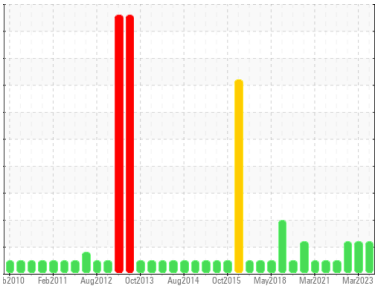
# OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL

Machine Id
## NOVA BUS EQ60052
Component
**Rear Diesel Engine**
Fluid
**VALVOLINE 15W40 (24 LTR)**

## DIAGNOSIS

**Recommendation**
Check for low coolant level. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

**Wear**
All component wear rates are normal.

**Contamination**
Water treatment chemicals present, indicating slow coolant leak. Test for glycol is negative. There is no indication of any contamination in the oil.

**Fluid Condition**
The condition of the oil is acceptable for the time in service (see recommendation).

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0887267** | WC0770744 | WC0734914 |
| Sample Date | | Client Info | | **12 Dec 2023** | 27 Mar 2023 | 20 Oct 2022 |
| Machine Age | kms | Client Info | | **752964** | 729587 | 706262 |
| Oil Age | kms | Client Info | | **10000** | 10000 | 10000 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **---** | ATTENTION | ATTENTION |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >3.0 | **<1.0** | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >75 | **33** | 34 | 22 |
| Chromium | ppm | ASTM D5185(m) | >5 | **2** | 2 | 2 |
| Nickel | ppm | ASTM D5185(m) | >4 | **<1** | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | >2 | **0** | <1 | <1 |
| Silver | ppm | ASTM D5185(m) | >2 | **<1** | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >15 | **4** | 3 | 2 |
| Lead | ppm | ASTM D5185(m) | >25 | **4** | 2 | 2 |
| Copper | ppm | ASTM D5185(m) | >100 | **2** | 1 | 1 |
| Tin | ppm | ASTM D5185(m) | >4 | **0** | <1 | 0 |
| Antimony | ppm | ASTM D5185(m) | | **0** | 0 | <1 |
| Vanadium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | 39 | **9** | 11 | 4 |
| Barium | ppm | ASTM D5185(m) | 1 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 49 | **76** | 76 | 69 |
| Manganese | ppm | ASTM D5185(m) | 1 | **0** | <1 | <1 |
| Magnesium | ppm | ASTM D5185(m) | 616 | **1032** | 1030 | 1006 |
| Calcium | ppm | ASTM D5185(m) | 1554 | **1141** | 1303 | 1102 |
| Phosphorus | ppm | ASTM D5185(m) | 899 | **1024** | 1093 | 1085 |
| Zinc | ppm | ASTM D5185(m) | 1069 | **1237** | 1298 | 1203 |
| Sulfur | ppm | ASTM D5185(m) | 2624 | **2611** | 2672 | 2530 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >25 | **12** | 10 | 9 |
| Sodium | ppm | ASTM D5185(m) | | ▲ **406** | ▲ 298 | ▲ 221 |
| Potassium | ppm | ASTM D5185(m) | >20 | **29** | 39 | 32 |
| Glycol | % | ASTM D7922* | | **0.0** | 0.0 | 0.0 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | ASTM D7844* | >6 | **0.9** | 1.2 | 0.8 |
| Nitration | Abs/cm | ASTM D7624* | >20 | **14.3** | 15.1 | 12.7 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | **28.3** | 31.5 | 26.4 |

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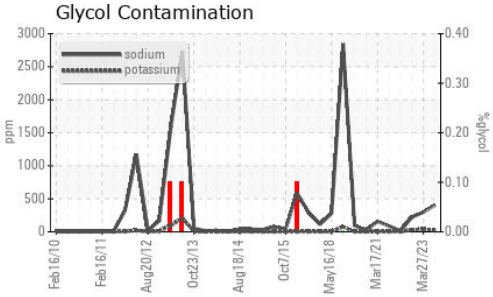
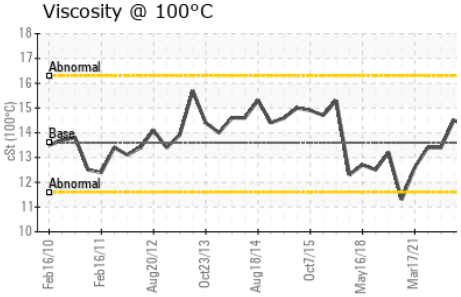
Glycol Contamination




