

# **OIL ANALYSIS REPORT**

Sample Rating Trend





#### Area KEMP QUARRIES / PRYOR STONE [66579] Machine Id VVL137 Component

Front Left Final Drive

PETRO CANADA PRODURO TO-4 SAE 50 (--- GAL)





## DIAGNOSIS

**Recommendation** Resample at the next service interval to monitor. (

Customer Sample Comment: Pm1 performed. All oil samples taken. Engine oil, and all filters changed. )

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

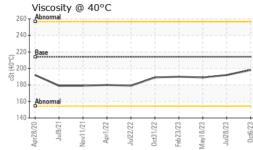
#### **Fluid Condition**

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

| SAMPLE INFOR     |        |             | iimit/base | current     | nistory i   | nistoryz      |
|------------------|--------|-------------|------------|-------------|-------------|---------------|
| Sample Number    |        | Client Info |            | PCA0086225  | PCA0084226  | PCA0083968    |
| Sample Date      |        | Client Info |            | 06 Oct 2023 | 28 Jul 2023 | 18 May 2023   |
| Machine Age      | hrs    | Client Info |            | 32269       | 31785       | 31319         |
| Oil Age          | hrs    | Client Info |            | 484         | 2146        | 1680          |
| Oil Changed      |        | Client Info |            | Oil Added   | Changed     | Oil Added     |
| Sample Status    |        |             |            | NORMAL      | NORMAL      | NORMAL        |
| WEAR METAL       | S      | method      | limit/base | current     | history1    | history2      |
| Iron             | ppm    | ASTM D5185m | >800       | 10          | 24          | 32            |
| Chromium         | ppm    | ASTM D5185m | >10        | 0           | 0           | <1            |
| Nickel           | ppm    | ASTM D5185m | >5         | 0           | 0           | 0             |
| Titanium         | ppm    | ASTM D5185m | >15        | 0           | 0           | 0             |
| Silver           | ppm    | ASTM D5185m | >2         | 0           | 0           | 0             |
| Aluminum         | ppm    | ASTM D5185m | >75        | 1           | 4           | 2             |
| Lead             | ppm    | ASTM D5185m | >10        | <1          | 0           | 0             |
| Copper           | ppm    | ASTM D5185m | >75        | <1          | 2           | 1             |
| Tin              | ppm    | ASTM D5185m | >8         | <1          | <1          | <1            |
| Vanadium         | ppm    | ASTM D5185m |            | 0           | 0           | 0             |
| Cadmium          | ppm    | ASTM D5185m |            | 0           | 0           | 0             |
| ADDITIVES        |        | method      | limit/base | current     | history1    | history2      |
| Boron            | ppm    | ASTM D5185m | 2          | 0           | 0           | <1            |
| Barium           | ppm    | ASTM D5185m | 0          | 0           | 0           | 0             |
| Molybdenum       | ppm    | ASTM D5185m | 0          | <1          | 0           | 1             |
| Manganese        | ppm    | ASTM D5185m | 0          | 0           | <1          | <1            |
| Magnesium        | ppm    | ASTM D5185m | 9          | 4           | 15          | 15            |
| Calcium          | ppm    | ASTM D5185m | 3114       | 3811        | 3446        | 3162          |
| Phosphorus       | ppm    | ASTM D5185m | 1099       | 1032        | 1011        | 1018          |
| Zinc             | ppm    | ASTM D5185m | 1245       | 1369        | 1252        | 1259          |
| Sulfur           | ppm    | ASTM D5185m | 7086       | 4944        | 6309        | 6578          |
| CONTAMINAN       | TS     | method      | limit/base | current     | history1    | history2      |
| Silicon          | ppm    | ASTM D5185m | >400       | 15          | 14          | 12            |
| Sodium           | ppm    | ASTM D5185m |            | <1          | <1          | 1             |
| Potassium        | ppm    | ASTM D5185m | >20        | <1          | 0           | <1            |
| VISUAL           |        | method      | limit/base | current     | history1    | history2      |
| White Metal      | scalar | *Visual     | NONE       | NONE        | NONE        | NONE          |
| Yellow Metal     | scalar | *Visual     | NONE       | NONE        | NONE        | NONE          |
| Precipitate      | scalar | *Visual     | NONE       | NONE        | NONE        | NONE          |
| 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           |
| Free Water       | scalar | *Visual     |            | NEG         | NEG         | NEG           |
| FLUID PROPE      | RTIES  | method      | limit/base | current     | history1    | history2      |
| Visc @ 40°C      | cSt    | ASTM D445   | 213.9      | 198         | 192         | 189           |
| 3:17:55) Rev: 1  |        |             |            |             |             | Submitted By: |



