# OIL ANALYSIS REPORT

Sample Rating Trend


**DEGRADATION**

Machine Id
## KENWORTH VS647
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON HP 15W40 (--- GAL)**

## DIAGNOSIS

**Recommendation**
Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

**Wear**
Cylinder, crank, or cam shaft wear is indicated. All other component wear rates are normal.

**Contamination**
There is no indication of any contamination in the oil.

**Fluid Condition**
The BN level is low. The condition of the oil is acceptable for the time in service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **PCA0112126** | --- | --- |
| Sample Date | | Client Info | | **23 Feb 2024** | --- | --- |
| Machine Age | mls | Client Info | | **661798** | --- | --- |
| Oil Age | mls | Client Info | | **36181** | --- | --- |
| Oil Changed | | Client Info | | **Changed** | --- | --- |
| Sample Status | | | | **ABNORMAL** | --- | --- |

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

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | ▲ **117** | --- | --- |
| Chromium | ppm | ASTM D5185m | >20 | **3** | --- | --- |
| Nickel | ppm | ASTM D5185m | >4 | **<1** | --- | --- |
| Titanium | ppm | ASTM D5185m | | **2** | --- | --- |
| Silver | ppm | ASTM D5185m | >3 | **0** | --- | --- |
| Aluminum | ppm | ASTM D5185m | >20 | **12** | --- | --- |
| Lead | ppm | ASTM D5185m | >40 | **37** | --- | --- |
| Copper | ppm | ASTM D5185m | >330 | **3** | --- | --- |
| Tin | ppm | ASTM D5185m | >15 | **3** | --- | --- |
| Vanadium | ppm | ASTM D5185m | | **<1** | --- | --- |
| Cadmium | ppm | ASTM D5185m | | **0** | --- | --- |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **26** | --- | --- |
| Barium | ppm | ASTM D5185m | | **0** | --- | --- |
| Molybdenum | ppm | ASTM D5185m | | **69** | --- | --- |
| Manganese | ppm | ASTM D5185m | | **1** | --- | --- |
| Magnesium | ppm | ASTM D5185m | | **1082** | --- | --- |
| Calcium | ppm | ASTM D5185m | | **1522** | --- | --- |
| Phosphorus | ppm | ASTM D5185m | | **1154** | --- | --- |
| Zinc | ppm | ASTM D5185m | | **1451** | --- | --- |
| Sulfur | ppm | ASTM D5185m | | **3090** | --- | --- |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **12** | --- | --- |
| Sodium | ppm | ASTM D5185m | | **4** | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | **3** | --- | --- |

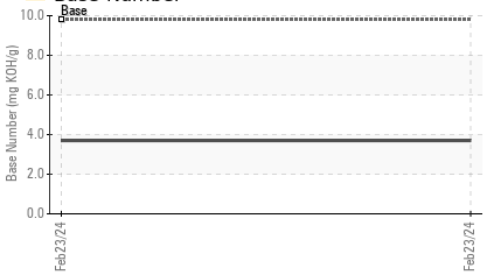
| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **1.1** | --- | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **19.2** | --- | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **39.8** | --- | --- |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **44.7** | --- | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | ▲ **3.7** | --- | --- |

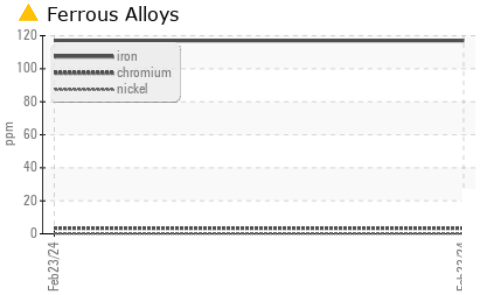
# OIL ANALYSIS REPORT

OIL DIAGNOSTICS

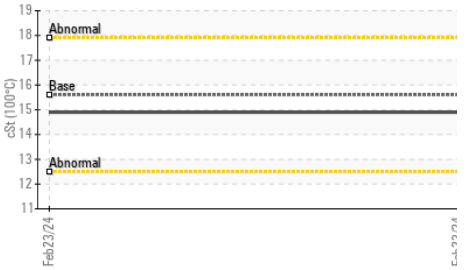
Base Number




Ferrous Alloys




Viscosity @ 100°C

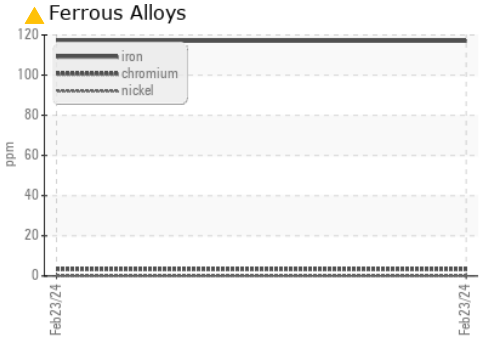



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | --- | --- |
| Precipitate | scalar | *Visual | NONE | **NONE** | --- | --- |
| Silt |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

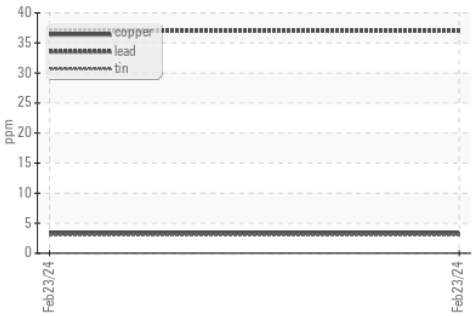
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 15.6 | **14.9** | --- | --- |

## GRAPHS

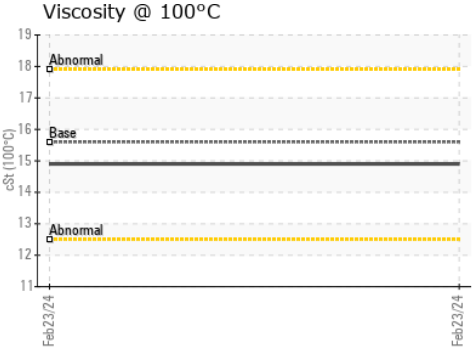
Ferrous Alloys



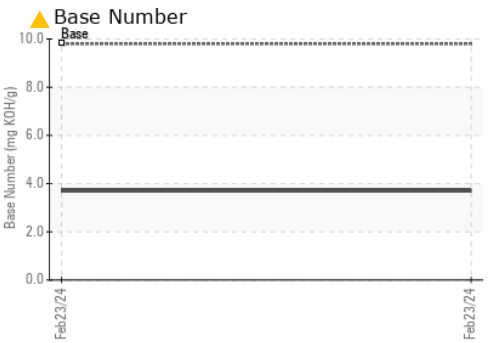

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : PCA0112126
**Lab Number** : 06111832
**Unique Number** : 10915329
**Test Package** : FLEET

**Received** : 07 Mar 2024
**Tested** : 08 Mar 2024
**Diagnosed** : 10 Mar 2024 - Don Baldridge

*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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Report Id: VOYNEW [WUSCAR] 06111832 (Generated: 03/10/2024 13:45:09) Rev: 1

Contact/Location: TYLER SEVERINO - VOYNEW