# LAB REPORT

Unit id
**STEAM TURBINE**
Component
**Lubricating Oil 9T**

OELCHECK since 1991

**Lab number: 1704448**

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

Sample Report
Scope of Analysis: Turbine Set 9 (Revision)

Wear metals are only present in negligible concentration. Therefore, hardly any abrasive or corrosive wear is evident. The cleanliness class of the oil meets the requirements. The water content is within the normal range. The water separation capability is somewhat improved. The foaming behavior is significantly increased. However, the trend is stable. If no operational difficulties occur due to the increased foaming behavior, the oil remains ready for operation. All other determined data are within the permissible or expected values. If no oil change has been carried out yet, continued use of the oil under similar operating conditions while maintaining usual maintenance work would be possible. I advise you: Send us the next sample at your next maintenance or on the occasion of the usual inspection to observe the trend behavior.

Dipl.-Ing. Andy Böhme (CLS)

**NORMAL**

| ANALYSIS RESULTS | | | Current sample | Previous samples → | | | | |
|---|---|---|---|---|---|---|---|---|
| Lab number | | | **1704448** | 1704449 | 1704450 | 1704451 | | |
| SAMPLE RATING | | | ✓ | ✓ | ✓ | ✓ | | |
| Date of examination | | | **16.05.2025** | 13.05.2024 | 19.05.2023 | 23.05.2022 | | |
| Date of sample taken | | | **08.05.2025** | 05.05.2024 | 13.05.2023 | 16.05.2022 | | |
| Date of last oil change | | | **16.10.2018** | 16.10.2018 | 16.10.2018 | 16.10.2018 | | |
| Top-up since change | | | **200 l** | - | - | - | | |
| Operating time since change | | | **6.5 a** | 5.5 a | 4.5 a | 3.5 a | | |
| Total operating time | | | **23.5 a** | 22.5 a | 21.5 a | 20.5 a | | |
| 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 | | Farbzahl | **1.5** | 1.5 | 1.5 | 1.5 | | |

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| ANALYSIS RESULTS (...) | | | Current sample | Previous samples → | | | | |
|---|---|---|---|---|---|---|---|---|
| Lab number | | | **1704448** | 1704449 | 1704450 | 1704451 | | |
| SAMPLE RATING | | | ✓ | ✓ | ✓ | ✓ | | |
| Date of examination | | | **16.05.2025** | 13.05.2024 | 19.05.2023 | 23.05.2022 | | |
| Date of sample taken | | | **08.05.2025** | 05.05.2024 | 13.05.2023 | 16.05.2022 | | |
| **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 | | |
| **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 | | Anzahl/100ml | **42724** | 32249 | 52338 | 43770 | | |
| B: >6µm = ISO >6µm | | Anzahl/100ml | **12224** | 11567 | 14460 | 16075 | | |
| C: >14µm = ISO >14µm | | Anzahl/100ml | **1527** | 1584 | 1369 | 1466 | | |
| D: >21µm | | Anzahl/100ml | **465** | 444 | 242 | 386 | | |
| E: >38µm | | Anzahl/100ml | **43** | 25 | 13 | 0 | | |
| F: >70µm | | Anzahl/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 | | |



OELCHECK GmbH · Kerschelweg 28 · 83098 Brannenburg · Deutschland
Description of test methods and standards: www.oelcheck.com

Images/Diagrams/LAB.REPORT →

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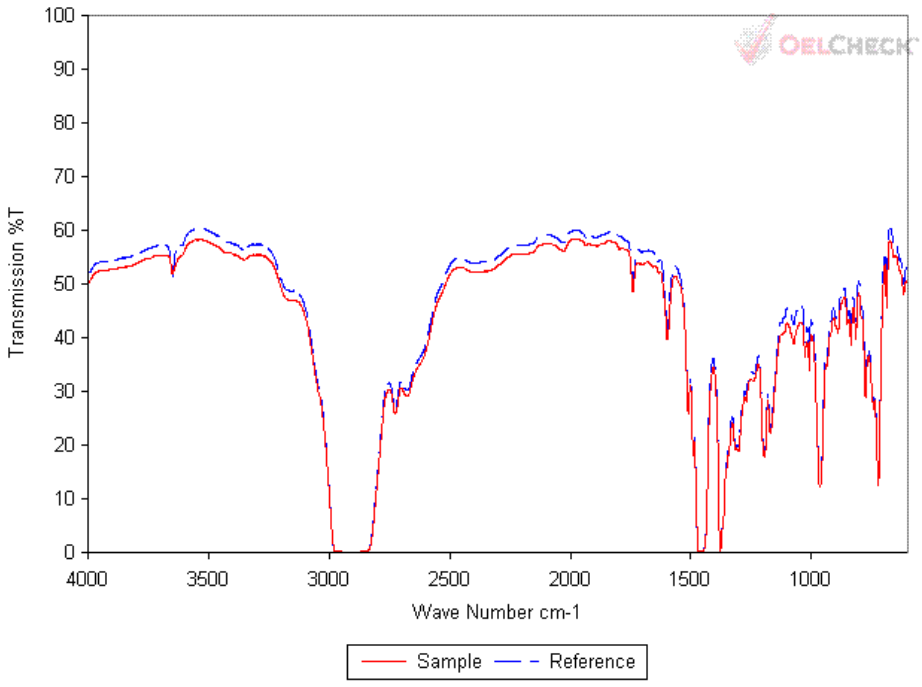
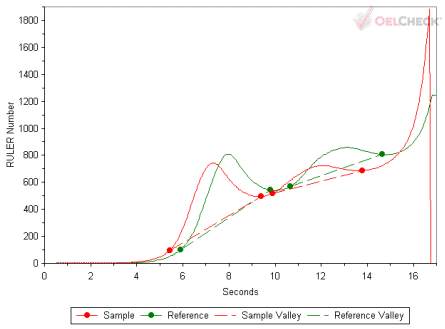
OELCHECK since 1991

