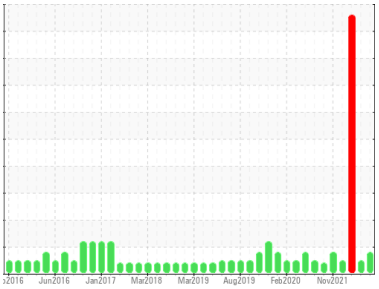
# OIL ANALYSIS REPORT

Sample Rating Trend



**WEAR**

Area
## RECUPERATION - BROYAGE
Machine Id
## CONVOYEUR ALIMENTATEUR PESEUR NORD (301) (S/N 460-B2-301)
Component
**Reduction Gear**
Fluid
**ESSO SPARTAN EP 320 (20 LTR)**

## DIAGNOSIS

**Recommendation**

Nous vous recommandons de vidanger l`huile de ce composant si vous ne l`avez pas déjà fait. Nous vous recommandons d`échantillonner de nouveau dès que possible afin de contrôler la situation.

**Wear**

Usure des engrenages. Le bas indice ferreux (PQ) indique que l'usure ferreuse est due à de la corrosion.

**Contamination**

Il n`y a aucun indice de contamination dans l`huile.

**Fluid Condition**

l`huile n'est plus en état de service en raison d'une usure anomale et/ou sévère.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0841679** | WC0782256 | WC0734135 |
| Sample Date | | Client Info | | **06 Mar 2024** | 30 Mar 2023 | 25 Aug 2022 |
| Machine Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **ABNORMAL** | NORMAL | SEVERE |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >0.1 | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| PQ | | ASTM D8184* | | **9** | --- | 10 |
| Iron | ppm | ASTM D5185(m) | >150 | ▲ **167** | 70 | 116 |
| Chromium | ppm | ASTM D5185(m) | >10 | **1** | <1 | 1 |
| Nickel | ppm | ASTM D5185(m) | >10 | **<1** | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >25 | **<1** | 2 | 1 |
| Lead | ppm | ASTM D5185(m) | >100 | **0** | 0 | <1 |
| Copper | ppm | ASTM D5185(m) | >50 | **<1** | <1 | <1 |
| Tin | ppm | ASTM D5185(m) | >10 | **<1** | 0 | <1 |
| Antimony | ppm | ASTM D5185(m) | >5 | **0** | 0 | 0 |
| 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) | .4 | **22** | 17 | 20 |
| Barium | ppm | ASTM D5185(m) | | **9** | 29 | 8 |
| Molybdenum | ppm | ASTM D5185(m) | 0 | **0** | <1 | 0 |
| Manganese | ppm | ASTM D5185(m) | | **1** | 1 | 1 |
| Magnesium | ppm | ASTM D5185(m) | 0 | **<1** | 0 | <1 |
| Calcium | ppm | ASTM D5185(m) | 0 | **27** | 22 | 27 |
| Phosphorus | ppm | ASTM D5185(m) | 250 | **317** | 330 | 301 |
| Zinc | ppm | ASTM D5185(m) | 0 | **7** | 6 | 9 |
| Sulfur | ppm | ASTM D5185(m) | | **14827** | 15641 | 14141 |
| Lithium | ppm | ASTM D5185(m) | | **2** | <1 | 2 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >50 | **14** | 12 | 12 |
| Sodium | ppm | ASTM D5185(m) | | **2** | 2 | 3 |
| Potassium | ppm | ASTM D5185(m) | >20 | **<1** | 0 | <1 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | ASTM D7844* | | **0** | 0 | 0 |
| Nitration | Abs/cm | ASTM D7624* | | **3.4** | 3.4 | 2.0 |
| Sulfation | Abs/.1mm | ASTM D7415* | | **13.9** | 14.0 | 9.1 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | ASTM D7414* | | **4.8** | 5.3 | 3.3 |

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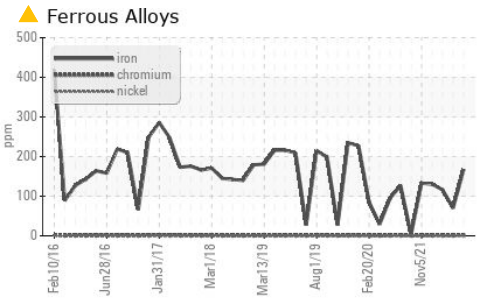
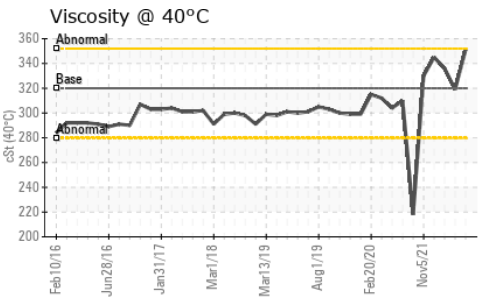
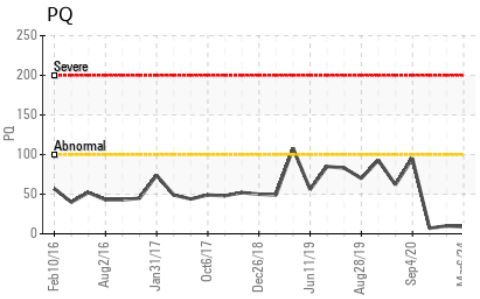


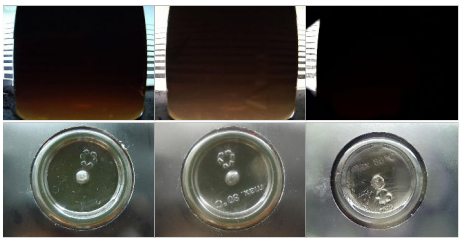



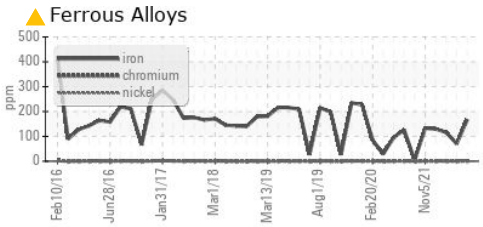

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | Visual* | NONE | **NONE** | NONE | NONE |
|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

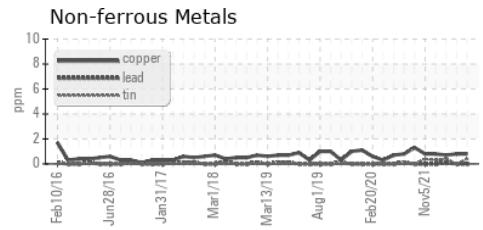
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D7279(m) | 320 | **351** | 319 | 336 |

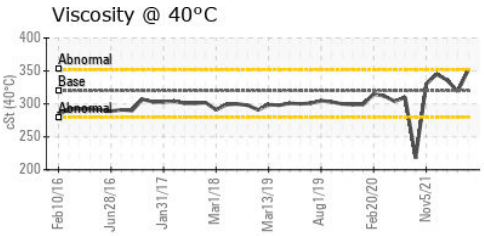
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | | | | |
| Bottom | | | | | |

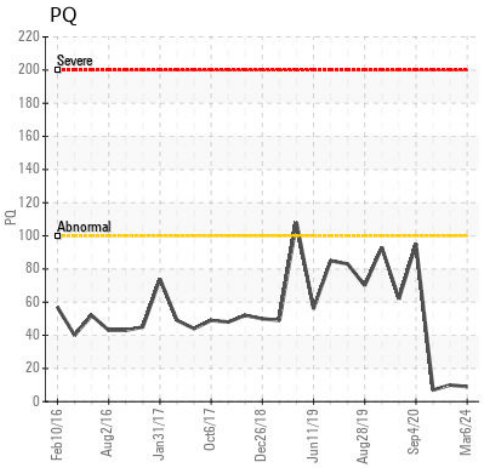


## GRAPHS




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : WC0841679
**Lab Number** : 02622109
**Unique Number** : 5747228
**Test Package** : IND 1 ( Additional Tests: FT-IR, PQ )

**Received** : 14 Mar 2024
**Tested** : 14 Mar 2024
**Diagnosed** : 15 Mar 2024 - Kevin Marson

*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.*


**Rio Tinto - USINE VAUDREUIL BHB (Mill - Aluminum)**
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