**GENERAL INFORMATION**

|  |  |  |  |
| --- | --- | --- | --- |
| VESSEL | BITU ATLANTIC | DATE (dd/mm/yy) | 09-FEB-2019 |
| PORT /TERMINAL | DAKAR | ARRIVAL DRAFT  | 8.80 m (F) , 8.80 m (A) |
| QTY TO LOAD/ DISCHARGE | 5500 MT IN VAC.  | ARRIVAL DISPLACEMENT  | 38260 MT |
| CARGO DENSITY | 1.0387/1.0501/1.0526 ( VAC.) | ARRIVAL DEADWEIGHT | 28570MT |
| GRADE (S) | BITUMEN PEN 20/30,35/50, 60/70 | DEPARTURE DRAFT | 7.6 m (F) , 7.6 m (A) |
| VOYAGE No. |  ATL003L3 | DEPARTURE DISPLACEMENT  | 31947 MT |
| MAX. DEPTH AT BERTH |   | DEPARTURE DEADWEIGHT | 22256 MT |

|  |  |  |
| --- | --- | --- |
|  | **Arrival Condition:** | **Departure Condition:** |
| **Cargo Tanks** | Hours | Hours |
| **Ullage** | **Qty** | **%** | **Ullage** | Qty | **%** |
| 1P/1S | 1.96/1.95 | 2497/2497 | **95/95** | 9.25/1.95 | 1297/2497 | **50/95** |
| 2P/2S | 8.21/8.21 | 1948/1946 | **53/53** | 8.21/8.21 | 1948/1946 | 8.21/8.21 |
| 3P/3S | 17.49/17.49 | 0/0 | **0/0** | 17.49/17.49 | 0/0 | **0/0** |
| 4P/4S | 17.49/17.49 | 0/0 | **0/0** | 17.49/17.49 | 0/0 | **0/0** |
| 5P/5S | 4.86/1.73 | 2715/3407 | **75/90** | 11.35/1.73 | 1221/3407 | **35/90** |
| 6P/6S | 17.49/17.49 | 0/0 | **0/0** | 17.49/17.49 | 0/0 | **0/0** |
| 7P/7S | 1.25/1.29 | 3272/3272 | **95/95** | 14.05/1.29 | 472/3272 | **13/95** |
| SLP/ SLS | 17.74/17.75 | 0/0 | **0** | 17.74/17.75 | 0/0 | **0** |
| ROT | 10.09 | 0 | 0 | 10.09 | 0 | 0 |
| Max. Ben. Mom. | **75** |       |       | **73%** |       |       |
| Max. Sh. Force | **55** |       |       | **55%** |       |       |
| Draft Fwd | **8.80** |       |       | **7.6** |       |       |
| Draft Aft | **8.80** |       |       | **7.6** |       |       |
| Trim | **0.0m** |       |       | **0.00m** |       |       |
| GM | 3.83 m |       |       | 4.97 m |       |       |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Grade 1:bitumen pen 20/30 |  | Grade 2:bitumen pen 35/50 |  | Grade 3:bitumen pen 60/70 |  |
| Quantity m/t: 1200 MT IN VAC. WITH VEF |  | Quantity m/t: 2800 MT IN VAC. WITH VEF |  | Quantity m/t: 1500 MT IN VAC. WITH VEF |  |
| Quantity cbm: 1235 |  | Quantity cbm:2910 |  | Quantity cbm:1564 |  |
| Density 15 C – 1.0501 (Vac) |  | Density 15 C – 1.0526 |  | Density 15 C1.0387 |  |
| Loading Temperature: 135 |  | Loading Temperature:135 |  | Loading Temperature:135 |  |

**TANKS TO BE LOADED/ DISCHARGED**

|  |  |
| --- | --- |
| TANKS TO BE LOADED/ DISCHARGED | 1P, 5P, 7S |
| TANKS NOT TO BE LOADED/ DISCHARGED | 1S,2P,2S,3P,3S,4P,4S,5S,6P,6S,7P,SLP, SLS, ROT |
| MAX. AGREED LOADING/ DISCHARGING RATE |  833 cub m per hr / line |
| MAX. No OF SLACK TANKS DURING THE OPERATION\* | 3 |

\*(The maximum number of slack tanks during any stage of the operation are not to exceed the allowed number as per the ship’s approved Loading Manual).

