

AI TAKAMUL COMPANY FOR ENGINEERING TESTS AND PROFESSIONAL SAFETY LIMITED

Basra, North Rumaila, Quality Control Yard - Iraq



CERTIFICATE OF QUALIFICATION VISUAL AND MAGNETIC PARTICLE INSPECTION AND ULTRASONIC THICKNESS GAUGING INSPECTION

THIS REPORT COMPLIES WITH RECOGNIZED INTERNATIONAL STANDARDS & TECHNICAL REQUIREMENTS

| | | | |
|---------------------|--|-----------------------|------------------------------------|
| CLIENT: | HALLIBURTON | REPORT NO.: | QC-25-05-TSS-NDT-058 |
| LOCATION: | TSS YARD | JOB NO.: | 16042025 |
| WORK ORDER # | ***** | STANDARD: | ASTM E709 -21 & ASTM E797-21 |
| DATE OF INSPECTION: | Wednesday, April 16, 2025 | NEXT INSPECTION DATE: | Wednesday, October 15, 2025 |
| TYPE OF INSPECTION: | VISUAL INSPECTION AND MAGNETIC PARTICLE INSPECTION AND ULTRASONIC THICKNESS GAUGING | | |

| | | | |
|--------------|---|-------------|--------------|
| DESCRIPTION: | CHECK VALVE 3" 600 CL (FLAPPER VALVE) | SERIAL NO.: | 03RT2 |
|--------------|---|-------------|--------------|

(a) Normal condition: Large reflection echo, Area of diffused echo, Target, Surface, Small reflection echo, Detector.

(b) Corrosion present on back surface: Corroded condition, Target, Reflection echo becomes wide small by diffused reflection caused by corroded surface.

* ALL READINGS IN INCH
**MINIMUM THICKNESS PROVIDED BY CUSTMER

ONLINE TRACEABILITY

| ANGLE | WALL THICKNESS RESULT | | MINIMUM THICKNESS IN INCHES |
|-------|-----------------------|--|-----------------------------|
| | A | | |
| 0° | 0.867 | | 0.400 INCH |
| 90° | 0.848 | | |
| 180° | 0.860 | | |
| 270° | 0.838 | | |

| INSPECTION RESULT | | |
|-------------------|----------|----------------------------|
| VT & MPI | Accepted | According to ASTM E709-21 |
| UT | Accepted | According to ASTM E 797-21 |

Inspection Evaluation

MPI -The Above Item Has No Significant Discontinuous At The Time Of Inspection And Found Acceptable According to ASTM E709-21
 Note:Magnetic Particle Inspection With A/C Hand Yoke Available Areas

U.T-The Above Item Was Found Acceptable As Per ASTM E797-21

| INSPECTION EQUIPMENT DETAILS | | | | TECHNICAL DETAILS | | | |
|----------------------------------|-----------|--------------|----------|---------------------------|-------------|---------------------|-------------|
| AC YOKE S.N: | 201504048 | CAL DUE DATE | 7-Oct-25 | White Contrast WCP-2 | MANUFACTURE | BATCH NO | EXPIRE DATE |
| Digital Lux Meter WHITE LIGHT | 2722003 | CAL DUE DATE | 9-Oct-25 | | Magnaflux | 230408 | APRIL,2026 |
| UT THICKNESS GAUGE: | 5500391 | CAL DUE DATE | 7-Oct-25 | Black Magnetic Ink 7HF | MANUFACTURE | BATCH NO | EXPIRE DATE |
| UT TEST BLOCK: | NoBo5087 | CAL DUE DATE | 8-Oct-25 | | Magnaflux | 230604 | JUNE, 2026 |
| ASTM Test Block: | 1657 | CAL DUE DATE | 7-Oct-25 | Concentration of 7HF: | | 1.2 to2.4 ml/100 ml | |
| WHITE LIGHT INTENSITY: | 3580 lux | | | | | | |

| PERSON DETAILS | | REVIEW BY | | | |
|--------------------|-------------------------|------------------------|----------------|---------|--|
| INSPECTOR NAME: | M. Shalwan Ahmed | SENIOR INSPECTOR: | NAVEED HUSSAIN | CLIENT: | |
| QUALIFICATION: | SNT-TC-1, Level 2, 2023 | INSPECTION SUPERVISOR: | HANI ALI | HB&SIGN | |
| SIGNATURE & STAMP: | | | | DATE: | |



AI TAKAMUL COMPANY FOR ENGINEERING TESTS AND PROFESSIONAL SAFETY LIMITED

Basra, North Rumaila, Quality Control Yard - Iraq



CERTIFICATE OF QUALIFICATION VISUAL AND MAGNETIC PARTICLE INSPECTION AND ULTRASONIC THICKNESS GAUGING INSPECTION

THIS REPORT COMPLIES WITH RECOGNIZED INTERNATIONAL STANDARDS & TECHNICAL REQUIREMENTS

| | | | |
|---------------------|---------------------------|-----------------------|------------------------------------|
| CLIENT: | HALLIBURTON | REPORT NO.: | QC-25-05-TSS-NDT-059 |
| LOCATION: | TSS YARD | JOB NO: | 16042025 |
| WORK ORDER # | ***** | STANDARD: | ASTM E709 -21 & ASTM E797-21 |
| DATE OF INSPECTION: | Wednesday, April 16, 2025 | NEXT INSPECTION DATE: | Wednesday, October 15, 2025 |

VISUAL INSPECTION AND MAGNETIC PARTICLE INSPECTION AND ULTRASONIC THICKNESS GAUGING

| | | | |
|--------------|--|------------|---------------------|
| DESCRIPTION: | FLANGE: 3" 600 CL X 3" 206 WING | SERIAL NO: | HAH 18833-12 |
|--------------|--|------------|---------------------|

Reflection echo become wide small by diffused reflection caused by corroded scabrous surface.

* ALL READINGS IN INCH
**MINIMUM THICKNESS PROVIDED BY CUSTOMER

ONLINE TRACEABILITY

| ANGLE | WALL THICKNESS RESULT | | MINIMUM THICKNESS IN INCHES |
|-------|-----------------------|--|-----------------------------|
| | A | | |
| 0° | 0.297 | | 0.124 INCH |
| 90° | 0.309 | | |
| 180° | 0.313 | | |
| 270° | 0.304 | | |

| INSPECTION RESULT | | |
|-------------------|----------|----------------------------|
| VT & MPI | Accepted | According to ASTM E709-21 |
| UT | Accepted | According to ASTM E 797-21 |

Inspection Evaluation
 MPI -The Above Item Has No Significant Discontinuous At The Time Of Inspection And Found Acceptable According to ASTM E709 -21
 Note:MPI Wet Fluorescent inspection Thread With UltraViolet Light
 Magnetic Particle Inspection With A/C Hand Yoke Welds & Availiable Areas
 U.T-The Above Item Was Found Acceptable As Per ASTM E797-21

| INSPECTION EQUIPMENT DETAILS | | | | TECHNICAL DETAILS | | | |
|----------------------------------|-----------|---------------------------|-------------------------|-------------------------------------|-------------|----------------------|-------------|
| AC YOKE S.N: | 201504048 | CAL DUE DATE | 7-Oct-25 | White Contrast WCP-2 | MANUFACTURE | BATCH NO | EXPIRE DATE |
| Digital Lux Meter WHITE LIGHT | 2722003 | CAL DUE DATE | 9-Oct-25 | | Magnaflux | 230408 | APRIL,2026 |
| UT THICKNESS GAUGE: | 5500391 | CAL DUE DATE | 7-Oct-25 | Black Magnetic Ink 7HF | MANUFACTURE | BATCH NO | EXPIRE DATE |
| UT TEST BLOCK: | NoBo5087 | CAL DUE DATE | 8-Oct-25 | | Magnaflux | 230604 | JUNE, 2026 |
| ASTM Test Block: | 1657 | CAL DUE DATE | 7-Oct-25 | Fluorescent Magnetic Ink 14HF | MANUFACTURE | BATCH NO | EXPIRE DATE |
| DC COIL: | 22650 | CAL DUE DATE | 8-Oct-25 | | Magnaflux | 230503 | MAY.2026 |
| UV BLACK LIGHT: | 87521 | CAL DUE DATE | 9-Oct-25 | Concentration of 14HF: | | 0.1 to 0.4 ml/100 ml | |
| WHITE LIGHT INTENSITY: | 3580 lux | UV BLACK LIGHT INTENSITY: | 3020 μw/cm ² | Concentration of 7HF: | | 1.2 to2.4 ml/100 ml | |

| PERSON DETAILS | | REVIEW BY | | | |
|--------------------|-------------------|------------------------|----------------|---------|--|
| INSPECTOR NAME: | M. Shalazad Ahmed | SENIOR INSPECTOR: | NAVEED HUSSAIN | CLIENT: | |
| QUALIFICATION: | | INSPECTION SUPERVISOR: | HANI ALI | HB&SIGN | |
| SIGNATURE & STAMP: | | | | DATE: | |

Original - Client Files Copy - Area Office QC/FN/PT/077 Rev.00 DATED 07.NOV. 2021



AI TAKAMUL COMPANY FOR ENGINEERING TESTS AND PROFESSIONAL SAFETY LIMITED

Basra, North Rumaila, Quality Control Yard - Iraq



CERTIFICATE OF QUALIFICATION VISUAL AND MAGNETIC PARTICLE INSPECTION AND ULTRASONIC THICKNESS GAUGING INSPECTION

THIS REPORT COMPLIES WITH RECOGNIZED INTERNATIONAL STANDARDS & TECHNICAL REQUIREMENTS

| | | | |
|---------------------|---------------------------|-----------------------|------------------------------------|
| CLIENT: | HALLIBURTON | REPORT NO.: | QC-25-05-TSS-NDT-060 |
| LOCATION: | TSS YARD | JOB NO: | 16042025 |
| WORK ORDER # | ***** | STANDARD: | ASTM E709 -21 & ASTM E797-21 |
| DATE OF INSPECTION: | Wednesday, April 16, 2025 | NEXT INSPECTION DATE: | Wednesday, October 15, 2025 |

VISUAL INSPECTION AND MAGNETIC PARTICLE INSPECTION AND ULTRASONIC THICKNESS GAUGING

| | | | |
|--------------|--|------------|--------------------|
| DESCRIPTION: | FLANGE: 3" 600 CL X 3" 206 THREAD | SERIAL NO: | WO-16293-10 |
|--------------|--|------------|--------------------|

* ALL READINGS IN INCH
**MINIMUM THICKNESS PROVIDED BY CUSTOMER

ONLINE TRACEABILITY

| ANGLE | WALL THICKNESS RESULT | | MINIMUM THICKNESS IN INCHES |
|-------|-----------------------|--|-----------------------------|
| | A | | |
| 0° | 0.308 | | 0.124 INCH |
| 90° | 0.315 | | |
| 180° | 0.301 | | |
| 270° | 0.314 | | |

| INSPECTION RESULT | | |
|-------------------|----------|----------------------------|
| VT & MPI | Accepted | According to ASTM E709-21 |
| UT | Accepted | According to ASTM E 797-21 |

Inspection Evaluation
 MPI -The Above Item Has No Significant Discontinuous At The Time Of Inspection And Found Acceptable According to ASTM E709 -21
 Note:MPI Wet Fluorescent inspection Thread With UltraViolet Light
 Magnetic Particle Inspection With A/C Hand Yoke Welds & Availiable Areas
 U.T-The Above Item Was Found Acceptable As Per ASTM E797-21

| INSPECTION EQUIPMENT DETAILS | | | | TECHNICAL DETAILS | | | |
|-------------------------------|-----------|---------------------------|-------------------------|-------------------------------|-------------|----------------------|-------------|
| AC YOKE S.N: | 201504048 | CAL DUE DATE | 7-Oct-25 | White Contrast WCP-2 | MANUFACTURE | BATCH NO | EXPIRE DATE |
| Digital Lux Meter WHITE LIGHT | 2722003 | CAL DUE DATE | 9-Oct-25 | | Magnaflux | 230408 | APRIL,2026 |
| UT THICKNESS GAUGE: | 5500391 | CAL DUE DATE | 7-Oct-25 | Black Magnetic Ink 7HF | MANUFACTURE | BATCH NO | EXPIRE DATE |
| UT TEST BLOCK: | NoBo5087 | CAL DUE DATE | 8-Oct-25 | | Magnaflux | 230604 | JUNE, 2026 |
| ASTM Test Block: | 1657 | CAL DUE DATE | 7-Oct-25 | Fluorescent Magnetic Ink 14HF | MANUFACTURE | BATCH NO | EXPIRE DATE |
| DC COIL: | 22650 | CAL DUE DATE | 8-Oct-25 | | Magnaflux | 230503 | MAY.2026 |
| UV BLACK LIGHT: | 87521 | CAL DUE DATE | 9-Oct-25 | Concentration of 14HF: | | 0.1 to 0.4 ml/100 ml | |
| WHITE LIGHT INTENSITY: | 3580 lux | UV BLACK LIGHT INTENSITY: | 3020 μw/cm ² | Concentration of 7HF: | | 1.2 to2.4 ml/100 ml | |

| PERSON DETAILS | | REVIEW BY | | | |
|--------------------|---------------------|------------------------|----------------|---------|--|
| INSPECTOR NAME: | M.Shahzad Ahmed | SENIOR INSPECTOR: | NAVEED HUSSAIN | CLIENT: | |
| QUALIFICATION: | NDT - MPI - PT - UT | INSPECTION SUPERVISOR: | HANI ALI | HB&SIGN | |
| SIGNATURE & STAMP: | | | | DATE: | |

Original - Client Files Copy - Area Office QC/FN/PT/077 Rev.00 DATED 07.NOV. 2021

