

**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:	<b>HALLIBURTON</b>	REPORT NO.:	QC-25-05-TSS-NDT-033
LOCATION:	<b>TSS YARD</b>	JOB NO.:	12052025
WORK ORDER #	*****	STANDARD:	ASTM E709 -21 & ASTM E797-21
DATE OF INSPECTION:	Monday, May 12, 2025	NEXT INSPECTION DATE:	<b>Tuesday, November 11, 2025</b>
TYPE OF INSPECTION:	<b>VISUAL INSPECTION AND MAGNETIC PARTICLE INSPECTION AND ULTRASONIC THICKNESS GAUGING</b>		

DESCRIPTION:	<b>CHECK VALVE 3" 600 CL (FLAPPER VALVE )</b>	SERIAL NO.:	<b>C-002</b>
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(a) Normal condition: Large reflection echo, Area of diffused echo, Surface, Target.

(b) Corrosion present on back surface: Small reflection echo, Area of diffused echo, 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°	0.869		0.400 INCH
90°	0.863		
180°	0.878		
270°	0.862		

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:	3670 lux						

PERSON DETAILS		REVIEW BY			
INSPECTOR NAME:	M. Shalwan Ahmed	SENIOR INSPECTOR:	NAVEED HUSSAIN	CLIENT:	
QUALIFICATION:		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:	<b>HALLIBURTON</b>	REPORT NO.:	QC-25-05-TSS-NDT-034
LOCATION:	<b>TSS YARD</b>	JOB NO:	12052025
WORK ORDER #	*****	STANDARD:	ASTM E709 -21 & ASTM E797-21
DATE OF INSPECTION:	Monday, May 12, 2025	NEXT INSPECTION DATE:	<b>Tuesday, November 11, 2025</b>

**TYPE OF INSPECTION: VISUAL INSPECTION AND MAGNETIC PARTICLE INSPECTION AND ULTRASONIC THICKNESS GAUGING**

DESCRIPTION:	<b>FLANGE: 3" 600 CL X 3" 206 WING</b>	SERIAL NO:	<b>28377-2</b>
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(a) Normal condition  
Underside: (b) Corrosion present on back surface.  
Reflection echo become wide small by diffused reflection caused by corroded tubular surface.

**ONLINE TRACEABILITY**

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

ANGLE	WALL THICKNESS RESULT		MINIMUM THICKNESS IN INCHES
	A		
0°	0.307		0.124 INCH
90°	0.312		
180°	0.304		
270°	0.315		

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 Discontinuities 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 & 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	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:	3590 lux	UV BLACK LIGHT INTENSITY:	3060 μw/cm <sup>2</sup>	Concentration of 7HF:		1.2 to 2.4 ml/100 ml	

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

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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:	<b>HALLIBURTON</b>	REPORT NO.:	QC-25-05-TSS-NDT-035
LOCATION:	<b>TSS YARD</b>	JOB NO:	12052025
WORK ORDER #	*****	STANDARD:	ASTM E709 -21 & ASTM E797-21
DATE OF INSPECTION:	Monday, May 12, 2025	NEXT INSPECTION DATE:	<b>Tuesday, November 11, 2025</b>

**TYPE OF INSPECTION: VISUAL INSPECTION AND MAGNETIC PARTICLE INSPECTION AND ULTRASONIC THICKNESS GAUGING**

DESCRIPTION:	<b>FLANGE: 3" 300 CL X 4" 206 THREAD</b>	SERIAL NO:	<b>P1201A</b>
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(a) Normal condition: Large reflection echo, Area of diffused echo, Detector, Target.

(b) Corrosion present on back surface: Small reflection echo, Area of diffused echo, Detector, Target. Reflection echo become wide small by diffused reflection caused by corroded tubular surface.

ONLINE TRACEABILITY

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

ANGLE	WALL THICKNESS RESULT		MINIMUM THICKNESS IN INCHES
	A		
0°	0.312		0.124 INCH
90°	0.302		
180°	0.307		
270°	0.315		

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 Discontinuities 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 & 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	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:	3590 lux	UV BLACK LIGHT INTENSITY:	3060 μw/cm <sup>2</sup>	Concentration of 7HF:		1.2 to 2.4 ml/100 ml	

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

