# PROBLEM SUMMARY

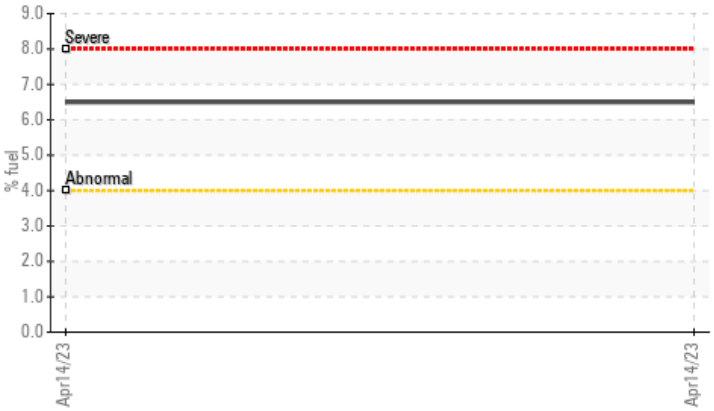
Area
**Emergency Generator**
Machine Id
**Emergency Generator**
Component
**Front Left Auxiliary Engine**
Fluid
**PETRO CANADA DURON HP 15W40 (--- GAL)**

**Sample Rating Trend**

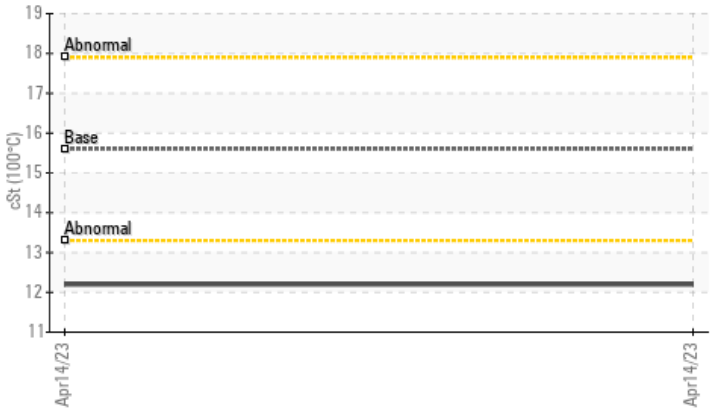
**FUEL**

## COMPONENT CONDITION SUMMARY

▲ Fuel Dilution




▲ Viscosity @ 100°C




## RECOMMENDATION

We recommend that you change the oil at the next available stoppage or outage. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

## PROBLEMATIC TEST RESULTS

| | | | | | | |
|---|---|---|---|---|---|---|
| Sample Status | | | | **ABNORMAL** | --- | --- |
| Fuel | % | ASTM D7593* | >4.0 | ▲ **6.5** | --- | --- |
| Visc @ 100°C | cSt | ASTM D7279(m) | 15.6 | ▲ **12.2** | --- | --- |

**Customer Id:** VMASSEY
**Sample No.:** WC0810862
**Lab Number:** 02552828
**Test Package:** MAR 1

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Wes Davis +1 905-569-8600 x223
wesd@wearcheck.ca

*To change component or sample information:*
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

## RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|---|---|---|---|---|
| Change Fluid | MISSED | Aug 16 2023 | ? | We recommend that you change the oil at the next available stoppage or outage. |
| Resample | MISSED | Aug 16 2023 | ? | We recommend an early resample to monitor this condition. |
| Information Required | MISSED | Aug 16 2023 | ? | NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. |

## HISTORICAL DIAGNOSIS

# OIL ANALYSIS REPORT

Sample Rating Trend

**FUEL**

Area
## Emergency Generator
Machine Id
## Emergency Generator
Component
**Front Left Auxiliary Engine**
Fluid
**PETRO CANADA DURON HP 15W40 (--- GAL)**

## DIAGNOSIS

**Recommendation**

We recommend that you change the oil at the next available stoppage or outage. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

**Wear**

All component wear rates are normal.

**Contamination**

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

**Fluid Condition**

Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0810862** | --- | --- |
| Sample Date | | Client Info | | **14 Apr 2023** | --- | --- |
| Machine Age | hrs | Client Info | | **0** | --- | --- |
| Oil Age | hrs | Client Info | | **0** | --- | --- |
| Oil Changed | | Client Info | | **N/A** | --- | --- |
| Sample Status | | | | **ABNORMAL** | --- | --- |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Glycol | | WC Method | | **NEG** | --- | --- |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >35 | **2** | --- | --- |
| Chromium | ppm | ASTM D5185(m) | >4 | **0** | --- | --- |
| Nickel | ppm | ASTM D5185(m) | >2 | **<1** | --- | --- |
| Titanium | ppm | ASTM D5185(m) | >2 | **<1** | --- | --- |
| Silver | ppm | ASTM D5185(m) | >2 | **0** | --- | --- |
| Aluminum | ppm | ASTM D5185(m) | >25 | **1** | --- | --- |
| Lead | ppm | ASTM D5185(m) | >7 | **2** | --- | --- |
| Copper | ppm | ASTM D5185(m) | >65 | **8** | --- | --- |
| Tin | ppm | ASTM D5185(m) | >4 | **<1** | --- | --- |
| Antimony | ppm | ASTM D5185(m) | | **<1** | --- | --- |
| Vanadium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Beryllium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Cadmium | ppm | ASTM D5185(m) | | **0** | --- | --- |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | 0 | **32** | --- | --- |
| Barium | ppm | ASTM D5185(m) | 0 | **0** | --- | --- |
| Molybdenum | ppm | ASTM D5185(m) | 60 | **51** | --- | --- |
| Manganese | ppm | ASTM D5185(m) | 0 | **<1** | --- | --- |
| Magnesium | ppm | ASTM D5185(m) | 1010 | **791** | --- | --- |
| Calcium | ppm | ASTM D5185(m) | 1070 | **1167** | --- | --- |
| Phosphorus | ppm | ASTM D5185(m) | 1150 | **997** | --- | --- |
| Zinc | ppm | ASTM D5185(m) | 1270 | **1068** | --- | --- |
| Sulfur | ppm | ASTM D5185(m) | 2060 | **2668** | --- | --- |
| Lithium | ppm | ASTM D5185(m) | | **<1** | --- | --- |

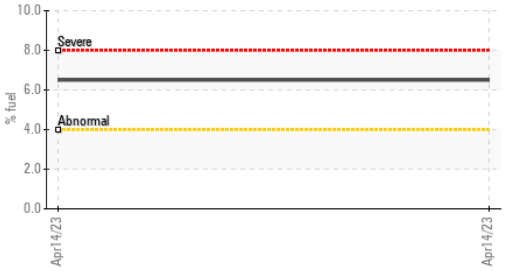
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >20 | **3** | --- | --- |
| Sodium | ppm | ASTM D5185(m) | | **2** | --- | --- |
| Potassium | ppm | ASTM D5185(m) | >20 | **<1** | --- | --- |
| Fuel | % | ASTM D7593* | >4.0 | ▲ **6.5** | --- | --- |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | ASTM D7844* | | **0** | --- | --- |
| Nitration | Abs/cm | ASTM D7624* | >20 | **4.6** | --- | --- |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | **16.6** | --- | --- |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | **11.8** | --- | --- |

# OIL ANALYSIS REPORT

Fuel Dilution



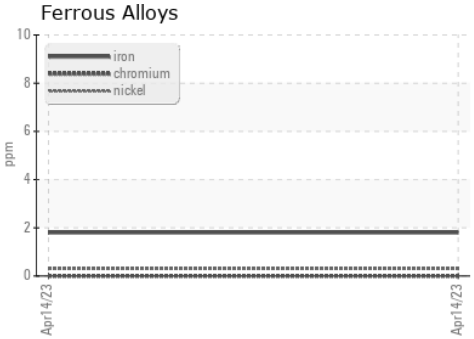

Viscosity @ 100°C

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | Visual* | NONE | **VLITE** | --- | --- |
| 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* | >0.1 | **NEG** | --- | --- |
| Free Water | scalar | Visual* | | **NEG** | --- | --- |

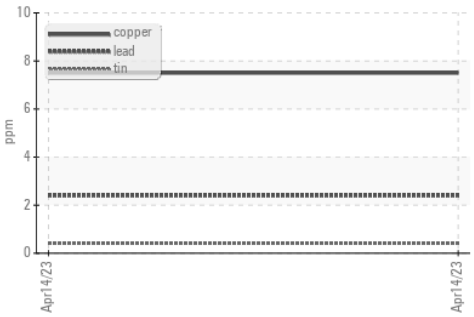
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D7279(m) | 15.6 | ▲ **12.2** | --- | --- |

## GRAPHS

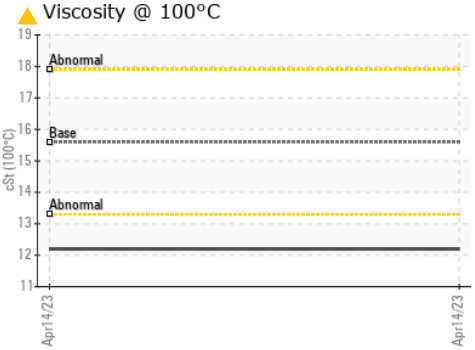
Ferrous Alloys




Non-ferrous Metals




Viscosity @ 100°C




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : WC0810862 **Received** : 21 Apr 2023
**Lab Number** : 02552828 **Diagnosed** : 24 Apr 2023
**Unique Number** : 5565843 **Diagnostician** : Wes Davis
**Test Package** : MAR 1 ( Additional Tests: FuelDilution, PercentFuel )

*To discuss this sample report, contact Customer Service at 1-800-268-2131.*
*Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.*
*Validity of results and interpretation are based on the sample and information as supplied.*

**Canadian Coast Guard**
CCGS Vincent Massey, 101 Boul. Champlain
Quebec, QC
CA G1K 7Y7
Contact: Vincent Massey
vincentmasseyse@ccgs-ngcc.gc.ca
T:
F: