



**TOTAL UPSTREAM NIGERIA LIMITED**

**EGINA**



Technological Expertise  
Local Commitment

## TANKER LOADING SHEET

### Quality control

|          |                 |
|----------|-----------------|
| Operator | TOTAL           |
| Terminal | EGINA           |
| Sample   | EGINA crude oil |

|              |                  |
|--------------|------------------|
| Vessel       | MT AEGEAN VISION |
| Loading No.  | CNOG-EG-033      |
| Shipment No. | 201103-053       |
| Date         | 24-Nov-20        |
| Time         | 10H53 - 12H22    |

| TEST                        | METHOD                     | RESULTS |
|-----------------------------|----------------------------|---------|
| Density @ 15°C (g/cc)       | ASTM D1298                 | 0.8872  |
| Density @ 60°F (g/cc)       | ASTM D1298                 | 0.8869  |
| S.G @ 60°F                  | ASTM D1298                 | 0.8877  |
| API @ 60°F                  | ASTM D1298                 | 27.9    |
| Salt content NaCl Eq (mg/l) | ASTM D3230                 | 25.3    |
| Water % Dean Stark          | ASTM D4006                 | 0.10    |
| RVP (PSI)                   | ASTM D323-99a & ASTM D6377 | 2.75    |

|                          |                     |                        |                  |
|--------------------------|---------------------|------------------------|------------------|
| <b>DPR:</b>              |                     | <b>NNPC:</b>           |                  |
| Name:                    | OKECHUKWU, M. C.    | Name:                  | NWUNUCHI VINCENT |
| Signature:               |                     | Signature:             |                  |
| Date:                    | 24-Nov-20           | Date:                  | 24-Nov-20        |
| <b>Egina Laboratory:</b> |                     | <b>Cargo surveyor:</b> |                  |
| Name:                    | JOHN-FIBIKA MARKSON | Name:                  | OBODO STEPHEN    |
| Signature:               |                     | Signature:             |                  |
| Date:                    | 24-Nov-20           | Date:                  | 24-Nov-20        |

# **FPSO Egina** **OFFICIAL OFFLOADING BATCH REPORT** Batch Number: 147 - 1

Date and Time: 24/11/2020 12:39  
Recalculations Performed: 1

| Vessel Data   |         | ALGHEAN VISION             |            |
|---|---------|----------------------------|------------|
| Vessel  |         | 201103-053                 |            |
| Cargo Number  |         | ABIDJAN, COTE D'           |            |
| Destination   |         | 23-11-2020 08:30           |            |
| Loading Started At  |         | 24/11/2020 10:26           |            |
| Loading Completed At  |         | 1002500 bbl                |            |
| Target Volume   |         |                            |            |
| <b>Cumulative Totals At Batch End</b>                         |         | <b>FC1</b>                 | <b>FC3</b> |
| Gross Volume (GV = pulses / KF)                               | bbl     | FT-26501A                  | FT-26501B  |
| Gross Volume (GV = pulses / KF)                               | m³      | 3093295.4                  | 2610964.5  |
| Gross Standard Volume (GSV = GV * CTL * CPL * MF)             | bbl     | 3093295.4                  | 2610964.5  |
| Gross Mass (GM = GSV * SD)                                    | kg      | 3093295.4                  | 2610964.5  |
| Net Standard Volume (NSV = GSV * (1 - BSW))                   | bbl     | 3093295.4                  | 2610964.5  |
| Net Standard Volume (NSV = GSV * (1 - BSW))                   | Sm³     | 4709572.5                  | 4024991.0  |
| <b>Batch Totals</b>   |         | <b>FC1</b>                 | <b>FC3</b> |
| Omni Ticket Number  |         | FT-26501A                  | FT-26501B  |
| Gross Volume (GV = pulses / KF)                               | bbl     | 341090.1                   | 336298.9   |
| Gross Volume (GV = pulses / KF)                               | m³      | 34229.0                    | 336298.9   |
| Gross Standard Volume (GSV = GV * CTL * CPL * MF)             | bbl     | 34229.0                    | 336298.9   |
| Gross Mass (GM = GSV * SD)                                    | kg      | 34229.0                    | 336298.9   |
| Net Standard Volume (NSV = GSV * (1 - BSW))                   | bbl     | 34229.0                    | 336298.9   |
| Net Standard Volume (NSV = GSV * (1 - BSW))                   | Sm³     | 53017.5                    | 52299.3    |
| Note: BSW and API gravity are taken from laboratory analysis. |         |                            |            |
| <b>Flow Weighted Averages</b>                                 |         | <b>FC1</b>                 | <b>FC3</b> |
| Pressure  | psig    | FT-26501A                  | FT-26501B  |
| Temperature   | °F      | 340.21                     | 340.74     |
| Standard Density  | Deg API | 108.56                     | 109.06     |
| BS&W  | % w/w   | 27.900                     | 27.900     |
| K-Factor  | p/bbl   | 0.10                       | 0.10       |
| Meter Factor  | -       | 13.97                      | 13.97      |
| CPL   | -       | 0.99805                    | 0.99807    |
| CTL   | -       | 1.001780                   | 1.001750   |
| Note: BSW and API gravity are taken from laboratory analysis. |         |                            |            |
| <b>Laboratory Input</b>                                       |         |                            |            |
| BS&W  | %       | 0.10                       |            |
| API Gravity @ 60°F  | Deg API | 27.900                     |            |
|   |         | Total Number of Grabs      |            |
|   |         | Lab Measured Sample Volume |            |
|   |         | Sample Performance Factor  |            |
|   |         | PASS                       |            |
|   |         | 15894                      |            |
|   |         | 16600                      |            |
|   |         | 0.957                      |            |

| DESIGNATION    | NAME             | SIGNATURE |
|----------------|------------------|-----------|
| LOADING MASTER | TRAYLO STANBOLON |           |
| DPR REP        | OKECHUKWU, C.M.  |           |
| NNPC REP       | VALENT NAWUICHI  |           |
| CARGO SURVEYOR | ABORD, L.S.      |           |

# **FPSO Egina** **PROVING REPORT** **5FT-26501A**

Date and Time: 23/11/2020 11:10  
Report Number: FC1 - 172

## **Meter Data**

Meter Model FH-TZN  
Meter Serial Number 9021080  
Meter Size 12" inch  
Nominal K Factor 13.97 p/bbl  
Meter Tag Number 5FT-26501A

## **Prover Data**

Prover Base Volume 56.11 bbl  
Prover Internal Diameter 28.460 inch  
Prover Wall Thickness 0.750 inch  
Coef. of Cubical Exp. 1.860E-05  
Modulus of Elasticity 3.000E+07

## **Run Results**

| #    | Forward<br>Pulses | Reverse<br>Pulses | Total<br>Pulses | Pressure [psi g] |        | Temperature [°F] |        | Time [s] | Resulting<br>MF |
|------|-------------------|-------------------|-----------------|------------------|--------|------------------|--------|----------|-----------------|
|      |                   |                   |                 | Meter            | Prover | Meter            | Prover |          |                 |
| 1    | 393.000           | 393.000           | 786.000         | 347.07           | 334.31 | 106.78           | 106.98 | 14.58    | 0.997974        |
| 2    | 393.000           | 393.000           | 786.000         | 348.72           | 335.97 | 106.82           | 107.02 | 14.68    | 0.998010        |
| 3    | 393.000           | 393.000           | 786.000         | 349.66           | 336.74 | 106.87           | 107.07 | 14.56    | 0.998147        |
| 4    | 393.000           | 393.000           | 786.000         | 349.62           | 336.90 | 106.91           | 107.12 | 14.66    | 0.998079        |
| 5    | 393.000           | 393.000           | 786.000         | 348.39           | 335.49 | 106.97           | 107.16 | 14.57    | 0.998020        |
| Avg. |                   |                   | 786.063         | 348.69           | 335.88 | 106.87           | 107.07 |          | 0.998046        |

Maximum Deviation Between Runs 0.020 %  
Run Repeatability 0.017 %

## **Data**

### **Meter Factor Calculation**

|   |  |        |                |
|---|--|--------|----------------|
| A | Base Prover Volume @ 60°F and 0 psig     |        | 56.11289 bbl   |
| B | Temperature Correction Factor For Steel  | (CTSp) | 1.000875 -     |
| C | Pressure Correction Factor For Steel     | (CPSp) | 1.000406 -     |
| D | Temperature Correction Factor For Liquid | (CTLp) | 0.979856 -     |
| E | Pressure Correction Factor For Liquid    | (CPLp) | 1.001705 -     |
| F | Combined Correction Factor               | (CCFp) | 0.982785 -     |
| G | Corrected Prover Volume                  |        | 55.14690 bbl   |
| H | Indicated Meter Volume                   |        | 56.28630 bbl   |
| I | Temperature Correction Factor For Liquid | (CTLm) | 0.979942 -     |
| J | Pressure Correction Factor For Liquid    | (CPLm) | 1.001769 -     |
| K | Combined Correction Factor For Liquid    | (CCFm) | 0.981676 -     |
| L | Corrected Meter Volume                   |        | 55.25491 bbl   |
| M | Average Meter Flowrate                   |        | 13841.77 bbl/h |
| N | Meter Factor @ Proving Flowrate          |        | 0.998045 -     |
| O | Meter Factor @ Base Conditions           |        | 0.998045 -     |




## **Historical Data**

Historical Meter Factors at normal meter flowrate of 12000 bbl/h.

|                  |          |          |          |          |          |
|------------------|----------|----------|----------|----------|----------|
| Date:            | 23/11/20 | 08/11/20 | 29/10/20 | 23/10/20 | 08/10/20 |
| Meter Factor:    | 0.998045 | 0.997988 | 0.998123 | 0.997804 | 0.998043 |
| Deviation (+/-): | 0.00     | 0.00     | 0.01     | -0.02    | 0.00     |
| Date:            | 04/10/20 | 28/09/20 | 17/09/20 | 31/08/20 | 19/08/20 |
| Meter Factor:    | 0.997976 | 0.997907 | 0.997884 | 0.998222 | 0.998391 |
| Deviation (+/-): | 0.00     | -0.01    | -0.01    | 0.02     | 0.04     |

## **Proving Result**

MF is implemented.  
Manual prove requested

| DESIGNATION    | NAME             | SIGNATURE  |
|----------------|------------------|--|
| LOADING MASTER | IVAYLO STAMBOLOV |  |
| DPR REP        | OKECHUKWU, C. M. |  |
| CARGO SURVEYOR | OBODO, I. S.     |  |

# **FPSO Egina** **OFFLOADING START BATCH REPORT** Batch Number: 147

Date and Time: 23/11/2020 08:32

|   |       |                  |            |            |               |
|---|-------|------------------|------------|------------|---------------|
| <b>Vessel Data</b>                                |       | AEGEAN VISION    |            |            |               |
| Vessel  |       | 201103-053       |            |            |               |
| Cargo Number                                      |       | ABIDJAN, COTE D' |            |            |               |
| Destination                                       |       | 1002500 bbl      |            |            |               |
| Target Volume                                     |       |                  |            |            |               |
| <b>Current Process Data</b>                       |       | FC1              | FC3        | FC5        | FC7           |
|   |       | FT-26501A        | FT-26501B  | FT-26501C  | FT-26501D     |
| Stream Gross Flow Rate                            | bbl/h | 0.0              | 0.0        | 0.0        | 0.0           |
| Stream Temperature                                | °F    | 79.67            | 80.12      | 79.77      | 79.95         |
| Stream Pressure                                   | barg  | 7.84             | -1.99      | -2.97      | -2.28         |
| Meter K-Factor                                    | p/bbl | 13.97            | 13.92      | 13.89      | 13.88         |
| <b>Current Batch Totals</b>                       |       | FC1              | FC3        | FC5        | FC7           |
|   |       | FT-26501A        | FT-26501B  | FT-26501C  | FT-26501D     |
| Omni Ticket Number                                |       | 159              | 148        | 150        | 145           |
|   |       |                  |            |            | Station Total |
|   |       |                  |            |            | FC8           |
| Omni Ticket Number                                | bbl   | 0.0              | 0.0        | 0.0        | 0.0           |
| Gross Volume (GV = pulses / KF)                   | m³    | 0.0              | 0.0        | 0.0        | 0.0           |
| Gross Volume (GV = pulses / KF)                   | bbl   | 0.1              | 0.0        | 0.0        | 0.0           |
| Gross Standard Volume (GSV = GV * CTL * CPL * MF) | klb   | 0.0              | 0.0        | 0.0        | 0.0           |
| Gross Mass (GM = GSV * SD)                        | bbls  | 0.1              | 0.0        | 0.0        | 0.0           |
| Net Standard Volume (NSV = GSV * (1 - BSW))       | Sm³   | 0.0              | 0.0        | 0.0        | 0.0           |
| Net Standard Volume (NSV = GSV * (1 - BSW))       |       |                  |            |            |               |
| <b>Cumulative Totals At Batch Start</b>           |       | FC1              | FC3        | FC5        | FC7           |
|   |       | FT-26501A        | FT-26501B  | FT-26501C  | FT-26501D     |
| Gross Volume (GV = pulses / KF)                   | bbl   | 30352205.3       | 25764176.5 | 31324103.5 | 30419226.7    |
| Gross Volume (GV = pulses / KF)                   | m³    | 4825615.2        | 4096176.9  | 4980134.6  | 4836270.7     |
| Gross Standard Volume (GSV = GV * CTL * CPL * MF) | bbl   | 29777595.2       | 25283316.8 | 31139095.3 | 29823679.1    |
| Gross Mass (GM = GSV * SD)                        | klb   | 9247900.0        | 7843191.5  | 9535545.3  | 9294641.3     |
| Net Standard Volume (NSV = GSV * (1 - BSW))       | bbls  | 29301781.4       | 25000236.3 | 30659581.9 | 29318704.8    |
| Net Standard Volume (NSV = GSV * (1 - BSW))       | Sm³   | 4658611.1        | 3974720.1  | 4874484.1  | 4661301.7     |



**TOTAL UPSTREAM NIGERIA LIMITED**

Date: 24<sup>th</sup> of November 2020  
To: DPR TERMINAL REPRESENTATIVE  
From: Egina Marine Operation Manager

**PROVING ON STREAM B & C FAILURE DURING OFFLOADING**

M/T AEGEAN VISION tendered her NOR on 22<sup>nd</sup> November 2020 at 00h01 and we commenced the offloading the 23<sup>rd</sup> November 2020 at 08h30.

Stream A, B, C were selected for this offloading. Stream A was proved on the 23<sup>rd</sup> November without problem. On the same date the proving was initiated on stream B and failed at approx. 12:00hrs due to failure of the 4 way valve. Stream C can not be proved due to failure of the 4 way valve. Offloading must be stopped for further investigation and repairs. This will be done after this offloading.  
Due to this event, method of the last three average MF will be used as calculated as follows:

**Average of stream B as per last three offloadings:**

16<sup>th</sup> of November 2020 / DELTA EURYDICE / MF=0.99877  
30<sup>th</sup> of October 2020 / ATHENIAN SUCCES / MF=0.99879  
24<sup>th</sup> of October 2020 / MATALA / MF= 0.99856

**Average MF stream B =0.99871**

**Average of stream C as per last three offloadings:**

16<sup>th</sup> of November 2020 / DELTA EURYDICE / MF=0.99909  
9<sup>th</sup> of November 2020 / FRONT BRAGE / MF=0.99930  
24<sup>th</sup> of October 2020 / MATALA / MF= 0.99958

**Average MF stream C=0.99932**

See as attached batch and proving reports for last offloadings

Best Regards,  
Benoit DEUTSCH  
Marine Operation Manager  
Egina FPSO

**EGINA TERMINAL REP.**

Sign: .....

Copy received by me:  
*[Signature]*  
24/11/2020



**TANK CALIBRATION TABLE  
(CARGO OIL TANKS)  
for MV 'AEGEAN VISION'**

PRINCIPAL DIMENSIONS


|                       |          |
|-----------------------|----------|
| LENGTH O. A.          | 274.22 m |
| LENGTH B. P.          | 263.14 m |
| BREADTH MLD.          | 48.00 m  |
| DEPTH MLD.            | 23.10 m  |
| DRAUGHT MLD. (DESIGN) | 16.00 m  |
| DRAUGHT MLD. (SCANT.) | 17.15 m  |

**CAUTION**

THIS DRAWING CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION.  
HENCE, THE REPRODUCTION, TRANSFER AND/OR UTILIZATION IN  
WHOLE OR IN PART ARE PROHIBITED WITHOUT THE WRITTEN  
PERMISSION OF HYUNDAI HEAVY INDUSTRIES CO., LTD.

IMO SHIP IDENTIFICATION NO.  
IMO 9645437

( 321 SHEETS WITH COVER)

|   |   |                                     |   |
|---|---|-------------------------------------|---|
| SEC.NO.<br>C3J1   | SHIP DESIGN OFFICE<br>DESIGN COORDINATION DEPT                                      | 159,000 DWT CLASS CRUDE OIL CARRIER |   |
| TEL.NO.<br>3-3835   | SHIP NO.<br>2849  | SHIP<br>NAME                        | AEGEAN VISION                                 |
| DATE<br>2016.<br>12. 16.  | APPROVED <i>J. Y. Ryu</i><br>CHECKED S. Y. Lee (H1-TMS)<br>DRAWN J. M. Kim (H1-TMS) | NAME OF DRAWING                     | TANK CALIBRATION TABLE<br>FOR CARGO OIL TANKS |
| <br>HYUNDAI HEAVY INDUSTRIES CO., LTD. |   | SCALE<br><i>X</i>                   | DRAWING NO.<br>7G-7000-020                    |
|   |   | CONSOLIDATED NO.                    | FG - 11                                       |

DDF-G350-621

AAU2014-0871



ΠΡΟΣ / TO: ΜΤ "AEGEAN VISION"  
C/O:  
ARCADIA SHIPMANAGEMENT INC  
ΔΡΑΓΑΤΣΑΝΙΟΥ 8  
ΑΘΗΝΑ

ΗΜΕΡΟΜΗΝΙΑ: 12/02/2020  
ΣΗΜΕΙΑ ΜΑΣ: ΔΔ/9255/92

**ΑΦΟΡΑ: ΒΕΒΑΙΩΣΗ ΕΛΕΓΧΟΥ ΚΑΙ ΒΑΘΜΟΝΟΜΗΣΗΣ / TEST AND CALIBRATION**  
**CERTIFICATE**

ΜΕ ΤΟ ΠΑΡΟΝ ΘΑ ΘΕΛΑΜΕ ΝΑ ΣΑΣ ΒΕΒΑΙΩΣΟΥΜΕ ΟΤΙ ΣΤΟ ΜΕ ΤΑ ΚΑΤΩΤΕΡΩ ΣΤΟΙΧΕΙΑ ΟΡΓΑΝΟ ΕΓΙΝΕ ΕΛΕΓΧΟΣ ΚΑΛΗΣ ΛΕΙΤΟΥΡΓΙΑΣ ΚΑΙ ΒΑΘΜΟΝΟΜΙΣΗ ΣΥΜΦΩΝΑ ΜΕ ΤΙΣ ΕΓΚΡΙΤΕΣ ΟΔΗΓΙΕΣ ΤΟΥ ΚΑΤΑΣΚΕΥΑΣΤΗ ΚΑΙ ΤΑ ΕΘΝΙΚΑ ΠΡΟΤΥΠΑ ΟΡΓΑΝΩΝ:

(WITH THIS WE CERTIFY THAT THE FOLLOWING INSTRUMENT WAS CHECKED FOR ITS GOOD PERFORMANCE AND CALIBRATED IN ACCORDANCE WITH ITS PRODUCER'S INSTRUCTION AND NATIONAL INSTRUMENTS STANDARDS:)

|                                    |  |
|------------------------------------|--|
| ΠΕΡΙΓΡΑΦΗ ΑΝΙΧΝΕΥΤΟΥ:              | ΤΑΠΙΑ ΜΕΤΡΗΣΗΣ ΣΤΑΘΜΗΣ ΔΕΞΑΜΕΝΩΝ ΔΙΑΧΩΡΙΣΤΙΚΗΣ ΕΠΙΦΑΝΕΙΑΣ ΥΓΡΩΝ ΚΑΙ ΘΕΡΜΟΚΡΑΣΙΑΣ |
| INSTRUMENT'S DESCRIPTION:          | ULLAGE, TEMPERATURE & INTERFACE TAPE   |
| ΤΥΠΟΣ (TYPE):                      | N-2401-2/D-2401-2 UTI/30M/FDLPSC   |
| ΚΑΤΑΣΚΕΥΑΣΤΗΣ (MAKER):             | MMC (ASIA) LIMITED   |
| ΣΕΙΡΙΑΚΟΣ ΑΡΙΘΜΟΣ (SERIAL NUMBER): | 6541   |
| GROUNDING TO PROBE:                | 5Ω   |
| VAPOUR LOCK MODEL:                 | C-50   |
| ΙΔΙΟΚΤΗΤΗΣ (OWNER):                | ΜΤ AEGEAN VISION   |

ΗΜΕΡΟΜΗΝΙΑ ΕΠΟΜΕΝΗΣ ΒΑΘΜΟΝΟΜΙΣΗΣ (CALIBRATION DUE DATE):

**11/02/2021**

ΜΕΤΑ ΤΙΜΗΣ / SINCERELY YOURS  
ΓΙΑ ΤΗΝ DMS

ΔΗΜΗΤΡΗΣ ΔΑΜΑΣΚΟΣ  
ΤΕΧΝ. ΧΗΜ. ΜΗΧΑΝ.

**D.M.S. / ΔΗΜ. Γ. ΔΑΜΑΣΚΟΣ**  
ΣΥΣΤΗΜΑΤΑ ΑΝΙΧΝΕΥΣΗΣ ΑΕΡΙΩΝ & ΜΕΣΑ  
ΠΡΟΣΤΑΣΙΑΣ ΣΤΗΝ ΕΡΓΑΣΙΑ - ΤΕΧΝ. ΑΣΦΑΛΕΙΑΣ  
ΠΡΟΣΧΗ ΑΣΦΑΛΕΤΙΚΩΝ ΥΠΗΡΕΣΙΩΝ  
ΠΑΡΟΧΗ ΑΣΦΑΛΕΤΙΚΩΝ ΥΠΗΡΕΣΙΩΝ  
ΝΑΠΟΛΕΟΝΤΟΣ 7, ΑΧΑΡΝΑΙ - ΑΘΗΝΑ 115675  
ΑΦΜ: 0215906283 / ΔΟΥ: ΑΧΑΡΝΩΝ  
ΤΗΛ: 210 2407270 - 210 2401510 - FAX 210 2406575

