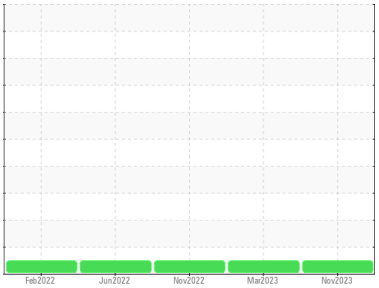
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**T1923**
Component
**Diesel Engine**
Fluid
**CHEVRON DELO 400 SDE SAE 15W40 (--- GAL)**

## 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.

**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 | | **PCA0081098** | PCA0081096 | PCA0081115 |
| Sample Date | | Client Info | | **06 Nov 2023** | 08 Mar 2023 | 07 Nov 2022 |
| Machine Age | mls | Client Info | | **443416** | 402098 | 366451 |
| Oil Age | mls | Client Info | | **41318** | 35647 | 33344 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >5 | **<1.0** | <1.0 | <1.0 |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | **28** | 24 | 22 |
| Chromium | ppm | ASTM D5185m | >20 | **0** | 1 | 1 |
| Nickel | ppm | ASTM D5185m | >4 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **5** | 8 | 7 |
| Lead | ppm | ASTM D5185m | >40 | **5** | 6 | 7 |
| Copper | ppm | ASTM D5185m | >330 | **7** | 2 | <1 |
| Tin | ppm | ASTM D5185m | >15 | **0** | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **27** | 31 | 100 |
| Barium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **103** | 88 | 121 |
| Manganese | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | **338** | 157 | 646 |
| Calcium | ppm | ASTM D5185m | | **2041** | 1997 | 1653 |
| Phosphorus | ppm | ASTM D5185m | 760 | **938** | 894 | 679 |
| Zinc | ppm | ASTM D5185m | 800 | **1196** | 1168 | 773 |
| Sulfur | ppm | ASTM D5185m | 3000 | **3290** | 3781 | 2820 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **8** | 8 | 6 |
| Sodium | ppm | ASTM D5185m | | **2** | 2 | <1 |
| Potassium | ppm | ASTM D5185m | >20 | **5** | 8 | 6 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.5** | 0.5 | 0.4 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **11.5** | 11.1 | 12.3 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **27.5** | 25.2 | 27.4 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **23.4** | 20.1 | 23.7 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10 | **4.3** | 5.2 | 7.2 |

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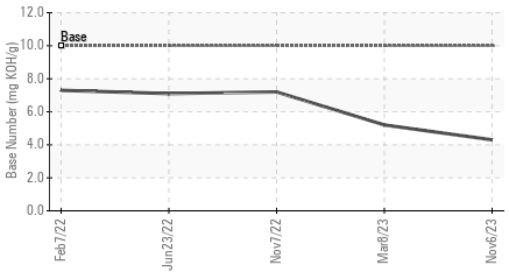
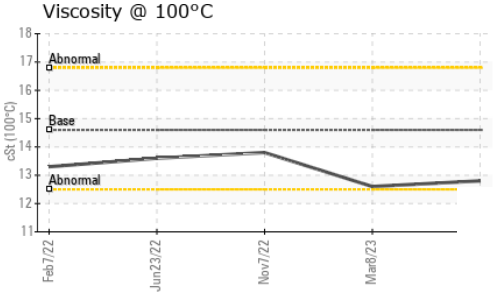
Base Number




Viscosity @ 100°C

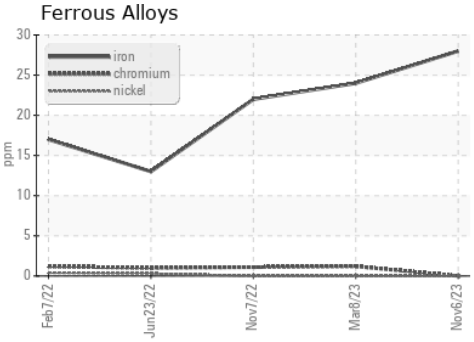



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 |

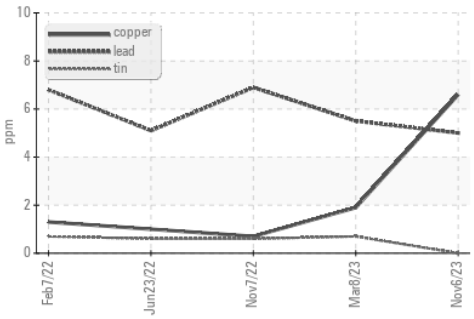
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 14.6 | **12.8** | 12.6 | 13.8 |

## GRAPHS

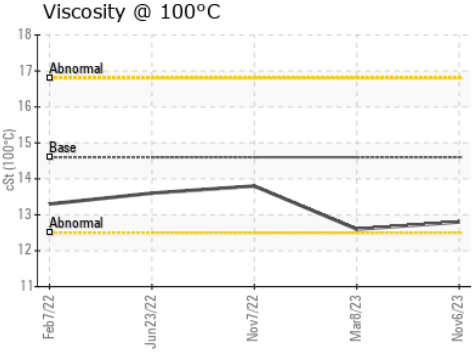
Ferrous Alloys



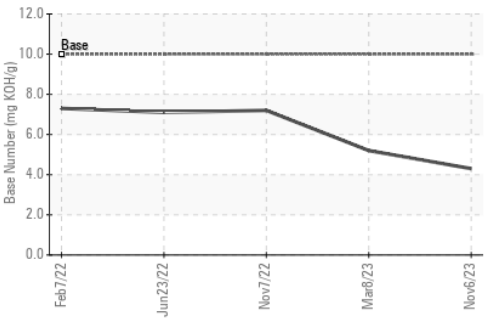

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : PCA0081098
**Lab Number** : 06003434
**Unique Number** : 10737196
**Test Package** : FLEET

**Received** : 09 Nov 2023
**Diagnosed** : 13 Nov 2023
**Diagnostician** : Don Baldridge

*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)*


**Ergon Trucking Inc. - PET108**
929 US Highway 11 North
Petal, MS
US 39465
Contact: Earlo Duck
earlo.duck@ergon.com
T:
F: