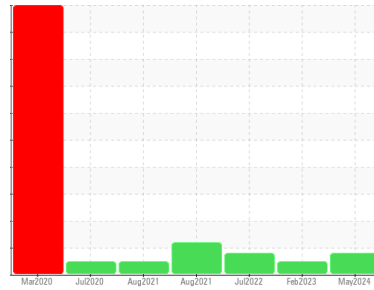


OIL ANALYSIS REPORT

Machine Id
5048
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 10W30 (28 QTS)

Sample Rating Trend



DIAGNOSIS

Recommendation
 No corrective action is recommended at this time. Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear
 Cylinder, crank, or cam shaft wear is indicated.

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.

SAMPLE INFORMATION

| method | limit/base | current | history1 | history2 | |
|---------------|-------------|--------------------|---------------|-------------|-------|
| Sample Number | Client Info | PCA0112713 | PCA0045450 | PCA0071382 | |
| Sample Date | Client Info | 30 May 2024 | 15 Feb 2023 | 23 Jul 2022 | |
| Machine Age | mls | Client Info | 103026 | 89372 | 84735 |
| Oil Age | mls | Client Info | 13654 | 4637 | 7067 |
| Oil Changed | Client Info | Changed | Changed | Changed | |
| Sample Status | | ABNORMAL | NORMAL | ABNORMAL | |

CONTAMINATION

| method | limit/base | current | history1 | history2 |
|--------|----------------|----------------|----------|----------|
| Fuel | WC Method >5 | <1.0 | <1.0 | <1.0 |
| Water | WC Method >0.2 | NEG | NEG | NEG |
| Glycol | WC Method | NEG | NEG | NEG |

WEAR METALS

| method | limit/base | current | history1 | history2 |
|----------|----------------------|--------------|----------|-------------|
| Iron | ppm ASTM D5185m >100 | ▲ 113 | 41 | 96 |
| Chromium | ppm ASTM D5185m >20 | 2 | 2 | 2 |
| Nickel | ppm ASTM D5185m >4 | 2 | 1 | <1 |
| Titanium | ppm ASTM D5185m | <1 | <1 | <1 |
| Silver | ppm ASTM D5185m >3 | <1 | 0 | <1 |
| Aluminum | ppm ASTM D5185m >20 | 18 | 6 | ▲ 39 |
| Lead | ppm ASTM D5185m >40 | 7 | 2 | 2 |
| Copper | ppm ASTM D5185m >330 | 8 | 3 | 5 |
| Tin | ppm ASTM D5185m >15 | 2 | 1 | <1 |
| Antimony | ppm ASTM D5185m | --- | --- | --- |
| Vanadium | ppm ASTM D5185m | <1 | <1 | 0 |
| Cadmium | ppm ASTM D5185m | 0 | 0 | 0 |

ADDITIVES

| method | limit/base | current | history1 | history2 |
|------------|----------------------|--------------|----------|----------|
| Boron | ppm ASTM D5185m 2 | 0 | 0 | 3 |
| Barium | ppm ASTM D5185m 0 | <1 | 0 | 2 |
| Molybdenum | ppm ASTM D5185m 50 | 66 | 65 | 64 |
| Manganese | ppm ASTM D5185m 0 | 1 | 2 | 1 |
| Magnesium | ppm ASTM D5185m 950 | 867 | 939 | 827 |
| Calcium | ppm ASTM D5185m 1050 | 1087 | 1147 | 1036 |
| Phosphorus | ppm ASTM D5185m 995 | 917 | 993 | 943 |
| Zinc | ppm ASTM D5185m 1180 | 1135 | 1254 | 1145 |
| Sulfur | ppm ASTM D5185m 2600 | 3234 | 3540 | 3030 |

CONTAMINANTS

| method | limit/base | current | history1 | history2 |
|-----------|---------------------|----------|----------|----------|
| Silicon | ppm ASTM D5185m >25 | 6 | 8 | 11 |
| Sodium | ppm ASTM D5185m | 5 | 3 | 5 |
| Potassium | ppm ASTM D5185m >20 | 7 | 2 | 20 |

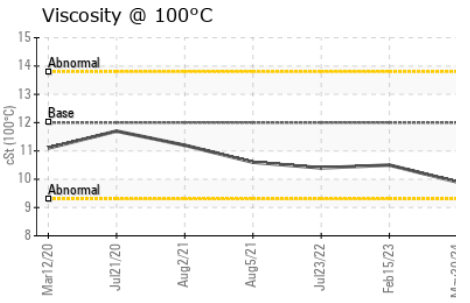
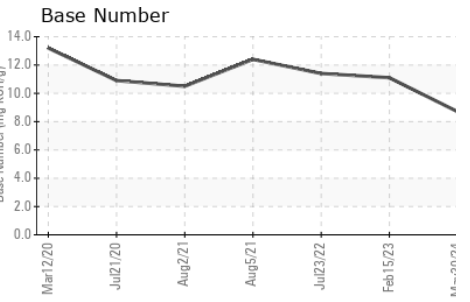
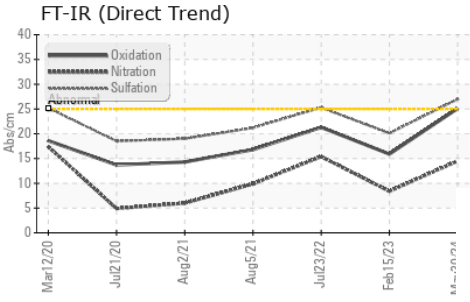
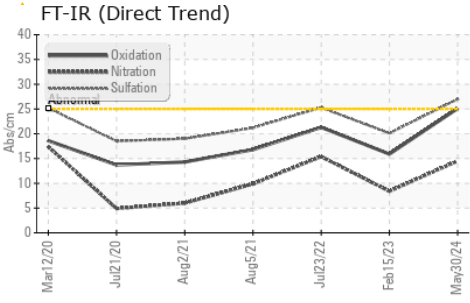
INFRA-RED

| method | limit/base | current | history1 | history2 |
|-----------|--------------------------|-------------|----------|----------|
| Soot % | % *ASTM D7844 >3 | 2.1 | 0.6 | 2.2 |
| Nitration | Abs/cm *ASTM D7624 >20 | 14.5 | 8.4 | 15.4 |
| Sulfation | Abs/.1mm *ASTM D7415 >30 | 27.0 | 20.1 | 25.3 |

FLUID DEGRADATION

| method | limit/base | current | history1 | history2 |
|------------------|--------------------------|-------------|----------|----------|
| Oxidation | Abs/.1mm *ASTM D7414 >25 | 25.1 | 15.9 | 21.3 |
| Base Number (BN) | mg KOH/g ASTM D2896 | 8.7 | 11.1 | 11.4 |

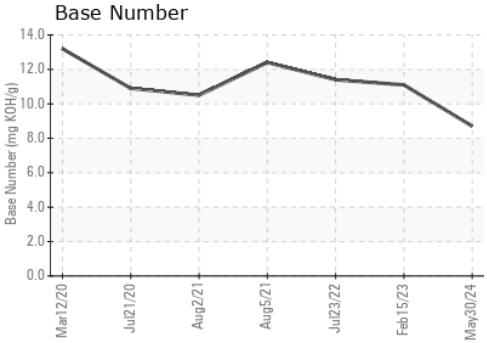
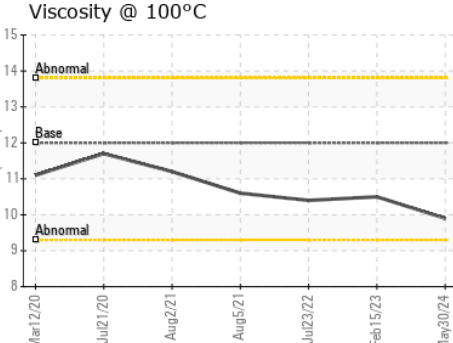
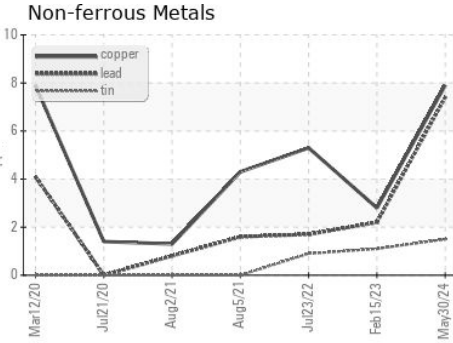
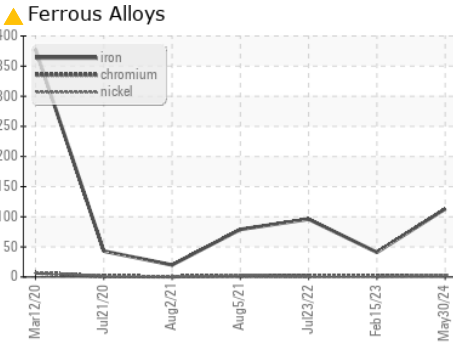
OIL ANALYSIS REPORT



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

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|----------|----------|------|
| Visc @ 100°C | cSt | ASTM D445 | 12.00 | 9.9 | 10.5 | 10.4 |

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0112713 **Received** : 20 Jun 2024
Lab Number : 06215313 **Tested** : 21 Jun 2024
Unique Number : 11088177 **Diagnosed** : 21 Jun 2024 - Sean Felton
Test Package : FLEET

ICSB370 - Alton
 4525 North Alby Road
 Godfrey, IL
 US 62035
 Contact: Chad Ingold
 c.ingold@illinois-central.com
 T: (618)466-5400
 F:

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)