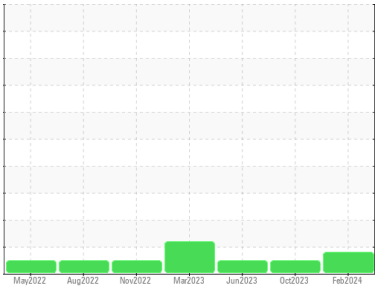
OIL DIAGNOSTICS

# OIL ANALYSIS REPORT

Sample Rating Trend




**FUEL**

Area
**TRACTORS**
Machine Id
**[TRACTORS] TR373**
Component
**Diesel Engine**
Fluid
**KENDALL 15W40 (--- GAL)**

## DIAGNOSIS

**Recommendation**

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

**Wear**

All component wear rates are normal.

**Contamination**

Light fuel dilution occurring. 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 | | **PCA0110026** | LP0000441 | LP0000182 |
| Sample Date | | Client Info | | **14 Feb 2024** | 13 Oct 2023 | 22 Jun 2023 |
| Machine Age | hrs | Client Info | | **7856** | 7218 | 6680 |
| Oil Age | hrs | Client Info | | **600** | 600 | 600 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **MARGINAL** | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >0.2 | **NEG** | NEG | NEG |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | **27** | 32 | 23 |
| Chromium | ppm | ASTM D5185m | >20 | **1** | 2 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | **<1** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **1** | 1 | 1 |
| Silver | ppm | ASTM D5185m | >3 | **<1** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **2** | 4 | 4 |
| Lead | ppm | ASTM D5185m | >40 | **6** | 7 | 5 |
| Copper | ppm | ASTM D5185m | >330 | **1** | <1 | <1 |
| Tin | ppm | ASTM D5185m | >15 | **<1** | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 6.3 | **28** | 20 | 23 |
| Barium | ppm | ASTM D5185m | 0.6 | **<1** | 0 | 5 |
| Molybdenum | ppm | ASTM D5185m | 0.4 | **82** | 88 | 78 |
| Manganese | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Magnesium | ppm | ASTM D5185m | 277 | **100** | 184 | 128 |
| Calcium | ppm | ASTM D5185m | 1514 | **1893** | 2074 | 1821 |
| Phosphorus | ppm | ASTM D5185m | 634 | **939** | 975 | 873 |
| Zinc | ppm | ASTM D5185m | 743 | **1089** | 1243 | 1100 |
| Sulfur | ppm | ASTM D5185m | 2592 | **3459** | 3637 | 3511 |

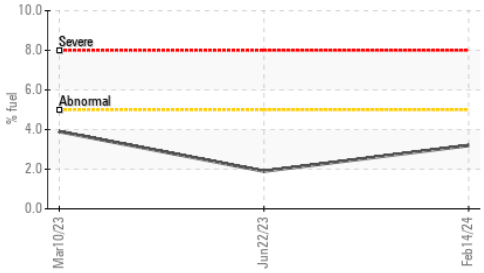
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **6** | 6 | 5 |
| Sodium | ppm | ASTM D5185m | | **0** | 8 | 7 |
| Potassium | ppm | ASTM D5185m | >20 | **5** | 8 | 3 |
| Fuel | % | ASTM D3524 | >5 | ▲ **3.2** | <1.0 | 1.9 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.7** | 0.8 | 0.7 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **11.2** | 10.8 | 10.9 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **24.1** | 23.7 | 24.4 |

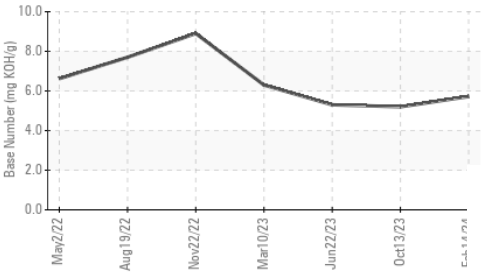
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **19.9** | 19.6 | 20.9 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **5.72** | 5.2 | 5.3 |

# OIL ANALYSIS REPORT

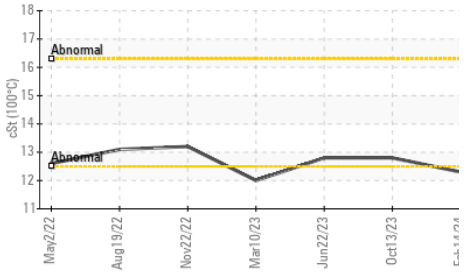
Fuel Dilution




Base Number




Viscosity @ 100°C

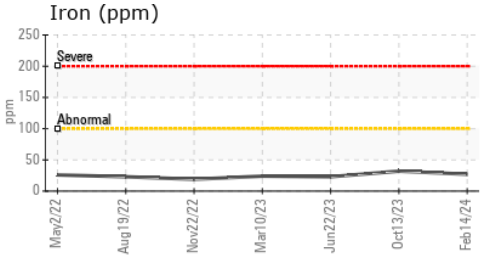



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

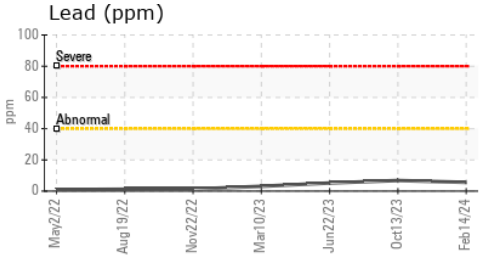
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | | **12.3** | 12.8 | 12.8 |

## GRAPHS

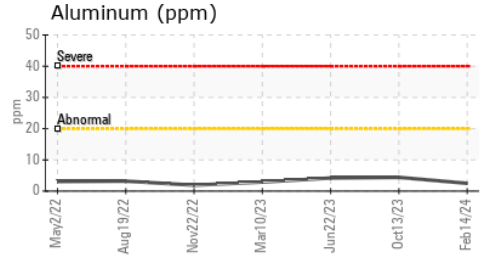
Iron (ppm)



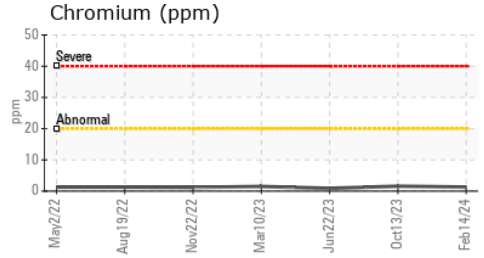

Lead (ppm)



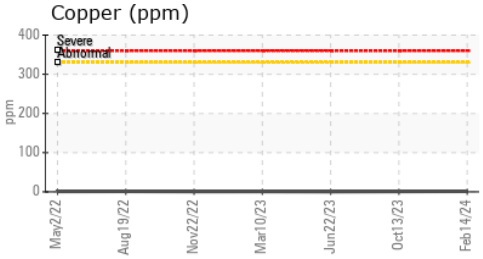

Aluminum (ppm)



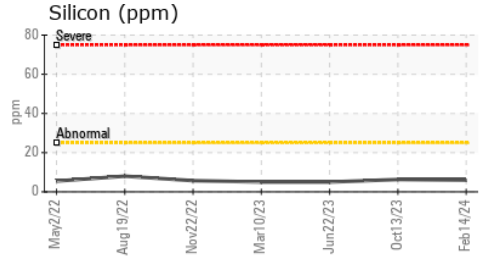

Chromium (ppm)



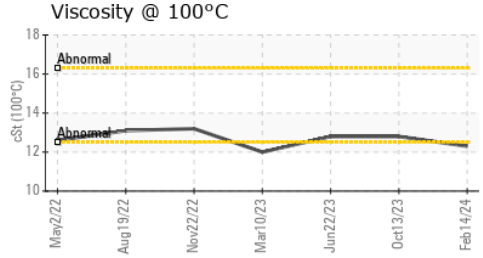

Copper (ppm)



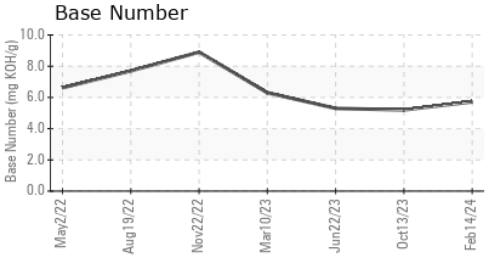

Silicon (ppm)




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : PCA0110026
**Lab Number** : 06096401
**Unique Number** : 10889254
**Test Package** : MOB 2 ( Additional Tests: FuelDilution, PercentFuel )

**Received** : 21 Feb 2024
**Tested** : 24 Feb 2024
**Diagnosed** : 24 Feb 2024 - Wes Davis

*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)*

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