



OIL ANALYSIS REPORT

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

Area
GUAY SON [CONHER]
Machine Id
IBACO BM DAGIO I
Component
Auxiliary Power Unit Diesel Engine
Fluid
XTRA REV 15W40 (8 LTR)

RECOMMENDATION

We advise that you check the fuel injection system. Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | KL0013480 | KL0013349 | KL0012863 |
| Sample Date | | Client Info | | 18 Jan 2024 | 01 Nov 2023 | 21 Sep 2023 |
| Machine Age | hrs | Client Info | | 0 | 0 | 15131 |
| Oil Age | hrs | Client Info | | 100 | 240 | 24 |
| Filter Age | hrs | Client Info | | 100 | 240 | 24 |
| Oil Changed | | Client Info | | Not Changd | Changed | Changed |
| Filter Changed | | Client Info | | Not Changd | Changed | Changed |
| Sample Status | | | | ABNORMAL | ABNORMAL | ABNORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >100 | 30 | 40 | 9 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | 0 | <1 | <1 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 3 | 5 | 3 |
| Lead | ppm | ASTM D5185m | >40 | 0 | 1 | 0 |
| Copper | ppm | ASTM D5185m | >330 | 2 | 29 | <1 |
| Tin | ppm | ASTM D5185m | >15 | 0 | 1 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | <1 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

There is a moderate amount of particulates present in the oil. There is a moderate amount of fuel present in the oil.

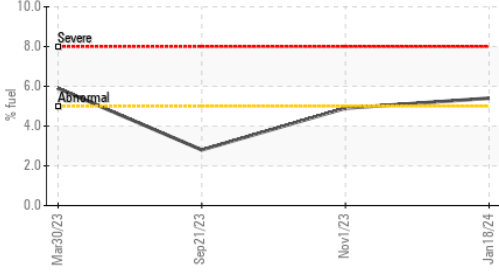
| | | | | | | |
|------------------|----------|--------------|--------|----------------|---------|---------|
| Silicon | ppm | ASTM D5185m | >25 | 14 | 18 | 8 |
| Potassium | ppm | ASTM D5185m | >20 | 4 | 3 | 1 |
| Fuel | % | ASTM D3524 | >5 | ▲ 5.4 | ▲ 4.9 | ▲ 2.8 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.1 | 0.1 | 0 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 7.2 | 7.2 | 4.5 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 15.0 | 15.7 | 12.6 |
| Particles >4µm | | ASTM D7647 | | 9100 | 45569 | 26978 |
| Particles >6µm | | ASTM D7647 | >5000 | ▲ 4957 | ▲ 24824 | ▲ 14696 |
| Particles >14µm | | ASTM D7647 | >640 | ▲ 844 | ▲ 4225 | ▲ 2501 |
| Particles >21µm | | ASTM D7647 | >160 | ▲ 284 | ▲ 1423 | ▲ 842 |
| Particles >38µm | | ASTM D7647 | >40 | ▲ 44 | ▲ 220 | ▲ 130 |
| Particles >71µm | | ASTM D7647 | >10 | 4 | ▲ 22 | 13 |
| Oil Cleanliness | | ISO 4406 (c) | >19/16 | ▲ 19/17 | ▲ 22/19 | ▲ 21/19 |
| 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 |

FLUID CONDITION

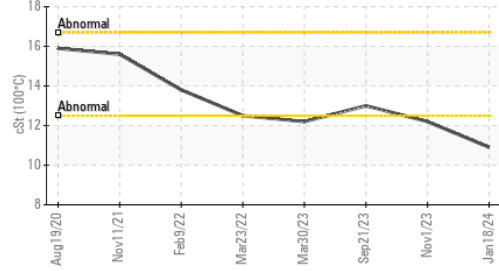
Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

