



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

Machine Id
BIG EASY
Component
3 Main Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | MW0064925 | MW0057159 | MW0036777 |
| Sample Date | | Client Info | | 24 Jan 2024 | 16 Aug 2023 | 10 Jan 2023 |
| Machine Age | hrs | Client Info | | 18993 | 16938 | 15136 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Not Changd | N/A | N/A |
| Filter Changed | | Client Info | | Not Changd | N/A | N/A |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|-------|
| Iron | ppm | ASTM D5185m | >75 | 0 | 6 | 6 |
| Chromium | ppm | ASTM D5185m | >8 | 0 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | >3 | 13 | 15 | 14 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >15 | <1 | <1 | 1 |
| Lead | ppm | ASTM D5185m | >18 | 3 | <1 | 1 |
| Copper | ppm | ASTM D5185m | >80 | <1 | <1 | 1 |
| Tin | ppm | ASTM D5185m | >14 | <1 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | <1 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | LIGHT |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

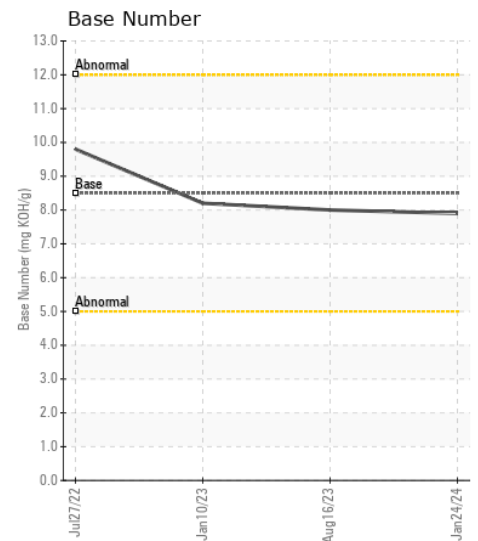
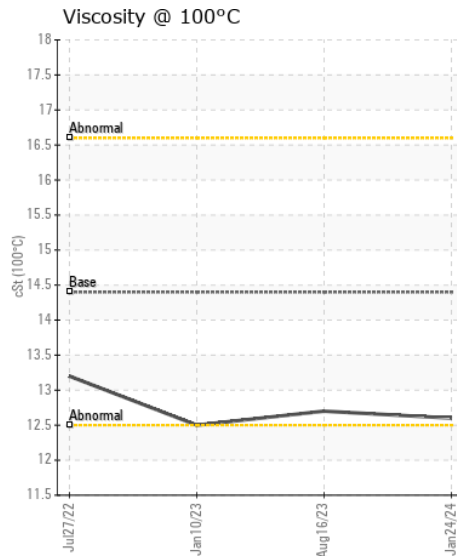
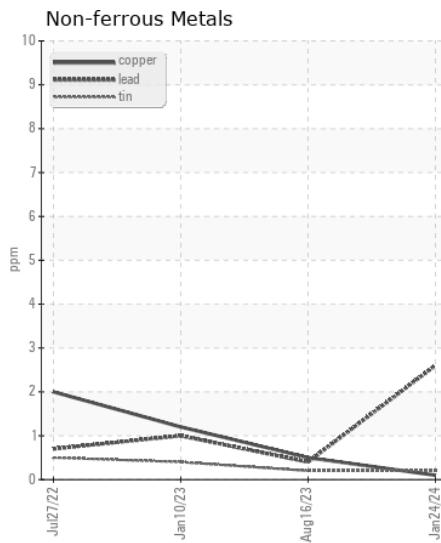
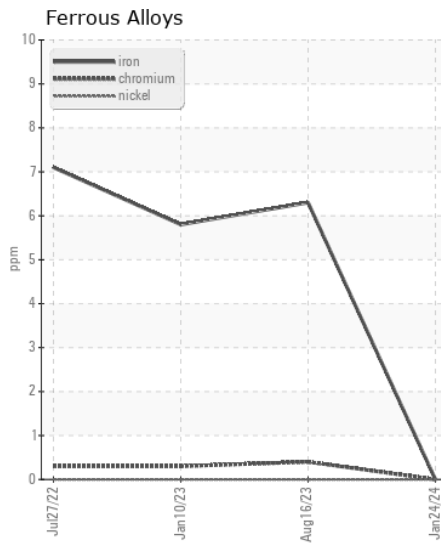
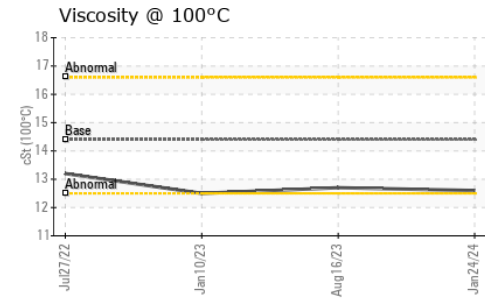
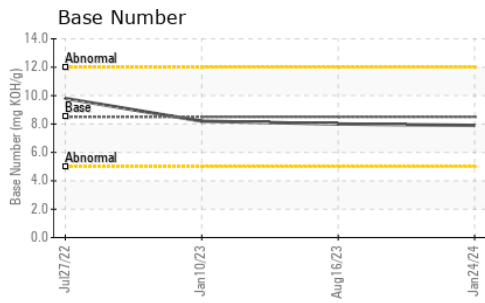
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >20 | 0 | 4 | 4 |
| Potassium | ppm | ASTM D5185m | >20 | 3 | 4 | 3 |
| Fuel | | WC Method | >4.0 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.1 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | | 0.4 | 0.2 | 0.2 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 9.5 | 8.2 | 8.7 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 19.3 | 18.1 | 18.6 |
| 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 | >0.1 | NEG | NEG | NEG |

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.

| | | | | | | |
|------------------|----------|-------------|------|-------------|------|------|
| Sodium | ppm | ASTM D5185m | >158 | 4 | 3 | 4 |
| Boron | ppm | ASTM D5185m | 250 | 74 | 90 | 87 |
| Barium | ppm | ASTM D5185m | 10 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 100 | 26 | 32 | 33 |
| Manganese | ppm | ASTM D5185m | | 1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 450 | 655 | 700 | 727 |
| Calcium | ppm | ASTM D5185m | 3000 | 1475 | 1596 | 1714 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 668 | 739 | 762 |
| Zinc | ppm | ASTM D5185m | 1350 | 797 | 853 | 931 |
| Sulfur | ppm | ASTM D5185m | 4250 | 2874 | 3092 | 3945 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 14.6 | 12.9 | 13.6 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | 7.9 | 8.0 | 8.2 |
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | 12.6 | 12.7 | 12.5 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0064925
Lab Number : 06084627
Unique Number : 10872072
Test Package : MAR 2

Received : 09 Feb 2024
Tested : 12 Feb 2024
Diagnosed : 12 Feb 2024 - Wes Davis

AMERICAN RIVER TRANSPORTATION CO.
 P.O. BOX 2889
 ST. LOUIS, MO
 US 63111
 Contact: BRIAN GRIEWING
 brian.griewing@adm.com
 T:
 F: (314)481-5278

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)