Initial Dischaging rate (cbm/hr) \_\_\_\_\_\_150cubm\_per line\_\_\_\_\_\_\_\_\_for\_\_\_60\_\_\_\_\_\_\_\_\_\_\_\_\_\_ minutes

Normal /max Discharging rate cbm/hr \_\_\_\_\_\_\_833cubm per line\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Max backpressure kg/sq. Cm: \_\_\_10.5     \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Please also note information in: - Unloading instructions to chief officer, - unloading port information

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 7 PORT | 6 PORT | 5 PORT | 4 PORT | 3 PORT | 2 PORT | 1 PORT |
| Ullage:1.22Cbm:3421M/t:3272 | Ullage:17.49Cbm:0M/t:3526 | Ullage:4.91Cbm:2812M/t:2717 | Ullage:17.49Cbm:0M/t:0 | Ullage:17.49Cbm:0M/t:0 | Ullage:8.21Cbm:1948M/t:1883 | Ullage:2.10Cbm:2600M/t:2497 |
|  |  |  |  |  |  |
| 7 SB / CEN | 6 SB / CEN | 5 SB / CEN | 4 SB / CEN | 3 SB / CEN | 2 SB / CEN | 1 SB / CEN |
| Ullage:1.24Cbm:3422M/t:3272 | Ullage:17.49Cbm:0M/t:0 | Ullage:1.73Cbm:3557M/t:3477 | Ullage:17.49Cbm:0M/t:0 | Ullage:17.49Cbm:0M/t:0 | Ullage:821Cbm:1946M/t:1881 | Ullage:2.10Cbm:2600M/t:2497 |

**Other Remarks:**

|  |
| --- |
| CALCULATION BASED ON THE AVERAGE DISCHARGE RATE OF 750 CBM/HR |
|       |

**STAGE SEQUENCE PLAN**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **arrival** | **Stage No:1** | **Stage No:2** | **Stage No:3** | **Stage No:4** | **departure** |
| **TANKS (Cargo and Ballast)** |  | Hours0000-0200 | Hours0200-0400 | Hours0400-0600 | Hours0600-0800 | Hours0800-1000 |
| **Ullage** | **Qty** | **%** | **Ullage** | Qty | **Ullage** | Qty | **%** | **%** | **Ullage** | Qty | **%** | **Ullage** | Qty | **%** | **Ullage** | Qty | **%** |
| **1P/1S COT** | **1.96/****1.95** | **2600/2602** | **95/95** | **1.96/****1.95** | **2600/2602** | **95/95** | **1.96/****1.95** | **2600/2602** | **95/95** | **1.96/****1.95** | **2600/2602** | **95/95** | **1.96/****1.95** | **2600/2602** | **95/95** | **1.96/****1.95** | **2600/2602** | **95/95** |
| **2P/2S COT** | **8.21/8.21** | **1948/1946** | **53/53** | **8.21/8.21** | **1948/1946** | **53/53** | **8.21/8.21** | **1948/1946** | **53/53** | **8.21/8.21** | **1948/1946** | **53/53** | **8.21/8.21** | **1948/1946** | **53/53** | **8.21/8.21** | **1948/1946** | **53/53** |
| **3P/3S COT** | **17.49/17.49** | **0/0** | **0** | **17.49/17.49** | **0/0** | **0** | **17.49/17.49** | **0/0** | **0** | **17.49/17.49** | **0/0** | **0** | **17.49/17.49** | **0/0** | **0** | **17.49/17.49** | **0/0** | **0** |
| **4P/4S COT** | **17.49/17.49** | **0/0** | **0** | **17.49/****17.49** | **0/0/** | **0** | **17.49/****17.49** | **0/0** | **0** | **17.49/****17.49** | **0/0** | **0** | **17.49/****17.49** | **0/0** | **0** | **17.49/****17.49** | **0/0** | **0** |
| **5P/5S COT** | **4.86/1.73** | **2812/3557** | **75/90** | **4.86/1.73** | **2812/3557** | **75/90** | **11.35/1.73** | **1270/3557** | **35/90** | **11.35/1.73** | **1270/3557** | **35/90** | **11.35/1.73** | **1270/3557** | **35/90** | **11.35/1.73** | **1270/3557** | **35/90** |
| **6P/6S COT**  | **17.49/17.49** | **0/0** | **0** | **17.49/17.49** | **0/0** | **0** | **17.49/17.49** | **0/0** | **0** | **17.49/17.49** | **0/0** | **0** | **17.49/17.49** | **0/0** | **0** | **17.49/17.49** | **0** | **0** |
| **7P/7S COT** | **1.25/1.29** | **3417/3419** | **95/95** | **1.25/1.29** | **3417/3419** | **95/95** | **1.25/1.29** | **3417/3419** | **95/95** | **7.60/1.29** | **1916/3419** | **51/95** | **14.05/1.29** | **473/3419** | **13/95** | **14.05/1.29** | **473/3419** | **13/95** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Max. Ben. Mom. | **75** |  |  | **55** |  |  | **69** |  |  | **73** |  |  | **73** |  |  | **73** |  |  |
| Max. Sh. Force | **55** |  |  | **45** |  |  | **49** |  |  | **44** |  |  | **55** |  |  | **55** |  |  |
| Draft Fwd | **8.80** |  |  | **7.9** |  |  | **7.5** |  |  | **7.8** |  |  | **7.60** |  |  | **7.60** |  |  |
| Draft Aft | **8.80** |  |  | **9.5** |  |  | **9.4** |  |  | **8.3** |  |  | **7.60** |  |  | **7.60** |  |  |
| Trim | **0.00** |  |  | **1.6** |  |  | **1.9** |  |  | **0.5** |  |  | **0** |  |  | **0** |  |  |
| GM | **3.83** |  |  | **4.32** |  |  | **4.54** |  |  | **4.87** |  |  | **4.97** |  |  | **4.97** |  |  |
| **Remarks :**  |
|

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **arrival** | **Stage No:1** | **Stage No:2** | **Stage No:3** | **Stage No:4** | **departure** |
| **TANKS (Cargo and Ballast)** |  | Hours0000-0200 | Hours0200-0400 | Hours0400-0600 | Hours0600-0800 | Hours0800-1000 |
| **Ullage** | **Qty** | **%** | **Ullage** | Qty | **Ullage** | Qty | **%** | **%** | **Ullage** | Qty | **%** | **Ullage** | Qty | **%** | **Ullage** | Qty | **%** |

 |
|  **FPK** | **9** | 700 | **70** | **9** | 700 | **70** | **9** | 700 | **70** | **0** | **0** | **0** | **0/0** | **0/0** | **0** | **0/0** | **0/0** | **0** |
| **1P/1S WBT** | **0/0** | **0/0** | **0** | **0/0** | **0/0** | **0** | **0/0** | **0/0** | **0** | **0/0** | **0/0** | **0** | **0/0** | **0/0** | **0** | **0/0** | **0/0** | **0** |
| **2P/2S WBT** | **0/0** | **0/0** | **0** | **0/0** | **0/0** | **0** | **0/0** | **0/0** | **0** | **0/0** | **0/0** | **0** | **0/0** | **0/0** | **0** | **0/0** | **0/0** | **0** |
| **3P/3S WBT** | **18.35/18.35** | **1125/1125** | **98/98** | **18.35/18.35** | **1125/1125** | **98/98** | **18.35/18.35** | **1125/1125** | **98/98** | **18.35/18.35** | **1125/1125** | **98/98** | **18.35/18.35** | **1125/1125** | **98/98** | **18.35/18.35** | **1125/1125** | **98/98** |
| **4P/4S WBT** | **18.5/18.5** | **1125/1125** | **98/98** | **18.5/18.5** | **1125/1125** | **98/98** | **18.5/18.5** | **1125/1125** | **98/98** | **18.5/18.5** | **1125/1125** | **98/98** | **18.5/18.5** | **1125/1125** | **98/98** | **18.5/18.5** | **1125/1125** | **98/98** |
| **5P/5S WBT** | **0/0** | **0/0** | **0** | **0/0** | **0/0** | **0** | **0/0** | **0/0** | **0** | **0/0** | **0/0** | **0** | **0/0** | **0/0** | **0** | **0/0** | **0/0** | **0** |
| **6P/6S WBT** | **0/0** | **0/0** | **0/0** | **4.5/0** | **610/0** | **45/0** | **18.50/0** | **1125/0** | **98/0** | **3.5/0** | **563/0** | **40/0** | **0/0** | **0/0** | **0** | **0/0** | **0/0** | **0** |
| **7P/7S WBT** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** |
| **8P/8S WBT** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** | **0/0** |
| Max. Ben. Mom. | **75** |  |  | **55** |  |  | **69** |  |  | **73** |  |  | **73** |  |  | **73** |  |  |
| Max. Sh. Force | **55** |  |  | **45** |  |  | **49** |  |  | **44** |  |  | **55** |  |  | **55** |  |  |
| Draft Fwd | **8.80** |  |  | **7.9** |  |  | **7.5** |  |  | **7.8** |  |  | **7.60** |  |  | **7.60** |  |  |
| Draft Aft | **8.80** |  |  | **9.5** |  |  | **9.4** |  |  | **8.3** |  |  | **7.60** |  |  | **7.60** |  |  |
| Trim | **0.00** |  |  | **1.6** |  |  | **1.9** |  |  | **0.5** |  |  | **0** |  |  | **0** |  |  |
| GM | **3.83** |  |  | **4.32** |  |  | **4.54** |  |  | **4.87** |  |  | **4.97** |  |  | **4.97** |  |  |
| **Remarks :**  |

