	TANK TOP ACCOMMODATION STARBOARD	2	5	D		25	K/I/H05050						
SD05054	TANK TOP ACCOMMODATION STARBOARD	2	5	D		26	K/I/H05050						
SD05055	TANK TOP ACCOMMODATION STARBOARD	2	5	D		27	K/I/H05050						
SD05056	TANK TOP ACCOMMODATION STARBOARD	2	5	D		28	K/I/H05050						
SD05057	TANK TOP ACCOMMODATION STARBOARD	2	5	D		29	K/I/H05050						
SD05058	TANK TOP ACCOMMODATION STARBOARD	2	5	D		30	K/I/H05050						
SD05059	TANK TOP CORR. BY BRIDGE	2	5	D		31	K/I/H05050						
SD05060	TANK TOP BRIDGE	2	0	B		08	K/I/H05060						

CÓPIA FIEL DO DOCUMENTO ORIGINAL

DIVISÃO DE SERVIÇOS CABLES
SUPERVISOR
JOSE CARLOS PINHEIRO GUSMÃO



UTRONICA PANEL No. 2

COFT REF	TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT DWG. DE- 3010.38- 6400-855- AMK	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
MA05061	433	TANK TOP BRIDGE	2	0	B	26	K/H05060							
SD05062	416	TANK TOP BRIDGE	2	0	B	09	K/H05060							
MA05063	434	TANK TOP BRIDGE	2	0	B	27	K/H05060							
SD05064	417	TANK TOP CENTRAL CONTROL ROOM	2	0	B	10	K/H05060							
MA05065	435	TANK TOP STBD ACCOMMODATION CORRIDOR	2	0	B	28	K/H05060							
SD05066	418	TANK TOP STBD ACCOMMODATION CORRIDOR	2	0	B	11	K/H05060							
SD05067	419	TANK TOP STBD ACCOMMODATION LINEN LOCKER	2	0	B	12	K/H05060							
SD05068	420	TANK TOP STBD ACCOMMODATION CORR.	2	0	B	13	K/H05060							
SD05069	421	TANK TOP STBD ACCOMMODATION CORR.	2	0	B	14	K/H05060							
SD05080	456	SECOND DECK PORT ACCOMMODATION	2	1	B	09	K/H05080							
MA05081	478	SECOND DECK PORT ACCOM CORRIDOR	2	1	B	31	K/H05080							
SD05082	457	SECOND DECK HOSPITAL	2	1	B	10	K/H05080							
SD05083	458	SECOND DECK PORT ACCOMMODATION	2	1	B	11	K/H05080							
SD05084	459	SECOND DECK PORT ACCOMMODATION	2	1	B	12	K/H05080							
SD05085	460	SECOND DECK PORT ACCOMMODATION	2	1	B	13	K/H05080							
SD05086	461	SECOND DECK PORT FORWARD FAN ROOM	2	1	B	14	K/H05080							
HD05087	462	SECOND DECK PORT FORWARD FAN ROOM	2	1	B	15	K/H05080							
SD05088	463	SECOND DECK PORT ACCOMMODATION	2	1	B	16	K/H05080							
SD05089	464	SECOND DECK PORT ACCOMMODATION	2	1	B	17	K/H05080							
SD05100	493	SECOND DECK PORT ACCOMMODATION	2	2	B	06	K/H05100							
SD05101	494	SECOND DECK PORT ACCOMMODATION	2	2	B	07	K/H05100							
SD05102	495	SECOND DECK PORT ACCOMMODATION	2	2	B	08	K/H05100							
SD05103	496	SECOND DECK PORT ACCOMMODATION	2	2	B	09	K/H05100							

COPIA DEL DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUSMAO
DIRECTOR
DIVISAO DE SERVICOS C-37

UTRONICA PANEL No. 2

OFFT	TAG No	SERVICE	SPACE	PANEL	LOOP	SPUR	ADDR.	LAYOUT	CABLE	Disabled	Fault	INT.	FIELD	REMARKS
REF			No.					DWG. DE- 3070.38- 5400-855- AMK				TEST	TEST	

SD05104	SECOND DECK SMOKERS DAY ROOM	2	2	B	10	K/H05100								
SD05105	SECOND DECK PORT ACCOMMODATION	2	2	B	11	K/H05100								
SD05106	SECOND DECK PORT ACCOMMODATION	2	2	B	12	K/H05100								
SD05107	SECOND DECK PORT OFFICE	2	2	B	13	K/H05100								
SD05108	SECOND DECK PORT OFFICE	2	2	B	14	K/H05100								
SD05109	SECOND DECK PORT OFFICE	2	2	B	15	K/H05100								
SD05120	SECOND DECK STBD ACCOM CORRIDOR	2	3	B	06	K/H05120								
SD05121	SECOND DECK STBD ACCOMMODATION	2	3	B	07	K/H05120								
SD05122	SECOND DECK MESS ROOM	2	3	B	08	K/H05120								
MA05123	SECOND DECK MESS ROOM	2	3	B	28	K/H05120								
SD05124	SECOND DECK DAY ROOM (NON SMOKERS)	2	3	B	09	K/H05120								
SD05125	SECOND DECK TV/MOVIE ROOM	2	3	B	10	K/H05120								
SD05126	SECOND DECK CHANGING ROOM	2	3	B	11	K/H05120								
MA05127	SECOND DECK CORRIDOR BY CONFERENCE ROOM	2	3	B	29	K/H05120								
SD05128	SECOND DECK CORRIDOR BY CONFERENCE ROOM	2	3	B	12	K/H05120								
SD05140	SECOND DECK STBD ACCOMMODATION	2	4	B	04	K/H05140								
MA05141	SECOND DECK STBD ACCOM CORRIDOR	2	4	B	27	K/H05140								
SD05142	SECOND DECK STBD ACCOM CORRIDOR	2	4	B	05	K/H05140								
SD05143	SECOND DECK STBD ACCOM CORRIDOR	2	4	B	06	K/H05140								
MA05144	SECOND DECK STBD ACCOM CORRIDOR	2	4	B	28	K/H05140								
SD05145	SECOND DECK STBD ACCOMMODATION	2	4	B	07	K/H05140								
SD05146	SECOND DECK STBD ACCOMMODATION	2	4	B	08	K/H05140								
MA05147	ESCAPE AT SECOND DECK STBD FORWARD	2	4	B	29	K/H05140								

JOSÉ CARLOS FERNÁNDEZ GUERRA
DIRECTOR
DIVISIÓN DE SERVICIOS CAPTIVOS

COPIA DEL DOCUMENTO

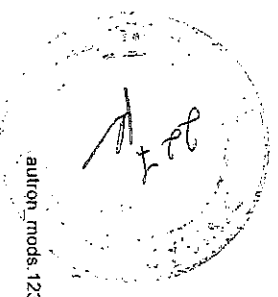


TRONICA PANEL No. 2

TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT DWG. DE- 3010-38- 5400-85- AMK	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
MA05148	SECOND DECK STBD FORWARD WINCH CABIN	2	4	B	30	K/I/H05140							
SD05149	SECOND DECK STBD FORWARD WINCH CABIN	2	4	B	09	K/I/H05140							
SD05160	MAIN DECK RADIO ROOM	2	5	B	08	K/I/H05160							
MA05161	MAIN DECK RADIO ROOM CORRIDOR	2	5	B	35	K/I/H05160							
SD05162	MAIN DECK RADIO ROOM CORRIDOR	2	5	B	09	K/I/H05160							
SD05163	MAIN DECK TRANSIT ROOM	2	5	B	10	K/I/H05160							
SD05164	PORT FWD COLUMN VENT IN	2	5	B	11	K/I/H05160							
MA05165	ESCAPE FROM BATTERY AREA	2	5	B	36	K/I/H05160							
MA05166	MAIN DECK LAYDOWN AREA	2	5	B	37	K/I/H05160							
SD05167	MAIN DECK COFFEE SHOP	2	5	B	12	K/I/H05160							
SD05168	MAIN DECK DECK LOCKER	2	5	B	13	K/I/H05160							
SD05200	CENTRAL CONTROL ROOM(new def)	2	7	C	16	SD05200							
SD05201	CENTRAL CONTROL ROOM(new def)	2	7	C	17	SD05200							
SD06010	TANK TOP SWITCH ROOM 1	2	6	B	10	K/I/H06010							
SD06011	TANK TOP SWITCH ROOM 1	2	6	B	11	K/I/H06010							
SD06012	TANK TOP ENGINE CONTROL ROOM	2	6	B	12	K/I/H06010							
SD06013	TANK TOP ENGINE CONTROL ROOM CORR.	2	6	B	13	K/I/H06010							
SD06014	TANK TOP FWD PUMP ROOM 1	2	6	B	14	K/I/H06010							
SD06015	TANK TOP FIRE PUMP D	2	6	B	15	K/I/H06010							
SD06016	TANK TOP MACHINE SHOP	2	6	B	16	K/I/H06010							
SD06017	TANK TOP MECHANICAL STORES	2	6	B	17	K/I/H06010							
SD06030	SECOND DECK GENERATOR 2	2	6	D	25	K/I/H06030							
HD06031	SECOND DECK GENERATOR 2	2	6	D	26	K/I/H06030							

CÓPIA FIEL DO ORIGINAL E ORIGINAL

JOSE CARLOS PIMENTEL GUSMAO
DIRETOR
DIVISÃO DE SERVIÇOS CATERING

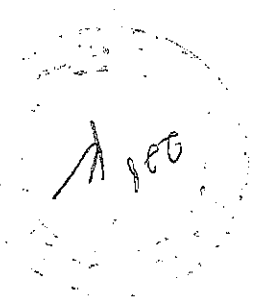


RONICA PANEL No. 2

TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT DWG. DE- 3010.30- 5400-855- ANIK	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
SD06032	SECOND DECK GENERATOR 2	2	6	D		27	K/I/H06030						
SD06034	SECOND DECK GENERATOR 1	2	6	D		28	K/I/H06030						
HD06035	SECOND DECK GENERATOR 1	2	6	D		29	K/I/H06030						
SD06036	SECOND DECK GENERATOR 1	2	6	D		30	K/I/H06030						
SD06060	SECOND DECK ELECTRONICS WORKSHOP	2	0	C		15	K/I/H06060						
SD06061	SECOND DECK CORRIDOR BY D.O. TANKS	2	0	C		16	K/I/H06060						
MA06062	SECOND DECK CORRIDOR BY D.O. TANKS	2	0	C		29	K/I/H06060						
SD06063	SECOND DECK CORRIDOR BY D.O. TANKS	2	0	C		17	K/I/H06060						
MA06064	SECOND DECK CORRIDOR BY D.O. TANKS	2	0	C		30	K/I/H06060						
SD06065	SECOND DECK CORRIDOR BY D.O. TANKS	2	0	C		18	K/I/H06060						
MA06066	DELETE	2	0	C		31	K/I/H06060						
SD07000	TANK TOP SACK STORAGE	2	1	C		18	K/I/H07000						
SD07001	TANK TOP SACK STORAGE	2	1	C		19	K/I/H07000						
SD07002	TANK TOP PUMP STORE ROOM	2	1	C		20	K/I/H07000						
SD07003	TANK TOP SACK STORAGE	2	1	C		21	K/I/H07000						
SD07004	TANK TOP LAYDOWN AREA	2	1	C		22	K/I/H07000						
SD07005	TANK TOP CORRIDOR BY MUD PP ROOM	2	1	C		23	K/I/H07000						
MA07006	TANK TOP CORRIDOR BY MUD PUMP ROOM	2	1	C		32	K/I/H07000						
SD07007	TANK TOP CORRIDOR BY MUD PP ROOM	2	1	C		24	K/I/H07000						
SD07008	TANK TOP DRILLING TRANSFER ROOM	2	1	C		25	K/I/H07000						
MA07020	TANK TOP CORRIDOR BY GENERATOR 4	2	2	C		25	K/I/H07020						
SD07021	TANK TOP CORRIDOR BY GENERATOR 4	2	2	C		16	K/I/H07020						
MA07022	TANK TOP CORRIDOR BY GENERATOR 4	2	2	C		26	K/I/H07020						

JOSE CARLOS PINHEIRO GUSMAO
DIRECTOR
DEPARTAMENTO DE MANUTENCAO

COPIA FIEL DO DOCUMENTO ORIGINAL





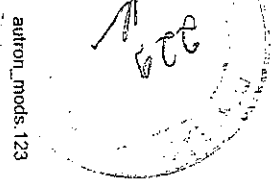
DNICA PANEL No. 2

TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT DWG. DE-3010.38-5400-855-ANMK	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
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SD07023	TANK TOP PRODUCTION WAREHOUSE	2	2	C	17	K/IH07020							
SD07024	TANK TOP PRODUCTION WAREHOUSE	2	2	C	18	K/IH07020							
MA07025	TANK TOP PRODUCTION WAREHOUSE	2	2	C	27	K/IH07020							
MA07026	DELETED NOW MA 23000	2	2	C	28	K/IH07020							
SD07040	TANK TOP AUX MACH ROOM	2	3	C	13	K/IH07040							
SD07041	TANK TOP AUX MACH ROOM	2	3	C	14	K/IH07040							
SD07042	TANK TOP AUX MACH ROOM	2	3	C	15	K/IH07040							
SD07043	TANK TOP FO PURIFIER ROOM	2	3	C	16	K/IH07040							
SD07044	TANK TOP AUX MACH ROOM	2	3	C	17	K/IH07040							
SD07045	TANK TOP AUX MACH ROOM	2	3	C	18	K/IH07040							
SD07046	TANK TOP AUX MACH ROOM	2	3	C	19	K/IH07040							
SD07047	TANK TOP PUMP STORE ROOM	2	3	C	20	K/IH07040							
SD07048	TANK TOP CORR BY FO PURIF ROOM	2	3	C	21	K/IH07040							
SD07049	TANK TOP FO PURIF ROOM	2	3	C	22	K/IH07040							
SD07060	TANK TOP SWITCHGEAR ROOM 2	2	4	C	10	K/IH07060							
SD07061	TANK TOP SWITCHGEAR ROOM 2	2	4	C	11	K/IH07060							
SD07062	TANK TOP SWITCHGEAR ROOM 2	2	4	C	12	K/IH07060							
MA07063	TANK TOP CORRIDOR BY SWITCHGEAR ROOM 2	2	4	C	31	K/IH07060							
SD07064	TANK TOP CORRIDOR BY SWITCHGEAR ROOM 2	2	4	C	13	K/IH07060							
SD07065	TANK TOP DRILLING STORE	2	4	C	14	K/IH07060							
SD07066	TANK TOP CORRIDOR BY ELECTRICAL STORES	2	4	C	15	K/IH07060							
MA07067	TANK TOP BOP ACCUMULATOR + CONTROL UNIT	2	4	C	32	K/IH07060							
SD07068	TANK TOP BOP ACCUMULATOR + CONTROL UNIT	2	4	C	16	K/IH07060							

COPIA DEL DOCUMENTO ORIGINAL

JOSE CARLOS RINCONTEL GUSMAO
DIRECTOR
DIVISION DE SERVICIOS CENTRALES



UTRONICA PANEL No. 2

DEF EF	TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT DWG. DE- 3070.38- 5400-855- ANR	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
01	SD07069	TANK TOP RTU 5 ROOM (NEW DET.)	2	4	C	34		K/H07060						
21	SD07080	SECOND DECK GENERATOR 3	2	5	C	14		K/H07080						
22	HD07081	SECOND DECK GENERATOR 3	2	5	C	15		K/H07080						
23	SD07082	SECOND DECK GENERATOR 3	2	5	C	16		K/H07080						
24	SD07083	SECOND DECK GENERATOR 4	2	5	C	17		K/H07080						
25	HD07084	SECOND DECK GENERATOR 4	2	5	C	18		K/H07080						
26	SD07085	SECOND DECK GENERATOR 4	2	5	C	19		K/H07080						
27	SD07086	SECOND DECK COMP ROOM	2	5	C	20		K/H07080						
28	MA07087	SECOND DECK AUX MACH SPACE	2	5	C	38		K/H07080						
29	SD07088	SECOND DECK AUX MACH SPACE	2	5	D	21		K/H07080						
30	SD07089	SECOND DECK AUX MACH SPACE	2	5	C	22		K/H07080						
31	SD07100	SECOND DECK MCC ROOM 2	2	6	C	18		K/H07100						
32	SD07101	SECOND DECK TROLLEY BEAM BY MCC RM 2	2	6	C	19		K/H07100						
33	MA07102	SECOND DECK OPEN STORAGE AREA	2	6	C	32		K/H07100						
34	SD07103	SECOND DECK BATTERY ROOM 1	2	6	C	20		K/H07100						
35	SD07104	SECOND DECK ELEC EQUIP RM	2	6	C	21		K/H07100						
36	MA07105	SECOND CORR DECK ELEC EQUIP RM	2	6	C	33		K/H07100						
37	SD07106	SECOND PROD WHSE	2	6	C	23		K/H07100						
38	SD07107	SECOND DECK MCC RM 1	2	6	C	22		K/H07100						
39	SD07108	SECOND DECK CORR BY MACH RM 1	2	6	C	24		K/H07100						
40	SD07120	SECOND DECK OPEN STORAGE AREA	2	7	A	01		K/H07120						
41	SD07121	SECOND DECK OPEN STORAGE AREA	2	7	A	02		K/H07120						
42	SD07122	SECOND DECK PROCESS GAS COMPRESSOR ROOM	2	7	A	03		K/H07120						

COPIA DEL DOCUMENTO ORIGINAL

JOSE CARLOS PUENTE GUSMAO
DIRECTOR
DIVISION DE SERVICIOS CABLE

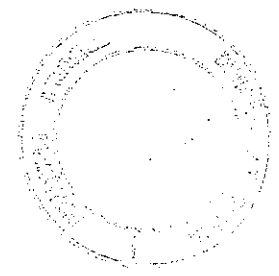
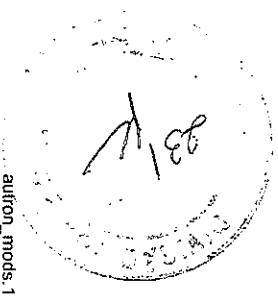


UTRONICA PANEL No. 2

OFF REF	TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT DWG. DE- 3010.38- 5400-855- AMK	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
986	MA07123	SECOND DECK OPEN STORE	2	7	A	09		K/I/H07120						
991	SD07124	SECOND DECK CORRIDOR BY DRILLING MCC	2	7	A	04		K/I/H07120						
992	SD07125	SECOND DECK STAIRWELL BY DRILLING MCC RM	2	7	A	05		K/I/H07120						
997	MA07126	SECOND DECK STAIRWELL BY DRILLING MCC RM	2	7	A	10		K/I/H07120						
993	SD07127	SECOND DECK DRILLING MCC ROOM	2	7	A	06		K/I/H07120						
994	SD07128	SECOND DECK ELEC EQUIP RM CORR	2	7	A	07		K/I/H07120						
995	SD07129	SECOND DECK ELEC EQUIP RM	2	7	A	08		K/I/H07120						
339	MA08000	MAIN DECK PORT	2	0	D	32		K/I/H08000						
100	MA08001	ESCAPE FROM EM GEN ROOM	2	0	D	33		K/I/H08000						
996	SD08002	MAIN DECK EMERGENCY GENERATOR ROOM	2	0	D	19		K/I/H08000						
997	SD08003	MAIN DECK EMERGENCY GENERATOR ROOM	2	0	D	20		K/I/H08000						
998	SD08004	MAIN DECK EM SWITCH BOARD ROOM	2	0	D	21		K/I/H08000						
999	SD08005	MAIN DECK EM SWITCH BOARD ROOM	2	0	D	22		K/I/H08000						
1000	SD08006	EM GEN HVAC COOLING ROOM	2	0	D	23		K/I/H08000						
1001	SD08007	DELETE	2	0	D	24		K/I/H08000						
1002	MA09010	DELETE NOW MA 16000	2	1	D	33		K/I/H09010						
1003	SD09011	DELETE	2	1	D	26		K/I/H09010						
1004	SD09012	DELETE	2	1	D	27		K/I/H09010						
1005	SD09013	DELETE	2	1	D	28		K/I/H09010						
1006	SD09030	DELETE	2	2	D	19		K/I/H09030						
1007	MA09031	DELETE NOW MA 24000	2	2	D	29		K/I/H09030						
1008	MA09032	DELETE NOW MA 23001	2	2	D	30		K/I/H09030						
1009	SD09033	DELETE	2	2	D	20		K/I/H09030						

COPIA DEL DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUSMÃO
OFICINHA DE MANUTENÇÃO



TRONICA PANEL No. 2

TAG No	SERVICE	SPACE No.	PANEL	LOOP	SPUR	ADDR.	LAYOUT DWG. DE- 3070.30- 5400-855- AMK	CABLE	Disabled	Fault	INT. TEST	FIELD TEST	REMARKS
SD09034	DELETE		2	2	D	21	K/H/09030						
SD09035	DELETE		2	2	D	22	K/H/09030						
SD11000	MAIN DECK FIRE PP RM E		2	3	D	23	K/H/11000						
MA11001	ESCAPE FROM FIRE PP RM E		2	3	D	30	K/H/11000						
SD11002	PORT ACCOMM VENT IN		2	3	D	24	K/H/11000						
SD13010	UPPER DECK STBD CRANE ENG RM		2	4	D	17	K/H/13010						
HD13011	UPPER DECK STBD CRANE ENG RM		2	4	D	18	K/H/13010						
SD13012	UPPER DECK STBD CRANE ENG RM		2	4	D	19	K/H/13010						
HD13013	UPPER DECK STBD CRANE ENG RM		2	4	D	20	K/H/13010						
HD13014	UPPER DECK STBD CRANE SWGEAR		2	4	D	21	K/H/13010						
HD13015	UPPER DECK STBD CRANE SWGEAR		2	4	D	22	K/H/13010						
MA13016	UPPER DECK STBD CRANE CABIN		2	4	D	33	K/H/13010						
SD13017	UPPER DECK STBD CRANE CABIN		2	4	D	23	K/H/13010						
SD13018	UPPER DECK STBD CRANE CABIN		2	4	D	24	K/H/13010						
MA14000	TANK TOP - PROCESS AREA PORT		2	7	B	14	MA15000						(NEW)
MA14001	TANK TOP - PROCESS AREA PORT		2	7	B	15	MA15000						(NEW)
MA15000	TANK TOP - PROCESS AREA STARBOARD		2	7	B	11	MA15000						(NEW)
MA15001	TANK TOP - PROCESS AREA STARBOARD		2	7	B	12	MA15000						(NEW)
MA15002	TANK TOP - PROCESS AREA STARBOARD		2	7	B	13	MA15000						(NEW)
MA16000	CHEMICAL INJECTION ROOM - TANK TOP		2	1	D	33	K/H/09010						(NEW)
MA16001	CHEMICAL INJECTION ROOM - SECOND DECK		2	1	D	34	K/H/09010						(NEW)
MA16002	CHEMICAL INJECTION ROOM - TANK TOP		2	1	D	35	K/H/09010						(NEW)
MA23000	MOON POOL - TANK TOP(NEW MAC)was MA07026		2	2	D	28	K/H/09030						(NEW)

CÓPIA FEL DO DOCUMENTO ORIGINAL

DIVISÃO DE SERVIÇOS CARGAS
JOSE CARLOS FILANTE, GUSMÃO
SUPERVISOR

(NEW)
(NEW)
(NEW)
(NEW)
(NEW)
(NEW)
(NEW)
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(NEW)
(NEW)

ESPAÑOL DOBLES

10/11/20

1774	AD	Verdu
3	AD	Verdu
1774	AD	Verdu
3	AD	Verdu

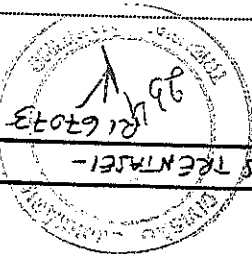
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DESCRIPTION OF ELECTRICAL WORK

Workpack #: 560700-005

PETROBRAS TCE NTA 21-

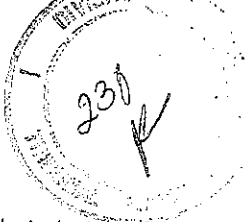


1,1	Pontoon, M.C.C. Port Fwd. Pump Room (FZ/317QF)	Compartment	(Cubicle)	Description of Change	Remains S.W. feed pump 'A', port. Motor size modified from 90KW to 150 KW. Existing circuit device	10	To be removed, & new circuit device type LN 500 to be installed.	Was W.I. S.W. booster pump 'A'. Now spare. Existing circuit device remains.	14	Was W.I. S.W. booster pump 'B'. Now drains storage transfer pump 'A'. Remove existing circuit device and add relocated circuit device type LN150. This relocated circuit device to be removed from cubicle 42 of the production MCC No. 2. (FZ/427QF).	21	Remains dehumidifier 'B'. Existing circuit device to be removed from its present position and relocated to the lower half of existing cubicle position 26.	26	Was deaerator vacuum blower 'B'. Now empty compartment. Existing circuit device to be removed and replaced with new empty cubicle 26 on upper half, & relocated cubicle 21 on lower half.	1,3	Pontoon M.C.C. Stbd. Pump Room (FZ/418QF)	Compartment	(Cubicle)	Description of Change	Remains S.W. feed pump 'A'. Stbd. Motor size modified from 90KW to 150 KW. Existing circuit device	10	To be removed, & new circuit device type LN 500 to be installed.	Was W.I. S.W. booster pump 'D'. Now spare. Existing circuit device remains.	14	Was dehumidifier 'C'. Existing circuit device to be removed & relocated to existing cubicle position 30.	20	The present cubicle 30 is an empty compartment.	26	Was deaerator vacuum blower 'D'. Now spare. Existing circuit device remains.	30	Was empty compartment. Now dehumidifier 'C'. Existing empty cassette to be removed & replaced with relocated circuit device from existing cubicle 20.	1,4	Pontoon M.C.C. Stbd. Aft Pump Room (FZ/417QF)	Compartment	(Cubicle)	Description of Change	Remains S.W. feed pump 'B'. Stbd. Motor size modified from 90KW to 150 KW. Existing circuit device	10	To be removed, & new circuit device type LN 500 to be installed.	Was base oil transfer pump 'B'. Now spare. Existing circuit device remains.	18	Was deaerator vacuum blower 'B'. Now empty compartment. Existing circuit device to be removed and replaced with new empty cubicle 26 on upper half, & relocated cubicle 27 on lower half.	26	Remains cathodic protection system power supply. 1. Existing circuit device to be removed and relocated to the lower half of existing cubicle position 26.	27	JOSE CARLOS MARINEL SUSIMO DIVISAO DE SERVICOS GERAIS
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Subject: LV MCC Port Fwd Pump Room (FZ/3170F) Circuit Details Schedule													
Client: Petromec		Made By: Iain McLeod		Date: 21/04/98		Checked By: B. Dines		Date: 21/04/98		Rev: C		Document No: LI-3010-38-5140-741-AMK-790	
Plant: P36 Rancador		Location: Iain McLeod		Date: 22/05/98		B. Dines		Date: 22/05/98		Rev: D		Remarks: For information - vendor data added	
Contract No: L0277		Iain McLeod		10/03/98		B. Dines		10/03/98		Rev: B		Reissued for vendor input	
Reference	Description	Status	Equipment / Feeder Rating (kVA)	Compart. Ref.	Schematic Type	Circuit Device Type	Rating	Release Mfg. Setting	CT Ratio	Overload Range	Set Point	Full Load Current	Inrush Current
1	2	3	4	5	6	7A	7B	7C	8A	8B	8C	9A	9B
14	13	12	11	10	9	8	7	6	5	4	3	2	1
B-1-25101A	See water test pump A part	New	150.0	10	SAZ	DOL	LN 500	450	RM 320	3200	400/1	200-310	50.0
AE/499A	DIESEL WATER PUMP A	Exist	37.0	11	B2	DOL	LN 125	90	RM 100	1000	80/1	40-65	59.0
IE/551A	WATER INJECTION UNIT DIESEL PUMP A	Exist	7.5	12	A1	DOL	LN 32	32	RM 20	210	-	10-14	11.5
YE/558AG	WATER INJECTION PUMP AUXILIARY TUBE PUMP A	Exist	11.0	13	PA1	DOL	LN 32	63	RM 27	280	40/1	15-25	19.3
AD0003-1A	EQUIPPED SPARE SIZE 3	Spare	37.0	14	PA2	DOL	LN 125	90	RM 100	1000	80/1	40-65	-
XE/412A	DIESEL PUMP A	Exist	22.0	15	B1	DOL	LN 63	63	RM 52	550	40/1	24-40	31.3
YE/555AA	DEARATOR VACUUM PUMP A	Exist	45.0	16	PA2	DOL	LN 125	90	RM 100	1000	100/1	63-96	71.0
YE/5580F	WATER INJECTION PUMP TUBE TANK HEATER B	Exist	5.5	17	PA1	DOL	LN 32	16	RM 12	112	-	6-8.5	7.2
XE/411B	DIESEL PUMP B	Exist	7.5	18	B1	DOL	LN 32	32	RM 20	210	-	10-14	12.2
XE/411A	DIESEL PUMP A	Exist	7.5	19	B1	DOL	LN 32	32	RM 20	210	-	10-14	12.2
XE/781A	DIESEL OIL TRANSFER PUMP A	Exist	11.0	20	N/A	MXB	LN 63	-	RM 47	650	-	37-47	38.0
XE/148A	SEWAGE TREATMENT PLANT A	Exist	11.0	21	B1	DOL	LN 32	50	RM 27	240	20/1	15-25	15.4
XA/510A	WATER INJECTION PUMP TUBE TANK HEATER A	Exist	10.0	22	N/A	MXB	LN 32	-	RM 12	112	-	6-8.5	7.2
YE/558AF	ELECTRO CHLORINATION UNIT A	Exist	5.5	23	PA1	FC	LN 32	16	RM 12	112	-	6-8.5	7.2
XA/528A	EQUIPPED SPARE SIZE 2	Exist	20.0	24	N/A	MXB	LN 32	-	RM 20	210	-	10-16.8	-
40002-25	CATHODIC PROTECTION SUPPLY 3	Exist	20.0	25	PA1	DOL	LN 32	25	RM 20	210	-	10-16.8	-
PR 001AL	BALAST PUMP A	Exist	20.0	26	N/A	MXB	LN 32	-	RM 20	210	-	10-16.8	-
XE/414A	EMPTY COMPARTMENT SIZE 2	Empty	28	27	B2A	DOL	LN 200	315	RM 200	2000	200/1	100-168	142.6
FZ-004PC	PORT FWD WELDING SOCKET	Exist	20.0	29	-	-	-	-	RM 32	450	-	24-32	26.2

Vendor Approval

TEL GUSMÃO
CARTÃO 123456789



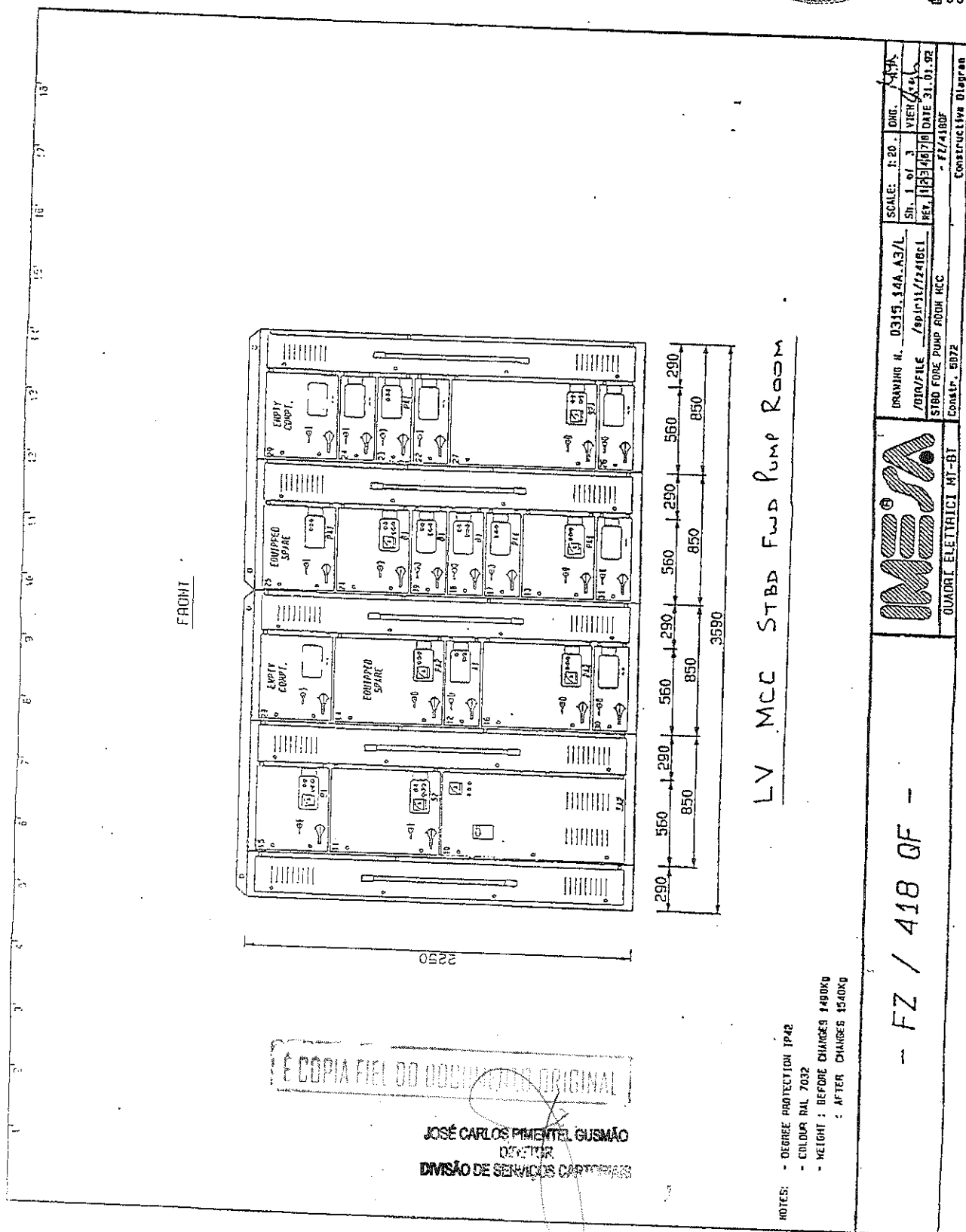
LV MCC Sbltd Air Pump Room (FZ/417QF) Circuit Details Schedule										Document No: LI-3010.38-5140-741-AMK-792									
Serial	Plant	Location	Contract No	Made By	Date	Checked By	Date	Rev	Remarks	Vendor Approval									
	P36 Roncador	Campos Basin	L0277	Iain McLeod	21/04/98	B. Dines	22/05/98	C	For information - vendor data added										
				Iain McLeod	22/05/98	B. Dines	22/05/98	D	For information - vendor data added										
				Iain McLeod	10/03/98	B. Dines	10/03/98	B	Reissued for vendor input										
1																			
Reference	Description																		
	Status	Equipment / Rating (kW)	Equipment / Rating (kW)	Equipment / Rating (kW)	Equipment / Rating (kW)	Equipment / Rating (kW)	Equipment / Rating (kW)	Equipment / Rating (kW)	Equipment / Rating (kW)	Equipment / Rating (kW)	Equipment / Rating (kW)	Equipment / Rating (kW)	Equipment / Rating (kW)	Equipment / Rating (kW)	Equipment / Rating (kW)	Equipment / Rating (kW)	Equipment / Rating (kW)	Equipment / Rating (kW)	Equipment / Rating (kW)
1	Flow	150.0	10	S42	DOL	LN 500	450	RM 320	3200	400/1	200-310	236	1234	2	3	70	110	80	Cassette new
2	Exist	37.0	11	B2	DOL	LN 125	90	RM 100	1000	80/1	40-65	58.0			1	3	25		
3	Exist	7.5	12	A1	DOL	LNA 32	32	RM 20	210		10-14	11.5			1	3	2.5		
4	Exist	11.0	13	PA1	DOL	LNA 32	63	RM 27	280	40/1	15-25	19.3			1	3	4		
5	Flow	63.0	14	PA2	DOL	LN 160	175	RM 125	1250	150/1	75-126	101	650	1	3	50	220	100	Cassette from Drilling 421 31
6	Exist	22.0	15	B1	DOL	LNA 63	63	RM 52	550	40/1	24-40	31.3			1	3	10		
7	Exist	45.0	16	PA2	DOL	LN 125	90	RM 100	1000	100/1	63-96	71.0			1	3	25		
8	Exist	3.0	17	A1	DOL	LNA 32	12	RM 12	112		4.5-6.5	5.2			1	3	2.5		
9	Spine	11.0	18	B1	DOL	LNA 32	50	RM 27	280	20/1	15-25								
10	Exist	7.5	19	B1	DOL	LNA 32	32	RM 20	210		10-14	12.2			1	3	2.5		
11	Exist	7.5	20	B1	DOL	LNA 32	32	RM 20	210		10-14	12.2			1	3	2.5		
12	Exist	30.0	21	N/A	MXB	LNA 63		RM 54	650		43-54	47.0			1	3	10		
13	Exist	11.0	22	B1	DOL	LNA 32	50	RM 27	280	20/1	15-25	15.4			1	3	2.5		
14	Exist	5.5	23	B1	DOL	LNA 32	25	RM 16	155		7.5-11	8.9			1	3	2.5		
15	Exist	20.0	25	N/A	MXB	LNA 32		RM 32	450		24-32	27.0			1	3	4		
16	Empty		26																
17	Reloc	20.0	27	N/A	MXB	LNA 32		RM 32	450		24-32	32.0							
18	Exist	90.0	28	B2A	DOL	LN 200	315	RM 200	2000	200/1	100-160	142.6			1	3	95		
19	Exist	10.0	29	N/A	MXB	LNA 32		RM 15	210		10.5-15	14.0			1	3	2.5		
20	Exist	7.5	30	B1	DOL	LNA 32	32	RM 20	210		10-14	11.5			1	3	2.5		
21	Exist	20.0	31	N/A	MXB	LNA 32		RM 32	450		24-32	26.2			1	3	6		
22	Exist	11.0	32	PATF	DOL	LNA 32	32	RM 27	280		10-16.8	13.5			1	3	2.5		

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JOSE CARLOS PIMENTEL GUSMAO
DIRETOR
DIVISAO DE MANUTENCAO

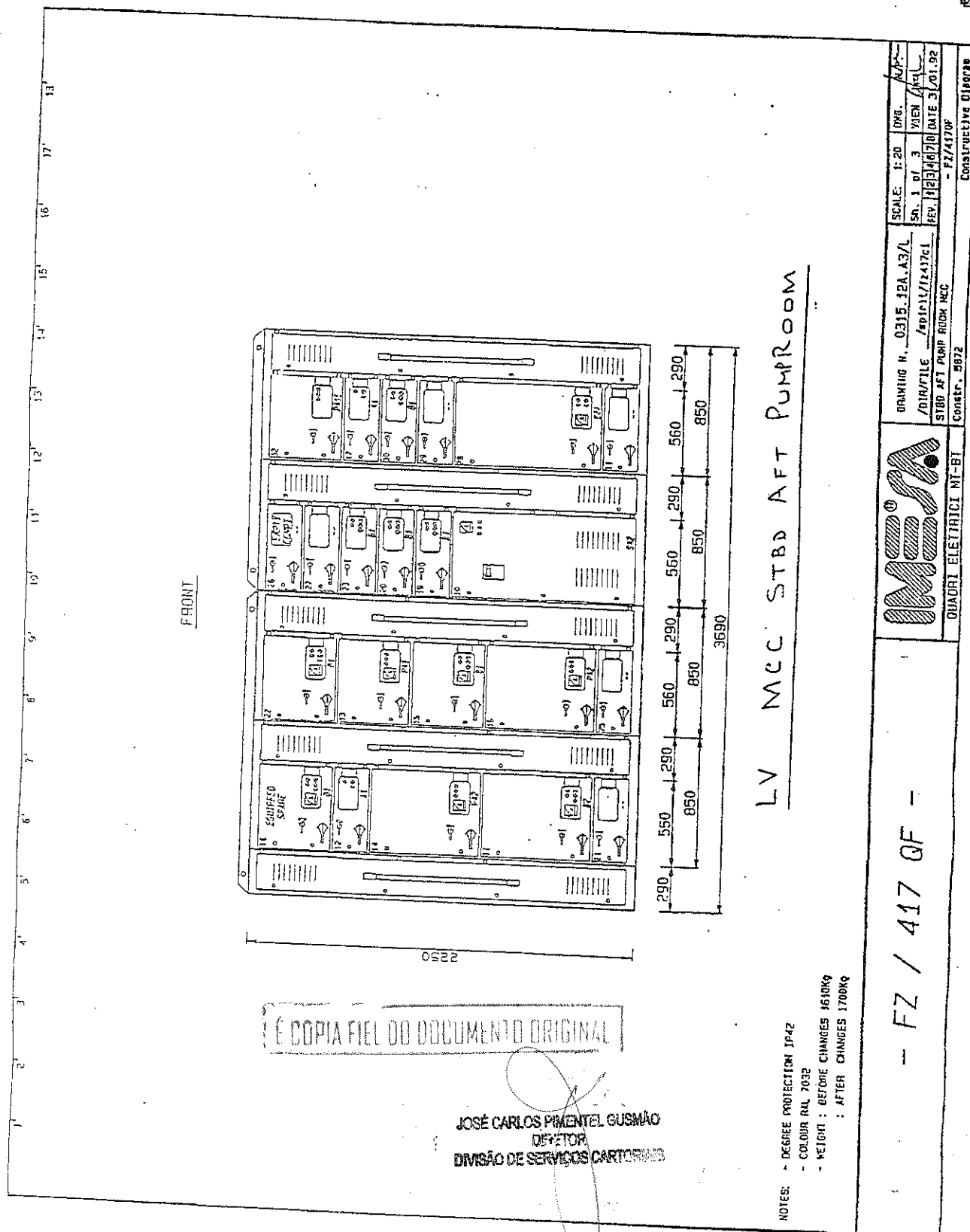
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	PURT FOR PUMP ROOM MCC		REV. 1/2/16/16	DATE 31.01.92
	Constr. 5972		- FZ/370F	
QUADRI ELETTRICI MT-6T				
Constructive Diagram				



RONCADOR FLD DLPMT

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DESCRIPTION OF ELECTRICAL WORK
1.2 Production M.C.C. No.2 (FZ/427QF)

Compartment (Cubicle) Reference	Description of Change
11	Was glycol booster pump 'B', Now well head hydr.reservoir circ. pump. Existing circuit device remains.
12	Was glycol circulating pump 'B', Now spare. Existing circuit device remains.
15	Was inverter cubicle, Now crude oil pipeline booster pump 'C'. Existing circuit device remains.
16	Was M.O.V. distr. board, Now spare. Existing circuit device remains.
18	Was heating medium pump 'B', Now spare. Existing circuit device remains.
19	Was glycol regenerator transformer, Now heating medium circ. Pump 'B'. Existing circuit device remains.
21	Was turbine vent fan 'A', Now spare. Existing circuit device remains.
22	Was turbine vent fan 'B', Now test separator pump 'B'. Existing circuit device remains.
23	Was turbine lub. oil heater, Now LP flare drum pump 'B'. Remove existing circuit device & replace with a relocated circuit device, to be removed from cubicle 29 of former drilling MCC No.1.
24	Was turbine enclosure heater & fan, Now spare. Existing circuit device remains.
25	Was turbine cleaning tank heater, Now spare. Existing circuit device remains.
26	Was turbine rinse tank heater, Now crude oil pipeline aux. lub. Oil pump 'C'. Remove existing circuit device & replace with a relocated circuit device, to be removed from cubicle 23 of former drilling MCC No.1.
27	Was turbine turbine battery charger panel, Now spare. Existing circuit device remains
28	Was turbine anti-icing fan, Now well head MP hydraulic fluid pump. Remove existing circuit device & replace with a relocated circuit device, to be removed from cubicle 18 of former drilling MCC No.1
30	Was export pump 'B' aux. L.O. pump future, Now spare. Existing circuit device remains.
31	Was export pump 'B' L.O. heater future, Now spare. Existing circuit device remains.
33	Was HP/exp compr LO pump 'A', Now riser pull in winch main. Remove existing circuit device & fit new one.
34	Was HP/export compressor L.O. pump 'B', Now spare. Existing circuit device remains.
35	Was HP/export compressor reservoir heater, Now caisson pump 'B' circulation pump. Existing circuit device remains.
36	Was spare, Now riser pull in winch auxiliary. Relocated circuit device to be added. This relocated device to be removed from cubicle 16 of former drilling MCC No. 2.
42	Was riser gantry crane hyd. pack, Now empty compartment. The existing circuit device to be removed & relocated to cubicle 14 of the port oil pump room MCC, refer to workpack 560700-005
43	Existing circuit remains "W.I. Chloropac control panel 2", but release type in circuit device to be modified.
50	Was spare, Now caisson pump 'C' oil circ.pump. Relocated circuit device to be added. This relocated device to be removed from cubicle 11 of the former drilling MCC No.2.
51	Was spare, Now closed drains drum pump 'B'. Relocated circuit device to be added. This relocated device to be removed from cubicle 10 of the former drilling MCC No.2.
52	Was spare, Now Riser pull in winch auxiliary. Relocated circuit device to be added. This relocated device to be removed from cubicle 16 of the former drilling MCC No.1.
53	Was spare, Now TEG circulation pump 'B'. Relocated circuit device to be added. This relocated device to be removed from cubicle 10 of the former drilling MCC No.1.

DESCRIPTION OF ELECTRICAL WORK



1.2 Production M.C.C. No.2 (FZ/427QF) contd.

Compartment
(Cubicle)
Reference

Description of Change

- | | |
|----|--|
| 54 | Was spare, Now oil dehydrator transformer 'B' (single phase). Relocated circuit device to be added. This relocated device to be removed from cubicle 22 of the former drilling MCC No.2. |
| 55 | Was spare, Now riser pull in winch. A new circuit device is to be installed in this location. |

1.3 Note: The above changes represent the known modifications to the breakers & controllers in each of the numbered cubicles. In addition internal cabling modifications will be required as directed by IMESA. Some breakers & controllers will require rating release or overload set point adjustment, but this will be carried out by IMESA.

LV Production MCC1 (FZ327QF) Circuit Details Schedule													
Subject	Document No: LI-3010.38-5140-741-AMK-788												
Client	Remarks												
Plant	For information - vendor data added												
Location	Reissued for vendor input												
Contract No:	Reissued for vendor input												
1	2	3	4	5	6	7A	7B	7C	8A	8B	8C	9A	9B
Reference	Description	Status	Equipment / Reorder (KW)	Compat	Automatic	Type	Current Breaker	Rating	Release Type	Release Setting (A)	CT Ratio	Range (A)	Set Point (A)
XG0001C	AIR COMPRESSOR C	Exist	155.0	10	PA2R	DOL	LNA 500		RM 500	3200	400/1	-	240
A0001-11	EQUIPPED SPARE SIZE 1	Spare		11	PB1	DOL	LNA 32		RM 12	112	-	4.5 - 6.5	
A0001-12	EQUIPPED SPARE SIZE 1	Spare		12	PB1	DOL	LNA 32		RM 16	155	-	10 - 14	
B533605	TANKTOP DECK SUMP PUMP	Exist	0.75	13	SA1	DOL	LNA 32		RM 3.2	32	-	1.7 - 2.4	1.9
P43001A	HP FLARE DRUM PUMP A	Exist	15.0	14	SA1	DOL	LNA 63		RM 43	450	40/1	24 - 40	30
B-122301A	Drum of pipeline booster pump A	Exist	130.0	15	SA2	DOL	LNA 320		RM 320	2500	300/1	200-340	
B-122301B	Drum of pipeline booster pump B	New	130.0	16	SA2	DOL	LNA 320		RM 320	2500	300/1	200-340	
P45002A	HAZARDOUS OVEN DRAINS DRUM PUMP A	Exist	2.2	17	SA1	DOL	LNA 32		RM 9	84	-	4.5 - 6.5	4.7
A0001-18	EQUIPPED SPARE SIZE 1	Spare		18	N/A	MXB	LNA 32		R 32	450	-	24 - 32	
A0001-19	EQUIPPED SPARE SIZE 1	Spare		19	PA1	DOL	LNA 32		RM 12	112	-	4.5 - 6.5	
B-123301A	IEG circulation pump A	New	22.5	20	SA1	DOL	LNA 63		RM 43	450	40/1	24 - 40	
B-122304A	Drum of pipeline booster pump A	New	1.27	21	SA1	DOL	LNA 32		RM 4.5	45	-	2.2 - 3.1	2.4
B-122304B	Drum of pipeline booster pump B	New	1.27	22	SA1	DOL	LNA 32		RM 4.5	45	-	2.2 - 3.1	2.4
IF-10-122301A	Drum of pipeline booster pump A (single phase)	New	44.0	23	SA1	FC	LNA 160		RM 125	1250	200/1	75 - 128	125
A0001-24	EQUIPPED SPARE SIZE 1	Spare		24	PA1	DOL	LNA 32		RM 16	155	-	10 - 14	
A0001-25	EQUIPPED SPARE SIZE 1	Spare		25	PD1H	DOL	LNA 32		RM 3.2	32	-	1.7 - 2.4	
P-541201	WATER INJECT SCALE INJECTOR PUMP	Exist	80.0	26	TS42	FC	LNA 320		RM 320	2500	300/1	100-140	105
P42102	WATER INJECT SCALE INJECTOR PUMP	Exist	0.12	27	PA1	DOL	LNA 32		RM 1	10	-	0.25 - 0.4	0.4
P42103	WATER INJECT SCALE INJECTOR PUMP	Exist	0.12	28	PA1	DOL	LNA 32		RM 1	10	-	0.25 - 0.4	0.4
P42104	WATER INJECT OUTLET SCANNER PUMP	Exist	0.12	29	PA1	DOL	LNA 32		RM 1	10	-	0.25 - 0.4	0.4
A0001-30	EQUIPPED SPARE SIZE 1	Spare		30	PA1	DOL	LNA 32		RM 1	10	-	0.25 - 0.4	
A0001-31	EQUIPPED SPARE SIZE 1	Spare		31	PA1	DOL	LNA 32		RM 1	10	-	0.25 - 0.4	
A0001-32	EQUIPPED SPARE SIZE 1	Spare		32	PA1	DOL	LNA 32		RM 1	10	-	0.25 - 0.4	
P42101	WATER INJECTION INJECTOR PUMP	Exist	1.5	33	PA1	DOL	LNA 32		RM 4.5	45	-	2.8 - 4	3.4
A0001-34	EQUIPPED SPARE SIZE 1	Spare		34	PA1	DOL	LNA 32		RM 12	112	-	7.5 - 11	
P30011	GAS BOOST COMPRESSOR LURE PUMP	Exist	12.5	35	PD1	DOL	LNA 63		RM 43	450	40/1	15 - 25	22.7
E30009	GAS BOOST COMPRESSOR HEATER	Exist	6.0	36	PD1H	FC	LNA 32		RM 12	112	-	7.5 - 11	7.9
B60001C	AIR COMPRESSOR C/VENTILATION FAN	Exist	0.75	37	PA1	DOL	LNA 32		RM 3.2	32	-	1.3 - 1.8	1.8
A0001-38	EQUIPPED SPARE SIZE 1	Spare		38	PD1H	DOL	LNA 32		RM 12	112	-	7.5 - 11	
A0001-39	EQUIPPED SPARE SIZE 1	Spare		39	PD1H	FC	LNA 32		RM 12	112	-	7.5 - 11	

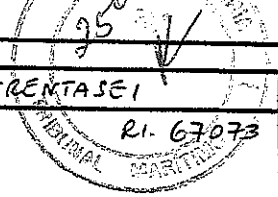
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JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORÍAS

LV Production MCC2 (FZ/427QF) Circuit Details Schedule																			Document No: LJ-3010.38-5140-741-AMK-789				
Subject	Client	Plant	Location	Contract No.	Made By	Date	Checked By	Date	Rev	Remarks										Vendor Approval			
	Petromec	P36 Roncador	Campos Basin	L0277	Iain McLeod	21/04/98	B. Dines	21/04/98	C	For Information - vendor data added													
					Iain McLeod	19/02/98	B. Dines	25/02/98	A	Reissued for vendor input													
					Iain McLeod	10/03/98	B. Dines	10/03/98	B	Reissued for vendor input													
Reference	2				3	4	5	6	7A	7B	7C	8A	8B	8C	Overload			CABLE		12	13	14	
	Description				Status	Equipment Rating	Compart	Rel. Schematic	Type	Circuit Device	Relaying	Release Type	Release Mag Setting	CT Ratio	Range (A)	90 Point (A)	Full Load Current (A)	Inrush Current (A)	N°	Cores	mm²	Field Equipment Anilcon Heater Rating (W)	Comments
PA2205	PRODUCTION MANIFOLD SCALE INHIBITOR PUMP				Exist	0.55	39	PA1	DOL	LNA 32	(A)	RM 2.5	22	-	1.3 - 1.8	1.5	1.5	1	3	2.5			
PA2203	PRODUCTION MANIFOLD SCALE INHIBITOR PUMP				Exist	0.55	40	PA1	DOL	LNA 32		RM 2.5	22	-	1.3 - 1.8	1.5	1.5	1	3	2.5			
PA2204	PRODUCTION MANIFOLD SCALE INHIBITOR PUMP				Exist	0.55	41	PA1	DOL	LNA 32		RM 2.5	22	-	1.3 - 1.8	1.5	1.5	1	3	2.5			
	EMPTY COMPARTMENT SIZE 3				Empty	-	42	-	-	-		-	-	-	-	-	-	-	-	-	-	CB moved to PAPER 318/14	
JP42501	WATER INJECTION CHLORPAC PANEL 2				Exist	32.0	43	N/A	MXB	LNA 63		R 54*	650	-	43-54*	40.7	40.7	1	3	10		"R 47 (37-47) better	
PA2501A	CHLOR SEA WATER BOOSTER PUMP C				Exist	3.0	44	PDI	DOL	LNA 32		RM 12	112	-	4.5 - 6.5	6.2	6.2	1	3	4			
PA2501B	CHLOR SEA WATER BOOSTER PUMP D				Exist	3.0	45	PDI	DOL	LNA 32		RM 12	112	-	4.5 - 6.5	6.2	6.2	1	3	4			
BA2501A	CHLOR H2 DILUTION BLOWER C				Exist	0.75	46	PDI	DOL	LNA 32		RM 4.5	45	-	2.2 - 3.1	2.6	2.6	1	3	2.5			
BA2501B	CHLOR H2 DILUTION BLOWER D				Exist	0.75	47	PDI	DOL	LNA 32		RM 4.5	45	-	2.2 - 3.1	2.6	2.6	1	3	2.5			
	EMPTY COMPARTMENT SIZE 4				Empty	-	48	-	-	-		-	-	-	-	-	-	-	-	-	-		
	EMPTY COMPARTMENT SIZE 5				Empty	-	49	-	-	-		-	-	-	-	-	-	-	-	-	-		
B-51103C	Custom pump C oil circulation pump				New	17.3	50	SA1	DOL	LNA 63		RM 43	450	40/1	24 - 40	30	180	1	3	6		423/11	
B-533603B	Custom pump B oil circulation pump				New	21.3	51	SA1	DOL	LNA 63		RM 43	450	50/1	28-42	37	245	1	3	10		423/10	
GH-610002B	mei pump in which standby				New	18.5	52	PA1	DOL	LNA 63		RM 52	550	-	24-40	30.5	-	1	3	10	50	From 323/16	
B-123301B	TEC circulation pump B				New	22.5	53	SA1	DOL	LNA 63		RM 43	450	40/1	24 - 40	37.3	218	1	3	10	50	323/10	
IF-10-122301B	oil dehydrator transformer B (single phase)				New	44.0	54	SM0	FC	LN 160		RM 125	1250	150/1	75 - 126	125	125	1	3	70		423/22	
GN-610001B	mei pump in which main				New	75.0	55	PA2	DOL	LN 160		RM 160	1600	-	100-140	121	121	1	3	70	220	100	
	EMPTY COMPARTMENT SIZE 1				Empty	-	56	-	-	-		-	-	-	-	-	-	-	-	-	-		
	EMPTY COMPARTMENT SIZE 2				Empty	-	57	-	-	-		-	-	-	-	-	-	-	-	-	-		
	EMPTY COMPARTMENT SIZE 1				Empty	-	58	-	-	-		-	-	-	-	-	-	-	-	-	-		
YB/731E	MATRIX SEPARATOR OIL CIRCULATION PUMP				Exist	18.5	59	SA1	DOL	LNA 63		RM 52	550	40/1	24 - 40	33.7	-	1	3	10			
	EMPTY COMPARTMENT SIZE 1				Empty	-	60	-	-	-		-	-	-	-	-	-	-	-	-	-		
	EMPTY COMPARTMENT SIZE 1				Empty	-	61	-	-	-		-	-	-	-	-	-	-	-	-	-		
	EMPTY COMPARTMENT SIZE 1				Empty	-	62	-	-	-		-	-	-	-	-	-	-	-	-	-		
	EMPTY COMPARTMENT SIZE 1				Empty	-	63	-	-	-		-	-	-	-	-	-	-	-	-	-		
	EMPTY COMPARTMENT SIZE 1				Empty	-	64	-	-	-		-	-	-	-	-	-	-	-	-	-		

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Vendor to check / verify / complete columns 6, 7A, 7B, 7C, 8A, 8B, 8C, 9A, 9B and 12

DESCRIPTION OF ELECTRICAL WORK

1.1 440V Switchboard No.1 (XA/872C)

Compartment (Cubicle) Reference	Description of Change
313	Was PF main pwr. pack winch - future, Now equipped spare
314	Was PA main pwr. pack winch - future, Now equipped spare
315	Was SF main pwr. pack winch - future, Now equipped spare
316	Was SA main pwr. pack winch - future, Now equipped spare
321	Was thruster 2 pwr. Pnl.1 - future, Now equipped spare
323	Was drilling MCC No.1, Now equipped spare
339	Was spare, Now gas compressor 'A' MCC - new circuit
340	Was spare, Now gas compressor Common MCC - new circuit
341	Was spare, Now Teg reboiler panel - new circuit

1.2 440V Switchboard No.2 (XA/872D)

Compartment (Cubicle) Reference	Description of Change
413	Was SA main pwr. pack winch - future, Now equipped spare
414	Was SF main pwr. pack winch - future, Now equipped spare
415	Was PA main pwr. pack winch - future, Now equipped spare
416	Was PF main pwr. pack winch - future, Now equipped spare
421	Was thruster 4 pwr. Pnl.1 - future, Now equipped spare
423	Was drilling MCC No.2, Now equipped spare
428	Was spare, Now gas compressor 'B' MCC - new circuit
441	Was spare, Now gas compressor 'C' MCC - new circuit
445	Was spare, Now chemical injection MCC - new circuit

1.3 Note all the above are circuit name changes only, the present breakers in each of the numbered cubicles are the correct type and size & none need be removed or re-located. Some may require rating release or overload set point adjustment, but this will be carried out by IMESA.

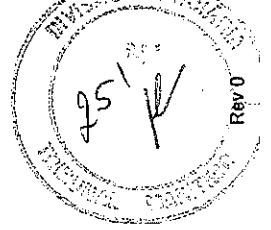
1.4 See sheets 4, 5 & 6 for modification to existing platform cabling. These cable disconnections to be completed before or during the main switchboard modifications

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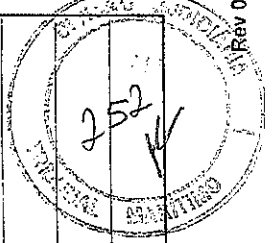
Cable Number	Equipment From	Equipment To	Production Action From	Production Action To	Comments
F/0000021QFA	Cubicle 321	Coiled in Thruster Room Port Fwd	Disconnect Cable from breaker 321, cap ends & store in void space below Swbd.	Ground cable to earth in Thruster Room Port Fwd.	
F/0000021QFB	Cubicle 321	Coiled in Thruster Room Port Fwd	Disconnect Cable from breaker 321, cap ends & store in void space below Swbd.	Ground cable to earth in Thruster Room Port Fwd.	
F/0000022QFA	Cubicle 322	Coiled in Thruster Room Stbd. Aft	Disconnect Cable from breaker 322, cap ends & store in void space below Swbd.	Ground cable to earth in Thruster Room Stbd. Aft	
F/0000022QFB	Cubicle 322	Coiled in Thruster Room Stbd. Aft	Disconnect Cable from breaker 322, cap ends & store in void space below Swbd.	Ground cable to earth in Thruster Room Stbd. Aft	
Note: All "To action" above, will be subject to separate work packs					
F/0000023QIA	Cubicle 341	Coiled in Drilling Transformer Room (T026)	Disconnect cable from breaker 341, strip-out completely & scrap	No action	Complete strip-out required to free-up cable rack space
F/0000023QIB	Cubicle 341	Coiled in Drilling Transformer Room (T026)	Disconnect cable from breaker 341, strip-out completely & scrap	No action	Complete strip-out required to free-up cable rack space
F/0000023QIC	Cubicle 341	Coiled in Drilling Transformer Room (T026)	Disconnect cable from breaker 341, strip-out completely & scrap	No action	Complete strip-out required to free-up cable rack space
F/0000023QID	Cubicle 341	Coiled in Drilling Transformer Room (T026)	Disconnect cable from breaker 341, strip-out completely & scrap	No action	Complete strip-out required to free-up cable rack space
A/00/S112	Cubicle 337	HPR Relay unit (AS/001RU) in S.W. Filtration Compl. in Stbd. Pontoon	Disconnect from breaker 337, cap the ends & store at the bottom of the Swbd. for possible re-use.	No action	Petromec & Amec to provide confirmation of this action
Cable splicing not allowed					

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Cable Number	Equipment From	Equipment To	Production Action From	Production Action To	Comments
R/0000022QFA	Connected in cubicle 422 Coiled in Thruster Room Port Fwd.		Disconnect cable from Breaker 422, cap the ends & store in void space below Swbd.	Ground cable to earth in thruster room port fwd.	
R/0000022QFB	Connected in cubicle 422 Coiled in Thruster Room Port Fwd.		Disconnect cable from Breaker 422, cap the ends & store in void space below Swbd.	Ground cable to earth in thruster room port fwd.	
R/0000030QFA	Connected in cubicle 430 Coiled in Cement Room.		Disconnect cable from Breaker 430 & Ground cable to earth in void space below Swbd.	Cut back cable, cap the ends and store in Cement Room	
R/0000030QFB	Connected in cubicle 430 Coiled in Cement Room.		Disconnect cable from Breaker 430 & Ground cable to earth in void space below Swbd.	Cut back cable, cap the ends and store in Cement Room	
R/0000021QFA	Connected in cubicle 421 Coiled in Thruster Room Sld. Alt		Disconnect cable from Breaker 421, cap the ends & store in void space below Swbd.	Ground cable to earth in thruster room Sld. Alt	
R/0000021QFB	Connected in cubicle 421 Coiled in Thruster Room Sld. Alt		Disconnect cable from Breaker 421, cap the ends & store in void space below Swbd.	Ground cable to earth in thruster room Sld. Alt	
Note: All "To action" shown above will be subject to separate work packs					
R/0000023QIA	Cubicle 423	Coiled in Drilling Transformer Room (T026)	Disconnect from breaker 423, strip-out completely & scrap	No action	Complete strip-out required to free up cable rack space
R/0000023QIB	Cubicle 423	Coiled in Drilling Transformer Room (T026)	Disconnect from breaker 423, strip-out completely & scrap	No action	Complete strip-out required to free up cable rack space
R/0000023QIC	Cubicle 423	Coiled in Drilling Transformer Room (T026)	Disconnect from breaker 423, strip-out completely & scrap	No action	Complete strip-out required to free up cable rack space
R/0000023QID	Cubicle 423	Coiled in Drilling Transformer Room (T026)	Disconnect from breaker 423, strip-out completely & scrap	No action	Complete strip-out required to free up cable rack space
R/0000023QIE	Cubicle 423	Coiled in Drilling Transformer Room (T026)	Disconnect from breaker 423, strip-out completely & scrap	No action	Complete strip-out required to free up cable rack space
R/0000023QIF	Cubicle 423	Coiled in Drilling Transformer Room (T026)	Disconnect from breaker 423, strip-out completely & scrap	No action	Complete strip-out required to free up cable rack space
R/0000025QFA	Connected in cubicle 425 Coiled in Switchgear Room No.2		No. 425 & strip-out cable completely	Remove cable from rack & strip-out completely.	
R/0000025QFB	Connected in cubicle 425 Coiled in Switchgear Room No.2		Disconnect cable from Breaker No. 425 & strip-out cable completely	Remove cable from rack & strip-out completely.	
R/0000025QFC	Connected in cubicle 425 Coiled in Switchgear Room No.2		Disconnect cable from Breaker No. 425 & strip-out cable completely	Remove cable from rack & strip-out completely.	

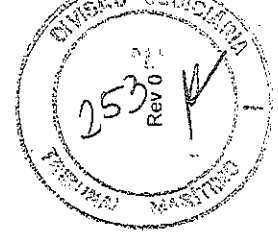


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Cable Number	Equipment From	Equipment To	Production Action From	Production Action To	Comments
R/2500010MOA	Coiled on rack in switchgear room No.2	Coiled in spare rack in Gas turbine 4 compl. (T082)	No action	No action	
A/00/S113	Connected in cubicle 445	Relay unit No. 2 (AS/002RU) S.W. Filtration Compl. in the Sibd. Pontoon.	Disconnect from Breaker 445, cap ends boot & store at bottom of swbd. For possible re-use	No action	Petromec & Amec to provide confirmation of this action
R/0000040AV	Connected in cubicle 440	Grounded in S.W. sprinkler control panel YE/485A	Disconnect cable from Breaker 440 cap the ends & store in void space below Swbd.	No Action	Cable earthed down in sprinkler control panel YE/485 by Fincantieri the S.W.pump is supplied from the emergency Swbd. Section A cubicle 440.
Cable splicing not allowed					

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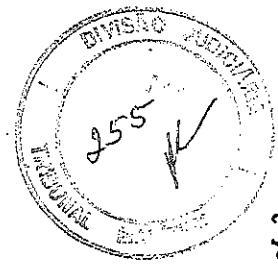
Subject LV SWBD (XA/872C) Circuit Details Schedule																			
Client		Made By		Date		Checked By		Date		Rev		Remarks							
Pellomcc		Iain McLeod		21/04/98		B. Dines		21/04/98		C		For information - vendor data added							
F36 Roncadot		Iain McLeod		24/02/98		B. Dines		25/02/98		A		Reissued for vendor input							
Campos Basin		Iain McLeod		10/03/98		B. Dines		10/03/98		B		Reissued for vendor input							
Contract No: L0277																			
1	2	3	4	5	6	7A	7B	7C	8A	8B	8C	9A	9B	10A	10B	11	12	13	14
Reference	Description	Status	Equipment / Rating (kW)	Rel. Comp	Rel. Type	Circuit Device	Release Type	Release Rating	Release Type	Release Rating	CT Ratio	Range (A)	Set Point (A)	Full Load (A)	Inrush (A)	CABLE Cores mm²	Field Equipment Anticon Heater Rating (W)	Comments	
FZ/201TB	MC OVER FROM TRANSFORMER B	Exisl	3000.0	301	N/A	ACB	6300	6300	PRIP6300	OFF	6000/5	2520-6300	4410	4582.6					C
FZ/201TA	MC OVER FROM TRANSFORMER A	Exisl	3000.0	302	N/A	ACB	6300	6300	PRIP6300	OFF	6000/5	2520-6300	4410						C
FZ/203QF	HEAT TRACING PANEL 1 TRANSFORMER	Exisl	260.0	303	N/A	MXB	LN 500	500	R 400	4000	6000/5	370-400	394	393.6		2 3 120			C
XA/872C	PUMP THE SECTIONS A & B	Exisl	2000.0	305	N/A	ACB	6300	6300	PRIP6300	OFF	-	2520-6300	4410						C
XA/872E	220V MCB 1 TRANSFORMER	Exisl	260.0	305	N/A	MXB	LN 500	500	R 400	4000	6000/5	320-400	394	393.6		2 3 120			C
XA/239A	SEA WATER SERVICE PUMP A	Exisl	520.0	307A	N/A	ACB	1600	1600	PRIP1600	10000	15000/5	640-1600	off	841.0		4 3 120			C
XA/239B	SEA WATER SERVICE PUMP B	Exisl	130.0	307B	N/A	DOL	LN 220	220	R 250	2500	3000/5	160-264		220.0		7 7 7			C
XA/273	MC RECONNECTOR EMERGENCY SEC A	Exisl	290.0	308	N/A	ACB	2500	2500	PRIP2500	OFF	30000/5	1000-2500	2000	1913.2		8 3 120			C
XA/401E	PUMP PUMP E	Exisl	290.0	309	N/A	ACB	1250	1250	PRIP1250	6250	10000/5	500-1250	off	465.3		3 3 120			C
XA/407A	PUMP PUMP A	Exisl	520.0	310	N/A	MXB	LN 800	800	R 800	6300	12000/5	630-800	772	772		4 3 95		*Check at site	C
XA/407B	PUMP PUMP B	Exisl	400.0	311	N/A	MXB	LN 800	800	R 800	6300	8000/5	500-630	579	579		3 3 95		*Check at site	C
FZ/311OF	PORT FIVE WORKING VANDERBASS MCC	Exisl	400.0	312	N/A	MXB	LN 800	800	R 800	6300	8000/5	500-630	579	579		3 3 95		*Check at site	C
FZ/312QF	PORT FIVE WORKING VANDERBASS MCC	Exisl	400.0	313	N/A	MXB	LN 800	800	R 800	6300	8000/5	500-630	579	579		3 3 95		*Check at site	C
AXO/313	EQUIPPED SPARE	Spare	400.0	314	N/A	MXB	LN 800	800	R 800	6300	8000/5	500-630	579	579					C
AXO/314	EQUIPPED SPARE	Spare	400.0	314	N/A	MXB	LN 800	800	R 800	6300	8000/5	500-630	579	579					C
AXO/315	EQUIPPED SPARE	Spare	400.0	315	N/A	MXB	LN 800	800	R 800	6300	8000/5	500-630	579	579					C
AXO/316	EQUIPPED SPARE	Spare	400.0	316	N/A	MXB	LN 800	800	R 800	6300	8000/5	500-630	579	579					C
FZ/317OF	PORT FORWARD PUMP ROOM MCC	Exisl	520.0	317	N/A	MXB	LN 800	800	R 800	6300	10000/5	630-800	772	615.5		4 3 95			C
FZ/318OF	PORT FORWARD PUMP ROOM MCC	Exisl	560.0	318	N/A	ACB	1250	1250	PRIP1250	10000	12000/5	500-1250	875	653.8		4 3 120			C
FZ/420OF	TRUSTER 3 POWER PANEL 7 (not required)	Exisl	200.0	319	N/A	MXB	LN 500	500	R 320	3200	-	250-320	252	217.1		2 3 50		*Check at site	C
FZ/320QF	TRUSTER 1 POWER PANEL 1 (not required)	Exisl	200.0	320	N/A	MXB	LN 500	500	R 320	3200	-	250-320	252	214.6		2 3 50		*Check at site	C
AXO/321	EQUIPPED SPARE	Spare	200.0	321	N/A	MXB	LN 500	500	R 320	3200	-	250-320	252	214.6					C
AXO/322	EQUIPPED SPARE	Spare	200.0	322	N/A	MXB	LN 500	500	R 320	3200	-	250-320	252	252					C
AXO/323	EQUIPPED SPARE	Spare	560.0	323	N/A	ACB	1250	1250	PRIP1250	10000	12000/5	500-1250	875	818.6					C
FZ/324OF	VENTILATION MCC 1	Exisl	560.0	324	N/A	ACB	1250	1250	PRIP1250	10000	10000/5	500-1250	875	818.6		4 3 120			C
FZ/325CT	GAS TURBINE 2 MCC	Exisl	320.0	325	N/A	MXB	LN 500	500	R 500	5000	8000/5	400 - 500	474	252.9		3 3 70		*Check at site	C
FZ/326QF	RG SERVICE MCC 1	Exisl	320.0	326	N/A	MXB	LN 500	500	R 500	5000	6000/5	400 - 500	448	266.8		2 3 120		*Check at site	C
FZ/327OF	PRODUCTION MCC 1	Exisl	1300.0	327	N/A	ACB	2500	2500	PRIP2500	20000	30000/5	1000-2500	2000	1500.2		8 3 120			C

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Vendor to check / verify / complete columns 6, 7A, 7B, 7C, 8A, 8B, 8C, 9A, 9B and 12

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JOSE CARLOS PIMENTEL GUSMÃO
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Subject: LV SW/BD (XA/872C) Circuit Details Schedule														Document No: LJ-3010.38-5140-741-AMK-785					
Client: Petromec		Made By	Date	Checked By	Date	Rev	Remarks							Vendor Approval					
Plant: P36 Roncador		Jain McLeod	21/04/98	B. Dines	21/04/98	C	For information - vendor data added												
Location: Campos Basin		Jain McLeod	24/02/98	B. Dines	25/02/98	A	Reissued for vendor input												
Contract No: L0277		Jain McLeod	10/03/98	B. Dines	10/03/98	B	Reissued for vendor input												
1	2	3	4	5	6	7A	7B	7C	8A	8B	8C	9A	9B	10A	10B	11	12	13	14
Reference	Description	Status	Equipment / Rating	Com Par	Schematic Type	Type	Circuit Device	Release Type	Release Mag Setting	CT Ratio	Overload Range (A)	Set Point (A)	Thermal Load (A)	Inrush Current (A)	Cable No	Cable Size (mm²)	Field Equipment Anticlon Heater Rating (VAC)	Comments	Rev
XA/004	OIL FIELD ROLLER SWD (not required)	Exist	30.0	328	N/A	MXB	LN 125	R 50	500	-	40-50	47	39.4		1	3	10		C
FZ/329QF	OUTLET HVAC POWER PANEL 1	Exist	560.0	329	N/A	ACB	1250	PRUP1250	10000	1200/5	500-1250	875	741.6		4	3	120		C
XA/877	SHORE CONNECTION PANEL	Exist	320.0	330	N/A	MXB	LN 500	R 500	5000	800/5	400-500	500	500.0		3	3	95		C
FZ/3310X0	GALLEY POWER PANEL TRANSFORMER	Exist	120.0	331	N/A	MXB	LN 320	R 200	2000	-	160-200	197	196.8		1	3	120		C
XA/107A	REVERSE OSMOSIS POTABLE WATER MAKER 1	Exist	65.0	332	N/A	MXB	LN 125	R 40*	400*	-	32-40*		57.0		1	3	25	*R 63 (50-63) better	C
YA/453A	FRESH WATER HEATER A	Exist	80.0	333	N/A	MXB	LN 125	R 125	1000	-	100 - 125	102*	85.3*		1	3	35	*Check at site	C
400X-334	EQUIPMENT SPARE	Spare	80.0	334	N/A	MXB	LN 125	R 125	1000	-	100 - 125	102						*Check at site	C
AS/001UFS	MS UPS A BYPASS SUPPLY	Exist	32.0	335	N/A	MXB	LN 125	R 50	500	-	40 - 60*	47*	39.4*		1	3	10		C
CCT/337	WFR DYNAMIC POSITION (not required)	Exist	15.0	337	N/A	MXB	LN 125	R 20	200	-	16 - 20	18	30.0						C
FZ/338CT	GAS TURBINE 1 MCC	Exist	320.0	338	N/A	MXB	LN 500	R 500	5000	800/5	400 - 500*	474*	255.2*		3	3	70	*Check at site	C
U-UC-1223H4	gas compressor A MCC	New	130.0	339	N/A	MXB	LN 320	R 200	2000	-	160-200		200.0		1	3	120		C
U-UC-1223H4	gas compressor common MCC	New	160.0	340	N/A	MXB	LN 320	R 200	2500	-	200-250		250.0		2	3	120		C
PH-123-01	TEG reboiler panel	New	300.0	341	N/A	MXB	LN 500	R 400	5000	-	400-500		500.0		3	3	120		C
400X-342	EQUIPMENT SPARE	Spare	80.0	342	N/A	MXB	LN 125	R 125	1000	-	100-125	102							C



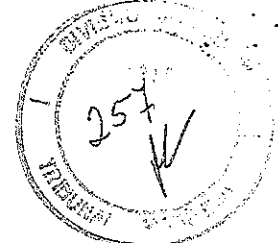
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LV SWIBD (XA/872D) Circuit Details Schedule																				
Subject: LV SWIBD (XA/872D) Circuit Details Schedule		Document No: LI-3010.38-5140-741-AMK-786																		
Client: Petromec	Made By	Date	Checked By	Date	Rev	Remarks													Vendor Approval	
Plant: P38 Roncador	Iain McLeod	21/04/98	B. Dines	21/04/98	C	For information - vendor data added														
Location: Campos Basin	Iain McLeod	24/02/98	B. Dines	25/02/98	A	Reissued for vendor input														
Contract No: L0277	Iain McLeod	10/03/98	B. Dines	10/03/98	B	Reissued for vendor input														
1	2	3	4	5	6	7A	7B	7C	8A	8B	8C	9A	9B	10A	10B	11	12	13	14	
Reference	Description	Status	Equipment Rating (kW)	Comp. Rel.	Schema	Type	Circuit Device	Release Type	Release Map Setting	CT Ratio	Overload	Range	Set Point	Field Load	Invert	Cable	Field Equipment Rating (Vac)	Comments	Rev	
FZ/001TFD	INCOMER FROM TRANSFORMER D	Exst	3000.0	401	N/A	ACB	6300	PR1/P6300	OFF	6000/5	2520-6300	4410	4592.6							
FZ/001TFC	INCOMER FROM TRANSFORMER C	Exst	3000.0	402	N/A	ACB	6300	PR1/P6300	OFF	6000/5	2520-6300	4410	4592.6							
FZ/4030F	41.1 TRACING PANEL 2 TRANSFORMER	Exst	260.0	403	N/A	MXB	LN 500	R 400	4000	600/5	320-400	394	393.6			2	3	120		
XA/872D	INCOMER FROM SECTIONS A & B	Exst	2000.0	405	N/A	ACB	6300	PR1/P6300	OFF	6000/5	2520-6300	4410	4592.6							
XA/872F	2700 MSB 2 TRANSFORMER	Exst	260.0	405	N/A	MXB	LN 500	R 400	4000	600/5	320-400	394	393.6			2	3	120		
XA/039D	SEA WATER SERVICE PUMP D	Exst	520.0	407A	N/A	ACB	1600	PR1/P1600	10000	1500/5	640-1600	off	841.0			4	3	120		
XA/039D	SEA WATER BALLAST PUMP D	Exst	130.0	407B	N/A	DOL	LN 320	RM 250	2500	300/5	160-264		220.0			2	2	7		
XA/873	INTERCONNECTOR EMERGENCY SEC B	Exst		408	N/A	ACB	2500	PR1/P2500	OFF	3000/5	1000-1250	2000	1907.6			9	3	120		
XA/401B	FIRE PUMP B	Exst	280.0	409	N/A	ACB	1250	PR1/P1250	6250	1000/5	500-1250	off	465.3			3	3	120		
YA/787B	STATBOARD CRANE	Exst	600.0	410	N/A	ACB	1250	PR1/P1250	10000	1500/5	500-1250	875	827.0			5	3	95		
FZ/4110F	STRD AFT MOORING WINDLASS MCC	Exst	400.0	411	N/A	MXB	LN 800	R 630	6300	800/5	500-630	579	467.2			3	3	95		
FZ/4120F	STRD FWD MOORING WINDLASS MCC	Exst	400.0	412	N/A	MXB	LN 800	R 630	6300	800/5	500-630	579	467.2			3	3	95		
AD003-413	EQUIPPED STAGE	Spare	400.0	413	N/A	MXB	LN 800	R 630	6300	800/5	500-630	579	467.2			3	3	95		
AD000-414	EQUIPPED STAGE	Spare	400.0	414	N/A	MXB	LN 800	R 630	6300	800/5	500-630	579	467.2			3	3	95		
AD000-415	EQUIPPED STAGE	Spare	400.0	415	N/A	MXB	LN 800	R 630	6300	800/5	500-630	579	467.2			3	3	95		
AD000-416	EQUIPPED STAGE	Spare	400.0	416	N/A	MXB	LN 800	R 630	6300	800/5	500-630	579	467.2			3	3	95		
FZ/4170F	STRD AFT PUMP ROOM MCC	Exst	560.0	417	N/A	ACB	1250	PR1/P1250	10000	12000/5	500-1250	875	685.0			4	3	120		
FZ/4180F	STRD FWD PUMP ROOM MCC	Exst	520.0	418	N/A	MXB	LN 800	R 800	6300	12000/5	630-800	772	646.6			4	3	95		
FZ/3203F	THRUSTER 1 POWER PANEL 2	Exst	200.0	419	N/A	MXB	LN 500	R 320	3200	600/5	250-320	252	217.1			2	3	50		
FZ/4203F	THRUSTER 3 POWER PANEL 1	Exst	200.0	420	N/A	MXB	LN 500	R 320	3200	600/5	250-320	252	214.6			2	3	50		
AD000-421	EQUIPPED STAGE	Spare	200.0	421	N/A	MXB	LN 500	R 320	3200	600/5	250-320	252	214.6			2	3	50		
AD000-422	EQUIPPED STAGE	Spare	200.0	422	N/A	MXB	LN 500	R 320	3200	600/5	250-320	252	214.6			2	3	50		
AD000-423	EQUIPPED STAGE	Spare	650.0	423	N/A	ACB	1250	PR1/P1250	10000	1500/5	500-1250	875	835.0			4	3	120		
FZ/4240F	VENTILATION MCC 2	Exst	560.0	424	N/A	ACB	1250	PR1/P1250	10000	1500/5	500-1250	875	835.0			4	3	120		
AD000-425	EQUIPPED STAGE	Spare	320.0	425	N/A	MXB	LN 500	R 500	5000	600/5	400-500	474								
FZ/4260F	WIG SERVICE MCC 2	Exst	320.0	426	N/A	MXB	LN 500	R 500	5000	600/5	400-500	440	243.6			2	3	120		
FZ/4270F	WIG SERVICE MCC 2	Exst	1300.0	427	N/A	ACB	2500	PR1/P2500	20000	3500/5	1000-2500	2000	1743.8			9	3	120		

Vendor to check / verify / complete columns 6, 7A, 7B, 7C, 8A, 8B, 8C, 9A, 9B and 12

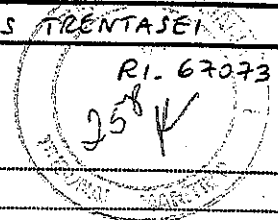
LV SW/BD (XA/872D) Circuit Details Schedule															Document No: LJ-3010.38-5140-741-AMK-786				
Client	Petromec	Made By	Date	Checked By	Date	Rev	Remarks				Vendor Approval								
Plant:	P36 Roncador	Iain McLeod	21/04/98	B. Dines	21/04/98	C	For information - vendor data added												
Location:	Campos Basin	Iain McLeod	24/02/98	B. Dines	25/02/98	A	Reissued for vendor input												
Contract No:	L0277	Iain McLeod	10/03/98	B. Dines	10/03/98	B	Reissued for vendor input												
1	2	3	4	5	6	7A	7B	7C	8A	8B	8C	9A	9B	10A	10B	11	12	13	14
Reference	Description	Status	Equipment / Packer Rating (kW)	Compn Rtg	Schematic	Circuit Device			Rating			Overload		Inrush Current (A)	CABLE		Field Equipment Antikon Heater Rating (VAc)	Comments	
						Type	Breaker Rating	Contactor	Release Type	Release Mag Setting	CT Ratio	Range (A)	Full Load (A)		No Cores	mm ²			
UC-UC-122301B	gas compressor B MCC	New	130.0	428	N/A	MXB	LN 320		R 200	2000	-	160-200		200.0		1	3	120	C
FZ/429QF	QUARTIS HVAC POWER PANEL 2	Exist	560.0	429	N/A	ACB	1250		PR1P1250	10000	1200/5	500-1250	875	697.6		4	3	120	C
A000-430	EQUIPPED SPARE	Spare	260.0	430	N/A	MXB	LN 500		R 400	4000	600/5	320-400	386						C
FZ0F-131000	WORKS300P POWER PANEL	Exist	130.0	431	N/A	MXB	LN 320		R 200	2000	-	160-200	193	134.0		1	3	95	C
XAV107B	REVERSE OSMOSIS POTABLE WATER MAKER 2	Exist	65.0	432	N/A	MXB	LN 125		R 100*	1000*	-	80-100*	84*	57.0		1	3	25	C
A000-433	EQUIPPED SPARE	Spare	130.0	433	N/A	MXB	LN 320		R 200	2000	-	160-200	193					* R 63 (50-63) better	C
YA/453B	FRESH WATER HEATER B	Exist	80.0	434	N/A	MXB	LN 125		R 125	1000	-	100-125	102	85.3		1	3	35	C
YA/453C	FRESH WATER HEATER C	Exist	80.0	435	N/A	MXB	LN 125		R 125	1000	-	100-125	102	85.3		1	3	35	C
A000-436	EQUIPPED SPARE	Spare	130.0	436	N/A	MXB	LN 320		R 200	2000	-	160-200	197						C
AS-002UPS	IAS UPS B BYPASS SUPPLY	Exist	32.0	437	N/A	MXB	LN 125		R 50	500	-	40-50	47	39.4		1	3	10	C
FZ/438CT	GAS TURBINE 3 MCC	Exist	320.0	438	N/A	MXB	LN 500		R 500	5000	800/5	400-500	474	255.2		3	3	70	C
FZ0F-10000	LAUNDRY POWER PANEL	Exist	130.0	439	N/A	MXB	LN 320		R 200	2000	-	160-200	197	196.0		1	3	120	C
YE-485A	SPRINKLER SEA WATER PUMP	Exist	22.0	440		DOL	LN 125		RM 63	630	-	50-63	53	30.0		1	3	10	C
V- UC-122301C	gas compressor C MCC	New	130.0	441	N/A	MXB	LN 320		R 200	2000	-	160-200		200.0		1	3	120	C
A000-443	EQUIPPED SPARE	Spare	260.0	443	N/A	MXB	LN 500		R 400	4000	-	320-400	394						C
IAC-682501	thermal injection mcc	New	65.0	445	N/A	MXB	LN 125		R 100	1000	-	80-100		100.0		1	3	70	C



COPIA FIEL DO DOCUMENTO ORIGINAL

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DIVISÃO DE SERVIÇOS CARTÓRIOS

DESCRIPTION OF ELECTRICAL WORK



1.1 6600V Switchboard No.1 (XA/872A)

Compartment (Cubicle) Reference	Description of Change
106	Was drilling sect. 1 xfmr., Now process cooling circ. Pump A, type S. F. circuit breaker to be removed and replaced with new VF controller type ABB6.
133	Was thruster motor A port aft, Now process cooling circulation pump C, existing circuit device remains.
134	Was thruster motor A port fwd future, Now water injection booster pump A port, existing circuit device remains, but requires modification.
137	Was thruster motor B stbd. aft future, Now water injection booster pump B stbd., existing circuit device remains but requires modification.
138	Was thruster motor B stbd. fwd., Now sea water supply caisson pump A, existing circuit device remains but requires modification.

1.2 6600V Switchboard No.2 (XA/872B)

Compartment (Cubicle) Reference	Description of Change
104	Was G.T. 4 - future, Now export power transformer, existing circuit device remains.
107	Was drilling sect. 2 xfmr., Now process cooling circ. Pump B, type S. F. circuit breaker to be removed and replaced with new VF controller type ABB6.
127	Was spare circuit, Now crude oil pipeline pump C, existing circuit device remains.
135	Was thruster motor A stbd. fwd., Now sea water supply caisson pump B, existing circuit device remains
136	Was thruster motor A stbd. aft future, Now water injection booster pump A stbd, existing circuit device remains, but requires modification.
139	Was thruster motor B port fwd. future, Now water injection booster pump B port, existing circuit device remains but requires modification.
140	Was thruster motor A port aft., Now sea water supply caisson pump C, existing circuit device remains but requires modification.

1.3 Note the above changes represent the known modifications to the breakers in each of the numbered cubicles. In addition internal cabling modifications will be required as directed by ABB. Some breakers will require rating release or overload set point adjustment, but this will be carried out by ABB.

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MV SW/BD XA/872A Circuit Details Schedule														
Document No: LI-3010-38-5140-741-AMK-783														
Client	Petromec	Made By	Date	Checked By	Date	Rev	Remarks							
Plant	P36 Rencador	lain McLeod	21/04/98	B. Dines	21/04/98	C	For information - vendor data added							
Location	Campes Basin	lain McLeod	24/02/98	B. Dines	24/02/98	A	Reissued for vendor input							
Contract No	L0277	lain McLeod	09/03/98	B. Dines	09/03/98	B	Reissued for vendor input							
Reference	Description	Status	Equipment / Feeder Rating (kW)	Compart Ref	Schematic Type	Circuit Device Type	Rating (A)	CT Ratio	Overload Range (A)	Set Point (A)	Full Load Current (A)	Inrush Current (A)	CABLE No Cores	Field Equipment Amps Rating (V) (W)
XA/275A	INCORPOR FROM GENERATOR 1	Exst	14500	101		SFCB	2500	N/A	2000 / 5.5		1505.0		8	3
XA/275B	INCORPOR FROM GENERATOR 2	Exst	14500	102		SFCB	2500	N/A	2000 / 5.5		1505.0		8	3
XA/872C	440V BUS 1A TRANSFORMER	Exst	3000.0	105		SFCB	1250	N/A	400 / 5.5		306.2		2	3
B-512401A	process cooling circulation pump A	New	447.6	106	AB96	VFC	N/A	600	60 / 5.5		48.0	330.0	1	3
XA/872A	INTERCONNECTOR TO MVZ	Exst	18280	110		SFCB	2500	N/A	2000 / 5.5		2000.0		10	3
XA/872C	440V BUS 1B TRANSFORMER	Exst	3000.0	112		SFCB	1250	N/A	400 / 5.5		306.2		2	3
A000-105	UNEQUIPPED CABLE	State	-	121				-					-	-
B-122302A	crude oil pipeline pump A	New	1550.0	125	AB91	VFC	N/A	600	250 / 5.1		155.0	837.0	1	3
B-122302B	crude oil pipeline pump B	New	1550.0	126	AB91	VFC	N/A	600	250 / 5.1		155.0	837.0	1	3
P51003A	WATER INJECTION MAIN PUMP A PORT	Exst	2610.0	129	AB94	SFCB	1250	N/A	300 / 5.5		275.0		2	3
P51003B	WATER INJECTION MAIN PUMP B PORT	Exst	2610.0	130	AB94	SFCB	1250	N/A	300 / 5.5		275.0		2	3
B-512401C	process cooling circulation pump C	New	447.6	133	AB96	VFC	N/A	600	60 / 5.5		48.0	330.0	1	3
B-125102A	water injection booster pump A port	New	355.0	134	AB92	VFC	N/A	600	100 / 5.5		35.7	228.0	1	3
B-125112B	water injection booster pump B port	New	355.0	137	AB92	VFC	N/A	600	100 / 5.5		35.7	228.0	1	3
B-511102A	100 water supply station pump A	New	600.0	138	AB96	VFC	N/A	500	160 / 5.5		71.5	332.0	1	3

* All CTs have a 5A secondary except for the differential protection CTs on the Crude Oil Pipeline Pumps, which have a 1A secondary.

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DIRETOR
DIVISÃO DE SERVIÇOS CARTÓGRAFOS

JOSÉ CARLOS
DIVISÃO DE

360
K

Subject: MV SW/BD XA872B Circuit Details Schedule

Client: Pefomec		Made By: Iain McLeod		Date: 21/04/98		Checked By: B. Dines		Date: 21/04/98		Rev: C		Document No: LI-3010.38-5140-741-AMK-784		Remarks: For information - vendor data added		Vendor Approval	
Plant: P66 Roncador		Iain McLeod		24/02/98		B. Dines		24/02/98		A				Reissued for vendor input			
Location: Campos Basin		Iain McLeod		09/03/98		B. Dines		09/03/98		B				Reissued for vendor input			
Contract No: L0277																	
Reference	Description	Status	Equipment Rating (kW)	Compant Ref.	Schematic Type	Circuit Breaker Rating (A)	Feeder Rating (A)	Contactor Rating (A)	Fuse Rating (A)	CT Ratio	Overload Range (A)	Set Point (A)	Full Load Current (A)	Inrush Current (A)	CABLE No Cores	Field Equipment Rating (MVA)	Comments
1		3	4	5	6	7A	7B	7C	8A	8B	9A	9B	10A	10B	11	12	
XA875C	GENERATOR FROM GENERATOR 3	Exist	14500	103	SFCB	2500	N/A	N/A	N/A	2000 / 5-5.5	See ABB document: N° 359043		1585.0	8.3	120	-	
TF-514001	Export power transformer (6.8 kV)	New	4000.0	104	ABB5	SFCB	2500	N/A	N/A	600 / 5-5.1			398.0	2	3	120	-
B-512401B	Process cooling circulation pump B	New	447.6	107	ABB6	VFC	N/A	600	160	60 / 5-5			48.0	1	3	16	-
XA872D	440V MSB 2A TRANSFORMER	Exist	3000.0	108	SFCB	1250	N/A	N/A	N/A	400 / 5-5			306.2	2	3	120	-
XA872A	440V MSB 2A TRANSFORMER	Exist	18290	109	SFCB	2500	N/A	N/A	N/A	2000 / 5			2000.0	10	3	120	-
XA872D	440V MSB 2B TRANSFORMER	Exist	3000.0	111	SFCB	1250	N/A	N/A	N/A	400 / 5-5	Protection / Fault study		306.2	2	3	120	-
B-122302C	Crude oil pipeline pump C	New	1550.0	127	ABB1	VFC	N/A	600	250	300 / 5-5			155.0	1	3	120	-
MA30002	GAS BOOSTER COMPRESSOR	Exist	2200.0	128	ABB1	VFC	N/A	600	350	300 / 5-5			228.0	2	3	120	-
P52003A	WATER INJECTION MAIN PUMP A SIBD	Exist	2610.0	131	ABB4	SFCB	1750	N/A	N/A	300 / 5-5			275.0	2	3	70	-
P52003B	WATER INJECTION MAIN PUMP B SIBD	Exist	2610.0	132	ABB4	SFCB	1750	N/A	N/A	300 / 5-5			275.0	2	3	70	-
B-511102B	Sea water supply caisson pump B	New	600.0	135	ABB6	VFC	N/A	600	160	90 / 5-5			71.5	1	3	25	-
B-125112A	Water injection booster pump A atid	New	355.0	136	ABB2	VFC	N/A	600	100	50 / 5-5			36.7	1	3	70	220
B-125102B	Water injection booster pump B atid	New	355.0	139	ABB2	VFC	N/A	600	100	50 / 5-5			36.7	1	3	70	220
B-511102C	Sea water supply caisson pump C	New	600.0	140	ABB6	VFC	N/A	600	160	90 / 5-5			71.5	1	3	25	N/A

PN-514001 Single unit switch panel														
PN-514001	Export power (13.8kV)	New	4000.0	N/A	ABB7	SFCB	630	N/A	N/A	250 / 1	190.0	1	3	95

* All CTs have a 5A secondary except for the differential protection CTs on the Crude Oil Pipeline Pumps and Export Power Transformer (13.8kV), which have a 1A secondary.

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DIRETOR
DIVISÃO DE SERVIÇOS CARRA



Workpack #:560700-003

PETROBRAS TRENTAJEI

DESCRIPTION OF ELECTRICAL WORK

R1. 67073

1.1 Emergency Switchboard (XA/873)

Compartment (Cubicle) Reference	Description of Change
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811	Was Gas turbine 3 C.O. MCC, Now Auxiliary Generator, Remove existing breaker and relocate to cubicle 869. New breaker, type ACB 1250 to be installed in this position.
821	Was B.O.P. hydraulic pump, now Auxiliary Fresh Water pump. Existing breaker and controller remain, but overload requires to be replaced.
823	Was D.W. aux. Brake monitor unit, Now Equipped spare. No change to breaker.
825	Was mud mix & transfer pump 'A', Now equipped spare. No change to breaker.
847	Was spare, Now Gas turbine No.1 Change over MCC. This is a re-located breaker, transferred from cubicle 912, in 'A' section of the board.
850	Was spare, Now Auxiliary Air Compressor Package. Existing breaker to be used for this new circuit. Overload may require to be adjusted.
863	Was spare, Now Light battery charger panel No.2. This is a new circuit not yet on the drawings. A new breaker, type MXB, rating LN320, to be added in this cubicle.
869	Was spare, Now Gas turbine No.3 Change over MCC. This is a re-located breaker, transferred from cubicle 811.
912	Was Gas turbine 1 C.O. MCC, Now Laboratory distribution panel. Remove existing breaker and relocate to cubicle 847. A new breaker type MXB, rating LN500, to be added to this cubicle.
920	Was B.O.P. hydraulic pump, Now equipped spare. No change to breaker & controller.
926	Was spare, Now Diving distribution socket. Remove existing breaker. A new breaker, type MXB, rating LN125, to be added to this cubicle.
944	Was Drawworks hydraulic power unit, Now equipped spare. No change to breaker & controller.

1.2 See sheets 4, 5, & 6 for modification to existing platform cabling. These cable disconnections and re-locations to be completed before or during the emergency switchboard modifications.

1.3 Note the above changes represent the known modifications to the breakers & contrs. in each of the numbered cubicles. In addition internal cabling modifications will be required as directed by IMESA. Some breakers will require rating release or overload set point adjustment, but this will be carried out by IMESA.

560700-003.xls

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Sheet 3 of 6

JOSE CARLOS PUENTE GUSMÃO
DIRETOR
SEÇÃO DE SERVIÇOS CARTORIAIS

Cable number	Equipment		Production Action		Production Action		Comments
	From	To	From	To	From	To	
E/0000026UTB	Cubicle 926	Cable coiled in cement room	Disconnect from breaker 926 & splice or pull back to breaker 912		Connect to new laboratory distribution panel PN/514002		New distribution panel to be added in laboratory
E/0000026UTA	Cubicle 926	Cable coiled in cement room	No action, leave cable connected to brkr. 926		Connect to new diving socket No.1 Z/55001-01		New socket to be added outside cement room.
E/0000012QFA	cubicle 912	Gas turbine No.1 change over (MCC) FZ/338CT	Disconnect from brkr. 912. Existing temporary cable splice inside Swbd. To be removed and permanent splice added. Cable to be re-connected to cubicle 847		None		Brkr. From cubicle 912 to be transferred to cubicle 847
E/0000012QFB	cubicle 912	Gas turbine No.1 change over (MCC) FZ/338CT	Disconnect from brkr. 912. Existing temporary cable splice inside Swbd. To be removed and permanent splice added. Cable to be re-connected to cubicle 847		None		Brkr. From cubicle 912 to be transferred to cubicle 847
E/0000012QFC	cubicle 912	Gas turbine No.1 change over (MCC) FZ/338CT	Disconnect from brkr. 912. Existing temporary cable splice inside Swbd. To be removed and permanent splice added. Cable to be re-connected to cubicle 847		None		Brkr. From cubicle 912 to be transferred to cubicle 847
E/0000011QFA	cubicle 811	Gas turbine No.3 change over (MCC) FZ/438CT	Disconnect from brkr. 811, splice & re-connect to cubicle 869.		None		Brkr. From cubicle 811 to be transferred to cubicle 869
E/0000011QFB	cubicle 811	Gas turbine No.3 change over (MCC) FZ/438CT	Disconnect from brkr. 811, splice & re-connect to cubicle 869.		None		Brkr. From cubicle 811 to be transferred to cubicle 869
E/0000011QFC	cubicle 811	Gas turbine No.3 change over (MCC) FZ/438CT	Disconnect from brkr. 811, splice & re-connect to cubicle 869.		None		Brkr. From cubicle 811 to be transferred to cubicle 869
No tag	Bus Bar section 'B'	Auxiliary Generator GE/514001 incomer	Disconnect from bus bar and connect to new breaker in cubicle 811. Splice may be required.		No action at this time		Existing brkr.in cubicle 811 to be transferred to cubicle 869 & new brkr. fitted in cubicle 811
No tag	Bus Bar section 'B'	Auxiliary Generator GE/514001 incomer	Disconnect from bus bar and connect to new breaker in cubicle 811. Splice may be required.		No action at this time		Existing brkr.in cubicle 811 to be transferred to cubicle 869 & new brkr. fitted in cubicle 811
No tag	Bus Bar section 'B'	Auxiliary Generator GE/514001 incomer	Disconnect from bus bar and connect to new breaker in cubicle 811. Splice may be required.		No action at this time		Existing brkr.in cubicle 811 to be transferred to cubicle 869 & new brkr. fitted in cubicle 811
No tag	Bus Bar section 'B'	Auxiliary Generator GE/514001 incomer	Disconnect from bus bar and connect to new breaker in cubicle 811. Splice may be required.		No action at this time		Existing brkr.in cubicle 811 to be transferred to cubicle 869 & new brkr. fitted in cubicle 811
No tag	Bus Bar section 'B'	Auxiliary Generator GE/514001 incomer	Disconnect from bus bar and connect to new breaker in cubicle 811. Splice may be required.		No action at this time		Existing brkr.in cubicle 811 to be transferred to cubicle 869 & new brkr. fitted in cubicle 811

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CÓPIA FIEL DO DOCUMENTO ORIGINAL

Cable number	Equipment From	Equipment To	Production Action From	Production Action To	Comments
No tag	Bus Bar section 'B'	Auxiliary Generator GE/514001 incomer	Disconnect from bus bar and connect to new breaker in cubicle 811. Splice may be required.	No action at this time	Existing brkr. in cubicle 811 to be transferred to cubicle 869 & new brkr. fitted in cubicle 811
No tag	Bus Bar section 'B'	Auxiliary Generator GE/514001 incomer	Disconnect from bus bar and connect to new breaker in cubicle 811. Splice may be required.	No action at this time	Existing brkr. in cubicle 811 to be transferred to cubicle 869 & new brkr. fitted in cubicle 811
No tag	Bus Bar section 'B'	Auxiliary Generator GE/514001 incomer	Disconnect from bus bar and connect to new breaker in cubicle 811. Splice may be required.	No action at this time	Existing brkr. in cubicle 811 to be transferred to cubicle 869 & new brkr. fitted in cubicle 811
No tag	Bus Bar section 'B'	Auxiliary Generator GE/514001 incomer	Disconnect from bus bar and connect to new breaker in cubicle 811. Splice may be required.	No action at this time	Existing brkr. in cubicle 811 to be transferred to cubicle 869 & new brkr. fitted in cubicle 811
No tag	Bus Bar section 'B'	Auxiliary Generator GE/514001 incomer	Disconnect from bus bar and connect to new breaker in cubicle 811. Splice may be required.	No action at this time	Existing brkr. in cubicle 811 to be transferred to cubicle 869 & new brkr. fitted in cubicle 811
No tag	Bus Bar section 'B'	Auxiliary Generator GE/514001 incomer	Disconnect from bus bar and connect to new breaker in cubicle 811. Splice may be required.	No action at this time	Existing brkr. in cubicle 811 to be transferred to cubicle 869 & new brkr. fitted in cubicle 811
No tag	Bus Bar section 'B'	Auxiliary Generator GE/514001 incomer	Disconnect from bus bar and connect to new breaker in cubicle 811. Splice may be required.	No action at this time	Existing brkr. in cubicle 811 to be transferred to cubicle 869 & new brkr. fitted in cubicle 811
No tag	Bus Bar section 'B'	Auxiliary Generator GE/514001 incomer	Disconnect from bus bar and connect to new breaker in cubicle 811. Splice may be required.	No action at this time	Existing brkr. in cubicle 811 to be transferred to cubicle 869 & new brkr. fitted in cubicle 811
No tag	Coiled on top of Swbd.	Auxiliary Generator GE/514001.	To be determined by IMESA	To be determined by AMEC	This is an existing control cable that was never connected.
E/00000020MO	Cubicle 920	Cable coiled under B.O.P. control room	Disconnect cable from contr. 920, splice & re-connect to brkr. in cubicle 850	Splice cable & re-route to Aux. Air comprsr. UC/513401 in aux. machy. room	
E/00000020PS	Cubicle 920	Cable coiled under B.O.P. control room	Disconnect cable from contr. 920, re-connection to be determined by IMESA	Splice cable & re-route to Aux. Air comprsr. Local control in aux. machy. room	
E/00000020BC	Cubicle 920	Location unknown, cable was connected to B.O.P. cont. & signal box.	Disconnect and ground to earth.	Cap ends.	Final 'To' location to be determined
E/00000020SE	Cubicle 920	Location unknown, cable was connected to B.O.P. selector switch, FZ/883CDSE.	Disconnect and ground to earth.	Cap ends.	Final 'To' location to be determined
E/00000044MO	Cubicle 944	Coiled on drill floor, (was Drawworks Hydraulic power unit YB/865F)	Disconnect and ground to earth.	Cap ends.	Final 'To' location to be determined

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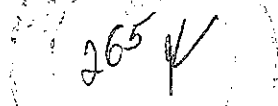
FOR CARLOS PIMENTEL
DIRECTOR
DIVISAO DE SERVICOS CARTORARIOS

263
K

Cable number	Equipment From	Equipment To	Production Action From	Production Action To	Comments
E/0000044PL	Cubicle 944	Coiled on drill floor, (was Drawworks Hydraulic power unit YB/865F)	Disconnect and ground to earth.	Cap ends.	Final 'To' location to be determined
E/0000021MO	Cubicle 821	Cable coiled under B.O.P. control room	No action, leave cable connected to contr. in cubicle 821.	Splice cable & re-route to Aux. Fresh water cooling pump 'C' XB/054C, in F.W. pump room.	
E/0000021SE	Cubicle 821	Cable coiled under B.O.P. control room	No action, leave cable connected to contr. in cubicle 821.	Splice cable & re-route to Aux. Fresh water cooling pump 'C' XB/054C, in F.W. pump room.	Final 'To' location to be determined
E/0000021PS	Cubicle 821	Cable coiled under B.O.P. control room	No action, leave cable connected to contr. in cubicle 821.	Splice cable & re-route to Aux. Fresh water cooling pump 'C' XB/054C, in F.W. pump room.	Final 'To' location to be determined
E/0000021BC	Cubicle 821	Cable coiled under B.O.P. control room	Disconnect and ground to earth.	Cap ends.	Final 'To' location to be determined
E/0000023TFA	Cubicle 823	Cable coiled in drilling transformer room.	Disconnect & cap ends	Ground to earth	
E/0000023TFB	Cubicle 823	Cable coiled in drilling transformer room.	Disconnect & cap ends	Ground to earth	
E/0000023TFC	Cubicle 823	Cable coiled in drilling transformer room.	Disconnect & cap ends	Ground to earth	
E/0000025MO	Cubicle 825	Cable coiled in Mud Mix Room	Disconnect & cap ends	Ground to earth	
E/0000025PL	Cubicle 825	Cable coiled in Mud Mix Room	Disconnect & cap ends	Ground to earth	
E/0000047QFA	Coiled inside Swbd.	Coiled in switchgear room No.2.	Cap ends & secure in Swbd. for possible re-use.	None	Was connected to brkr. in cubicle 847 for G/T4 MCC.
E/0000047QFB	Coiled inside Swbd.	Coiled in switchgear room No.2.	Cap ends & secure in Swbd. for possible re-use.	None	Was connected to brkr. in cubicle 847 for G/T4 MCC.
E/0000047QFC	Coiled inside Swbd.	Coiled in switchgear room No.2.	Cap ends & secure in Swbd. for possible re-use.	None	Was connected to brkr. in cubicle 847 for G/T4 MCC.
Note: cable grounding & splicing above, will be subject to separate workpacks.					

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JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓGRAFOS



MENTEL GUSMÃO
TOR
COS CARTO

Vendor to check / verify / complete columns 6, 7A, 7B, 7C, 8A, 8B, 8C, 9A, 9B and

2566

Subject: LV Emergency SW/BD (XA/873) Circuit Details Schedule														Document No: LI-3010.38-5140-741-AMK-787							
Client	Petromec	Made By	Date	Checked By	Date	Rev	Remarks										Vendor Approval				
Plant	P36 Roncador	Iain McLeod	21/04/98	B. Dines	21/04/98	C	For Information - vendor data added														
Location	Campos Basin	Iain McLeod	24/02/98	B. Dines	25/02/98	A	Reissued for vendor input														
Contract No: L0277		Iain McLeod	10/03/98	B. Dines	10/03/98	B	Reissued for vendor input														
Reference	Description	Status	Equipment / Rating	Component	Schematic Type	Type	Circuit Device	Rating	Release Type	Release Mag. Setting	CT Ratio	Range (A)	Set Point (A)	Full Load Current (A)	Inrush Current (A)	N° Cores	CABLE mm²	Field Equipment Amperes Rating (Vac)	(W)	Comments	Rev
1	2	3	4	5	6	7A	7B	7C	8A	8B	8C	9A	9B	10A	10B	11	12	13	14		
873 EMGY A - EMERGENCY SWITCHBOARD SECTION A																					
XB2618	EMERGENCY GENERATOR EXHAUSTER 1 TRANSFORMER ROOM EXHAUSTER	Exist	13.8	946	G2	DOL	LN125		CM85	400	40 /	15 - 25.2 3.75 - 6.3	22 4.5	30		1	3	6			
A000-947	EQUIPPED SPARE	Spare		947	N/A	MXB	LN125		R32												
XB265F	EMERGENCY GENERATOR FAN 1 TRANSFORMER ROOM FAN	Exist	26.5	948	G2	DOL	LN125		CM 100	600	80 /	40 - 67 7.5 - 12.6	41 9	41		1	3	10			
A000-949	EQUIPPED SPARE	Spare		949	N/A	MXB	LN 125		R100												
YA7719A	DAVT & WCHCH PORT FWD LIFEBOAT	Exist	30.0	950	N/A	MXB	LN 125		R 50				47	32		1	3	16			
YA7719B	DAVT & WCHCH STBD FWD LIFEBOAT	Exist	30.0	951	N/A	MXB	LN125		R 50				47	32		1	3	16			
A000-952	EQUIPPED SPARE	Spare		952	N/A	MXB	LN 125		CM 100												
A000-953	EQUIPPED SPARE	Spare		953	N/A	MXB	LN 125		CM 40												
YA7792A	DAVT & WCHCH CENTRE RESCUE	Exist	30.0	954	N/A	MXB	LN 125		R 32				27	32		1	3	25			
YB9450A	FOAM EXTING SYSTEM HELICOPTER DECK	Exist	25.0	955	N/A	MXB	LN 125		R 40					9		1	3	1.5			
YB477	FOAM PUMP	Exist	52.0	956		DOL	LN 125		CM 100	1000	100 /	75 - 126		87		1	3	35			
A000-957	EQUIPPED SPARE	Spare		957	N/A	MXB	LN 125														

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JOSE CARLOS PIMENTEL GUSMAO
 DIRECTOR
 DIVISÃO DE SERVIÇOS CARTÓGRAFICOS

Vendor to check / verify / complete columns 6, 7A, 7B, 7C, 8A, 8B, 8C, 9A, 9B and 12

2

5

10

With ref. to your wgs. a.m., we point out that, according to IEC 61892-7 and MODU, code (see enclosures), the internal spaces of closed tanks are to be considered zone 0. Moreover, note that zone 1 includes, in outdoor or semi-enclosed locations, the area within 1,5 m from the boundaries of any openings to apparatus which is a part of the mind system (see 6.2.3.4 of MODU Code), while zone 2 is relevant to the areas 1,5 m beyond the zone 1 areas specified in 6.2.3.4 of MODU Code and beyond the semi-enclosed locations specified in 6.2.3.2.

INC. EQUIPMENT
SCRIPTION
MOLE WINCH
ENERATING SET

PLANI NORTH
SUPPLA ARCHIVIO

RINA
DIREZIONE GENERALE
HEAD OFFICE

77777

[illegible]

REGISTRO ITALIANO N° 11415

DCC
MASTER
COPY

NOTES

1. HAZARDOUS AREA CLASSIFICATION IN ACCORDANCE WITH THE AMERICAN PETROLEUM INSTITUTE RECOMMENDED PRACTICE FOR ELECTRICAL INSTALLATIONS AT PETROLEUM FACILITIES, RP 500 1st EDITION 1991.

3. ALL DIMENSIONS INDICATED ARE IN METRES OR PART THEREOF.

THE CHAIRMAN
JANUARY 1965

4. HAZARDOUS WREN CLASSIFICATION SHOWN ON THIS OPERATING ARE FOR NEW AND UNPROVED AREAS ONLY. FOR ALL OTHER AREAS REFER TO EXISTING POLARIS AND A CLASSIFICATION BROCHURE : 6405-1-000 FOR THE OPERATIVE.

