

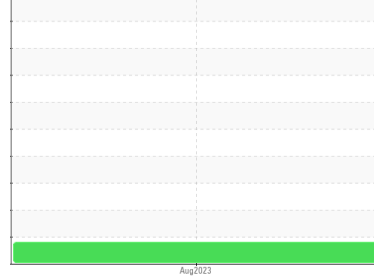
PROBLEM SUMMARY

Sample Rating Trend

WEAR

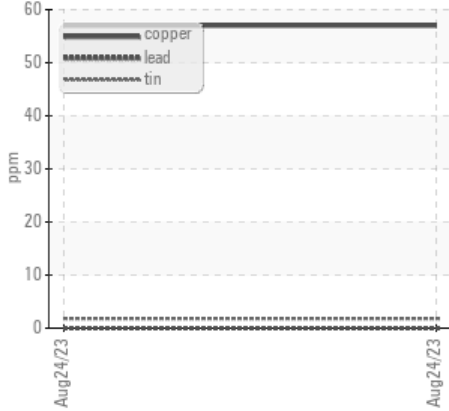


Machine Id
FREIGHTLINER 183
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 10W30 (--- GAL)

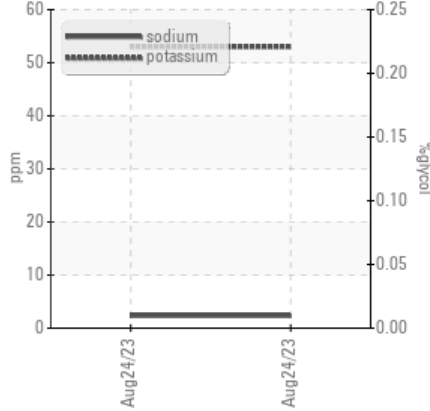


COMPONENT CONDITION SUMMARY

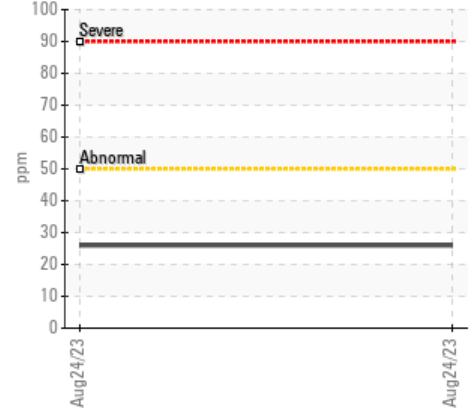
▲ Non-ferrous Metals



Glycol Contamination



Aluminum (ppm)



RECOMMENDATION

The oil change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

| Sample Status | ABNORMAL | --- | --- |
|---------------|----------|-------------|-----|
| Copper | ppm | ASTM D5185m | >50 |

Customer Id: TVAPLAIL
 Sample No.: PCA0097416
 Lab Number: 05971988
 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Don Baldrige +1
don.b505@comcast.net

To change component or sample information:
 Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

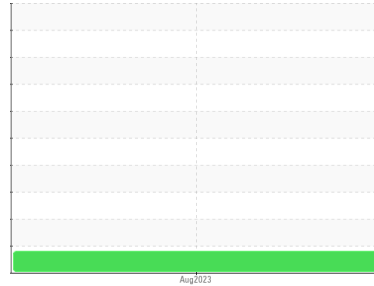
RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS



Machine Id
FREIGHTLINER 183
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 10W30 (--- GAL)



DIAGNOSIS

Recommendation
 The oil change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear
 The copper level is abnormal. All other component wear rates are normal.

Contamination
 Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. No other contaminants were detected in the oil.