**PUMPING PLAN**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pumps To Be Operated** | **Stage No:1****Hours:** | **Stage No:2****Hours:** | **Stage No:3****Hours:** | **Stage No:4****Hours:** |  |  |  |  |  |
| **COP NO 1** | **Y** | **Y** | **Y** | **Y** |  |  |  |  |  |
|  **COP NO 2** |  |  |  |  |  |  |  |  |  |
| **COP NO 3** | **-** | **-** | **-** | **-** | **-** |  |  |  |  |
| **WBP 1** | **-** | Y | Y |  | **-** |  |  |  |  |
|  **WBP 2** | **-** | **-** | **-** | **-** | **-** |  |  |  |  |
| **WB EDUCTOR** | **-** | **-** | **-** | **-** | **-** |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
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**~~LOADING/~~ DISCHARGING OPERATIONS SEQUENCE**

Indicate/ Record instructions and sequence of operations to take place (such as valve status and line up, tank atmosphere status including IG pressure, pumps to be used, stripping and pump to be used, topping up process, ullaging method, ballast operations/ sequence) per stage. The details and instructions to be provided shall be separated per stage (i.e. instructions to be followed for stage 1, then for stage 2 and so on).

|  |  |
| --- | --- |
| **Stage No:****Hours:** | **Instructions To Be Followed** |
| 1 | CARGO :Vessel to discharge BITUMEN PEN 20/30, from Nominated tanks ( 1P COT). Before commencing discharging ensure vessel lined up as per below mentioned sequence MANIFOLD V/V ‘s ( OPEN), MANIFOLD CROSSOVER V/V ‘S (OPEN ), GOOSENECK V/V (SHUT) , MANIFOLD DRAIN V/V’(SHUT), LINEMASTER V/V ( open), DROP V/V ( shut), BOTTOM CROSSOVER ( OPEN ) , TANK V/V’S (OPEN), BULKHEAD MASTER V/V’S ( open) ,PUMPROOM XOVER( OPEN ), PUMP DISCH. V/V ( OPEN) . Initial discharging rate to be 150cub m per line . Mastriser to be used as means of venting. Maintain positive pressure in the tanks . Hydraulic pump level to be monitored. Shipshore safety checklist to be complied with at all times . Discharging operations checklists to be complied with . Hourly pumproom rounds to be taken . LSA / FFA / SOPEP equipments to be kept ready at all times . BALLAST Start NO 1 WBP when required and adhere to sequence mentioned above. Monitor stresses & stability of the vessel at all times. |
| 2 | CARGO Vessel to discharge BITUMEN PEN 60/70, from Nominated tanks ( 5P COT as above mentioned sequence plan. Hourly comparison of ship shore figures to be carried out. Hydraulic pump level to be monitored. Shipshore safety checklist to be complied with at all times . Discharging opeartions checklists to be complies with . Hourly pumproom rounds to be taken . LSA / FFA / SOPEP equipments to be kept ready at all times . BALLAST : Start NO 1 WBP when required and adhere to sequence mentioned above. Monitor stresses & stability of the vessel at all times. |
| 3 | CARGO : Vessel to discharge BITUMEN PEN 35/50, from Nominated tanks ( 7S COT as above mentioned sequence plan. Hourly comparison of ship shore figures to be carried out. Hydraulic pump level to be monitored. Shipshore safety checklist to be complied with at all times . Discharging opeartions checklists to be complies with . Hourly pumproom rounds to be taken . LSA / FFA / SOPEP equipments to be kept ready at all times . Compare CCR guages with manual ullages of cargo tanks . Steel tapes to be used for comparison.BALLAST : USE 1 WBP when required and adhere to sequence mentioned above. Monitor stresses & stability of the vessel at all times |
| 4 | CARGO : Vessel about to complete discgarging bitumen pen 35/50. as above mentioned sequence plan. Adjust RPM to reduce rate .Hourly comparison of ship shore figures to be carried out. Hydraulic pump level to be monitored. Shipshore safety checklist to be complied with at all times . Loading opeartions checklists to be complies with . Hourly pumproom rounds to be taken . LSA / FFA / SOPEP equipments to be kept ready at all times . BALLAST :. USE 1 WBP when required and adhere to sequence mentioned above. Monitor stresses & stability of the vessel at all times |
| 5 | CARGO :dischraging completed secure valve, secure lines. Hydraulic pump level to be monitored. Shipshore safety checklist to be complied with at all times . Discharging opeartions checklists to be complies with . Hourly pumproom rounds to be taken . LSA / FFA / SOPEP equipments to be kept ready at all times . BALLAST : USE 1 WBP when required and adhere to sequence mentioned above. Monitor stresses & stability of the vessel at all times |

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| Critical Stages of Operation /Precautions agains static generation / Line clearing |
| Stage no 1 | Ensure lineup before starting discharging pen 20/30.. During ullaging/ gauging equipment to earthed before using. All deck hands to use gas meters at all times.  |
| Stage no 2 | Ensure lineup before starting discharging pen 60/70. During ullaging/ gauging equipment to earthed before using. All deck hands to use gas meters at all times.  |
| Stage no 3 | Ensure lineup before starting discharging pen 35/50.. During ullaging/ gauging equipment to earthed before using. All deck hands to use gas meters at all times.  |
| Stage no 4 | Reduce rate as per port requirement, operation to be complete. During ullaging/ gauging equipment to earthed before using. All deck hands to use gas meters at all times.  |
| Stage no 5 | After completion of discharging before disconnecting manifolds blow air to ensure no cargo splash takes place.crew members carrying out operation to wear special suits and face shiels for safety |
| Notice of Rate Change / Venting Requirements |
| Stage No 6 | Vessel to maintain watch on agreed VHF communication channel at all times . Vessel needs 5 minutes noticeto reduce rate. Inform duty engineer and ETO before any changes to COP rpm are made. |
|  | Vessel will use Mastriser as means of maintaining Positive pressure inside inside tanks . Ensure mastriser to be kept open at all times. |
|  |  |
| Emergency Stop Procedures / Emergency spill Procedures & Spill containment |
| Vessel has Emergency stops located at PORT manifold, STBD manifold, Pumproom entrance, Pumproom Bottom, CCR. If any leakage is observed COP to be tripped from any of above location , Manifold v/v to be closed and Drop V/v to be opened to depressurize the line in order to minimize the spill quantiry. |
| Alarm to be raised immediately in any spill and SOPEP equipments deployed for spill containment. Scuppers to be plugged during entire operation . Vessel to keep ready air driven wilden pumps with discharge going to SLOPS .Dump v/v to be used if required with permission of chief officer. DPA to be notified if required. |
|  |
| Hazards of Cargoes / Special precautions required |
| Bitumen is a high temperature cargo . Precautions to be taken while ullaging or checking temperature of COT, Proper PPE to be worn . Temperature resistant suit to be worn, Visor to be used during ullaging. While Disconnecting the manifolds Air to blown in the line and de pressurized to avoid any splash. Proper high temperature suits / Visors to be worn by all persons involved in manifold disconnection. Air inlets when not being used should be plugged to avoid any accidental release during operation. |
| Pumproom blower to be kept running at all times during operation. Hourly pumproom rounds to be carried out. Defeciency of oxygen can be encountered in pumproom due to high temperature inside. Gas monitores to be always carried for pumproom entry. Rescue equipments to be kept in state of full readiness at all times. |
|  |
| UKC limitations / Bunkering / Others |
|  | As per ukc policy, in any case not less than 0.6m |

Pre-loading / Pre- discharging plan understood and reviewed by all Deck Officers

**Cargo Watch-keeping Schedule: -**

 **Officer On Watch Deck Watch**

|  |  |  |
| --- | --- | --- |
| **0000-0600 / 1200- 1800** | 2ND OFFICER |      AB1/AB2/OS |
|  |       |      BSN/AB3/OS |
| **0600-1200 / 1800 – 2400** | 3RD OFFICER |       |
|  |       |       |
|  |       |       |

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| --- | --- | --- | --- | --- | --- |
| Prepared by Chief Officer:      |  |  | Approved by Master: |  |  |
| Reviewed by Deck Officer’s:  |   |  |  |  |  |
| 2nd Officer |  |  | 3rd Officer: |  |  |

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DECK CADET

BOSUN

PUMPMAN

AB1 OS1

AB2 OS2

AB3