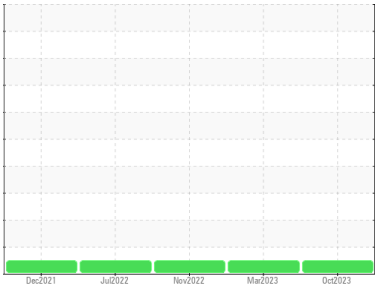
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Area
**Vessel**
Machine Id
## KAT 012 (Main Engine)
Component
**Main Engine**
Fluid
**PETRO CANADA CM MHP 153 (1000 LTR)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MOB 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid. this testkit includes BN to determine the suitability of the oil for continued use. ( Customer Sample Comment: Kat 012 )

**Wear**
Component wear rates appear to be normal (unconfirmed).

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

**Fluid Condition**
The condition of the oil is acceptable for the time in service (unconfirmed).

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **PC0018595** | PC0032197 | PC0031766 |
| Sample Date | | Client Info | | **18 Oct 2023** | 03 Mar 2023 | 08 Nov 2022 |
| Machine Age | kms | Client Info | | **188528** | 188528 | 186400 |
| Oil Age | kms | Client Info | | **188528** | 0 | 186400 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >4.0 | **<1.0** | <1.0 | <1.0 |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >25 | **5** | 6 | 4 |
| Chromium | ppm | ASTM D5185(m) | >5 | **0** | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) | >5 | **0** | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | >3 | **0** | <1 | <1 |
| Silver | ppm | ASTM D5185(m) | >2 | **<1** | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >10 | **1** | 2 | 1 |
| Lead | ppm | ASTM D5185(m) | >5 | **<1** | <1 | 0 |
| Copper | ppm | ASTM D5185(m) | >5 | **<1** | <1 | <1 |
| Tin | ppm | ASTM D5185(m) | >5 | **0** | 0 | 0 |
| Antimony | ppm | ASTM D5185(m) | | **0** | <1 | 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) | | **3** | 2 | 3 |
| Barium | ppm | ASTM D5185(m) | | **<1** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | | **2** | 3 | 2 |
| Manganese | ppm | ASTM D5185(m) | | **0** | <1 | <1 |
| Magnesium | ppm | ASTM D5185(m) | | **55** | 55 | 45 |
| Calcium | ppm | ASTM D5185(m) | | **5343** | 5438 | 5391 |
| Phosphorus | ppm | ASTM D5185(m) | | **869** | 959 | 952 |
| Zinc | ppm | ASTM D5185(m) | 1090 | **991** | 980 | 980 |
| Sulfur | ppm | ASTM D5185(m) | | **9374** | 9314 | 8874 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

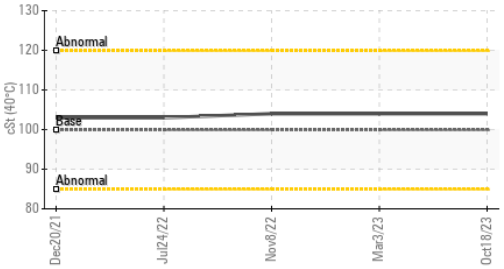
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >20 | **9** | 6 | 6 |
| Sodium | ppm | ASTM D5185(m) | >75 | **1** | <1 | <1 |
| Potassium | ppm | ASTM D5185(m) | >20 | **<1** | <1 | <1 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | ASTM D7844* | >2 | **0** | 0 | 0 |
| Nitration | Abs/cm | ASTM D7624* | >20 | **7.9** | 7.3 | 8.7 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | **12.7** | 16.7 | 14.3 |

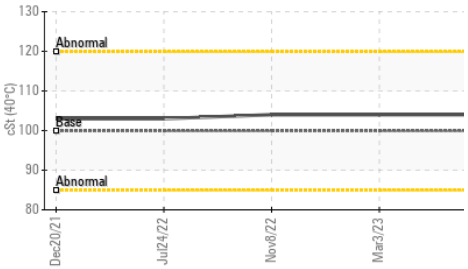
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | **6.3** | 7.2 | 7.5 |

# OIL ANALYSIS REPORT

Viscosity @ 40°C




Viscosity @ 40°C

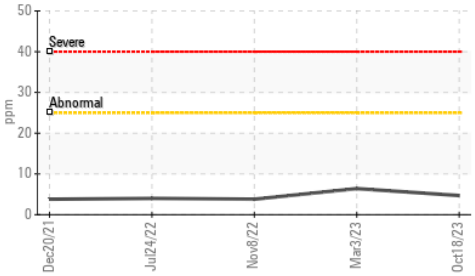



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Emulsified Water | scalar | Visual* | >0.1 | **NEG** | NEG | NEG |
| Free Water | scalar | Visual* | | **NEG** | NEG | NEG |

