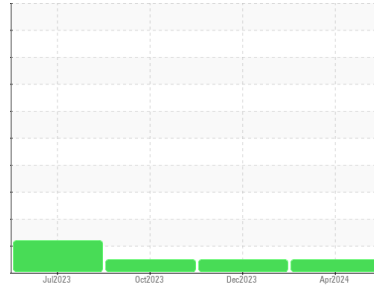




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id

413105

Component

Diesel Engine

Fluid

PETRO CANADA DURON HP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time.

Wear

Metal levels are typical for a new component breaking in.

Contamination

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. Light fuel dilution occurring. No other contaminants were detected 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 | | GFL0117313 | GFL0099602 | GFL0091555 |
| Sample Date | Client Info | | 12 Apr 2024 | 19 Dec 2023 | 03 Oct 2023 |
| Machine Age | kms | Client Info | 92444 | 65004 | 0 |
| Oil Age | kms | Client Info | 0 | 0 | 46601 |
| Oil Changed | Client Info | | Changed | Changed | Changed |
| Sample Status | | | NORMAL | NORMAL | NORMAL |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|--------|-----------|------------|------------|----------|----------|
| 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 D5185(m) >80 | 25 | 20 | 20 |
| Chromium | ppm | ASTM D5185(m) >5 | 1 | 1 | <1 |
| Nickel | ppm | ASTM D5185(m) >2 | 0 | <1 | 0 |
| Titanium | ppm | ASTM D5185(m) | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) >3 | 0 | 0 | <1 |
| Aluminum | ppm | ASTM D5185(m) >30 | 7 | 12 | 10 |
| Lead | ppm | ASTM D5185(m) >30 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185(m) >150 | 1 | <1 | 1 |
| Tin | ppm | ASTM D5185(m) >5 | 0 | 0 | 0 |
| Antimony | ppm | ASTM D5185(m) | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185(m) | 0 | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | 0 | 0 | 0 |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|--------------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185(m) 0 | 3 | 3 | 4 |
| Barium | ppm | ASTM D5185(m) 0 | 0 | 0 | <1 |
| Molybdenum | ppm | ASTM D5185(m) 60 | 55 | 56 | 57 |
| Manganese | ppm | ASTM D5185(m) 0 | <1 | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) 1010 | 931 | 908 | 896 |
| Calcium | ppm | ASTM D5185(m) 1070 | 1032 | 1026 | 1060 |
| Phosphorus | ppm | ASTM D5185(m) 1150 | 913 | 952 | 954 |
| Zinc | ppm | ASTM D5185(m) 1270 | 1062 | 1117 | 1148 |
| Sulfur | ppm | ASTM D5185(m) 2060 | 2006 | 2506 | 2425 |
| Lithium | ppm | ASTM D5185(m) | <1 | <1 | <1 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-------------------|------------|----------|----------|
| Silicon | ppm | ASTM D5185(m) >20 | 2 | 2 | 3 |
| Sodium | ppm | ASTM D5185(m) | 5 | 3 | 4 |
| Potassium | ppm | ASTM D5185(m) >20 | 10 | 18 | 20 |
| Fuel | % | ASTM D7593* >5 | 1.2 | <1.0 | <1.0 |

INFRA-RED

| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot % | % | ASTM D7844* >3 | 0.5 | 0.5 | 0.3 |
| Nitration | Abs/cm | ASTM D7624* >20 | 8.5 | 6.8 | 7.2 |
| Sulfation | Abs./1mm | ASTM D7415* >30 | 21.3 | 19.7 | 20.3 |

