



# PROBLEM SUMMARY

Sample Rating Trend

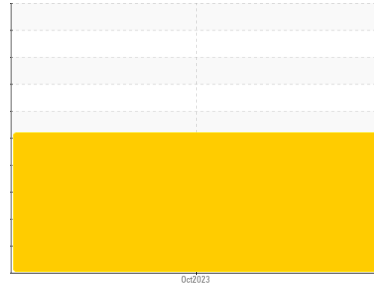
**WATER**



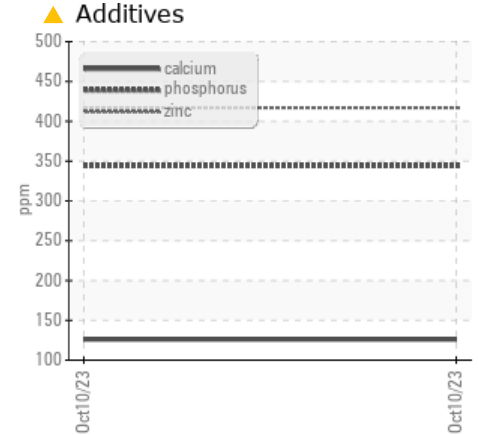
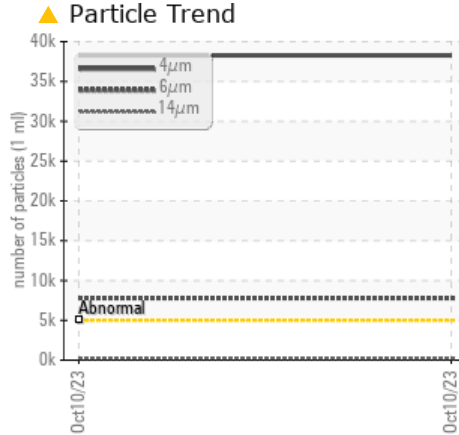
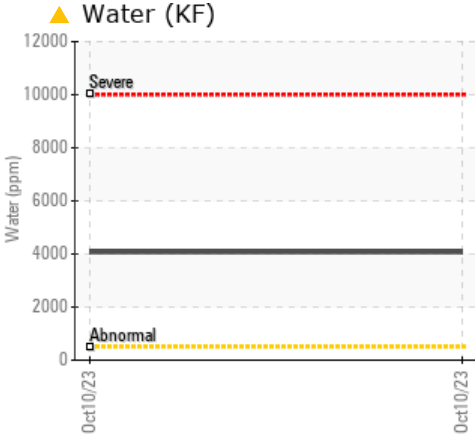
Area  
**Kam Forks & Tow Pins**  
 Machine Id  
**Kam Forks & Tow Pins**

Component  
**Hydraulic System**  
 Fluid

**PETRO CANADA HYDREX XV ALL SEASON HYDRAULIC OIL (--- 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 use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

## PROBLEMATIC TEST RESULTS

Sample Status				<b>ABNORMAL</b>	---	---
Phosphorus	ppm	ASTM D5185(m)	670	▲ <b>344</b>	---	---
Zinc	ppm	ASTM D5185(m)	850	▲ <b>417</b>	---	---
Sulfur	ppm	ASTM D5185(m)	1600	▲ <b>3129</b>	---	---
Water	%	ASTM D6304*	>0.05	▲ <b>0.407</b>	---	---
ppm Water	ppm	ASTM D6304*	>500	▲ <b>4070.3</b>	---	---
Particles >4µm		ASTM D7647	>5000	▲ <b>38270</b>	---	---
Particles >6µm		ASTM D7647	>1300	▲ <b>7796</b>	---	---
Particles >14µm		ASTM D7647	>160	▲ <b>242</b>	---	---
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ <b>22/20/15</b>	---	---
Appearance	scalar	Visual*	NORML	▲ <b>MILKY</b>	---	---
Emulsified Water	scalar	Visual*	>0.05	▲ <b>.2%</b>	---	---

Customer Id: VMASSEY  
 Sample No.: WC0848609  
 Lab Number: 02588285  
 Test Package: MAR 2



To manage this report scan the QR code

To discuss the diagnosis or test data:  
 Kevin Marson +1 (289)291-4644 x4644  
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To change component or sample information:  
 Gloria Gonzalez +1 (289)291-4643 x4643  
[gloria.gonzalez@wearcheck.com](mailto:gloria.gonzalez@wearcheck.com)

## RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We recommend you service the filters on this component.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Information Required	---	---	?	NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.
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 Fluid Source	---	---	?	Confirm the source of the lubricant being utilized for top-up/fill.
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 use off-line filtration with water adsorbent filters to attempt to remove the water from this oil.

## HISTORICAL DIAGNOSIS



# OIL ANALYSIS REPORT

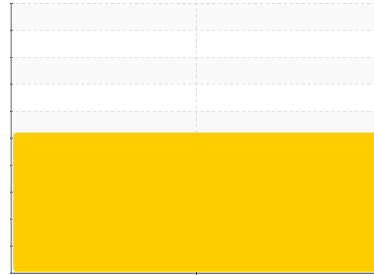
Sample Rating Trend

WATER

Area  
**Kam Forks & Tow Pins**  
Machine Id  
**Kam Forks & Tow Pins**

Component  
**Hydraulic System**  
Fluid

**PETRO CANADA HYDREX XV ALL SEASON HYDRAULIC OIL (--- 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 use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

### Wear

All component wear rates are normal.

### Contamination

There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. There is a moderate concentration of water present in the oil.

### Fluid Condition

Additive levels indicate the addition of a different brand, or type of 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.

## SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>WC0848609</b>	---	---
Sample Date	Client Info	<b>10 Oct 2023</b>	---	---
Machine Age	hrs Client Info	<b>0</b>	---	---
Oil Age	hrs Client Info	<b>0</b>	---	---
Oil Changed	Client Info	<b>N/A</b>	---	---
Sample Status		<b>ABNORMAL</b>	---	---

## WEAR METALS

method	limit/base	current	history1	history2
Iron ppm ASTM D5185(m)	>20	<b>2</b>	---	---
Chromium ppm ASTM D5185(m)	>10	<b>0</b>	---	---
Nickel ppm ASTM D5185(m)	>10	<b>0</b>	---	---
Titanium ppm ASTM D5185(m)		<b>0</b>	---	---
Silver ppm ASTM D5185(m)		<b>&lt;1</b>	---	---
Aluminum ppm ASTM D5185(m)	>10	<b>0</b>	---	---
Lead ppm ASTM D5185(m)	>20	<b>1</b>	---	---
Copper ppm ASTM D5185(m)	>20	<b>4</b>	---	---
Tin ppm ASTM D5185(m)	>10	<b>0</b>	---	---
Antimony ppm ASTM D5185(m)		<b>0</b>	---	---
Vanadium ppm ASTM D5185(m)		<b>0</b>	---	---
Beryllium ppm ASTM D5185(m)		<b>0</b>	---	---
Cadmium ppm ASTM D5185(m)		<b>0</b>	---	---

## ADDITIVES

method	limit/base	current	history1	history2
Boron ppm ASTM D5185(m)	0	<b>1</b>	---	---
Barium ppm ASTM D5185(m)	0	<b>&lt;1</b>	---	---
Molybdenum ppm ASTM D5185(m)	0	<b>0</b>	---	---
Manganese ppm ASTM D5185(m)	1	<b>0</b>	---	---
Magnesium ppm ASTM D5185(m)	0	<b>8</b>	---	---
Calcium ppm ASTM D5185(m)	100	<b>126</b>	---	---
Phosphorus ppm ASTM D5185(m)	670	<b>▲ 344</b>	---	---
Zinc ppm ASTM D5185(m)	850	<b>▲ 417</b>	---	---
Sulfur ppm ASTM D5185(m)	1600	<b>▲ 3129</b>	---	---
Lithium ppm ASTM D5185(m)		<b>&lt;1</b>	---	---

## CONTAMINANTS

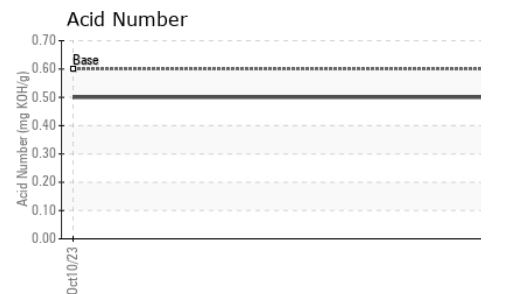
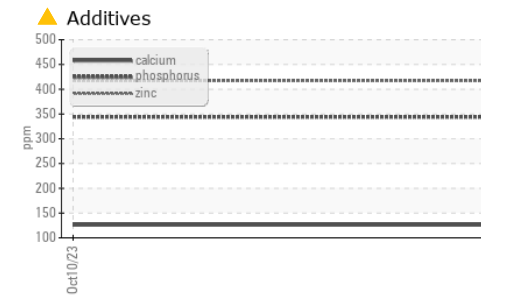
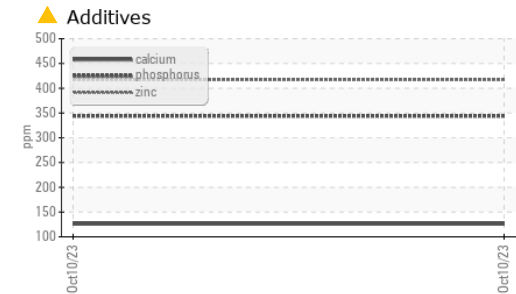
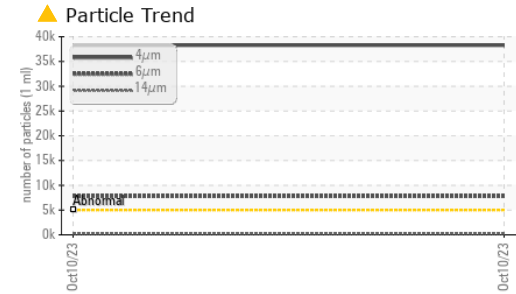
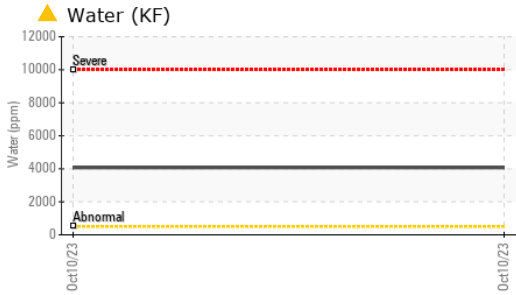
method	limit/base	current	history1	history2
Silicon ppm ASTM D5185(m)	>15	<b>&lt;1</b>	---	---
Sodium ppm ASTM D5185(m)		<b>2</b>	---	---
Potassium ppm ASTM D5185(m)	>20	<b>&lt;1</b>	---	---
Water % ASTM D6304*	>0.05	<b>▲ 0.407</b>	---	---
ppm Water ppm ASTM D6304*	>500	<b>▲ 4070.3</b>	---	---

## FLUID CLEANLINESS

method	limit/base	current	history1	history2
Particles >4µm ASTM D7647	>5000	<b>▲ 38270</b>	---	---
Particles >6µm ASTM D7647	>1300	<b>▲ 7796</b>	---	---
Particles >14µm ASTM D7647	>160	<b>▲ 242</b>	---	---
Particles >21µm ASTM D7647	>40	<b>39</b>	---	---
Particles >38µm ASTM D7647	>10	<b>2</b>	---	---
Particles >71µm ASTM D7647	>3	<b>0</b>	---	---
Oil Cleanliness ISO 4406 (c)	>19/17/14	<b>▲ 22/20/15</b>	---	---



# OIL ANALYSIS REPORT



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.60	<b>0.50</b>	---	---

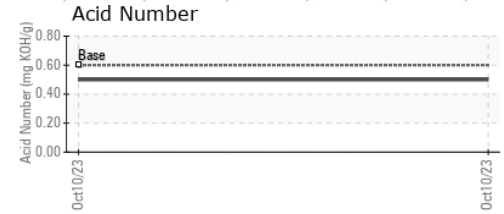
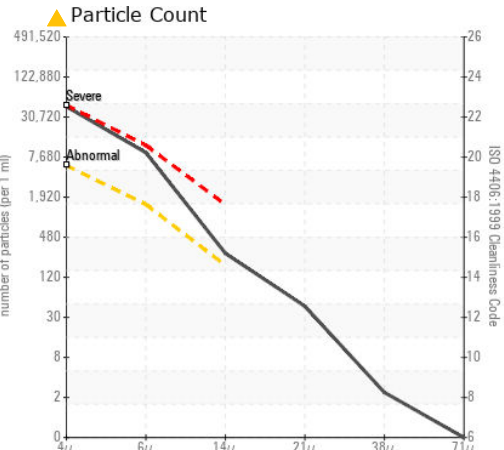
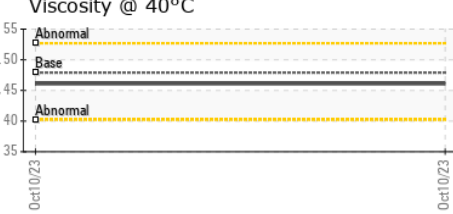
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	<b>NONE</b>	---	---
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	---	---
Precipitate	scalar	Visual*	NONE	<b>NONE</b>	---	---
Silt	scalar	Visual*	NONE	<b>NONE</b>	---	---
Debris	scalar	Visual*	NONE	<b>NONE</b>	---	---
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	---	---
Appearance	scalar	Visual*	NORML	<b>▲ MILKY</b>	---	---
Odor	scalar	Visual*	NORML	<b>NORML</b>	---	---
Emulsified Water	scalar	Visual*	>0.05	<b>▲ .2%</b>	---	---
Free Water	scalar	Visual*		<b>NEG</b>	---	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	47.9	<b>46.1</b>	---	---

### SAMPLE IMAGES

method	limit/base	current	history1	history2
Color			no image	no image
Bottom			no image	no image

### GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0848609 **Received** : 11 Oct 2023  
**Lab Number** : **02588285** **Diagnosed** : 12 Oct 2023  
**Unique Number** : 5657351 **Diagnostician** : Kevin Marson  
**Test Package** : MAR 2 ( Additional Tests: KF, TAN Man )

**Canadian Coast Guard**  
 CCGS Vincent Massey, 101 Boul. Champlain  
 Quebec, QC  
 CA G1K 7Y7  
 Contact: Vincent Massey  
 vincentmasseyse@ccgs-ngcc.gc.ca

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.

T:  
F: