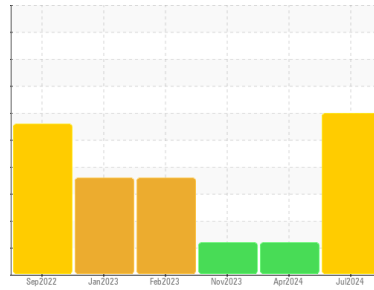




# PROBLEM SUMMARY

Sample Rating Trend

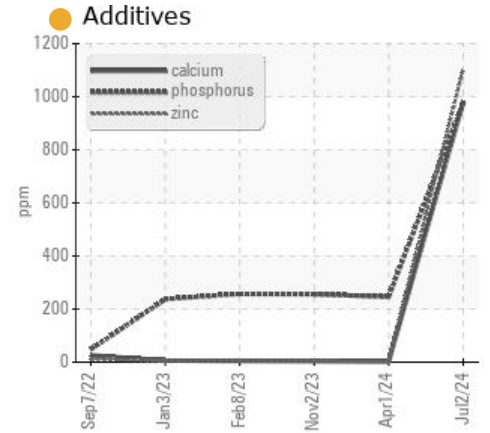
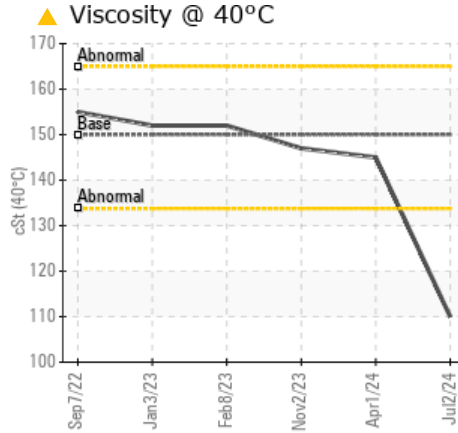
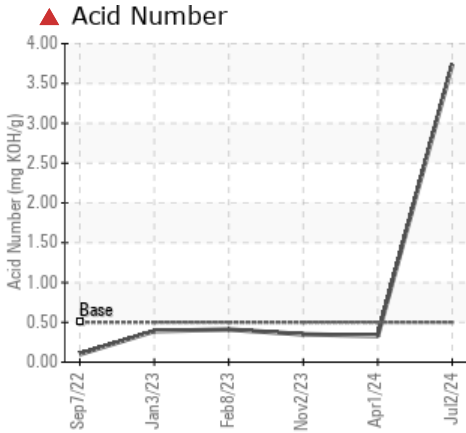


DEGRADATION



Area  
 5 Utilities/031 Water Pumping/Gearbox/P Pump/751B #2 Fire Pump  
 Machine Id  
**31GP751B #2 Fire Pump Gearbox**  
 Component  
**Gearbox**  
 Fluid  
**PETRO CANADA ENDURATEX EP 150 (17 LTR)**

## COMPONENT CONDITION SUMMARY



## RECOMMENDATION

Due to this condition we recommend the following action... We advise an early resample to confirm this situation. NOTE: The current sample results do not match this units historical trend, indicating the sample may not be from this component/unit.

## PROBLEMATIC TEST RESULTS

Sample Status		SEVERE	ABNORMAL	ABNORMAL
Acid Number (AN)	mg KOH/g    ASTM D974*    0.5	▲ 3.74	0.33	0.35
Visc @ 40°C	cSt    ASTM D7279(m)    150.0	▲ 110	145	147

Customer Id: PETMIS  
 Sample No.: WC0957478  
 Lab Number: 02646794  
 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](mailto:Kevin.Marson@wearcheck.com)

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
Resample	---	---	?	We advise an early resample to confirm this situation.
Alert	---	---	?	NOTE: The current sample results do not match this units historical trend, indicating the sample may not be from this component/unit.

HISTORICAL DIAGNOSIS

ISO



**01 Apr 2024 Diag: Wes Davis**

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



ISO



**02 Nov 2023 Diag: Kevin Marson**

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. 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



ISO



**08 Feb 2023 Diag: Wes Davis**

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 recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. All component wear rates are normal. Particles >6µm are severely high. Oil Cleanliness are severely high. Particles >4µm are abnormally high. Particles >14µm are notably 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.

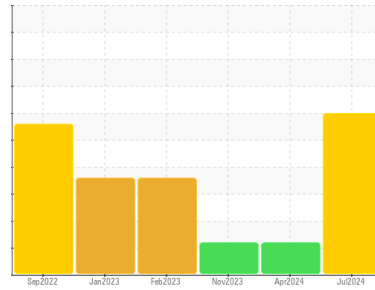
view report





# OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION



Area  
**5 Utilities/031 Water Pumping/Gearbox/P Pump/751B #2 Fire Pump**  
 Machine Id  
**31GP751B #2 Fire Pump Gearbox**  
 Component  
**Gearbox**  
 Fluid  
**PETRO CANADA ENDURATEX EP 150 (17 LTR)**

## DIAGNOSIS

### Recommendation

Due to this condition we recommend the following action... We advise an early resample to confirm this situation. NOTE: The current sample results do not match this units historical trend, indicating the sample may not be from this component/unit.

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

The high AN level of the oil indicates the presence of oxi-polymerized products. The AN level is much higher than the recommended limit. Viscosity of sample indicates oil is within SAE 40 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0957478</b>	WC0902169	WC0813228
Sample Date	Client Info		<b>02 Jul 2024</b>	01 Apr 2024	02 Nov 2023
Machine Age	hrs	Client Info	<b>0</b>	0	0
Oil Age	hrs	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>SEVERE</b>	ABNORMAL	ABNORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>200	<b>2</b>	4	3
Chromium	ppm	ASTM D5185(m)	>15	<b>0</b>	0	0
Nickel	ppm	ASTM D5185(m)	>15	<b>&lt;1</b>	0	<1
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)		<b>&lt;1</b>	0	<1
Aluminum	ppm	ASTM D5185(m)	>25	<b>&lt;1</b>	0	0
Lead	ppm	ASTM D5185(m)	>100	<b>2</b>	0	<1
Copper	ppm	ASTM D5185(m)	>200	<b>1</b>	<1	<1
Tin	ppm	ASTM D5185(m)	>25	<b>0</b>	0	0
Antimony	ppm	ASTM D5185(m)	>5	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Beryllium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185(m)		<b>0</b>	0	0

## ADDITIVES

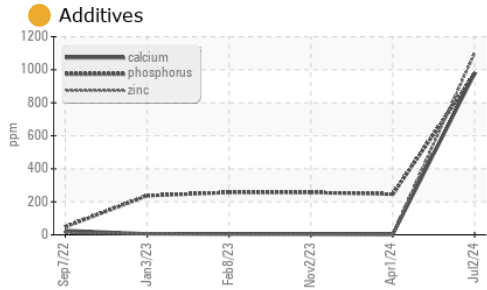
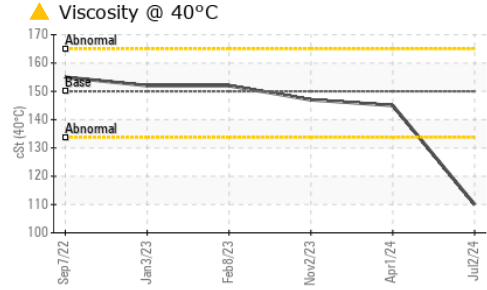
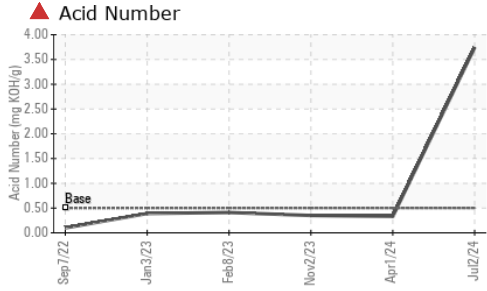
	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m)	55	<b>2</b>	60	63
Barium	ppm	ASTM D5185(m)	0	<b>0</b>	0	<1
Molybdenum	ppm	ASTM D5185(m)	0	<b>51</b>	0	0
Manganese	ppm	ASTM D5185(m)	0	<b>0</b>	0	0
Magnesium	ppm	ASTM D5185(m)	2	<b>908</b>	<1	<1
Calcium	ppm	ASTM D5185(m)	6	<b>977</b>	2	4
Phosphorus	ppm	ASTM D5185(m)	250	<b>974</b>	246	256
Zinc	ppm	ASTM D5185(m)	3	<b>1100</b>	2	3
Sulfur	ppm	ASTM D5185(m)	7500	<b>2546</b>	4769	4893
Lithium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1

## CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>50	<b>3</b>	<1	3
Sodium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	0	0



# OIL ANALYSIS REPORT



FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	0	▲ 90806	▲ 90539
Particles >6µm	ASTM D7647	>5000	0	▲ 14801	▲ 20383
Particles >14µm	ASTM D7647	>640	0	203	165
Particles >21µm	ASTM D7647	>160	0	22	28
Particles >38µm	ASTM D7647	>40	0	3	10
Particles >71µm	ASTM D7647	>10	0	2	9
Oil Cleanliness	ISO 4406 (c)	>21/19/16	---	▲ 24/21/15	▲ 24/22/15
Particles 5-15µm	count	NAS 1638	>5000	0	---
Particles 15-25µm	count	NAS 1638	>640	0	---
Particles 25-50µm	count	NAS 1638	>160	0	---
Particles 50-100µm	count	NAS 1638	>40	0	---
Particles >100µm	count	NAS 1638	>10	0	---

FLUID DEGRADATION	method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D974*	0.5	▲ 3.74	0.33	0.35

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	VLITE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	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)	150.0	▲ 110	145	147

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0957478 **Received** : 09 Jul 2024  
**Lab Number** : 02646794 **Tested** : 10 Jul 2024  
**Unique Number** : 5812346 **Diagnosed** : 15 Jul 2024 - Kevin Marson  
**Test Package** : IND 2 ( Additional Tests: PrtCountNAS, TAN Man )

**Petro Canada Lubricants Inc.**  
 385 Southdown Road  
 Mississauga, ON  
 CA L5J 2Y3  
 Contact: Martin Wagenaar  
 martin.wagenaar@HFSinclair.com  
 T: (905)403-5682  
 F: (905)822-6025

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.