

NORMAL **WEAR** CONTAMINATION NORMAL **FLUID CONDITION** NORMAL

Machine Id 46832 **Diesel Engine** MOBIL 15W40 (--- QTS)

| RECOMMENDATION | Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|--|---|---|--|---|---|---|--------------|
| No corrective action is recommended at this time. Resample at the next service interval to monitor. | Sample Number | | Client Info | | WC0936729 | WC0915970 | |
| | Sample Date | | Client Info | | 26 Jun 2024 | 25 Mar 2024 | |
| | Machine Age | mls | Client Info | | 22186 | 7456 | |
| | Oil Age | mls | Client Info | | 0 | 0 | |
| | Filter Age | mls | Client Info | | 0 | 0 | |
| | Oil Changed | | Client Info | | N/A | Changed | |
| | Filter Changed | | Client Info | | N/A | Changed | |
| | Sample Status | | | | NORMAL | ATTENTION | |
| | | | | | | | |
| WEAR | Iron | ppm | ASTM D5185m | | 66 | 33 | |
| All component wear rates are normal. | Chromium | ppm | ASTM D5185m | | 4 | <1 | |
| | Nickel | ppm | ASTM D5185m | >4 | 2 | 2 | |
| | Titanium | ppm | ASTM D5185m | | <1 | 0 | |
| | Silver | ppm | ASTM D5185m | | 1 | <1 | |
| | Aluminum | ppm | ASTM D5185m | | 61 | 29 | |
| | Lead | ppm | ASTM D5185m | | 0 | 1 | |
| | Copper | ppm | ASTM D5185m | | 286 | 207 | |
| | Tin | ppm | ASTM D5185m | >15 | 4 | 12 | |
| | Vanadium | ppm | ASTM D5185m | | <1 | 0 | |
| | White Metal | scalar | *Visual | NONE | NONE | NONE | |
| | Yellow Metal | scalar | *Visual | NONE | NONE | NONE | |
| | | ooului | viouui | NONE | none | INCINE | |
| CONTAMINATION | | | | | | | |
| CONTAMINATION | Silicon | ppm | ASTM D5185m | >25 | 7 | 6 | |
| Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in | Silicon Potassium | ppm ppm | ASTM D5185m ASTM D5185m | >25 >20 | 7 189 | 6 103 | |
| Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the | Silicon Potassium Fuel | ppm | ASTM D5185m ASTM D5185m ASTM D3524 | >25 >20 >5 | 7 189 <1.0 | 6 103 0.2 | |
| Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no | Silicon Potassium Fuel Water | ppm ppm | ASTM D5185m ASTM D5185m | >25 >20 >5 | 7 189 <1.0 NEG | 6 103 | |
| Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the | Silicon Potassium Fuel | ppm ppm | ASTM D5185m ASTM D5185m ASTM D3524 WC Method | >25 >20 >5 >0.2 | 7 189 <1.0 | 6 103 0.2 NEG | |
| Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no | Silicon Potassium Fuel Water Glycol | ppm ppm % | ASTM D5185m ASTM D5185m ASTM D3524 WC Method WC Method | >25 >20 >5 >0.2 | 7 189 <1.0 NEG NEG | 6 103 0.2 NEG NEG | |
| Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no | Silicon Potassium Fuel Water Glycol Soot % | ppm ppm % | ASTM D5185m ASTM D5185m ASTM D3524 WC Method WC Method *ASTM D7844 *ASTM D7624 | >25 >20 >5 >0.2 >3 >20 | 7 189 <1.0 NEG NEG 0.4 | 6 103 0.2 NEG NEG 0.2 | |
| Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no | Silicon Potassium Fuel Water Glycol Soot % Nitration | ppm ppm % Abs/cm | ASTM D5185m ASTM D5185m ASTM D3524 WC Method WC Method *ASTM D7844 *ASTM D7624 | >25 >20 >5 >0.2 >3 >20 | 7 189 <1.0 NEG NEG 0.4 9.3 | 6 103 0.2 NEG NEG 0.2 6.8 | |
| Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no | Silicon Potassium Fuel Water Glycol Soot % Nitration Sulfation | ppm ppm % % Abs/cm Abs/cm | ASTM D5185m ASTM D5185m ASTM D3524 WC Method *ASTM D7844 *ASTM D7624 *ASTM D7415 | >25 >20 >5 >0.2 >3 >20 >30 | 7 189 <1.0 NEG NEG 0.4 9.3 23.4 | 6 103 0.2 NEG 0.2 0.2 6.8 22.8 | |
| Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no | Silicon Potassium Fuel Water Glycol Soot % Nitration Sulfation Silt | ppm ppm % % Abs/cm Abs/cm scalar | ASTM D5185m ASTM D5185m ASTM D3524 WC Method *ASTM D7844 *ASTM D7624 *ASTM D7415 *Visual | >25 >20 >5 >0.2 >3 >20 >30 NONE | 7 189 <1.0 NEG 0.4 9.3 23.4 NONE | 6 103 0.2 NEG 0.2 6.8 22.8 NONE | |
| Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no | Silicon Potassium Fuel Water Glycol Soot % Nitration Sulfation Silt Debris | ppm % % Abs/cm Abs/.1mm scalar scalar | ASTM D5185m ASTM D5185m ASTM D3524 WC Method WC Method *ASTM D7844 *ASTM D7624 *Visual *Visual | >25 >20 >5 >0.2 >3 >20 >30 >30 NONE NONE | 7 189 <1.0 NEG 0.4 9.3 23.4 NONE NONE | 6 103 0.2 NEG NEG 0.2 6.8 22.8 NONE NONE | |
| Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no | Silicon Potassium Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt | ppm % % % Abs/cm Abs/.1mm scalar scalar scalar | ASTM D5185m ASTM D5185m ASTM D3524 WC Method *ASTM D7844 *ASTM D7624 *Visual *Visual *Visual | >25 >20 >5 >0.2 >0.2 >3 >20 >30 NONE NONE NONE | 7 189 <1.0 NEG NEG 0.4 9.3 23.4 NONE NONE NONE | 6 103 0.2 NEG NEG 0.2 6.8 22.8 NONE NONE NONE | |
| Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no | Silicon Potassium Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance | ppm % % % Abs/cm Abs/.1mm scalar scalar scalar scalar | ASTM D5185m ASTM D5185m ASTM D3524 WC Method *ASTM D7844 *ASTM D7624 *Visual *Visual *Visual *Visual | >25 >20 >5 >0.2 >3 >20 >30 NONE NONE NONE NORM | 7 189 <1.0 NEG 0.4 9.3 23.4 NONE NONE NONE NONE NORML | 6 103 0.2 NEG 0.2 6.8 22.8 NONE 22.8 NONE NONE NONE NONE | |
| Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil. | Silicon Potassium Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water | ppm % % Abs/cm Abs/.1mm scalar scalar scalar scalar scalar scalar | ASTM D5185m ASTM D5185m ASTM D3524 WC Method *ASTM D7844 *ASTM D7624 *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual | >25 >20 >5 >0.2 >3 >20 >30 NONE NONE NONE NORML NORML NORML >0.2 | 7 189 <1.0 NEG 0.4 9.3 23.4 NONE NONE NONE NONE NORML NORML NEG | 6 103 0.2 NEG 0.2 6.8 22.8 NONE NONE NONE NONE NORML NORML NORML NEG | |
| Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no | Silicon 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 ASTM D5185m ASTM D3524 WC Method *ASTM D7844 *ASTM D7624 *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual | >25 >20 >5 >0.2 >3 >20 >30 NONE NONE NONE NORML NORML NORML >0.2 | 7 189 <1.0 NEG 0.4 9.3 23.4 NONE NONE NONE NORML NORML NEG | 6 103 0.2 NEG 0.2 6.8 22.8 NONE 22.8 NONE NONE NORML NORML NORML NEG | |
| Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil. | Silicon 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 | ASTM D5185m ASTM D5185m ASTM D3524 WC Method *ASTM D7844 *ASTM D7624 *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m | >25 >20 >5 >0.2 >3 >20 >30 NONE NONE NONE NORML NORML NORML >0.2 | 7 189 <1.0 NEG 0.4 9.3 23.4 NONE NONE NONE NORML NORML NEG 4 4 | 6 103 0.2 NEG 0.2 6.8 22.8 NONE 22.8 NONE NORE NORE NORML NORML NEG 5 52 | |
| Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil. | Silicon 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 | ASTM D5185m ASTM D5185m ASTM D3524 WC Method *ASTM D7844 *ASTM D7624 *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m | >25 >20 >5 >0.2 >3 >20 >30 NONE NONE NONE NORML NORML NORML >0.2 | 7 189 <1.0 NEG 0.4 9.3 23.4 NONE NONE NONE NORML NORML NEG 4 4 22 1 | 6 103 0.2 NEG 0.2 6.8 22.8 NONE 22.8 NONE NORE NORE NORML NORML NORML NEG 5 5 52 0 | |
| Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil. | Silicon 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 scalar | ASTM D5185m ASTM D5185m ASTM D3524 WC Method *ASTM D7844 *ASTM D7624 *Visual *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m | >25 >20 >5 >0.2 >3 >20 >30 NONE NONE NONE NORML NORML NORML >0.2 | 7 189 <1.0 NEG 0.4 9.3 23.4 NONE NONE NONE NORML NORML NEG 4 4 42 1 52 | 6 103 0.2 NEG 0.2 6.8 22.8 NONE 22.8 NONE NORE NORE NORML NORML NORML S 5 5 52 0 40 | |
| Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil. | Silicon 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 | ASTM D5185m ASTM D5185m ASTM D3524 WC Method *ASTM D7844 *ASTM D7624 *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m | >25 >20 >5 >0.2 >3 >20 >30 NONE NONE NONE NORML NORML NORML >0.2 | 7 189 <1.0 NEG 0.4 9.3 23.4 NONE NONE NONE NORML NORML NEG 4 4 22 1 | 6 103 0.2 NEG 0.2 6.8 22.8 NONE 22.8 NONE NORE NORE NORML NORML NORML NEG 5 5 52 0 | |

Calcium

Zinc

Sulfur

Oxidation

Visc @ 100°C

Phosphorus

ASTM D5185m

ASTM D5185m

ASTM D5185m

ASTM D445

Abs/.1mm *ASTM D7414 >25

ppm ASTM D5185m

ppm

ppm

ppm

Base Number (BN) mg KOH/g ASTM D2896

cSt

1813

806

899

2731

21.1

9.8

9.3

1719

713

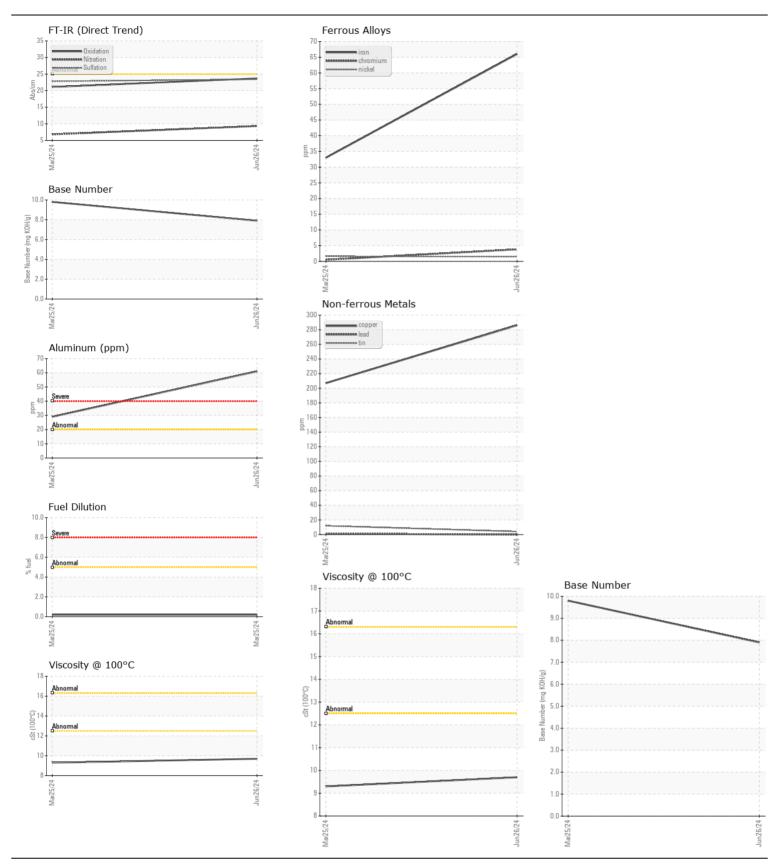
879

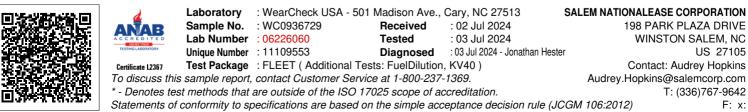
1851

23.7

7.9

9.7





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