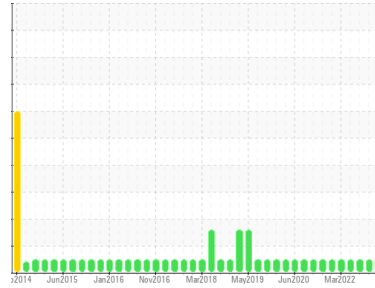


# OIL ANALYSIS REPORT



Area  
**KEMP QUARRIES / RVM-BUTTERFIELD [66114]**  
Machine Id  
**WL081**  
Component  
**Front Right Final Drive**  
Fluid  
**PETRO CANADA PRODURO TO-4 SAE 50 (--- GAL)**

Sample Rating Trend



**NORMAL**



## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. ( Customer Sample Comment: PM-4 changed fluid )

### Wear

All component wear rates are normal.

### 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.

## SAMPLE INFORMATION

|               | method      | limit/base  | current            | history1    | history2    |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info |             | <b>PCA0087038</b>  | PCA0085770  | PCA0062063  |
| Sample Date   | Client Info |             | <b>08 Nov 2023</b> | 01 Jun 2023 | 01 Dec 2022 |
| Machine Age   | hrs         | Client Info | <b>42315</b>       | 41808       | 41316       |
| Oil Age       | hrs         | Client Info | <b>42315</b>       | 41808       | 41316       |
| Oil Changed   | Client Info |             | <b>Changed</b>     | N/A         | N/A         |
| Sample Status |             |             | <b>NORMAL</b>      | NORMAL      | NORMAL      |

## CONTAMINATION

|       | method    | limit/base | current    | history1 | history2 |
|-------|-----------|------------|------------|----------|----------|
| Water | WC Method | >0.2       | <b>NEG</b> | NEG      | NEG      |

## WEAR METALS

|          | method | limit/base       | current   | history1 | history2 |
|----------|--------|------------------|-----------|----------|----------|
| Iron     | ppm    | ASTM D5185m >800 | <b>14</b> | 16       | 11       |
| Chromium | ppm    | ASTM D5185m >10  | <b>0</b>  | <1       | <1       |
| Nickel   | ppm    | ASTM D5185m >5   | <b>0</b>  | <1       | <1       |
| Titanium | ppm    | ASTM D5185m >15  | <b>0</b>  | 0        | 0        |
| Silver   | ppm    | ASTM D5185m >2   | <b>0</b>  | 0        | 0        |
| Aluminum | ppm    | ASTM D5185m >75  | <b>0</b>  | 2        | 1        |
| Lead     | ppm    | ASTM D5185m >10  | <b>0</b>  | <1       | 2        |
| Copper   | ppm    | ASTM D5185m >75  | <b>3</b>  | 2        | 2        |
| Tin      | ppm    | ASTM D5185m >8   | <b>0</b>  | <1       | <1       |
| Vanadium | ppm    | ASTM D5185m      | <b>0</b>  | 0        | 0        |
| Cadmium  | ppm    | ASTM D5185m      | <b>0</b>  | 0        | 0        |

## ADDITIVES

|            | method | limit/base       | current     | history1 | history2 |
|------------|--------|------------------|-------------|----------|----------|
| Boron      | ppm    | ASTM D5185m 2    | <b>0</b>    | 0        | 3        |
| Barium     | ppm    | ASTM D5185m 0    | <b>0</b>    | 0        | 0        |
| Molybdenum | ppm    | ASTM D5185m 0    | <b>0</b>    | <1       | <1       |
| Manganese  | ppm    | ASTM D5185m 0    | <b>0</b>    | <1       | <1       |
| Magnesium  | ppm    | ASTM D5185m 9    | <b>19</b>   | 23       | 21       |
| Calcium    | ppm    | ASTM D5185m 3114 | <b>3230</b> | 3511     | 3301     |
| Phosphorus | ppm    | ASTM D5185m 1099 | <b>1032</b> | 1077     | 984      |
| Zinc       | ppm    | ASTM D5185m 1245 | <b>1266</b> | 1352     | 1298     |
| Sulfur     | ppm    | ASTM D5185m 7086 | <b>4267</b> | 5662     | 5200     |

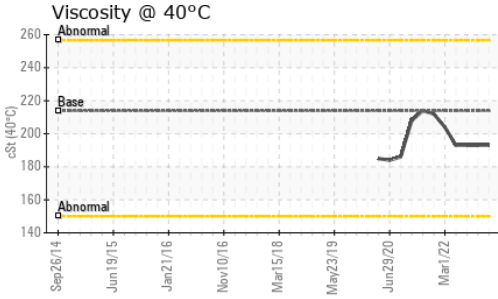
## CONTAMINANTS

|           | method | limit/base       | current   | history1 | history2 |
|-----------|--------|------------------|-----------|----------|----------|
| Silicon   | ppm    | ASTM D5185m >400 | <b>12</b> | 15       | 12       |
| Sodium    | ppm    | ASTM D5185m      | <b>1</b>  | 2        | 2        |
| Potassium | ppm    | ASTM D5185m >20  | <b>0</b>  | 1        | <1       |