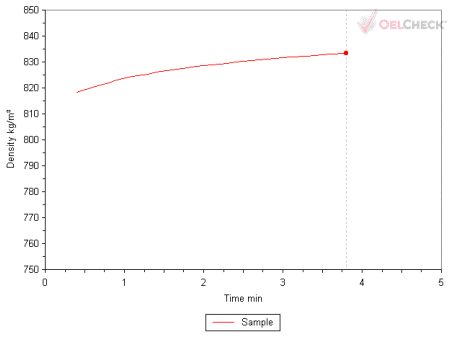
## SAMPLE IMAGES (LABORATORY NUMBER: 1704448)




INFRARED SPECTRUM




RULER DIAGRAM




AIR-RELEASE PROPERTIES


**Any questions?**
Phone: +49 8034 9047-210
ta@oelcheck.de

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## Evaluation of the oxidation inhibitors

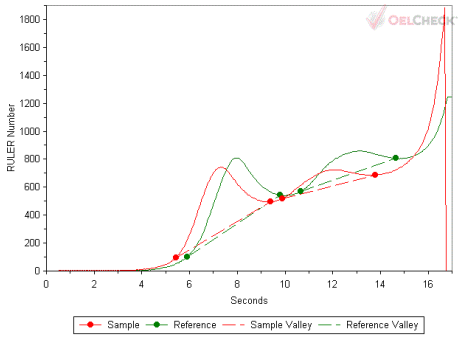
Only minor deviations compared to the previous sample can be detected.

Dipl.-Ing. Andy Böhme (CLS)

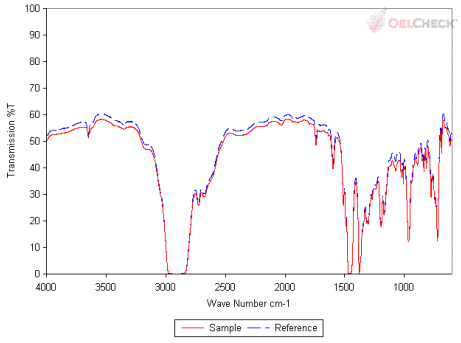
| ANALYSIS RESULTS | | Current sample |
|---|---|---|
| Lab number | | 1704448 |
| Date of examination | | 16.05.2025 |
| Date of sample taken | | 08.05.2025 |

| ANTIOXIDANT/RULER | | |
|---|---|---|
| Antioxidant 1 - RULER | % | 91.8 |
| Antioxidant 2 - RULER | % | 67.9 |
| Electrolyte solution | | Green |
| Sample volume | µl | 400 |

## SAMPLE PICTURES




RULER DIAGRAM




INFRARED SPECTRUM



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## Diagnosis of the MPC test

The MPC value is within the normal range. There is no risk of deposits forming in the system.

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|---|---|---|
| Lab number | | 1704448 |
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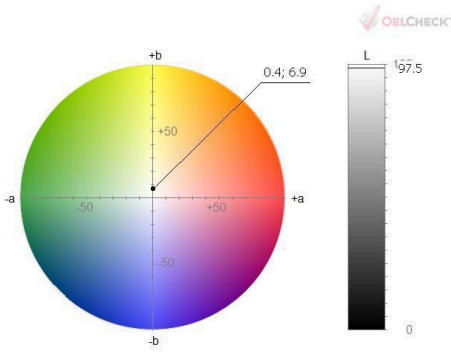
| MPC TEST | | |
|---|---|---|
| MPC | | 7.40 |
| Luminance L | L* | 97.50 |
| Redness index a | a* | 0.40 |
| Yellowness index b | b* | 6.90 |

## SAMPLE PICTURES

MPC TEST MEMBRANE




MPC LAB CHART



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