5. ELECTRICAL EQUIPMENT IN HAZARDOUS AREAS TO BE CERTIFIED IN ACCORDANCE WITH NF 500 FOR GAS GROUP D AND I (EXCLUDING CLASS I, 1.3 OF UNDERGROUND GAS TUNNELS)

UNIT P36 HAZARDOUS
AREA CLASSIFICATION
SEC' JECK

NOBLE FURNITURE
DENTON

P35-ROCKADDER FILE
CONTRACT :

ISSUE DATE	DESCRIPTION OF RECEIPT	FOR BY
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2005	RE-ISSUED FOR DESIGN	57
2006	ISSUED FOR DESIGN	15

[illegible][illegible]

0-10-5408-947-MOR-VZ	104	MOR A 23
EXHIBIT NUMBER		DATE
REFERENCE NUMBERS		

10.11-5CG-941-PLX-521	MAX AREA 1530
10.10-5100-941-ALX-132	MAX AREA 1470
10.11-5100-941-ALX-125	MAX AREA 1500

10-34-3700-241-ALB-450	HOZALONIS AP
10-35-3400-944-ALB-170	HAZ ARC A CA

--	--

UNCLASSIFIED

CLASS 1.1 DIVISION

CLASS 1. DIVIS

LEGEND

1. LOCATION OF CHEMICAL VENT LOCATIONS.

HOLOS

3

100

YD/EG4M	AIR CONDITION
XA/777A/G	LIFEBOAT
XA/214	FUEL OIL STOP

YD/684J	AIR HANDLING
YD/584H	AIR HANDLING
YD/684L	AIR CONDITION

AA44B3	SEB WHITE P
YA752A/B	MOBRING WINC
YA752C/D	MOBRING WINC

XA/40IC	FIRE PUMP	ENE
XA/40C		

10L

within 1,5 m from IN

Q.D.U. code (see Q.D.U. code)

$K=1.584 \times 10^6$ $\mathbb{H} = 3M \times 12P$ $\mathcal{E} = 3M \{1, Y\}$
$$= 3M(1Y^2)$$

DIVISION 1 INSIDE
TANKS (HOLD 1)

- * = Hinged doors (opening to hazardous area)
- ⑥ NOT CLASSED DOORS

STAIRBOARD

PLAN ON TANK TOP

Philosophy

1. PARABOLIC AREA CLASSIFICATION IN ACCORDANCE WITH THE AMERICAN PENTAGON INSTITUTES RESEARCHING PRACTICE FOR ELECTRICAL INSTALLATIONS AT PENTAGON FACILITIES, WP 5309

3. ALL DIMENSIONS INDICATED ARE IN METRES OR PART THEREOF.
4. HAZARDOUS AREAS CLASSIFICATION SHOWN BY THIS DRAWING ARE FOR ME-1 AND APPROVED AREAS ONLY. FOR ALL OTHER AREAS REFER TO EXISTING FACILITY AREA CLASSIFICATION DRAWINGS: 6805-X-10-D-10 HAZARDOUS.
5. ELECTRICAL EQUIPMENT IN HAZARDOUS AREAS TO BE IDENTIFIED IN ACCORDANCE WITH PER 508 FOR GAS GROUP 2D AND TEMPERATURE 133. ELECTRICAL EQUIPMENT FOR GAS GROUP 2D AND TEMPERATURE 133

DCC
MASTER
COPY

LEGEND

	CLASS 1., DIVISION 1
	CLASS 1., DIVISION 2

UNCLASSIFIED (SEE NOTE 4)

107772

ALONSO IN ALLANO IN IVILE

LIST B- NEW EQUIPMENT INCORPORATED

945201	CHAINS REPAIRMENT PACKAGES
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USE OF CALIBRATED EQUIPMENT TO BE RELIABLE

10/7318	MATRIX SEPARATOR
---------	------------------

DA/464	U.V. STERILIZED UNIT
DA/727	U.V. STERILIZED UNIT

453A-C	FRESH WATER HEATERS
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XA/1010	FIRE JOCKEY PUMP
---------	------------------

XA/275A-C INHIBIT GENERAL: CFTC	
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XA/146C/D	GEN SET DIESEL OIL FEED
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XA/144N/B	EM GEN DIESEL OIL FEED
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HEAT EXCHANGERS

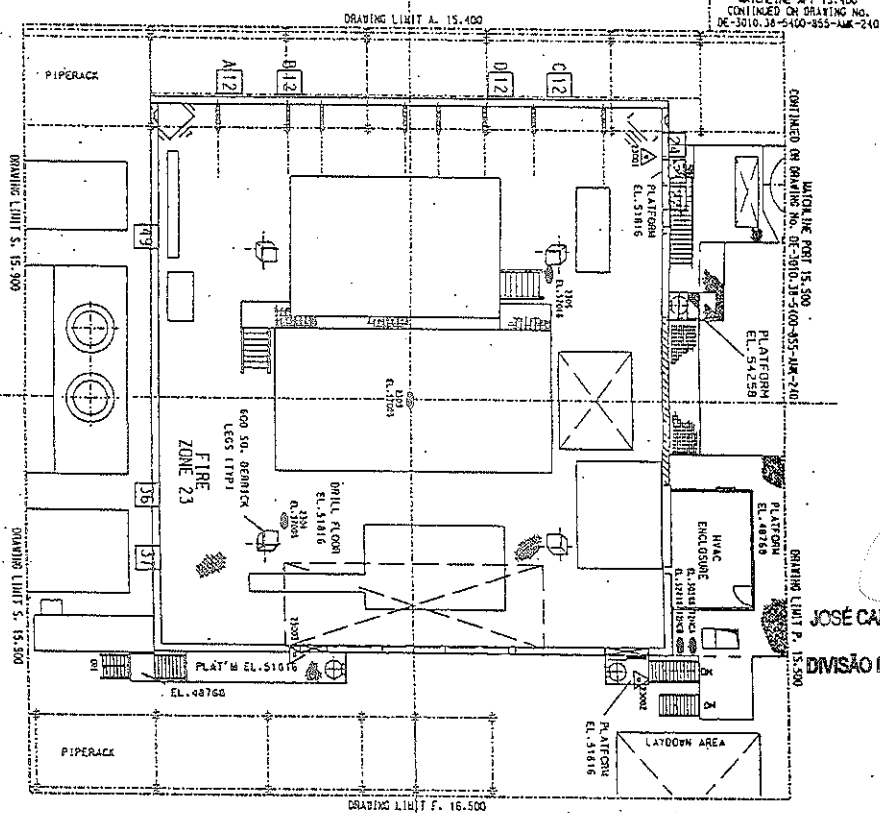
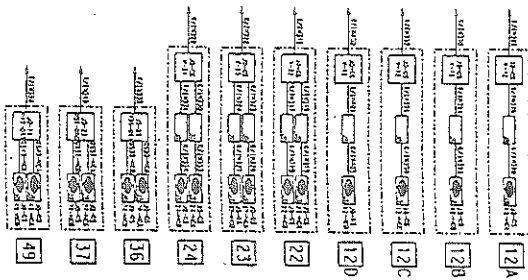
6.2.3.4 of COMPRESSOR SKID

DESCRIPTION

ESTIMATE EQUIVALENTS

1

272 ✓



JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓGRAFICOS

USDAO
TORONTO

STARBOARD

FOR INFORMATION ONLY

E & I MASTER

[illegible]

QUESTION	ANSWER
1. Which of the following is not a function of the liver?	1. To produce bile
2. Which of the following is not a function of the liver?	2. To produce bile
3. Which of the following is not a function of the liver?	3. To produce bile
4. Which of the following is not a function of the liver?	4. To produce bile
5. Which of the following is not a function of the liver?	5. To produce bile
6. Which of the following is not a function of the liver?	6. To produce bile
7. Which of the following is not a function of the liver?	7. To produce bile
8. Which of the following is not a function of the liver?	8. To produce bile
9. Which of the following is not a function of the liver?	9. To produce bile
10. Which of the following is not a function of the liver?	10. To produce bile

RECEIVED
PETROMEC
09 AUG 1999
BY: *pd*

PETROBRAS
TRANT
21.670

FIRE & GAS
UPPER DECK
CENTRE
EL. 46024

NOBLE
DENTON
746-2111

PJ5-PAW/MOON FILM
CONTRACT

DATE	OFFICIAL PRICE OF RETENTION	CODE
1954		84

[illegible]

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200

11/11/11 11/11/11

Lactuca sativa, var. *capitata*

RY
M

09 Aug 1951

PÉTROME

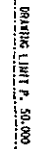
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121.00

THE ENT

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✓



DO & I MASTER

TURBINE AIR
INTAKE

DRAWING LIMIT DATUM 0.000

WATCHLINE DATUM 0.000
CONTINUED ON DRAWING NO.
DE-3010-38-5400-855-AMK-241

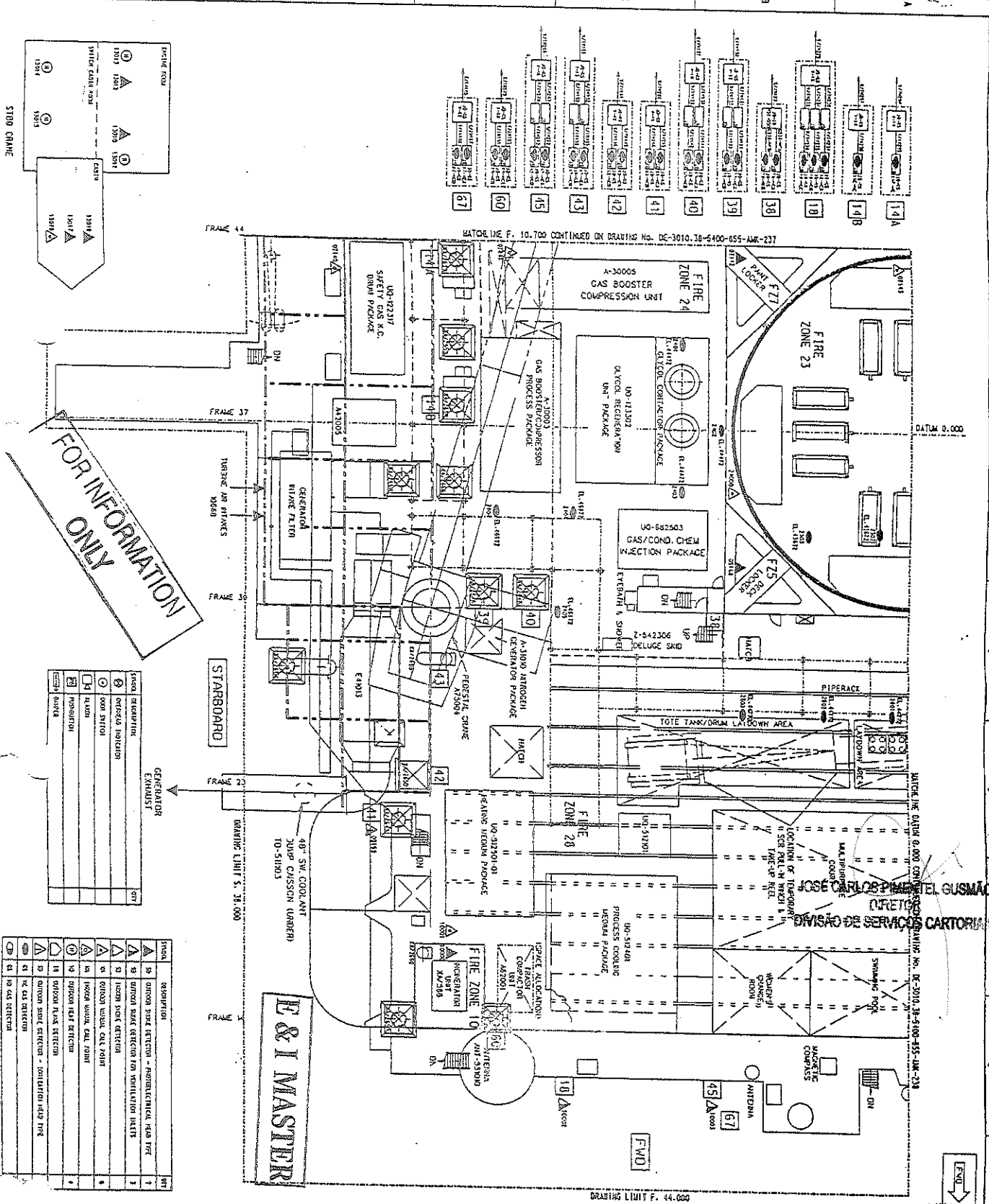
FOR INFORMATION
ONLY

[illegible]

FIRE & GAS
UPPER DECK
AFT/PORT
EL. 46024

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JOSE CARLOS PINHEIRO GUSMÃO
OFICIA
DIVISÃO DE SERVIÇOS CARTORIAL

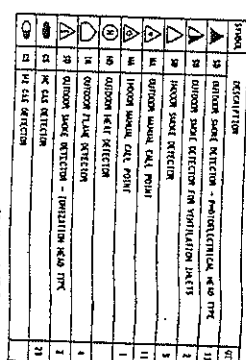
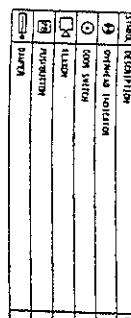
DRAWING LIMIT F. 44.000

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PETROMEX
09 JUL 1955
BY: *pd*

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FIRE & GAS
MAIN DECK
FYD/STBD
EL. 42672

275 ✓



JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORARIOS

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09 AUG 1999

FIRE & GAS
MAIN DECK
FYD/PORT
EL. 42672

1. MANUAL ALARM CALL POINTS
ON HELIDECK STAIRS.



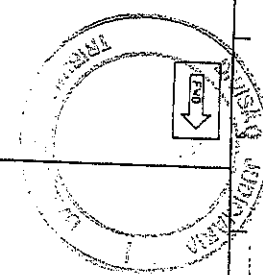
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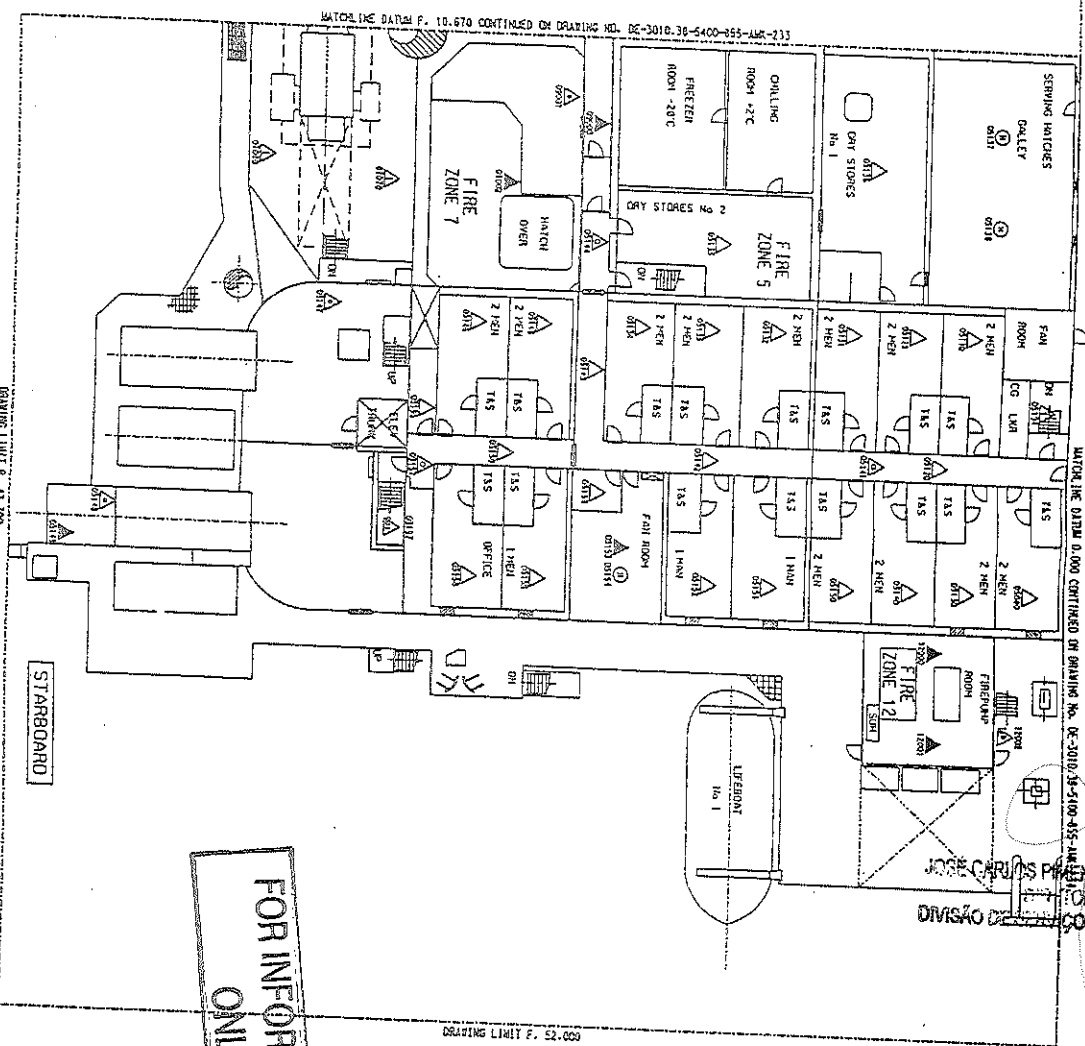
PROBLEM	ANSWER
1. Δ 27	ORIGIN AND DESTINATION - HOSPITALITY, WARE TIME
2. Δ 28	ORIGIN AND DESTINATION FOR CONSTRUCTION MATTER
3. Δ 29	ISSUE AND DESTINATION
4. Δ 30	ORIGIN AND DESTINATION FOR CONSTRUCTION MATTER
5. Δ 31	ISSUE AND DESTINATION FOR CONSTRUCTION MATTER
6. Δ 32	ORIGIN AND DESTINATION
7. Δ 33	ORIGIN AND DESTINATION - ISSUANCE AND TIME
8. Δ 34	ISSUE AND DESTINATION
9. Δ 35	ISSUE AND DESTINATION

FIRE & GAS
MAIN DECK
AFT/PORT
EL. 42672

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JOSE CARLOS PIMENTEL GUSMÃO
DIVISÃO DE RECURSOS CARTORARIAS

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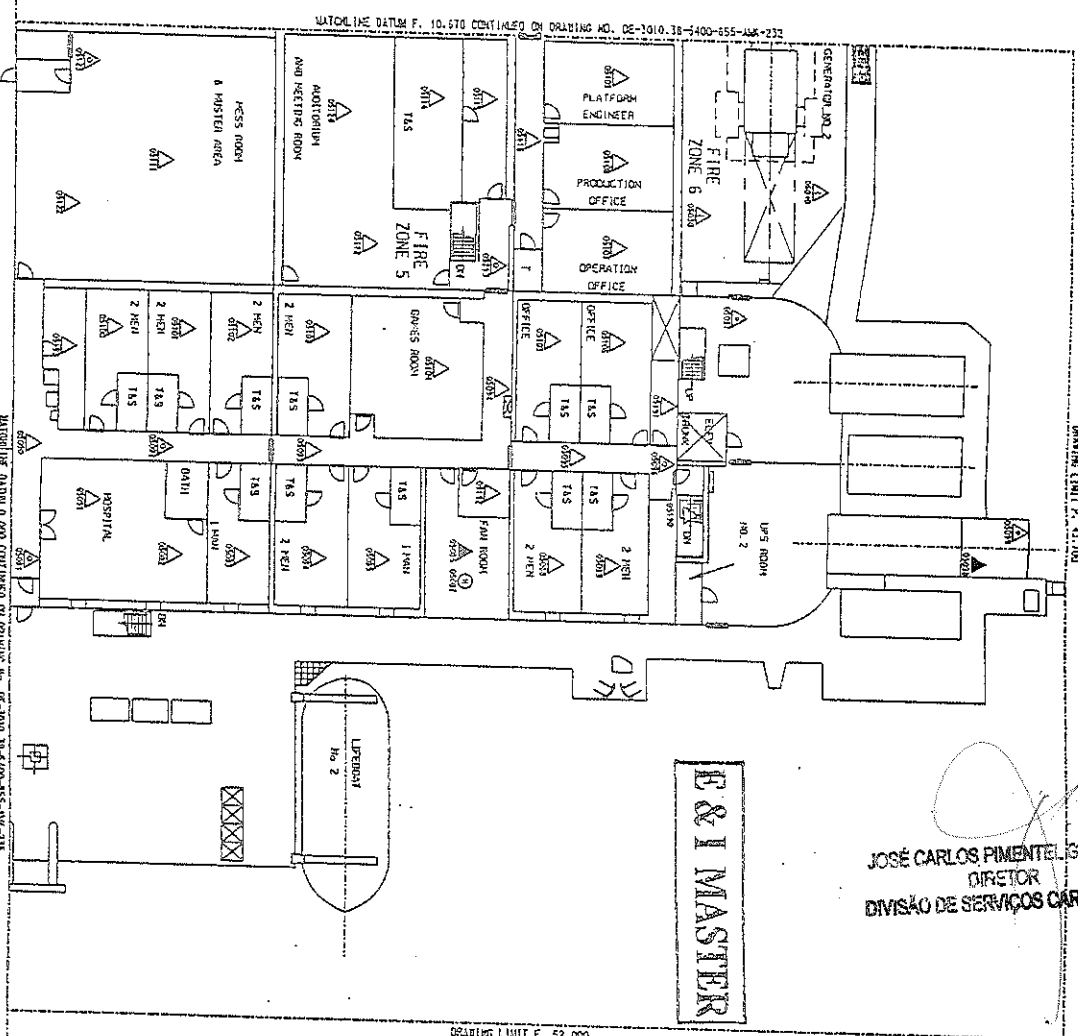
SYMBOL	DESCRIPTION	UNIT
①	ROOM SWITCH	
②	CLAMP	
③	MULTICUT	
④	CLAMP	

INCH	DESCRIPTION	QTY
10	CORNER IRON EFFICIOM	3
16	DIVIDER PLATE SET	
19	IRON ROD VLA	
25	IR CLS EFFICIOM	4
28	IR BAR EFFICIOM	

id	description	err
10	outdoor power - powerline cable hole	1
11	outdoor power line for ventilation ducts	1
12	outdoor power entrance	1
13	outdoor power cable entry	1
14	outdoor power cable entry	1

FIRE & GAS
SECOND DECK
FWD/STBD
EL. 39624

279
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DATE: 01/01/2000 0.000 (CONTINUED OF DRAWING NO. DE-1010-38-400-555-464-232)

DRAWING UNIT: 1:100

PORT

E & I MASTER

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

DRAWING LIMIT: F. 52.000

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PETROMEX
09 APR 1999

NO.	DESCRIPTION	DATE	BY
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PSC-REV-2000 FHEO
CHART: 1:1

FIRE & GAS
SECOND DECK
FWD/PORT
EL. 39624

NO.	DESCRIPTION	DATE	BY
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NO.	DESCRIPTION	DATE	BY
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280 K

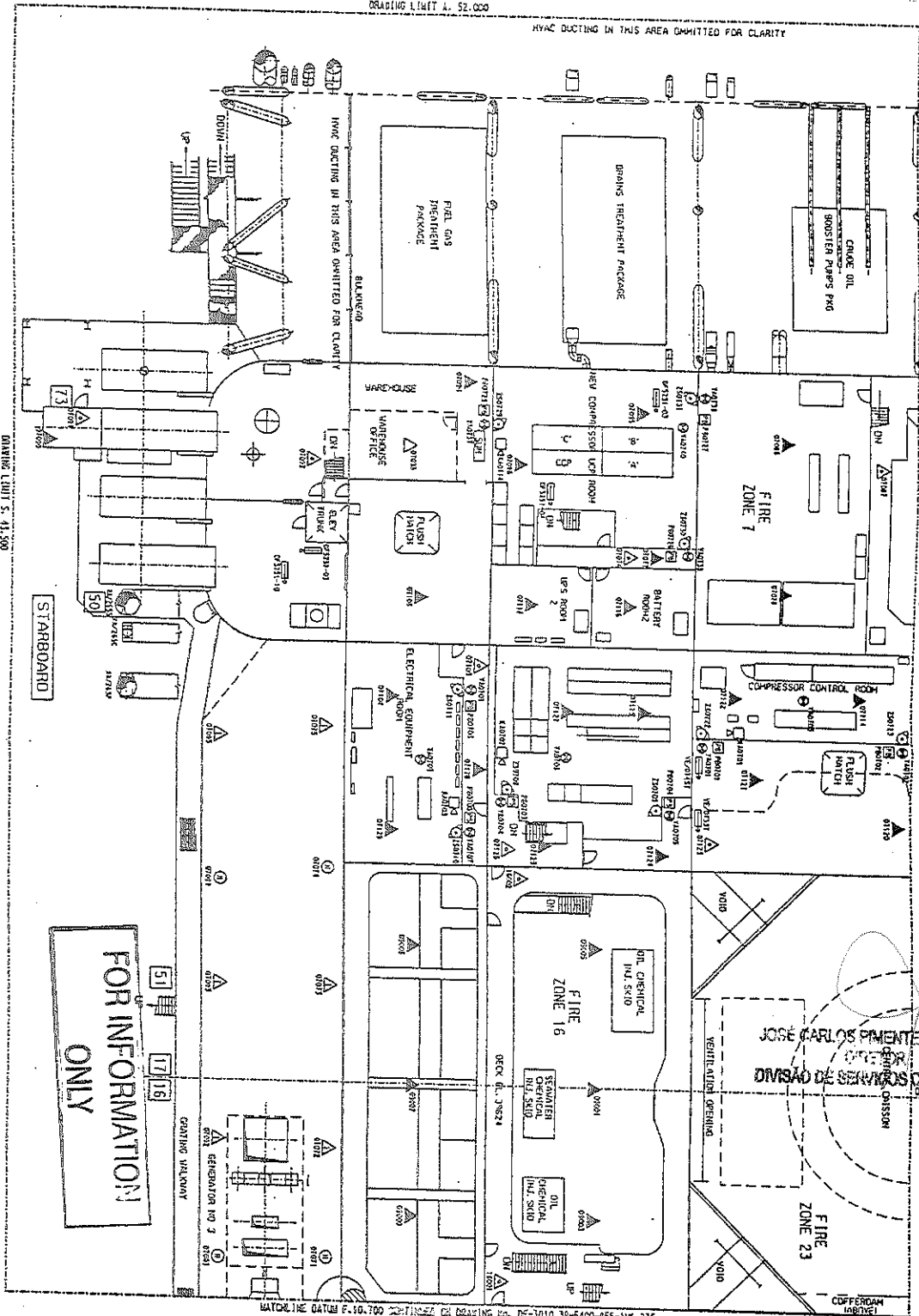
GRAVING LIMIT A. 52.000

HYAC DUCTING IN THIS AREA OMITTED FOR CLARITY

WATER LINE DUTY 0.000 CONTINUED ON DRAWING No. DE-3010-14-5100-555-AM-212

GRAVING LIMIT S. 41.300

STARBOARD



FOR INFORMATION ONLY

JOSÉ CARLOS PIMENTEL GUSMÃO
DIVISÃO DE SERVIÇOS CARTÓRIOS
DATA 01.08.2000

ENCARGADO DO DEPARTAMENTO DE PROJEÇÃO

EXI MASTER

RECEIVED
PE 10/10/19
09 OCT 19

BY: [Signature]

NO.	DESCRIPTION	DATE	BY
1	RECEIVED	10/10/19	PE
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4	RECEIVED	10/10/19	PE
5	RECEIVED	10/10/19	PE
6	RECEIVED	10/10/19	PE
7	RECEIVED	10/10/19	PE
8	RECEIVED	10/10/19	PE
9	RECEIVED	10/10/19	PE
10	RECEIVED	10/10/19	PE

NOVA DEPARTAMENTO DE PROJEÇÃO

FIRE & GAS
SECOND DECK
AFT/STBD
EL. 39624

FOR INFO ONLY



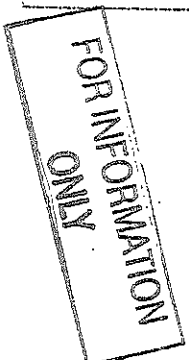
TOP SECRET

WATCH THE DISTON F.10.700 CONTINUED ON DRAWING NO. DE-3010, 30-5400-855-A&K-234

STAGE	DESCRIPTION	1997
19	COMMON MEAT RECIPES - SPANISH/ITALIAN/ASIAN/IND	20
20	COMMON MEAT RECIPES FOR VEGAN/VEGETARIAN MEATS	1
21	COMMON SWEET RECIPES	1
22	COMMON BEV. RECIPES: COFFEE, TEA, FRUIT	1
23	COMMON BEV. RECIPES: COFFEE, TEA, FRUIT	1
24	COMMON MEAT RECIPES	
25	COMMON MEAT RECIPES	
26	COMMON MEAT RECIPES - VEGETARIAN/VEGAN/IND	
27	COMMON MEAT RECIPES - VEGETARIAN/VEGAN/IND	

1276	1275	1274	1273	1272	1271	1270	1269	1268	1267	1266	1265	1264	1263	1262	1261	1260	1259	1258	1257	1256	1255	1254	1253	1252	1251	1250	1249	1248	1247	1246	1245	1244	1243	1242	1241	1240	1239	1238	1237	1236	1235	1234	1233	1232	1231	1230	1229	1228	1227	1226	1225	1224	1223	1222	1221	1220	1219	1218	1217	1216	1215	1214	1213	1212	1211	1210	1209	1208	1207	1206	1205	1204	1203	1202	1201	1200	1199	1198	1197	1196	1195	1194	1193	1192	1191	1190	1189	1188	1187	1186	1185	1184	1183	1182	1181	1180	1179	1178	1177	1176	1175	1174	1173	1172	1171	1170	1169	1168	1167	1166	1165	1164	1163	1162	1161	1160	1159	1158	1157	1156	1155	1154	1153	1152	1151	1150	1149	1148	1147	1146	1145	1144	1143	1142	1141	1140	1139	1138	1137	1136	1135	1134	1133	1132	1131	1130	1129	1128	1127	1126	1125	1124	1123	1122	1121	1120	1119	1118	1117	1116	1115	1114	1113	1112	1111	1110	1109	1108	1107	1106	1105	1104	1103	1102	1101	1100	1099	1098	1097	1096	1095	1094	1093	1092	1091	1090	1089	1088	1087	1086	1085	1084	1083	1082	1081	1080	1079	1078	1077	1076	1075	1074	1073	1072	1071	1070	1069	1068	1067	1066	1065	1064	1063	1062	1061	1060	1059	1058	1057	1056	1055	1054	1053	1052	1051	1050	1049	1048	1047	1046	1045	1044	1043	1042	1041	1040	1039	1038	1037	1036	1035	1034	1033	1032	1031	1030	1029	1028	1027	1026	1025	1024	1023	1022	1021	1020	1019	1018	1017	1016	1015	1014	1013	1012	1011	1010	1009	1008	1007	1006	1005	1004	1003	1002	1001	1000	999	998	997	996	995	994	993	992	991	990	989	988	987	986	985	984	983	982	981	980	979	978	977	976	975	974	973	972	971	970	969	968	967	966	965	964	963	962	961	960	959	958	957	956	955	954	953	952	951	950	949	948	947	946	945	944	943	942	941	940	939	938	937	936	935	934	933	932	931	930	929	928	927	926	925	924	923	922	921	920	919	918	917	916	915	914	913	912	911	910	909	908	907	906	905	904	903	902	901	900	899	898	897	896	895	894	893	892	891	890	889	888	887	886	885	884	883	882	881	880	879	878	877	876	875	874	873	872	871	870	869	868	867	866	865	864	863	862	861	860	859	858	857	856	855	854	8
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FIRE & GAS
SECOND DECK
AFT/PORT
EL. 39624



JOSE CARLOS ROSENTEL GUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAIS

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PETROMEC
09 AUG 1999

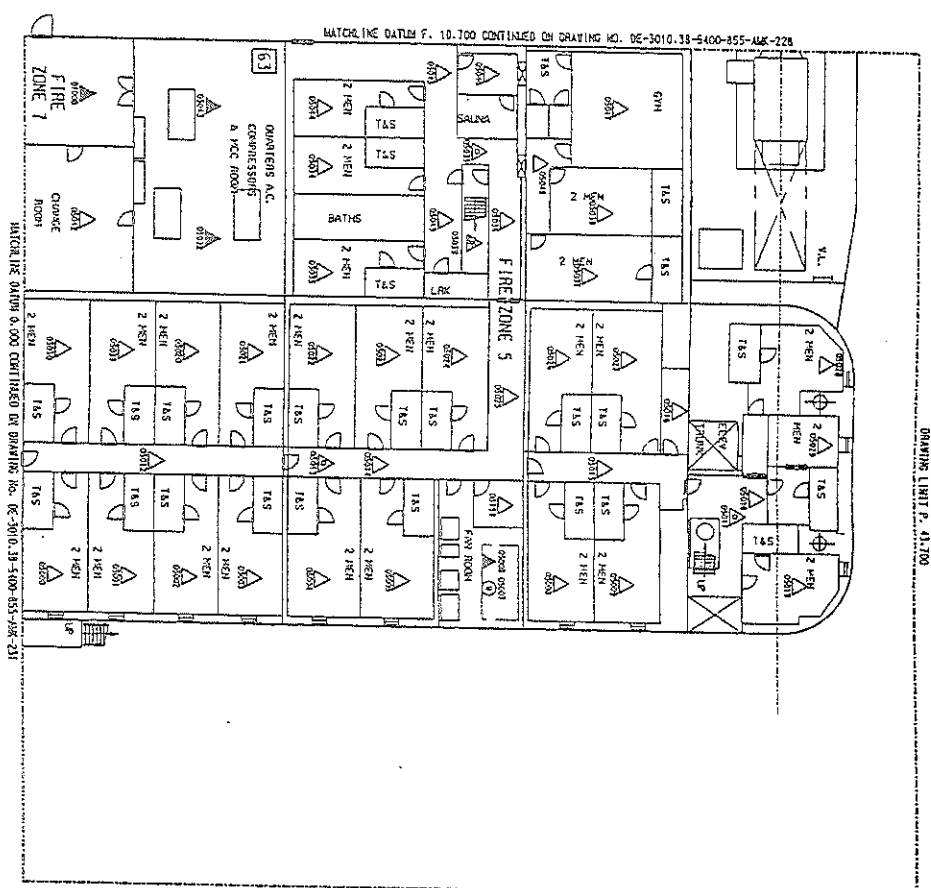
BY: _____

FIRE & GAS
TANK TOP
FWD/STBD
EL. 36576

UNION	DESCRIPTION	QTY
02	OVERSEAS RELOCATION	1
03	DEATH BENEFIT	1
04	EL. FORM	1
05	ADVERTISING	1
06	DATA	1

[illegible][illegible]

283 K



PORT

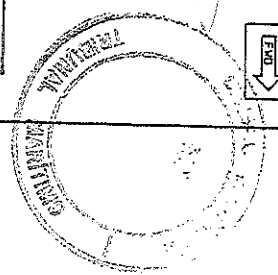
DRAWING LIMIT F. 45-000

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JOSÉ CARLOS PIMENTEL GUSMÃO
CIV-TOP
DIVISÃO DE SERVIÇOS CARTÓGRAFOS



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09 AUG 10

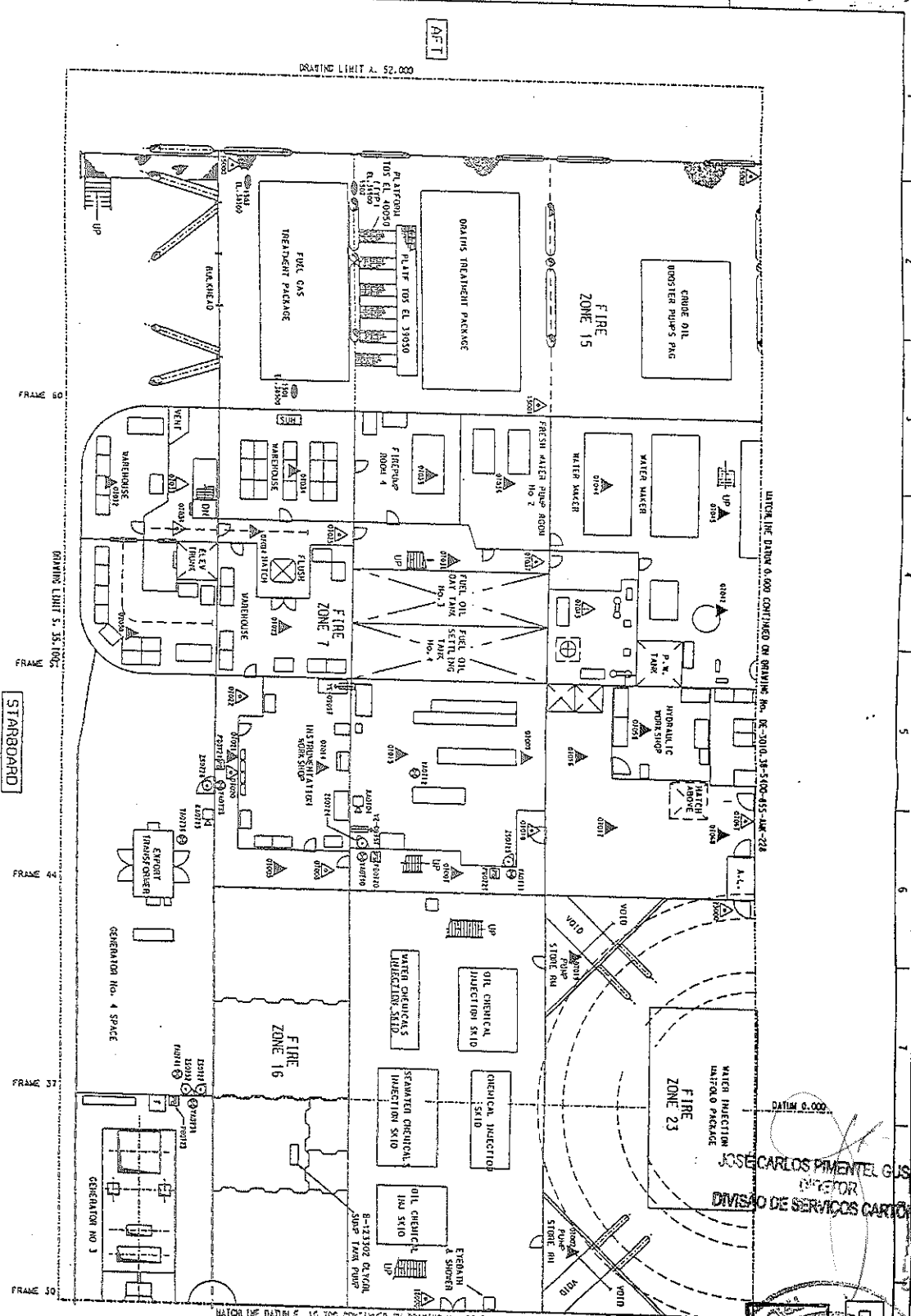
ITEM	DESCRIPTION	QTY
1	QUARTERS A.C. CREW	1
2	BATHS	1
3	TAS	1
4	HEU	1
5	FWD ROOM	1
6	MID ROOM	1
7	AFT ROOM	1
8	ENGINE ROOM	1
9	STEAM ROOM	1
10	WATER TANK	1
11	FUEL TANK	1
12	GAS TANK	1
13	OIL TANK	1

ITEM	DESCRIPTION	QTY
1	QUARTERS A.C. CREW	1
2	BATHS	1
3	TAS	1
4	HEU	1
5	FWD ROOM	1
6	MID ROOM	1
7	AFT ROOM	1
8	ENGINE ROOM	1
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10	WATER TANK	1
11	FUEL TANK	1
12	GAS TANK	1
13	OIL TANK	1

ITEM	DESCRIPTION	QTY
1	QUARTERS A.C. CREW	1
2	BATHS	1
3	TAS	1
4	HEU	1
5	FWD ROOM	1
6	MID ROOM	1
7	AFT ROOM	1
8	ENGINE ROOM	1
9	STEAM ROOM	1
10	WATER TANK	1
11	FUEL TANK	1
12	GAS TANK	1
13	OIL TANK	1

FIRE & GAS
TANK TOP
FWD/PORT
E-36576

284 ✓



E & I MASTER

Symbol	Description	Unit
①	WATER HEATING	
②	WATER HEATING	
③	WATER HEATING	
④	WATER HEATING	
⑤	WATER HEATING	
⑥	WATER HEATING	
⑦	WATER HEATING	
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⑨	WATER HEATING	
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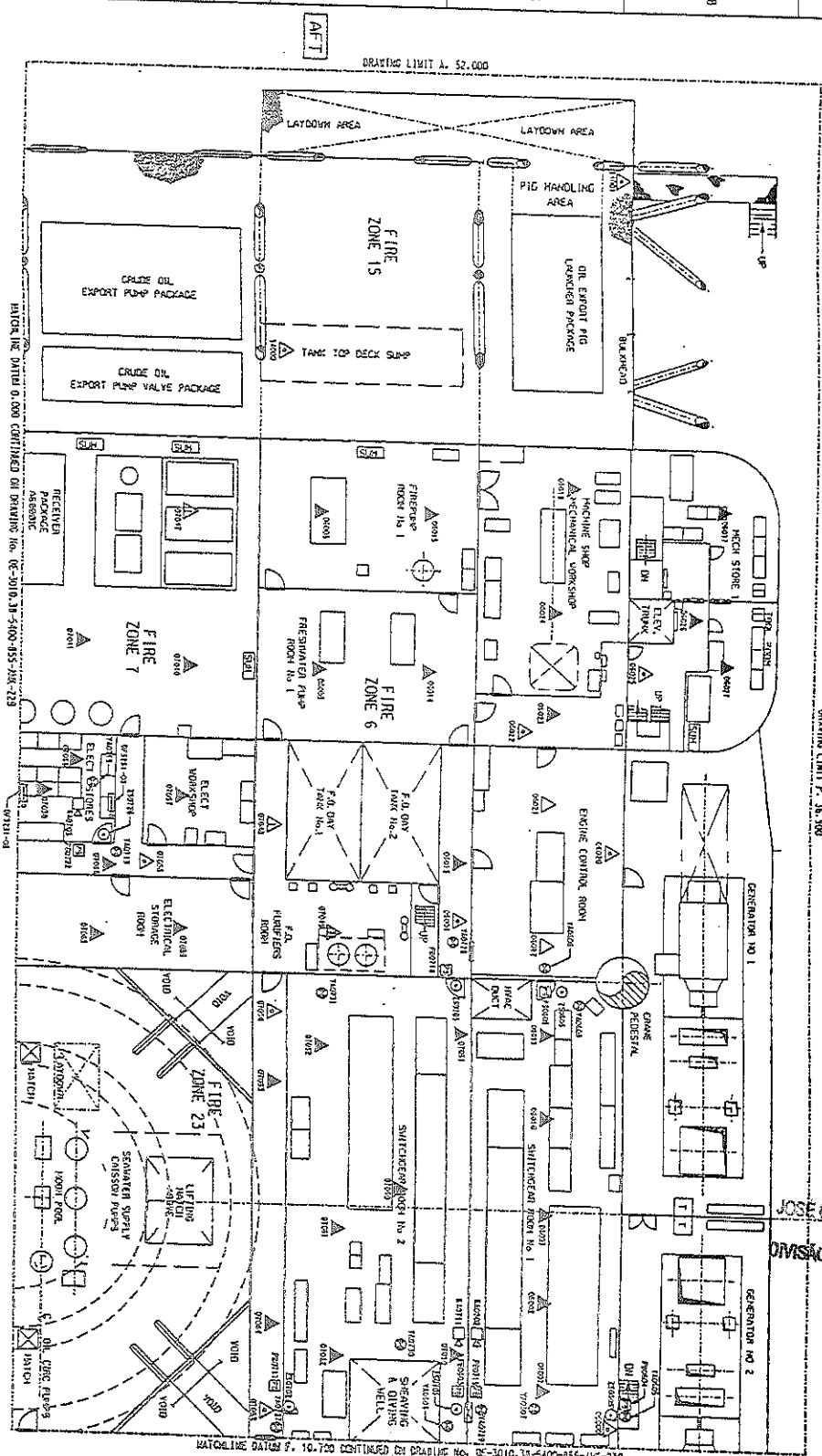
JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTOGRAFICOS

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285 ✓



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JOSE CARLOS LOPES GUSMÃO
INTELECTUAL
DIVISÃO DE SERVIÇOS CARTÓGRAFICOS

E & I MASTER

Figure 4 illustrates the stages of chick development from fertilization to hatching. The stages are numbered 1 through 12. Stage 1 shows a fertilized egg. Stage 2 shows cleavage. Stage 3 shows a two-cell stage. Stage 4 shows a four-cell stage. Stage 5 shows a morula stage. Stage 6 shows a gastrula stage. Stage 7 shows hatching. Stage 8 shows a chick in egg. Stage 9 shows a chick in egg. Stage 10 shows a chick in egg. Stage 11 shows a chick in egg. Stage 12 shows a chick in egg.

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09 JUL 199

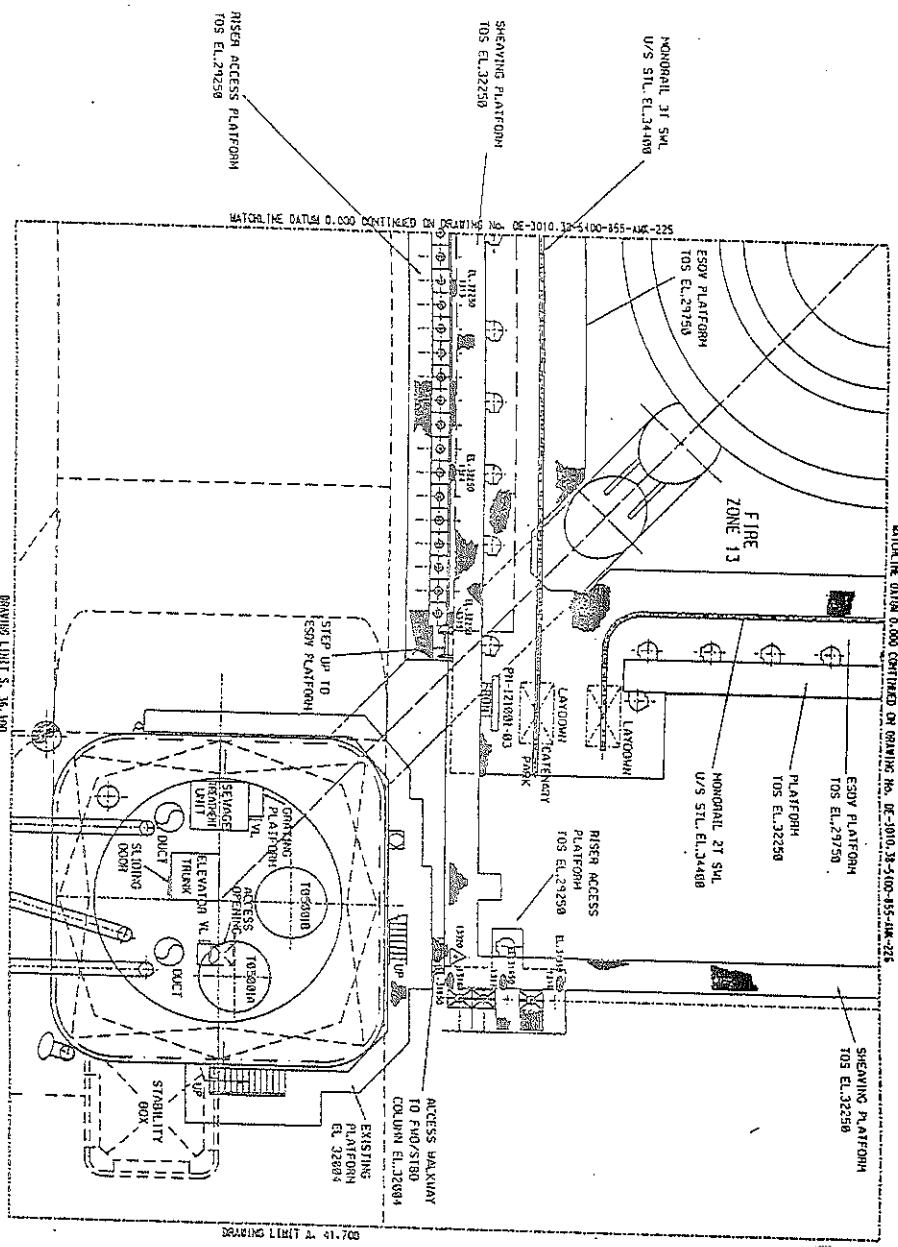
BY

FOR INFORMATION
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1	WASHER	DECONTAMINATOR	4715
2	3	OVERHEAD PROJECTOR	12
3	4	VIDEO CAMERA	4
4	5	ALUMINUM	3
5	6	AMPLIFIER	7
6	7	OUTLET	2

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FIRE & GAS
TANK TOP
AFT/PORT
EL. 36576



STARBOARD

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E & I MASTER

FWO

JOSE CARLOS FIMMTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

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PETROMEC
09 AUG 1939

Model	Description	Qty
②	OTC-10 Injection	
②	Acid Sphix	
②	A. Amp	
②	Injection	
②	Syring	

№№	Тема
55	Орточо буюу егизтөн - баянлалдагч буюу баян
56	Орточо буюу егизтөн - үзэгдэлч буюу үзэгдэлч баян
57	Орточо буюу егизтөн
58	Орточо буюу егизтөн
59	Орточо буюу егизтөн
60	Орточо буюу егизтөн
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100	Орточо буюу егизтөн

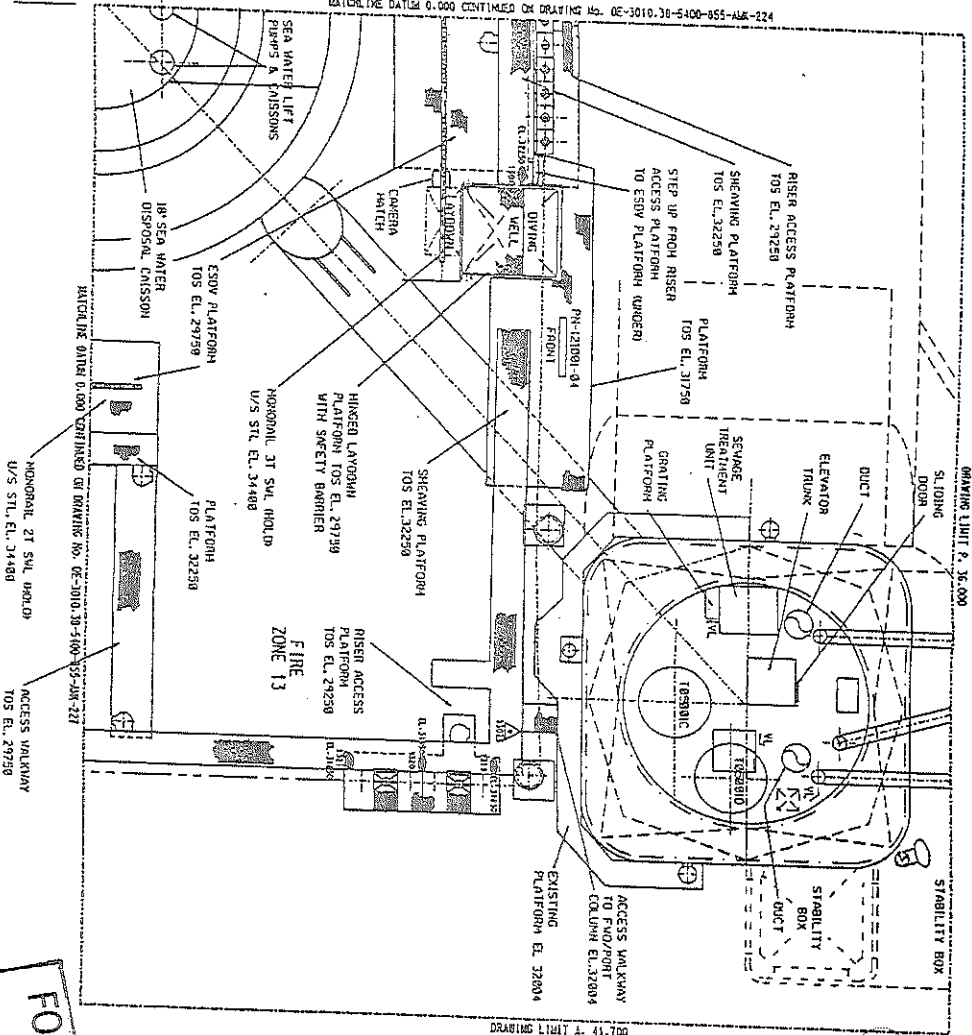
Cognome e Nome		Data di nascita		Data di morte	
1	2	3	4	5	6
1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
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109	110	111	112	113	114
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139	140	141	142	143	144
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FIRE & GAS
 RISER DECK
 FWD/STBD
 EL-28956-EL-35000

287 K

FRAME 37

WATCHLINE DATUM 0.000 CONTINUED ON DRAWING NO. DE-3010.30-5400-855-A&B-224



PORT

DRAWING LIMIT 1 - 41.70

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JOSE CARLOS PIMENTEL GUSMÃO
UNIFORM
DIVISÃO DE SERVIÇOS CARTÓGRAFOS

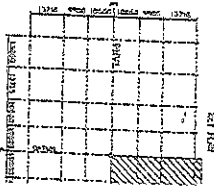
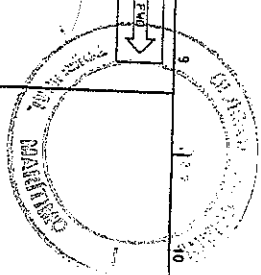
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SYMBOL	DESCRIPTION	NOTES
⊙	OFFICER'S QUARTERS	
⊙	COIN STATION	
⊙	ILLUMINATION	
⊙	PROJECTION	
⊙	WATER	

SYMBOL	DESCRIPTION	NOTES
△	GUNNER BOAT DETECTOR - ANTICOLLISION, 360 DEG	
△	GUNNER BOAT DETECTOR FOR VENTILATION INLET	
△	INCOGNITUM DETECTOR	
△	OUTPOST SIGNAL LIGHT	
△	INCOGNITUM SIGNAL LIGHT	
△	OUTPOST SIGNAL DETECTOR	
△	OUTPOST SIGNAL DETECTOR - ILLUMINATION AND TRAC	
△	IN COGNITUM DETECTOR	
△	IN COGNITUM DETECTOR	

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SYMBOL	DESCRIPTION	NOTES
△	INCOGNITUM DETECTOR	
△	OUTPOST SIGNAL DETECTOR	
△	OUTPOST SIGNAL DETECTOR - ILLUMINATION AND TRAC	
△	IN COGNITUM DETECTOR	
△	IN COGNITUM DETECTOR	

FIRE & GAS
RISER DECK
FWD/PORT
EL. 20936-EL. 35000

288 R

EXPEDIENTE GUSMÃO
DETOR
SERVIÇOS CARTORIAIS

GRATING LIMIT A. 40.50



FRAME 51

STARBOARD

RECEIVED JULY 5, 2010

WATCH THE DATA 0.000 CONTINUED ON DRAWING No. DE-3010.30-5400-855-AWG-727

100-443886-100

BY: *[Signature]*

FOR INFORMATION
ONLY

media	description	ref
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	cont booklet	
	album	
	reproduction	
	cover	

INDEX	DESCRIPTION	ORF
1	GENERAL BULK ELECTRONIC - EQUIPMENT, BULK PUR	
2	GENERAL BULK ELECTRONIC FOR REPLICATION MATHS	
3	GENERAL BULK ELECTRONIC	
4	ELECTRONIC BULK, CAL, PHOTO	1
5	PHOTO BULK, CAL, PHOTO	
6	GENERAL BULK ELECTRONIC	
7	GENERAL BULK ELECTRONIC	
8	GENERAL BULK ELECTRONIC - REPLICATION MATHS TR	
9	GENERAL BULK ELECTRONIC	
10	GENERAL BULK ELECTRONIC	

FIRE & GAS
RISER DECK
AFT/STBD
EL. 28956-EL. 35000

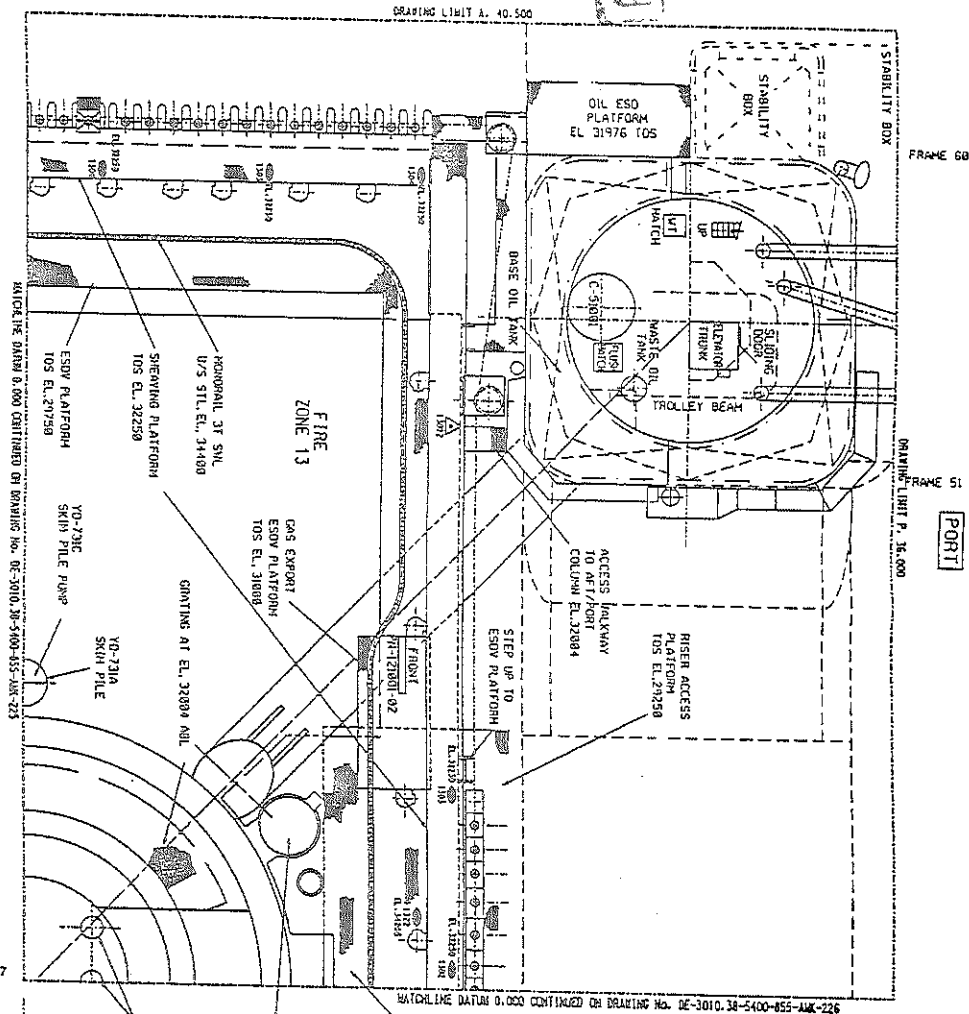
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BFI 6/10/2011	P-36-10000000 FILE CONTRACT

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DE-3010.30-9400-055-AL1-27

289 K

JOSÉ CARLOS FAVENEL GUSMÃO
DEFEITOR
DIVISÃO DE SERVIÇOS CARTORIAS

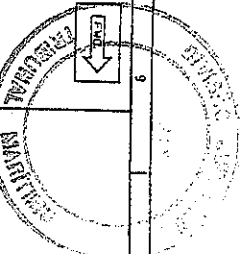


ITEM	DESCRIPTION	QTY
1	CONCRETE REINFORCEMENT	
2	CONCRETE	
3	STEEL	
4	WOOD	
5	PAINT	
6	WELDING	
7	BRICKS	
8	GLASS	
9	ROOFING	
10	INSULATION	
11	WATERPROOFING	
12	SEALANT	
13	GROUT	
14	ANCHOR BOLTS	
15	WELDING RODS	
16	WELDING GASES	
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98	PAINT TOOLS	
99	BRICKLAYS	
100	GLASS CUTTERS	

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ITEM	DESCRIPTION	QTY
1	CONCRETE REINFORCEMENT	
2	CONCRETE	
3	STEEL	
4	WOOD	
5	PAINT	
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7	BRICKS	
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FIRE & GAS
RISER DECK
AFT/PORT
EL. 20956-EL. 35000

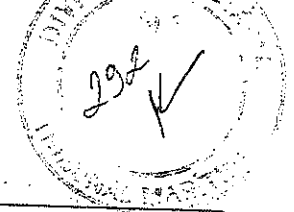
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Figure 1. The effect of the concentration of the polymer solution on the surface energy of the polymer film. The surface energy of the polymer film was measured by the contact angle method. The surface energy of the polymer film was measured by the contact angle method. The surface energy of the polymer film was measured by the contact angle method.

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FIRE & GAS
PLAN COLUMNS
EL. 21336



No.	Name	Age	Sex	Religion	Marital Status	Occupation	Address
1	J. J. Smith	30	M	Catholic	Single	Teacher	123 Main St., N.Y.C.
2	M. J. Jones	28	F	Protestant	Married	Nurse	456 Elm St., Phila.
3	R. L. Brown	35	M	Jewish	Single	Engineer	789 Oak St., Wash.
4	S. K. White	25	F	Buddhist	Single	Artist	101 Pine St., San Fran.
5	D. H. Green	40	M	Muslim	Married	Doctor	202 Cedar St., Los Ang.
6	L. P. Black	32	F	Hindu	Single	Writer	303 Birch St., Chicgo
7	K. M. Red	22	M	Sikh	Single	Student	404 Spruce St., Balt.
8	A. N. Blue	38	F	Pagan	Married	Homemaker	505 Ash St., Wash.
9	G. O. Yellow	27	M	Wiccan	Single	Musician	606 Hickory St., N.Y.C.
10	H. I. Purple	33	F	Druid	Married	Librarian	707 Maple St., Phila.



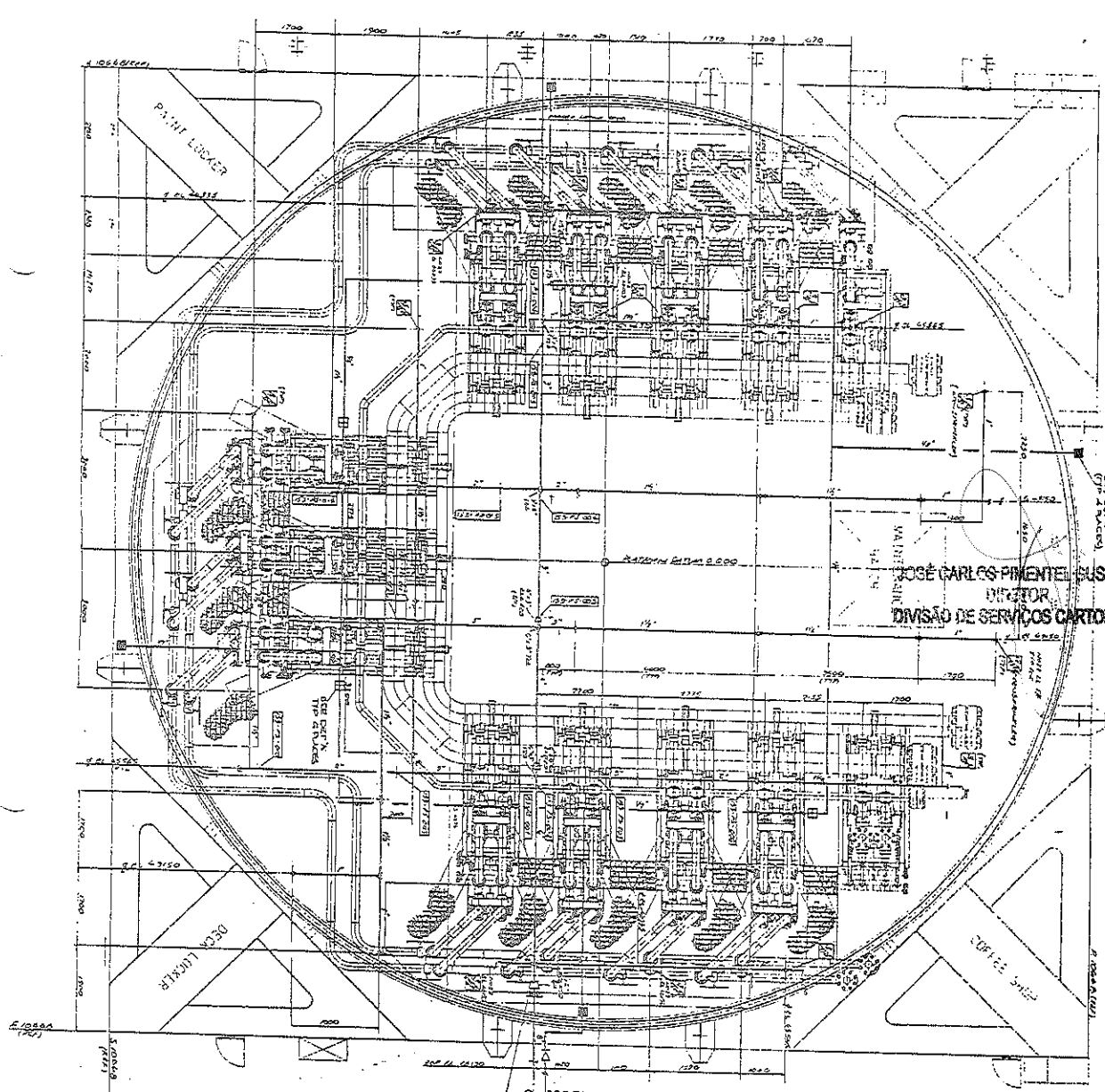
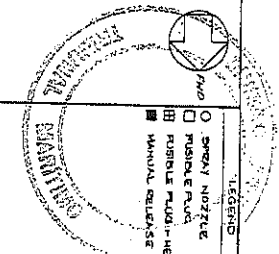
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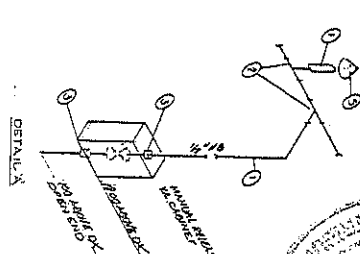


INSTITUTO DE INVESTIGACAO DO BRASIL
[REDACTED]

PETROBRAS TRENTALEI
R1-64073



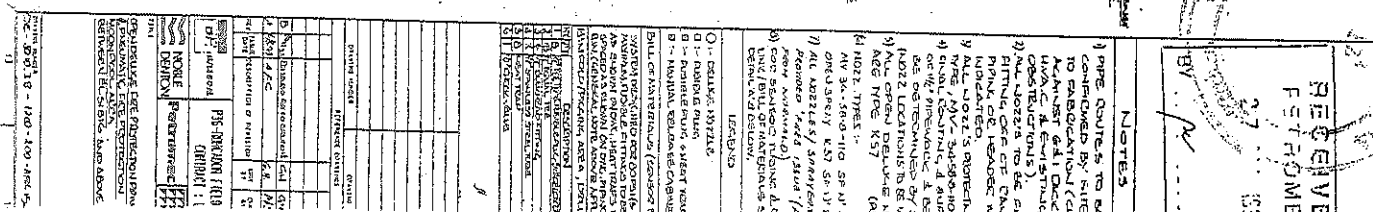
JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



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BY: [Signature]

1. NAME: [REDACTED]
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5. ZIP: [REDACTED]
6. PHONE: [REDACTED]
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13. TITLE: [REDACTED]
14. DEPARTMENT: [REDACTED]
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19. DRAWING: [REDACTED]
20. SHEET: [REDACTED]

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FETROMEC
27 OCT. 1998
BY: *[Signature]*

FWD

NOTES:
1. FINAL ROUTING AND SUPPLY
2. NETWORK ZONE AND B
3. DISTANCE TO BE MAINTAINED
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- LEGEND
- ORANGE NOZZLE
 - RISER PUMP
 - RISER PUMP - HEAT
 - MANUAL RELEASE VIA C

TABLE 1: FIRE PROTECTION EQUIPMENT

ITEM	DESCRIPTION	QUANTITY	REMARKS
1	ORANGE NOZZLE	10	FOR FIRE PROTECTION
2	RISER PUMP	1	FOR FIRE PROTECTION
3	RISER PUMP - HEAT	1	FOR FIRE PROTECTION
4	MANUAL RELEASE VIA C	1	FOR FIRE PROTECTION

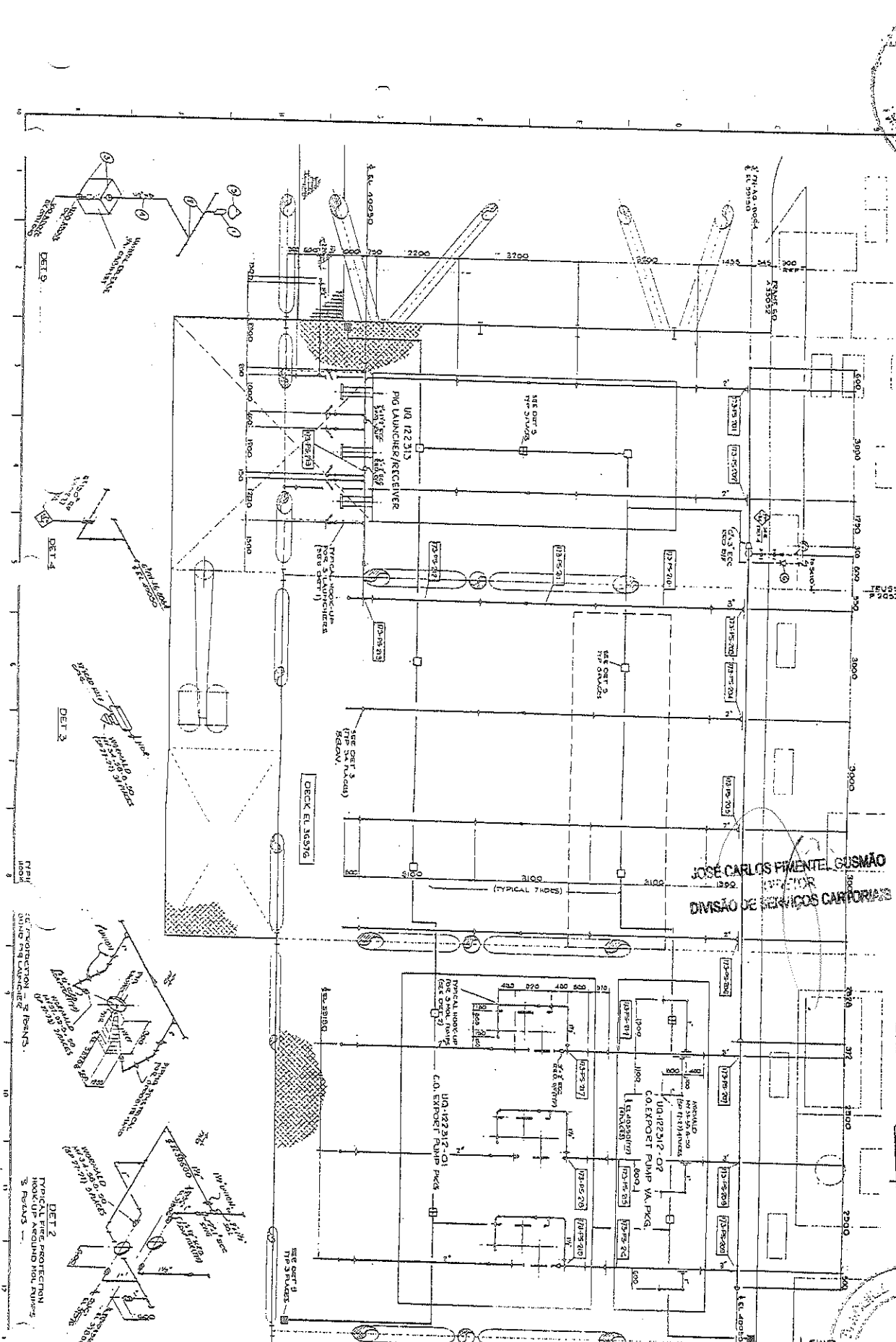
MASTER

DELIVER SKID H1 (EXIST)
FIRE ZONE 1A AREA

TABLE 2: FIRE PROTECTION EQUIPMENT

ITEM	DESCRIPTION	QUANTITY	REMARKS
1	ORANGE NOZZLE	10	FOR FIRE PROTECTION
2	RISER PUMP	1	FOR FIRE PROTECTION
3	RISER PUMP - HEAT	1	FOR FIRE PROTECTION
4	MANUAL RELEASE VIA C	1	FOR FIRE PROTECTION

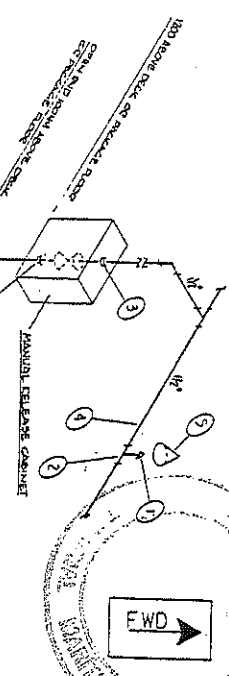
ATTENTION: PORT SIDE
FIRE PROTECTION PIPING
EL. 35.576



297



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9 CFF 70104 - 5P 27.29



THE M POINT, 6
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330157
LAT 604209

LEGEND	
○	CRUISE NOZZLE
○	AUXILIARY PUMPS
□	HAIRLINE PLUG
⊗	MAINT. RELEASE

BUL OF MATERIALS USED	
1	CRUISE CRACKED BUT DO NOT
2	MAINTAIN CRACKED BUT DO NOT
3	MAINTAIN CRACKED BUT DO NOT
4	MAINTAIN CRACKED BUT DO NOT
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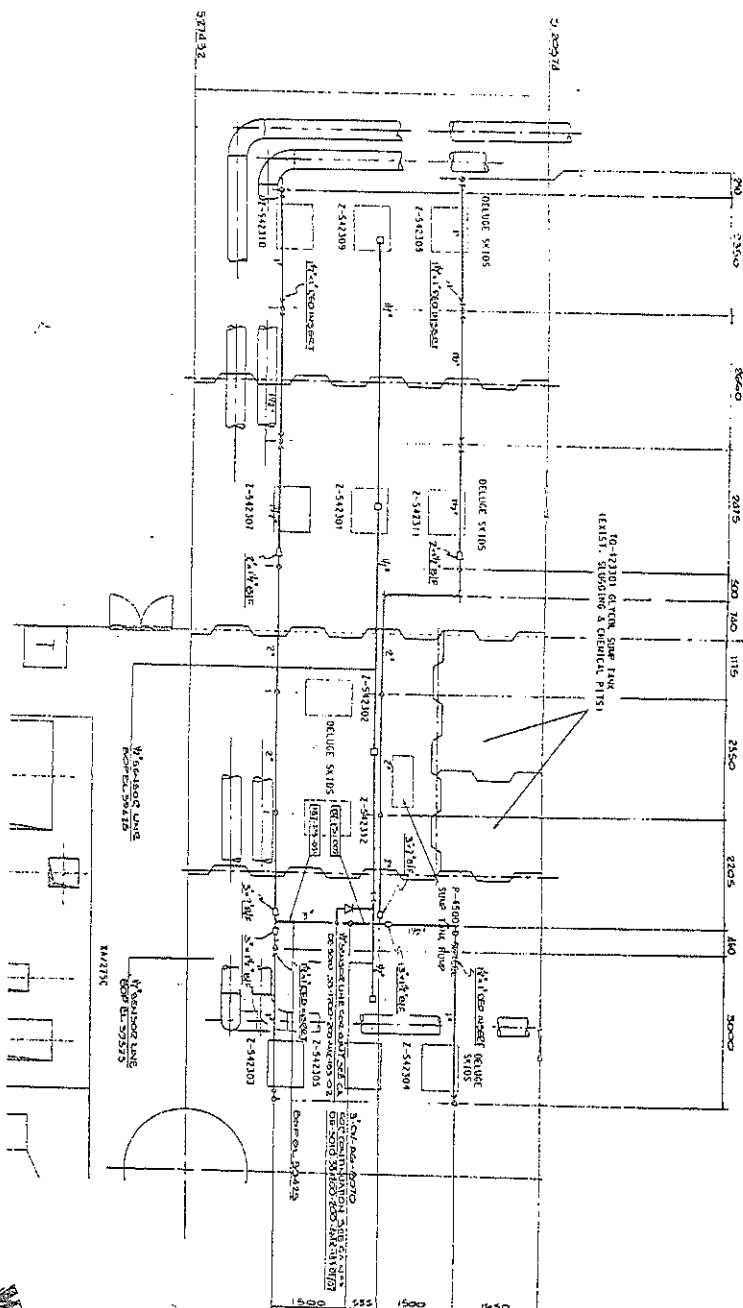
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10. **MANUAL RELEASE CAP**

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2-SMALLS STEEL RUEL
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27 Oct. 1998

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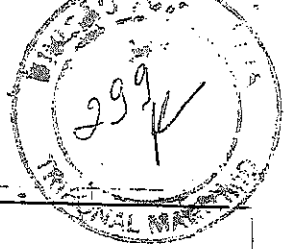
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Category 9	90	90%
Category 10	100	100%

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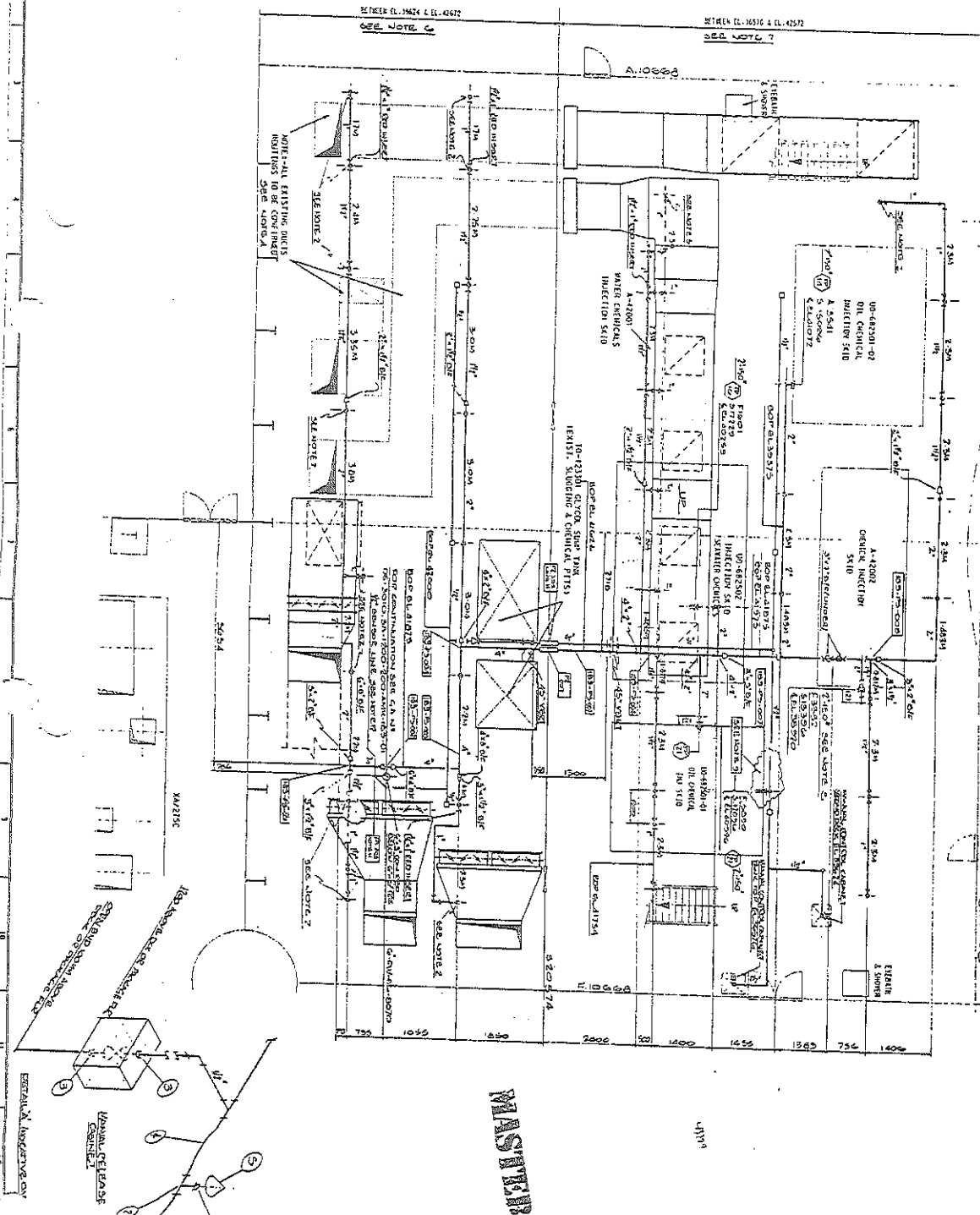
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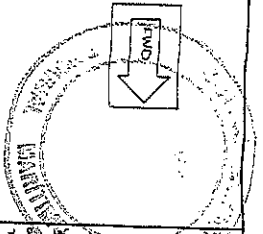
JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORÁRIOS

COPIA FIEL DO DOCUMENTO ORIGINAL

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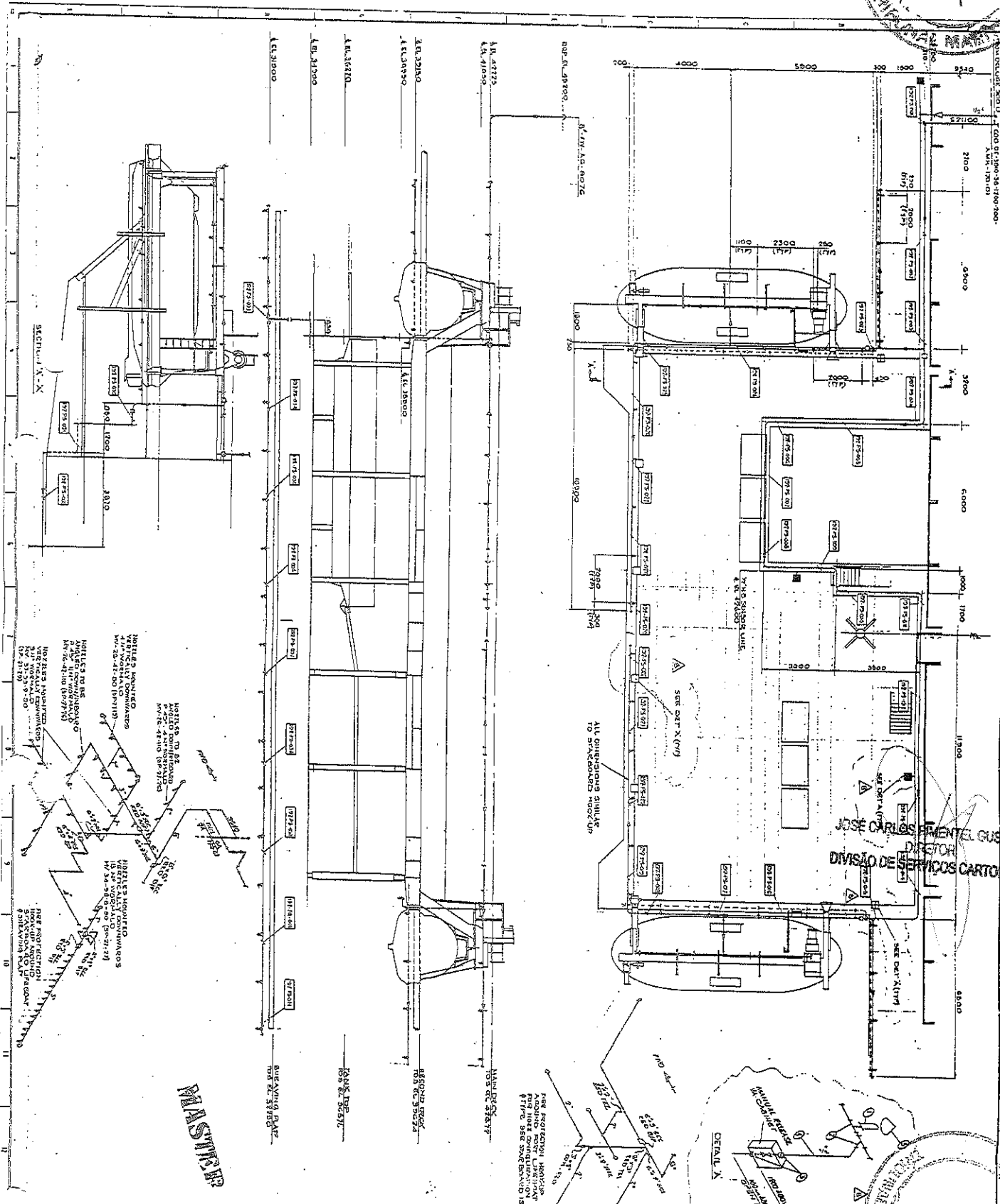
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27 OCT. 1994

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CHEMICAL INJECTION AND
OIL DETENTION
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JOSE CARLOS FERNANDES GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORARIOS

MASTER

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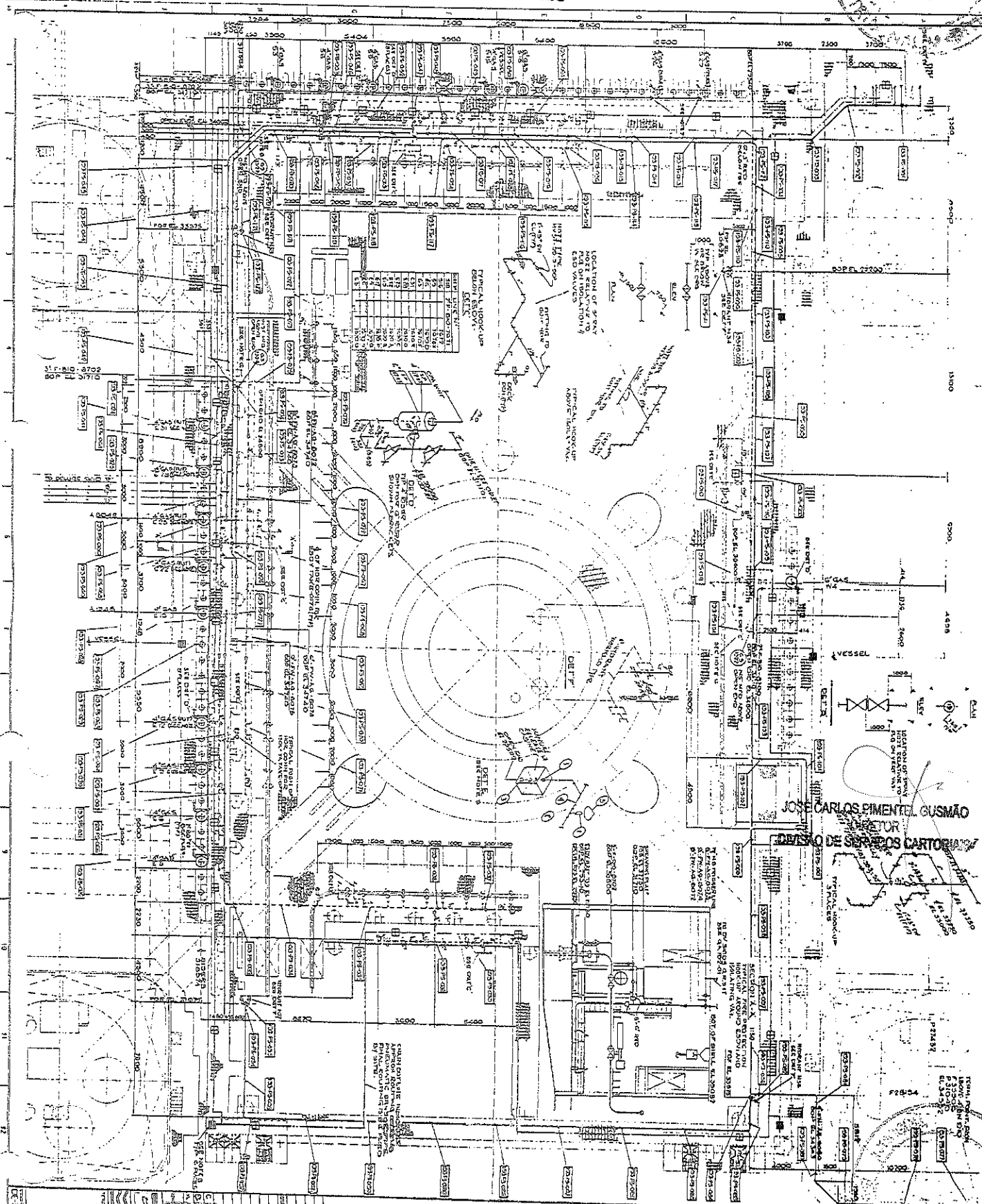
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JOSE CARLOS PIMENTEL GUSMÃO
DESENHADOR
DESENHO DE SISTEMAS DE PROTEÇÃO CONTRA INCÊNDIO

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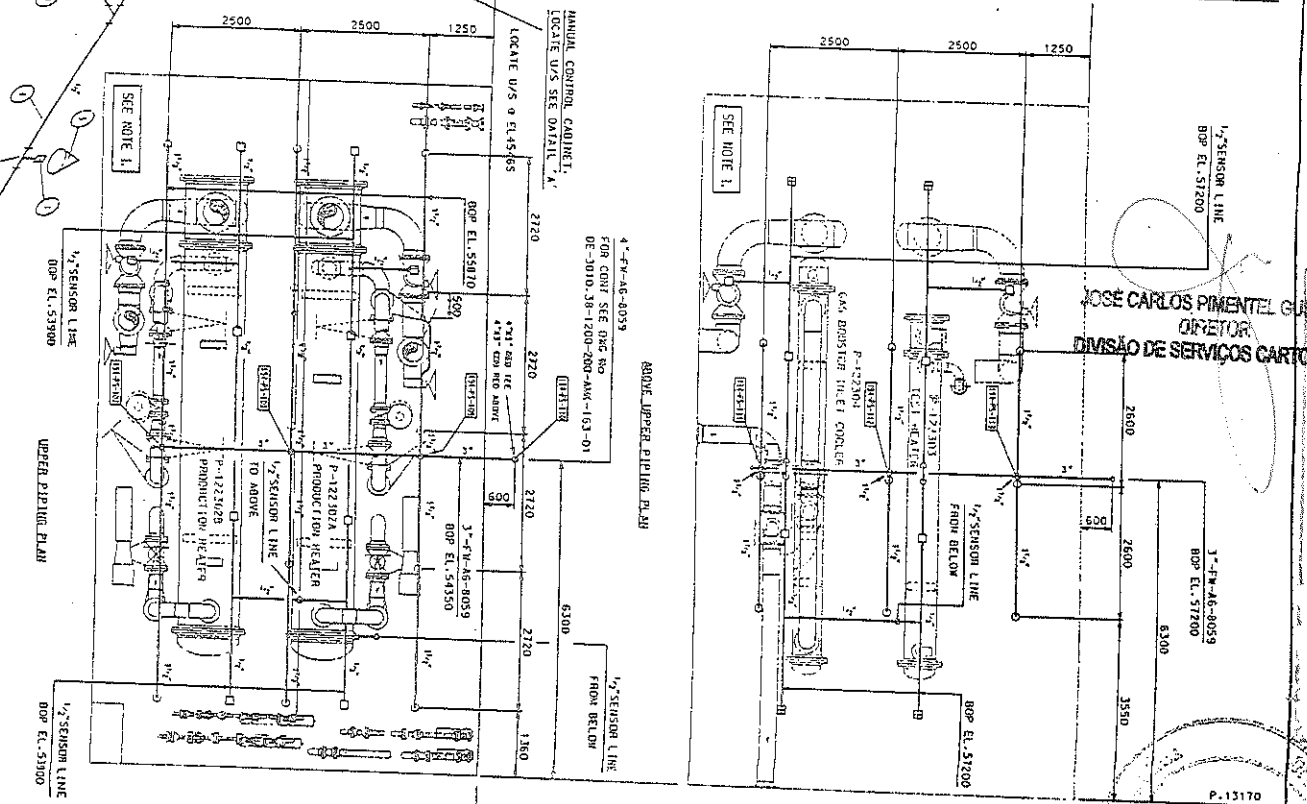
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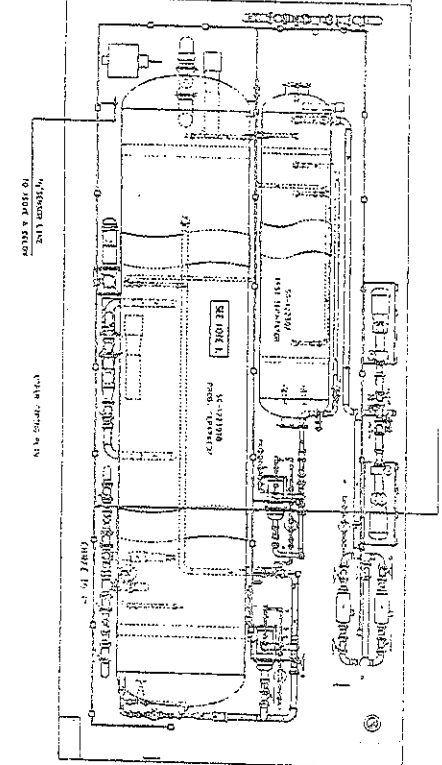
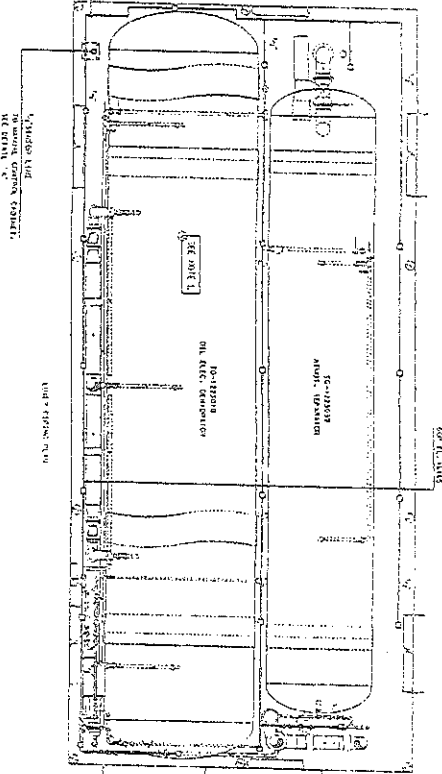
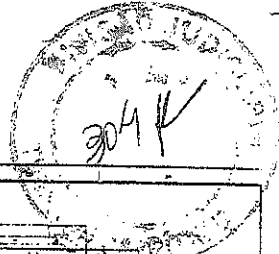
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| <p>1. <u>DATE</u> 10-26-1958</p> <p>2. <u>TO</u> <u>100-100000</u></p> <p>3. <u>FROM</u> <u>100-100000</u></p> <p>4. <u>SUBJECT</u> <u>100-100000</u></p> <p>5. <u>REASON</u> <u>100-100000</u></p> <p>6. <u>REMARKS</u> <u>100-100000</u></p> <p>7. <u>INITIALS</u> <u>100-100000</u></p> <p>8. <u>SIGNATURE</u> <u>100-100000</u></p> <p>9. <u>DATE</u> <u>10-26-1958</u></p> <p>10. <u>TIME</u> <u>10-26-1958</u></p> <p>11. <u>LOCATION</u> <u>100-100000</u></p> <p>12. <u>STATUS</u> <u>100-100000</u></p> <p>13. <u>REMARKS</u> <u>100-100000</u></p> <p>14. <u>INITIALS</u> <u>100-100000</u></p> <p>15. <u>SIGNATURE</u> <u>100-100000</u></p> <p>16. <u>DATE</u> <u>10-26-1958</u></p> <p>17. <u>TIME</u> <u>10-26-1958</u></p> <p>18. <u>LOCATION</u> <u>100-100000</u></p> <p>19. <u>STATUS</u> <u>100-100000</u></p> <p>20. <u>REMARKS</u> <u>100-100000</u></p> <p>21. <u>INITIALS</u> <u>100-100000</u></p> <p>22. <u>SIGNATURE</u> <u>100-100000</u></p> <p>23. <u>DATE</u> <u>10-26-1958</u></p> <p>24. <u>TIME</u> <u>10-26-1958</u></p> <p>25. <u>LOCATION</u> <u>100-100000</u></p> <p>26. <u>STATUS</u> <u>100-100000</u></p> <p>27. <u>REMARKS</u> <u>100-100000</u></p> <p>28. <u>INITIALS</u> <u>100-100000</u></p> <p>29. <u>SIGNATURE</u> <u>100-100000</u></p> <p>30. <u>DATE</u> <u>10-26-1958</u></p> <p>31. <u>TIME</u> <u>10-26-1958</u></p> <p>32. <u>LOCATION</u> <u>100-100000</u></p> <p>33. <u>STATUS</u> <u>100-100000</u></p> <p>34. <u>REMARKS</u> <u>100-100000</u></p> <p>35. <u>INITIALS</u> <u>100-100000</u></p> <p>36. <u>SIGNATURE</u> <u>100-100000</u></p> <p>37. <u>DATE</u> <u>10-26-1958</u></p> <p>38. <u>TIME</u> <u>10-26-1958</u></p> <p>39. <u>LOCATION</u> <u>100-100000</u></p> <p>40. <u>STATUS</u> <u>100-100000</u></p> <p>41. <u>REMARKS</u> <u>100-100000</u></p> <p>42. <u>INITIALS</u> <u>100-100000</u></p> <p>43. <u>SIGNATURE</u> <u>100-100000</u></p> <p>44. <u>DATE</u> <u>10-26-1958</u></p> <p>45. <u>TIME</u> <u>10-26-1958</u></p> <p>46. <u>LOCATION</u> <u>100-100000</u></p> <p>47. <u>STATUS</u> <u>100-100000</u></p> <p>48. <u>REMARKS</u> <u>100-100000</u></p> <p>49. <u>INITIALS</u> <u>100-100000</u></p> <p>50. <u>SIGNATURE</u> <u>100-100000</u></p> <p>51. <u>DATE</u> <u>10-26-1958</u></p> <p>52. <u>TIME</u> <u>10-26-1958</u></p> <p>53. <u>LOCATION</u> <u>100-100000</u></p> <p>54. <u>STATUS</u> <u>100-100000</u></p> <p>55. <u>REMARKS</u> <u>100-100000</u></p> <p>56. <u>INITIALS</u> <u>100-100000</u></p> <p>57. <u>SIGNATURE</u> <u>100-100000</u></p> <p>58. <u>DATE</u> <u>10-26-1958</u></p> <p>59. <u>TIME</u> <u>10-26-1958</u></p> <p>60. <u>LOCATION</u> <u>100-100000</u></p> <p>61. <u>STATUS</u> <u>100-100000</u></p> <p>62. <u>REMARKS</u> <u>100-100000</u></p> <p>63. <u>INITIALS</u> <u>100-100000</u></p> <p>64. <u>SIGNATURE</u> <u>100-100000</u></p> <p>65. <u>DATE</u> <u>10-26-1958</u></p> <p>66. <u>TIME</u> <u>10-26-1958</u></p> <p>67. <u>LOCATION</u> <u>100-100000</u></p> <p>68. <u>STATUS</u> <u>100-100000</u></p> <p>69. <u>REMARKS</u> <u>100-100000</u></p> <p>70. <u>INITIALS</u> <u>100-100000</u></p> <p>71. <u>SIGNATURE</u> <u>100-100000</u></p> <p>72. <u>DATE</u> <u>10-26-1958</u></p> <p>73. <u>TIME</u> <u>10-26-1958</u></p> <p>74. <u>LOCATION</u> <u>100-100000</u></p> <p>75. <u>STATUS</u> <u>100-100000</u></p> <p>76. <u>REMARKS</u> <u>100-100000</u></p> <p>77. <u>INITIALS</u> <u>100-100000</u></p> <p>78. <u>SIGNATURE</u> <u>100-100000</u></p> <p>79. <u>DATE</u> <u>10-26-1958</u></p> <p>80. <u>TIME</u> <u>10-26-1958</u></p> <p>81. <u>LOCATION</u> <u>100-100000</u></p> <p>82. <u>STATUS</u> <u>100-100000</u></p> <p>83. <u>REMARKS</u> <u>100-100000</u></p> <p>84. <u>INITIALS</u> <u>100-100000</u></p> <p>85. <u>SIGNATURE</u> <u>100-100000</u></p> <p>86. <u>DATE</u> <u>10-26-1958</u></p> <p>87. <u>TIME</u> <u>10-26-1958</u></p> <p>88. <u>LOCATION</u> <u>100-100000</u></p> <p>89. <u>STATUS</u> <u>100-100000</u></p> <p>90. <u>REMARKS</u> <u>100-100000</u></p> <p>91. <u>INITIALS</u> <u>100-100000</u></p> <p>92. <u>SIGNATURE</u> <u>100-100000</u></p> <p>93. <u>DATE</u> <u>10-26-1958</u></p> <p>94. <u>TIME</u> <u>10-26-1958</u></p> <p>95. <u>LOCATION</u> <u>100-100000</u></p> <p>96. <u>STATUS</u> <u>100-100000</u></p> <p>97. <u>REMARKS</u> <u>100-100000</u></p> <p>98. <u>INITIALS</u> <u>100-100000</u></p> <p>99. <u>SIGNATURE</u> <u>100-100000</u></p> <p>100. <u>DATE</u> <u>10-26-1958</u></p> | | | | | | | | | |

SEPARATION TRAIN 'A'
WG-12230J
PNEUMATIC FIRE PROTECTION
GENERAL ARRANGEMENT
MAIN DECK AND ABOVE
CORRESPONDING
DE-1010, 38-1200-206-MAY-194



COPIES OF JOURNAL OF THE
SOCIETY OF AMERICAN ARCHITECTS
FOR THE YEAR 1907

↓
F.H.D.

1. PIPING WITHIN ALLEN TANKS SHALL BE IDENTIFIED BY TAGGING AND COLOR CODING. IDENTIFICATION SHALL BE DONE PRIOR TO ANY MAINTENANCE WORK. TAGS SHALL BE PLACED AT THE POINT OF ENTRY TO THE TANK AND AT THE POINT OF ENTRY TO THE PIPING. TAGS SHALL BE PLACED AT THE POINT OF ENTRY TO THE TANK AND AT THE POINT OF ENTRY TO THE PIPING. TAGS SHALL BE PLACED AT THE POINT OF ENTRY TO THE TANK AND AT THE POINT OF ENTRY TO THE PIPING.
2. SENSORS TO BE FITTING TO THE TANK SHALL BE IDENTIFIED BY TAGGING AND COLOR CODING. IDENTIFICATION SHALL BE DONE PRIOR TO ANY MAINTENANCE WORK. TAGS SHALL BE PLACED AT THE POINT OF ENTRY TO THE TANK AND AT THE POINT OF ENTRY TO THE PIPING. TAGS SHALL BE PLACED AT THE POINT OF ENTRY TO THE TANK AND AT THE POINT OF ENTRY TO THE PIPING.
3. FINE, ROOFING AND SUPPLY PIPING SHALL BE IDENTIFIED BY TAGGING AND COLOR CODING. IDENTIFICATION SHALL BE DONE PRIOR TO ANY MAINTENANCE WORK. TAGS SHALL BE PLACED AT THE POINT OF ENTRY TO THE TANK AND AT THE POINT OF ENTRY TO THE PIPING. TAGS SHALL BE PLACED AT THE POINT OF ENTRY TO THE TANK AND AT THE POINT OF ENTRY TO THE PIPING.
4. PIPING TO BE FITTING TO THE TANK SHALL BE IDENTIFIED BY TAGGING AND COLOR CODING. IDENTIFICATION SHALL BE DONE PRIOR TO ANY MAINTENANCE WORK. TAGS SHALL BE PLACED AT THE POINT OF ENTRY TO THE TANK AND AT THE POINT OF ENTRY TO THE PIPING. TAGS SHALL BE PLACED AT THE POINT OF ENTRY TO THE TANK AND AT THE POINT OF ENTRY TO THE PIPING.

4. ONLY AREA SENSORS ARE SHOWN. THIS DRAWING FOR RINGS 2 & 3 SPECIFIC EQUIPMENT REFERENCE DE-301B,39-1200-200-00K.

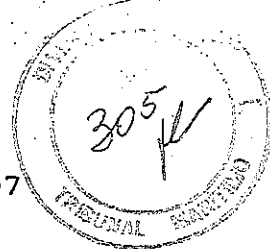
SECRET

RECEIVED
PETROMEC
20 OCT. 1998

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SEPARATION TRAIL, R.
UO-122302
PHARMAC. FINE PROTECTION
GEN. BAL. ADJUSTMENT
BATH CHECK AND ADJUST
UO-3010, 30-1200-200-ANG-1-94

ABS AMERICAS
A Division of the American Bureau of Shipping
 990 NORTH CORPORATE DR. SUITE 307
 NEW ORLEANS, LA 70123
 TEL: 504-731-2960
 FAX: 504-731-2969



INVOICE NO. 367000E118

BRANCH NO. 36700

DATE 05/28/99

CUSTOMER NO. 0301049170

P.O. NO. "SPIRIT OF COLUMBUS"

REGISTRO ITALIANO NAVALE
 CASELLA POSTALE 1195

FEDERAL I.D. 13-4921556

PAYMENT INSTRUCTIONS

Total Payable Upon Receipt.
 Please Provide Invoice Number.

D-16100 GENOVA, ITALY

RI 67073

PID/ABS I.D. P36692VE

SERVICES AT: NEW ORLEANS

REPORT/CERTIFICATE NO. 99NO27967

WIRE TRANSFERS:

CHASE BANK OF TEXAS, N.A.
 HOUSTON, TX 77252-8025 U.S.A.
 ABS AMERICAS
 Account 0010-088-8180

Ref. Invoice No. 367000E118

CHECKS:

ABS AMERICAS
 P.O. Box 201614

HOUSTON, TX 77216-1614

Ref. Invoice No. 367000E118

CODE	SERVICES PERFORMED	FEES
VSL 141	MATERIAL INSPECTION EXAMINATION AND CERTIFICATION OF PRODUCTION CAISSON FOR "SPIRIT OF COLUMBUS" (24 HOURS AT 125/HOUR)	3,000.00
811	REIMBURSED EXPENSES	

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAIS

FOR FURTHER INFORMATION ON SERVICES PERFORMED PLEASE
 CONTACT THE FOLLOWING EMPLOYEE AT ABS:

	GHEGAN	JAMES	D
PLEASE REMIT	TOTAL FEES	US	3,000.00
PAYMENT IN	TOTAL EXPENSES	US	300.00
CURRENCY BILLED.	TOTAL PAYABLE UPON RECEIPT	US	3,300.00

SEE REVERSE SIDE FOR TERMS AND CONDITIONS.

Note-Unless otherwise mutually agreed in writing, all services and publications rendered and certificates issued in connection with this invoice are governed by the terms and conditions on the reverse side hereof.
 Fee Questions/Service Comments:
 Please contact ABS at address/phone/fax indicated above for prompt response.

ABS AMERICAS
A Division of the American Bureau of Shipping
990 NORTH CORPORATE DR. SUITE 307
NEW ORLEANS, LA 70123
TEL: 504-731-2960
FAX: 504-731-2969



INVOICE NO. **367000E118** BRANCH NO. **36700** DATE **05/28/99**
 CUSTOMER NO. **0301049170** P.O. NO. **"SPIRIT OF COLUMBUS"**

REGISTRO ITALIANO NAVALE
CASELLA POSTALE 1195

D-16100 GENOVA, ITALY

FEDERAL I.D. 13-4921556

PAYMENT INSTRUCTIONS

Total Payable Upon Receipt.
 Please Provide Invoice Number.

WIRE TRANSFERS:

CHASE BANK OF TEXAS, N.A.
 HOUSTON, TX 77252-8025 U.S.A.
 ABS AMERICAS

Account 0010-088-8180

Ref. Invoice No. **367000E118**

CHECKS:

ABS AMERICAS

P.O. Box 201614

HOUSTON, TX 77216-1614

Ref. Invoice No. **367000E118**

PID/ABS I.D. **P36692VE**
 SERVICES AT: **NEW ORLEANS**
 PORT/CERTIFICATE NO. **99NO27967**

CODE	SERVICES PERFORMED	FEES
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VSL	MATERIAL INSPECTION	
141	EXAMINATION AND CERTIFICATION	
	OF PRODUCTION CAISSON FOR	
	"SPIRIT OF COLUMBUS"	
	(24 HOURS AT 125/HOUR)	
811	REIMBURSED EXPENSES	3,000.00

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JOSÉ CARLOS PIMENTEL GUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAIS

COPY

FOR FURTHER INFORMATION ON SERVICES PERFORMED PLEASE
 CONTACT THE FOLLOWING EMPLOYEE AT ABS:

GHEGAN, JAMES D

PLEASE REMIT	TOTAL FEES	US	3,000.00
PAYMENT IN	TOTAL EXPENSES	US	300.00
CURRENCY BILLED.	TOTAL PAYABLE UPON RECEIPT	US	3,300.00

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Fee Questions/Service Comments:

Please contact ABS at address/phone/fax indicated above for prompt response.

307
MISCELLANEOUS SURVEY REPORT

Page 1 of 3

SURVEY OF:		
ONE (1) PRODUCTION CAISSON		
Report No.: 99NO27967	Date: 20 APRIL 1999	Port: NEW ORLEANS
Vessel's Name: "SPIRIT OF COLUMBUS"	PID: 36692VE	
Manufacturer: ENGINEERING SPECIALITIES, INC.	Mfg.No.: 533601	
Purchaser: PETROMEC INC.	PO No./Hull No.: ---	
Location: 36 RONCADOR FIELD DEVELOPEMENT	Rating (WP): 3.6 BARG MAWP	
Serial Number: 061998-V1	Weight: 34927 KG	Test Pressure: 52 PSI
Material Test Report No.: ---	Service Use: WATER TREATMENT PRODUCTION CAISSON	
Drawing No. AS INDICATED	Date Approved:	ABS Markings 99NO27967 4-20-99

THIS IS TO CERTIFY that the undersigned Surveyor to this Bureau attended for the above survey and reports as follows:

1) One 84 ft., 10 1/4 in. length overall by 8 ft. diameter Production Caisson, with .75in. and .875in. shell thickness and .625in. head thickness, with integral pneumatic spargers and side mounted fiberglass water leg and including fittings for instrumentation was fabricated in accordance with the below listed Engineering Specialities, Inc. drawings, reviewed/approved by Registro Italiano Navale on 30 October 1998 and 12 November 1998.

Drawing no.	Title
002-004-002a	Production Caisson
002-004-002b	Production Caisson
063-001-001	Weight & Lift Data
010-002-001	Control Panel Logic Diagram
002-003-001	Sparger Manifold Arrangement
003-004-001	Water Leg Details
002-002-001	Pump Package Details
003-003-001	Support Details
003-002-001	Caisson Support
002-001-001	Production Caisson General Arrangement
	Calculation Notes
019-001-001	Structural Steel Calculations

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JOSÉ CARLOS PIMENTEL GUSMÃO
DELEGADO
DIVISÃO DE SERVIÇOS CARTÓRIOS

James D. Ghegan, Surveyor, American Bureau of Shipping

Surveyor, American Bureau of Shipping

(If additional space is required, use other side of this form)

NOTE:

This Report 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. This Report is a representation only that the vessel, structure, item of material, equipment, machinery or any other item covered by this Report has met one or more of the Rules, guides, standards or other criteria of American Bureau of Shipping as of the date of issue. Parties are advised to review the Rules for the scope and conditions of classification and to review the survey records for a fuller description of any restrictions or limitations on the vessel's service or surveys. The validity, applicability and interpretation of this Report is governed by the Rules and standards of American Bureau of Shipping who shall remain the sole judge thereof. Nothing contained in this Report or in any notation made in contemplation of this Report shall be deemed to relieve any designer, builder, owner, manufacturer, seller, supplier, repairer, operator or other entity of any warranty express or implied.

Details of Survey (continued)

- 2) Weld procedures and welder qualifications for all production welding were reviewed and found satisfactory.
- 3) Material test reports for all material used in the fabrication of the caisson were reviewed, found to be in compliance with the approved drawings and specifications and considered satisfactory.
- 4) Quality control procedures were reviewed, found to be in accordance with Engineering Specialties, Inc. Quality Control Manual Edition 3, noted to be applied in daily production activities and considered satisfactory.
- 5) Quality Control Plan, ESI document no. SDDR 104-001, noted to be RINA approved on 1 October 1998, was reviewed and followed during fabrication including all designated witness and hold points.
- 6) All fit-up and welding of the caisson unit and associated nozzles, manways, and fittings was examined during and upon completion of fabrication and found satisfactory.
- 7) All NDE (including radiographic, ultrasonic and magnetic particle testing) as required by the specifications was reviewed, necessary repairs and retesting points reviewed, and all considered satisfactory.
- 8) The caisson unit was pneumatically tested to 52 PSI, examined, found tight and considered satisfactory.
- 9) The following piping/systems were hydrostatically tested and considered satisfactory:
 - a) Pump skid suction/discharge piping (excluding fuel gas piping) tested to 427 PSI.
 - b) Sparger distribution manifolds and piping tested to 427 PSI.
 - c) The 24in. water leg including attached 90 degree elbow tested to 29 PSI.
 - d) The 3in. vent line and 1in. bridle piping tested to 432 PSI.
- 10) The following electrical equipment was tested and considered satisfactory:
 - a) High/low level switches operationally tested.
 - b) High/low level water and oil alarm panel operationally tested.
 - c) Pneumatic control panel operationally tested including valves/gauges and instrumentation.
- 11) Operational testing of pumps and oily water monitor and hydrostatic test of sparger supply lines was not carried out at this time.

James D. Ghegan



Surveyor, American Bureau of Shipping

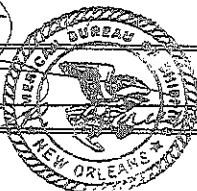
Surveyor, American Bureau of Shipping

	YES	NO	N/A
1. Manufacture or finishing carried out according to:			
a) approved plans and to the Rules	☒	☐	☐
b) <u>RINA, customer and manufacturer</u> specifications.	☒	☐	☐
2. Testing carried out as required by Rules/Specifications and as reported herein	☒	☐	☐
3. Calibration of testing/measuring equipment confirmed, with records maintained at facility or located at <u>Engineering Specialties, Inc.</u>	☒	☐	☐
4. Components stamped with report number and ABS markings	☒	☐	☐

AB 113 Distribution

Purchaser 2
ABS Office @ Destination 1
ABS Houston CDC 1
Local 1
Other

COPIA FIEL DO DOCUMENTO ORIGINAL
JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



REVIEWED By:

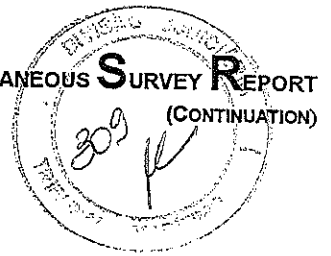
Signature

26 May 1999

Date

New Orleans

Port

**MISCELLANEOUS SURVEY REPORT**

(CONTINUATION)

Report No.:	Date	Port	Page of
99NO27967	20 APRIL 1999	NEW ORLEANS	3 of 3

12) The subject caisson unit is considered satisfactory subject to installation and testing to the satisfaction of the attending surveyor including verification of suitability of electrical equipment for hazardous locations and full function testing of all associated systems. The unit was stamped with ABS markings as noted above.

13) Since the subject caisson unit is "Classed" with the Registro Italiano Navale, this report/certificate is also valid for surveys carried out on behalf of Registro Italiano Navale.

14) Attached to this report are copies of Engineering Specialties, Inc. welding procedures, NDE reports and material certification reports.

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JOSE CARLOS PIMENTEL GUSMÃO
INTECTOR
DIVISÃO DE SERVIÇOS CARTORIAIS

James D. Ghegan



Surveyor, American Bureau of Shipping

Surveyor, American Bureau of Shipping

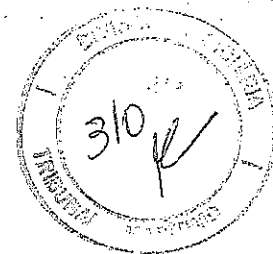
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NOTE: This Report evidences compliance with one or more of the Rules, guides, standards or other criteria of American Bureau of Shipping and is issued solely for the use of the Bureau, its committees, its clients or other authorized entities. This Report is a representation only that the vessel, equipment, structure, item of material, machinery or any other item covered by this Report has met one or more of the Rules, guides, standards or other criteria of American Bureau of Shipping as of the date of issue. Parties are advised to review the survey records for a fuller description of any restrictions or limitations on the vessel's service or surveys. The validity, applicability and interpretation of this Report is governed by the Rules and standards of American Bureau of Shipping who shall remain the sole judge thereof. Nothing contained in this Report or in any report issued in contemplation of this Report shall be deemed to relieve any designer, builder, owner, manufacturer, seller, supplier, repairer, operator or other entity of any warranty express or implied.



AMERICAN BUREAU OF SHIPPING

Two World Trade Center, 106th Floor
New York, New York 10048



Page 1 of 1

Report no: 99NO27967
ABS PID: P36692VE

Date: 20 April 1999

RELEASE NOTE

This is to certify that the following item: **One (1) Production Caisson**

Intended for: **PETROBRAS 36 (SPIRIT OF COLUMBUS) – RONCADOR FIELD DEVELOPMENT**

Manufactured by: Engineering Specialties, Inc., P.O. Box 2960, Covington, La. 70434 USA, on the 20th day of April, 1999, and was accepted by the undersigned to meet the Requirements of:

- A) Registro Italiano Navale
- B) Manufacturer's Specifications
- C) Client Specifications

Additional Requirements:

Examination and operational testing after installation to the satisfaction of the attending surveyor.

For final details, please refer to our report which will be issued in due course.

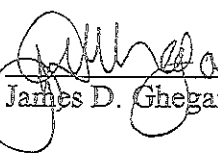
Check-off list as applicable:

- | | |
|---|--|
| ☒ Material Certificates | |
| ☒ Weld Procedure Qualifications | ☒ Pressure test |
| ☒ Welder Qualifications | ☒ Performance test |
| ☒ Visual Inspection | ☒ Marking |
| ☒ N.D.E. | |
| ☒ Dimensional Checks | |

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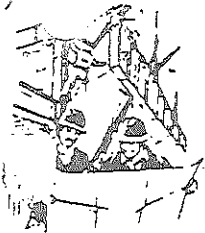
JOSÉ CARLOS PIMENTEL GUSMÃO
OPERADOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Examination of the subject equipment after installation is considered necessary.


James D. Ghegan


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995077



**SOUTHERN
INSPECTION & TESTING, INC.** N°
P.O. Box 1310 Marrero, Louisiana 70073
Phone: (504) 347-1752

6778

354
DATE 3-4-99
JOB NO 637
PAGE 1 OF 1

SPECIFICATION **ANSI-B31.3**
CUSTOMER NO. **16985-637**

RADIOGRAPHIC EXAMINATION REPORT

CUSTOMER ENGINEERING SPECIALTIES INC.	BILLING ADDRESS
PROJECT 637-	PROJECT ENGINEER
LOCATION HARVEY, LA.	FABRICATOR

ABBREVIATIONS OF RADIOGRAPHIC TERMS

B. = ARC BURN	E.C. = EXCESSIVE CROWN	I.P. = INADEQUATE PENETRATION	P.P. = PIPING POROSITY
T. = BURN THROUGH	E.P. = EXCESSIVE PENETRATION	I.F. = INCOMPLETE FUSION	P. = POROSITY
T.A. = BURN THROUGH AREA	F.A. = FILM ARTIFACT	I.U. = INTERNAL UNDERCUT	S.I. = SLAG INCLUSIONS
B. = CONCAVE BEAD	G.P. = GAS POCKET	L.C. = LOW CROWN	S.L. = SLAG LINES
= CRACK	H.B. = HOLLOW BEAD	O.U. = OUTSIDE UNDERCUT	

SPECIMEN NUMBER	AREA BOUNDARY	MATERIAL DIMENSIONS OD X SCH	INTERPRETATION		REMARKS	WS		SPECIMEN NUMBER	AREA BOUNDARY	MATERIAL DIMENSIONS OD X SCH	INTERPRETATION		REMARKS
			WITHIN CODE	BEYOND CODE							WITHIN CODE	BEYOND CODE	
W-1	A	2 1/2 x .218	✓			X	31						
	B		✓				32						
2	A		✓			X	33						
	B		✓				34						
3	A		✓			X	35						
	B		✓				36						
4	A		✓			X	37						
	B		✓				38						
5	A		✓			X	39						
	B		✓				40						
6	A		✓			X	41						
	B		✓				42						
7	A		✓			X	43						
	B		✓				44						
8	A		✓			X	45						
	B		✓				46						
							47						
							48						
							49						
							50						
							51						
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							57						
							58						
							59						
							60						

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JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓGRAFOS

NUMBER AND SIZE OF WELDS		Kodak FILM	TIME: LEFT LAB.	ARRIVED JOB	LEFT JOB	ARRIVED LAB.
8	2 1/2 O.D.X .218 W.T.	ft. 70 MM	☐ 1 MAN UNIT	☒ 2 MAN UNIT	☐ 3 MAN UNIT	OTHER
	O.D.X W.T.	16 ea. 3 1/2" X 10"	HOURS: S.T.	C.T.	OFFSH.	TOTAL: 3
	O.D.X W.T.	ea. 3 1/2" X 17"	MILEAGE: FROM	TO		TOTAL:
	O.D.X W.T.	ea.	SUBSTANCE:			
	Plate X W.T.	ea.	REMARKS:			
	Plate X W.T.	ea.				

L. BRENNY-K. MICHEL

SOUTHERN INSPECTION REPRESENTATIVE

ACCEPTED BY CUSTOMER REPRESENTATIVE

X-RAY — GAMMA RAY — ULTRASONIC — MAGNETIC PARTICLE — DYE PENETRANT — PHYSICAL TESTING — FILM INTERPRETATION
WRITTEN WELDING PROCEDURES & VERIFICATION — WELDER CERTIFICATION — CONSULTANTS — ONSTREAM EROSION & CORROSION SURVEYS
SHIP SURVEYS — LABORATORY ANALYSIS — LEAK DETECTION — QUALITY CONTROL MANAGEMENT — INSPECTION & SUPERVISION



**SOUTHERN
INSPECTION & TESTING, INC.** N^o
P.O. Box 1310 Marrero, Louisiana 70073
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8477

312 ✓
DATE: 1-25-99
JOB NO. J 637
PAGE 1 OF 1

SPECIFICATION ASME SEC VIII UW
CUSTOMER NO. 16779-637

RADIOGRAPHIC EXAMINATION REPORT

CUSTOMER	EST	BILLING ADDRESS	
PROJECT	C-10 NOZZLE SPOT	PROJECT ENGINEER	ANDREW
LOCATION	COVINGTON LA	FABRICATOR	EST

ABBREVIATIONS OF RADIOGRAPHIC TERMS

A.B. = ARC BURN
B.T. = BURN THROUGH
B.T.A. = BURN THROUGH AREA
C.B. = CONCAVE BEAD
C. = CPOCK

E.C. = EXCESSIVE CROWN
E.P. = EXCESSIVE PENETRATION
F.A. = FILM ARTIFACT
G.P. = GAS POCKET
H.B. = HOLLOW BEAD

I.P. = INADEQUATE PENETRATION
I.F. = INCOMPLETE FUSION
I.U. = INTERNAL UNDERCUT
L.C. = LOW CROWN
O.U. = OUTSIDE UNDERCUT

P.P. = PIPING POROSITY
P. = POROSITY
S.I. = SLAG INCLUSIONS
S.L. = SLAG LINES

SPECIMEN NUMBER	AREA BOUNDARY	MATERIAL DIMENSIONS OD X SCH	INTERPRETATION		REMARKS	SPECIMEN NUMBER	AREA BOUNDARY	MATERIAL DIMENSIONS OD X SCH	INTERPRETATION		REMARKS
			WITHIN CODE	BEYOND CODE					WITHIN CODE	BEYOND CODE	
1	C-10	18" X 2"			WS	31					
2	1-2			✓	PRO R	32					
3						33					
4						34					
5						35					
6						36					
7						37					
8						38					
9						39					
10						40					
11						41					
12						42					
13						43					
14						44					
15						45					
16						46					
17						47					
18						48					
19						49					
20						50					
21						51					
22						52					
23						53					
24						54					
25						55					
26						56					
27						57					
28						58					
29						59					
30						60					

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JOSÉ CARLOS PIMENTEL GUSMÃO
DIVISÃO DE SERVIÇOS CARTÓGRAFOS

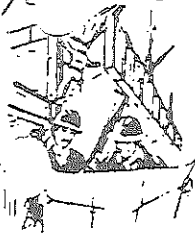
NUMBER AND SIZE OF WELDS	KODAK FILM "M"	TIME:	LEFT LAB.	ARRIVED JOB	LEFT JOB	ARRIVED LAB.
O.D.X W.T.	ft. 70 MM	☐ 1 MAN UNIT	☒ 2 MAN UNIT	☐ 3 MAN UNIT	OTHER	
1 18 O.D.X .750 W.T.	ea. 3 1/2" X 10"	HOURS: S.T.	O.T.	OFFSH:	TOTAL:	1
O.D.X W.T.	ea. 3 1/2" X 17"	MILEAGE: FROM	TO	TOTAL:		
O.D.X W.T.	ea.	SUBSISTANCE:				
Plate X W.T.	ea.	REMARKS:				
Plate X W.T.	ea.					

W. Smith 24 K. Michel LE
SOUTHERN INSPECTION REPRESENTATIVE

Scott Farthing
ACCEPTED BY CUSTOMER REPRESENTATIVE

X-RAY — GAMMA RAY — ULTRASONIC — MAGNETIC PARTICLE — DYE PENETRANT — PHYSICAL TESTING — FILM INTERPRETATION
WRITTEN WELDING PROCEDURES & VERIFICATION — WELDER CERTIFICATION — CONSULTANTS — ONSTREAM EROSION & CORROSION SURVEYS
SHIP SURVEYS — LABORATORY ANALYSIS — LEAK DETECTION — QUALITY CONTROL MANAGEMENT — INSPECTION & SUPERVISION

981273



**SOUTHERN
INSPECTION & TESTING, INC.** N^o
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8156

DATE: 9-15-98
JOB NO: 5637
PAGE 1 OF 1

SPECIFICATION: ASME SEC VIII
CUSTOMER NO.: 16063-637

RADIOGRAPHIC EXAMINATION REPORT

CUSTOMER	ESI	BILLING ADDRESS	
PROJECT	SPOT SHOTS	PROJECT ENGINEER	PAUL
LOCATION	COVINGTON LA	FABRICATOR	ESI

ABBREVIATIONS OF RADIOGRAPHIC TERMS

A.B. = ARC BURN
B.T. = BURN THROUGH
B.T.A. = BURN THROUGH AREA
C.B. = CONCAVE BEAD
C. = CRACK

E.C. = EXCESSIVE CROWN
E.P. = EXCESSIVE PENETRATION
F.A. = FILM ARTIFACT
G.P. = GAS POCKET
H.B. = HOLLOW BEAD

I.P. = INADEQUATE PENETRATION
I.F. = INCOMPLETE FUSION
I.U. = INTERNAL UNDERCUT
L.C. = LOW CROWN
O.U. = OUTSIDE UNDERCUT

P.P. = PIPING POROSITY
P. = POROSITY
S.I. = SLAG INCLUSIONS
S.L. = SLAG LINES

SPECIMEN NUMBER	AREA BOUNDARY	MATERIAL DIMENSIONS OD X SCH	INTERPRETATION		REMARKS	SPECIMEN NUMBER	AREA BOUNDARY	MATERIAL DIMENSIONS OD X SCH	INTERPRETATION		REMARKS
			WITHIN CODE	BEYOND CODE					WITHIN CODE	BEYOND CODE	
1	CAN 5	1" PLATE				31	SPOT	1" PLATE			
2						32					
3	S-3 SPOT 2R					33	C-3				
4						34	1-2		✓		
5	1-2		✓			35					
6						36	C-5				
7	LS-3 SPOT T1					37	1-2		✓		
8						38					
9	1-2		✓			39	C-7				
10						40	1-2		✓		
11	LS-3 SPOT T2					41					
12						42					
13	1-2		✓			43					
14						44					
15	CAN 7					45					
16						46					
17	-2 SPOT 2R					47					
18						48					
19	1-2		✓			49					
20						50					
21	LS-2 SPOT T1					51					
22						52					
23	1-2		✓			53					
24						54					
25	LS-2 SPOT T2					55					
26						56					
27	1-2		✓			57					
28						58					
29						59					
30						60					

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JOSE CARLOS PINHEIRO GUSMÃO
REVISOR
DIVISÃO DE SERVIÇOS CARTÓRIOS

NUMBER AND SIZE OF WELDS			KODAK FILM "M"	TIME:	LEFT LAB.	ARRIVED JOB	LEFT JOB	ARRIVED LAB.
	O.D.X	W.T.	ft. 70 MM		☐ 1 MAN UNIT	☒ 2 MAN UNIT	☐ 3 MAN UNIT	OTHER
	O.D.X	W.T.	ea. 3 1/2" X 10"	HOURS: S.T.		O.T.	OFFSH:	TOTAL: 82
	O.D.X	W.T.	ea. 3 1/2" X 17"	MILEAGE: FROM		TO		TOTAL: 50 R
	O.D.X	W.T.	9 ea. 4 1/2 X 10	SUBSTANCE:				
	1" Plate X-1000	W.T.	ea.	REMARKS:				
	Plate X	W.T.	ea.					

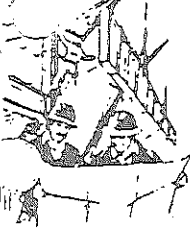
W. Smith B. Billiot

SOUTHERN INSPECTION REPRESENTATIVE

ACCEPTED BY CUSTOMER REPRESENTATIVE

X-RAY — GAMMA RAY — ULTRASONIC — MAGNETIC PARTICLE — DYE PENETRANT — PHYSICAL TESTING — FILM INTERPRETATION
WRITTEN WELDING PROCEDURES & VERIFICATION — WELDER CERTIFICATION — CONSULTANTS — ONSTREAM EROSION & CORROSION SURVEYS
SHIP SURVEYS — LABORATORY ANALYSIS — LEAK DETECTION — QUALITY CONTROL MANAGEMENT — INSPECTION & SUPERVISION

990258



**SOUTHERN
INSPECTION & TESTING, INC. N°**
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Phone: (504) 347-1752

7247

314
DATE 11/9-4-98
JOB NO. 3637
PAGE 05

SPECIFICATION ASME SEC. VIII
CUSTOMER NO. PD 16070 -637

RADIOGRAPHIC EXAMINATION REPORT

CUSTOMER ESI	BILLING ADDRESS
PROJECT 16070	PROJECT ENGINEER
LOCATION Covington, LA.	FABRICATOR ESI

ABBREVIATIONS OF RADIOGRAPHIC TERMS

A.B. = ARC BURN
B.T. = BURN THROUGH
B.T.A. = BURN THROUGH AREA
C.B. = CONCAVE BEAD
C. = CRACK

E.C. = EXCESSIVE CROWN
E.P. = EXCESSIVE PENETRATION
F.A. = FILM ARTIFACT
G.P. = GAS POCKET
H.B. = HOLLOW BEAD

I.P. = INADEQUATE PENETRATION
I.F. = INCOMPLETE FUSION
I.U. = INTERNAL UNDERCUT
L.C. = LOW CROWN
O.U. = OUTSIDE UNDERCUT

P.P. = PIPING POROSITY
P. = POROSITY
S.I. = SLAG INCLUSIONS
S.L. = SLAG LINES

SPECIMEN NUMBER	AREA BOUNDARY	MATERIAL DIMENSIONS OD X SCH	INTERPRETATION		REMARKS	SPECIMEN NUMBER	AREA BOUNDARY	MATERIAL DIMENSIONS OD X SCH	INTERPRETATION		REMARKS
			WITHIN CODE	BEYOND CODE					WITHIN CODE	BEYOND CODE	
1	15-1	7/8" Plate				31					
2	1-2		✓			32					
3						33					
4	15-2					34					
5	1-2			✓		35					
6						36					
7	15-3				Spot 1	37					
8	1-2		✓			38					
9						39					
10	15-3				Spot 2	40					
11	1-2			✓	N.F.	41					
12						42					
13						43					
14						44					
15						45					
16						46					
17						47					
18						48					
19						49					
20						50					
21						51					
22						52					
23						53					
24						54					
25						55					
26						56					
27						57					
28						58					
29						59					
30						60					

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JOSE CARLOS PIMENTE GUSMÃO
DIVISÃO DE SERVIÇOS CARTORIAS

NUMBER AND SIZE OF WELDS			Kodak FILM "M"	TIME: LEFT LAB.	ARRIVED JOB	LEFT JOB	ARRIVED LAB.
O.D.X	W.T.	ft. 70 MM		☐ 1 MAN UNIT	☒ 2 MAN UNIT	☐ 3 MAN UNIT	OTHER
O.D.X	W.T.	ea. 3 1/2" X 10"		HOURS: S.T.	O.T.	OFFSH:	TOTAL: 5 1/2
O.D.X	W.T.	ea. 3 1/2" X 17"		MILEAGE: FROM	TO		TOTAL: 100 H
O.D.X	W.T.	ea.		SUBSTANCE:			
7/8" Plate X	W.T.	4 ea. 4 1/2" X 10"		REMARKS:			
Plate X	W.T.	ea.					

W. Smith B. Billiot
SOUTHERN INSPECTION REPRESENTATIVE

Daniel Cote
ACCEPTED BY CUSTOMER REPRESENTATIVE

X-RAY — GAMMA RAY — ULTRASONIC — MAGNETIC PARTICLE — DYE PENETRANT — PHYSICAL TESTING — FILM INTERPRETATION
WRITTEN WELDING PROCEDURES & VERIFICATION — WELDER CERTIFICATION — CONSULTANTS — ONSTREAM EROSION & CORROSION SURVEYS
SHIP SURVEYS — LABORATORY ANALYSIS — LEAK DETECTION — QUALITY CONTROL MANAGEMENT — INSPECTION & SUPERVISION

WHITE - 1000

YELLOW - 1000

BLUE - 1000

980408



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INSPECTION & TESTING, INC. N°**
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315 ✓
DATE 12-29-98
JOB NO. 637
PAGE 1 OF 1
SPECIFICATION ASME SEC VIII
CUSTOMER NO. 16653-637

RADIOGRAPHIC EXAMINATION REPORT

CUSTOMER ESI-	BILLING ADDRESS
PROJECT JOB 637	PROJECT ENGINEER
LOCATION COVINGTON, LA.	FABRICATOR

ABBREVIATIONS OF RADIOGRAPHIC TERMS

A.B. = ARC BURN	E.C. = EXCESSIVE CROWN	I.P. = INADEQUATE PENETRATION	P.P. = PIPING POROSITY
B.T. = BURN THROUGH	E.P. = EXCESSIVE PENETRATION	I.F. = INCOMPLETE FUSION	P. = POROSITY
B.T.A. = BURN THROUGH AREA	F.A. = FILM ARTIFACT	I.U. = INTERNAL UNDERCUT	S.I. = SLAG INCLUSIONS
C.B. = CONCAVE BEAD	G.P. = GAS POCKET	L.C. = LOW CROWN	S.L. = SLAG LINES
C. = CRACK	H.B. = HOLLOW BEAD	O.U. = OUTSIDE UNDERCUT	

SPECIMEN NUMBER	AREA BOUNDARY	MATERIAL DIMENSIONS OD X SCH	INTERPRETATION		REMARKS		SPECIMEN NUMBER	AREA BOUNDARY	MATERIAL DIMENSIONS OD X SCH	INTERPRETATION		REMARKS
			WITHIN CODE	BEYOND CODE						WITHIN CODE	BEYOND CODE	
1	C981 1-2	18" X .750	✓				31					
2	C981 2-3		✓				32					
3	7722 0-1		✓				33					
4							34					
5	W-9 1-2	18" X .750	✓				35					
6							36					
7							37					
8							38					
9							39					
10							40					
11							41					
12							42					
13							43					
14							44					
15							45					
16							46					
17							47					
18							48					
19							49					
20							50					
21							51					
22							52					
23							53					
24							54					
25							55					
26							56					
27							57					
28							58					
29							59					
30							60					

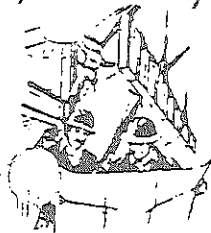
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JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

NUMBER AND SIZE OF WELDS				KODAK FILM	TIME: LEFT LAB.	ARRIVED JOB	LEFT JOB	ARRIVED LAB.
1	18	O.D.X .750	W.T.	ft. 70 MM	☐ 1 MAN UNIT	☒ 2 MAN UNIT	☐ 3 MAN UNIT	OTHER
		O.D.X	W.T.	4 ea. 3 1/2" X 10"	HOURS: S.T.	O.T.	OFFSH:	TOTAL: 4
		O.D.X	W.T.	ea. 3 1/2" X 17"	MILEAGE: FROM	TO		TOTAL: 50
		O.D.X	W.T.	ea.	SUBSTANCE:			
	18	Plate X	W.T.	ea.	REMARKS:			
		Plate X	W.T.	ea.				

W. BREAN - B. Billiot SOUTHERN INSPECTION REPRESENTATIVE
Andrew Lippo ACCEPTED BY CUSTOMER REPRESENTATIVE
X-RAY — GAMMA RAY — ULTRASONIC — MAGNETIC PARTICLE — DYE PENETRANT — PHYSICAL TESTING — FILM INTERPRETATION
WRITTEN WELDING PROCEDURES & VERIFICATION — WELDER CERTIFICATION — CONSULTANTS — ONSTREAM EROSION & CORROSION SURVEYS
SHIP SURVEYS — LABORATORY ANALYSIS — LEAK DETECTION — QUALITY CONTROL MANAGEMENT — INSPECTION & SUPERVISION
PINK File

980394



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INSPECTION & TESTING, INC.** N°
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Phone: (504) 347-1752

316

DATE 12-4-98
JOB NO. 637
PAGE 1 OF 1

SPECIFICATION

CUSTOMER NO.

ASME Sec. VIII
70# 16552-637

RADIOGRAPHIC EXAMINATION REPORT

CUSTOMER <u>ESI</u>	BILLING ADDRESS
PROJECT <u>Repairs</u>	PROJECT ENGINEER <u>Andrew</u>
LOCATION <u>Covington, LA.</u>	FABRICATOR <u>ESI</u>

ABBREVIATIONS OF RADIOGRAPHIC TERMS

A.B. = ARC BURN

B.T. = BURN THROUGH

B.T.A. = BURN THROUGH AREA

C.B. = CONCAVE BEAD

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I.P. = INADEQUATE PENETRATION

I.F. = INCOMPLETE FUSION

I.U. = INTERNAL UNDERCUT

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O.U. = OUTSIDE UNDERCUT

P.P. = PIPING POROSITY

P. = POROSITY

S.I. = SLAG INCLUSIONS

S.L. = SLAG LINES

SPECIMEN NUMBER	AREA BOUNDARY	MATERIAL DIMENSIONS OD X SCH	INTERPRETATION		REMARKS		SPECIMEN NUMBER	AREA BOUNDARY	MATERIAL DIMENSIONS OD X SCH	INTERPRETATION		REMARKS
			WITHIN CODE	BEYOND CODE						WITHIN CODE	BEYOND CODE	
1	LS-GR	96" x 3/4"					31					
2	1-2		/				32					
3							33					
4	LS-7R	96" x 7/8"					34					
5	2-3		/				35					
6							36					
7							37					
8							38					
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30							60					

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓGRAFOS

NUMBER AND SIZE OF WELDS	Kodak FILM "m"	TIME: LEFT LAB.	ARRIVED JOB	LEFT JOB	ARRIVED LAB.
O.D.X W.T. ft. 70 MM		☐ 1 MAN UNIT	☒ 2 MAN UNIT	☐ 3 MAN UNIT	OTHER
O.D.X W.T. ea. 3 1/2" X 10"		HOURS: S.T.	O.T.	OFFSH:	TOTAL: 4 hrs
96" O.D.X 3/4" W.T. 2 ea. 3 1/2" X 17"		MILEAGE: FROM	TO		TOTAL: 100A
O.D.X W.T. ea.		SUBSTANCE:			
Plate X W.T. ea.		REMARKS:			
Plate X W.T. ea.					

W. Breaux B. Billiot II
SOUTHERN INSPECTION REPRESENTATIVE

Andrew Shippo
ACCEPTED BY CUSTOMER REPRESENTATIVE

X-RAY — GAMMA RAY — ULTRASONIC — MAGNETIC PARTICLE — DYE PENETRANT — PHYSICAL TESTING — FILM INTERPRETATION
WRITTEN WELDING PROCEDURES & VERIFICATION — WELDER CERTIFICATION — CONSULTANTS — ONSTREAM EROSION & CORROSION SURVEYS
SHIP SURVEYS — LABORATORY ANALYSIS — LEAK DETECTION — QUALITY CONTROL MANAGEMENT — INSPECTION & SUPERVISION

WHITE - Invoicing

YELLOW - Customer

PINK - File

ORIGINAL FILE COPY
DO NOT REMOVE
AMERICAN ALLOY
PLATE # 5036699

CUSTOMER : ENGINEERING SPECIALTIES INC
CUST. P.O.# : 15933-637
A.A.S. S/C# : 153432
DATE MAILED: 08/31/1998
DESC: 120" X 96" X 303" CUT 98" TO ROLL C/L'S
3/4" X 96" X 120" LONG 30 DEG
DEL BEVEL AS NOTED ITEM 1 (1 PC)

APPROVED
ITEM # 2
QC # 14
DATE 8-31-98
JOB # 637

THIS IS TO CERTIFY THAT THE
PRODUCT DESCRIBED HEREIN WAS
MANUFACTURED, SAMPLED, TEST-
ED AND/OR INSPECTED IN
ACCORDANCE WITH THE SPECIFI-
CATION AND FULFILLS REQUIRE-
MENTS IN SUCH RESPECTS.

Laurel D. Clough
DIVISION MANAGER, QUALITY
DATE 07-21-98

Metallurgical Test Report

GENEVA STEEL COMPANY CERTIFIES ALL SHELLING, MELTING AND MANUFACTURING PROCESSES OCCURRED IN THE U.S.A.

PO. DATE	05/19/98	PURCHASE ORDER NO.	1400748/60-000260
SUPPLER NO.	GP49669A	RAIL ORDER NO.	EA32310
RAIL NO.	GP49669A		
SHIPMENT	SP 508697		

THYSSEN STEEL GROUP WEST O&S
C/O PORT RAIL SERVICES
PTRA ZONE 23 TRACK 435
PORT OF HOUSTON, HOUSTON TEXAS.

YIELD STRENGTH-TOTAL EXTENSION UNDER LOAD 0.5K.									
HEAT NO.	TYPE	C	MN	P	S	SI	CU	N	AL
102798	HEAT 25	104	010	012	20	01	01	01	039
206693	HEAT 27	107	008	008	008	21	01	01	034
206694	HEAT 27	103	009	010	20	01	01	01	033
207635	HEAT 26	104	006	016	21	01	01	01	040
GENEVA STEEL COMPANY CERTIFIES ALL SHELLING, MELTING AND MANUFACTURING PROCESSES OCCURRED IN THE U.S.A.									
END OF DATA									

QUAN- TITY	WEIGHT	HEAT NO.	TEST OR PRICE IDENTITY	YIELD ST. KSI	TENSILE STR. KSI	ELONGATION IN IN 2"	% RED. OF AREA	BEN
1	122526	102798	21-01	49.0	79.0	25.0		
2	245046	206493	29-01	51.1	80.6	22.0		
2	245046	206494	21-01	51.2	81.4	22.0		
2	245046	206494	22-01	50.7	80.8	24.0		
1	122526	206494	23-01	51.6	81.2	23.0		
1	122526	206494	24-01	51.0	81.3	23.0		
1	122526	206494	25-01	50.8	81.5	24.0		
1	122526	207635	23-01	51.4	79.3	22.0		
END OF DATA								

TEST REPORT APPROVED DATE 8-25-98
AMERICAN ALLOY STEEL BY *Handwritten Signature*
QUALITY ASSURANCE DEPT.

JOSE CARLOS PIMENTEL GUSM
DIRECTOR
DIVISAO DE SERVICOS CARTORU

COPIA FIEL DO DOCUMENTO ORIGINAL

08/31/98

14:08

AAS → 5048528474

NO. 957

D85

318 *[Signature]*
RECEIVED
MARTINS

08 3023 4PT DAY

Gulf States Steel, Inc.

GADSDEN, AL 36546-1000

APR 06 1998

22-S219-01

ORDER NO.	15462716	DATE ORDERED	01 09 98	ACCOUNT NUMBER	74521906	PAGE NO.	1	INVOICE NUMBER	742-03747
SHIPMENT NO.	1600656	DATE SHIPPED	04 01 98	DATE SHIPPED	04 01 98	ROUTE/VEHICLE IDENTIFICATION	NH 170436		

CERTIFICATE
OF TESTS

HEREBY CERTIFY THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND TESTED IN ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

C.F. BEARDIN, JR.
MGR. TECHNOLOGY AND
QUALITY - PLATE PRODUCTS

THYSSEN STL GROUP WEST
2700 POST OAK BLVD
STE 1100 ATTN DALE HARNIER
HOUSTON TX 77056

THYSSEN STEEL CO
EXPORT CONTAINER PYRA ZH 21
TRACK 435 PORT OF HOUSTON
HOUSTON TX

MATERIAL DESCRIPTION
PLATE CARBON ASTM A-516-70 GRD 70 ASME SA-516 DTS 97/01/98 GRD 70 PQR DIM 50049
PAR 3.10 MELTED & WFG IN USA

QUANTITY SHIPPED

42879

8750 X 120.0000 SHEARED EDGE X 480.0000 IN
HT 7456900 T P358401 1 PCS
HT 7456900 T P358402 1 PCS
HT 7456900 T P358403 1 PCS

CH C 28HX IN 85/1.20 P 033HX S.033HX SI 15/40 CU 40HX NI 40HX CR 30HX MO 12HX CB 024HX U 03HX
AL 026HX

NR VLS 30000 MIN TEN 70/90000 XELONG MIN 2 IN 21 OR 8 IN 17

TI 2 YR CA MUST SHOB HTCD IN USA SUBJECT TO OUTSIDE INSPECTION
TOTAL WT. 42,8790 PCS 3

MELTED AND MANUFACTURED IN THE USA

Certified a true copy of the
original, retained in our files.
AMERICAN ALLOY STEEL, INC.

AMERICAN ALLOY STEEL, INC.																		
HEAT NUMBER	CASE	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Co	V	Al	N	B	Ca	Ti	CE
7456900		.24	1.04	.010	.005	.243	0.03	0.02	0.03	.03	.003	.002	.040					
118 M. 32																		
HEAT NUMBER	TEST OR PIECE IDENTITY NO.	YIELD KSI	TENSILE KSI	% ELONG		HARDEN	BEND TEST	HEAT TREAT	YS/TS RATIO	% RED. AREA	DILY COATING	DROP WEIGHT TESTS						
				2"	8"							DIR	TEMP °F	1	2		AVG	
7456900	P358401	48.0	76.0		28			AR	.63									
7456900	P358402	50.0	77.0		26			AR	.64									
7456900	P358403	48.0	77.0		28			AR	.62									
GROUP ENGINE V. 00001																		
HEAT NUMBER	TEST OR PIECE IDENTITY NO.	HEAT TREAT	SIZE	DPR	TEMP °F	ENERGY				% SHEAR				MILS LATERAL EXPANSION				
						1	2	3	AVG	1	2	3	AVG	1	2	3	AVG	
TEST REPORT AUTHORIZED DATE <u>7-27-58</u> AMERICAN ALLOY STEEL BY <u>[Signature]</u> QUALITY ASSURANCE DEPT.																		