| | | | | | | |
|------------------|----------|-------------|-----|---------------|--------|-------|
| Sodium | ppm | ASTM D5185m | | 6 | 10 | 5 |
| Boron | ppm | ASTM D5185m | | 2 | 52 | 6 |
| Barium | ppm | ASTM D5185m | | <1 | <1 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 0 | <1 | 4 |
| Manganese | ppm | ASTM D5185m | | 0 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | 6 | 13 | 22 |
| Calcium | ppm | ASTM D5185m | | 2496 | 3454 | 2476 |
| Phosphorus | ppm | ASTM D5185m | | 1076 | 1066 | 1070 |
| Zinc | ppm | ASTM D5185m | | 1186 | 1366 | 1311 |
| Sulfur | ppm | ASTM D5185m | | 3543 | 3612 | 3684 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 10.4 | 10.0 | 6.6 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | 9.23 | 13.68 | 10.33 |
| Visc @ 100°C | cSt | ASTM D445 | | ▲ 10.9 | ▲ 12.2 | 13.0 |

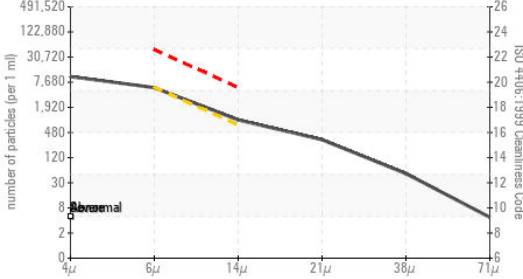
Fuel Dilution



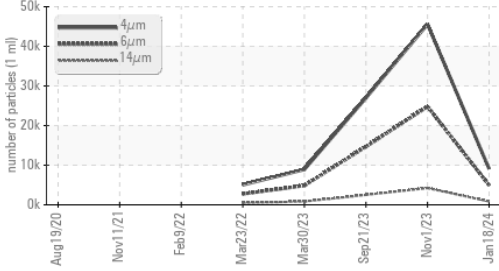
Viscosity @ 100°C



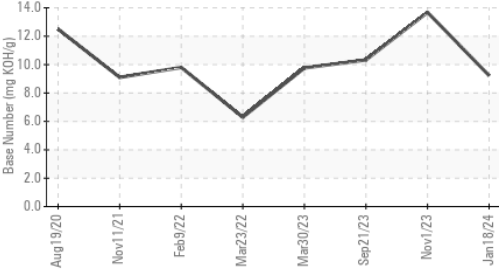
Particle Count



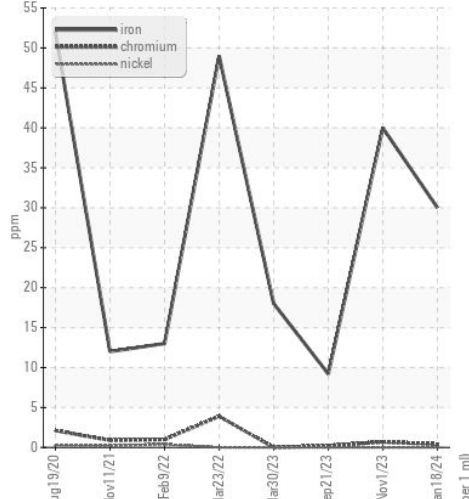
Particle Trend



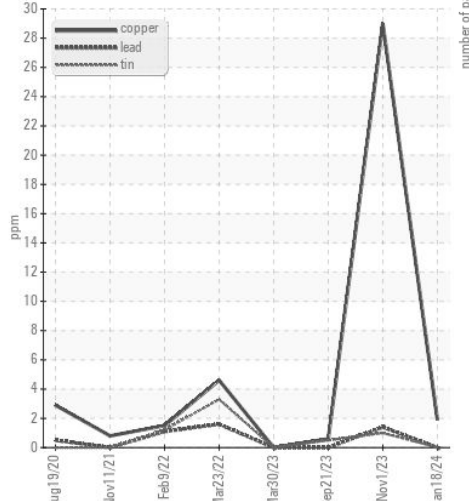
Base Number



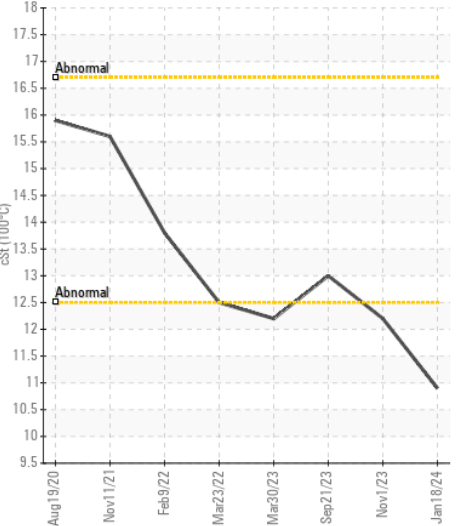
Ferrous Alloys



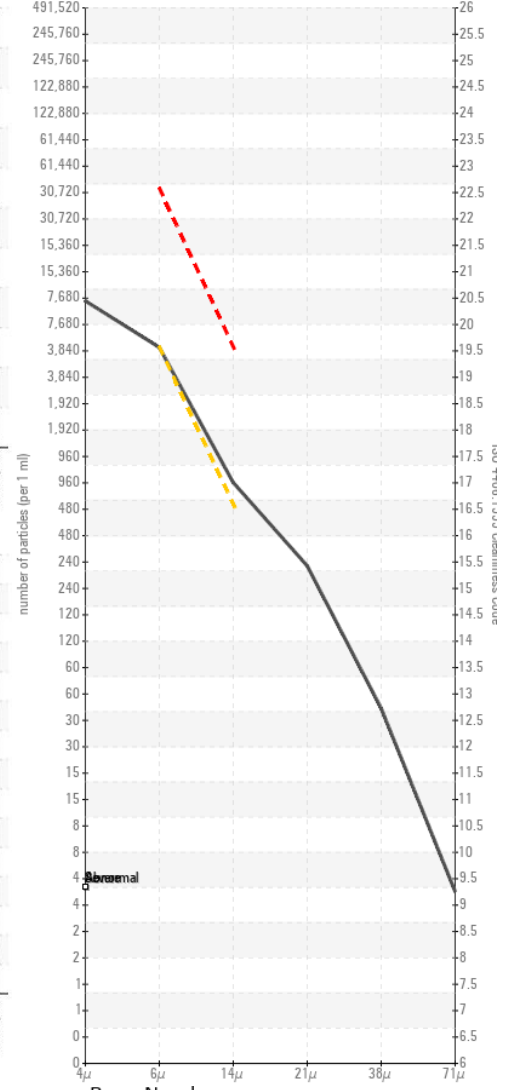
Non-ferrous Metals



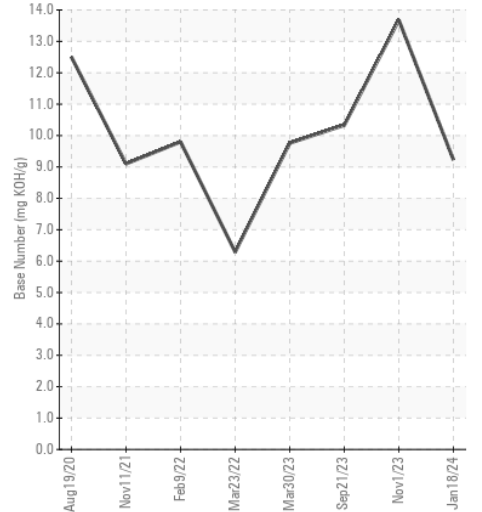
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0013480 **Received** : 30 Jan 2024
Lab Number : 06074987 **Diagnosed** : 02 Feb 2024
Unique Number : 10857078 **Diagnostician** : Jonathan Hester
Test Package : MOB 2 (Additional Tests: PercentFuel, PrtCount)

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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