

Machine Id **DFA28086** Component **Diesel Engine** Filuid **DIESEL ENGINE OIL SAE 15W40 (--- QTS)**

| RECOMMENDATION | Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|--|--|---|--|---|---|---|--|
| Description of the next service interaction of the service Discovery of the | Sample Number | | Client Info | | WC0925976 | WC0879587 | WC0820967 |
| Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample. | Sample Date | | Client Info | | 23 May 2024 | 08 Dec 2023 | 27 Jul 2023 |
| | Machine Age | mls | Client Info | | 384302 | 321412 | 287048 |
| | Oil Age | mls | Client Info | | 0 | 0 | 0 |
| | Filter Age | mls | Client Info | | 0 | 0 | 0 |
| | Oil Changed | | Client Info | | Changed | Changed | Changed |
| | Filter Changed | | Client Info | | Changed | Changed | Changed |
| | Sample Status | | | | NORMAL | NORMAL | NORMAL |
| WEAR | Iron | ppm | ASTM D5185m | >100 | 8 | 4 | 11 |
| All component wear rates are normal. | Chromium | ppm | ASTM D5185m | >20 | 0 | <1 | <1 |
| | Nickel | ppm | ASTM D5185m | | 0 | 0 | 0 |
| | Titanium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| | Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| | Aluminum | ppm | ASTM D5185m | | 4 | 2 | 2 |
| | Lead | ppm | ASTM D5185m | | 0 | <1 | <1 |
| | Copper | ppm | ASTM D5185m | | 4 | 6 | 10 |
| | Tin | ppm | ASTM D5185m | | <1 | <1 | 1 |
| | Vanadium | ppm | ASTM D5185m | | 0 | <1 | <1 |
| | White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| | Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| | | ooulu | | | | | |
| CONTAMINATION | Silicon | ppm | ASTM D5185m | . 25 | = | 4 | 4 |
| | Olifoott | ppin | ASTIVI DOTODITI | >20 | 5 | 4 | 4 |
| | Potassium | ppm | ASTM D5185m | | 1 | 4 <1 | 3 |
| There is no indication of any contamination in the oil. | | | | >20 | | | |
| | Potassium | | ASTM D5185m | >20 >5 | 1 | <1 | 3 |
| | Potassium Fuel | | ASTM D5185m WC Method | >20 >5 | 1 <1.0 | <1 <1.0 | 3 <1.0 |
| | Potassium Fuel Water | | ASTM D5185m WC Method WC Method | >20 >5 >0.2 | 1 <1.0 NEG | <1 <1.0 NEG | 3 <1.0 NEG |
| | Potassium Fuel Water Glycol | ppm | ASTM D5185m WC Method WC Method WC Method | >20 >5 >0.2 >3 | 1 <1.0 NEG NEG | <1 <1.0 NEG NEG | 3 <1.0 NEG NEG |
| | Potassium Fuel Water Glycol Soot % | ppm % | ASTM D5185m WC Method WC Method WC Method *ASTM D7844 | >20 >5 >0.2 >3 >20 | 1 <1.0 NEG NEG 0.5 | <1 <1.0 NEG NEG 0.3 | 3 <1.0 NEG NEG 0.6 |
| | Potassium Fuel Water Glycol Soot % Nitration | ppm % Abs/cm | ASTM D5185m WC Method WC Method WC Method *ASTM D7844 *ASTM D7624 | >20 >5 >0.2 >3 >20 | 1 <1.0 NEG NEG 0.5 8.3 | <1 <1.0 NEG NEG 0.3 6.9 | 3 <1.0 NEG 0.6 9.1 |
| | Potassium Fuel Water Glycol Soot % Nitration Sulfation | ppm % Abs/cm Abs/.1mm | ASTM D5185m WC Method WC Method *ASTM D7844 *ASTM D7624 *ASTM D7415 | >20 >5 >0.2 >3 >20 >30 | 1 <1.0 NEG NEG 0.5 8.3 23.5 | <1 <1.0 NEG 0.3 6.9 19.8 | 3 <1.0 NEG NEG 0.6 9.1 21.9 |
| | Potassium Fuel Water Glycol Soot % Nitration Sulfation Silt | ppm % Abs/cm Abs/.1mm scalar | ASTM D5185m WC Method WC Method *ASTM D7844 *ASTM D7624 *ASTM D7415 *Visual | >20 >5 >0.2 >3 >20 >30 NONE | 1 <1.0 NEG 0.5 8.3 23.5 NONE | <1 <1.0 NEG 0.3 6.9 19.8 NONE | 3 <1.0 NEG 0.6 9.1 21.9 NONE |
