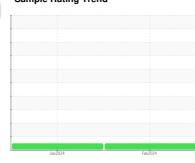


# **OIL ANALYSIS REPORT**

Sample Rating Trend







Machine Id MH-94
Component

**Diesel Engine** 

PETRO CANADA 15W40 (--- GAL)

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

#### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

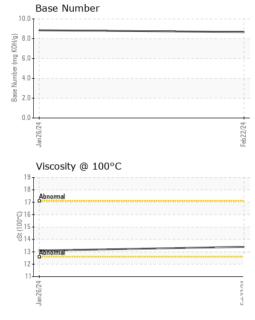
### **Fluid Condition**

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

|                  |          |             | Jan 2024   | Feb 2024    |             |          |
|------------------|----------|-------------|------------|-------------|-------------|----------|
| SAMPLE INFOR     | MATION   | method      | limit/base | current     | history1    | history2 |
| Sample Number    |          | Client Info |            | PCA0118521  | PCA0112763  |          |
| Sample Date      |          | Client Info |            | 22 Feb 2024 | 26 Jan 2024 |          |
| Machine Age      | hrs      | Client Info |            | 2973        | 2397        |          |
| Oil Age          | hrs      | Client Info |            | 576         | 895         |          |
| Oil Changed      |          | Client Info |            | Changed     | Changed     |          |
| Sample Status    |          |             |            | NORMAL      | NORMAL      |          |
| CONTAMINAT       | ION      | method      | limit/base | current     | history1    | history2 |
| Fuel             |          | WC Method   | >5         | <1.0        | <1.0        |          |
| Water            |          | WC Method   | >0.2       | NEG         | NEG         |          |
| Glycol           |          | WC Method   |            | NEG         | NEG         |          |
| WEAR METAL       | S        | method      | limit/base | current     | history1    | history2 |
| Iron             | ppm      | ASTM D5185m | >100       | 8           | 13          |          |
| Chromium         | ppm      | ASTM D5185m | >20        | <1          | <1          |          |
| Nickel           | ppm      | ASTM D5185m | >4         | 0           | <1          |          |
| Titanium         | ppm      | ASTM D5185m |            | <1          | <1          |          |
| Silver           | ppm      | ASTM D5185m | >3         | 0           | 0           |          |
| Aluminum         | ppm      | ASTM D5185m | >20        | 2           | 1           |          |
| Lead             | ppm      | ASTM D5185m | >40        | 0           | <1          |          |
| Copper           | ppm      | ASTM D5185m | >330       | <1          | 1           |          |
| Tin              | ppm      | ASTM D5185m | >15        | <1          | <1          |          |
| Vanadium         | ppm      | ASTM D5185m |            | <1          | 0           |          |
| Cadmium          | ppm      | ASTM D5185m |            | 0           | <1          |          |
| ADDITIVES        |          | method      | limit/base | current     | history1    | history2 |
| Boron            | ppm      | ASTM D5185m |            | 2           | <1          |          |
| Barium           | ppm      | ASTM D5185m |            | 0           | <1          |          |
| Molybdenum       | ppm      | ASTM D5185m |            | 60          | 66          |          |
| Manganese        | ppm      | ASTM D5185m |            | 0           | <1          |          |
| Magnesium        | ppm      | ASTM D5185m |            | 922         | 972         |          |
| Calcium          | ppm      | ASTM D5185m |            | 1007        | 1089        |          |
| Phosphorus       | ppm      | ASTM D5185m |            | 1070        | 876         |          |
| Zinc             | ppm      | ASTM D5185m |            | 1205        | 1264        |          |
| Sulfur           | ppm      | ASTM D5185m |            | 3136        | 2829        |          |
| CONTAMINAN       | TS       | method      | limit/base | current     | history1    | history2 |
| Silicon          | ppm      | ASTM D5185m | >25        | 4           | 4           |          |
| Sodium           | ppm      | ASTM D5185m |            | 2           | 0           |          |
| Potassium        | ppm      | ASTM D5185m | >20        | 2           | 5           |          |
| INFRA-RED        |          | method      | limit/base | current     | history1    | history2 |
| Soot %           | %        | *ASTM D7844 | >3         | 0.1         | 0.2         |          |
| Nitration        | Abs/cm   | *ASTM D7624 | >20        | 8.8         | 9.1         |          |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30        | 19.7        | 19.6        |          |
| FLUID DEGRA      | DATION   | method      | limit/base | current     | history1    | history2 |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25        | 17.5        | 18.2        |          |
| Base Number (BN) | mg KOH/g | ASTM D2896  |            | 8.68        | 8.85        |          |
| (= . •)          | 0 9      |             |            |             |             |          |



# **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    |          |
| <b>Emulsified Water</b> | scalar | *Visual    | >0.2       | NEG     | NEG      |          |
| Free Water              | scalar | *Visual    |            | NEG     | NEG      |          |
| FLUID PROPE             | RTIES  | method     | limit/base | current | history1 | history2 |
| \# O 10000              | - 04   | A OTA DAAF |            | 40.4    | 40.4     |          |

| Visc @ 100°C     | cSt     | ASTM D445 | 13.4             | 13.1        |             |
|------------------|---------|-----------|------------------|-------------|-------------|
| GRAPHS           |         |           |                  |             |             |
| Iron (ppm)       |         |           | Lead (ppr        | m)          |             |
| Severe           |         |           | 80 Severe        |             |             |
|                  |         |           | _ 60             |             |             |
| Abnormal         |         |           | Abnormal         |             |             |
| 1                |         |           | 20               |             |             |
| 744              |         |           | - 0 <del>1</del> |             | 74          |
| Jan 26/24        |         |           | Jan 26/24        |             | Feh?2/74    |
| Aluminum (ppm)   |         |           | Chromiun         | n (ppm)     |             |
| Severe           |         |           | 50<br>Severe     |             |             |
|                  |         |           | 20               |             |             |
| Abnormal         |         |           | Abnormal         |             |             |
| ) -              |         |           | 10               |             |             |
|                  |         |           | 0 124            |             | 800         |
| Jan26/24         |         |           | Jan 26/24        |             | Feb/2774    |
| Copper (ppm)     |         |           | Silicon (p       | pm)         |             |
| Severe Abhronnal |         |           | 80 Severe        |             |             |
| )+               |         |           | 60               |             |             |
| )                |         |           | Abnormal         |             |             |
| ) +              |         |           | 20               |             |             |
| 745/             |         |           | 7470             |             | 7.4         |
| Jan 26/24        |         |           | Jan 26/24        |             | Feh22/74    |
| Viscosity @ 100° | С       |           | Base Num         | nber        |             |
| Ahnormal         |         |           | 0.0 H            | <del></del> |             |
| Abnormal         |         |           | £ 6.0            |             |             |
| Abnormal         | <u></u> |           | 4.0              |             |             |
| Abnormal         |         |           | 8.00             |             |             |
| Jan 26/24 +      |         |           | Jan 26/24        |             | Eeb 22/24 4 |
| 9                |         |           | 9                |             | 2           |



Certificate L2367

Laboratory

Sample No. : PCA0118521 Lab Number : 06106308 Unique Number : 10909805 Test Package : MOB 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Received : 01 Mar 2024 Tested Diagnosed

: 04 Mar 2024 : 04 Mar 2024 - Wes Davis

SCRAP METAL SERVICES (SMS Mill Services LLC)

1500 COMMERCIAL AVE MINGO JUNCTION, OH US 43938

Contact: FRANK NALLY fnally@scrapmetalservices.com

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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