TEST REPORT APPROVED DATE 7-25-98
AMERICAN ALLOY STEEL
QUALITY ASSURANCE DEPT.

JOSÉ CARLOS PIMENTEL GUSMÃO
SUPERVISOR
DIVISÃO DE SERVIÇOS CARBÔNICOS

APPROVED

ITEM # 3
QC *[Signature]*
DATE 8-31-98
JOB # 637

CUSTOMER : ENGINEERING SPECIALTIES INC
CUST. P.O.#: 15933-637
A.A.S. S/O#: 153432
DATE MAILED: 08/31/1998
DESC: 120" X 303" CUT SQ TO ROLL CYL'S
7/8" X 96" OD X 120" LONG CYL
ITEM 2 (1 PC)

ORIGINAL FILE COPY
DO NOT REMOVE
AMERICAN ALLOY
PLATE # 75033814

319

Gulf States Steel, Inc.

CERTIFICATE OF TESTS

ORDER NO. 54007111 DATE 12-03-97

ACCOUNT NUMBER 74321906 PAGE NO. 1

SHIPMENT NO. 1600636 SHIPPED FROM ALA CITY

DATE SHIPPED 03-24-98 ROUTE/VEHICLE IDENTIFICATION SOU 116117

HEREBY CERTIFY THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND TESTED IN ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

C. F. DEARDEN, JR.
MGR. TECHNOLOGY AND
QUALITY - PLATE PRODUCTS

THUSSEN STL GROUP WEST
2700 POST OAK BLVD
STE 1100 ATTN DALE HARRIER
HOUSTON TX 77056

THUSSEN STEEL CO
2PORT CONTAINER PTRA IN 23
TRACK 435 PORT OF HOUSTON
HOUSTON TX

7/8 x 120 x 480

MATERIAL DESCRIPTION		QUANTITY SHIPPED
PLATE CARBON ASTM A-516-98 GRD 70 ASME SA-516 STD 07/01/95 GRD 70 PUQ DIN 50049 PAR 3.18 BELTID & RFG IN USA.		114344
.8750 X 120.0000 SHEARED EDGE X 480.0000 IN		
HT 7456783	P296501 1 PCS	
HT 7236812	P296601 1 PCS	
HT 7462794	P296701 1 PCS	
HT 7462794	P296702 1 PCS	
HT 7462769	P296801 1 PCS	
HT 7462769	P296802 1 PCS	
HT 7456812	P297001 1 PCS	
HT 7456812	P297002 1 PCS	
CH C 28HX RN 85/1.20 P 035HX S 035HX SI 15/40 CU 40HX NI 40HX CR 30HX NO 12HX CD 020HX V 03HX AL 020HX		

HEAT NUMBER	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Co	V	Al	N	B	Ca	Ti	CS
7456783	.25	1.02	.010	.011	.231	0.02	0.01	0.12	.04	.002	.002	.051					
7236812	.24	1.07	.011	.012	.216	0.03	0.01	0.03	.03	.004	.001	.029					
7462794	.24	1.06	.007	.013	.228	0.04	0.01	0.03	.02	.004	.001	.042					
7462769	.24	1.03	.010	.014	.228	0.04	0.01	0.13	.04	.003	.001	.037					
7456812	.24	1.07	.011	.012	.216	0.03	0.01	0.03	.03	.004	.001	.029					
HEAT NUMBER	TEST OR PIECE IDENTITY NO.	YIELD KSI	TENSILE KSI	% ELONG		HARDNESS	BEND TEST	HEAT TREAT	YS/TS RATIO	% RED. AREA	GALV. COATING	DROP WEIGHT TESTS					
				2"	8"												DIR
7236812	P296601	49.0	79.0		26			AR	.62								
7456783	P296501	50.0	79.0		26			AR	.63								
7456812	P297001	51.0	79.6		22			AR	.64								
7456812	P297002	46.0	76.0		24			AR	.63								
7462769	P296801	50.0	81.0		22			AR	.61								
7462769	P296802	51.0	80.0		23			AR	.63								
7462794	P296701	47.0	80.0		26			AR	.58								
7462794	P296702	53.0	79.0		24			AR	.67								
HEAT NUMBER	TEST OR PIECE IDENTITY NO.	HEAT TREAT	SIZE	DIR	TEMP °F	ENERGY				% SHEAR			MILS LATERAL EXPANSION				
						1	2	3	AVG	1	2	3	AVG	1	2	3	AVG
Certified a true copy of the original, retained in our file.																	
AMERICAN ALLOY STEEL, INC.																	
TEST REPORT APPROVED DATE 8-26-98																	
AMERICAN ALLOY STEEL BY [Signature]																	
QUALITY ASSURANCE DEPT. JOSE CARLOS PIMENTA																	

Certified a true copy of the original, retained in our file.
AMERICAN ALLOY STEEL, INC.

TEST REPORT APPROVED DATE 8-26-98

AMERICAN ALLOY STEEL BY

QUALITY ASSURANCE DEPT

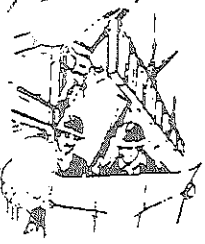
JOSE CARLOS PIMENTEL GUSMAO
DIRECTOR
DIVISAO DE SERVICOS CARTORIAIS

APPROVED
ITEM # 4
QC AR
DATE 8-31-98
JOB # 637

CUSTOMER : ENGINEERING SPECIALTIES INC
CUST. P.O.#: 15933-637
A.A.S. S/OH: 153432
DATE MAILED: 08/31/1998
DESC: 120" X 303" CUT SQ TO ROLL CYL'S
7/8" X 96" OD X 120" LONG CYL
ITEM 2 (1 PC)

ORIGINAL FILE COPY
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AMERICAN ALLOY STEEL
PLATE # 15033 117

980395



JOSÉ CARLOS PIMENTEL GUSMÃO
DIVISÃO DE SERVIÇOS CARTORIAIS

**SOUTHERN
INSPECTION & TESTING, INC.**
P.O. Box 1310 Marrero, Louisiana 70073
Phone: (504) 347-1752

DATE: 12-2-98
JOB NO. 637
PAGE 1 OF 1
SPECIFICATION ASME Sec. VIII
CUSTOMER NO. P.O. #16537-637

RADIOGRAPHIC EXAMINATION REPORT

CUSTOMER **EST** BILLING ADDRESS
PROJECT PROJECT ENGINEER
LOCATION **Covington, LA.** FABRICATOR **EST**

ABBREVIATIONS OF RADIOGRAPHIC TERMS
A.B. = ARC BURN E.C. = EXCESSIVE CROWN I.P. = INADEQUATE PENETRATION P.P. = PIPING POROSITY
B.T. = BURN THROUGH E.P. = EXCESSIVE PENETRATION I.F. = INCOMPLETE FUSION P. = POROSITY
B.T.A. = BURN THROUGH AREA F.A. = FILM ARTIFACT I.U. = INTERNAL UNDERCUT S.I. = SLAG INCLUSIONS
C.B. = CONCAVE BEAD G.P. = GAS POCKET L.C. = LOW CROWN S.L. = SLAG LINES
C. = CRACK H.B. = HOLLOW BEAD O.U. = OUTSIDE UNDERCUT

SPECIMEN NUMBER	AREA BOUNDARY	MATERIAL DIMENSIONS OD X SCH	INTERPRETATION		REMARKS		SPECIMEN NUMBER	AREA BOUNDARY	MATERIAL DIMENSIONS OD X SCH	INTERPRETATION		REMARKS
			WITHIN CODE	BEYOND CODE						WITHIN CODE	BEYOND CODE	
1	BS-C2	96" X 3/4"			W.S. X		31	4-5				
2	1-2		/				32	5-6		/		
3	2-3		/				33					
4	3-4		/				34	15-6	7/8" Plate			
5	4-5		/				35	1-2			/	X, S
6	5-6		/				36	2-3				Slag
7	6-7		/				37					
8	7-8		/				38	15-7				
9	8-9		/				39	1-2		/		X, S
10	9-10		/				40	2-3			/	Slag
11	10-11		/				41	3-4				
12	11-12		/				42	4-5		/		
13	12-13		/				43	5-6		/		
14	13-14		/				44	6-7		/		
15	14-15		/				45					
16	15-16		/				46	15-8				X, S
17	16-17		/				47	1-2		/		
18	17-18		/				48	2-3		/		
19	18-19		/				49	3-4		/		
20	19-20		/				50	4-5		/		
21	20-21		/				51	5-6		/		
22	21-22		/				52	6-7		/		
23	22-23		/				53	7-8		/		
24	23-24		/				54					
25	24-1		/				55					
26							56					
27	LS-1	3/4" Plate			X		57					
28	1-2		/				58					
29	2-3		/				59					
30	3-4		/				60					

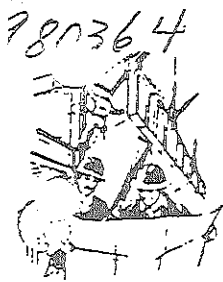
NUMBER AND SIZE OF WELDS
O.D.X W.T. ft. 70 MM
1 96" O.D.X 3/4" W.T. ea. 3 1/2" X 10"
O.D.X W.T. 43 ea. 3 1/2" X 17"
O.D.X W.T. ea.
3 7/8" Plate X W.T. ea.
1 3/4" Plate X W.T. ea.

Kodak FILM "M"
TIME: LEFT LAB. ARRIVED JOB LEFT JOB ARRIVED LAB.
□ 1 MAN UNIT / 2 MAN UNIT □ 3 MAN UNIT OTHER
HOURS: S.T. O.T. OFFSH: TOTAL: 15 hr
MILEAGE: FROM TO TOTAL: 100 RT.
SUBSTANCE:
REMARKS:

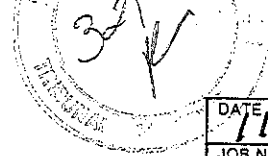
B. Billiot LI P. Branson LI
SOUTHERN INSPECTION REPRESENTATIVE

Andrew Lippo
ACCEPTED BY CUSTOMER REPRESENTATIVE

X-RAY — GAMMA RAY — ULTRASONIC — MAGNETIC PARTICLE — DYE PENETRANT — PHYSICAL TESTING — FILM INTERPRETATION
WRITTEN WELDING PROCEDURES & VERIFICATION — WELDER CERTIFICATION — CONSULTANTS — ONSTREAM EROSION & CORROSION SURVEYS
SHIP SURVEYS — LABORATORY ANALYSIS — LEAK DETECTION — QUALITY CONTROL MANAGEMENT — INSPECTION & SUPERVISION



**SOUTHERN
INSPECTION & TESTING, INC.** N° 8190
P.O. Box 1310 Marrero, Louisiana 70073
Phone: (504) 347-1752



DATE **11-20-98**
JOB NO **637**
PAGE **1** OF **1**

SPECIFICATION **ASME SEC VIII UW-3**
CUSTOMER NO **P.O.# 16484-637**

RADIOGRAPHIC EXAMINATION REPORT

CUSTOMER ESI	BILLING ADDRESS
PROJECT Job 637	PROJECT ENGINEER
LOCATION Covington, LA	FABRICATOR

ABBREVIATIONS OF RADIOGRAPHIC TERMS

A.B. = ARC BURN
B.T. = BURN THROUGH
B.T.A. = BURN THROUGH AREA
C.B. = CONCAVE BEAD
C. = CRACK

E.C. = EXCESSIVE CROWN
E.P. = EXCESSIVE PENETRATION
F.A. = FILM ARTIFACT
G.P. = GAS POCKET
H.B. = HOLLOW BEAD

I.P. = INADEQUATE PENETRATION
I.F. = INCOMPLETE FUSION
I.U. = INTERNAL UNDERCUT
L.C. = LOW CROWN
O.U. = OUTSIDE UNDERCUT

P.P. = PIPING POROSITY
P. = POROSITY
S.I. = SLAG INCLUSIONS
S.L. = SLAG LINES

SPECIMEN NUMBER	AREA BOUNDARY	MATERIAL DIMENSIONS OD X SCH	INTERPRETATION		REMARKS		SPECIMEN NUMBER	AREA BOUNDARY	MATERIAL DIMENSIONS OD X SCH	INTERPRETATION		REMARKS
			WITHIN CODE	BEYOND CODE						WITHIN CODE	BEYOND CODE	
1	LS4 1-2	7/8 PL	✓		Por X	31						
2	2-3		✓		SLAG	32						
3	3-4		✓			33						
4	4-5		✓			34						
5	5-6		✓		SLAG	35						
6	6-7		✓			36						
7						37						
8	CB 1-2	7/8 PL	✓		X	38						
9						39						
10	29 1-2	7/8 PL		✓	Por X-D	40						
11						41						
12						42						
13						43						
14						44						
15						45						
16						46						
17						47						
18						48						
19						49						
20						50						
21						51						
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30						60						

1 COPIA FIEL DO DOCUMENTO ORIGINAL
JOSE CARLOS FINEVEL GUSMAO
DIVISÃO DE SERVIÇOS CARTOGRAFIAIS

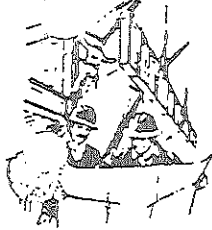
NUMBER AND SIZE OF WELDS		KODAK FILM	TIME: LEFT LAB.	ARRIVED JOB	LEFT JOB	ARRIVED LAB.
O.D.X	W.T.	ft. 70 MM	☐ 1 MAN UNIT	☒ 2 MAN UNIT	☐ 3 MAN UNIT	OTHER
O.D.X	W.T.	2 ea. 3 1/2" X 10"	HOURS: S.T.	O.T.	OFFSH:	TOTAL: 4
O.D.X	W.T.	6 ea. 3 1/2" X 17"	MILEAGE: FROM	TO		TOTAL: 50
O.D.X	W.T.	ea.	SUBSTANCE:			
10 → Plate X	W.T.	ea.	REMARKS:			
Plate X	W.T.	ea.				

W. BREAU - B. BRANSON
SOUTHERN INSPECTION REPRESENTATIVE

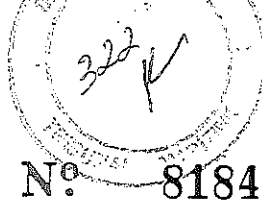
Andrew Lippo
ACCEPTED BY CUSTOMER REPRESENTATIVE

X-RAY — GAMMA RAY — ULTRASONIC — MAGNETIC PARTICLE — DYE PENETRANT — PHYSICAL TESTING — FILM INTERPRETATION
WRITTEN WELDING PROCEDURES & VERIFICATION — WELDER CERTIFICATION — CONSULTANTS — ONSTREAM EROSION & CORROSION SURVEYS
SHIP SURVEYS — LABORATORY ANALYSIS — LEAK DETECTION — QUALITY CONTROL MANAGEMENT — INSPECTION & SUPERVISION

980351



**SOUTHERN
INSPECTION & TESTING, INC.**
P.O. Box 1310 Marrero, Louisiana 70073
Phone: (504) 347-1752



DATE 11-5-98
JOB NO. 637
PAGE 1 OF 1

SPECIFICATION ASME Sec. VIII
CUSTOMER NO. Po # Repair 16376-63'

RADIOGRAPHIC EXAMINATION REPORT

CUSTOMER <u>ESI</u>	BILLING ADDRESS
PROJECT <u>Repair Tracers</u>	PROJECT ENGINEER
LOCATION <u>Covington, LA.</u>	FABRICATOR <u>ESI</u>

ABBREVIATIONS OF RADIOGRAPHIC TERMS

A.B. = ARC BURN
B.T. = BURN THROUGH
B.T.A. = BURN THROUGH AREA
C.B. = CONCAVE BEAD
C. = CRACK

E.C. = EXCESSIVE CROWN
E.P. = EXCESSIVE PENETRATION
F.A. = FILM ARTIFACT
G.P. = GAS POCKET
H.B. = HOLLOW BEAD

I.P. = INADEQUATE PENETRATION
I.F. = INCOMPLETE FUSION
I.U. = INTERNAL UNDERCUT
L.C. = LOW CROWN
O.U. = OUTSIDE UNDERCUT

P.P. = PIPING POROSITY
P. = POROSITY
S.I. = SLAG INCLUSIONS
S.L. = SLAG LINES

SPECIMEN NUMBER	AREA BOUNDARY	MATERIAL DIMENSIONS OD X SCH	INTERPRETATION		REMARKS		SPECIMEN NUMBER	AREA BOUNDARY	MATERIAL DIMENSIONS OD X SCH	INTERPRETATION		REMARKS
			WITHIN CODE	BEYOND CODE						WITHIN CODE	BEYOND CODE	
1	LS-4R1	7/8" Plate			X	31						
2	1-2		/			32						
3						33						
4	LS-4T1			/	X	34						
5	1-2			/	N.F.	35						
6						36						
7	LS-4T2			/	X	37						
8	1-2			/	N.F.	38						
9						39						
10						40						
11						41						
12						42						
13						43						
14						44						
15						45						
16						46						
17						47						
18						48						
19						49						
20						50						
21						51						
22						52						
23						53						
24						54						
25						55						
26						56						
27						57						
28						58						
29						59						
30						60						

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS FERNANDES GUSMAO
DIVISAO DE SERVICOS CARTORIAS

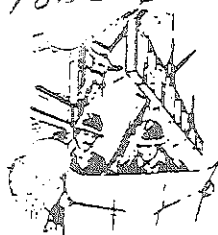
NUMBER AND SIZE OF WELDS				TIME	LEFT LAB.	ARRIVED JOB	LEFT JOB	ARRIVED LAB.
	O.D.X	W.T.	ft. 70 MM		☐ 1 MAN UNIT	☒ 2 MAN UNIT	☐ 3 MAN UNIT	OTHER
	O.D.X	W.T.	ea. 3 1/2" X 10"	HOURS: S.T.		O.T.	OFFSH:	TOTAL: <u>2 hrs</u>
	O.D.X	W.T.	ea. 3 1/2" X 17"	MILEAGE: FROM		TO		TOTAL:
	O.D.X	W.T.	ea.	SUBSTANCE:				
	<u>3</u> <u>7/8"</u> Plate X	W.T.	<u>3</u> ea. <u>4 1/2"</u> X <u>10</u>	REMARKS:				
	Plate X	W.T.	ea.					

W. Smith LI B. Billiet LI
SOUTHERN INSPECTION REPRESENTATIVE

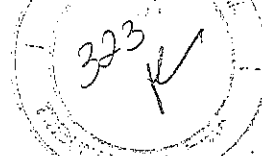
Andrew Shippo
ACCEPTED BY CUSTOMER REPRESENTATIVE

X-RAY — GAMMA RAY — ULTRASONIC — MAGNETIC PARTICLE — DYE PENETRANT — PHYSICAL TESTING — FILM INTERPRETATION
WRITTEN WELDING PROCEDURES & VERIFICATION — WELDER CERTIFICATION — CONSULTANTS — ONSTREAM EROSION & CORROSION SURVEYS
SHIP SURVEYS — LABORATORY ANALYSIS — LEAK DETECTION — QUALITY CONTROL MANAGEMENT — INSPECTION & SUPERVISION

980316



**SOUTHERN
INSPECTION & TESTING, INC.** N^o 8177
P.O. Box 1310 Marrero, Louisiana 70073
Phone: (504) 347-1752



DATE 10-27-98
JOB NO. 637
PAGE 1 OF 1

SPECIFICATION ASME SEC. 8 UWS2 1998
CUSTOMER NO. 16289-637

RADIOGRAPHIC EXAMINATION REPORT

CUSTOMER <u>ESI</u>	BILLING ADDRESS
PROJECT	PROJECT ENGINEER <u>ANDREW CRIPPO</u>
LOCATION <u>COVINGTON, LA</u>	FABRICATOR

ABBREVIATIONS OF RADIOGRAPHIC TERMS

A.B. = ARC BURN
B.T. = BURN THROUGH
B.T.A. = BURN THROUGH AREA
C.B. = CONCAVE BEAD
C. = CRACK

E.C. = EXCESSIVE CROWN
E.P. = EXCESSIVE PENETRATION
F.A. = FILM ARTIFACT
G.P. = GAS POCKET
H.B. = HOLLOW BEAD

I.P. = INADEQUATE PENETRATION
I.F. = INCOMPLETE FUSION
I.U. = INTERNAL UNDERCUT
L.C. = LOW CROWN
O.U. = OUTSIDE UNDERCUT

P.P. = PIPING POROSITY
P. = POROSITY
S.I. = SLAG INCLUSIONS
S.L. = SLAG LINES

SPECIMEN NUMBER	AREA BOUNDARY	MATERIAL DIMENSIONS OD X SCH	INTERPRETATION		REMARKS	SPECIMEN NUMBER	AREA BOUNDARY	MATERIAL DIMENSIONS OD X SCH	INTERPRETATION		REMARKS
			WITHIN CODE	BEYOND CODE					WITHIN CODE	BEYOND CODE	
1						31					
2	W-1	1-2	10" XH	✓	G.P. x	32					
3	2D					33					
4						34					
5	W-2	1-2	10" XH	✓	x	35					
6	12C					36					
7						37					
8	W-3	1-2	10" XH	✓	Por. x	38					
9	12B					39					
10						40					
11	W-4	1-2	10" XH	✓	x	41					
12	12A					42					
13						43					
14	W-5	1-2	10" x .594"	✓	x	44					
15	N10					45					
16						46					
17	-6	1-2	24" x .688"	✓	x	47					
18	T11					48					
19						49					
20	W-7	1-2	24" x .688"	✓	x	50					
21	N2					51					
22						52					
23	W-8	1-2	24" x .688"	✓	x	53					
24	N1					54					
25						55					
26	LS-4	1-2	96" x .875"	✓	G.P., I.P., I.U. x	56					
27						57					
28						58					
29	LS-5	1-2	96" x .875"	✓	x	59					
30						60					

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS FERNANDES CUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

NUMBER AND SIZE OF WELDS			KODAK FILM "M"	TIME: LEFT LAB.	ARRIVED JOB	LEFT JOB	ARRIVED LAB.
4 SPOT	10" O.D. X XH	W.T.					
1 SPOT	10" O.D. X .594"	W.T.	10	ea. 3 1/2" X 10"	□ 1 MAN UNIT	✓ 2 MAN UNIT	□ 3 MAN UNIT
2 SPOT	24" O.D. X .688"	W.T.		ea. 3 1/2" X 17"	□ 1 MAN UNIT	□ 2 MAN UNIT	□ 3 MAN UNIT
1 SPOT	96" O.D. X .875"	W.T.		ea.	□ 1 MAN UNIT	□ 2 MAN UNIT	□ 3 MAN UNIT
	Plate X	W.T.		ea.	□ 1 MAN UNIT	□ 2 MAN UNIT	□ 3 MAN UNIT
	Plate X	W.T.		ea.	□ 1 MAN UNIT	□ 2 MAN UNIT	□ 3 MAN UNIT

R. BRANSON - LEVEL III B. BRANSON - LEVEL I
SOUTHERN INSPECTION REPRESENTATIVE

Accepted by Andrew Crippa 10-27-98
ACCEPTED BY CUSTOMER REPRESENTATIVE

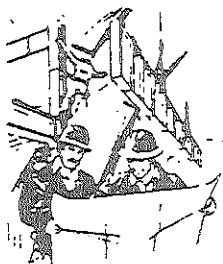
X-RAY — GAMMA RAY — ULTRASONIC — MAGNETIC PARTICLE — DYE PENETRANT — PHYSICAL TESTING — FILM INTERPRETATION
WRITTEN WELDING PROCEDURES & VERIFICATION — WELDER CERTIFICATION — CONSULTANTS — ONSTREAM EROSION & CORROSION SURVEYS
SHIP SURVEYS — LABORATORY ANALYSIS — LEAK DETECTION — QUALITY CONTROL MANAGEMENT — INSPECTION & SUPERVISION

WHITE - Issues

YELLOW - Customer

PINK - File

994031



SOUTHERN INSPECTION & TESTING, INC.

P.O. Box 1310

Marrero, Louisiana 70073

Phone: (504) 347-1752



Nº 8250

ULTRASONIC INSPECTION REPORT

DATE 1-27-99

SHEET 1 OF 1

CUSTOMER ENGINEERING SPECIALITIES INC.

JOB NO. 637

CUSTOMER NO. P.O.# 16791-637

JOB LOCATION COVINGTON, LA.

INSTRUMENT USED USN-52

COARSE GAIN 54dB DAMPENING FIX

FINE GAIN 8dB REJECT 0

TRANSDUCER 0°-60° SPECIFICATION ASME SEC VIII

ITEM	QUANTITY	DESCRIPTION	RESULT OF INSPECTION
------	----------	-------------	----------------------

2" PADEYE TO SHELL @ 46'3" @ 4°-

WITHIN CODE

UT: 2" PADEYE TO SHELL @ 46'3" @ 124°-

WITHIN CODE

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIVISÃO DE SERVIÇOS CARTORIAIS

LEFT LAB	AM	PM ARRIVED JOB	AM
			PM
LEFT JOB	AM	PM ARRIVED LAB	AM
			PM
TRAVEL TIME LAND:		WATER:	HOURS
WORK TIME			HOURS
1 TIME		2 HOURS	

MILEAGE 100 RT

REMARKS:

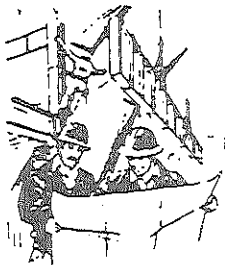
TECHNICIANS:

WADE BREAU

ACCEPTED BY:

Andrew Lippo

CUSTOMER'S REPRESENTATIVE



SOUTHERN INSPECTION & TESTING, INC.

P.O. Box 1310

Marrero, Louisiana 70073

Phone: (504) 347-1752



Nº 8249

ULTRASONIC INSPECTION REPORT

DATE 1-25-99

SHEET 1 OF 1

CUSTOMER ENGINEERING SPECIALITIES INC.

JOB NO. 637

INSTRUMENT USED USN-52

CUSTOMER NO. 16779-637

COARSE GAIN 56dB DAMPENING FIX

FINE GAIN 8dB REJECT 0

LOCATION COVINGTON, LA.

TRANSDUCER 0°-60°-70° SPECIFICATION ASME
SEC VIII

ITEM	QUANTITY	DESCRIPTION	RESULT OF INSPECTION
UT-20"ØD-XS-PIPE STANCHION TO CAISSON SHELL @ 92'6"		WITHIN CODE	
UT-20"ØD-XS-PIPE STANCHION TO CAISSON SHELL @ 67'6"		WITHIN CODE	
UT-20"ØD-XS-PIPE STANCHION TO CAISSON SHELL @ 47'6"		WITHIN CODE	
UT-20"ØD-XS-PIPE STANCHION TO CAISSON SHELL @ 38'7 1/2"		WITHIN CODE	
UT-16"ØD-XS-PIPE STANCHION TO CAISSON SHELL @ 34'11 1/2"		WITHIN CODE	
UT-2" PADEYE TO SHELL @ 91'3" @ 4°		WITHIN CODE	
UT-2" PADEYE TO SHELL @ 91'3" @ 124°		WITHIN CODE	
UT-2" PADEYE TO SHELL @ 91'3" @ 244°		WITHIN CODE	
UT-2" PADEYE TO SHELL @ 46'3" @ 4°		BEYOND CODE- 1" DEEP X 3 1/2" LONG	
UT-2" PADEYE TO SHELL @ 46'3" @ 124°		BEYOND CODE- 1" DEEP X 6" LONG	
UT-2" PADEYE TO SHELL @ 46'3" @ 244°		WITHIN CODE	

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUIMARÃES
DIRETOR
DIVISÃO DE SERVIÇOS CATASTRALIS

LEFT LAB	AM PM ARRIVED JOB	AM PM
LEFT JOB	AM PM ARRIVED LAB	AM PM
TRAVEL TIME LAND:	WATER:	HOURS
WORK TIME		HOURS
TIME	7	HOURS

MILEAGE 100 RT

REMARKS:

LEGAL. U.T. CRUPLING

TECHNICIANS:

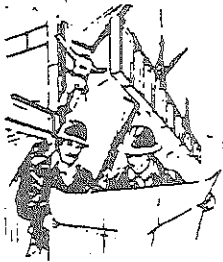
WADE BREAU

ACCEPTED BY:

Scott Lenth

CUSTOMER'S REPRESENTATIVE

990021



SOUTHERN INSPECTION & TESTING, INC.

P.O. Box 1310

Marrero, Louisiana 70073

Phone: (504) 347-1752



ULTRASONIC INSPECTION REPORT

Nº 8237

DATE 1-18-99

CUSTOMER ENGINEERING SPECIALTIES INC.

SHEET 1

OF 1

JOB NO. 637

INSTRUMENT USED USN-52

CUSTOMER NO. P.O.# 16740-637

COARSE GAIN 58dB

DAMPENING FIX

JOB LOCATION COVINGTON, LA.

FINE GAIN 12dB

REJECT 0

TRANSDUCER 0° & 70°

SPECIFICATION AWS-D1.

ITEM	QUANTITY	DESCRIPTION	RESULT OF INSPECTION
UT-20" XH PIPE TO CLAMP		ELEV. 92'-6" -	WITHIN CODE
UT-20" XH PIPE TO CLAMP		ELEV. 67'-6" -	WITHIN CODE
UT-20" XH PIPE TO CLAMP		ELEV. 47'-6" -	WITHIN CODE
UT-20" XH PIPE TO CLAMP		ELEV. 38'-7 1/4" -	WITHIN CODE
UT-16" XH PIPE TO CLAMP		ELEV. 34'-11 1/2" -	WITHIN CODE

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS FERNANDES GUSMÃO
DIRETOR
NÚCLEO DE SERVIÇOS CARTOGRAFIAIS

LEFT LAB	AM		AM
	PM	ARRIVED JOB	PM
LEFT JOB	AM		AM
	PM	ARRIVED LAB	PM
TRAVEL TIME LAND:		WATER:	HOURS
WORK TIME			HOURS
TIME		2 1/2	HOURS

MILEAGE 50

REMARKS:

1/2 GAL. U.T. COUPLING

TECHNICIANS:

WADE BREAU

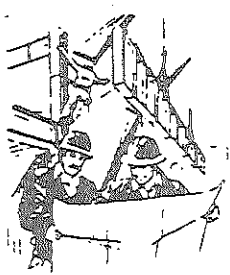
ACCEPTED BY:

Andrew Lipppo

CUSTOMER'S REPRESENTATIVE

X-RAY - GAMMA RAY - ULTRASONIC - MAGNETIC PARTICLE - DYE PENETRANT
FILM INTERPRETATION - LABORATORY ANALYSIS - PHYSICAL TESTING
WELDING PROCEDURES & VERIFICATION - WELDER CERTIFICATION - CONSULTANTS

780402



SOUTHERN INSPECTION & TESTING, INC.

P.O. Box 1310 Marrero, Louisiana 70073 Phone: (504) 347-1752

ULTRASONIC INSPECTION REPORT

Nº 8223

DATE 12-15-98

SHEET 1 OF 1

CUSTOMER ENGINEERING SPECIALTIES INC.

JOB NO. 637

INSTRUMENT USED USN-52

CUSTOMER NO. 16608-637

COARSE GAIN 54dB DAMPENING FIX

FINE GAIN 12dB REJECT 0

JOB LOCATION COVINGTON, LA.

TRANSDUCER 0° & 70° SPECIFICATION AWS-D1.1

ITEM	QUANTITY	DESCRIPTION	RESULT OF INSPECTION
------	----------	-------------	----------------------

UT-4		CAISSON BOX SUPPORT TO CAISSON @ 90' ELEVATION -	WITHIN CODE
------	--	---	-------------

UT-5		CAISSON BOX SUPPORT TO CAISSON @ 65' ELEVATION -	WITHIN CODE
------	--	---	-------------

UT-6		CAISSON BOX SUPPORT TO CAISSON @ 45' ELEVATION -	WITHIN CODE
------	--	---	-------------

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JOSE CARLOS PINHEIRO
INSPECTOR
DIVISÃO DE SERVIÇOS ESPECIALIZADOS

EFT LAB	AM	PM ARRIVED JOB	AM
EFT JOB	AM	PM ARRIVED LAB	AM
TRAVEL TIME LAND:		WATER:	HOURS
WORK TIME			HOURS
ME		5 1/2	HOURS

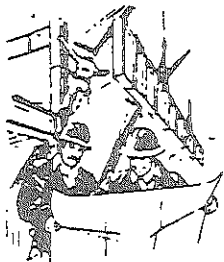
MILEAGE 100 RT.

REMARKS:
1/2 GAL. UT-COUPPING

TECHNICIANS:
WADE BREAU

ACCEPTED BY:
Andrew Lippe
CUSTOMER'S REPRESENTATIVE

280384

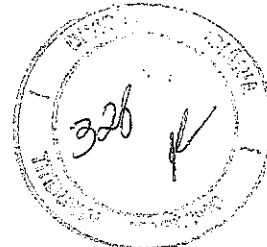


SOUTHERN INSPECTION & TESTING, INC.

P.O. Box 1310

Marrero, Louisiana 70073

Phone: (504) 347-1752



ULTRASONIC INSPECTION REPORT

No 8216

DATE 12-8-98

SHEET 1 OF 1

CUSTOMER ENGINEERING SPECIALITIES INC.

JOB NO. 637

CUSTOMER NO. 16576-637

INSTRUMENT USED USN-52

JOB LOCATION COVINGTON, LA.

COARSE GAIN 50dB DAMPENING FIX

FINE GAIN 12dB REJECT 0

TRANSDUCER 0°/70° SPECIFICATION AWS-D1.1

ITEM	QUANTITY	DESCRIPTION	RESULT OF INSPECTION
UT-1	4	CORNER WELDS ON CAISSON BOX SUPPORT @ 90° ELEVATION -	WITHIN CODE
UT-2	4	CORNER WELDS ON CAISSON BOX SUPPORT @ 65° ELEVATION -	WITHIN CODE
UT-3	4	CORNER WELDS ON CAISSON BOX SUPPORT @ 45° ELEVATION -	WITHIN CODE

RECEBUEMOS DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL CUSMÃO

DIVISÃO DE SERVIÇOS CARTORIAIS

LEFT LAB	AM	PM ARRIVED JOB	AM
			PM
LEFT JOB	AM	PM ARRIVED LAB	AM
			PM
TRAVEL TIME LAND:		WATER:	HOURS
WORK TIME			HOURS
TIME			4 1/2 HOURS

MILEAGE 100 RT.

REMARKS:

1/2 GAL. U.T. COUPLING

TECHNICIANS:

WADE BREAU (LII)

ACCEPTED BY:

Andrew Lippo

CUSTOMER'S REPRESENTATIVE

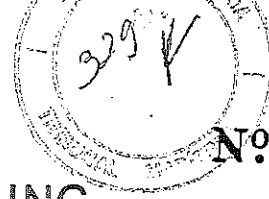
X-RAY - GAMMA RAY - ULTRASONIC - MAGNETIC PARTICLE - DYE PENETRANT
FILM INTERPRETATION - LABORATORY ANALYSIS - PHYSICAL TESTING
WELDING PROCEDURES & VERIFICATION - WELDER CERTIFICATION - CONSULTANTS

**SOUTHERN
INSPECTION & TESTING, INC.**

P. O. Box 1310

Marrero, Louisiana 70073

Phone: (504) 347-1752



Nº 4834

A.F.E. NO. P.O. # 16791-637

JOB NO. 637

JOB MAGNETIC PARTICLE INSPECTION

CONTRACTOR ENGINEERING SPECIALTIES INC. CLIENT

LOCATION COVINGTON, LA.

ENGINEER IN CHARGE

ADDRESS ASME SEC VIII

DAY

27-99

MT- 7/8" REPAD TO SHELL - 24" 150# NOZZLE - N2-

WITH IN CODE

MT- W9- 18" OD BUTT WELD - INSIDE & OUT

WITH IN CODE

HRS.

COPIA FIEL DO DOCUMENTO ORIGINAL

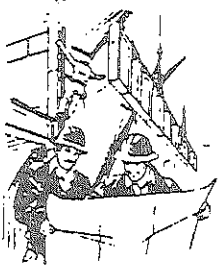
JOSÉ CARLOS FREITAS GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS TÉCNICOS

CLIENT'S REP.

Andrew Lippo

INSPECTOR

WADE BREAUX

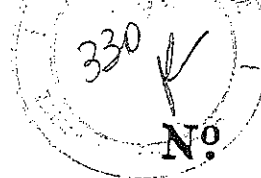


SOUTHERN
INSPECTION & TESTING, INC.

P. O. Box 1310

Marrero, Louisiana 70073

Phone: (504) 347-1752



4498

A.F.E. NO. 16279-637

JOB NO. 637

INSPECTOR'S REPORT NO. PAGE 3 OF 3

JOB MAGNETIC PARTICLE INSPECTION

CONTRACTOR ENGINEERING SPECIALTIES INC. CLIENT

LOCATION COVINGTON, LA.

ENGINEER IN CHARGE

ADDRESS ASME SEC VIII

DATE

1-26-78 MT- ROUNDSEAM WELD #5- 8'00X. 875" WALL- WELDS INSIDE &
OUTSIDE OF VESSEL - WITHIN CODE

10 MILES MT- ROUNDSEAM WELD #6- 8'00X. 875" WALL- WELDS INSIDE &
OUTSIDE OF VESSEL - WITHIN CODE

1/2 MT- ROUNDSEAM WELD #7- 8'00X. 875" WALL- WELDS INSIDE &
OUTSIDE OF VESSEL - WITHIN CODE

1/2 MT- ROUNDSEAM WELD #8- 8'00X. 875" WALL- WELDS INSIDE &
OUTSIDE OF VESSEL - WITHIN CODE

THES.

9-CANS- MAGNAFLUX- WHITE CONTRAST PAINT- WCP-2

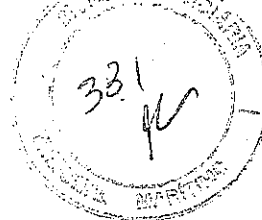
8-CANS- MAGNAFLUX- PREPARED BATH- 9CM

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTA JUNIOR
INSPECTOR
DIVISÃO DE SERVIÇOS TÉCNICOS

CLIENT'S REP. Andrew Lippo

INSPECTOR WADE BREAN (LH)



Date 11-03-98

COPIA FILE DO DOCUMENTO ORIGINAL

Sold To:
NEW ORLEANS WINDUSTRIAL
110 W. AIRLINE HWY
SUITE C
KENNER, LA 70062
Fax Number: 504-467-8591
Att 4757

Customer Number NEW003
Sales Order No. 68159
Customer PO No. 2381030A2

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

APPROVED

ITEM #
QC AS
DATE 11-9-98
JOB # 637,642

Heat Number YXQO

Quantity
35

Description
3 150 FF WN F316L/316 S/160

Specification
A/SA182M-95b

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Cr	Ni	Mo	N
17	1.84	.030	.006	.590	16.430	10.16	2.070	
Cu	Cb	Zn	Ti	V	Co	Fe	Al	Ta
				.070				.071

MECHANICAL TESTS

Utsile Psi	Yield Psi	Elongation %	Reduction %	Hardness
500	39600	54.60	78.30	BHN 156

TEMP - 1900F

HEAT TREATMENT: SOLUTION ANNEALED/WATER QUENCHED.

THIS IS TO CERTIFY THAT THE MATERIAL FURNISHED ON THIS ORDER COMPLIES IN ALL RESPECTS WITH THE SPECIFICATIONS INDICATED IN DESCRIPTION. I CERTIFY THAT THE ABOVE FIGURES ARE CORRECT IN ACCORDANCE WITH OUR RECORDS. TEXAS METAL WORKS, INC. IS A DOMESTIC MANUFACTURER. ALL FLANGES AND FITTINGS MANUFACTURED IN THE U.S.A. FREE OF MERCURY CONTAMINATION.

Sub - ~~637~~ - 642
PO# 16339

Sandra J. Price
SANDRA J. PRICE
QA MANAGER



Date 11-03-98

COPIA FIEL DO DOCUMENTO ORIGINAL

Sold To:
NEW ORLEANS WINDUSTRIAL
110 W. AIRLINE HWY
SUITE C
KENNER, LA 70062
Fax Number: 504-467-8591
Attn: 4757

Customer Number NEW003
Sales Order No. 68159
Customer PO No. 23810302
JOSE CARLOS PIMENTEL GUSMAO
DIRETOR
DIVISAO DE SERVICOS CARTORIAIS

APPROVED

ITEM #
QC
DATE 11-9-98
JOB # 637642

Heat Number XEBL

Quantity 3
Description 3 150 RF BL F316L/316

Specification
ASTM A182 96

CHEMICAL ANALYSIS

	Mn	P	S	Si	Cr	Ni	Mo	N
1	1.74	0.041	0.018	0.46	16.19	10.00	2.01	0.0430

Cu	Cb	Zn	Ti	V	Co	Fe	Al
----	----	----	----	---	----	----	----

MECHANICAL TESTS

nsile Psi	Yield Psi	Elongation %	Reduction %	Hardness
,778	42,261	60.10	70.20	153

TEMP - 1922 F HEAT TREATMENT; SOLUTION ANNEALED/WATER QUENCHED

THIS IS TO CERTIFY THAT THE MATERIAL FURNISHED ON THIS ORDER COMPLIES IN ALL RESPECTS WITH THE SPECIFICATIONS INDICATED IN DESCRIPTION. I CERTIFY THAT THE ABOVE FIGURES ARE CORRECT IN ACCORDANCE WITH OUR RECORDS. EXAS METAL WORKS, INC. IS A DOMESTIC MANUFACTURER. ALL FLANGES AND FITTINGS MANUFACTURED IN THE U.S.A. FREE OF MERCURY CONTAMINATION.

Sandra J. Price
SANDRA J. PRICE
QA MANAGER

ORIGINAL FILE COPY
DO NOT REMOVE
AMERICAN ALLOY
PLATE # 5036088

CUSTOMER : ENGINEERING SPECIALTIES INC
CUST. P.O.#: 15933-637
A.A.S. S/O# : 153432
DATE MAILED: 08/31/1998
DESC: 120" X 303" CUT 80 TO ROLL CYL.S.
3/4" X 96" OD X 120" LONG 30 DEG
DBL BEVEL AS NOTED ITEM 1 (1 PC)

APPROVED
ITEM #
QC
DATE 8-31-98
JOB # 637

THIS IS TO CERTIFY THAT THE
PRODUCT DESCRIBED HEREIN WAS
MANUFACTURED, SAMPLED, TEST-
ED AND/OR INSPECTED IN
ACCORDANCE WITH THE SPECIFI-
CATION AND FULFILLS REQUIRE-
MENTS IN SUCH RESPECTS.

Larry D. Chaves
DIVISION MANAGER, QUALITY
ONE 07-21-98

Metallurgical Test Report

GENEVA STEEL COMPANY CERTIFIES ALL SHEETING, MELTING AND MANUFACTURING PROCESSES OCCURRED IN THE U.S.A.

P.O. DATE	03/19/98	PURCHASE ORDER NO.	1600708/60-000260
SHIPPER'S NO.	GP49669A	WILL ORDER NO.	EA32310
SHIPPER'S NO.	GP49669A	WILL ORDER NO.	EA32310
SHIPPER'S NO.	GP49669A	WILL ORDER NO.	EA32310

THYSSEN STEEL GROUP WEST DAS
C/O PORT RAIL SERVICES
PTRA ZONE 23 TRACK 435
PORT OF HOUSTON, HOUSTON TEXAS.

PLATE
2-1976 ADDENDUM
GRADE 70 PRESSURE VESSEL QUALITY - MANDATORY DIE
STAMPING

ASME A516-90 GRADE 70 AND ASME SA-516 1995 EDITION
GRADE 70 PRESSURE VESSEL QUALITY - MANDATORY DIE
STAMPING

01 MILL CERTIFIED T/R

Certified a true copy of the
original, retained in our file.

ITEM	MATERIAL DESCRIPTION										QUAN- TITY	WEIGHT	HEAT NO.	TEST OR PLCE IDENTIFY	YIELD ST. KSI	TENSILE ST. KSI	ELONGATION IN INCHES	BEN
	GRADE	THICK- NESS	WELD OR FILLER	ORIENT.	FINISH	INCHES	PERCENT	PERCENT	PERCENT	PERCENT								
102798	HEAT	25	104	010	012	20	01	01	004	1	122525	102798	21-01	49.0	79.0	23.0		
206693	HEAT	27	107	008	009	21	01	01	004	2	245046	206693	29-01	51.1	80.6	22.0		
206694	HEAT	27	103	009	010	20	01	01	004	2	245046	206694	21-01	51.2	81.4	22.0		
207635	HEAT	26	104	006	016	21	01	01	004	1	122526	206694	23-01	51.6	81.2	23.0		
END OF DATA																		

YIELD STRENGTH-TOTAL EXTENSION UNDER LOAD 0.5K.

TEST REPORT APPROVED DATE
AMERICAN ALLOY STEEL BY
QUALITY ASSURANCE DEPT.

8-25-97
[Signature]

HEAT NO.	TYPE	C	AN	P	S	4	CU	N	CA	MO	SA	AL	N	V	I	II	III	IV	CA
102798	HEAT	25	104	010	012	20	01	01	004	004	004	039	004	004	004	004	004	004	004
206693	HEAT	27	107	008	009	21	01	01	004	004	004	039	004	004	004	004	004	004	004
206694	HEAT	27	103	009	010	20	01	01	004	004	004	039	004	004	004	004	004	004	004
207635	HEAT	26	104	006	016	21	01	01	004	004	004	040	004	004	004	004	004	004	004
GENEVA STEEL COMPANY CERTIFIES ALL SHEETING, MELTING AND MANUFACTURING PROCESSES OCCURRED IN THE U.S.A.																			
END OF DATA																			

017862 DECIMAL POSITIONS FOR ELEMENTS ARE INDICATED BY THE LEFT MARGINS, VERTICAL POSITIONS ARE INDICATED BY THE TOP MARGINS. PAGE 01

ORIGINAL FILE COPY
DO NOT REMOVE
AMERICAN ALLOY
PLATE # 5036689

CUSTOMER : ENGINEERING SPECIALTIES INC
CUST. P.O.#: 15933-637
A.A.S. S/O# 153432
DATE MAILED: 08/31/1998
DESC: 12C" X 303" CUT SQ TO ROLL CYL'S
3/4" X 96" OD X 120" LONG 30 DEG
DRL BEVEL AS NOTED ITEM 1 (1 PC)

APPROVED
ITEM # 2
QC 12
DATE 8-31-98
JOB # 637

THIS IS TO CERTIFY THAT THE
PRODUCT DESCRIBED HEREIN WAS
MANUFACTURED, SAMPLED, TEST-
ED AND/OR INSPECTED IN
ACCORDANCE WITH THE SPECIFI-
CATION AND FULFILLS REQUIRE-
MENTS IN SUCH RESPECTS.

James D. Charles
DIVISION MANAGER, QUALITY
DATE 07-21-98

Metallurgical Test Report

GENEVA STEEL COMPANY CERTIFIES ALL SUEL TIME, MELTING AND MANUFACTURING PROCESSES OCCURRED IN THE USA

Q.C. CONTRACT NO.	Q.C. DATE	PURCHASE ORDER NO.
1596	05/19/98	1600748/60-000260
GENEVA STEEL	SUPPLIER NO.	HAULY NO.
PO BOX 2500	GP49669A	GP49669A
PROVO, UTAH 84603	07-21-98	EA52310
	SP 508697	

THYSSEN STEEL GROUP WEST OAS
C/O PORT RAIL SERVICES
PYRA ZONE 23 TRACK 43S
PORT OF HOUSTON, HOUSTON TEXAS.

PLATE
ASTM A516-90 GRADE 70 AND ASME SA-516 1995 EDITION
1996 APPENDIX GRADE 70 PRESSURE VESSEL QUALITY - MANDATORY DIE
STAMPING

01 HILL CERTIFIED Y/R

Certified a true copy of the original, retained in our file.
AMERICAN ALLOY STEEL, INC.

HEAT NO.	TYPE	C	W	P	S	B	CU	IN	QUAN	WGT	HEAT NO.	TEST OR PRICE	YIELD ST.	TENSILE ST.	ELONGATION %	W. RED.
102798	HEAT	25	104	010	012	20	01	01	01	004	102798	21-01	49.0	79.0	25.0	25.0
206694	HEAT	27	107	008	009	21	01	01	01	004	206694	29-01	51.1	80.6	22.0	22.0
206694	HEAT	27	103	007	010	20	01	01	01	004	206694	21-01	51.2	81.4	22.0	22.0
206694	HEAT	26	104	006	018	21	01	01	01	004	206694	22-01	50.7	80.8	24.0	24.0
206694	HEAT	26	104	006	018	21	01	01	01	004	206694	23-01	51.6	81.2	23.0	23.0
206694	HEAT	26	104	006	018	21	01	01	01	004	206694	24-01	51.0	81.3	23.0	23.0
206694	HEAT	26	104	006	018	21	01	01	01	004	206694	25-01	50.8	81.5	24.0	24.0
206694	HEAT	26	104	006	018	21	01	01	01	004	206694	23-01	51.4	79.3	22.0	22.0

END OF DATA

YIELD STRENGTH-TOTAL EXTENSION UNDER LOAD 0.5X.

HEAT NO.	TYPE	C	W	P	S	B	CU	IN	QUAN	WGT	HEAT NO.	TEST OR PRICE	YIELD ST.	TENSILE ST.	ELONGATION %	W. RED.
102798	HEAT	25	104	010	012	20	01	01	01	004	102798	21-01	49.0	79.0	25.0	25.0
206694	HEAT	27	107	008	009	21	01	01	01	004	206694	29-01	51.1	80.6	22.0	22.0
206694	HEAT	27	103	007	010	20	01	01	01	004	206694	21-01	51.2	81.4	22.0	22.0
206694	HEAT	26	104	006	018	21	01	01	01	004	206694	22-01	50.7	80.8	24.0	24.0
206694	HEAT	26	104	006	018	21	01	01	01	004	206694	23-01	51.6	81.2	23.0	23.0
206694	HEAT	26	104	006	018	21	01	01	01	004	206694	24-01	51.0	81.3	23.0	23.0
206694	HEAT	26	104	006	018	21	01	01	01	004	206694	25-01	50.8	81.5	24.0	24.0
206694	HEAT	26	104	006	018	21	01	01	01	004	206694	23-01	51.4	79.3	22.0	22.0

END OF DATA

TEST REPORT APPROVED DATE 8-25-98
AMERICAN ALLOY STEEL BY *[Signature]*
QUALITY ASSURANCE DEPT.

GENEVA STEEL COMPANY CERTIFIES ALL SUEL TIME, MELTING AND MANUFACTURING PROCESSES OCCURRED IN THE USA.

DECIMAL POSITIONS FOR REQUIREMENTS ARE INDICATED BY *
017862 DECIMAL POSITIONS FOR REQUIREMENTS ARE INDICATED BY *
017862 DECIMAL POSITIONS FOR REQUIREMENTS ARE INDICATED BY *

CARLOS PIMENTEL GUSMAO
DIRETOR
DIVISAO DE SERVICOS CARTORIAIS

08/31/98

14:08

AAS - 5048920474

NO.957

D05

08/31/98

Gulf States Steel, Inc.

APR 06 1998

32-5219-01

ORDER NUMBER	ITEM	QTY	PURCHASE ORDER DATE
G 54627	36	742	01 09 98
PURCHASE ORDER NO.		SHIPPED FROM	
1600656		ALA CITY	

CERTIFICATE OF TESTS

ACCOUNT NUMBER	PAGE NO.	INVOICE NUMBER
74521906	1	742-05747
DATE SHIPPED	ROUTED TO IDENTIFICATION	
04 01 98	NH 170436	

HEREBY CERTIFY THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND TESTED IN
CONFORMANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED
UPON THE RESULTS OF SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE
TO THE SPECIFICATIONS.

G.F. BIARDIN, JR.
NSR, TECHNOLOGY AND
QUALITY - PLATE PRODUCTS

THYSSEN STL GROUP WEST
2700 POST OAK BLVD
STE 1100 ATTN DALE HARNIER
HOUSTON TX 77056

THYSSEN STEEL CO
2700 POST OAK BLVD
STE 1100 ATTN DALE HARNIER
HOUSTON TX

MATERIAL DESCRIPTION
PLATE CARBON ASTM A-516-90 GRD 70 ASHTA SA-516 DTD 07/01/95 GRD 70 PUQ BIN 50049
PAR 3.1B MELTED & MFG IN USA

QUANTITY SHIPPED

42879

3750 X 120.0000 SHEARED EDGE X 490.0000 IN
HT 7456900 T P358401 1 PCS
HT 7456900 T P358402 1 PCS
HT 7456900 T P358403 1 PCS

CH C 28XX NH 85/1.20 P 033XX S.033XX SX 15/40 CU 40XX NI 40XX CR 30XX MO 12XX CB 02XX U 03XX
AL 020NH

NR YLD 38000 NIM TEN 70/90000 XELONG NIM 2 IN 21 OR 8 IN 17

TZ 2 TR CA MUST SHDS HTCD IN USA SUBJECT TO OUTSIDE INSPECTION
TOTAL WT. 42,879# PCS 3

MELTED AND MANUFACTURED IN THE USA

Certified a true copy of the
original, retained in our files.
AMERICAN ALLOY STEEL, INC.

HEAT NUMBER	C	Mn	P	S	Si	Al	Ni	Cr	Mo	Cu	Nb	As	Se	Ca	Ti	CE
7456900	.24	1.04	.010	.013	.243	0.05	0.02	0.03	.03	.003	.002	.010				
																JOSE

HEAT NUMBER	TEST OR PIECE IDENTITY NO.	YIELD KSI	TENSILE KSI	% ELONG		HARDNESS	BEND TEST	HEAT TREAT	YS/TS RATIO	% RED. AREA	CALY COATING	DROP WEIGHT TEAR TEST (IN)				
				2"	4"							DIR	TEMP °F	1	2	AVG
7456900	P358401	48.0	76.0		28			RR	.63							
7456900	P358402	50.0	77.0		26			RR	.64							
7456900	P358403	48.0	77.0		22			RR	.62							

HEAT NUMBER	TEST OR PIECE IDENTITY NO.	HEAT TREAT	SIZE	DR	TEMP °F	ENERGY				% SHEAR				MLS LATERAL EXPANSION					
						1	2	3	AVG	1	2	3	AVG	1	2	3	AVG		

TEST REPORT APPROVED DATE 7-25-88

AMERICAN ALLOY OR FIELD

QUALITY ASSURANCE DEPT.

TEST REPORT AUTHORIZED DATE 7-28-98
AMERICAN ALLOY STEEL
QUALITY ASSURANCE DEPT.

APPROVED

ITEM # 3
QC AS
DATE 8-31-98
JOB # 637

CUSTOMER : ENGINEERING SPECIALTIES INC
CUST. P.O.#: 15933-637
A.A.S. S/O#: 158432
DATE MAILED: 08/31/1998
DESC: 120" X 303" CUT SQ TO ROLL CYL'S
7/8" X 96" OD X 120" LONG CYL
ITEM 2 (1 PC)

ORIGINAL FILE COPY
DO NOT REMOVE
AMERICAN ALLOY
PLATE # 75033814

08-31-98

14:04

RECEIVED FROM: 713 452 8289

P. 05

Gulf States Steel, Inc.
CERTIFICATE OF TESTS

ORDER NO. 74200711 DATE 12 03 97 PURCHASE ORDER NO. 1600636 SHIPPED FROM ALA CITY

ACCOUNT NUMBER 74321906 PAGE NO. 1 INVOICE NUMBER 742-05080 DATE SHIPPED 02.24.98 ROUTE/VEHICLE IDENTIFICATION SOU 116117

WE HEREBY CERTIFY THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND TESTED IN ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

C.F. BEARDEN, JR.
 MGR. TECHNOLOGY AND
 QUALITY - PLATE PRODUCTS

THYSSEN STL GROUP DIST
 2700 POST OAK BLVD
 STE 1100 AITH DALE HARRIER
 HOUSTON TX 77056

THYSSEN STEEL CO
 EXPORT CONTAINER PTRA IN 23
 TRACK 435 PORT OF HOUSTON
 HOUSTON TX

7/8 X 120 X 480

MATERIAL DESCRIPTION		QUANTITY SHIPPED
PLATE CARBON ASTM A-516-98 GRD 70 ASME SA-516 DTD 07/01/93 GRD 70 P69 DIN 50049 PAR 3.12 ELEVATED 2 RTG IN USA		114344
6750 X 120.0000 SHEARED EDGE X 480.0000 IN		
HT 7456783	P296501 PCS	
HT 7256812	P296501 PCS	
HT 7462794	P296701 PCS	
HT 7462794	P296702 PCS	
HT 7462769	P296801 PCS	
HT 7462769	P296802 PCS	
HT 7456812	P297001 PCS	
HT 7456812	P297002 PCS	
CH C 28X HN 85/1.20 P 635X S 635X SZ 15/40 CH 48X HI 48X CR 30X RD 12X CD 02X V 63X RL 620X		

HEAT NUMBER	C	Mn	P	S	SI	CU	NI	CR	MO	CD	V	AL	N	B	Ca	TI	CS
7456783	.25	1.02	.010	.011	.23	0.02	0.01	0.12	.04	.003	.002	.051					
7256812	.24	1.07	.011	.012	.216	0.03	0.01	0.03	.03	.004	.007	.028					
7462794	.24	1.06	.007	.015	.228	0.04	0.01	0.02	.02	.004	.001	.042					
7462769	.24	1.03	.010	.014	.228	0.03	0.01	0.13	.04	.003	.001	.037					
7456812	.24	1.07	.011	.012	.216	0.03	0.01	0.03	.03	.004	.001	.028					
HEAT NUMBER	TEST OR PIECE IDENTITY NO.	YIELD KSI	TENSILE KSI	% ELONG		HARDNESS	BEND TEST	HEAT TREAT	YS/TS RATIO	% RED AREA	GALV COATING	DROP WEIGHT YEAR TESTS					
				2"	8"								DIR	TEMP °F	1	2	AVG
7256812	P296601	49.0	79.0		26			RR	.62								
7456783	P296501	50.0	79.0		26			RR	.63								
7456812	P297001	51.0	79.0		26			RR	.64								
7456812	P297002	48.0	76.0		24			RR	.63								
7462769	P296801	50.0	81.0		22			RR	.61								
7462769	P296802	51.0	80.0		23			RR	.63								
7462794	P296701	47.0	80.0		26			RR	.58								
7462794	P296702	53.0	79.0		24			RR	.67								
HEAT NUMBER	TEST OR PIECE IDENTITY NO.	HEAT TREAT	SIZE	DIR	TEMP °F	ENERGY				% SHEAR				MBS LATERAL EXPANSION			
						1	2	3	AVG	1	2	3	AVG	1	2	3	AVG
Certified a true copy of the original, retained in our file.																	
AMERICAN ALLOY STEEL, INC.																	
TEST REPORT APPROVED DATE 8-26-91																	
AMERICAN ALLOY STEEL BY [Signature]																	
QUALITY ASSURANCE DEPT.																	

Certified a true copy of the original, retained in our file.
 AMERICAN ALLOY STEEL, INC.

TEST REPORT APPROVED DATE 8-26-98
 AMERICAN ALLOY STEEL BY [Signature]
 QUALITY ASSURANCE DEPT

APPROVED
 ITEM # 4
 QC [Signature]
 DATE 8-31-98
 JOB # 637

CUSTOMER : ENGINEERING SPECIALTIES INC
 CUST. P.O.#: 15933-637
 A.A.S. S/OH: 153432
 DATE MAILED: 08/31/1998
 DESC: 120" X 303" CUT SQ TO ROLL CYL'S
 7/8" X 96" OD X 120" LONG CYL
 ITEM 2 (1 PC)

ORIGINAL FILE COPY
 DO NOT REMOVE
 AMERICAN ALLOY STEEL
 PLATE # 15033 817

Gulf States Steel, Inc.

32-8381-01

DATE ORDERED: 12/03/97

ITEM: 11 742

QUANTITY: 1

DATE SHIPPED: 03/24/98

ROUTE/VEHICLE IDENTIFICATION: SOU 116117

1400436

ALB CITY

CERTIFICATE OF TESTS

ACCOUNT NUMBER: 74321906

PAGE NO: 1

INVOICE NUMBER: 742-03080

HEREBY CERTIFY THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND TESTED IN ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

C.T. BEARDEN, JR.
MGR. TECHNOLOGY AND
QUALITY - PLATE PRODUCTS

THYSSEN STL GROUP WEST
2700 POST OAK BLVD
STE 1100 ATRN DALE HARBOR
HOUSTON TX 77036

THYSSEN STEEL CO
EXPORT CONTAINER PTRA 2H 23
TRACK 435 PORT OF HOUSTON
HOUSTON TX

7/8 X 120 X 480

MATERIAL DESCRIPTION

PLATE CARBON ASTM A-316-98 GRD 70 ASKE SA-916 DTG 07/01/95 GRD 70 P09 DIN 50049
PAR 3.18 RELYED A RFG IN USA.

9750 X 120.0000 SHARPER EDGE X 980.0000 IN

HT 7456783 T P296601 1 PCS
HT 7256812 T P296601 1 PCS
HT 7462794 T P296701 1 PCS
HT 7462794 T P296702 1 PCS
HT 7462769 T P296801 1 PCS
HT 7462769 T P296802 1 PCS
HT 7456812 T P297001 1 PCS
HT 7456812 T P297002 1 PCS

CH C 28HX MN 53/1.20 P 63SMX S 63SMX SI 15/40 CU 40HX MI 40HX CR 30HX NO 12HX CE 62HX V 63HX
HL 020BIN

QUANTITY SHIPPED

114344

HEAT NUMBER	TEST OR PIECE IDENTITY NO.	YIELD KSI	TENSILE KSI	% ELONG 2"	% ELONG 8"	HARDNESS	BEND TEST	HEAT TREAT	TESTS RATIO	% RED AREA	BALD CONTING	DROF WEIGHT TEAR TESTS						
												DIR	TEMP °F	1	2	AVG		
7256812	P256601	49.0	78.0	26				AR	.62									
7456783	P296601	50.0	79.0	26				AR	.63									
7456812	P297001	51.0	79.0	22				AR	.64									
7456812	P297002	48.0	76.0	24				AR	.63									
7462769	P296801	50.0	81.0	27				AR	.61									
7462769	P296802	51.0	80.0	26				AR	.64									
7462794	P296701	47.0	80.0	26				AR	.56									
7462794	P296702	53.0	79.0	24				AR	.57									

HEAT NUMBER	TEST OR PIECE IDENTITY NO.	HEAT TREAT	SIZE	DIR	TEMP °F	ENERGY				% SHEAR				MILS LATERAL EXPANSION				
						1	2	3	AVG	1	2	3	AVG	1	2	3	AVG	

Certifies a true copy of the original, retained in our file.
AMERICAN ALLOY STEEL, INC.

TEST REPORT APPROVED DATE: 8-26-98
AMERICAN ALLOY STEEL BY: [Signature]
QUALITY ASSURANCE DEPT.

APPROVED
ITEM # 5
QC [Signature]
DATE 8-31-98
JOB # 637

CUSTOMER : ENGINEERING SPECIALTIES INC
CUST. P.O.#: 15933-637
A.A.S. S/O#: 153432
DATE MAILED: 08/31/1998
DESC: 120" X 303" CUT SA TO ROLL CYL'S
7/8" X 96" OD X 120" LONG CYL
ITEM 2 (1 PC)

ORIGINAL FILE COPY
AMERICAN REMOVAL
PLATE # 15033815

(TYPE B - IN) ORDANCE WITH ISO 10474 / EN10204 / DIN50049

SHIPPER'S NO.

P32033

MILL ORDR. ITEM NO.

DR59315 01

MATERIAL COND: AS-ROLLED

PRODUCT IDENTIFICATION

B03479

B03481

PRODUCT IDENTIFICATION	FLAT	BEND	GRAIN SIZE	MIN. COLLAPSE	OIR	TEST LOC.			TEMP.	SIZE	TEST CONFO.			FT-LBS			% SHEAR			ln (mm)
						1	2	3			1	2	3	1	2	3	1	2	3	
B03479	OK																			
B03481	OK																			
				END OF DATA																

LEGEND:	T - TRANSVERSE		B - BODY	W - WELD
	L - LONGITUDINAL			

LEGEND: L - LONGITUDINAL

T - TRANSVERSE

B - BODY

W - WELD

H - HAZ - HEAT AFFECTED ZONE

TESTING/INSPECTION INFORMATION

RESULTS/COMMENTS

TEST / INSPECTION	YES	RESULTS/COMMENTS
FULL LENGTH VISUAL	X	
FULL LENGTH EMI	X	
FULL LENGTH MPI		OD _____ OD/ID X _____ L X _____ L/T _____
FULL LENGTH UT		OD _____ OD/ID _____ L _____ L/T _____
END AREA INSPECTION (PLAIN END)	X	MPI X _____ UT _____ L/T _____
SPECIAL END AREA (SEA) INSP.		MPI _____ UT _____
FULL LENGTH DRIFT		DRIFT MANDREL SIZE: _____

ADDITIONAL NOTES/COMMENTS

ALL MELTING AND MANUFACTURING TOOK PLACE IN THE USA.
 MANUFACTURED IN AN ISO 9001 CERTIFIED FACILITY - CERTIFICATE #30727.
 NO REPAIRS BY WELDING. NO MERCURY OR MERCURY COMPOUNDS ARE ADDED TO THE STEEL AND ALL MERCURY BEARING EQUIPMENT IS PROTECTED BY A DOUBLE BOUNDARY OF CONTAINMENT.
 MATERIAL WAS HOT FINISHED - NO HEAT TREATMENT.
 ALSO MEETS THE REQUIREMENTS OF ASME SA53 1992 EDITION, & SA106 1992 EDITION GRADE B
 01 MILL
 SHOW HT#S ON T/R

END OF DATA

THIS IS TO CERTIFY THAT THE PRODUCT DESCRIBED HEREIN WAS MANUFACTURED, SAMPLED, TESTED AND/OR INSPECTED IN ACCORDANCE WITH THE SPECIFICATION AND FULFILLS THE REQUIREMENTS IN SUCH RESPECTS.

PREPARED BY THE OFFICE OF: J. N. ZGONG

DATE

08/14/95

COPIA FILED DOCUMENT

MILL TEST REPORTS FURNISHED

BY RED MAN PIPE & SUPPLY COMPANY

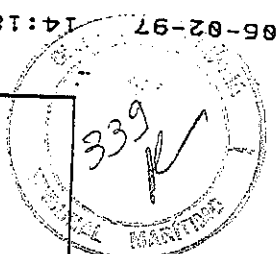
CUSTOMER: *Red Man Specialties*

YOUR P. O. *0827/2001/511*

TAGGING #1

OUR P. O. *64-02818-2*

66-02-97 14:18



FAIRFIELD	WORKS	ORDER NO.	13-7215	INVOICE	488-04347
P. O. BOX 599		MILL ORDER NO.	0569480		
FAIRFIELD, AL 35064		VEHICLE	49705		
		IDENTITY	4092449		04/29/91

VENNDOR

FAIRFIELD WORKS
P. O. BOX 599
FAIRFIELD, AL 35064

VINSON SUPPLY CO
HARVEY LA WISE
P O BOX 4860
TULSA OK 74101-4860

M
A
I
L
T

SPEC. PSOA PIPE CARBON STEEL RISE ART EL CA WATER WY PIPES 48 IN DIA

INSPECTION REPORT
 AS3-B9A ASTM A106-B9 GRADE B TRIPLE STENCIL BLK REG MILL COAT P
 BEV 30 DEG APPROVED

INST. # _____
VILL. # _____
CERTIFIED T/R
DATE 06-11-98
OC R

ITEM NO.	SIZE	WALL	MATERIAL DESCRIPTION	SPECIFICATION & GRADE	MATL.	HEAT/ LOT NO.	MIN. HYDRO	YIELD STR.	TENSILE STR.	% ELONG.	GAGE WIDTH	EVALUATION
108	3	.037	ALUMINUM ALLOY	A92024-T6	ALUMINUM	108-108	0.00	40,000	48,000	12%	0.125	PASS

	PST	PST	PST	PST	PST	CARTON	IN.	PKT
001	436000	0.4380	SMLS X23700	5440	45,900	72,600	X23700	OK
001	00000		X → X24351	5440	47,300	77,600	X24351	OK

[illegible]

CUSTOMER 2149. JOL
YOUR P. O. 3579850

TAGGING	
OUR P. O.	07-169816

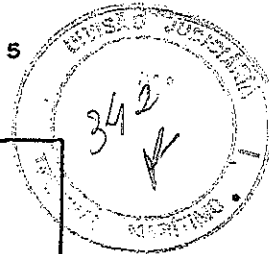
[illegible]

ITEM #	QTY	UNIT	PRICE	AMOUNT	TAX	TOTAL	DATE	TIME	LOCATION	REMARKS
1	100	010	007	22	00	22	01	01	01	01
2	100	010	007	22	00	22	01	01	01	01
3	100	010	007	22	00	22	01	01	01	01
4	95	012	009	22	00	22	01	01	01	01
5	94	011	009	23	00	23	01	01	01	01
6	94	010	009	23	00	23	01	01	01	01
END OF DATA										

[illegible]

341 ✓

DECIMAL POSITIONS FOR ELEMENTS ARE INDICATED BY THE LEFT MARGIN, VERTICAL DOTTED LINE OR DECIMAL POINT. PAGE



MILL ORDER/ITEM NO. DR96 (01)		SHIPPER'S NO. 948		TYPE B - W AGED ICE WITH ISO 15818-1		MATERIAL COND: AS ROLLED		Q.D.: 2.375 (60.325)		n (mm) WALL: 0.436 (11.074)		In (mm)	
PRODUCT IDENTIFICATION A25059 A40432		FLAT		BEND		GRAIN SIZE		MIN COLLAPSE		DR		TEST LOC.	
T - TRANSVERSE		B - BODY		W - WELD		HAZ - HEAT AFFECTED ZONE		TESTING / INSPECTION INFORMATION		RESULTS / COMMENTS			
FULL LENGTH VISUAL		X											
FULL LENGTH EMI													
FULL LENGTH MPI													
FULL LENGTH UT													
END AREA INSPECTION (PLAIN END)													
SPECIAL END AREA (SEA) INSP.													
FULL LENGTH DRIFT													
DRIFT MANDREL SIZE:													

ADDITIONAL NOTES/COMMENTS

ALL MELTING AND MANUFACTURING TOOK PLACE IN THE USA. NO REPAIRS BY WELDING. NO MERCURY OR MERCURY COMPOUNDS ARE ADDED TO THE STEEL AND ALL MERCURY BEARING EQUIPMENT IS PROTECTED BY A DOUBLE BOUNDARY OF CONTAINMENT.

MILL TEST REPORTS FURNISHED
BY RED MAN PIPE & SUPPLY COMPANY

CUSTOMER: Eng 13990584
YOUR P.O. 64326720
TAGGING
OUR P.O. 64326720

MILL TEST REPORT FURNISHED
BY RED MAN PIPE & SUPPLY COMPANY
EVALUATOR: JOSE CARLOS PIMENTE
DATE: 03/27/97
BY: JOSE CARLOS PIMENTE
DATE: 03/27/97

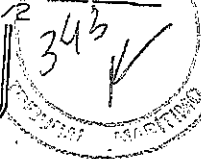
THIS IS TO CERTIFY THAT THE PRODUCT DESCRIBED HEREIN WAS MANUFACTURED, SAMPLED, TESTED AND/OR INSPECTED IN ACCORDANCE WITH THE SPECIFICATION AND FULFILLS THE REQUIREMENTS IN SUCH RESPECTS.

PREPARED BY THE OFFICE OF: F.J. MIKULSKI MGR. MET. &
Q.A. USS TUBULAR PRODUCTS

DATE: 03/31/97

COPIA FIEL DO DOCUMENTO ORIGINAL

Lebendorfer Straße 1
06420 Bebitz



Überprüft als Hersteller nach AD-Merkblatt WO/TRD 100 / TRR 100 und VdTUEV-W 350/3, -W 354, -W 399

Abnahmeprüfzeugnis / Test report / Certificat de réception

EN 10204-3.1 B / DIN 50049-3.1.B

Nr. 9814019

Besteller RED MAN PIPE AND SUPPLY 2333 CLINTON DRIVE
Customer
Client

Zeichen des Herstellerwerkes
Manufacturer's brand
Marque du producteur



Erzeugnis ANSI SLIP-ON FLANGES
Product 3'
Produit CLASS 150

RAISED FACE

Bestell-Nr. Order-No. No. de contrat
64-80602-304
Pos/It: 17

Werkstoff A/S105 ASTM A105M-96 FORGED
Material ASME PART: A SEC: II)*
Materiau

NACE MR0175-97

Stückzahl
Number 100
Nombre

Schmelze Nr./Nr. des Prüfloses
Heat No./Test No.
No. d coulee/No. d'essai 162AS

Anforderungen
Demands
Demandes

ASME B 16.5-96

Stempel des Abnehmers
Stamp of the testing engineer
Etampe du controleur



Schmelzenanalyse / Heat analysis / Analyse de coulée

%C	%Si	%Mn	%P	%S	%Cr	%Al	%Mo	%Ni	%Ti	%V	%N	%Nb	%Cu
.19	.20	.85	.011	.019	.07		.02	.08		.00		.002	.26

Erschmelzungsart Melting process Mode de fusion E

Prüfgergebnisse / Test results / Resultats d'essais

Nr. No. No.	Lage Orientation Position	Temper. Temp. Temp. (°C)	ReH / Rp Mpa (N/mm²)		Rm Mpa (N/mm²)	A [%] Lo = 4 d ₀	Z [%]	Av / K (J)	Temper. Temp. Temp. (°C)	Form Forme Form	Härte Hardness Dureté Brinell
			0.2%	1.0%							
Max.	TANG.	20	250		485 630	22	30	/22(Singl.)	20		137 187
1	TANG.	20	296		520	36	57	48 52 42	20	Charpy-V	150

APPROVED

ITEM #. 9
QC *RS*
DATE 9-14-98
JOB # 637

)*: Edition 95 Addenda 97 CEV=0,37 $CEV=C+Mn/6+(V+Mo+Cr)/5+(Ni+Cu)/15$

MILL TEST REPORTS FURNISHED
BY RED MAN PIPE & SUPPLY COMPANY -

CUSTOMER *Eng. Specialist*
YOUR P. O. *10056637*
TAGGING *#1*
OUR P. O. *64-466970*

REC-9-14-98
JOB-637

BEBITZ, 09.07.98 TT

TIEDKE *Tiedke* WORKS INSPECTOR

Besichtigung und Ausmessung: o. B.
Results of inspection and measurement w. o.

Die gestellten Anforderungen sind erfüllt.
The a. m. results meet requirements.



NATIONAL FLANGE & FITTING CO.

4420 CREEKMONT ST.
P. O. BOX 924149
HOUSTON, TEXAS 77292-4149
(713) 688-2515
FAX (713) 688-0205



OLD TO NEW ORLEANS WINDUSTRIAL
110 WEST AIRLINE HWY
SUITE C
KENNER LA 70062

MILL TEST REPORT

INVOICE
NUMBER 81462200
DATE 09/10/98

CUSTOMER'S ORDER NO: 23899A2

QTY	DESCRIPTION	MATERIAL	H CODE
10	24" 150# WN RF S/40 ITEM# 10	SA-105-95ED	EWG-98
28	3" 150# WN RF S/160 ITEM# 11	SA-105-92A	RJW-96
3	8" 150# WN RF XH ITEM# 12	SA-105-92A	HYA-96
2	4" 150# WN RF S/120 ITEM# 13	SA-105-95ED	GYH-98
3	1-1/2" 150# WN RF XH ITEM# 14	SA-105-92A	HGP-96
5	10" 150# WN RF XH ITEM# 15	SA-105-95ED	HTG-98
1	10" 150# WN RF S/80 ITEM# 16	SA-105-95ED	HZG-98
2	2" 150# WN RF XXH ITEM# 17	SA-105-95ED	GET-97

H CODE	CAR	MAN	PHOS	SUL	NIC	CHR	MOL	SIL	CU	VA	NB
EWG-98	.166	1.200	.014	.003	.110	.140	.020	.190	.190	.001	.001
I: 75,800 YLD:	46,500	EL: 29.50	RED: 56.30	CVN@						BHN: 154/155	
RJW-96	.220	.750	.020	.022	.060	.050	.006	.160	.090	.003	.002
I: 73,386 YLD:	44,670	EL: 32.00	RED: 59.80	CVN@						BHN: 163	
HYA-96	.190	.840	.018	.029	.130	.070	.020	.180	.360	.000	.000
I: 74,600 YLD:	43,700	EL: 30.70	RED: 57.60	CVN@						BHN: 152	
GYH-98	.180	.800	.019	.017	.160	.140	.040	.190	.280	.000	.000
I: 75,300 YLD:	41,400	EL: 31.50	RED: 62.40	CVN@						BHN: 152	
HGP-96	.200	1.040	.011	.035	.110	.090	.044	.250	.270	.002	.000
I: 83,800 YLD:	52,500	EL: 22.00	RED: 55.20	CVN@						BHN: 152/156	
HTG-98	.210	.980	.010	.022	.060	.100	.010	.270	.170	.003	.001
I: 73,096 YLD:	43,654	EL: 39.00	RED: 71.00	CVN@						BHN: 152/156	
HZG-98	.200	.830	.014	.003	.120	.080	.040	.260	.360	.000	.000
I: 74,600 YLD:	48,200	EL: 31.80	RED: 55.60	CVN@						BHN: 152	
GET-97	.180	.890	.006	.017	.090	.060	.025	.260	.240	.003	.000
I: 75,347 YLD:	57,382	EL: 37.70	RED: 62.80	CVN@						BHN: 159/159	

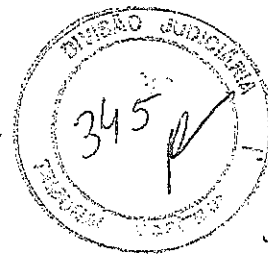
REC-9-15-98
PO# 16027 - JOB - 637

APPROVED
ITEM # 10, 11, 12, 13, 14, 15, 16, 17
QC AK
DATE 9-15-98
JOB # 637

WE CERTIFY THAT THE MATERIAL FURNISHED ON THIS ORDER COMPLIES IN ALL
RESPECTS WITH THE SPECIFICATIONS INDICATED IN DESCRIPTION. WE FURTHER CERTIFY
THAT OUR PRODUCT WAS MANUFACTURED IN THE UNITED STATES.

NATIONAL FLANGE & FITTING COMPANY

BY: Mary Kew



CUSTOMER P/O NO.	REFERENCE	CUSTOMER NO.	INVOICE NO.	INVOICE DATE	DATE
1930301N3	155492	538069	875196	3/14/96	3/1

SOLD TO:

NEW ORLEANS WINDUSTRIAL
 110 WEST AIRLINE HWY #C
 KENNER LA 70062

SHIP TO:

NEW ORLEANS WINDUSTRIAL
 110 W. AIRLINE HWY - SUITE
 KENNER LA 70062

TR: 9295

CERTIFIED TEST REPORT

QUANTITY	DESCRIPTION/SPECIFICATION	HEAT CODE
76	3 150 RF WN XH	
77	A105 27 / 10835	
78	4 150 RF WN XH	1095C
79	A105 01 / FXO	
	6 150 RF WN XH	1295LM
	A105 04 / 8496H1203	
	8 150 RF WN XH	1195AE
	A105 32 / 68476	0895AS
	A105-94 / SA105	
	AS FORGED	
	A105-94 / SA105	
	AS FORGED	
	A105-94 / SA105	
	AS FORGED	
	A105-94 / SA105	
	AS FORGED	

HEAT CODE	C	Mn	P	S	Si	Cr	Mo	Cu	Ni	V	Nb	C.E
95CS	.20	.92	.015	.025	.31	.12	.02	.19	.08	.03	.01	.40
1295LM	.17	1.04	.011	.018	.23	.09	.02	.31	.09	.02	.01	.40
1195AE	.23	.98	.019	.028	.19	.06	.02	.27	.10	.00	.00	.43
0895AS	.20	.87	.007	.009	.22	.08	.03	.20	.08	.00	.00	.39

HEAT CODE	TENSILE * KSI	YIELD KSI	% Elong. IN 2"	Hardness HB	Size MM x 10 mm	Temp. °F	FOOT POUNDS	LATERAL EXPANSION	% SHEAR
095CS	82.2	57.3	26.0	147					
295LM	81.4	53.8	24.0	170					
195AE	81.8	46.4	27.0	144					
895AS	75.9	45.2	32.0	153					

APPROVED

ITEM # 18

QC AS

DATE 9-15-98

JOB # 637

JOB-637

= LONGITUDINAL, T = TRANSVERSE, R = ROUND, S = STRIP

HACKNEY is a domestic manufacturer, and these items conform to the following specifications as they apply:
 FITTINGS: ASTM A234 WPB, ASME SA234 WPB, ANSI B16.9, B16.28, AND NACE MR01-75.
 FLANGES: ASTM A105 AND A516-70, ASME SA105, ANSI B16.5, AND NACE MR01-75.
 Items were heat treated as required by the applicable specification. They also conform to the requirements of Parts 192 and 195, Title 49, Code of Federal Regulations.
 All welded fittings are welded by certified welders to ASME Section X, and 100% radiographically examined per Article 2, ASME Section V. All are in accordance with the requirements of Paragraph UG-11, Section VII, Division 1 of the ASME code. Hackney weld caps meet ASME Division 1, Section VIII Press. Code Requirements, Paragraph UCS-79d. We certify that these flanges and fittings capable of passing a hydrostatic test compatible with their rating, and above figures are correct as contained in the records of the Company. Hardness testing and stamping are per NACE MR01-75.

ISI [Signature]

MATERIAL TEST REPORT

Trinity Industries Inc. Fitting and Flange Group

Hackney * Ladish * Flo-Bend

P. O. Box 568887 - 2525 Stemmons Freeway - Dallas, TX 75356-8887

Phone: (214) 589-8177

Fax: (214) 589-8892

Order Number: 238212A2

Date: 2/19/98

APPROVED

Sold To: NEW ORLEANS WINDUSTRIAL
110 WEST AIRLINE HWY #C
KENNER LA 70062

Ship To:

ITEM # 19
QC AA
DATE 9-15-98
JOB # 637

Heat Code	Qty	Description / Specifications
AB98AA	8 150 RF WN STD	A/SA 105- 96 , NACE MR0175
	A105/04/14558	AS FORGED
AM97BK	2 150 RF WN XH	A/SA 105- 96 , NACE MR0175
	A105/27/24148	AS FORGED
AM97BB	3 150 RF WN XH	A/SA 105- 96 , NACE MR0175
	A105/27/24319	AS FORGED
0597CC	10 150 RF WN XH	A/SA 105- 96 , NACE MR0175
	A105/31/697984	AS FORGED

Chemical Analysis

Heat Code	C	Mn	P	S	Si	Cr	Mo	Cu	Ni
AB98AA	.200	.850	.005	.026	.210	.060	.025	.180	.07
AM97BK	.190	.860	.008	.021	.250	.098	.016	.120	.06
AM97BB	.230	.890	.010	.024	.280	.097	.016	.170	.06
0597CC	.194	.940	.009	.016	.250	.030	.014	.100	.05

Chemical Analysis (cont.)

Heat Code	V	Nb	B	Al	N	Ti	SN	CE
AB98AA	.000	.000						.37
AM97BK	.019	.011						.37
AM97BB	.020	.012						.41
0597CC	.002	.000						.36

Physical Properties

Heat Code	Tensile* KSI	Yield KSI	% Elong. in 2 in	% R.A.	Hardness H
AB98AA	74.6	43.4	11.0	54	141
AM97BK	85.3	66.8	28.0	48	169
AM97BB	84.0	55.0	26.0	54	172
0597CC	75.0	39.9	33.0	63	137

Charpy Results

Heat Code	Size mm x 10 mm	Temp (F)	Foot Lbs.	Lat. Expansion	% Shear
AB98AA					
AM97BK					
AM97BB					
0597CC					

* L = Longitudinal, T = Transverse, R = Round, S = Strip

We certify that the material herein described has been manufactured, heat treated, sampled, tested, and inspected in accordance with the above standards and specifications and satisfies those requirements. We certify these flanges and fittings capable of passing a hydrostatic test compatible with their rating. The above figures are correct as contained in the records of the Company. This information has been electronically transmitted to our customer.

S/ Glinda LaFleur

SEP.14.1998

1:06PM

REDMAN PIPE & SUPPLY CO. CARLOS DOMINGUEZ GUSMÃO

DIVISÃO DE SERVIÇOS CARTORIAIS

NO.803

P.2/2

Page 1 of 1

CERTIFIED MATERIAL TEST REPORT

Trinity Industries Inc. Fitting and Flange Group

Hackney * Ladish * Flo-Bend

P. O. Box 568887 - 2525 Stemmons Freeway - Dallas, TX 75356-8887

Phone: (214)589 8177 Fax: (214)589 8892

Order Number:

MILL TEST REPORTS FURNISHED
Date: 9/14/98 BY RED MAN PIPE & SUPPLY COMPANYSold To: RED MAN PIPE & SUPPLY CO
P.O. BOX 35632
TULSA OK 741530632Ship To: CUSTOMER Eng. Specialties
YOUR P.O. 1605637
TAGGING # 2
OUR P.O. 64-466970

EM#	Heat Code	Qty	Description / Specifications
20	AL97BD	3" 150# RF BLD FLG	A/SA 105- 96 , NACE MR0175
		AL05/103/65048	AS FORGED
21	0397BE	3" 150# RF BLD FLG	A/SA 105- 95B , NACE MR0175
		AL05 4/10846	AS FORGED

APPROVED

JOB-637 9-15-98

ITEM #
QC AK
DATE 9-15-98

Heat Code		Chemical Analysis							
C	P	S	Si	Cr	Mo	Cu	Ni		
AL97BD	.130	.930	.006	.014	.090	.070	.030	.050	.070
0397BE	.190	.890	.007	.009	.240	.040	.026	.220	.080

Heat Code		Chemical Analysis (cont.)						
V	Nb	B	Al	N	Ti	SN	CE	
AL97BD	.001							.309
0397BE	.001	.003						.371

APPROVED

ITEM # 20,21QC AKDATE 9-15-98

Heat Code		Physical Properties			
Tensile* KSI	Yield KSI	% Elong. in 2 in	% R.A.	Hardness HB	
AL97BD	75.0	42.0	32.0	64	144
0397BE	76.1	45.3	32.0	64.0	147

Heat Code		Charpy Results			
Size mm x 10 mm	Temp (F)	Foot Lbs.	Lat. Expansion	% Shear	
AL97BD					
0397BE					

REC-9-15-98
PO# 16056 JOB-637

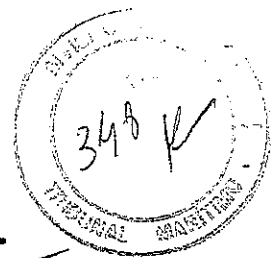
* L = Longitudinal, T = Transverse, R = Round, S = Strip

We certify that the material herein described has been manufactured, heat treated, sampled, tested, and inspected in accordance with the above standards and specifications and satisfies those requirements. We certify these flanges and fittings capable of passing a hydrostatic test compatible with their rating. The above figures are correct as contained in the records of the Company. This information has been electronically transmitted to our customer.

/S/ Glinda LaFleur

TRINITY INDUSTRIES, INC.

DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS



APPROVED

ITEM # 22
QC B
DATE 9-16-98
JOB # 637

ENGINEERING SPECIALTIES INC
PO BOX 2960
COVINGTON LA 70434-2960

ATTENTION : PAUL LEMONS

JOB # 637

REFERENCE : CUSTOMER P/O 16008637
TRINITY S/O 3-14636

, TAG #

GENTLEMEN :

ATTACHED ARE COPIES OF MILL TEST REPORTS FOR THE FOLLOWING MATERIAL PROVIDED ON YOUR REFERENCED PURCHASE ORDER.

HEADS FROM STOCK

1-SA516-70 ELLIPTICAL HEAD 96.0000 OD 0.6250 NOM
WITH 2.0000 SF.
.5000 MIN THICKNESS

CODE	QTY	Thickness	Producer	Melt	Slab	Grade
U2BV	1.	.6250	UNITED STATE	W24784	56-1	SA516-70

TRINITY INDUSTRIES, INC. certifies that heads manufactured from material represented by this report were normalized at 1650F for 30 minutes per inch of thickness, 30 minutes minimum.

THE ITEMS LISTED ABOVE WERE FORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS OF THE ASME BOILER AND PRESSURE VESSEL CODE SECTION VIII, DIV. 1. COLD FORMED HEADS COMPLY WITH PARAGRAPH UCS-79(D). ALL HEADS COMPLY WITH UG-81.

ATTACHED MILL TEST REPORTS ARE IN COMPLIANCE TO ASME CODE SECTION II STANDARD SPECIFICATION SA20/SA20M - 89A PARA. 7.1.1

IF YOU HAVE ANY FURTHER QUESTIONS, PLEASE CONTACT ME IN NAVASOTA, TEXAS AT 1-800-392-3594.

VERY TRULY YOURS,

GWEN PULLIN
TRINITY INDUSTRIES, INC.
HEAD DIVISION

MILL TEST REPORTS TO GO WITH SHIPMENT.
/ 8/98



U.S. STEEL GROUP
Division of USX Corporation

U.S. STEEL GROUP

Metallurgical
Test Report

USS, USX, USK
are trademarks of USX Corp.

USX™

REQ. JOB, CONTRACT NO.

P.O. DATE

PURCHASE ORDER NO.

MILL ORDER NO.

INVOICE NO.

BEING DULY SWORN ACCORDING TO
LAW, DEPOSES AND SAYS PRODUCT
DESCRIBED HEREIN WAS MFGD.,
SAMPLED, TESTED AND/OR INSPD.
IN ACCORDANCE WITH THE SPEC-
IFICATION AND FILLS RE-
QUIREMENTS IN SUCH RESPECTS.

H20725

UB20961

154-365087

PREPARED BY THE OFFICE OF:
S.C. PAPE, GEN. MGR., Q.A.

SHIPPER'S NO.

05 25 96

UB20961

154-365087

DATE

H08166

05 25 96

UB20961

154-365087

BY: _____

IDENTIFY OTTX090064

UB20961

154-365087

BY: _____

IDENTIFY OTTX090064

UB20961

154-365087

BY: _____

H08166

05 25 96

UB20961

154-365087

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H08166

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BY: _____

H08166

05 25 96

UB20961

154-365087

BY: _____

SEP. 15. 1998 11:31AM
Manufacturing Co., L.P.
201 Dulce Road
Houston, TX 77013

REDMAN PIPE & SUPPLY 203 5043475312

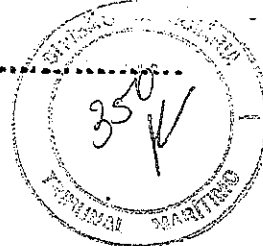
NO. 840 P. 1/1
07-26 03:45PM 0140 P. 01/02
Order Number: 0002716
PO Number:
Order Date: 07/28/98

Redman

MATERIAL TEST REPORT

S REDMAN PIPE & SUPPLY
N ACCOUNTS PAYABLE #3382
L P O BOX 35632
D TULSA OK 74153

S REDMAN PIPE & SUPPLY
N ACCOUNTS PAYABLE 00382
L P O BOX 35632
P TULSA OK 74153



ITEMS

Qty	Description	Mill Spec	Heat Code	Mill Heat Number
1	4" 300 RF WN STD	SA105-97	KK2	87652
1	4" 150 RF WN STD	SA105-97	HT9	88163
1	3" 150 RF BLIND	SA105-97	LS9	82803
1	2" 300 RF BLIND	SA105-97	KK2	82866
1	1" 150 RF THD	SA105-97	177	77112
1	4" 300 RF WN WN	SA105-97	H21	71023
1	1-1/2" 600 RF BW XH	SA105-97	DR9	83815

CHEMICAL PROPERTIES

Chemical	C	Si	Mn	P	S	Cr	Al	Co	Ni	Mo	V	Ca	CE
12	0.180	0.220	1.150	0.008	0.006	0.050	0.027	0.230	0.090	0.020	0.003	0.001	0.000
1	0.180	0.190	1.150	0.008	0.012	0.110	0.032	0.140	0.100	0.020	0.003	0.002	0.000
19	0.170	0.200	1.120	0.017	0.007	0.110	0.029	0.090	0.020	0.000	0.019	0.000	0.000
18	0.170	0.210	1.150	0.017	0.009	0.110	0.029	0.010	0.020	0.000	0.020	0.000	0.000
7	0.180	0.200	1.100	0.009	0.013	0.130	0.035	0.250	0.160	0.030	0.004	0.001	0.000
1	0.190	0.230	1.160	0.005	0.003	0.080	0.025	0.090	0.000	0.010	0.003	0.001	0.000
9	0.170	0.220	1.150	0.010	0.009	0.070	0.032	0.230	0.090	0.020	0.004	0.004	0.000

PHYSICAL PROPERTIES

Chemical	Tensile	Yield	Elong	HA	BHN	Charpy	Fl-Lbs	Lat Expan	Shr Fract	Test Temp
77865	46870	31.40	63.30	148-154						
74240	47125	34.00	60.30	150-154						
78325	45530	40.00	64.90	145-162						
70470	46110	31.60	68.30	141-148						
77140	43445	26.70	63.40	154-164						
75400	45010	34.00	69.00	142-154						
76595	45690	30.40	68.10	154-164						

NOTES

Note

JOB-637

ITEM # 23
QC AS
DATE 9-16-98
JOB # 637

JOSE CARLOS MARTINEZ GUSMAO
DIRECTOR
APPROVED: SERVICIOS CARTORIAS

MILL TEST REPORTS FURNISHED
BY RED MAN PIPE & SUPPLY COMPANY
CUSTOMER: *Eng. Application*
YOUR P. O. *10050637*
TAGGING: *#2*
OUR P. O. *04-460970*

Continued On The Next Page

Verify our flanges are capable of passing a hydrostatic test
suitable with their rating and all test results and process
variation contained herein are correct and true as contained in
any records. All Flanges meet NACE MR0-175 - Latest Revision

Redman
Manufacturing Co., L.P.

MATERIAL TEST REPORT

INSPECTION CERTIFICATE EN 10204 3.1.B

ISO 9001

R66: 26-98-049086 1/2
N°V&M: JD788502

APPROVED

ITEM # 24

QC

DATE

JOB #

Purchaser: MC JUNKIN CORPORATION

Order n°: VMH-1213 PO COT1 122497

SEAMLESS STEEL PIPE HOT FINISHED (KILLED STEEL)

HOT FINISHED NORMALIZED CONDITION 950°C (1742°F) min oil-slr

ENDS BEVELLED 30° ANTI-RUST COATING DRY VARNISH

Specification: API 5L (41 ER) + ASTM A 106 (99) - GRADE B/X42 + ASTM A 53 (96) + ASME SA 53 (95) + ASME SA 106 (95) - NACE MR 01.75 (97)

Die stamping: FRANCE

Stencils marking: V & M FRANCE SL 0061 API MONOGRAM DATE OF MARKING A53/SA53 A106/SA106 DIAMETER B-X42 S HYDROSTATIC TEST HT HEAT NUMBER SCH 160 SIZE

PURCHASE ORDER LENGTH

Marking on label: PURCHASE ORDER NEW ORLEANS MADE IN FRANCE BUNDLE NR ONE AND FOLLOWING ONES WEIGHT IN LBS

** NO REPAIR BY WELDING HAS BEEN CARRIED OUT AND ASME SA 53/B **

QUANTITY PER ITEM

V/R	Q/R	size	single length	quantity	length	weight
02	02	NO 3" X SCH 160 65.90 X 11.13 MM	DRL 36/42 FT 10.970 / 12.800 M	42	1629.10	23124

LADLE ANALYSIS

CEC: C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15

Process	heat	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	V	CEC
MIN.		0.10	0.10	0.29								
MAX.		0.20	0.70	0.030	0.40	0.15	0.40	0.15	0.40	0.40	0.08	0.35
B	84216	%	%	%	%	%	%	%	%	%	%	%
		0.17	0.18	0.51	0.009	0.006	0.12	0.05	0.10	0.14	0.00	0.30

PRODUCT ANALYSIS

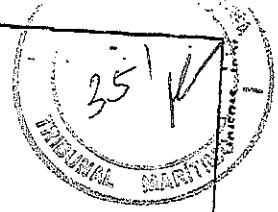
CEC: C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15

test	heat	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	V	CEC
MIN.		0.10	0.10	0.29								
MAX.		0.20	0.70	0.030	0.40	0.15	0.40	0.15	0.40	0.40	0.08	0.35
62BF1	84216	%	%	%	%	%	%	%	%	%	%	%
		0.17	0.19	0.51	0.009	0.006	0.13	0.05	0.10	0.13	0.00	0.31
62BF2	84216	%	%	%	%	%	%	%	%	%	%	%
		0.17	0.18	0.49	0.007	0.005	0.12	0.05	0.10	0.13	0.00	0.30

EST Job 637 nozzle pipe

JOSÉ CARLOS FIMINTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

CÓPIA FIEL DO DOCUMENTO ORIGINAL



MATERIAL TEST REPORT

ISO 9001

Ref: 26-98-049086 2/2
N°V&M: JD788502

INSPECTION CERTIFICATE EN 10204 3.1.B

VALLOUREC & MANNESMANN TUBES

V&M FRANCE
Tubaria de S. Paulorua da Galbota Zl n° 4 - BP 2
59080 Saint-Saulve FRANCE
tel.: 03.27.23.13.01
fax: 03.27.23.13.63RECTANGULAR SPECIMEN LONGITUDINAL TENSILE TEST AT ROOM TEMPERATURE
***** SPECIMEN PICKED ON PIPES IN MANUFACTURING LENGTH *****

test	heat	width	thick.	secc.	Y.S.	T.S.	elong. 2"
MIN.							
MAX.							
62BF01	784216	19.10	11.00	mm2	42000	60000	30
					psi	psi	%
					45845	68333	38

***** ROCKWELL C HARDNESS < OR = 22 GUARANTEED *****

NON DESTRUCTIVE TESTS

test	test rate	pressure	hold time	result
APPEARANCE & DIMENSIONS	100% LOT	psi	sec	
HYDROSTATIC TEST	100% LOT			
TECHNOLOGICAL TESTS		3003		OK
				3 OK

test	result
FLATTENING TEST	OK

Original computer copy - authenticity is guaranteed by the V&M logo watermarked.
All the pipetubes conform to the requirements of the order and standard regarding the grade, quality and heat treatment throughout their whole length.

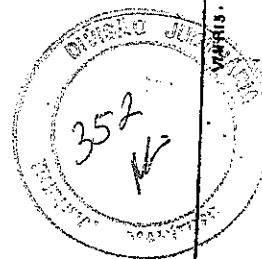
18/02/98

The authorized expert in Quality Control Section
Mr OGBURY

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR

DIVISÃO DE SERVIÇOS CARTORIAIS



EST Job 637 nozzle pipe

V&M 15. 03.97



**vallourec
industries**

Tuberie de St Saulve

rue du Galibot ZI n°4 - BP 2
59880 Saint-Saulve FRANCE
tél: 27.23.13.01
tlx: VLR SOLV 110887F
fax: 27.23.15.63

MATERIAL TEST REPORT

CERTIFICATE 1992.438



Ref: 26-94-145067 1 / 1
N°: GU7686/09

Purchaser: **MC JUNKIN CORPORATION**

Order n°: **VLR H15283/71-07646 DU 03.10.94**

SEAMLESS STEEL PIPE, HOT FINISHED (KILLED STEEL)
AS ROLLED

ENDS BEVELLED 30° ANTI-RUST COATING DRY VARNISH

Specification: GRADE B API 5L FORTIETH ISSUE ASTM A 53 (93A) ASME SA 106 (92) + NACE MR 01.75 (93) + PRODUCT SHEET LP 89.001 REV. 1
Stencil marking VALLOUREC SV 5L 0061 API MONOGRAM DATE OF MARKING A53/SA53 A106/SA106 DIAMETER 19.00 B S LENGTH IN FOOT DIMENSION HEAT NUMBER CUS
ER'S REFERENCE

Die stamping FRANCE

Marking on labels CUSTOMER'S REFERENCE NEW ORLEANS MADE IN FRANCE BUNDLE NUMBER ONE AND FOLLOWING ONES WEIGHT IN LBS

APPROVED

ITEM # 26

QC 12

DATE 2-6-94

JOB # 637

NO REPAIR BY WELDING HAS BEEN CARRIED OUT

QUANTITY PER ITEM

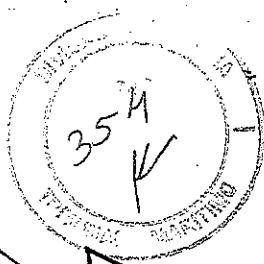
Y/R	O/R	size	single length	quantity	length ft	weight lb
09	09	4 1/2" X 0.438" (4.500") 114.30 X 11.13 MM	RL 36/42 FT 10.97/12.80 M	24	969.44	18278

LADLE ANALYSIS

Process	heat	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	V	CEC
MIN.		0.22	0.10	0.29								
MAX.			%	%	%	%	%	%	%	%	%	%
E	59229	0.11	0.22	0.55	0.019	0.005	0.11	0.04	0.10	0.17	0.00	0.25
E	59922	0.11	0.22	0.48	0.014	0.007	0.10	0.05	0.09	0.19	0.00	0.24

APPROVED
ITEM # 26
QC 12
DATE 2-6-94
JOB # 637

REC-12-19-94
JOB-637



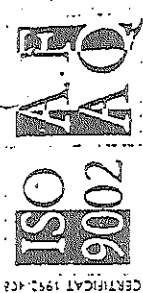


**vallourec
industries**

Tuberie de St Saulve

rue du Galibot ZI n°4 - BP 2
59880 Saint-Saulve FRANCE
tel: 27.23.13.01
tlx: VLR SOLV 110887F
fax: 27.23.15.63

MATERIAL TEST REPORT



Réf: 26-94-145067 21
N° : GU7686/09

PRODUCT ANALYSIS

test	heat	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	V	CEC
MIN.		0.22	0.10	0.29								
MAX.		0.22	1.06	0.035	0.035	0.40	0.15	0.40	0.40	0.08	0.08	0.40
		%	%	%	%	%	%	%	%	%	%	%
545N	59229	0.15	0.22	0.55	0.019	0.006	0.11	0.04	0.11	0.17	0.00	0.29
546N	59229	0.14	0.22	0.55	0.020	0.006	0.11	0.04	0.11	0.17	0.00	0.28
547N	59922	0.14	0.22	0.51	0.014	0.008	0.11	0.05	0.10	0.20	0.00	0.28
548N	59922	0.12	0.20	0.44	0.010	0.006	0.10	0.04	0.09	0.18	0.00	0.24
		%	%	%	%	%	%	%	%	%	%	%

RECTANGULAR SPECIMEN LONGITUDINAL TENSILE TEST AT ROOM TEMPERATURE

test	heat	width	thick.	sect.	Y.S.	T.S.	elong. 2"
MIN.					35000	60000	30
MAX.							
		mm	mm	mm ²	psi	psi	%
545N	59229	19.50	10.80	211.86	43089	65721	38
547N	59922	19.45	10.80	211.31	42944	63835	38

NON DESTRUCTIVE TESTS

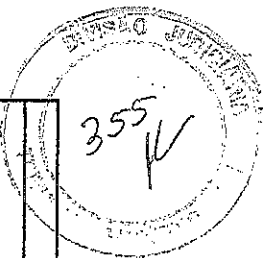
test	test rate	specification	result
APPEARANCE & DIMENSIONS	100% LOT		OK
HYDROSTATIC TEST	100% LOT	2800 PSI / S"	OK

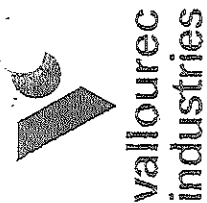
TECHNOLOGICAL TESTS

test	result
FLATTENING TEST	OK

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JOSÉ CARLOS FERNANDES GARMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

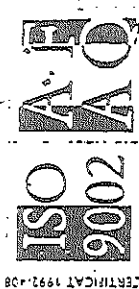




Tuberie de St Saulve

rue du Galibot ZI n°4 - BP 2
59880 Saint-Saulve FRANCE
tel: 27.23.13.01
fax: VLR SOLV 110887F
fax: 27.23.15.63

MATERIAL TEST REPORT



Réf: 26-94-145067

N°: GU7686/09

25/05/94

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In view of results of inspection tests, we certify that the products delivered comply with the specifications of the order.

The authorized expert in Quality Control Section

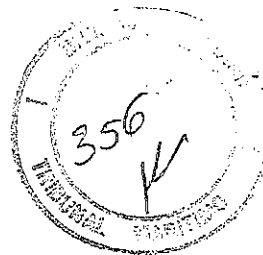
M. SKORUPKA

Don Ghy

VALLUREC
INDUSTRIES
MINERIE DE ST-SAULVE
SERVICE QUALITÉ

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JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



DATE: 09/29/97
TIME: 15:02:24 USXTM

132

TUMULAN PROPHETES TRUFED TEST REPO

1

U.S. STEEL GROUP
A Division of USX Corporation

THE UNIVERSITY OF CHICAGO PRESS

100

॥ श्रीगणेशाय नमः ॥

Q&A ORDER NUMBER 010490 17		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO ADDRESS		SHIP TO 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PIFIED TEST REPORT

TO
JINKIN CORP
LEBLANC ROAD
LLEN

LA70767

FACTURER
CORPORATION
DIVISION
BOX 3180
BURGH

PA152194776

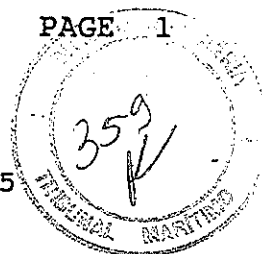
JOSÉ CARLOS FIMMEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

SHIP FROM
USS/KOBE STEEL CO
1807 EAST 28TH ST
LORAIN

OH44055

MANUFACTURING PLANT
USS/KOBE STEEL CO
1807 EAST 28TH ST
LORAIN

OH44055



~~SECRET~~ B26037

JINKIN PO NUMBER S071071398

PART # 0292-2347 LINE # 9

PPED

03/27/96

FOR ORDER NUMBER

DR7030509

.* SPECIFICATIONS *.*

1 CARBON SMLS STD PIPE API
B D GRADE X42 ASTM A53-
ICTE ASME SA53- 1992 ED
92 EDITION 1994 ADDENDU

5L- 41ST EDITION DTD 4/1/95 GR
93A ASTM A106- 94 GRADE B QUAD
ITION 1994 ADDENDUM ASME SA106
M GRADE B BLK REG MILL COAT PE

.*.*.* NOTES *.*.*.*

AS TO CERTIFY THAT THE PRODUCT DESCRIBED HEREIN WAS
MANUFACTURED, SAMPLED, TESTED AND/OR INSPECTED IN ACCORDANCE
THE SPECIFICATION AND FULFILLS THE REQUIREMENTS IN
RESPECTS. PREPARED BY THE OFFICE OF: D.S. DABKOWSKI
MET. & Q.A. USS TUBULAR PRODUCTS

.*.* DESCRIPTION *.*.*.*

00-INCH OD X 0.4380-INCH WALL GRADE B SML

CHEMISTRY

LOCAL ANALYSIS-PRODUCT

	CR	CU	MN	MO	NI	P
	0.05	0.02	0.90	0.02	0.02	0.007
	SI	V				
4	0.24	0.002				

CE = 0.45 ✓

CHEMISTRY

ANALYSIS-HEAT

	CR	CU	MN	MO	NI	P
	0.06	0.02	0.88	0.02	0.02	0.007
	SI	V				
4	0.24	0.001				

PHYSICAL
YIELD
TENSILE
ELONGATION

45800
78900
37
OK
86
3000

ILE STRENGTH
MATE STRENGTH
ENT-ELONGATION
NESS
WELL HARDNESS
OTEST

HYDRO PRESSURE

ITY ASSURANCE CONTACT

D.S. DABKOWSKI
USX CORPORATION

INFORMATION WAS RECEIVED ELECTRONICALLY FROM THE MANUFACTURER IDENTIFIED

END OF REPORT *.*

APPROVED
ITEM # 28
QC
DATE 9-16-96
JOB # 637

APPROVED
ITEM #
QC
DATE
JOB #

DATE PUF ORDER NO.

FAIRFIELD WORKS
P. O. BOX 599
FAIRFIELD, AL 35064

THIS IS TO
PRODUCT DESCRIBED HEREIN
MFGD., SAMPLED, TESTED,
OR INSPD. IN ACCORDANCE
THE SPECIFICATION AND FILL
REQUIREMENTS IN ST
RESPECTS.

INVOICE NO.
P 49705
VEHICLE
IDENTITY NU99419

ORDER NO. 43-7215
MILL ORDER NO. DS69680
488-04347
04/29/91

VINSON SUPPLY CO
4400 FIRST AVE.
HARVEY LA 70058

PREPARED BY THE OFFICE
F.W. MOORE

DATE 05/15/91

DATE 05/15/91

DATE 05/15/91

DATE 05/15/91

DATE 05/15/91

DATE 05/15/91

DATE 05/15/91

DATE 05/15/91

DATE 05/15/91

DATE 05/15/91

DATE 05/15/91

DATE 05/15/91

DATE 05/15/91

DATE 05/15/91

PAGE 2

364
W

0.19	0.91	0.014	0.007	0.19	0.2	0.34
CR	MO	V	AL	B	TI	SN
0.17	0.07	0.004	0.036	0.0004	0.003	0.01
CB	CA	N				
0.003	0.0016	0.0075				
CARBON EQUIVALENT						
0.43						

TRANSVERSE CROSS SECTION #		PHYSICAL	
		WIDTH	1.519
		THICKNESS	0.538
AREA OF SAMPLE			0.8172
ACTUAL LOAD (KIPS) #	1	PHYSICAL	
		YIELD	43.1
		TENSILE	63.2
STRENGTH (KSI) #	1	PHYSICAL	
		YIELD	52.7
		TENSILE	77.3
ELONGATION #	1	PHYSICAL	
GAGE LENGTH		ELONGATION	30.1
			2
HYDROSTATIC TEST		PHYSICAL	
		HYDRO PRESSURE	3000
HARDNESS RB AVG 77		PHYSICAL	
			OK
FLATTENING TEST		PHYSICAL	
			OK

QUALITY COORDINATOR JOSEPH E. DOLAK
NORTH STAR STEEL

THIS INFORMATION WAS RECEIVED ELECTRONICALLY FROM THE MANUFACTURER IDENTIFIED ABOVE.

END OF REPORT *-*

ESI Job 637 nozzle pipe

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

266

IN NUMBER 89214	CUSTOMER ORDER NUMBER 10170-00	DATE 09/05/97	OFC 23	COM 00	DI W 16	NET SLS 20	GR SLS 01	ACCOUNT NUMBER 05712000000	US FP	PAW	PAGE 1
TEXAS PIPE & SUPPLY CO INC 2330 HOLMES ROAD HOUSTON TX 77051					TEXAS PIPE & SUPPLY CO INC 2330 HOLMES ROAD HOUSTON TX 77051						

NG
L-CUST. TRK-TR W/SHT

R SPEC	ROUND	HOT FINISH	PER SPEC	WK 9-30-97
AMLESS	ASTM/ASME A/SA 106 B 94	HF CARBON PIPE	09/30/97	

ALL INSTRUCTIONS:
AIN ENDS. U.V.C. COATED.
CEPTABLE PER NACE MRO 175 TABLE 3.
RMISSEIBLE OVERAGES ACCEPTABLE.
M FOR 20' MIN. LENGTHS.

Page 2 of 2

QUANTITY	O.D.	I.D.	WALL	LENGTH	WT/FT	WEIGHT	
19,500'	1.900		200 AVG	RAND 17' 24'	3.631	70,805	Comp. 470 pcs. 9,770'
1-1/2" SCH 80							

APPROVED
ITEM # 33
QC AS
DATE 10-2-98
JOB # 637

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

HEAT NO.	C	Mn	P	S	SI	NI	Cr	Mo	Cu	Pb	REMARKS
566363	.19	.67	.002	.011	.21	.05	.03	.01	.09		V .001 Product Analysis
	.19	.67	.002	.011	.21	.05	.03	.01	.10		V .001 Product Analysis
	.19	.68	.006	.012	.22	.05	.03	.01	.09		V .000 Ladle Analysis
209824	.19	.89	.004	.010	.23	.07	.05	.02	.13		V .002 Product Analysis
	.20	.90	.002	.010	.24	.08	.05	.02	.14		V .002 Product Analysis
	.19	.93	.008	.011	.25	.09	.05	.02	.13		V .000 Ladle Analysis

ATTN	FLARE	FLANGE	REV. PLATTEN	HYDRO TEST	BEND	EDDY CURRENT
				2500 psi OK	OK	

EAT NO.	ULT. STR. PSI	YIELD PSI	ELONG 2"	HARDNESS	HEAT NO.	ULT. STR. PSI	YIELD PSI	ELONG 2"	HARDNESS
566363	70000	44000	34.0						
209824	74600	48300	52.0						

"PRODUCED NOT FINISH
DOES NOT REQUIRE HEAT
TREAT PER A-101"

I CERTIFY THAT THE MATERIAL HEREIN DESCRIBED HAS BEEN MANUFACTURED
IN ACCORDANCE WITH THE ORDERED SPECIFICATION AND THAT THIS TEST
RESULTS IS CORRECT AS CONTAINED IN THE RECORDS OF THE COMPANY.

D. J. All
TECHNICAL ANALYST

SWORN TO AND SUBSCRIBED BEFORE ME THIS

DAY OF 19

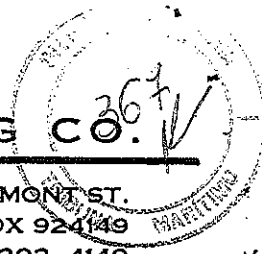
NOTARY PUBLIC

REC-8-13-98
JOB-601
70th 15841



NATIONAL FLANGE & FITTING CO.

4420 CREEKMONT ST.
P. O. BOX 924149
HOUSTON, TEXAS 77292-4149
(713) 688-2515
FAX (713) 688-0205



SOLD
TO

NEW ORLEANS WINDUSTRIAL
110 WEST AIRLINE HWY
SUITE C
KENNER, LA 70062

MILL TEST REPORT

CUSTOMER'S ORDER NO: 23899A2

INVOICE
NUMBER 81464300 DATE 09/23/98

ITEM	QTY	DESCRIPTION	MATERIAL	H CODE
1	8	30" 150# S/O RF	SA-105-95ED	KZA-98
2	2	24" 150# WN RF S/40	SA-105-95ED	OET-98

COPIA FIEL DO DOCUMENTO ORIGINAL
JOSE CARLOS PIMENTA GUSMÃO
DIVISÃO DE SERVIÇOS CARTORIAS

H CODE	CAR	MAN	PHOS	SUL	NIC	CHR	MOL	SIL	CU	VA	NB
1 KZA-98	.200	1.160	.014	.005	.010	.050	.000	.260	.040	.004	.002
EN: 75,900 YLD:	41,600	EL: 32.80	RED: 64.00	CVN@						BHN: 144/146	
2 OET-98	.175	1.280	.008	.006	.156	.129	.034	.219	.229	.004	.003
EN: 75,100 YLD:	46,800	EL: 35.80	RED: 73.00	CVN@						BHN: 152/155	

APPROVED
ITEM # 34
QC AR
DATE 10-6-98
JOB # 637

Rec-19-2-98
JOB - 637
PO # 16027

WE CERTIFY THAT THE MATERIAL FURNISHED ON THIS ORDER COMPLIES IN ALL RESPECTS WITH THE SPECIFICATIONS INDICATED IN DESCRIPTION. WE FURTHER CERTIFY THAT THIS PRODUCT WAS MANUFACTURED IN THE UNITED STATES.

NATIONAL FLANGE & FITTING COMPANY

BY: *Mary Fernald*



GENEVA STEEL

Metallurgical Test Report



REV. 3/87

GENEVA STEEL COMPANY CERTIFIES ALL SMELTING, MELTING AND MANUFACTURING PROCESSES OCCURRED IN THE U.S.A.

REQ. JOB. CONTRACT NO. 03/17/97 PURCHASE ORDER NO. 12218/60-5438

V GENEVA STEEL
N P.O. BOX 2500
D PROVO, UTAH 84603
R
S MANNESMANN PIPESTEEL CORP
C/O 1990 POST OAK BLVD SUITE 1000
6 HOUSTON TX 77056-3811
Y O

SHIPPER NO. GP194288
MILL ORDER NO. EA39745
VEHICLE IDENTITY SP 509175
TALLY NO. GP194288

CAPITOL STEEL INC
C/O BYRD TEAM TRACK Y
BATON ROUGE LA

THIS IS TO CERTIFY THAT THE PRODUCT DESCRIBED HEREIN WAS MANUFACTURED, SAMPLED, TESTED AND/OR INSPECTED IN ACCORDANCE WITH THE SPECIFICATION AND FULFILLS REQUIREMENTS IN SUCH RESPECTS.

Larry D. Clinger
DIVISION MANAGER, QUALITY
DATE 05-06-97

SPEC. PLATE ASTM A516-90 GRADE 70 AND ASME SA-516 1995 EDITION
INSP. 1995 ADDENDA GRADE 70 PRESSURE VESSEL QUALITY - MANDATORY DIE STAMPING.

01 MILL CERTIFIED Y/R

ITEM NO.	MATERIAL DESCRIPTION				QUAN- TITY	WEIGHT	HEAT NO.	TEST OR PIECE IDENTITY	YIELD ST. KSI	TENSILE STR. KSI	ELONGATION %		% RED. OF AREA	BEND
	THICKNESS OR SECTION	WIDTH DIA OR FL. WT.	LENGTH								IN 8"	IN 2"		
04	3/8	.3750"	96.0000"	240.0000"	5	12250#	206440	21-01	51.3	72.9		38.0		
09	7/8	.8750"	120.0000"	480.0000"	1	14293#	206598	21-01	56.2	78.8		36.0		
10	1	.0000"	72.0000"	480.0000"	2	19602#	206518	22-01	51.4	73.3		34.0		
								25-01	49.6	78.6	27.0			
								***END OF	51.9	80.8	25.0			
								END OF	DATA					
APPROVED ITEM # 35 QC <u>AT</u> DATE 10-6-98 JOB # 637														

YIELD STRENGTH--TOTAL EXTENSION UNDER LOAD 0.5%													
HEAT NO.	TYPE	C	MN	P	S	SI	CU	NI	CR	MO	SN	AL	N
206440	HEAT	20	107	008	012	20	01	01	02	004		036	017
206518	HEAT	26	106	008	009	21	01	01	02	004		040	005
206598	HEAT	26	104	010	008	20	01	01	02	004		040	004
GENEVA STEEL COMPANY CERTIFIES ALL SMELTING, MELTING AND MANUFACTURING PROCESSES OCCURRED IN THE U.S.A.													
END OF DATA													

017862 (3 C A A) PAGE 01

BOLTEX ELECTRONIC MATERIAL TEST REPORTREPORT FOR HEAT CODE: TV4

Material Spec: SA105

Item Number: 627

Description: 3" 150 RF WN XX

Part Number: 1-1030181

APPROVED

ITEM # 36QC ASDATE 10-21-98JOB # 637

Chemical		Mechanical	
C	0.17	Hardness - BHN	142-148
Si	0.24	Charpy	
Mn	1.1	Ft-Lb	
P	0.013	Lateral Expansion	
S	0.013	Shear Fraction	
Cr	0.1	Test Temperature	
Al	0.03	Tensile	71920
Cu	0.22	Yield	48545
Ni	0.11	Elongation - %	34
Mo	0.02	Area Reduction - %	65.8
V	0.004		
Cb	0.004		
Carbon Equivalent	0.4001		

Heat Treatment:

This electronic document certifies that flanges marked with the referenced heat code are capable of passing a hydrostatic test compatible with their rating. We certify that all test results and process information are correct and true as contained in the records of the company. All flanges meet NACE MR-0175. - Latest Revision.

This MTR was obtained directly from our Internet site and all statements contained herein are intended to certify only flanges purchased and shipped directly from boltex mfg.co., l.p., Houston, Texas.

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BolTex Material Test Reports

MILL TEST REPORTS FURNISHED
BY RED MAN PIPE & SUPPLY COMPANY

CUSTOMER: Eng Spec
YOUR P. O. 162341637
TAGGING 1
OUR P. O. 64-47886-0

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTA GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

34480

JOSÉ CARLOS RIBEIRO GUSMÃO
DE ATOR
DIVISÃO DE SERVIÇOS CARTONÁRIOS

10-19-98 5:35pm p. 1 of 1

GENIEVA STEEL COMPANY CERTIFIES AL

3. MELTING AND REMOVAL OF THE ORDER NO.

P.O. DATE	PURCHASE ORDER NO.
10/01/00	NE11-79893/61-9205

ROYAL TALE NO.

MAIL ORDER NO.

GP507296

F451300

810E77 0010
GPE0729A Q710-10

NAMASCO
C/O NEW ORLEANS PUBLIC BELT RR
DELIVERY WAREHOUSE #1
NEW ORLEANS, LA

MANNESMANN PIPE&STEEL CORP
1190 POST OAK BLVD SUITE 1800
HOUSTON TX 77056-3811

PLATE
1996 ADDENDA
STAMPING AND
ASTM A516-90 GRADE 70 AND ASME SA-516 1995 EDITION
GRADE 70 PRESSURE VESSEL QUALITY MANDATORY DIE
DIN 50049-3.1B

OF MILL
CERTIFIED T/R

APPROVED 637
ITEM # AK
QC 10-26-98
DATE 637
JOB #

MATERIAL DESCRIPTION	QUAN- TITY	WEIGHT	HEAT NO.	TEST OR PIECE IDENTITY	YIELD PT. * K.S.I.	TENSILE STR. K.S.I.	ELONGATION %		% RED. OF AREA	BEND
							IN 8"	IN 7"		
.3750"	4	19604#	207477	25-01	58.8	82.3		34.0		
				25-01	44.8	71.6		40.0		
				25-01	43.0	70.0		40.0		
				22-01	57.6	83.1		32.0		
	1	4901#	207478	22-01	48.4	74.0		30.0		
				22-01	49.0	74.4		34.0		
				23-01	57.4	83.7		36.0		
	10	49010#	207479	23-01	46.3	72.4		40.0		
				23-01	46.4	74.6		30.0		
				24-01	51.2	76.7		40.0		
	3	19602#	207473	24-01	50.1	75.4		40.0		
				24-01	50.1	74.6		40.0		
				21-01	51.7	76.6		32.0		
	7	45738#	207475	21-01	47.3	73.3		25.0		
				21-01	48.4	72.8		40.0		

[illegible]

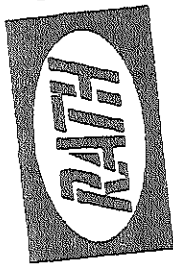
HEAT NO.	YIELD STRENGTH-TOTAL EXTENSION UNDER LOAD															CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H	CB	C	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	H
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PAGE 01

'GENEVA
STEEL COMPANY LIMITED
CHEMICAL BOARD

END OF DATA*****

017862



Pipe and Tubing

Stainless, Duplex and Nickel Alloys

RATH MANUFACTURING CO., INC.
2505 FOSTER AVENUE • JANESVILLE, WISCONSIN 53547-0389 U.S.A.
PHONE 608-754-2222, FAX 608-754-0889

APPROVED
ITEM # 38
QC APL
DATE 10-27-98
JOB # 637

REPORT OF TESTS

SHIP TO: TUBESALES
175 TUBEWAY

SOLD TO: TUBESALES
175 TUBEWAY

GA 30051
FOREST PARK

PURCHASE ORDER NUMBER
ATL8-57381 ✓

GA 30051

SHIP VIA
BESTWAY/PPD ADD

WT250011A316/316L-209NDL
2 1/2" 11A 316/316L 20" MULTI END

CUSTOMER ORDER ID
C009132

ASTM SPECIFICATIONS
2.500" X 11 GA TP316/TP316L SA240/A240/A268/A554
WELDED & BRIGHT SOLUTION ANNEALED
SA240-A98, A240-A98, A268-A98, A554-A98

REVISION DATE
COMMENTS

TEST REPORTS

OCT 02 1998

ACCEPTABLE
BY MM

COIL # 7271695

CHEMICAL ANALYSIS (WT)

HEAT # 923146 V
C 0.019
Mn 1.70
P 0.028
S 0.013

Si 0.43
Cr 16.83
Ni 10.16

Mo 2.07
Cu 0.19
Co 0.2

N 0.053
Cb+Ta 0.19

Ti 0.19
Fe 0.19

Al 0.19

V 0.19

W 0.19

HARDNESS
RB

MECHANICAL TEST
YIELD STRENGTH (0.2% OFFSET)
P.S.I. 50000 M.P.A. 345

TENSILE STRENGTH
P.S.I. 88300 M.P.A. 609

ELONGATION (% IN 2")
54

REVERSE FLATTENING - OK
EDDY CURRENT - OK

AIR UNDER WATER P.S.
HYDRO P.S.I.

FLANGE TEST - OK
FLATTENING TEST - OK

REVERSE BEND - OK
FLARE TEST - OK

ADDITIONAL TEST

ATTEST:

Rath Mfg. Co., Inc. does not use mercury, lead, sulfur or any special metal alloy which is liquid at ambient temperature in its product or facility. Weld repair was not used to manufacture this product.

Rath's stainless steel tubing manufacturing process does not use any of the products targeted in the U.S. Clean Air Act of 1990.

Rath's stainless steel tubing manufacturing process has been inspected and tested to be in accordance with the applicable specifications as stated in the "ORDER DATA" portion of this report.

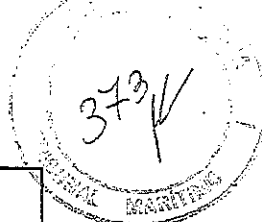
We hereby testify that the material described herein has been inspected and tested to be in accordance with the applicable specifications as stated in the "ORDER DATA" portion of this report.

BY J. Miller
JAN MEIER, MILL CERTIFICATION COORDINATOR

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

COPIA FIEL DO DOCUMENTO OR

10-23-98
2 1/2" 316L 3/5 TUBING, FOR SPARGERS.



USX, USX, USX are trademarks of USX Corporation

CERTIFIED TEST REPORT
(TYPE B - IN AT VANCE WITH ISO 9001 / EN10204/DIN50040)

MILL ORDER NO. DR38720 01	SHIPPERS NO. 96891-1
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MATERIAL COND: AS ROLLED	OD: 12.750 (323.850)	WALL: 0.500 (12.700)	in (mm)
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PRODUCT IDENTIFICATION	FLAT	BEND	GRAIN SIZE	MIN COLLAPSE	CHARPY V-NOTCH IMPACT TESTING														
					DIR	TEST LOC.	TEMP	SIZE	TEST COND.	FT-LBS			% SHEAR						
										1	2	3	AVG	1	2	3	AVG		
B68623	OK		*** END OF DATA																

LEGEND:	L - LONGITUDINAL	T - TRANSVERSE	B - BODY	W - WELD	HAZ - HEAT AFFECTED ZONE
---------	------------------	----------------	----------	----------	--------------------------

TEST / INSPECTION	YES	RESULTS / COMMENTS
FULL LENGTH VISUAL	X	
FULL LENGTH EMI	X	
FULL LENGTH MPI		OD X OD/ID L L/T X
FULL LENGTH UT		OD OD/ID L L/T
END AREA INSPECTION (PLAIN END)		MPI UT
SPECIAL END AREA (SEA) INSP.		MPI UT
FULL LENGTH DRIFT		DRIFT MANDREL SIZE:

ADDITIONAL NOTES/COMMENTS

ALL MELTING AND MANUFACTURING TOOK PLACE IN THE USA. NO REPAIRS BY WELDING. NO MERCURY OR MERCURY COMPOUNDS ARE ADDED TO THE STEEL AND ALL MERCURY BEARING EQUIPMENT IS PROTECTED BY A DOUBLE BOUNDARY OF CONTAINMENT.

MILL TEST REPORTS FURNISHED
BY RED MAN PIPE & SUPPLY COMPANY

CUSTOMER: Engin
YOUR P. O.: 14338637
TAGGING: 64482110
OUR P. O.: 64482110

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS
DIRETOR GERAL
DIVISAO DE ENGENHARIA

THIS IS TO CERTIFY THAT THE PRODUCT DESCRIBED HEREIN WAS MANUFACTURED, SAMPLED, TESTED AND/OR INSPECTED IN ACCORDANCE WITH THE SPECIFICATION AND FULFILLS THE REQUIREMENTS IN SUCH RESPECTS.

PREPARED BY THE OFFICE OF: F.J. MIKULSKI MET. & Q.A. USS TUBULAR PRODUCTS

DATE 09/27/98

11/1/98

Tube Forgings of America
5200 N.W. Front Avenue
Portland, OR 97210



Certified Material Test Report
ISO9002 Certified #30248

Customer Information

Item:

Description: 2 XH CROSS WPB

Quantity: 1

JOB - 637
part 16402

Notes:

TFA Heat Code: H232

TFA Grade: WPB

Mill Heat Code: IBN

Mill: GULF

C	Mn	P	S	Si	Mo	Cr	Ni	Cu	V	Cb	B	Ti	Al
0.18	0.96	0.007	0.024	0.28	0.028	0.08	0.14	0.24	0.004	0			

Yield PSI: 53261

Tensile PSI: 74069

% Elongation in 2": 31.8

Isile Orientation:

Test Bar Type: ROUND

BHN: 156

Gauge Length: 2.0"

Charpy V notch test at degrees F.:

Lbs. 1: 2: 3: Avg:

C.E.: 0.3877

Coupon Size:

APPROVED

ITEM # 40

QC AS

DATE 11-16-98

JOB # 637

1. STARTING MATERIAL WAS A SOLID FORGING WHICH MEETS THE CHEMICAL AND PHYSICAL REQUIREMENTS OF ASTM A 234 WPB. 2. MATERIAL WAS NORMALIZED AT 1650F AND AIR COOLED. 3. MATERIAL IS SEAMLESS. 4. THE BRINELL HARDNESS DOES NOT EXCEED 197 PART TO PART.

1. THE MATERIAL IS MANUFACTURED TO ASTM A 234 GRWPB FROM THE 1997 VOLUME, REV96 A. 2. DESIGN AND DIMENSIONS TO ASME B16.9-93 OR ASME B16.28-94. 3. PER NACE MR-01-75, 98 REVISION.



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R. N. GUPTA & COMPANY, C-55, Focal Point, Ludhiana-141 010. (India)

MATERIAL MILL TEST CERTIFICATE

Certificate No. 76 Date 14.03.97
 Raw Material Specification : ASTM A105/95b ASME SA105/95b
 Specification for Inspection : ANSI B16.5/88

Name of Buyer : SILBO INDUSTRIES INC.
 P. O. No. : 80953 DT. 12.02.97

Invoice No. RNG/EXP/59

MECHANICAL REQUIREMENTS

Sr. No.	DESCRIPTION	Schedule	Quantity Pcs.	Heat No.	Y.S (P.S.I) Min	T.S (P.S.I) Min	E% Min	R.A. % Min	Hardness BHN.
1	2" 150# SORF	-	700	H-175	62270	72960	29.8	42.3	137-187 Max.
2	2" 150# SOFF	-	100	H-175	62270	72960	29.8	42.3	-
3	2 1/2" 150# SORF	-	350	H-174	58623	73180	30.5	49.7	-
4	3" 150# SORF	-	550	H-174	58623	73180	30.5	49.7	-
5	3" 150# SOFF	-	50	H-174	58623	73180	30.5	49.7	-
6	4" 150# SORF	-	487	H-174	58623	73180	30.5	49.7	-
7	4" 150# SOFF	-	001	H-165	51792	74152	28.4	60.31	-
8	4" 150# SOFF	-	002	H-167	58038	80882	31.4	55.11	-

JOSE CARLOS PIMENTEL GUSMAO
 DIVISAO DE SERVICOS CARTORIAIS

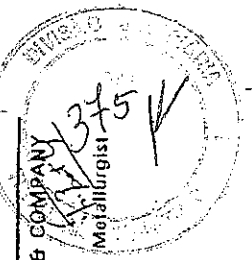
CHEMICAL REQUIREMENTS

Heat No.	SPECIFIED ELEMENTS					UNSPECIFIED ELEMENTS					Heat Treatment
	C 0.35 Max.	Mn. 0.60-1.05	P 0.04 Max.	S 0.05 Max.	Si 0.10-0.35 Max.	Cu 0.40 Max.	Ni 0.40 Max.	Cr 0.30 Max.	Mo 0.12 Max.	V 0.03 Max.	
H-175	0.19	0.70	0.028	0.040	0.15	<0.02	0.03	0.03	<0.02	<0.02	AS FORGED.
H-174	0.22	0.76	0.028	0.025	0.24	<0.02	0.03	0.04	<0.02	<0.02	AS FORGED.
H-165	0.21	0.85	0.032	0.026	0.25	<0.02	0.03	0.04	<0.02	<0.02	AS FORGED.
H-167	0.33	0.70	0.030	0.026	0.24	<0.02	0.05	0.04	<0.02	<0.02	AS FORGED.

Certified that the materials described above are in accordance with the order and Specifications

APPROVED

ITEM # 41
 QC 88
 DATE 11-16-98
 JOB # 637



c/z. JOB - 637
port 16407

For R. N. GUPTA & COMPANY

AMERI-FORGE

Subsidiary of Global Industrial Technologies, Inc.

SALES (713) 393-4200

BUY QUALITY - BUY AMERICAN

FAX (713) 455-8366

SOLD
TO:

MATERIAL TEST REPORT

Cert. # 91296 B/L # 0
Inv. # P/L # 49609

ITEM	QTY.	DESCRIPTION & CONDITION	Cust. PO#
1	1,004	2" 150# WN RF XH	C998D
		Heat Number: 46358 Mill: SMI	A105-95B FINISH MACHINED
			HEAT CODE: KGQ
		C: 0.200 Mn: 0.880 P: 0.005 S: 0.016 Si: 0.260 BHN: 183 183	
		Cu: 0.170 Ni: 0.120 Cr: 0.050 Mo: 0.031 Cb: 0.000 V: 0.004	
		CE XXXXXXXX (Cu+Ni+Cr+Mo)= 0.383 (Cr+Mo)= 0.081 Charpy @ =	
		Tensile: 86,448 Yield: 61,266 Elong%: 26.5 in 1" ROA%: 59.6	

Note: Chemical Analysis results shown are actual. Elements with less than .02 are hereby reported as "<.02%".
Forgings are capable of passing a hydrostatic test compatible with the appropriate rating.
Elongation taken from a Round Specimen.
All material supplied under this order is certified to be free of mercury contamination and no mercury bearing equipment was used in manufacturing, fabrication or testing.
Yield strength was determined using the 0.2% offset method.

FORGINGS CO. CERTIFIED TO SA-105
FORGINGS ARE IN COMPLIANCE WITH NACE MR01-75
REF: 187 BHN MAX
MACHINED FLANGES COMPLY WITH ANSI B16.5

APPROVED

ITEM # 42
QC AS
DATE 11-16-98
JOB # 637

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS POMEREL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

IN COMPLIANCE WITH THE "BUY AMERICAN ACT", AMERI-FORGE CORP. CERTIFIES THAT THESE FORGINGS WERE PRODUCED IN HOUSTON, TEXAS AND ALL MATERIAL USED WAS "MADE IN U.S.A." WE FURTHER CERTIFY THAT THIS IS A TRUE COPY OF THE ORIGINAL "MILL TEST REPORT" NOW ON FILE.

October 28, 1998

QUALITY ASSURANCE DEPARTMENT

EMPRESAS RIGA, S.A de C.V.
DIVISIÓN DE SERVICIOS CALIDAD

CONEXIÓN SOLDABLE

CARR. MTY-LAREDO KM. 24.2

APARTADO POSTAL 43 C.P. 65550 CIÉNEGA DE FLORES, N.L., MÉXICO

TELS: (8) 344-84-83, 344-84-45, 344-88-60

FAX: (8) 344-88-01

correo electronico: riga@infosel.net.mx



Certificate 95/5377

CERTIFICADO DE CALIDAD No.: CERTIFIED TEST REPORT: 2292		FECHA: DATE: DICIEMBRE 11 de 1996	
VENDIDO A: SOLD TO:		PEDIDO DEL CLIENTE No. CUSTOMERS ORDER No.	EMBARCADO A: SHIP TO: LOS MISMOS

PRUEBAS MECANICAS

CANT.	COLADA HEAT CODE	DESCRIPTION	ESF. DE CEDENCIA YIELD STRENGTH (PSI)	ESF. RUPTURA TENSILE STRENGTH (PSI)	ELONGACION ELONGATION % 2"	DUREZA HARDNESS - HB
12	WG1	CODO 16 X 45 CED XS	44709	68412	43	105
60	XB1	CODO R.L. 8 X 90 CED STD	48115	71251	35	90
74	LT1	CODO R.L. 8 X 90 CED STD	46696	78206	35	149
46	XQ1	CODO R.L. 8 X 90 CED STD	43574	67844	38	---
802	WL1	CODO R.L. 3 X 90 CED XS	46597	72792	35	109
1300	WL1	CODO R.L. 2 X 90 CED XS	43800	67700	50	124
922	TY1	CODO R.L. 2 X 90 CED XS	45149	60634	42	128
4555	LC1	CODO R.L. 2 X 90 CED XS	48523	68830	32	135
523	SS1	CODO R.L. 2 X 90 CED XS	44500	69400	50	133
2500	RQ1	CODOR .L. 1 1/4 X 90 CED STD	46200	70000	50	128
50	RQ1	CODO R.L. 1 1/4 X 180 CED STD	46200	70000	50	128
96	QR1	CODO R.L. 1 1/2 X 90 CED STD	53097	69022	48	145

ANALISIS QUIMICO

COLADA HEAT CODE	C.E.	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Nb
WG1	0.311	0.182	0.690	0.006	0.001	0.280	0.030	0.049	0.015	0.030	0.000	0.000
XB1	0.333	0.185	0.800	0.007	0.004	0.310	0.030	0.079	0.009	0.030	0.000	0.000
LT1	0.359	0.215	0.760	0.005	0.004	0.300	0.030	0.072	0.017	0.040	0.000	0.000
XQ1	0.311	0.184	0.680	0.004	0.001	0.270	0.030	0.061	0.007	0.030	0.000	0.000
XK1	0.326	0.190	0.750	0.011	0.002	0.280	0.020	0.070	0.010	0.010	0.000	0.001
WL1	0.000	0.150	0.640	0.002	0.014	0.220	0.030	0.150	0.010	0.100	0.000	0.000
TY1	0.278	0.180	0.500	0.010	0.003	0.250	0.040	0.040	0.010	0.030	0.000	0.001
LC1	0.433	0.210	1.019	0.021	0.017	0.300	0.130	0.130	0.040	0.120	0.010	0.000
SS1	0.308	0.180	0.630	0.002	0.014	0.260	0.030	0.160	0.010	0.070	0.000	0.000
RQ1	0.280	0.150	0.650	0.003	0.015	0.200	0.030	0.130	0.010	0.070	0.000	0.000
RQ1	0.280	0.150	0.650	0.003	0.015	0.200	0.030	0.130	0.010	0.070	0.000	0.000
QR1	0.296	0.110	0.960	0.011	0.003	0.190	0.030	0.050	0.030	0.030	0.050	0.001

LOS PRODUCTOS MANUFACTURADOS POR EMPRESAS RIGA, S.A. de C.V. ESTAN CONFORME A LAS SIGUIENTES ESPECIFICACIONES:

CC-008

PRODUCTS MANUFACTURED BY EMPRESAS RIGA, S.A. de C.V. ARE CONFORMING TO FOLLOWING SPECIFICATIONS:

STARTING MATERIAL SEAMLESS PIPE ASTM A-106 GRADE B.

ASTM A-234 WPB, ASME SA 234 WPB, ANSI B 16.9 Y ANSI B16.28

CONEXIONES SIN COSTURA, FORJADO EN CALIENTE Y NORMALIZADO
SEAMLESS FITTINGS, HOT FORMED AND NORMALIZED

CERENTE CONTROL DE CALIDAD:

QUALITY CONTROL MANAGER:

ING. PEDRO HERNANDEZ FLORES.

Specialty Steels and Seamless Tubes

Vereeniging Works

General Hertzog Road
P O Box 48
1930 Vereeniging
South Africa
Telephone (016) 450-4911
Fax (016) 23-4906



Licensed under
API Spec 5L and SCT
5L - 0319
5CT - 0419



SABS ISO 9002
SABS 62-1: 1989
Permit No 4938/7140

Test Certificate

EN 10204 / DIN 50049/3.1B



Iscor Order No TH80188

Reference No 06750/80188/98

Part No I 1022XEFULQ

Contract/Customer Order No 88-01000102223-18137

Purchaser

Product FULLY KILLED HOT FINISHED CARBON STEEL SEAMLESS TUBES: BEVELLED ENDS

Specification API 5L.95B/X42/ASTM A106.94B/ASME SA106.94B/ASTM A53B/ASME SA53B NDE

Product Marking IST 5L-0319 MONOGRAM 04-98 X42/ASTM A106.94B/ASME SA106.94B/ASTM A53B/ASME SA53B 2,374 x .21 x 40,028 5,02 50 NB SCH 80 B S TESTED 2500psi NDE I 1022XEFULQ 3M9451 06750

Quantity	Dimensions O/D x THK x Length	Total Length (ft)	Total Weight lbs	Steel Process
399	2,374in x .21in x 40,028ft	15971,3	80288,9	ELECTRIC ARC

Chemical Composition (%)

	C	Si	Mn	S	P	Cr	Ni	Mo	Cu	V	Al	C eq.
Requirements	Min .15 Max .20	Min .15 Max .30	Min .85 Max 1.05	.015	.020	.200	.200	.100	.200	.010	.010	
Cast Number												
3M9451 ✓	.18	.27	.93	.009	.011	.070	.200	.028	.130	.002	.003	.377

Tensile Test

Test No	Tensile Strength PSI	Yield Strength PSI	Gauge Length	% El
Spec Min	59901	41916		30
1	77160	53809	2,0in	34
2	76435	53084	2,0in	35

APPROVED
ITEM # 45
QC: RS
DATE 11-16-98
JOB # 637

Mechanical Test

Bending Test SATISFACTORY
Flattening Test SATISFACTORY
Flaring Test SATISFACTORY
Hydrostatic Test 2500psi for 5 sec
Hardness Test HV (30 Kg) 154, 155, 155
NDE Test FLUX LEAKAGE PRACTICE E570
Drift Test NOT APPLICABLE

Remarks
STEEL GRADE: SC 20/04
FINAL OPERATION AT A TEMPERATURE ABOVE 930C AND COOLED IN STILL AIR. HARDNESS IN ACCORDANCE WITH NACE MR0175-94.

Signature of Manager

Date 14/05/1998

Manager Quality Assurance

Date

We hereby certify that the steel grade and quality level of all tubes are in conformity with the order and comply fully with the specification requirements.



10000 RIVER ROAD P.O. BOX 5000
A PLACE, LOUISIANA 70069-1156
Telephone (504) 652-4900

MATERIAL CERTIFICATION REPORT
O'NEAL STEEL INC.
P.O. BOX 98
BIRMINGHAM, AL 35201-0098

O'NEAL STEEL INC.
ONE O'NEAL LANE
P.O. BOX 11508
MOBILE, AL 36611-0508

TESTED IN
ASTM A6
ACCORDANCE
WITH

INVOICE NO.
PRODUCT UNEQUAL ANGLES
HEAT NO. 54360 21 PCS
Length 40'0"

DATE 07/21/98
Cust O-3300'-0003
GRADE A36-96
SIZE U 6 X 3-1/2 X 3/8 X 11.700

Prod Id:0116761

JOSE CARLOS PUENTE GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓRIAS

APPROVED

ITEM #
QC
DATE
JOB #

CHEMICAL ANALYSIS	
C	.11
Mn	.87
P	.016
S	.05
Si	.24
Cu	.41
Ni	.17
Cr	.12
Mo	.044
Cb	
V	
B	
Al	

MECHANICAL PROPERTIES	
TEST 1	TEST 2
YIELD STRENGTH - PSI TENSILE STRENGTH - PSI ELONGATION % BEND TEST SPECIMEN AREA - SQ. IN. REDUCTION OF AREA % IMPACT STRENGTH FT/LBS.	43,650 64,536 39.0 8 8 43,219 64,894 40.0 8

SEVERITY	FREQUENCY	RATING
INTERNAL CLEANLINESS		

Customer Grade & Specs: ASME SA36 A709 GRADE 36

RECEIVED JUL 23 1998

I HEREBY CERTIFY THAT THE MATERIAL TEST RESULTS PRESENTED HERE ARE FROM THE REPORTED HEAT AND ARE CORRECT. ALL TESTS WERE PERFORMED IN ACCORDANCE TO THE SPECIFICATIONS REPORTED ABOVE. ALL STEEL IS ELECTRIC FURNACE MELTED, MANUFACTURED, PROCESSED, AND TESTED IN THE U.S.A WITH SATISFACTORY RESULTS, AND IS FREE OF MERCURY CONTAMINATION IN THE PROCESS.

APPROVED

ITEM # 46
QC AS
DATE 11-16-98
JOB # 637

SIGNED

Timothy R. White
TIMOTHY R. WHITE, QUALITY ASSURANCE MANAGER

NOTARIZED UPON REQUEST:

SWORN AND SUBSCRIBED TO BEFORE ME IN AND FOR ST. JOHN
PARISH ON THIS DAY 19

DIRECT ANY QUESTIONS OR NECESSARY CLARIFICATIONS CONCERNING
THIS REPORT TO THE SALES DEPARTMENT.

1-800-535-7692 (USA)

(NOTARY PUBLIC)



UTAH STEEL CORPORATION
(TENNESSEE)

2404 S. ROANE STREET
HARRIMAN, TENNESSEE 37748
Telephone (423) 882-5100

MATERIAL CERTIFICATION REPORT

O'NEAL STEEL INC.
P.O. BOX 98
BIRMINGHAM, AL 35201-0098

O'NEAL STEEL INC.
ONE O'NEAL LANE
P.O. BOX 11508
MOBILE, AL 36611-0508

TESTED IN ACCORDANCE WITH

ASTM A6

INVOICE NO.

PRODUCT

FLATS

HEAT NO. M5590

Length 20'0"

96 Pcs

GRADE A3644W

SIZE F 3 X 1/4 X 2.553

DATE 10/29/98

Cust O-3300 -0003

PO:M517615

Prod Id:0342701

CHEMICAL ANALYSIS	
C	.15
Mn	.64
P	.024
S	.03
Si	.25
Cu	.25
Ni	.10
Cr	.11
Mo	.027
Cb	.000
V	.000
B	
Al	

MECHANICAL PROPERTIES	
TEST 1	TEST 2
YIELD STRENGTH - PSI	48,800
TENSILE STRENGTH - PSI	68,800
ELONGATION %	28.0
GUAGE LENGTH	8
DIAMETER	
BEND TEST RESULTS	
SPECIMEN AREA - SQ. IN.	
REDUCTION OF AREA %	
IMPACT STRENGTH FT/LBS.	

SEVERITY	FREQUENCY	RATING
INTERNAL CLEANLINESS		

Customer Grade & Specs: ASME SA36

RECEIVED OCT 30 1998

I HEREBY CERTIFY THAT THE MATERIAL TEST RESULTS PRESENTED HERE ARE FROM THE REPORTED HEAT AND ARE CORRECT. ALL TESTS WERE PERFORMED IN ACCORDANCE TO THE SPECIFICATIONS REPORTED ABOVE. ALL STEEL IS ELECTRIC FURNACE MELTED, MANUFACTURED, PROCESSED, AND TESTED IN THE U.S.A WITH SATISFACTORY RESULTS, AND IS FREE OF MERCURY CONTAMINATION IN THE PROCESS.

APPROVED

ITEM # 47
QC
DATE 11-16-98
JOB # 637

SIGNED

Timothy R. White
TIMOTHY R. WHITE, QUALITY ASSURANCE MANAGER

NOTARIZED UPON REQUEST:

SWORN AND SUBSCRIBED TO BEFORE ME ON _____ DAY OF _____, 19____

IN ROANE COUNTY, TENNESSEE BY _____

COMMISSION EXPIRATION: _____

DIRECT ANY QUESTIONS OR NECESSARY CLARIFICATIONS CONCERNING THIS REPORT TO THE SALES DEPARTMENT.

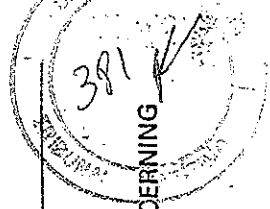
1-800-535-7692 (USA)

JOSE CARLOS PIMENTEL JUNIOR
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

APPROVED

ITEM #
QC
DATE
JOB #

HARDENABILITY	
JOMINY TEST RESULTS	
GRAIN SIZE	
ROCKWELL C HARDNESS	
DISTANCE FROM	
QUENCHED END IN	
1/16th INCH INCREMENTS	
1	13
2	14
3	15
4	16
5	18
6	20
7	22
8	24
9	26
10	28
11	30
12	32





P.O. BOX 321188
BIRMINGHAM, AL 35232-1188
(205) 592-8981

CERTIFIED TEST REPORT

FOR ADDITIONAL COPIES CALL (205) 599-7981
The following tests conform to the requirements
of the specifications listed.

S 252300
O O'NEAL STEEL INC
L P O BOX 98
D BIRMINGHAM
T USA
O

S 0000
H O'NEAL STEEL, INC.
I P O BOX 11508
P MOBIL
T USA
O

Q. A. MANAGER
5/18/98
QUALITY ASSURANCE MANAGER

AL 352010098
36671

HEAT NO	SECTION	SPECIFICATION	T #	YIELD (KSI) (MPA)	TENSILE (KSI) (MPA)	ELONGATION 2" 50MM	R.A. %	BND TST RSL	BHN	SIZE (MM)	TEMP.	FT. LBS. FT. LBS. JOULES JOULES
982465	W 4X13.0	ASTM A36-94/A572-94-50	1	50.5	67.5	31.0						
982465	W 4X13.0	ASTM A36-94/A572-94-50	2	50.0	67.5	30.0						
982467	W 4X13.0	ASTM A36-94/A572-94-50	1	52.5	70.5	29.0						
982467	W 4X13.0	ASTM A36-94/A572-94-50	2	52.5	71.0	29.0						
982468	W 4X13.0	ASTM A36-94/A572-94-50	1	55.5	75.0	25.0						
982468	W 4X13.0	ASTM A36-94/A572-94-50	2	54.5	74.5	27.0						

APPROVED

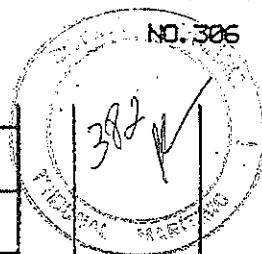
ITEM # 48
QC PA
DATE 11-16-98
JOB # 637

Steve Longlock
6-20-98
DATE

RECEIVED JUN 22 1998

HEAT NO	C	Mn	P	S	Si	Cu	Cr	Ni	Mo	Co	V	Al	Sn	CARBON EQUIV	DATE ROLLED
982465	.09	1.07	.013	.035	.16	.23	0.09	0.11	.029	.002	.0240	.000	.012	.32	5/10/98
982467	.09	1.09	.011	.036	.22	.24	0.08	0.12	.032	.003	.0280	.003	.000	.32	5/10/98
982468	.15	1.06	.013	.030	.17	.22	0.11	0.11	.028	.002	.0210	.001	.000	.38	5/10/98

Remarks: 100% MELTED AND MANUFACTURED IN THE USA AND FREE FROM MERCURY CONTAMINATION IN THE PROCESS
ABOVE A36 MATERIAL MEETS ASME SA36-92



Job #637

06/22/98

14:30

ONEAL STEEL → ONEAL STEEL

2055998132

JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

Commande relative conformant à notre marque ASSURANCE QUALITE Order manufactured in accordance with our QUALITY ASSURANCE mark	Lequel de recevoir ROUBREIN Signature	22/09/06 14004	NAME of the Director
---	---	------------------------------	---------------------------------

1	742-
ROUTE/VEHICLE IDENTIFICATION	

OSBORN TRNP

("SHIP TO" SAME AS "SOLD TO" UNLESS OTHERWISE INDICATED)

O'NEAL STEEL INC
ONE O'NEAL LANE
MOBILE AL 36611

TOTAL BT: 13,068# PCS 2

JOB # 637

[illegible]

**Dalmine**PLANT:
DALMINE

INSPECTION CERTIFICATE

(UNI EN 10204 3.1.B)

N. 98/17252

Page 1

CUSTOMER'S ORDER D4725 - 173 LONDON M

MILL ORDER / ITEM 1900865/006 BL 58
EXP REFERENCE C/16158

PRODUCT SEAMLESS STEEL PIPES FOR HIGH TEMPERATURE ACCORDING TO ASTM A 106,
ASME SA 106ASTM ASME A/SA 53 API 5L AND NACE MR. 01.75 STEEL GR. B
ASTM A 106 ASME SA 106ASTM ASME A SA 53 API 5L AND X42 C EQ 0.4%
MAX BLACK INSIDE, OILED OUTSIDE BY PT1 - ND 602, BEVELLED
ACCORDING TO API CT4:6648

DIMENSIONS: Lg. From Lg. To O.D. mm O.D. Inch W.T. mm W.T. Inch
11600 12800 508,000 20" 12,700 0,500

SHIPPING NOTE : E1200985 DATE 04/08/1998
QUANTITY : Nr 3 Mt 37,72 Kg 5880 Ft 123' 9" Lbs 12963,1

TEST N. N0747 HEAT N. 984399

TENSION TEST + 20,0°C

TEST SPEC. : LONGITUDINAL WIDTH 25,40 THICK. 12,80 SECTION 325,1 mm²
YIELD POINT 0,5% (KSI) : requir min 42 result 46,4
TENSILE STRENGTH (KSI) : requir min 60 result 73,9
ELONGATION : CALIBRATED ON 2" 50,0 mm
(%) : requir.min 27,0 result 40,0

HARDNESS HRC requir. max 22,0 result 0,0
HARDNESS HRB requir. max 100,0 result 81,7

TECHNOLOGICAL TESTS PERFORMED WITH SATISFACTORY RESULTS:

FLATTENING TEST : TEST PERFORMED AT ONE END OF 1 PIPE OF THE LOT

TEST N. N0747/10 HEAT N. 984399

TENSION TEST + 20,0°C

TEST SPEC. : LONGITUDINAL WIDTH 25,20 THICK. 12,80 SECTION 322,6 mm²
YIELD POINT 0,5% (KSI) : requir min 42 result 46,2
TENSILE STRENGTH (KSI) : requir min 60 result 73,1
ELONGATION : CALIBRATED ON 2" 50,0 mm
(%) : requir.min 27,0 result 42,0

HARDNESS HRC requir. max 22,0 result 0,0
HARDNESS HRB requir. max 100,0 result 80,8

TECHNOLOGICAL TESTS PERFORMED WITH SATISFACTORY RESULTS:

FLATTENING TEST : TEST PERFORMED AT ONE END OF 1 PIPE OF THE LOT

TEST N. N0747/20 HEAT N. 984399

TENSION TEST + 20,0°C

TEST SPEC. : TRANSVERSAL WIDTH 37,80 THICK. 12,70 SECTION 480,1 mm²
YIELD POINT 0,5% (KSI) : requir min 42 result 45,8
TENSILE STRENGTH (KSI) : requir min 60 result 73,3
ELONGATION APPROVED : CALIBRATED ON 2" 50,8 mm

ITEM # 53

QC AK

DATE 11-20-98

JOB # 637

DATE

04/08/1998

PRODUCT

CONTROL MANAGER
Marco BELLOLI

QUALITY

SERVICE MANAGER
Ambrogio COLOMBO

Follows

Job # 637

**Balmine**PLANT:
DALMINE

INSPECTION CERTIFICATE

(UNI EN 10204 3.1.B)

N. 98/17252

Page 2

380
380
380

HARDNESS	HRC	requ.	(%): requir.min 29,5	result	41,7
HARDNESS	HRB	requ.	max 22,0	result	0,0
			max 100,0	result	80,0

HEAT N. 984399

HEAT ANALYSIS %

C	0,15	Mn	0,87	Si	0,25	P	0,010	S	0,003	Cu	0,12
Ni	0,17	Cr	0,13	Mo	0,04	V	0,007				
(V + Ni + Cr + Mo + Cu) =				0,467							
CARBON EQUIVALENT				: L.F. (C + Mn/6 + (Cr + Mo + V)/5 + (Ni + Cu)/15)				0,35			

PRODUCT ANALYSIS %

TEST N. N0747

C	0,16	Mn	0,85	Si	0,24	P	0,009	S	0,004	Cu	0,11
Ni	0,17	Cr	0,13	Mo	0,04	V	0,006				
(V + Ni + Cr + Mo + Cu) =				0,455							
CARBON EQUIVALENT				: L.F. (C + Mn/6 + (Cr + Mo + V)/5 + (Ni + Cu)/15)				0,36			

PRODUCT ANALYSIS %

TEST N. N0748

C	0,16	Mn	0,86	Si	0,24	P	0,009	S	0,004	Cu	0,12
Ni	0,17	Cr	0,13	Mo	0,04	V	0,006				
(V + Ni + Cr + Mo + Cu) =				0,466							
CARBON EQUIVALENT				: L.F. (C + Mn/6 + (Cr + Mo + V)/5 + (Ni + Cu)/15)				0,36			

LEAK-TIGHTNESS TEST PERFORMED WITH SATISFACTORY RESULTS BY:

HYDRAULIC TEST PRESSURE

1900,0 PSI

FOR 5 Sec

VISUAL AND DIMENSIONAL CONTROL OF THE TUBES HAS BEEN CARRIED OUT WITH SATISFACTORY RESULT

STEEL IS FULLY KILLED AND PRODUCED BY ELECTRIC FURNACE

* CERTIFIED FACTORY UNI EN ISO 9001: I.G.Q. Nr. 8603 *

APPROVED

ITEM # 53

QC RE

DATE 11-20-98

JOB # 637

DATE

04/08/1998

PRODUCT

CONTROL MANAGER

Marco BELLOLI

QUALITY

SERVICE MANAGER

Ambrogio COLOMBO

End

Slurry Pump Size

1

Hindings View of Music

17780kg

*Zbrojstvo malec / Mesto Ruzica
Dobrobozavod / Društvo L. / ...*

INSPEKČNÍ CERTIFIKÁT

INSPECTION CERTIFICATE, ABNAHMEPRÜFZEUGNIS, CERTIFICAT DE RECEPTION DU MATÉRIEL

VÍTKOVICE a. s.

EN 10204 3.1.b

Lot No. 14805
 Date 3.08.98
 Page 1

SMIL 200 - PLOCHÉ VÝROBKŮ, 200 02 OSTRAVA s. - ČESKÁ REPUBLIKA
 DIVISION 200 - FLAT PRODUCTS, 200 02 OSTRAVA s. - CZECH REPUBLIC
 DIVISION 200 - FLACHEERZEUGNISSE, 200 02 OSTRAVA s. - TSCHHEISCHE REPUBLIK
 DIVISION 200 - PRODUITS PLATÉS, 200 02 OSTRAVA s. - RÉPUBLIQUE TCHÈQUE

Customer: American Steelplate

PREUSSAG HANDEL GMBH
 SCHWANNSTRASSE 12
 D-40476 DUSSELDORF
 GERMANY

Order No. 535889-28
 Serial: 9821D50752/0002
 12/30823 A-D

Weight: 17780kg
 HOT ROLLED STEEL PLATES.

Vyrobeno v systému jakosti dle ČSN EN ISO 9002.
 Made in quality system according to EN ISO 9002.
 Hergestellt im Qualitätssicherungssystem laut EN ISO 9002.
 Fabriqué en système qualité conformément à la EN ISO 9002.

Dim. rozměr a hmotnost výrobku Type, Dimension and weight of products Art, Abmessungen und Masse des Erzeugnisses, Sorte, dimensions et masse des produits			Jabot, Material quality, Material quality, Qualité			Norma, Standard Norm Norme		
11/2X96X480"			A516GR70			ASTM A516M GR.70-90		
17780 kg			normalized			ASME SA516 GR.70-95		
2 Plates			A516GR70			ASTM A20M/93A		
38,1 x 2438 x 12 192 mm			normalized			ASME SA20M/95		
Potrubí No of pipes Jusky No de pipes	Výrobek Rolled Product Walschucke Hr No de la mola	Typ No Heat No Schmelze Nr No de la coada	Test No Probe Nr No de la prueba	Zkouška izlom Tensile test, Zugversuchtest, Essai de traction				Temp. Temp. Temp.
1	2	3	4	5	6	7	8	9
1	9895	29551	17	124	A q 20	350	504	33.6
1	9897	29551	17	125	A q 20	378	496	33.6

Charpy V-Notch Impact test acc. A20M acc. ASTM and acc. SA20M acc. ASME-CL4

Heat	C	Mn	Si	P	S	Cu	Ni	Cr	Mo	V	Al	Nb
29551	0.19	1.13	0.24	0.020	0.008	0.03	0.02	0.05	0.01	0.01	0.055	0.01

APPROVED
 ITEM # 55
 QC
 DATE 12-3-98
 JOB # 637

T = 73,099
 Y = 50,763

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS VIMENTAL GUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAS

WRAPPER PLATE

Certified a true copy of the original, retained in our file.
 AMERICAN ALLOY STEEL, INC.

TEST REPORT APPROVED DATE 11-18-98
 AMERICAN ALLOY STEEL BY [Signature]
 QUALITY ASSURANCE DEPT.

Normalized temperature 900-920°C/55 min.
 Mercury free. No weld repair.

Attestation vérification pré-départ: All requirements on the material have been fulfilled. Die an den Werkstoff gestellten Anforderungen sind erfüllt. Le matériel est conforme aux conditions prescrites.

VÍTKOVICE
 VÍTKOVICE a.s.
 706 02 OSTRAVA-VÍTKOVICE
 RUSSIA 181 122

Attestation vérification pré-départ: All requirements on the material have been fulfilled. Die an den Werkstoff gestellten Anforderungen sind erfüllt. Le matériel est conforme aux conditions prescrites.

Kontrola analýz / Werkstoffprüfungen
 Dr. Ing. Věra Ševčíková

AT No. 203270

PIPE

鋼管検査証明書
INSPECTION CERTIFICATE

SHIPPER: HARUBERI CORPORATION
REFERENCE NO: 308-08743005
CONTRACT NO: 7-542-83-5-5-112
COMMODITY: 308-BLACK STEEL PIPE
SPECIFICATION: API SPEC 5L GRADE B (31 EDITION APR. 1993)

日本製鋼所株式会社
Nippon Steel Corporation
HEAD OFFICE: 2-1-1, OHTSUKA 4-CHOME, TOYO IN, JAPAN
BRANCH: 100, DATA SHOMAI, HIGASHI-KU, YOKOHAMA
PREP BY: JAPAN

検査番号: SL727033
製造番号: 11
検査日: 1987-05-22

品名: 鋼管

SIZE	QUANTITY	MASS	HEAT NO.	CONTRACT NO.	TEST NO.	TEST RESULT	REMARKS
10" X 0.75" X 40'	75	130.02	103270	375-0011	1	53500 70300 490	
				375-0011	2	73500	
				375-0011	3	54500 70300 490	
				375-0011	4	52000 69000 500	
				375-0011	5	72500	
				375-0011	6	57500 69000 500	

APPROVED
ITEM # 56
QC
DATE 12-3-98
JOB # 637

THIS MATERIAL MEETS
THE REQUIREMENTS OF
ASME SECTION II PARTA
FOR SA-106 B MATERIAL
CERTIFIED PER UG-10
AT
12-3-98

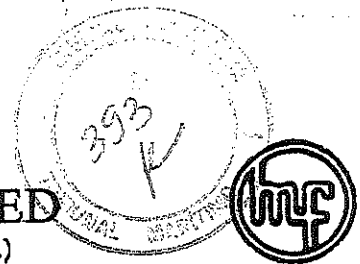
WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN, HAS BEEN
MADE IN ACCORDANCE WITH THE RULES OF THE CONTRACT.

検査員: A. M. JONES
検査員: 佐藤 健一
検査員: 佐藤 健一

392

ORIGINAL DOCUMENT

日本製鋼所株式会社
DIVISION OF SERVICES CARTORIALS



METAL FORGINGS PRIVATE LIMITED

B-1, MAYAPURI INDUSTRIAL AREA, NEW DELHI-110064. (INDIA)

Phones : 513 43 76, 513 44 58

MILL TEST REPORT/MILL TEST CERTIFICATE NO. : MF/QC= 4250 Dt. 10.3.97

M/s. PROFIT PIPING COMPONENTS INC,
4579, LEWIS ROAD,
STONE MOUNTAIN, GEORGIA-30083 U.S.A.

YOUR P. O. NO. & DATE : 5944 Dt. 28.2.97
SPECIFICATION : ASTM A105/ASME SA105
BATCH NO. : E 235 A
LAB. RFF. NO. : 039714

DATE OF TESTING : 3.3.97
CONDITION : -
CAST NO. 603305

Certified that representative samples selected and tested from the material as enumerated below conforms to the testing requirement of the above mentioned specifications and requirements of the customer.

Item No.	Fully M/C Flg. DESCRIPTION As per ANSI B16.5	Qty. No.	CHEMICAL - ANALYSIS %										
			C	Si	Mn	P	S	Ni	Cr	Mo	V	Cu	C
4	18"-150WRF-XH	15	.24	.26	.74	.025	.019	-	-	-	-	-	-
			(MILL TEST REPORT)										
			.23	.28	.76	.024	.021	.04	.03	<.02	<.02	<.02	<.02
			(PRODUCT ANALYSIS)										

PHYSICAL - PROPERTIES

Y.S. Kg/mm ²	U.T.S. Kg/mm ²	Elong % on 25mm	Redn. in Area %	Hardness B.H.N.	Bend Test	Impact Test	Other Test
34.57	53.25	(4D) 32.80	54.92	156	-	Size of Test Piece Test Temp. Values Average Value	-

REMARKS:

APPROVED

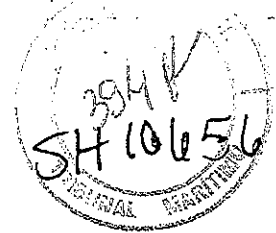
ITEM # 57
QC AS
DATE 12-3-98
JOB # 637

(MANAGER QUALITY CONTROL)

637

12-3-98

JOSÉ CARLOS PIMENTEL SUSMÃO
OFICER
DIVISÃO DE SERVIÇOS CARTÓRIAS



METAL FORGINGS PRIVATE LIMITED

B-1, MAYAPURI INDUSTRIAL AREA, NEW DELHI-110064. (INDIA)

Phone : 5134376 5134458

MILL TEST CERTIFICATE NO. MF/QC : 1387 Dt. 31.8.98



M/s. PROFIT PIPING COMPONENTS INC
4579, LEWIS ROAD,
STONE MOUNTAIN, GA-30083 U.S.A.

YOUR P.O. NO. & DATE : 5422 Dt. 14.5.98

SPECIFICATION : ASTM A105/ASME SA105 (1995) DATE OF TESTING : 23.8.98

BATCH NO. : E 341 B

LAB. REF NO. : 0898141

CONDITION : -

CAST NO. 815179

PAINTING : - Black Flat Mercury Free

Certified that representative samples selected and tested from the material as enumerated below conforms to the testing requirement of the above mentioned specifications and requirements of the customer

Item No.	Fully M/C Flg. DESCRIPTION As per PROFIT ORDER	Qty. No.	CHEMICAL - ANALYSIS %									
			C	Si	Mn	P	S	Ni	Cr	Mo	V	Cu
2	16"-150BLRF	30	.23	.21	.70	.021	.023	-	-	-	-	-
			(MILL TEST REPORT)									
3	18"-150BLRF	110	.23	.23	.73	.022	.022	.05	.05	.02	.02	.02
			(PRODUCT ANALYSIS)									

PHYSICAL - PROPERTIES

Y.S. Kg/mm ²	UTS. Kg/mm ²	Elong % on 50x	Redn. in Area %	Hardness B.H.N.	Hard Test	Impact Test	Other Test
30.52	51.68	(4D) 31.0	53.83	152	-	Size of Test Piece Test Temp Values Average Value	APPROVED ITEM # 58 QC DATE 12-3-98 JOB # 637

REMARKS: The above material is free from mercury contamination and no mercury bearing equipments was used in manufacturing and testing.

AP
637
12-3-98

BLIND flange

[Signature]
(MANAGER QUALITY CONTROL)

(TYPE B - INV) ORDANCE W. 104474/EN1020/ (30049)

SHIPPER'S NO. 24021-L

VEHICLE ID

RED MAN PIPE & SUPPLY CO
ACCOUNTS PAYABLE # 4030
SUPPLY DIV
PO BOX 35632
TULSA OK 74133-0632

RED MAN PIPE & SUPPLY CO
ATTN: LARRY BINDER
PO BOX 35632
TULSA OK 74133-0632

MAIL TO ADDRESS
RED MAN PIPE & SUPPLY CO
SUPPLY DIV
ATTN: LARRY BINDER
PO BOX 35632
TULSA OK 74133-0632

VENDOR
USS TUBULAR PRODUCTS APPROVED
1807 EAST 28TH ST. ITEM # 59
LDRAIN, OH 44055 QC
DATE 12-1-98
JOB # 637

SPECIFICATION AND GRADE

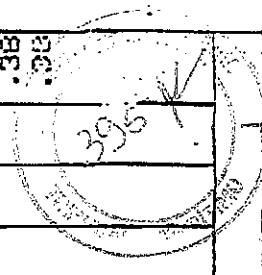
PIPE CARBON SMLS STD PIPE API 5L-X41ST EDITION DTD 4/1/95 GRADE B AND GRADE X42 ASTM A53-#95 ASTM A106-#94A GRADE B QUAD STENCIL ASME SA53-#1995 EDITION 1995 ADDENDUM ASME SA106-#1995 EDITION 1995 ADDENDUM GRADE B CARBON EQUIVALENT ON HEAT ANALYSIS .40 MAX BASED ON C+MN OVER 6 + (CR+MO+V) OVER 5 + (CU+NI) OVER 15 BLK REG MILL COAT PE DEV 30 DEG MEETING ALL THE APPLICABLE REQUIREMENTS OF NACE STANDARD MR-01-75

16" PIPE 50B-637
16583

MATERIAL COND:	AS ROLLED	OD: 16.000 (406.400)		ID: 12.700		WALL: 1.500		IN (mm)		OUT (mm)		IN (mm)		OUT (mm)	
		YIELD		TENSILE		ELONG %		MIN HYDRO		MIN HYDRO		MIN HYDRO		MIN HYDRO	
PRODUCT IDENTIFICATION	TENSILE TEST TYPE/ ORIENTATION	TEST COMD	RANGE WIDTH	YIELD MIN: MAX	TENSILE PSI MIN: MAX	ELONG % MIN: MAX	YIELD MAX	TENSILE PSI MIN: MAX	ELONG % MIN: MAX	YIELD MAX	TENSILE PSI MIN: MAX	ELONG % MIN: MAX	YIELD MAX	TENSILE PSI MIN: MAX	ELONG % MIN: MAX
A23873	STRIP/1/B	AR	1.500	51100	50	74800	0.68	5	5	5	5	5	5	5	5

LEGEND:	L - LONGITUDINAL U - UPSET		F - TRANSVERSE N - NORMALIZED		QT - QUENCHED & TEMPERED SR - STRESS RELIEVED				AH - AS ROLLED AQ - AS QUENCHED				B - BODY				W - WELD			
			C	MN	P	S	SI	CU	NI	CR	MO	AL	N	V	B	Ti	CB	CO	CE	
PRODUCT IDENTIFICATION	TYPE																		MAX	
		A23873	HEAT	17	104	008	009	26	02	02	05	01	032		001					40
		A23873	PROD	19	104	009	009	25	02	02	05	01	027		001					36
A23873	PROD	19	106	008	010	25	02	02	02	05	01	025		001					38	
				** END OF DATA THIS SHEET **																
																			395	

*C.E. IS BASED ON THE FOLLOWING EQUATION: (S)CE = C + (MN/5) + (CR+MO+V)/5 + (NI+CU)/15



MILL OR	ITEM NO.	SHIPPER'S NO.	CO. NUMBER	Q.D. 16,000(406,400)	IN (mm)	WALL: 0.500 (12.700)	IN (mm)									
DRE:1751 01																
MATERIAL AS ROLLED																
PRODUCT IDENTIFICATION	FLAT	BEND	GRAIN SIZE	MIN COLLAPSE	OR	TEST LOC.	TEMP	SIZE	TEST GOND	FT-105	% SHEAR					
A23893	OK		** END OF DATA				**			1	2	3	1	2	3	AVG

LEGEND:	L - LONGITUDINAL	T - TRANSVERSE	B - BODY	W - WELD	HAZ - HAZ AFFECTED ZONE
TESTING / INSPECTION INFORMATION					
TEST / INSPECTION	YES	RESULTS / COMMENTS			
FULL LENGTH VISUAL	X				
FULL LENGTH EMI	X				
FULL LENGTH MPI					
FULL LENGTH UT					
END AREA INSPECTION (PLAIN END)					
SPECIAL END AREA (SEAM INS)					
FULL LENGTH DRIFT					

ALL WELDING AND MANUFACTURING TOOK PLACE IN THE USA. NO REPAIRS BY WELDING. NO MERCURY OR MERCURY COMPOUNDS ARE ADDED TO THE STEEL AND ALL MERCURY BEARING EQUIPMENT IS PROTECTED BY A DOUBLE BOUNDARY OF CONTAINMENT.

APPROVED
ITEM # 59
QC
DATE 12-11-98
JOB # 637

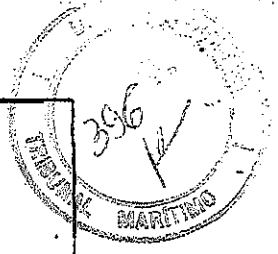
MILL TEST REPORTS FURNISHED
BY RED MAN PIPE & SUPPLY COMPANY

CUSTOMER
YOUR P. O.
TAGGING
OUR P. O.

THIS IS TO CERTIFY THAT THE PRODUCT DESCRIBED HEREIN WAS MANUFACTURED, SAMPLED, TESTED AND/OR INSPECTED IN ACCORDANCE WITH THE SPECIFICATION AND FULFILLS THE REQUIREMENTS IN SUCH RESPECTS.

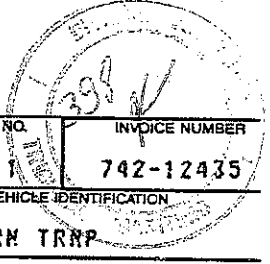
PREPARED BY THE OFFICE OF: F.J. MIKULSKI MGR. MET. &
Q.A. USE TUBULAR PRODUCTS

DATE 10/07/96



Gulf States Steel, Inc.

GADSDEN, AL 35904-1935



-06 -01

GSS ORDER NO.			PURCHASE ORDER DATE		
NUMBER	ITEM	MFG			
36197	02	742	04 29 98		
BASE ORDER NO.			SHIPPED FROM		
10			ALA CITY		

CERTIFICATE OF TESTS

ACCOUNT NUMBER	PAGE NO.	INVOICE NUMBER
56755012	1	742-12435
DATE SHIPPED	ROUTE/VEHICLE IDENTIFICATION	
07 15 98	OSBORN TRAP	

WE CERTIFY THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND TESTED IN ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED ON THE RESULTS OF SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE WITH THE SPECIFICATIONS.

J.G. MILAN
MANAGER PLATE TECHNOLOGY
AND QUALITY

("SHIP TO" SAME AS "SOLD TO" UNLESS OTHERWISE INDICATED)

O'NEAL STEEL INC
P O BOX 2623
BIRMINGHAM AL 35202

O'NEAL STEEL INC
ONE O'NEAL LANE
MOBILE AL 36611

MATERIAL DESCRIPTION A516 CARBON ASTM A-516-90 GRD 70 ASME SA-516 DTD 07/01/95 GRD 70 PUQ KILLED FINE RIM PRACTICE BLACK DOMESTIC STEEL ONLY ST ID: 0427481 500 X 120.0000 SHEARED EDGE X 480.0000 IN 1 7457871 T U213401 1 PCS 1 7457871 T U213402 1 PCS 1 C 27HX MM 85/1.20 P 035HX S 035HX SI 15/40 CU 40HX MI 40HX CR 30HX MO 12HX CB 020HX V 03HX 020HX 2 YLD 38000 MIN TEN 70/90000 XELONG MIN 2 IN 21 OR 8 IN 17 1 TR O'NEAL STEEL INC PO BOX 11508 MOBILE AL 36671 TOTAL WT. 16,336# PCS 2															QUANTITY SHIPPED
															16336

Job # 637

RECEIVED JUL 17 1998

nozzle repad material

ITEM	GRAIN	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Co	V	Al	N	B	Ca	Ti	C.E
7871		.18	1.10	.015	.013	.247	0.03	0.01	0.12	.05	.002	.003	.028					

ITEM	TEST OR PIECE IDENTITY NO.	YIELD KSI	TENSILE KSI	% ELONG		HARDNESS	BEND TEST	HEAT TREAT	YS/TS RATIO	% RED. AREA	GALV COATING	DROP WEIGHT TEAR TESTS						
				2"	8"							DIR	TEMP °F	1	2	AVG		
7871	U213401	48.0	73.0		28			RR	.65									
7871	U213402	49.0	73.0		27			RR	.67									

ITEM	TEST OR PIECE IDENTITY NO.	HEAT TREAT	SIZE	DIR	TEMP °F	ENERGY				% SHEAR				MILS LATERAL EXPANSION				
						1	2	3	AVG	1	2	3	AVG	1	2	3	AVG	

APPROVED
ITEM # 61
QC AS
DATE 12-28-98
JOB # 637

LAST PAGE

00031100050

Isacor Speciality Steels
Vereeniging Works

PO#13301 Angel Light

Test Certificate - Seamless Tubes

General Hertzog Drive
P O Box 48
1930 Vereeniging
South Africa
Telephone +27 16 450 4911
Fax +27 16 423 4906



Licensed under
API Spec 5L and 5CT
5L - 0318
5CT - 0418



SABS ISO 9002
SABS 62-1: 1989
Permit No 4938/7140

Test Certificate
EN 10204 / DIN 50049/3.18



Isacor Order No: 800081 Contract/Customer Order No: SUS9/8560
Reference No: T0280007009 Part No: I1038AXFULL
Customer: TEXAS PIPE
Product: FULLY KILLED HOT FINISHED CARBON STEEL SEAMLESS TUBES
Specification: API 5L 95B/ASTM A106.94B/ASME SA106.94B/SA53B NDE
Product Marking: IST 5L-0319 MONOGRAM 10-98 ASTM A106B/ASME SA106B/SA53B
NB 150SCH80 6.100 m (20.013') 6.626" 28.57 B S TESTED 19300 kPa (2800 psi)
CAST NO: 9B0577 T0280007009 1000000112 NDE

Quantity	Mass (lbs)	Dimensions			Total Length (ft)	Steel Process
		O/D(in.)	Thick(in.)	Length(ft)		
50	28,617.913	6.626	0.432	20.013	1,000.650	Electric Arc

Chemical Composition (%)

Requirements		C	Si	Mn	S	P	Cr	Ni	Cu	V	Al					
Steel Grade	Min	0.150	0.150	0.600	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
SE-20	Max	0.200	0.300	0.900	0.015	0.020	0.200	0.200	0.200	0.050	0.050					
Cast No: 9B0577		0.170	0.290	0.700	0.015	0.008	0.050	0.090	0.110	0.001	0.014					

Mechanical Properties of Material

	Tensile Strength psi	Yield Strength psi	El (in 50mm/2") %
Spec. Min	60190	34956	30
Spec. Max	144392	144392	100
1	72954	46762	32
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

OTHER TESTS

Flattening test Passed
Flaring test Passed
Hydrostatic test 19300kPa for 5 sec
Hardness test HV (30 kg) 147, 148, 148
N.D.E test Flux Leakage Practice E570

Remarks:

Final operation at a temperature above 930°C and cooled in still air.
Hardness in accordance with NACE MR0175-95.

6" pipe
JOB-637
PO#16725

1-18-99

APPROVED

ITEM # 62
QC AS
DATE 1-19-99
JOB # 637

B le Roux Certified: M. Smith

10/04/1998

Manager Quality Assurance

We hereby certify that the steel grade and quality level of all products are in conformity with the order and comply fully with the specification requirements

Sh # 10705 TX

ATLANTIC MFG & MACHINE CO.
18 EAST BLACK HORSE PIKE
WILLIAMSTOWN NJ 08094
VOICE: (609) 561-9533

MATERIAL TEST REPORT

FAX: (609) 561-9276

SOLD TO: PRO-FIT
13131 ALMEDA ROAD
HOUSTON TX 77045

CUSTOMER ORDER NO: 2814

DATE: 09/04/98

ITEMS					HEAT#	HEAT CODE
ITEM#	QTY	DESCRIPTION				
309.1	25.	18" 150# BLIND RF				1892
309.4	35.	24" 150# BLIND RF				1895
312.0	20.	20" 150# BLIND RF				G166
312.3	20.	16" 150# BLIND RF				G233

===== CHEMICAL PROPERTIES =====												
ITEM#	C	Mn	Si	Phos	Sul	Cr	Al	Cu	Ni	Mo	Vn	Cb
309.1	0.180	1.260	0.210	0.009	0.006	0.030	0.000	0.230	0.040	0.070	0.010	0.014
309.4	0.170	1.100	0.210	0.012	0.010	0.040	0.000	0.020	0.020	0.020	0.030	0.006
312.0	0.180	0.720	0.220	0.012	0.022	0.060	0.000	0.160	0.130	0.010	0.010	0.001
312.3	0.190	0.730	0.230	0.014	0.023	0.070	0.000	0.170	0.140	0.010	0.010	0.001

PHYSICAL PROPERTIES							CHARPY IMPACT TEST
ITEM#	YIELD STRENGTH	TENSILE STRENGTH	ELONG%	RED. AREA	HARDNESS		
309.1	64500	79500	29.00	80.00	150/150		
309.4	54000	82500	35.00	69.00	150/150		
312.0	40400	70500	30.00	51.00	147/147		
312.3	40400	70500	30.00	54.00	147/147		

APPROVED
ITEM # 63
QC AS
DATE 1-19-99
JOB # 637

NOTES		
ITEM#	FORGINGS ARE IN COMPLIANCE WITH NACE MR01-75	
309.1	SA/A105-95	B16.5
309.4	SA/A105-95	B16.5
312.0	SA/A105-95	B16.5
312.3	SA/A105-95	B16.5

REC - 1 - 16 - 99
JOB - 637
PO# 16725

We hereby certify that the reported figures are correct as contained in the records of the corporation and that material was manufactured in the United States of America.

Certification Andrew J. Walker
ANDREW J. WALKER QA



UMA SHANKER KHANDLWAL & CO.
E-30 OKHLA INDUSTRIAL AREA PHASE-II,
NEW DELHI-110020

Works Test Certificate

USKLAB NO. 96/928/ST-585-1 DATE: 28.9.95 INVOICE NO. 2077 DATE: 29.9.96

Purchase Order No. H 79723
Component 24"-150# STEEL P.L.G.
Drawing No. USK/CW/CI-3/145-92
Machining STD. ANSI B16.5-1988

TRC. U.S.A.
Forging Specification: ASTM A105 - 96
Steel Sample V.S.F.

Order No. 903903

HEAT NO. 9308

CHEMICAL COMPOSITION

Element	Specified Composition %	Actual Composition	USKLAB	WILL T.C.
Carbon	0.35 max.	C. 222	0.24C	
Manganese	0.60-1.05	G. 720	0.74C	
Silicon	0.0-0.35	D. 280	0.26C	
Sulphur	0.043 max.	3.021	0.019	
Phosphorus	0.035 max.	0.027	0.025	
Chromium	0.30 max.	0.020	0.022	
Nickel	0.40 max.	0.040	0.023	
Copper	0.40 max.	0.030	0.071	
Molybdenum	0.12 max.	0.004	0.004	
Vanadium	0.15 max.	0.004	0.004	
Columbium	0.02 max.	0.000	0.000	
Carbon Equivalent (CE)	0.47 max.	0.353	0.375	

MECHANICAL PROPERTIES

PROPERTIES

SPECIFIED

OBTAINED

Yield Strength
MPa

250 min.

3-2.07

Tensile Strength
MPa

405 min.

520.25

% Elongation
in 50 mm (4D)

22.0 min.

25.40

Hardness
HB

182 max.

156.00

% Reduction
of Area

30.0 min.

55.23

Remarks: We hereby certify that the material described here in has been tested in accordance with the applicable specifications referred above and meets the requirements.

Checked by:

28.9.96

Metallurgical

Certified by:

Quality Control Manager

APPROVED
ITEM # 64
QC
DATE 1-19-99
JOB # 637

JSTR

AMERI-STAR FORGE

Subsidiary of Global Industrial Technologies, Inc.

SALES (713) 393-4200

BUY QUALITY - BUY AMERICAN

FAX (713) 455-8366

SOLD
TO:**MATERIAL TEST REPORT**

Cert. # 91296

B/L #

0

Inv. #

P/L # 49609

ITEM	QTY.	DESCRIPTION & CONDITION	Cust. PO#:
1	1,004	2" 150# WN RF XM	C998D
		Heat Number: 46358 Mill: SMI	A105-95B FINISH MACHINED
		C: 0.200 Mn: 0.880 P: 0.005 S: 0.016 Si: 0.260 BHN: 183 183	HEAT CODE: KGO
		Cu: 0.170 Ni: 0.120 Cr: 0.050 Mo: 0.031 Cb: 0.000 V: 0.004	
		CE XXXXXXXX (Cu+Ni+Cr+Mo)= 0.393 (Cr+Mo)= 0.081 Charpy @ =	
		Tensile: 86,448 Yield: 61,266 Elong%: 26.5 in 1" ROA%: 59.6	

No. 5: Chemical Analysis results shown are actual. Elements with less than .02 are hereby reported as "<.02%".

Forgings are capable of passing a hydrostatic test compatible with the appropriate rating.

Elongation taken from a Round Specimen.

All material supplied under this order is certified to be free of mercury contamination and no mercury bearing equipment was used in manufacturing, fabrication or testing.

Yield strength was determined using the 0.2% offset method.

COPIA FIEL DO DOCUMENTO ORIGINAL

FORGINGS CO. CERTIFIED TO SA-105
FORGINGS ARE IN COMPLIANCE WITH NACE MRO1-75
REF: 187 BHN MAX
MACHINED FLANGES COMPLY WITH ANSI B16.5

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

APPROVED

ITEM # 65

QC AS

DATE 1-19-99

JOB # 637

IN COMPLIANCE WITH THE "BUY AMERICAN ACT", AMERI-FORGE CORP. CERTIFIES THAT THESE FORGINGS WERE PRODUCED IN HOUSTON, TEXAS AND ALL MATERIAL USED WAS "MADE IN U.S.A." WE FURTHER CERTIFY THAT THIS IS A TRUE COPY OF THE ORIGINAL "MILL TEST REPORT" NOW ON FILE.

Jamie Reger

October 28, 1998

QUALITY ASSURANCE DEPARTMENT

CERTIFIED MATERIAL TEST REPORT
 Trinity Industries Inc. Fitting and Flange Group
 Hackney * Ladish * Flo-Bend

P. O. Box 568887 - 2525 Stemmons Freeway - Dallas, TX 75356-8887
 Phone: (214)589-8177 Fax: (214)589-8892



Number: 238212A2 ADD (186010-010) INV #00971330 4/01/98 Date: 4/01/98

Old To: NEW ORLEANS WINDUSTRIAL
 110 WEST AIRLINE HWY #C
 KENNER LA 70062

Ship To: NEW ORLEANS WINDUSTRIAL
 110 W. AIRLINE HWY - SUIT
 KENNER LA 70062

Mat Code	Qty	Description / Specifications
97TM	4	4 150 RF WN S/120 A/SA 105- 95B , NACE MR0175 A105 1/HUU AS FORGED
98BL	1	18 150 RF BLD A105 F A/SA 105- 96 , NACE MR0175 A105 34 / 15959 AS FORGED
97AA	1	18 150 RF WN STD A/SA 105- 96 , NACE MR0175 A105 2 / 576702 AS FORGED
97AG	2	20 150 RF BLD A105 F A/SA 105- 96 , NACE MR0175 A105 34 / 13400 AS FORGED

APPROVED
 ITEM # 66
 QC AS
 DATE 1-19-99
 JOB # 637

Chemical Analysis									
Mat Code	C	Mn	P	S	Si	Cr	Mo	Cu	Ni
97TM	.180	1.110	.009	.013	.220	.090	.010	.150	.070
98BL	.200	1.120	.027	.013	.280	.028	.002	.012	.020
97AA	.200	.850	.015	.004	.200	.200	.020	.190	.080
97AG	.220	1.130	.023	.011	.290	.028	.002	.009	.018

Chemical Analysis (cont.)									
Mat Code	V	Nb	B	Al	N	Ti	SN		CE
97TM	.027	.007	.000	.000	.000	.000			.404
98BL	.002	.001		.002					.394
97AA	.000	.002		.037					.403
97AG	.001	.001		.009					.415

Physical Properties						
Mat Code	Tensile* KSI	Yield KSI	% Elong. in 2 in	% R.A.	Hardness HB	
97TM	77.4	54.3	25.1	59.6	167	
98BL	83.3	38.5	32.0	55.0	149	
97AA	75.8	45.1	34.0	68.0	156	
97AG	81.0	43.5	26.0	56.0	147	

Charpy Results					
Mat Code	Size mm x 10 mm	Temp(F)	Foot Lbs.	Lat. Expansion	% Shear
97TM					
98BL					
97AA					
97AG					

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
 OFICINHA
 DIVISÃO DE SERVIÇOS CARTORIAIS

L = Longitudinal, T = Transverse, R = Round, S = Strip

certify that the material herein described has been manufactured, heat treated, sampled, tested, and inspected in accordance with the above standards and specifications and satisfies those requirements. We certify these flanges and fittings capable of passing a hydrostatic test compatible with their rating. Above figures are correct as contained in the records of the Company. This information has been electronically transmitted to our customer.

/ Glinda LaFleur

(TYPE B - R / TRDARGE WITH IS 78/EN10204/DIN6004)

ITEM NO. DR 005 01 SHIPPERS NO. 96-43-L P.O. NUMBER 3.500 (88.900) O.D. 0.600 (15.240) in (mm) WALL: 0.600 (15.240) in (mm)

PRODUCT IDENTIFICATION	FLAT	BEND	GRAIN SIZE	MIN COLLAPSE	DIR	TEST LOC.	TEMP	SIZE	CHARPY V-NOTCH IMPACT TESTING					HAZ - HEAT AFFECTED ZONE
									TEST COND.	1	2	3	AVG	
Y67259	OK		XX	END OF DATA	THIS SHEET	XX								

LEGEND:	L - LONGITUDINAL	T - TRANSVERSE	B - BODY	W - WELD	RESULTS / COMMENTS
FULL LENGTH VISUAL					
FULL LENGTH EMI					
FULL LENGTH MPI					
FULL LENGTH UT					
END AREA INSPECTION (PLAIN END)					
SPECIAL END AREA (SEA) INSP.					
FULL LENGTH DRIFT					

ALL MELTING AND MANUFACTURING TOOK PLACE IN THE USA. NO REPAIRS BY WELDING. NO MERCURY OR MERCURY COMPOUNDS ARE ADDED TO THE STEEL AND ALL MERCURY BEARING EQUIPMENT IS PROTECTED BY A DOUBLE BOUNDARY OF CONTAINMENT.

APPROVED
ITEM # 69
QC
DATE 1-28-99
JOB # 637

MILL TEST REPORTS FURNISHED
BY RED MAN PIPE & SUPPLY COMPANY
CUSTOMER: Subsea
YOUR P. O. 476
TAGGING 6444 047

JOSÉ CARLOS PIMENTEL G. SAO
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓRIOS

COPIA FIEL DO DOCUMENTO ORIGINAL

THIS IS TO CERTIFY THAT THE PRODUCT DESCRIBED HEREIN WAS MANUFACTURED, SAMPLED, TESTED AND/OR INSPECTED IN ACCORDANCE WITH THE SPECIFICATION AND FULFILLS THE REQUIREMENTS IN SUCH RESPECTS.

PREPARED BY THE OFFICE OF: F. J. MIKULSKI MGR., MET. &
Q.A. USS TUBULAR PRODUCTS

DATE 05/22/98



JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

5250 Brittmoore Road
Houston, Texas 77041
PHONE (713) 466-6160
FAX (713) 466-6334
1-800-535-0386

PAC STAINLESS LTD.
01/22/1999

TEST CERTIFICATE

SOLD TO: ENGINEERING SPECIALTIES, INC. P.O. BOX 1340 DUNSTON LA 70434	SHIP TO: ENGINEERING SPECIALTIES, INC.
--	---

APPROVED
ITEM # 71
QC AS
DATE 1-29-99
SHIPPING ORDER: 637

P.O. 1340 DATE: 01/22/1999 SHIPPING ORDER: 637

1

Stock Number 750500035	Heat No. C44104	Description and Specification 1/2 X .035 X 20" 316L SMLS A&P	648							
CHEMICAL ANALYSIS										
C .012	Si .52	Mn 1.34	P .025	S .001	Ni 12.72	Cr 17.25	Mo 2.57			
MECHANICAL TESTS										
Flattening GOOD	Flaring GOOD	Hydrostatic GOOD	Surface GOOD	Corrosion GOOD	Eddy Current GOOD	Flange GOOD				
TENSILE PROPERTIES										
Yield 280	Tensile 335	Unit MPA	Elong. 50	Hardness 68-73	Comments ASTM A269/A213					

2

Stock Number 750500035	Heat No. C44104	Description and Specification 1/2 X .035 X 20" 316L SMLS A&P	648							
CHEMICAL ANALYSIS										
C .033	Si .37	Mn 1.38	P .027	S .001	Ni 12.15	Cr 16.32	Mo 3.20			
MECHANICAL TESTS										
Flattening GOOD	Flaring GOOD	Hydrostatic GOOD	Surface GOOD	Corrosion GOOD	Eddy Current GOOD	Flange GOOD				
TENSILE PROPERTIES										
Yield 37.8	Tensile 20.9	Unit ksi	Elong. 50.1	Hardness 73.9	Comments ASTM A269/A213					

3

Stock Number 751000109	Heat No. 750095	Description and Specification 1" X .109 X 20" 316L SMLS A&P	637							
CHEMICAL ANALYSIS										
C .018	Si .74	Mn 1.73	P .030	S .005	Ni 8.37	Cr 13.45	Mo 2.09			
MECHANICAL TESTS										
Flattening GOOD	Flaring GOOD	Hydrostatic GOOD	Surface GOOD	Corrosion GOOD	Eddy Current GOOD	Flange GOOD				
TENSILE PROPERTIES										
Yield 26	Tensile 80	Unit ksi	Elong. 70%	Hardness HRB72	Comments ASTM A269/A213					

We certify that the above data is as
furnished by the producing mill or supplier

PAC STAINLESS LTD.

MACHINE SPECIALTY & MFG
5 ROUSSEAU ROAD
YOUNGSVILLE, LA 70592-9316
Phone 318-837-0020
Fax # 318-837-0062

W/O # : 798424
Date : 12/03/98
P.O.# : 20009150



*** MATERIAL TEST REPORT ***

BILL TO:
DUPRE SUPPLY
1225 PETERS RD.
HARVEY, LA 70058

SHIP TO:
DUPRE SUPPLY
HARVEY, LA

ITEMS		ITEMS	
QTY	DESCRIPTION	QTY	DESCRIPTION
18 5	3" 150# PF W/N XH STARTING MATERIAL :ASTM	A105-95b	
19 5	4" 150# PF W/N STD STARTING MATERIAL :ASTM	A105-95b	
20 5	1" 600# RF THRD. STARTING MATERIAL :ASTM	A105-95b	
4	4" 150# RF W/N S/160 STARTING MATERIAL :ASTM	A105-95b	

CHEMICAL PROPERTIES													
ITEM	HT. CODE	C	MN	P	S	SI	CU	NI	CR	MO	CB	V	CE
18	M3906	.180	.760	.006	.019	.220	.240	.110	.150	.026	.000	.003	.366
19	M4060	.190	1.030	.007	.022	.220	.210	.080	.070	.030	.002	.025	.406
20	M3495	.210	.880	.007	.025	.250	.260	.090	.060	.023	.000	.003	.397
21	M3589	.180	1.110	.009	.013	.220	.150	.070	.090	.010	.007	.027	.405

PHYSICAL PROPERTIES										LAT.	SHEAR	TEST
YIELD	TENSELE	ELONG.	RED.	HARDNESS		CHARPY		TEST		EXPAN.	FRAC.	TEMP
STRENGTH	STRENGTH	% IN 2"	AREA									
18	48,072	70,532	28.40	59.70	143/146							
19	58,295	82,128	28.60	62.10	187-187							
20	53,947	75,807	29.50	59.00	152-156							
21	54,311	77,372	25.10	59.60	167 167							

NOTES

- 18 NACE MRO-175
- 19 NACE MRO-175
- 20 NACE MRO-175
- NORMALIZED 1650F 3 HRS
- 21 NACE MRO1-75

REC - 1 - 25 - 99
JOB - 637
PO# 16774

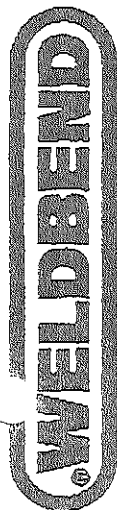
APPROVED
ITEM # 72
QC AS
DATE 12-29-99
JOB # 637

We hereby certify that all test results and process information contained herein are correct and true as contained in the records of the company.

CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL SUSMAO
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓGRAFOS

Wendy Guindoz
MACHINE SPECIALTY & MFG



TO: NEW ORLEANS INDUSTRIAL CO.
110 W. AIRLINE HWY. STE C
KENNER LA 70062
Attn: HRMAN

MATERIAL TEST REPORT FLANGES

JOSE CARLOS PIMENTEL GISMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

[illegible]

Meets the requirements of ASTM A-105,
(and SA-105).
ISO 9002 CERTIFIED MANUFACTURER



FORM NO. M7-OB1

Quality Assurance Department

By

January 27, 1999

Specialty Steels and Seamless Tubes

Vereeniging Works

General Hertzog Road
P O Box 48
1930 Vereeniging
South Africa
Telephone (016) 450-4911
Fax (016) 23-4906



Licensed under
API Spec 5L and 5CT,
5L - 0319
5CT - 0419



SABS ISO 9002
SABS 62-1: 1989
Permit No 4938/7140

Test Certificate
EN 10204 / DIN 50049/3.1B



Iscon Order No TH80188

Reference No 06750/80188/98

Part No I 1022XEFULQ

Contract/Customs Order No 88-01000102223-18137
Product Code

Purchaser

Product FULLY KILLED HOT FINISHED CARBON STEEL SEAMLESS TUBES: BEVELLED ENDS

Specification API 5L 95B/X42/ASTM A106.94B/ASME SA106.94B/ASTM A53B/ASME SA53B NDE

Product Marking IST 5L-0319 MONOGRAM 04-98 X42/ASTM A106.94B/ASME SA106.94B/ASTM A53B/ASME SA53B 2,374 x ,21 x 40,028 5,02 50 NB SCH 80 B S TESTED 2500psi NDE I 1022XEFULQ 3M9451 06750

Quantity	Dimensions	Total Length (ft)	Total Weight lbs	Steel Process
399	2,374in x ,21in x 40,028ft	15971,3	80288,9	ELECTRIC ARC

Chemical Composition (%)

Requirements	Min	Max	C	Si	Mn	S	P	Cr	Ni	Mo	Cu	V	Al	C eq.
			,15	,15	,85	,015	,020	,200	,200	,100	,200	,010	,010	
Cast Number														
3M9451 ✓			,18	,27	,93	,009	,011	,070	,200	,028	,130	,002	,003	,377

Tensile Test

Test No.	Tensile Strength Psi	Yield Strength Psi	Gauge Length	% El
Spec Min	59901	41916		30
1	77160	53809	2,0in	34
2	76435	53084	2,0in	35

Mechanical Test

Bending Test SATISFACTORY
Flattening Test SATISFACTORY
Flaring Test SATISFACTORY
Hydrostatic Test 2500psi for 5 sec
Hardness Test HV (30 Kg) 154, 155, 155
N.D.E. Test FLUX LEAKAGE PRACTICE E570
Drift Test NOT APPLICABLE

Remarks
STEEL GRADE: SC 20/04
FINAL OPERATION AT A TEMPERATURE ABOVE 930C AND COOLED IN STILL AIR. HARDNESS IN ACCORDANCE WITH NACE MR0175-94.

Certified by B. L. ROUX Date 14/05/1998
Manager Quality Assurance

We hereby certify that the steel grade and quality level of all tubes are in conformity with the order and comply fully with the specification requirements.

2" PIPE

Rec-

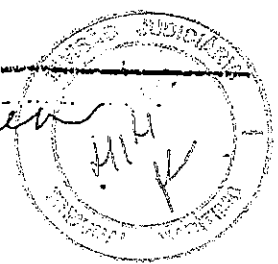
1027-99
JOB# 637
PO# 16794

207042 / 0



AMERI-Forge

Subsidiary of Global Industrial Technologies, Inc.



SALES (713) 393-4200

BUY QUALITY - BUY AMERICAN

FAX (713) 455-8366

SOLD TO:

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL SUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

MATERIAL TEST REPORT

Cert. # 91296	B/L # 0
Inv. #	P/L # 49609

QTY.	DESCRIPTION & CONDITION	Cust. PO#:
1,004	2" 150# WN RF XH	C998D
	Heat Number: 46358 Mill: SMI	A105-95B FINISH MACHINED
		HEAT CODE: KGQ
	C: 0.200 Mn: 0.880 P: 0.005 S: 0.016 Si: 0.260 BHN: 183 183	
	Cu: 0.170 Ni: 0.120 Cr: 0.050 Mo: 0.031 Cb: 0.000 V: 0.004	
	CE (XXXXXX) (Cu+Ni+Cr+Mo)= 0.383 (Cr+Mo)= 0.081 Charpy @ =	
	Tensile: 86,448 Yield: 61,266 Elong%: 26.5 in 1" ROA%: 59.6	

Note: Chemical Analysis results shown are actual. Elements with less than .02 are hereby reported as "<.02%".
 Forgings are capable of passing a hydrostatic test compatible with the appropriate rating.
 Elongation taken from a Round Specimen.
 All material supplied under this order is certified to be free of mercury contamination and no mercury bearing equipment was used in manufacturing, fabrication or testing.
 Yield strength was determined using the 0.2% offset method.

FORGINGS CO. CERTIFIED TO SA-105
 FORGINGS ARE IN COMPLIANCE WITH NACE MR01-75
 REF: 187 BHN MAX
 MACHINED FLANGES COMPLY WITH ANSI B16.5

APPROVED
 ITEM # 75
 QC ART
 DATE 1-29-99
 JOB # 637

REC - 1-27-99
 JOB - 637
 PO# - 16794

COMPLIANCE WITH THE "BUY AMERICAN ACT", AMERI-FORGE CORP. CERTIFIES THAT THESE FORGINGS WERE PRODUCED IN DALLAS, TEXAS AND ALL MATERIAL USED WAS "MADE IN U.S.A." WE FURTHER CERTIFY THAT THIS IS A TRUE COPY OF THE ORIGINAL "MILL TEST REPORT" NOW ON FILE.

[Signature]

October 28, 1998

QUALITY ASSURANCE DEPARTMENT

CERTIFIED MATERIAL TEST REPORT

Trinity Industries Inc.

Fitting and Flange Group

Hackney * Ladish * Flo-Bend

P. O. Box 568887 - 2525 Stemmons Freeway - Dallas, TX 75356-8887

Phone: (214) 589-8177

Fax: (214) 589-8892

Order Number: DALE

Date: 2/02/99

Sold To: DUPRE SUPPLY COMPANY
 VENDOR # 0010048
 307 MECCA DRIVE
 LAFAYETTE LA 70508

Ship To:

APPROVED

ITEM # 76

QC

DATE 2-8-99

JOB # 637

Heat Code	Qty	Description / Specifications
ED98BAB	2 STD W/C	A/SA 516-70, A/SA 234 96A WPB, NAC E MR017
	A516-70 106/B8P5507	

2" WELD CAPS S/40 BORE

SKID PIPING

Atte Debbie

892-0474

Heat Code	Chemical Analysis								
	C	Mn	P	S	Si	Cr	Mo	Cu	Ni
ED98BAB	.220	1.060	.010	.001	.210	.030	.006	.130	.050

Heat Code	Chemical Analysis (cont.)							
	V	Nb	B	Al	N	Ti	SN	CE
98BAB	.004	.003	.0003	.023	.005	.002		.416

É COPIA FIEL DO DOCUMENTO ORIGINAL
 JOSE CARLOS FERNANDES GUSMÃO
 DIRETOR

DIVISÃO DE SERVIÇOS CARTORIAIS

Heat Code	Physical Properties				
	Tensile* KSI	Yield KSI	% Elong. in 2 in	% R.A.	Hardness HB
ED98BAB	78.4T	55.1	24.0		156

Heat Code	Charpy Results			
	Size mm x 10 mm	Temp (F)	Foot Lbs.	Lat. Expansion
ED98BAB				% Shear

* L = Longitudinal, T = Transverse, R = Round, S = Strip

We certify that the material herein described has been manufactured, heat treated, sampled, tested, and inspected in accordance with the above standards and specifications and satisfies those requirements. We certify these flanges and fittings capable of passing a hydrostatic test compatible with their rating. The above figures are correct as contained in the records of the Company. This information has been electronically transmitted to our customer.

Glinda LaFleur

TUBULAR TEST REPORT

LOS PIMENTEL CUSMAO
OFICIN
DIVISÃO DE SERVIÇOS CARTÓFIAS



**KOPPEL
STEEL**

A Subsidiary of TSC Group Inc.

ORDER: T7274

HEAT: 426462

P.O.: 8016-00

PART NO:

SOLD TO: TEXAS PIPE & SUPPLY CO., INC.
ATTN: PURCHASING DEPARTMENT
2330 HOLMES ROAD
HOUSTON, TX 77051

SHIP TO: TEXAS PIPE & SUPPLY CO., INC.
SPIN 774190 SP DELIVERY
PIERCE JUNCTION TEAM TRACK
HOUSTON, TX

SPECIFICATION(S): ASTM ASME SA53/A53-96/SA106/A106-95
API GR B/X42 SR4 INSPECTION
CERTIFIED NACE MR-01-75

GRADE: 1023M

SIZE 2.375 X 0.154

W/F

3.65

QUALITY: SEAMLESS HOT FINISH

	C	MN	S	P	SI	CR	NI	MO	CU	AL	V
L	.19	.51	.012	.004	.24	.10	.07	.03	.17	.013	.001
P	.17	.49	.011	.004	.23	.10	.07	.02	.17	.012	.001
P	.18	.49	.011	.004	.23	.09	.07	.02	.17	.011	.001
P	.18	.49	.010	.004	.24	.11	.08	.03	.18	.012	.001
P	.17	.49	.010	.004	.23	.10	.07	.02	.18	.011	.001

MATERIAL 100% MELTED AND MANUFACTURED IN THE USA.

SPECIMEN	YIELD KSI	TENSILE KSI	ELNG 2"	R/A	ROCK WELL	GRAIN SIZE	C.E.	HYDROTEST
.750" STR	59.6 59.5 57.4	76.4 78.3 75.6	35.0 32.0 34.0		76-78 RB	7.0	0.317	3000 PSI 5 SEC HOLD

APPROVED

ITEM # 77
QC RS
DATE 2-8-99
JOB # 637

2" pipe

*SKIP
piping*

BENDS - SATISFACTORY

7-15-97

DATE

QUALITY ASSURANCE

MATERIAL WAS NOT EXPOSED TO MERCURY DURING PROCESSING.

NO WELDING OR WELD REPAIR PERFORMED ON THIS MATERIAL.

NO INTENTIONAL LEAD ADDITIONS WERE MADE TO THIS MATERIAL.

KOPPEL STEEL OPERATIONS
BOX 750

ER FALLS, PA 15010

PHONE 412-843-7100, FAX 412-847-6255

AMBRIDGE TUBE OPERATIONS
P.O. BOX 410

AMBRIDGE, PA 15003

PHONE 412-266-8830, FAX 412-266-8840

BAYTOWN TUBE PROCESSING OPERATIONS
P.O. BOX 779

BAYTOWN, TX 77522

PHONE 713-383-2603, FAX 713-573-1456



CERTIFIED MILL TEST REPORT
BONNEY FORGE

U.S. ROUTE 522 SOUTH
P.O. BOX 330
MOUNT UNION, PA 17066
(814) 542-2545 (800) 345-7546
FAX (814) 542-9977 TELEX 910-240-9091

LOG NO. 51122 PAGE 1



CUSTOMER: DUPRE SUPPLY
CUSTOMER'S Order No.: 20008320

Date 09/08/98
Bonney Order No. 907964

SHIPPED TO: DUPRE SUPPLY
1225 PETERS ROAD

Mark 639329

HARVEY, LA70058-0000

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO. CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:
------	----------	---------	--

A105-95B

001 30 38204

36-3X1 3M A105 FLEX T

C .190 MN .980 P .009 S .023 SI .24
NI .040 CU .120 CR .060 MO .007 V .02
NB .001

CE (LONG FORMULA) = 0.38

T/S 74987 Y/S 48817 EL 32.50 RA 68.29

BRINELL HARDNESS: 153

1. THE FITTINGS SUPPLIED ARE IN ACCORDANCE WITH PURCHASE ORDER SPECIFICATIONS.
2. CERTIFYING ASTM A105-95B REVISION / ASME SA105-95 EDITION, 97 ADDENDA.

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS FIMMEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

APPROVED

ITEM # 78
QC AS
DATE 2-8-99
JOB # 637

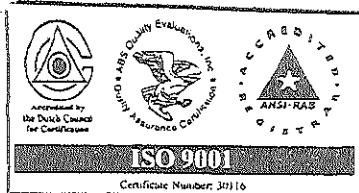
***** END OF CERTIFICATION *****

that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory check

by

[Signature]

QUALITY CONTROL MANAGER

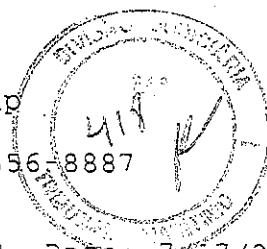


3 3598 56/12/97

120428 25740

CERTIFIED MATERIAL TEST REPORT
Trinity Industries Inc. Fitting and Flange Group
Hackney * Ladish * Flo-Bend

P. O. Box 568887 - 2525 Stemmons Freeway - Dallas, TX 75356-8887
 Phone: (214) 589-8177 Fax: (214) 589-8892



Number: 20007885 (191168-017) INV #00986850 7/17/98 Date: 7/17/98

Ship To: DUPRE SUPPLY COMPANY
 VENDOR # 0010048
 307 MECCA DRIVE
 LAFAYETTE LA 70508

Ship To: DUPRE SUPPLY
 1225 PETERS RD.
 HARVEY LA 70058

Mat Code	Qty	Description / Specifications
98AAM	20	2 STD CAP A/SA 516-70, A/SA 234 96A WPB, NACE MR0175
98AE	30	A516-70 58/7456159 6 STD LR 90 DEG EL A/SA 234- 96A WPB, NACE MR0175
98AR	10	A106B 07 / L60337 8 STD LR 90 DEG EL A/SA 234- 96A WPB, NACE MR0175
98APA	2	A106B 07 / L30433 8 X 6 XH LR 90 DEG R A/SA 234- 94 WPB, NACE MR0175 A106B 66/K26836 STRESS RELIEVED

Chemical Analysis

Mat Code	C	Mn	P	S	Si	Cr	Mo	Cu	Ni
98AAM	.220	1.040	.009	.018	.210	.040	.020	.020	.020
98AE	.150	.740	.012	.004	.260	.110	.030	.190	.110
98AR	.170	.660	.011	.007	.240	.100	.020	.120	.080
98APA	.210	.630	.015	.012	.310	.050	.010	.100	.020

Chemical Analysis (cont.)

Mat Code	V	Nb	B	Al	N	Ti	SN	CE
98AAM	.000	.002		.051				.407
98AE	.001	.003	.005					.321
98AR	.002	.003	.005					.317
98APA	.010	.000						.337

APPROVED
 ITEM # 79
 QC AS
 DATE 2-8-99
 JOB # 637

Physical Properties

Mat Code	Tensile* KSI	Yield KSI	% Elong. in 2 in	% R.A.	Hardness HB
98AAM	75.4T	52.5	25.0		150
98AE	68.6L	47.4	35.0		125
98AR	65.6L	36.5	34.0		137
98APA	67.2L	44.4	39.0	61	130

Charpy Results

Mat Code	Size mm x 10 mm	Temp(F)	Foot Lbs.	Lat. Expansion	% Shear
98AAM					
98AE					
98AR					
98APA					

CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAS

L = Longitudinal, T = Transverse, R = Round, S = Strip

We certify that the material herein described has been manufactured, heat treated, sampled, tested, and inspected in accordance with the above standards specifications and satisfies those requirements. We certify these flanges fittings capable of passing a hydrostatic test compatible with their rating. Above figures are correct as contained in the records of the Company. This information has been electronically transmitted to our customer.

Glinda LaFleur

CERTIFIED MATERIAL TEST REPORT
 Trinity Industries Inc. Fitting and Flange Group
 Hackney * Ladish * Flo-Bend

P. O. Box 568887 - 2525 Stemmons Freeway - Dallas, TX 75356-8887
 Phone: (214) 589-8177 Fax: (214) 589-8892

Order Number: 20006837 (182466-034) INV #00966417 3/06/98 Date: 3/06/99

Sold To: DUPRE SUPPLY COMPANY
 VENDOR # 0010048
 307 MECCA DRIVE
 LAFAYETTE LA 70508

Ship To: DUPRE SUPPLY
 1225 PETERS RD.
 HARVEY LA 70058

Heat Code	Qty	Description / Specifications
AL97AY	15	3 150 RF THRD A/SA 105- 96 , NACE MR0175 A105/04/13716 AS FORGED
AK97BB	15	4 150 RF THRD A/SA 105- 96 , NACE MR0175 A105/93/33793 AS FORGED
AM97BH	50	2 150 RF WN STD A/SA 105- 96 , NACE MR0175 A105/27/14504 AS FORGED
AL97BW	50	3 150 RF WN STD A/SA 105- 96 , NACE MR0175 A105/27/24152 AS FORGED

Chemical Analysis									
Heat Code	C	Mn	P	S	Si	Cr	Mo	Cu	Ni
AL97AY	.190	.890	.010	.019	.240	.070	.030	.170	.08
AK97BB	.200	.890	.008	.015	.220	.070	.010	.180	.07
AM97BH	.190	.870	.012	.023	.280	.116	.017	.230	.07
AL97BW	.200	.890	.014	.023	.250	.102	.018	.120	.06

Chemical Analysis (cont.)									
Heat Code	V	Nb	B	Al	N	Ti	SN	CE	
AL97AY							APPROVED		.37
AK97BB	.002						ITEM # 80		.38
AM97BH	.020	.013					QC AF		.38
AL97BW	.020	.011					DATE 2-8-99		.38
							JOB # 637		

Physical Properties							
Heat Code	Tensile* KSI	Yield KSI	% Elong. in 2 in	% R.A.	Hardness H		
AL97AY	75.3	42.1	32.0	62	144		
AK97BB	72.9	41.9	33.0	64	144		
AM97BH	83.6	55.2	25.0	55	165		
AL97BW	88.5	57.8	26.0	56	176		

Charpy Results					
Heat Code	Size mm x 10 mm	Temp(F)	Foot Lbs.	Lat. Expansion	% Shear
AL97AY					
AK97BB					
AM97BH					
AL97BW					

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORÍAIOS

* L = Longitudinal, T = Transverse, R = Round, S = Strip

We certify that the material herein described has been manufactured, heat treated, sampled, tested, and inspected in accordance with the above standards and specifications and satisfies those requirements. We certify these fittings capable of passing a hydrostatic test compatible with their rating. The above figures are correct as contained in the records of the Company. This information has been electronically transmitted to our customer.

/S/ Glinda LaFleur

(COPD-976 CUST TAKEN)

ER REPORT



NATIONAL FLANGE & FITTING CO.

4420 CREEKMONT ST.
P. O. BOX 924149
HOUSTON, TEXAS 77292-4149
(713) 688-2515
FAX (713) 688-0205

SOLD TO DUPRE SUPPLY CO
307 MECCA DRIVE
LAFAYETTE, LA 70500

MILL TEST REPORT

INVOICE
NUMBER 90070100 DATE 11/16/98

CUSTOMER'S ORDER NO: 2000402-JR

ITEM	QTY	DESCRIPTION	MATERIAL	H CODE
32	2"	150# SW RF XH	A-105-96	KTO-97

APPROVED

ITEM # 81
QC AS
DATE 2-12-99
JOB # 637

APPROVED

ITEM #
QC AS
DATE 11-20-98
JOB # 633

H CODE	CAR	MAN	PHOS	SUL	NIC	CHR	MOL	SIL	CU	VA	NB
KTO-97	.190	.900	.007	.019	.100	.060	.036	.260	.210	.004	.000
N: 74,838 YLD: 52,925 EL: 27.00 RED: 58.90 CVN@										BHN: 167/167	

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JOSÉ CARLOS PIMENTEL GUSMÃO
GERENTE
DIVISÃO DE SERVIÇOS CARTÓRIOS

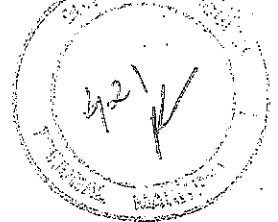
WE CERTIFY THAT THE MATERIAL FURNISHED ON THIS ORDER COMPLIES IN ALL
WITH THE SPECIFICATIONS INDICATED IN DESCRIPTION. WE FURTHER CERTIFY
THAT THE PRODUCT WAS MANUFACTURED IN THE UNITED STATES.

NATIONAL FLANGE & FITTING COMPANY

BY: Mary Harris

JOB #633

CARLOS PIMENTEL GUSMÃO
 DIVISÃO DE SERVIÇOS CARTORIAS



ENGINEERING SPECIALTIES, INC.										PRESSURE CONTROL VALVES PILOTS AND REGULATORS			
PROJECT:		P36-Rancador											
CUSTOMER:		Petromec											
ESI JOB #:		637											
EQUIPMENT:		Production Caisson											
MODEL #:		FP-S-62-5-500-4											
		#82				#83				#84			
										#85			
1	TAG NO.	PCV-53360040				PCV-53360042				PCV-53360044			
2	SERVICE	Sparger Gas Inlet				Sparger Gas Inlet				Sparger Gas Inlet			
3	LINE NO./VESSEL NO.	TD533601				TD533601				TD533601			
4	LINE SIZE/SCHED. NO.	1 1/2"				1 1/2"				1 1/2"			
5	FUNCTION	Regulator				Regulator				Regulator			
6	TYPE OF BODY												
7	BODY SIZE	ORIFICE SIZE		1 1/2"		1 1/16"		1 1/2"		1 1/16"		1 1/2"	
8	GUIDING	NO. OF PORTS		2		2		2		2		2	
9	END CONN. & RATING	NPT				NPT				NPT			
10	BODY MATERIAL	Cast Steel				Cast Steel				Cast Steel			
11	PACKING MATERIAL	Standard				Standard				Standard			
12	LUBRICATOR	ISOLAT. VALVE											
13	SEAL TYPE												
14	TRIM FORM												
15	TRIM MATERIAL	316 SS				316 SS				316 SS			
16	SEAT MATERIAL	316 SS				316 SS				316 SS			
17	REQUIRED SEAT TIGHTNESS												
18	MAX. ALLOW SOUND LEV. DBA	85 dBA				85 dBA				85 dBA			
19	TYPE OF ACTUATOR	Diaphragm				Diaphragm				Diaphragm			
20	PILOT												
21	SUPPLY TO PILOT												
22	SELF CONT.	EXT. CONN.											
23	DIAPHRAGM MATERIAL	Neoprene				Neoprene				Neoprene			
24	DIAPHRAGM RATING												
25	SPRING RANGE	.35 - 5.6 kg/cm2				.35 - 5.6 kg/cm2				.35 - 5.6 kg/cm2			
26	SET POINT	2.1 kg/cm2				1.7 kg/cm2				1.4 kg/cm2			
27													
28	FILT REG	SUPPLY GAGE											
29	LINE STRAINER												
30	HOUSING VENT												
31	INTERNAL RELIEF												
32													
33													
34	A. FLOW UNITS LIQUID												
35	B. FLOW UNITS STEAM												
36	C. FLOW UNITS GAS SP.GR. LOWER												
37	FLUID	Process Gas				Process Gas				Process Gas			
38	QUANT. MAX. m3/hr	MAX. CV *		177		475		177		475		177	
39	QUANT. Oper.m3/hr	OPER CV *		106		* 284		106		* 284		106	
40	VALVE CV *	VALVE FL		* 475				* 475				* 475	
41	Norm in pres kg/cm2	Norm deltaP kg/cm2		9.84		7.73		9.84		8.08		9.84	
42	MAX. INLET PRESSURE	17.5 kg/mc2				17.5 kg/mc2				17.5 kg/mc2			
43	MAX. SHUT OFF	MAX. DELTA P											
44	TEMP. MAX.	OPERATING		100°C		60°C		100°C		60°C		100°C	
45	OPER SP. GR.	MOL. WEIGHT		24.2				24.2				24.2	
46	OPER. VISC.	% FLASH											
47	% SUPERHEAT	% SOLIDS											
48	VAPOR PRESS	CRIT PRESS											
49	PREDICTED SOUND LEVEL DBA												
50	MANUFACTURER	Fisher				Fisher				Fisher			
51	MODEL NUMBER	95H				95H				95H			

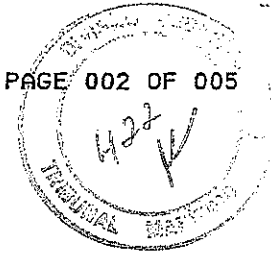
NOTES: 316 Stainless steel tags
 * Information supplied by manufacturer unless already specified

APPROVED

ITEM # 82,83,84,85
 QC AS
 DATE 2-12-99
 JOB # 637

06/08/98 1:03PM

PAGE 002 OF 005



BAYOU STEEL CORPORATION

MATERIAL CERTIFICATION REPORT

RIVER ROAD P.O. BOX 5000
LA PLACE, LOUISIANA 70069-1156
Telephone (504) 652-4900

KLOCKNER NAMASCO
5775-C GLENRIDGE DRIVE
THE INDUSTRIAL CANAL
ATLANTA, GA 30328

TESTED IN
ACCORDANCE
WITH

ASTM A6

INVOICE NO.

PRODUCT WIDE FLANGE BEAM

DATE 06/08/98

* HEAT NO. 52125 40 Pcs
Length 40'0"

GRADE A36 -94

SIZE
W 4 X 4 X 13.0

CHEMICAL ANALYSIS	
C	.11
Mn	.76
P	.006
S	.04
Si	.21
Cu	.41
Ni	.22
Cr	.25
Mo	.069
Cb	
V	
B	
Al	

MECHANICAL PROPERTIES

	TEST 1	TEST 2	TEST 3
YIELD STRENGTH - PSI	47,930	44,790	
TENSILE STRENGTH - PSI	65,270	64,290	
ELONGATION %	30.0	33.0	
GUAGE LENGTH	8	8	
BEND TEST DIAMETER			
RESULTS			
SPECIMEN AREA - SQ. IN.			
REDUCTION OF AREA %			
IMPACT STRENGTH FT/LBS.			

INTERNAL CLEANLINESS	SEVERITY	FREQUENCY	RATING

I HEREBY CERTIFY THAT THE MATERIAL, TEST RESULTS PRESENTED HERE ARE FROM THE REPORTED HEAT AND ARE CORRECT. ALL TESTS WERE PERFORMED IN ACCORDANCE TO THE SPECIFICATIONS REPORTED ABOVE. All Steel is Electric Furnace melted, manufactured, processed, and tested in the U.S.A. with satisfactory results, and is free from mercury contamination in the process.

SIGNED

Timothy R. White
TIMOTHY R. WHITE / QUALITY ASSURANCE MANAGER

DIRECT ANY QUESTIONS OR NECESSARY CLARIFICATIONS CONCERNING THIS REPORT TO THE SALES DEPARTMENT.

1-800-452-8834 (LA)
1-800-535-7692 (USA)

Cust N-0115 -0004 PO:NEW85476
DETAILED GRADE INFO A36 -94

APPROVED

ITEM # 860
QC AS
DATE 2-12-99
JOB # 637

~~Job 622/623~~

~~pump skids~~



(205) 592-8981

CERTIFIED TEST REPORT

The following tests conform to the requirements

100

NAMASCO (KLOCKNER) CORP.
5775 - C GLENRIDGE DR - #110
ATLANTA, GA. 30328

SHIP TO

NAMASCO
4501 NORTH MIRO
NEW ORLEANS, LA. 70177

WE HEREBY CERTIFY THAT THE FOLLOWING DATA IS A TRUE COPY FROM TESTS PERFORMED IN OUR LABORATORY.

David E. McKeown
QUALITY ASSURANCE MANAGER

6/26/97

HEAT NO	SECTION	SPECIFICATION	T #	YIELD (KSI) (MPA)	TENSILE (KSI) (MPA)	ELONGATION 2" 50MM	R.A. %	BND TST RSL	BHN	CHARPY V-HITTING RESULTS	
										SIZE (MM)	TEMP.
972282	F 4X1/2	ABS PART 2-96 GR A	1	47.8	70.0	30.0					
972282	F 4X1/2	ABS PART 2-96 GR A	2	48.1	70.5	29.0					
96 pieces, 20', 13,056 lbs. P.O.# NEW59807											
APPROVED ITEM # <u>87</u> QC <u>AS</u> DATE <u>2-12-99</u> JOB # <u>637</u>											
ATTACHMENT TO MATERIAL REPORT NO 0219482 20 JUN '97 AMERICAN BUREAU OF SHIPPING NEW ORLEANS, LA											

HEAT
NO
972282

Ni	Mo	Cb	V	Al	Sn	CARBON EQUIV.
0.09	.035	.000	.0020	.000	.012	.32

DATE	ROLLED
4/20/91	

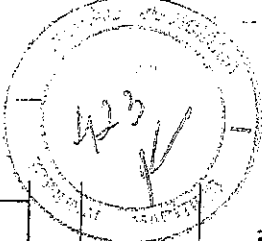
Remarks: 100% MELTED AND MANUFACTURED IN THE USA AND FREE FROM MERCURY CONTAMINATION IN THE PROCESS

WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN MADE TO THE APPLICABLE SPECIFICATIONS BY THE ELECTRIC FURNACE PROCESS AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ABOVE SPECIFICATIONS AND IN THE PRESENCE OF A SURVEYOR FROM THE AMERICAN BUREAU OF SHIPPING WITH SATISFACTORY RESULTS.

269/276-9769

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUIMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS





P.O. BOX 321188
BIRMINGHAM, AL 35232-1188
(205) 592-8981

CERTIFIED TEST REPORT

FOR ADDITIONAL COPIES CALL (205) 599-7961
The following tests conform to the requirements
of the specifications listed.

WE HEREBY CERTIFY THAT THE FOLLOWING DATA
IS A TRUE COPY FROM TESTS PERFORMED IN OUR
LABORATORY.

David L. McKeown
QUALITY ASSURANCE MANAGER

6/11/97

SOLD TO:

NAMASCO (KLOCKNER) CORP.
5775-C GLENRIDGE DR-#110
ATLANTA, GA. 30328

SHIP TO:

NAMASCO
4501 NORTH MIRO
NEW ORLEANS, LA. 70177

HEAT NO	SECTION	SPECIFICATION	T #	YIELD (KSI) (MPA)	TENSILE (KSI) (MPA)	ELONGATION 8" 200MM 50MM	R.A. %	BND TST RSL	BHN	SIZE (MM)	TEMP. JOULES	FT. LBS FT. LBS JOULES
972336	F 3X1 1/4	ABS PART 2-96 GR A	1	52.5	72.5	27.0						
972336	F 3X1 1/4	ABS PART 2-96 GR A	2	53.0	72.5	29.0						

360 pieces, 20', 18,360 lbs.

P.O.#NEW56550

APPROVED

ITEM # 88

QC

DATE 2-12-99

JOB # 637

ATTACHMENT TO MATERIAL REPORT

NO 021818 18 JUN '97

AMERICAN BUREAU OF SHIPPING NEW ORLEANS, LA

HEAT NO	C	Mn	P	S	Si	Cu	Cr	Ni	Mp	Ch	V	Al	Sn	CARBON EQUIV.	DATE ROLLED
972336	.14	0.70	.010	.026	.26	.36	0.12	0.11	.035	.001	.0000	.001	.013	.31	4726797

Remarks: 100% MELTED AND MANUFACTURED IN THE USA AND FREE FROM MERCURY CONTAMINATION IN THE PROCESS

WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN MADE TO THE APPLICABLE SPECIFICATIONS BY THE ELECTRIC FURNACE PROCESS AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ABOVE SPECIFICATIONS AND IN THE PRESENCE OF A SURVEYOR FROM THE AMERICAN BUREAU OF SHIPPING WITH SATISFACTORY RESULTS.

Don H 622/603

CERTIFIED MATERIAL TEST REPORT
 Trinity Industries Inc. Fitting and Flange Group
 Hackney * Ladish * Flo-Bell
 P. O. Box 568887 - 2525 Stemmons Freeway - Dallas, TX 75356-8887
 Phone: (214) 589-8177 Fax: (214) 589-8892



Order Number: 20006839 (182467-049) INV #00966324 3/06/98 Date: 3/06/98

Sold To: DUPRE SUPPLY COMPANY
 VENDOR # 0010048
 307 MECCA DRIVE
 LAFAYETTE LA 70508

Ship To: DUPRE SUPPLY
 1225 PETERS RD.
 HARVEY LA 70058

Heat Code	Qty	Description / Specifications
KK97AN	100	2 STD TEE A/SA 234- 96A WPB, NACE MR0175 A106B 09 / S53235
CM97AG	40	3 STD TEE A/SA 234- 96A WPB, NACE MR0175 A106B 09 / A41561 STRESS RELIEVED
KM97AQ	10	8 STD TEE A/SA 234- 96A WPB, NACE MR0175 A106B 07 / KY0224
KA98AF	200	2 XH TEE A/SA 234- 96A WPB, NACE MR0175 A106B 107 / 9707570

Chemical Analysis									
Heat Code	C	Mn	P	S	Si	Cr	Mo	Cu	Ni
KK97AN	.190	.730	.007	.001	.250	.030	.010	.020	.01
CM97AG	.170	.750	.009	.007	.230	.060	.010	.040	.03
KM97AQ	.150	.680	.007	.008	.220	.100	.030	.150	.09
KA98AF	.160	.770	.013	.013	.210	.010	.002	.010	.01

Chemical Analysis (cont.)									
Code	V	Nb	B	Al	N	Ti	SN	CE	
KK97AN	.001	.001	.030	.027	.006		APPROVED		.32
CM97AG	.002	.002	.001	.025	.005		ITEM # 89		.31
KM97AQ	.001	.003	.005				QC A4		.30
KA98AF	.004	.005					DATE 2-8-99		.21
							JOB # 637		

Physical Properties					
Heat Code	Tensile* KSI	Yield KSI	% Elong. in 2 in	% R.A.	Hardness
KK97AN	71.7L	47.7	36.0		125
CM97AG	69.8L	46.7	38.0		141
KM97AQ	66.3	48.5	39.8		137
KA98AF	60.3	39.7	34.0		119

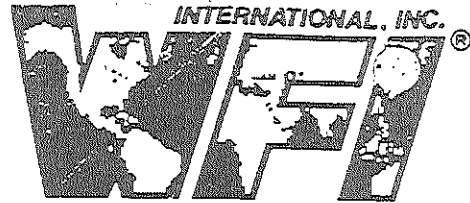
Charpy Results				
Heat Code	Size mm x 10 mm	Temp (F)	Foot Lbs.	Lat. Expansion % Shear
KK97AN				
CM97AG				
KM97AQ				
KA98AF				

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAIS

* L = Longitudinal, T = Transverse, R = Round, S = Strip

We certify that the material herein described has been manufactured, heat treated, sampled, tested, and inspected in accordance with the above standard and specifications and satisfies those requirements. We certify these flange fittings capable of passing a hydrostatic test compatible with their rating. The above figures are correct as contained in the records of the Company. This information has been electronically transmitted to our customer.
 /S/ Glinda LaFleur



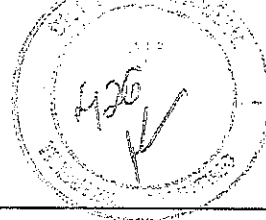
NUCLEAR PRODUCTS, INC.

MANUFACTURER OF PIPING & PRESSURE VESSEL COMPONENTS

THIS PRODUCT HAS NOT COME IN DIRECT CONTACT WITH MERCURY OR ANY OF ITS COMPOUNDS, NOR WITH ANY MERCURY CONTAINING DEVICE EMPLOYING A SINGLE BOUNDARY OF CONTAINMENT. NO WELDING PERFORMED.

SOLD TO

DUPRE SUPPLY COMPANY
VENDOR # 0010 4
307 MECCA DRIVE
LAFAYETTE, LA 70508



CUSTOMER'S ORDER NO.

20008971

WFI NO.

723951

DATE

11/06/99

CERTIFIED MATERIAL TEST REPORT

IAW EN10204 3.1.B.

MATERIAL IS CAPABLE OF WITHSTANDING A HYDRO TEST PRESSURE BASED ON PIPE OF THE SAME SCHEDULE OR WALL THICKNESS.

ITEM	QUANTITY	DESCRIPTION	MATERIAL	HEAT CO
103	30	36 - 3 X 1" 3000 THP	A/SA105-94	412
104	6	36 - 3 X 1" 3000 SWP	A/SA105-94	412

APPROVED
ITEM # 90
QC AS
DATE 2-8-99
JOB # 637

CHEMICAL COMPOSITION

GRADE	C	MN	P	S	SI	CU	NI	CR	MO	V	NB
100	.200	1.00	.010	.006	.200	.03	.03	.04	.020	.019	.000

MECHANICAL PROPERTIES

	TENSILE PSI	YIELD PSI	ELONG %	RA %	HARDNESS
MILL					150 BHN
PRODUCT	76,961	55,500	33.4	62.4	153 BHN

CARBON EQUIVALENCY (LONG FORM.) = .38

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JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

WE CERTIFY THAT THE CONTENTS OF THIS REPORT ARE CORRECT AND ACCURATE AND THAT ALL TEST RESULTS AND OPERATIONS PERFORMED BY WFI OR ITS SUBCONTRACTORS ARE IN COMPLIANCE WITH THE MATERIAL SPECIFICATION AND THE REQUIREMENTS OF THE REFERENCED CODE OR STANDARD AND THAT THE MATERIAL CONFORMS TO THE DIMENSIONAL REQUIREMENTS OF THE ORDER.

HEAT TREATMENT

NORMALIZED @ 1650 DEG F & AIR COOLED

Quality Assurance Representative

(SIGNED AND DATED)

ENGINEERING SPECIALTIES, INC.				ROTAMETERS			
PROJECT:	P36-Rancandor			NO.	BY	DATE	REV
CUSTOMER:	Petrotec			1	GAL	11/19/98	0
ESI JOB #:	637			2	GAL	1/7/99	1
EQUIPMENT:	Production Caisson						
MODEL #:	FP-S-62-5-500-4 #91 #92 #93 #94						
1 TAG NO.	FI-53360047A-E		FI-53360045A-E	FI-53360043A-E	FI-53360041A-E		
2 SERVICE	Fuel Gas Supply		Fuel Gas Supply	Fuel Gas Supply	Fuel Gas Supply		
3 LINE NO./VESSEL NO.	TD533601		TD533601	TD533601	TD533601		
4 MANUFACTURER	Brooks		Brooks	Brooks	Brooks		
5 MODEL NUMBER	MT3810		MT3810	MT3810	MT3810		

METER									
6 MOUNTING	In Line Vertical		In Line Vertical	In Line Vertical	In Line Vertical		In Line Vertical		
7 SUPPLY Rating (kg/cm2)	105		105	105	105		105		
8 CONNECTION SIZE TYPE	1" FNPT		1" FNPT	1" FNPT	1" FNPT		1" FNPT		
9 INLET DIR.	OUTLET DIR.		Bottom Top	Bottom Top	Bottom Top	Bottom Top		Bottom Top	
10 FITTING MATERIAL	316 SS		316 SS	316 SS	316 SS		316 SS		
11 PACKING OR O-RING MATERIAL	Viton		Viton	Viton	Viton		Viton		
12 ENCLOSURE TYPE	Cast Alum.		Cast Alum.	Cast Alum.	Cast Alum.		Cast Alum.		
13 SIZE	FLOAT GUIDE		10 None	10 None	10 None	10 None		10 None	
14 TUBE MATERIAL	FLOAT MATERIAL		316 SS 316 SS	316 SS 316 SS	316 SS 316 SS	316 SS 316 SS		316 SS 316 SS	
15 METER SCALE: FLOW & TYPE	0-37 m3/h Direct		0-37 m3/h Direct	0-37 m3/h Direct	0-37 m3/h Direct		0-37 m3/h Direct		
16 METER SCALE RANGE	0 - 100%		0 - 100%	0 - 100%	0 - 100%		0 - 100%		
17 METER FACTOR	N/A		N/A	N/A	N/A		N/A		
18 RATED ACCURACY	+/- 5% full scale		+/- 5% full scale	+/- 5% full scale	+/- 5% full scale		+/- 5% full scale		
19 HYDRAULIC CALIBRATION REQUIRED	N/A		N/A	N/A	N/A		N/A		
20 FLUID	Gas		Gas	Gas	Gas		Gas		
21 COLOR OR TRANSPARENCY	Transparent		Transparent	Transparent	Transparent		Transparent		
22 MAXIMUM FLOW RATE	37 m3/h		37 m3/h	37 m3/h	37 m3/h		37 m3/h		
23 Normal Flow m3/h	Min. Flow m3/h		21.2 3.6	21.2 3.6	21.2 3.6	21.2 3.6		21.2 3.6	
24 OPER. SPECIFIC GRAVITY (LIQUID)									
25 OPER. PRESSURE	OPER. TEMP.		1 kg/cm2 60° C	1.4 kg/cm2 60° C	1.75 kg/cm2 60° C	2.1 kg/cm2 60° C		2.1 kg/cm2 60° C	
26 STD. DENSITY	MOL. WEIGHT		24.2	24.2	24.2	24.2		24.2	
27 MAX. ALLOWABLE PRESS. DROP									
28									
29 EXTENSION WELL MATERIAL	N/A		N/A	N/A	N/A		N/A		
30 GASKET MATERIAL	N/A		N/A	N/A	N/A		N/A		
31 TRANSMITTER OUTPUT	N/A		N/A	N/A	N/A		N/A		
32 TRANS. ENCLOSURE CLASS	N/A		N/A	N/A	N/A		N/A		
33 SCALE RANGE	MATERIAL		N/A N/A	N/A N/A	N/A N/A	N/A N/A		N/A N/A	
34 NO. OF CONTACT	FORM		N/A N/A	N/A N/A	N/A N/A	N/A N/A		N/A N/A	
35 RATING	HOUSING		N/A N/A	N/A N/A	N/A N/A	N/A N/A		N/A N/A	
36 ACTION									
37									
38 VALVE SIZE & MATERIAL	1" needle 316 S/S		1" needle 316 S/S	1" needle 316 S/S	1" needle 316 S/S		1" needle 316 S/S		
39 VALVE LOCATION	Inlet		Inlet	Inlet	Inlet		Inlet		
40 CONST. DIFF. RELAY MATERIAL									
41 PURGE METER TUBING									
42 AIRSET									
43									

NOTES:

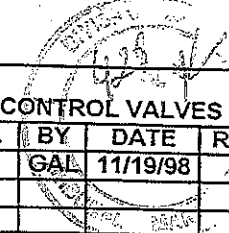
1. Total Quantity Flow Indicators - 20
2. 316 Stainless steel tags.
3. Needle valves for isolation and adjusting gas flow.

APPROVED

ITEM # 91, 92, 93, 94
QC AS
DATE 2-25-99
JOB # 037

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JOSE CARLOS FEMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

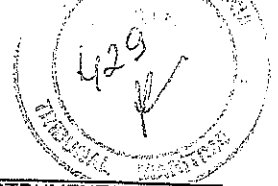
ENGINEERING SPECIALTIES, INC.											
PROJECT: P-36 Rancan CUSTOMER: Petromec CUST. JOB#: 637 PLANT: Production Caisson LOCATION:		CONTROL VALVES <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>NO.</th> <th>BY</th> <th>DATE</th> <th>REV.</th> </tr> <tr> <td>1</td> <td>GAL</td> <td>11/19/98</td> <td>0</td> </tr> </table>		NO.	BY	DATE	REV.	1	GAL	11/19/98	0
NO.	BY	DATE	REV.								
1	GAL	11/19/98	0								

#95 #96

SERVICE: Oil Removal		TAG NO.: XV-53360048 & 0050		DWG. NO.:			
FLUID		UNITS		CRIT PRESS PC::			
2 S	FLOW RATE	m3/h	203	NORM FLOW	34	MIN FLOW	
3 E C	INLET PRESSURE	kg/cm2	3		3		
4 R O	OUTLET PRESSURE	kg/cm2			2.9		
5 V N	INLET TEMPERATURE	°C	60		60		
6 I D	SPEC WT/SPEC GRAV/MOL.WT				24.2 MW		
7 C I	VISCOSITY/SPEC HEATS RATIO						
8 E T	VAPOR PRESSURE PV						
9 I	* REQUIRED CV						
10 O	* TRAVEL	%					
11 N	ALLOWABLE/* PREDICTED SPL	dBA					
12 S							
13 L	PIPE LINE SIZE	IN	1" Sch 80	53	* TYPE Spring Diaphragm		
14 N	& SCHEDULE	OUT	1" Sch 80	54	* MFR & MODEL Fisher 128 PQC		
15 E	PIPE LINE INSULATION			55 A	* SIZE 20 EFF AREA		
16 E				56 C	ON/OFF Yes MODULATING		
17 V	* TYPE	Globe		57 T	SPRING ACTION OPEN/CLOSE Closed		
18 A	* SIZE	1" ANSI CLASS		58 U	* MAX ALLOWABLE PRESSURE 100 psig/7 kg/cm2		
19 L	MAX PRESS/TEMP	14 kg/cm2 / 66°C		59 A	* MIN REQUIRED PRESSURE 0 psig/0kg/cm2		
20 V	* MFR & MODEL	Fisher 128 PQC		60 T	AVAILABLE AIR SUPPLY PRESSURE:		
21 E	* BODY BONNET MATL	Carbon Steel		61 O	MAX 60 psig/4 kg/cm2 MIN 30 psig/2 kg/cm2		
22	* LINER MATERIAL/ID			62 R	* BENCH RANGE		
23 B	END	IN 1" NPT		63	ACTUATOR ORIENTATION		
24 O	CONNECTION	OUT 1" NPT		64	HANDWHEEL TYPE No		
25 D	FIG FACE FINISH			65	AIR FAILURE VALVE Fail Close		
26 Y B	END EXT/MATL			66			
27 / O	* FLOW DIRECTION			67 P	INPUT SIGNAL		
28 N	* TYPE OF BONNET			68 S	* TYPE N/A		
29 N	LUB & ISO VALVE	LUBE		69 I	* MFR & MODEL		
30 E	* PACKING MATERIAL	PTFE V-Ring		70 T	* ON INCR SIGNAL OUTPUT INCR/DECR		
31 T	* PACKING TYPE			71 I	GAUGES BY-PASS		
32	* TYPE			72 O	* CAM CHARACTERISTIC		
33	* SIZE	3/4" RATED TRAVEL 3/8"		73 N			
34 T	* CHARACTERISTIC			74 W	TYPE QUANTITY		
35 R	* BALANCED/UNBALANCED			75 I	MFR & MDOEL		
36 I	* RATED	CV FL XT		76 T	CONTACTS/RATING		
37 M	* PLUG/BALL/DISK MATERIAL	316 S/S Nylon		77 C	ACUTATION POINTS		
38	* SEAT MATERIAL	316 S/S		78 H			
39	* CAGE/GUIDE MATERIAL	N/A		79 I	* MFG & MODEL		
40	* STEM MATERIAL	316 S/S		80 R	* SET PRESSURE		
41				81 S	FILTER GAUGE		
42 S A	NEC CLASS	GROUP	DIV	82 E			
43 P C				83 T	* HYDRO PRESSURE		
44 E C				84 E	ANSI/FCI LEAKAGE CLASS		
45 C E				85 S			
46 I S				86 T			
47 A S							
48 L O							
49 S R							
50 / I							
51 E							
52 S							

- ES: 1. Total quantity of valves = 2
 2. 316 stainless steel tags
 3. Line + XV losses negligible
 * Information supplied by manufacturer unless already specified.

APPROVED
 ITEM # 95,96
 QC AS
 DATE 2-25-99
 JOB # 637



ENGINEERING SPECIALTIES, INC.											
PROJECT: P36-Rancandor											
CUSTOMER: Petromec											
ESI JOB #: 637											
EQUIPMENT: Production Caisson											
MODEL #: FP-S-62-5-500-4											
LEVEL INSTRUMENTS (DISPLACER OR FLOAT)											
NO.		BY		DATE		REV.					
1		GAL		11/18/98		0					
2		GAL		1/7/99		1					
B O D Y / C A S S O N	1	TAG NO.	LSH-53360044		LSL-5336-0045		LSH-53360040		LSL-53360041		
	2	SERVICE	Water Compartment		Water Compartment		Oil Compartment		Oil Compartment		
	3	LINE NO./VESSEL NO.	TD533601		TD533601		TD533601		TD533601		
	4	BODY OR CAGE	Carbon Steel		Carbon Steel		Carbon Steel		Carbon Steel		
	5	MATERIAL RATING	2220 WOG		2220 WOG		2220 WOG		2220 WOG		
	6	CONN. SIZE & LOC. UPPER	1" SIDE		1" TOP		1" SIDE		1" TOP		
	7	TYPE	FNPT		FNPT		FNPT		FNPT		
	8	CONN. SIZE & LOC. LOWER	1" BOTTOM		1" SIDE		1" BOTTOM		1" SIDE		
	9	TYPE	FNPT		FNPT		FNPT		FNPT		
	10	CASE MOUNTING	Yes		Yes		Yes		Yes		
	11	TYPE	Integral		Integral		Integral		Integral		
	D I S P L A C E R	12	ROTATABLE HEAD	No		No		No		No	
13		CAGE FLANGED									
14		ORIENTATION	Left Hand Mount		Left Hand Mount		Right Hand Mount		Right Hand Mount		
15		COOLING EXTENSION									
16		TYPE	Displacer		Displacer		Displacer		Displacer		
17		DIMENSIONS	4" dia.		4" dia.		4" dia.		4" dia.		
18		INSERTION DEPTH	N/A		N/A		N/A		N/A		
19		DISPLACER EXTENSION	N/A		N/A		N/A		N/A		
20		DISP. OR FLOAT MATERIAL	316 SS		316 SS		316 SS		316 SS		
21		DISPLACER SPRING/TUBE MTL.	K-Monel		K-Monel		K-Monel		K-Monel		
X M T R		22	FUNCTION	High Level		Low Level		High Level		Low Level	
		23	OUTPUT	Switch Closure		Switch Closure		Switch Closure		Switch Closure	
	24	CONTROL MODES	Snap		Snap		Snap		Snap		
	25	DIFFERENTIAL									
	26	OUTPUT ACTION: LEVEL RISE									
	27	MOUNTING	Integral		Integral		Integral		Integral		
	28	ENCLOSURE CLASS	Class I Div. I		Class I Div. I		Class I Div. I		Class I Div. I		
	29	ELEC. POWER OR AIR SUPPLY	24 VDC		24 VDC		24 VDC		24 VDC		
	30	SWITCH TYPE	SPDT	Std	SPDT	Std	SPDT	Std	SPDT	Std	
	S E R V I C E	31	UPPER LIQUID	Oil/Gas		Oil/Gas		Gas		Gas	
		32	LOWER LIQUID	Water		Water		Oil		Oil	
		33	SP.GR. UPPER	0.996	1.02	0.996	1.02	0.996	0.996	0.996	0.996
34		PRES. MAX.	3.6 kg/cm2	Atmos	3.6 kg/cm2	Atmos	3.6 kg/cm2	Atmos	3.6 kg/cm2	Atmos	
35		TEMP. MAX.	70°C	40°C	70°C	40°C	70°C	40°C	70°C	40°C	
O P T I O N S		36	AIRSET	N/A		N/A		N/A		N/A	
		37	SUPPLY GAGE	N/A		N/A		N/A		N/A	
		38	GAGE GLASS CONNECTIONS								
		39	GAGE GLASS MODEL NO.								
		40	CONTACTS: NUM								
		41	CONTACTS:								
		42	CONTACT RATING								
	43	ACTION OF CONTACTS									
	44	FILTER REGULATOR WITH GAUGE									
	45										
	46	MANUFACTURER	Fisher or Equal		Fisher or Equal		Fisher or Equal		Fisher or Equal		
	47	MODEL NUMBER	2100E		2100E		2100E		2100E		
48											

NOTES: 316 Stainless steel tag.

APPROVED

ITEM # 97, 98, 99, 100

QC

DATE 2-25-99

JOB # 637

430 ✓

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ENGINEERING SPECIALTIES, INC.				PRESSURE CONTROL VALVES PILOTS AND REGULATORS				
PROJECT:		P36-Rancandor		NO.		BY		
CUSTOMER:		Petromec		1		GAL		
ESI JOB #:		637		DATE		REV.		
EQUIPMENT:		Production Caisson		11/19/98		0		
MODEL #:		FP-S-62-5-500-4						
B O D Y	1	TAG NO.		PCV-53360039				
	2	SERVICE		Power Gas Pumps				
	3	LINE NO./VESSEL NO.		TD533601 \ B533606A-B				
	4	LINE SIZE/SCHED. NO.		1 1/2"				
	5	FUNCTION		Regulator				
	6	TYPE OF BODY						
	7	BODY SIZE	ORIFICE SIZE	1 1/2"	1 1/16"			
	8	GUIDING	NO. OF PORTS		2			
	9	END CONN. & RATING		NPT				
	10	BODY MATERIAL		Carbon Steel				
	11	PACKING MATERIAL		Standard				
	12	LUBRICATOR	ISOLAT. VALVE					
	13	SEAL TYPE						
	14	TRIM FORM						
	15	TRIM MATERIAL		316 SS				
	16	SEAT MATERIAL		316 SS				
	A C T U A T O R /	17	REQUIRED SEAT TIGHTNESS					
		18	MAX. ALLOW SOUND LEV. DBA		85 dBA			
19		TYPE OF ACTUATOR		Diaphragm				
20		PILOT						
21		SUPPLY TO PILOT						
22		SELF CONT.	EXT. CONN.					
23		DIAPHRAGM MATERIAL		Neoprene				
24		DIAPHRAGM RATING						
25		SPRING RANGE		.35 - 5.6 kg/cm2				
26		SET POINT		2.8 kg/cm2				
A C C E S S	27							
	28	FILT REG	SUPPLY GAGE					
	29	LINE STRAINER						
	30	HOUSING VENT						
	31	INTERNAL RELIEF						
S E R V I C E	32							
	33							
	34	A. FLOW UNITS LIQUID						
		B. FLOW UNITS STEAM						
		C. FLOW UNITS GAS SP.GR. LOWER						
	35	FLUID		Process Gas				
	36	QUANT. MAX. m3/hr	MAX. CV *	422	475			
	37	QUANT. Oper. m3/hr	OPER CV *	34	38			
	38	VALVE CV *	VALVE FL	475				
	39	Norm in pres kg/cm2	Norm deltaP kg/cm2	9.9	7			
	40	MAX. INLET PRESSURE		17.5 kg/mc2				
	41	MAX. SHUT OFF	MAX. DELTA P					
	42	TEMP. MAX.	OPERATING	100°C	60°C			
	43	OPER SP. GR.	MOL. WEIGHT		24.2			
	44	OPER. VISC.	% FLASH					
45	% SUPERHEAT	% SOLIDS						
46	VAPOR PRESS	CRIT PRESS						
47	PREDICTED SOUND LEVEL DBA							
48	MANUFACTURER		Fisher					
49	MODEL NUMBER		95H					

NOTE: 316 Stainless steel tags
* Information supplied by manufacturer.

APPROVED

ITEM # 108
QC RT
DATE 2-25-99
JOB # 637



ENGINEERING SPECIALTIES, INC.				LEVEL INSTRUMENTS (DISPLACER OR FLOAT)			
PROJECT: P36-Rancandor				NO.	BY	DATE	REV.
CUSTOMER: Petromec				1	GAL	11/19/98	0
ESI JOB #: 637				2	GAL	1/7/99	1
EQUIPMENT: Production Caisson							
Model #: FP-S-62-5-500-4							
B O D Y / C A G E	1	TAG NO.	LT-53360042				
	2	SERVICE	Oil Compartment				
	3	LINE NO./VESSEL NO.	TD533601				
	4	BODY OR CAGE	Carbon Steel				
		MATERIAL RATING	150#				
	5	CONN. SIZE & LOC. UPPER	4" SIDE				
		TYPE	150# RF				
	6	CONN. SIZE & LOC. LOWER	4" SIDE				
		TYPE	150# RF				
	7	CAGE MOUNTING	60" C-C flg				
		TYPE					
	8	ROTATABLE HEAD	Yes				
9	CAGE FLANGED						
10	ORIENTATION	Right Hand Mount					
11	COOLING EXTENSION						
12							
D I S P L A C E R		TYPE	Displacer				
	13	DIMENSIONS					
	14	INSERTION DEPTH					
	15	DISPLACER EXTENSION	316				
	16	DISP. OR FLOAT MATERIAL	316 SS				
	17	DISPLACER SPRING/TUBE MTL.	K-Monel				
	18						
	19						
X M T R	20	FUNCTION	Level Control				
	21	OUTPUT	0-200 kPa				
	22	CONTROL MODES	Proportional				
	23	DIFFERENTIAL					
	24	OUTPUT ACTION: LEVEL RISE	Increase				
	25	MOUNTING	Integral				
	26	ENCLOSURE CLASS	Weatherproof				
	27	ELEC. POWER OR AIR SUPPLY	200 kPa				
28	SWITCH TYPE	MATERIAL					
S E R V I C E	29	UPPER LIQUID	Gas				
	30	LOWER LIQUID	Oil				
	31	SP.GR. UPPER	SP.GR. LOWER	0.81			
	32	PRES. MAX.	PRES. NORMAL	3.6 kg/cm2	Atmos		
	33	TEMP. MAX.	TEMP. NORM.	70°C	40°C		
	34						
	35						
O P T I O N S	36	AIRSET	SUPPLY GAGE	Yes	Yes		
	37	GAGE GLASS CONNECTIONS					
	38	GAGE GLASS MODEL NO.					
	39	CONTACTS: NUM	CONTACTS:				
	40	CONTACT RATING					
	41	ACTION OF CONTACTS					
	42	FILTER REGULATOR WITH GAUGE	Yes				
	43						
	44						
	45						
46	MANUFACTURER	Fisher or Equal					
47	MODEL NUMBER	2502-249BP					
48							

NOTES: 1) 316 Stainless steel tag.
2) Gauges to read kPa or kg/cm2

APPROVED

ITEM # 109

QC 28

DATE 2-25-99

JOB # 637

DATE:

PAGE2

The Type 168 and 168H three-way, snap-acting switching valves provide fast, positive switching of pneumatic pressures in response to a predetermined change in a pneumatic input signal. These switches can be used to open and close pneumatically operated control valves, to load or exhaust pneumatic systems, or to operate a variety of pneumatic equipment.

Units are available for handling body pressures up to 150 psig (10.3 bar) with diaphragm pressures from 2 to 150 psi (0.1 to 10.3 bar). Maximum and minimum diaphragm pressure changes between switching points are shown in table 1. The diaphragm pressures at which switching occurs are determined by the locations of the adjusting nuts. Type 168 and 168H switching valves are also available with a manual reset lever (see figure 4).

The Type 68-2, shown in figures 1 and 3, is a three-way, snap-acting switching valve that forms the valve body portion of the Type 168 and 168H switching valves. A manual reset switch, see figure 4, may be adapted to the Type 168 and 168H switching valves to provide for manual reset. An extension of the trip lever allows the Type 68-2 to be used as a manual switching valve.

Features

- **Fast, Positive Switching Action**—Trip lever motion increases spring load on the seat until the lever and spring mechanism passes dead center; then valve spring force "snaps" the rocker to its alternate position. Soft seat construction and fast switching action minimize leakage and throttling between seat rings.
- **Full Adjustability**—High and low tripping pressures can be adjusted throughout diaphragm pressure range.
- **Three-Way or On/Off Action**—With one connection (either B or C) plugged, unit can be used as on/off switch.
- **Suitable for Sour Gas Service**—No brass or bronze in trim parts.
- **Automatic or Manual Reset**—Unit may be set to automatically reset after tripping, keeping the pressure within the selected range. With both adjusting nuts in place, the unit trips at the upper (or lower) pressure limit and resets automatically when the lower (or upper) limit is reached. With one adjusting nut in place, the unit trips at the high (or low) pressure limit and remains in that position until it is reset. Reset may be achieved by removing the stem protector and tripping the switch or tripping an optional reset lever (see figure 4).

APPROVED

ITEM # 110
 QC RR
 DATE 2-8-99
 JOB # 637

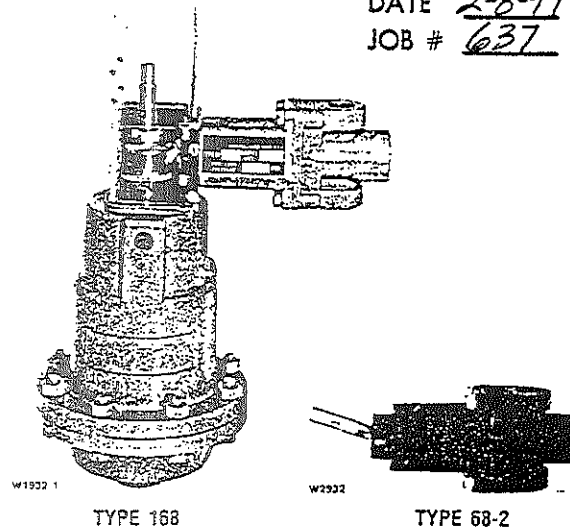


Figure 1. Typical Constructions

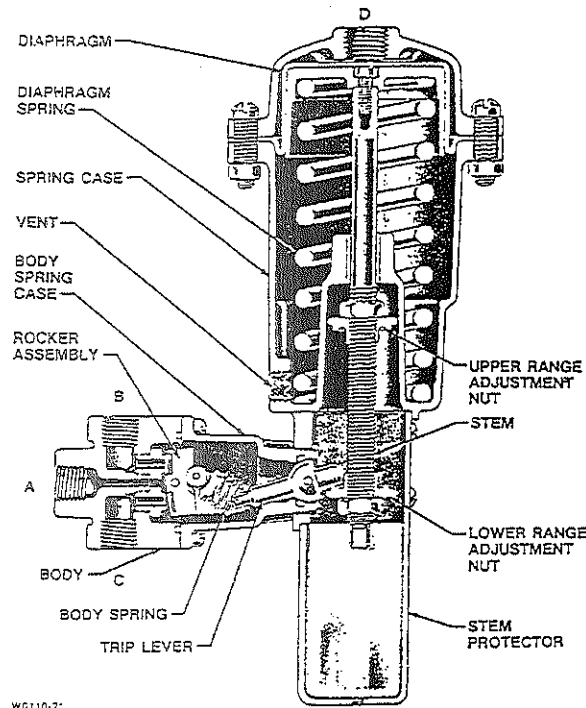


Figure 2. Type 168 Sectional View

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORÍAIOS

ENGINEERING SPECIALTIES, INC.				OIL AND WATER MONITOR			
PROJECT: P-36-Rancondor				NO. 1			
CUSTOMER: Petromec				BY GAL			
ESI JOB #: 637				DATE 11/19/98			
EQUIPMENT: Production Caisson				REV. 0			
MODEL #: FP-S-62-5-500-4							
1	TAG NO.		ATI-53360040				
2	SERVICE		Produced Water				
3	VESSEL NO.		TD533601				
4	MANUFACTURER		Turner Designs				
5	MODEL NUMBER		TD-4100-XD				
METER							
6	LINE SIZE		1"				
7	END CONNECTION		npt				
8	BODY RATING						
9	BODY MATERIAL		Carbon Steel				
10	FLANGE MATERIAL						
11	LINER MATERIAL						
12	NOMINAL FLOW RANGE		1-2 gpm continuous				
13	ACCURACY		± 5%				
14	TEMPERATURE EFFECT						
15	ELECTRODE MATERIAL						
16	TRANSMITTAL		INTEGRAL				
17	OUTPUT		4-20mA				
18	POWER REQUIREMENTS		110-240 VAC 50/60 HZ				
19	ELECTRICAL RATING		CLASS 1, DIV II, D				
20	ELECTRONICS CABINET		316 S/S Nema 4X				
21	RANGE		1 microgram/L->1000mg/L				
22							
FLUID DATA							
23	FLUID		Saline Oily Water				
24	FLOW RATE MIN.	FLOW RATE MAX	1.0 gpm/3.8 lpm	2.0 gpm/7.6 lpm			
25	NORMAL FLOW		1.0 gpm/3.8 lpm				
26	OPERATING PRESSURE		<50 psig / 3.5 kg cm2				
27	BACK PRESSURE						
28	OPER. TEMP MAX	OPER. TEMP MIN	190 F / 88 C	104 F / 40 C			
29	OPERATING SPECIFIC GRAVITY		1.02				
30	VISCOSITY RANGE						
31							
OPTIONS							
32	DEAERATION CHAMBER		316L S/S				
33							
34							
35							
36							
37							
NOTES:							
1. Air supply required for air curtain of non-contact sample cell = 15 scfh @ 10 psig. (0.4 m3/h @ 0.7 kg/cm2)							
2. Analyzer alarm point = 20 ppm oil in water.							
3. Sample feed pump supplied separately.							

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL CUSMÃO
DIRETOR
DEPARTAMENTO DE SERVIÇOS CARTORIAIS

APPROVED

ITEM # 111
QC AS
DATE 3-2-99
JOB # 637

02/09/99 13:11:09
J. B. SMITH MFG CO
6618 Navigation Blvd
Houston, Texas 77011

** MILL TEST REPORT **

Page:
P.O. Box 931
Phone 713-928-571
Fax 713-928-521

Customer Name : DUPRE SUPPLY

Customer P.O. #:

Item Description

Raw Material Description

2 X 1-1/2 STD BXT

2 SCH 40 A106 GR.B SMLS

JBS Code#: TNH Mill HT#: 5715-A

Fitting Spec: ASTM A234 WPB-95A

CHEMICAL ANALYSIS *****

C: .190	MN: .810	P: .020	S: .013	SI: .270	CR: .080	NI: .040
MO: .020	CU: .040	CO: .000	AL: .028	V: .002	CB/NR: .000	CE: .000
SN: .000	TI: .000	Pb: .000				

MECHANICAL TESTS *****

Yield PSI: 59,553	Yield MPa: 411	Tensile PSI: 73,460	Tensile MPa: 507
Elongation: 26.8	Reduction: 61.0	Hardness: 134	Charpy Test Temp: 0
Charpy 1: 0	Charpy 2: 0	Charpy 3: 0	Avg. Charpy: 0

OTHER TESTS *****

Heat Treatment Process Type:

Certification Notes *****

We certify that this is a true and correct copy of the mill certificate, issued by the manufacturer of the steel employed or the laboratory which has determined it as retained in the records of the company. J.B. Smith Mfg makes no representation beyond those of the manufacturer or its agent.

APPROVED

ITEM # 112
QC AS
DATE 2-24-99
JOB # 637

REC- 2-18-99
JOB - 637
PO# 16823

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Jason

03/01/99 13:52:26
J. B. SMITH MFG CO
6508 Navigation Blvd
Houston, Texas 77011

** MILL TEST REPORT **

Page: 1
P.O. Box 9310
Phone 713-928-5711
Fax 713-928-5219

Customer Name : DUPRE SUPPLY

Customer P.O. #: 16954-637

Item Description	Raw Material Description
2 X 3/4 XH BKT	2 SCH 80 A106 GR.B SMLS
JBS Code#: TOP Mill HT#: 365317	Fitting Spec: ASTM A234 WPB-95A
CHEMICAL ANALYSIS *****	
C: .160 MN: .950 P: .012 S: .002 SI: .220 CR: .050 NI: .040	
MO: .010 CU: .020 CO: .000 AL: .000 V: .010 CB/NR: .000 CE: .340	
SN: .000 TI: .000 Pb: .000	
MECHANICAL TESTS *****	
Yield PSI: 47,151 Yield MPa: 325 Tensile PSI: 69,348 Tensile MPa: 478	
El. gation: 42.0 Reduction: 64.0 Hardness: 126 Charpy Test Temp: 0	
Charpy 1: 0 Charpy 2: 0 Charpy 3: 0 Avg. Charpy: 0	
OTHER TESTS *****	
Heat Treatment Process Type:	

Certification Notes *****

We certify that this is a true and correct copy of the mill certificate, issued by the manufacturer of the steel employed or the laboratory which has determined it as retained in the records of the company. J.B. Smith Mfg makes no representation beyond those of the manufacturer or its agent.

APPROVED
ITEM # 113
QC AB
DATE 3-5-99
JOB # 637

E COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

8/18 10:53P
Date: 1/18/99

UcorSteel
A Division of NUCOR Corporation
Post Office Box 125 • Jewett, Texas 75846

24312
CERTIFIED MILL TEST REPORT

18001

Sold To: NAYASCO
4501 NORTH MIRO STREET
NEW ORLEANS LA 70117-4439

Ship To: NAYASCO
4501 N. MIRO & INDUSTRIAL CANAL
NEW ORLEANS LA



8 INCH SCALE

SIZE	GRADE	HEAT NUMBER	CUSTOMER PO NUMBER	TENSILE YIELD ELONG		SI	S	P	V	Nb	Cu	Cr	Ni	Mo	Bend Test
				PSI	PSI &										
1/4 X 12	ASTM A36-96/ASME SA36-95	385-3555	NEM-101074	76700	54400 27	.142	.677	.234	.030	.007	.003	.002	.382	.043	.151 .034
3/8 X 10	ASTM A36-96/ASME SA36-95	394-0062	NEM-101074	76300	51400 24	.161	.636	.212	.027	.015	.003	.003	.330	.091	.084 .018
3/8 X 12	ASTM A36-96/ASME SA36-95	384-3479	NEM-101074	76500	52800 28	.163	.739	.270	.030	.012	.003	.005	.354	.084	.102 .027
3/8 X 6	ASTM A36-96/ASME SA36-95	382-3664	NEM-101074	69500	49700 29	.123	.699	.194	.027	.011	.003	.004	.347	.103	.093 .022
2 X 2 X 1/4	ASTM A36-96/ASME SA36-95	382-3818	NEM-101074	72100	55200 27	.158	.699	.231	.021	.008	.003	.005	.298	.110	.121 .039
2 X 2 X 1/4	ASTM A36-96/ASME SA36-95	381-3512	NEM-101074	74700	52500 23	.157	.641	.215	.027	.007	.003	.002	.363	.087	.220 .061
1 X 4-8	ASTM A36-96/ASME SA36-95	393-0005	NEM-101074	65400	48800 27	.137	.689	.240	.016	.005	.003	.003	.161	.097	.143 .052

APPROVED

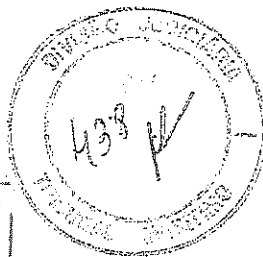
ITEM # 114

QC AS

DATE 3-9-99

JOB # 637

COPIA FIEL DO DOCUMENTO ORIGINAL



JOSE CARLOS MONTES
DIRETOR
DIVISÃO DE SERVIÇOS METALURGICOS

Ben King

CHIEF METALLURGIST

ALL MATERIAL STRAND CAST

MELTED AND MANUFACTURED IN U.S.A.

REC- 2-2-99
JOB- 637
PO# 16970

03/05/99 FRI 11:54 FAX 1 504 872 0032
01/21/99 THU 11:41 FAX 504 8 0390
TO: Fax: 15044562874

DUPRE SUPPLY
GRINNELL-JEFF.LA

0002
000
12/02/99 12/08/99 Page 2 of 2 Log:11

CANVIL

P.O. Box 40, Sarnia, Ontario N3Y 4K9

CERTIFICATE OF TEST

Reference No.: CB-0372

Order Number: 00000000-

12/08/98

GRINNELL S.S./ METAIRIE LA
2900 CLEARVIEW PKWY
SUITE 201
METAIRIE LA

Shipped To:
SAM

PAUL

Part Number: E310810000

É COPIA FIEL DO DOCUMENTO ORIGINAL

Description: 1 3000 THIRD HALF CPLE

A105

Specification: ASTM A105-95b/ ASME SA105

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Chemical Analysis :

Heat No.	Ht Code	C	Mn	P	S	Si	Cu	Ni	Cr
M61	AH1	0.20	1.00	0.010	0.026	0.26	0.12	0.06	0.11
		Mo	V	Co/Nb					
		0.03	0.02	0.00					

Mechanical Properties

Yield Strength psi :	50,000	Tensile Strength psi :	50,000
MPa :	345	MPa :	551
Elongation % 2" :	31.0	Red. Area % :	67.0
Heat Treatment:		Hardness BHN :	159

We certify that this is a true and correct copy of the mill certificate, issued by the manufacturer of the steel employed or the laboratory which has determined it, as retained in the records of the company. CANVIL makes no representation beyond those of the manufacturer or its agent.

CANVIL

APPROVED

ITEM # 115
QC AS
DATE 3-10-99
JOB # 637

637

03/05/99 FRI 08:55 FAX
MACHINE SPECIALTY & MFG
15 ROUSSEAU ROAD
HOUMSVILLE, LA 70592-9316
home 318-837-0020
ex # 318-837-0062

---> DUPRE HARVEY
W/F # : 786387
Date : 06/30/98
P.O. # : STOCK

*** MATERIAL TEST REPORT ***

BILL TO:
MSM HOUMA
P.O. BOX 1546
HOUMA, LA 70361

SHIP TO:
MSM HOUMA
917 SUNSET AVE
HOUMA LA 70360

ITEMS

QTY	DESCRIPTION	STARTING MATERIAL :ASTM	
30	2" 1500# RP BLIND	A105-95b	
6	6" 600# RP BLIND	A105-95b	
6	2" 1500# RP BLIND	A105-95b	

CHEMICAL PROPERTIES

HT. CODE	C	MN	P	S	SI	CU	NI	CR	MO	CB	V	CE
M3382	.190	.930	.009	.029	.210	.210	.088	.060	.024	.000	.004	.382
M1235	.200	.850	.007	.016	.270	.218	.088	.040	.015	.000	.004	.373
M4043	.190	1.070	.010	.050	.240	.190	.070	.070	.020	.008	.027	.409

PHYSICAL PROPERTIES

YIELD STRENGTH	TENSILE STRENGTH	ELONG. % IN 2"	RED. AREA	HARDNESS	CHARPY TEST	LAT. EXPAN.	SHEAR FRAC.	TEST TEMP
45,310	75,884	24.70	59.00	159-159				
53,840	76,444	30.90	59.60	159-159				
45,873	70,454	33.30	63.70	146-146				

NOTES

NACE MRO-175

NORMALIZED @ 1675F 4 HRS A/C NACE MRO-175

NORMALIZED @ 1650F 3 HRS A/C NACE MRO-175

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

We hereby certify that all test results and process information contained herein are correct and true as contained in the records of the company.

APPROVED

ITEM # 116
QC AS
DATE 3-10-99
JOB # 637

MACHINE SPECIALTY & MFG

637
3-8-99

MSM

2900488818 XVA 21:01 06/30/99

TI TUBE GROUP

Guanex

GULF STATES TUBE DIVISION

ROSENBERG, TEXAS 77471

P.O. BOX 962
ROSENBERG, TEXAS 77471
(713) 342-5400
800-231-5984

ORDER NUMBER	CUSTOMER ORDER NUMBER	DATE	OFC	COM	DI WT	NET SLS	GR SLS	ACCOUNT NUMBER	PA
088954	10054-00	08/18/97	23	00	16	20	01	05712000000	FP PAW

TEXAS PIPE & SUPPLY CO INC
2330 HOLMES ROAD
HOUSTON TX 77051

SHIP TO
TEXAS PIPE & SUPPLY CO INC
2330 HOLMES ROAD
HOUSTON TX 77051

SN
TR
INV

CUTTING

COL CUST TRK - TR W/SHPT

PER SPEC	SHAPE	PRODUCT	FG	HEAT TREATMENT	REQUIRE
PER SPEC	ROUND	HOT FINISH		PER SPEC	WK 9-19-97
SEAMLESS	ASTM/ASME A/SA 106 B 94	HF CARBON PIPE			09/19/97

SPECIAL INSTRUCTIONS:

WCH: WK 9-19-97
PL/ ENDS - UVC COATED
ACCEPTABLE PER NACE MRO 175 TABLE 3
PERMISSIBLE OVERAGES ACCEPTABLE
MIN 20' MIN. LENGTHS

APPROVED

ITEM # 117
QC AK
DATE 3-10-99
JOB # 637

QUANTITY	O.D.	I.D.	WALL	LENGTH	WT/FT	WEIGHT	
1	20,480'	1.315	.179 AVG	RAND 17' 24'	2.172	44,483	Comp. 876 pcs. 19,152'
		1" SCH 80					

HEAT NO	C	Mn	P	S	Si	Ni	Cr	Mo	Cu	Pb	REMARKS
566333	.17	.77	.002	.011	.25	.06	.03	.01	.12		V .002 Product Analysis
	.18	.76	.004	.011	.24	.06	.03	.01	.12		V .001 Product Analysis
	.17	.76	.008	.011	.24	.06	.03	.01	.11		V .000 Ladle Analysis
56353	.17	.75	.002	.012	.23	.06	.04	.01	.12		V .002 Product Analysis
	.18	.75	.002	.013	.24	.06	.04	.01	.12		V .002 Product Analysis
	.17	.73	.007	.013	.23	.05	.04	.01	.11		V .000 Ladle Analysis
566363	.19	.67	.002	.011	.22	.05	.03	.01	.10		V .001 Product Analysis
	.20	.67	.002	.012	.21	.05	.03	.01	.10		V .001 Product Analysis
	.19	.68	.006	.012	.22	.05	.03	.01	.09		V .000 Ladle Analysis

FLATTEN		FLARE		FLANGE		REV. FLATTEN		HYDRO TEST		BEND		EDDY CURRENT							
								2500 psi OK		OK									
HEAT NO.		ULT. STR. PSI		YIELD PSI		ELONG 2"		HARDNESS		HEAT NO.		ULT. STR. PSI		YIELD PSI		ELONG 2"		HARDNESS	
566333		71600		48000		46.0													
566353		71800		47900		46.0													
566363		73700		48300		46.0													

"PRODUCED HOT FINISH
DOES NOT REQUIRE HEAT
TREAT PER A-106."



WILLIAM R. BLUM
MY COMMISSION EXPIRES
June 10, 1999

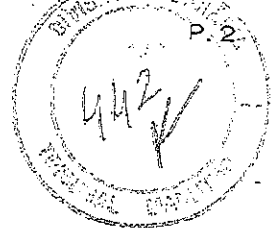
I CERTIFY THAT THE MATERIAL HEREIN DESCRIBED HAS BEEN MANUFACTURED
IN ACCORDANCE WITH THE ORDERED SPECIFICATION AND THAT THIS TEST
INFORMATION IS CORRECT AS CONTAINED IN THE RECORDS OF THE COMPANY.

DWAYNE ALLEN

TECHNICAL ANALYST

SWORN TO AND SUBSCRIBED BEFORE ME THIS
18TH DAY OF Sept.

NOTARY PUBLIC

**Grinnell****CORPORATION****MANUFACTURING DIVISION**

2470 Old Jackson Road
Henderson, Tennessee 38340-9716
901-989-3551

Certificate of Test

Certificate No.:

Date: 07/08/98

Description: 1" SCH 80 SEAMLESS

Specification: ASTM A106-91 GRADE B
ASME SA106 GRADE B

Heat No.: 801704

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL CUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS**CHEMICAL ANALYSIS %**

C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Cb/Nb	Al	Sn
0.160	0.910	0.018	0.010	0.210	0.070	0.040	0.040	0.010	0.002			

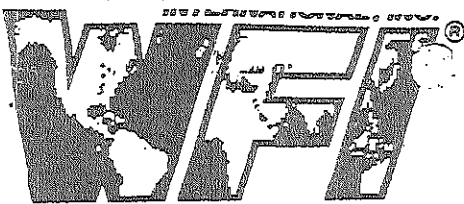
MECHANICAL PROPERTIES

Yield Strength (psi): 48,750 (MPa):	Tensile Strength (psi): 72,250 (MPa):
Elongation % 2": 58.700	Hardness (BHN):

We certify that this is a true and correct copy of the mill certificate, issued by the manufacturer of the steel employed or the laboratory which has determined it, as retained in the records of the company. Grinnell makes no representation beyond those of the manufacturer or its agent.

APPROVED

ITEM # 118
QC AS
DATE 3-10-99
JOB # 637
Thomas Price, CQA
Quality Engineer



NUCLEAR PRODUCTS, INC.

MANUFACTURER OF PIPING & PRESSURE VESSEL COMPONENTS

THIS PRODUCT HAS NOT COME IN DIRECT CONTACT WITH MERCURY OR ANY OF ITS COMPOUNDS. NOR WITH ANY MERCURY CONTAINING DEVICE EMPLOYING A SINGLE BOUNDARY OF CONTAINMENT. NO WELDING PERFORMED.

SOLD TO

DUPRE' SUPPLY COMPANY
VENDOR # 001003
307 MECCA DRIVE

LAFAYETTE, LA 70508



CUSTOMER'S ORDER NO.

20009232

WFI NO.

725224

DATE

12/03/98

CERTIFIED MATERIAL TEST REPORT

TAW EN10204 3.1.B.
MATERIAL IS CAPABLE OF WITHSTANDING A HYDRO TEST PRESSURE BASED ON PIPE OF THE SAME SCHEDULE OR WALL THICKNESS.

ITEM	QUANTITY	DESCRIPTION	MATERIAL	HEAT CODE
2	100	36 - 1 1/2 X 3/4" 3000 THP	A/SA105-96	444
3	10	2 1/2 - 1 1/4 X 1" 3000 THP	A/SA105-96	444

REC- 3-1-99
JOB- 637
PO# 16954

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

CHEMICAL COMPOSITION											
ELEMENT	C	MN	P	S	SI	CU	NI	CR	MO	V	NB
ANALYSIS	.190	1.01	.011	.006	.200	.03	.02	.04	.010	.019	.002
PRODUCED											

MECHANICAL PROPERTIES					
	TENSILE (PSI)	YIELD (PSI)	ELONG (%)	RA (%)	HARDNESS
MILL					150 BHN
PRODUCT	77,903	54,213	33.7	71.4	153 BHN

CARBON EQUIVALENCY (LONG FORM.) = .37

APPROVED

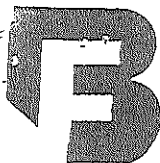
ITEM # 120
QC AK
DATE 3-10-99
JOB # 637

WE CERTIFY THAT THE CONTENTS OF THIS REPORT ARE CORRECT AND ACCURATE AND THAT ALL TEST RESULTS AND OPERATIONS PERFORMED BY WFI OR ITS SUBCONTRACTORS ARE IN COMPLIANCE WITH THE MATERIAL SPECIFICATION AND THE REQUIREMENTS OF THE REFERENCED CODE OR STANDARD AND THAT THE MATERIAL CONFORMS TO THE DIMENSIONAL REQUIREMENTS OF THE ORDER.

M. J. Schmitt

Quality Assurance Representative

NORMALIZED @ 1650 DEG F. & AIR COOLED



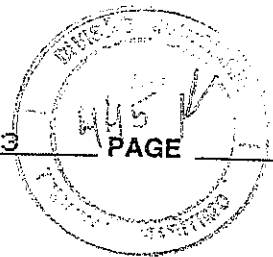
CERTIFIED MILL TEST REPORT

BONNEY FORGE

U.S. ROUTE 522 SOUTH
P.O. BOX 330
MOUNT UNION, PA 17066
(814) 542-2545 (800) 345-7546
FAX (814) 542-9977 TELEX 910-240-9091

LOG NO. 54753

PAGE



CUSTOMER: DUPRE SUPPLY

Date 11/12/98

CUSTOMER'S Order No.:

Bonney Order No.

SHIPPED TO: DUPRE SUPPLY
1225 PETERS ROAD

Mark ATTN: RAY
FAX: 504-368-5036

HARVEY, LA70058-0000

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO. CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:
009	3470	11/2X 3/4 3000 A105 INSR S	C .200 MN 1.030 P .013 S .024 SI .20 NI .050 CU .180 CR .060 MD .010 V .00 AL .001 SN .009 NB .018 CE (LONG FORMULA) = 0.40 T/S 81310 Y/S 57180 EL 26.00 RA 51.00 BRINELL HARDNESS: 170
010	38217	3/4 3000 A105 90EL T	C .190 MN 1.020 P .006 S .026 SI .25 NI .040 CU .100 CR .060 MD .012 V .02 NB .001 CE (LONG FORMULA) = 0.39 T/S 79980 Y/S 52725 EL 29.35 RA 64.34 BRINELL HARDNESS: 156

1. CERTIFYING ASTM A105-95B REVISION / ASME SA105-95 EDITION, 97 ADDENDA.

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL DOS SANTOS
DIRETOR
DIVISÃO DE SERVIÇOS CARTORÁRIOS

APPROVED

ITEM # 121
QC AS
DATE 3-10-99
JOB # 637

***** END OF CERTIFICATION *****

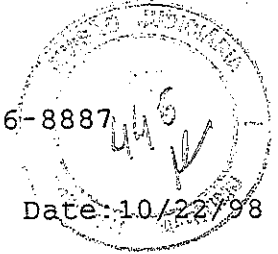
that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory check

by Russ Stewart



QUALITY CONTROL MANAGER

CERTIFIED MATERIAL TEST REPORT
 Trinity Industries Inc. Fitting and Flange Group
 Hackney * Ladish * Flo-Bend
 P. O. Box 568887 - 2525 Stemmons Freeway - Dallas, TX 75356-8887
 Phone: (214)589-8177 Fax: (214)589-8892



Number: 20008719 (194776-018) INV #00107114 10/22/98 Date: 10/22/98

old To: DUPRE SUPPLY COMPANY
 VENDOR # 0010048
 307 MECCA DRIVE
 LAFAYETTE LA 70508

Ship To: DUPRE' SUPPLY
 1225 PETERS RD.
 HARVEY LA 70058

Heat Code	Qty	Description / Specifications
KB98AA	6	1 XH TEE A/SA 234- 96A WPB, NACE MR0175 A106B 49 / 53918 STRESS RELIEVED
KH98AF	50	2 XH TEE A/SA 234- 96A WPB, NACE MR0175 A106B 09 / B68252 STRESS RELIEVED
KD98AI	24	3 XH TEE A/SA 234- 96A WPB, NACE MR0175 A106B 09 / Y66704 STRESS RELIEVED
WF98AD	10	4 XH TEE A/SA 234- 96A WPB, NACE MR0175 A106B 49 / 55801 STRESS RELIEVED

Chemical Analysis									
Heat Code	C	Mn	P	S	Si	Cr	Mo	Cu	Ni
KB98AA	.180	.730	.016	.005	.360	.070	.020	.180	.070
KH98AF	.160	.780	.009	.006	.210	.040	.010	.010	.020
KD98AI	.170	.730	.007	.006	.230	.070	.020	.020	.020
WF98AD	.200	.730	.010	.001	.360	.030	.020	.150	.080

Chemical Analysis (cont.)									
Heat Code	V	Nb	B	Al	N	Ti	SN		CE
KB98AA	.004	.005							.33
KH98AF	.000	.000							.30
KD98AI	.000	.000							.31
WF98AD	.004	.008							.34

Physical Properties					
Heat Code	Tensile* KSI	Yield KSI	% Elong. in 2 in	% R.A.	Hardness H
KB98AA	68.8	46.5	33.0		141
KH98AF	68.7L	47.8	39.0		137
KD98AI	64.5L	41.1	40.0		127
WF98AD	75.4	47.3	35.0	66.0	132

Charpy Results					
Heat Code	Size mm x 10 mm	Temp(F)	Foot Lbs.	Lat. Expansion	% Shear
KB98AA					
KH98AF					
KD98AI					
WF98AD					

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS FONSECA
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAIS

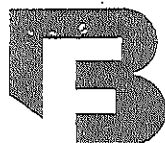
* L = Longitudinal, T = Transverse, R = Round, S = Strip

We certify that the material herein described has been manufactured, heat treated, sampled, tested, and inspected in accordance with the above standards and specifications and satisfies those requirements. We certify these flanges and fittings capable of passing a hydrostatic test compatible with their rating. The above figures are correct as contained in the records of the Company. This information has been electronically transmitted to our customer.

/S/ Glinda LaFleur

APPROVED
 ITEM # 122
 QC AS
 DATE 3-10-99
 JOB # 637

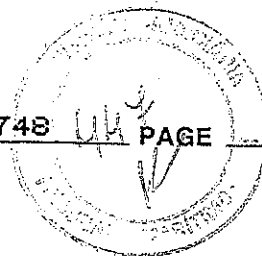
CERTIFIED MILL TEST REPORT



BONNEY FORGE

U.S. ROUTE 522 SOUTH
P.O. BOX 330
MOUNT UNION, PA 17056
(814) 542-2545 (800) 345-7546
FAX (814) 542-9977 TELEX 910-240-9091

LOG NO. 41748 PAGE 1



CUSTOMER: DUPRE SUPPLY

Date 02/27/98

CUSTOMER'S Order No.: 20006841

Bonney Order No. 16394600

SHIPPED TO: DUPRE SUPPLY
1225 PETERS ROAD

Mark

HARVEY, LA70058

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO.	CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:				
110	50	6487 MALE	3/4 3000 A105 UNAR T	C .210 MN	1.010 P	.008 S	.020 SI	.3
			NI .065 CU	.230 CR	.075 MO	.016 V		.0
			CB .013					
			CE (LONG FORMULA) = 0.42					
			T/S 79711 Y/S 58026 EL 44.00 RA 44.00					
			BRINELL HARDNESS: 170					
		6532 NUT-AIU	3/4 3000 A105 UNAR T	C .190 MN	.990 P	.012 S	.026 SI	.2
			NI .090 CU	.190 CR	.080 MO	.020 V		.0
			NB .020					
			CE (LONG FORMULA) = 0.39					
			T/S 74259 Y/S 50328 EL 36.00 RA 68.00					
			BRINELL HARDNESS: 142					
		6543 FEMALE	3/4 3000 A105 UNAR T	C .190 MN	.920 P	.008 S	.026 SI	.2
			NI .110 CU	.250 CR	.220 MO	.040 V		.0
			CB .015					
			CE (LONG FORMULA) = 0.42					
			T/S 85000 Y/S 49500 EL 23.00 RA 55.00					
			BRINELL HARDNESS1: 159 HARDNESS2: 167					
111	200	6335 FEMALE	1 3000 A105 UNAR T	C .190 MN	1.000 P	.012 S	.022 SI	.2
			NI .030 CU	.080 CR	.020 MO	.005 V		.0
			AL .003 NB	.000 SN	.010			
			CE (LONG FORMULA) = 0.37					
			T/S 74540 Y/S 46940 EL 30.00 RA 55.00					
			BRINELL HARDNESS: 149					

APPROVED

ITEM # 123
QC AB
DATE 3-10-99
JOB # 637

E COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL DOS SANTOS
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

***** CONTINUED ON NEXT PAGE *****

Verify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory ch



QUALITY CONTROL MANAGER

CERTIFIED MATERIAL TEST REPORT
Trinity Industries Inc. Fitting and Flange Group

Hackney * Ladish * Flo-Bend
 P. O. Box 568887 - 2525 Stemmons Freeway - Dallas, TX 75356-8887
 Phone: (214) 589-8177 Fax: (214) 589-8892

Order Number: **JASON** (504) 368-5036 Date: 3/31/98

Sold To: DUPRE SUPPLY COMPANY
 VENDOR # 0010048
 307 MECCA DRIVE
 LAFAYETTE LA 70508

Ship To:

Heat Code	Qty	Description / Specifications
AM97BK	2 150 BLD	A/SA 105- 96 , NACE MR0175
	A105/27/24148	AS FORGED
AL97BN	2 150 RF S/O	A/SA 105- 96 , NACE MR0175
	A105/27/14329	AS FORGED
AM97CA	6 150 RF BLD	A/SA 105- 96 , NACE MR0175
	A105/04/14563	AS FORGED
0497AN	3 150 RF BLD	A/SA 105- 96 , NACE MR0175
	A105 27/23298	AS FORGED

Chemical Analysis									
Heat Code	C	Mn	P	S	Si	Cr	Mo	Cu	Ni
AM97BK	.190	.860	.008	.021	.250	.098	.016	.120	.060
AL97BN	.190	.910	.011	.023	.260	.083	.010	.130	.063
AM97CA	.210	.940	.006	.014	.240	.050	.027	.220	.080
0497AN	.210	.960	.008	.020	.300	.089	.017	.180	.064

Chemical Analysis (cont.)									
Heat Code	V	Nb	B	Al	N	Ti	SN	CE	
AM97BK	.019	.011	.0000					.371	
AL97BN	.019	.011	.0000					.375	
AM97CA								.401	
0497AN	.022	.013						.411	

Physical Properties						
Heat Code	Tensile* KSI	Yield KSI	% Elong. in 2 in	% R.A.	Hardness HB	
AM97BK	85.3	66.8	28.0	48	169	
AL97BN	83.6	53.8	26.0	60	159	
AM97CA	77.7	44.1	31.0	56	139	
0497AN	80.7	56.8	24.0	61.0	165	

Charpy Results				
Heat Code	Size mm x 10 mm	Temp (F)	Foot Lbs.	% Shear
AM97BK				
AL97BN				
AM97CA				
0497AN				

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUSMAO
 DIRETOR
 DIVISAO DE SERVICOS CARTORIAIS

* L = Longitudinal, T = Transverse, R = Round, S = Strip

We certify that the material herein described has been manufactured, heat treated, sampled, tested, and inspected in accordance with the above standards and specifications and satisfies those requirements. We certify these flanges and fittings capable of passing a hydrostatic test compatible with their rating. The above figures are correct as contained in the records of the Company. This information has been electronically transmitted to our customer.

/S/ Glinda Lafleur

APPROVED
 ITEM # 124
 QC AS
 DATE 3-10-99
 JOB # 637

MAR-31-98 08:39 AM

CERTIFIED MATERIAL TEST REPORT

Trinity Industries Inc. Fitting and Flange Group

Hackney * Ladish * Flo-Bend

P.O. Box 568887 - 2525 Stemmons Freeway - Dallas, TX 75356 - 8887

Phone: (214) 589-8177 Fax: (214) 589-8892

Order Number: 20004767

Date: 03/01/99

Sold to: DUPRE SUPPLY COMPANY
 VENDOR # 0010048
 307 MECCA DRIVE
 LAFAYETTE LA 70508

Ship to:

Heat Code	Quantity	Description / Specifications
EB98AAE		2" XH WELD CAP A/SA 234 - 96A WPB, A/SA 516-70 A516-70 106/B8M5076 NACE MR0175

Chemical Analysis

Heat Code	Test	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al
EB98AAE	M	.220	1.050	.005	.004	.250	.120	.040	.030	.003	.0020

Chemical Analysis (cont.)

Heat Code	N	V	B	Ti	Cb	Sn	W	Pb	Co	CE
EB98AAE	.0005	.002	.0004	.0001	.002					.412

Physical Properties

Heat Code	Tensile KSI	Type	Thickness	Yield KSI	% Elong. (4D)	% RA	Hardness HB
EB98AAE	78.3	T		57.3	28.0		165

Charpy Results

Heat Code	Size x 10mm	Type	Temp. (F)	Foot Pounds	Later. Expansion	% Shear
EB98AAE						

Test: M=Mill Product

Type: T=Transverse

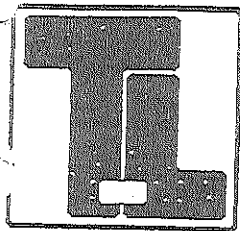
We certify that the material herein described has been manufactured, heat treated, sampled, tested, and inspected in accordance with the above standards and specifications and satisfies those requirements. We certify these flanges and fittings capable of passing a hydrostatic test compatible with their rating. The above figures are correct as contained in the records of the Company. This information has been electronically transmitted to our customer.
 /S/ Glinda LaFleur

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JOSE CARLOS MENTEL GUSMÃO
 DIVISÃO DE SERVIÇOS CARTÓGRAFOS

APPROVED

ITEM # 125
 QC AS
 DATE 3-10-99
 JOB # 637



TUBE-LINE CORPORATION

475 JERSEY AVENUE, NEW BRUNSWICK, NJ 08901

Report Date

11/25/98

CERTIFIED MATERIAL TEST REPORT

Heat Code	Description	Spec	Grade	Heat Number
C98408	6 300# R/F WELD NECK XH	A105 -95b		9715257
C98416	4 150# R/F WELD NECK STD	A105 -95b		9715211
D98416	6 300# R/F WELD NECK STD	A105 -95b		84659

4"

CHEMICAL COMPOSITION %

Heat Code	C	Mn	P	S	Si	Cr	Cu	Mo	NI	V	Cb
C98408	.21	1.07	.007	.019	.26	.06	.19	.01	.07	.024	.002
C98416	.17	1.11	.009	.014	.23	.09	.23	.03	.10	.025	.001
D98416	.18	1.05	.019	.007	.22	.12	.13	.01	.05	.001	.00

TENSILE PROPERTIES

Heat Code	Y.S.	T.S.	%EL	%Red	C.E.
C98408	59.9	82.4	31.6	60.2	
C98416	58.8	84.3	28.9	60.1	.406
D98416	53.9	74.2	27.1	60.6	0

This information is electronically reproduced for Tube-Line customers.

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GISMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Fittings manufactured to meet the latest issued requirements of ASTM A234 WPB, ASME SA234 WPB, ANSI B16.9, B16.28 and ASTM A234 hardness requirement of 197 HB. MAX. Starting material for fittings conforms to the requirements of ASTM A106B

Flanges manufactured to meet the latest issued requirements of ASTM A105, ASME SA105 and ANSI B16.5, and ASTM A105 hardness requirement of 187 HB. MAX.

Fittings conform to the requirements of NACE MR0175-94.

Flanges conform to the requirements of NACE MR0175-95.

Tube-Line certifies that the above given physical tests and chemical analysis results are true and correct according to records in the possession of the company.

The above items were heat treated in accordance with the requirements of the specification to which they were manufactured.

APPROVED

ITEM # 126

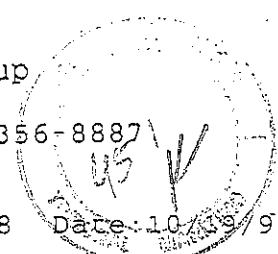
QC AS

DATE 3-10-99

JOB # 637

CERTIFIED MATERIAL TEST REPORT
 Trinity Industries Inc. Fitting and Flange Group
 Hackney ** Ladish * Flo-Bend

P. O. Box 568887 - 2525 Stemmons Freeway - Dallas, TX 75356-8887
 Phone: (214)589-8177 Fax: (214)589-8892



Number: 20003756-DB (195097-001) INV #00106420 10/19/98 Date: 10/19/98

Old To: DUPRE SUPPLY COMPANY
 VENDOR # 0010048
 307 MECCA DRIVE
 LAFAYETTE LA 70508

Ship To: DUPRE SUPPLY
 1225 PETERS RD.
 HARVEY LA 70058

Heat Code	Qty	Description / Specifications
D98AH	160	4 X 2 1/2 STD CON A/SA 234- 96A WPB, NACE MR0175 A106B 09 / S60922 STRESS RELIEVED
D98AS	90	4 STD TEE A/SA 234- 96A WPB, NACE MR0175 A106B 49 / 56054 STRESS RELIEVED
D98AC	90	4 STD TEE A/SA 234- 96A WPB, NACE MR0175 A106B 49 / 56320 STRESS RELIEVED
D98AL	90	4 STD TEE A/SA 234- 96A WPB, NACE MR0175 A106B 49 / 55710 STRESS RELIEVED

4" TEE

Chemical Analysis

Heat Code	C	Mn	P	S	Si	Cr	Mo	Cu	Ni
D98AH	.160	.730	.008	.015	.220	.050	.010	.030	.030
D98AS	.180	.700	.014	.001	.350	.050	.020	.160	.100
D98AC	.190	.750	.011	.002	.350	.050	.020	.160	.100
D98AL	.190	.740	.018	.001	.350	.040	.030	.140	.060

Chemical Analysis (cont.)

Heat Code	V	Nb	B	Al	N	Ti	SN	CE
D98AH	.000	.000						.297
D98AS	.004	.010						.327
D98AC	.004	.010						.346
D98AL	.004	.010	.005					.340

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUSMÃO
 DIRETOR

Physical Properties

DIVISÃO DE SERVIÇOS CARTÓRIAS

Heat Code	Tensile* KSI	Yield KSI	% Elong. in 2 in	% R.A.	Hardness HB
D98AH	70.2L	44.0	42.5		156
D98AS	78.4L	54.3	26.0		139
D98AC	77.0L	51.9	30.0		144
D98AL	73.2	50.8	30.0		150

Charpy Results

Heat Code	Size mm x 10 mm	Temp(F)	Foot Lbs.	Lat. Expansion	% Shear
D98AH					
D98AS					
D98AC					
D98AL					

REC- 3-10-99
 JOB-637

* L = Longitudinal, T = Transverse, R = Round, S = Strip

We certify that the material herein described has been manufactured, heat treated, sampled, tested, and inspected in accordance with the above standards and specifications and satisfies those requirements. We certify these flanges and fittings capable of passing a hydrostatic test compatible with their rating. The above figures are correct as contained in the records of the Company. This information has been electronically transmitted to our customer.

By: Glinda LaFleur

PO# 17031

APPROVED

ITEM # 127
 QC AS
 DATE 3-10-99
 JOB # 637

CERTIFIED MATERIAL TEST REPORT
Trinity Industries Inc. Fitting and Flange Group
 Hackney * Ladish * Flo-Bend

P. O. Box 568887 - 2525 Stemmons Freeway - Dallas, TX 75356-8887
 Phone: (214) 589-8177 Fax: (214) 589-8892

Order Number: 20009493 (198073-023) INV #00119226 1/22/99 Date: 1/22/99

Sold To: DUPRE SUPPLY COMPANY
 VENDOR # 0010048
 307 MECCA DRIVE
 LAFAYETTE LA 70508

Ship To: DUPRE SUPPLY
 1225 PETERS RD.
 HARVEY LA 70058

Heat Code	Qty	Description / Specifications
EL98AAE	10	4 STD CAP A/SA 516-70, A/SA 234 96A WPB, NACE MR0175 A516-70 106/A8U4425 NORM. 1650A/C
EG98AAC	10	4 XH CAP A/SA 516-70, A/SA 234 96A WPB, NACE MR0175 A516-70 117/B8D107
KH98AE	40	1 1/2 STD LR 90 DEG A/SA 234- 96A WPB, NACE MR0175 A106B 49 /56054 STRESS RELIEVED
KK98AE	120	3 STD LR 90 DEG EL A/SA 234- 96A WPB, NACE MR0175 A106B 09 / Y66416 STRESS RELIEVED

Chemical Analysis

Heat Code	C	Mn	P	S	Si	Cr	Mo	Cu	Ni
EL98AAE	.210	1.090	.019	.008	.240	.050	.021	.140	.060
EG98AAC	.210	1.030	.008	.005	.220	.090	.040	.370	.150
KH98AE	.180	.710	.013	.001	.360	.050	.020	.160	.100
KK98AE	.170	.720	.006	.008	.210	.080	.020	.030	.030

Chemical Analysis (cont.)

Heat Code	V	Nb	B	Al	N	Ti	SN	CE
EL98AAE	.002	.003	.002	.024	.012	.002		.418
EG98AAC	.003	.002		.025				.441
KH98AE	.004	.010						.325
KK98AE	.001	.001						.314

Physical Properties

Heat Code	Tensile* KSI	Yield KSI	% Elong. in 2 in	% R.A.	Hardness H
EL98AAE	78.1T	53.1	30.0		147
EG98AAC	83.3T	56.6	30.0	66.0	159
KH98AE	65.9	44.8	29.0		127
KK98AE	67.8L	44.0	39.0		125

Charpy Results

Heat Code	Size mm x 10 mm	Temp(F)	Foot Lbs.	Lat. Expansion	% Shear
EL98AAE					
EG98AAC					
KH98AE					
KK98AE					

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL OLIVEIRA
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAS

* L = Longitudinal, T = Transverse, R = Round, S = Strip

We certify that the material herein described has been manufactured, heat treated, sampled, tested, and inspected in accordance with the above standards and specifications and satisfies those requirements. We certify these flanges and fittings capable of passing a hydrostatic test compatible with their rating. The above figures are correct as contained in the records of the Company. This information has been electronically transmitted to our customer.

/S/ Glinda LaFleur

APPROVED

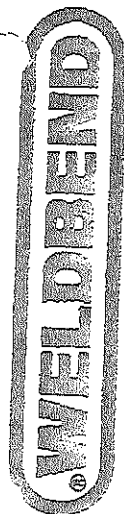
ITEM # 128

QC AS

DATE 3-10-99

JOB # 637

TO: NEW ORLEANS INDUSTRIAL CO.
110 W. AIRLINE HWY. STE C
KENNER LA 70062
Attn: BILL



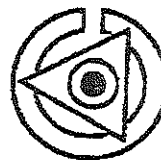
MATERIAL TEST REPORT FLANGES

FLANGES

RECEIVED BELL

Description		Heat ID		Steel Producer													
Qty	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Cb	V	Tens	Yield	Elong	ROA	BHN	
Carbon Equivalence Notes:																	
3"	150# WM RF				JKC		SMI										
	.200	.840	.004	.018	.220	.220	.090	.040	.014	0.000	.004	Hot Formed	72634	52141	24.60	60.60	159
	.372																
--- STD BORE ---																	
COPIA FIEL DO DOCUMENTO ORIGINAL																	
APPROVED																	
ITEM # 129																	
QC AP																	
DATE 3-16-99																	
JOB # 637																	
REC - 3-15-99																	
JOB - 637																	
PO# 17068																	
JOSE CARLOS FONSECA CUSMAO																	
DIRECTOR																	
DIVISÃO DE SERVIÇOS CARTORIAIS																	
Meets the requirements of ASTM A 105																	

Meets the requirements of ASTM A-105,
(and SA-105).
ISO 9002 CERTIFIED MANUFACTURER



March 15, 1999

FORM NO. M7-DB1

By James J. [Signature]
Quality Assurance Department

Accredited by
the Dutch Council

52071 FOD



CERTIFIED MATERIAL TEST REPORT
Trinity Industries Inc. Fitting and Flange Group
Hackney * Ladish * Flo-Bend * CQ
P.O. Box 568887 - 2525 Stemmons Freeway - Dallas, TX 75356 - 8887
Phone: (214) 589-8177 Fax: (214) 589-8892

Order Number:

Date: 03/12/99

Sold to: F V F INC
P.O. BOX 80785
BATON ROUGE LA 70808

Ship to:

Heat Code	Quantity	Description	Specifications
PEMX	3	150 RF WN XXH	A/SA 105- 94
		A105 22 / APQY	AS FORGED

NACE MR0175

		<u>Chemical Analysis</u>									
Heat Code	Test	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al
PEMX	M	.180	.990	.023	.027	.170	.260	.110	.120	.030	

		<u>Chemical Analysis (cont.)</u>									
Heat Code	N	V	B	Ti	Cb	Sn	W	Pb	Co	CE	
PEMX		.020			.000					.403	

		<u>Physical Properties</u>					
Heat Code	Tensile KSI	Type	Thickness	Yield KSI	% Elong. (4D)	% RA	Hardness HB
PEMX	83.5			54.5	24.0	59.6	170

		<u>Charpy Results</u>				
Heat Code	Size X.10mm	Type	Temp. (F)	Foot Pounds	Later. Expansion	* Shear
PEMX						

Test: M=Mill Product
Type:

We certify that the material herein described has been manufactured, heat treated, sampled, tested, and inspected in accordance with the above standards and specifications and satisfies those requirements. We certify these flanges and fittings capable of passing a hydrostatic test compatible with their rating. The above figures are correct as contained in the records of the Company. This information has been electronically transmitted to our customer.
/S/ Glinda Lafleur

APPROVED
ITEM # 131
QC *AS*
DATE 3-16-99
JOB # 637

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

http://209.39.85.6/*WEBUSR/23.3498943941/00126/0040937/mtr011to.htm

3/12/99

** TOTAL PAGE.002 **



NATIONAL FLANGE & FITTING CO.

4420 CREEKMONT ST.
P. O. BOX 924149
HOUSTON, TEXAS 77292-4149
(713) 688-2515
FAX (713) 688-0205



SOLD
TO

MILL TEST REPORT

INVOICE
NUMBER

DATE

60997100 07/16/96

CUSTOMER'S ORDER NO: 304-S-NF

ITEM	QTY	DESCRIPTION	MATERIAL	H CODE
11	5	2" 150# WN RF XXH	A-105-93B	AGO-96
12	10	1-1/2" 150# BLD RF W/HUB	A-105-93B	TNE-95
	1	6" X 4" 150# THRD RED RF	A-105-93B	GKA-92
14	5	8" 300# BLD RF	A-105-93B	HTP-96
15	2	18" 300# BLD RF	A-105-93B	HYP-96
16	2	20" 300# BLD RF	A-105-93B	KAH-96
17	6	1-1/2" 300# SW RF STD	A-105-93B	HGP-90
18	4	1" 300# SW RF S/160	A-105-93B	HNT-96
19	7	6" 300# WN RF STD	A-105-93B	JJZ-96
20	1	2" 300# WN RF S/160	A-105-93B	AHG-96

ITM	H CODE	CAR	MAN	PHOS	SUL	NIC	CHR	MOL	SIL	CU	VA	NB
11	AGO-96	.200	1.000	.010	.030	.080	.070	.020	.210	.230	.025	.008
TEN:	76,300 YLD:	48,200	EL:	24.00	RED:	59.46	CVN@				BHN:	146/149
12	TNE-95	.220	.990	.008	.039	.110	.080	.030	.270	.220	.002	.000
TEN:	87,000 YLD:	53,300	EL:	24.00	RED:	54.65	CVN@				BHN:	163/167
13	GKA-92	.180	1.110	.009	.015	.070	.060	.010	.230	.220	.004	.003
TEN:	74,385 YLD:	50,170	EL:	32.00	RED:	63.40	CVN@				BHN:	142/151
14	HTP-96	.190	.900	.008	.038	.120	.080	.040	.240	.260	.003	.000
TEN:	79,800 YLD:	48,500	EL:	26.00	RED:	61.90	CVN@				BHN:	167/170
15	HYP-96	.250	.770	.016	.030	.045	.055	.005	.265	.230	.002	.003
TEN:	74,981 YLD:	45,685	EL:	28.57	RED:	62.25	CVN@				BHN:	153
16	KAH-96	.230	.600	.032	.038	.012	.014	.006	.240	.008	.005	.003
TEN:	73,386 YLD:	43,944	EL:	29.80	RED:	57.01	CVN@				BHN:	150
17	HGP-90	.200	.990	.023	.006	.015	.115	.005	.300	.015	.002	.000
TEN:	76,725 YLD:	44,091	EL:	33.00	RED:	55.00	CVN@				BHN:	160/166
18	HNT-96	.200	1.050	.011	.033	.120	.070	.035	.250	.260	.002	.000
TEN:	79,400 YLD:	48,900	EL:	22.00	RED:	59.60	CVN@				BHN:	152/156
19	JJZ-96	.170	1.060	.015	.019	.050	.080	.015	.190	.170	.003	.000
TEN:	71,504 YLD:	49,022	EL:	24.40	RED:	55.90	CVN@				BHN:	159/163
20	AHG-96	.190	1.130	.011	.029	.100	.100	.020	.180	.250	.025	.000
TEN:	83,900 YLD:	54,600	EL:	22.00	RED:	57.21	CVN@				BHN:	149/159

COMMENT: ITEMS 33-44: NORMALIZED @ 1650 F FOR 1 HOUR PER INCH OF THICKNESS, AIR COOLED.

ITEM 45: NORMALIZED @ 1650 F FOR 3 HOURS, AIR COOLED.

THIS IS TO CERTIFY THAT THE MATERIAL FURNISHED ON THIS ORDER COMPLIES IN ALL RESPECT WITH THE SPECIFICATIONS INDICATED IN DESCRIPTION. WE FURTHER CERTIFY THIS PRODUCT WAS MANUFACTURED IN THE UNITED STATES.

NATIONAL FLANGE & FITTING COMPANY

APPROVED

ITEM # 132

QC AS

DATE 3-16-99

JOB # 637

BY: Mary F. Fries

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓFIAS

00133100

BOLTEX ELECTRONIC MATERIAL TEST REPORT

REPORT FOR HEAT CODE: NL7

Material Spec: SA105

Item Number: 366

Description: 2" 150 RF WN XX

Part Number: 1-1020181

Chemical		Mechanical	
C	0.19	Hardness - BHN	143-147
Si	0.21	Charpy	
Mn	1.16	Ft-Lb	
P	0.007	Lateral Expansion	
S	0.004	Shear Fraction	
Cr	0.06	Test Temperature	
Al	0.024	Tensile	71,920
Cu	0	Yield	44,950
Ni	0.01	Elongation - %	32
Mb	0	Area Reduction - %	68.6
V	0		
Cb	0.002		
Carbon Equivalent	0.396		

Heat Treatment:

This electronic document certifies that flanges marked with the referenced heat code are capable of passing a hydrostatic test compatible with their rating. We certify that all test results and process information are correct and true as contained in the records of the company. All flanges meet NACE MR-0175. - Latest Revision.

This MTR was obtained directly from our Internet site and all statements contained herein are intended to certify only flanges purchased and shipped directly from boltex mfg.co., l.p., Houston, Texas.

NOTICE: Any unauthorized downloading, reproduction, distribution, or use of this electronic media is hereby prohibited. Violators shall be prosecuted to the fullest extent of the law.

boltex
mfg.co.

Material Test Reports

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL CUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

APPROVED

ITEM # 133

QC AB

DATE 3-16-99

JOB # 637

<http://www.vnetstar.com/boltex/report.asp?Index=2>

3/10/99

(TYPE B - IN ACCORDANCE WITH ISO 15643-1)

SHIPPER'S NO.

P.O. NUMBER

ORDER/ITEM NO.

0131605 01

156443-L

MATERIAL CONC: AS ROLLED

OD: 3.500 (88.900) in (mm) WALL: 0.600 (15.240) in (mm)

PRODUCT IDENTIFICATION	FLAT	BEND	GRAIN SIZE	MIN COLLAPSE	CHARPY V-NOTCH IMPACT TESTING													
					DIR	TEST LOC.	TEMP	SIZE	TEST COND.	FT-LBS			% SHEAR					
										1	2	3	AVG	1	2	3	AVG	
Y67259	OK		*** END OF DATA															

LEGEND: L - LONGITUDINAL T - TRANSVERSE B - BODY W - WELD HAZ - HEAT AFFECTED ZONE

TEST / INSPECTION		TESTING / INSPECTION INFORMATION		RESULTS / COMMENTS	
FULL LENGTH VISUAL		YES	X		
FULL LENGTH EMI					
FULL LENGTH MPI				OD	OD/ID L L/T
FULL LENGTH UT				OD	OD/ID L L/T
END AREA INSPECTION (PLAIN END)				MPI	UT
SPECIAL END AREA (SEA) INSP.				MPI	UT
FULL LENGTH DRIFT				DRIFT MANDREL SIZE:	

ALL MELTING AND MANUFACTURING TOOK PLACE IN THE USA. NO REPAIRS BY WELDING. NO MERCURY OR MERCURY COMPOUNDS ARE ADDED TO THE STEEL AND ALL MERCURY BEARING EQUIPMENT IS PROTECTED BY A DOUBLE BOUNDARY OF CONTAINMENT.

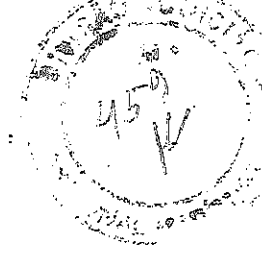
COPIA FIELD DOCUMENT ORIGINAL

APPROVED
ITEM # 134
QC
DATE 3-16-99
JOB # 637

THIS IS TO CERTIFY THAT THE PRODUCT DESCRIBED HEREIN WAS MANUFACTURED, SAMPLED, TESTED AND/OR INSPECTED IN ACCORDANCE WITH THE SPECIFICATION AND FULFILLS THE REQUIREMENTS IN SUCH RESPECTS.

PREPARED BY THE OFFICE OF: F.J. MIKULSKI MGR. MET. & Q.A. USS TUBULAR PRODUCTS

DATE 05/22/98



USX, USX, USX are trademarks of USX Corporation

(TYPE B - IN ACCORDANCE WITH ISO 1

ITEM NO. 17555 01

SHIPPERS NO. 15713-L

PO NUMBER 2.375(60.325)

WALL: 0.436 (11.074)

AS ROLLED

MATERIAL CONC:	OD: 2.375(60.325)		in (mm)		WALL: 0.436 (11.074)		in (mm)										
PRODUCT IDENTIFICATION	FLAT	BEND	GRAIN SIZE	MIN COLLAPSE	DIR	TEST LOC.	TEMP	SIZE									
S60683	OK	XX END OF DATA THIS SHEET XX	XX	XX	XX	XX	XX	XX									
									TEST COND.	1	2	3	AVG	1	2	3	AVG
									CHARPY V-NOTCH IMPACT TESTING								
									FT-LBS								

LEGEND:	L - LONGITUDINAL	T - TRANSVERSE	B - BODY	W - WELD	HAZ - HEAT AFFECTED ZONE
TEST / INSPECTION	TESTING / INSPECTION INFORMATION				
FULL LENGTH VISUAL	YES	X			
FULL LENGTH FMI					
FULL LENGTH MPI					
FULL LENGTH UT					
END AREA INSPECTION (PLAIN END)					
SPECIAL END AREA (SEA) INSP.					
FULL LENGTH DRIFT					

ALL MELTING AND MANUFACTURING TOOK PLACE IN THE USA. NO REPAIRS BY WELDING. NO MERCURY OR MERCURY COMPOUNDS ARE ADDED TO THE STEEL AND ALL MERCURY BEARING EQUIPMENT IS PROTECTED BY A DOUBLE BOUNDARY OF CONTAINMENT.

APPROVED

ITEM # 135

QC

DATE 3-16-99

JOB # 637

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PINTO

DIVISAO DE SERVIÇOS TÉCNICOS

PREPARED BY THE OFFICE OF: F. J. MIKULSKI

Q.A. USS TUBULAR PRODUCTS

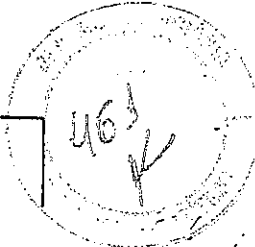
DATE 03/25/98

THIS IS TO CERTIFY THAT THE PRODUCT DESCRIBED HEREIN WAS MANUFACTURED, SAMPLED, TESTED AND/OR INSPECTED IN ACCORDANCE WITH THE SPECIFICATION AND FULFILLS THE REQUIREMENTS IN SUCH RESPECTS.

PREPARED BY THE OFFICE OF: F. J. MIKULSKI

Q.A. USS TUBULAR PRODUCTS

DATE 03/25/98



TUBE TEST REPORT

KOPPEL
STEEL462
P

ORDER: T8159	HEAT: 430711	P.O.: 12013-00	PART NO:
OLD TO: TEXAS PIPE & SUPPLY CO., INC. ATTN: PURCHASING DEPARTMENT 2330 HOLMES ROAD HOUSTON, TX 77051		SHIP TO: TEXAS PIPE & SUPPLY CO., INC. ATTN: RECEIVING DEPARTMENT 2330 HOLMES ROAD HOUSTON, TX 77051	
SPECIFICATION(S): ASME ASTM SA53/A53-97 GR B/SA106/A106-97a GR B API 5L GR B/X42 SR4 INSPECTION CERTIFIED NACE MR-01-75			
GRADE: 1023M	SIZE 3.500 X 0.216	W/F 7.58	QUALITY: SEAMLESS HOT FINISH

TEST RESULTS CONFORM TO THE STANDARDS AND SPECIFICATIONS LISTED ABOVE.

	C	MN	S	P	SI	CR	NI	MO	CU	AL	V
L	.20	.58	.006	.005	.24	.09	.10	.03	.23	.016	.002
P	.20	.58	.007	.007	.24	.09	.10	.03	.22	.016	.001
P	.20	.58	.007	.006	.24	.09	.09	.03	.23	.017	.001
P	.20	.58	.007	.006	.24	.09	.10	.03	.23	.016	.001
P	.20	.58	.007	.006	.24	.09	.10	.03	.23	.015	.001

MATERIAL 100% MELTED AND MANUFACTURED IN THE USA.

SPECIMEN	YIELD KSI	TENSILE KSI	ELNG 2"	R/A	ROCK WELL	GRAIN SIZE	C.E.	HYDROTEST
.750" STR	48.9 49.5	72.1 73.0	36.0 38.0		74-76 RB	7.0	0.343	3000 PSI 5 SEC HOLD

60 FT
3" PIPE

APPROVED APPROVED
 ITEM # 136 ITEM # 136
 QC AS QC AS
 DATE 12-4-98 DATE 3-17-99
 JOB # 633 JOB # 637

FLATS - SATISFACTORY

05/29/98

DATE

QUALITY ASSURANCE/KOPPEL

MATERIAL WAS NOT EXPOSED TO MERCURY DURING PROCESSING.
 NO WELDING OR WELD REPAIR PERFORMED ON THIS MATERIAL.
 NO INTENTIONAL LEAD ADDITIONS WERE MADE TO THIS MATERIAL.

THIS CERTIFICATION MAY NOT BE REPRODUCED EXCEPT IN FULL.

KOPPEL STEEL OPERATIONS

P.O. BOX 750

BEAVER FALLS, PA 15010

TEL: 724-77100 FAX 724-847-6255

88-6 6629 678 210

AMBRIDGE TUBE OPERATIONS

P.O. BOX 410

AMBRIDGE, PA 15005

PHONE 724-266-8830, FAX 724-266-8840

BATTOWN TUBE PROCESSING OPERATIONS

2600 SPUR SS

BATTOWN, TX 77520

PHONE 281-383-2603, FAX 281-573-1656

92:80 8651-10-100

KOPPEL STEEL CORP

JOB - 633

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAIS

Trinity Industries Inc. "CQ" Fitting and Flange
P. O. Box 568887 - 2525 Stemmons Freeway - Dallas, TX 75356-8887
Phone: (214) 589-8177 Fax: (214) 589-8892

Order Number: TOM MURPHY # 12

Date: 11/23/98

Ship To:

Sold To: TUBE-LINE CORPORATION
475 JERSEY AVENUE
NEW BRUNSWICK NJ 08901

APPROVED

ITEM # 138
QC AS
DATE 12-9-98
JOB # 633

Heat Code	Qty	Description / Specifications
FHAAJ	3 150 RF WN STD CQ A105 01 / JYN	A/SA 105- 96 , NACE MR0175 AS FORGED

Heat Code	Chemical Analysis								
	C	Mn	P	S	Si	Cr	Mo	Cu	Ni
FHAAJ	.210	1.100	.012	.015	.230	.100	.030	.190	.080

Heat Code	Chemical Analysis (cont.)							
	V	Nb	B	Al	N	Ti	SN	CE
FHAAJ	.023	.008						.440

Heat Code	Physical Properties				
	Tensile* KSI	Yield KSI	% Elong. in 2 in	% R.A.	Hardness HB
FHAAJ	77.9	55.0	26.1	60.2	174

Heat Code	Charpy Results			
	Size mm x 10 mm	Temp(F)	Foot Lbs.	Lat. Expansion
FHAAJ				% Shear

* L = Longitudinal, T = Transverse, R = Round, S = Strip

We certify that the material herein described has been manufactured, heat treated, sampled, tested, and inspected in accordance with the above standards and specifications and satisfies those requirements. We certify these flanges and fittings capable of passing a hydrostatic test compatible with their rating. The above figures are correct as contained in the records of the Company. This information has been electronically transmitted to our customer.

/S/ Glinda LaFleur

APPROVED

ITEM # 138
QC AS
DATE 3-17-99
JOB # 637

E COPIA FIEL DO DOCUMENTO ORIGINAL

TOTAL P.02

RECEIVED FROM:

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

P.03

12-89-98 13:11

215 ROUSSEAU ROAD
YOUNGSVILLE, LA 70592-9316
Phone 318-837-0020
Fax # 318-837-0062

W/O : 792286
Date : 10/02/98
P.O.# : 20008484



*** MATERIAL TEST REPORT ***

BILL TO:
DUPRE SUPPLY
1225 PETERS RD.
HARVEY, LA 70058

SHIP TO:
DUPRE SUPPLY
HARVEY, LA

----- ITEMS -----
QTY DESCRIPTION
4 3" 150# PF W/N STD STARTING MATERIAL :ASTM A105-93B

----- CHEMICAL PROPERTIES -----
HT. CODE C SIL MN PHOS SUL CR AL CU NI MO V CB CE:
M200 .230 .270 .890 .005 .022 .070 .005 .280 .120 .032 .003 .426

----- PHYSICAL PROPERTIES -----
YIELD TENSILE ELONG. RED. CHARPY LAT. SHEAR TEST
LENGTH STRENGTH % IN 2" AREA HARDNESS TEST EXPAN. FRAC. TEMP
52.400 84.500 22.00 52.70 155-159

----- NOTES -----
PAGE MRO-175

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JOSÉ CARLOS PIMENTEL GUSMÃO
ENFOTEC
DIVISÃO DE SERVIÇOS CARTÓGRAFOS

APPROVED
ITEM #
QC AF
DATE 11-23-98
JOB # 633

We hereby certify that all test results and process information contained herein are correct and true as contained in the records of the company.

APPROVED
ITEM # 140
QC AF
DATE 3-22-99
JOB # 637

JOB # 633

Wendy J. Jindler
MACHINE SPECIALTY & MFG

COPIA FIEL DO DOCUMENTO ORIGINAL

GERLUM, INC.
TUBE-LINE FLANGE DIVISION
PICKOR FITTING DIVISION
170 TUBEMAY DRIVE
CAROL STREAM, ILLINOIS 60108
PHONE: (630) 690-7000
FAX: (630) 690-2108

CUSTOMER/BRANCH: ALLOY PIPING PRODUCTS
SHREVEPORT, LA

CUSTOMER P.O. NUMBER: 011 5 06530
GERLUM ORDER NUMBER: 91102

REMARKS:

Date: JAN 6 1999

TWO NUMBER/ DESCRIPTION	GRADE	HEAT CODE	C	SI	Mn	P	S	NI	CK	Mo	N	CU	YIELD TENSILE PSI	EL RED
3/4 150 BLD RP	F316/316L	BCJ78	1	.025	.29	1.52	.029	.026	10.15	16.20	2.10	.05	42,700 79,500	62 79
1-1/2 150 BLD RP	F316/316L	BCJ82	1	.025	.33	1.26	.030	.011	10.62	16.10	2.00	.06	43,300 76,400	58 77
3 150 BLD RP	F316/316L	BCJ9F	1	.026	.32	1.26	.025	.009	10.23	16.00	2.11	.06	44,500 76,500	57 74
3 150 BLD RP	F316/316L	BCJ9G	1	.013	.39	1.43	.026	.027	11.22	17.19	2.09	.05	53,700 81,200	52 70
3 150 BLD RP	F316/316L	BCJ9H	1	.025	.68	1.57	.037	.027	10.20	16.45	2.10	.04	47,700 85,700	52 84
2 150 50 RP	F316/316L	BCJ9V	1	.020	.40	1.21	.025	.001	10.69	16.75	2.12	.04	33,000 79,000	39 74
2-1/2 150 50 RP	F316/316L	BCJ9B	1	.027	.36	1.26	.025	.009	10.15	16.00	2.08	.06	43,500 77,300	54 74
5 150 50 RP	F316/316L	BCJ9P	1	.019	.39	1.76	.029	.001	10.23	16.18	2.05	.07	55,300 84,200	53 69

STARTING MATERIAL: 1. FORGING
THE REFERENCED TUBE-LINE FLANGES MEET THE REQUIREMENTS OF ASTM A182-97C AND ASME SA182-96. THIS MATERIAL WAS SOLUTION ANNEALED AT A MINIMUM TEMPERATURE OF 1900 DEGREES F, AND QUENCHED TO BELOW 500 DEGREES F.

PIPE WELDED WITHOUT FILLER METAL
THE REFERENCED PICKOR FITTINGS MEET THE REQUIREMENTS OF ASTM A403-97A AND ASME SA403-96. THIS MATERIAL WAS SOLUTION ANNEALED AT A MINIMUM TEMPERATURE OF 1900 DEGREES F, AND WATER QUENCHED OR RAPIDLY COOLED.

5. SEAMLESS PIPE

WE CERTIFY THE CONTENTS OF THIS REPORT ARE CORRECT. THE BEST OF OUR KNOWLEDGES. THIS REPORT AUTHORIZED BY: JAMES H. BETTISWORTH

APPROVED

ITEM # 141

QC

DATE 3-29-99

JOB # 637

SPARGER
MAT'L



Peachtree Metals Co.

P2. NOV 2014 • FULLY CHARGED BOMB • 770458-217 • 1000434-102

CERTIFICATE

12188

DATE: 04/06/98

PRE 1

ACCOUNT NO: JATULL

WILL YOU

J. M. TULL
P.O. BOX 4725
NORCROSS, GA 30091

SHIP TO: 004

J. M. TULL
125 CARBON ROAD
BIRMINGHAM, AL 35215

~~ORDER HQ 121419~~

Q01. 2021419

INVOICE NO: 819593

BILL OF LADING: 14828

HT. No. 307395

REF ID: A1213144

1. 50 x 80 x 100

WIGHT, 32

[illegible]

LET JUDGE

三

EXHIBIT 104

TELETYPE UNIT 29

DECEMBER **OK**

161

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APPROVED

ITEM # 142

QC AA

DATE 3-30-99

637

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JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Serving the Sunbelt

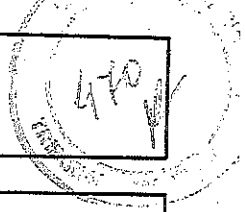
WE HEREBY CERTIFY TO THE ABOVE FACTS AND BELIEVE THE FOREGOING DATA

** TOTAL PAGE.02 **

637
3-30-99

JOSE CARLOS FIMMENTE GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

P36 - RONCADOR FIELD DEVELOPMENT



SUPPLIER/CONTRACTOR NAME: Engineering Specialties, Inc.

PO/CONTRACT NUMBER: 3606838

PO/CONTRACT TITLE:

DOCUMENT TITLE: Welding Procedure Specifications Gs1-b

EQUIPMENT NOS.: TD-533601

SUPPLIER DOC. NO.: REV: 01

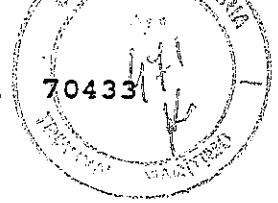
NUMBER OF PAGES (TOTAL): 5

PROJECT NUMBER						
DOCUMENT TYPE	RONCADOR FIELD ID NO	AREA OF ACTIVITY /SYSTEM NO.	CLASS OF SERVICE	ORIGINATOR CODE	SEQUENTIAL NUMBER	REVISION
	3010.38					
SDDR CODES		SEQUENTIAL NUMBER		SHEET NUMBER		REVISION
						01
APPROVAL STATUS				SIGNED		DATED
R - REJECTED - REVISE AND RESUBMIT FOR APPROVAL <u>WORK MAY NOT PROCEED</u>						
C - COMMENTS - REVISE AND RESUBMIT FOR APPROVAL WORK MAY PROCEED SUBJECT TO INCORPORATION OF ALL COMMENTS INDICATED						
I - INFORMATION ONLY - REVIEW NOT REQUIRED						
F - FINAL - ACCEPTED AS FINAL/AS-BUILT						
S - SUPERSEDED/CANCELLED						
PERMISSION TO PROCEED DOES NOT CONSTITUTE ACCEPTANCE OF DESIGN DETAILS, CALCULATIONS, TEST METHODS OR MATERIALS DEVELOPED OR SELECTED BY CONTRACTOR FROM FULL COMPLIANCE WITH CONTRACTUAL OR OTHER OBLIGATIONS NOR DETRACT FROM ANY RIGHTS OF THE P36 - RONCADOR FIELD DEVELOPMENT PROJECT						

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COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



WPS No.: Gsl-b Date: 12/14/95 Revision No.: 0
Reporting PQRs: 1033-6"XXH

BASE METAL (QW-403, QW-405) No. <u>1</u> to P No.: <u>1</u> Thickness range. <u>0.1875"</u> to <u>1.5000"</u> Position(s). <u>All positions</u> Progression. <u>Vert. Up (1st pass down)</u> Notes _____	JOINT (QW-402) Joint design <u>Groove/Fillet (see pg 2)</u> Backing..... <u>With or without backing</u> Backing Matl <u>Weld metal</u> Fillet Weld Size <u>All (QW-451.4)</u> notes _____
PREHEAT (QW-406) Minimum Temperature. <u>60</u> Degrees F. Interpass Temp. Max. <u>550</u> Degrees F. Preheat Maintenance. <u>None</u>	POSTWELD HEAT TREATMENT (QW-407) Temperature range <u>None</u> Time range <u>None</u> notes _____

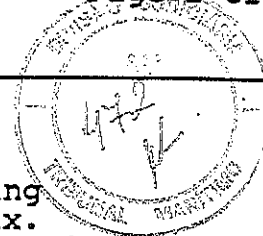
Process / type <u>All pass(es)</u> Process thickness limit. <u>GMAW / semi-auto</u> <u>0.1875" to 1.5000"</u>	<u>None</u> <u>None</u>
WELDING GAS (QW-408) Shielding Gas / CFH..... <u>75% Argon, 25% CO2 / 27-36</u> Trailing Gas / CFH..... <u>None / -</u> Backing Gas / CFH..... <u>None / -</u>	<u>None / -</u> <u>None / -</u> <u>N/A / -</u>
FILLER METAL (QW-404) AWS classification..... <u>ER70S-6</u> AWS Spec. No. & F No. SFA#: <u>5.18</u> F#: <u>6</u> No. or Chem. Comp. <u>1</u> Filler metal trade name. <u>n/r</u> Flux trade name/type <u>N/A / -</u> Elec./Wire size (in) ... <u>0.035 0.045 1/16</u>	<u>None</u> SFA#: <u>None</u> F#: <u>-</u> <u>None</u> <u>None</u> <u>None / -</u> <u>- / -</u> <u>- / -</u> <u>- / -</u> <u>None</u> <u>N/A / -</u> <u>N/A</u> <u>N/A</u>
ELECTRICAL (QW-409) Welding amperage range.. <u>80-145 110-175 165-300</u> Welding voltage range... <u>17-22 18-23 20-25</u> Travel speed (ipm)..... <u>Var. Var. Var.</u> Max. Heat Input (J/in).. Electrode Type/Size..... <u>N/A / -</u> Polarity..... <u>DCEP (reverse)</u> Arc CAW transfer mode. <u>Short Circuiting Arc</u>	<u>- / -</u> <u>- / -</u> <u>- / -</u> <u>- / -</u> <u>None</u> <u>N/A / -</u> <u>N/A</u> <u>N/A</u>
CELIQUE (QW-410) String / weave bead..... <u>String & Weave Bead</u> Nozzle / gas cup..... <u>3/8" to 5/8"</u> Contact tube to work.... <u>1/4" - 1/2"</u> Oscillation..... <u>N/A</u> Electrode..... <u>Single Electrode</u> Other Technique Notes... Multiple or Single Pass (per side).... <u>Multiple Passes</u>	<u>N/A</u> <u>N/A</u> <u>None</u> <u>None</u> <u>N/A</u> <u>None</u>
1) <u>No peening done with this procedure.</u>	
2) <u>No pass greater than 1/2" allowed.</u>	
3) <u>No supplementary filler metal will be used with this procedure.</u>	
4) _____	
5) _____	
6) _____	
7) <u>Preheat to 175F if "T" > 1" and C > 0.30%; To 200F if 1.25" < "T" <= 1.5"</u>	

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

PS No.: Gsl-b

Date: 12/14/95 Revision No.: 0



IT (QW-402)

In-V groove

Backing : no backing
 Root Opening: 3/16" max.
 Groove Angle: 50 degree min.
 Root Face : 1/8" max.

Single-Bevel groove

Backing : no backing
 Root Opening: 3/16" max.
 Groove Angle: 45 degree min.
 Root Face : 1/8" max.

Single-V groove

Backing : gouged & back welded
 Root Opening: 1/4" max.
 Groove Angle: 50 degree min.
 Root Face : 3/16" max.

Double-Bevel groove

Backing : gouged & back welded
 Root Opening: 1/4" max.
 Groove Angle: 45 degree min.
 Root Face : 3/16" max.

Double-V groove

Backing : gouged & back welded
 Root Opening: 1/4" max.
 Groove Angle: 45 degree min.
 Root Face : 3/16" max.

Single/Double Fillet

Backing :
 Root Opening: 3/16" max.
 Weld Size : Required fillet
 plus root opening

Square groove

Backing : T-joint
 Root Opening: 1/32" max.

Square groove

Backing : no backing
 Root Opening: 3/32" max.

WELD JOINT DESCRIPTIONS SHOWN ARE NOT INCLUSIVE OF ALL OF THOSE FOUND ON A
 SITE. WELD JOINT DESIGN REFERENCE IN AN ENGINEERING SPECIFICATION OR
 DESIGN DRAWING SHALL TAKE PRECEDENCE OVER WELD JOINTS SHOWN IN THIS WPS.

Initial cleaning With wire brush clean 1" both sides of weld joint.
 Method of back gouging When required, Arc air and/or grinding.

- Minimum preheat must be maintained during thermal cutting, tacking, and welding operations.
- Welds shall be cleaned between each pass. When completed, remove all slag and projections.
-
-
-

I certify that the statements in this record are correct and in accordance with the requirements of Sections IX and VIII of the ASME Code.

Prepared By: [Signature] (12/14/95) Eng'g. Manager

Accepted By: [Signature] (12/14/95) QC Manager

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAIS

R No.: 1033-6"XXH Date: 12/14/95 WPS No.: Gsl-b Rev 0

WELD JOINT CONFIGURATION

Joint Design (QW-402)
n e-V groove
en butt, no back weld
ove Angle : 75 Degrees
ot Opening : 1/8 Inches
ot Face : 1/16 Inches

te: _____

SITUATION (QW-405)
sition of Joint : 6G - 45 Deg.
ogression: Vert. Up (1st pass down)
te: _____

BASE METAL (QW-403)

Material form. Pipe / Tube
Material Spec. SA-106, Grade B
To SA-106, Grade B
P No. 1 Gr. 1 to P No. 1 Gr. 1
Thickness (in) 0.8640 Dia. (in) 6.6250

HEAT TREATMENT (QW-406, QW-407)

Preheat Temperature: 60 Degrees F.
Preheat Maintenance: None
Interpass Temperature: 550 Degrees F.
PWHT temperature ... : None Degrees F.
PWHT Holding time(hr): None
note: _____

ld. process / type All pass(es)
S (QW-408) GMAW / semi-auto
welding Gas / CFH..... 75% Argon, 25% CO2 / 30
ailing Gas / CFH..... None / -
cking Gas / CFH..... None / -

LLA METAL (QW-404)
S Classification..... ER70S-6
A Spec. No. & F No.... SFA#: 5.18 F#: 6
No. or Chem. Comp..... 1
ler Metal Trade Name. L-TEC ESAB
Flux Trade Name/Type N/A / -
ld Deposit 't' (in).... 0.8640
ec./Wire Size (in).... 0.035 / - / -
ECTRICAL (QW-409)
perage USED 80-115 / - / -
ltage USED 16-19 / - / -
vel Speed (ipm)..... Var. / - / -
k. Heat Input (J/in).... None
ngsten Type & Size.... N/A / -
rr : Type/Polarity... DCEP (reverse)
AW-CAW Transfer Mode. Short Circuiting Arc
CHNIQUE (QW-410)
ing or Weave Bead.... String & Weave Bead
lfice/Gas Cup Size.... 1/2"
tact Tube to Work.... 1/4" - 1/2"
illation..... N/A
lt./Single Electrodes. Single Electrode
er Technique Notes...
ltiple or Single Pass (per side).... Multiple Passes

None
None / -
None / -
N/A / -
None
SFA#: None F#: -
None
None / -
None
- / -
- / -
- / -
None
N/A / -
N/A
N/A
N/A
N/A
None
None
None
N/A
None

- 1) Peening was not used with this weld test.
- 2) No Pass > 1/2" t.
- 3) No supplementary filler metal was used with this weld test.
- 4) _____
- 5) _____

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTA GUSMÃO
DEPARTAMENTO
DIVISÃO DE SERVIÇOS CARTORIAIS

Procedure Qualification Record (PQR)

QR No.: 1033-6"XXH

Page 2 of 2

TENSILE TEST (QW-150)

Specimen No.	Width (in.)	Thick. (in.)	Area (sq.in.)	Ultimate total load (lb)	Ultimate stress (psi)	Type of failure and location
T-1	0.715	0.659	0.471	34977	74300	Base metal
T-2	0.739	0.657	0.486	38541	79300	Base metal

GUIDED BEND TEST (QW-160)

Figure No. and Type	Result	Figure No. and Type	Result
QW-462.2 Side bend	Acceptable	QW-462.2 Side bend	Acceptable
QW-462.2 Side bend	Acceptable	QW-462.2 Side bend	Acceptable

TOUGHNESS TEST (QW-170)

Spec. No.	Notch Location	Notch Type	Test Temp. (°F)	Impact Values (ft-lbs)	Lateral exp.		Drop weight break
					Shear %	Mils	
N/A							

HARDNESS TEST - Brinell hardness

	-1-	-2-	-3-	HAZ	-1-	-2-	-3-	WM	-1	-2-	-3-
Base metal	163	143	147		175	162	168		177	169	169
SA-106	169	147	144		180	185	169		157	180	169

(Heat Affected Zone=HAZ, Weld Metal=WM)

Notes:

Welder's Name: Revere, Arland ID: 435-37-0409
 Tests conducted by: Southern Insp. & Testing Laboratory Test No: 1033
 PQR was done & welding of coupon was witnessed by: Engineering Specialties

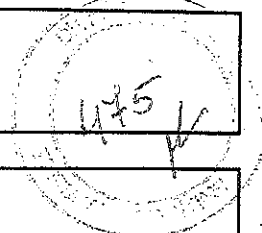
I certify that the statements in this record are correct and that the test
 coupons were prepared, welded, and tested in accordance with the requirements
 of Section IX of the ASME Code.

Prepared By: [Signature] (12/14/95) Eng'g. Manager
 Certified By: [Signature] (12/14/95) Quality Control

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PINHEIRO CUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAIS

P36 - RONCADOR FIELD DEVELOPMENT



SUPPLIER/CONTRACTOR NAME: Engineering Specialties, Inc.

PO/CONTRACT NUMBER: 3606838

PO/CONTRACT TITLE:

DOCUMENT TITLE: Welding Procedure Specifications GsSm1-b

EQUIPMENT NOS.: TD-533601

SUPPLIER DOC. NO.: REV : 01

NUMBER OF PAGES (TOTAL): 5

PROJECT NUMBER						
DOCUMENT TYPE	RONCADOR FIELD ID NO	AREA OF ACTIVITY /SYSTEM NO.	CLASS OF SERVICE	ORIGINATOR CODE	SEQUENTIAL NUMBER	REVISION
	3010.38					
SDDR CODES		SEQUENTIAL NUMBER		SHEET NUMBER		REVISION
						01
APPROVAL STATUS				SIGNED		DATED
R - REJECTED - REVISE AND RESUBMIT FOR APPROVAL <u>WORK MAY NOT PROCEED</u>						
C - COMMENTS - REVISE AND RESUBMIT FOR APPROVAL WORK MAY PROCEED SUBJECT TO INCORPORATION OF ALL COMMENTS INDICATED						
I - INFORMATION ONLY - REVIEW NOT REQUIRED						
F - FINAL - ACCEPTED AS FINAL/AS-BUILT						
S - SUPERSEDED/CANCELLED						
PERMISSION TO PROCEED DOES NOT CONSTITUTE ACCEPTANCE OF DESIGN DETAILS, CALCULATIONS, TEST METHODS OR MATERIALS DEVELOPED OR SELECTED BY CONTRACTOR FROM FULL COMPLIANCE WITH CONTRACTUAL OR OTHER OBLIGATIONS NOR DETRACT FROM ANY RIGHTS OF THE P36 - RONCADOR FIELD DEVELOPMENT PROJECT						

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTOGRAFIC

Engineering Specialties, Inc.
17438 Hard Hat Row Covington, LA
WELDING PROCEDURE SPECIFICATION (WPS)

70433

WPS No.: GsSm1-b Date: 06/23/94 Revision No.: 0
Supporting PQRs: 114

METAL (QW-403, QW-405)
NO. 1 to P No.: 1
thickness range. 0.1875" to 1.5000"
position(s). All positions (see note)
progression. Vert. Up (1st pass down)
notes Flat & Horizontal with SAW.

JOINT (QW-402)
Joint design Groove/Fillet (see pg 2)
Backing..... With or without backing
Backing Matl Weld metal
Fillet Weld Size All (QW-451.4)
notes

REHEAT (QW-406)
Minimum Temperature. 55 Degrees F.
Interpass Temp. Max. 550 Degrees F.
Reheat Maintenance. None

POSTWELD HEAT TREATMENT (QW-407)
Temperature range None
Time range None
notes

Process / type 1st process
GMAW / semi-auto
Process thickness limit. 0.1375" Max.

2nd process
SAW / machine
1.5000" Max.

WELDING GAS (QW-408)
Shielding Gas / CFH..... 75% Argon, 25% CO2 / 26-33
Backing Gas / CFH..... None / -
Preheating Gas / CFH..... None / -

N/A / -
N/A / -
N/A / -

FILLER METAL (QW-404)
AWS classification..... ER70S-6
AWS Spec. No. & F No.... SFA#: 5.18 F#: 6
No. or Chem. Comp..... 1
Filler metal trade name. n/r
Flux trade name/type N/A / -
Sec./Wire size (in) ... 0.035 0.045 1/16

F7A2-EM12K
SFA#: 5.17 F#: 6
1
n/r
L-TEC 429 / Neutral
3/32 1/8 5/32

ELECTRICAL (QW-409)
Welding amperage range... 80-145 110-175 165-300
Welding voltage range... 17-22 18-23 20-25
Travel speed (ipm)..... Var. Var. Var.
Max. Heat Input (J/in).... None

150-400 300-500 375-850
28-32 28-34 28-36
15-25 20-30 20-40
None

Electrode Type/Size..... N/A / -
Polarity..... DCEP (reverse)
Arc CAW transfer mode. Short Circuiting Arc

N/A / -
DCEP (reverse)
N/A

TECHNIQUE (QW-410)
Welding / weave bead..... Weave Bead
Shielding / gas cup..... 3/8" to 5/8"
Contact tube to work.... 1/4" - 1/2"
Oscillation..... N/A
Electrode.. Single Electrode

String Bead
N/A
3/4" - 1"
Single Electrode

Other Technique Notes...
Multiple or Single Pass (per side).... Multiple Passes

- 1) No peening done with this procedure.
- 2) No pass greater than 1/2" allowed.
- 3) original WPS/PQR by T.Hauptman 4/8/91
- 4)
- 5) Preheat to 175F if "T" > 1" and C > 0.30%; To 200F if 1.25 < "T" <= 1.5"
- 6)
- 7)

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

PS No.: GsSm1-b

Date: 06/23/94 Revision No.: 0

TNT (QW-402)

Single-V groove

Backing : no backing
 Root Opening: 3/16" max.
 Groove Angle: 50 degree min.
 Root Face : 1/8" max.

Single-Bevel groove

Backing : no backing
 Root Opening: 3/16" max.
 Groove Angle: 45 degree min.
 Root Face : 1/8" max.

Single-V groove

Backing : gouged & back welded
 Root Opening: 1/4" max.
 Groove Angle: 50 degree min.
 Root Face : 3/16" max.

Double-Bevel groove

Backing : gouged & back welded
 Root Opening: 1/4" max.
 Groove Angle: 45 degree min.
 Root Face : 3/16" max.

Double-V groove

Backing : gouged & back welded
 Root Opening: 1/4" max.
 Groove Angle: 45 degree min.
 Root Face : 3/16" max.

Single/Double Fillet

Backing :
 Root Opening: 3/16" max.
 Weld Size : Required fillet
 plus root opening

Square groove

Backing : T-joint
 Root Opening: 1/32" max.

Square groove

Backing : no backing
 Root Opening: 3/32" max.

WELD JOINT DESCRIPTIONS SHOWN ARE NOT INCLUSIVE OF ALL OF THOSE FOUND ON A
 B SITE. WELD JOINT DESIGN REFERENCE IN AN ENGINEERING SPECIFICATION OR
 SIGN DRAWING SHALL TAKE PRECEDENCE OVER WELD JOINTS SHOWN IN THIS WPS.

Initial cleaning With wire brush clean 1" both sides of weld joint.
Method of back gouging Arc Air and Grinding to remove all defects.

- a) Minimum preheat must be maintained during thermal cutting, tacking, and welding operations.
- b) Welds shall be cleaned between each pass. When completed, remove all slag and projections.

c)

d)

e)

certify that the statements in this record are correct and in accordance
 with the requirements of Sections IX and VIII of the ASME Code.

Prepared By: R. E. Dufurichon (06/23/94) Eng'g. Manager

Accepted By: R. E. Dufurichon (06/23/94) QC Manager

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAIS

Procedure Qualification Record (PQR)

PQ No.: 114

Page 2 of 2

TENSILE TEST (QW-150)

Specimen No.	Width (in.)	Thick. (in.)	Area (sq.in.)	Ultimate total load (lb)	Ultimate stress (psi)	Type of failure and location
T1	0.660	0.552	0.364	27800	76400	Ductile - WM
T2	0.825	0.660	0.544	46000	84600	Ductile - WM

GUIDED BEND TEST (QW-160)

Figure No. and Type	Result	Figure No. and Type	Result
QW-462.2 Side bend	Acceptable	QW-462.2 Side bend	Acceptable
QW-462.2 Side bend	Acceptable	QW-462.2 Side bend	Acceptable

TOUGHNESS TEST (QW-170)

Spec. No.	Notch Location	Notch Type	Test Temp. (°F)	Impact Values (ft-lbs)	Lateral exp.		Drop weight break
					Shear %	Mils	
N/A							

HARDNESS TEST - No hardness test

Base metal	-1-	-2-	-3-	HAZ	-1-	-2-	-3-	WM	-1	-2-	-3-
------------	-----	-----	-----	-----	-----	-----	-----	----	----	-----	-----

(Heat Affected Zone=HAZ, Weld Metal=WM)

Notes: _____

Welder's Name: Revere, Arland ID: 435-37-0409
 Tests conducted by: OWENSBY & KRITIKOS, INC. Laboratory Test No: 101748.44
 Test was done & welding of coupon was witnessed by: Engineering Specialties

I certify that the statements in this record are correct and that the test
 coupons were prepared, welded, and tested in accordance with the requirements
 of Section IX of the ASME Code.

Prepared By: [Signature] (06/23/94) Eng'g. Manager
 Certified By: [Signature] (06/23/94) Quality Control

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAIS

Engineering Specialties, Inc.
17438 Hard Hat Row
Covington, LA 70433
Procedure Qualification Record (PQR)



POR No.: 114 Date: 06/23/94 WPS No.: GsSm1-b Rev 0

JOINT DESIGN (QW-402)
WELD JOINT CONFIGURATION
 Single-V groove
 open butt, no back weld
 Groove Angle : 60 Degrees
 Root Opening : 1/8 Inches
 Root Face : 1/8 Inches
 Note: _____
POSITION (QW-405)
 Position of Joint : 1G - Flat
 Progression: N/A
 Note: _____

BASE METAL (QW-403)
 Material form. Plate
 Material Spec. SA-516, Grade 70
 To SA-516, Grade 70
 P No. 1 Gr. 2 to P No. 1 Gr. 2
 Thickness (in) 1.0000

HEAT TREATMENT (QW-406, QW-407)
 Preheat Temperature: 55 Degrees F.
 Preheat Maintenance: None
 Interpass Temperature: _____ Degrees F.
 PWHT temperature ... : None Degrees F.
 PWHT Holding time(hr): None
 Note: _____

Welding Process / type
1st process
GMAW / semi-auto
 Shielding Gas / CFH..... 75% Argon, 25% CO2/ 28
 Filling Gas / CFH..... None
 Capping Gas / CFH..... None

2nd process
SAW / machine
 _____ / -
 _____ / -
 _____ / -

BASE METAL (QW-404)
 S Classification.....
 A Spec. No. & F No..... SFA#: ER70S-6 F#: 6
 No. or Chem. Comp..... 1
 Filler Metal Trade Name..... n/r
 Flux Trade Name/Type..... N/A / -
 Root Deposit 't' (in).... 0.1250
 Ec./Wire Size (in).... 0.0350
ELECTRICAL (QW-409)
 Amperage USED 140
 Voltage USED 17
 Travel Speed (ipm)..... Var. Var. Var.
 Heat Input (J/in).... None
 Electrode Type & Size.... N/A / -
 Transfer Type/Polarity... DCEP (reverse)
 Arc Transfer Mode..... Short Circuiting Arc
TECHNIQUE (QW-410)
 String or Weave Bead.... Weave Bead
 Face/Gas Cup Size.... 1/2"
 Contact Tube to Work.... 1/4" - 1/2"
 Illumination..... N/A
 Root/Single Electrodes. Single Electrode
 Other Technique Notes...
 Multiple or Single Pass (per side).... Multiple Passes

F7A2-EM12K
 SFA#: 5.17 F#: 6
 (verify chemistry)
 L-TEC 81
 L-TEC 429 / Neutral
0.8750
0.0780
400
32
12 Var. Var.
None
N/A / -
DCEP (reverse)
N/A
String Bead
N/A
3/4" - 1"
Single Electrode

Peening was not used with this weld test.
 No Pass > 1/2" t.
 Original WPS/PQR by T.Hauptman 4/8/91

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL JUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAS

P36 - RONCADOR FIELD DEVELOPMENT

SUPPLIER/CONTRACTOR NAME: Engineering Specialties, Inc.

PO/CONTRACT NUMBER: 3606838

PO/CONTRACT TITLE:

DOCUMENT TITLE: Welding Procedure Specifications GsFs1-c

EQUIPMENT NOS.: TD-533601

SUPPLIER DOC. NO.: **REV : 01**

NUMBER OF PAGES (TOTAL): 5

PROJECT NUMBER						
DOCUMENT TYPE	RONCADOR FIELD ID NO	AREA OF ACTIVITY /SYSTEM NO.	CLASS OF SERVICE	ORIGINATOR CODE	SEQUENTIAL NUMBER	REVISION
	3010.38					
SDDR CODES		SEQUENTIAL NUMBER		SHEET NUMBER		REVISION
						01
APPROVAL STATUS				SIGNED		DATED
R - REJECTED - REVISE AND RESUBMIT FOR APPROVAL <u>WORK MAY NOT PROCEED</u>						
C - COMMENTS - REVISE AND RESUBMIT FOR APPROVAL WORK MAY PROCEED SUBJECT TO INCORPORATION OF ALL COMMENTS INDICATED						
I - INFORMATION ONLY - REVIEW NOT REQUIRED						
F - FINAL - ACCEPTED AS FINAL/AS-BUILT						
S - SUPERSEDED/CANCELLED						
PERMISSION TO PROCEED DOES NOT CONSTITUTE ACCEPTANCE OF DESIGN DETAILS, CALCULATIONS, TEST METHODS OR MATERIALS DEVELOPED OR SELECTED BY CONTRACTOR FROM FULL COMPLIANCE WITH CONTRACTUAL OR OTHER OBLIGATIONS NOR DETRACT FROM ANY RIGHTS OF THE P36 - RONCADOR FIELD DEVELOPMENT PROJECT						

S No.: GsFs1-c Date: 03/23/93 Revision No.: 0
Supporting PQRs: 510

METAL (QW-403, QW-405)
No. 1 to P No.: 1
Thickness range. 0.1875" to 2.2500"
Position(s). All positions
Progression. Vert. Up (1st pass down)
Notes

JOINT (QW-402)
Joint design Groove/Fillet (see pg. 2)
Backing..... With or without backing
Backing Matl Optional
Fillet Weld Size All (QW-451.4)
Notes

PREHEAT (QW-406)
Minimum Temperature. 75 Degrees F.
Interpass Temp. Max. 550 Degrees F.
Postheat Maintenance. None

POSTWELD HEAT TREATMENT (QW-407)
Temperature range None
Time range None
Notes

Process / type 1st process
GMAW / semi-auto
Process thickness limit. 0.1375" Max.

2nd process
FCAW / semi-auto
2.2500" Max.

Shielding Gas / CFH..... 75% Argon, 25% CO2 / 26-33
Shielding Gas / CFH..... None / -
Shielding Gas / CFH..... None / -

75% Argon, 25% CO2 / 26-33
None / -
N/A / -

WELDER METAL (QW-404)
Classification..... ER70S-6
Spec. No. & F No.... SFA#: 5.18 F#: 6
No. or Chem. Comp..... 1
Welder metal trade name. N/R
Flux trade name/type None / -
Wire size (in) ... 0.035 | 0.045 | 1/16

E71T-1
SFA#: 5.20 F#: 6
1
N/R
None / -
0.035 | 0.045 | 1/16

CENTRICAL (QW-409)
Welding amperage range.. 80-145 | 110-175 | 165-300
Welding voltage range... 17-22 | 18-23 | 20-25
Weld speed (ipm)..... Var. | Var. | Var.
Heat Input (J/in)..... None
Welding Type/Size..... N/A / -
Polarity & Polarity..... DCEP (reverse)
Welding Transfer mode. Short Circuiting Arc
Welding (QW-410)
Welding / weave bead..... Weave Bead
Welding / gas cup..... 3/8" to 5/8"
Welding tube to work.... 1/4 - 1/2"
Welding..... None
Welding / Single electrode.. Single Electrode

120-200 | 150-225 | 175-275
19-24 | 22-26 | 25-28
Var. | Var. | Var.
None
N/A / -
DCEP (reverse)
Spray Arc
String & Weave Bead
3/8" to 5/8"
3/4 - 1"
None
Single Electrode

Welding Technique Notes...
Multiple or Single Pass (per side).... Multiple Passes
No peening done with this procedure.
No pass greater than 1/2" allowed.

Preheat to 175F if "T" > 1" and C > 0.30%; To 200F if 1.25 < "T" <= 1.5"

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTOGRAFIA

WPS No.: GsFsl-c

Date: 03/23/93 Revision No.: 0

JOINT (QW-402)

Single-V groove

Backing : no backing
 Root Opening: 3/16" max.
 Groove Angle: 50 degree min.
 Root Face : 1/8" max.

Single-Bevel groove

Backing : no backing
 Root Opening: 3/16" max.
 Groove Angle: 45 degree min.
 Root Face : 1/8" max.

Double-V groove

Backing : gouged & back welded
 Root Opening: 1/4" max.
 Groove Angle: 50 degree min.
 Root Face : 3/16" max.

Double-Bevel groove

Backing : gouged & back welded
 Root Opening: 1/4" max.
 Groove Angle: 45 degree min.
 Root Face : 3/16" max.

Single-V groove

Backing : gouged & back welded
 Root Opening: 1/4" max.
 Groove Angle: 45 degree min.
 Root Face : 3/16" max.

Single/Double Fillet

Backing :
 Root Opening: 3/16" max.
 Weld Size : Required fillet
 plus root opening

Square groove

Backing : T-joint
 Root Opening: 1/32" max.

Square groove

Backing : no backing
 Root Opening: 3/32" max.

WELD JOINT DESCRIPTIONS SHOWN ARE NOT INCLUSIVE OF ALL OF THOSE FOUND ON A
 JOB SITE. WELD JOINT DESIGN REFERENCE IN AN ENGINEERING SPECIFICATION OR
 DESIGN DRAWING SHALL TAKE PRECEDENCE OVER WELD JOINTS SHOWN IN THIS WPS.

Initial cleaning With wire brush clean 1" both sides of weld joint.

Method of back gouging Grind until all defects are removed (see page 2).

- a) Minimum preheat must be maintained during thermal cutting, tacking, and welding operations.
- b) Welds shall be cleaned between each pass. When completed, remove all slag and projections.

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAIS

I hereby certify that the statements in this record are correct and in accordance with the requirements of Section IX.

Prepared By: B. E. J. Inflection (03/23/93) Eng'g. Manager

Accepted By: Paulo Lima (03/23/93) QC Manager

R No.: 510 Date: 03/23/93 WPS No.: GsFsl-c Rev 0

INT DESIGN (QW-402)
LD JOINT CONFIGURATION
Type-V groove
an butt, no back weld
ove Angle : 60 Degrees
ot Opening : 1/16 Inches
ot Face : 1/16 Inches

BASE METAL (QW-403)
Material form. Plate
Material Spec. SA-36
To SA-36
P No. 1 Gr. 1 to P No. 1 Gr. 1
Thickness (in) 1.1250

te: _____

SITION (QW-405)
osition of Joint : 1G - Flat
gression: N/A
e: _____

HEAT TREATMENT (QW-406, QW-407)
Preheat Temperature: 175 Degrees F.
Preheat Maintenance: None
Interpass Temperature: 550 Degrees F.
PWHT temperature ... : None Degrees F.
PWHT Holding time(hr): None
note: _____

1st process
d process / type GMAW / semi-auto
(QW-408)
Welding Gas / CFH..... 75% Argon, 25% CO2 / 28
Shielding Gas / CFH..... None / -
Preheating Gas / CFH..... None / -

2nd process
d process / type FCAW / semi-auto
(QW-409)
Welding Gas / CFH..... 75% Argon, 25% CO2 / 28
Shielding Gas / CFH..... None / -
Preheating Gas / CFH..... N/A / -

ELER METAL (QW-404)
Classification..... ER70S-6
Spec...No. & F No.... SFA#: 5.18 F#: 6
o. or Chem. Comp..... 1
ler Metal Trade Name. N/R
Flux Trade Name/Type None / -
d Deposit 't' (in).... 0.125
c./Wire Size (in).... 0.0350 - -
CTRICAL (QW-409)
erage USED 110 - -
tage USED 18 - -
vel Speed (ipm)..... Var. - -
. Heat Input (J/in).... None
gsten Type & Size.... N/A / -
r- Type/Polarity... DCEP (reverse)
W, CAW Transfer Mode. Short Circuiting Arc
ENIQUE (QW-410)
ing or Weave Bead.... Weave Bead
fice/Gas Cup Size.... 1/2"
tact Tube to Work.... 1/4 - 1/2"
illation..... None
t./Single Electrodes. Single Electrode
er Technique Notes...
iple or Single Pass (per side).... Multiple Passes

E71T-1
SFA#: 5.20 F#: 6
1
N/R
None / -
1.0000
0.0450 - -
150 - -
25 - -
Var. - -
None
N/A / -
DCEP (reverse)
Spray Arc
String & Weave Bead
1/2"
3/4 - 1"
None
Single Electrode

Peening was not used with this weld test.
No Pass > 1/2" t.

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JOSÉ CARLOS PIMENTEL PUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

Procedure Qualification Record (PQR)

PC No.: 510

TENSILE TEST (QW-150)

Page 2 of 2

Specimen No.	Width (in.)	Thick. (in.)	Area (sq.in.)	Ultimate total load (lb)	Ultimate stress (psi)	Type of failure and location
T-1	0.7420	0.3920	0.2909	24000	82503	Ductile - BM
T-2	0.7450	0.3720	0.2771	22000	79394	Ductile - BM

GUIDED BEND TEST (QW-160)

Figure No. and Type	Result	Figure No. and Type	Result
QW-462.2 Side bend	Acceptable	QW-462.2 Side bend	Acceptable
QW-462.2 Side bend	Acceptable	QW-462.2 Side bend	Acceptable

TOUGHNESS TEST (QW-170)

Spec. No.	Notch Location	Notch Type	Test Temp. (°F)	Impact Values (ft-lbs)	Lateral exp.		Drop weight break
					Shear %	Mils	

HARDNESS TEST - Brinell hardness

Base metal	-1-	-2-	-3-	HAZ	-1-	-2-	-3-	WM	-1	-2-	-3-
SA-36	157				153				153		
SA-36											

(Heat Affected Zone=HAZ, Weld Metal=WM)

Welder's Name: Revere, Arland ID: 435-37-0409
 Tests conducted by: Southern Insp. & Testing Laboratory Test No: 510
 Test was done & welding of coupon was witnessed by: Engineering Specialities,

I certify that the statements in this record are correct and that the test
 specimens were prepared, welded, and tested in accordance with the requirements
 of Section IX of the ASME Code.

Prepared By: R. E. Dufrechou (03/23/93) Eng'g. Manager
 Certified By: Paul L. L... (03/23/93) Quality Control

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAIS

Engineering Specialties, Inc.
 17438 Hard Hat Row Covington, LA 70433
WELDER OR WELDING OPERATOR PERFORMANCE QUALIFICATION

4854

Camp: S Welder's Name: Fauntleroy, Scott I.D.#: 439-06-0372
 P-No: GsFsl-c Rev: 0 WPQ Number: 510-Proc-#1 Date: 01/04/95
 Welding process used: GMAW / semi-auto
 Base material(s): SA-106, Grade B to SA-106, Grade B

Welding variables (QW-350)	Actual Values	Range Qualified
Type of weld joint.....	Pipe Groove	Groove and Fillets
Backing (QW-402).....	No backing used	With or Without backing
P-No. to P-No. (QW-403)...	1 to 1	P-1 thru P-11 & P-4X
Pipe diameter - groove (in.)	6.6250	2.875" minimum
Base metal thickness (in.)...	0.4320	WPS limits
WPS classification (info)....	ER70S-6	
Filler metal spec. (SFA No.)	5.18	5.XX
Filler metal F-Number.....	6	F 6
Consumable insert.....	n.a.	n.a.
Weld deposit - groove (in.)..	0.1250	0.1375" maximum
Welding position (QW-405)....	6G - 45 Deg.	All positions
Weld progression.....	Vertical Down	Vertical Down (n4)
Backing gas (QW-408).....	No backing gas used	With/Without backing gas
PAW/FCAW transfer mode.....	Short Circuiting Arc	Short Circuiting Arc only
Machine welding (QW-360)	Actual Values	Range Qualified
Direct/Remote visual control.	n.a.	n.a.
Automatic joint tracking.....	n.a.	n.a.
Angle/multiple pass per side	n.a.	n.a.

Fillet Welds: All base material thicknesses, fillet sizes, and diameters.
Welds with backing include fillets and double-welded joints.
 Notes: _____

4) The root pass when it is removed to sound weld metal in the preparation for welding the second side and the cover or wash pass may be up or down.
Guided Bend Test Results

Figure No. and Type	Result	Figure No. and Type	Result
QW-462.3(a) Face bend	Acceptable	QW-462.3(a) Root bend	Acceptable
QW-462.3(a) Face bend	Acceptable	QW-462.3(a) Root bend	Acceptable

radiographic test results: None

Other test notes : Visual examination satisfactory per QW-302.4 and QW-190.

Welding test conducted by: Engineering Specialties, Inc.

Witness tests conducted by: Engineering Specialties Lab test no. 510-6"-S

I certify that the statements in this record are correct and that the test coupons were prepared, welded, and tested in accordance with the requirements Section IX of the ASME code.

Organization: Engineering Specialties

Certified By: [Signature] (01/04/95) Quality Control

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAS

Engineering Specialties, Inc.
17438 Hard Hat Row

Covington, LA 70433

WELDER OR WELDING OPERATOR PERFORMANCE QUALIFICATION

Welder's Name: Fauntleroy, Scott

I.D.#: 439-06-0372

PS No: Gsl-a-2 Rev: 0 WPC Number: 103-6"

Date: 09/14/94

Welding process used: GMAW / semi-auto

Base material(s): SA-106, Grade B to

SA-106, Grade B

Welding variables (QW-350)	Actual Values	Range Qualified
Type of weld joint.....	Pipe Groove	Groove and Fillets
* Backing (QW-402).....	No backing used	With or Without backing
-No. to P-No. (QW-403)...	1 to 1	P-1 thru P-11 & P-4X
Pipe diameter - groove (in.)	6.6250	2.875" minimum
Base metal thickness (in.)...	0.4320	WPS limits
WPS classification (info)....	ER70S-2	
Filler metal spec. (SFA No.)	5.18	
Filler metal F-Number.....	6	5.XX
Consumable insert.....	n.a.	F 6
Weld deposit - groove (in.)..	0.4320	n.a.
Welding position (QW-405)....	6G - 45 Deg.	0.4752" maximum
Weld progression.....	Vertical Up And Down	All positions
Backing gas (QW-408).....	No backing gas used	Vertical Up or Down
GMAW/FCAW transfer mode.....	Short Circuiting Arc	With/Without backing gas
Machine welding (QW-360)	Actual Values	Short Circuiting Arc only
Direct/Remote visual control.	n.a.	Range Qualified
Automatic joint tracking.....	n.a.	n.a.
Single/multiple pass per side	n.a.	n.a.

Fillet Welds: All base material thicknesses, fillet sizes, and diameters.
* Welds with backing include fillets and double-welded joints.

Guided Bend Test Results

Figure No. and Type	Result	Figure No. and Type	Result
QW-462.3(a) Face bend	Acceptable	QW-462.3(a) Root bend	Acceptable
QW-462.3(a) Face bend	Acceptable	QW-462.3(a) Root bend	Acceptable

Radiographic test results: None

Other test notes : Visual examination satisfactory per QW-302.4 and QW-190.

Welding test conducted by: Engineering Specialties, Inc.

Each test conducted by: Engineering Specialties Lab test no. 103-6"-S

I certify that the statements in this record are correct and that the test coupons were prepared, welded, and tested in accordance with the requirements of Section IX of the ASME code.

Organization: Engineering Specialties

Certified By: [Signature] (09/14/94) Quality Control

É COPIA FIEL DO DOCUMENTO ORIGINAL:

JOSÉ CARLOS PIMENTEL QUEMADO
DEPARTAMENTO
DIVISÃO DE SERVIÇOS CARTORIAIS

Engineering Specialties, Inc.
17438 Hard Hat Row Covington, LA 70433
WELDER OR WELDING OPERATOR PERFORMANCE QUALIFICATION

Lamp: X Welder's Name: Revere, Arland I.D.#: 435-37-0409
PS No: GsSm1-b Rev: 0 WPQ Number: Process #1 Date: 7/12/94
Welding process used: GMAW / semi-auto
Base material(s): SA-516, Grade 70 to SA-516, Grade 70

Welding variables (QW-350)	Actual Values	Range Qualified
Type of weld joint.....	Plate Groove	Groove and Fillets
* Backing (QW-402).....	No backing used	With or Without backing
-No. to P-No. (QW-403)...	1 to 1	P-1 thru P-11 & P-4X
Pipe diameter - groove (in.)	n.a.	2.875" minimum
Base metal thickness (in.)...	1.0000	WPS limits
WPS classification (info)....	ER70S-6	
Filler metal spec. (SFA No.)	5.18	5.XX
Filler metal F-Number.....	6	F 6
Consumable insert.....	n.a.	n.a.
Weld deposit - groove (in.)..	0.1250	0.1375" maximum
Welding position (QW-405)....	1G - Flat	Flat only
Weld progression.....	n.a.	n.a.
Backing gas (QW-408).....	No backing gas used	With/Without backing gas
GMAW/FCAW transfer mode.....	Short Circuiting Arc	Short Circuiting Arc only
Machine welding (QW-360)	Actual Values	Range Qualified
Direct/Remote visual control.	n.a.	n.a.
Automatic joint tracking.....	n.a.	n.a.
Single/multiple pass per side	n.a.	n.a.

Fillet welds: All base material thicknesses, fillet sizes, and diameters.
Welds with backing include fillets and double-welded joints.
Notes: _____

Guided Bend Test Results

Figure No. and Type	Result	Figure No. and Type	Result
QW-462.2 Side bend	Acceptable	QW-462.2 Side bend	Acceptable
QW-462.2 Side bend	Acceptable	QW-462.2 Side bend	Acceptable

Radiographic test results: None

Other test notes : Visual examination satisfactory per QW-302.4 and QW-190.

Welding test conducted by: Engineering Specialties

Tests conducted by: OWENSBY & KRITIKOS, INC. Lab test no. 101748.42

I certify that the statements in this record are correct and that the test coupons were prepared, welded, and tested in accordance with the requirements of Section IX of the ASME code.

Organization: Engineering Specialties

Certified By: R.E. Dufresne (7/12/94) Quality Control

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JOSE CARLOS PIMENTEL JUNIOR
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

489

Engineering Specialties, Inc.
17438 Hard Hat Row Covington, LA 70433
WELDER OR WELDING OPERATOR PERFORMANCE QUALIFICATION

Camp: X Welder's Name: Revere, Arland I.D.#: 435-37-0409
PS No: GsSml-b Rev: 0 WPQ Number: Process #2 Date: 06/23/94
Welding process used: SAW / machine Type range: Machine or Automatic
Base material(s): SA-516, Grade 70 to SA-516, Grade 70

Welding variables (QW-350)	Actual Values	Range Qualified
Type of weld joint.....	Plate Groove	Groove and Fillets
* Backing (QW-402).....	Backing used	With backing only
-No. to P-No. (QW-403)...	1 to 1	All base metals
Pipe diameter - groove (in.)	n.a.	All diameters
Base metal thickness (in.)...	1.0000	WPS limits
WPS classification (info)....	F7A2-EM12K	
Filler metal spec. (SFA No.)	5.17	5.XX
Filler metal F-Number.....	6	All F-Numbers
Consumable insert.....	n.a.	n.a.
Shield deposit - groove (in.)..	0.8750	WPS limits
Shielding position (QW-405)....	1G - Flat	Flat only
Shield progression.....	n.a.	n.a.
Backing gas (QW-408).....	n.a.	n.a.

Machine welding (QW-360)	Actual Values	Range Qualified
Direct/Remote visual control.	Direct control used	Direct control required
Automatic joint tracking.....	Manual tracking	With or W/O auto tracking
Single/multiple pass per side	Multiple passes	Single or Multiple pass

Fillet Welds: All base material thicknesses, fillet sizes, and diameters.
* Welds with backing include fillets and double-welded joints.

Guided Bend Test Results

Figure No. and Type	Result	Figure No. and Type	Result
QW-462.2 Side bend	Acceptable	QW-462.2 Side bend	Acceptable
QW-462.2 Side bend	Acceptable	QW-462.2 Side bend	Acceptable

Radiographic test results: None

Other test notes : Visual examination satisfactory per QW-302.4 and QW-190:

Welding test conducted by: Engineering Specialties

Mech. tests conducted by: OWENSBY & KRITIKOS, INC. Lab test no. 101748.42

I certify that the statements in this record are correct and that the test coupons were prepared, welded, and tested in accordance with the requirements of Section IX of the ASME code.

Organization: Engineering Specialties

Certified By: B.E. Dufrecha (06/23/94) Quality Control

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTA LUSMAO
DIRETOR
DIVISAO DE SERVICOS CARTORIAS

490

Engineering Specialties, Inc.
17438 Hard Hat Row Covington, LA 70433
WELDER OR WELDING OPERATOR PERFORMANCE QUALIFICATION

Lamp: X Welder's Name: Revere, Arland I.D.#: 435-37-0409
PS No: GsFsl-c Rev: 0 WPQ Number: Process #1 Date: 03/23/93
Welding process used: GMAW / semi-auto
Base material(s): SA-36 to SA-36

Welding variables (QW-350)	Actual Values	Range Qualified
Type of weld joint.....	Plate Groove	Groove and Fillets
* Backing (QW-402).....	No backing used	With or Without backing
-No. to P-No. (QW-403)...	1 to 1	P-1 thru P-11 & P-4X
Pipe diameter - groove (in.)	n.a.	2.875" minimum
Base metal thickness (in.)...	1.1250	WPS limits
WPS classification (info)....	ER70S-6	
Filler metal spec. (SFA No.)	5.18	5.XX
Filler metal F-Number.....	6	F 6
Consumable insert.....	n.a.	n.a.
Weld deposit - groove (in.)..	0.1250	0.1375" maximum
Welding position (QW-405)....	1G - Flat	Flat only
Weld progression.....	n.a.	n.a.
Backing gas (QW-408).....	No backing gas used	With/Without backing gas
GMAW/FCAW transfer mode.....	Short Circuiting Arc	Short Circuiting Arc only
Machine welding (QW-360)	Actual Values	Range Qualified
Direct/Remote visual control.	n.a.	n.a.
Automatic joint tracking.....	n.a.	n.a.
Single/multiple pass per side	n.a.	n.a.

Fillet Welds: All base material thicknesses, fillet sizes, and diameters.

* Welds with backing include fillets and double-welded joints.

Notes:

Guided Bend Test Results

Figure No. and Type	Result	Figure No. and Type	Result
QW-462.2 Side bend	Acceptable	QW-462.2 Side bend	Acceptable
QW-462.2 Side bend	Acceptable	QW-462.2 Side bend	Acceptable

Radiographic test results: Acceptable per QW-302.2 and QW-191

Other test notes : None

Welding test conducted by: Engineering Specialties,

Each. tests conducted by: Southern Insp. & Testing Lab test no. 510

I certify that the statements in this record are correct and that the test coupons were prepared, welded, and tested in accordance with the requirements of Section IX

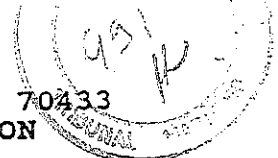
Organization: Engineering Specialties

Certified By: R.E. Dufresne (16-31-95) Quality Control

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JOSÉ CARLOS PIMENTEL ALBUQUERQUE
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Engineering Specialties, Inc.
 17438 Hard Hat Row Covington, LA 70433
WELDER OR WELDING OPERATOR PERFORMANCE QUALIFICATION



Lamp: X Welder's Name: Revere, Arland I.D.#: 435-37-0409
 PS No: GsFsl-c Rev: 0 WPQ Number: Process #2 Date: 03/23/93
 Welding process used: FCAW / semi-auto
 Base material(s): SA-36 to SA-36

Welding variables (QW-350)	Actual Values	Range Qualified
Type of weld joint.....	Plate Groove	Groove and Fillets
* Backing (QW-402).....	Backing used	With backing only
-No. to P-No. (QW-403)...	1 to 1	P-1 thru P-11 & P-4X
Pipe diameter - groove (in.)	n.a.	2.875" minimum
Base metal thickness (in.)...	1.1250	WPS limits
WPS classification (info)....	E71T-1	
Filler metal spec. (SFA No.)	5.20	5.XX
Filler metal F-Number.....	6	F 6
Consumable insert.....	n.a.	n.a.
Shield deposit - groove (in.)..	1.0000	WPS limits
Shielding position (QW-405)....	1G - Flat	Flat only
Shield progression.....	n.a.	n.a.
Backing gas (QW-408).....	No backing gas used	Without backing gas only
MAW/FCAW transfer mode.....	Spray Arc	Short Circuiting Arc only
Machine welding (QW-360)	Actual Values	Range Qualified
Intermittent/Remote visual control.	n.a.	n.a.
Automatic joint tracking.....	n.a.	n.a.
Single/multiple pass per side	n.a.	n.a.

Fillet Welds: All base material thicknesses, fillet sizes, and diameters.
 * Welds with backing include fillets and double-welded joints.
 Notes: _____

Guided Bend Test Results

Figure No. and Type	Result	Figure No. and Type	Result
QW-462.2 Side bend	Acceptable	QW-462.2 Side bend	Acceptable
QW-462.2 Side bend	Acceptable	QW-462.2 Side bend	Acceptable

Radiographic test results: Acceptable per QW-302.2 and QW-191

Other test notes : None

Welding test conducted by: Engineering Specialties,
 Mech. tests conducted by: Southern Insp. & Testing Lab test no. 510

I certify that the statements in this record are correct and that the test
 coupons were prepared, welded, and tested in accordance with the requirements
 of Section IX

Organization: Engineering Specialties

Certified By: R.E. Dufreche (10-31-95) Quality Control

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL JUNIOR
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAS

Engineering Specialties, Inc.
17438 Hard Hat Row Covington, LA 70433
WELDER OR WELDING OPERATOR PERFORMANCE QUALIFICATION

I.D.#: 435-37-0409

Date: 11/19/96

Camp: X Welder's Name: Revere, Arland
PS No: Gsl-b Rev: 0 WPO Number: 103-2"
Welding process used: GMAW / semi-auto
Base material(s): SA-106, Grade B to SA-106, Grade B

	Actual Values	Range Qualified
Welding variables (QW-350)		Groove and Fillets
Type of weld joint.....	Pipe Groove	With or Without backing
* Backing (QW-402).....	No backing used	P-1 thru P-11 & P-4X
P-No. to P-No. (QW-403)...	1 to 1	1.00" minimum
Pipe diameter - groove (in.)	2.3750	WPS limits
Base metal thickness (in.)...	0.2180	
WPS classification (info)....	ER70S-2	
Filler metal spec. (SFA No.)	5.18	5.XX
Filler metal F-Number.....	6	F 6
Consumable insert.....	n.a.	n.a.
Electrode deposit - groove (in.)..	0.2180	0.2398" maximum
Welding position (QW-405)....	6G - 45 Deg.	All positions
Weld progression.....	Vertical Up And Down	Vertical Up or Down
Backing gas (QW-408).....	No backing gas used	With/Without backing gas
MAW/FCAW transfer mode.....	Short Circuiting Arc	Short Circuiting Arc only
Line welding (QW-360)	Actual Values	Range Qualified
Direct/Remote visual control.	n.a.	n.a.
Automatic joint tracking.....	n.a.	n.a.
Single/multiple pass per side	n.a.	n.a.

Fillet Welds: All base material thicknesses, fillet sizes, and diameters.
* Welds with backing include fillets and double-welded joints.

Notes:

Guided Bend Test Results

Figure No. and Type	Result	Figure No. and Type	Result
QW-462.3(a) Face bend	Acceptable	QW-462.3(a) Root bend	Acceptable
QW-462.3(a) Face bend	Acceptable	QW-462.3(a) Root bend	Acceptable

Radiographic test results: None

Other test notes: Visual examination satisfactory per QW-302.4 and QW-190.

Welding test conducted by: Engineering Specialties
Mech. tests conducted by: Engineering Specialties Lab test no. ESI120284

We certify that the statements in this record are correct and that the test coupons were prepared, welded, and tested in accordance with the requirements of Section IX of the ASME code.

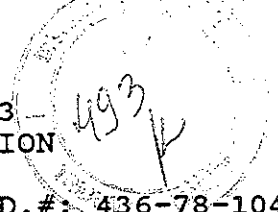
Organization: Engineering Specialties

Certified By: (Signature) (11/19/96) Quality Control

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓFIAS

Engineering Specialties, Inc.
17438 Hard Hat Row Covington, LA 70433
WELDER OR WELDING OPERATOR PERFORMANCE QUALIFICATION



Stamp: G Welder's Name: Mc Clendon, Greg I.D.#: 436-78-1041
WPQ No: GsFs1-c Rev:0 WPQ Number: Process #1 Date: 4/14/98
Welding process used: GMAW / semi-auto
Base material(s): SA-36 to SA-36

Welding variables (QW-350)	Actual Values	Range Qualified
Type of weld joint.....	Plate Groove	Groove and Fillets
** Backing (QW-402).....	No backing used	With or Without backing
P-No. to P-No. (QW-403)...	1 to 1	P-1 thru P-11 & P-4X
Pipe diameter - groove (in.)	n.a.	2.875" minimum (n1)
Base metal thickness (in.)...	1.1250	WPS limits
AWS classification (info)....	ER70S-6	
Filler metal spec. (SFA No.)	5.18	5.XX
Filler metal F-Number.....	6	F 6
Consumable insert.....	n.a.	n.a.
Weld deposit - groove (in.)..	0.5000	1.0000" maximum
Welding position (QW-405)....	3G - Vertical	F & V (Fillets - F,H,V)
Weld progression.....	Vertical Up And Down	Vertical Up or Down
Backing gas (QW-408).....	No backing gas used	With/Without backing gas
SM/FCAW transfer mode.....	Short Circuiting Arc	Short Circuiting Arc only
Machine welding (QW-360)	Actual Values	Range Qualified
Direct/Remote visual control.	n.a.	n.a.
Automatic joint tracking.....	n.a.	n.a.
Single/multiple pass per side	n.a.	n.a.

Fillet Welds: All base material thicknesses, fillet sizes, and diameters.
** Welds with backing include fillets and double-welded joints.
Notes: (n1) Pipe with O.D. <= 24" limited to flat rotated only.

Guided Bend Test Results

Figure No. and Type	Result	Figure No. and Type	Result
QW-462.3(a) Face bend	Acceptable	QW-462.3(a) Root bend	Acceptable
QW-462.3(b) Face bend	Acceptable	QW-462.3(b) Root bend	Acceptable

Radiographic test results: None

Other test notes : None

Welding test conducted by: Engineering Specialties,
Tech. tests conducted by: Engineering Specialties Lab test no. 062297

We certify that the statements in this record are correct and that the test
coupons were prepared, welded, and tested in accordance with the requirements
of Section IX

Organization: Engineering Specialties

Inspected By: R. E. Dufresne (05/29/97) Quality Control

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JOSÉ CARLOS PIMENTEL CUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

REGISTRO ITALIANO NAVALE

OFFICE/AGENCY IN QUEBEC

FACTUAL REPORT OF SURVEYS

RINA number [8] 67073		Name of ship PETROBRAS TRENTASEI		Gross Tonnage [8]		Flag of ship ITALIAN		
Start of Survey 20.09.99		End of Survey 11.10.99		Place of Survey QUEBEC		File [9] 97/DG/14810 IN		
THIS IS TO CERTIFY THAT THE FOLLOWING SURVEYS HAVE BEEN CARRIED OUT ACCORDING TO APPLICABLE RULES AND REGULATIONS								
CLASS / "NAVIGABILITA" (*) SURVEYS [3]		Spec (Ren) Survey [1]	Ord (Ann) Survey [1]	Intermediate Survey [1]	Continuous Survey [1]	Occasional Survey [1]	First Classification "Navigabilit�" Survey [1]	
1 Hull								
2 Machinery								
3 Unmanned machinery space (IAQ/IAP/IAQ+IAP) (*)								
4 Refrigerating Plant (IFQ)								
5 Special notations (FFQ; NAU; SCC,.....) (*)								
6 Diving systems								
7 Dynamic positioning system (IPD)								
3 Bottom (S)		NORM	VS	AVA	Afloat			
9 Tailshaft (centre) [6]		NEW	COMP	ALT	PAR	with NDT		
10 Tailshaft (port) [6]		NEW	COMP	ALT	PAR	with NDT		
11 Tailshaft (stbd) [6]		NEW	COMP	ALT	PAR	with NDT		
12 Main/Auxiliary boiler [1]		No.	AL	IN	CN	CM	PC	
13 Main/Auxiliary boiler [1]		No.	AL	IN	CN	CM	PC	
14 Main/Auxiliary boiler [1]		No.	AL	IN	CN	CM	PC	
15 Main/Auxiliary boiler [1]		No.	AL	IN	CN	CM	PC	
STATUTORY SURVEYS		Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat	STATUTORY SURVEYS			Type [2]
16 Load Line (INT/ITA) (*) [3]					29 Dangerous Goods in Road Tanks			
17 Safety Construction					30 Dangerous Goods in Tank Containers			
18 Safety Equipment					31 Dangerous Goods in Packages			
19 Safety Radio					32 Cargo Gear - Cranes (ILO) [3]			
20 Safety Passenger					33 Cargo Gear - Derricks (ILO) [3]			
21 MARPOL Annex I (IOPP/CONF/DICH) (*) [3]					34 Cargo Gear - Cranes (RINA) [3]			
22 Fitness Chemicals (COF/COF) (*)					35 Cargo Gear - Derricks (RINA) [3]			
23 Fitness Gases (COF/COF) (*)					36 "Idoneit�" (passenger/cargo (*) ships) [3]			
24 Noxious Liquid Substances (IPPC)					37 Crude Oil Washing (COW)			AUT OCC
25 Sewage Pollution Prevention (ISPP)					38 Radar ascertainment			RIN OCC
26 Dangerous Goods in bulk (CHEM) [3]					39 CERTIFICATE OF FITNESS			OCC PRO 31.10.99
27 Dangerous Goods in bulk (GAS) [3]					40			
3 Carriage of vehicles					41			
EACH SURVEY WAS CARRIED OUT IN ACCORDANCE WITH THE RELEVANT "CHECK LIST"								
THIS IS THE FINAL REPORT ☒ THIS IS NOT THE FINAL REPORT; NARRATIVE REPORTS WITH RELEVANT ENCLOSURES WILL BE SENT LATER ☐								
PARTIAL / COMPLETE (*) THICKNESS MEASUREMENTS CARRIED OUT ☐ RELEVANT REPORTS ARE ENCLOSED ☐								
TOTAL ENCLOSURES No. <u>5</u> RELEVANT TO ITEM(S) <u>39</u>								
RECOMMENDATIONS / MEMO (*) were imposed / deleted / postponed / confirmed (*) as stated on page <u>5 AB of IAFEXU 3</u>								
Type of Certificate or Statement [7]	CC	DC	DN	DP	Date of VISA	Certificate confirmation	SURVEYORS:	
T							Ident. No.	
E							Surname	
X							FORMENTI	
T								
O								
F								
V								
I								
S								
A								

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JOS  CARLOS PIMENTE, JOS  M O
DIRETOR
DIVIS O DE SERVI OS CARTORIAIS

Former VISA : Date Place

(*) Underline the appropriate word(s) or abbreviation(s)

Place and date: Qu bec 11.10.99

Form: VISITE1-Rep-EG-05/94

Surveyors' names and signatures

See Explanatory Notes [1] to [9] on page 2

REGISTRO ITALIANO NAVALE

R. Formenti

[Signature]

SALT WATER BALLAST SPACES

(a) Spaces examined where no protective coating was applied from the time of construction:

(b) Spaces examined where the protective coating was found in POOR condition:

(c) Spaces examined where the protective coating was found in GOOD or FAIR condition:



FIRE FIGHTING SYSTEMS AND APPLIANCES

(a) Date of last check of CO2 bottles/vessels content:

(e) Date of last check of nitrogen bottles content:

(b) Date of last hydrotesting of CO2 bottles/vessels:

(f) Date of last hydrotesting of nitrogen bottles:

(c) Date of last check of HALON bottles/vessels content:

(g) Date of last renewal of foam forming liquid:

(d) Date of last hydrotesting of HALON bottles/vessels:

(h) Foam forming liquid sample taken for analysis (if required): ☐

SETTING UP OF SAFETY VALVES OF MAIN / AUXILIARY (*) BOILERS:

THE OUTSTANDING ITEMS FOR COMPLETION OF PART-HELD ORDINARY (ANNUAL) / INTERMEDIATE (*) HULL OR MACHINERY SURVEYS AND/OR MAIN / AUXILIARY BOILER SURVEYS (*) ARE AS STATED BELOW:

EXPLANATORY NOTES FOR FILLING IN THIS FORM:

[1] MARKS FOR SURVEY EXTENT

X or AL = Survey entirely carried out

IN = Commencement of Survey

CN = Continuation of Survey

CM = Completion of Survey

PC = Annual Survey of exhaust fired thermal oil heaters including visual inspection and tightness testing of heater tubes

[2] TYPE OF SURVEY

ANN = Annual Survey

AUT = Survey for authorization (for COW) (Item 37)

BIE = Biennial Survey (for Compasses)

INT = Intermediate Survey

LT = Load test (for Cargo Gear - Items 32 to 35)

OCC = Occasional survey

QUA = Quadrennial Survey (for Cargo Gear - Items 32 to 35)

QUI = Quinquennial survey (for Cargo Gear - Items 32 to 35)

RIL = Initial Survey

RIN = Renewal Survey

VAR = Survey for Loadline variations (Item 16)

[3] OTHER NOTES ON SURVEYS

N.B.: "NAVIGABILITÀ" SURVEYS are Surveys to be carried out for the purpose of the issue, maintenance or renewal of the "Certificato di navigabilità" (Seaworthiness Certificate) under the provisions of Italian Safety Rules

"IDONEITÀ" SURVEYS are Surveys to be carried out for the purpose of the issue, maintenance or renewal of the national safety certificate called "Certificato di Idoneità" to passenger or cargo ships not subject to SOLAS under the provisions of Italian Safety Rules (Item 36)

INT/ITA = Survey for the purpose of the International/Italian Loadline Certificate, as appropriate (Item 16)

CONF = Certificate of compliance ("Conformità") to MARPOL Annex I (only for Italian flag ships not subject to MARPOL) (Item 21)

DICH = Statement of compliance ("Dichiarazione") to MARPOL Annex I (only for Italian flag ships not subject to MARPOL) (Item 21)

CHEM = Statement of compliance ("Attestazione") to Italian Statutory Regulations (only for Italian or foreign flag chemical tankers or gas carriers operating in Italy) (Items 26 and 27)

RINA = Survey for the purpose of RINA Certificate for cargo gear (only for cargo gear of Italian ships not required to be included in ILO cargo gear booklet) (Items 34 and 35)

[4] CERTIFICATES AND STATEMENTS

PRO = Provisional (Interim) Certificate issued

EXT = Validity of existing Certificate extended

CND = Conditional Certificate issued

DEF = Full term Certificate issued

N.B.: The square is to be left blank in the case of endorsements of existing certificates

[5] BOTTOM SURVEY

NORM = Survey NOT valid on account of a Special Survey

VS = Survey valid on account of a Special Survey

AVA = Survey in connection with a Damage Survey

Afloat: Mark the square with X to mean that an In-water Survey was carried out in lieu of a Docking Survey (see 3.2.3.2 of Ch. 3 of Section A of the Rules)

N.B.: The underwater inspection of the ship's bottom to postpone the Docking Survey is to be considered as an Occasional Survey

[6] TAILSHAFT SURVEY

NEW = Tailshaft renewed

COMP = Complete Survey

ALT = Alternate Modified Survey

PAR = Partial Survey

With NDT: Mark the square with X to mean that a surface crack detection of the propeller keyed connection to the tailshaft was satisfactorily performed

[7] TYPE OF CERTIFICATE OR STATEMENT

CC = Certificate of Class

DC = Class Statement

DN = Statement with a view to obtaining the "Certificato di navigabilità"

DP = Certificate of Class for Pleasure Vessels

[8] FOREIGN FLAG SHIPS NOT CLASSED WITH RINA

In the case of these ships, the value of Gross Tonnage and, in lieu of RINA number, Distinctive number or letters are to be indicated

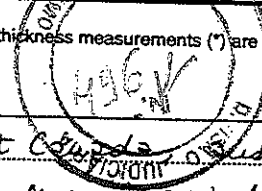
[9] FILE

Year, Office code, File number and File code are to be specified, in the above order, according to the File Record Book of the RINA Office concerned

(*) Underline the appropriate word(s) or abbreviation(s)

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DIRETOR
DIVISÃO DE SERVIÇOS CARTÓGRAFICOS



At request of the Canadian Maritime Authority, Transport Canada, according to the instruction of the Head Office, occasional survey carried out in order to issue a Technical Certificate of Fitness.

The inspections were extended particularly at the condition of the Safety Equipment, Safety Radio and the towing condition, because the annual class and Statutory Certificates surveys already carried out with satisfactory result.

Enclosures :

- Letter of Transport Canada
- Report Form IAFEEQU 3 Rep.
- Radio inspection report by Scantech Inc.
- Towing plans, signed by the Warranty Surveyor (Noble Denton Europe)
- Copy of Certificate of Technical Fitness no 9P QUE 17 issued -

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JOSE CARLOS PIMENTEL GUSMÃO
DEFEITOR
DIVISÃO DE SERVIÇOS CARTORIAS

*) Underline the appropriate word(s) or abbreviation(s)

Place and date: Quebec, 11.10.99

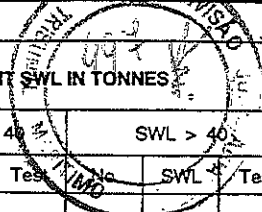
Surveyors' names and signatures



REGISTRO ITALIANO NAVALE
R. Formenti

[Signature]

CARGO GEAR INFORMATION



TYPE OF CARGO GEAR SURVEYED	TYPE OF SURVEY(S) CARRIED OUT	NUMBER OF CARGO GEAR SURVEYED AND RELEVANT SWL IN TONNES											
		SWL ≤ 10			10 < SWL ≤ 20			20 < SWL ≤ 40			SWL > 40		
		No.	SWL	Test	No.	SWL	Test	No.	SWL	Test	No.	SWL	Test
DERRICKS	First Survey / Quinquennial Survey												
	Quadrennial Survey												
	Annual Survey												
CRANES	First / Annual (*) Survey												
CARGO ELEVATORS	First / Annual (*) Survey												

DERRICKS, CRANES AND/OR CARGO ELEVATORS OUT OF SERVICE, IF ANY, ARE TO BE STATED BELOW (specify number and relevant SWL)

INFORMATION FOR INVOICING

SURVEYS CARRIED OUT IN ITALY OR ABROAD BY RINA EXCLUSIVE SURVEYORS

INFORMATION ON TONNAGE MEASUREMENTS

Tonnage measurements carried out according to Regulations of:

The ship had already been measured according to Regulations of:

Tonnage re-measurements carried out: ☐ Tonnage measurements carried out for sister ship(s) accepted ☐

INFORMATION ON SUBDIVISION AND STABILITY

Inclining test carried out: ☐ Light ship weight test carried out ☐

Subdivision and/or damage stability calculations carried out ☐

Calculations as above carried out for sister ship(s) accepted: ☐

OTHER INFORMATION

Fees for visaed or issued class documents: Fees for visaed or issued statutory documents:

Phone / Telex expenses: Miscellaneous expenses:

In the case of surveys carried out outside the RINA Branch Office area, state whether travel tickets (if any) have been supplied by the Shipowner or by RINA

Expenses for travel tickets as above when supplied by RINA:

Survey(s) carried out together with the following RINA Agent abroad

The invoice is to be sent to the Shipowner (yes/no): If not, the invoice is to be sent to the following address:

..... Client Code

--	--	--	--	--

Through..... Through Code

--	--	--	--	--

SURVEYS CARRIED OUT OUTSIDE ITALY BY RINA/GL JOINT EXCLUSIVE STATIONS OR AGENCIES ABROAD

Number of documents issued or visaed without inspections onboard being carried out: Number of Km covered by car and corresponding fees:

Total time spent on surveys (hours/min.): Other car travelling expenses (tolls, etc.):

Occasional survey time (hours/min.): Travelling expenses other than by car (thickets, etc.):

Travelling time (hours/min.): Phone/Telex expenses:

Out of office time (hours/min.): Miscellaneous expenses:

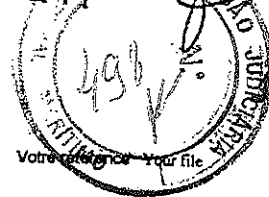
Overtime (hours/min.):

(*) Underline the appropriate word(s) or abbreviation(s)

Place and date: Quebec 12.10.94 Head of Office or Agent (Abroad) [Signature]

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JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

8th October 1999Notre référence - Our file
IMO no. 8916566

M. Roberto Firmenti
Marine surveyor
Registro Italiano Navale
Québec Office
Québec, Canada

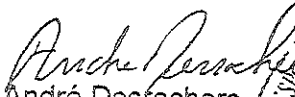
SUBJECT: PETROBRAS-36 : Certificate of fitness, limited voyage.

Sir,

In order to complete the pre-departure inspection of the rig « PETROBRAS -36 », will you please issue an official « CERTIFICATE OF FITNESS » for the trip from Québec to Sept-Îles and for the trip from Sept-Îles to outside Canadian Waters. This certificate is to be issued to replace the « normal » Cargo Ship Safety Equipment Certificate since the rig is not in fully operating condition.

This « Certificate » is required before departure of the rig.

We thank you for your cooperation,


André Desrochers
Manager
Marine Safety



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JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



Transports Canada - Sécurité maritime - Région du Québec
Gare maritime Champlain, 901, Cap Diamant, 4^e étage, Québec (Québec) G1K 4K1
Tél.: (418) 648-3234 - Télécopieur: (418) 648-5106



scantech inc.

communications maritimes et terrestres

450, rue Papin, Ste-Foy, Québec, Canada G1P 3T9

Tél.: (418) 653-1772

Telex: 051-31651

Fax: (418) 652-1258



To who it may concern;

This Technical report, concerning radio telecommunication equipment on Petrobras 36, was performed on the 8TH of October 1999.

The equipment tested was all VHF Marine Band radio including those in Life Boat, GMDSS Portable, both Main and Reserve MF/HF Transceiver for telephony, both VHF Airband, Radar X & S Band, GPS, EPIRB, SART, Navtex, Echo Sounder, WeatherFax.

Hereby we, after performing the relevant test, certify that those different equipment's are in operating condition and operate within their respective specifications unless noted in the following test report.

Alain Boucher
Technical Advisor

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JOSÉ CARLOS FINEVIEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



Technical Report

VHF Marine telecommunication equipment:

There is 5 VHF Sailor RT2047 VHF Radiotelephone unit

Command & Control Room (2)

1- RT/423 RT Sailor RT2047 Duplex VHF Radiotelephone

Power = 23 Watts

VSWR = 0.2 Watts

Deviation= 4.3 Khz

Frequency measured on ch 16 (156.800 MHz) = 156.799997 MHz

2- RT/424 RT Sailor RT2047 Duplex VHF Radiotelephone

Power = 20 Watts

VSWR = 0.4Watts

Deviation= 4.4 KHz

Frequency measured on ch 16 (156.800 MHz) = 156.800020 MHz

Wheelhouse (1)

1- RT/425 RT Sailor RT2047 Duplex VHF Radiotelephone

Power = 24 Watts

VSWR = 0.5 Watts

Deviation= 4.5 KHz

Frequency measured on ch 16 (156.800 MHz) = 156.7999976 MHz

RadioRoom (2)

1- RT/421 RT Sailor RT2047 Duplex VHF Radiotelephone

Power = 22 Watts

VSWR = 0.2 Watts

Deviation= 4.6Khz

Frequency measured on ch 16 (156.800 MHz) = 156.799986 MHz

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DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



2- RT/422 RT Sailor RT2047 Duplex VHF Radiotelephone

Power = 22 Watts

VSWR = 0.1 Watts

Frequency measured on ch 16 (156.800 MHz) = 156.799983 MHz

Handheld GMDSS VHF (3)

1- Skanti 9110 S/N 487035

Power = 1.8 Watts

Reduced Power = .22 Watt

Deviation = 4.2 KHz

Frequency measured on ch 16 (156.800 MHz) = 156.799980 MHz

Lithium Battery Expiry date : JANUARY 2003

2- Skanti 9110 S/N 487062

Power = 1.9 Watts

Reduced Power (1Watt) = .24 Watt

Deviation = 4.6 KHz

Frequency measured on ch 16 (156.800 MHz) = 156.799992 MHz

Lithium Battery Expiry date : JANUARY 2003

3- Skanti 9110 S/N 487064

Power = 1.8 Watts

Reduced Power (1Watt) = .23 Watt

Deviation = 4.8 KHz

Frequency measured on ch 16 (156.800 MHz) = 156.799991 MHz

Lithium Battery Expiry date : JANUARY 2003

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JOSE CARLOS PIMENTEL CUSMÃO
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DIVISÃO DE SERVIÇOS CARTORIAIS



Life Boat Marine Band VHF

There is 4 VHF radiotelephone one in each life boat plus 1 in the rescue boat.

1- RT 102 RT-001 Shipmate RS 8000

Power = 15 Watts
VSWR = 1.3 Watts
Deviation = 3.8KHz
Frequency measured on ch 16 (156.800 MHz) = 156.800 023

2- RT 102 RT-002 Shipmate RS 8000

Power = 16 Watts
VSWR = 1.2 Watts
Deviation = 3.7KHz
Frequency measured on ch 16 (156.800 MHz) = 156.800 012

3- RT 102 RT-003 Shipmate RS 8000

Power = 18 Watts
VSWR = 1.5 Watts
Deviation = 4.2KHz
Frequency measured on ch 16 (156.800 MHz) = 156.799989

4- RT 102 RT-004 Shipmate RS 8000

Power = 18 Watts
VSWR = 1.7 Watts
Deviation = 3.8KHz
Frequency measured on ch 16 (156.800 MHz) = 156.800 011

5- RT 102 RT-005 Shipmate RS 8000 Rescue Boat

Power = 17 Watts
VSWR = 1.5 Watts
Deviation = 3.9KHz
Frequency measured on ch 16 (156.800 MHz) = 156.800 002

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DIVISÃO DE SERVIÇOS CARTORIAIS



MF/HF Marine Telecommunication Equipment;

The Equipment is located and operated in RadioRoom. There is two (2) MF/HF transceiver for telephony witch we have tested. Radio equipment related to Emergency 500KHz has not been tested since this is no more in use by today's standard.

1- Skanti TRP 8752 D IT 1 Main RT 412 RT

Power (750 Watts PEP) = 450 Watts Carrier 525 Watts with Modulation on 2182 KHz

Antenna Current = 3 Amps Carrier 4.5 amps with modulation

Frequency measure on 2182 KHz = 2182.002 KHz

VSWR = 12 Watts

2- Skanti TRP 8752 D IT 1 Reserve RT 411 RT

Power (750 Watts PEP) = 460 Watts Carrier 535 Watts with Modulation on 2182 KHz

Antenna Current = 4 Amps Carrier 6.5 amps with modulation

Frequency measure on 2182 KHz = 2182.005 KHz

VSWR = 16 Watts

Air Band VHF Radiotelecommunication Equipment;

There is two Air band radiotelephone, one is located in CCR and the other in Radio Room.

1- RT 501 RT Jotron TR6101

Power = 7 Watts

Modulation 80 %

VSWR = .5 Watt

Frequency measured at 120.300 MHz = 120.300002 MHz

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DIVISÃO DE SERVIÇOS CARTÓGRAFOS



1- RT 502 RT Jotron TR6101

Power = 7.5 Watts

Modulation 78 %

VSWR = .5 Watt

Frequency measured at 120.300 MHz = 120.300003 MHz

The radio in CCR as been check in Radio Room since no power was available at the time problem with power cord connection.

EPIRB;

EPIRB has been check for proper programmed data has follow

Jotron TRON 30S MKII

Frequency = 406.0252 MHz

Country = Italy

ID = 9EEA492CBA3A4D1

Maritime

Callsign = ICOL

Homing = 121.5 MHz

BCH = 16AFA2 Valid

Hydrostatic Release Expiry Date = SEPTEMBER 2001

Battery Expiry date = JAN 2001

SART;

SART'S has been check with X- Band radar in operation and are fully operational

Jotron SART (6)

Battery Expiry Date = 4 DEC 1999 / 2 AUGUST 2003

Radars;

Radar has been check and are fully operational

X - Band ARPA Radar Furuno FR 2825 with two 25 KW Transceiver

S - Band ARPA Radar Furuno FR2830S with one 30KW Transceiver

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DIVISÃO DE SERVIÇOS CARTORIAIS



GPS:

GPS is fully operational

GPS Furuno GP 70

Echo Sounder:

Echo sounder has been check and is fully operational

Echo Sounder Simrad

Navtex:

Navtex was check and is fully operational

Navtex Furuno

Weather Fax:

Weather fax has been checked and is fully operational

Weather fax Furuno

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DIVISÃO DE SERVIÇOS CARTOGRAFIAIS

Note; All Antennas, on those equipment has been visually inspected and electrically tested and fulfill the relevant requirements.

Performed date; 8 October 1999

By; ALAIN BOUCHER

Signature AB Boucher

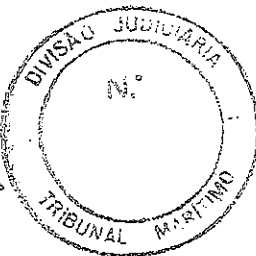


scantech inc.

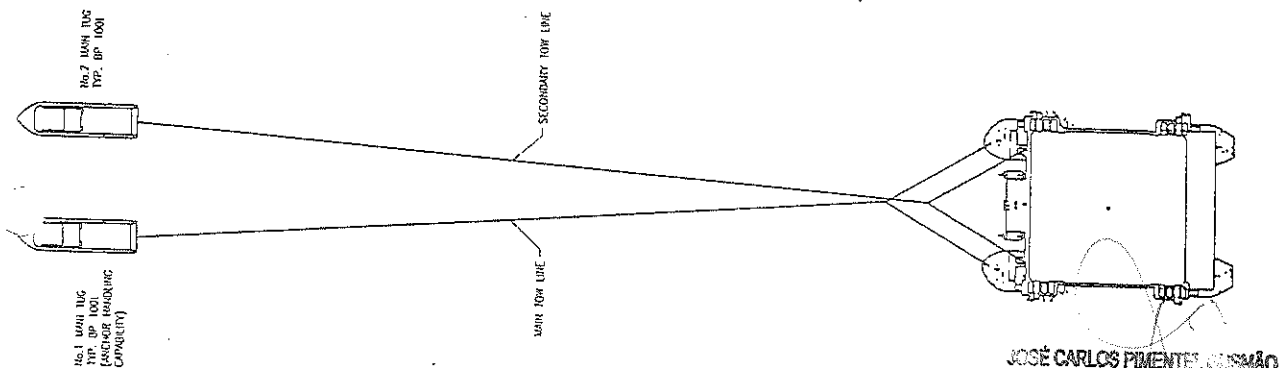
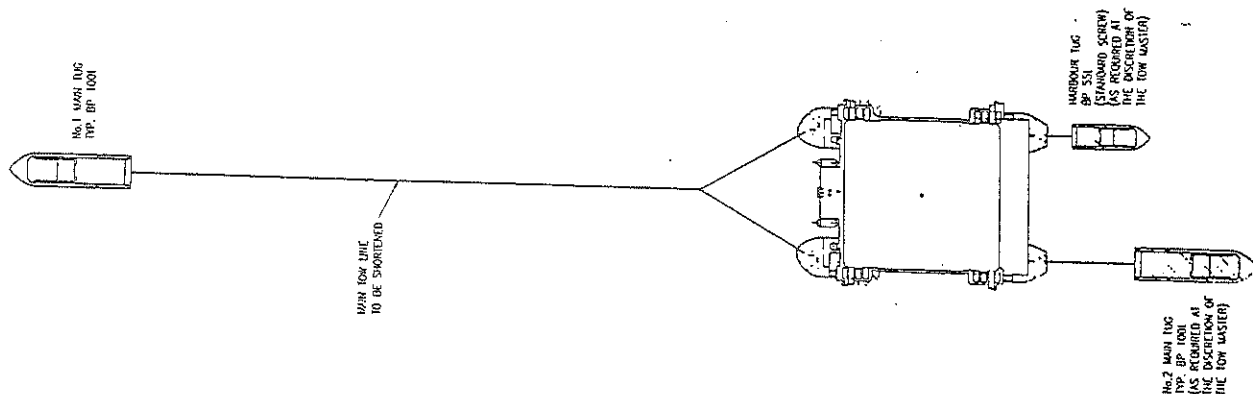
électronique maritime et télécommunication
450, rue Papin, Ste-Foy, Québec, Canada G1P 3T9

ITEM	DESCRIPTION	QTY	MOQ
1	WAC PERMANENT 15m LENGTH	4+1	1501

Tracy answered
by Nellie Denton Esq.
J. D. Denton
5/10/99.

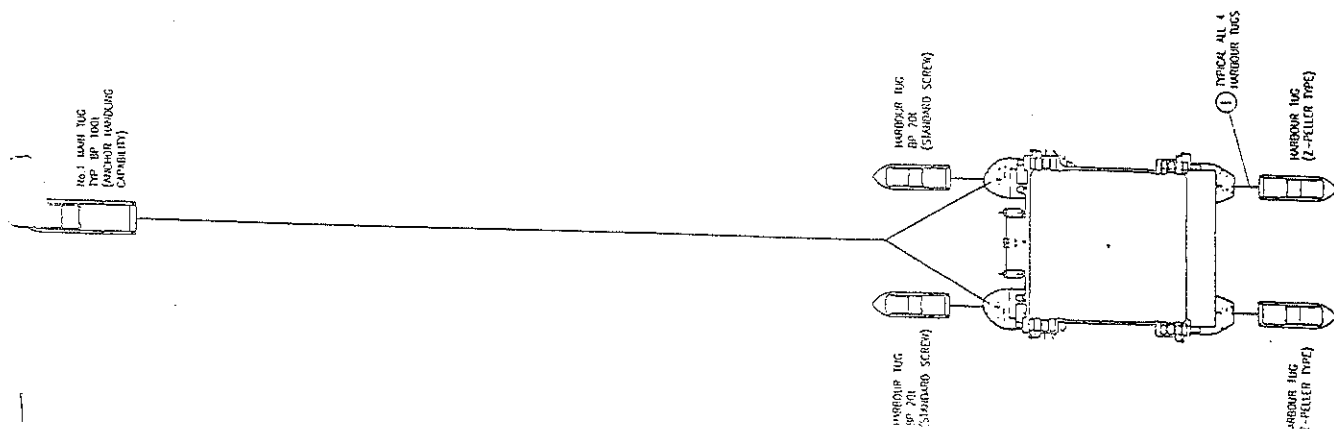
[illegible]

BR	NONE DENON	Spectrometer	#1 AME
AMERICAN		MINE AND MINING	SGC/MAY99
CANADA		ELEMENT	DALY
		TEST APPARATUS	NO. 008



JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

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DEPARTURE
OLIVER TO DUNTE AND DIS

APPORTO DI VISITA DELLE DOTAZIONI DI SICUREZZA RICHIESTE PER LE NAVI DA CARICO

To meet the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended by Protocol 1978 or by Protocol 1988 thereto in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended by Protocol 1978 or by Protocol 1988 thereto.

Type and name of ship Nome e tipo della nave		Signal letters Nominativo internazionale		Nationality and Port of registry Nazionalità e porto di immatricolazione	
PETROBRAS PI(col) P-perif-prod. TRENTASEI		1 COL		ITALIAN - NAPOLI	
Date keel laid [2] Data impostazione chiglia	Rt number Numero Rt	Gross tonnage Stazza lorda	Survey / Visita		Report No. Rapporto N.
10.03.86	67073	34481 GT	Port / Porto QUEBEC (QC.)	Date / Data 11.10.99	Type / Tipo [3] Res
Name and address of the Owners, Managers or Managing Agents / Nome e indirizzo dell'Armatore o dei suoi Agenti			Length of ship / Lunghezza della nave		
SANA S.p.A. VIA DEI TADOLINI, 26 ROMA			Machinery - Type and output / Macchine - Tipo e potenza		
E.P. m			Propelling machinery Apparato motore		
Registered Di stazza			4-2 THRUJTER/2] DRIVEN BY E.M. - 4500 KW x 2		
Overall . . . m			Auxiliaries Macchinari ausiliari		
Fuori tutto			no 3 T/GAS - 18125 KW no 1 D/G - 3310 KW no 1 D/G - 750 KW		
Freeboard [4] Di bordo libero			Boilers - Type and no. of burners / Tipo e n. di bruciatori		
Max. Breadth Larghezza max.			Main boilers Caldaie principali		
			Auxiliary boilers Caldaie ausiliarie		
Total number of persons carried on board: Crew: 18 + 42 + Passengers, if any: Numero totale delle persone imbarcate: Equipaggio 42 + Passengers (eventuali) =					

LIFE- SAVING APPLIANCES - The total number of persons provided for by life-saving appliances is 60 and no more, viz:			
MEZZI DI SALVATAGGIO - Il numero complessivo delle persone per le quali sono provvisti i mezzi di salvataggio è _____ e non più e precisamente:			
Number Numero	Type of life-saving appliances Tipo dei mezzi di salvataggio	Persons Persone	Characteristics Caratteristiche
2	Lifeboats on portside capable of accommodating: / Imbarcazioni di salvataggio sul lato sinistro per complessive:	130	Self righting / Partially / Totally enclosed / With self-contained air support system / Fire protected / Open (+) / Autoraddrizzanti / Totalmente / Parzialmente chiuse / Con impianto autonomo di alimentazione d'aria / Protette contro gli incendi / Aperte (+)
2	Lifeboats on starboard side capable of accommodating: / Imbarcazioni di salvataggio sul lato destro per complessive:	130	Self righting / Partially / Totally enclosed / With self-contained air support system / Fire protected / Open (+) / Autoraddrizzanti / Totalmente / Parzialmente chiuse / Con impianto autonomo di alimentazione d'aria / Protette contro gli incendi / Aperte (+)
4	Motor or mechanically propelled lifeboats (included in the total lifeboats listed above) [5] / Imbarcazioni di salvataggio a motore od a propulsione meccanica (comprese tra le suddette imbarcazioni) [5]		
1	Free fall lifeboats capable of accommodating: / Imbarcazioni di salvataggio a caduta libera per complessive:		Self righting / With self-contained air support system / Fire protected (+) / Autoraddrizzanti / Con impianto autonomo di alimentazione d'aria / Protetta contro gli incendi (+)
1	Rescue boats (included/not included (+) in the total lifeboats listed above) capable of accommodating: / Battelli di emergenza (compresi/non compresi (+) tra le suddette imbarcazioni) per complessive: (1/7/88)		
6	Liferafts for which approved launching appliances are required, capable of accommodating: / Zattere di salvataggio per le quali sono richiesti dispositivi approvati per la messa in mare, per complessive:	150	
1	Liferafts for which approved launching appliances are not required, capable of accommodating: / Zattere di salvataggio per le quali non sono richiesti dispositivi approvati per la messa in mare, per complessive:		
1	Liferafts stowed forward/aft (+) capable of accommodating: Zattere di salvataggio sistemate a prora / a poppa (+), per complessive:		
11	Lifebuoys / Salvagenti anulari		
190	Lifejackets / Cinture di salvataggio		
60	Immersion suits / Tute di immersione (1/7/81)		
12	Thermal protective aids / Indumenti di protezione termica (1/7/81)		

È COPIA FIDEL DEL DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL, JUSMÃO

DIRETOR

DIVISÃO DE SERVIÇOS CARTORIAS

SEE GUIDANCE NOTE

SEE GUIDANCE NOTES ON THE REAR OF THIS FRONT PAGE / Vedere Note Esplicative sul retro di questa pagina

RINA Surveyor's name and signature <i>S. Formenti</i>						Port of survey Porto di visita		Date of survey Data della visita		RI number Numero RI		Report No. Rapporto N.		Page Pagina	
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- 2.4 Date of issue of the Certificate : / Data di rilascio del Certificato :
 2.5 Date of expiry of the Certificate : / Data di scadenza del Certificato :
 2.6 The validity of the existing Certificate was extended until : / La validità dell'esistente Certificato è stata estesa fino al :



3 RECOMMENDATIONS AFTER SURVEY CONCERNING THE ISSUE OF CERTIFICATE / Proposte circa il rilascio del Certificato a seguito della visita

The undersigned has/have (+) verified the equipment and arrangements fitted onboard the ship surveyed and has/have (+) found them to be in agreement with those listed in the Record held by the same ship. All items surveyed have been found to be properly maintained and in an efficient and good working condition; it is therefore recommended that: / Il sottoscritto / I sottoscritti (+) ha / hanno (+) esaminato le dotazioni e le sistemazioni a bordo della nave visitata ed ha/hanno (+) riscontrato che le stesse erano conformi a quanto indicato nell' "Elenco" in possesso della nave stessa; tutte le dotazioni e le sistemazioni esaminate apparivano ben conservate ed in buone condizioni di efficienza. Si raccomanda pertanto di:

- (a) a full term Cargo Ship Equipment Certificate valid for a period of 24 months be issued in accordance with the provisions of the applicable SOLAS Regulations / rilasciare un certificato definitivo di Sicurezza Dotazioni per Navi da Carico, valido per 24 mesi, in accordo con le disposizioni applicabili della Convenzione SOLAS ☐
 (b) a full term Cargo Ship Safety Certificate valid for a period 5 years be issued in accordance with the provisions of the applicable SOLAS Regulations / rilasciare un Certificato definitivo di Sicurezza per Navi da Carico, valido 5 anni, in accordo con le disposizioni applicabili della Convenzione SOLAS ☐
 (c) the full term Cargo Ship Safety Equipment Certificate to be issued as said in (a) shall be valid until: il Certificato definitivo di Sicurezza Dotazioni per Navi da Carico di cui in (a) dovrà essere valido fino al:
 (d) the full term Cargo Ship Safety Certificate to be issued as said in (b) shall be valid until: / il Certificato definitivo di Sicurezza per Navi da Carico di cui in (b) dovrà essere valido fino al:
 (e) no full term Certificate be issued until the survey is completed / non rilasciare alcun Certificato definitivo fino al completamento della visita ☒

4. ENDORSEMENTS TO ATTACHMENT AND/OR ATTACHMENT AND SUPPLEMENT TO THE CERTIFICATE / Vidimazioni sull'Allegato e/o sul Supplemento e sull'Allegato al Certificato

At Annual/Intermediate/Periodical (+) Survey as required by Regulation 6 (b) / 8 (b) of Chapter 1 of the Protocol of 1978 / Regulation 8 of Chapter 1 of the Protocol of 1988 (+) relating to the International Convention for the Safety of Life at Sea, 1974, the ship was found to comply with the applicable provisions of that Protocol. The Attachment and the Supplement (+) to the Cargo Ship Safety Equipment Certificate / Cargo Ship Safety Certificate (+) has/have (+) therefore been endorsed as follows: / Alla visita annuale/intermedia/periodica (+) richiesta dalla Regola 6 (b) / 8 (b) del Protocollo del 1978 / Regola 8 del Protocollo del 1988 (+) relativo alla Convenzione Internazionale per la salvaguardia della vita umana in mare del 1974, la nave è stata trovata rispondente alle disposizioni applicabili del detto Protocollo. L'Allegato ed il Supplemento (+) al Certificato di Sicurezza Dotazioni per Navi da Carico / Certificato di Sicurezza per Navi da Carico (+) è/sono stato/i pertanto vidimato/i come segue:

JOSÉ CARLOS PIMENTEL GUSMÃO
 DIRECTOR
 DIVISÃO DE SERVIÇOS CARTORIAS

Place / Luogo

The Surveyor to Registro Italiano Navale
 Il Tecnico del Registro Italiano Navale

Date / Data

5 SPECIAL ADDITIONAL INFORMATION / Informazioni aggiuntive particolari

- 5.1 Repairs and/or renewals were carried out to equipment or arrangements listed in the Record held by the ship, as specified at item 8 of this Report / Sono state eseguite riparazioni o sostituzioni di dotazioni o sistemazioni incluse nell' "Elenco" in possesso della nave, come precisato alla voce 8 del presente Rapporto. ☒
 5.2 Alterations have been made to equipment or arrangements listed in the Record held by the ship, as specified at item 8 of this Report / Sono state apportate modifiche delle dotazioni o alle sistemazioni indicate nell' "Elenco" in possesso della nave, come precisato alla voce 8 del presente Rapporto. ☒
 5.3 Due to repairs, renewals and/or alterations mentioned in 5.1 and/or 5.2, the relevant pages of the Record held by the ship have been duly replaced / A seguito delle riparazioni, sostituzioni e/o modifiche di cui in 5.1 e/o 5.2, le pertinenti pagine dell' "Elenco" in possesso della nave sono state debitamente sostituite. ☒

COPIA DEL DOCUMENTO ORIGINAL

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- 6.1 GENERAL / Generalità
- 6.1.1 Had any changes been made or new equipment or arrangements been installed which could affect the validity of the Certificate? / Sono state apportate modifiche o installate nuove dotazioni o sistemazioni che potrebbero interessare la validità del Certificato? ☒
- 6.1.2 If any changes or additions have been made, has the Record held by the ship been amended accordingly and details specified under item 8 of this Report? / Nel caso di modifiche o aggiunte alle dotazioni o sistemazioni, è stato opportunamente corretto l' "Elenco" in possesso della nave e sono stati precisati i relativi dettagli alla voce 8 del presente Rapporto? ☒
- 6.1.3 All other Statutory Certificates were valid at the time of the survey / Tutti gli altri Certificati statuali erano in regolare corso di validità al momento della visita ☒
- 6.2 DOCUMENTATION / Documentazione
- 6.2.1 FIRE CONTROL PLANS / Piani per la difesa contro gli incendi (Reg. II - 2 / 20)
- 6.2.1.1 Fire control plans, including a duplicate set, are properly posted / I piani per la difesa contro gli incendi, compreso il duplicato degli stessi, sono affissi come prescritto ☒
- 6.2.2 MUSTER LIST AND EMERGENCY INSTRUCTIONS / Ruolo d'appello ed istruzioni per i casi di emergenza (Reg. III / 8; 53)
- 6.2.2.1 Muster list including manning of fire parties and emergency procedures are properly posted / Il Ruolo d'appello comprendente l'effettivo organico delle persone destinate a combattere gli incendi e le procedure per i casi di emergenza è affisso come prescritto ☒
- 6.2.3 NAUTICAL PUBLICATIONS / Pubblicazioni nautiche (Reg. V / 20)
- 6.2.3.1 Adequate and up-to-date charts, sailing directions, lists of lights, Notices to Mariners, tide tables and all other nautical publications necessary for the intended voyages are provided to the Master's satisfaction / Adeguate ed aggiornate carte nautiche, portolani, elenchi dei fari e dei fanali, avvisi ai naviganti, tavole di marea ed ogni altra pubblicazione nautica necessaria per i viaggi da intraprendere sono disponibili a bordo ed a soddisfazione del Comandante ☒
- 6.2.4 INTERNATIONAL CODE OF SIGNALS / Codice internazionale dei segnali (Reg. V / 21)
- 6.2.4.1 One copy of the current edition is provided / Una copia della vigente edizione è disponibile a bordo ☒
- 6.2.5 TRAINING MANUALS / Manuali per l'addestramento (Reg. III / 18; 51)
- 6.5.2.1 Are training manuals provided in each crew messroom and recreation room or in each crew cabin? Sono disponibili manuali per l'addestramento in ogni sala per la mensa e per la ricreazione dell'equipaggio od in ogni cabina per l'equipaggio? ☒
- 6.2.6 INSTRUCTIONS FOR ONBOARD MAINTENANCE / Istruzioni per le operazioni di manutenzione a bordo (Reg. III / 19; 52)
- 6.2.6.1 Are instructions for maintenance of life-saving appliances provided onboard? / Sono disponibili a bordo istruzioni per la manutenzione dei mezzi di salvataggio? ☒
- 6.2.7 OPERATING INSTRUCTIONS / Istruzioni operative (Reg. III / 9)
- 6.2.7.1 Are posters or signs with operating instructions provided on or in the vicinity of survival craft and their launching stations? / Vi sono sui mezzi collettivi di salvataggio od in prossimità di essi e delle aree per la loro messa a mare cartelli od altre indicazioni contenenti istruzioni operative? ☒
- 6.2.8 MANNING OF SURVIVAL CRAFT AND SUPERVISION / Supervisione dei mezzi collettivi di salvataggio e persone che si devono imbarcare sugli stessi (Reg. III / 10)
- 6.2.8.1 The person in charge of survival craft and, in case of lifeboats, also the second-in-command have a list of the survival craft crew / La persona responsabile di un mezzo collettivo di salvataggio e, nel caso di una imbarcazione di salvataggio, anche il capo imbarcazione supplente hanno una lista delle persone che debbono imbarcarsi sul loro mezzo ☒
- 6.2.9 ONBOARD DRILLS, TRAINING AND MAINTENANCE / Esercitazioni pratiche e manutenzioni a bordo (Reg. III / 18; 19; 52; 53)
- 6.2.9.1 Are Log Book entries being made as required by Regulation III / 18.5 and is the Master aware of the intent of Regulation II-2/21 concerning the availability for immediate use of all fire extinguishing appliances? / Vengono fatte sui Giornali di bordo le annotazioni richieste dalla Regola III / 18.5 ed è il Comandante informato dell'intendimento della Regola II-2/21 relativa alla disponibilità per un uso immediato di tutti i mezzi e gli impianti per l'estinzione degli incendi?
- 6.2.9.2 Indicate the dates of the latest of the following Log Book entries: / Indicare la data delle ultime annotazioni sul Giornale di bordo relative a:
- TEMPORARY
- DIRECTOR
- DIVISION DE SERVICES CARTOGRAFIS
- (a) Abandon ship and fire training and drills / Esercitazioni e prove di abbandono nave e antincendio:
- NEW DRILL BEFORE LEAVING 11.10.99
- (b) On board training and instructions / Addestramento ed istruzioni a bordo

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appliances, and general alarm system are being carried out / Vengono effettuate ispezioni settimanali di tutti i mezzi collettivi di salvataggio, inclusi i loro motori e le sistemazioni per la loro messa a mare, e dell'impianto di allarme generale

- 6.2.9.4 Monthly inspections of life-saving appliances, including lifeboat equipment, using the check list in the "Instructions for onboard maintenance" are being carried out / Vengono eseguite ispezioni mensili dei mezzi di salvataggio, comprese le dotazioni delle imbarcazioni di salvataggio, seguendo la lista delle verifiche da eseguire di cui alle "Istruzioni per la manutenzione a bordo"
- 6.2.9.5 Lifeboats are being lowered to the embarkation deck at least once every 3 months and launched at least annually / Le imbarcazioni di salvataggio vengono ammainate fino al ponte di imbarco almeno una volta ogni 3 mesi e messe a mare almeno una volta all'anno
- 6.2.9.6 Indicate the dates of the latest occasion when lifeboats were turned out and lowered to embarkation deck and when were launched and manoeuvred in the water (*): / Indicare le più recenti date in cui le imbarcazioni di salvataggio sono state messe fuori bordo ed ammainate fino al ponte per l'imbarco sulle stesse e quelle in cui sono state messe a mare e manovrate in acqua (*):

Boat No. Imbarcazione N.	Date of last / Data dell'ultima		
	Turning out Messa fuori bordo	Launching Messa in mare	Launching of loaded boat (1) Messa in mare con carico (1)
1 SF			26.08.99
2 PF			26.08.99
3 S			26.08.99
4 P			26.08.99

(1) Only for ships flying Italian flag / Solo per navi di bandiera italiana

- 6.2.9.7 Freefall lifeboats are being launched and manoeuvred in the water at least annually / Le imbarcazioni di salvataggio a caduta libera vengono ammainate e manovrate in acqua almeno una volta ogni anno
- 6.2.9.8 Indicate the date of the latest occasion when freefall lifeboats were launched and manoeuvred in the water (*): / Indicare la più recente data in cui le imbarcazioni di salvataggio a caduta libera sono state messe a mare e manovrate in acqua (*):
- 6.2.9.9 Rescue boats other than lifeboats which are also rescue boats are being launched with their assigned crew aboard and manoeuvred in the water at least once every 3 months / I battelli di emergenza che non siano anche imbarcazioni di salvataggio vengono messi a mare con tutto l'equipaggio a bordo e manovrati in acqua almeno una volta ogni 3 mesi
- 6.2.9.10 Indicate the date of the latest occasion when the rescue boat was launched and manoeuvred in the water (*): / Indicare la più recente data in cui il battello di emergenza è stato messo a mare e manovrato in acqua (*):
- 6.2.9.11 Have inflatable liferafts and associated hydrostatic release units (including liferafts stowed forward or aft, if any) been serviced in the last 12 months? / Le zattere gonfiabili ed i relativi dispositivi idrostatici di sgancio (comprese quelle eventualmente sistemate a prora ed a poppa) sono state revisionate negli ultimi 12 mesi?
- 6.2.9.12 Indicate the date of the last servicing of inflatable liferafts and associated hydrostatic release units (including liferafts stowed forward or aft, if any) (*): / Indicare le date dell'ultima revisione delle zattere gonfiabili e dei relativi dispositivi idrostatici di sgancio (comprese quelle eventualmente sistemate a prora ed a poppa) (*):

Manufacturer and serial number Fabbricante e num. di matricola	No. of persons Numero di persone	Location Ubicazione	Servicing agent and date Stazione e data della revisione
(a) VIKING DKF 25			
(b) NO3 { R 0110P3 L 010PP3	25 25	MAIN DECK	YVES BOURQUE No 1210 (G.A. BOURQUE MARINE INC. - QUEBEC)
(c) { R 0210P3	25	STBD	
(d) NO3 { L 020PP3 R 0110P3	25 25	MAIN DECK	27.09.99
(e) { R 0310P3	25	PORT	

(*) INDICATE THE DATE OF THE SURVEY IF THE TEST OR SERVICING IS CARRIED OUT AT THAT TIME
Indicare la data della visita se la prova o la revisione vengono eseguite in detta occasione

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- ry / L'impianto autonomo di alimentazione d'aria di ciascuna imbarcazione provvista di detto impianto è stato sottoposto ad un esame generale e riscontrato in condizioni soddisfacenti
- 6.7.1.9 (●) Each lifeboat self-contained air support system has been satisfactorily tested / L'impianto autonomo di alimentazione d'aria di ciascuna imbarcazione provvista di detto impianto è stato provato con esito soddisfacente ☒
- 6.7.1.10 Each lifeboat water spray fire-protection system has been generally examined and found satisfactory / L'impianto di protezione antincendio ad acqua spruzzata di ciascuna imbarcazione provvista di detto impianto è stato sottoposto ad un esame generale e riscontrato in condizioni soddisfacenti ☒
- 6.7.1.11 (●) Each lifeboat water spray fire-protection system has been satisfactorily tested / L'impianto di protezione antincendio ad acqua spruzzata di ogni imbarcazione provvista di detto impianto è stato provato con esito soddisfacente ☒
- 6.7.1.12 (●) Air cases have been removed, found or placed in good conditions, replaced and secured / Le casse d'aria per la galleggiabilità sono state rimosse e trovate in buone condizioni o rimesse in ordine e risistemate in posto ☒
- 6.7.1.13 (●) Built-in buoyancy has been found in good conditions, as far as seen / Il materiale di galleggiabilità integrale con lo scafo è stato esaminato, per quanto visibile, e trovato in buone condizioni ☒
- 6.7.2 RESCUE BOAT / Battello di emergenza ☒

Note / Nota :

Item 6.7.2.2 marked (●) is applicable only in case of Initial, Periodical or Renewal Surveys
La voce 6.7.2.2 contrassegnata con (●) è applicabile solo nel caso di Visita Iniziale, Periodica o di Rinnovo

- 6.7.2.1 Rescue boat has been examined and found in good conditions and fully equipped / Il battello di emergenza è stato esaminato e trovato in condizioni soddisfacenti e provvisto di tutte le dotazioni richieste ☒
- 6.7.2.2 (●) Release hook, falls and associated moving parts (blocks, sheaves, etc.) have been found free and well lubricated or made good at the time of the survey / Il gancio di rilascio, i tiranti e tutte le relative parti mobili (bozzelli, pulegge, etc.) sono risultate agevolmente manovrabili e ben lubrificate o sono state rese tali al momento della visita ☒
- 6.7.2.3 Launching and recovery appliances have been found in satisfactory conditions, when examined as far as practicable / Le sistemazioni per la messa a mare ed il recupero del battello di emergenza sono stati esaminate, per quanto possibile, e trovate in buone condizioni ☒
- 6.7.2.4 The rescue boat is provided with retroreflective material / Il battello di emergenza è provvisto di bande o strisce in materiale retroriflettente ☒
- 6.7.3 LIFEBOAT DISTRESS SIGNALS / Segnali di soccorso delle imbarcazioni di salvataggio
- 6.7.3.1 All lifeboats distress signals were found in satisfactory conditions / Tutti i segnali di soccorso a bordo delle imbarcazioni sono stati trovati in buone condizioni ☒
- 6.7.3.2 Indicate dates of manufacture and/or dates of expiry of the following items: / Indicare la data di fabbricazione e/o di scadenza dei seguenti segnali :

ITEM Segnale	Manufacture date (M) and/or Expiry date (E) Data di fabbricazione (M) e/o Data di scadenza (E)			
	Boat No. 1 Imbarc. N. 1	Boat No. 2 Imbarc. N. 2	Boat No. 3 Imbarc. N. 3	Boat No. 4 Imbarc. N. 4
2 orange smoke signals 2 segnali fumogeni arancioni	M 7.99	M 7.99	M 7.99	M 7.99
4 red parachute signals 4 segnali di soccorso a paracadute a luce rossa	M 4.99	M 4.99	M 4.99	M 4.99
6 red hand-held flares 6 fuochi a mano a luce rossa	M 4.99	M 4.99	M 4.99	M 4.99

- 6.7.4 SURVIVAL CRAFT LAUNCHING AND EMBARKATION ARRANGEMENTS / Sistemazioni per l'ammaino dei mezzi collettivi di salvataggio e per l'imbarco sugli stessi

Note / Nota :

Items 6.7.4.1 to 6.7.4.6 marked (●) are applicable only in case of Initial, Periodical or Renewal Surveys / Le voci da 6.7.4.1 a 6.7.4.6 contrassegnate con (●) sono applicabili solo nel caso di Visita Iniziale, Periodica o di Rinnovo

- 6.7.4.1 (●) Emergency source of electric power, lighting and general alarm are all operating satisfactorily
L'illuminazione, la sorgente di energia elettrica di emergenza e l'allarme generale sono tutti funzionanti in modo soddisfacente ☒
- 6.7.4.2 (●) Means of preventing discharge of water into boats were found satisfactory / I mezzi per impedire che si riversi l'acqua dentro le imbarcazioni sono stati trovati in ordine ☒

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- 6.7.4.4 (●) Lifelines on davit spans (+) and bousing tackles (+) were found or placed in good conditions (if applicable) / I penzoli attaccati ai bracci della gru (+) ed i paranchi arridatoi (+) sono stati trovati o messi in ordine (se applicabile) ☒
- 6.7.4.5 (●) Lifeboat embarkation ladders were found or placed in good conditions / Le scalette per l'imbarco sulle imbarcazioni di salvataggio sono state trovate o comunque rimesse in buone condizioni ☒
- 6.7.4.6 (●) Abandon-ship audible signals were found operating satisfactorily / I segnali di allarme sonori per l'abbandono della nave sono stati trovati efficienti ☒
- 6.7.4.7 Operative tests of all emergency power supplies, emergency lighting and general alarm system were satisfactorily carried out / Sono state eseguite con buon esito le prove di funzionamento di tutte le fonti di energia elettrica di emergenza, dell'illuminazione di emergenza e del sistema di allarme generale ☒
- 6.7.4.8 All embarkation arrangements and launching gear were found to be in satisfactory conditions when examined as far as practicable / Tutte le sistemazioni per la messa a mare dei mezzi collettivi di salvataggio e per l'imbarco sugli stessi sono state trovate in buone condizioni, previo esame per quanto praticamente possibile ☒
- 6.7.4.9 Posters and signs as required by Regulation III / 9 were posted throughout the ship / I cartelli ed i segnali richiesti dalla Regola III / 9 risultavano affissi nelle varie idonee posizioni della nave ☒
- 6.7.4.10 The two-way communication systems required by Regulation III / 6.2.4 were tested and found to be in good working conditions / I mezzi di comunicazione a due vie richiesti dalla Regola III / 6.2.4 sono stati provati e trovati funzionanti ed efficienti ☒
- 6.7.4.11 Lifeboat launching instructions were posted as required / Le istruzioni per l'ammaino delle imbarcazioni di salvataggio erano affisse come prescritto ☒

6.7.5 INFLATABLE LIFERAFTS / Zattere di salvataggio gonfiabili (Reg. III / 23)

- 6.7.5.1 Liferrafts were stowed so as to facilitate their proper release and free floating / Le zattere erano sistemate in modo da facilitare la loro corretta messa a mare e la loro libera galleggiabilità in acqua ☒
- 6.7.5.2 Liferaft launching instructions were posted as required / Le istruzioni per l'ammaino delle zattere erano affisse come prescritto ☒

6.7.6 RIGID LIFERAFTS / Zattere di salvataggio rigide (Reg. III / 40)

Note / Note :

Item 6.7.6.2 marked (●) is applicable only in case of Initial, Periodical or Renewal Surveys / La voce 6.7.6.2 contrassegnata con (●) è applicabile solo nel caso di Visite Iniziale, Periodica o di Rinnovo

- 6.7.6.1 Each liferaft examined was found in a good condition, fitted with retroreflective material and stowed so as to facilitate its proper and rapid launching / Tutte le zattere esaminate sono state trovate in soddisfacenti condizioni, provviste di bande o strisce in materiale retroriflettente e sistemate in modo da facilitare la loro corretta e rapida messa a mare ☒
- 6.7.6.2 (●) Raft equipment were found complete and in good condition / Le zattere erano provviste di tutte le dotazioni richieste ed in buone condizioni ☒
- 6.7.6.3 All liferaft distress signals were found in satisfactory conditions / Tutti i segnali di soccorso a bordo delle zattere sono stati trovati in buone condizioni ☒
- 6.7.6.4 Indicate dates of manufacture and/or dates of expiry of the following items: / Indicare la data di fabbricazione e/o di scadenza dei seguenti segnali:

ITEM Segnale	Manufacture date (M) and/or Expiry date (E) Data di fabbricazione (M) e/o data di scadenza (E)		
	Raft No. 1 Zattera N. 1	Raft No. 2 Zattera N. 2	Raft No. 3 Zattera N. 3
4 red parachute signals 4 segnali di soccorso a paracadute a luce rossa			
6 red hand-held flares 6 fuochi a mano a luce rossa			

6.7.7 LIFERAFT LAUNCHING AND EMBARKATION ARRANGEMENTS / Sistemazioni per la messa a mare delle zattere di salvataggio e/o per l'imbarco sulle stesse (Reg. III / 48)

- 6.7.7.1 Embarkation arrangements of inflatable liferafts and, where provided, launching arrangements of davit launched liferafts were found satisfactory / Le sistemazioni per l'imbarco sulle zattere gonfiabili e quelle eventuali per la messa a mare delle zattere ammainabili con gru sono state trovate in ordine ☒

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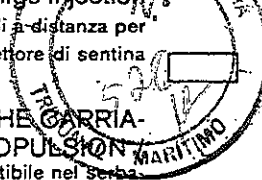
Note / Nota :

Items 6.15.9.6 to 6.15.9.15 apply in alternative to items 6.15.9.2 to 6.15.9.5 in case of Annual and Intermediate Surveys / Le seguenti voci da 6.15.9.6 a 6.15.9.15 si applicano in alternativa alle voci da 6.15.9.2 a 6.15.9.5 nel caso di Visite annuali ed intermedie.

- 6.15.9.6 Following to a general external examination, all system components and piping were found in good conditions, free from signs of corrosion and leakages / A seguito di un esame generale esteriore, tutte le parti dell'impianto e le tubolature sono state trovate in buone condizioni ed esenti da segni di corrosione o di perdite ☐
- 6.15.9.7 All inert gas blowers were found operating satisfactorily / Tutte le soffianti sono state trovate correttamente funzionanti ☐
- 6.15.9.8 The scrubber room ventilation system was found operating satisfactorily / L'impianto di ventilazione del locale in cui è ubicata la torre di lavaggio è stato trovato correttamente funzionante ☐
- 6.15.9.9 The deck water seal filling and draining system was found operating satisfactorily and without evidence of water carry-over / Il sistema di riempimento e di drenaggio del dispositivo di tenuta idraulica sul ponte è stato trovato correttamente funzionante e non mostrava segni di trascinamento d'acqua ☐
- 6.15.9.10 The non-return valve was found operating satisfactorily / La valvola di non ritorno è stata trovata correttamente funzionante ☐
- 6.15.9.11 All remotely operated or automatically controlled valves and, in particular, the flue gas isolating valves were found operating satisfactorily / Tutte le valvole con comando a distanza o automatico, ed in particolare le valvole di intercettazione sui collettori, sono state trovate correttamente funzionanti ☐
- 6.15.9.12 Soot blower interlocking devices were checked and found satisfactory / I dispositivi di interblocco per il funzionamento dei soffiatori di fuliggine sono stati controllati e trovati in ordine ☐
- 6.15.9.13 It was checked that gas pressure regulating valve automatically closed when the gas blowers were stopped / È stato accertato che la valvola di regolazione della pressione del gas inerte si chiudeva automaticamente quando si fermavano le soffianti ☐
- 6.15.9.14 The following safety devices fitted on the inert gas system were checked, as far as practicable, using simulated conditions, where necessary, and were found operating satisfactorily: / I seguenti dispositivi di sicurezza di cui è provvisto l'impianto di gas inerte sono stati controllati, per quanto praticamente possibile, usando, quando necessario, condizioni simulate, ed è stato accertato che gli stessi funzionavano correttamente:
- (a) High oxygen content of gas in the inert gas main / Alto contenuto di ossigeno nel collettore del gas inerte ☐
 - (b) Low pressure in the inert gas main / Bassa pressione del gas nel collettore del gas inerte ☐
 - (c) Low pressure in the supply to the deck water seal / Bassa pressione dell'acqua di alimentazione al dispositivo di tenuta idraulica sul ponte ☐
 - (d) High temperature of gas in the inert gas main / Alta temperatura del gas nel collettore del gas inerte ☐
 - (e) Low water pressure to the scrubber / Bassa pressione dell'acqua di alimentazione alla torre di lavaggio ☐
- 6.15.9.15 The accuracy of portable and fixed oxygen measuring equipment was checked by means of calibration gas / La taratura degli analizzatori di ossigeno fissi e portatili è stata controllata usando un gas campione ☐
- 6.16 SPECIAL ARRANGEMENTS IN MACHINERY SPACES AND CARGO SPACES / Sistemazioni particolari nei locali macchine e nei locali da carico (Reg. II - 2 / 11; 53)
- 6.16.1 Means of stopping machinery and shutting off oil fuel suction pipes: remote controls were checked and found operating satisfactorily / Mezzi per arrestare i macchinari e per intercettare i tubi di aspirazione del combustibile: i comandi a distanza sono stati controllati e trovati correttamente funzionanti ☐
- 6.16.2 It has been checked that ventilators, tunnel openings, skylights, doorways and tunnel doors can be closed from outside the machinery spaces / È stato accertato che i mezzi di chiusura delle trombe di ventilazione, delle aperture sui fumaio, degli osteriggi, degli accessi e delle porte delle gallerie per alberi o tubi possono essere manovrati dall'esterno dei locali macchine ☐
- 6.16.3 It has been checked that ventilating fans and ventilators and all other openings serving cargo spaces can be stopped or closed from outside those spaces / È stato accertato che i ventilatori, le trombe di ventilazione e tutte le altre aperture serventi i locali da carico si possono arrestare o chiudere dall'esterno dei detti locali ☐
- 6.17 SPECIAL ARRANGEMENTS FOR CERTAIN SHIPS / Sistemazioni particolari per alcune navi
- 6.17.1 SHIPS WITH PERIODICALLY UNATTENDED MACHINERY SPACES / Navi con locali macchine periodicamente non presidiati (Reg. II - 1 / 48; II - 2 / 14)
- 6.17.1.1 The required fixed fire detection and fire alarm system fitted in periodically unattended machinery spaces, including relevant audible and visual alarms, was checked and found operating satisfactorily / Il prescritto impianto fisso di rivelazione e segnalazione incendi installato nei locali macchine periodicamente non presidiati, compresi i relativi allarmi ottici ed acustici, è stato controllato e trovato correttamente funzionante ☐

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system (if fitted) were checked and found operating satisfactorily / I prescritti comandi a distanza per le prese a mare e gli scarichi fuori bordo che si trovano al di sotto della linea di galleggiamento e l'eiettore di sentina (se esiste) sono stati controllati e trovati correttamente funzionanti



6.17.2 SHIPS WITH RO-RO CARGO SPACES AND OTHER SPACES INTENDED FOR THE CARRIAGE OF MOTOR VEHICLES WITH FUEL IN THEIR TANKS FOR THEIR OWN PROPULSION / Navi con locali da carico Ro-Ro ed altri locali da carico destinati al trasporto di autoveicoli con combustibile nel serbatoio per la loro propulsione (Reg. II - 2 / 53.2)

6.17.2.1 All required special arrangements as listed in item 8.2 of the Record were checked as far as practicable and found satisfactory / Tutte le sistemazioni particolari prescritte che sono indicate alla voce 8.2 dell'Elenco sono state controllate, per quanto praticamente possibile, e trovate in ordine

6.17.3 SHIPS ENGAGED IN THE TRADE OF CARRYING DANGEROUS GOODS / Navi destinate al trasporto di merci pericolose (Reg. II - 2 / 54)

6.17.3.1 The required special arrangements and equipment as per Regulation II-2/54 which are fitted onboard the ship as specified in the Record were checked as far as practicable and found in good condition and operating satisfactorily / Tutte le sistemazioni e le dotazioni particolari prescritte dalla Regola II-2/54 di cui è provvista la nave, come indicato nell'Elenco, sono state controllate, per quanto praticamente possibile, e trovate in buone condizioni e funzionanti correttamente

6.17.4 OIL TANKERS AND CHEMICAL TANKERS / Petroliere e chimichiere (Reg. II - 2 / 61.9 - IBC Code : para. 11.3.11 - BCH Code : para. 3.4.11)

6.17.4.1 All cut out valves in the foam main and in the fire main and piping of fixed fire fighting system for cargo tanks and cargo pump room were externally examined as far as practicable and found satisfactory / Tutte le valvole per isolare sezioni danneggiate del collettore dell'acqua e della schiuma dell'impianto fisso antincendio per la protezione delle cisterne del carico e del locale pompe del carico sono state controllate, per quanto praticamente possibile, e trovate in ordine

6.18 OTHER SPECIAL ARRANGEMENTS (IF ANY) / Altre eventuali sistemazioni particolari

- New centralized CO₂ system (no 2 items X 17 bottles 45 Kg each + 1 N₂), on main deck, for: Emergency Generator or Export Power Transformer; Switchboard, 6.6 kV no 1-2; CCP compressor room or Vent. UPS room; CCR or compressor MCC room; MCC rooms no 1-2; compressors control room; Elect. equip. room; Elect. stores - NOT YET FITTED

- No 3 CO₂ systems for NUOVA PIANONE Turbines, no 10 X 45 Kg each - NOT YET FITTED

- DEWGE system for all process skids and Master Area (fwd lifeboats) - NOT YET FITTED

JOSE CARLOS PINHEIRO CUSMAO
DIRECTOR
DIVISÃO DE SERVIÇOS CARTORIAIS

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TRIBUNAL MARITIMO

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JOSE CARLOS PIMENTEL CARMÃO
DEFEITOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Form SAFECUJ-Rep-BG-08/95

8.1

Parts listed below have been modified, renewed or replaced and the relevant pages in the Record have been corrected accordingly and replaced; copies of those corrected pages are also attached to this Report. Le parti elencate qui di seguito sono state modificate, rinnovate o sostituite e le corrispondenti pagine dell'Elenco sono state debitamente corrette e sostituite; copia delle suddette pagine corrette è allegata al presente Rapporto:

Items of the Record Voci dell'Elenco	REMARKS / Annotazioni
4.1.7.	(Temporary) Deck diesel generator for Jockey pump.
4.1.8	(Temporary) Over Emergency Generator room
4.1.14	All fire pumps are in automatic condition - Temporary the main pump are locally controlled only (upper decks)
4.2	All fire hydrants will be renewed - They are already renewed only on weather decks: nos 35 double type Diameter 2 1/2" - coupling: bayonet.
4.3	Holes for weather deck hydrants: no 64 length: 15 m diameter: 65 mm - material: polyester and extruded rubber tube - M.S.A.-A.T. spray nozzles, U.K. made, without any documentation -
4.4	Boilers removed
4.8 - 4.9	High speed compressor removed - New equipment for process apparatus still out of service - Drilling area is now S.W. (air) pumps and manifold or pip launchers area -
4.12	Foam replaced by film forming foam at 3% No test performed
4.16	Powder renewed - N ₂ Boilies tested but not refilled - Temporary out of service
5.2	Some minor changeament in the distribution (list submitted separately) - Only the fire detectors useful for the present trip were checked and tested - No test on the new fitted ones
6.1	We tested only the ESD for the equipment to be used in the present trip -
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JOSÉ CARLOS PIMENTEL CUSMÃO DIRETOR DIVISÃO DE SERVIÇOS CARTORIAIS	
4.3 Note	These materials are not Italian Administration Approved Type (boles manufactured before 1 Jan. 1999): The Owner was duly informed that he needs the Italian Authority authorization to maintain on board the named equipment -



REGISTRAZIONE ITALIANA NAVALE

R. Formenti

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This survey was carried out in order to issue a Certificate of Fitness for the single voyage, in tow, from Quebec to Sept Iles, into the St. Lawrence River, in favourable weather conditions and a maximum of not 50 people on board, not later than the end of October 1999.

Request of Canadian Maritime Authority - Transport Canada, enclosed -

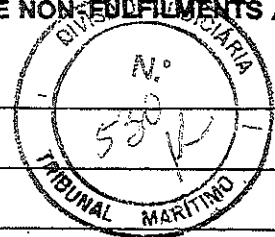
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DIRECTOR
DIVISÃO DE SERVIÇOS CARTORIAS



REGISTRO ITALIANO NAVALE
R. Formenti

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 DIRECTOR
 DIVISÃO DE SERVIÇOS CARTORIAIS

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TOTAL P.02

NAME R. S. Higgins
Signed for and on behalf of WILLIAM EAGLES LIMITED

We certify that the whole of the supplies detailed herein - having been inspected, tested or otherwise as stated above - conform in all respects with the requirements of the contract or order.

É COPIA FIEBDO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL CUSMÃO
DIRECTOR
DIVISÃO DE SERVIÇOS CARTORIAIS

The Nozzle complies with SI 611 and also the requirements of "Solas" (Chapter 11-2:Construction)
Details obtained from your copy
The Nozzle is produced from materials suitable for a marine environment

Certificate Notes			
Item	Product No	Quantity	Description
1	P4000C017	17	Manifold Right Angle (GM LG2): 4" ASA 150 FF Fig x 2-3" ASA 150 FF Fig
2	P4000C016	15	Manifold Right Angle (GM LG2): 3" ASA 150 FF Fig x 2 - 3" ASA 150 FF Fig
3	P372002043	64	PRV2 PRESSURE REGULATING VALVE (GM LG2): Bidnose 3" ASA 150 FF Fig x 65mm Storz (KA81)
4	P311002035	32	SHOCKLESS NOZZLE MK2 (GM LG2): Constant Flow 65mm Storz KA81 (RG 5) x Off-Spray-Jet 433ipm @ 3.5 Bar

Wormald Anslul (UK) Ltd
Wormald Park
Grimsshaw Lane
Newton Heath
Manchester
Greater Manchester
M40 2WL
ENGLAND

Serial Number 7450
Order No 1998/1161
Customer Order 474685/WA886728-000-44
Certificate Date 28/3/99

LIVERPOOL STREET
SALFORD M5 4LP
Telephone: 0161 736 1661
Fax: 0161 745 7765



William
Eagles
Limited



REGISTRO ITALIANO NAVALE

OFFICE/AGENCY IN QUEBEC

FACTUAL REPORT OF SURVEYS

RINA number [8] 07073	Name of ship PETROBRAS TRENTASEI	Gross Tonnage [8]	Flag of ship ITALIAN
Start of Survey JULY 99	End of Survey 06.10.99	Place of Survey QUEBEC	File [9] 97 DG 14810 IN

THIS IS TO CERTIFY THAT THE FOLLOWING SURVEYS HAVE BEEN CARRIED OUT ACCORDING TO APPLICABLE RULES AND REGULATIONS

CLASS / "NAVIGABILITA'" (*) SURVEYS [3]	Spec (Ren) Survey [1]	Ord (Ann) Survey [1]	Intermediate Survey [1]	Continuous Survey [1]	Occasional Survey [1]	First Classification "Navigabilita'" Survey [1]	Cert/Stat [4]	Expiry date of Cert/Stat
1 Hull	IN	X		X	X			
2 Machinery	IN	X		X	X			
3 Unmanned machinery space (IAQ/IAP/IAQ+IAP) (*)								
4 Refrigerating Plant (IFQ)								
5 Special notations (FFQ; NAU; SCC,) (*)								
6 Diving systems								
7 Dynamic positioning system (IPD)								

Bottom [5]		NORM	VS	AVA	Afloat	☐	DIVISÃO DE SEPARAÇÃO CARTÓRIAS														
9	Tailshaft (centre) [6]	NEW	COMP	ALT	PAR	with NDT	☐	12	Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
10	Tailshaft (port) [6]	NEW	COMP	ALT	PAR	with NDT	☐	13	Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
11	Tailshaft (stbd) [6]	NEW	COMP	ALT	PAR	with NDT	☐	14	Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
								15	Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC

STATUTORY SURVEYS	Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat	STATUTORY SURVEYS	Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat
15 Load Line (INT/NAU) (*) [3]	RIN	PRO	29.02.00	29 Dangerous Goods in Road Tanks			
17 Safety Construction	ANN			30 Dangerous Goods in Tank Containers			
18 Safety Equipment				31 Dangerous Goods in Packages			
19 Safety Radio				32 Cargo Gear - Cranes (ILO) [3]	ANN		
20 Safety Passenger				33 Cargo Gear - Derricks (ILO) [3]			
21 MARPOL Annex I (IOPP/COMP/CH) (*) [3]	ANN			34 Cargo Gear - Cranes (RINA) [3]			
22 Fitness Chemicals (COF/COF) (*)				35 Cargo Gear - Derricks (RINA) [3]			
23 Fitness Gases (COF/COF) (*)				36 "Idoneità" (passenger/cargo (*) ships) [3]			
24 Noxious Liquid Substances (IPPC)				37 Crude Oil Washing (COW)	AUT	OCC	
25 Sewage Pollution Prevention (ISPP)				38 Radar ascertainment	RIN	OCC	
26 Dangerous Goods in bulk (CHEM) [3]				39			
27 Dangerous Goods in bulk (GAS) [3]				40			
28 Carriage of vehicles				41			

ACH SURVEY WAS CARRIED OUT IN ACCORDANCE WITH THE RELEVANT "CHECK LIST"

THIS IS THE FINAL REPORT ☒ THIS IS NOT THE FINAL REPORT; NARRATIVE REPORTS WITH RELEVANT ENCLOSURES WILL BE SENT LATER ☐

PARTIAL / COMPLETE (*) THICKNESS MEASUREMENTS CARRIED OUT ☐ RELEVANT REPORTS ARE ENCLOSED ☐

TOTAL ENCLOSURES No. RELEVANT TO ITEM(S) 1-2-16-17-21-32 + list at page 8 of VISITEE

RECOMMENDATIONS / MEMO (*) were imposed / deleted / postponed / confirmed (*) as stated on page 3 ☒

Type of Certificate or Statement [7] ☒ CC ☐ DC ☐ DN ☐ DP Date of VISA 061099 Certificate confirmation 11099

Commencement of special survey no 1, hull and machinery ordinary surveys, hull and machinery occasional surveys for alteration and recommissioning survey carried out - Class confirmed for the single voyage in towing condition from Quebec to Sept Iles (QC.) into the St. Lawrence River not later than 31 October 1999. It is to certify that the process equipments, Turbo/Gas generators nos 1, 2 and 3, helideck and propulsion apparatus are temporarily out of service - (Follow at page no 3)

Former VISA: Date 11.02.98 Place QUEBEC

(*) Underline the appropriate word(s) or abbreviation(s)

See Explanatory Notes [1] to [9] on page 2

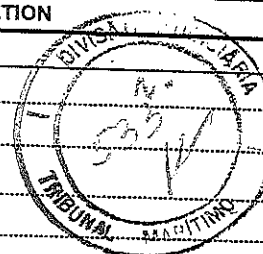
Place and date: Quebec, 10.10.99 Surveyors' names and signatures

Form: VISITEE-Rep-EG-05/94

REGISTRO ITALIANO NAVALE

R. Formenti

SALT WATER BALLAST SPACES



- (a) Spaces examined where no protective coating was applied from the time of construction: NO ONE
- (b) Spaces examined where the protective coating was found in POOR condition: NO ONE
- (c) Spaces examined where the protective coating was found in GOOD or FAIR condition: ALL THEN

FIRE FIGHTING SYSTEMS AND APPLIANCES

- (a) Date of last check of CO2 bottles/vessels content: _____
- (b) Date of last hydrotesting of CO2 bottles/vessels: _____
- (c) Date of last check of HALON bottles/vessels content: _____
- (d) Date of last hydrotesting of HALON bottles/vessels: _____
- (e) Date of last check of nitrogen bottles content: _____
- (f) Date of last hydrotesting of nitrogen bottles: OCTOBER 1999
- (g) Date of last renewal of foam forming liquid: OCTOBER 1999
- (h) Foam forming liquid sample taken for analysis (if required): _____ ☐

SETTING UP OF SAFETY VALVES OF MAIN / AUXILIARY (*) BOILERS:

THE OUTSTANDING ITEMS FOR COMPLETION OF PART-HELD ORDINARY (ANNUAL) / INTERMEDIATE (*) HULL OR MACHINERY SURVEYS AND/OR MAIN / AUXILIARY BOILER SURVEYS (*) ARE AS STATED BELOW:

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JOSÉ CARLOS PIMENTEL GUSMÃO

EXPLANATORY NOTES FOR FILLING IN THIS FORM

DIVISÃO DE SERVIÇOS CERTIFICADORA

[1] MARKS FOR SURVEY EXTENT

- X or AL = Survey entirely carried out
- IN = Commencement of Survey
- CN = Continuation of Survey
- CM = Completion of Survey
- PC = Annual Survey of exhaust fired thermal oil heaters including visual inspection and tightness testing of heater tubes

[2] TYPE OF SURVEY

- ANN = Annual Survey
- AUT = Survey for authorization (for COW) (Item 37)
- BIE = Biennial Survey (for Compasses)
- INT = Intermediate Survey
- LT = Load test (for Cargo Gear - Items 32 to 35)
- OCC = Occasional survey
- JA = Quadrennial Survey (for Cargo Gear - Items 32 to 35)
- QU = Quinquennial survey (for Cargo Gear - Items 32 to 35)
- RIL = Initial Survey
- RIN = Renewal Survey
- VAR = Survey for Loadline variations (Item 16)

[3] OTHER NOTES ON SURVEYS

- N.B.: "NAVIGABILITÀ" SURVEYS are Surveys to be carried out for the purpose of the issue, maintenance or renewal of the "Certificato di navigabilità" (Seaworthiness Certificate) under the provisions of Italian Safety Rules
- "IDONEITÀ" SURVEYS are Surveys to be carried out for the purpose of the issue, maintenance or renewal of the national safety certificate called "Certificato di Idoneità" to passenger or cargo ships not subject to SOLAS under the provisions of Italian Safety Rules (Item 36)
- INT/ITA = Survey for the purpose of the International/Italian Loadline Certificate, as appropriate (Item 16)
- CONF = Certificate of compliance ("Conformità") to MARPOL Annex I (only for Italian flag ships not subject to MARPOL) (Item 21)
- DICH = Statement of compliance ("Dichiarazione") to MARPOL Annex I (only for Italian flag ships not subject to MARPOL) (Item 21)
- CHEM = Statement of compliance ("Attestazione") to Italian Statutory Regulations (only for Italian or foreign flag chemical tankers or gas carriers operating in Italy) (Items 26 and 27)
- GAS
- RINA = Survey for the purpose of RINA Certificate for cargo gear (only for cargo gear of Italian ships not required to be included in ILO cargo gear booklet) (Items 34 and 35)

[4] CERTIFICATES AND STATEMENTS

- PRO = Provisional (Interim) Certificate issued
- EXT = Validity of existing Certificate extended
- CND = Conditional Certificate issued
- DEF = Full term Certificate issued
- N.B.: The square is to be left blank in the case of endorsements of existing certificates

[5] BOTTOM SURVEY

- NORM = Survey NOT valid on account of a Special Survey
- VS = Survey valid on account of a Special Survey
- AVA = Survey in connection with a Damage Survey
- Afloat: Mark the square with X to mean that an In-water Survey was carried out in lieu of a Docking Survey (see 3.2.3.2 of Ch. 3 of Section A of the Rules)
- N.B.: The underwater inspection of the ship's bottom to postpone the Docking Survey is to be considered as an Occasional Survey

[6] TAILSHAFT SURVEY

- NEW = Tailshaft renewed
- COMP = Complete Survey
- ALT = Alternate Modified Survey
- PAR = Partial Survey
- With NDT: Mark the square with X to mean that a surface crack detection of the propeller keyed connection to the tailshaft was satisfactorily performed

[7] TYPE OF CERTIFICATE OR STATEMENT

- CC = Certificate of Class
- DC = Class Statement
- DN = Statement with a view to obtaining the "Certificato di navigabilità"
- DP = Certificate of Class for Pleasure Vessels

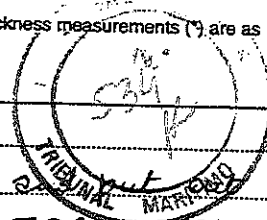
[8] FOREIGN FLAG SHIPS NOT CLASSED WITH RINA

In the case of these ships, the value of Gross Tonnage and, in lieu of RINA number, Distinctive number or letters are to be indicated

[9] FILE

Year, Office code, File number and File code are to be specified, in the above order, according to the File Record Book of the RINA Office concerned

(*) Underline the appropriate word(s) or abbreviation(s)



(TEXT OF VISA - FOLLOW FROM PAGE 1)

Aux. oil fired boilers RINA plan no 90 and 91 dismantled out of service. Fitted on board an additional diesel/generator 750 kW. The notation "Perf" is temporary suspended.

- Name and Registry number changed on all certificates, according new ATTO DI NAZIONALITA'
- Class certificate modified according H.O. instructions
- Continuous hull and machinery surveys according Forms H 186 enclosed - (complete check list will be sent from Sept - 1/99)
- For narrative report and remarks see enclosed forms VISITE 2 pages 1 + 8

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUIMÃO
DIETISTA
DIVISÃO DE SERVIÇOS CARTORAIAS

(*) Underline the appropriate word(s) or abbreviation(s)

Place and date: Quebec, 10.10.99 Surveyors' names and signatures

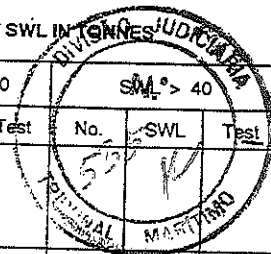


REGISTRO ITALIANO NAVALE
R. Formenti

[Signature]

CARGO GEAR INFORMATION

TYPE OF CARGO GEAR SURVEYED	TYPE OF SURVEY(S) CARRIED OUT	NUMBER OF CARGO GEAR SURVEYED AND RELEVANT SWL IN TONNES											
		SWL ≤ 10			10 < SWL ≤ 20			20 < SWL ≤ 40			SWL > 40		
		No.	SWL	Test	No.	SWL	Test	No.	SWL	Test	No.	SWL	Test
DERRICKS	First Survey / Quinquennial Survey												
	Quadrennial Survey												
	Annual Survey												
CRANES	First / Annual (*) Survey	2	5	-				1	22	-	1	50	-
CARGO ELEVATORS	First / Annual (*) Survey												



DERRICKS, CRANES AND/OR CARGO ELEVATORS OUT OF SERVICE, IF ANY, ARE TO BE STATED BELOW (specify number and relevant SWL)

INFORMATION FOR INVOICING

SURVEYS CARRIED OUT IN ITALY OR ABROAD BY RINA EXCLUSIVE SURVEYORS

INFORMATION ON TONNAGE MEASUREMENTS

Tonnage measurements carried out according to Regulations of:

The ship had already been measured according to Regulations of:

Tonnage re-measurements carried out: ☐ Tonnage measurements carried out for sister ship(s) accepted ☐

INFORMATION ON SUBDIVISION AND STABILITY

Inclining test carried out: ☐ Light ship weight test carried out ☐

Subdivision and/or damage stability calculations carried out ☐

Calculations as above carried out for sister ship(s) accepted: ☐

OTHER INFORMATION

Fees for visaed or issued class documents: Fees for visaed or issued statutory documents:

Phone / Telex expenses: Miscellaneous expenses:

In the case of surveys carried out outside the RINA Branch Office area, state whether travel tickets (if any) have been supplied by the Shipowner or by RINA

Expenses for travel tickets as above when supplied by RINA:

Survey(s) carried out together with the following RINA Agent abroad

The invoice is to be sent to the Shipowner (yes/no): If not, the invoice is to be sent to the following address:

Through Client Code

--	--	--	--	--

Through Through Code

--	--	--	--	--

SURVEYS CARRIED OUT OUTSIDE ITALY BY RINA/GL JOINT EXCLUSIVE STATIONS OR AGENCIES ABROAD

Number of documents issued or visaed without inspections onboard being carried out: Number of Km covered by car and corresponding fees:

Total time spent on surveys (hours/min.): Other car travelling expenses (tolls, etc.):

Occasional survey time (hours/min.): Travelling expenses other than by car (tickets, etc.):

Travelling time (hours/min.): Phone/Telex expenses:

Out of office time (hours/min.): Miscellaneous expenses:

Overtime (hours/min.):

JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Underline the appropriate word(s) or abbreviation(s)

Place and date: Quêbec, 10.10.99 Head of Office or Agent (Abroad)



REGISTRO ITALIANO NAVALE

Nave: SPIRIT OF COLUMBUS
ShipNumero Registro 67073
Register Number

- (2) ☒ ALLEGATO AL RAPPORTO N. 97 DG 14810 IN
Enclosed to survey report
☐ PROMEMORIA DI SERVIZIO
Memorandum

(1) VISITA: CONTINUOUS, SPECIAL AND OCCASIONAL HULL SURVEY
Survey

OPERAZIONI E LAVORI ESEGUITI - OSSERV. - Items and repairs carried out - Remarks

GRUPPO ELEMENTO * (3)
15 16 17 18 19 20 O R D 77

- SURVEY OF BALLAST TANK 6 S

14 1X

- " " 5 S

18 1X

- " " DRY TANK 27 P

19 X

- " " 27 S

20 X

- " " OF DRILLING WATER TANK 15 P

35 1X

- " " BALLAST TANK 21 P

55 1X

- " " OF POTABLE WATER TANK 24 P

63 1X

- " " OF DRY TANK 1 SA

130 1X

- " " 32 S

102 X

- " " 33 P

103 X

- " " 32

106 X

- " " " " " "

104 X

- " " " " " "

105 X

- " " " " " "

107 X

- " " " " " "

108 X

- " " POTABLE WATER TANK

101 X

- " " DRY TANK SOP

129 1X

- " " 27 S

9 1X

- WINDLASS INSPECTION (nos 4 new ones also)

20 X

- WINDLASS TEST

10X

- WARPING CAPSTANS AND WINCHES INSPECTION

11X

- WARPING CAPSTANS AND WINCHES TEST

12X

- SURVEY OF DRILL WATER TANK 15 P

13X

- " " DRY TANK 28 P

35 X

- " " 51 P

49 X

- " " CHAIN LOCKER 2 P

59 X

- " " 1 P

15 X

- " " DRILL WATER TANK 14 P

45 X

- " " DRY TANK 28 S

37 X

- " " 51 S

50 X

- " " 50 S

60 X

- SURVEY OF CHAIN LOCKER 3 S

10 X

- " " 4 S

16 X

- SURVEY OF BALLAST TANK 19 S

46 X

- " " 21 S

58 X

- " " DRILL WATER 9 S

56 X

- " " BALLAST TANK 5 P

22 X

- " " 6 P

17 X

- " " 11 P

13 X

25 X

Porto/Place: QUEBEC

Data/Date: JULY 28, 1999

I tecnici/The surveyors:

- (1) Il foglio potrà essere utilizzato quale rapporto di visita solo nel caso di Visita Speciale e/o continuativa scafo, macchina, I.F. riempiendo le caselle delle colonne 15-27. In questo caso dovranno essere utilizzati fogli separati per lo scafo, la macchina e l'I.F. rispettivamente.
The sheet can be used as survey report only for Special Survey and/or continuous hull, machinery, refrigerating plant filling the boxes in way of the number 15-27. In such case separate sheets will be used for hull, machinery and refrigerating plant.
- (2) Porre "X" nella casella corrispondente alla voce che indica come si intende utilizzare il modulo.
Mark "X" in way of the box showing the kind it is intention to use the form.
- (3) Porre "1" quando gruppo visitato al completo riscontrato in ordine.
Mark "1" when the group is thoroughly surveyed and found in order.

COPIA DEL DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL CUSMAO
DIRETOR



REGISTRO ITALIANO NAVALE

Nave:
Ship

SPIRIT OF COLUMBUS

- Numero Registro
Register Number

67073

- (2) ☒ ALLEGATO AL RAPPORTO N. 97 DG 14810 IN
Enclosed to survey report
- ☐ PROMEMORIA DI SERVIZIO
Memorandum

JUDICIAL

(1) VISITA: OCCASIONAL, CONTINUOUS & SPECIAL HULL SURVEY
Survey

OPERAZIONI E LAVORI ESEGUITI - OSSERV. — Items and repairs carried out - Remarks

GRUPPO ELEMENTO * (3)
15 16 17 18 19 20 O R D 77

- SURVEY OF VOID SPACES

32 P1

37 PU

58 P

59 P

SURVEY OF BALLAST TANK

2 S

3 P

7 S

19 P

3 S

16 P

5 S

SURVEY OF VOID SPACES

58 S

59 S

37 S

37 S

31 S

34

3 S

SURVEY OF BALLAST TANK

23 S

23 P

25 P

SURVEY OF DRY TANK

31 P

SURVEY OF BALLAST TANK

4 P

SURVEY OF DRY SPACE

36

42 SU

41 SU

57

57

60

HYDROTEST OF DRAIN'S JUMP TANK

OF GLYCOLIC TANK

SURVEY OF DRY TANK

42 PU

40

43

39

104

139

69

71

4

5

12

57

6

51

18

72

70

139

140

112

97

98

74

73

75

111

7

127

138

144

99

100

207

210

162

137

136

145

135

Porto/Place: QUEBEC Data/Date: 06.10.99

I tecnici/The surveyors:

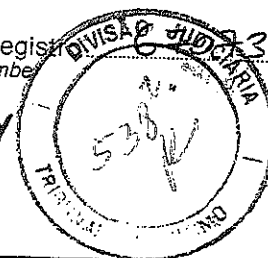
- (1) Il foglio potrà essere utilizzato quale rapporto di visita solo nel caso di Visita Speciale e/o continuativa scafo, macchina, I.F. riempiendo le caselle alle colonne 15 + 77. In questo caso dovranno essere utilizzati fogli separati per lo scafo, la macchina e l'I.F. rispettivamente. The sheet can be used as survey report only for Special Survey and/or continuous hull, machinery, refrigerating plant filling the boxes in way of the number 15 + 77. In such case separate sheets will be used for hull, machinery and refrigerating plant.
- (2) Porre "X" nella casella corrispondente alla voce che indica come si intende utilizzare il modulo. Mark "X" in way of the box showing the kind it is intention to use the form.
- (3) Porre "1" quando gruppo visitato al completo riscontrato in ordine. Mark "1" when the group is thoroughly surveyed and found in order.



REGISTRO ITALIANO NAVALE

Nave:
Ship

SPIRIT OF COLUMBUS

Numero Registro
Register Number

- (2) ☒ ALLEGATO AL RAPPORTO N. 97 DC 14810 IN
Enclosed to survey report
- ☐ PROMEMORIA DI SERVIZIO
Memorandum

(1) VISITA: OCCASIONAL, CONTINUOUS & SPECIAL MACHINERY SURVEY
Survey

OPERAZIONI E LAVORI ESEGUITI - OSSERV. — Items and repairs carried out - Remarks

	GRUPPO			ELEMENTO					*			(3)
	15	16	17	18	19	20	O	R	D			77
- AUX. BOILER (TAC-CLQ)												
- AUX. BOILER (TAC-CLQ)												
- HOT WELL												
- FEED PUMP												
- FEED PUMP												
- CHEMICAL PUMP												
- DIESEL OIL PUMP												
- DIESEL OIL PUMP												
- STEAM PIPES : PARTIALLY DISMANTLED												
- COMPRESSED AIR VESSEL (E.G. MANOEUVRING)												
- AIR VESSEL										X		
- SPRINKLER VESSEL										X		
- AIR VESSEL										X		
- AIR COMPRESSOR										X		
- AIR VESSEL										X		
- AIR VESSEL										X		
- FOAM TANK (FIBERGLASS)										X		
- FOAM TANK										X		
- FOAM TANK										X		
- BILGE PIPING INSPECTION										X		
- BALLAST PIPING INSPECTION										X		
- MAINFIRE PLANT RECEIVER (EXISTING)										X		
- DIESEL OIL PUMP (PURIFIER ROOM STBD)										X		
- S.W. Filtration package Stbd										X		
- S.W. Filtration package Port										X		

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓGRAFOS

Porto/Place: QUEBEC

Data/Date: 06.10.99

I tecnici/The surveyors:

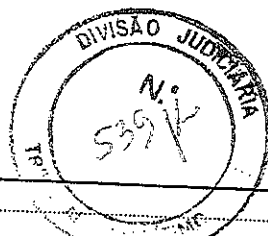
- Il foglio potrà essere utilizzato quale rapporto di visita solo nel caso di Visita Speciale e/o continuativa scafo, macchina, I.F. riempiendo le caselle alle colonne 15-77.
In questo caso dovranno essere utilizzati fogli separati per lo scafo, la macchina e l'I.F. rispettivamente.
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In such case separate sheets will be used for hull, machinery and refrigerating plant.
- (2) Porre "X" nella casella corrispondente alla voce che indica come si intende utilizzare il modulo.
Mark "X" in way of the box showing the kind it is intention to use the form.
- (3) Porre "1" quando gruppo visitato al completo riscontrato in ordine.
Mark "1" when the group is thoroughly surveyed and found in order.



REGISTRO ITALIANO NAVALE

Nave: SPIRIT OF COLUMBUS
Ship- Numero Registro 67073
Register Number

- (2) ☒ ALLEGATO AL RAPPORTO N. 97 DG 14810 IN
Enclosed to survey report
☐ PROMEMORIA DI SERVIZIO
Memorandum

(1) VISITA: OCCASIONAL, CONTINUOUS & SPECIAL HULL SURVEY
Survey

OPERAZIONI E LAVORI ESEGUITI - OSSERV. — Items and repairs carried out - Remarks

SURVEY OF BALLAST TANK					GRUPPO ELEMENTO					ITEMS CARRIED OUT - REMARKS					
15	16	17	18	19	20	O	R	D	77	(3)					
u										31			X		
u										63			X		
u										65			X		
u										36			X		
u										38			X		
u										26			X		
u										32			X		
u										171			X		
u										23			X		
u										2			X		
u										14			X		
u										42			X		
u										54			X		
u										62			X		
u										67			X		
u										68			X		
u										24			X		
u										44			X		
u										41			X		
u										43			X		
u										64			X		
u										66			X		
u										53			X		
u										11			X		
u										61			X		
(*) Bottom plate found lightly buckled between fr. 69-70 on portside lower hull, about 1000 portside of longitudinal BKh: 150x300x60 very close to the watertight transversal bKh fr 70 in tank NP. 61, bKh also lightly deformed at the connection to the bottom; between two bottom transversal stiffening, at fr. 69, 300x800x100 in the tank NP 53.															
SURVEY OF BALLAST TANK 2 P															
u										3			X		
u										52			X		
u										58			X		
u										1			X		
u										8			X		
u										76			X		
(*) NOTE = THE BALLAST TANKS SO MARKED WERE FOUND IN FAIR CONDITION BECAUSE COATING BEGINS TO WASTE OR IT IS ALREADY PARTIALLY REMOVED															
URTO/Place: QUEBEC															

REGISTRO ITALIANO NAVALE

ALLEGATO AL FORM
ATTACHED TO FORM

VISITE 1

FOGLIO
SHEET

di 8
of

Porto di visita Port of survey	Data della visita Date of survey	Estremi della pratica File			
QUEBEC (Q.C.)	06.10.99	97	DG	14810	IN

Nome della nave
Name of ship

PETROBRAS TRENTASEI

Numero RINA
RINA number

67073

Vessel was modified and up-graded in order to comply to the requirements of Petrobras General Technical Specification (SANTA 15000 - P.36) and relevant Annex X (no drilling operations, production of 180'000 BOPD on Campos Basin (Brazil), between September 1997 and October 1999 in Quebec City (Quebec - Canada) by Davie Shipyard.

The works were carried out in accordance with the relevant drawings issued by Noble Denton and AMEC, most part of them sent to Head Office for appraisal or information, and the Shipyard Project Work Packages, based on Noble Denton and Amec drawings or sketches.

Someones of these construction drawings, when considered useful or important, are enclosed to present report. For the items, previously included in the Hull and Mech. class reports and already stripped out, see previous class reports.

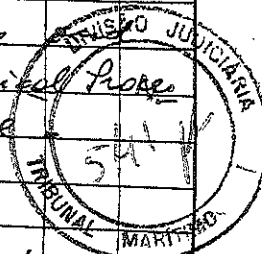
The new items are indicated in the lists enclosed to June 1999 Class report, and further modifications are still indicated on the present report.

Steel material, normally EH 36, generally duly Tested and certified by other Classification Societies; small quantity certified only by Mill-certificates of approved vendors; further mechanical tests carried out when non conformity to the drawings was found or in order to requalify lower grade materials.

Welding procedures, already approved by Canadian Welding Bureau and Lloyd's Register, were accepted after satisfactory result of extensive production tests. Welding consumables approved by C.W.B. and also A.B.S. and L.R.

Shipyard welders authorized by C.W.B. according Canadian national Rules, duly accepted by other Classification Societies; up-date lists were submitted every three months, for structures and pipings.

Shipyards HQ POOL Quality Assurance Procedures
Petroleum also Quality system, and all the technical Proce-
dures were submitted to this Surveyor for acceptance



SHORT DESCRIPTION OF WORKS CARRIED OUT

Existing aft deck extension was stripped out and a new
* aft deck extension, in correspondence of main deck and tank
top deck on 13,00 x 55,00, was realized according the
relevant approved drawings. Many stiffeners were added
on the existing structures, welded doublers on longitudinal
thruers and complete welded doublers on existing transom
for 60, often on both sides as well as on drawings and NBD
sketches already shown to this H.O. A suitable program
for the periodical inspections of the stressed zones requested
but not yet prepared and submitted to this H.O.

Round house on main deck, starboard side, for store
and mixing and mud pumps, stripped out.

All items relevant drilling service and the most part of
items relevant the production service were stripped out, included
all equipment on the ex-drill floor, winches, drawworks,
all drilling accessory gears and the travelling crane
into the moon pool.

Actually, the drilling equipment still existing on board
are: the central derrick, the BARDER rotating crane into
the ex-drill house (Temporary out of service for the presence
of new manifolds and piping), the four cement tanks
into the legs, the aux. machinery in the lower hulls;
the vessel is furthermore particularly arranged in order
to be able to be reconverted to the drilling service.

The central caisson was closed by a bottom structural plug
and now it is containing new three sea water supply service
pumps and the connections of the risers; new structural
floors into the moon pool realized at level of tank top deck,
main deck and ex-drill floor.

The existing four anchor chain winches platforms were
enlarged in order to fit new four similar winches
(actually not 16 in total) for the positioning on the
Roucedor Field in Brasil Helideck braces partially

COPIA FIEL DO DOCUMENTO ORIGINAL

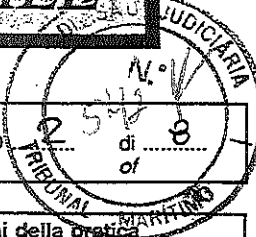
Data
Date Quebec 10.10.99

JOSÉ CARLOS PINHEIRO LUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Nome e firma del Tecnico del RINA
RINA Surveyor's name and signature



R. Formenti



Porto di visita Port of survey	Data della visita Date of survey	Estremi della pratica File			
QUEBEC (QC.)	06.10.99	97	DC	14810	IN

Nome della nave
Name of ship

PETROBRAS TRENTASEI

Numero RINA
RINA number

67073

removed and refitted in fwd position as well as sketches here enclosed, because of the presence of the new winch on portside fwd corner.

Two new stability boxes were fitted over the lower hulls and the existing fairlead boxes modified and widely enlarged, to contain new four chain lockers and to comply to new floating and stability conditions.

The following new structures were fitted externally to the lower hulls: no 4 riser supports (at center and FWD of each inner side of hulls); no 2 heavy steel cotemporary supports at external side of portside hull.

A new complex spider deck was fitted under the platform whose shell bottom was modified by several strong welded inserts to support the new structures. Together with this spider deck, riser pull-in equipment, coils and sheave system were also fitted to permit the risers adjustment: all these new structures were connected to the existing platform by inserts and steel boxes, with many stiffenings and modifications at the existing frames and beams. For the details see also the enclosed drawings showing the new fitting.

Double protection fenders fitted on the new fairlead boxes according the approved drawings; very heavy riser protection net supports fitted on the four legs, by the use of large and strong steel inserts: at present moment the relevant NBD drawings were only filed by H.O. and the most important construction drawings are enclosed to this report for information.

Modifications in the lower hulls are concerning only the up-lifting of existing equipments and the new possibility, requested by Petrobras, to check the sea-chests while the vessel is floating, using a movable cover in aluminum alloy on the sea-chests openings and suitable

JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

holes are closed by bolted steel covers. Relevant drawings already filed by this H.O. Because of the presence of a new steel catenary support, the end of the $7\frac{1}{2}$ m of port side lower hull was removed and fitted 110 mm of previous position.

Modifications into the upper platform carried out according the plot plan drawings, last revision (already in the hands of the H.O.), showing all the components of service for many rooms. Structurally, the aft zone was widely reinforced to support the new aft deck extension and the heavy process items fitted on main deck. The mud tanks were opened and modified in Deluge distribution rooms; two small mud tanks converted in one glycol tank. The mud pump room was modified in Chemical Injection room and opened to the central caisson at tank top deck level.

For process piping, very high pipe racks were realised on main deck to connect the various skids and process equipments; relevant drawings already filed by this H.O.

Pip launchers were fitted on the aft deck extension, lower level, associated to suitable platform; the other manifolds are now fitted into the moonpool at various levels, and the ex-drilling house under the central derrick was widely opened at each side accordingly.

The new skids in aft position, on main deck, are now larger than the original deck; for this reason it was necessary to remove and reroute the air pipes and the ventilation ducts already existing, and to arrive at aft end, after the aft deck extension or externally at sides, with the respect of the Load Line Rules.

Many other components were carried out on vessel service piping, according the approved drawings (see sea-water lines, deluge system), and many other modifications were required by the presence of new structures, according the Shipyard Project Work Bookings and at local Surveyor satisfaction (particularly at the four corners of the upper platform i.e. w.o. the new mooring winches deck extensions).

Raisers fitted and adjusted according the approved drawings, passing through the central caisson and the new floors at

CÓPIA FIEL DO DOCUMENTO ORIGINAL

Nome e firma del Tecnico del RINA
RINA Surveyor's name and signature
R. Formenti

Data
Date Quebec 10.10.99

JOSÉ CARLOS PINETEL GUSMÃO
DIRECTOR
DIVISÃO DE SERVIÇOS CARTORIAS

ALLEGATO AL FORM
ATTACHED TO FORM

VISITE 1

FOGLIO
SHEET8
BUNAL OF MARITIME

Porto di visita Port of survey	Data della visita Date of survey	Estremi della pratica File			
QUEBEC (QC.)	06.10.99	97	DG	14810	IN

Nome della nave
Name of ship

PETROBRAS TRENTASEI

Numero RINA
RINA number

67073

look top deck level and at main deck level, using the FIRETEX SYSTEM as sealing everywhere.

This type of piping penetration and sealing was used widely for many services: they are fitted on external side of central caisson, between the cofferdams and the inner part of central caisson, on the floors at look top level and main deck level for the risers; other similar penetration in deluge room on double bottom, through the double bottom for deluge pipes in chemical injection room, on main deck.

Other penetration on the ex-drill floor. The used sealing, FIRETEX SYSTEM, is approved by Lloyd's Register only for fire protection, but the pipe flanges were fitted up by KAOWOOL without any conformity to the required density and procedures; no any watertightness certified. They were accepted only temporary for the present trip and the used system must be duly revised.

These penetrations may affect the conditions for the arrangement of new load line, actually removed at draft of 23.00 m according the stability calculation and the H.O. instructions. On the basis of the Temporary acceptance of the piping sealing, a new interim certificate was issued.

The ex-drill house under the derrick, now fitted between watertight floors (the upper one fitted with many pipe penetrations still open) was widely open on each side between the main deck and the upper deck. Suitable structures were maintained or adjusted on three sides, but on the STBD side only a small girder 200x100x12 was added at 2300 mm over the main deck: it is considered not sufficient and it is necessary to improve it as well as necessary or in conformity with the Port or Aft sides. Other minor openings not affecting the frames were realised on the

big launchers zone (see also enclosed drawings). During the works, we checked that all the structures of the upper platform, decks and walls, were bent or buckled in a day by day more sensitive way, because of the large use of welding and the fitting of several steel inserts, for the same reason many machineries were found out of alignment. We consider that the H.O. shall have a correct knowledge of the problem together with the already known problems of the far 60 beams and near critical zones for stress, for a suitable periodical inspection program.

The new towing system was not realized according the approved drawings, because the system will not be used to tow the vessel from Canada to Brazil. With reference to no 7022685 app. dup, detail (2) realized on both lower hulls, detail (1) (see also no 7022688) not realized. Emergency towing system according no 7022687 app. dup and additional stiffenings at 2nd deck level, fwd, according no 7023068 app. dup. also not realized.

In the new dry compartments into the central coffer and the new forelead and stability boxes, no sounding pipes or other level detectors were fitted, only leakage detectors according H.O. fax ITO/044383/CMU on the April 23, 1999.

After the removing of the upper lift trucks on main deck, because of the presence of new process skids, the two aft elevators were limited to work top deck level, and the machinery floor fitted on the 2nd deck. FWD elevators remained unchanged.

At present, anchors and anchor chains are the original ones. The new mooring equipment will be purchased and installed in Brazil. New and existing mooring winches inspected and tested by load cells satisfactorily. At present, no 4 anchors fitted and connected to 400 m of chains on the four legs, the remaining chains ($2 \times 500 \text{ m} + 4 \times 250 \text{ m}$) are spare in different chain lockers.

All new skids were fitted on board and connected by welding to the foundations or directly to the deck or floor plates.

COPIA FIEL DO DOCUMENTO ORIGINAL

Nome e firma del Tecnico del RINA
RINA Surveyor's name and signature

REGISTRO ITALIANO NAVALE
R Formenti

Data
Date Quebec 10.10.99

JOSÉ CARLOS PIMENTEL GUIMÃO
DIRETOR
DIVISÃO DE SERVIÇOS GERAIS

As well as already indicated in the previous report (only some skids remain on board, all the other ones were shipped out and renewed).

The two oil fired aux boilers (no 90-91), considered no further useful for heating in Brazilian climate, also dismantled and shipped out together with their accessories and service pumps; steam pipes also, where possible, were removed.

New deck generator installed into fixed suitable container on the upper floor of the Emergency Generator R.H., associated with separate diesel-oil tank. It is electrically connected to the Emergency Switchboard by change over switch in order to be able to run separately and instead of the Emergency Generator: it is manually operated and is to be considered a spare for the Emergency Generator, according Pablos request. Fitting and connection are satisfactory, see also test report 99QUE/06/CO enclosed, but no any drawings relevant the electric system was received, also if directly requested.

Emergency Generator tested after the complete overhauling: cooling system modified to improve the efficiency, test carried out satisfactorily but the Vulkan coupling was found with a small crack. No problem ascertained in all the test performed (also load tests carried out for the two diesel-generators) and a spare Vulkan coupling purchased and stored on board. The Emergency Generator is complying with RINA Rules and it is able to start automatically and to power the emergency services and lights in 36 sec (less than 45 sec requested). For this reason no other emergency source of power should be necessary, but the vessel is fitted with the following emergency lighting systems:

- Normal double lights, with "E" indication, powered also by E.G.
 - Double lights, one of them powered by own battery having 60 min of autonomy (now reduced to 15 min about), the other one powered by E.G.
 - Single lights, on escape routes or critical points, powered by renewed separate batteries having 90 min of autonomy.
- All these systems are normally switched on and powered

É COPIA FIEL DO DOCUMENTO ORIGINAL

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RINA Surveyor's name and signature



REGISTRO ITALIANO NAVALE
R. Formenti

Data
Date Quebec 10.10.99

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

ALLEGATO AL FORM
ATTACHED TO FORM

VISITE 1

FOGLIO
SHEET

Porto di visita Port of survey	Data della visita Date of survey	Estremi della pratica File			
QUEBEC (QC)	06.10.99	97	DC	14810	IN

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Name of ship

PETROBRAS TRENTASEI

Numero RINA
RINA number

67073

by main source

- Portable lamps powered by own rechargeable battery, normally connected to main power in corridors and machinery spaces.

They may be removed in the future.

Gas turbines for main generators were completely overhauled and up-graded in specialised workshops in Canada and U.S.: after the refitting on board they were found affected by not understood and out normal range vibrations in the power turbines, and one test was unsatisfactory. To resolve the problem, the no 3 power turbine was removed again and sent to a specialised workshop in Florida U.S. They are temporary out of service, but they are not strictly required for the present trip.

The new electrical temporary configuration is the following one: Emergency generator as main source of power, deck-generator as emergency generator manually operated, able to power a suitable S.W. pump and the jockey pump (the 5th smaller fire pump) as emergency fire pump and the other emergency services. Vessel will be always connected to one or more tugs till the loading on the M/V Right Servant & for the transfer to Brazil, without people on board.

Up-fitting work performed by ABB-BAILEY are reported shortly in the enclosed sheet, according approved drawings; they removed the repetition of propulsion alarms (CRITICO-NON CRITICO) from the panel "Engineers calling" on bridge.

For AUGUST system, they said that all drawings were sent to the H.O. for the approval: no one answer from H.O. about this question. For some remarks after the tests, partially carried out, see the REMARKS LIST.

External electric cable racks in fibreglass, fire characteristics accepted by ABS.

Gratings for walkways also in fibreglass, accepted by RINA.

COPIA FIEL DO DOCUMENTO ORIGINAL

the indication of new safety floor. The up-grading must be completed. Only the fire-hydrants on wheathur decks were renewed, by duplex ones, coupling by baguet, with relevant new fire-hoses. The internal ones temporary remain the same (coupling by screw and different diameter). New Kg 12 Powder portable fire extinguishers and 10L water fire extinguishers added. New fixed CO₂ system for deck-generator fitted. New centralized CO₂ system fitted but is out of service, still disconnected. No any drawing was submitted, and we consider that the system is not complying with the Rules, having only one push-button on the mimic-panel in CCR or a manual (triple) release system outside of protected area. Piping are not yet tested, the system is not protected on the open deck, the same CCR is a protected area, and the Export power transformer room (ex T/Generator no 4 room - future), protected area, is separated by the T/Generator no 3 room by a double door B 15 type.

The foam system was not modified (dmg 7018324 not realized) but to use foam forming foam at 3% on orifice with diameter of 5 mm was added. Foam was renewed according the fax QUE 188/RFO on the 13.09.94, test by water satisfactory with 5,4% about, but not test by foam yet performed. For this reason, the helideck was considered temporary out of service.

On the upper deck, the new fire hydrants (nº 4) are not able to reach every point by two different hydrants with only one hose, and it is necessary to add one or two more fire hydrants.

The fire detectors (smoke and heat detectors) are in working condition and only few of them are still out of service in non operated zone (see list enclosed). The gas detectors are not yet in service; also the fusible plugs are not in service in the process area, and the list is also enclosed to the present report.

Existing sprinkler system, spray water system and deluge are in order. The new deluge system is fitted but is to test hydraulically and in service.

New equipment only stored on board, not checked.

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RINA Surveyor's name and signature



REGISTRO ITALIANO NAVALE
R. Formenti

Data
Date Quebec 10.10.94

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

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VISITE 1

FOGLIO
SHEET



Porto di visita Port of survey	Data della visita Date of survey	Estremi della pratica File			
QUEBEC	06.10.99	97	D4	14810	IN

Nome della nave
Name of ship

PETROBRAS TRENTASEI

Numero RINA
RINA number

67073

REMARKS	
1.	REMARKS ALREADY INDICATED IN THE PRESENT REPORT
-	Piping penetration, closed by FIRETEX SYSTEM, must be duly revised
-	Reinforce, as well as necessary, the actual horizontal girder in the wide opening of ex-drill house, Stbd side
-	Perform periodical inspection of the stressed areas adjacent the gouge for 60 and the general structural condition of the upper platform, as per several bent zones
-	New drains pump tank and new glycol tank have opening's closing appliances not UNAV and maintained closed only by their own weight without any locking device
-	Vulcan coupling of the Emergency Generator found with a small crack
-	Main Gas Turbines to test and put in service
-	No approved drawings for August system; query sent to Head Office
-	No approved drawings for new centralized CO ₂ system; Head Office informed some months ago
-	All fire fighting equipment must be fitted according the Safety Plan, at present approved preliminarily (not final revision)
-	New CO ₂ system must be duly checked: non conformity of the system with the Rules and other defects in the protected areas found. Also pipes not yet completed.
-	Foam system for Helideck must be duly tested
-	On the spider deck, the position of fire hydrants is not satisfactory
-	New deluge system only fitted: no test performed
2.	OTHER REMARKS
-	Hazardous areas: according AMEC, the situation must

stacks collapsed in the area adjacent the chemical injection room the electrical equipment is not suitable for hazardous area, two 6.6 KV cables splicing are existing at tank top deck level, the doors are normal doors, not closed. The following exhaust fans are into the Aft Deck Exhaust (lower deck) hazardous area:

X/B 226 B - Warehouse

X/B 265 Q - Mechanical store

X/A 263 N - Fire pump room A/P

X/A 265 F - Aux. machinery space A/S

- Longitudinal bulkhead at 205th H/L side, between the miscel injection room and Deluge room, fitted with AO doors, has all the piping penetration closed by FIRETEX System.

- Powder system for Helideck. Powder renewed, N₂ bottles tested but not refilled for local difficulty. System out of service.

- One compressed air bottle for self breathing apparatus not accepted at pressure test: now one bottle is missing.

- Diesel oil tank for deck generator: refuelling line transfer system is to be replaced by fixed line, vent pipe to be added, quickly closing valves or remote controlled valves must be fitted.

- On NOVAX PRONOX Gas Turbocompressor skids, no 3 air vessels for air dampers fitted. They may have been tested by a Spanish National Body, no certificate now available.

- Drinking fountains removed: potable water system is to be revised.

- ESD, Emergency Shut Down System, tested only for the equipment in service during the present trip.

3. NOTE FOR AUGUST SYSTEM

Existing system up-graded with many modifications.

Previous panels in CCR for fire and emergency events removed, new type ones installed. System fully automated and operated by soft operator.

New mimic panel for fire pumps: the manual remote control of the pumps is possible only at system's knowledge.

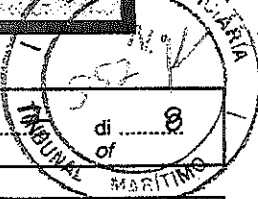
COPIA FIEL DO DOCUMENTO ORIGINAL

Nome e firma del Tecnico del RINA
RINA Surveyor's name and signature

Data
Date Quebec 10.10.99

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

REGISTRO ITALIANO NAVALE
R. Formenti



Porto di visita Port of survey	Data della visita Date of survey	Estremi della pratica File			
QUEBEC	06.10.99	97	D4	14810	IN

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Name of ship

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Numero RINA
RINA number

67073

valves on the pumps only automatically operated. By the panel it is not possible to check if some pump is running. During the sea-trials, because the system was not fully in service, it was necessary to maintain open all the valves (local operation by the actuators only by a portable hand pump, not easy in case of emergency) and to use the local start-stop panel of the pumps. Pumps are on the platform upper floors.

The mimic panel for the ESD (Emergency Shut Down) shows all the different fire zones of the vessel, every one fitted with a ESD push button and, if existing, another push-button for the release of the relevant fixed fire fighting system, CO₂ included, according the approved drawings "Fire and GAS" cause & effects. No any repetition of the fire alarm is showed on the mimic panel (it is necessary to transfer the information from the screen to the panel looking for the correct zone, operation not quick), no any light on the push-buttons. To reset it is necessary to push again the zone push button, without the knowledge of the previous action.

The system should be revised in order to minimize the human errors in manual controls and so clarify better the standing condition of the vessel.

4. NOTE FOR PROCESS EQUIPMENT

All the skids are installed, fixed on board by welding, connected at 95% electrically and by piping. Pipes installed checked during construction and butt joints examined by RX or NDT satisfactorily. No any test pressure carried out, except for some lines dedicated to aux. compressed air and hydraulic pipes for weller racks, according the list of pipes enclosed. Loop test on skids and relevant instrumentation carried out according

sluices, gas detectors and fusible plugs" still out of service for completion of the works -

According Brazilian Rules, every pressure vessel to be retested before enter in service in Brazilian waters, and for this reason all the pressure vessels of the skids, old and new ones are in course of hydraulic test.

The existing skids were tested and internally inspected, the new skid were not inspected: Petrobras has the relevant reports for all the test already performed.

Delivery and safety valves also checked in workshop according report in Petrobras hands.

É COPIA FIEL DO DOCUMENTO ORIGINAL

Data
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JOSÉ CARLOS PIMENTEL CUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

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REGISTRO ITALIANO NAVALE

R. Formenti

[Signature]

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VISITE 1

FOGLIO 8
SHEET



Porto di visita Port of survey	Data della visita Date of survey	Estremi della pratica File		
QUEBEC	06.10.99	97	DG	14810 IN

Nome della nave
Name of ship

PETROBRAS TRENTASEI

Numero RINA
RINA number

67073

ENCLOSED DOCUMENTATION LIST

Drawings relevant the steel cotenary rizer supports. The rizer protection net and many details of the pull-in / pull-out system for the rizer are not further enclosed to this report because at last moment they were approved. Pipe racks drawings also approved when report already filled up.

- 1 - ARB-BAILEY Control system works performed
 - 2 - FIRETEX SYSTEMS pipe penetration seal
 - 3 - Description of electrical works (no for RINA Brasil)
 - 4 - List of fire detectors - AUTRONICA panel no 1 & no 2
 - 5 - Dwg DE 3010-38-5400-855-AMK - 220/241
Position of fire detectors
 - 6 - Dwg DE-3010-38-1200-200 AMK (u 11 dwgs)
Position of fuel pumps
 - 7 - Instrument and Loop list status per Skid
 - 8 - Hazardous areas : remarks on no 3 Plot plans
 - 9 - HVAC system - List of fire dampers and no 2 punch lists
 - 10 - Painting specification
 - 11 - List of Test certificate (RINA Brasil will find in the boxes stored on board all the copies of the certificates)
 - 12 - Copy of ATTO DI NAZIONALITA'
 - 13 - Electrical cable splice procedure
 - 14 - Modification of Helideck bracings, because of presence of wind deck extension
 - 15 - VIPOND REPORTS : test of fire extinguishers and compressed air bottles
 - 16 - Check certificates for paint locker CO₂ bottles and Gas Turbines CO₂ bottles (galley CO₂ bottle Certificate, requested two months ago, not yet submitted)
- ONLY FOR RINA BRASIL
- LIST OF ALL ELECTRICAL PENETRATIONS

JOSÉ CARLOS PIMENTEL RUSMÃO
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- LIST OF ALL PIPING PENETRATIONS
17 - PIPES (not back register)



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Nome e firma del Tecnico del RINA
RINA Surveyor's name and signature

Data
Date 10.10.99



REGISTRO ITALIANO NAVALE
R. Perment

JOSÉ CARLOS PIMENTEL OLIVEIRA
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

[Signature]

ABB-BAILEY CONTROL SYSTEM:

all. 1



- Production system:

All the control for the new process skids is new. One new cabinet was added in the ventilation MMC room and two cabinets were added to the existing one in the compressor control room.

- ESD system:

Concerning the emergency shutdown system, five new RS-232 communication links between Bailey and August system were added in order to have information displayed on the console screens in the CCR.

- Fire and Gas system:

Three new RS-232 links were added to the August F/G system. A new cabinet was added in the sack storage for this purpose. New configuration was done to integrated all the F/G detectors of the new skids as well as the fire water system.

- Mooring, propulsion and environmental systems:

The existing RS-232 link going to the Cegelec panel was kept and rerouted to the new cabinet install in the sack storage. This link is giving information on the thrusters, the environmental parameters as well as the draft, heel and trim of the platform and the length and tension of the chains.

- Load computer:

This RS-232 link was kept and rerouted as well to the new cabinet in the sack storage. This link is sending data to a computer in order with the help of a dedicated software to calculate the load of the platform.

- Ballast system:

Nothing was change in this system including software in hardware.

- Fluid system:

Only the bilge system was modified by adding new valves and level switches for the new void spaces.

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JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓGRAFOS

- Electrical system:

The two cabinets related to the electrical system were modified in order to receive all the new I/O's required for the new motors. The Power management system was redone completely. The existing communication links to the AGT turbines were kept and redundant one's were added for safety.

- Operator interface stations:

The three operator stations in the old ECR room were removed. The eight consoles in the CCR were sent back to Bailey main office in order to be upgraded in were reinstalled in the CCR.

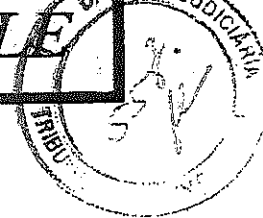
- New systems:

Three redundant communication links were added to the Nuovo-Pignone turbo-compressors in order to monitor the values on the console screens in the CCR. A new communication link was added to the new SAS computers that read the temperature and pressure values of the wells. A new fiber optic link between Bailey system and P-47 will be added in order to exchange some informations.

E COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL SUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORÁRIOS





CARGO GEAR SURVEY REPORT

Survey under the provisions of the International Labour Organization Convention and RINA Rules for loading and unloading arrangements and for other lifting appliances on board ships

67073
RINA No

PETROBRAS TRENTAJEI
Ship's Name

QUEBEC
Port

09.09.99
Date

970414810/IN
File code

1 The undersigned surveyor of RINA supervised / performed the following surveys and tests:

Number (a)	Type (b)	SWL (c)	Survey (d)	Test (e)	Results (f)
1	C	50 t	ANN	-	X
2	C	22 t	ANN	-	X
3	B	5 t	ANN	-	X
4	B	5 t	ANN	-	X

Mark with following abbreviations:

- (a) Position number on approved "Rigging Plans".
- (b) Type of installation: D = Derrick; C = Crane; E = Cargo Elevator; R = Ramp; B = Bridge Crane.
- (c) Safe Working Load in kN.
- (d) Type of survey: IN = Initial; QUI = Quinquennial; ANN = Annual; 6M = Six Monthly; OCC = Occasional survey for damage and/or repair.
- (e) Test method: W = by weight; Y = by dynamometer; — = test not carried out.
- (f) Survey/Test result: X = Satisfactory; R = Remarks; OUT = Out of service.

2 The approved "Rigging Plans" are available on board ☒

3 Marking on cargo handling appliances: existing ☒ requested ☐

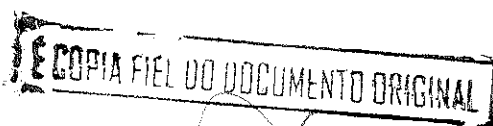
4 New certificates issued:

Form (g)							
Number							
(g) New form issued: LA1 Cargo Gear Booklet; or LA2 lifting appliances test; or LA3 loose gear test; or LA4 wire ropes test; or LA5 for Italian flagged ships only.							

5 Endorsement in Cargo Gear Booklet: Part I ☒ Part II ☒

6 Confirm that Part III of the Cargo Gear Booklet has / has not (delete as appropriate) been endorsed by a "responsible person" on board and forms LA3 / LA4 (delete as appropriate) have been issued ☐

7 Works, remarks and restrictions are reported overleaf ☒



RINA surveyor's name and signature



REGISTRO ITALIANO NAVALE
R. Formenti

Date 24.09.99

Mark: — = No or not applicable; X = Yes or applicable; R = Remarks reported overleaf

JOSE CARLOS PINHEIRO JUNIOR
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

REMARKS



- CRANE NO 1 - MAIN BRACING, PORTSIDE, FOUND LIGHTLY CORRUPT
 IN CORRESPONDANCE OF THE CANTILEVER ARM OF THE UPPER
 LIGHT, ABOUT 8 MT. FAR FROM THE UPPER EXTREMITY.
 ARM WELDED DIRECTLY ON THE BRACING WITHOUT ANY PAD.
 VISUAL INSPECTION AND MAGNETIC PARTICLE INSPECTION CARRIED
 OUT WITH SATISFACTORY RESULT. SEE ENCLOSED REPORT.
 THIS IS A MEMO; NO REMARKS.

CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL OLIVEIRA
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAIS

RAPPORT DE CONTRÔLE MAGNÉTOSCOPIQUE MAGNETIC PARTICLE INSPECTION REPORT

Report
Report
Date 14-08-99
File

1540
14-08-99
1540

Ship / Coque
Contrat (ct) R-2200
Description Spirit of Columbus

Item (s) 1 rue 50 tonnes

Ref. — Matl. C/S Joint — Pc no. —

Finition de la soudure
Weid finish AS welded

Etendue du contrôle
Extent of surface tested 100% on fillet weld

Spécification —

Critères de rejet
Acceptance standards Fissuration 97 DC 14810 IN
J. P. Pimentel

Instrument CONTOUR Probe, B310 PD, Serial: 1173

METHOD(E) Continue / Continuous ☒ Résiduelle / Residual ☐

PARTICULES
PARTICLES

Fluorescent ☐ Sèches / Dry ☒ Couleur / Color
Visible ☐ Humides / Wet ☐ Yellow

MAGNÉTISATION

Prods ☐ Longitudinal / Coil ☐
Courant / Current AC ☐ DC ☐ Courant / Current AC ☐ DC ☐
Distance / Spacing Amp. Tours / Turns
Amperage Ratio D / L

Circulaire / Circular ☐ Yoke ☒
Dia. pièce / Part dia. Courant / Current AC ☐ DC ☒
Amperage AC ☐ DC ☐

Démagnétisation
Demagnetizing Solenoid Décroissance AC ☐ Démagnétiseur ☐
AC decreasing Demagnetizer

REMARQUES / REMARKS Damage on the boom of the crane,
Near the gate

Item (s): Acceptable ☒ Schéma inclus ☐
Non (not) acceptable ☐ Sketch attached

Opérateur /
Operator ALAN Deloat
Tech. App. C.E.S.B.: 6717
Auth. insp.

DISTRIBUTION
0. Fière - File
1. SAQ - QAD M.G. FIELDING
2. Lab.
3. Client - Cust. TESTS & TRIALS
4. Autre - Other

0

CA-NDE-102, REV. 05/89

CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL CUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

REGISTRO ITALIANO NAVALE



CHECKLIST FOR LOAD LINE RENEWAL SURVEYS

Survey under the provisions of the International Load Line Convention 1930 / 1966 and National Rules
(All references to Regulations relate to ILLC 1966)

(*)

67073	PETROBRAS TRENTASEI	QUEBEC	06.10.99	97DG14810/IN
RINA No	Ship Name	Port	Date	File code

Note: Items previously examined for RINA class, as demonstrated by files on board, need not be re-examined.

STABILITY, LOADING GUIDANCE INFORMATION

- 1 Check that stability information for the Master is available on board (Reg. 10.2) ☒
- 2 Check that approved loading manual / electronic instrument and relative operation manual is available on board (Reg. 10.1). ☒ NA

CHECKS REQUIRED FOR ALL SHIPS

- 3 Check that the initial Freeboard survey report is available on board ☐
- 4 Check that Freeboard marks are indicated on the ship's sides as stated in the Load Line Certificate (If necessary, re-mark and re-paint) (Regs. 4 to 9) ☒
- 5 Check that no alterations have been made to the hull or superstructures which would affect the calculations to determine the position of load lines ☒ R
- 6 Examination of the superstructure end bulkheads and operational test of their openings. (Reg.11 e 12) ☒
- 7 Confirm that the closing means of the following openings have been examined and found in effective and good weathertight conditions (Regs. 14 to 18)
 - a) Hatch covers (wooden covers, bearing surface of hatch covers, tarpaulins, battening down devices, securing bars, steel covers, gaskets and securing devices) ☒
 - b) Flush deck hatch covers ☒
 - c) Access openings to superstructures, deckhouses and houses on superstructures and deckhouses, from which companionways are leading down ☒
 - d) Companionways and access hatchways to spaces below the freeboard deck and superstructure decks ☒
 - e) Annular funnel spaces, skylights and doorways ☒
- 8 Confirm the weathertightness of flush deck hatch covers (to be proved by hose testing if deemed necessary) ☒
- 9 Confirm the weathertightness of cargo hatch covers with coamings (to be proved by hose testing, if deemed necessary) ☒ NA
- 10 Confirm that the following parts were examined and found in good condition:
 - a) Exposed parts of machinery spaces casings on freeboard deck or superstructure decks (structural conditions) (Regs. 17 and 26) ☒
 - b) Ventilators and air pipes, including their coamings and closing appliances (Regs. 19 and 20) ☒

(*) Mark: — = Not seen; X = Yes or now seen satisfactory; R = Remarks reported on forms VISITE 1 / 2; NA = Not applicable.

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- 11 Confirm the watertight integrity of the closing arrangements of shell ports (bow, side, stern) and other similar openings (Reg. 21) ☒ NA
- 12 Confirm the good working condition of scuppers, inlets and discharges and their positive means of closure (Reg. 22) ☒
- 13 Confirm the good working condition of the automatic non-return valves of sanitary discharges and their positive means of closure (Reg. 22) ☒
- 14 Confirm the good effectiveness and watertightness of side scuttles in the shell plating and superstructures, windows in deckhouse and their deadlights. (Reg. 23) ☒
- 15 Confirm examination and operational test of the shutters of freeing ports in bulkheads and other drainage means of the upper deck (Reg. 24) ☒
- 16 Confirm the efficiency of guardrails, handrails, gangways and underdeck passages (if any) (Reg. 25)
If guardrails are detachable, is there a sufficient number of stanchions available? ☒
- 17 Confirm the examination, when applicable, of the special requirements for type A (Reg. 26) ☒ NA
- 18 Confirm the examination and operational test of all appliances for subdivision (only for Type A and B-minus ships) (e.g. crossflooding fittings, controls, non-return valves etc.) (Reg. 27) ☒ NA

CHECKS REQUIRED FOR SHIPS CARRYING TIMBER DECK CARGOES (Regs. 42 to 44)

- 19 Confirm that lashing appliances in accordance with Regulation 44 or the approved lashing plan are available (chains, wire ropes, stretching screws, sliphooks, eye plates) ☐
- 20 Confirm the good effective condition of the appliances mentioned above ☐
- 21 Confirm that steering arrangements are effectively protected against damage by timber cargo ☐
- 22 Confirm that steering arrangements are accessible, as far as practicable ☐
- 23 Confirm that efficient provisions have been made for steering the ship in the event of a breakdown of the main steering arrangements ☐

RINA Surveyor name and signature

Date 06.10.99



REGISTRO ITALIANO NAVALE
A. Formenti

[Handwritten signature]

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DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

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CHECKLIST FOR SAFETY CONSTRUCTION AND LOAD LINE ANNUAL SURVEYS, AND HULL AND MACHINERY INTERMEDIATE / ORDINARY (ANNUAL) SURVEYS (To be filled in (*) and enclosed with form VISITE1 for intermediate surveys)

62023
RINA No

PETROBRAS TRENTASEI
Ship Name

QUEBEC
Port

06.10.99
Date

970614810/IN
File code

GENERAL

- 1 Check the validity, as appropriate, of all Certificates ☒
- 2 a) Confirm that entries have been made in the Log Book stating that the following have been checked or tested and found satisfactory not more than twelve (12) hours before the departure from any port (SOLAS 74/88, Reg. V/19.2). ☒
 - Main steering gear.
 - Auxiliary steering gear.
 - Remote control system.
 - Steering gear system and power failure alarms.
 - Low level alarm in the hydraulic reservoir of steering gear (applicable to all oil and chemical tankers, gas carriers and to ships other than the above built after 1/9/1984).
 - Communication system from bridge to steering gear compartment.
 - Bridge steering position.
 - Emergency power supply.
 - Rudder angle indicators.
- b) Confirm that emergency steering drills are recorded in the Log Book every three (3) months. ☒
- c) Ascertain that change-over procedure diagrams of steering gear are properly posted. ☒
- d) Confirm that all officers are reported to be familiar with steering gear change-over procedures. ☒
- 3 Confirm that the machinery, boilers and other pressure vessels associated piping systems and fittings are so installed and protected as to reduce to a minimum any danger to persons on board, due regard being given to moving parts, hot surfaces and other hazards (SOLAS 74/88, Regs. II-1/26). ☒
- 4 Confirm that the engineers' alarm is clearly audible in engineers' accommodation (SOLAS 74/88, Reg. II-1/38). ☒
- 5 Confirm that the precautions provided against shock, fire and other hazards of electrical origin are being satisfactorily maintained (SOLAS 74/88, Reg. II-1/45). ☒
- 6 Examination of the arrangements for gaseous fuel for domestic purposes (SOLAS 74/88, Reg. II-2/51). ☒
- 7 Examination and operational test of means of going astern (SOLAS 74/88, Reg. II-1/28). ☒
- 8 Check whether any new equipment has been fitted and, if so, confirm that it has been approved before installation and that any changes are reflected in the appropriate certificate. ☒
- 9 Confirm that means are provided to ensure that the machinery can be brought into operation from the dead ship condition without external aid (SOLAS 74/88, Reg. II-1/26). ☒

HULL

Confirm that the following items were examined and found in satisfactory condition, as far as can be seen:

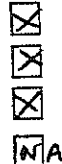
- 10 Weather decks, masts and lightning conductors - hatchways and their covers and coamings - vents and air pipes - casings, skylights - flush deck scuttles - deck houses, companionways, superstructures - side bow, stern doors, windows, deadlights, sidescuttles, windows, - scuppers - sanitary discharges and valves - freeing ports - gangways, walkways, handrails, guardrails, bulwarks and fittings for timber deck cargoes. ☒
- 11 Loading manual / electronic instrument and relative approved operation manual. ☒
- 12 Is approved stability information for the Master available on board? (ILCC 1966, Reg. 10.2). ☒
- 13 Freeboard marks. ☒
- 14 Mooring and anchoring equipment, as far as can be seen. ☒
- 15 Watertight doors in the watertight bulkheads examination; remotely and locally tested. ☒
- 16 Moveable ramps (not covered by Cargo Gear Register) operationally tested. ☒
- 17 Collision and other watertight bulkheads, as far as can be seen (SOLAS 74/88, Regs. II-1/11 and 14). ☒
- 18 No changes to the arrangements for structural fire protection are reported to have been made since last survey. (Any changes are to be reported under Remarks on forms VISITE1 or VISITE2). ☒

(*) Mark: — = Not seen; X = Yes or now seen satisfactory;

R = Remarks reported on forms VISITE1 or VISITE2; NA = Not applicable.

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- 19 Manual and/or automatic fire doors (where fitted) operationally tested.
- 20 Flame screens on vents to all bunkers, lub. oil tanks and slop tanks.
- 21 Closing arrangement of ventilators, annular funnel spaces, skylights, doorways.
- 22 Accessible compartments (holds, tweendeck and machinery spaces) inspected.
- 23 Main and auxiliary steering arrangements examination and operational test (see item 2)
- Main steering gear.
 - Auxiliary steering gear.
 - Steering gear remote control system.
 - Bridge steering position.
 - Steering gear emergency power supply.
 - Rudder angle indicators.
 - Steering gear system and power failure alarms.
 - Test to verify the full movement of the rudder.



HULL - TANKER REQUIREMENTS

- 24 Confirm that the following items were examined and found in satisfactory condition:

WEATHER DECK

- Hull plating, its closing appliances and hull watertight penetrations, as far as practicable.
- Cargo tank openings, including gaskets, covers, coaming, P/V valves and flame screens, as far as can be seen.
- Flame screens on vents to all bunker, oily ballast and oily slop tanks, as far as can be seen.
- Cargo, crude oil washing, bunker, ballast and vent piping systems, including vent masts and headers, pressure gauges on cargo discharge and cargo tank level indicators, operationally tested.

CARGO PUMP ROOMS

- Potential sources of ignition in or near the cargo pump rooms (e.g. loose seals, excessive product in bilges, excessive vapour, combustible materials, etc.) were eliminated.
- Access ladders.
- Pump room bulkheads and their penetrations.
- Piping Systems in pump room.

Special additional checks required for ENHANCED SURVEY PROGRAMME (see form CLASTR1).

Confirm that the Enhanced Survey Report File was on board.

HULL - BULK CARRIER REQUIREMENTS:

- 25 Confirm that the following items were examined and found in satisfactory condition:

- Hull plating and its closing appliances, as far as can be seen
- Hull watertight penetrations, as far as practicable

HATCH COVERS AND COAMINGS

- No unapproved changes made since the last survey
- Hatch covers and tightness devices of longitudinal, transverse and intermediate cross junctions.
- Clamping devices, retaining bars, cleating, chain or rope pulleys, guides, track wheels and stoppers.
- Wires, chains, gypsies and tensioning devices.
- Hydraulic systems essential to closing and securing, safety locks and retaining devices.

Special additional checks required for ENHANCED SURVEY PROGRAMME for bulk carriers over 10 years (see form CLASTR2).

Confirm that the Enhanced Survey Report File was on board.

HULL - SHIPS OF PARTICULAR TYPE OR WITH SPECIAL NOTATIONS

- 26 Confirm that special arrangements provided for the following types or notations entered on the class certificate were examined and found in satisfactory condition, as far as can be seen:
- Rec Oil, Treat Oil, AP, Re, Re Salv, Pcv (cable ship), Underwater Vehicles and Diving Systems, Drilling Unit, FFO, IPD, SPMQ, Eli, MAN, NAU, IV(x,y). (NOTE: underline the appropriate notations)

HULL - BALLAST SPACES USED FOR SALT WATER,

- 27 other than double bottoms, where the protective coating was found in Poor condition and has not been renewed or no protective coating has been applied since the time of construction (See the relevant list on the survey status)
- List of spaces examined ALL SPACES

.....

- Have thickness measurements been carried out? NO

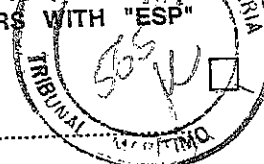
HULL INTERMEDIATE SURVEYS

ADDITIONAL OPERATIONS FOR OIL TANKERS AND BULK CARRIERS
OVER 5 YEARS OF AGE WITH "ESP" NOTATION

- 28 Overall and close-up surveys required according to the Enhanced Survey Programme (see forms CLASTR1/2).

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DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS



- 29 Internal examination of some representative cargo spaces (including cargo holds of gas carriers).

List of cargo spaces examined

HULL INTERMEDIATE SURVEYS ADDITIONAL OPERATIONS FOR BULK CARRIERS OVER 5 YEARS OF AGE AND OIL AND CHEMICAL TANKERS OVER 10 YEARS OF AGE (OTHER THAN THOSE WITH "ESP" NOTATION) ☐

- 30 Internal examination of some representative cargo spaces.

List of cargo spaces examined

HULL INTERMEDIATE SURVEYS ADDITIONAL OPERATIONS FOR ALL SHIPS OVER 5 YEARS OF AGE (OTHER THAN OIL TANKERS AND BULK CARRIERS WITH "ESP" NOTATION)

- 31 Internal general examination of Salt Water Ballast Spaces (For ships over 5 years and up to 10 years of age: examination of some "Representative" spaces. - For ships over 10 years of age: examination of "All" spaces - see the relevant list on the survey status) is required. If no visible structural defects, the examination may be limited to a verification that the protective coating remains efficient. ☒

- List of ballast spaces where the protective coating was found in Good or Fair condition: ALL

- List of ballast spaces where the protective coating was found in Poor condition or without protective coating: NO ONE

- Have thickness measurements been carried out? NO ☒

MACHINERY

MACHINERY AND ELECTRICAL PLANT

- 1 Machinery and boiler spaces general examination - Operational test of ventilation system (SOLAS 74/78, Reg. II-1/35). ☒
- 2 Means of communication between navigating bridge, mach. control room, alternative steering positions, tested. ☒
- 3 Bilge systems operationally tested; bilge wells, reach rods, pumps, and level alarms, where fitted, examined. ☒
- 4 Boilers, aux. boilers and pressure vessels, safety devices, foundations, controls, relieving gear, insulation, gauges and piping generally examined. ☒
- 5 Main propulsion system and essential auxiliary machinery generally examined and operationally tested, check of condition of any expansion joints in sea water system. ☐
- 6 Main source of electrical power system examined and operationally tested, as far as practicable. ☒
- 7 Emergency source of power, including control and change over arrangements, examined and operationally tested. ☒
- 8 Automation equipment and/or remote control system of main propulsion system (if fitted) generally examined and operationally tested. ☐
- 9 Planned Maintenance System PMS (if fitted) has been audited (the relevant report is to be sent to the H.O.). ☒
- 10 Tailshaft Monitoring System TMS (if fitted): check records of lubricating oil analysis (carried out by Owners every six months), oil consumption and bearing temperature. ☒
- 11 Ship Management System SMS / SMSQ, (if fitted), has been audited. ☐

MACHINERY - FIRE FIGHTING SYSTEMS AND EQUIPMENT

- 12 Fire control plans (properly ~~and permanently~~ posted). ☒
- 13 Fire and/or smoke alarm and detection systems (manual/automatic) examined and operationally tested, as far as practicable. ☒
- 14 Water fire-extinguishing system (main and emergency fire pumps are to be tested to demonstrate that the two required jets of water could be provided simultaneously from different hydrants). ☒
- 15 Fire hoses, nozzles, applicators and spanners examined ☒
- 16 CO₂ (carbon dioxide) and/or Steam fire-extinguishing system, inspection and operational test. ☒
- CO₂ bottle dates: Last checking oct. 99 Last hydrotest 1994 Last pipe blowing Sept. 99
- 17 Halon fire-extinguishing system, inspection and operational test. ☒
- Halon vessels: Date of last checking Date of last hydrotest

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DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

- 18 Foam and/or fire extinguishing system, inspection and operational test. Date of last recharging of foam-forming liquid Sept. 99; Sample of foam forming liquid taken for analysis see.
- Nitrogen bottles: Date of last checking EMPTY Date of last hydrotest Oct. 99
- 19 Pressure Water-Spraying fire-extinguishing system, inspection and operational test.
- 20 Sprinkler fire-extinguishing system, inspection and operational test.
- 21 Semi-portable, portable fire extinguishers and deck movable foam-type units inspection and operational test.
- Date of last foam recharging of deck movable foam-type units (if any) ---
- 22 Fireman's outfits and other equipment - inspection and operational test (air bottles are to be hydrotested at every Special Survey). ☒
- 23 Remote controls for stopping fans and machinery and shutting off fuel oil supplies in machinery spaces - examination and operational test. ☒
- 24 Emergency escape routes examined for confirmation that they were efficient and free from obstructions. ☒

MACHINERY - ADDITIONAL OPERATIONS FOR OIL TANKERS

- 25 Cargo, bilge, ballast and stripping pumps generally examined including gland seals and pump foundations; electrical and mechanical remote operating and shutdown devices checked for proper operation. ☐
- 26 Electrical installations in dangerous zones - general examination and checking for confirmation of absence of potential sources of ignition. ☐
- 27 Confirm that the cargo pump room ventilation system was operative, ducting intact, dampers were operative and screens clean. ☐

MACHINERY - INERT GAS SYSTEM (IIQ) (Where fitted)

- 28 Piping system and all components generally examined and found free of signs of corrosion or gas/effluent leakage. ☐
- 29 All inert gas blowers operationally tested; blower failure alarm and power supply failure alarm tested. ☐
- 30 Scrubber or blower room ventilation system operationally tested. ☐
- 31 Deck water seal filling and draining system operationally tested and found without evidence of water carry-over. ☐
- 32 Non-return valve operationally tested. ☐
- 33 All remote operated or automatically controlled valves, including flue gas isolating valves, operationally tested. ☐
- 34 Interlocking feature of the soot blowers examined and operationally tested. ☐
- 35 Checking that gas pressure regulating valve automatically closes when the inert gas blowers are secured. ☐
- 36 Checking of safety devices, as far as practicable, using simulated conditions, where necessary. The following alarms were tested: ☐
- High oxygen content in the inert gas main.
 - Low gas pressure in the inert gas main.
 - Low water level in the deck water seal.
 - Checking automatic shut down of blowers in event of low water pressure / high water level in the scrubber and high temperature of inert gas.
 - High temperature of gas in the inert gas main.
 - Low water pressure to the scrubber.
 - High water level in the scrubber.
- 37 Checking, by means of calibration gas, of the portable and fixed oxygen measuring equipment. ☐
- 38 Inert Gas System examined under working conditions. ☐

MACHINERY INTERMEDIATE SURVEY

ADDITIONAL OPERATIONS FOR OIL AND CHEMICAL TANKERS OVER 5 YEARS OF AGE

- 39 Cargo, COW system and its fittings, ballast, steam, bunker and vent pipes, vent masts and headers - examination, with hydrostatic test or thickness measurements or others testing, if considered necessary. ☐
- 40 Electrical equipment and cables examined in dangerous zones and spaces such as cargo pump rooms and areas adjacent to cargo tanks, in order to ascertain: ☐
- a) Absence of defective explosion-proof lights and fixtures. ☐
 - b) Absence of improperly installed wiring, non-approved lighting or other electrical equipment and dead ended wiring. ☐
 - c) Insulation resistance of the circuits. (A recent record of testing can be considered acceptable). ☐

NOTE: For Gas Carriers, Chemical Tankers, Car Carriers and Ships with special notations IAQ, IAP, IFQ the appropriate check lists are to be used.

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Date Quebec 6.10.99

JOSE CARLOS PIMENTEL CUSMAO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

RINA Surveyor name and signature



REGISTRO ITALIANO NAVALE

R. Formenti

[Signature]



REGISTRO ITALIANO NAVALE

RAPPORTO PER VISITA OBBLIGATORIA ANNUALE, INTERMEDIA, RINNOVO O OCCASIONALE MARPOL 73/78
REPORT FOR MARPOL 73/78 MANDATORY ANNUAL INTERMEDIATE, RENEWAL OR OCCASIONAL SURVEY

RAPPORTO PER NAVE DIVERSA DA PETROLIERA - Report for Ship other than oil tanker															
NOME DELLA NAVE - Name of Ship						NUMERO R.L.N.A. R.I.N.A. Number		RAPPORTO N° Report NO.							
1	2	3	4	5	6	7	8	9	10	11	12				
PETROBRAS TRENTASEI						6	7	0	7	3	1	4	8	1	0
NOMINATIVO INTERNAZIONALE Signal letters		NAZIONALITÀ Nationality		PORTO DI IMMATRICOLAZIONE Port of Registry		STAZZA LORDA Gross Tonnage		97/DC/1							
I COL		ITALIAN		NAPOLI		34481 GT									

DA COMPILARE SOLO NEL CASO DI VISITE ESEGUITE IN ITALIA
To be filled in only in case of surveys carried out in Italy

In considerazione delle operazioni ora eseguite possono essere accreditate le seguenti visite:

[illegible]

N.B. IN CASO DI VISITA OCCASIONALE CONTEMPORANEA AD UNA VISITA PERIODICA DOVRÀ ESSERE COMPILATA LA SOLA RIGA DI VISITA PERIODICA E GLI ACCESSI RELATIVI ALLA VISITA OCCASIONALE DOVRANNO ESSERE SOMMATI A QUELLI DELLA VISITA PERIODICA

- i) Il sottoscritto raccomanda il rinnovo del certificato MARPOL 73/78 corredato dell'appropriato elenco delle soluzioni costruttive adottate e delle apparecchiature installate

The undersigned hereby recommends the renewal of the MEARPOL 73/78 Confinement supplemented by the appropriate Record of Construction and Equipment

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- ii) Apposta vidimazione sul certificato esistente per
Endorsement of the existing Certificate. Entry made for

JOSÉ CARLOS PIMENTEL CUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Visita annuale Annual survey	Visita intermedia Intermediate survey
---	--

~~Cancellare la voce non pertinente~~
~~Delete item not appropriate~~

TO BE FILLED IN ONLY IN CASE OF SURVEYS CARRIED OUT ABROAD

First survey Date _____ Last survey Date _____ No of visits _____

IL PRESENTE RAPPORTO SI COMPONE DELLE PAG. N°
This Report consists of the sheets No.

This Report consists of the sheets No.

QUEBEC

DATA 06-10-1999



REGISTRO ITALIANO NAVALE

Formenti

ELENCO OPERAZIONI - IN ACCORDO CON LE DISPOSIZIONI DELLA CONVENZIONE INTERNAZIONALE MARPOL 1973 COME EMENDATA DAL PROTOCOLLO 1978

Check list

ANNESSE I
- TO MEET THE REQUIREMENTS OF THE INTERNATIONAL CONVENTION MARPOL 1973 AS MODIFIED BY THE PROTOCOL 1978 - ANNEX I



PARTE A
Section

1. Documentazione
Documentation

Giorno Day 29
Mese Month 02
Anno Year 00

1.1 Validità del certificato I.O.P.P./di conformità Annesso I (*)
Validity I.O.P.P./Annex I conformity certificate (*)

1.2 Validità del certificato di classe
Class Certificate validity

1.3 La nave è dotata del "Registro degli oli minerali" rispondente alle norme e debitamente compilato?
Is the ship provided with the "Oil Register Book" complying with the Rules and the due entries were made?

1.4 Esistono a bordo Certificati attestanti il tipo approvato, relativi a separatori di acque oleose, separatori/filtro, monitor di sentina, allarmi 15ppm od in alternativa tali apparecchiature sono dotate di targhette indicanti gli estremi di approvazione?
Are Certificates for type approved of oily water separating equipment, oil filtering equipment, bilge monitor, 15ppm alarm on board or alternatively a.m. equipments are fitted with a metal plate in which the particulars of approval are marked by stamping?

2. Le seguenti attrezzature sono state esaminate esternamente e le loro condizioni trovate soddisfacenti?
Have following equipments been externally examined and found satisfactory?

2.1 Impianto di separazione o di separazione/filtraggio delle acque oleose (TWO ITEMS)
Oily water separating or separating/filtering system

2.2 Monitor di sentina e relativi dispositivi di indicazione e registrazione
Bilge monitor and relating indicating and recording devices

2.3 Valvole scarico fuori bordo
Overboard discharge valves

2.4 Allarme a 15 ppm (CON PUNTO 2.5)
15 ppm bilge alarm

2.5 Dispositivo automatico di arresto dello scarico fuori bordo nel caso di contenuto di olio maggiore di 15ppm
Devices for automatic stopping of overboard discharge in case of oil content greater than 15 ppm

2.6 Mezzi riconosciuti idonei per il trattamento delle morchie (omogenizzatori, inceneritori, ecc.)
Recognized means for the control of sludge (homogenizers, incinerators, etc.)

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3. Depositi combustibile, morchie, acque oleose di sentina
Fuel, sludge, oily bilge water tanks

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DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

3.1 È stato accertato che i depositi per olio combustibile non vengono utilizzati anche per acqua di zavorra?
Has it been proved that the fuel tanks are not used for carriage of ballast water?

3.2 Le condizioni dei seguenti depositi e delle relative pompe e tubazioni sono soddisfacenti?
Have the following tanks and relating pumps and piping been found satisfactory?



i) Depositi morchie _____
Sludge tanks

☒ ☐

ii) Depositi acque oleose di sentina _____
Oily bilge water tanks

☒ ☐

3.3 Le condizioni degli impianti per lo sbarco a terra del contenuto dei depositi delle acque oleose di sentina e delle morchie sono soddisfacenti?
Have the installation for discharge of oily bilge waters and sludges to shore receptions been found satisfactory?

☒ ☐

3.4 Le tubolature per lo scarico a terra dei residui sono dotate della flangia di collegamento unificata in accordo con la Regola 19?
Are the pipelines for the discharge of residues to the shore reception facilities fitted with the standard discharge connection in compliance with Regulation 19?

☒ ☐

4. Rispetti Spare

4.1 Esiste a bordo una quantità sufficiente di:
Sufficient storage is on board of:

i) Parti di rispetto per il separatore come previsto nella monografia del costruttore _____
Spare parts for separator as recommended by manufacturer's user manual

☒ ☐

ii) Carta o appositi nastri per la registrazione _____
Consumables for recorders

☒ ☐

PARTE B Section

Questa parte deve essere compilata solo in occasione di visita intermedia o di rinnovo (in aggiunta alla Parte "A")
This section is to be filled in only when an intermediate or a renewal survey is carried out (in addition to section "A")

5. Le seguenti installazioni sono state esaminate, sottoposte a prova di funzionamento e riscontrate in ordine:
Following installations have been checked, tested and proved to be in good working condition:

5.1 Impianti di separazione o di separazione/filtraggio acque oleose di sentina _____
Oily water separating or separating/filtering systems

☒ ☐

5.2 Pompe degli impianti di separazione o di separazione/filtraggio con relative tubazioni sentina e connessioni alle casse morchie _____
Separating or separating/filtering systems pumps with relevant bilge piping and pipes to sludge tanks

☒ ☐

5.3 Tutte le valvole olio, acqua, vapore e drenaggio. Comando manuale ed automatico dello scarico fuori bordo _____
All oil, water, steam and drain valves. Manual and automatic stop of overboard discharge

☒ ☐

5.4 Monitor di sentina _____
Bilge monitor

☒ ☐

5.5 Allarme 15 ppm sentina _____
15 ppm bilge alarm

☒ ☐

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JOSÉ CARLOS PIMENTEL CUSMÃO
DIRECTOR
DIVISÃO DE SERVIÇOS CADETOARIAS



(Da elencare con riferimento alla voce del rapporto)
(List referring to the item numbers in the report)

- VESSEL IS FITTED WITH MATRIX SEPARATOR AND SKIM
PILE FOR THE TREATMENT AND SEPARATION OF OIL-
WATER PRODUCTION -

NO PREVIOUS DOCUMENTATION FOUND AND NO INDICATION
IN THE EXISTING CERTIFICATE

- VESSEL IS FITTED WITH FOUR FURTHER OIL CONTENT METERS
INTO THE LOWER HULLS, IN ORDER TO PERMIT THE
DIRECT DISCHARGE OF BILGE WATER TO SEA - PENDING
THE PROBLEMS AFFECTING ONE OF THEM (SPARE PART
MISSING) AND THE PRESENCE OF OIL IN THE BILGES
BECAUSE OF MAINTENANCE OPERATIONS ON THE HYDRAULIC
ACTUATORS FOR THE BALLAST/BILGE VALVES, THE SAME
OIL CONTENT METERS ARE TO BE CONSIDERED OUT OF
SERVICE AND THE BILGE WATER TO BE SENT TO
THE SEPARATORS -

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DIVISÃO DE SERVIÇOS CARTORIAS

PORTO

QUÉBEC

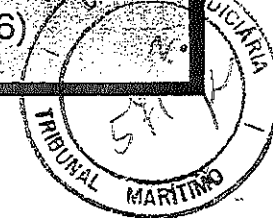
DATA

06.10.99



REGISTRO ITALIANO NAVALE
R. Formenti

INTERNATIONAL LOAD LINE CERTIFICATE (1966)



N. 99 QUE 16

issued under the provisions of the International Convention on Load Lines, 1966
(hereinafter referred to as "the Convention")

under the authority of the Government of

REPUBLIC OF ITALY

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by

REGISTRO ITALIANO NAVALE

JOSÉ CARLOS PIMENTEL JORNÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Name of ship and RINA number **PETROBRAS TRENTASEI (RI 67073)**
Distinctive number or letters **ICOL** IMO number **8946566** Length (L) ⁽¹⁾ **112,780**
Freeboard assigned as: ⁽²⁾ **New ship**
Type of ship ⁽³⁾ **B with increased freeboard**
Port and number of registry **NAPOLI - 66 (Reg.Int.)**

FREEBOARD from the deck line			LOAD LINE		
Tropical (T)	-	mm	-	mm	above S
Summer (S)	14583	mm	Upper edge of line through centre of ring		
Winter (W)	-	mm	-	mm	below S
Winter North Atlantic (WNA)	-	mm	-	mm	below S
Timber Tropical (LT)	-	mm	-	mm	above LS
Timber Summer (LS)	-	mm	-	mm	above S
Timber Winter (LW)	-	mm	-	mm	below LS
Timber Winter North Atlantic (LWNA)	-	mm	-	mm	below LS
Subdivision Marks:					
C.1	-	mm	-	mm	
C.2	-	mm	-	mm	
C.3	-	mm	-	mm	

This certificate consists of 3 pages

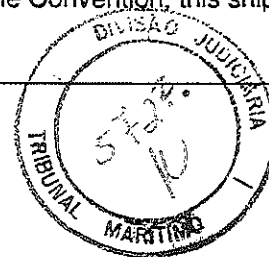
Freeboards and load lines which are not applicable need not be entered on the certificate

(1) 2 (8) of the Convention is to be entered The ship's length L, in metres, as defined in Article 2 (8) of the Convention is to be entered

(2) "New ship" or "Existing ship" is to be entered

(3) "A" or "B" or "B with reduced freeboard" or "B with increased freeboard" is to be entered

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.



Place	Signature and seal
Date	
Place	Signature and seal
Date	
Place	Signature and seal
Date	
Place	Signature and seal
Date	

The provisions of the Convention being fully complied with by this ship, the validity of this certificate is, in accordance with the Article 19 (2) of the Convention, extended until:

Place	Signature and seal
Date	

E COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS FIMMENTE CUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



RI 67073

Numero RINA
RINA Register No

CERTIFICATO DI CLASSE CERTIFICATE OF CLASS

Numero IMO
IMO number

N. 9600661

Nome
Name

PETROBRAS TRENTASEI (*)
-SPIRIT-OF-COLUMBUS-

Nomin. Int.le
Dist. No. / letters

ICOL

Categoria
Category

PIATTAFORMA MOBILE CON COLONNE STABILITA' PROPULSA
COLUMN STABILIZED MOBILE PLATFORM (SELF-PROPELLED)

Armatore
Owner

S.A.N.A. S.P.A. SOCIETA' ARMAMENTO NAVI APPOGGIO - ROMA

Cantiere costruttore - Luogo di costruzione
Shipyard - Place of build

FINCANTIERI CANTIERI NAVALI ITALIANI S.P.A. -
(GE) - GENOVA

Porto immatr. - N.
Port of registry - No.

NAPOLI - 1921- 66 (Reg. Int.) (*)

Bandiera
Flag

ITALIA

Data di costruzione
Date of build

02.1995

Data di entrata in esercizio
Date of commissioning

02.1995

Lunghezza (costr.)
Length (moulded)

112.78 m

Stazza lorda
Gross tonnage

34481 GT

Larghezza (costr.)
Breadth (moulded)

77.68 m

Stazza netta
Net tonnage

10344 NT

N. motori principali
No. of main engines

4

Altezza (costr.)
Depth (moulded)

36.57 m

Lunghezza fuori tutto
Overall length

112.78 m

Potenza totale
Total power

9000 kW

SI CERTIFICA che la nave suddetta e' stata sottoposta agli accertamenti prescritti dai vigenti Regolamenti del RINA e, sulla base di quanto accertato, e' stata classificata con le seguenti caratteristiche di classe (*)

THIS IS TO CERTIFY that the above ship has been surveyed in accordance with the RINA Rules and, on the basis of the survey report submitted, has been assigned the class (*)



100 - A - 1.1 - Nav IL ; Perf - Prod - FPO

vincolate al bordo libero di cui al relativo certificato.
based on the freeboard indicated in the Loadline Certificate.

con notazioni particolari
with special notations

ELI ; ID

per un periodo di classe di (anni : mesi)
for a period of class of (years : months)

5 : 0

a decorrere dal
running from

02.1995

Questo certificato sara' considerato nullo qualora non siano osservate le prescrizioni dei vigenti Regolamenti.
This certificate will be invalidated whenever the requirements of the Rules are not complied with.

Rilasciato a Genova
Issued at

in data 07.03.1996
on

(*) Amended by Office
Quebec, 20.09.99



REGISTRO ITALIANO NAVALE
R. Formenti

[Signature]

COPIA FIEL DI DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL SUMMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

Il Direttore Generale
The Director General

[Signature]

Questo certificato e' valido solo se contiene anche le pagine indicanti le date di scadenza delle visite periodiche e quelle contenenti le vidimazioni.
This certificate is only valid provided it also contains the pages with the expiry dates of periodical surveys and the endorsements.

(*) Il servizio e la navigazione sono descritti a pagina 2.
Trade and service are described at page 2.

Ex nomi
Former ship's names



Tipo di visita Type of survey	Scadenza Due date	Periodicita' Frequency	Tolleranza(mesi) Range(months)	
SPECIALE SPECIAL	02.2000			
ORDINARIA SCAFO HULL ORDINARY	02.1996	Annuale (02.1996 - 02.1997 - 02.1998 - 02.1999) Annual (02.1996 - 02.1997 - 02.1998 - 02.1999)	-3	+3
ORDINARIA MACCHINA MACHINERY ORDINARY	02.1996	Annuale (02.1996 - 02.1997 - 02.1998 - 02.1999) Annual (02.1996 - 02.1997 - 02.1998 - 02.1999)	-3	+3
CALDERINA 90 AUX BOILER 90	08.1997	2 anni e 6 mesi dalla precedente esecuzione 2 years and 6 months from last survey		+6
CALDERINA 91 AUX BOILER 91	08.1997	2 anni e 6 mesi dalla precedente esecuzione 2 years and 6 months from last survey		+6
CALDERINA 92 AUX BOILER 92	08.1997	2 anni e 6 mesi dalla precedente esecuzione - prova di tenuta annuale 2 years and 6 months from last survey - due tightness test annually		+6
CALDERINA 93 AUX BOILER 93	08.1997	2 anni e 6 mesi dalla precedente esecuzione - prova di tenuta annuale 2 years and 6 months from last survey - due tightness test annually		+6
CARENA DRYDOCKING	08.1997	2 anni e 6 mesi dalla precedente esecuzione 2 years and 6 months from last survey		+6
SCHOTTEL DR. SCHOTTEL (STBD)	02.2000	5 anni dalla precedente esecuzione 5 years from last survey		+6
SCHOTTEL SN. SCHOTTEL (PORT)	02.2000	5 anni dalla precedente esecuzione 5 years from last survey		+6

È COPIA FIEL DEL DOCUMENTO ORIGINAL

Servizio / Trade

1. Perforazione del fondo marino, per la ricerca o per lo sfruttamento del fondo stesso e del relativo sotto-suolo.
2. Produzione di idrocarburi estratti dal sottosuolo a mezzo di specifiche sistemazioni.
3. Trattamento e trasbordo di idrocarburi liquidi estratti dal sottosuolo marino.

JOSÉ CARLOS PIMENTEL CUSNÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓRIAS

1. Drilling operations of the seabed, for the exploration or exploitation of resources beneath the same seabed.
2. Production of hydrocarbons extracted from the seabed by means of specific arrangements.
3. Process and off loading of liquid hydrocarbons extracted from the seabed.

(*) Amended by Office
Quebec, 06.10.99

Navigazione / Service

INTERNAZIONALE LUNGA A RIMORCHIO (*)

Unrestricted Service in Tow (*)



REGISTRO ITALIANO NAVALE
L. Fagnanti

[Signature]

LA CLASSE DELLA NAVE SARA' AUTOMATICAMENTE SOSPESA NEL CASO IN CUI LE VISITE SPECIALI, INTERMEDIE O ORDINARIE NON SARANNO ESEGUITE ENTRO LE TOLLERANZE AMMESSE SULLE DATE DI SCADENZA.
THE VESSEL'S CLASS WILL BE AUTOMATICALLY SUSPENDED IF THE SPECIAL SURVEY OR THE INTERMEDIATE SURVEY OR THE ORDINARY (ANNUAL) SURVEYS ARE NOT CARRIED OUT WITHIN THE END OF THEIR RESPECTIVE RANGE-DATES.

Il Certificato di classe e' rilasciato in base alle norme e condizioni specificate nei Regolamenti del RINA di cui l'interessato ha preso esatta conoscenza, accettandole incondizionatamente con particolare riguardo alle clausole seguenti: il Registro Italiano Navale esplica le sue mansioni a mezzo di funzionari o altre persone che giudica munite di ogni requisito di idoneita' e competenza per i compiti loro affidati. Nella sua qualita' di perito il RINA esprime esclusivamente opinioni e valutazioni di conformita' alle proprie norme regolamentari e non assume in alcun caso (ove pure i suoi pareri fossero richiesti in materia non espressamente regolamentata) la responsabilita' facenti capo ai progettisti, agli amatori, ai costruttori, ai collaudatori, ai cantieri e ad ogni persona od Ente tenuta per legge o per contratto a fornire garanzie, soggetti tutti che mantengono inalterate le rispettive responsabilita' anche nel caso di interventi consultivi del RINA. Per quanto attiene ai compiti direttamente assunti e svolti al di fuori di quelli delegati di cui al comma successivo, il RINA risponde a termini di legge. Nell'ambito dei compiti al RINA delegati dai competenti Ministeri, eventuali responsabilita' possono essere ravvisate solo in caso di dolo o colpa grave dei funzionari o dei soggetti incaricati. In nessun caso la responsabilita' - quale che sia l'entita' del danno lamentato - potra' eccedere un valore pari a 5 volte la misura dei compensi percepiti dal RINA come corrispettivo dei servizi prestati o prestazioni rese, dai quali o dalle quali sia derivato il danno lamentato.

The Certificate of class is issued on the basis of the requirements and conditions as specified in the RINA Rules of which the interested party has acquired full knowledge, accepting them unconditionally, with particular regard to the following clauses: RINA carries out its duties through officers or other persons it considers possess all the requirements of suitability and competence for the tasks which have been assigned to them. In its capacity as expert, RINA only expresses opinions and evaluations of compliance with its own rule requirements and does not, in any case whatsoever, (even if its opinions are requested on matters not expressly covered by Rules) assume the liabilities pertaining to the designers, shippers, builders, test inspectors, shipyards or any person or organization responsible by law or contractually for providing guarantees for all of whom the respective liabilities remain unchanged even in the case of consultative actions by RINA. For what concerns the tasks taken on and carried out directly, other than those delegated in the following, RINA is answerable in law terms. Within the context of the tasks delegated to RINA by the Italian Administration, liability can only be recognized in the case of fraud or gross negligence by the officers or the persons engaged. In no case shall the liability, regardless of the amount of damage reported, exceed a value equal to 5 times the total of the fees received by RINA as consideration of the services rendered from which the damage reported derives.

Localita' e data della visita
Place and date of survey

QUEBEC - February 1998

It is to certify that the auxiliary oil-fired boilers
periodical survey was carried out in Quebec on the
4th of November 1997 - Class confirmed as per
previous entry -

Porto
Port

QUEBEC

data
date

11 February 1998

Firma e timbro
Signature and sealMARITIMO
R. Formenti

pratica/file

Localita' e data della visita
Place and date of survey

QUEBEC - October 1999

Commencement of special Survey no 1, hull and machi-
nery ordinary surveys, hull and machinery occasional
surveys for alterations and recommissioning survey
carried out - Class confirmed for the single voyage
in towing conditions from Quebec to Sept Iles (Q.C.)

Porto
Portdata
dateFirma e timbro
Signature and seal

pratica/file

Localita' e data della visita
Place and date of survey

into the St. Lawrence River not later than 31 October 1999.

It is to certify that the process equipments, Turbo/Gas
Generators nos 1, 2 and 3, helideck and propulsion appa-
ratus are temporary out of service - Aux. oil fired boiler
RINA plan no. 90 and 91 dismantled and put out of service.

Porto
Portdata
dateFirma e timbro
Signature and seal

pratica/file

Localita' e data della visita
Place and date of survey

Fitted on board an additional diesel/generator 750 kW.
The notation "PERF" is temporary suspended

Porto
Port

Quebec

data
date

October 6, 1999

Firma e timbro
Signature and sealREGISTRO ITALIANO NAVALE
R. Formenti

pratica/file

Localita' e data della visita
Place and date of surveyFirma e timbro
Signature and seal

pratica/file

Porto
Portdata
date

E COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

CERTIFICATO INTERNAZIONALE DI BORDO LIBERO (1966)
INTERNATIONAL LOAD LINE CERTIFICATE (1966)

N. 9600159

rilasciato in ottemperanza alle disposizioni della Convenzione internazionale sulle linee
di carico del 1966 (nel seguito richiamata come "la Convenzione")
issued under the provisions of the International Convention on Load Lines, 1966
(hereinafter referred to as "the Convention")

per incarico del Governo della
under the authority of the Government of

REPUBBLICA ITALIANA
REPUBLIC OF ITALY

dal
by

(*) Amended by Office
Quebec, 20.09.99



REGISTRO ITALIANO NAVALE
R. Formenti

[Signature]

REGISTRO ITALIANO NAVALE

PETROBRAS TRENTASEI (*)

Nome della nave e Numero RINA
Name of ship and RINA number

~~SPIRIT OF COLUMBUS~~ (RI 67073)

Nominativo internazionale
Distinctive number or letters

ICOL

Numero IMO
IMO number

8916566

Lunghezza (L) (1)
Length (L) (1)

112.780

Bordo Libero assegnato come (2)
Freeboard assigned as (2)

Nave nuova
New ship

Tipo di nave (3)
Type of ship (3)

B con bordo libero aumentato
B with increased freeboard

Porto e numero d'immatricolazione
Port and number of registry

NAPOLI - 4924 66 (Reg. Int.) (*)

BORDO LIBERO misurato a partire dalla linea di riferimento <i>FREEBOARD from the deck line</i>			POSIZIONE DELLA LINEA DI CARICO <i>LOAD LINE</i>		
Tropicale (T) <i>Tropical</i>	—	mm	—	mm	al di sopra di E <i>above</i>
Estivo (E) <i>Summer</i>	12203	mm	—	mm	Lembo superiore della linea posta al centro del disco <i>Upper edge of line through centre of ring</i>
Invernale (I) <i>Winter</i>	—	mm	—	mm	al di sotto di E <i>below</i>
Invernale Nord Atlantico (INA) <i>Winter North Atlantic</i>	—	mm	—	mm	al di sotto di E <i>below</i>
Tropicale Legname (TL) <i>Timber Tropical</i>	—	mm	—	mm	al di sopra di EL <i>above</i>
Estivo Legname (EL) <i>Timber Summer</i>	—	mm	—	mm	al di sopra di E <i>above</i>
Invernale Legname (IL) <i>Timber Winter</i>	—	mm	—	mm	al di sotto di EL <i>below</i>
Invernale Nord Atlantico Legname (INAL) <i>Timber Winter North Atlantic</i>	—	mm	—	mm	al di sotto di EL <i>below</i>
Marche di compartimentazione: <i>Subdivision Marks:</i>					
C.1	—	mm	—	mm	
C.2	—	mm	—	mm	
C.3	—	mm	—	mm	

COPIA FIDELIO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORÁRIOS

Questo certificato è composto di 3 pagine / *This certificate consists of 3 pages*

I bordi liberi e le linee di carico che non sono applicabili possono non essere riportati nel certificato / *Freeboards and load lines which are not applicable need not be entered on the certificate*

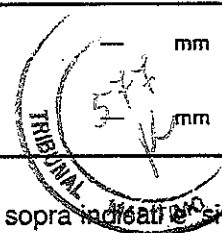
(1) Indicare la lunghezza della nave L, in m, come definita nell' Articolo 2 (8) della Convenzione / *The ship's length L, in metres, as defined in Article 2(8) of the Convention is to be entered*

(2) Indicare "Nave nuova" oppure "Nave esistente" / *"New ship" or "Existing ship" is to be entered*

(3) Indicare "A" o "B" o "B con bordo libero ridotto" o "B con bordo libero aumentato" / *"A" or "B" or "B with reduced freeboard" or "B with increased freeboard" is to be entered*

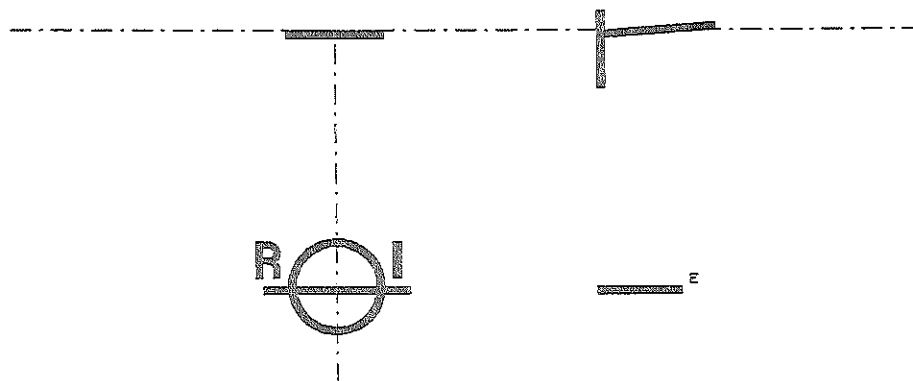
Abbuono per acqua dolce per tutti i bordi liberi, eccettuati quelli per trasporto di legname
Allowance for fresh water for all freeboards other than timber

Abbuono per acqua dolce per i bordi liberi per trasporto di legname
Allowance for fresh water for timber freeboards



Il lembo superiore della linea di riferimento rispetto alla quale sono misurati i bordi liberi sopra indicati è situato a 0 mm dal ponte a murata

The upper edge of the deck line from which these freeboards are measured is 0 mm from the deck at side



Data della visita iniziale
Date of initial survey

03.1995

SI CERTIFICA che questa nave e' stata visitata, che sono stati assegnati i bordi liberi e che le linee di carico sopra indicate sono state marcate secondo le disposizioni della Convenzione Internazionale sulle linee di carico del 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.

Il presente certificato e' valido fino al
This certificate is valid until

29.02.2000

Rilasciato a
Issued at

Genova

Il
on

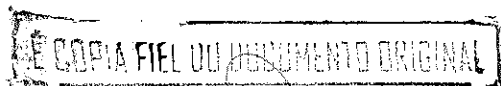
07.03.1996

La suddetta validita' del presente certificato e' subordinata all' effettuazione delle visite periodiche in accordo con le disposizioni dell' Articolo 14 (1) (c) della Convenzione.

The above validity of this certificate is subject to periodical inspections in accordance with Article 14 (1) (c) of the Convention.

Il sottoscritto dichiara di essere debitamente autorizzato dal sopracitato Governo a rilasciare il presente certificato.

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



JOSÉ CARLOS RIMENTEL GUIMÃO
DIVISÃO DE SERVIÇOS CARTORIAIS

REGISTRO ITALIANO NAVALE

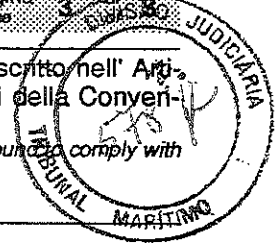
Quando la nave parte da un porto situato su un fiume o in acque interne, puo' essere ammessa un'immersione aumentata di quanto corrisponde al peso del combustibile e degli altri materiali che saranno consumati nel percorso tra il porto di partenza ed il mare.
When a ship departs from a port situated on a river or inland waters, deeper loading shall be permitted corresponding to the weight of fuel and all other materials required for consumption between the point of departure and the sea.

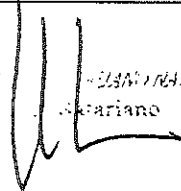
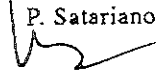
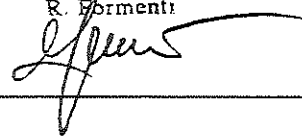
Quando una nave naviga in acqua dolce di densita' pari all'unita', la linea di carico appropriata puo' essere oltrepassata di quanto corrisponde all'abbuono di bordo libero di cui sopra. Quando la densita' dell'acqua e' maggiore dell'unita', puo' essere dato un abbuono proporzionale alla differenza fra 1,025 e la densita' effettiva.

When a ship is in fresh water of unit density the appropriate load line may be submerged by the amount of the fresh water allowance shown above. Where the density is other than unity, an allowance shall be made proportional to the difference between 1,025 and the actual density.

SI DICHIARA che, in occasione della visita periodica eseguita in conformita' con quanto prescritto nell' Articolo 14 (1) (c) della Convenzione, la nave e' risultata rispondente alle pertinenti disposizioni della Convenzione stessa.

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.



Luogo Place PALERMO	Firma e timbro Signature and seal   REGISTRO ITALIANO NAVALE P. Satariano
Data Date 10 GIU. 1996	
Luogo Place PALERMO	Firma e timbro Signature and seal   REGISTRO ITALIANO NAVALE P. Satariano
Data Date 12 GIUGNO 1997	
Luogo Place QUEBEC	Firma e timbro Signature and seal   REGISTRO ITALIANO NAVALE R. Formenti
Data Date 11 FEBRUARY 1998	
Luogo Place QUEBEC	Firma e timbro Signature and seal   REGISTRO ITALIANO NAVALE R. Formenti
Data Date 28 MAY 1999	

Poiche' la nave risponde pienamente alle disposizioni della Convenzione, la validita' del presente certificato, in accordo con quanto stabilito nell'Articolo 19 (2) della Convenzione, e' estesa fino al:

The provisions of the Convention being fully complied with by this ship, the validity of this certificate is, in accordance with the Article 19 (2) of the Convention, extended until:

Luogo Place	Firma e timbro Signature and seal
Data Date	

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL CUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



SANA

~~—SPIRIT OF COLUMBUS—~~ PETROBRAS TRENTASE
PIATTAFORMA SEMI-SOMMERGIBILE
PER PRODUZIONE E PERFORAZIONE

E COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

PIANO DI EMERGENZA DI BORDO CONTRO
L'INQUINAMENTO DA OLI MINERALI

In conformità alla
Reg. 26 dell'Allegato 1
della MARPOL 73/78

*) Amended by Office
Quebec, 06.10.99



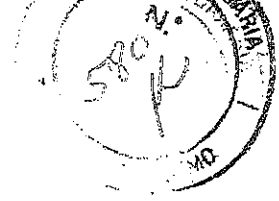
REGISTRO ITALIANO NAVALE

R. Formenti

[Signature]

RINA	DIREZIONE GENERALE HEAD OFFICE
APPROVATO in conformità alla Reg. 26 della Convenzione Marpol 73/78 per conto dell'Amministrazione ITALIANA	
N. 8001743	
Genova, 20/09/1995	
 REGISTRO ITALIANO NAVALE	

Eseguito	Autore	Data
FINCANTIERI Cantieri Navali Italiani S.p.A. DIVISIONE COSTRUZIONI MERCANTILI	Unità Op. MC-APP M. Busetto <i>[Signature]</i>	04.01.1995



SANA
~~—SPIRIT OF COLUMBUS—~~ PETROBRAS TRENTASEI (*)
SEMI-SUBMERSIBLE PRODUCTION/DRILLING PLATFORM

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

SHIPBOARD OIL POLLUTION
EMERGENCY PLAN

Complying with
MARPOL 73/78 Annex I, Reg.26

(*) Amended by Office
Quebec, Oct. 6, 1997



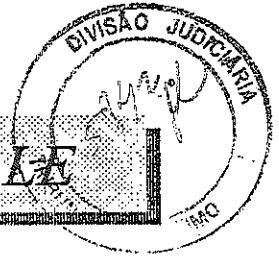
REGISTRO ITALIANO NAVALE
R. Formenti

[Signature]

RINA	DIREZIONE GENERALE HEAD OFFICE
APPROVED In compliance with Regulation 26 of 73/78 Marpol Convention on behalf of the Administration of <u>ITALY</u>	
N. 8001743	
Genoa. 20/09/1997	
 REGISTRO ITALIANO NAVALE	

Issued by	Authors	Date
 FINCANTIERI Cantieri Navali Italiani S.p.A. DIVISIONE COSTRUZIONI MERCANTILI	Op. Unit MC-APP M. Busetto <i>[Signature]</i>	04.01.1995

JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS



REGISTRO ITALIANO NAVALE

RI 67073
Numero RINA
RINA Register No.

CERTIFICATO DI CLASSE CERTIFICATE OF CLASS

8916566
Numero IMO
IMO number

N. 9600661

Nome
Name
PETROBRAS TRENTASEI (R)
—SPIRIT OF COLUMBUS—

Nomin. Int.le
Dist. No. / letters

ICOL

Categoria
Category
PIATTAFORMA MOBILE CON COLONNE STABILITA' PROPULSA
COLUMN STABILIZED MOBILE PLATFORM (SELF-PROPELLED)

Armatore
Owner
S.A.N.A. S.P.A. SOCIETA' ARMAMENTO NAVI APPOGGIO - ROMA

Cantiere costruttore - Luogo di costruzione
Shipyard - Place of build
FINCANTIERI CANTIERI NAVALI ITALIANI S.P.A. -
(GE) - GENOVA

Porto immatr. - N.
Port of registry - No.
NAPOLI - 192+ 66 (Reg. Int.) (*) Bandiera
Flag
ITALIA

Data di costruzione Date of build	02.1995	Data di entrata in esercizio Date of commissioning	02.1995
Lunghezza (costr.) Length (moulded)	112.78 m	Stazza lorda Gross tonnage	34481 GT
Larghezza (costr.) Breadth (moulded)	77.68 m	Stazza netta Net tonnage	10344 NT
Altezza (costr.) Depth (moulded)	36.57 m	Lunghezza fuori tutto Overall length	112.78 m
		N. motori principali No. of main engines	4
		Potenza totale Total power	9000 kW

SI CERTIFICA che la nave suddetta e' stata sottoposta agli accertamenti prescritti dai vigenti Regolamenti del RINA e, sulla base di quanto accertato, e' stata classificata con le seguenti caratteristiche di classe (*)

THIS IS TO CERTIFY that the above ship has been surveyed in accordance with the RINA Rules and, on the basis of the survey report submitted, has been assigned the class (*)

★ 100 - A - 1.1 - Nav IL ; Perf - Prod - FPO

vincolate al bordo libero di cui al relativo certificato.
based on the freeboard indicated in the Loadline Certificate.

con notazioni particolari
with special notations

✠ ELI ; ID

per un periodo di classe di (anni : mesi)
for a period of class of (years : months)

5 : 0

a decorrere dal
running from

02.1995

Questo certificato sara' considerato nullo qualora non siano osservate le prescrizioni dei vigenti Regolamenti.
This certificate will be invalidated whenever the requirements of the Rules are not complied with.

Rilasciato a Genova
Issued at

in data 07.03.1996
on

(R) Amended by Office
Quebec, 20.09.99



REGISTRO ITALIANO NAVALE
R. Formenti

[Signature]

Il Direttore Generale
The Director General

[Signature]

Questo certificato e' valido solo se contiene anche le pagine indicanti le date di scadenza delle visite periodiche e quelle contenenti le vidimazioni.
This certificate is only valid provided it also contains the pages with the expiry dates of periodical surveys and the endorsements.

(*) Il servizio e la navigazione sono descritti a pagina 2.
Trade and service are described at page 2.

JOSE CARLOS PIMENTEL DUSMAO

DIRETTORE

CERTIFICATO INTERNAZIONALE PER LA PREVENZIONE DELL' INQUINAMENTO DA OLIO MINERALE
INTERNATIONAL OIL POLLUTION PREVENTION CERTIFICATE



No. 9600228

rilasciato in ottemperanza alle disposizioni della Convenzione Internazionale per la Prevenzione dell' inquinamento causato da navi, del 1973, come modificata dal relativo Protocollo del 1978 (nel seguito richiamata come "la Convenzione")
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 (hereinafter referred to as "the Convention")

per incarico del Governo della
under the authority of the Government of

REPUBBLICA ITALIANA
REPUBLIC OF ITALY

(*) Amended by Office
Quebec, 20.09.99



REGISTRO ITALIANO NAVALE
R. Formenti

[Signature]

dal
by

REGISTRO ITALIANO NAVALE

PETROBRAS TRENTASEI (*)

Nome della nave e Numero RINA Name of ship and RINA number	-SPIRIT OF COLUMBUS- (RI 67073)		
Nominativo internazionale Distinctive number or letters	ICOL	Stazza lorda Gross tonnage	34481 GT
Porto e numero d'immatricolazione Port and number of registry	NAPOLI -1921- 66 (Reg. Int.) (*)		

Tipo di nave:
Type of ship:

Petroliera(*) Oil tanker(*)	☐
Nave diversa da petroliera con cisterne del carico aventi le capacita' indicate nella Regola 2 (2) dell' Annesso I della Convenzione(*) Ship other than an oil tanker with cargo tanks coming under Regulation 2 (2) of Annex I of the Convention(*)	☐
Nave diversa da quelle di cui sopra(*) Ship other than any of the above(*)	☒

Questo certificato redatto su modello conforme a quello approvato con Decreto Ministeriale 25 gennaio 1985 e' composto di 2 pagine ed e' rilasciato su incarico del governo della Repubblica italiana ai sensi del Decreto Ministeriale 17 novembre 1982.
This certificate, drawn up on a form complying with that approved by the Italian Ministerial Decree dated 25 April 1985, consists of 2 pages and is issued under the authority of the government of the Republic of Italy under the provisions of the Italian Ministerial Decree dated 17 November 1982.

(*) Marcare la casella con (X) per indicare il tipo "pertinente" e con un trattino (-) per indicare i tipi "non pertinenti".
Entries in boxes shall be made by inserting either a cross (X) for the answers "yes" or "applicable" or a dash (-) for the answers "no" or "not applicable", as appropriate.

Al Certificato deve essere permanentemente allegato l' Elenco delle soluzioni costruttive adottate e delle apparecchiature installate sulla nave.
This Certificate shall be supplemented by a Record of Construction and Equipment.

8

RINA number [8] 67073	Name of ship	Gross Tonnage [8]	Flag of ship ITALIAN
Start of Survey 13.04.99	End of Survey 18.06.99	Place of Survey QUEBEC (QC.)	File [9] 87 DC 14810 IN

CLASS / "NAVIGABILITY" = (*) SURVEYS [3]	Spec (Ren) Survey [1]	Ord (Ann) Survey [1]	Intermediate Survey [1]	Continuous Survey [1]	Occasional Survey [1]	First Classification "Navigability" Survey [1]	Cert/Stat [4]	Expiry date of Cert/Stat
1 Hull				X	X			
2 Machinery				X	X			
3 Unmanned machinery space (IAQ/IAP/IAQ+IAP)(*)								
4 Refrigerating Plant (IFQ)								
5 Special notations (FFQ; NAU; SCC,.....) (*)								
6 Diving systems								
7 Dynamic positioning system (IPD)								

Item [5]	NORM	VS	AVA	Afloat	Q	12 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC	
9 Tailshaft (centre) [6]	NEW	COMP	ALT	PAR	with NDT	Q	13 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
10 Tailshaft (port) [6]	NEW	COMP	ALT	PAR	with NDT	Q	14 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
11 Tailshaft (stbd) [6]	NEW	COMP	ALT	PAR	with NDT	Q	15 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC

STATUTORY SURVEYS	Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat	STATUTORY SURVEYS	Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat
16 Load Line (INT/NA) (*) [3]	ANN			29 Dangerous Goods in Road Tanks			
17 Safety Construction				30 Dangerous Goods in Tank Containers			
18 Safety Equipment				31 Dangerous Goods in Packages			
19 Safety Radio				32 Cargo Gear - Cranes (ILO) [3]			
20 Safety Passenger				33 Cargo Gear - Derricks (ILO) [3]			
21 MARPOL Annex 1 (OPP/CONF/DICH) (*) [3]				34 Cargo Gear - Cranes (RINA) [3]			
22 Fitness Chemicals (COF/COF) (*)				35 Cargo Gear - Derricks (RINA) [3]			
23 Fitness Gases (COF/COF) (*)				36 "Itonetia" (passenger/cargo (*) ships) [3]			
24 Noxious Liquid Substances (IPPC)				37 Crude Oil Washing (COW)	AUT	OCC	
25 Sewage Pollution Prevention (ISPP)				38 Radar ascertainment	RIN	OCC	
26 Dangerous Goods in bulk (CHEM) [3]				39			
27 Dangerous Goods in bulk (GAS) [3]				40			
28 Carriage of vehicles				41			

..... SURVEY WAS CARRIED OUT IN ACCORDANCE WITH THE RELEVANT "CHECK LIST"

THIS IS THE FINAL REPORT ☒ THIS IS NOT THE FINAL REPORT: NARRATIVE REPORTS WITH RELEVANT ENCLOSURES WILL BE SENT LATER D

PARTIAL / COMPLETE (*) THICKNESS MEASUREMENTS CARRIED OUT ☐ RELEVANT REPORTS ARE ENCLOSED ☐

TOTAL ENCLOSURES No. 3 RELEVANT TO ITEM(S) 1-2-16

RECOMMENDATIONS / MEMO (*) were imposed / deleted / postponed / confirmed (") as stated on page 3

Type of Certificate or Statement	CC	DC	DN	DP	Date of VISA				Certificate				SURVEYORS
----------------------------------	----	----	----	----	--------------	--	--	--	-------------	--	--	--	-----------

Statement	Confirmation	Ident. No.	Surname
T			

	FORMENTI
--	----------

No visa in Class certificate	
------------------------------	--

[illegible]

BORIS BEZ

RECEIVED JAN 10 1964

1. The first part of the document is a list of names and addresses, which appears to be a directory or a list of contacts. The names are written in a cursive script, and the addresses are listed below them. The list includes names such as "John A. Smith", "John B. Smith", "John C. Smith", "John D. Smith", "John E. Smith", "John F. Smith", "John G. Smith", "John H. Smith", "John I. Smith", "John J. Smith", "John K. Smith", "John L. Smith", "John M. Smith", "John N. Smith", "John O. Smith", "John P. Smith", "John Q. Smith", "John R. Smith", "John S. Smith", "John T. Smith", "John U. Smith", "John V. Smith", "John W. Smith", "John X. Smith", "John Y. Smith", and "John Z. Smith".

100-443888-100

JOSE CARLOS PIMENTEL JUNIOR

DIVISÃO DE SERVIÇOS CARTORIAIS

Number VISA : Date Place

(*) Underline the appropriate word(s) or abbreviation(s).

() Enclose the appropriate word(s) or abbreviation(s)

Place and date: Quebec 18.06.99 Surveyors' names and signatures:  R. Formenti

Form: VISITE1-Rep-EG-05/94

SALT WATER BALLAST SPACES

(a) Spaces examined where no protective coating was applied from the time of construction:

(b) Spaces examined where the protective coating was found in POOR condition:

(c) Spaces examined where the protective coating was found in GOOD or FAIR condition:

FIRE FIGHTING SYSTEMS AND APPLIANCES

(a) Date of last check of CO2 bottles/vessels content:

(e) Date of last check of nitrogen bottles content:

(b) Date of last hydrotesting of CO2 bottles/vessels:

(f) Date of last hydrotesting of nitrogen bottles:

(c) Date of last check of HALON bottles/vessels content:

(g) Date of last renewal of foam forming liquid:

(d) Date of last hydrotesting of HALON bottles/vessels:

(h) Foam forming liquid sample taken for analysis (if required): ☐

SETTING UP OF SAFETY VALVES OF MAIN / AUXILIARY (*) BOILERS:

THE OUTSTANDING ITEMS FOR COMPLETION OF PART-HELD ORDINARY (ANNUAL) / INTERMEDIATE (*) HULL OR MACHINERY SURVEYS AND/OR MAIN / AUXILIARY BOILER SURVEYS (*) ARE AS STATED BELOW:

E COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSNÃO

DIRETOR

DIVISÃO DE SERVIÇOS CARTORIAIS

EXPLANATORY NOTES FOR FILLING IN THIS FORM:

[1] MARKS FOR SURVEY EXTENT

X or AL = Survey entirely carried out

IN = Commencement of Survey

CN = Continuation of Survey

CM = Completion of Survey

PC = Annual Survey of exhaust fired thermal oil heaters including visual inspection and tightness testing of heater tubes

[2] TYPE OF SURVEY

ANN = Annual Survey

AUT = Survey for authorization (for COW) (Item 37)

BIE = Biennial Survey (for Compasses)

NT = Intermediate Survey

LT = Load test (for Cargo Gear - Items 32 to 35)

OT = Occasional survey

QQA = Quadrennial Survey (for Cargo Gear - Items 32 to 35)

QUI = Quinquennial survey (for Cargo Gear - Items 32 to 35)

RIL = Initial Survey

RIN = Renewal Survey

VAR = Survey for Loadline variations (Item 16)

[3] OTHER NOTES ON SURVEYS

N.B.: "NAVIGABILITÀ" SURVEYS are Surveys to be carried out for the purpose of the issue, maintenance or renewal of the "Certificato di navigabilità" (Seaworthiness Certificate) under the provisions of Italian Safety Rules
"IDONEITÀ" SURVEYS are Surveys to be carried out for the purpose of the issue, maintenance or renewal of the national safety certificate called "Certificato di Idoneità" to passenger or cargo ships not subject to SOLAS under the provisions of Italian Safety Rules (Item 36)

INT/ITA = Survey for the purpose of the International/Italian Loadline Certificate, as appropriate (Item 16)

CONF = Certificate of compliance ("Conformità") to MARPOL Annex I (only for Italian flag ships not subject to MARPOL) (Item 21)

DICH = Statement of compliance ("Dichiarazione") to MARPOL Annex I (only for Italian flag ships not subject to MARPOL) (Item 21)

CHEM = Statement of compliance ("Attestazione") to Italian Statutory Regulations (only for Italian or foreign flag chemical tankers or gas carriers operating in Italy) (Items 26 and 27)

RINA = Survey for the purpose of RINA Certificate for cargo gear (only for cargo gear of Italian ships not required to be included in ILO cargo gear booklet) (Items 34 and 35)

[4] CERTIFICATES AND STATEMENTS

PRO = Provisional (Interim) Certificate issued

EXT = Validity of existing Certificate extended

CND = Conditional Certificate issued

DEF = Full term Certificate issued

N.B.: The square is to be left blank in the case of endorsements of existing certificates

[5] BOTTOM SURVEY

NORM = Survey NOT valid on account of a Special Survey

VS = Survey valid on account of a Special Survey

AVA = Survey in connection with a Damage Survey

Afloat: Mark the square with X to mean that an In-water Survey was carried out in lieu of a Docking Survey (see 3.2.3.2 of Ch. 3 of Section A of the Rules)

N.B.: The underwater inspection of the ship's bottom to postpone the Docking Survey is to be considered as an Occasional Survey

[6] TAILSHAFT SURVEY

NEW = Tailshaft renewed

COMP = Complete Survey

ALT = Alternate Modified Survey

PAR = Partial Survey

With NDT: Mark the square with X to mean that a surface crack detection of the propeller keyed connection to the tailshaft was satisfactorily performed

[7] TYPE OF CERTIFICATE OR STATEMENT

CC = Certificate of Class

DC = Class Statement

DN = Statement with a view to obtaining the "Certificato di navigabilità"

DP = Certificate of Class for Pleasure Vessels

[8] FOREIGN FLAG SHIPS NOT CLASSED WITH RINA

In the case of these ships, the value of Gross Tonnage and, in lieu of RINA number, Distinctive number or letters are to be indicated

[9] FILE

Year, Office code, File number and File code are to be specified, in the above order, according to the File Record Book of the RINA Office concerned

(*) Underline the appropriate word(s) or abbreviation(s)

CARGO GEAR INFORMATION

TYPE OF CARGO GEAR SURVEYED	TYPE OF SURVEY(S) CARRIED OUT	NUMBER OF CARGO GEAR SURVEYED AND RELEVANT SWL IN TONNES											
		SWL ≤ 10			10 < SWL ≤ 20			20 < SWL ≤ 40			SWL > 40		
		No.	SWL	Test	No.	SWL	Test	No.	SWL	Test	No.	SWL	Test
DERRICKS	First Survey / Quinquennial Survey												
	Quadrennial Survey												
	Annual Survey												
CRANES	First / Annual (*) Survey												
CARGO ELEVATORS	First / Annual (*) Survey												

DERRICKS, CRANES AND/OR CARGO ELEVATORS OUT OF SERVICE, IF ANY, ARE TO BE STATED BELOW (specify number and relevant SWL)

INFORMATION FOR INVOICING

SURVEYS CARRIED OUT IN ITALY OR ABROAD BY RINA EXCLUSIVE SURVEYORS

INFORMATION ON TONNAGE MEASUREMENTS

Tonnage measurements carried out according to Regulations of:

The ship had already been measured according to Regulations of:

Tonnage re-measurements carried out: ☐ Tonnage measurements carried out for sister ship(s) accepted: ☐

INFORMATION ON SUBDIVISION AND STABILITY

Inclining test carried out: ☐ Light ship weight test carried out: ☐

Subdivision and/or damage stability calculations carried out: ☐

Calculations as above carried out for sister ship(s) accepted: ☐

OTHER INFORMATION

For visaed or issued class documents: Fees for visaed or issued statutory documents:

Phone / Telex expenses: Miscellaneous expenses:

In the case of surveys carried out outside the RINA Branch Office area, state whether travel tickets (if any) have been supplied by the Shipowner or by RINA

Expenses for travel tickets as above when supplied by RINA:

Survey(s) carried out together with the following RINA Agent abroad:

The invoice is to be sent to the Shipowner (yes/no): If not, the invoice is to be sent to the following address:

..... Client Code

Through..... Through Code

SURVEYS CARRIED OUT OUTSIDE ITALY BY RINA/GL JOINT EXCLUSIVE STATIONS OR AGENCIES ABROAD

Number of documents issued or visaed without inspections onboard being carried out: Number of Km covered by car and corresponding fees:

Total time spent on surveys (hours/min.): Other car travelling expenses (tolls, etc.):

Occasional survey time (hours/min.): Travelling expenses other than by car (thickets, etc.):

Travelling time (hours/min.): Phone/Telex expenses:

Out of office time (hours/min.): Miscellaneous expenses:

Overtime (hours/min.):

E COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUIMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Underline the appropriate word(s) or abbreviation(s)

Place and date: Head of Office or Agent (Abroad)

Nave: SPIRIT OF COLUMBUS
ShipNumero Registro
Register Number

596 64073

- (2) ☒ ALLEGATO AL RAPPORTO N. 97 DG 14810 IN
Enclosed to survey report
- ☐ PROMEMORIA DI SERVIZIO
Memorandum

1/2

(1) VISITA: CONTINUOUS HULL SURVEY ~ OCC. SURVEY
Survey

OPERAZIONI E LAVORI ESEGUITI - OSSERV. — Items and repairs carried out - Remarks	GRUPPO			ELEMENTO					*			(3)
	15	16	17	18	19	20	O	R	D			77
- SURVEY OF DRAIN TANK 27 S					20	X						
- " DRAIN TANK 28 S					50	X						
- " DRY TANK 37 PU					139	X						
- " DRY TANK 37 SU					140	X						
- " DRY TANK 38 PU					141	X						
- " DRY TANK 38 SU					142	X						
- " GLYCOL TANK					169	X						
- " BASE OIL TANK					170	X						
- " VOID SPACES (x)					101		X					
- " VOID SPACES (x)					102		X					
- (x) AFTER PORTIONNING IN TWO SEPARATED COMPARTMENTS												
- SURVEY OF F.W. (DRILLING) TANK 15 P					35		X					
- SURVEY OF NEW GLYCOL TANK (i.w.o. previous mud tanks)							X					
- SURVEY DRY TANK (new) 29 P							X					
- " " 29 S							X					
- " " 30 P							X					
- " " 30 S							X					
- " " 62 P							X					
- " " 62 S							X					
- " " 63 P							X					
- " " 63 S							X					
- " CHAIN LOCKER 11 P							X					
- " " 9 S							X					
- " " 12 P							X					
- " " 10 S							X					
- " DRY TANK 46 P							X					
- " " 46 S							X					
- " " 45 P							X					
- " " 45 S							X					
- " " 46 a P							X					
- " " 46 a S							X					
- " " 45 a P							X					
- " " 45 a S							X					
- " (modified) 29 a P										X		
- " " 29 a S										X		
- " " 30 a P										X		
- " " 30 a S										X		
- " (new) 64 P										X		
- " " 64 S										X		
- " " 65 P										X		

Porto/Place: QuebecData/Date: 18.6.99

I tecnici/The surveyors:

R. Formenti

Il foglio potrà essere utilizzato quale rapporto di visita solo nel caso di Visita Speciale e/o continuativa scafo, macchina, I.F. riempiendo le caselle alle colonne 15-77. In questo caso dovranno essere utilizzati fogli separati per lo scafo, la macchina e l'I.F. rispettivamente.
The sheet can be used as survey report only for Special Survey and/or continuous hull, machinery, refrigerating plant filling the boxes in way of the number 15-77. In such case separate sheets will be used for hull, machinery and refrigerating plant.

- (2) Porre "X" nella casella corrispondente alla voce che indica come si intende utilizzare il modulo.
Mark "X" in way of the box showing the kind it is intention to use the form.

- (3) Porre "1" quando gruppo visitato al completo riscontrato in ordine.
Mark "1" when the group is thoroughly surveyed and found in order.

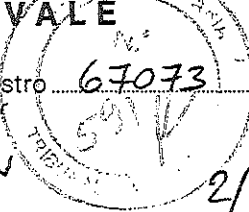
EXCOPIA FIEL DO DOCUMENTO ORIGINAL
JOSE CARLOS PIMENTEL OLIVEIRA
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



REGISTRO ITALIANO NAVALE

Nave: SPIRIT OF COLUMBUS
ShipNumero Registro 67073
Register Number

- (2) ☒ ALLEGATO AL RAPPORTO N. 97 DG 14810 IN
Enclosed to survey report
- ☐ PROMEMORIA DI SERVIZIO
Memorandum

(1) VISITA: HULL CONTINUOUS SURVEY - OCCASIONAL SURVEY
Survey

OPERAZIONI E LAVORI ESEGUITI - OSSERV. — Items and repairs carried out - Remarks		GRUPPO				ELEMENTO			*		(3)	
		15	16	17	18	19	20	O	R	D	77	
- SURVEY OF DRAIN TANK (NEW)	65 S								X			
- PRESSURE TEST OF DRY TANK (NEW)	30 S								X			
-	63 S								X			
-	45 S								X			
-	45 a S								X			
-	30 a S								X			
-	65 S								X			
-	OF CHAIN LOCKER								X			
-	OF DRY TANK								X			
-	63 P								X			
-	45 P								X			
-	45 a P								X			
-	30 a P								X			
-	65 P								X			
-	OF CHAIN LOCKER								X			
-	OF DRY TANK								X			
-	62 S								X			
-	46 S								X			
-	46 a S								X			
-	29 a S								X			
-	64 S								X			
-	OF CHAIN LOCKER								X			
-	OF DRY TANK								X			
-	62 P								X			
-	11 P								X			
-	46 P								X			
-	46 a P								X			
-	29 a P								X			
-	64 P								X			

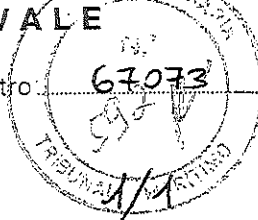
E' COPIA FIEL DEL DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL DOS SANTOS
DIRECTOR
DIVISÃO DE SERVIÇOS GERAISREGISTRO ITALIANO NAVALE
R. FormentiPorto/Place: Québec Data/Date: 18.06.99 I tecnici/The surveyors

Il foglio potrà essere utilizzato quale rapporto di visita solo nel caso di Visita Speciale e/o continuativa scafo, macchina, I.F. riempiendone caselle e colonne 15 + 77. In questo caso dovranno essere utilizzati fogli separati per lo scafo, la macchina e l'I.F. rispettivamente.
The sheet can be used as survey report only for Special Survey and/or continuous hull, machinery, refrigerating plant filling the boxes in way of the number 15 + 77. In such case separate sheets will be used for hull, machinery and refrigerating plant.

(2) Porre "X" nella casella corrispondente alla voce che indica come si intende utilizzare il modulo.
Mark "X" in way of the box showing the kind it is intention to use the form.

(3) Porre "1" quando gruppo visitato al completo riscontrato in ordine.
Mark "1" when the group is thoroughly surveyed and found in order.



- Numero Registro
Register Number

--	--	--

I tecnici / *The surveyors*

1402 162

ALLEGATO AL FORM
ATTACHED TO FORM

VISITE 2

FOGLIO
SHEET

1 of 1

Porto di visita Port of survey	Data della visita Date of survey	Estremi della pratica File			
QUEBEC		97	DC	14810	IN

Nome della nave
Name of ship

SPIRIT OF COLUMBUS

Numero RINA
RINA number

67073

INTERNATIONAL LOAD LINE REPORT

During the up-grading works, vessel was modified. With reference to the load line requirements, general characteristics of the hull and the load line appliances were also modified as follows:

- 1 Central coirson was closed by a plug bottom, according approved dwg, and two new structural floors fitted at tank top deck and main deck level
- 2 Zone between tank top deck and main deck, fr. 30-44 stbd side $10668 \div 27432$ from CL, previously intended for mud tanks and bilge pumps, open to the central coirson
- 3 no. two stability boxes added over the lower hulls, aftwards, according approved dwg
- 4 no. four complex fairlead and stability boxes added i. w.o. the four columns, according approved dwg.
- 5 new watertight divisions realized in the void spaces into the FWD columns and into the ex-base oil tanks in the aft columns
- 6 New heavy structure added to the upper platform; see on Aft deck extension for heavy equipment, aft the fr. 60, according approved dwg
- 7 Round house on main deck, stbd side, removed.
- 8 Ex drilling house i.w.o. the central derrick, widely opened on each side; new complete deck fitted at drill floor level
- 9 New side opening, stbd side, in turbine room no 4, realized. It is closed by bolted steel cover, whose relevant structure was accepted by Head Office.
- 10 All the previous external openings are unchanged; for the presence of new very large skids on main deck, aft, it was necessary to reroute the aft vent pipes and

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JOSÉ CARLOS PIMENTEL RUSMÃO
DIRETOR

DIVISÃO DE SERVIÇOS CARTORIAS

ventilation ducts, possibly at holes of the new equipment, partially afterwords of the aft deck extension. Mainly height, dimensions and closing appliances were confirmed in the new positions.

- 11 New vent pipes from new stability boxes and other new spaces realized till the main deck (see approved clup no 7020943 dated 15.10.98)
- 12 New ventilation ducts fitted from Gas turbine room no 4, just under the main deck on stbd side, about 2.5 m over the 2nd deck (L.L. deck) - these ducts have the same characteristics of the other ventilation ducts.
- 13 New ventilation ducts fitted over the floor at El 48768 on Port side, having similar characteristics
- 14 The central coaming, between El 33792 and 34354 was adjusted for the risers penetrations, according the approved clups no 7019387 and 7019296 dated 15.12.98. For the relevant openings at side and closing appliances, see FAX ITO/05879/NGU dated 2.3.99, confirming that the Load line conditions are complying to.
- 15 Similar penetrations for deluge pipings realized on main deck, stbd side, for nos 7 pipes having ϕ 300 mm about, with the same closing appliances as per no 14, in correspondence of the deluge system room (ex mud tanks compartment)
- 16 Suitable handrails for the crew protection fitted everywhere, on all floors, platforms, decks and stairs, in conformity with the Load Line Requirements and according the relevant approved clup.
- 17 A Flush-deck hatch 2500 x 2500 realized on main deck, ex mod pool area (watertight deck, covered but open spaces), closed by belted steel cover
- 18 Several penetrations for pipes, of various dimensions, realized on main deck as well as item no 15; some type of sealing should be provided to.
- 19 Man NOBLE DENTON requested the repositioning of load line marks at draft 22.00 m, according the new stability information - Job not made, waiting the approval of the Head Office -

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Nome e firma del Tecnico del RINA
RINA Surveyor's name and signature

R. Formenti

Date
Date Québec, 18.06.99

JOSE CARLOS PIMENTEL GUSMÃO
DIRECTOR
DIVISÃO DE SERVIÇOS CARTORIAS



REGISTRO ITALIANO NAVALE

Québec, 18.06.99

Alla DIREZIONE GENERALE
Via Corsica, 12
16128 GENOVA (ITALIE)
ITO (sig Gualco)
NAV (sig Maggiani)

Prot. QUE 158/RFO

Oggetto : M/V SPIRIT OF COLUMBUS - RI-67073
File 97 DG 14810 IN

Si invia in allegato il Mod. VISITE 1 per le visite
eseguite sull'unità in oggetto a Quebec (Qc) nel periodo
Aprile - Giugno 1999.

Nello stesso rapporto sono stati inseriti i seguenti
documenti :

- Rapporto circa le condizioni di Bordo Libero
- Note al piano schematico scafo
- Note e nuovo elenco "items" del piano schematico macchine

Distinti saluti

REGISTRO ITALIANO NAVALE

R. FORMENTI

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JOSÉ CARLOS PIMENTEL GUIMARÃES
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



JOB 97 DG 14810 IN

Data 18.06.89

SPIRIT OF COLUMBUS - RI. 67073

Pag. 1/4 sigla RFO

REGISTRO ITALIANO NAVALE

NOTE AL PIANO SCHEMATICO MACCHINA

RIFERIMENTO : DESCRIPTION OF ITEMS- MAIN ENGINES PLANT

1064 NON ESISTE (FUTURE)

ECCATTELLO DOCUMENTO ORIGINAL

1065 TRATTASI DI 2 MOTORI COASSIALI

JOSE CARLOS PIMENTEL OLIMPIO
DIRETOR

1066 TRATTASI DI 2 MOTORI COASSIALI

DIVISÃO DE SERVIÇOS CARTÓRIAS

1067 NON ESISTE (FUTURE)

- AUXILIARY ENGINES PLANT

AGGIUNGERE 1 L2 DIESEL ENGINE FOR AUX. GENERATOR (FWD STBD el 48768)

L2 DIESEL ENGINE FOR AIR-COMPRESSOR (EMER. GEN. ROOM)

- AUXILIARY BOILERS PLANT

APPORTARE LE SEGUENTI MODIFICHE (GLI ALTRI ITEMS INALTERATI):

116-117-124-125 ELEMENTI RELATIVI AD IMPIANTI DI PROCESSO

192 SBARCATO, NON ESISTE

193 UP-GRADED IN GAS BOOSTER COMPRESSOR, RELATIVO AD
IMPIANTI DI PROCESSO

194-195-196-197-198 SBARCATI - NON ESISTONO

199 UP-GRADED IN: CHEMICAL INJECTION (WATER) PACKAGE

(el. 36576 STBD-CL OUT) IMPIANTO DI PROCESSO

200 UP-GRADED IN: CHEMICAL INJECTION (OIL) PACKAGE

(el. 36576 STBD-CL IN) IMPIANTO DI PROCESSO

201-202-203-204 SBARCATI - NON ESISTONO

205 ELEMENTO RELATIVO AD IMPIANTI DI PROCESSO

206 CHLOROPAC UNIT: NON PER: AUXILIARY BOILERS PLANT

- LUBRICATING OIL SYSTEM114-115 INCORPORATE ENTRO I TRUBISTERS E TEMPORANEAMENTE
SBARCATI - DA DEPENDARE

120-121 EX BASE OIL PUMPS - SBARCATI - NON ESISTONO

149 SOLUBLE OIL PUMP: NON RELATIVA AL CUB. OIL SYSTEM

HYDRAULIC OIL SYSTEM (VEDERE PAG. 1/BIS AGGIUNTA)

244-245 SBARCATI - NON ESISTONO

- HYDRAULIC POWER PACKAGE (UQ-121003) - NEW (FOR
S.W. PUMPS) (el 36576 CL/AFT, fr. 46-48)



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REGISTRO ITALIANO NAVALE

NOTE AL PIANO SCHEMATICO MACCHINA

- HYDRAULIC OIL SYSTEM (SEGUE DA PAG 1)

1-23 INALTERATI

✓ STEERING SYSTEM CONTROL HYDRAULIC OIL POWER UNIT

(ESISTENTE) el SS14, prop. Thruster room PORT, AFT

← Idem c.s. el SS14, prop. Thruster room STRD, FWD

136-137-138 INALTERATO

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REGISTRO ITALIANO NAVALE

NOTE AL PIANO SCHEMATICO MACCHINA

FUEL AND DIESEL OIL SYSTEM

AL MOMENTO NON SI HA NOTIZIA DI CAMBIAMENTI

COOLING SYSTEM (da modificare completamente)

(Macchinari esistenti)

6	S.W. PUMP	FWD pump room PORT
90	S.W. PUMP	AFT pump room PORT
92	S.W. PUMP	FWD pump room STBD
110	S.W. PUMP	AFT pump room STBD

✓ 155 F.W. PUMP el 36576 AFT. STBD fr. 58

✓ 129 F.W. PUMP el 36576 AFT. PORT. OUT fr. 53

✓ 139 AUX. F.W. PUMP el 36576 AFT. PORT. IN fr. 53

✓ 154 F.W. COOLER el 36576 AFT. STBD

✓ 128 F.W. COOLER el 36576 AFT. PORT

(Macchinari di nuova installazione)

vedere a pagina 3	S.W. SUPPLY CAISSON PUMP	el 8000, central caisson	FWD
	S.W. SUPPLY CAISSON PUMP	id. c.s.	CL
	S.W. SUPPLY CAISSON PUMP	id. c.s.	AFT

BILGE AND BALLAST SYSTEM

✓ 246 NON ESISTE

5 STRIPPING PUMP - esclusivamente servizio 23 YORVA

114 STRIPPING PUMP - esclusivamente servizio 23 YORVA

CARGO SYSTEM (NON ESISTE)FIRE EXTINGUISHING SYSTEM

AL MOMENTO NON SI HA NOTIZIA DI CAMBIAMENTO DI MACCHINARI

COMPRESSED AIR SYSTEM

208 DRIVEN BY AUX. DIESEL ENGINE

SPECIAL PLANT (L'ELENCO VIENE RISCritto COMPLETAMENTE)

7-18-29-109 DRIVING S.W. PUMP (inalterato)

✓ 139-140-141-143-144-145-146-147-148 NON ESISTONO

✓ 182-204-220 NON ESISTONO



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NOTE AL PIANO SCHEMATICO MACCHINA

✓ 174 - S.W. INJECTION PUMP (existing, up-graded) el 3000 FWD
STBD. IN fr. 25

X 175 - S.W. INJECTION PUMP (id. c.s.) el 3000 FWD STBD. OUT

X 176 - S.W. INJECTION PUMP (id. c.s.) el 3000 FWD PORT. IN

X 177 - S.W. INJECTION PUMP (id. c.s.) el 3000 FWD PORT. OUT

X 182 - S.W. INJECTION BOOSTER PUMP (existing, up-graded) el 3000
AFT STBD. IN fr. 49

X 183 - S.W. INJECTION BOOSTER PUMP (id. c.s.) el 3000 AFT STBD. OUT

X 184 - S.W. INJECTION BOOSTER PUMP (id. c.s.) el 3000 AFT. PORT. IN

X 185 - S.W. INJECTION BOOSTER PUMP (id. c.s.) el 3000 AFT PORT. OUT

X 186 - S.W. FEED PUMP (renewed) el 3000 AFT STBD. IN fr. 46

X 187 - S.W. FEED PUMP (id. c.s.) el 3000 AFT. STBD. OUT

✓ 188 - S.W. FEED PUMP (id. c.s.) el 3000 AFT PORT. IN

✓ 192 - S.W. FEED PUMP (id. c.s.) el 3000 AFT PORT. OUT

146 - 117 - 124 - 125 up-graded - posizione inalterata

111 - S.W. FILTRATION PACKAGE el 3000 AFT PORT fr. 45 ÷ 50

112 - S.W. FILTRATION PACKAGE el 3000 AFT STBD fr. 45 ÷ 50

206 - 234 invariati

118 - 119 invariati

156 - 157 invariati

158 - 159 - 160 - 161 - 162 invariati

168 - 169 invariati

172 HOT WELL invariato (Aux. boilers plant)

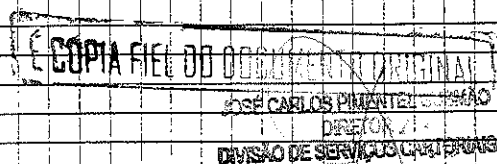
AGGIUNGERE, QUALI NUOVI ITEMS:

195 - S.W. SUPPLY CAISSON PUMP (condotta da motore elettrico) 6.6kv)
el 8000 circa, entro tubi strutturali installati nel Central
Caisson FWD

196 - S.W. SUPPLY CAISSON PUMP - Idem c.s. el 8000 CL

197 - S.W. SUPPLY CAISSON PUMP - Idem c.s. el 8000 AFT

per servizio DELUGE, RAIN FIRE, S.W. SUPPLY, AUX. COOLING





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NOTE AL PIANO SCHEMATICO PIACCHINA

- ANTI-BIDFOULING UNIT el 42766 FWD. STBD
- LIQUID RING DRAIN TANK PUMP (ESISTENTE) el 3000 AFT
PORT. IN fr. 50
- LIQUID RING DRAIN TANK PUMP (ESISTENTE) - el 3000 AFT
PORT. OUT fr. 50
- LIQUID RING DRAIN TANK PUMP (ESISTENTE) - el 3000 AFT
STBD. IN fr. 50
- LIQUID RING DRAIN TANK PUMP (ESISTENTE) - el 3000 AFT
STBD. OUT fr. 50

- PLAN NUMBER NOT CONNECTED TO SYSTEM

193 ✓ GAS BOOSTER COMPRESSOR (INCORPORA ANCHE IL N° 235)
el 42676 STBD. AFT fr 42443

237 ✓ GAS BOOSTER/COMP. PROCESS PACKAGE - el 42676 STBD
CL fr. 35439

205 INALTERATO

199 - 200 CIA' PRECEDENTERENTE INDICATI

236 IMPIANTO COMPLETAMENTE RINNOVATO - el 36576 AFT. STBD. OUT

189 - 190 IN UNICO SKID - el 36576 AFT. STBD. IN

91 - 93 INALTERATO

118 - 119 INALTERATO

128 - 129 - 154 - 155 INALTERATO

- AUX. FRESH WATER PUMP (ESISTENTE) el 36576 PORT. IN

156 - 157 INALTERATO

158 - 159 HOT F.W. CIRCULATING PUMPS - INALTERATO

160 - 161 - 162 INALTERATO

168 - 169 INALTERATO

191 INALTERATO

TUTTI GLI ALTRI "ITEMS" RISULTANO SBARCATI, NON PIU' ESISTENTI. VEDERE

ELENCO "NUOVI ITEMS" PER IL COMPLETO AGGIORNAMENTO

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JOSE CARLOS PINHEIRO

DIRETOR

DIVISAO DE SERVICOS CARTORIAS



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NOTE AL PIANO SCHEMATICO SCAFO

- 109-110 ✓ (ex Base oil tanks) - ora DRAINS STORAGE TANKS
- 170-169 ✓ trattati di SOLUBLE OIL TANK in due compartimenti separati
- 157-158-159-160 - ex MUD TANK - ELIMINATE - Ricavato locale per macchinari (DELUGE SYSTEM)
- 161-162 modificate in unica cisterna, con compartimento sup. stagno: ora GLYCOL TANK
- 866 ex Mud pump room - attualmente locale per macchinari: Chemical Injection room, porta verso il locale DELUGE e verso il Central Caisson, zona tra copertino inferiore e Main deck.
- 77-78-79-80 Compartimenti parzialmente demoliti e modificati. Da depernare e reinserire come da elenco successivo
- 119-120-121-122 - Compartimenti demoliti con successive modificazioni. Da depernare e reinserire come da elenco successivo
- 183 DRY TANK (el 12192 PORT/FWD fr. 11÷14) 29 P / 170 m³ ex-novo
- 184 DRY TANK (el 12192 STBD/FWD fr. 11÷14) 29 S / 170 m³ ex-novo
- 185 DRY TANK (el 12192 PORT/AFT fr. 60÷63) 30 P / 170 m³ ex-novo
- 186 DRY TANK (el 12192 STBD/AFT fr. 60÷63) 30 S / 170 m³ ex-novo
- 187 DRY TANK (el 12192 PORT/FWD fr. 15÷22) 62 P / 118 m³ ex-novo
- 188 DRY TANK (el 12192 STBD/FWD fr. 15÷22) 62 S / 118 m³ ex-novo
- 189 DRY TANK (el 12192 PORT/AFT fr. 52÷59) 63 P / 118 m³ ex-novo
- 190 DRY TANK (el 12192 STBD/AFT fr. 52÷59) 63 S / 118 m³ ex-novo
- 851 CHAIN LOCKER (el 12192 PORT/FWD fr. 11÷15) 11 P / 95 m³ ex-novo
- CHAIN LOCKER (el 12192 STBD/FWD fr. 11÷15) 11 S / 95 m³ ex-novo
- 852 CHAIN LOCKER (el 12192 PORT/AFT fr. 59÷63) 12 P / 95 m³ ex-novo
- CHAIN LOCKER (el 12192 STBD/AFT fr. 59÷63) 10 S / 95 m³ ex-novo
- 191 DRY TANK (el 18288 PORT/FWD fr. 11÷14) 46 P / 66 m³ ex-novo
- 192 DRY TANK (el 18288 STBD/FWD fr. 11÷14) 46 S / 66 m³ ex-novo
- 193 DRY TANK (el 18288 PORT/AFT fr. 60÷63) 45 P / 66 m³ ex-novo
- 194 DRY TANK (el 18288 STBD/AFT fr. 60÷63) 45 S / 66 m³ ex-novo

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JOSÉ CARLOS PINHEIRO CUSMÃO
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DIVISÃO DE SERVIÇOS CARTORIAIS



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NOTE AL PIANO SCHEMATICO SCAFO

X	- 195	DRY TANK	(el 18288 PORT/FWD OUT fr. 11÷15)	46 a P	ex-novo
X	- 196	DRY TANK	(el 18288 STBD/FWD OUT fr. 11÷15)	46 a S	ex-novo
X	- 197	DRY TANK	(el 18288 PORT/AFT OUT fr. 59÷63)	45 a P	ex-novo
X	- 198	DRY TANK	(el 18288 STBD/AFT OUT fr. 59÷63)	45 a S	ex-novo
X	- 199	DRY TANK	(el 18288 PORT/FWD fr. 15÷22)	28 a P / 162 m ³	(*)
X	- 200	DRY TANK	(el 18288 STBD/FWD fr. 15÷22)	29 a S / 162 m ³	(*)
X	- 701	DRY TANK	(el 18288 PORT/AFT fr. 52÷59)	30 a P / 162 m ³	(*)
X	- 702	DRY TANK	(el 18288 STBD/AFT fr. 52÷59)	30 a S / 162 m ³	(*)

(*) Incorporando i void spaces in corrispondenza degli esistenti Fairlead Box

X	- 703	DRY TANK	(el 19812 PORT/FWD fr. 15÷22)	64 P / 252 m ³	ex-novo
X	- 704	DRY TANK	(el 19812 STBD/FWD fr. 15÷22)	64 S / 252 m ³	ex-novo
X	- 705	DRY TANK	(el 19812 PORT/AFT fr. 52÷59)	65 P / 252 m ³	ex-novo
X	- 706	DRY TANK	(el 19812 STBD/AFT fr. 52÷59)	65 S / 252 m ³	ex-novo
X	- 707	CENTRAL CAISSON - VOID SPACE	(el 10688 - 36576)	60 / 3088 m ³	

(più spazio aperto alle estremità superiore e inferiore)

CENTRAL CAISSON - spazio per macchinari, aperto sul lato DL verso

Chemical injection room (el 36576 - 42672) - più aperto

X	- 708	DRY TANK	(el 9144 PORT/AFT fr. 41÷51)	61 P / 487 m ³	ex-novo
X	- 709	DRY TANK	(el 9144 STBD/AFT fr. 41÷51)	61 S / 487 m ³	ex-novo

~~161-162 stabilimento unico~~

- 151-152-153-172-174-175-873 : si propone di raggruppare

questi items in un unico "Crew accommodation below main deck"

- 177 Trattari di: Radio Room & facilities for helicopter, and battery room

- Main Engine room (el 36576 - STBD. AFT) : non comprende un

Turbo / Alternatore principale, ma il Export Power transformer 6,6KV/13,8KV

- 710 DRAINS SUMP TANK (el 35376 - STBD. AFT - fr. 62) - 16 m³ ex-novo

- 109-110 In secondo tempo, per motivi di stabilità, questi spazi sono stati suddivisi in due da paratia trasversale staguo : trattari attualmente di 4 compartimenti, distribuiti nel piano PL - PP.

LAVORO ANNULLATO : restano due compartimenti



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REGISTRO ITALIANO NAVALE

NOTE AL PIANO SCHEMATICO SCAFO

- 77-78-79-80 Demolite o comunque trasformate in quelle indicate come ex-novo
- 103-104-119-120-121-122 Demolite o comunque trasformate in quelle indicate come ex-novo
- ✓ - 101 Void space suddiviso in due compartimenti a seguito della chiusura rapida della paratia longitudinale prodiera
- ✓ - 102 Idem c.r. (101)

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REGISTRO ITALIANO NAVALE

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NUOVI "ITEMS" DEL PIANO SCHEMATICO MACCHINE

- DRAINS PUMP (tipo Allweiler SHP 1450.2 da 1000 l/min - M.E. Siemens da 63 kW) - (el 21336 from B.L. PORT AFT)
- DRAINS PUMP (id.c.s.) - (el 21336 STBD. AFT)
- FUEL GAS TREATMENT PACKAGE (UQ-S13501) - comprende Fuel Gas K.O. Drum - (el 36576 AFT STBD ^{OUT} in Aft deck extension)
- DRAINS TREATMENT PACKAGE (A 45001) - comprende Hazardous open Drains Drum con 2 E/P (ex closed drain pumps) e un Closed Drains Drum con 2 E/P di nuova installazione - (el 36576 AFT STBD IN in Aft deck extension) - (ex nn.pp. 189-190)
- CRUDE OIL BOOSTER PUMPS PKG (UQ-122341) - comprende n. 3 E/Pompe "Ingersoll Dresser Pumps" 8x10x15 AL (890 m³/h 4,5 bar) - M.E. ABB da 132 kW - (el 36576 AFT CL/STBD in Aft deck extension)
- CRUDE OIL PIPELINE PUMPS PKG (UQ-122312, EXPORT SERVICE) - comprende 3 E/Pompe "Ingersoll Dresser Pumps" 8x13 DA-4 (890 m³/h 7,5 bar) - M.E. ABB da 1550 kW, 6,6 KV - (el 36576 AFT - CL/PORT in Aft deck extension) Ogni pompa è corredata di impianto lubrificazione esterna, con 2 EE/Pompe, uno scambiatore di calore e un contenitore d'olio da 0,2 m³
- SUMP PUMP - E/P per closed drains and hazardous open drains - (ex pompa da skid n.p. 189-190, rimossa) - (el 36576 AFT-PORT)
- HYDRAULIC POWER PACKAGE (UQ-121003) - Comprende una E/Centralina idraulica, due serbatoi separati di olio idraulico con E/P di pompaggio e circolazione, batteria di 16 bombole di N₂ collaudate a 480 bar - (el 36576 CL/AFT fr 40-42)
- CHEMICAL INJECTION PACKAGE (OIL PROD.) - (UQ-682501-02) - Comprende serbatoio in due parti, n. 2 E/P DEMULSIFIER PUMPS, n. 1 E/P TEST MANIFOLD OIL SCALE INHIB PUMP - (el 36576 STBD CL fr. 40-42)
- CHEMICAL INJECTION (WATER) SKID (A 42001) - Comprende n. 7 E/Pompe

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REGISTRO ITALIANO NAVALE

NUOVI "ITEMS" DEL PIANO SCHEMATICO MACCHINE

doppie: antifoam inj. p. - polyelectrolyte inj. p. - ferric chloride inj. p. - w.i.
biocide p. - w.i. scale inhib. p. - w.i. scale inhib. p. - w.i. oxygen scavenger p.

(el. 36576 STBD. CL. fr. 40-42) - ex n.p. 199 ovr. 200

- CHEMICAL INJECTION (OIL) SKID (A 42002) - Comprende n. 5 E/Pompe doppie:

prod. manifold oil defoamer p. (4) - prod. manifold oil scale inhib. p. (6) -

(el. 36576 STBD. CL. IN fr. 36-38) - ex n.p. 199 ovr. 200

- CHEMICAL INJECTION PACKAGE (WATER INT.) (UQ-682502) - Comprende un

serbatoio in tre comparti e 1 E/P Oxygen scavenger pump - (el. 36576
STBD. CL. OUT fr. 36-38)

- CHEMICAL INJECTION PACKAGE (OIL PROD.) - (UQ-682501-01) - Comprende un

serbatoio e 1 E/P Test manifold oil defoamer pump - (el. 36576 STBD.
CL. fr. 32-34)

- TURBO/COMPRESSOR PACKAGE TRAIN A - (UQ-122304) - Comprende, da

poppa: gas generator with its own synthetic oil package,
power turbine, reduction gear, 3rd stage compressor, 1st & 2nd
stage compressor, valve oil console (comprendente oil tank,
2 weathers and 2 E/pumps), Alarm and safety protection
devices - (el. 42672 AFT/CL)

Collegato aux. e per di scarico (collegato esclusivamente ad
impianto di processo.) (el. 50861 AFT/CL)

- TURBO/COMPRESSOR PACKAGE TRAIN B (UQ-122306) (idem c.s.)

(el. 50861 AFT/STBD. IN)

- TURBO/COMPRESSOR PACKAGE TRAIN C (UQ-122308) (idem c.s.)

(el. 50861 AFT/STBD. OUT)

- TURBO/COMPRESSOR STARTER SKID (UQ-122310) - Comprende una

centrifuga idraulica con 2 E/Pompe - (el. 42676
AFT/STBD)

COMPRESSOR PROCESS PACKAGE TRAIN A (UQ-122305) - Comprende

n. 3 Suction Scrubber (1st, 2nd, 3rd suction KO Drum)

n. 4 scambiatori di calore a fascio tubiero -

(el. 42676 AFT/CL)

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REGISTRO ITALIANO NAVALE

NUOVI "ITEMS" DEL PIANO SCHEMATICO MACCHINE

- COMPRESSOR PROCESS PACKAGE TRAIN B (UQ-122307) - Idem c.s.
(el 42676 AFT/STBD.IN)
- COMPRESSOR PROCESS PACKAGE TRAIN C (UQ-122309) - Idem c.s.
(el 42676 AFT/STBD.OUT)
- SEPARATION PACKAGE TRAIN A (UQ-122301) - Comprende:
production separator, oil electrostatic dehydrator, atmospheric separator, produced water degasser. (el 42676 AFT.PORT.OUT)
- SEPARATOR PACKAGE TRAIN B (UQ-122302) - Comprende:
production separator, atmospheric separator, test separator, oil electrostatic dehydrator. (el 42676 AFT.PORT.IN)
- PROD SEPARATOR OIL HEATERS (UQ-122303) - Comprende:
n. 4 scambiatori di calore tipo Alfa Laval, n. 2 production heaters, pre-heater minori. (el 42676 AFT/PORT fr. 43-45)
- GLYCOL SUMP TANK PUMP - E/P per glicole (ex pompa da skid n. p. 189-190, rimoria) - (el 36576 STBD.CL fr. 36)
- SAFETY GAS K.O. DRUM PACKAGE (UQ-122317) - Comprende un serbatoio verticale. (el 42676 STBD.CL fr. 40-44)
- GLYCOL CONTACTOR TOWERS PACKAGE (UQ-123301) - Comprende n. 2 serbatoi verticali TEG CONTACTOR (el 42676 STBD.CL.IN fr. 35-39)
- GLYCOL REGENERATION UNIT PACKAGE (UQ-122302) - Comprende un TEG REGENERATION UNIT CONDENSER, un GLYCOL FLASH TANK, n. 2 scambiatori di calore per glicole, n. 2 TEG refrigeranti, n. 4 filtri e n. 2 pompe per glicole. (el 42676 STBD.CL.OUT fr. 35-39)
- GAS/COND. CHEMICAL INJECTION PACKAGE (UQ-1082503) - Comprende una cisterna INOX in due componenti, n. 2 pompe Gas Hydrate Inhib. pumps, n. 2 pompe GAS Corrosion Inhib. pumps. (el 42676 STBD.CL fr. 32-34)
- L.P. FLARE K.O. DRUM PACKAGE (UQ-541202-01) - Comprende L.P. Flare Drum Verticale e sccanto bulli DR (UQ-541202-02) due

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JOSÉ CARLOS PIMENTEL DUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

REGISTRO ITALIANO NAVALE

7

OFFICE/AGENCY IN QUEBEC FACTUAL REPORT OF SURVEYS

RINA number [8] 67073	Name of ship SPIRIT OF COLUMBUS	Gross Tonnage [8]	Flag of ship ITALIAN
Start of Survey 12.01.99	End of Survey 26.03.99	Place of Survey QUEBEC (QC)	File [9] 97/DG/14810/IN

THIS IS TO CERTIFY THAT THE FOLLOWING SURVEYS HAVE BEEN CARRIED OUT ACCORDING TO APPLICABLE RULES AND REGULATIONS

CLASS / "NAVIGABILITA'" (*) SURVEYS [3]	Spec (Ren) Survey [1]	Ord (Ann) Survey [1]	Intermediate Survey [1]	Continuous Survey [1]	Occasional Survey [1]	First Classification "Navigabilit� Survey [1]	Cert/Stat [4]	Expiry date of Cert/Stat
1 Hull				X	X			
2 Machinery				X	X			
3 Unmanned machinery space (IAQ/AP/RAQ+HAP)(*)								
4 Refrigerating Plant (IFQ)								
5 Special notations (FFQ; NAU; SCC;.....) (*)								
6 Diving systems								
7 Dynamic positioning system (IPD)								

8 Bottom (S)	NORM	VS	AVA	Afloat	☐	12 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC	
9 Tailshaft (centre) [6]	NEW	COMP	ALT	PAR	with NDT	☐	13 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
10 Tailshaft (port) [6]	NEW	COMP	ALT	PAR	with NDT	☐	14 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
11 Tailshaft (stbd) [6]	NEW	COMP	ALT	PAR	with NDT	☐	15 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC

STATUTORY SURVEYS	Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat	STATUTORY SURVEYS	Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat
16 Load Line (INT/ITA) (*) [3]				29 Dangerous Goods in Road Tanks			
17 Safety Construction				30 Dangerous Goods in Tank Containers			
18 Safety Equipment				31 Dangerous Goods in Packages			
19 Safety Radio				32 Cargo Gear - Cranes (ILO) [3]			
20 Safety Passenger				33 Cargo Gear - Derricks (ILO) [3]			
21 MARPOL Annex I (IOPP/CONF/DICH) (*) [3]				34 Cargo Gear - Cranes (RINA) [3]			
22 Fitness Chemicals (COF/COF) (*)				35 Cargo Gear - Derricks (RINA) [3]			
23 Fitness Gases (COF/COF) (*)				36 "Idoneit�" (passenger/cargo (*) ships) [3]			
24 Noxious Liquid Substances (IPPC)				37 Crude Oil Washing (COW)	AUT	OCC	
25 Sewage Pollution Prevention (ISPP)				38 Radar ascertainment	RIN	OCC	
26 Dangerous Goods in bulk (CHEM) [3]				39			
27 Dangerous Goods in bulk (GAS) [3]				40			
3 Carriage of vehicles				41			

EACH SURVEY WAS CARRIED OUT IN ACCORDANCE WITH THE RELEVANT "CHECK LIST" ☐

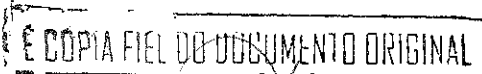
THIS IS THE FINAL REPORT ☒ THIS IS NOT THE FINAL REPORT; NARRATIVE REPORTS WITH RELEVANT ENCLOSURES WILL BE SENT LATER ☐

PARTIAL / COMPLETE (*) THICKNESS MEASUREMENTS CARRIED OUT ☐ RELEVANT REPORTS ARE ENCLOSED ☐

TOTAL ENCLOSURES No. 2 RELEVANT TO ITEM(S) 1-2

RECOMMENDATIONS / MEMO (*) were imposed / deleted / postponed / confirmed (*) as stated on page 3 ☐

Type of Certificate or Statement [7]	CC	DC	DN	DP	Date of VISA	Certificate confirmation	Ident. No.	SURVEYORS
	X							Surname

T E X T O F V I S A	NO ENTRY IN CLASS CERTIFICATE										FORMENTI	
	 JOS� CARLOS PIMENTEL GUSM�O DIRETOR DIVIS�O DE SERVI�OS CARTORIAS											
	Former VISA : Date..... Place.....											

(*) Underline the appropriate word(s) or abbreviation(s)

Place and date: Qu bec, 26.03.99

Surveyors' names and signatures.....

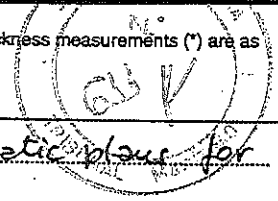
Form: VISITE1-Rep-EG-05/94

See Explanatory Notes [1] to [9] on page 2

REGISTRO ITALIANO NAVALE

R. Formenti

[Signature]



As soon as possible, elements relevant the new schematic plans for Hull and Machinery will be sent to Head Office

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JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓRIOS

Underline the appropriate word(s) or abbreviation(s)

Place and date: Quebec, 26.03.99 Surveyors' names and signatures: R. Formenti



REGISTRO ITALIANO NAVALE
R. Formenti

CARGO GEAR INFORMATION

TYPE OF CARGO GEAR SURVEYED	TYPE OF SURVEY(S) CARRIED OUT	NUMBER OF CARGO GEAR SURVEYED AND RELEVANT SWL IN TONNES											
		SWL ≤ 10			10 < SWL ≤ 20			20 < SWL ≤ 40			SWL > 40		
		No.	SWL	Test	No.	SWL	Test	No.	SWL	Test	No.	SWL	Test
DERRICKS	First Survey / Quinquennial Survey												
	Quadrennial Survey												
	Annual Survey												
CRANES	First / Annual (*) Survey												
CARGO ELEVATORS	First / Annual (*) Survey												

DERRICKS, CRANES AND/OR CARGO ELEVATORS OUT OF SERVICE, IF ANY, ARE TO BE STATED BELOW (specify number and relevant SWL)

INFORMATION FOR INVOICING

SURVEYS CARRIED OUT IN ITALY OR ABROAD BY RINA EXCLUSIVE SURVEYORS

INFORMATION ON TONNAGE MEASUREMENTS

Tonnage measurements carried out according to Regulations of:

The ship had already been measured according to Regulations of:

Tonnage re-measurements carried out: ☐ Tonnage measurements carried out for sister ship(s) accepted ☐

INFORMATION ON SUBDIVISION AND STABILITY

Inclining test carried out: ☐ Light ship weight test carried out ☐

Subdivision and/or damage stability calculations carried out ☐

Calculations as above carried out for sister ship(s) accepted: ☐

OTHER INFORMATION

Fees for visaed or issued class documents: Fees for visaed or issued statutory documents:

Phone / Telex expenses: Miscellaneous expenses:

In the case of surveys carried out outside the RINA Branch Office area, state whether travel tickets (if any) have been supplied by the Shipowner or by RINA

Expenses for travel tickets as above when supplied by RINA:

Survey(s) carried out together with the following RINA Agent abroad

The invoice is to be sent to the Shipowner (yes/no): If not, the invoice is to be sent to the following address:

..... Client Code

--	--	--	--	--

Through..... Through Code

--	--	--	--	--

SURVEYS CARRIED OUT OUTSIDE ITALY BY RINA/GL JOINT EXCLUSIVE STATIONS OR AGENCIES ABROAD

Number of documents issued or visaed without inspections onboard being carried out: Number of Km covered by car and corresponding fees:

Total time spent on surveys (hours/min.): Other car travelling expenses (tolls, etc.):

Occasional survey time (hours/min.): Travelling expenses other than by car (thickets, etc.):

Travelling time (hours/min.): Phone/Telex expenses:

Out of office time (hours/min.): Miscellaneous expenses:

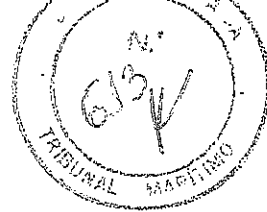
Overtime (hours/min.):

(*) Underline the appropriate word(s) or abbreviation(s)

Place and date: Head of Office or Agent (Abroad)



REGISTRO ITALIANO NAVALE



Québec, March 26, 1999

TO HEAD OFFICE
ITO

VIA CORSICA, 12
16128 GENOVA

Prot. QUE / 131 / RFO

Obj.: JOB 97 DG 14810 IN - SPIRIT OF COLUMBUS

Ri. 67073

CLASS SURVEYS

Please find enclosed the form VISITE 1 and the factual reports relevant the Class surveys carried out on the above name vessel during the months January - February and March 1999 -

Best regards

REGISTRO ITALIANO NAVALE

R. FORMENTI

É COPIA FIEL DO DOCUMENTO ORIGINAL

RINA	DIREZIONE GENERALE
POSTA IN ARRIVO	
30 MAR 1999	
PROTOCOLLO	7153
ASSEGNATA A	ITO
COPIA A	

JOSÉ CARLOS PIMENTEL CUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Transmitte
a
Ches-tice
(Maggiore)
My





REGISTRO ITALIANO NAVALE

Nave:
Ship

SPIRIT OF COLUMBUS

- Numero Registro
Register Number

615 67073

- (2) ☒ ALLEGATO AL RAPPORTO N. 97 DG 14810 IN
Enclosed to survey report
- ☐ PROMEMORIA DI SERVIZIO
Memorandum

page 2/2

(1) VISITA: Occasional & continuous machinery survey
Survey

OPERAZIONI E LAVORI ESEGUITI - OSSERV. — Items and repairs carried out - Remarks

GRUPPO			ELEMENTO				*			(3)
15	16	17	18	19	20	O	R	D	77	

VISTA - SURVEY OF MAIN TURBINE ASSEMBLY

31

SX

SURVEY OF HULL SERVICE AIR COMPRESSOR

165

X

" " AIR COMPRESSOR

166

X

" " AIR COMPRESSOR

167

X

FUEL GAS TREATMENT PACKAGE - ITEM STRIPPED OUT AND
REPLACED BY NEW ONE AND IN DIFFERENT POSITION

236

X

METHANOL INJECTION PACKAGE - STRIPPED OUT

233

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JOSE CARLOS PIENDEL CUSMAO
CAPITAN
DIVISAO DE SERVIÇOS CARTOGRAFICOS



REGISTRO ITALIANO NAVALE

R. Formenti

Porto/Place: QUEBEC Data/Date: 26.03.99 I tecnici/The surveyors:

- (1) Il foglio potrà essere utilizzato quale rapporto di visita solo nel caso di Visita Speciale e/o continuativa scafo, macchina, I.F. riempiendo le caselle alle colonne 15 + 77. In questo caso dovranno essere utilizzati fogli separati per lo scafo, la macchina e l'I.F. rispettivamente.
The sheet can be used as survey report only for Special Survey and/or continuous hull, machinery, refrigerating plant filling the boxes in way of the number 15 + 77. In such case separate sheets will be used for hull, machinery and refrigerating plant.
- (2) Porre "X" nella casella corrispondente alla voce che indica come si intende utilizzare il modulo.
Mark "X" in way of the box showing the kind it is intention to use the form.
- (3) Porre "1" quando gruppo visitato al completo riscontrato in ordine.
Mark "1" when the group is thoroughly surveyed and found in order.



REGISTRO ITALIANO NAVALE

Nave: SHIP SPIRIT OF COLUMBUS- Numero Registro
Register Number

67073

- (2) ☒ ALLEGATO AL RAPPORTO N. 97 DG 14810 IN
Enclosed to survey report
- ☐ PROMEMORIA DI SERVIZIO
Memorandum

(1) VISITA: Occasional & continuous hull survey
Survey

N.P. S.O.

OPERAZIONI E LAVORI ESEGUITI - OSSERV. — Items and repairs carried out - Remarks

GRUPPO ELEMENTO * (3)
15 16 17 18 19 20 O R D 77

- SURVEY OF F.O. TANK

33 1X

- " BALLAST TANK

2 1X

- " PORT PONTOON STABILITY BOX (NEW) 61P
(el 9144 PORT fr. 42-S1)

1 181X

- HYDROSTATIC TEST OF VOID SPACE 61P

1 181X

- SURVEY OF STBD PONTOON STABILITY BOX (NEW) 61S
(el 9144 STBD fr. 42-S1)

1 181X

- HYDROSTATIC TEST OF VOID SPACE 61S

1 181X

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JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIASREGISTRO ITALIANO NAVALE
FormantiPorto/Place: QUEBEC Data/Date: 26.03.99 I tecnici/The surveyors: [Signature]

- (1) Il foglio potrà essere utilizzato quale rapporto di visita solo nel caso di Visita Speciale e/o continuativa scafo, macchina, I.F. riempiendo le caselle alle colonne 15 + 77. In questo caso dovranno essere utilizzati fogli separati per lo scafo, la macchina e l'I.F. rispettivamente.
The sheet can be used as survey report only for Special Survey and/or continuous hull, machinery, refrigerating plant filling the boxes in way of the number 15 + 77. In such case separate sheets will be used for hull, machinery and refrigerating plant.
- (2) Porre "X" nella casella corrispondente alla voce che indica come si intende utilizzare il modulo.
Mark "X" in way of the box showing the kind it is intention to use the form.
- (3) Porre "1" quando gruppo visitato al completo riscontrato in ordine.
Mark "1" when the group is thoroughly surveyed and found in order.

REGISTRO ITALIANO NAVALE

638 K

OFFICE/AGENCY IN QUEBEC FACTUAL REPORT OF SURVEYS

RINA number [8] 67073	Name of ship SPIRIT OF COLUMBUS	Gross Tonnage [8]	Flag of ship ITALIAN
Start of Survey 06.11.98	End of Survey 18.12.98	Place of Survey QUEBEC	File [9] 97 DC 14810 IN

THIS IS TO CERTIFY THAT THE FOLLOWING SURVEYS HAVE BEEN CARRIED OUT ACCORDING TO APPLICABLE RULES AND REGULATIONS

CLASS / "NAVIGABILITA" (*) SURVEYS [3]						Spec (Ren) Survey [1]	Ord (Ann) Survey [1]	Intermediate Survey [1]	Continuous Survey [1]	Occasional Survey [1]	First Classification "Navigabilità" Survey [1]				Cert/Stat [4]	Expiry date of Cert/Stat					
1 Hull																					
2 Machinery									X												
3 Unmanned machinery space (IAQ/AP/IAQ+AP) (*)																					
4 Refrigerating Plant (IFQ)																					
5 Special notations (FFQ; NAU; SCC,.....) (*)																					
6 Diving systems																					
7 Dynamic positioning system (IPD)																					
8 Bottom [5]		NORM	VS	AVA	Afloat	☐	12 Main/Auxiliary boiler [1]		No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC	
9 Tailshaft (centre) [6]		NEW	COMP	ALT	PAR	with NDT	☐	13 Main/Auxiliary boiler [1]		No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
10 Tailshaft (port) [6]		NEW	COMP	ALT	PAR	with NDT	☐	14 Main/Auxiliary boiler [1]		No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
11 Tailshaft (stbd) [6]		NEW	COMP	ALT	PAR	with NDT	☐	15 Main/Auxiliary boiler [1]		No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC

STATUTORY SURVEYS	Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat	STATUTORY SURVEYS	Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat
16 Load Line (INT/ITA) (*) [3]				29 Dangerous Goods in Road Tanks			
17 Safety Construction				30 Dangerous Goods in Tank Containers			
18 Safety Equipment				31 Dangerous Goods in Packages			
19 Safety Radio				32 Cargo Gear - Cranes (ILO) [3]			
20 Safety Passenger				33 Cargo Gear - Derricks (ILO) [3]			
21 MARPOL Annex I (IOPP/CONF/DICH) (*) [3]				34 Cargo Gear - Cranes (RINA) [3]			
22 Fitness Chemicals (COF/COF) (*)				35 Cargo Gear - Derricks (RINA) [3]			
23 Fitness Gases (COF/COF) (*)				36 "Idoneità" (passenger/cargo (*) ships) [3]			
24 Noxious Liquid Substances (IPPC)				37 Crude Oil Washing (COW)	AUT	OCC	
25 Sewage Pollution Prevention (ISPP)				38 Radar ascertainment	RIN	OCC	
26 Dangerous Goods in bulk (CHEM) [3]				39 Crew Lifts	ANN		
27 Dangerous Goods in bulk (GAS) [3]				40			
28 Carriage of vehicles				41			

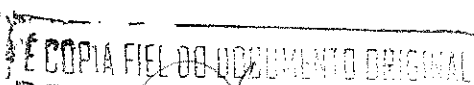
EACH SURVEY WAS CARRIED OUT IN ACCORDANCE WITH THE RELEVANT 'CHECK LIST' ☒

THIS IS THE FINAL REPORT ☒ THIS IS NOT THE FINAL REPORT; NARRATIVE REPORTS WITH RELEVANT ENCLOSURES WILL BE SENT LATER ☐

PARTIAL / COMPLETE (*) THICKNESS MEASUREMENTS CARRIED OUT ☐ RELEVANT REPORTS ARE ENCLOSED ☐

TOTAL ENCLOSURES No. 2 RELEVANT TO ITEM(S) 2 - 39

RECOMMENDATIONS / MEMO (*) were imposed / deleted / postponed / confirmed (*) as stated on page 3 ☐

Type of Certificate or Statement [7]	CC	DC	DN	DP	Date of VISA	Certificate confirmation	SURVEYORS	
T E X T O F V I S A	NO ENTRY IN CLASS CERTIFICATE						Ident. No.	Sumame
							S26	FORMENTI
								FAT SIS
 JOSE CARLOS PIMENTEL CUSHAO DIRETOR DIVISAO DE SERVICOS CARTORIAS								

Former VISA : Date Place

(*) Underline the appropriate word(s) or abbreviation(s)

Place and date: Quebec, 18.12.98 Surveyors' names and signatures.....

Form: VISITE1-Rep-EG-05/94

See Explanatory Notes [1] to [9] on page 2
REGISTRO ITALIANO NAVALE

R. Formenti

[Signature]

SALT WATER BALLAST SPACES

Spaces examined where no protective coating was applied from the time of construction:

(b) Spaces examined where the protective coating was found in POOR condition:

(c) Spaces examined where the protective coating was found in GOOD or FAIR condition:

FIRE FIGHTING SYSTEMS AND APPLIANCES

(a) Date of last check of CO2 bottles/vessels content:

(e) Date of last check of nitrogen bottles content:

(b) Date of last hydrotesting of CO2 bottles/vessels:

(f) Date of last hydrotesting of nitrogen bottles:

(c) Date of last check of HALON bottles/vessels content:

(g) Date of last renewal of foam forming liquid:

(d) Date of last hydrotesting of HALON bottles/vessels:

(h) Foam forming liquid sample taken for analysis (if required): ☐

SETTING UP OF SAFETY VALVES OF MAIN / AUXILIARY (*) BOILERS:

THE OUTSTANDING ITEMS FOR COMPLETION OF PART-HELD ORDINARY (ANNUAL) / INTERMEDIATE (*) HULL OR MACHINERY SURVEYS AND/OR MAIN / AUXILIARY BOILER SURVEYS (*) ARE AS STATED BELOW:

EXPLANATORY NOTES FOR FILLING IN THIS FORM:

[1] MARKS FOR SURVEY EXTENT

X or AL = Survey entirely carried out
 IN = Commencement of Survey
 CN = Continuation of Survey
 CM = Completion of Survey
 PC = Annual Survey of exhaust fired thermal oil heaters including visual inspection and tightness testing of heater tubes

[2] TYPE OF SURVEY

ANN = Annual Survey
 AUT = Survey for authorization (for COW) (Item 37)
 BIE = Biennial Survey (for Compasses)
 INT = Intermediate Survey
 L = Load test (for Cargo Gear - Items 32 to 35)
 OC = Occasional survey
 QA = Quadrennial Survey (for Cargo Gear - Items 32 to 35)
 QUI = Quinquennial survey (for Cargo Gear - Items 32 to 35)
 RIL = Initial Survey
 RIN = Renewal Survey
 VAR = Survey for Loadline variations (Item 16)

[3] OTHER NOTES ON SURVEYS

N.B.: "NAVIGABILITA" SURVEYS are Surveys to be carried out for the purpose of the issue, maintenance or renewal of the "Certificato di navigabilità" (Seaworthiness Certificate) under the provisions of Italian Safety Rules
 "IDONEITA" SURVEYS are Surveys to be carried out for the purpose of the issue, maintenance or renewal of the national safety certificate called "Certificato di idoneità" to passenger or cargo ships not subject to SOLAS under the provisions of Italian Safety Rules (Item 36)

INT/ITA = Survey for the purpose of the International/Italian Loadline Certificate, as appropriate (Item 16)

CONF = Certificate of compliance ("Conformità") to MARPOL Annex I (only for Italian flag ships not subject to MARPOL) (Item 21)

DICH = Statement of compliance ("Dichiarazione") to MARPOL Annex I (only for Italian flag ships not subject to MARPOL) (Item 21)

CHEM = Statement of compliance ("Attestazione") to Italian Statutory Regulations (only for Italian or foreign flag chemical tankers or gas carriers operating in Italy) (Items 26 and 27)

RINA = Survey for the purpose of RINA Certificate for cargo gear (only for cargo gear of Italian ships not required to be included in ILO cargo gear booklet) (Items 34 and 35)

[4] CERTIFICATES AND STATEMENTS

PRO = Provisional (Interim) Certificate issued
 EXT = Validity of existing Certificate extended
 CND = Conditional Certificate issued
 DEF = Full term Certificate issued
 N.B.: The square is to be left blank in the case of endorsements of existing certificates

[5] BOTTOM SURVEY

NORM = Survey NOT valid on account of a Special Survey
 VS = Survey valid on account of a Special Survey
 AVA = Survey in connection with a Damage Survey
 Afloat: Mark the square with X to mean that an In-water Survey was carried out in lieu of a Docking Survey (see 3.2.3.2 of Ch. 3 of Section A of the Rules)
 N.B.: The underwater inspection of the ship's bottom to postpone the Docking Survey is to be considered as an Occasional Survey

[6] TAILSHAFT SURVEY

NEW = Tailshaft renewed
 COMP = Complete Survey
 ALT = Alternate Modified Survey
 PAR = Partial Survey
 With NDT: Mark the square with X to mean that a surface crack detection of the propeller keyed connection to the tailshaft was satisfactorily performed

[7] TYPE OF CERTIFICATE OR STATEMENT

CC = Certificate of Class
 DC = Class Statement
 DN = Statement with a view to obtaining the "Certificato di navigabilità"
 DP = Certificate of Class for Pleasure Vessels

[8] FOREIGN FLAG SHIPS NOT CLASSED WITH RINA

In the case of these ships, the value of Gross Tonnage and, in lieu of RINA number, Distinctive number or letters are to be indicated

[9] FILE

Year, Office code, File number and File code are to be specified, in the above order, according to the File Record Book of the RINA Office concerned

(*) Underline the appropriate word(s) or abbreviation(s)

É COPIA FIEL DO DOCUMENTO ORIGINAL
 JOSÉ CARLOS PIMENTEL GUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAIS

RECOMMENDATIONS / MEMO (*) imposed / deleted / postponed / confirmed and / or OUTSTANDING ITEMS for completion of thickness measurements () are as stated below:
(The space below may also be used for Narrative Reports as well as for any additional remarks concerning surveys performed)



É CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL COSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTOGRAFICOS

(*) Underline the appropriate word(s) or abbreviation(s)

Place and date: Surveyors' names and signatures

CARGO GEAR INFORMATION

TYPE OF CARGO GEAR SURVEYED	TYPE OF SURVEY(S) CARRIED OUT	NUMBER OF CARGO GEAR SURVEYED AND RELEVANT SWL IN TONNES											
		SWL ≤ 10			10 < SWL ≤ 20			20 < SWL ≤ 40			SWL > 40		
		No.	SWL	Test	No.	SWL	Test	No.	SWL	Test	No.	SWL	Test
DERRICKS	First Survey / Quinquennial Survey												
	Quadrennial Survey												
	Annual Survey												
CRANES	First / Annual (*) Survey												
CARGO ELEVATORS	First / Annual (*) Survey												

DERRICKS, CRANES AND/OR CARGO ELEVATORS OUT OF SERVICE, IF ANY, ARE TO BE STATED BELOW (specify number and relevant SWL)

INFORMATION FOR INVOICING

SURVEYS CARRIED OUT IN ITALY OR ABROAD BY RINA EXCLUSIVE SURVEYORS

INFORMATION ON TONNAGE MEASUREMENTS

Tonnage measurements carried out according to Regulations of:

The ship had already been measured according to Regulations of:

Tonnage re-measurements carried out: ☐ Tonnage measurements carried out for sister ship(s) accepted: ☐

INFORMATION ON SUBDIVISION AND STABILITY

Inclining test carried out: ☐ Light ship weight test carried out: ☐

Subdivision and/or damage stability calculations carried out: ☐

Calculations as above carried out for sister ship(s) accepted: ☐

OTHER INFORMATION

Fees for visaed or issued class documents: Fees for visaed or issued statutory documents:

Phone / Telex expenses: Miscellaneous expenses:

In the case of surveys carried out outside the RINA Branch Office area, state whether travel tickets (if any) have been supplied by the Shipowner or by RINA

Expenses for travel tickets as above when supplied by RINA:

Survey(s) carried out together with the following RINA Agent abroad:

The invoice is to be sent to the Shipowner (yes/no): If not, the invoice is to be sent to the following address:

..... Client Code

--	--	--	--	--

Through..... Through Code

--	--	--	--	--

SURVEYS CARRIED OUT OUTSIDE ITALY BY RINA/GL JOINT EXCLUSIVE STATIONS OR AGENCIES ABROAD

Number of documents issued or visaed without inspections onboard being carried out: Number of Km covered by car and corresponding fees:

Total time spent on surveys (hours/min.): Other car travelling expenses (tolls, etc.):

Occasional survey time (hours/min.): Travelling expenses other than by car (thickets, etc.):

Travelling time (hours/min.): Phone/Telex expenses:

Out of office time (hours/min.): Miscellaneous expenses:

Overtime (hours/min.):

*) Underline the appropriate word(s) or abbreviation(s)

Place and date: Quebec, 13.12.98

Head of Office (Agent) (Abroad)



REGISTRO ITALIANO NAVALE

Québec, 18 Dicembre 1998

Dott. Ing. Renato ROBINO

ITO

Direzione Generale

Via Cavour, 12 - 16128 GENOVA

Prot. QUE/103 /RFO

Oggetto : M/V SPIRIT OF COLUMBUS - RI 67073

File 97 DG 14810 IN

Visite di classe -

Si invia in allegato il Mod. VISITE 1 relativo alle visite eseguite a bordo della unità in oggetto nel periodo Novembre-Dicembre 1998, corredato degli allegati indicati.

Distinti saluti

REGISTRO ITALIANO NAVALE

(R. Formenti)

E COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO

DIRETOR

DIVISÃO DE SERVIÇOS CARTORIAS



REGISTRO ITALIANO NAVALE

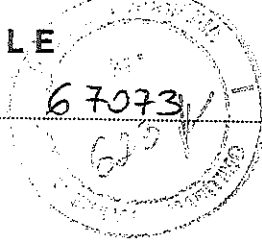
Nave:
Ship

SPIRIT OF COLUMBUS

- Numero Registro
Register Number

67073

(2)

ALLEGATO AL RAPPORTO N. 97 DG 14810 IN
Enclosed to survey reportPROMEMORIA DI SERVIZIO
Memorandum(1) VISITA:
Survey

Continuous & occasional machinery survey

OPERAZIONI E LAVORI ESEGUITI - OSSERV. — Items and repairs carried out - Remarks

GRUPPO ELEMENTO * (3)
15 16 17 18 19 20 O R D 77

Survey of SALT WATER PUMP

Main Gas Turbine Compressors

Main Gas Turbine Comb. chamber ass.

Main Gas Turbine

Main Gas Turbine

27X

31 3X

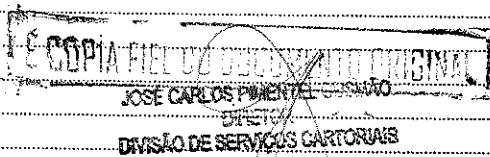
31 4X

32 3X

32 4X

33 3X

33 4X

REGISTRO ITALIANO NAVALE
R. Formenti

Porto/Place:

Quebec

Data/Date:

15 Dicembre 98

I tecnici/The surveyors:

R. Formenti

- (1) Il foglio potrà essere utilizzato quale rapporto di visita solo nel caso di Visita Speciale e/o continuativa scafo, macchina, I.F. riempiendo le caselle alle colonne 15 + 77. In questo caso dovranno essere utilizzati fogli separati per lo scafo, la macchina e l'I.F. rispettivamente.
The sheet can be used as survey report only for Special Survey and/or continuous hull, machinery, refrigerating plant filling the boxes in way of the number 15 + 77. In such case separate sheets will be used for hull, machinery and refrigerating plant.
- (2) Porre "X" nella casella corrispondente alla voce che indica come si intende utilizzare il modulo.
Mark "X" in way of the box showing the kind it is intention to use the form.
- Porre "1" quando gruppo visitato al completo riscontrato in ordine.
Mark "1" when the group is thoroughly surveyed and found in order.

REGISTRO ITALIANO NAVALE



CHECKLIST FOR PASSENGERS AND CREW LIFTS SURVEY

Survey under the provisions of RINA Rules for the design, construction and testing of lifts for passengers and crew members

(*)

67073 RINA No	SPIRIT OF COLUMBUS Ship Name	QUEBEC Port	06.11.98 Date	97 DC 14810 IN File code
1995 Date of build	ITALIAN Flag		ICOL Call sign	8916566 IMO number

TYPE OF SURVEY

INITIAL ☐	QUINQUENNIAL ☐	ANNUAL ☒	OTHER ☒
----------------------------------	---------------------------------------	--	---

RECORD OF ARRANGEMENTS

(To be filled in according to the Certificate of qualification)

LIFTS BUILDER: AUMAK AB - SKELLEFTEA - SVEZIA

Lift no.	Position (frame)	Rated load (kg)	Persons no.	Serial no.	Power (1)	Service (2)
1	22 DR	1630	7	6315	E	C
2	22 SN	1630	7	6316	E	C
3	SS DR	1630	7	6287	E	C
4	SS SN	1630	7	6286	E	C

- (1) E: Electric; H: Hydraulic
(2) C: Crew; P: Passengers

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JOSÉ CARLOS PIMENTEL SUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

INITIAL, QUINQUENNIAL AND ANNUAL SURVEY

1 Arrangements

- a) Is the plate indicating the rated load inside the car in agreement with the relevant Certificate of qualification? ☒

(*) Mark: — = Not seen; X = Yes or now seen satisfactory; R = Remarks reported on forms VISITE1 / 2; NA = Not applicable.

2. a) Are sheaves, sprockets, guide rollers, axle pins and bearings, etc., free from cracks or scores and are free to rotate?
 b) Are rope grooves free from scoring and sprockets free from signs of abnormal wear, hooking, etc.?
 c) Are lubrication arrangements in working order?
 d) Are axle pins and bearings free from signs of deformation and excessive wear?

NOTE: In determining the extent of examination or dismantling, due regard is to be given to the standard of maintenance, state of lubrication and degree of use.

3 Wire ropes

- a) Has entire length of rope been examined?
 b) Is the rope free from broken, worn or corroded wires?
 c) Have terminal fittings, splices, etc. been examined, with particular attention to broken wires at ferrule connections?

☒ NA
☒ NA
☒ NA

4 Chains

- a) Has entire length of chain been examined?
 b) Is the chain free from signs of deformation, wear or other defects?
 c) Is the material recorded on test certificate, distinguishing between mild steel, higher tensile steel and alloy steel?

☒ NA
☒ NA
☒ NA

5 Hydraulic sistem

- a) Are hydraulic pipes, cylinders, etc., in working condition?
 b) Are pistons, pivot pins and bearings, etc., free from signs of excessive wear and deformation?
 c) Are sheaves free from cracks or scores and free to rotate?
 d) Are mounting brackets free from deformation, cracks or damage?

☒ NA
☒ NA
 YES/ ☒ NA
 YES/ ☒ NA

6 Electric system

- a) Does the system operate satisfactorily?
 b) Are main and emergency lighting system of the car in working order?

☒
☒

7 Landing and car doors

- a) Do landing and car doors operate satisfactorily?
 b) Do interlocks on the doors operate effectively?
 c) Is the doors' fire resisting capacity unimpaired?
 d) Is clearance between car doors and car doors and door's structure acceptable?

☒
☒
☒
☒

8 Car and counterweight

- a) Are car and counterweight free from signs of damages which could affect their operating efficiency or carrying capacity?
 b) Are brackets for sheaves, guide rollers, wire terminals, etc., secure and in good order?
 c) Is the car's fire resisting capacity unimpaired?
 d) Are handrails and nonslip floor inside the car in good order?

☒
☒
☒
☒

9 Lift trunk and well

- a) Are lift trunk and well free from debris or damage which could impair the satisfactory operation of the lift?
 b) Is the trunk suitably ventilated and is the ventilation system separated from those serving other spaces except for the stairways trunk in which the lift trunk is completely enclosed (if applicable)?
 c) Are the electric cables inside the trunk dedicated only to the lift service?
 d) Is the trunk's fire resisting capacity satisfactory, with particular regard to prevention of fire and smoke passage from one deck to another?
 e) Is the machinery room in good order and provided with a self-closing and lockable door?

☒
☒
☒
☒
☒

10 Guides and buffers

- a) Are car and counterweight guides and relevant joint plates free from signs of wear or distortion?
 b) Are the brackets connecting guides to trunk in good order?
 c) Are the buffers in good order and supports sound?

☒
☒
☒

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 JOSÉ CARLOS PIMENTEL SERRÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAIS

11 Safety devices and brakes

- a) Have brakes been tested stopping the empty car at each stay when lifting and stopping the car loaded with 1,25 times the rated load when lowering? (°) ☒
- b) Has car parachute been checked lowering the car uniformly loaded with rated load at nominal speed, with disengaged brake winch (applicable to immediate blockage parachutes)? (°) ☒
- c) Has car parachute been checked lowering the car uniformly loaded with 1,25 times the rated load at reduced speed, with disengaged brake and winch (applicable to progressive blockage parachutes)? (°) ☒
- d) Do car doors open automatically if a person passes through while closing? ☒
- e) Are landing doors prevented from opening if the lift is not at relevant floor? ☒
- f) Is lift prevented from operating if a landing, car or escape door is open? ☒
- g) Has emergency procedure for repositioning of lift car after stop at intermediate position been checked? ☒

12 Safety equipment

- a) Are all escape hatches, ladders, etc., free from obstruction and in good order? ☒
- b) Is the lift prevented from operating when the escape hatch on top of the car is open? ☒
- c) Do the emergency telephone and warning system operate satisfactorily? ☒
- d) Are all warning notices, etc., legible, secure and correctly located? ☒

13 Test

- a) Have all safety devices been checked at the rated load? (°) ☒
- (°) This check may be carried out by the lifts builder or by the maintenance company. A copy of the relevant check report is to be forwarded to RINA surveyor.

INITIAL AND QUINQUENNIAL SURVEY

1 Hydraulic system

- a) Has working pressure been checked during the working test? ☐

2 Electric system

- a) Have isolation, continuity and ground been checked satisfactorily? ☐
- b) Have nominal current value, speed of electric motor (AC) or voltage (DC) been checked while lifting the car loaded with its rated load? ☐

3 Safety devices and brakes

- a) Has counterweight parachute been checked with car uniformly loaded with rated load at nominal speed (applicable to parachutes provided with limit speed device)? (°) ☐
- b) Has counterweight parachute been checked by dynamic test without observing damages compromising the lift operation (applicable to parachutes not provided with limit speed device)? (°) ☐
- c) Is the car prevented from lifting when the counterweight is put on the shock adsorbers? (°) ☐

4 Shock adsorbers

- a) Has car deflection been checked for compliance with the characteristic curve after putting the car loaded with its rated load on its shock adsorbers and releasing the ropes (applicable to store of energy shock adsorbers)? (°) ☐
- b) Has speed decrease been checked after lowering the car loaded with its rated load in way to put it on the shock adsorbers at the nominal speed or at the design speed of the adsorber (applicable to store of energy shock adsorbers with damped feedback or dissipation of energy shock adsorbers)? After this no damages compromising the lift operation are to be observed (°) ☐

5 Test

- a) Has the car been tested with static load equal to 1,5 times the rated load, in its lowest position? ☐
- b) Has a function test been carried out at 1,1 times the rated load? ☐
- (°) This check may be carried out by the lifts builder or by the maintenance company. A copy of the relevant check report is to be forwarded to RINA surveyor.

INITIAL SURVEY ONLY

1 Arrangements

- a) Have arrangements been checked for compliance with all approved drawings and certificates? ☐

E COPIA FIEL DO DOCUMENTO ORIGINAL

DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

REMARKS

Annual survey carried out while the vessel is laid-up for up to
grading works; occasional survey also carried out after the
removing of the upper stop at the second deck level and the
trunk from main deck of the two aft elevators.

Inspection and tests carried out satisfactorily; report of
Alimak Company Field Technician and United Hoist Equip-
Ltd enclosed.

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS DIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

Date 1998 November 17

RINA Surveyor's name and signature

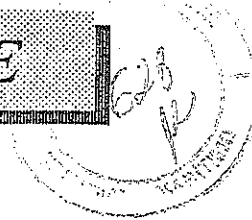


REGISTRO ITALIANO NAVALE

R. Formenti

[Signature]

REGISTRO ITALIANO NAVALE



CERTIFICATO DI QUALIFICA DEGLI ASCENSORI PER PASSEGGERI ED EQUIPAGGIO CERTIFICATE OF QUALIFICATION FOR PASSENGERS AND CREW LIFTS

N. 9600160

Nome della nave e Numero RINA <i>Name of ship and RINA number</i>	SPIRIT OF COLUMBUS (RI 67073)		
Bandiera <i>Flag</i>	ITALIA	Numero IMO <i>IMO number</i>	8916566
Nominativo internazionale <i>Distinctive number of letters</i>	ICOL	Stazza lorda <i>Gross tonnage</i>	34481 GT
Porto e numero d'immatricolazione <i>Port and number of registry</i>	NAPOLI - 1921		

SI CERTIFICA che gli ascensori della nave suddetta, sulla base degli accertamenti eseguiti, sono stati riconosciuti rispondenti alle "Norme per la progettazione, la costruzione, ed il collaudo degli ascensori per passeggeri ed equipaggio" del RINA.

