LAB REPORT

OELCHECK since 1991

Unit ID **Steam turbine**

Component Lubricating oil 9T

Lab number 1704448

+49 8034-9047-210

OELCHECK GmbH · Kerschelweg 28 · 83098 Brannenburg

Example report
Analysis scope: Turbine Oil Kit 9 (revision)

Manufacturer: **AEG-Kanis**
Oil brand name: **Mobil DTE 846**
Oil quantity in system: **13000 l**

Diagnosis for the current laboratory values

Wear metals are only present in negligible concentrations. Hardly any abrasive or corrosive wear is therefore visible. The cleanliness class of the oil complies with the requirements. The water content is within the normal range. The water separability is slightly improved. The foaming tendency is strongly increased. The trend, however, is steady. The oil is fit for further use, if the increased foaming tendency does not cause operational problems. All the other data detected are within the permissible or expected value range. If no oil change has happened yet, it is possible to continue using the oil under similar operating conditions and under continuation of the usual maintenance schedule. I recommend that you send the next sample at the next service interval or at your regular inspection for trend analysis.

Dipl.-Ing. Andy Böhme (CLS)

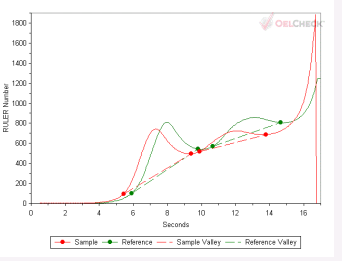
Sample Rating

normal

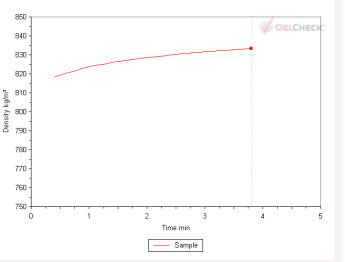
ANALYSIS RESULTS			Current sample	Previous samples		
LAB NUMBER			**1704448**	1704449	1704450	1704451
SAMPLE RATING			✓	✓	✓	✓
Date tested			**16.05.2023**	11.05.2022	18.05.2021	22.05.2020
Date of sample taken			**08.05.2023**	05.05.2022	13.05.2021	16.05.2020
Date of last oil change			**16.10.2016**	16.10.2016	16.10.2016	16.10.2016
Top-up since change		l	**200**	-	-	-
Operating time since change		a	**6,5**	5,5	4,5	3,5
Total operating time		a	**23,5**	22,5	21,5	20,5
Oil changed			**no**	no	no	-
WEAR						
Iron	Fe	mg/kg	**0**	0	0	0
Chrome	Cr	mg/kg	**0**	0	0	0
Tin	Sn	mg/kg	**0**	1	0	0
Aluminum	Al	mg/kg	**0**	0	0	0
Nickel	Ni	mg/kg	**0**	0	0	0
Copper	Cu	mg/kg	**2**	1	0	0
Lead	Pb	mg/kg	**0**	0	0	0
Molybdenum	Mo	mg/kg	**0**	0	0	0
Manganese	Mn	mg/kg	**0**	0	0	0
PQ index	-		**< 25**	< 25	< 25	< 25
CONTAMINATION						
Silicon	Si	mg/kg	**1**	0	0	0
Potassium	K	mg/kg	**0**	0	0	0
Sodium	Na	mg/kg	**2**	0	0	0
Lithium	Li	mg/kg	**0**	0	0	0
Water K. F.	ppm		**< 30**	< 30	< 30	< 30
OIL CONDITION						
Viscosity at 40°C	mm²/s		**43.93**	43.98	43.89	43.87
Viscosity at 100°C	mm²/s		**7.05**	7.09	7.01	7.08
Viscosity index	-		**120**	121	118	121
Oxidation	A/cm		**1**	1	1	1
IR index	-		**99.85**	99.95	99.93	99.92
Color	Color index		**1.5**	1.5	1.5	1.5
ADDITIVES						
Calcium	Ca	mg/kg	**1**	0	0	0
Magnesium	Mg	mg/kg	**0**	0	0	0
Boron	B	mg/kg	**0**	0	0	0
Zinc	Zn	mg/kg	**1**	0	1	0
Phosphorus	P	mg/kg	**1173**	1172	1071	1103
Barium	Ba	mg/kg	**0**	0	0	0
Sulphur	S	mg/kg	**19**	11	17	18

Infrared Spectrum

RULER Diagram



Air-release properties



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Send new sample

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Component: Lubricating oil 9T

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Operating time since change		a	**6,5**	5,5	4,5	3,5
Total operating time		a	**23,5**	22,5	21,5	20,5
Oil changed			**no**	no	no	-
ADDITIONAL TESTS						
AN / NN	mgKOH/g		**< 0.10**	< 0.10	< 0.10	< 0.10
MPC			**7.40**	3.10	8.10	5.40
Air-release properties	min		**3.8**	4.6	4.4	4.4
Air release at temperature	°C		**50**	50	50	50
Water separation (steam)	s		**139**	162	164	162
Density 15°C	kg/m³		**859**	859	859	859
Foam test seq. I	ml/ml		**590/0**	640/0	630/0	560/0
Cleanliness class	ISO 4406		**16/14/11**	16/14/11	16/14/11	16/15/11
A: >4µm = ISO >4µm	Particles/100ml		**42724**	32249	52338	43770
B: >6µm = ISO >6µm	Particles/100ml		**12224**	11567	14460	16075
C: >14µm = ISO >14µm	Particles/100ml		**1527**	1584	1369	1466
D: >21µm	Particles/100ml		**465**	444	242	386
E: >38µm	Particles/100ml		**43**	25	13	0
F: >70µm	Particles/100ml		**0**	0	0	0
Cleanliness class	SAE AS 4059		**6A**	6A	7A	6A
Antioxidant 1 - RULER	%		**91.8**	75.1	92.6	101.3
Antioxidant 2 - RULER	%		**67.9**	63.9	71.1	71.7

