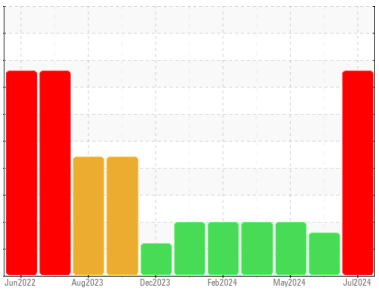
# PROBLEM SUMMARY

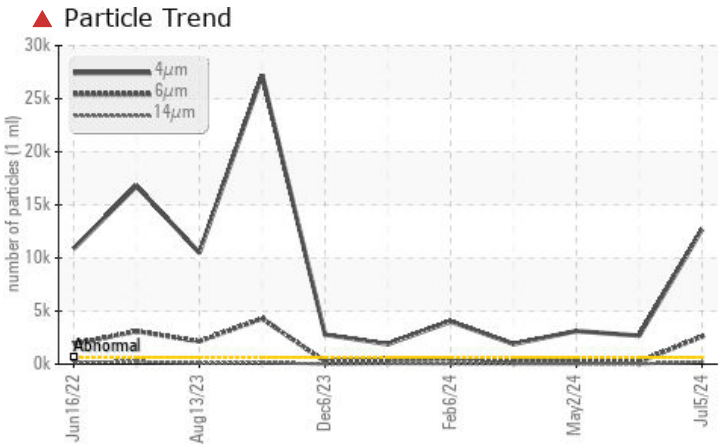
Sample Rating Trend




ISO

Machine Id
## MAIN PRESS 4
Component
**Hydraulic System**
Fluid
**PETRO CANADA HYDREX AW 46 (13000 LTR)**

## COMPONENT CONDITION SUMMARY




## RECOMMENDATION

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. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using Advanced Oil Monitoring (AOM) kits for this system. The AOM test package includes advanced level testing to determine the suitability of turbine and large industrial compressor oils for continued use.

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | SEVERE | ABNORMAL | ABNORMAL |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >640 | ▲ **12686** | ▲ 2678 | ▲ 3118 |
| Particles >6µm | | ASTM D7647 | >160 | ▲ **2606** | ● 232 | ● 264 |
| Particles >14µm | | ASTM D7647 | >20 | ▲ **217** | 16 | ● 23 |
| Particles >21µm | | ASTM D7647 | >4 | ▲ **51** | ● 7 | ● 7 |
| Oil Cleanliness | | ISO 4406 (c) | >16/14/11 | ▲ **21/19/15** | ▲ 19/15/11 | ▲ 19/15/12 |

**Customer Id:** INDMIS
**Sample No.:** WC0943191
**Lab Number:** 02646250
**Test Package:** IND 2

*To manage this report scan the QR code*

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Kevin.Marson@wearcheck.com

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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. |
| Resample | --- | --- | ? | Resample in 30-45 days to monitor this situation. |
| Contact Required | --- | --- | ? | Please contact your representative for information regarding the proper sampling kits for your service. |
| Alert | --- | --- | ? | NOTE: We recommend using Advanced Oil Monitoring (AOM) kits for this system. The AOM test package includes advanced level testing to determine the suitability of turbine and large industrial compressor oils for continued use. |
| 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 Dirt Access | --- | --- | ? | We advise that you check all areas where contaminants can enter the system. |
| 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

ISO

**04 Jun 2024 Diag: Wes Davis**

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using Advanced Oil Monitoring (AOM) kits for this system. The AOM test package includes advanced level testing to determine the suitability of turbine and large industrial compressor oils for continued use.All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service (unconfirmed). The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

ISO

**02 May 2024 Diag: Wes Davis**

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using Advanced Oil Monitoring (AOM) kits for this system. The AOM test package includes advanced level testing to determine the suitability of turbine and large industrial compressor oils for continued use.All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service (unconfirmed). The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

ISO

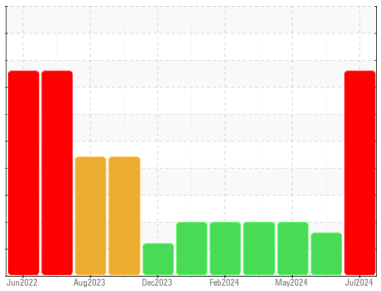
**03 Apr 2024 Diag: Wes Davis**

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using Advanced Oil Monitoring (AOM) kits for this system. The AOM test package includes advanced level testing to determine the suitability of turbine and large industrial compressor oils for continued use.All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service (unconfirmed). The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

# OIL ANALYSIS REPORT

Sample Rating Trend




ISO

Machine Id
## MAIN PRESS 4
Component
**Hydraulic System**
Fluid
**PETRO CANADA HYDREX AW 46 (13000 LTR)**

## DIAGNOSIS

**Recommendation**

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. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using Advanced Oil Monitoring (AOM) kits for this system. The AOM test package includes advanced level testing to determine the suitability of turbine and large industrial compressor oils for continued use.