THIS IS TO CERTIFY that the below listed lifts fitted, based on the ascertainties performed, have been recognized in accordance with the RINA "Rules for design, building and testing of lifts for passengers and crew".

Il presente certificato è valido fino al: 29.02.2000
The present certificate is valid until

a condizione che sia conservata la validità del Certificato di classe e che gli ascensori siano sottoposti alle visite prescritte dai vigenti Regolamenti.
on condition that the Certificate of class remains valid and the lifts are surveyed as required by the current RINA Rules.

È COPIA FIDEL DEL DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETTORE
DIVISÃO DE SERVIÇOS CARTORIAS

Rilasciato a
Issued at

Genova

il
on

07.03.1996

REGISTRO ITALIANO NAVALE

[Signature]

Questo certificato è composto di 3 pagine.
This certificate consists of 3 pages.

RINA carries out its duties through officers or other persons it considers possess all the requirements of suitability and competence for the tasks which have been assigned to them. In its capacity as expert RINA only expresses opinions and evaluations of compliance with its own rule requirements and does not, in any case whatsoever, (even if its opinions are requested on matters not expressly covered by Rules) assume the liabilities pertaining to the designers, shipowners, builders, test inspectors, shipyards or any person or organization responsible by law or contractually for providing guarantees for all of whom the respective liabilities remain unchanged even in the case of consultative actions by RINA. For what concerns the tasks taken on and carried out directly, other than those delegated, dealt with in the following sentence, RINA is answerable in law terms. Within the context of the tasks delegated to RINA by the Italian Administration, liability can only be recognized in the case of fraud or gross negligence by the officers or the persons entrusted. In no case shall the liability, regardless of the amount of damage reported, exceed a value equal to 5 times the total of the fees received by RINA as consideration of the services rendered from which the damage reported derives.

SCADENZE DELLE VISITE PERIODICHE
DUE DATES OF PERIODICAL SURVEYSVisite annuali 02.1996 - 02.1997 - 02.1998 - 02.1999
Annual surveys

VIDIMAZIONI / ENDORSEMENTS

Localita' e data della visita
Place and date of survey PALERMO GIUGNO 1996ESEGUITA VISITA ANNUALE. CONTINUA NELLA SUA
QUALIFICA. - - - - -Porto PALERMO data 10 GIUGNO 1996
Port dateFirma e timbro
Signature and sealFirma
SignatureLocalita' e data della visita
Place and date of survey PALERMO LUGLIO 1997ESEGUITA VISITA ANNUALE.
CONTINUA NELLA SUA QUALIFICAPorto PALERMO data 9-LUGLIO-1997
Port dateFirma e timbro
Signature and sealREGISTRO ITALIANO NAVALE
(R. BARCELONA)Localita' e data della visita
Place and date of survey QUEBEC, NOVEMBER 1998ANNUAL AND OCCASIONAL SURVEY CARRIED OUT.
THE VALIDITY OF PRESENT CERTIFICATE IS CONFIRMED.Porto QUEBEC (QC.) data 1998, NOVEMBER 17
Port dateFirma e timbro
Signature and sealREGISTRO ITALIANO NAVALE
R. FermentiLocalita' e data della visita
Place and date of survey JOSE CARLOS PIMENTEL GUSMAO
DIRETOR
DIVISAO DE SERVICOS CARTOGRAFICOS

E COPIA FIEL DEL DOCUMENTO ORIGINAL

Porto data
Port dateFirma e timbro
Signature and sealLocalita' e data della visita
Place and date of surveyFirma e timbro
Signature and sealPorto data
Port date

RINA carries out its duties through officers or other persons it considers possess all the requirements of suitability and competence for the tasks which have been assigned to them. In its capacity as expert RINA only expresses opinions and evaluations of compliance with its own rule requirements and does not, in any case whatsoever, (even if its opinions are requested on matters not expressly covered by Rules) assume the liabilities pertaining to the designers, shipowners, builders, test inspectors, shipyards or any person or organization responsible by law or contractually for providing guarantees for all of whom the respective liabilities remain unchanged even in the case of consultative actions by RINA. For what concerns the tasks taken on and carried out directly, other than those delegated, dealt with in the following sentences, RINA is answerable in law terms. Within the context of the tasks delegated to RINA by the Italian Administration, liability can only be recognized in the case of fraud or gross negligence by the officers or the persons engaged. In no case shall the liability, regardless of the amount of damage reported, exceed a value equal to 5 times the total of the fees received by RINA as consideration of the services rendered from which the damage reported derives.



ALIMAK ELEVATOR COMPANY
DIVISÃO DE SERVIÇOS TÉCNICOS

ALIMAK ELEVATOR COMPANY

PERIODIC INSPECTION AND TEST REPORT

97 DG 14810 In

Service Report: 63229

Hour Meter: 67016

Date: June 30

Customer: Devco Industries

S/N: 6315

Year: 1991

Model: 1010 Spc
500A Hall

Location: Spirit of Columbus (Oil Pk) 5750 Blvd

Alimak Rep: A. Wickert

NO	Items To Be Checked	OK	FREQ	COMMENTS
CAR				
1	Instruction and Load Signs (Clean Car and Top)	✓	M	
2	Car Enclosure Vision Panels (Clean)	✓	Q	
3	Car Door (X) Trap Door (→) Interlocks (X) (Gibs)	✓	M	Car Interlocks Bush.
4	Car Lights (X) 'E' Lights (X) Alarm (X)	✓	M	
5	Car Operating Station (X) 'E' Stop Button (X)	✓	M	Loose Buttons
ELECTRICAL CABINET				
1	Main Volt. <u>440</u> VAC Control Volt. <u>120</u> VAC	✓	M	
2	Battery VDC Charger VDC	✓	M	
3	Elec. Components, Loose Connections, Jumpers	✓	Q	
4	Car Top Operating Station	✓	M	Loose Buttons
5	Retiring Cam	✓	M	
MACHINERY				
1	Gear Box for Leaks and Level	✓	M	
2	Safety Device Type: <u>Q243032150</u> Exp: <u>97/04</u>	✓	BM	Out dated 10
3	Hoist Brake <u>6245100</u>	✓	M	
4	Electric Motor <u>3 Motors MATR 132 MS</u>	✓	BM	
5	Worm Gear Wear Clean Air Filter	✓	Q	
6	Play Between Coupling Shafts	✓	Y	
7	Rack and Pinion Wear	✓	BM	
8	Machine Plate Attachment	✓	M	
9	Centrifugal Brake	✓	M	
10	Safety Hooks, Guide Rollers & Counter Rollers	✓	M	
HOISTWAY				
1	Mast Alignment	✓	Y	
2	Mast Bolts (X) Rack Screws (X) Tie-Ins (X)	✓	Y	
3	Trailing Power (X) Control Cables (X)	✓	M	
4	Cable Support Arms (X) Cable Guides (X)	✓	M	
5	Counterweight Wire Rope & Attachments	✓	M	
6	Counterweight, Rollers & Cathead	✓	M	
7	Enclosures and Sill Runby	✓	M	
8	Landing Door Interlocks (Clean Door Tracks)	✓	M	
9	Normal Travel Limits (X) Final Limits (X)	✓	M	
10	Travel Limit Cams & Flags	✓	M	
11	Operation of Hall Call Stations (X) Lights (X)	✓	M	
PIT				
1	Pit Stop Switch	✓	M	
2	Buffer Springs	✓	BM	
3	Car Mounting Dampers and Bolts	✓	M	
4	Cable Trolley Assembly	✓	M	
5	Distance of Trolley Assembly from Base Frame:	✓	Q	
6	Counterweight Runby	✓	Q	

LUBRICATION

1. Rack (X) Rollers (X) Doors (X) Interlocks (X) SD (X) ✓ M

TESTING

1. Safety Device S/N: 114576 mos. () 1 year (X)

2. Corrosion - Ultra Sonic Test (If Needed)

Was the unit in safe operating condition?

Y N (1) Safety moved to Re

Aut → (2) - Car Door Interlock Bushing needs to be

Field Technician Signature

Customer Signature

JOSÉ CARLOS PIMENTEL GISMÃO
DIRETOR
DIVISÃO DE SERVIÇOS ALIMAK ELEVATOR COMPANY
PERIODIC INSPECTION AND TEST REPORT



Service Report: 64205

Hour Meter: 47694

Date: June 23

Customer: Dove Industries

S/N: 6257

Year: 92

Model: 1-114 SP

Location: Spirit of Columbus OHL P.O. (Kearney)

Alimak Rep: A

NO	Items To Be Checked	OK	FREQ	COMMENTS
CAR				
1	Instruction and Load Signs (Clean Car and Top)	✓	M	
2	Car Enclosure Vision Panels (Clean)	✓	Q	
3	Car Door (✓) Trap Door (✓) Interlocks (✓) (Gibs)	✓	M	
4	Car Lights (✓) 'E' Lights (✓) Alarm (✓)	✓	M	
5	Car Operating Station (✓) 'E' Stop Button (✓)	✓	M	
ELECTRICAL CABINET				
1	Main Volt. 440 VAC Control Volt. 120 VAC	✓	M	
2	Battery VDC Charger VDC	✓	M	
3	Elec. Components, Loose Connections, Jumpers	✓	Q	
4	Car Top Operating Station	✓	M	
5	Retiring Cam	✓	M	
MACHINERY				
1	Gear Box for Leaks and Level 9032400 20.5/1	✓	M	
2	Safety Device Type: 9043042150 EXP: 97/02	X	BM	Out dated (14)
3	Hoist Brake BxLF 100	✓	M	
4	Electric Motor 3 phase MBTR 132 M.S.I	✓	BM	
5	Worm Gear Wear Clean Air Filter	✓	Q	
6	Play Between Coupling Shafts	✓	Y	
7	Rack and Pinion Wear	✓	BM	
8	Machine Plate Attachment	✓	M	
9	Centrifugal Brake	✓	M	
10	Safety Hooks, (Guide Rollers) & Counter Rollers	X	M	Two guide rollers gears worn out
HOISTWAY				
1	Mast Alignment	✓	Y	
2	Mast Bolts (✓) Rack Screws (✓) Tie-Ins (✓)	✓	Y	
3	Trailing Power (✓) Control Cables (✓)	✓	M	
4	Cable Support Arms (✓) Cable Guides (X)	✓	M	changed own
5	Counterweight Wire Rope & Attachments	✓	M	
6	Counterweight, Rollers & Cathead	✓	M	
7	Enclosures and Sill Runby	✓	M	
8	Landing Door Interlocks (Clean Door Tracks)	X	M	Need to check Alarm
9	Normal Travel Limits (✓) Final Limits (✓)	✓	M	
10	Travel Limit Cams & Flags	✓	M	
11	Operation of Hall Call Stations (✓) Lights (✓)	✓	M	
PIT				
1	Pit Stop Switch	✓	M	
2	Buffer Springs	✓	BM	
3	Car Mounting Dampers and Bolts	✓	M	
4	Cable Trolley Assembly	✓	M	
5	Distance of Trolley Assembly from Base Frame:	✓	Q	
6	Counterweight Runby	✓	Q	
LUBRICATION				
1	Rack (✓) Rollers (✓) Doors (✓) Interlocks (✓) SD (✓)	✓	M	
TESTING				
1	Safety Device S/N: 11444 6 mos. () 1 year (✓)	X		Out dated
2	Corrosion - Ultra Sonic Test (If Needed)		Y	
Was the unit in safe operating condition? (Y) Put (N) ① Sub out dated need Be changed ② Guide Rollers need change ③ Car Hook Inbalance Cam need Rechr				

Field Technician Signature

Customer Signature

ALIMAK ELEVATOR COMPANY
PERIODIC INSPECTION AND TEST REPORTService Report: 68229Hour Meter: 59019Date: June 20, 1982Customer: Deane IndustriesS/N: 6316Year: 1982Model: 10/14 SPVLocation: Spirit of Columbus (Oil P.) Port of SpainAlimak Rep: A. WickhamSANA Hall 5
1300101

NO	Items To Be Checked	OK	FREQ	COMMENTS
CAR				
1	Instruction and Load Signs (Clean Car and Top)	✓	M	
2	Car Enclosure Vision Panels (Clean)	✓	Q	
3	Car Door (X) Trap Door (✓) Interlocks (✓) (Gibs)	✓	M	Interlocks Bushings
4	Car Lights (✓) 'E' Lights (✓) Alarm (✓)	✓	M	
5	Car Operating Station (✓) 'E' Stop Button (✓)	✓	M	Control Buttons
ELECTRICAL CABINET				
1	Main Volt. 440 VAC Control Volt. 120 VAC	✓	M	
2	Battery VDC Charger VDC	✓	M	
3	Elec. Components, Loose Connections, Jumpers	✓	Q	
4	Car Top Operating Station	✓	M	
5	Retiring Cam	✓	M	
MACHINERY				
1	Gear Box for Leaks and Level 9-32 800-662	✓	M	
2	Safety Device Type: 9043093150 EXP: 97100	✓	BM	cat dated 7/82
3	Hoist Brake	✓	M	
4	Electric Motor	✓	BM	
5	Worm Gear Wear Clean Air Filter	✓	Q	
6	Play Between Coupling Shafts	✓	Y	
7	Rack and Pinion Wear	✓	BM	
8	Machine Plate Attachment	✓	M	
9	Centrifugal Brake	✓	M	
10	Safety Hooks, Guide Rollers & Counter Rollers	✓	M	
HOISTWAY				
1	Mast Alignment	✓	Y	
2	Mast Bolts (✓) Rack Screws (✓) Tie-Ins (✓)	✓	Y	
3	Trailing Power (✓) Control Cables (✓)	✓	M	
4	Cable Support Arms (✓) Cable Guides (✓)	✓	M	
5	Counterweight Wire Rope & Attachments	✓	M	
6	Counterweight, Rollers & Cathead	✓	M	
7	Enclosures and Sill Runby	✓	M	
8	Landing Door Interlocks (Clean Door Tracks)	✓	M	
9	Normal Travel Limits (✓) Final Limits (✓)	✓	M	
10	Travel Limit Cams & Flags	✓	M	
11	Operation of Hall Call Stations (✓) Lights (✓)	✓	M	
PIT				
1	Pit Stop Switch	✓	M	
2	Buffer Springs	✓	BM	
3	Car Mounting Dampers and Bolts	✓	M	
4	Cable Trolley Assembly	✓	M	
5	Distance of Trolley Assembly from Base Frame:	✓	Q	
6	Counterweight Runby	✓	Q	
LUBRICATION				
1	Rack (✓) Rollers (✓) Doors (✓) Interlocks (✓) SD (✓)	✓	M	
TESTING				
1	Safety Device S/N: 11458 6 mos. () 1 year (✓)	✓		cat dated
2	Corrosion - Ultra Sonic Test (If Needed)	✓	Y	
Was the unit in safe operating condition? (Y) N				

Field Technician Signature

Customer Signature

① Safety Recall Checkings
 ② Cor. Interlock when N.
 ③ Buttons & Wires.



JOSE CARLOS FERNANDES ALIMAK ELEVATOR COMPANY
DIVISÃO DE SERVIÇOS TÉCNICOS
DEPARTAMENTO DE INSPEÇÃO E TESTES

Service Report: 65205

Hour Meter: 523 31

Date: June 2

Customer: Nova Indústrias

S/N: 6201

Year: 92

Model: 11/13 SP

Location: Spirit of Columbus Q.L. Ry (Port side)

Alimak Rep: A. W. L. Int

(S.A. No. 11.11.1300.14)

NO	Items To Be Checked	OK	FREQ	COMMENTS
CAR				
1	Instruction and Load Signs (Clean Car and Top)	✓	M	
2	Car Enclosure Vision Panels (Clean)	✓	Q	
3	Car Door (✓) Trap Door (✓) Interlocks (✓) (Gibs)	✓	M	
4	Car Lights () 'E' Lights () Alarm ()	✓	M	
5	Car Operating Station (✓) 'E' Stop Button (✓)	✓	M	Button Loose
ELECTRICAL CABINET				
1	Main Volt. 440 VAC Control Volt. 120VAC	✓	M	
2	Battery VDC Charger VDC	✓	M	
3	Elec. Components, Loose Connections, Jumpers	X	Q	No main inspection
4	Car Top Operating Station	✓	M	No main inspection
5	Retiring Cam	✓	M	check large part
MACHINERY				
1	Gear Box for Leaks and Level 4032900 20.5/1	✓	M	
2	Safety Device Type: 9041092150 EXP: 97/02	X	BM	Out Dated / 14x
3	Hoist Brake BxLF 140	✓	M	
4	Electric Motor 3 motor MBTA 132 M.S.I	✓	BM	
5	Worm Gear Wear Clean Air Filter	✓	Q	
6	Play Between Coupling Shafts	✓	Y	
7	Rack and Pinion Wear	✓	BM	
8	Machine Plate Attachment	✓	M	
9	Centrifugal Brake	✓	M	
10	Safety Hooks, Guide Rollers & Counter Rollers	X	M	Two guide rollers. 90% worn out.
HOISTWAY				
1	Mast Alignment	✓	Y	
2	Mast Bolts (✓) Rack Screws (✓) Tie-Ins (✓)	✓	Y	
3	Trailing Power (✓) Control Cables (✓)	✓	M	
4	Cable Support Arms (✓) Cable Guides (✓)	✓	M	
5	Counterweight Wire Rope & Attachments	✓	M	
6	Counterweight, Rollers & Cathead	✓	M	
7	Enclosures and Sill Runby	✓	M	
8	Landing Door Interlocks (Clean Door Tracks)	X	M	Need to check door & fix
9	Normal Travel Limits (✓) Final Limits (✓)	✓	M	also missing roller & ...
10	Travel Limit Cams & Flags	✓	M	
11	Operation of Hall Call Stations (✓) Lights (✓)	✓	M	
PIT				
1	Pit Stop Switch	✓	M	
2	Buffer Springs	✓	BM	
3	Car Mounting Dampers and Bolts	✓	M	
4	Cable Trolley Assembly	✓	M	
5	Distance of Trolley Assembly from Base Frame:	✓	Q	
6	Counterweight Runby	✓	Q	

LUBRICATION

1. Rack (✓) Rollers (✓) Doors (✓) Interlocks (✓) SD (✓) ✓ M

TESTING

1. Safety Device S/N: 11443 6 mos. () 1 year (✓) X

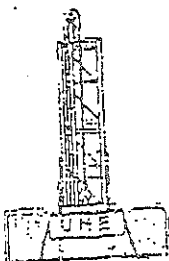
2. Corrosion - Ultra Sonic Test (If Needed) Y

Was the unit in safe operating condition? (Y) But N

① - Safety needs to be changed
② - Check rollers & ch. + check tightness of circuit (Sump & 2) - Car wire to T. level

Field Technician Signature

Customer Signature



UNITED HOIST EQUIPMENT LTD.

106 COMMERCIAL ROAD, BOLTON, ONT. L7E 1K4

Telephone (905) 857-1354 FAX: (905) 857-0353

87 DG 14810

November 9, 1998

TELE-FAXED

Davie Industries
22, Geo D. Davie
C.P. 130
Levis, Quebec
G5V 6N7



Attention: Jacques Raquier

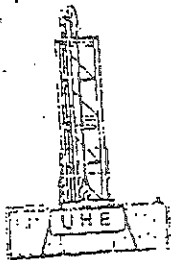
Gentlemen:

Re: Spirit of Columbus, Quebec

This letter is to confirm our capacity as a registered contractor in construction hoists.

United Hoist Equipment Ltd is a registered contractor in Ontario (registration #21002) to maintain, install, dismantle and service construction hoists.

On Friday November 6, 1998 we had completed the maintenance required on your Alimak elevators serial #6315, #6316, #6386 & #6387 at the aforementioned project and the units were inspected and passed by Groupe Conseil Quasip. A letter is attached from the engineer to specify the inspection details. A Rina representative was on site thru out this inspection to witness the procedure and approval of the units when passed.



UNITED HOIST EQUIPMENT LTD.

106 COMMERCIAL ROAD, BOLTON, ONT. L7E 1K4

Telephone (905) 857-1354 FAX: (905) 857-0353



Please be advised that the (4) aforementioned safety devices will have to be serviced and re-inspected every twelve (12) months.

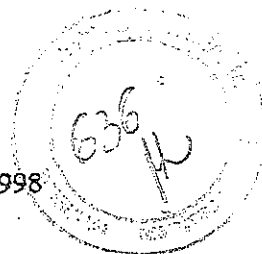
Sincerely,

UNITED HOIST EQUIPMENT LTD

Charles Atkinson
President

E Cópia fiel do documento original

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



Trois-Rivières, le 9 novembre 1998

Groupe
Conseil
QuasipMr Charles Atkinson
United Hoist Equipment Ltd
106 Commercial Road
Bolton, ont.
L7E-1K4

Objet: Test of free fall brake, Pontoon hoist
Spirit of Columbus

Monsieur Atkinson,

Following your request to witness the operation of the free fall brake on the four hoists located on the Spirit of Columbus platform. Please find hereafter my report of this inspection.

The Spirit of Columbus is an oil platform currently under revision at the Davie Shipyard, Quebec city wharf. Each of the four pontoon legs is equipped with a hoist manufactured by Alimak, Sweden bearing the following serial numbers # 6315, 6316, 6386 & 6387, and each having a capacity of 1620 Kg at a speed of 32 m/min. Each hoist is powered by three gearmotors mounted in parallel each turning a pinion gear on a single rack gear.

The following set up was performed to do this test, on each of the four hoist assembly. Each gearmotor assembly comprise a motor, an electric motor brake, a gear reducer and high speed shaft centrifugal brake, in addition each hoist is equipped with an independent free fall governor brake set to activate should the hoist fall at a rate exceeding 148 fpm independtly of the two previous brake system. The gear reducer brake was made inoperative by inserting a finger plate stopping the centrifugal action, and the electric motor brake control was jumped to an external control push-button station.

209, place St
Trois-Rivières
Québec, Qc
téléphone: (819) 37
télécopieur: (819) 37

COPIA FIEL DO DOCUMENTO ORIGINAL
JOSE CARLOS PIMENTEL GUIMAR
DIRETOR
DIVISÃO DE SERVIÇOS CARTORARIAS

REGISTRO ITALIANO NAVALE

5

OFFICE/AGENCY IN QUEBEC FACTUAL REPORT OF SURVEYS

RINA number [8] 67073	Name of ship SPIRIT OF COLUMBUS	Gross Tonnage [8]	Flag of ship ITALIAN
Start of Survey 20.07.98	End of Survey 23.10.98	Place of Survey QUEBEC	File [9] 97 DG 14810 IN

THIS IS TO CERTIFY THAT THE FOLLOWING SURVEYS HAVE BEEN CARRIED OUT ACCORDING TO APPLICABLE RULES AND REGULATIONS

CLASS / "NAVIGABILITA" (*) SURVEYS [3]	Spec (Ren) Survey [1]	Ord (Ann) Survey [1]	Intermediate Survey [1]	Continuous Survey [1]	Occasional Survey [1]	First Classification Navigability Survey [1]	Cert/Stat [4]	Expiry date of Cert/Stat
1 Hull				X	X			
2 Machinery				X	X			
3 Unmanned machinery space (IAQ/AP/IAQ+IAP)(*)								
4 Refrigerating Plant (IFQ)								
5 Special notations (FFQ; NAU; SCC,.....) (*)								
6 Diving systems								
7 Dynamic positioning system (IPD)								

Bottom (5)	NORM	VS	AVA	Afloat	□	12 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC	
9 Tailshaft (centre) [6]	NEW	COMP	ALT	PAR	with NDT	□	13 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
10 Tailshaft (port) [6]	NEW	COMP	ALT	PAR	with NDT	□	14 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
11 Tailshaft (stbd) [6]	NEW	COMP	ALT	PAR	with NDT	□	15 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC

STATUTORY SURVEYS	Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat	STATUTORY SURVEYS	Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat
16 Load Line (INT/ITA) (*) [3]				29 Dangerous Goods in Road Tanks			
17 Safety Construction				30 Dangerous Goods in Tank Containers			
18 Safety Equipment				31 Dangerous Goods in Packages			
19 Safety Radio				32 Cargo Gear - Cranes (ILO) [3]	ANN		
20 Safety Passenger				33 Cargo Gear - Derricks (ILO) [3]			
21 MARPOL Annex I (IOPP/CONF/DICH) (*) [3]				34 Cargo Gear - Cranes (RINA) [3]	QUI		
22 Fitness Chemicals (COF/COF) (*)				35 Cargo Gear - Derricks (RINA) [3]			
23 Fitness Gases (COF/COF) (*)				36 "Idoneità" (passenger/cargo (*) ships) [3]			
24 Noxious Liquid Substances (IPPC)				37 Crude Oil Washing (COW)	AUT	OCC	
25 Sewage Pollution Prevention (ISPP)				38 Radar ascertainment	RIN	OCC	
26 Dangerous Goods in bulk (CHEM) [3]				39			
27 Dangerous Goods in bulk (GAS) [3]				40			
Carriage of vehicles				41			

EACH SURVEY WAS CARRIED OUT IN ACCORDANCE WITH THE RELEVANT "CHECK LIST" ☐

THIS IS THE FINAL REPORT ☒ THIS IS NOT THE FINAL REPORT; NARRATIVE REPORTS WITH RELEVANT ENCLOSURES WILL BE SENT LATER ☐

PARTIAL / COMPLETE (*) THICKNESS MEASUREMENTS CARRIED OUT ☐ RELEVANT REPORTS ARE ENCLOSED ☐

TOTAL ENCLOSURES No. 4 RELEVANT TO ITEM(S) 1-2-32-34

RECOMMENDATIONS / MEMO (*) were imposed / deleted / postponed / confirmed (*) as stated on page 3 ☐

Type of Certificate or Statement [7]	CC	DC	DN	DP	Date of VISA	Certificate confirmation	SURVEYORS
	X						Ident. No. Sumame
No entry in Class Certificate COPIA FIEL DO DOCUMENTO ORIGINAL JOSÉ CARLOS PIMENTEL GUSMÃO DIRETOR DIVISÃO DE SERVIÇOS CARTORIAIS							526 FORMENTI

Former VISA : Date Place.....

(*) Underline the appropriate word(s) or abbreviation(s)

Place and date: Quebec 23.10.98 Surveyors' names and signatures: Formenti

Form: VISITE1-Rep-EG-05/94

See Explanatory Notes [1] to [9] on page 2

REGISTRO ITALIANO NAVALE

SALT WATER BALLAST SPACES

(a) Spaces examined where no protective coating was applied from the time of construction:

(b) Spaces examined where the protective coating was found in POOR condition:

(c) Spaces examined where the protective coating was found in GOOD or FAIR condition:

FIRE FIGHTING SYSTEMS AND APPLIANCES

(a) Date of last check of CO2 bottles/vessels content:

(e) Date of last check of nitrogen bottles content:

(b) Date of last hydrotesting of CO2 bottles/vessels:

(f) Date of last hydrotesting of nitrogen bottles:

(c) Date of last check of HALON bottles/vessels content:

(g) Date of last renewal of foam forming liquid:

(d) Date of last hydrotesting of HALON bottles/vessels:

(h) Foam forming liquid sample taken for analysis (if required): ☐

SETTING UP OF SAFETY VALVES OF MAIN / AUXILIARY (*) BOILERS:

THE OUTSTANDING ITEMS FOR COMPLETION OF PART-HELD ORDINARY (ANNUAL) / INTERMEDIATE (*) HULL OR MACHINERY SURVEYS AND/OR MAIN / AUXILIARY BOILER SURVEYS (*) ARE AS STATED BELOW:

EXPLANATORY NOTES FOR FILLING IN THIS FORM:

[1] MARKS FOR SURVEY EXTENT

X or AL = Survey entirely carried out

IN = Commencement of Survey

CN = Continuation of Survey

CM = Completion of Survey

PC = Annual Survey of exhaust fired thermal oil heaters including visual inspection and tightness testing of heater tubes

[2] TYPE OF SURVEY

ANN = Annual Survey

AUT = Survey for authorization (for COW) (Item 37)

BIE = Biennial Survey (for Compasses)

INT = Intermediate Survey

LT = Load test (for Cargo Gear - Items 32 to 35)

OCC = Occasional survey

QUA = Quadrennial Survey (for Cargo Gear - Items 32 to 35)

QUI = Quinquennial survey (for Cargo Gear - Items 32 to 35)

RIL = Initial Survey

RIN = Renewal Survey

VAR = Survey for Loadline variations (Item 16)

[3] OTHER NOTES ON SURVEYS

N.B.: "NAVIGABILITA" SURVEYS are Surveys to be carried out for the purpose of the issue, maintenance or renewal of the "Certificato di navigabilità" (Seaworthiness Certificate) under the provisions of Italian Safety Rules

"IDONEITA" SURVEYS are Surveys to be carried out for the purpose of the issue, maintenance or renewal of the national safety certificate called "Certificato di Idoneità" to passenger or cargo ships not subject to SOLAS under the provisions of Italian Safety Rules (Item 36)

INT/ITA = Survey for the purpose of the International/Italian Loadline Certificate, as appropriate (Item 16)

CONF = Certificate of compliance ("Conformità") to MARPOL Annex I (only for Italian flag ships not subject to MARPOL) (Item 21)

DICH = Statement of compliance ("Dichiarazione") to MARPOL Annex I (only for Italian flag ships not subject to MARPOL) (Item 21)

CHEM = Statement of compliance ("Attestazione") to Italian Statutory Regulations (only for Italian or foreign flag chemical tankers or gas carriers operating in Italy) (Items 26 and 27)

RINA = Survey for the purpose of RINA Certificate for cargo gear (only for cargo gear of Italian ships not required to be included in ILO cargo gear booklet) (Items 34 and 35)

[4] CERTIFICATES AND STATEMENTS

PRO = Provisional (Interim) Certificate issued

EXT = Validity of existing Certificate extended

CND = Conditional Certificate issued

DEF = Full term Certificate issued

N.B.: The square is to be left blank in the case of endorsements of existing certificates

[5] BOTTOM SURVEY

NORM = Survey NOT valid on account of a Special Survey

VS = Survey valid on account of a Special Survey

AVA = Survey in connection with a Damage Survey

Afloat: Mark the square with X to mean that an In-water Survey was carried out in lieu of a Docking Survey (see 3.2.3.2 of Ch. 3 of Section A of the Rules)

N.B.: The underwater inspection of the ship's bottom to postpone the Docking Survey is to be considered as an Occasional Survey

[6] TAILSHAFT SURVEY

NEW = Tailshaft renewed

COMP = Complete Survey

ALT = Alternate Modified Survey

PAR = Partial Survey

With NDT: Mark the square with X to mean that a surface crack detection of the propeller keyed connection to the tailshaft was satisfactorily performed

[7] TYPE OF CERTIFICATE OR STATEMENT

CC = Certificate of Class

DC = Class Statement

DN = Statement with a view to obtaining the "Certificato di navigabilità"

DP = Certificate of Class for Pleasure Vessels

[8] FOREIGN FLAG SHIPS NOT CLASSED WITH RINA

In the case of these ships, the value of Gross Tonnage and, in lieu of RINA number, Distinctive number or letters are to be indicated

[9] FILE

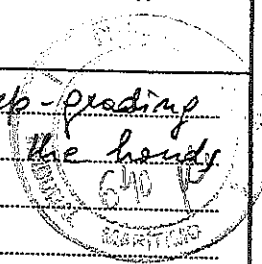
Year, Office code, File number and File code are to be specified, in the above order, according to the File Record Book of the RINA Office concerned

(*) Underline the appropriate word(s) or abbreviation(s)

CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

The vessel remains in "laid-up" condition, for up-proding works. All documents, except Cargo Gear Book, in the hands of Italian Consulate of Quebec.



É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL CUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORÍAS

Underline the appropriate word(s) or abbreviation(s)

Place and date: Quebec, 23.10.98 Surveyors' names and signatures



REGISTRO ITALIANO NAVALE
R. Formenti

[Signature]

CARGO GEAR INFORMATION

TYPE OF CARGO GEAR SURVEYED	TYPE OF SURVEY(S) CARRIED OUT	NUMBER OF CARGO GEAR SURVEYED AND RELEVANT SWL IN TONNES											
		SWL ≤ 10			10 < SWL ≤ 20			20 < SWL ≤ 40			SWL > 40		
		No.	SWL	Test	No.	SWL	Test	No.	SWL	Test	No.	SWL	Test
DERRICKS	First Survey / Quinquennial Survey												
	Quadrennial Survey												
	Annual Survey												
CRANES	First / Annual (*) Survey ANN QUI	2	58					1	22	X	1	50	
CARGO ELEVATORS	First / Annual (*) Survey												

DERRICKS, CRANES AND/OR CARGO ELEVATORS OUT OF SERVICE, IF ANY, ARE TO BE STATED BELOW (specify number and relevant SWL)

INFORMATION FOR INVOICING

SURVEYS CARRIED OUT IN ITALY OR ABROAD BY RINA EXCLUSIVE SURVEYORS

INFORMATION ON TONNAGE MEASUREMENTS

Tonnage measurements carried out according to Regulations of:

The ship had already been measured according to Regulations of:

Tonnage re-measurements carried out: ☐ Tonnage measurements carried out for sister ship(s) accepted: ☐

INFORMATION ON SUBDIVISION AND STABILITY

Inclining test carried out: ☐ Light ship weight test carried out: ☐

Subdivision and/or damage stability calculations carried out: ☐

Calculations as above carried out for sister ship(s) accepted: ☐

OTHER INFORMATION

Fees for visaed or issued class documents: Fees for visaed or issued statutory documents:

Phone / Telex expenses: Miscellaneous expenses:

In the case of surveys carried out outside the RINA Branch Office area, state whether travel tickets (if any) have been supplied by the Shipowner or by RINA:

Expenses for travel tickets as above when supplied by RINA:

Survey(s) carried out together with the following RINA Agent abroad:

The invoice is to be sent to the Shipowner (yes/no): If not, the invoice is to be sent to the following address:

..... Client Code

--	--	--	--	--

Through: Through Code

--	--	--	--	--

SURVEYS CARRIED OUT OUTSIDE ITALY BY RINA/GL JOINT EXCLUSIVE STATIONS OR AGENCIES ABROAD

Number of documents issued or visaed without inspections onboard being carried out: Number of Km covered by car and corresponding fees:

Total time spent on surveys (hours/min.): Other car travelling expenses (tolls, etc.):

Occasional survey time (hours/min.): Travelling expenses other than by car (thickets, etc.):

Travelling time (hours/min.): Phone/Telex expenses:

Out of office time (hours/min.): Miscellaneous expenses:

Overtime (hours/min.):

Underline the appropriate word(s) or abbreviation(s)

Place and date: Quebec, 23.10.98 Head of Office or Agent (Abroad)

Form: VISITE1-Rep-EG-05/94

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

É COPIA FIEL DO DOCUMENTO ORIGINAL

Nave:
Ship

SPIRIT OF COLUMBUS

- Numero Registro
Register Number

67073

(2)



ALLEGATO AL RAPPORTO N.

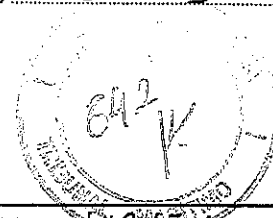
97 DG 14810 IN

Enclosed to survey report



PROMEMORIA DI SERVIZIO

Memorandum

(1) VISITA: CONTINUOUS MACHINERY SURVEY - OCCASIONAL SURVEY
Survey

OPERAZIONI E LAVORI ESEGUITI - OSSERV. — Items and repairs carried out - Remarks

GRUPPO ELEMENTO * (3)
15 16 17 18 19 20 O R D 77

- HULL SERVICE AIR RECEIVER

- AUTOMATISM AIR RECEIVER

- BASE OIL TRANSFER PUMP - STRIPPED OUT } NOT EXISTING

- BASE OIL TRANSFER PUMP - STRIPPED OUT }

- AIR-CONDITIONING PLANT

MISC

All five compressors needed overhauling operations: it was preferable to change them completely - Renewed by same type new compressors -

- FRESH WATER PUMP (AUX.) - Not in machinery schematic plant, installed at the end of construction for harbour service.

type: GARBARINO RU 125.315 n. 22121 / 9.054 C - 1995

208 m³/h x 35 mca - call R. EN 500518 - M.E. Electro

Adda C 200 LT/4 1954 15 F kW 34.7 440V 60Hz 58 A

cos φ 0.88 1765 RPM n. 5902941 "a norme RINA"

Installed on std of FW pump hp 129 (el 36576 PORT/AFT IN) -

COPIA FIDEL DEL DOCUMENTO ORIGINAL

JOSÉ CARLOS PUENTE CUSIMÓ

DIRECTOR

DIVISÃO DE SERVIÇOS CARTORIAS



REGISTRO ITALIANO NAVALE

R. F. F. F. F.

QUEBEC

Data/Date: 23.10.98

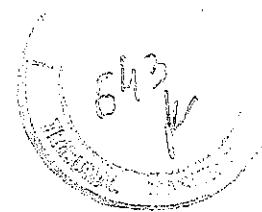
I tecnici/The surveyors

*Ilizato quale rapporto di visita solo nel caso di Visita Speciale e/o continuativa scafo, macchina, I.F. riempiendo le caselle alle colonne 15 + 77.
essere utilizzati fogli separati per lo scafo, la macchina e l'I.F. rispettivamente.urvey report only for Special Survey and/or continuous hull, machinery, refrigerating plant filling the boxes in way of the number 15 + 77.
ets will be used for hull, machinery and refrigerating plant.Corrispondente alla voce che indica come si intende utilizzare il modulo.
box showing the kind it is intention to use the form.ppo visitato al completo riscontrato in ordine.
group is thoroughly surveyed and found in order.



REGISTRO ITALIANO NAVALE

Quebec, 23.10.98



Alla Direzione Generale
Via Corsica 12 - 16128 Genova
ITO

Prot. QUE/90/RFO

Oggetto: JOB 97 DG 14810 IN - SPIRIT OF COLUMBUS - RI. 67073
Visite di Classe

Si trasmette, il allegato, il mod. VISITE 1 contenente i "factual reports" per le visite di Classe eseguite sulla unità in oggetto nel periodo Luglio - Ottobre 1998.

Distinti saluti

REGISTRO ITALIANO NAVALE
R. FORMENTI



x Clarifice

NB non fe ll ware

1. L.

- 4 NOV 1998



- Numero Registro 67073
Register Number

644

OPERAZIONI E LAVORI ESEGUITI - OSSERV. — *Items and repairs carried out - Remarks*

[illegible]

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORÁRIOS



REGISTRO ITALIANO NAVALE

R. Feringan

Porto/Place: QUEBEC Data/Date: 23.10.98 | tecnici/The surveyors

- (1) Il foglio potrà essere utilizzato quale rapporto di visita solo nel caso di Visita Speciale e/o continuativa scafo, macchina, I.F. riempiendo le caselle alle colonne 15 + 77. In questo caso dovranno essere utilizzati fogli separati per lo scafo, la macchina e l'I.F. rispettivamente.
The sheet can be used as survey report only for Special Survey and/or continuous hull, machinery, refrigerating plant filling the boxes in way of the number 15 + 77.
In such case separate sheets will be used for hull, machinery and refrigerating plant.
- (2) Porre "X" nella casella corrispondente alla voce che indica come si intende utilizzare il modulo.
Mark "X" in way of the box showing the kind it is intention to use the form.
- (3) Porre "1" quando gruppo visitato al completo riscontrato in ordine.
Mark "1" when the group is thoroughly surveyed and found in o. der.

REGISTRO ITALIANO NAVALE

CARGO GEAR SURVEY REPORT

Survey under the provisions of the International Labour Organization Convention and RINA Rules for loading and unloading arrangements and for other lifting appliances on board ships

67073
RINA No

SPIRIT OF COLUMBUS
Ship's Name

QUEBEC
Port

30.09.98
Date

97DG14810 IN
File code

1 The undersigned surveyor of RINA supervised / performed the following surveys and tests:

Number (a)	Type (b)	SWL (c)	Survey (d)	Test (e)	Results (f)
1	C	50 t	ANN	—	X
3	B	5 t	ANN	—	X
4	B	5 t	ANN	—	X
2	C	22 t			OUT

Mark with following abbreviations:

- (a) Position number on approved "Rigging Plans".
(b) Type of installation: D = Derrick; C = Crane; E = Cargo Elevator; R = Ramp; B = Bridge Crane.
(c) Safe Working Load in kN.
(d) Type of survey: IN = Initial; QUI = Quinquennial; ANN = Annual; 6M = Six Monthly; OCC = Occasional survey for damage and/or repair.
(e) Test method: W = by weight; Y = by dynamometer; — = test not carried out.
(f) Survey/Test result: X = Satisfactory; R = Remarks; OUT = Out of service.

2 The approved "Rigging Plans" are available on board ☒

3 Marking on cargo handling appliances: existing ☒ requested ☐

4 New certificates issued:

Form (g)								
Number								
(g) New form issued: LA1 Cargo Gear Booklet; or LA2 lifting appliances test; or LA3 loose gear test; or LA4 wire ropes test; or LA5 for Italian flagged ships only.								

5 Endorsement in Cargo Gear Booklet: Part I ☒ Part II ☒

6 Confirm that Part III of the Cargo Gear Booklet has / has not (delete as appropriate) been endorsed by a "responsible person" on board and forms LA3 / LA4 (delete as appropriate) have been issued ☐

7 Works, remarks and restrictions are reported overleaf ☒

COPIA DELL'INSTRUMENTO ORIGINAL

RINA surveyor's name and signature

Date 30.09.98

JOSÉ CARLOS PINO DEL CUSHIO
DIRECTOR



REGISTRO ITALIANO NAVALE

R. Formenti

Mark: — = No or not applicable; X = Yes or not applicable; R = Remarks reported overleaf.

REMARKS

- CRANE NO 2 IS TEMPORARY OUT OF SERVICE FOR
REPAIR -

SHIP'S CARGO GEAR BOOKLET IS FORM MC 1

E CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSE F. MONTES GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



MODULO MC 1
Form MC 1

REGISTRO ITALIANO NAVALE

ISPettorato di GENOVA
Branch Office of

Registro N. 4/084

Rilasciato il 22-02-1995
Issued

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORÁRIOS

REGISTRO DEI MEZZI DI CARICO E SCARICO DI BORDO

REGISTER OF SHIPS CARGO HANDLING MACHINERY AND GEAR

É COPIA FIEL DO DOCUMENTO ORIGINAL

Il presente Registro è redatto sulla base del Registro tipo approvato dalla Organizzazione Internazionale del Lavoro per il collaudo e l'esame dei mezzi impiegati per la caricazione e la scarica delle navi.

This Register-Book is drawn up on the basis of the standard form approved by the International Labour Office for the test and examination of lifting machinery and gear used in the loading and unloading of ships.

Per le navi di bandiera italiana il presente Registro è rilasciato per conto del Ministero della Marina Mercantile.

For ships flying Italian flag this Register is issued on behalf of the Administration.

Nome della nave "SPIRIT OF COLUMBUS" R167073
Name of Ship

Numero di matricola
Official Number

Compartimento Marittimo NAPOLI
Port of Registry

Armatore SANA SPA - ROMA
Name of Owner

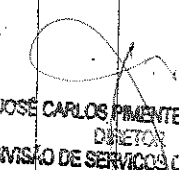
Indirizzo PIAZZA VILLA CARREGNA 44 - ROMA
Address

GENERE E RELATIVI ACCESSORI, ESCLUSI I PICCHI ED I RELATIVI ACCESSORI NON SMONTABILI (Vedere Istruzioni N. 3)
gear other than derricks and permanent attachments thereto
 (See Instructions No. 3)

*Visita completa e sigillata esame esteriore, integrato, se necessario, con altri mezzi di indagine quali saggi al martello, effettuato con la maggior cura compatibile con le circostanze, allo scopo di poter formulare una conclusione attendibile sulla sicurezza offerta dalle parti esaminate; a tale fine devono essere smontate, se necessario, parti di macchinario o attrezzature, a thorough examination a means a visual examination, supplemented if necessary by other means, such as a hammer test, carried out as carefully as the conditions permit in order to arrive at a reliable conclusion as to the safety of the parts examined; if necessary for the purpose, parts of the machines or gear must be dismantled.

certifica che, alla data in cui è stata apposta la firma, gli apparecchi ed accessori indicati alla colonna 1 sono stati sottoposti a visita completa da una persona competente e che, salvo quanto riportato nella colonna 3, non sono stati riscontrati difetti tali da compromettere la sicurezza di impiego.

certify that on the date to which I have appended my signature, the machinery and gear shown in column 1 was thoroughly examined by a competent person, and no defects affecting its safe working condition were found other than those shown in column 3.

Data e Firma Date and Signature	Data e Firma Date and Signature	Data e Firma Date and Signature	REMARKS (to be initialed and dated) OSSERVAZIONI (sigla e data)
ERMO 12 GIUGNO 1997  REGISTRO ITALIANO NAVALE R. Formenti	QUEBEC, 30 SEPTEMBER 98  REGISTRO ITALIANO NAVALE R. Formenti	 JOSÉ CARLOS PIMENTEL DIRECTOR DIVISÃO DE SERVIÇOS CARGAS	Smonta / February 1995 GRU N.2 da operazione "1-Pull operation" portatore 15 t e da carichi fuori servizio - CRANE No.2 "1-Pull operation" SWL 15 tons is out of service. Genova, 22 February 1995
COPIA FID. DO DOCUMENTO ORIGINAL			 REGISTRO ITALIANO NAVALE R. Formenti
			QUEBEC, 30 September 1998 CRANE NO 2 (22 t SWL) IS TEMPORARY OUT OF SERVICE  REGISTRO ITALIANO NAVALE R. Formenti

REGISTRO ITALIANO NAVALE

CARGO GEAR SURVEY REPORT

Survey under the provisions of the International Labour Organization Convention and RINA Rules for loading and unloading arrangements and for other lifting appliances on board ships

RINA No **67073** Ship's Name **SPIRIT OF COLUMBUS** Port **QUEBEC** Date **06.10.98** File code **97DC14810 IN**

1 The undersigned surveyor of RINA supervised / performed the following surveys and tests:

Number (a)	Type (b)	SWL (c)	Survey (d)	Test (e)	Results (f)
2	C	22 t	QUI	W	X

Mark with following abbreviations:

- (a) Position number on approved "Rigging Plans".
- (b) Type of installation: D = Derrick; C = Crane; E = Cargo Elevator; R = Ramp; B = Bridge Crane.
- (c) Safe Working Load in kN.
- (d) Type of survey: IN = Initial; QUI = Quinquennial; ANN = Annual; 6M = Six Monthly; OCC = Occasional survey for damage and/or repair.
- (e) Test method: W = by weight; Y = by dynamometer; — = test not carried out.
- (f) Survey/Test result: X = Satisfactory; R = Remarks; OUT = Out of service.

2 The approved "Rigging Plans" are available on board ☒

3 Marking on cargo handling appliances: ☒ existing ☐ requested

4 New certificates issued:

Form (g)	LA 2							
Number	FILE/3							

(g) New form issued: LA1 Cargo Gear Booklet; or LA2 lifting appliances test; or LA3 loose gear test; or LA4 wire ropes test; or LA5 for Italian flagged ships only.

5 Endorsement in Cargo Gear Booklet: ☒ Part I ☒ Part II

6 Confirm that Part III of the Cargo Gear Booklet has / has not (delete as appropriate) been endorsed by a "responsible person" on board and forms LA3 / LA4 (delete as appropriate) have been issued ☐

7 Works, remarks and restrictions are reported overleaf ☒

Date **06.10.98**

COPIA FIDEL COPIA ORIGINAL
JOSE CARLOS PIMENTEL OLIVEIRA
DIRECTOR
RINA surveyor's name and signature

RINA surveyor's name and signature

REGISTRO ITALIANO NAVALE
R. Formenti

Mark: — = No or not applicable; X = Yes or Remarks reported overleaf.

REMARKS

Crane was completely overhauled; drum renewed - 650

Running test and overload test carried out satisfactorily

Main hoist (1 fall operation) also fitted in service.

Entry in form MC 1 as well as per added copy -

E COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL QUEMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIS

REGISTRO ITALIANO NAVALE

Certificate of test and thorough examination of Lifting Appliances Certificato di prova e visita delle sistemazioni di carico e scarico

This Certificate is based on the standard international form as recommended by the International Labour Office in accordance with ILO Convention No. 152.

Questo Certificato è redatto secondo il modello standard prescritto dall'ufficio Internazionale del Lavoro in accordo con la Convenzione ILO n. 152.

Certificate No. 97 DG 14810 IN / 3
Certificato N.:

Ship's name SPIRIT OF COLUMBUS
Nome nave

RINA Number 67073
Numero RINA

(1) Situation and description of lifting appliances (with distinguishing numbers or marks, if any) which have been tested and thoroughly examined <i>Ubicazione e descrizione delle sistemazioni di carico e scarico (con numeri o marche distintive se esistono) che sono stati provati e visitati</i>	(2) Angle to the horizontal or radius at which test load applied <i>Angolo di elevazione o volata del braccio all'atto della esecuzione della prova</i>	(3) Test load (kN) <i>Carico di prova (kN)</i>	(4) Safe working SWL (kN) or radius column <i>Portata (kN) all'angolo di elevazione o volata del braccio indicata colonna</i>
ELECTRO/HYDRAULIC CRANE LIEBHERR BOS 22/1250	m.		
MAIN HOIST (2 FALL OPERATION)	9 44	264 kN 132,4 kN	215,8 105,9
MAIN HOIST (1 FALL OPERATION)	25 44.3	265,8 kN 132,4 kN	215,8 105,9

E COPIA FIEL DELL'ORIGINAL

JOSE CARLOS PUENTE GARCIA

DIRECTOR

(5) Name and address of public service, association, company or firm conducting the test and examination
Nome e indirizzo dell'Ente, Associazione, Compagnia o Ditta che procede alla prova e visita

REGISTRO ITALIANO NAVALE - SURVEY STATION FOR QUEBEC

(6) Position of signatory in public service, association, company or firm
Qualifica del Firmatario nell'ente, Associazione Compagnia o Ditta

PRINCIPAL SURVEYOR

I certify that the above machinery, together with accessory gear, was tested by a competent person in the manner set forth on the reverse of this certificate; that a careful examination of the said machinery and gear by a competent person after the test showed that it had withstood proof load without injury or permanent deformation; and that the safe working load of the said machinery and gear is as shown in column (4).

Si certifica che gli apparecchi sopra specificati, unitamente ai loro accessori sono stati provati da una persona competente nel modo indicato nel questo modulo; che una visita accurata di detti apparecchi e accessori, successivamente effettuata da una persona competente, ha dimostrato che essi sopportano la prova senza riportare danno o deformazioni permanenti; e che la portata dei detti apparecchi e manovre è quella indicata nella colonna (4).

Date QUEBEC (QC.) October 6, 1998
Data

Stamp and signature
Timbro e firma



REGISTRO ITALIANO NAVALE

R. Formenti

NOTE - «Competent person» means a Surveyor of RINA or a person acknowledged by RINA.

NOTA - «Persona competente» significa un Tecnico del RINA oppure una persona specificamente riconosciuta competente dal RINA.

INSTRUCTIONS
ISTRUZIONI

1. Every lifting appliance shall be tested with a test load which shall exceed the safe working load as follows:
Tutti i mezzi di carico e scarico devono essere provati con un carico pari alla portata, maggiorata come segue:

SAFE WORKING LOAD
Portata (P)TEST LOAD (see para. 3)
Carico di prova (vedi par. 3)

≤ 200 kN

25 per cent in excess
25 per cento in eccesso

200 < P ≤ 500 kN

50 kN in excess
50 kN di sovraccarico

≥ 500 kN

10 per cent in excess
10 per cento in eccesso

2. In the case of derrick systems:
Se trattasi di picchi:

The test load shall be lifted with the ship's normal tackle with the derrick at an angle which should not be more than 15 degrees horizontal, or, when this is impracticable, at the lowest practicable angle. The angle at which the test was made should be stated in certificate of test. After the test load has been lifted, it should be swung as far as possible in both directions.

Il carico di prova deve essere sollevato con le attrezzature normali della nave, con una elevazione del picco non maggiore di 15° o, quando è impossibile, con la minore elevazione possibile. L'angolo di elevazione al quale è stata effettuata la prova deve essere riportato nel Certificato di Prova. Quando il peso di prova è sollevato il picco deve essere brandeggiato quanto più possibile nei due sensi.

The safe working load shown in column 4 is applicable only to a swinging derrick. When using fixed derricks, such as Union purchase rigs, the safe working load should as a general rule be reduced; in any case, it should be determined with due regard to the actual conditions.

Il carico di lavoro indicato nella colonna 4 è valevole soltanto per picco brandeggiato. Quando viene usato il sistema di picchi fissi con carico volante, il carico di lavoro deve essere ridotto; in ogni caso esso deve essere determinato per le reali condizioni d'uso.

In the case of heavy derricks, care should be taken that the appropriate shrouds and stays are rigged.
Nel caso di picchi di forza, si deve curare che la vantatura relativa sia a posto e sia testata.

3. In the case of cranes:
Se trattasi di gru:

The test load shall be lifted and swung as far as possible in both directions. If the jib of the crane has a variable radius it should be tested with a test load, as defined above, at the maximum and minimum radii of the jib. With hydraulic cranes where, owing to the setting valves, it is impossible to lift the test load, it will be sufficient to lift a load not less than 1.1 P.

Il carico di prova deve essere sollevato e brandeggiato quanto più possibile nei due sensi. Se il braccio della gru è a raggio variabile esso deve essere provato con un carico di prova come detto sopra alla massima ed alla minima volata della gru. Con gru idrauliche, qualora a causa del valore di taratura delle valvole di sicurezza sia impossibile sollevare il carico di prova previsto, sarà sufficiente sollevare un carico di prova non inferiore a 1,1 P.

4.

As a general rule, all tests should be carried out in this way dead load. RINA can authorize use of spring or hydraulic balances. When spring or hydraulic balance is used it shall be accurately certified, and the test should not be regarded as satisfactory unless the indication remains constant for a period of at least five minutes; moreover a load deemed sufficient by the RINA surveyor shall be lifted and swung as far as possible in both directions.

Come norma generale tutte le prove devono essere effettuate sollevando dei pesi. Il RINA può autorizzare l'uso dei dinamometri a molla o idraulici. Quando per la prova viene impiegato un dinamometro, esso deve essere accuratamente tarato e la prova non è ritenuta soddisfacente se l'indicazione dell'apparecchio non rimane costante per almeno cinque minuti; inoltre un carico ritenuto sufficiente dal tecnico del RINA deve essere sollevato e brandeggiato quanto più possibile nei due sensi.

After being tested as aforesaid, all lifting machinery, with the whole of the gear accessory thereto shall be examined to see whether part has been injured or permanently deformed by the test.

Dopo le prove suddette ogni sistemazione coi relativi accessori deve essere esaminata per controllare che nessuna parte di essa abbia subito danni permanenti.

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

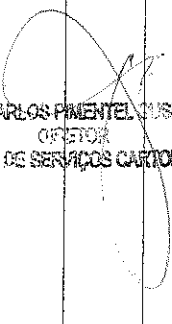
I GENERE E RELATIVI ACCESSORI, ESCLUSI I PICCHI ED I RELATIVI ACCESSORI NON SMONTABILI (Vedere Istruzioni N. 3)
near other than derricks and permanent attachments thereto
(See Instructions No. 3)

« *Visita completa* » significa esame esteriore, integrato, se necessario, con altri mezzi di indagine quali saggi al martello, effettuato con la maggior cura compatibile con le circostanze, allo scopo di poter formulare una conclusione attendibile sulla sicurezza offerta dalle parti esaminate; a tale fine devono essere smontate, se necessario, parti di macchinario a attrezzatura.

« *Thorough examination* » means a *visual examination*, supplemented if necessary by other means, such as a *hammer test*, carried out as carefully as the conditions permit in order to arrive at a reliable conclusion as to the safety of the parts examined; if necessary for the purpose, parts of the machines or gear must be dismantled.

i certificati che, alla data in cui è stata apposta la firma, gli apparecchi ed accessori indicati alla colonna 1 sono stati sottoposti a visita completa da una persona competente e che, salvo quanto riportato nella colonna 3, non sono stati riscontrati difetti tali da menarne la sicurezza di impiego.

certify that on the date to which I have appended my signature, the machinery and gear shown in column 1 was thoroughly examined by a competent person, and no defects affecting its safe working condition were found other than those shown in column 2.

Data e Firma Date and Signature	Data e Firma Date and Signature	Data e Firma Date and Signature	(to be initialed and dated)
		 JOSE CARLOS PIMENTEL CUSMÃO DIRETOR DIVISÃO DE SERVIÇOS CARTOGRAFIAIS	QUEBEC, October, 06, 1998 CRANE no 2, "2-Full operation, 11 SWL" and "1-Full operation, 11 SWL" IS RECITED IN SERVICE  REGISTRO ITALIANO/NAVILE B. Portinari

(3)

OSSErvAZIONI
(siglare e datare)

REMARKS
(To be initialed and dated)

QUEBEC, October, 06, 1998

CRANE no 2, "2-Fall operation"

SWL⁴ and "1-FM operation, 11

~~SWL~~ IS RE-PLATED IN SERVICE



REGISTRO TALLADO MANUS

5. OLIVER

Alans

JOSE CARLOS PIMENTEL DUARTE
OFICINHA
DIVISÃO DE SERVIÇOS CARTORIAIS

REGISTRO ITALIANO NAVALE

(4)

OFFICE/AGENCY IN QUEBEC FACTUAL REPORT OF SURVEYS

RINA number [8] 67073	Name of ship SPIRIT OF COLUMBUS	Gross Tonnage [8]	Flag of ship ITALIAN
Start of Survey 12.05.98	End of Survey 26.06.98	Place of Survey QUEBEC	File [9] 97 DG 14810 IN

THIS IS TO CERTIFY THAT THE FOLLOWING SURVEYS HAVE BEEN CARRIED OUT ACCORDING TO APPLICABLE RULES AND REGULATIONS

CLASS / "NAVIGABILITY" (*) SURVEYS [3]	Spec (Ren) Survey [1]	Ord (Ann) Survey [1]	Intermediate Survey [1]	Continuous Survey [1]	Occasional Survey [1]	First Classification "Navigability" Survey [1]	Cert/Stat [4]	Expiry date of Cert/Stat
1 Hull				X	X			
2 Machinery				X	X			
3 Unmanned machinery space (IAQ/IAP/IAQ-IAP) (*)								
4 Refrigerating Plant (IFQ)								
5 Special notations (FFQ; NAU; SCC,) (*)								
6 Diving systems								
7 Dynamic positioning system (IPD)								

Bottom (5)		NORM	VS		AVA	Afloat	□	12 Main/Auxiliary boiler [1]											No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
9	Tailshaft (centre) [6]	NEW	COMP	ALT	PAR	with NDT	□	13 Main/Auxiliary boiler [1]											No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
10	Tailshaft (port) [6]	NEW	COMP	ALT	PAR	with NDT	□	14 Main/Auxiliary boiler [1]											No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
11	Tailshaft (stbd) [6]	NEW	COMP	ALT	PAR	with NDT	□	15 Main/Auxiliary boiler [1]											No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC

STATUTORY SURVEYS	Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat	STATUTORY SURVEYS	Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat
16 Load Line (INT/ATA) (*) [3]				29 Dangerous Goods in Road Tanks			
17 Safety Construction				30 Dangerous Goods in Tank Containers			
18 Safety Equipment				31 Dangerous Goods in Packages			
19 Safety Radio				32 Cargo Gear - Cranes (ILO) [3]			
20 Safety Passenger				33 Cargo Gear - Derricks (ILO) [3]			
21 MARPOL Annex I (OPP/CONF/DICH) (*) [3]				34 Cargo Gear - Cranes (RINA) [3]			
22 Fitness Chemicals (COF/COF) (*)				35 Cargo Gear - Derricks (RINA) [3]			
23 Fitness Gases (COF/COF) (*)				36 "Idoneità" (passenger/cargo (*) ships) [3]			
24 Noxious Liquid Substances (IPPC)				37 Crude Oil Washing (COW)	AUT	OCC	
25 Sewage Pollution Prevention (ISPP)				38 Radar ascertainments	RIN	OCC	
26 Dangerous Goods in bulk (CHEM) [3]				39			
27 Dangerous Goods in bulk (GAS) [3]				40			
28 Carriage of vehicles				41			

EACH SURVEY WAS CARRIED OUT IN ACCORDANCE WITH THE RELEVANT "CHECK LIST" ☐

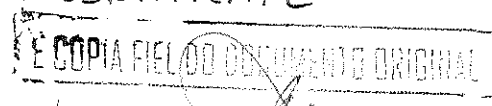
THIS IS THE FINAL REPORT ☒ THIS IS NOT THE FINAL REPORT; NARRATIVE REPORTS WITH RELEVANT ENCLOSURES WILL BE SENT LATER ☐

PARTIAL / COMPLETE (*) THICKNESS MEASUREMENTS CARRIED OUT ☐ RELEVANT REPORTS ARE ENCLOSED ☐

TOTAL ENCLOSURES No. 3 RELEVANT TO ITEM(S) 1-2

RECOMMENDATIONS / MEMO (*) were imposed / deleted / postponed / confirmed (*) as stated on page 3 ☐

Type of Certificate or Statement [7]	CC	DC	DN	DP	Date of VISA	Certificate confirmation	SURVEYORS
	X						Ident. No. Sumame

T E X T O F V I S A	NO ENTRY IN CLASS CERTIFICATE						526 FORMENTI	
	 							

Former VISA : Date Place

(*) Underline the appropriate word(s) or abbreviation(s)

Place and date: QUEBEC, 26.06.98

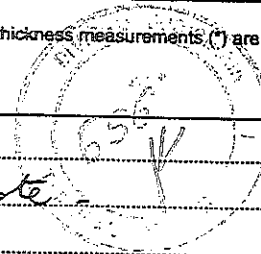
Form: VISITE1-Rep-EG-05/94

See Explanatory Notes [1] to [9] on page 2

Surveyors' names and signatures.....

 **REGISTRO ITALIANO NAVALE**
R. Formenti

Ship in laid-up condition
Certificates stored at the Québec Italian Consulate



E COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS FIMMENTEL BUSNÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Underline the appropriate word(s) or abbreviation(s)

Place and date: Québec, 26.06.98 Surveyors' names and signatures: R. Formenti



REGISTRO ITALIANO NAVALE
R. Formenti



REGISTRO ITALIANO NAVALE

Nave: SPIRIT OF COLUMBUS
Ship- Numero Registro
Register Number

67073

- (2) ☒ ALLEGATO AL RAPPORTO N. 97 DC 14810/1N
Enclosed to survey report
- ☐ PROMEMORIA DI SERVIZIO
Memorandum

(1) VISITA: HULL Continuous and occasional survey
Survey

OPERAZIONI E LAVORI ESEGUITI - OSSERV. — Items and repairs carried out - Remarks

WORKS AND REPAIRS CARRIED OUT - REMARKS										15	16	17	18	19	20	O	R	D	77	
- DRY TANK (After the fitting of new structures and stiffenings on transom and new girders i.w.o. new deck extension and new mooring winches platforms)																				
- STORAGE SPACE - STRIPPED OUT, NOT EXISTING																				
- D.O. SETTLING TANK n. 4																				
- D.O. DAY TANK n. 3																				
- SLUDGE TANK																				
- SEPARATOR TANK																				
- OVERFLOW TANK																				
- D.O. SETTLING TANK n. 1																				
- SLUDGE TANK																				
- OVERFLOW TANK																				
- SEPARATOR TANK																				
- WASTE OIL TANK																				
- DIESEL OIL TANK																				

COPIA FIDEL DEL DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GISMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTOGRAFICOS

REGISTRO ITALIANO NAVALE

R. Formenti

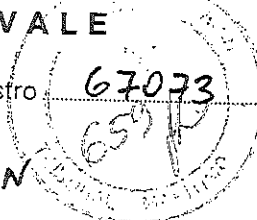
Porto/Place: QUEBEC Data/Date: 25-06-98 I tecnici/The surveyors: [Signature]

- 1) Il foglio potrà essere utilizzato quale rapporto di visita solo nel caso di Visita Speciale e/o continuativa scato, macchina, I.F. riempiendo le caselle alle colonne 15 + 77. In questo caso dovranno essere utilizzati fogli separati per lo scato, la macchina e l'I.F. rispettivamente.
The sheet can be used as survey report only for Special Survey and/or continuous hull, machinery, refrigerating plant filling the boxes in way of the number 15 + 77. In such case separate sheets will be used for hull, machinery and refrigerating plant.
- (2) Porre "X" nella casella corrispondente alla voce che indica come si intende utilizzare il modulo.
Mark "X" in way of the box showing the kind it is intention to use the form.
- (3) Porre "1" quando gruppo visitato al completo riscontrato in ordine.
Mark "1" when the group is thoroughly surveyed and found in order.

Nave: SHIP SPIRIT OF COLUMBUSNumero Registro
Register Number

67073

- (2) ☒ ALLEGATO AL RAPPORTO N. 97 DG 14810/IN
Enclosed to survey report
- ☐ PROMEMORIA DI SERVIZIO
Memorandum

(1) VISITA: Continuous machinery Survey - Thruster Survey
Survey

OPERAZIONI E LAVORI ESEGUITI - OSSERV. — Items and repairs carried out - Remarks

GRUPPO ELEMENTO * (3)
15 16 17 18 19 20 O R D 77

- Survey of the two Thrusters carried out in HALIFAX (N.S.)
Thrusters, 4 blades propellers, are marked:
No 5492. 1/2 - 10.92 Van De Giessen - NL
(R) RINA 437 858
They found in open space of Secunda Marine in Halifax (N.S.)
Harbour, checked, coated and adjusted according to
UPS instructions - Conditions are satisfactory -
They were temporary removed at rig arrival by Menr.
Domination Diving Ltd, DNV quality ISO 9002, and
stowed in horizontal position on rudder ring.
Air pipe added on the top of nozzle according instruction
for a long period storage -
See enclosed documentation copy -

- MAIN MAIN ELECTRIC MOTOR (PORT-FWD) NOT EXISTING 1064
- MAIN MAIN ELECTRIC MOTOR (STBD-AFT) NOT EXISTING 1067
- LUB. OIL PUMP (INSIDE THE THRUSTER) 114
- LUB. OIL PUMP (INSIDE THE THRUSTER) 115
(please delete from schematic plant)

E COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PINHEIRO GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAISREGISTRO ITALIANO NAVALE
R. FormentiPorto/Place: QUEBEC Data/Date: 26.06.98I tecnici/The surveyors: [Signature]

- (1) Il foglio potrà essere utilizzato quale rapporto di visita solo nel caso di Visita Speciale e/o continuativa scafo, macchina, I.F. riempiendo le caselle alle colonne 15 + 77.
In questo caso dovranno essere utilizzati fogli separati per lo scafo, la macchina e l'I.F. rispettivamente.
The sheet can be used as survey report only for Special Survey and/or continuous hull, machinery, refrigerating plant filling the boxes in way of the number 15 + 77.
In such case separate sheets will be used for hull, machinery and refrigerating plant.
- (2) Porre "X" nella casella corrispondente alla voce che indica come si intende utilizzare il modulo.
Mark "X" in way of the box showing the kind it is intention to use the form.
- (3) Porre "1" quando gruppo visitato al completo riscontrato in ordine.
Mark "1" when the group is thoroughly surveyed and found in order.

LIPS BV
P.O.Box 9
6150 BB Drunen
The Netherlands

Tel: +31-416-388116
Fax: +31-416-379162
Tlx: 36185 Lips nl

RECEIVED

To : Dominion Diving Ltd. Fax : 001 902 363 7966
Attn. : Angus Borland Date : 08 August 1997
Your ref. : fax dd 07 August 1997 Pages : 4-
From : Service & Aftersales Dept. Fax (DPP) : +31-416-379140
Contact : Arie Pijl Tel (DPP) : +31-416-388226
Our ref. : T07197
Subject : Spirit of Columbus Thruster removal

Should this fax be illegible please phone or fax your contact

Dear Sir,

On page 3 and 4 of this fax you will find our rates and terms for the year 1997.

You will not need a special cradle for transportation because the thruster can be simply transported on the aft side of the nozzle (see page 2). For storage we recommend a dry and well ventilated space. If the storage will be for a longer period of time it is advisable to fit a ventilating pipe on top of the streamline-cover, please note that there have to be filter on this pipe to make sure that no dirt, sand etc. can ingress (see also page 2).

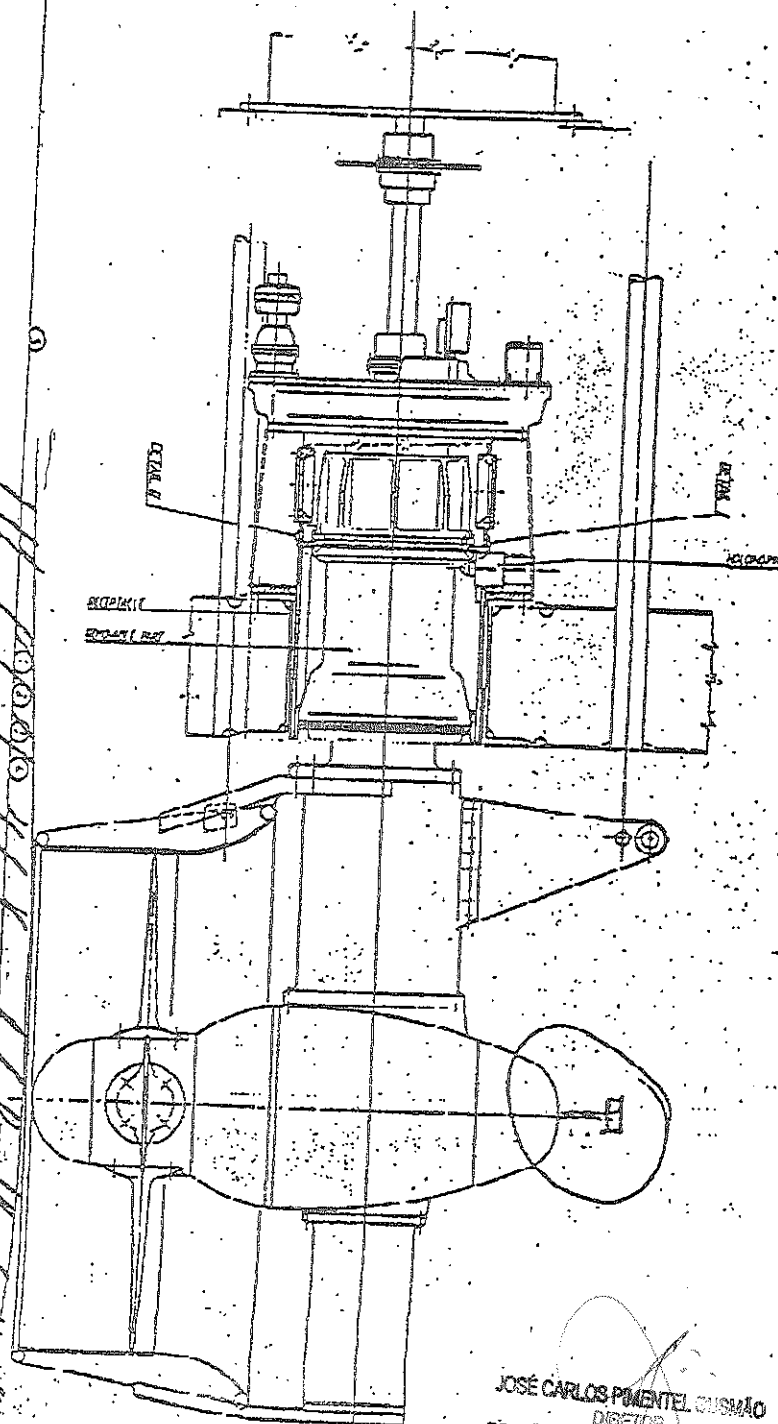
Our service engineer for this job will be Mr. Peter Willeijns and he can assist and advise you also how to transport the thruster and how to fit this pipe.

Best regards

Arie Pijl - serv. man. Lips BV

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

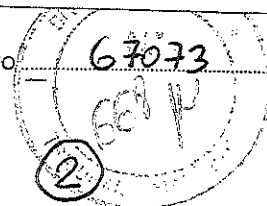


Nave: SPIRIT OF COLUMBUS
Ship

- Numero Registro
Register Number

67073

- (2) ☒ ALLEGATO AL RAPPORTO N. 97 DG 14810 IN
Enclosed to survey report
☐ PROMEMORIA DI SERVIZIO
Memorandum



(1) VISITA: CONTINUOUS HULL SURVEY
Survey

OPERAZIONI E LAVORI ESEGUITI - OSSERV. — Items and repairs carried out - Remarks

GRUPPO ELEMENTO * (3)
15 16 17 18 19 20 O R D 77

SURVEY OF MUD TANK

4S-TT

157.1

157X

3S-TT

158.2

158X

2S-TT

159.4

159X

1S-TT

160.4

160X

S-TT

161.1

161X

S-TT

162.1

162X

(AS WELL AS IN ACTUAL CONDITIONS, BEFORE ARRANGING FOR
THE NEW USE - NO MORE MUD TANKS.)

PORTO

ARLH/14810

NAVAL

7/12

E COPIA FIDELI DEL DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL OLIVEIRA
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

REGISTRO NAVALE
R. Formenti

Porto/Place: QUEBEC Data/Date: 24.04.1998 I tecnici/The surveyors: [Signature]

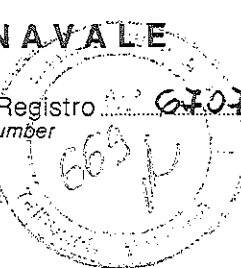
- (1) Il foglio potrà essere utilizzato quale rapporto di visita solo nel caso di Visita Speciale e/o continuativa scafo, macchina, I.F. riempiendo le caselle alle colonne 15-77.
In questo caso dovranno essere utilizzati fogli separati per lo scafo, la macchina e l'I.F. rispettivamente.
The sheet can be used as survey report only for Special Survey and/or continuous hull, machinery, refrigerating plant filling the boxes in way of the number 15-77.
In such case separate sheets will be used for hull, machinery and refrigerating plant.
- (2) Porre "X" nella casella corrispondente alla voce che indica come si intende utilizzare il modulo.
Mark "X" in way of the box showing the kind it is intention to use the form.
- (3) Porre "1" quando gruppo visitato al completo riscontrato in ordine.
Mark "1" when the group is thoroughly surveyed and found in order.



REGISTRO ITALIANO NAVALE

Nave: SPIRIT OF COLUMBUS
Ship- Numero Registro 67073
Register Number

- (2) ☒ ALLEGATO AL RAPPORTO N. 97 DG 14810 IN
Enclosed to survey report
- ☐ PROMEMORIA DI SERVIZIO
Memorandum

(1) VISITA: CONTINUOUS MACHINERY SURVEY
Survey

OPERAZIONI E LAVORI ESEGUITI - OSSERV. — Items and repairs carried out - Remarks

GRUPPO ELEMENTO * (3)
15 16 17 18 19 20 O R D 77

FOAM PUMP

DEAREATOR TOWER PORT

DEAREATOR TOWER STBD

(VEHICLES IN ORDER; INTERNAL ARRANGEMENT RENEWED AS WELL AS
UP-GRADING WORK SPECIFICATION)

211 X

124 X

125 X

/

/

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
DIRECTOR
DIVISÃO DE SERVIÇOS CARTOGRAFICOSPorto/Place: QUEBECData/Date: 24.04.1998I tecnici/The surveyors: [Signature]

- (1) Il foglio potrà essere utilizzato quale rapporto di visita solo nel caso di Visita Speciale e/o continuativa scafo, macchina, I.F. riempiendo le caselle alle colonne 15 + 77.
In questo caso dovranno essere utilizzati fogli separati per lo scafo, la macchina e l'I.F. rispettivamente.
The sheet can be used as survey report only for Special Survey and/or continuous hull, machinery, refrigerating plant filling the boxes in way of the number 15 + 77.
In such case separate sheets will be used for hull, machinery and refrigerating plant.
- (2) Porre "X" nella casella corrispondente alla voce che indica come si intende utilizzare il modulo.
Mark "X" in way of the box showing the kind it is intention to use the form.
- (3) Porre "1" quando gruppo visitato al completo riscontrato in ordine.
Mark "1" when the group is thoroughly surveyed and found in order.

REGISTRO ITALIANO NAVALE

(2)

OFFICE/AGENCY IN

QUEBEC

FACTUAL REPORT OF SURVEY

RINA number [8] 07073	Name of ship SPIRIT OF COLUMBUS	Gross Tonnage [8]	Flag of ship ITALIAN
Start of Survey 11.02.98	End of Survey 11.02.98	Place of Survey QUEBEC (Q.C.)	File [9] 97 DG 14810 1

THIS IS TO CERTIFY THAT THE FOLLOWING SURVEYS HAVE BEEN CARRIED OUT ACCORDING TO APPLICABLE RULES AND REGULATIONS

CLASS / "NAVIGABILITA'" (*) SURVEYS [3]	Spec (Ren) Survey [1]	Ord (Ann) Survey [1]	Intermediate Survey [1]	Continuous Survey [1]	Occasional Survey [1]	First Classification "Navigabilità" Survey [1]	Cert/Stat [4]	Expiry date of Cert/Stat
1 Hull								
2 Machinery								
3 Unmanned machinery space (IAQ/AP/IAQ-IAP) (*)								
4 Refrigerating Plant (IFQ)								
5 Special notations (FFQ; NAU; SCC,) (*)								
6 Diving systems								
7 Dynamic positioning system (IPD)								

8 Bottom [5]	NORM	VS	AVA	Afloat	☐	12 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	
9 Tailshaft (centre) [6]	NEW	COMP	ALT	PAR	with NDT	☐	13 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM
10 Tailshaft (port) [6]	NEW	COMP	ALT	PAR	with NDT	☐	14 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM
11 Tailshaft (stbd) [6]	NEW	COMP	ALT	PAR	with NDT	☐	15 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM

STATUTORY SURVEYS	Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat	STATUTORY SURVEYS	Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat
16 Load Line (INT/NAU) (*) [3]	ANN			29 Dangerous Goods in Road Tanks			
17 Safety Construction				30 Dangerous Goods in Tank Containers			
18 Safety Equipment				31 Dangerous Goods in Packages			
19 Safety Radio				32 Cargo Gear - Cranes (ILO) [3]			
20 Safety Passenger				33 Cargo Gear - Derricks (ILO) [3]			
21 MARPOL Annex I (IOPP/CONF/DICH) (*) [3]				34 Cargo Gear - Cranes (RINA) [3]			
22 Fitness Chemicals (COF/COF) (*)				35 Cargo Gear - Derricks (RINA) [3]			
23 Fitness Gases (COF/COF) (*)				36 "Idoneità" (passenger/cargo (*) ships) [3]			
24 Noxious Liquid Substances (IPPC)				37 Crude Oil Washing (COW)	AUT	OCC	
25 Sewage Pollution Prevention (ISPP)				38 Radar ascertainties	RIN	OCC	
26 Dangerous Goods in bulk (CHEM) [3]				39			
27 Dangerous Goods in bulk (GAS) [3]				40			
28 Carriage of vehicles				41			

EACH SURVEY WAS CARRIED OUT IN ACCORDANCE WITH THE RELEVANT "CHECK LIST"

THIS IS THE FINAL REPORT ☒ THIS IS NOT THE FINAL REPORT; NARRATIVE REPORTS WITH RELEVANT ENCLOSURES WILL BE SENT LATER

PARTIAL / COMPLETE (*) THICKNESS MEASUREMENTS CARRIED OUT ☐ RELEVANT REPORTS ARE ENCLOSED

TOTAL ENCLOSURES No. RELEVANT TO ITEM(S)

RECOMMENDATIONS / MEMO (*) were imposed / deleted / postponed / confirmed (*) as stated on page 3

Type of Certificate or Statement [7]	CC	DC	DN	DP	Date of VISA	11 02 98	Certificate confirmation					
T E X T O F V I S A	It is to certify that the auxiliary oil-fired boilers periodical survey was carried out in Québec on the 4th of November 1997 - Class confirmed as per previous entry.											
JOSÉ CARLOS FIMMTEL CUSMÃO DIRETOR DIVISÃO DE SERVIÇOS CAPTÓRIOS												
Former VISA : Date 27.09.97 Place QUEBEC												

SURVEYORS	
Ident. No.	Surname
526	FORNENT

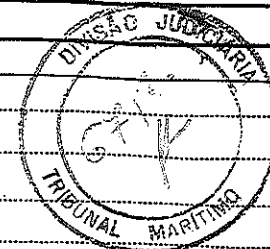
(*) Underline the appropriate word(s) or abbreviation(s)

Quebec, 11.2.98

COPIA FIEL DO DOCUMENTO ORIGINAL

See Explanatory Notes [1] to [9] on page

SALT WATER BALLAST SPACES



(a) Spaces examined where no protective coating was applied from the time of construction:

(b) Spaces examined where the protective coating was found in POOR condition:

(c) Spaces examined where the protective coating was found in GOOD or FAIR condition:

FIRE FIGHTING SYSTEMS AND APPLIANCES

(a) Date of last check of CO2 bottles/vessels content:

(e) Date of last check of nitrogen bottles content:

(b) Date of last hydrotesting of CO2 bottles/vessels:

(f) Date of last hydrotesting of nitrogen bottles:

(c) Date of last check of HALON bottles/vessels content:

(g) Date of last renewal of foam forming liquid:

(d) Date of last hydrotesting of HALON bottles/vessels:

(h) Foam forming liquid sample taken for analysis (if required): ☐

SETTING UP OF SAFETY VALVES OF MAIN / AUXILIARY (*) BOILERS:

THE OUTSTANDING ITEMS FOR COMPLETION OF PART-HELD ORDINARY (ANNUAL) / INTERMEDIATE (*) HULL OR MACHINERY SURVEYS AND/OR MAIN / AUXILIARY BOILER SURVEYS (*) ARE AS STATED BELOW:

EXPLANATORY NOTES FOR FILLING IN THIS FORM:

[1] MARKS FOR SURVEY EXTENT

X or AL = Survey entirely carried out
 IN = Commencement of Survey
 CN = Continuation of Survey
 CM = Completion of Survey
 PC = Annual Survey of exhaust fired thermal oil heaters including visual inspection and tightness testing of heater tubes

[2] TYPE OF SURVEY

ANN = Annual Survey
 AUT = Survey for authorization (for COW) (Item 37)
 BIE = Biennial Survey (for Compasses)
 INT = Intermediate Survey
 LT = Load test (for Cargo Gear - Items 32 to 35)
 OCC = Occasional survey
 QUA = Quadrennial Survey (for Cargo Gear - Items 32 to 35)
 QUI = Quinquennial survey (for Cargo Gear - Items 32 to 35)
 RIL = Initial Survey
 RIN = Renewal Survey
 VAR = Survey for Loadline variations (Item 16)

[3] OTHER NOTES ON SURVEYS

N.B.: "NAVIGABILITA" SURVEYS are Surveys to be carried out for the purpose of the issue, maintenance or renewal of the "Certificato di navigabilità" (Seaworthiness Certificate) under the provisions of Italian Safety Rules
 "IDONEITA" SURVEYS are Surveys to be carried out for the purpose of the issue, maintenance or renewal of the national safety certificate called "Certificato di idoneità" to passenger or cargo ships not subject to SOLAS under the provisions of Italian Safety Rules (Item 36)

INT/ATA = Survey for the purpose of the International/Italian Loadline Certificate, as appropriate (Item 16)

CONF = Certificate of compliance ("Conformità") to MARPOL Annex I (only for Italian flag ships not subject to MARPOL) (Item 21)

DICH = Statement of compliance ("Dichiarazione") to MARPOL Annex I (only for Italian flag ships not subject to MARPOL) (Item 21)

CHEM = Statement of compliance ("Attestazione") to Italian Statutory Regulations (only for Italian or foreign flag chemical tankers or gas carriers operating in Italy) (Items 26 and 27)

RINA = Survey for the purpose of RINA Certificate for cargo gear (only for cargo gear of Italian ships not required to be included in ILO cargo gear booklet) (Items 34 and 35)

[4] CERTIFICATES AND STATEMENTS

PRO = Provisional (Interim) Certificate issued
 EXT = Validity of existing Certificate extended
 CND = Conditional Certificate issued
 DEF = Full term Certificate issued

N.B.: The square is to be left blank in the case of endorsements of existing certificates

[5] BOTTOM SURVEY

NORM = Survey NOT valid on account of a Special Survey
 VS = Survey valid on account of a Special Survey
 AVA = Survey in connection with a Damage Survey

Afloat: Mark the square with X to mean that an In-water Survey was carried out in lieu of a Docking Survey (see 3.2.3.2 of Ch. 3 of Section A of the Rules)

N.B.: The underwater inspection of the ship's bottom to postpone the Docking Survey is to be considered as an Occasional Survey

[6] TAILSHAFT SURVEY

NEW = Tailshaft renewed
 COMP = Complete Survey
 ALT = Alternate Modified Survey
 PAR = Partial Survey

With NDT: Mark the square with X to mean that a surface crack detection of the propeller keyed connection to the tailshaft was satisfactorily performed

[7] TYPE OF CERTIFICATE OR STATEMENT

CC = Certificate of Class
 DC = Class Statement
 DN = Statement with a view to obtaining the "Certificato di navigabilità"
 DP = Certificate of Class for Pleasure Vessels

[8] FOREIGN FLAG SHIPS NOT CLASSED WITH RINA

In the case of these ships, the value of Gross Tonnage and, in lieu of RINA number, Distinctive number or letters are to be indicated

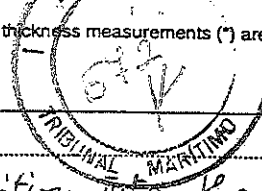
[9] FILE

Year, Office code, File number and File code are to be specified, in the above order, according to the File Record Book of the RINA Office concerned

(*) Underline the appropriate word(s) or abbreviation(s)

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL DOS SANTOS
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORÁRIOS



Vessel in laid-up condition, moored in protected position into the old port of Québec City (Québec), along the Saint Lawrence River, still iced. Vessel as well as in original conditions with reference to L.L. rules, floating at 7.5 mt. draft about -

Remarks: Round house on main deck, stbd side, removed, but a companionway as access to lower decks conserved; a temporary opening is existing on the platform stern transom, between main deck and 2nd deck, fitted with suitable temporary closing devices; other three Temporary openings on main deck are fitted with suitable weather proof closing appliances; handrails, where removed, readjusted by suitable protection means during the present up-grade works period -

General conditions considered satisfactory to confirm the validity and to endorse the International Load Line Certificate -

Certificates endorsed while in the hands of Italian Consulate in Québec

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PAVENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

(*) Underline the appropriate word(s) or abbreviation(s)

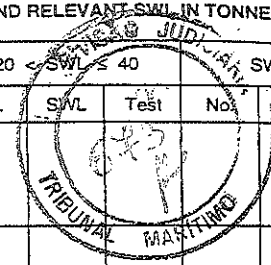
Place and date: Québec, 11.02.98 Surveyors' names and signatures



REGISTRO ITALIANO NAVALE
R. Formenti

[Signature]

TYPE OF CARGO GEAR SURVEYED	TYPE OF SURVEY(S) CARRIED OUT	NUMBER OF CARGO GEAR SURVEYED AND RELEVANT SWL IN TONNES											
		SWL ≤ 10			10 < SWL ≤ 20			20 < SWL ≤ 40			SWL > 40		
		No.	SWL	Test	No.	SWL	Test	No.	SWL	Test	No.	SWL	Test
DERRICKS	First Survey / Quinquennial Survey												
	Quadrennial Survey												
	Annual Survey												
CRANES	First / Annual (*) Survey												
CARGO ELEVATORS	First / Annual (*) Survey												



DERRICKS, CRANES AND/OR CARGO ELEVATORS OUT OF SERVICE, IF ANY, ARE TO BE STATED BELOW (specify number and relevant SWL)

INFORMATION FOR INVOICING

SURVEYS CARRIED OUT IN ITALY OR ABROAD BY RINA EXCLUSIVE SURVEYORS

INFORMATION ON TONNAGE MEASUREMENTS

Tonnage measurements carried out according to Regulations of:

The ship had already been measured according to Regulations of:

Tonnage re-measurements carried out: ☐ Tonnage measurements carried out for sister ship(s) accepted

INFORMATION ON SUBDIVISION AND STABILITY

Inclining test carried out: ☐ Light ship weight test carried out

Subdivision and/or damage stability calculations carried out

Calculations as above carried out for sister ship(s) accepted:

OTHER INFORMATION

Fees for visaed or issued class documents: Fees for visaed or issued statutory documents:

Phone / Telex expenses: Miscellaneous expenses:

In the case of surveys carried out outside the RINA Branch Office area, state whether travel tickets (if any) have been supplied by the Shipowner or by RINA

Expenses for travel tickets as above when supplied by RINA:

Survey(s) carried out together with the following RINA Agent abroad

The invoice is to be sent to the Shipowner (yes/no): If not, the invoice is to be sent to the following address:

JOB: 97 DC ALBIO IN

Client Code

Through Through Code

SURVEYS CARRIED OUT OUTSIDE ITALY BY RINA/GL JOINT EXCLUSIVE STATIONS OR AGENCIES ABROAD

Number of documents issued or visaed without inspections onboard being carried out: Number of Km covered by car and corresponding fees:

Total time spent on surveys (hours/min.): Other car travelling expenses (tolls, etc.):

Occasional survey time (hours/min.): Travelling expenses other than by car (thickets, etc.):

Travelling time (hours/min.): Phone/Telex expenses:

Out of office time (hours/min.): Miscellaneous expenses:

Overtime (hours/min.):

(*) Underline the appropriate word(s) or abbreviation(s)

Place and date: Quebec 23.02.98

É COPIA FIEL DO DOCUMENTO ORIGINAL

Head of Office or Agent (Abroad)

JOSÉ CARLOS PINHEIRO CUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



REGISTRO ITALIANO NAVALE



Québec, 23 Febbraio 1998

Dr. Ing. RENATO ROBINO
DIREZIONE GENERALE - ITO
VIA CORSICA 12
16128 GENOVA

ns. rif. QUE/16/RFO (pratica 97 DG 14810 IN)
oggetto: SPIRIT OF COLUMBUS - RI. 67073 - VISITE DI
CLASSE E STATUTORY CERTIFICATES

Si trasmette in allegato il mod. VISITE 1 per le
visite effettuate nel periodo Gennaio - Febbraio 1998 -

Distinti saluti

REGISTRO ITALIANO NAVALE

Ing. Roberto Formenti

E COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

REGISTRO ITALIANO NAVALE



OFFICE/AGENCY IN VENEZIA FACTUAL REPORT OF SURVEYS

RINA number [8] 07073	Name of ship SPIRIT OF COLUMBUS	Gross Tonnage [8]	Flag of ship ITALIAN
Start of Survey 18.09.97	End of Survey 27.09.97	Place of Survey QUEBEC	File [9] 97 VE 1818 NA

THIS IS TO CERTIFY THAT THE FOLLOWING SURVEYS HAVE BEEN CARRIED OUT ACCORDING TO APPLICABLE RULES AND REGULATIONS

CLASS / "NAVIGABILITA'" (*) SURVEYS [3]	Spec (Ren) Survey [1]	Ord (Ann) Survey [1]	Intermediate Survey [1]	Continuous Survey [1]	Occasional Survey [1]	First Classification "Navigabilita'" Survey [1]	Cert/Stat [4]	Expiry date of Cert/Stat
1 Hull					X			
2 Machinery					X			
3 Unmanned machinery space (IAQ/IAP/IAQ-IAP) (*)								
4 Refrigerating Plant (IFQ)								
5 Special notations (FFQ; NAU; SCC;) (*)								
6 Diving systems								
7 Dynamic positioning system (IPD)								

Bottom [5]	NORM	VS	AVA	Afloat	Q	12 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC	
9 Tailshaft (centre) [6]	NEW	COMP	ALT	PAR	with NDT	Q	13 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
10 Tailshaft (port) [6]	NEW	COMP	ALT	PAR	with NDT	Q	14 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
11 Tailshaft (stbd) [6]	NEW	COMP	ALT	PAR	with NDT	Q	15 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC

STATUTORY SURVEYS	Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat	STATUTORY SURVEYS	Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat
16 Load Line (INT/ITA) (*) [3]				28 Dangerous Goods in Road Tanks			
17 Safety Construction				30 Dangerous Goods in Tank Containers			
18 Safety Equipment				31 Dangerous Goods in Packages			
19 Safety Radio				32 Cargo Gear - Cranes (ILO) [3]	LT	DEF	
20 Safety Passenger				33 Cargo Gear - Derricks (ILO) [3]			
21 MARPOL Annex I (IOPP/CONF/DICH) (*) [3]				34 Cargo Gear - Cranes (RINA) [3]			
22 Fitness Chemicals (COF/COF) (*)				35 Cargo Gear - Derricks (RINA) [3]			
23 Fitness Gases (COF/COF) (*)				36 "Idoneità" (passenger/cargo (*) ships) [3]			
24 Noxious Liquid Substances (IPPC)				37 Crude Oil Washing (COW)	AUT	OCC	
25 Sewage Pollution Prevention (ISPP)				38 Radar ascertainment	RIN	OCC	
Dangerous Goods in bulk (CHEM) [3]				39			
27 Dangerous Goods in bulk (GAS) [3]				40			
Carriage of vehicles				41			

EACH SURVEY WAS CARRIED OUT IN ACCORDANCE WITH THE RELEVANT "CHECK LIST" ☐

THIS IS THE FINAL REPORT ☒ THIS IS NOT THE FINAL REPORT; NARRATIVE REPORTS WITH RELEVANT ENCLOSURES WILL BE SENT LATER ☐

PARTIAL / COMPLETE (*) THICKNESS MEASUREMENTS CARRIED OUT ☐ RELEVANT REPORTS ARE ENCLOSED ☐

TOTAL ENCLOSURES No. 4 RELEVANT TO ITEM(S) 1-2-32

RECOMMENDATIONS / MEMO (*) were imposed / deleted / postponed / confirmed (*) as stated on page 3 ☐

Type of Certificate or Statement [7]	CC	DC	DN	DP	Date of VISA	270997	Certificate confirmation	280298	SURVEYORS'	
	X								Ident. No. Surname	
T	Occasional survey carried out. It is to certify that the two propeller units are temporary removed and the vessel is temporary laid up for up-grade works. Class confirmed until February 1998.								526	FORMENTI
E										
X										
T										
O										
F										
V										
S										
A										

or VISA : Date 07.07.97 Place PALERMO

È COPIA FIEL DEL DOCUMENTO ORIGINALE

JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORÁRIOS



(*) Underline the appropriate word(s) or abbreviation(s)

Place and date: QUEBEC 27.09.1997 Surveyors' names and signatures R. Formenti

SALT WATER BALLAST SPACES



Spaces examined where no protective coating was applied from the time of construction:

b) Spaces examined where the protective coating was found in POOR condition:

(c) Spaces examined where the protective coating was found in GOOD or FAIR condition:

FIRE FIGHTING SYSTEMS AND APPLIANCES

(a) Date of last check of CO2 bottles/vessels content:

(e) Date of last check of nitrogen bottles content:

(b) Date of last hydrotesting of CO2 bottles/vessels:

(f) Date of last hydrotesting of nitrogen bottles:

(c) Date of last check of HALON bottles/vessels content:

(g) Date of last renewal of foam forming liquid:

(d) Date of last hydrotesting of HALON bottles/vessels:

(h) Foam forming liquid sample taken for analysis (if required): ☐

SETTING UP OF SAFETY VALVES OF MAIN / AUXILIARY (*) BOILERS:

OUTSTANDING ITEMS FOR COMPLETION OF PART-HELD ORDINARY (ANNUAL) / INTERMEDIATE (*) HULL OR MACHINERY SURVEYS AND/OR MAIN / AUXILIARY BOILER SURVEYS (*) ARE AS STATED BELOW:

EXPLANATORY NOTES FOR FILLING IN THIS FORM:

[1] MARKS FOR SURVEY EXTENT

X or AL = Survey entirely carried out

IN = Commencement of Survey

CN = Continuation of Survey

CM = Completion of Survey

PC = Annual Survey of exhaust fired thermal oil heaters including visual inspection and tightness testing of heater tubes

[2] TYPE OF SURVEY

ANN = Annual Survey

AUT = Survey for authorization (for COW) (Item 37)

BIE = Biennial Survey (for Compasses)

INT = Intermediate Survey

LT = Load test (for Cargo Gear - Items 32 to 35)

O = Occasional survey

Q = Quadrennial Survey (for Cargo Gear - Items 32 to 35)

QUI = Quinquennial survey (for Cargo Gear - Items 32 to 35)

RIL = Initial Survey

RIN = Renewal Survey

VAR = Survey for Loadline variations (Item 16)

[3] OTHER NOTES ON SURVEYS

N.B.: "NAVIGABILITÀ" SURVEYS are Surveys to be carried out for the purpose of the issue, maintenance or renewal of the "Certificato di navigabilità" (Seaworthiness Certificate) under the provisions of Italian Safety Rules

"IDONEITÀ" SURVEYS are Surveys to be carried out for the purpose of the issue, maintenance or renewal of the national safety certificate called "Certificato di idoneità" to passenger or cargo ships not subject to SOLAS under the provisions of Italian Safety Rules (Item 36)

INT/ITA = Survey for the purpose of the International/Italian Loadline Certificate, as appropriate (Item 16)

CONF = Certificate of compliance ("Conformità") to MARPOL Annex I (only for Italian flag ships not subject to MARPOL) (Item 21)

DICH = Statement of compliance ("Dichiarazione") to MARPOL Annex I (only for Italian flag ships not subject to MARPOL) (Item 21)

CHEM = Statement of compliance ("Attestazione") to Italian Statutory Regulations (only for Italian or foreign flag chemical tankers or gas carriers operating in Italy) (Items 26 and 27)

RINA = Survey for the purpose of RINA Certificate for cargo gear (only for cargo gear of Italian ships not required to be included in ILO cargo gear booklet) (Items 34 and 35)

[4] CERTIFICATES AND STATEMENTS

PRO = Provisional (Interim) Certificate issued

EXT = Validity of existing Certificate extended

CND = Conditional Certificate issued

DEF = Full term Certificate issued

N.B.: The square is to be left blank in the case of endorsements of existing certificates

[5] BOTTOM SURVEY

NORM = Survey NOT valid on account of a Special Survey

VS = Survey valid on account of a Special Survey

AVA = Survey in connection with a Damage Survey

Afloat: Mark the square with X to mean that an In-water Survey was carried out in lieu of a Docking Survey (see 3.2.3.2 of Ch. 3 of Section A of the Rules)

N.B.: The underwater inspection of the ship's bottom to postpone the Docking Survey is to be considered as an Occasional Survey

[6] TAILSHAFT SURVEY

NEW = Tailshaft renewed

COMP = Complete Survey

ALT = Alternate Modified Survey

PAR = Partial Survey

With NDT: Mark the square with X to mean that a surface crack detection of the propeller keyed connection to the tailshaft was satisfactorily performed

[7] TYPE OF CERTIFICATE OR STATEMENT

CC = Certificate of Class

DC = Class Statement

DN = Statement with a view to obtaining the "Certificato di navigabilità"

DP = Certificate of Class for Pleasure Vessels

[8] FOREIGN FLAG SHIPS NOT CLASSED WITH RINA

In the case of these ships, the value of Gross Tonnage and, in lieu of RINA number, Distinctive number or letters are to be indicated

[9] FILE

Year, Office code, File number and File code are to be specified, in the above order, according to the File Record Book of the RINA Office concerned

(*) Underline the appropriate word(s) or abbreviation(s)

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS NIMENTEL OLIVEIRA
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



Before entering in the St. Lawrence River, the two existing units (~~Port FWD~~ - Stbd - FWD ; Port - AFT) were removed and stored temporary in the port of Halifax (Nova Scotia - Canada). Vessel was also laid up and delivered to Davie Ind. Shipyard in Quebec for upgrade works. Vessel technicians winterized the same vessel and safety equipment together to shipyard technicians who have now the responsibility of whole vessel: occasional survey carried out confirming the satisfactory conditions of all the apparatus and machinery, except propellers already removed. Class was confirmed in the laid up condition until February 1998, for bottom inspection and aux. boilers survey. Copies of letter sent by the Owner to Italian Consulate in Montreal and to RINA enclosed.

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PINHEIRO OLIVEIRA
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓGRAFOS

Underline the appropriate word(s) or abbreviation(s)

Place and date: Quebec, 27.01.97 Surveyors' names and signatures



REGISTRO ITALIANO NAVALE
R. Formenti

[Signature]

CARGO GEAR INFORMATION

TYPE OF CARGO GEAR SURVEYED	TYPE OF SURVEY(S) CARRIED OUT	NUMBER OF CARGO GEAR SURVEYED AND RELEVANT SWL IN TONNES											
		SWL ≤ 10			10 < SWL ≤ 20			20 < SWL			SWL > 40		
		No.	SWL	Test	No.	SWL	Test	No.	SWL	Test	No.	SWL	Test
DERRICKS	First Survey / Quinquennial Survey												
	Quadrennial Survey												
	Annual Survey												
CRANES	First / Annual (*) Survey												
CARGO ELEVATORS	First / Annual (*) Survey												

DERRICKS, CRANES AND/OR CARGO ELEVATORS OUT OF SERVICE, IF ANY, ARE TO BE STATED BELOW (specify number and relevant SWL)

INFORMATION FOR INVOICING

SURVEYS CARRIED OUT IN ITALY OR ABROAD BY RINA EXCLUSIVE SURVEYORS

INFORMATION ON TONNAGE MEASUREMENTS

Tonnage measurements carried out according to Regulations of:

The ship had already been measured according to Regulations of:

Tonnage re-measurements carried out: ☐ Tonnage measurements carried out for sister ship(s) accepted ☐

INFORMATION ON SUBDIVISION AND STABILITY

Inclining test carried out: ☐ Light ship weight test carried out: ☐

Subdivision and/or damage stability calculations carried out: ☐

Calculations as above carried out for sister ship(s) accepted: ☐

OTHER INFORMATION

Fees for visaed or issued class documents: Fees for visaed or issued statutory documents:

Phone / Telex expenses: Miscellaneous expenses:

In the case of surveys carried out outside the RINA Branch Office area, state whether travel tickets (if any) have been supplied by the Shipowner or by RINA

Expenses for travel tickets as above when supplied by RINA:

Survey(s) carried out together with the following RINA Agent abroad

The invoice is to be sent to the Shipowner (yes/no): SI If not, the invoice is to be sent to the following address:

Sr. ARMANDO HAVI

Client Code

497078

Through: Through Code

SURVEYS CARRIED OUT OUTSIDE ITALY BY RINA/GL JOINT EXCLUSIVE STATIONS OR AGENCIES ABROAD

Number of documents issued or visaed without inspections onboard being carried out: Number of Km covered by car and corresponding fees:

Total time spent on surveys (hours/min.): Other car travelling expenses (tolls, etc.):

Occasional survey time (hours/min.): Travelling expenses other than by car (thickets, etc.):

Travelling time (hours/min.): Phone/Telex expenses:

Out of office time (hours/min.): Miscellaneous expenses:

Overtime (hours/min.):

JOSÉ CARLOS PIMENTEL DURAS
DIRECTOR

DIVISÃO DE SERVIÇOS CARGO

(*) Underline the appropriate word(s) or abbreviation(s)

É COPIA FIEL DO DOCUMENTO ORIGINAL

Place and date: VE 1/10/97 Head of Office or Agent (Abroad) [Signature]



CARGO GEAR SURVEY REPORT

Survey under the provisions of the International Labour Organization Convention and RINA Rules for loading and unloading arrangements and for other lifting appliances on board ships

RINA No **67073**

Ship's Name **SPIRIT OF COLUMBUS**

Port **QUEBEC**

Date **18.09.97**

File code **97VE1818NA**

1 The undersigned surveyor of RINA supervised / performed the following surveys and tests:

Number (a)	Type (b)	SWL (c)	Survey (d)	Test (e)	Results (f)
STBD SIDE	C	490,5	QUI	Y	X

Mark with following abbreviations:

- (a) Position number on approved "Rigging Plans".
- (b) Type of installation: D = Derrick; C = Crane; E = Cargo Elevator; R = Ramp; B = Bridge Crane.
- (c) Safe Working Load in kN.
- (d) Type of survey: IN = Initial; QUI = Quinquennial; ANN = Annual; 6M = Six Monthly; OCC = Occasional survey for damage and/or repair.
- (e) Test method: W = by weight; Y = by dynamometer; — = test not carried out.
- (f) Survey/Test result: X = Satisfactory; R = Remarks; OUT = Out of service.

2 The approved "Rigging Plans" are available on board ☒

3 Marking on cargo handling appliances: existing ☒ requested ☐

4 New certificates issued:

Form (g)	LA2							
Number	(97 DG 14810 IN/1)							

(g) New form issued: LA1 Cargo Gear Booklet; or LA2 lifting appliances test; or LA3 loose gear test; or LA4 wire ropes test; or LA5 for italian flagged ships only.

5 Endorsement in Cargo Gear Booklet: Part I ☐ Part II ☐

6 Confirm that Part III of the Cargo Gear Booklet has / has not (delete as appropriate) been endorsed by a "responsible person" on board and forms LA3 / LA4 (delete as appropriate) have been issued ☐

7 Works, remarks and restrictions are reported overleaf ☒



RINA surveyor's name and signature

Date **30 Settembre 1997**

JOSE CARLOS PIMENTEL GISMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIS



REGISTRO ITALIANO NAVALE
R. Formenti

[Signature]

Mark: — = No or not applicable; X = Yes or now seen satisfactory; R = Remarks reported overleaf.

REMARKS

Vessel is equiped by previous ILO Cargo Gear Booklet
already endorsed by Palermo RINA Office in July 1997
Dynamometer "KTS NO.3 Capacity 160'000 LBS" of KEY
MARINE INDUSTRIES LTD - Vancouver, tested and
authorized by ABS as per certificate VA 12720-X
on 24.06.1997 in Vancouver B.C. - Canada -

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS FIMMEL CISMAG
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

M · S · R

Midland & Scottish Resources
Group of Companies



Società Armamento
Navi Appoggio S.p.A.

Sede Legale ed Ufficio Operativo:
00151 ROMA
VIA E. JENNER, 136
SCALA A - INTERNO 11
TEL. 06/58.28.295 - 58.28.951
FAX 06/58.28.709

22 settembre 1997

Al
Consolato Generale D'Italia
3489 Drummond Street
Montreal H3G 1X6

Al
C.te Giuseppe Somma
p/f Spirit of Columbus
Quebec City
Canada

Nave "Spirit of Columbus" : Dichiarazione di disarmo

La sottoscritta Società Armamento Navi Appoggio SANA SpA, con sede in Roma Via E Jenner No 136, cap 00151, armatore della nave "Spirit of Columbus", nr. di matricola 1921 del Compartimento Marittimo di Napoli, DICHIARA che la sopra nominata nave, consegnata per lavori al Cantiere Davie Industries Inc. di Quebec, sarà posta causa lavori in disarmo a partire dal 26 Settembre 1997, sotto la totale responsabilità del Cantiere.

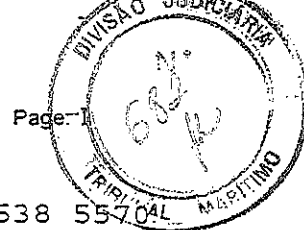
Il personale facente tuttora parte dell'equipaggio di Bordo sarà sbarcato per disarmo e rimpatriato nel rispetto dei vigenti contratti collettivi di lavoro e precisamente l'art. 9 del CCNL per Capitani e Direttori e l'art. 64 del CCNL per equipaggi del Naviglio Maggiore.

La presente comunicazione per l'attivazione delle procedure previste dal ns. Codice della Navigazione in caso di disarmo.

SANA SpA

È COPIA FIEL DEL DOCUMENTO ORIGINALE

JOSÉ CARLOS PIMENTEL CUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



Page: 1

TO : RINA
R Robino, C Murgia, R Formenti
CC : MARITIMA
Otoniel S Reis
CC : A Hourston, W Nilssen, G Somma
FROM : A Gierczynski
DATE : 27 September, 1997
REF : QUE.GE.008

Fax: 011 39 10 538 557041
Fax: 011 55 21 262 3528

SUBJECT : SPIRIT OF COLUMBUS - UPGRADE CONTRACT

The Spirit of Columbus has been delivered to Davie Industries on the 26th September 27, 1997 for the execution of the upgrade work corresponding to the P-36 Roncador contract.

The unit will be temporarily laid up for the duration of the works at this yard. For the duration of the works the yard will ensure the safe keeping of the Spirit of Columbus and the maintenance of the class requirements. I enclose for your reference a copy of our letter to the local consul on this matter.

Could you please ensure that all corresponding formalities within your contracted responsibilities are now followed as per our discussions on this subject.

I thank you for your assistance in this matter.

Best regards

Andrés Gierczynski
Construction Manager

Construction Site Office

Phone: (418) 694 7160
Fax : (418) 694 0427

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS FIMMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

REGISTRO ITALIANO NAVALE

Certificate of test and thorough examination of Lifting Appliances Certificato di prova e visita delle sistemazioni di carico e scarico

This Certificate is based on the standard international form as recommended by the International Labour Office in accordance with ILO Convention No. 152.

Questo Certificato è redatto secondo il modello standard prescritto dall'Ufficio Internazionale del Lavoro in accordo con la Convenzione ILO n. 152.

Certificate No. 97 DG 14 80 ALN 1
Certificato N.:
Ship's name SPIRIT OF COLUMBUS
Nome nave
RINA Number 67073
Numero RINA

(1) Situation and description of lifting appliances (with distinguishing numbers or marks, if any) which have been tested and thoroughly examined <i>Ubicazione e descrizione delle sistemazioni di carico e scarico (con numeri o marche distintive se esistono) che sono stati provati e visitati</i>	(2) Angle to the horizontal or radius at which test load applied <i>Angolo di elevazione o volata del braccio all'atto della esecuzione della prova</i>	(3) Test load (kN) <i>Carico di prova (kN)</i>	(4) Safe working load SWL (kN) at angle or radius shown in column 2 <i>Portata (kN) all'angolo di elevazione o volata del braccio indicato alla colonna 2</i>
ELECTRO/HYDRAULIC CRANE LIEBHERR TYPE 50/1900 MAIN HOIST WHIP HOIST	RADIUS 10,5 ÷ 20 12 ÷ 54	540,5 183,9	490,5 147,1

(1) Name and address of public service, association, company or firm making the test and examination REGISTRO ITALIANO
Nome e indirizzo dell'Ente, Associazione, Compagnia o Ditta che procede alle prove e visite
NAVALE - GENOVA (ITALY)

(2) Position of signatory in public service, association, company or firm EXECUTIVE MANAGER
Qualifica del Firmatario nell'ente, Associazione, Compagnia o Ditta

I certify that the above machinery, together with accessory gear, was tested by a competent person in the manner set forth on the reverse of this certificate; that a careful examination of the said machinery and gear by a competent person after the test showed that it had withstood proof load without injury or permanent deformation; and that the safe working load of the said machinery and gear is as shown in column (4).

Si certifica che gli apparecchi sopra specificati, unitamente ai loro accessori sono stati provati da una persona competente nel modo indicato nel retro questo modello; che una visita accurata di detti apparecchi e accessori, successivamente effettuata da una persona competente, ha dimostrato che essi hanno sopportato la prova senza riportare danno o deformazioni permanenti; e che la portata dei detti apparecchi e manovre è quella indicata nella colonna (4).

Date QUEBEC CANADA 18 SEPT. 1997

Stamp and signature
Timbro e firma



REGISTRO ITALIANO NAVALE
R. Formenti

NOTE - «Competent person» means a Surveyor of RINA or a person acknowledged by RINA.

NOTA - «Persona competente» significa un Tecnico del RINA oppure una persona specificatamente riconosciuta competente dal RINA.

Form LA2-Can-80-06/85

COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL JUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CERTIFICADOS



REGISTRO ITALIANO NAVALE



QUEBEC, 19 Dicembre 1997

ALLA DIREZIONE GENERALE
ITO
c.a. Ing. R. ROBINO

rit. QUE/010/RFO

oggetto: SPIRIT OF COLUMBUS RI. 67073
JOB 97 DG 14810 IN

Si trasmette, in allegato, il mod. VISITE 1 per le visite
di classe eseguite a Quebec dal 04.11.1997 al 19.12.1997.

Distinti saluti

REGISTRO ITALIANO NAVALE
R. Formenti

E COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL CUSMÃO
DIRECTOR
DIVISÃO DE SERVIÇOS CARTORARIAS

A CLASSIFICA

REGISTRO ITALIANO NAVALE



OFFICE/AGENCY IN QUEBEC FACTUAL REPORT OF SURVEYS

RINA number [8] 67073	Name of ship SPIRIT OF COLUMBUS	Gross Tonnage [8]	Flag of ship ITALIAN
Start of Survey 04.11.97	End of Survey 19.12.97	Place of Survey QUEBEC (CND)	File [9] 97 DC 14810 IN

THIS IS TO CERTIFY THAT THE FOLLOWING SURVEYS HAVE BEEN CARRIED OUT ACCORDING TO APPLICABLE RULES AND REGULATIONS

CLASS / "NAVIGABILITA'" (*) SURVEYS [3]	Spec (Ren) Survey [1]	Ord (Ann) Survey [1]	Intermediate Survey [1]	Continuous Survey [1]	Occasional Survey [1]	First Classification "Navigabilità" Survey [1]	Cert/Stat [4]	Expiry date of Cert/Stat
1 Hull				X				
2 Machinery				X				
3 Unmanned machinery space (IAQ/IAP/IAQ+IAP) (*)								
4 Refrigerating Plant (IFQ)								
5 Special notations (FFQ; NAU; SCC,.....) (*)								
6 Diving systems								
7 Dynamic positioning system (IPD)								

Bottom (5)	NORM	VS	AVA	Afloat	Q	12 Main/Auxiliary boiler [1]	No. 90	X	IN	CN	CM	PC	No. 91	X	IN	CN	CM	PC	
9 Tailshaft (centre) [6]	NEW	COMP	ALT	PAR	with NDT	Q	13 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
10 Tailshaft (port) [6]	NEW	COMP	ALT	PAR	with NDT	Q	14 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC
11 Tailshaft (stbd) [6]	NEW	COMP	ALT	PAR	with NDT	Q	15 Main/Auxiliary boiler [1]	No.	AL	IN	CN	CM	PC	No.	AL	IN	CN	CM	PC

STATUTORY SURVEYS	Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat	STATUTORY SURVEYS	Type [2]	Cert/Stat [4]	Expiry date of Cert/Stat
16 Load Line (INT/TA) (*) [3]				29 Dangerous Goods in Road Tanks			
17 Safety Construction				30 Dangerous Goods in Tank Containers			
18 Safety Equipment				31 Dangerous Goods in Packages			
19 Safety Radio				32 Cargo Gear - Cranes (ILO) [3]			
20 Safety Passenger				33 Cargo Gear - Derricks (ILO) [3]			
21 MARPOL Annex I (IOPP/CONF/DICH) (*) [3]				34 Cargo Gear - Cranes (RINA) [3]			
22 Fitness Chemicals (COF/COF) (*)				35 Cargo Gear - Derricks (RINA) [3]			
23 Fitness Gases (COF/COF) (*)				36 "Idoneità" (passenger/cargo (*) ships) [3]			
24 Noxious Liquid Substances (IPPC)				37 Crude Oil Washing (COW)	AUT	OCC	
25 Sewage Pollution Prevention (ISPP)				38 Radar ascertainment	RIN	OCC	
26 Dangerous Goods in bulk (CHEM) [3]				39			
27 Dangerous Goods in bulk (GAS) [3]				40			
Carriage of vehicles				41			

EACH SURVEY WAS CARRIED OUT IN ACCORDANCE WITH THE RELEVANT "CHECK LIST" ☐

THIS IS THE FINAL REPORT ☒ THIS IS NOT THE FINAL REPORT; NARRATIVE REPORTS WITH RELEVANT ENCLOSURES WILL BE SENT LATER ☐

PARTIAL / COMPLETE (*) THICKNESS MEASUREMENTS CARRIED OUT ☐ RELEVANT REPORTS ARE ENCLOSED ☐

TOTAL ENCLOSURES No. **3** RELEVANT TO ITEM(S) **1 - 2 - 12**

RECOMMENDATIONS / MEMO (*) were imposed / deleted / postponed / confirmed (*) as stated on page 3 ☐

Type of Certificate or Statement [7]	CC	DC	DN	DP	Date of VISA		Certificate confirmation					SURVEYORS:	
T E X T O F V I S A	No entry in Class Certificate (see note on page 3) COPIA FIEL DO DOCUMENTO ORIGINAL JOSÉ CARLOS PIMENTEL CUSMÃO DIRETOR DIVISÃO DE SERVIÇOS CAPTURAIS										Ident. No.	Surname	
											526	FORMENTI	

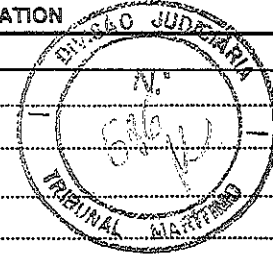
Under VISA : Date **27.01.98** Place **QUEBEC**

(*) Underline the appropriate word(s) or abbreviation(s)

See Explanatory Notes [1] to [9] on page 2

Place and date: **Québec, 19.12.1997** Surveyors' names and signatures: **Formenti**

SALT WATER BALLAST SPACES



(a) Spaces examined where no protective coating was applied from the time of construction:

(b) Spaces examined where the protective coating was found in POOR condition:

(c) Spaces examined where the protective coating was found in GOOD or FAIR condition:

FIRE FIGHTING SYSTEMS AND APPLIANCES

(a) Date of last check of CO2 bottles/vessels content:

(e) Date of last check of nitrogen bottles content:

(b) Date of last hydrotesting of CO2 bottles/vessels:

(f) Date of last hydrotesting of nitrogen bottles:

(c) Date of last check of HALON bottles/vessels content:

(g) Date of last renewal of foam forming liquid:

(d) Date of last hydrotesting of HALON bottles/vessels:

(h) Foam forming liquid sample taken for analysis (if required): ☐

SETTING UP OF SAFETY VALVES OF MAIN / AUXILIARY (*) BOILERS:

n. 90 = 11.3 BAR

n. 91 = 11.6 BAR

THE OUTSTANDING ITEMS FOR COMPLETION OF PART-HELD ORDINARY (ANNUAL) / INTERMEDIATE (*) HULL OR MACHINERY SURVEYS AND/OR MAIN / AUXILIARY BOILER SURVEYS (*) ARE AS STATED BELOW:

EXPLANATORY NOTES FOR FILLING IN THIS FORM:

(1) MARKS FOR SURVEY EXTENT

- ✓ A = Survey entirely carried out
- ✓ = Commencement of Survey
- ✓ = Continuation of Survey
- ✓ = Completion of Survey
- ✓ = Annual Survey of exhaust fired thermal oil heaters including visual inspection and tightness testing of heater tubes

(2) TYPE OF SURVEY

- ✓ ANN = Annual Survey
- ✓ = Survey for authorization (for COW) (Item 37)
- ✓ = Biennial Survey (for Compasses)
- ✓ = Intermediate Survey
- ✓ = Load test (for Cargo Gear - Items 32 to 35)
- ✓ = Occasional survey
- ✓ = Quadrennial Survey (for Cargo Gear - Items 32 to 35)
- ✓ = Quinquennial survey (for Cargo Gear - Items 32 to 35)
- ✓ = Initial Survey
- ✓ = Renewal Survey
- ✓ = Survey for Loadline variations (Item 16)

(3) NOTES ON SURVEYS

- ✓ "NAVIGABILITA" SURVEYS are Surveys to be carried out for the purpose of the issue, maintenance or renewal of the "Certificato di navigabilità" (Seaworthiness Certificate) under the provisions of Italian Safety Rules
- ✓ "IDONEITA" SURVEYS are Surveys to be carried out for the purpose of the issue, maintenance or renewal of the national safety certificate called "Certificato di idoneità" to passenger or cargo ships not subject to SOLAS under the provisions of Italian Safety Rules (Item 36)
- ✓ Survey for the purpose of the International/Italian Loadline Certificate, as appropriate (Item 16)
- ✓ Certificate of compliance ("Conformità") to MARPOL Annex I (only for Italian flag ships not subject to MARPOL) (Item 21)
- ✓ Statement of compliance ("Dichiarazione") to MARPOL Annex I (only for Italian flag ships not subject to MARPOL) (Item 21)
- ✓ Statement of compliance ("Attestazione") to Italian Statutory Regulations only for Italian or foreign flag chemical tankers or gas carriers operating in Italy (Items 26 and 27)
- ✓ Survey for the purpose of RINA Certificate for cargo gear (only for cargo gear of Italian ships not required to be included in ILO cargo gear Booklet) (Items 34 and 35)

(4) CERTIFICATES AND STATEMENTS

- PRO = Provisional (Interim) Certificate issued
- EXT = Validity of existing Certificate extended
- CND = Conditional Certificate issued
- DEF = Full term Certificate issued

N.B.: The square is to be left blank in the case of endorsements of existing certificates

(5) BOTTOM SURVEY

- NORM = Survey NOT valid on account of a Special Survey
- VS = Survey valid on account of a Special Survey
- AVA = Survey in connection with a Damage Survey
- Afloat: Mark the square with X to mean that an In-water Survey was carried out in lieu of a Docking Survey (see 3.2.3.2 of Ch. 3 of Section A of the Rules)
- N.B.: The underwater inspection of the ship's bottom to postpone the Docking Survey is to be considered as an Occasional Survey

(6) TAILSHAFT SURVEY

- NEW = Tailshaft renewed
- COMP = Complete Survey
- ALT = Alternate Modified Survey
- PAR = Partial Survey

With NDT: Mark the square with X to mean that a surface crack detection of the propeller keyed connection to the tailshaft was satisfactorily performed

(7) TYPE OF CERTIFICATE OR STATEMENT

- CC = Certificate of Class
- DC = Class Statement
- DN = Statement with a view to obtaining the "Certificato di navigabilità"
- DP = Certificate of Class for Pleasure Vessels

(8) FOREIGN FLAG SHIPS NOT CLASSED WITH RINA

In the case of these ships, the value of Gross Tonnage and, in lieu of RINA number, Distinctive number or letters are to be indicated

(9) FILE

Year, Office code, File number and File code are to be specified, in the above order, according to the File Record Book of the RINA Office concerned

Use the appropriate word(s) or abbreviation(s)

RINA 018-05/94

E COPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PINHEIRO
DIRECTOR
DIVISÃO DE SERVIÇOS CLASSE

Surveys carried out during the period November - December 1989
and while up-grade works at DAVIE Industries inc. in Quebec
(Canada).

No entry in Class Certificate because during laid-up condition
of vessel, all Certificates are in the Italian Consulate in Quebec.

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JOSÉ CARLOS PIMENTEL CUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTOGRAFICOS

Underline the appropriate word(s) or abbreviation(s)

Place and date: Quebec, 19.12.1989 Surveyors' names and signatures



REGISTRAZIONE ITALIANA NAVALE
Formenti

[Signature]

CARGO GEAR INFORMATION

TYPE OF CARGO GEAR SURVEYED	TYPE OF SURVEY(S) CARRIED OUT	NUMBER OF CARGO GEAR SURVEYED AND RELEVANT SWL IN TONNES											
		SWL ≤ 10			10 < SWL ≤ 20			20 < SWL ≤ 40					
		No.	SWL	Test	No.	SWL	Test	No.	SWL	Test			
DERRICKS	First Survey / Quinquennial Survey												
	Quadrennial Survey												
	Annual Survey												
CRANES	First / Annual (*) Survey												
CARGO ELEVATORS	First / Annual (*) Survey												

DERRICKS, CRANES AND/OR CARGO ELEVATORS OUT OF SERVICE, IF ANY, ARE TO BE STATED BELOW (specify number and relevant SWL)

INFORMATION FOR INVOICING

SURVEYS CARRIED OUT IN ITALY OR ABROAD BY RINA EXCLUSIVE SURVEYORS

INFORMATION ON TONNAGE MEASUREMENTS

Tonnage measurements carried out according to Regulations of:

The ship had already been measured according to Regulations of:

Tonnage re-measurements carried out: ☐ Tonnage measurements carried out for sister ship(s) accepted ☐

INFORMATION ON SUBDIVISION AND STABILITY

Inclining test carried out: ☐ Light ship weight test carried out ☐

Subdivision and/or damage stability calculations carried out ☐

Calculations as above carried out for sister ship(s) accepted: ☐

OTHER INFORMATION

Fees for visaed or issued class documents: Fees for visaed or issued statutory documents:

Phone / Telex expenses: Miscellaneous expenses:

In the case of surveys carried out outside the RINA Branch Office area, state whether travel tickets (if any) have been supplied by the Shipowner or by RINA

Expenses for travel tickets as above when supplied by RINA:

Survey(s) carried out together with the following RINA Agent abroad

The invoice is to be sent to the Shipowner (yes/no): NO If not, the invoice is to be sent to the following address:

INCLUDED IN JOB "97 DG 14810 IN" Client Code

Through..... Through Code

SURVEYS CARRIED OUT OUTSIDE ITALY BY RINA/GL JOINT EXCLUSIVE STATIONS OR AGENCIES ABROAD

Number of documents issued or visaed without inspections onboard being carried out: Number of Km covered by car and corresponding fees:

Total time spent on surveys (hours/min.): Other car travelling expenses (tolls, etc.):

Occasional survey time (hours/min.): Travelling expenses other than by car (thickets, etc.):

Travelling time (hours/min.): Phone/Telex expenses:

Out of office time (hours/min.): Miscellaneous expenses:

Overtime (hours/min.):

JOSE CARLOS PIMENTEL CUSMAO
DIRECTOR
DIVISÃO DE SERVIÇOS CARTORIAS

(*) Underline the appropriate word(s) or abbreviation(s)

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Place and date: Quebec 19.12.97 Head of Office or Agent (Abroad) [Signature]

REGISTRO ITALIANO NAVALE

Statement n° 97 DG 14810 IN/2

To whom it may concern,

It is to certify that the undersigned surveyor did attend in Quebec on the 4th of November 1997 a complete inspection of the two oil-fired aux. boilers Clayton on board of motor/vessel-rig.

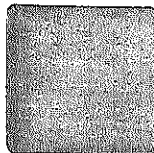
SPIRIT OF COLUMBUS
(RL 67073)

Safety valves adjusted during running test at following pressure value:

- Boiler n° 1 11.3 BAR
- Boiler n° 2 11.6 BAR

After the test, working pressure was adjusted again at 100 p.s.i. for the requested heating service. The relevant Class Certificate will be endorsed thoroughly when in our hands.

Quebec, November 19th, 1997

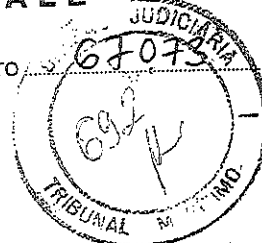


REGISTRO ITALIANO NAVALE
R. Formenti

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JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTEIRAS

RINA carries out its duties through officers or other persons it considers possess all the requirements of suitability and competence for the tasks which have been assigned to them. In its capacity as expert RINA only expresses opinions and evaluations of compliance with its own rule requirements and does not, in any case whatsoever, (even if its opinions are requested on matters not expressly covered by Rules) assume the liabilities pertaining to the designers, shipowners, builders, test inspectors, shipyards or any person or organization responsible by law or contractually for providing guarantees for all of whom the respective liabilities remain unchanged even in the case of consultative actions by RINA. For what concerns the tasks taken on and carried out directly, other than those delegated, dealt with in the following sentence, RINA is answerable in law terms. Within the context of the tasks under the responsibility of RINA as delegate of the Italian Merchant Marine Ministry, liability can only be recognized in the case of fraud or gross negligence by the officers or the persons entrusted. In no case shall the liability, regardless of the amount of damage reported, exceed a value equal to 5 times the total of the fees received by RINA as consideration of the services rendered from which the damage reported derives.

Nave: SPIRIT OF COLUMBUS
Ship- Numero Registro
Register Number

- (2) ☒ ALLEGATO AL RAPPORTO N.
Enclosed to survey report
- ☐ PROMEMORIA DI SERVIZIO
Memorandum

(1) VISITA: (MACHINERY) PERF/PROD PLANT REMOVED DEFINITELY
Survey

OPERAZIONI E LAVORI ESEGUITI - OSSERV. — Items and repairs carried out - Remarks

GRUPPO ELEMENTO * (3)
15 16 17 18 19 20 O R D 77

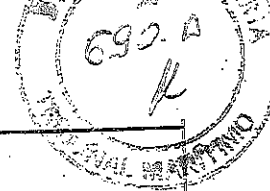
- H.P. EXPORT GAS COMPRESSOR
- 3rd STAGE SEPARATOR
- 2nd STAGE SEPARATOR
- TEST SEPARATOR SKID
- OIL METERING SKID
- PRODUCED WATER TREATMENT PACK.
- OIL BOOSTER PUMP SKID
- FLASH GAS LP COMPRESSOR
- CENTRIFUGE
- DRIVING WATER BRAKE COOLING SYSTEM
- DEGASSER
- SHALE SHAKERS
- GLYCOL CONTACTOR PACKAGE
- GLYCOL REGENERATING PACKAGE
- HEATING MEDIUM PACKAGE

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JOSE CARLOS PIMENTEL GUSMAO
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓGIOSPorto/Place: QUEBEC Data/Date: 19.12.1992 I tecnici/The surveyors: [Signature]

- (1) Il foglio potrà essere utilizzato quale rapporto di visita solo nel caso di Visita Speciale e/o continuativa scafo, macchina, I.F. riempiendo le caselle alle colonne 15 + 77.
In questo caso dovranno essere utilizzati fogli separati per lo scafo, la macchina e l'I.F. rispettivamente.
The sheet can be used as survey report only for Special Survey and/or continuous hull, machinery, refrigerating plant filling the boxes in way of the number 15 + 77.
In such case separate sheets will be used for hull, machinery and refrigerating plant.
- (2) Porre "X" nella casella corrispondente alla voce che indica come si intende utilizzare il modulo.
Mark "X" in way of the box showing the kind it is intention to use the form.
- (3) Porre "1" quando gruppo visitato al completo riscontrato in ordine.
Mark "1" when the group is thoroughly surveyed and found in order.



CERTIDÃO

CERTIFICO que, nesta data, foi encerrado o 19 Volume
do Anexo A do processo 19489/01

O referido é verdade e dou fé.

Aos 09 de abril de 2004.

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JOSE CARLOS PIMENTEL CUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS