

OIL ANALYSIS REPORT

Sample Rating Trend





NORMAL

MOBIL DELVAC 1300 SUPER15W40 (--- QTS)

DIAGNOSIS

Machine Id **16822** Component **Diesel Engine**

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

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.

| | | methoa | iimit/base | current | riistory i | nistory2 |
|--|--|--|--|--|---|--|
| Sample Number | | Client Info | | IL0027076 | II 0027063 | II 0027117 |
| Sample Date | | Client Info | | 06 Sen 2023 | 31 May 2023 | 22 Mar 2023 |
| Machino Ago | mle | Client Info | | 215105 | 2016/9 | 272075 |
| | mlo | Client Info | | 00457 | 17679 | 20000 |
| | 11115 | | | 23457 Observed | Changed | 20900 |
| Oli Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| CONTAMINATIO | N | method | limit/base | current | history1 | history2 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Glycol | | WC Method | | NEG | NEG | NEG |
| | | | 12 . 1. 11 | | | |
| WEAR METALS | | method | limit/base | current | nistory i | nistory2 |
| Iron | ppm | ASTM D5185m | >100 | 34 | 14 | 26 |
| Chromium | ppm | ASTM D5185m | >20 | 1 | <1 | 3 |
| Nickel | ppm | ASTM D5185m | >4 | 0 | 0 | <1 |
| Titanium | ppm | ASTM D5185m | | <1 | <1 | 0 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >20 | 10 | 8 | 3 |
| Lead | ppm | ASTM D5185m | >40 | 2 | <1 | 2 |
| Copper | ppm | ASTM D5185m | >330 | 2 | 2 | 4 |
| Tin | ppm | ASTM D5185m | >15 | <1 | <1 | 1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| | | | | | | |
| | | | | | In the second second | |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| ADDITIVES Boron | ppm | method ASTM D5185m | limit/base 0 | current 8 | history1 25 | history2 9 |
| ADDITIVES Boron Barium | ppm ppm | method ASTM D5185m ASTM D5185m | limit/base 0 0 | current 8 0 | history1 25 0 | history2 9 0 |
| ADDITIVES Boron Barium Molybdenum | ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m | limit/base 0 0 0 | current 8 0 63 | history1 25 0 35 | history2 9 0 57 |
| ADDITIVES Boron Barium Molybdenum Manganese | ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | limit/base 0 0 0 | current 8 0 63 <1 | history1 25 0 35 <1 | history2 9 0 57 1 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium | ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | limit/base 0 0 0 0 | current 8 0 63 <1 897 | history1 25 0 35 <1 616 | history2 9 0 57 1 908 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | limit/base 0 0 0 0 | current 8 0 63 <1 897 1128 | history1 25 0 35 <1 616 1465 | history2 9 0 57 1 908 1308 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | limit/base 0 0 0 0 | current 8 0 63 <1 897 1128 1014 | history1 25 0 35 <1 616 1465 745 | history2 9 0 57 1 908 1308 987 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | limit/base 0 0 0 0 | current 8 0 63 <1 897 1128 1014 1250 | history1 25 0 35 <1 616 1465 745 930 | history2 9 0 57 1 908 1308 987 1238 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | limit/base 0 0 0 0 | current 8 0 63 <1 897 1128 1014 1250 3384 | history1 25 0 35 <1 616 1465 745 930 2881 | history2 9 0 57 1 908 1308 987 1238 3377 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS | ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | limit/base | current 8 0 63 <1 897 1128 1014 1250 3384 current | history1 25 0 35 <1 616 1465 745 930 2881 history1 | history2 9 0 57 1 908 1308 987 1238 3377 history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon | ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m | limit/base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | current 8 0 63 <1 897 1128 1014 1250 3384 current 6 | history1 25 0 35 <1 616 1465 745 930 2881 history1 5 | history2 9 0 57 1 908 1308 987 1238 3377 history2 5 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m | limit/base 0 0 0 0 0 1 1 1 1 1 1 1 2 5 | current 8 0 63 <1 897 1128 1014 1250 3384 current 6 <1 | history1 25 0 35 <1 616 1465 745 930 2881 history1 5 3 | history2 9 0 57 1 908 1308 987 1238 3377 history2 5 3 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m | limit/base 0 0 0 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 | current 8 0 63 <1 897 1128 1014 1250 3384 current 6 <1 18 | history1 25 0 35 <1 616 1465 745 930 2881 history1 5 3 8 | history2 9 0 57 1 908 1308 987 1238 3377 history2 5 3 4 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m | limit/base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | current 8 0 63 <1 897 1128 1014 1250 3384 current 6 <1 18 | history1 25 0 35 <1 616 1465 745 930 2881 history1 5 3 8 bistory1 | history2 9 0 57 1 908 1308 987 1238 3377 bistory2 5 3 4 bistory2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED | ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m | limit/base 0 0 0 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 | current 8 0 63 <1 897 1128 1014 1250 3384 current 6 <1 18 current | history1 25 0 35 <1 616 1465 745 930 2881 history1 5 3 8 history1 25 | history2 9 0 57 1 908 1308 987 1238 3377 history2 5 3 4 history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m | limit/base 0 0 0 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 | current 8 0 63 <1 897 1128 1014 1250 3384 current 6 <1 18 current 0.4 | history1 25 0 35 <1 616 1465 745 930 2881 history1 5 3 8 history1 0.5 | history2 9 0 57 1 908 1308 987 1238 3377 history2 5 3 4 history2 0.4 |
| ADDITIVES Boron Barium 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 | method ASTM D5185m | limit/base 0 0 0 0 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 | current 8 0 63 <1 897 1128 1014 1250 3384 current 6 <1 18 current 0.4 11.9 | history1 25 0 35 <1 616 1465 745 930 2881 history1 5 3 8 history1 0.5 10.0 | history2 9 0 57 1 908 1308 987 1238 3377 history2 5 3 4 history2 0.4 12.3 |
| ADDITIVES Boron Barium 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 | method ASTM D5185m | limit/base 0 <t< th=""><th>current 8 0 63 <1 897 1128 1014 1250 3384 current 6 <1 18 current 0.4 11.9 23.4</th><th>history1 25 0 35 <1 616 1465 745 930 2881 history1 5 3 8 history1 0.5 10.0 22.1</th><th>history2 9 0 57 1 908 1308 987 1238 3377 history2 5 3 4 history2 0.4 12.3 25.8</th></t<> | current 8 0 63 <1 897 1128 1014 1250 3384 current 6 <1 18 current 0.4 11.9 23.4 | history1 25 0 35 <1 616 1465 745 930 2881 history1 5 3 8 history1 0.5 10.0 22.1 | history2 9 0 57 1 908 1308 987 1238 3377 history2 5 3 4 history2 0.4 12.3 25.8 |
| ADDITIVES Boron Barium 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 | method ASTM D5185m ASTM D5185m | limit/base 0 0 0 0 0 1 1 1 1 1 2 2 1 2 2 1 1 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 | current 8 0 63 <1 897 1128 1014 1250 3384 current 6 <1 18 current 0.4 11.9 23.4 | history1 25 0 35 <1 616 1465 745 930 2881 history1 5 3 8 history1 0.5 10.0 22.1 | history2 9 0 57 1 908 1308 987 1238 3377 history2 5 3 4 history2 0.4 12.3 25.8 history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7415 method *ASTM D7414 | limit/base 0 0 0 0 0 0 0 1 0 1 1 25 20 20 20 20 20 30 25 30 1 1 1 25 | current 8 0 63 <1 897 1128 1014 1250 3384 current 6 <1 18 current 0.4 11.9 23.4 current 20.7 | history1 25 0 35 <1 616 1465 745 930 2881 history1 5 3 8 history1 0.5 10.0 22.1 history1 21.6 | history2 9 0 57 1 908 1308 987 1238 3377 history2 5 3 4 history2 0.4 12.3 25.8 history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation Base Number (BN) | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7414 *ASTM D7414 ASTM D2896 | limit/base 0 0 0 0 0 0 0 0 1 1 2 >20 >30 >20 >30 1 1 1 2 2 3 20 30 20 20 20 20 20 20 20 30 25 9.4 | current 8 0 63 <1 897 1128 1014 1250 3384 current 6 <1 18 current 0.4 11.9 23.4 current 20.7 6.8 | history1 25 0 35 <1 616 1465 745 930 2881 history1 5 3 8 history1 0.5 10.0 22.1 history1 21.6 9.0 | history2 9 0 57 1 908 1308 987 1238 3377 history2 5 3 4 history2 0.4 12.3 25.8 history2 27.6 4.1 |



cSt (100°C)

12

Jul12/19

an17/20

un24/20

OIL ANALYSIS REPORT



| 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 PROPERT | IES | method | limit/base | current | history1 | history2 |
| Visc @ 100°C | cSt | ASTM D445 | 14 | 13.8 | 13.6 | 14.2 |
| GRAPHS | | | | | | |