**Wear**

Component wear rates appear to be normal (unconfirmed).

**Contamination**

There is a high amount of particulates (2 to 100 microns in size) present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code.

**Fluid Condition**

The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service (unconfirmed). 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 | | **WC0943191** | WC0921541 | WC0921535 |
| Sample Date | | Client Info | | **05 Jul 2024** | 04 Jun 2024 | 02 May 2024 |
| Machine Age | mths | Client Info | | **0** | 0 | 0 |
| Oil Age | mths | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **SEVERE** | ABNORMAL | ABNORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >0.05 | **NEG** | NEG | NEG |

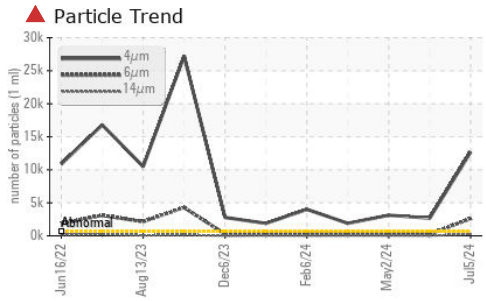
| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >20 | **12** | 12 | 11 |
| Chromium | ppm | ASTM D5185(m) | >20 | **1** | 1 | 1 |
| Nickel | ppm | ASTM D5185(m) | >20 | **<1** | 0 | 0 |
| Titanium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >20 | **<1** | 0 | 0 |
| Lead | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Copper | ppm | ASTM D5185(m) | >20 | **4** | 5 | 4 |
| 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 |

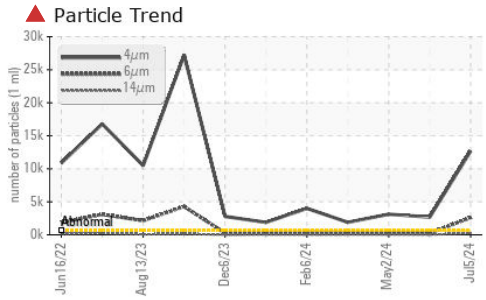
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | 0.0 | **<1** | <1 | <1 |
| Barium | ppm | ASTM D5185(m) | 0.0 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 0.1 | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185(m) | 0.0 | **<1** | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) | 0.3 | **2** | 2 | 2 |
| Calcium | ppm | ASTM D5185(m) | 50 | **51** | 53 | 53 |
| Phosphorus | ppm | ASTM D5185(m) | 315 | **323** | 341 | 332 |
| Zinc | ppm | ASTM D5185(m) | 411 | **385** | 386 | 391 |
| Sulfur | ppm | ASTM D5185(m) | 712 | **717** | 735 | 715 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

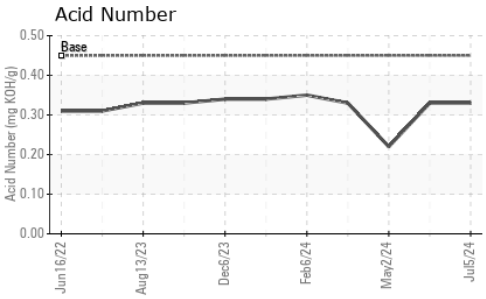
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >15 | **0** | 0 | 0 |
| Sodium | ppm | ASTM D5185(m) | | **<1** | 1 | <1 |
| Potassium | ppm | ASTM D5185(m) | >20 | **1** | 1 | 1 |

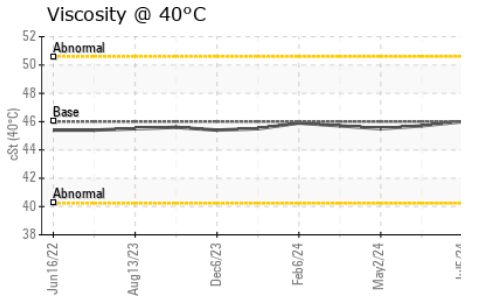
| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >640 | ▲ **12686** | ▲ 2678 | ▲ 3118 |
| Particles >6µm | | ASTM D7647 | >160 | ▲ **2606** | ● 232 | ● 264 |
| Particles >14µm | | ASTM D7647 | >20 | ▲ **217** | 16 | ● 23 |
| Particles >21µm | | ASTM D7647 | >4 | ▲ **51** | ● 7 | ● 7 |
| Particles >38µm | | ASTM D7647 | >3 | **4** | 1 | 1 |
| Particles >71µm | | ASTM D7647 | >3 | **0** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >16/14/11 | ▲ **21/19/15** | ▲ 19/15/11 | ▲ 19/15/12 |

# OIL ANALYSIS REPORT



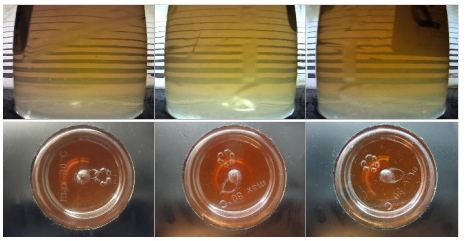




| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D974* | 0.45 | **0.33** | 0.33 | 0.22 |

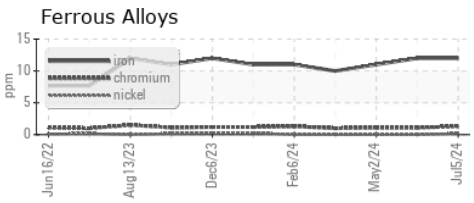
| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | Visual* | NONE | **VLITE** | NONE | NONE |
| Yellow Metal | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | Visual* | NONE | **NONE** | NONE | NONE |
| 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* | >0.05 | **NEG** | NEG | NEG |
| Free Water | scalar | Visual* | | **NEG** | NEG | NEG |

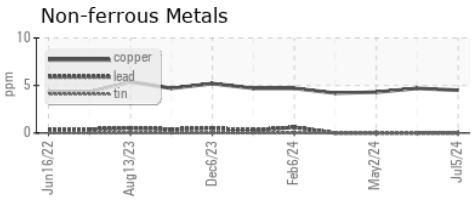
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D7279(m) | 46.0 | **46.0** | 45.7 | 45.5 |

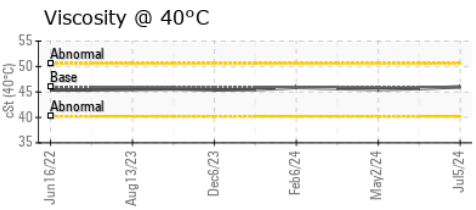
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | | | | |
| Bottom | | | | | |

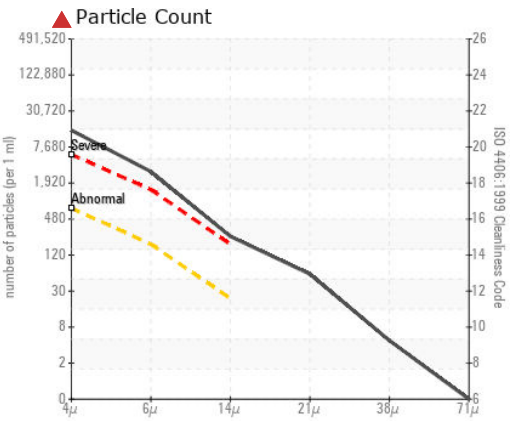


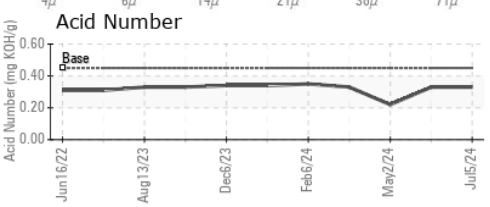
## GRAPHS




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : WC0943191 **Received** : 08 Jul 2024
**Lab Number** : 02646250 **Tested** : 09 Jul 2024
**Unique Number** : 5811802 **Diagnosed** : 09 Jul 2024 - Kevin Marson
**Test Package** : IND 2 ( Additional Tests: Bottom )

*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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