Fluid Condition
 The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|----------|----------|
| Sample Number | Client Info | | PCA0097416 | --- | --- |
| Sample Date | Client Info | | 24 Aug 2023 | --- | --- |
| Machine Age | mls | Client Info | 108000 | --- | --- |
| Oil Age | mls | Client Info | 25000 | --- | --- |
| Oil Changed | Client Info | | Changed | --- | --- |
| Sample Status | | | ABNORMAL | --- | --- |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel | WC Method | >3.0 | <1.0 | --- | --- |
| Glycol | WC Method | | NEG | --- | --- |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|------------------|-------------|----------|----------|
| Iron | ppm | ASTM D5185m >200 | 33 | --- | --- |
| Chromium | ppm | ASTM D5185m >6 | 4 | --- | --- |
| Nickel | ppm | ASTM D5185m >3 | 0 | --- | --- |
| Titanium | ppm | ASTM D5185m >2 | 0 | --- | --- |
| Silver | ppm | ASTM D5185m >2 | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185m >50 | 26 | --- | --- |
| Lead | ppm | ASTM D5185m >10 | 0 | --- | --- |
| Copper | ppm | ASTM D5185m >50 | ▲ 57 | --- | --- |
| Tin | ppm | ASTM D5185m >6 | 2 | --- | --- |
| Vanadium | ppm | ASTM D5185m | 0 | --- | --- |
| Cadmium | ppm | ASTM D5185m | 0 | --- | --- |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|------------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m 2 | 0 | --- | --- |
| Barium | ppm | ASTM D5185m 0 | 0 | --- | --- |
| Molybdenum | ppm | ASTM D5185m 50 | 66 | --- | --- |
| Manganese | ppm | ASTM D5185m 0 | <1 | --- | --- |
| Magnesium | ppm | ASTM D5185m 950 | 1000 | --- | --- |
| Calcium | ppm | ASTM D5185m 1050 | 1101 | --- | --- |
| Phosphorus | ppm | ASTM D5185m 995 | 982 | --- | --- |
| Zinc | ppm | ASTM D5185m 1180 | 1283 | --- | --- |
| Sulfur | ppm | ASTM D5185m 2600 | 2791 | --- | --- |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-----------------|-----------|----------|----------|
| Silicon | ppm | ASTM D5185m >50 | 5 | --- | --- |
| Sodium | ppm | ASTM D5185m | 2 | --- | --- |
| Potassium | ppm | ASTM D5185m >20 | 53 | --- | --- |

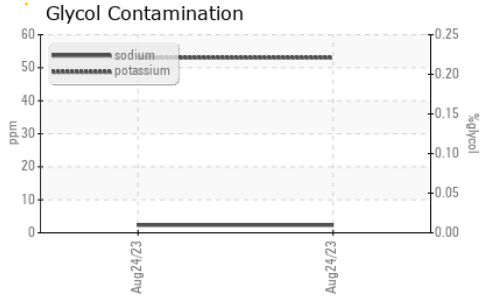
INFRA-RED

| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 >3 | 0.3 | --- | --- |
| Nitration | Abs/cm | *ASTM D7624 >20 | 8.6 | --- | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | 19.5 | --- | --- |

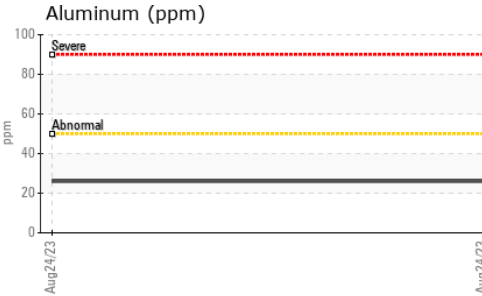
FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | *ASTM D7414 >25 | 16.6 | --- | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 7.1 | --- | --- |