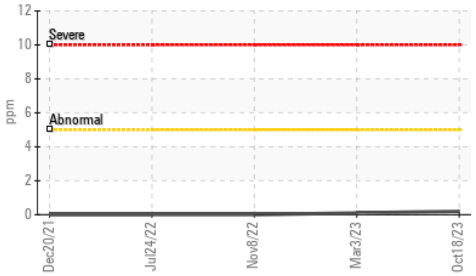
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D7279(m) | 99.91 | **104** | 104 | 104 |
| Visc @ 100°C | cSt | ASTM D7279(m) | 11.16 | **11.7** | 11.7 | 11.7 |
| Viscosity Index (VI) | Scale | ASTM D2270* | 102 | **100** | 100 | 100 |

## GRAPHS

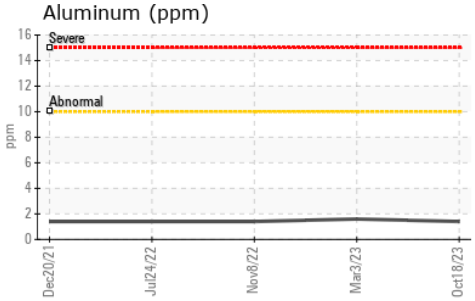
Iron (ppm)



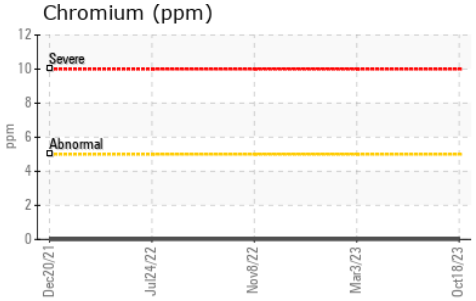

Lead (ppm)



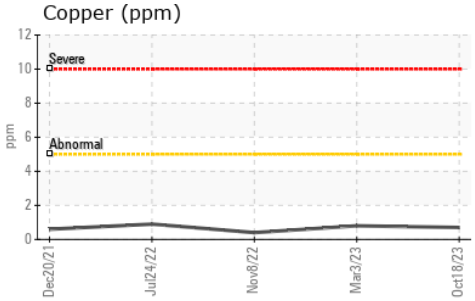

Aluminum (ppm)



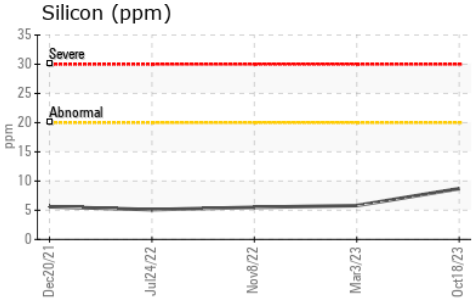

Chromium (ppm)



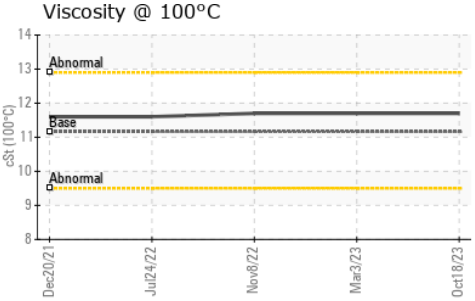

Copper (ppm)



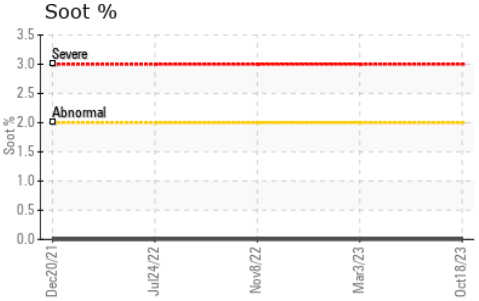

Silicon (ppm)




Viscosity @ 100°C




Soot %




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **Ocean Choice International - Katsheshuk II**
**Sample No.** : PC0018595 **Received** : 27 Oct 2023 1315 Topsail Rd, P.O. Box 8190
**Lab Number** : 02592312 **Diagnosed** : 27 Oct 2023 St. John`s, NL
**Unique Number** : 5669391 **Diagnostician** : Kevin Marson CA A1B 3N4
**Test Package** : MOB 1 ( Additional Tests: KV40, VI ) Contact: Chief Engineer

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