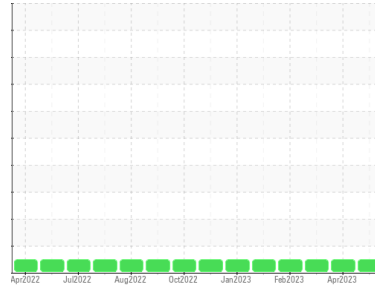


OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Area
WILLMAR
Machine Id
Unit 01 DB040101E
Component
Natural Gas Engine
Fluid
PETRO CANADA DURON MONOGRADE HD 40W (250 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

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

SAMPLE INFORMATION

| method | limit/base | current | history1 | history2 |
|---------------|-----------------|--------------------|-------------|-------------|
| Sample Number | Client Info | PCA0050287 | PCA0050286 | PCA0050285 |
| Sample Date | Client Info | 26 May 2023 | 25 Apr 2023 | 29 Mar 2023 |
| Machine Age | hrs Client Info | 4570 | 4448 | 4357 |
| Oil Age | hrs Client Info | 4958 | 4448 | 4357 |
| Oil Changed | Client Info | Filtered | Filtered | Filtered |
| Sample Status | | NORMAL | NORMAL | NORMAL |

WEAR METALS

| method | limit/base | current | history1 | history2 |
|--------------------------|------------|--------------|----------|----------|
| Iron ppm ASTM D5185m | >50 | 4 | 4 | 3 |
| Chromium ppm ASTM D5185m | >4 | 0 | 0 | 0 |
| Nickel ppm ASTM D5185m | >2 | 0 | 0 | 0 |
| Titanium ppm ASTM D5185m | | 0 | 0 | 0 |
| Silver ppm ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum ppm ASTM D5185m | >9 | <1 | <1 | <1 |
| Lead ppm ASTM D5185m | >30 | <1 | 0 | 2 |
| Copper ppm ASTM D5185m | >35 | 2 | 3 | 2 |
| Tin ppm ASTM D5185m | >4 | <1 | 0 | <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 | | 0 | 21 | 0 |
| Barium ppm ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum ppm ASTM D5185m | | <1 | 2 | <1 |
| Manganese ppm ASTM D5185m | | <1 | <1 | <1 |
| Magnesium ppm ASTM D5185m | | 889 | 759 | 827 |
| Calcium ppm ASTM D5185m | | 1093 | 1155 | 1110 |
| Phosphorus ppm ASTM D5185m | | 1082 | 1003 | 1034 |
| Zinc ppm ASTM D5185m | | 1281 | 1156 | 1201 |
| Sulfur ppm ASTM D5185m | | 3771 | 3241 | 3330 |

CONTAMINANTS

| method | limit/base | current | history1 | history2 |
|---------------------------|------------|------------|----------|----------|
| Silicon ppm ASTM D5185m | >+100 | 2 | 3 | 3 |
| Sodium ppm ASTM D5185m | | 3 | 4 | 2 |
| Potassium ppm ASTM D5185m | >20 | 4 | 0 | 2 |
| Fuel % ASTM D3524 | >4.0 | 1.3 | 1.3 | 1.6 |

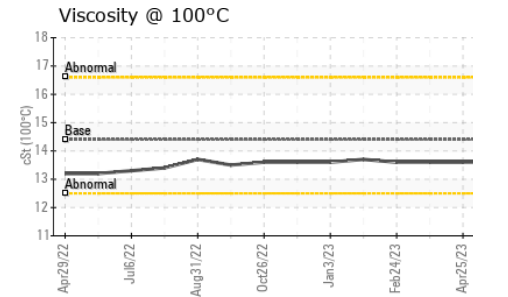
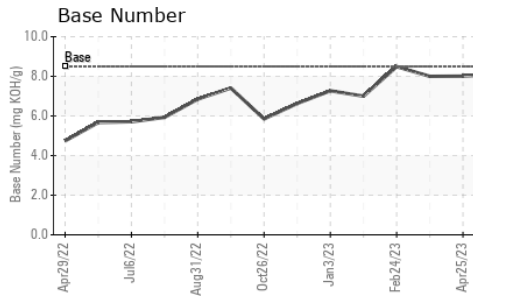
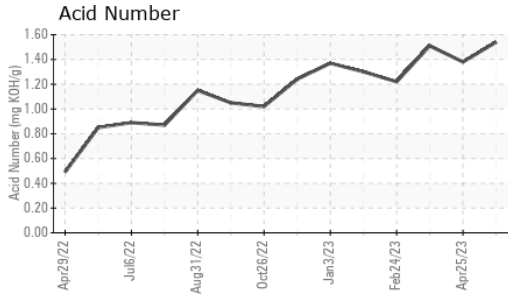
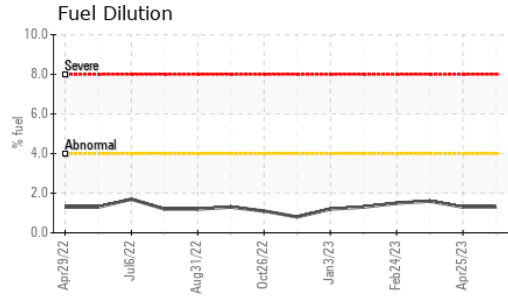
INFRA-RED

| method | limit/base | current | history1 | history2 |
|--------------------------------|------------|-------------|----------|----------|
| Soot % *ASTM D7844 | | 0.1 | 0 | 0.1 |
| Nitration Abs/cm *ASTM D7624 | >20 | 3.9 | 3.7 | 4.0 |
| Sulfation Abs/.1mm *ASTM D7415 | >30 | 13.2 | 11.5 | 13.1 |

