



OIL ANALYSIS REPORT

| | |
|-----------------|---------------|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |

Area
WCLSNC
Machine Id
QC230801DE
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | WC0939706 | WC0939705 | WC0939704 |
| Sample Date | | Client Info | | 22 May 2024 | 21 May 2024 | 20 May 2024 |
| Machine Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | N/A | N/A | N/A |
| Filter Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >11 | 9 | 11 | 9 |
| Chromium | ppm | ASTM D5185m | >3 | <1 | 2 | 1 |
| Nickel | ppm | ASTM D5185m | >2 | <1 | 1 | <1 |
| Titanium | ppm | ASTM D5185m | >2 | <1 | <1 | <1 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 1 | <1 |
| Aluminum | ppm | ASTM D5185m | >5 | 2 | 4 | 3 |
| Lead | ppm | ASTM D5185m | >2 | <1 | 1 | <1 |
| Copper | ppm | ASTM D5185m | >7 | 5 | 6 | 5 |
| Tin | ppm | ASTM D5185m | >2 | <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 |

CONTAMINATION

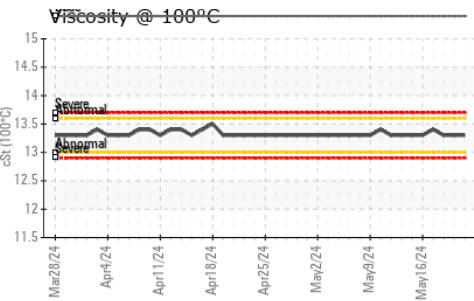
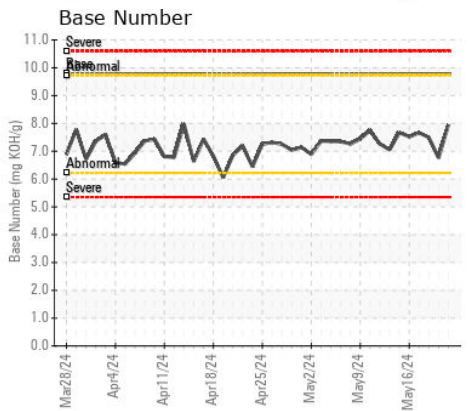
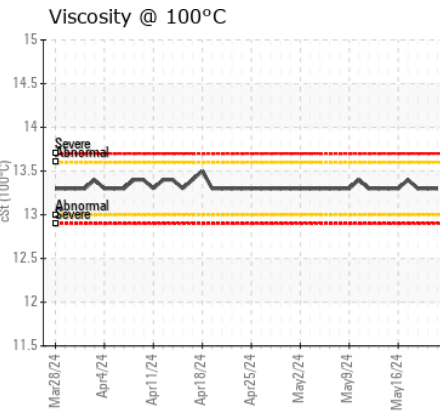
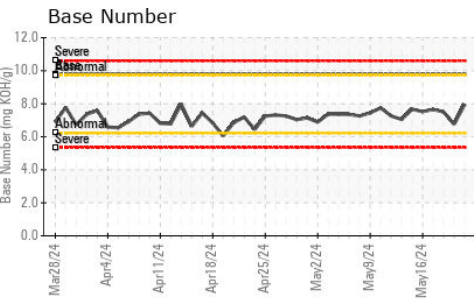
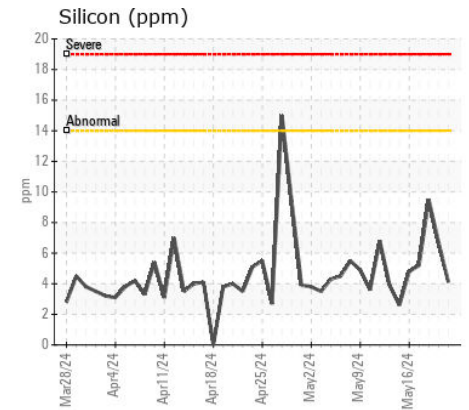
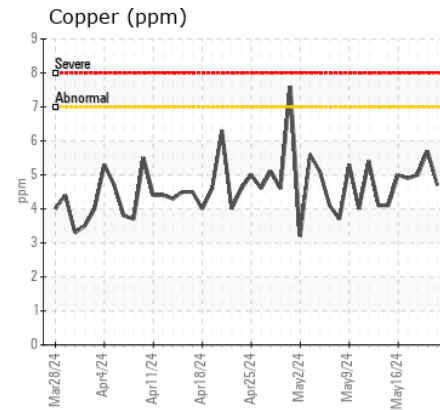
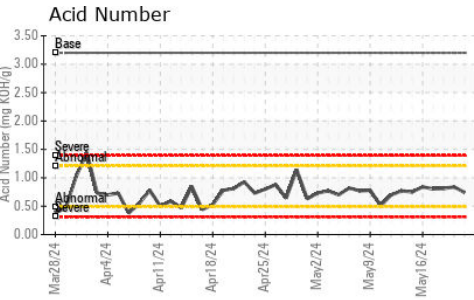
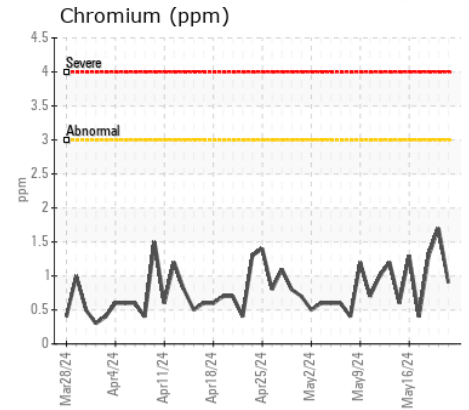
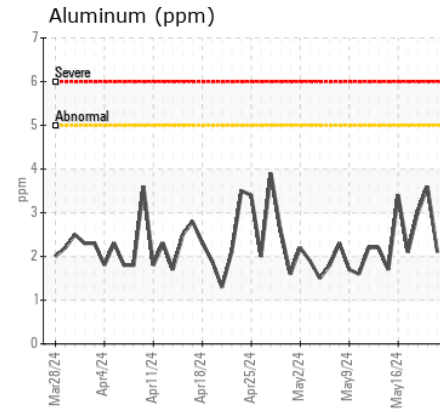
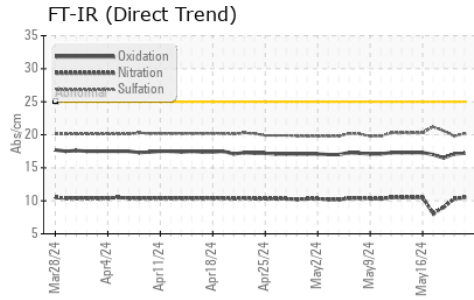
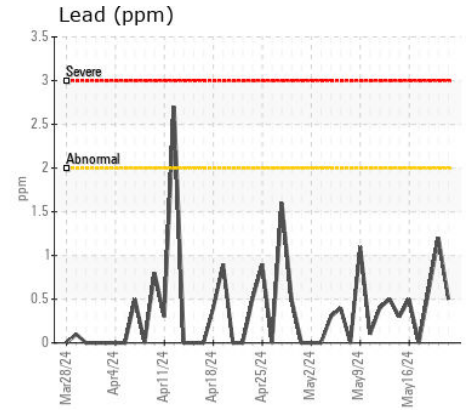
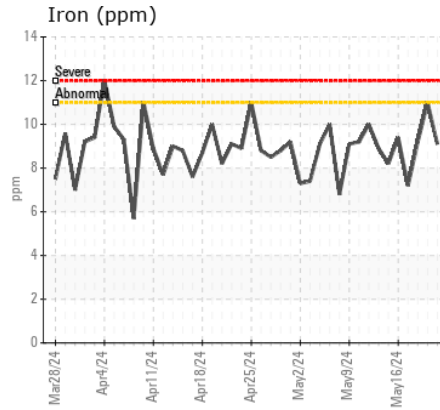
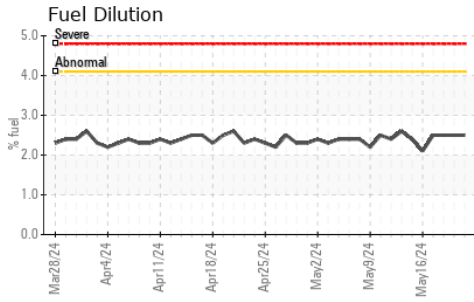
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|--------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >14 | 4 | 7 | 10 |
| Potassium | ppm | ASTM D5185m | >20 | 3 | 4 | 4 |
| Fuel | % | ASTM D3524 | >4.1 | 2.5 | 2.5 | 2.5 |
| Water | % | ASTM D6304 | >0.2 | NEG | NEG | NEG |
| Glycol | % | *ASTM D2982 | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >0.3 | 0.1 | 0.1 | 0.1 |
| Nitration | Abs/cm | *ASTM D7624 | >10.8 | 10.5 | 10.3 | 9.0 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >20.8 | 20.2 | 19.8 | 20.6 |
| 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 |

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

| | | | | | | |
|----------------------|----------|-------------|-------|--------------|------|------|
| Sodium | ppm | ASTM D5185m | >13 | 7 | 8 | 7 |
| Boron | ppm | ASTM D5185m | 0 | 6 | 7 | 6 |
| Barium | ppm | ASTM D5185m | 0 | <1 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 60 | 49 | 48 | 50 |
| Manganese | ppm | ASTM D5185m | 0 | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 1010 | 528 | 507 | 510 |
| Calcium | ppm | ASTM D5185m | 1070 | 1449 | 1398 | 1468 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 764 | 730 | 719 |
| Zinc | ppm | ASTM D5185m | 1270 | 944 | 896 | 909 |
| Sulfur | ppm | ASTM D5185m | 2060 | 2679 | 2731 | 2542 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >17.9 | 17.2 | 17.1 | 16.5 |
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 3.2 | 0.74 | 0.84 | 0.81 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | 7.95 | 6.76 | 7.50 |
| Visc @ 40°C | cSt | ASTM D445 | 113.9 | 98.1 | 99.7 | 98.0 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 13.3 | 13.3 | 13.3 |
| Viscosity Index (VI) | Scale | ASTM D2270 | 142 | 134 | 131 | 134 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0939706
Lab Number : 06187895
Unique Number : 11044647
Test Package : MOB 2 (Additional Tests: FuelDilution, Glycol, KF, KV40, PercentFuel, VI)

Received : 22 May 2024
Tested : 31 May 2024
Diagnosed : 31 May 2024 - Jonathan Hester

WEARCHECK LUBRICATION SERVICES QA ACCOUNT
 501 Madison Ave
 Cary, NC
 US 27513
 Contact: WCLS CARY NC

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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