# Lubricant Analysis Report

Oil Analyzers INC.

North America: +1-877-458-3315

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| NORMAL | | ABNORMAL | | CRITICAL |

Overall report severity based on comments.

| Account Information | | Component Information | | Sample Information | |
|---|---|---|---|---|---|
| Account Number: | [redacted] | Component ID: | 2020 ECODIESEL E | Tracking Number: | 20150T25071 |
| Company Name: | | Secondary ID: | | Lab Number: | I-133868 |
| Contact: | | Component Type: | DIESEL ENGINE | Lab Location: | Indianapolis |
| Address: | | Manufacturer: | VM MOTORI | Data Analyst: | RNM |
| | | Model: | 3.0 TURBO | Sampled: | 19-Jul-2021 |
| Phone Number: | | Application: | AUTOMOTIVE | Received: | 23-Jul-2021 |
| | | Sump Capacity: | 9 qt | Completed: | 26-Jul-2021 |

| Filter Information | | Miscellaneous Information | Product Information | |
|---|---|---|---|---|
| Filter Type: | FULLFLOW | | Product Manufacturer: | PENNZOIL |
| Micron Rating: | 0 | | Product Name: | PLATINUM EURO FULL SYNTHETHIC |
| | | | Viscosity Grade: | SAE 5W40 |

**Comments** Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. Aluminum is at a MINOR LEVEL; ALUMINUM sources in ENGINES include pistons, block and components (intake manifold, head, bearing caps), thrust bearings, main/rod bearing overlay or backing, alumina silica, or contamination from grease. Lube mixing possible due to change in additive levels; Lubricant and filter change acknowledged.

| | Wear Metals (ppm) | | | | | | | | | | Contaminant Metals (ppm) | | | Multi-Source Metals (ppm) | | | | | | Additive Metals (ppm) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample # | Iron | Chromium | Nickel | Aluminum | Copper | Lead | Tin | Cadmium | Silver | Vanadium | Silicon | Sodium | Potassium | Titanium | Molybdenum | Antimony | Manganese | Lithium | Boron | Magnesium | Calcium | Barium | Phosphorus | Zinc |
| 1 | 19 | 1 | 0 | 13 | 14 | 0 | 0 | 0 | 0 | 0 | 36 | 4 | 24 | 0 | 47 | 0 | 5 | 1 | 72 | 21 | 2505 | 0 | 803 | 920 |
| **2** | 21 | 1 | 0 | 13 | 7 | 0 | 1 | 0 | 0 | 0 | 13 | 3 | 14 | 0 | 84 | 0 | 2 | 0 | 169 | 887 | 1703 | 0 | 888 | 1046 |

| | Sample Information | | | | | | | Contaminants | | | Fluid Properties | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample # | Date Sampled | Date Received | Lube Time mi | Unit Time mi | Lube Change | Lube Added qt | Filter Change | Fuel Dilution % | Soot % | Water % | Viscosity 40°C cSt | Viscosity 100 °C cSt | Acid Number mg KOH/g | Base No. D4739 mg KOH/g | Oxidation abs/cm | Nitration abs/0.1 mm |
| 1 | 19-Jun-2021 | 25-Jun-2021 | 4133 | 4133 | Yes | 9 | Yes | 0.6 - GC | <.1 | <.1 - FTIR | | 13.0 | | 8.32 | 9 | 10 |
| **2** | 19-Jul-2021 | 23-Jul-2021 | 3551 | 7684 | Yes | 9 | Yes | 0.1 - GC | <.1 | <.1 - FTIR | | 12.6 | | 9.52 | 10 | 10 |

| | Particle Count (particles/mL) | | | | | | | | | | Additional Testing |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample # | ISO Code Based On 4/6/14 | > 4 µm | > 6 µm | > 10 µm | > 14 µm | > 21 µm | > 38 µm | > 70 µm | > 100 µm | Test Method | |
| 1 | // | | | | | | | | | | |
| **2** | // | | | | | | | | | | |

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Results relate only to the items tested. Missing fluid or component information limits the evaluation. No warranty is expressed or implied. Measurement uncertainty available upon request.