Viscosity @ 100°C



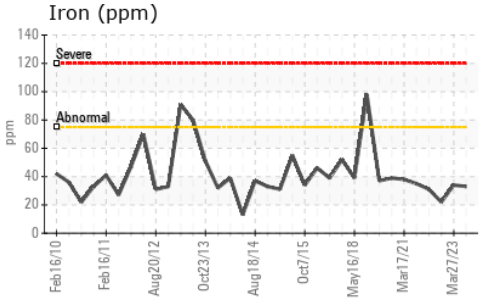

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | **27.9** | 28.1 | 25.1 |

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Emulsified Water | scalar | Visual* | >0.2 | **NEG** | NEG | NEG |
| Free Water | scalar | Visual* | | **NEG** | NEG | NEG |

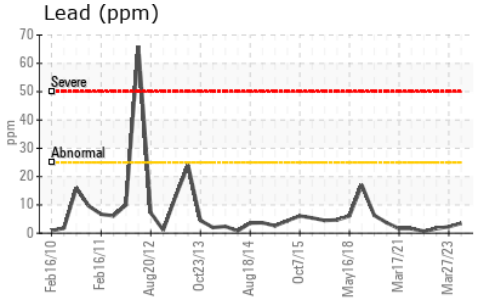
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D7279(m) | 13.6 | **14.6** | 14.3 | 14.5 |

## GRAPHS

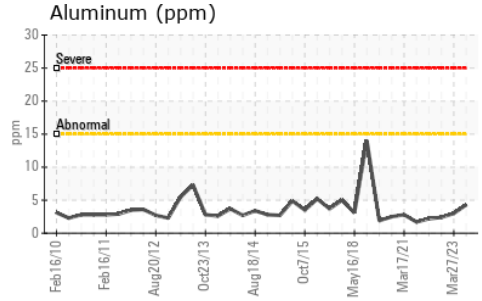
Iron (ppm)



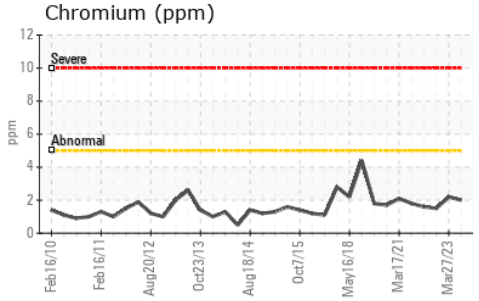

Lead (ppm)



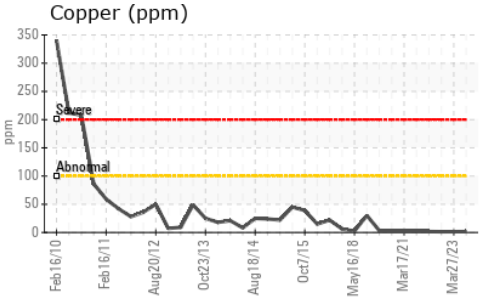

Aluminum (ppm)



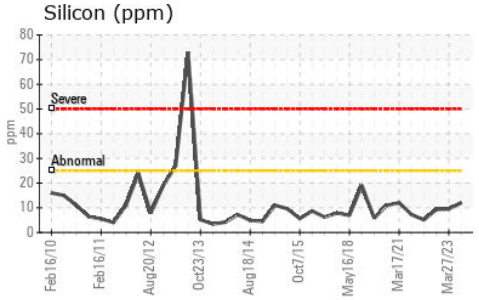

Chromium (ppm)




Copper (ppm)




Silicon (ppm)

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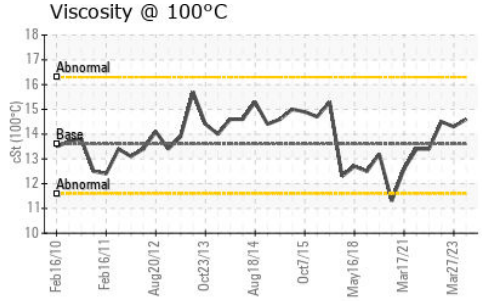
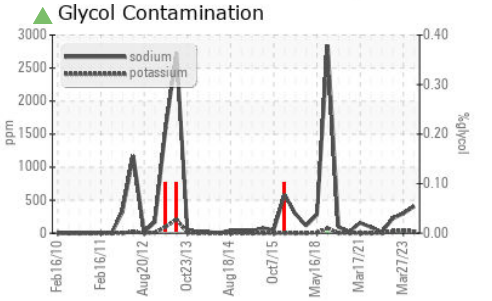



▲ Glycol Contamination




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : WC0887267 **Recieved** : 20 Dec 2023
**Lab Number** : 02604311 **Diagnosed** : 20 Dec 2023
**Unique Number** : 5697396 **Diagnostician** : Kevin Marson
**Test Package** : MOB 1 ( Additional Tests: Glycol )

*To discuss this sample report, contact Customer Service at 1-800-268-2131.*
*Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.*
*Validity of results and interpretation are based on the sample and information as supplied.*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