



| | |
|-----------------|---------------|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |



Area
KEMP QUARRIES / MUSKOGEE SAND [68593]
Machine Id
WL109
Component
Front Right Final Drive
Fluid
PETRO CANADA PRODURO TO-4 SAE 50 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor. (Customer Sample Comment: PM-2 sampled fluid)

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | PCA0086511 | PCA0070580 | PCA0048601 |
| Sample Date | | Client Info | | 05 Feb 2024 | 22 Nov 2023 | 11 Sep 2023 |
| Machine Age | hrs | Client Info | | 50702 | 50215 | 49706 |
| Oil Age | hrs | Client Info | | 50702 | 50215 | 49706 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | N/A | N/A | Changed |
| Filter Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >800 | 22 | 17 | 30 |
| Chromium | ppm | ASTM D5185m | >10 | 0 | 0 | <1 |
| Nickel | ppm | ASTM D5185m | >5 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | >15 | <1 | <1 | <1 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >75 | 1 | 1 | 3 |
| Lead | ppm | ASTM D5185m | >10 | <1 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >75 | 0 | <1 | 1 |
| Tin | ppm | ASTM D5185m | >8 | <1 | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

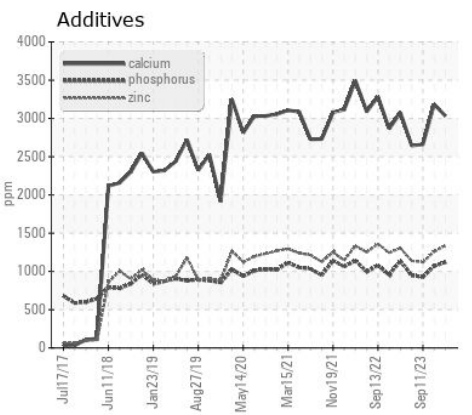
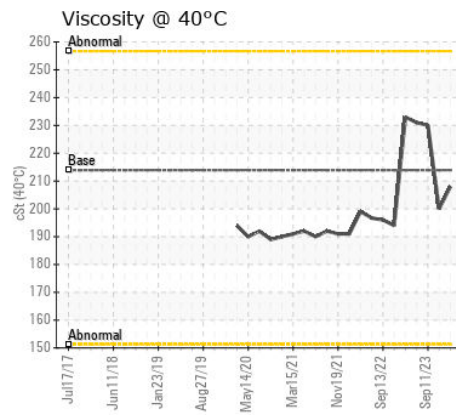
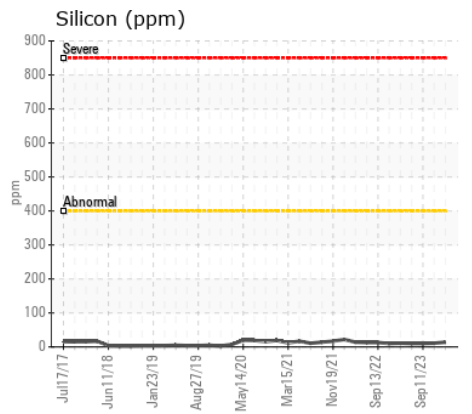
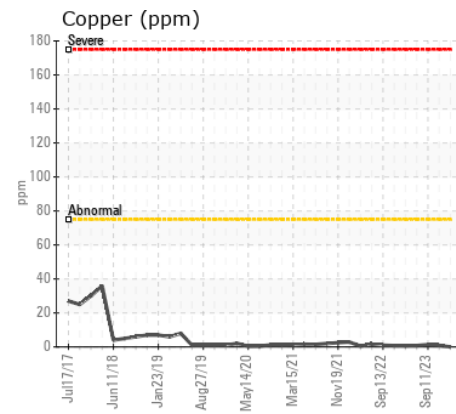
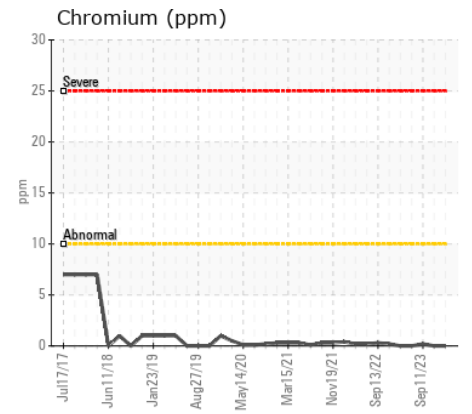
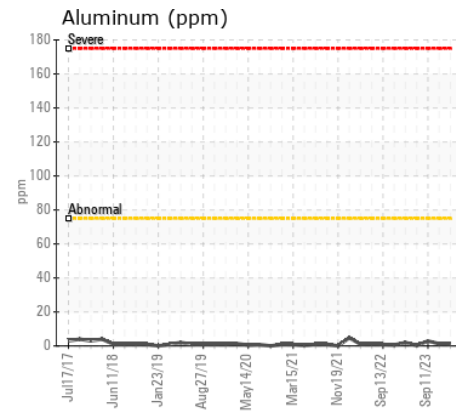
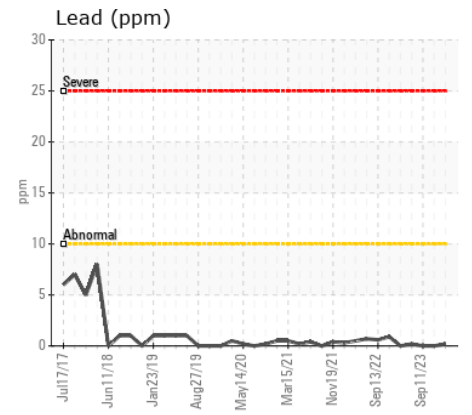
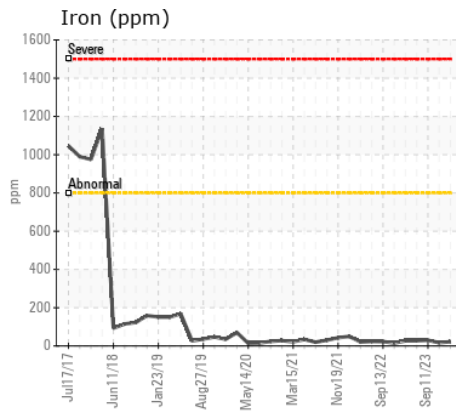
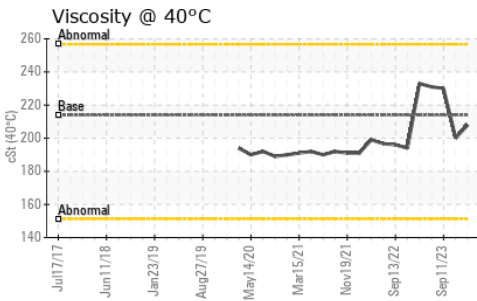
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|--------|-------------|-------|--------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >400 | 14 | 11 | 10 |
| Potassium | ppm | ASTM D5185m | >20 | 0 | 2 | 2 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Silt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | NEG |

FLUID CONDITION

The condition of the oil is acceptable for the time in service.

| | | | | | | |
|-------------|-----|-------------|-------|--------------|------|------|
| Sodium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Boron | ppm | ASTM D5185m | 2 | <1 | 0 | 2 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0 | 0 | <1 | 2 |
| Manganese | ppm | ASTM D5185m | 0 | <1 | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | 9 | 15 | 13 | 14 |
| Calcium | ppm | ASTM D5185m | 3114 | 3033 | 3183 | 2660 |
| Phosphorus | ppm | ASTM D5185m | 1099 | 1121 | 1070 | 928 |
| Zinc | ppm | ASTM D5185m | 1245 | 1337 | 1258 | 1120 |
| Sulfur | ppm | ASTM D5185m | 7086 | 5213 | 5416 | 4012 |
| Visc @ 40°C | cSt | ASTM D445 | 213.9 | 208 | 200 | 230 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0086511 **Received** : 13 Feb 2024
Lab Number : 06088387 **Tested** : 14 Feb 2024
Unique Number : 10875832 **Diagnosed** : 15 Feb 2024 - Sean Felton
Test Package : MOB 1

Kemp Quarries - Muskogee Sand
 3395 W 50th St N
 Porter, OK
 US 74454
 Contact:
 muskogee@muskogeessand.com
 T:
 F:

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)