| | Potassium Fuel Water Glycol Soot % Nitration Sulfation Silt Debris | ppm % Abs/cm Abs/1mm scalar scalar | ASTM D5185m WC Method WC Method *ASTM D7844 *ASTM D7624 *Visual *Visual | >20 >5 >0.2 >3 >20 >30 NONE NONE | 1 <1.0 NEG 0.5 8.3 23.5 NONE NONE | <1 <1.0 NEG 0.3 6.9 19.8 NONE NONE | 3 <1.0 NEG 0.6 9.1 21.9 NONE NONE |
| | Potassium Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt | ppm % Abs/cm Abs/.1mm scalar scalar scalar | ASTM D5185m WC Method WC Method *ASTM D7844 *ASTM D7624 *Visual *Visual *Visual | >20 >5 >0.2 >3 >20 >30 NONE NONE NONE | 1 <1.0 NEG 0.5 8.3 23.5 NONE NONE NONE | <1 <1.0 NEG 0.3 6.9 19.8 NONE NONE NONE | 3 <1.0 NEG NEG 0.6 9.1 21.9 NONE NONE NONE |
| | Potassium Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance | 9% Abs/cm Abs/.1mm scalar scalar scalar scalar scalar | ASTM D5185m WC Method WC Method *ASTM D7844 *ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual | >20 >5 >0.2 >3 >20 >30 NONE NONE NONE NORM | 1 <1.0 NEG 0.5 8.3 23.5 NONE NONE NONE NONE NORML | <1 <1.0 NEG 0.3 6.9 19.8 NONE NONE NONE NONE NONE | 3 <1.0 NEG NEG 0.6 9.1 21.9 NONE NONE NONE NONE NORML |
| There is no indication of any contamination in the oil. | Potassium Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water | 9% Abs/cm Abs/.1mm scalar scalar scalar scalar scalar scalar | ASTM D5185m WC Method WC Method *ASTM D7844 *ASTM D7624 *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual | >20 >5 >0.2 >30 >30 NONE NONE NONE NORML NORML >0.2 | 1 <1.0 NEG 0.5 8.3 23.5 NONE NONE NONE NORML NORML NEG | <1 <1.0 NEG 0.3 6.9 19.8 NONE NONE NONE NONE NORML NORML NEG | 3 <1.0 NEG 0.6 9.1 21.9 NONE NONE NONE NORML NORML NEG |
| | Potassium Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium | ppm % Abs/cm Abs/.1mm scalar scalar scalar scalar scalar scalar scalar | ASTM D5185m WC Method WC Method *ASTM D7844 *ASTM D7624 *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual | >20 >5 >0.2 >30 >30 NONE NONE NONE NORML NORML >0.2 >158 | 1 <1.0 NEG 0.5 8.3 23.5 NONE NONE NONE NORML NORML NEG | <1 <1.0 NEG 0.3 6.9 19.8 NONE NONE NONE NORML NORML NEG 0 | 3 <1.0 NEG 0.6 9.1 21.9 NONE NONE NONE NORML NORML NEG |
| There is no indication of any contamination in the oil. | Potassium Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron | ppm % Abs/cm Abs/.1mm scalar scalar scalar scalar scalar scalar scalar gcalar | ASTM D5185m WC Method WC Method *ASTM D7844 *ASTM D7624 *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m | >20 >5 >0.2 >30 >30 NONE NORME NORML >0.2 >158 250 | 1 <1.0 NEG 0.5 8.3 23.5 NONE NONE NONE NORML NORML NEG 1 214 | <1 <1.0 NEG 0.3 6.9 19.8 NONE NONE NONE NORML NORML NEG 0 0 | 3 <1.0 NEG 0.6 9.1 21.9 NONE NONE NORML NORML NORML NEG 1 0 |
| There is no indication of any contamination in the oil. | Potassium Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium | ppm % Abs/cm Abs/.1mm scalar scalar scalar scalar scalar scalar scalar gcalar | ASTM D5185m WC Method WC Method *ASTM D7844 *ASTM D7624 *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m | >20 >5 >0.2 >30 >30 NONE NONE NORML NORML >0.2 >158 250 10 | 1 <1.0 NEG 0.5 8.3 23.5 NONE NONE NONE NORML NORML NEG 1 214 0 | <1 <1.0 NEG 0.3 6.9 19.8 NONE NONE NONE NORML NORML NEG 0 0 0 | 3 <1.0 NEG 0.6 9.1 21.9 NONE NONE NONE NORML NORML NEG 1 0 0 |
| There is no indication of any contamination in the oil. FLUID CONDITION The BN result indicates that there is suitable alkalinity remaining in the | Potassium Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum | ppm % Abs/cm Abs/.1mm scalar scalar scalar scalar scalar scalar gcalar | ASTM D5185m WC Method WC Method *ASTM D7844 *ASTM D7624 *Visual *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m | >20 >5 >0.2 >30 >30 NONE NONE NORML NORML >0.2 >158 250 10 | 1 <1.0 NEG 0.5 8.3 23.5 NONE NONE NORE NORML NORML NEG 1 214 0 85 | <1 <1.0 NEG 0.3 6.9 19.8 NONE NONE NONE NORML NORML NEG 0 0 0 0 0 60 | 3 <1.0 NEG 0.6 9.1 21.9 NONE NONE NORML NORML NORML NEG 1 0 0 63 |
| There is no indication of any contamination in the oil. FLUID CONDITION The BN result indicates that there is suitable alkalinity remaining in the | Potassium Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese | ppm % Abs/cm Abs/.1mm scalar scalar scalar scalar scalar scalar gpm ppm ppm ppm | ASTM D5185m WC Method WC Method *ASTM D7844 *ASTM D7624 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | >20 >5 >0.2 >3 >20 >30 NONE NONE NORML NORML >0.2 >158 250 10 100 | 1 <1.0 NEG 0.5 8.3 23.5 NONE NONE NONE NORML NORML NEG 1 214 0 85 <1 | <1 <1.0 NEG 0.3 6.9 19.8 NONE NONE NONE NORML NORML NEG 0 0 0 0 0 60 0 | 3 <1.0 NEG 0.6 9.1 21.9 NONE NONE NONE NORML NORML NEG 1 0 0 63 <1 |
| There is no indication of any contamination in the oil. FLUID CONDITION The BN result indicates that there is suitable alkalinity remaining in the | Potassium Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium | ppm % Abs/cm Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm | ASTM D5185m WC Method WC Method *ASTM D7844 *ASTM D7624 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | >20 >5 >0.2 >3 >20 >30 NONE NONE NORML NORML >0.2 >158 250 10 100 100 | 1 <1.0 NEG 0.5 8.3 23.5 NONE NONE NONE NORML NORML NEG 1 214 0 85 <1 435 | <1 <1.0 NEG 0.3 6.9 19.8 NONE NONE NONE NORML NORML NEG 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 3 <1.0 NEG 0.6 9.1 21.9 NONE NONE NONE NORML NORML NEG 1 0 0 63 <1 1024 |
| There is no indication of any contamination in the oil. FLUID CONDITION The BN result indicates that there is suitable alkalinity remaining in the | Potassium Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese | ppm % Abs/cm Abs/.1mm scalar scalar scalar scalar scalar scalar gcalar ppm ppm ppm | ASTM D5185m WC Method WC Method *ASTM D7844 *ASTM D7624 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | >20 >5 >0.2 >30 >30 NONE NONE NONE NORML NORML >0.2 >158 250 10 100 100 100 3000 | 1 <1.0 NEG 0.5 8.3 23.5 NONE NONE NONE NORML NORML NEG 1 214 0 85 <1 | <1 <1.0 NEG 0.3 6.9 19.8 NONE NONE NONE NORML NORML NEG 0 0 0 0 0 60 0 | 3 <1.0 NEG 0.6 9.1 21.9 NONE NONE NONE NORML NORML NEG 1 0 0 63 <1 |

Zinc

Sulfur

Oxidation

Visc @ 100°C cSt

1264

3225

15.1 9.6

13.8

1332

3462

17.0

8.7

14.2

1298

3455

17.7

6.5

14.2

ASTM D5185m 1350

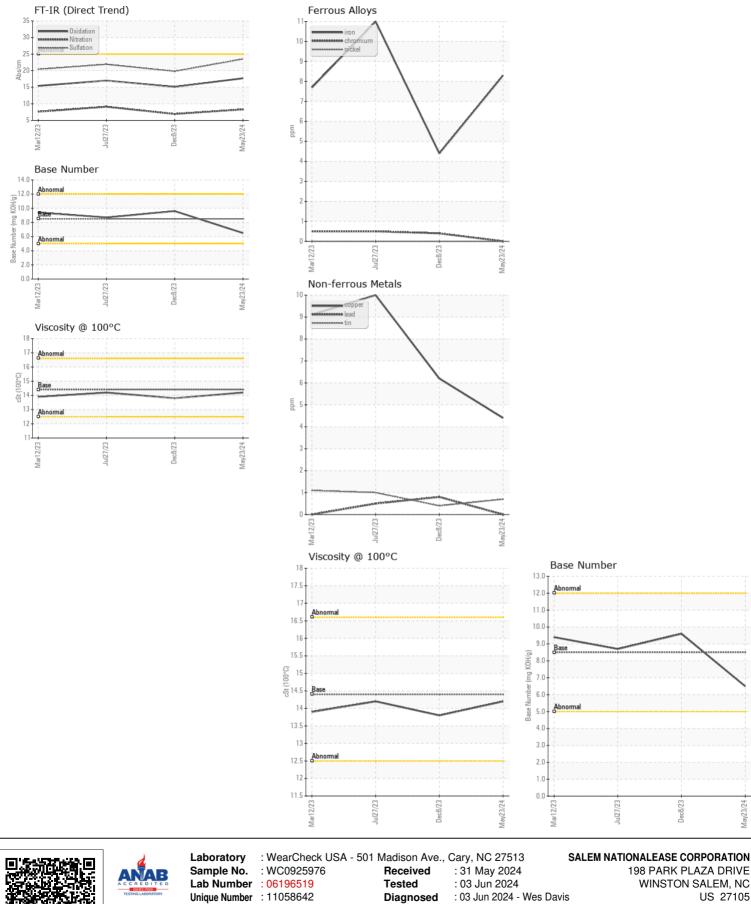
ASTM D445 14.4

ppm ASTM D5185m 4250

Abs/.1mm *ASTM D7414 >25

ppm

Base Number (BN) mg KOH/g ASTM D2896 8.5



Test Package : FLEET Certificate L2367 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.

US 27105 **Contact: Audrey Hopkins** Audrey.Hopkins@salemcorp.com T: (336)767-9642 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: x:

Contact/Location: Audrey Hopkins - SALWIN Page 2 of 2