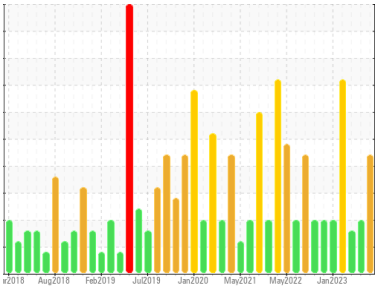
# PROBLEM SUMMARY

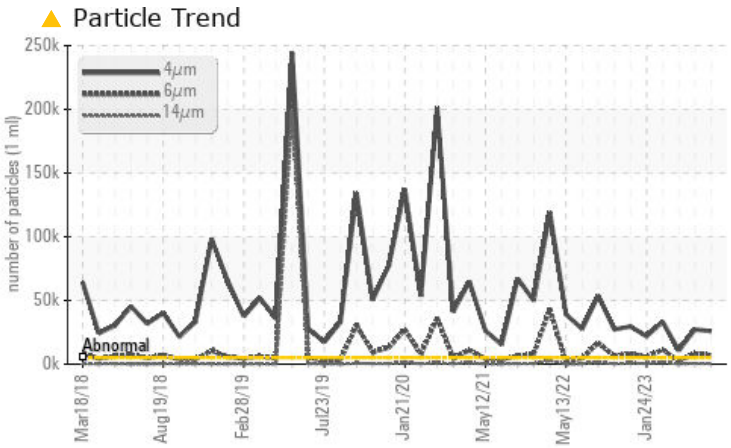
Sample Rating Trend



**WATER**

Area
## BOF/OG SYSTEM
Machine Id
## D - O.G. Fan Lube System # 7
Component
**Tank Lube System**
Fluid
**PETRO CANADA HYDREX AW 100 (135 GAL)**

## COMPONENT CONDITION SUMMARY




## RECOMMENDATION

We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We advise that you follow the water drain-off procedure for this component. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | **ABNORMAL** | ABNORMAL | ABNORMAL |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >5000 | ▲ **25867** | ▲ 27247 | ▲ 10679 |
| Particles >6µm | | ASTM D7647 | >1300 | ▲ **6974** | ▲ 8394 | ▲ 2472 |
| Particles >14µm | | ASTM D7647 | >160 | ▲ **451** | ▲ 582 | ▲ 186 |
| Particles >21µm | | ASTM D7647 | >40 | ▲ **117** | ▲ 132 | 47 |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ **22/20/16** | ▲ 22/20/16 | ▲ 21/18/15 |
| Appearance | scalar | Visual* | NORML | ▲ **WGOIL** | NORML | NORML |
| Free Water | scalar | Visual* | | ▲ **1%** | NEG | NEG |


**Customer Id:** LEWBOSC
**Sample No.:** WC0850091
**Lab Number:** 02576223
**Test Package:** IND 2

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

*To change component or sample information:*
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

## RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|---|---|---|---|---|
| Change Filter | --- | --- | ? | We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. |
| Water Drain-off | --- | --- | ? | We advise that you follow the water drain-off procedure for this component. |
| Resample | --- | --- | ? | We recommend an early resample to monitor this condition. |
| Check Breathers | --- | --- | ? | The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. |
| Check Water Access | --- | --- | ? | We advise that you check for the source of water entry. |
| Check Seals | --- | --- | ? | Check seals and/or filters for points of contaminant entry. |
| Filter Fluid | --- | --- | ? | We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. |

## HISTORICAL DIAGNOSIS

**13 Jul 2023 Diag: Kevin Marson**

ISO

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition.All component wear rates are normal. There is a moderate amount of particulates (2 to 100 microns in size) present in the oil. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

**20 Jun 2023 Diag: Kevin Marson**

ISO

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

**28 Feb 2023 Diag: Kevin Marson**

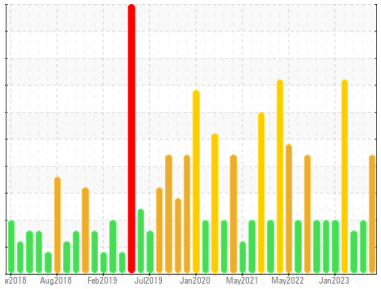
ISO

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation.All component wear rates are normal. Particles >14µm are severely high. Particles >21µm are severely high. Particles >6µm are severely high. Oil Cleanliness are severely high. Particles >4µm are abnormally high. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

# OIL ANALYSIS REPORT

Sample Rating Trend




**WATER**

Area
## BOF/OG SYSTEM
Machine Id
## D - O.G. Fan Lube System # 7
Component
**Tank Lube System**
Fluid
**PETRO CANADA HYDREX AW 100 (135 GAL)**

## DIAGNOSIS

**Recommendation**

We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We advise that you follow the water drain-off procedure for this component. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition.