FLUID DEGRADATION

| method | limit/base | current | history1 | history2 |
|--------------------------------------|------------|-------------|----------|----------|
| Oxidation Abs/.1mm *ASTM D7414 | >25 | 6.8 | 6.4 | 6.5 |
| Acid Number (AN) mg KOH/g ASTM D8045 | | 1.54 | 1.38 | 1.51 |
| Base Number (BN) mg KOH/g ASTM D2896 | 8.5 | 8.10 | 8.01 | 8.00 |

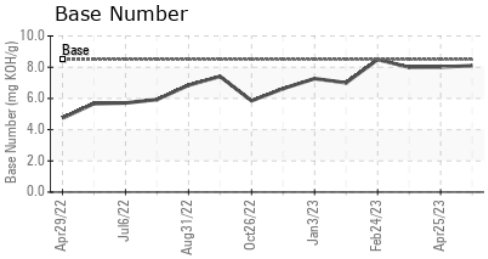
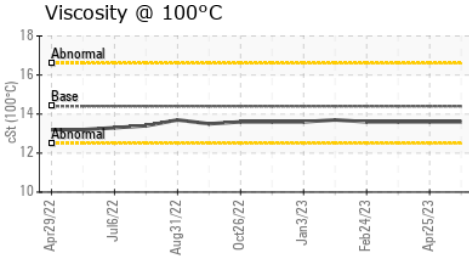
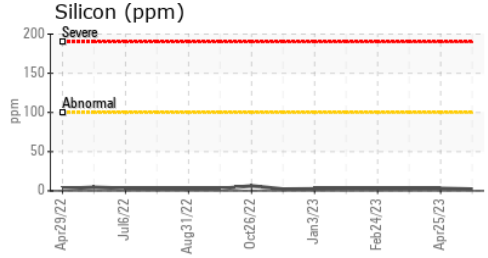
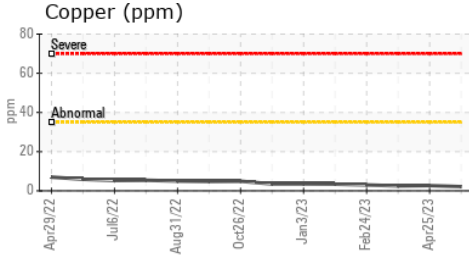
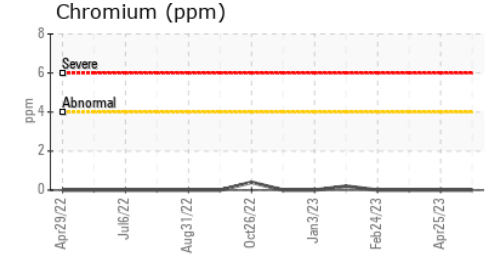
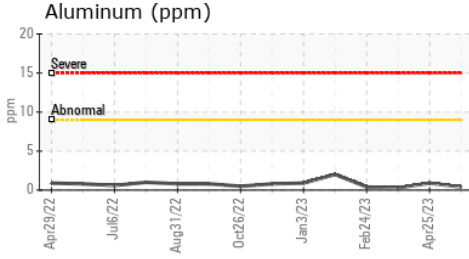
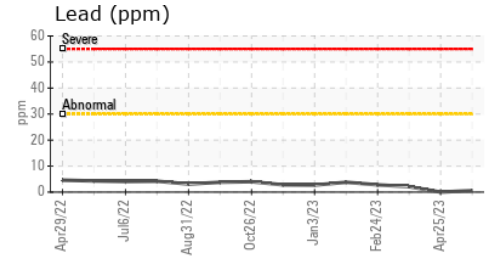
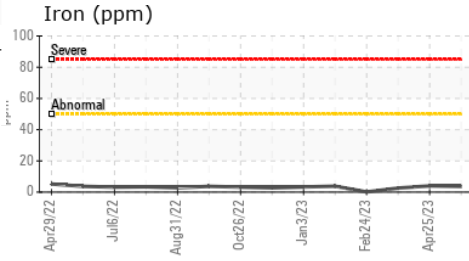
OIL ANALYSIS REPORT



| 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 |
| Emulsified Water | scalar | *Visual | >0.1 | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|-------------|----------|------|
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | 13.6 | 13.6 | 13.6 |

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0050287 **Received** : 31 May 2023
Lab Number : **05861416** **Diagnosed** : 02 Jun 2023
Unique Number : 10495881 **Diagnostician** : Sean Felton
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel)

Magellan Midstream LP - Willmar
 2131 30th Stree SW
 Willmar, MN
 US 56201
 Contact: Andrew Lauer
 andrew.lauer@magellanlp.com
 T: (320)808-4364
 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)