



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

Area

[83847]

Machine Id

4347 MORRISON ST NIAGARA CITY OF NIAGARA CITY OF NIAGARA

Component

Rear Natural Gas Engine

Fluid

ESSO XD-3 EXTRA 15W40 (--- GAL)

RECOMMENDATION

Confirm the source of the lubricant being utilized for top-up/fill.
 Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|----------|----------|
| Sample Number | | Client Info | | PN0005667 | --- | --- |
| Sample Date | | Client Info | | 17 Jan 2024 | --- | --- |
| Machine Age | hrs | Client Info | | 93 | --- | --- |
| Oil Age | hrs | Client Info | | 0 | --- | --- |
| Filter Age | hrs | Client Info | | 0 | --- | --- |
| Oil Changed | | Client Info | | Changed | --- | --- |
| Filter Changed | | Client Info | | Changed | --- | --- |
| Sample Status | | | | NORMAL | --- | --- |

WEAR

Metal levels are typical for a new component breaking in.

| | | | | | | |
|--------------|--------|---------------|------|--------------|-----|-----|
| Iron | ppm | ASTM D5185(m) | >50 | 32 | --- | --- |
| Chromium | ppm | ASTM D5185(m) | >4 | 11 | --- | --- |
| Nickel | ppm | ASTM D5185(m) | >2 | <1 | --- | --- |
| Titanium | ppm | ASTM D5185(m) | | 22 | --- | --- |
| Silver | ppm | ASTM D5185(m) | >3 | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185(m) | >9 | 3 | --- | --- |
| Lead | ppm | ASTM D5185(m) | >30 | 2 | --- | --- |
| Copper | ppm | ASTM D5185(m) | >35 | 12 | --- | --- |
| Tin | ppm | ASTM D5185(m) | >4 | <1 | --- | --- |
| Vanadium | ppm | ASTM D5185(m) | | 0 | --- | --- |
| White Metal | scalar | Visual* | NONE | NONE | --- | --- |
| Yellow Metal | scalar | Visual* | NONE | NONE | --- | --- |

CONTAMINATION

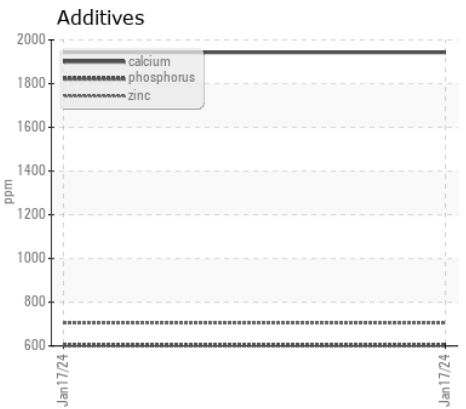
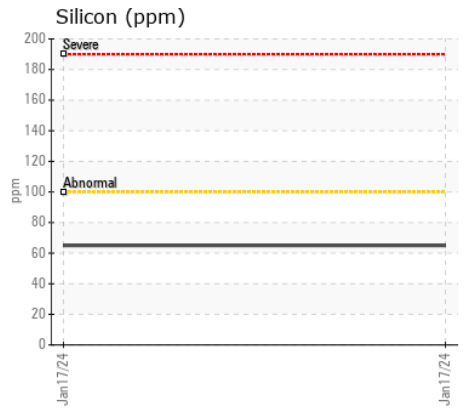
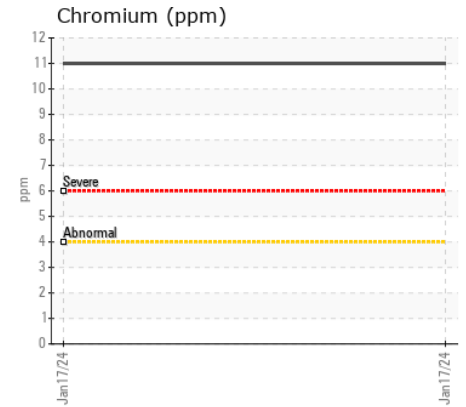
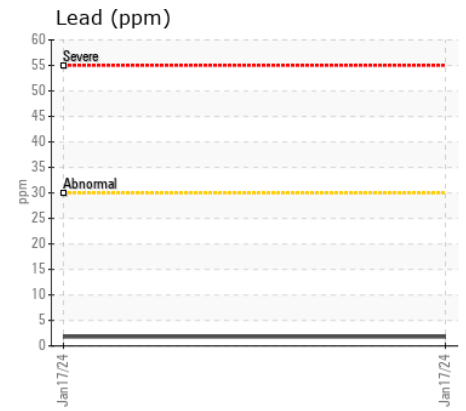
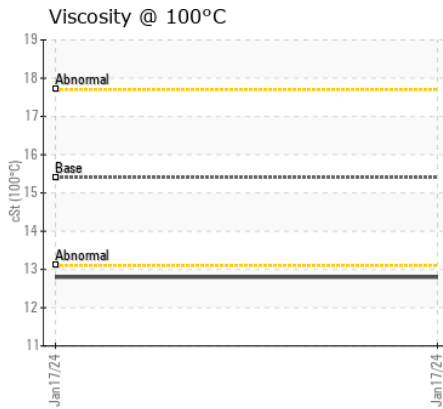
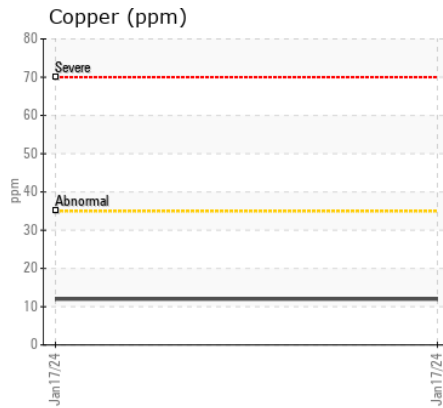
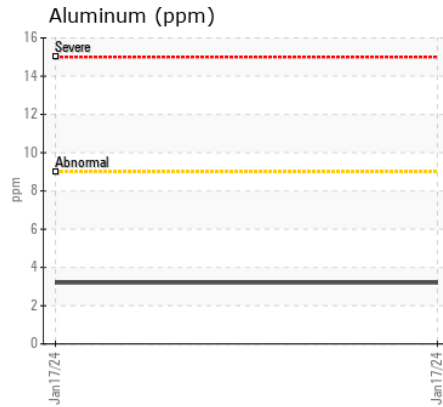
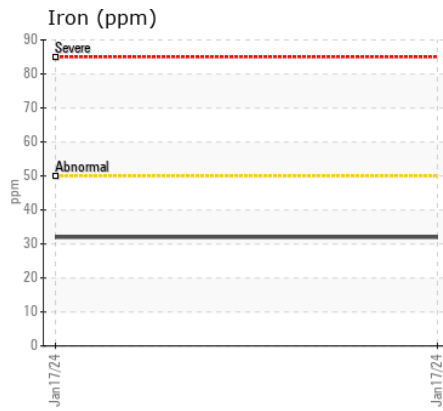
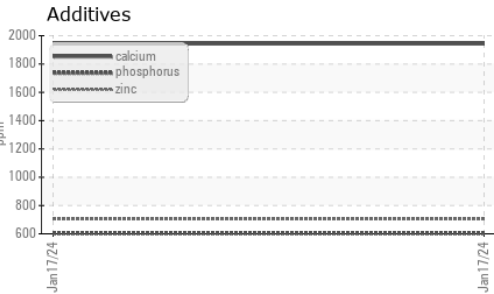
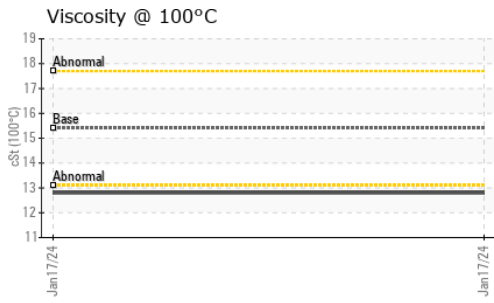
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|---------------|-------|--------------|-----|-----|
| Silicon | ppm | ASTM D5185(m) | >+100 | 65 | --- | --- |
| Potassium | ppm | ASTM D5185(m) | >20 | 1 | --- | --- |
| Water | | WC Method | >0.1 | NEG | --- | --- |
| Soot % | % | ASTM D7844* | | 0 | --- | --- |
| Nitration | Abs/cm | ASTM D7624* | >20 | 4.8 | --- | --- |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | 18.6 | --- | --- |
| Silt | scalar | Visual* | NONE | NONE | --- | --- |
| Debris | scalar | Visual* | NONE | VLITE | --- | --- |
| Sand/Dirt | scalar | Visual* | NONE | NONE | --- | --- |
| Appearance | scalar | Visual* | NORML | NORML | --- | --- |
| Odor | scalar | Visual* | NORML | NORML | --- | --- |
| Emulsified Water | scalar | Visual* | >0.1 | NEG | --- | --- |

FLUID CONDITION

Additive levels indicate the addition of a different brand, or type of oil.
 The condition of the oil is acceptable for the time in service.

| | | | | | | |
|--------------|----------|---------------|------|-------------|-----|-----|
| Sodium | ppm | ASTM D5185(m) | >192 | 2 | --- | --- |
| Boron | ppm | ASTM D5185(m) | | 70 | --- | --- |
| Barium | ppm | ASTM D5185(m) | | 5 | --- | --- |
| Molybdenum | ppm | ASTM D5185(m) | | 120 | --- | --- |
| Manganese | ppm | ASTM D5185(m) | | 104 | --- | --- |
| Magnesium | ppm | ASTM D5185(m) | | 15 | --- | --- |
| Calcium | ppm | ASTM D5185(m) | 3780 | 1943 | --- | --- |
| Phosphorus | ppm | ASTM D5185(m) | 1370 | 603 | --- | --- |
| Zinc | ppm | ASTM D5185(m) | 1500 | 704 | --- | --- |
| Sulfur | ppm | ASTM D5185(m) | 3800 | 2311 | --- | --- |
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | 9.6 | --- | --- |
| Visc @ 100°C | cSt | ASTM D7279(m) | 15.4 | 12.8 | --- | --- |



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PN0005667 **Received** : 19 Jan 2024
Lab Number : 02609942 **Diagnosed** : 19 Jan 2024
Unique Number : 5711028 **Diagnostician** : Kevin Marson
Test Package : MOB 1 (Additional Tests: Visual)

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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