**Wear**

All component wear rates are normal.

**Contamination**

There is a moderate amount of particulates (2 to 100 microns in size) present in the oil. Free water present.

**Fluid Condition**

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0850091** | WC0838949 | WC0832556 |
| Sample Date | | Client Info | | **16 Aug 2023** | 13 Jul 2023 | 20 Jun 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 | | | | **ABNORMAL** | ABNORMAL | ABNORMAL |

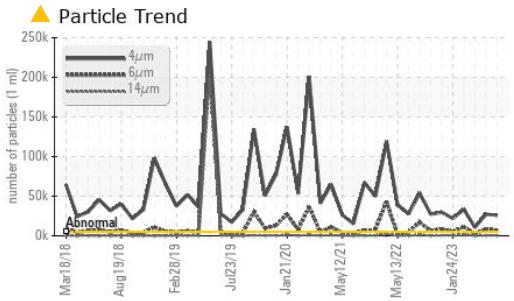
| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| PQ | | ASTM D8184* | >99999 | **0** | 0 | 0 |
| Iron | ppm | ASTM D5185(m) | >20 | **1** | <1 | <1 |
| Chromium | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) | >20 | **<1** | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | | **<1** | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >20 | **<1** | <1 | 0 |
| Lead | ppm | ASTM D5185(m) | >20 | **1** | <1 | <1 |
| Copper | ppm | ASTM D5185(m) | >20 | **3** | 2 | <1 |
| Tin | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Antimony | ppm | ASTM D5185(m) | | **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 |

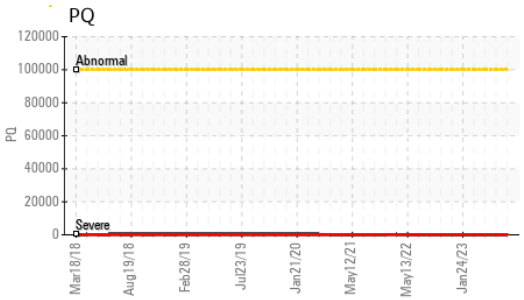
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | 0 | **0** | 0 | <1 |
| Barium | ppm | ASTM D5185(m) | 0 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 0 | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185(m) | 0 | **0** | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) | 0 | **<1** | <1 | 0 |
| Calcium | ppm | ASTM D5185(m) | 50 | **34** | 37 | 39 |
| Phosphorus | ppm | ASTM D5185(m) | 330 | **315** | 333 | 340 |
| Zinc | ppm | ASTM D5185(m) | 430 | **347** | 372 | 366 |
| Sulfur | ppm | ASTM D5185(m) | 760 | **2706** | 2707 | 2857 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

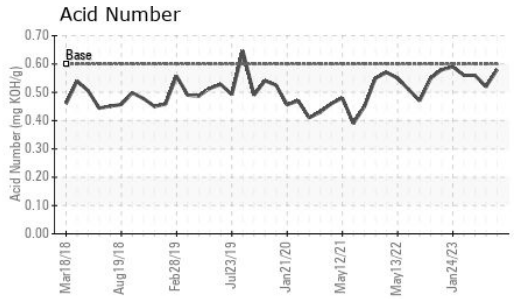
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >15 | **3** | 3 | 3 |
| Sodium | ppm | ASTM D5185(m) | | **<1** | <1 | 0 |
| Potassium | ppm | ASTM D5185(m) | >20 | **<1** | <1 | <1 |

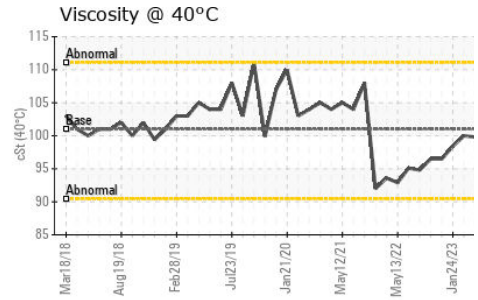
| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >5000 | ▲ **25867** | ▲ 27247 | ▲ 10679 |
| Particles >6µm | | ASTM D7647 | >1300 | ▲ **6974** | ▲ 8394 | ▲ 2472 |
| Particles >14µm | | ASTM D7647 | >160 | ▲ **451** | ▲ 582 | ▲ 186 |
| Particles >21µm | | ASTM D7647 | >40 | ▲ **117** | ▲ 132 | 47 |
| Particles >38µm | | ASTM D7647 | >10 | **4** | 2 | 1 |
| Particles >71µm | | ASTM D7647 | >3 | **1** | 0 | 1 |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ **22/20/16** | ▲ 22/20/16 | ▲ 21/18/15 |

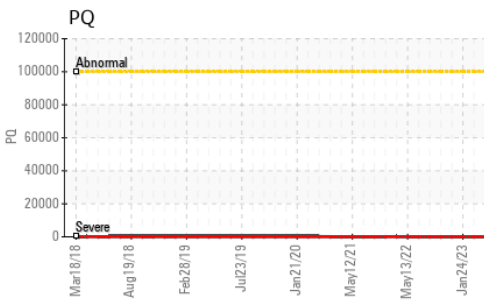
# OIL ANALYSIS REPORT



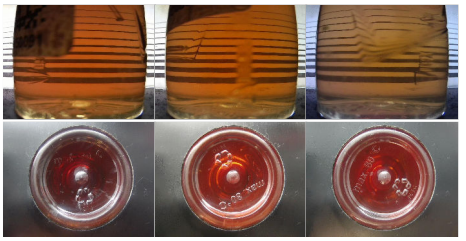




| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D974* | 0.60 | **0.58** | 0.52 | 0.56 |

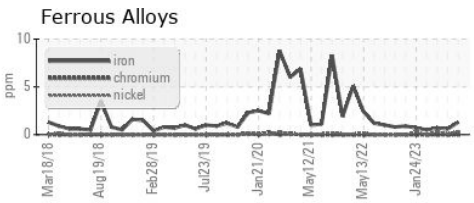
| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| Silt | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| Debris | scalar | Visual* | NONE | **VLITE** | NONE | VLITE |
| Sand/Dirt | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| Appearance | scalar | Visual* | NORML | ▲ **WGOIL** | NORML | NORML |
| Odor | scalar | Visual* | NORML | **NORML** | NORML | NORML |
| Emulsified Water | scalar | Visual* | >5 | **NEG** | NEG | NEG |
| Free Water | scalar | Visual* | | ▲ **1%** | NEG | NEG |

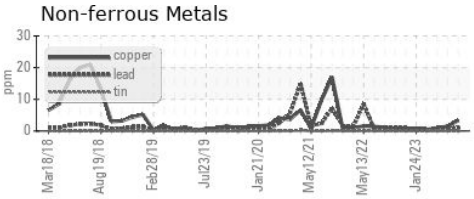
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D7279(m) | 101 | **99.5** | 98.1 | 99.8 |

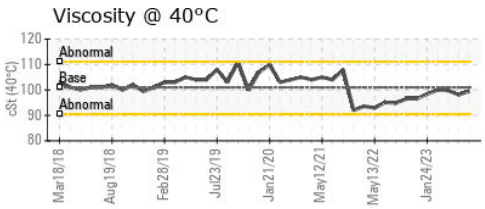
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | | | | |
| Bottom | | | | | |

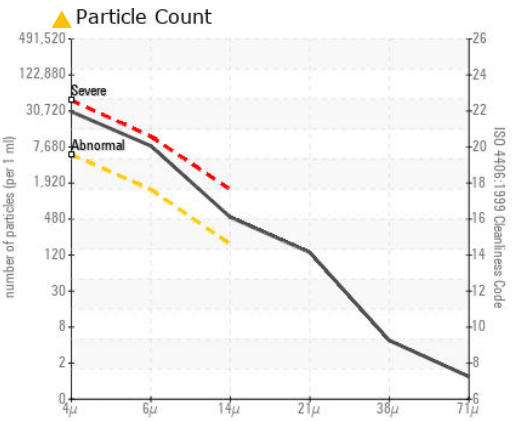


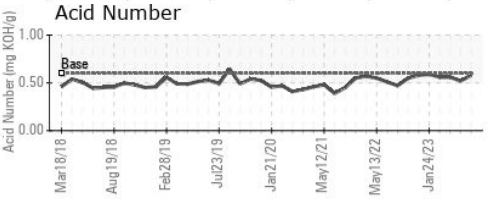
## GRAPHS




CALA Testing Accreditation No. 1005078
ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **STELCO - BOSC - Basic Oxygen Slab Caster**
**Sample No.** : WC0850091 **Received** : 16 Aug 2023 2330 Regional Road #3, Door: BOSC8
**Lab Number** : 02576223 **Diagnosed** : 18 Aug 2023 NANTICOKE, ON
**Unique Number** : 5629283 **Diagnostician** : Kevin Marson CA N0A 1L0
**Test Package** : IND 2 ( Additional Tests: PQ, TAN Man ) Contact: Tom Walden

*To discuss this sample report, contact Customer Service at 1-800-268-2131.* Thomas.Walden@stelco.com
*Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.* T: (519)587-4541
*Validity of results and interpretation are based on the sample and information as supplied.* F: (519)587-7702