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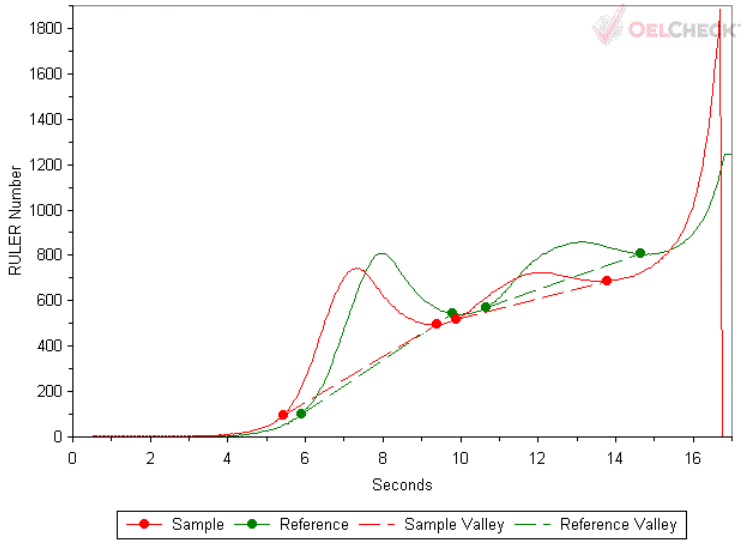
Evaluation of the oxidation inhibitors
There is no significant change in comparison to the previous sample.
Dipl.-Ing. Andy Böhme (CLS)



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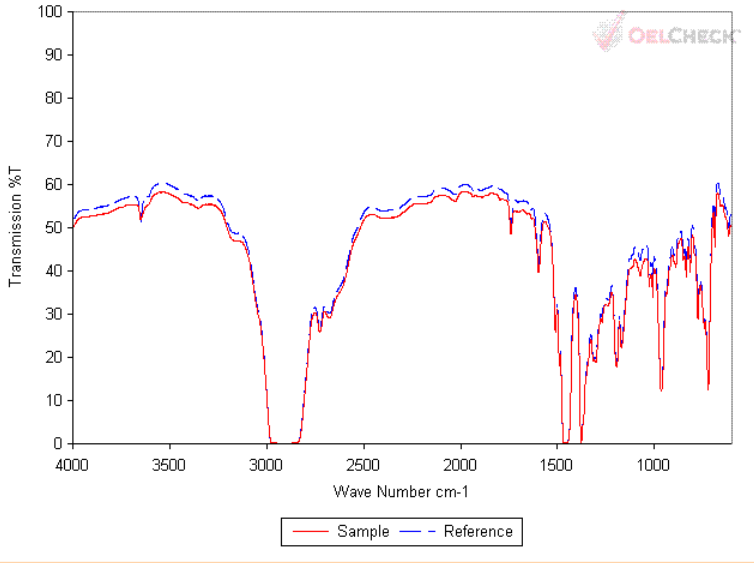
Date of sample taken		08.05.2023
Date of last oil change		16.10.2016
Top-up since change	l	200
Operating time since change	a	6,5
Total operating time	a	23,5
Oil changed		no

Antioxidant/RULER

Antioxidant 1 - RULER	%	91,8
Antioxidant 2 - RULER	%	67,9
Electrolyte solution		Green
Sample volume	µl	400



Antioxidant/FT-IR

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Diagnosis of the MPC test
The MPC value is within a normal range. There is no risk for the formation of varnish.
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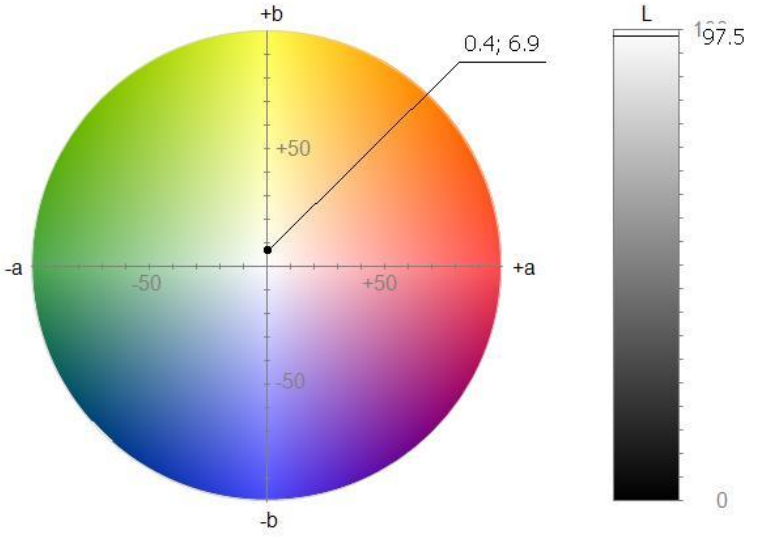

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Operating time since change	a	6,5
Total operating time	a	23,5
Oil changed		no

MPC test	
MPC	7,40
Luminance L	97,50
Redness index a	0,40
Yellowness index b	6,90

MPC test membrane