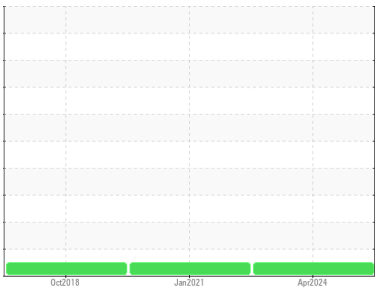
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
## COVE (S/N A9046)
Component
**Natural Gas Engine**
Fluid
**{not provided} (--- GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor.

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

**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.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **RP0039452** | RP0014801 | RP203731 |
| Sample Date | | Client Info | | **10 Apr 2024** | 11 Jan 2021 | 01 Oct 2018 |
| Machine Age | hrs | Client Info | | **16** | 86 | 79 |
| Oil Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >50 | **8** | 8 | 15 |
| Chromium | ppm | ASTM D5185m | >4 | **<1** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | **<1** | <1 | <1 |
| Titanium | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >9 | **4** | 5 | 1 |
| Lead | ppm | ASTM D5185m | >30 | **5** | 4 | 18 |
| Copper | ppm | ASTM D5185m | >35 | **12** | 5 | 14 |
| Tin | ppm | ASTM D5185m | >4 | **2** | 1 | 0 |
| Antimony | ppm | ASTM D5185m | | **---** | 0 | 2 |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **<1** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **<1** | 10 | 41 |
| Barium | ppm | ASTM D5185m | | **<1** | 0 | <1 |
| Molybdenum | ppm | ASTM D5185m | | **137** | 5 | 12 |
| Manganese | ppm | ASTM D5185m | | **<1** | <1 | 1 |
| Magnesium | ppm | ASTM D5185m | | **889** | 19 | 77 |
| Calcium | ppm | ASTM D5185m | | **2876** | 3093 | 1440 |
| Phosphorus | ppm | ASTM D5185m | | **342** | 338 | 585 |
| Zinc | ppm | ASTM D5185m | | **369** | 381 | 486 |

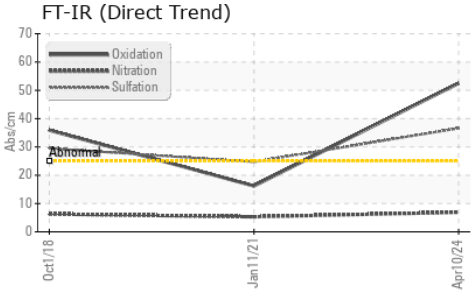
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >+100 | **18** | 15 | 34 |
| Sodium | ppm | ASTM D5185m | | **2** | 2 | 4 |
| Potassium | ppm | ASTM D5185m | >20 | **3** | <1 | 0 |
| Water | % | ASTM D6304 | >0.1 | **NEG** | NEG | 0.171 |
| ppm Water | ppm | ASTM D6304 | >1000 | **---** | --- | 1710 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | | **0.1** | 0.1 | 0.1 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **6.9** | 5.3 | 6.3 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **36.6** | 24.7 | 29.5 |

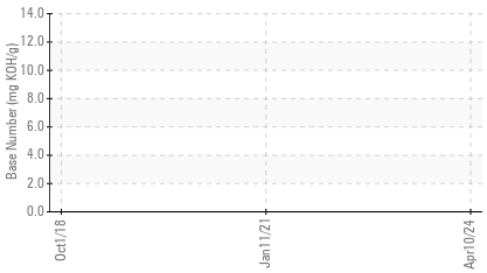
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **52.5** | 16.2 | 35.9 |
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | **---** | 0.693 | 1.343 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **12.90** | --- | --- |

# OIL ANALYSIS REPORT

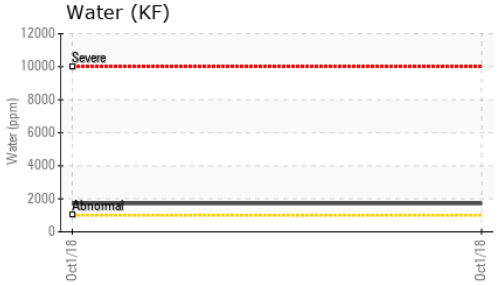
FT-IR (Direct Trend)



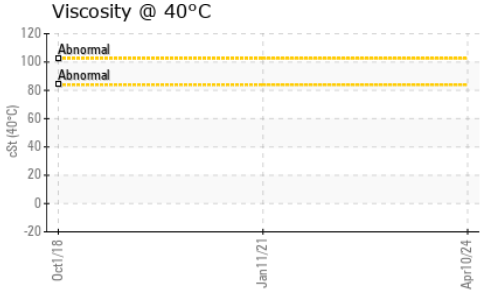

Base Number



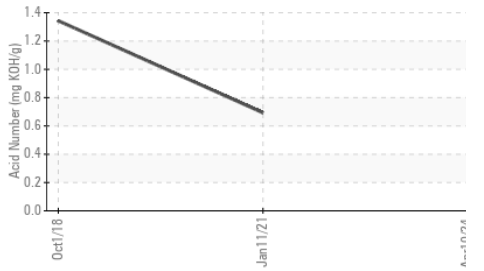

Water (KF)




Viscosity @ 40°C




Acid Number

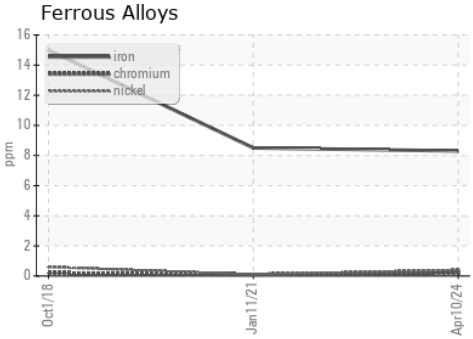



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **NONE** | NONE | LIGHT |
| 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 |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

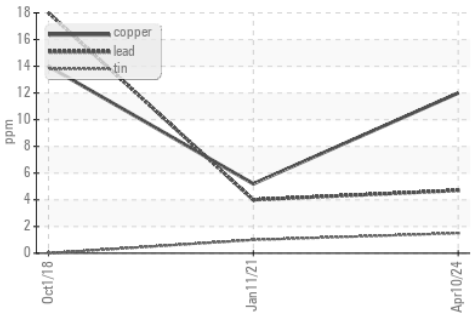
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | | **12.5** | 11.0 | 9.32 |

## GRAPHS

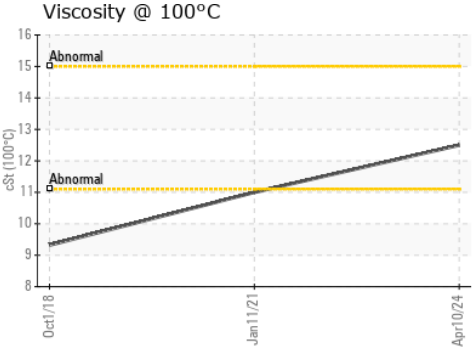
Ferrous Alloys



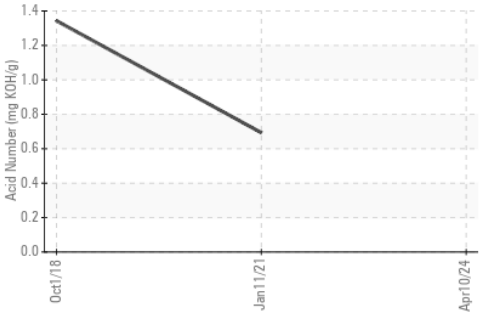

Non-ferrous Metals




Viscosity @ 100°C




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : RP0039452
**Lab Number** : 06179520
**Unique Number** : 11030846
**Test Package** : IND 2 ( Additional Tests: FT-IR, KV100, TBN )

**Received** : 14 May 2024
**Tested** : 17 May 2024
**Diagnosed** : 17 May 2024 - Sean Felton

*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)*

**WARWICK SEWER AUTHORITY**
125 ARTHUR DEVINE BLVD
WARWICK, RI
US 02888
Contact: JOHN BROSNAHAN
john.s.brosnahan@warwickri.com
T:
F:

Report Id: WARWARRI [WUSCAR] 06179520 (Generated: 05/17/2024 10:10:21) Rev: 1

Contact/Location: JOHN BROSNAHAN - WARWARRI