OIL ANALYSIS REPORT

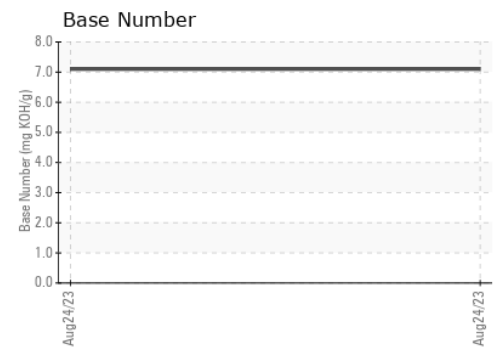
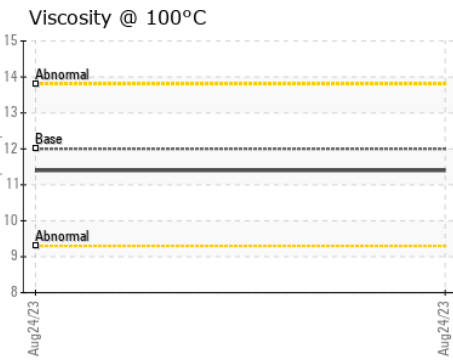
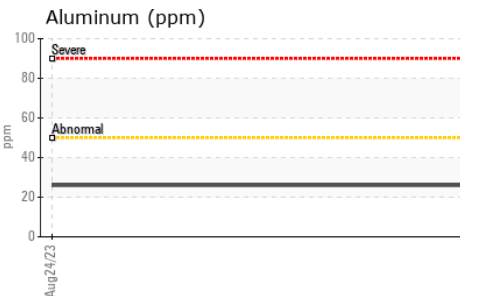
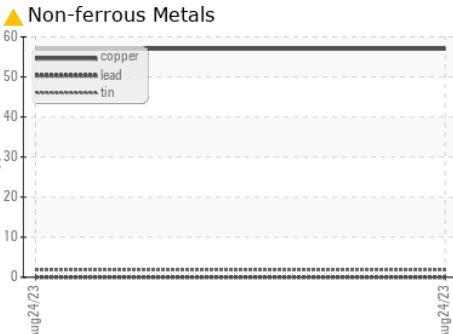
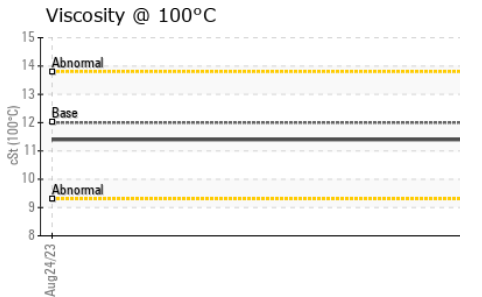
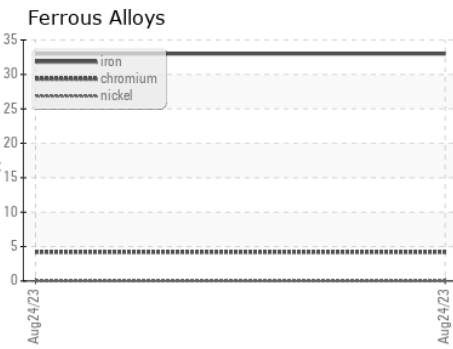
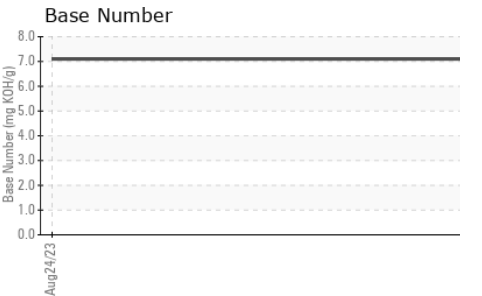


| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- |
| Precipitate | scalar | *Visual | NONE | NONE | ---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



| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 100°C | cSt | ASTM D445 | 12.00 | 11.4 | --- |

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0097416 **Received** : 06 Oct 2023
Lab Number : 05971988 **Diagnosed** : 10 Oct 2023
Unique Number : 10683938 **Diagnostician** : Don Baldrige
Test Package : FLEET

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 PLAINFIELD, IL
 US 60544

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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)