# **OIL ANALYSIS REPORT**



| C  | SAMPLE IMAGES method lim   | it/base current                 | history1  | history2   |
|--|--|---------------------------------|---|--|
|  | Color  | no image                        | no image  | no image   |
| Apri/122   | Bottom   | no image                        | no image  | no image   |
| Apri/22<br>Ju/22/22<br>0ct31/22<br>Feb23/23<br>May18/23<br>Ju/28/23<br>Uct6/23<br>0ct6/23    | GRAPHS   |                                 |   |  |
|  | Iron (ppm)   | Lead (ppm)                      |   |  |
|  | 1600 Severe  | 30                              |   |  |
|  | 1200   | 25                              |   |  |
| Ē  | 800 - Abnormal   | ق 15 -                          |   |  |
|  | 600  | 10 - Abnormal                   |   |  |
|  | 200  | 5                               |   |  |
|  | Apr28/20<br>Jul9/21-<br>Nov11/21-<br>Jul22/22 -<br>Oct31/22 -<br>May18/23 -<br>Jul28/23 -<br>Oct6/23 -   | Apr28/20 -<br>Jul9/21 -         | Apr1/22 -<br>Jul22/22 -<br>Oct31/22 -<br>Feb23/23 -   | May18/23 -<br>Jul28/23 -<br>Oct6/23 -                                      |
|  | 육 ´ 옷 색 큿 ᆼ 弛 툴 ㅋ ㅇ<br>Aluminum (ppm)  | چ َ ≥<br>Chromium (p            |   | Mar<br>Ju  |
|  | 200 Severe   | 30                              | piny  |  |
|  | 150  | 25 - Severe                     |   |  |
|  | 5 100  | 20 -<br>톱 15 -                  |   |  |
|  | 50   | 10 - Abnormal                   |   |  |
|  |  | 5 -                             |   |  |
|  | Apr/28/20<br>Jul9/21-<br>Apr1/22 -<br>Jul22/22 -<br>Oct31/22 -<br>May18/23 -<br>Jul28/23 -<br>Jul28/23 -   | Apr28/20                        | Apr1/22 -<br>Jul22/22 -<br>Oct31/22 -<br>Feb23/23 -   | May18/23 .<br>Jul28/23 .<br>Oct6/23  |
|  | A A , D H M ,  |                                 |   | May'<br>Juli<br>Oc   |
|  | Copper (ppm)   | Silicon (ppm)                   |   |  |
|  | Severe   | 800                             |   |  |
|  | Ē 100  | 600 - Abnormal                  |   |  |
|  | Abnormal   | 400 - Abnormal                  |   |  |
|  | 50-  | 200                             |   |  |
|  | Jul9/28/20<br>Jul9/28/20<br>Apr1/22<br>bct31/22<br>bct31/22<br>Jul28/23<br>Oct6/23   | pr28/20                         | Apr1/22<br>Jul22/22<br>Jet31/22   | ay18/23  |
|  | ά ν · · ο <sup>μ</sup> ψ ·   | Apr28/20<br>Jul9/21             | Apr1/22<br>Jul22/22<br>Oct31/22<br>Feb23/23   | May18/23 -<br>Jul28/23 -<br>Oct6/23 -                                      |
|  | Viscosity @ 40°C   | Additives                       |   |  |
|  | 240 -  | 3500 - calcium phosphore        | JS  |  |
|  | 220 Base   | 3000 zinc                       |   |  |
|  | 200<br>3 180   | E 2500                          |   |  |
|  | 160 - Abnormal   | 1500                            | Supplier of the second s |  |
|  | 140  | 500 - 12 - 12                   | 22 - 22 - 22 - 22 - 23 - 23 - 23 - 23 -   | 23   |
|  | Apr/28/20<br>Jul9/21<br>Apr/1/21<br>Jul22/22<br>Dct31/22<br>Feb23/23<br>Jul28/23<br>Oct6/23  | Apr28/20<br>Jul9/21<br>Nov11/21 | Apr1/22<br>Jul22/22<br>Oct31/22<br>Feb23/23   | May18/23<br>Jul28/23<br>0ct6/23  |
| Certificate 12367<br>Laboratory<br>Sample No.<br>Lab Number<br>Unique Number<br>Test Package | : WearCheck USA - 501 Madison Ave., Cary, No<br>: PCA0086225 <b>Received</b> : 16 Oct 20<br>: 05980725 <b>Diagnosed</b> : 18 Oct 20<br>: 10698020 <b>Diagnostician</b> : Sean Fel<br>: MOB 1 | )23<br>)23                      | Quarries - Pryor  | <b>Stone - Pryor</b><br>1050 E 520 Rd<br>Pryor, OK<br>US 74361<br>Contact: |
| To discuss this sample report,<br>* - Denotes test methods that a                            | contact Customer Service at 1-800-237-1369.<br>are outside of the ISO 17025 scope of accreditation<br>ifications are based on the simple acceptance decision                                 |                                 |   | oryorstone.com<br>T:<br>F:   |

