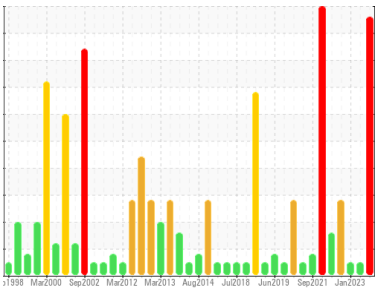
# PROBLEM SUMMARY

Sample Rating Trend

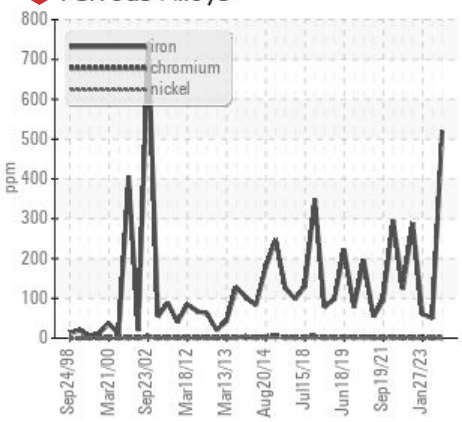


WEAR

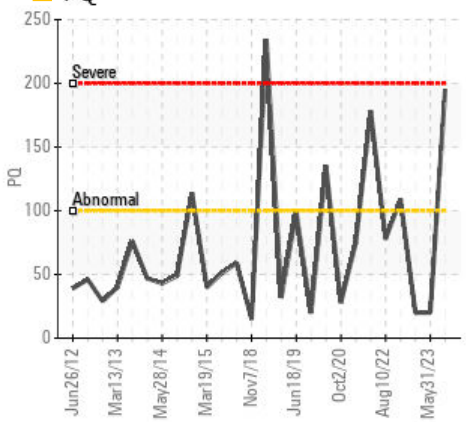
Area
## PUMPHOUSE/LANCE & FCE PUMPS
Machine Id
## C - Lance and Furnace 1 Electric Pump IB
Component
**Lube System**
Fluid
**PETRO CANADA HYDREX AW 100 (2 GAL)**

## COMPONENT CONDITION SUMMARY

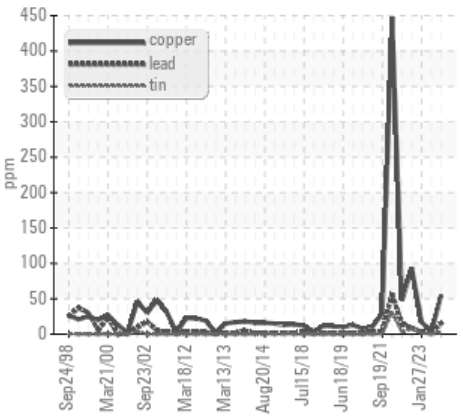
Ferrous Alloys




PQ




Non-ferrous Metals




## RECOMMENDATION

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | SEVERE | NORMAL | NORMAL |
|---|---|---|---|---|---|---|
| PQ | | ASTM D8184* | >DFLT | ▲ 195 | 20 | 20 |
| Iron | ppm | ASTM D5185(m) | >20 | ⬢ 520 | 50 | 60 |
| Lead | ppm | ASTM D5185(m) | >20 | ▲ 15 | 2 | 3 |
| Copper | ppm | ASTM D5185(m) | >20 | ▲ 55 | 3 | 17 |

**Customer Id:** LEWBOSC
**Sample No.:** WC0866303
**Lab Number:** 02586766
**Test Package:** IND 2

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
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gloria.gonzalez@wearcheck.com

## RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|---|---|---|---|---|
| Change Fluid | --- | --- | ? | We recommend that you drain the oil from the component if this has not already been done. |
| Resample | --- | --- | ? | We recommend an early resample to monitor this condition. |

## HISTORICAL DIAGNOSIS

**31 May 2023 Diag: Bill Quesnel**

NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

**27 Jan 2023 Diag: Kevin Marson**

NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The water content is negligible. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

**13 Dec 2022 Diag: Kevin Marson**

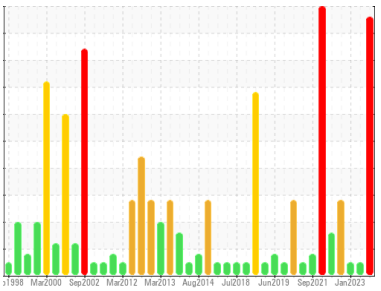
VISUAL METAL

We advise that you check for visible metal particles in the oil. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.Copper and iron ppm levels are abnormal. Light concentration of visible metal present. Oil cooler core leaching or motor piston wear is indicated. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report

# OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Area
## PUMPHOUSE/LANCE & FCE PUMPS
Machine Id
## C - Lance and Furnace 1 Electric Pump IB
Component
**Lube System**
Fluid
**PETRO CANADA HYDREX AW 100 (2 GAL)**

## DIAGNOSIS

**Recommendation**

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

**Wear**

Iron ppm levels are severe. PQ levels are abnormal. Copper ppm levels are abnormal. Lead ppm levels are noted. Cylinder or oil pump wear indicated. Oil cooler core leaching or motor piston wear is indicated. The high ferrous density (PQ) index indicates that abnormal wear is occurring.

**Contamination**

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

**Fluid Condition**

The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0866303** | WC0824420 | WC0785682 |
| Sample Date | | Client Info | | **04 Oct 2023** | 31 May 2023 | 27 Jan 2023 |
| 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 | | | | **SEVERE** | NORMAL | NORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| PQ | | ASTM D8184* | >DFLT | ▲ **195** | 20 | 20 |
| Iron | ppm | ASTM D5185(m) | >20 | ⬢ **520** | 50 | 60 |
| Chromium | ppm | ASTM D5185(m) | >20 | **2** | <1 | 0 |
| Nickel | ppm | ASTM D5185(m) | >20 | **<1** | 3 | 0 |
| Titanium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | | **<1** | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >20 | **<1** | <1 | <1 |
| Lead | ppm | ASTM D5185(m) | >20 | ▲ **15** | 2 | 3 |
| Copper | ppm | ASTM D5185(m) | >20 | ▲ **55** | 3 | 17 |
| Tin | ppm | ASTM D5185(m) | >20 | **2** | 0 | 1 |
| Antimony | ppm | ASTM D5185(m) | | **0** | 0 | <1 |
| Vanadium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |

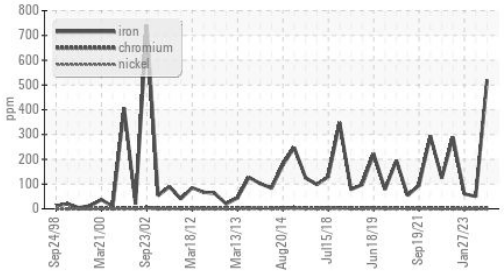
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | 0 | **<1** | 0 | <1 |
| Barium | ppm | ASTM D5185(m) | 0 | **<1** | 1 | 5 |
| Molybdenum | ppm | ASTM D5185(m) | 0 | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185(m) | 0 | **2** | <1 | <1 |
| Magnesium | ppm | ASTM D5185(m) | 0 | **0** | <1 | 0 |
| Calcium | ppm | ASTM D5185(m) | 50 | **35** | 50 | 49 |
| Phosphorus | ppm | ASTM D5185(m) | 330 | **314** | 370 | 361 |
| Zinc | ppm | ASTM D5185(m) | 430 | **361** | 409 | 414 |
| Sulfur | ppm | ASTM D5185(m) | 760 | **2511** | 2682 | 2541 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >15 | **11** | 3 | 3 |
| Sodium | ppm | ASTM D5185(m) | | **3** | <1 | <1 |
| Potassium | ppm | ASTM D5185(m) | >20 | **0** | <1 | <1 |

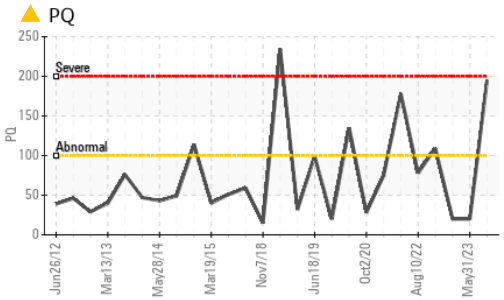
| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | | **256637** | 272482 | 149271 |
| Particles >6µm | | ASTM D7647 | >10240000 | **70517** | 67182 | 29653 |
| Particles >14µm | | ASTM D7647 | >10240000 | **651** | 152 | 340 |
| Particles >21µm | | ASTM D7647 | >2560000 | **139** | 32 | 39 |
| Particles >38µm | | ASTM D7647 | >640000 | **6** | 0 | 0 |
| Particles >71µm | | ASTM D7647 | >160000 | **1** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >--/30/30 | **25/23/17** | 25/23/14 | 24/22/16 |

# OIL ANALYSIS REPORT

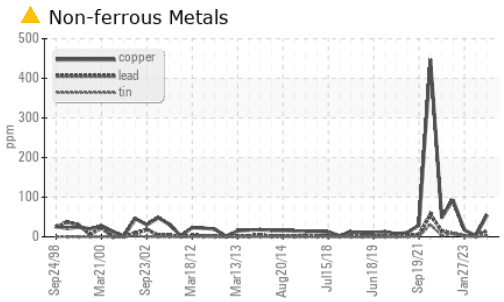
Ferrous Alloys



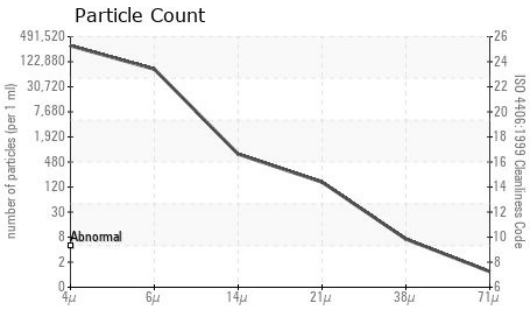

PQ



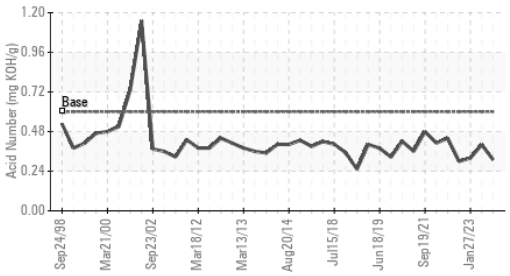

Non-ferrous Metals




Particle Count



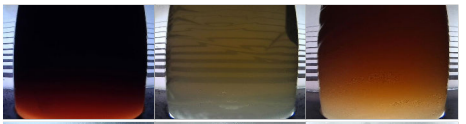

Acid Number




| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D974* | 0.60 | **0.31** | 0.40 | 0.32 |

| 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 | **VLITE** | NONE | NONE |
| Appearance | scalar | Visual* | NORML | **NORML** | NORML | NORML |
| Odor | scalar | Visual* | NORML | **NORML** | NORML | NORML |
| Emulsified Water | scalar | Visual* | >5 | **NEG** | NEG | .5% |
| Free Water | scalar | Visual* | | **NEG** | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D7279(m) | 101 | **93.5** | 93.5 | 92.1 |

| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |
| PrtFilter | | | *no image* | *no image* | *no image* |


ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **STELCO - BOSC - Basic Oxygen Slab Caster**
**Sample No.** : WC0866303 **Received** : 04 Oct 2023 2330 Regional Road #3, Door: BOSC8
**Lab Number** : 02586766 **Diagnosed** : 05 Oct 2023 NANTICOKE, ON
**Unique Number** : 5655832 **Diagnostician** : Kevin Marson CA N0A 1L0
**Test Package** : IND 2 ( Additional Tests: PQ ) Contact: Tom Walden
Thomas.Walden@stelco.com
T: (519)587-4541
F: (519)587-7702


*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.*