

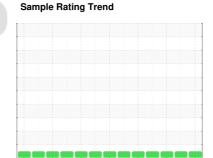
OIL ANALYSIS REPORT



KANSAS/44/EG - OTHER SERVICE 53.125L [KANSAS^44^EG - OTHER SERVICE] Component

Diesel Engine

MOBIL DELVAC 1300 SUPER15W40 (--- GAL)





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

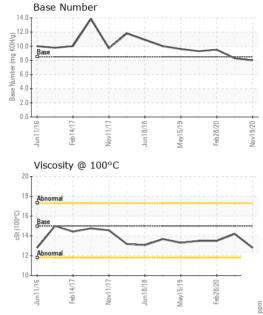
| SAMPLE INFORM | MATION | method | limit/base | current | history1 | history2 |
|--|--|---|--|---|--|--|
| Sample Number | | Client Info | | WC0453654 | WC0453640 | WC0398770 |
| Sample Date | | Client Info | | 19 Nov 2020 | 04 Jun 2020 | 28 Feb 2020 |
| Machine Age | hrs | Client Info | | 3273 | 3008 | 2767 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| CONTAMINATION | V | method | limit/base | current | history1 | history2 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Glycol | | WC Method | | NEG | NEG | NEG |
| WEAR METALS | | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185m | >100 | 13 | 10 | 8 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | <1 | <1 | <1 |
| Titanium | ppm | ASTM D5185m | >2 | <1 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | 2 | 1 | 2 |
| Lead | ppm | ASTM D5185m | >40 | <1 | <1 | <1 |
| Copper | ppm | ASTM D5185m | >330 | 2 | 1 | 1 |
| Tin | ppm | ASTM D5185m | >15 | <1 | 0 | 1 |
| Antimony | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| Boron | ppm | AOTA DEADE | 0 | 60 | 63 | 50 |
| | ppiii | ASTM D5185m | O | | | |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Barium Molybdenum | | | | 0 4 | 0 5 | |
| | ppm | ASTM D5185m | 0 | | | 0 |
| Molybdenum | ppm ppm | ASTM D5185m ASTM D5185m | 0 | 4 | 5 | 0 39 |
| Molybdenum Manganese | ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m | 0 | 4 <1 | 5 <1 | 0 39 <1 |
| Molybdenum Manganese Magnesium | ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 | 4 <1 700 | 5 <1 664 | 0 39 <1 484 |
| Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 | 4 <1 700 1355 | 5 <1 664 1280 | 0 39 <1 484 1643 |
| Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 | 4 <1 700 1355 701 | 5 <1 664 1280 646 | 0 39 <1 484 1643 717 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 | 4 <1 700 1355 701 840 | 5 <1 664 1280 646 726 | 0 39 <1 484 1643 717 817 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 | 4 <1 700 1355 701 840 2439 | 5 <1 664 1280 646 726 2228 | 0 39 <1 484 1643 717 817 1876 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 0 limit/base | 4 <1 700 1355 701 840 2439 | 5 <1 664 1280 646 726 2228 history1 | 0 39 <1 484 1643 717 817 1876 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m | 0 0 0 limit/base | 4 <1 700 1355 701 840 2439 current 5 | 5 <1 664 1280 646 726 2228 history1 4 | 0 39 <1 484 1643 717 817 1876 history2 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m | 0 0 0 0 limit/base | 4 <1 700 1355 701 840 2439 current 5 | 5 <1 664 1280 646 726 2228 history1 4 3 | 0 39 <1 484 1643 717 817 1876 history2 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m | 0 0 0 limit/base >25 >20 | 4 <1 700 1355 701 840 2439 current 5 2 3 | 5 <1 664 1280 646 726 2228 history1 4 3 2 | 0 39 <1 484 1643 717 817 1876 history2 7 2 <1 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m | 0 0 0 limit/base >25 >20 limit/base | 4 <1 700 1355 701 840 2439 current 5 2 3 current | 5 <1 664 1280 646 726 2228 history1 4 3 2 history1 | 0 39 <1 484 1643 717 817 1876 history2 7 2 <1 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 0 0 limit/base >25 >20 limit/base >3 >20 | 4 <1 700 1355 701 840 2439 current 5 2 3 current 0.5 | 5 <1 664 1280 646 726 2228 history1 4 3 2 history1 0.3 | 0 39 <1 484 1643 717 817 1876 history2 7 2 <1 history2 0.3 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 0 0 limit/base >25 >20 limit/base >3 >20 | 4 <1 700 1355 701 840 2439 current 5 2 3 current 0.5 9.9 | 5 <1 664 1280 646 726 2228 history1 4 3 2 history1 0.3 9 | 0 39 <1 484 1643 717 817 1876 history2 7 2 <1 history2 0.3 7 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145 | 0 0 0 0 0 | 4 <1 700 1355 701 840 2439 current 5 2 3 current 0.5 9.9 21.3 | 5 <1 664 1280 646 726 2228 history1 4 3 2 history1 0.3 9 20.3 | 0 39 <1 484 1643 717 817 1876 history2 7 2 <1 history2 0.3 7 22.6 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method | 0 0 0 0 limit/base >25 >20 limit/base >3 >20 >30 limit/base | 4 <1 700 1355 701 840 2439 current 5 2 3 current 0.5 9.9 21.3 current | 5 <1 664 1280 646 726 2228 history1 4 3 2 history1 0.3 9 20.3 history1 | 0 39 <1 484 1643 717 817 1876 history2 7 2 <1 history2 0.3 7 22.6 history2 |



OIL ANALYSIS REPORT

Visc @ 100°C

GRAPHS

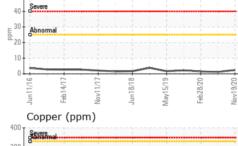


| VISUAL | | method | limit/base | current | history1 | history2 | |
|-------------------------|--------|---------|------------|---------|----------|----------|--|
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE | |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE | |
| Precipitate | scalar | *Visual | NONE | NONE | NONE | NONE | |
| Silt | scalar | *Visual | NONE | NONE | NONE | NONE | |
| Debris | scalar | *Visual | NONE | NONE | NONE | NONE | |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | NONE | |
| Appearance | scalar | *Visual | NORML | NORML | NORML | NORML | |
| Odor | scalar | *Visual | NORML | NORML | NORML | NORML | |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | NEG | |
| Free Water | scalar | *Visual | | NEG | NEG | NEG | |
| | | | | | | | |
| FLUID PROPERTIES | | method | | | | history2 | |

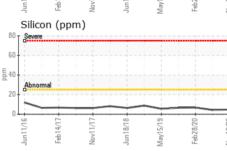
12.8

| J | | | | | | | | | | | | |
|----------|------------|-------|----------|----------|----------|----------|----------|------------|--------|----------|-----|--|
| Iron | Iron (ppm) | | | | | | | Lead (ppm) | | | | |
| Severe | | | | | | | 80 - Sev | ere | | | | |
| Abnom | mal | | | | | | 60 - Abr | ormal | | | | |
| 0 | | | | | | | 20 | | | | | |
| 0 | 4/17 | 1/17 | 81/8 | 61/9 | 8/20 | 9/20 | 0 1/16 | 4/17 | - 41/1 | 8/18 | 073 | |
| Jun11/16 | Feb14/ | Nov1 | Jun18/18 | May15/19 | Feb28/20 | Nov19/20 | Jun11/1 | Feb14/ | Nov | Jun18/18 | Man | |
| Alum | ninum | (ppm) | | | | | Ch | romium | (ppm) | | | |
| Severe | | | | | | | 40 - Sev | ere | | | | |
| | | | | | | | | | | | | |

ASTM D445 15.0

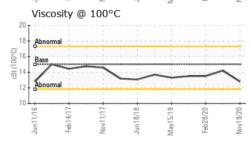


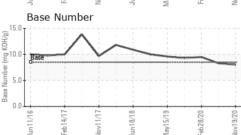
cSt



14.2

13.5









Laboratory Sample No. Lab Number

Unique Number

: WC0453654 : 05124809

E 200

100

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received Diagnosed : 9270078

: 30 Nov 2020

: 25 Nov 2020

Diagnostician : Wes Davis

Test Package : MOBCE (Additional Tests: TBN) To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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Report Id: SHEWIC [WUSCAR] 05124809 (Generated: 07/21/2023 11:27:02) Rev: 1

Submitted By: RICHARD MARTINEZ