

# LAB REPORT

Unit id  
**STEAM TURBINE**  
Component  
**control oil**



Lab number: 1704488

Machine type  
**DKZ 42 E520**

Manufacturer  
**ABB**

Oil brand name  
**Shell Turbo T 46**

Oil quantity in system  
**500 l**

Sample Report  
Scope of Analysis: Turbine Set 4

Only minor deviations are detectable compared to the previous sample. All determined values are within the permissible tolerance limits. We find neither unusual wear nor harmful contamination in the oil. Continued operation is possible without corrective measures. I advise you: Send us the next sample at your next maintenance or on the occasion of the regular inspection to monitor the trend behavior.



**NORMAL**

Dipl.-Ing. Andy Böhme (CLS)

ANALYSIS RESULTS			Current sample	Previous analyses (not shown: 3) →				
Lab number			<b>1704488</b>	1700937	1704489	1704490	1700938	1704491
SAMPLE RATING			✓	✓	✓	ⓘ	✓	✓
Date of examination			<b>09.05.2025</b>	28.04.2025	13.02.2025	04.11.2024	28.10.2024	01.08.2024
Date of sample taken			<b>02.05.2025</b>	30.03.2025	08.02.2025	27.10.2024	13.10.2024	27.07.2024
Date of last oil change			<b>18.04.2016</b>	12.03.2015	18.04.2016	18.04.2016	12.03.2015	18.04.2016
Top-up since change			<b>0 l</b>	3400 l	0 l	-	3400	-
Operating time since change			<b>3301 d</b>	106134 h	3217 d	3113 d	102342 h	3022 d
Total operating time			<b>32 a</b>	229296 h	32 a	32 a	225504 h	32 a
Oil changed			<b>no</b>	no	no	no	no	no
WEAR								
Iron	Fe	mg/kg	<b>0</b>	1	0	1	2	0
Chrome	Cr	mg/kg	<b>0</b>	0	0	0	0	0
Tin	Sn	mg/kg	<b>0</b>	0	1	0	0	0
Aluminum	Al	mg/kg	<b>0</b>	0	0	0	0	0
Nickel	Ni	mg/kg	<b>0</b>	0	0	0	0	0
Copper	Cu	mg/kg	<b>1</b>	0	1	2	0	1
Lead	Pb	mg/kg	<b>0</b>	1	1	0	1	0
Molybdenum	Mo	mg/kg	<b>0</b>	0	0	0	0	0
Manganese	Mn	mg/kg	<b>0</b>	-	0	0	-	0
PQ index	-	-	<b>&lt; 25</b>	< 25	< 25	< 25	< 25	< 25
CONTAMINATION								
Silicon	Si	mg/kg	<b>0</b>	0	0	0	0	0
Potassium	K	mg/kg	<b>0</b>	0	0	0	0	0
Sodium	Na	mg/kg	<b>0</b>	14	0	0	13	0
Lithium	Li	mg/kg	<b>0</b>	-	0	0	0	0
Water K. F.		ppm	<b>&lt; 30</b>	228	< 30	< 30	244	< 30
OIL CONDITION								
Viscosity at 40 °C		mm <sup>2</sup> /s	<b>46.06</b>	44.58	46.37	46.01	44.51	45.98
Viscosity at 100 °C		mm <sup>2</sup> /s	<b>6.84</b>	5.34	6.90	6.86	5.33	6.82
Viscosity index		-	<b>103</b>	11	104	104	11	102
Oxidation		A/cm	<b>1</b>	-	1	2	-	1
IR index		-	<b>99.79</b>	98.89	99.80	99.67	98.54	99.35
Color		Farbzahl	<b>5.0</b>	5.5	4.5	5.0	5.5	5.0

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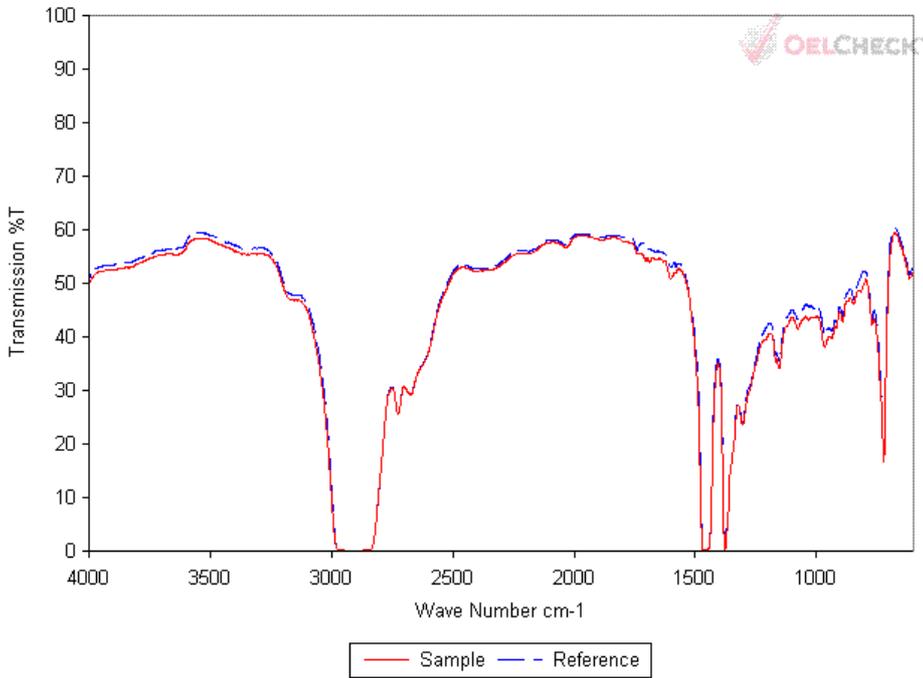
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<b>ADDITIVES</b>								
Calcium	Ca	mg/kg	<b>0</b>	0	0	0	0	0
Magnesium	Mg	mg/kg	<b>0</b>	0	0	0	0	0
Boron	B	mg/kg	<b>0</b>	0	0	0	0	0
Zinc	Zn	mg/kg	<b>0</b>	0	0	1	0	0
Phosphorus	P	mg/kg	<b>1</b>	> 30000	0	0	> 30000	1
Barium	Ba	mg/kg	<b>0</b>	0	0	0	0	0
Sulphur	S	mg/kg	<b>111</b>	< 10	24	< 10	< 10	73
<b>ADDITIONAL TESTS</b>								
AN / NN		mgKOH/g	<b>&lt; 0.10</b>	0.11	< 0.10	< 0.10	0.10	< 0.10
Cleanliness class		ISO 4406	<b>16/14/11</b>	20/17/14	15/13/10	23/21/17	20/17/13	17/15/11
A: >4µm = ISO >4µm		Anzahl/100ml	<b>46390</b>	588741	20072	4819367	622358	81416
B: >6µm = ISO >6µm		Anzahl/100ml	<b>12484</b>	104451	6693	1232314	101583	23971
C: >14µm = ISO >14µm		Anzahl/100ml	<b>1108</b>	8244	694	86723	7114	1633
D: >21µm		Anzahl/100ml	<b>344</b>	-	231	22530	-	295
E: >38µm		Anzahl/100ml	<b>49</b>	-	65	1933	-	0
F: >70µm		Anzahl/100ml	<b>0</b>	-	14	179	-	0
Cleanliness class		SAE AS 4059	<b>6A</b>		6E	> 12A		7A
Phenolic antioxidant FT-IR		%	<b>67.3</b>	-	68.7	69.5	-	53.5



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SAMPLE IMAGES (LABORATORY NUMBER: 1704488)



INFRARED SPECTRUM



BOTTLE AND CAP



**Any questions?**

Phone: +49 8034 9047-210  
ta@oelcheck.de

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