

# **OIL ANALYSIS REPORT**

## Area MP-103 B72335 - VACUUM PUMP BUSCH (630) STACK PACK B72335 Vacuum Pump Fluid

PETRO CANADA PURITY FG SYNTHETIC 100 (15 LTR)

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

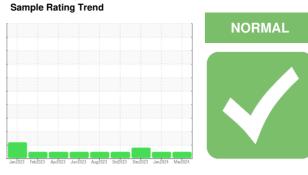
All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

### Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



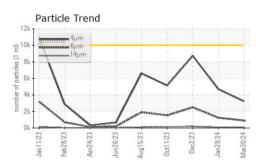
| SAMPLE INFORM                                        | ATION            | method               | limit/base | current     | history1    | history2         |
|------------------------------------------------------|------------------|----------------------|------------|-------------|-------------|------------------|
| Sample Number                                        |                  | Client Info          |            | WC0907992   | WC0885408   | WC0866782        |
| Sample Date                                          |                  | Client Info          |            | 30 Mar 2024 | 29 Jan 2024 | 02 Dec 2023      |
| Machine Age                                          | hrs              | Client Info          |            | 0           | 0           | 0                |
| Oil Age                                              | hrs              | Client Info          |            | 0           | 0           | 0                |
| Oil Changed                                          |                  | Client Info          |            | N/A         | N/A         | N/A              |
| Sample Status                                        |                  |                      |            | NORMAL      | NORMAL      | ATTENTION        |
| CONTAMINATION                                        | ٧                | method               | limit/base | current     | history1    | history2         |
| Water                                                |                  | WC Method            | >.1        | NEG         | NEG         | NEG              |
| WEAR METALS                                          |                  | method               | limit/base | current     | history1    | history2         |
| Iron                                                 | ppm              | ASTM D5185m          | >20        | 0           | <1          | <1               |
| Chromium                                             | ppm              | ASTM D5185m          | >20        | 0           | 0           | 0                |
| Nickel                                               | ppm              | ASTM D5185m          | >20        | 0           | 0           | <1               |
| Titanium                                             | ppm              | ASTM D5185m          |            | <1          | 0           | 0                |
| Silver                                               | ppm              | ASTM D5185m          |            | 0           | 0           | 0                |
| Aluminum                                             | ppm              | ASTM D5185m          | >20        | 2           | <1          | 2                |
| Lead                                                 | ppm              | ASTM D5185m          |            | 0           | 0           | 0                |
| Copper                                               | ppm              | ASTM D5185m          |            | 0           | 0           | 0                |
| Tin                                                  | ppm              |                      | >20        | ۰<br><1     | 0           | <1               |
| Vanadium                                             | ppm              | ASTM D5185m          |            | 0           | 0           | 0                |
| Cadmium                                              | ppm              | ASTM D5185m          |            | 0           | 0           | 0                |
|                                                      | ppm              |                      | limit/base | -           | -           |                  |
| ADDITIVES                                            |                  | method               | limit/base | current     | history1    | history2         |
| Boron                                                | ppm              | ASTM D5185m          |            | 0           | 0           | 0                |
| Barium                                               | ppm              | ASTM D5185m          |            | 0           | 0           | 0                |
| Molybdenum                                           | ppm              | ASTM D5185m          |            | 0           | 0           | 0                |
| Manganese                                            | ppm              | ASTM D5185m          |            | 0           | 0           | <1               |
| Magnesium                                            | ppm              | ASTM D5185m          |            | <1          | 0           | 1                |
| Calcium                                              | ppm              | ASTM D5185m          |            | 0           | 0           | 0                |
| Phosphorus                                           | ppm              | ASTM D5185m          |            | 580         | 283         | 568              |
| Zinc                                                 | ppm              | ASTM D5185m          |            | 0           | 0           | 0                |
| Sulfur                                               | ppm              | ASTM D5185m          |            | 1694        | 752         | 1457             |
| CONTAMINANTS                                         |                  | method               | limit/base | current     | history1    | history2         |
| Silicon                                              | ppm              | ASTM D5185m          | >15        | 4           | 5           | 11               |
| Sodium                                               | ppm              | ASTM D5185m          |            | 3           | 3           | 5                |
| Potassium                                            | ppm              | ASTM D5185m          | >20        | <1          | 0           | 3                |
| FLUID CLEANLIN                                       | IESS             | method               | limit/base | current     | history1    | history2         |
| Particles >4µm                                       |                  | ASTM D7647           | >10000     | 3237        | 4702        | 8739             |
| Particles >6µm                                       |                  | ASTM D7647           | >2500      | 890         | 1239        | 2502             |
| Particles >14µm                                      |                  | ASTM D7647           | >320       | 95          | 88          | 188              |
| Particles >21µm                                      |                  | ASTM D7647           | >80        | 29          | 17          | 55               |
| Particles >38µm                                      |                  | ASTM D7647           | >20        | 2           | 0           | 3                |
| Particles >71µm                                      |                  | ASTM D7647           |            | 0           | 0           | 1                |
|                                                      |                  | ISO 4406 (c)         | >20/18/15  | 19/17/14    | 19/17/14    | 20/19/15         |
| Oil Cleanliness                                      |                  | 100 4400 (0)         | 2000000    | 13/11/14    | 10/11/11    |                  |
| Oil Cleanliness                                      |                  | ( /                  | limit/base |             |             |                  |
| Oil Cleanliness<br>FLUID DEGRADA<br>Acid Number (AN) | TION<br>mg KOH/g | method<br>ASTM D8045 |            | current     | history1    | history2<br>0.13 |

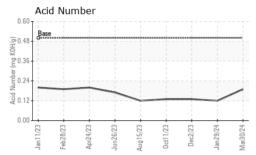
Report Id: HORAUS [WUSCAR] 06139877 (Generated: 04/08/2024 13:57:10) Rev: 1

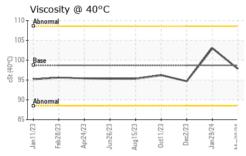
Contact/Location: RYAN LOWE - HORAUS Page 1 of 2

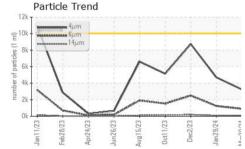


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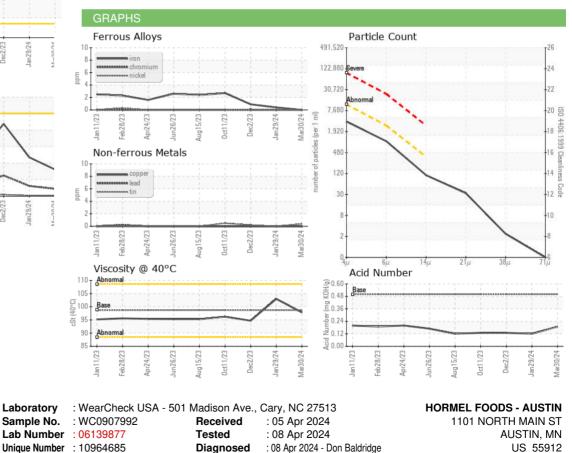








| VISUAL           |        | method    | limit/base | current | history1 | history2 |
|------------------|--------|-----------|------------|---------|----------|----------|
| White Metal      | scalar | *Visual   | NONE       | NONE    | NONE     | NONE     |
| Yellow Metal     | scalar | *Visual   | 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   | >.1        | NEG     | NEG      | NEG      |
| Free Water       | scalar | *Visual   |            | NEG     | NEG      | NEG      |
| FLUID PROPERT    | IES    | method    | limit/base | current | history1 | history2 |
| Visc @ 40°C      | cSt    | ASTM D445 | 98.7       | 97.8    | 103      | 94.7     |
| SAMPLE IMAGES    | 6      | method    | limit/base | current | history1 | history2 |
| Color            |        |           |            | ·       |          |          |
| Bottom           |        |           |            | 6       |          |          |



| - A20 1242.0TT111                                                                                    | 50MC 0025                                                                          | Lub Humber         | . 00100011        | restea                   | . 00 / 101 2024          |                   | /////////////////////////////////////// |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------|-------------------|--------------------------|--------------------------|-------------------|-----------------------------------------|
|                                                                                                      | TESTING LABORATORY                                                                 | Unique Number      | : 10964685        | Diagnosed                | : 08 Apr 2024 - Don Bald | ridge             | US 55912                                |
| STREES OF                                                                                            | Certificate L2367                                                                  | Test Package       | : IND 2 ( Additio | onal Tests: PrtCount)    |                          |                   | Contact: RYAN LOWE                      |
|                                                                                                      |                                                                                    |                    | rslowe@hormel.com |                          |                          |                   |                                         |
|                                                                                                      | * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. |                    |                   |                          |                          |                   | T: (507)437-5674                        |
|                                                                                                      | Statements of                                                                      | of conformity to s | pecifications are | based on the simple acco | eptance decision rule    | (JCGM 106:2012)   | F: (507)437-9805                        |
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