## VISUAL

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

# OIL ANALYSIS REPORT

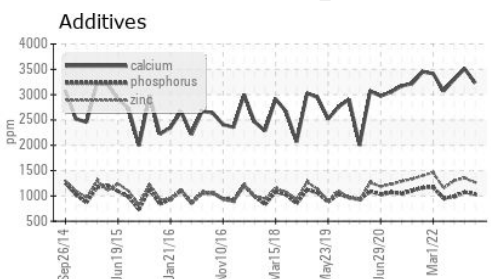
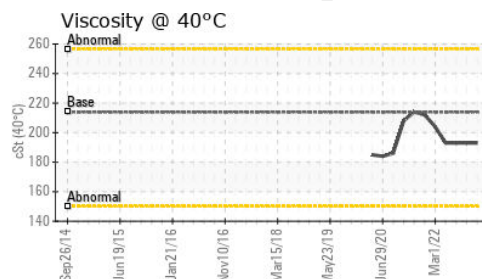
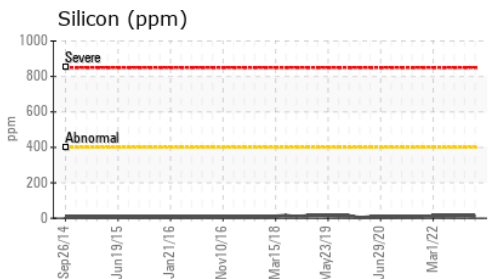
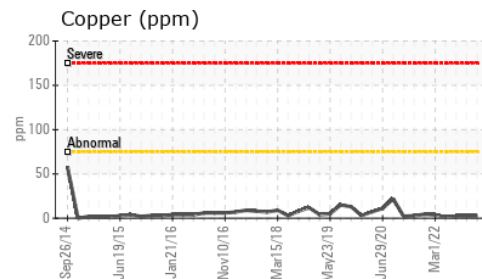
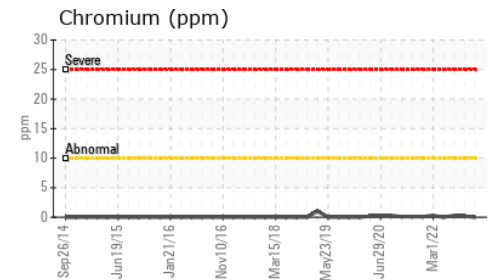
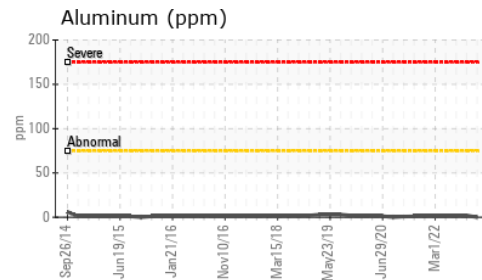
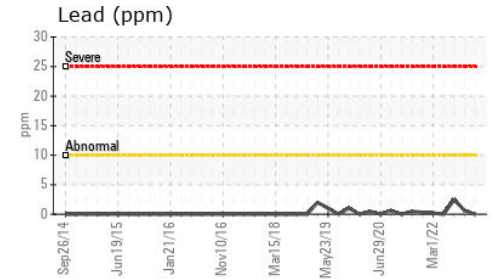
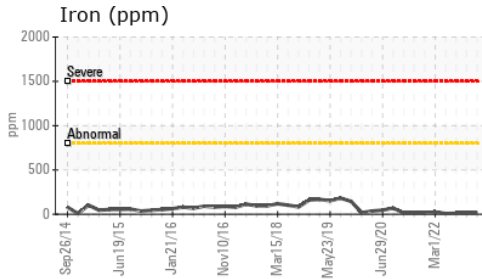


| FLUID PROPERTIES |     | method    | limit/base | current    | history1 | history2 |
|------------------|-----|-----------|------------|------------|----------|----------|
| Visc @ 40°C      | cSt | ASTM D445 | 213.9      | <b>193</b> | 193      | 193      |

| SAMPLE IMAGES |  | method | limit/base | current | history1 | history2 |
|---------------|--|--------|------------|---------|----------|----------|
|---------------|--|--------|------------|---------|----------|----------|

|        |  |  |  |          |          |          |
|--------|--|--|--|----------|----------|----------|
| Color  |  |  |  | no image | no image | no image |
| Bottom |  |  |  | no image | no image | no image |

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PCA0087038 **Received** : 20 Nov 2023  
**Lab Number** : **06013552** **Diagnosed** : 22 Nov 2023  
**Unique Number** : 10752696 **Diagnostician** : Sean Felton  
**Test Package** : MOB 1

**Kemp Quarries - RVM-Butterfield**  
 8651 Farm Rd 2115  
 Purdy, MO  
 US 65734  
 Contact: LEE DUCHANOIS  
 lduchanois@kempquarries.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)

T:  
F: