CONST

WEAR CHECK

OIL ANALYSIS REPORT

| | |
|---|---|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |

Machine Id
# KINDER MORGAN FE-2 (S/N 30108)
Component
## Diesel Engine
Fluid
## SHELL ROTELLA T4 15W40 (--- QTS)

## RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

## WEAR

Metal levels are typical for a new component breaking in.

## CONTAMINATION

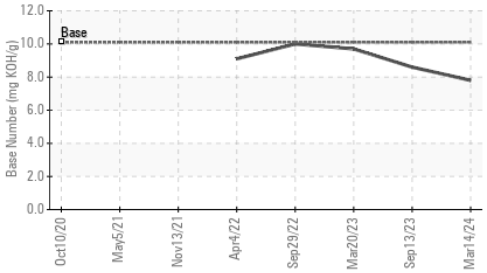
There is no indication of any contamination in the oil.

## FLUID CONDITION

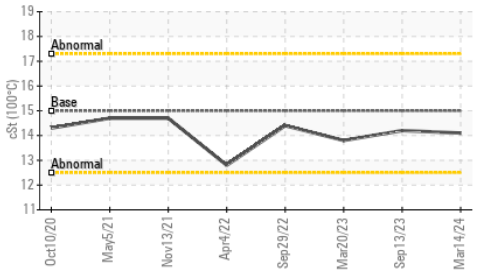
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | WC0800562 | WC0800588 | WC0800575 |
| Sample Date | | Client Info | | 14 Mar 2024 | 13 Sep 2023 | 20 Mar 2023 |
| Machine Age | mls | Client Info | | 14665 | 13786 | 12823 |
| Oil Age | mls | Client Info | | 0 | 963 | 1512 |
| Filter Age | mls | Client Info | | 0 | 963 | 1512 |
| Oil Changed | | Client Info | | N/A | N/A | Changed |
| Filter Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| Iron | ppm | ASTM D5185m | >100 | 8 | 6 | 6 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | <1 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | <1 | <1 | 0 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 5 | 6 | 5 |
| Lead | ppm | ASTM D5185m | >40 | 0 | <1 | 0 |
| Copper | ppm | ASTM D5185m | >330 | 4 | 5 | 4 |
| Tin | ppm | ASTM D5185m | >15 | <1 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silicon | ppm | ASTM D5185m | >25 | 4 | 3 | 5 |
| Potassium | ppm | ASTM D5185m | >20 | 12 | 9 | 7 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.1 | 0.1 | 0.1 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 5.2 | 4.5 | 4.5 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 15.8 | 17.5 | 18.4 |
| 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 |
| Sodium | ppm | ASTM D5185m | | 1 | <1 | 1 |
| Boron | ppm | ASTM D5185m | | 25 | 111 | 156 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 13 | 50 | 62 |
| Manganese | ppm | ASTM D5185m | | 0 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | 88 | 309 | 417 |
| Calcium | ppm | ASTM D5185m | | 2138 | 1804 | 1923 |
| Phosphorus | ppm | ASTM D5185m | | 888 | 991 | 1123 |
| Zinc | ppm | ASTM D5185m | | 1076 | 1147 | 1314 |
| Sulfur | ppm | ASTM D5185m | | 3651 | 3588 | 4213 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 9.5 | 12.6 | 13.2 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.1 | 7.8 | 8.6 | 9.7 |
| Visc @ 100°C | cSt | ASTM D445 | 15 | 14.1 | 14.2 | 13.8 |

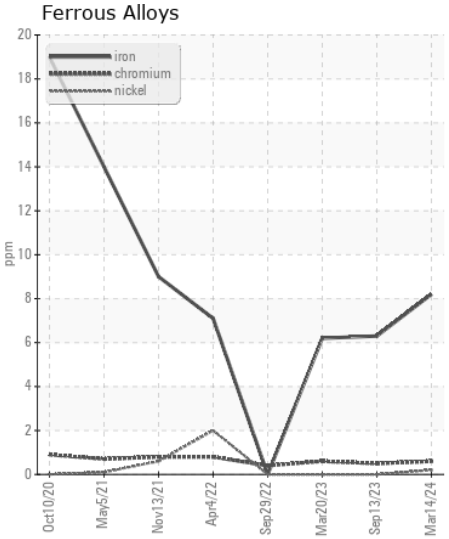
Base Number



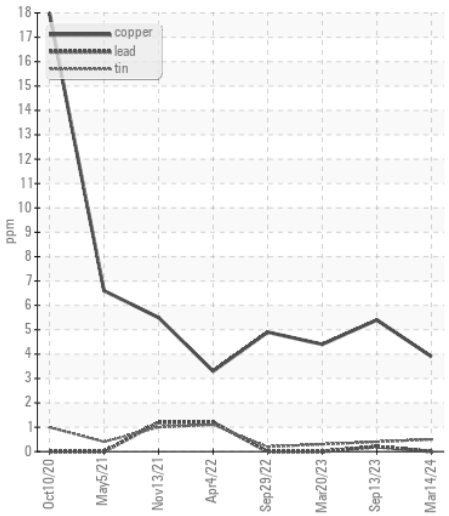

Viscosity @ 100°C



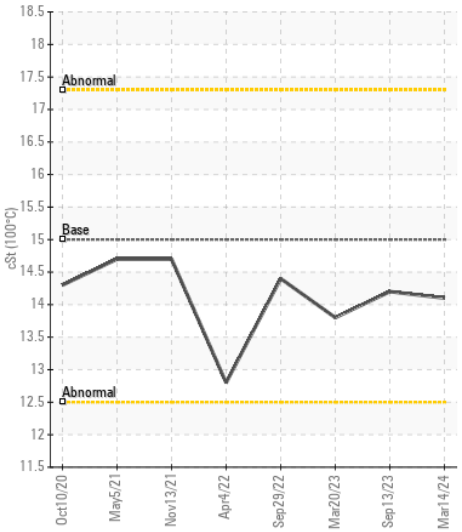

Ferrous Alloys




Non-ferrous Metals




Viscosity @ 100°C

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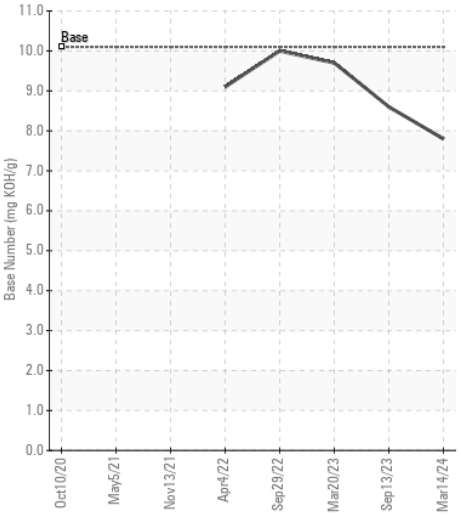


Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0800562
**Lab Number** : 06121943
**Unique Number** : 10936094
**Test Package** : CONST ( Additional Tests: TBN )

**Received** : 19 Mar 2024
**Tested** : 19 Mar 2024
**Diagnosed** : 19 Mar 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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