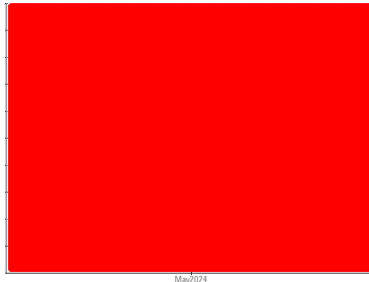
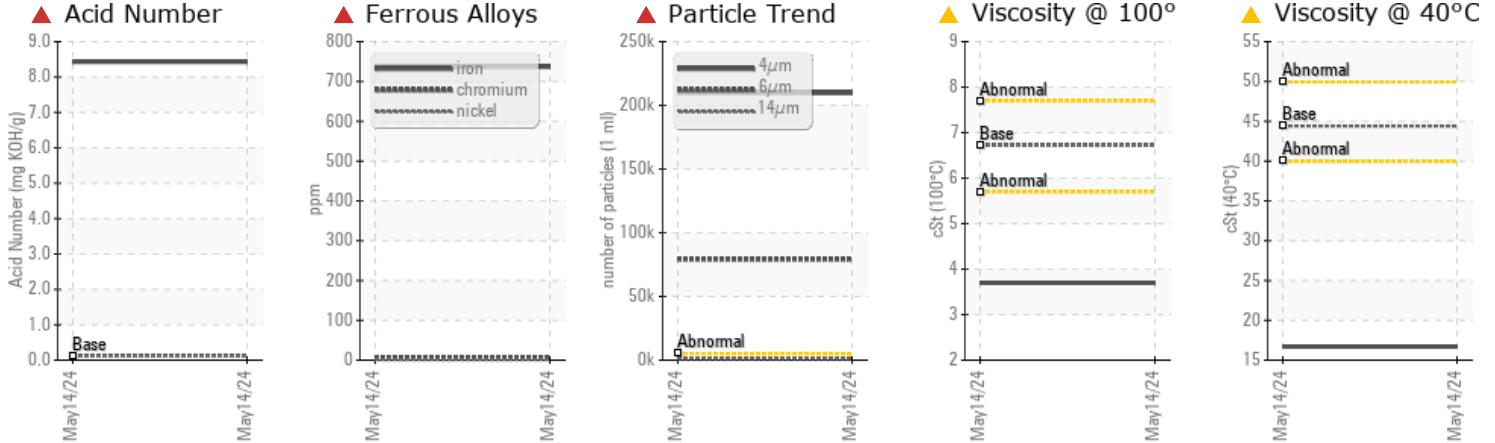




Machine Id
SCMPER
Component
Hydraulic System
Fluid
PETRO CANADA TURBOFLO R&O 46 (--- GAL)



COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check all areas where contaminants can enter the system. We recommend that you drain the oil from the component if this has not already been done. 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.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	---	---
Iron	ppm	ASTM D5185(m)	>20	▲ 737	---	---
Particles >4µm		ASTM D7647	>5000	▲ 209742	---	---
Particles >6µm		ASTM D7647	>1300	▲ 79231	---	---
Particles >14µm		ASTM D7647	>160	▲ 1262	---	---
Particles >21µm		ASTM D7647	>40	▲ 170	---	---
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ 25/23/17	---	---
Acid Number (AN)	mg KOH/g	ASTM D974*	0.12	▲ 8.43	---	---
Visc @ 40°C	cSt	ASTM D7279(m)	44.4	▲ 16.7	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	6.72	▲ 3.7	---	---

Customer Id: PCA_129713
Sample No.: PC
Lab Number: 02635708
Test Package: IND 2



To manage this report scan the QR code

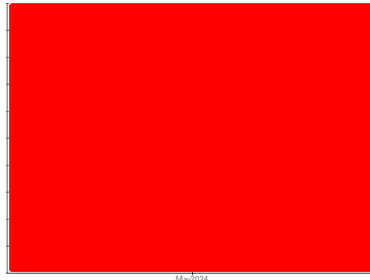
To discuss the diagnosis or test data:
Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

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 Fluid	---	---	?	We recommend that you drain the oil from the component if this has not already been done.
Change Filter	---	---	?	We recommend you service the filters on this component.
Resample	---	---	?	Resample in 30-45 days to monitor this situation.
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 Dirt Access	---	---	?	We advise that you check all areas where contaminants can enter the system.

HISTORICAL DIAGNOSIS



Machine Id
SCMPER
Component
Hydraulic System
Fluid
PETRO CANADA TURBOFLO R&O 46 (--- GAL)

DIAGNOSIS

▲ Recommendation

We advise that you check all areas where contaminants can enter the system. We recommend that you drain the oil from the component if this has not already been done. 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.

▲ Wear

Iron ppm levels are severe. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion.

▲ Contamination

There is a high amount of particulates (2 to 100 microns in size) present 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 ISO 15 range, advise investigate. 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	PC	---	---
Sample Date	Client Info	14 May 2024	---	---
Machine Age	hrs	Client Info	0	---
Oil Age	hrs	Client Info	0	---
Oil Changed	Client Info	N/A	---	---
Sample Status		SEVERE	---	---

CONTAMINATION method limit/base current history1 history2

Water	WC Method	>0.05	NEG	---	---
-------	-----------	-------	------------	-----	-----

WEAR METALS method limit/base current history1 history2

PQ	ASTM D8184*		0	---	---
Iron	ppm	ASTM D5185(m)	>20	▲ 737	---
Chromium	ppm	ASTM D5185(m)	>20	5	---
Nickel	ppm	ASTM D5185(m)	>20	1	---
Titanium	ppm	ASTM D5185(m)		0	---
Silver	ppm	ASTM D5185(m)		0	---
Aluminum	ppm	ASTM D5185(m)	>20	0	---
Lead	ppm	ASTM D5185(m)	>20	2	---
Copper	ppm	ASTM D5185(m)	>20	11	---
Tin	ppm	ASTM D5185(m)	>20	0	---
Antimony	ppm	ASTM D5185(m)		0	---
Vanadium	ppm	ASTM D5185(m)		0	---
Beryllium	ppm	ASTM D5185(m)		0	---
Cadmium	ppm	ASTM D5185(m)		0	---

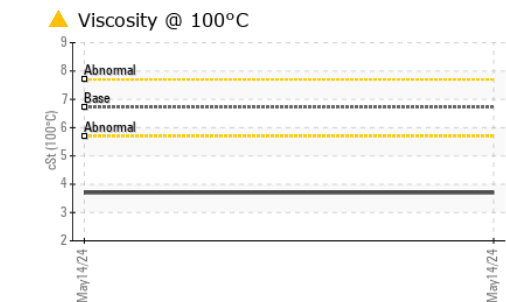
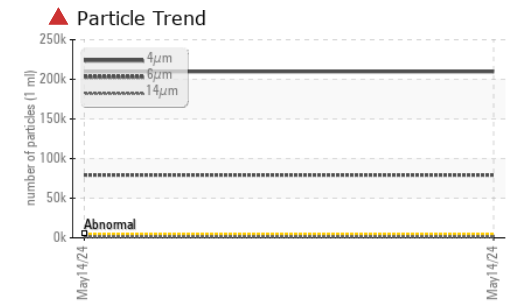
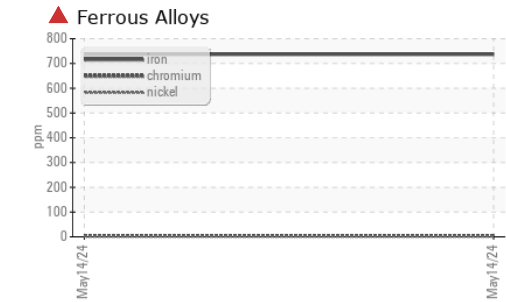
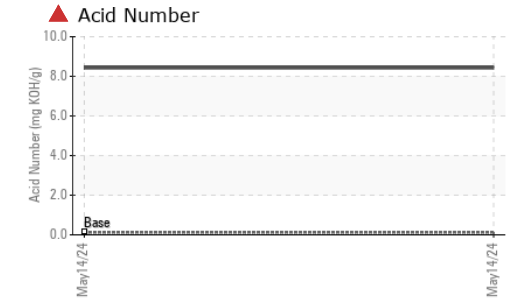
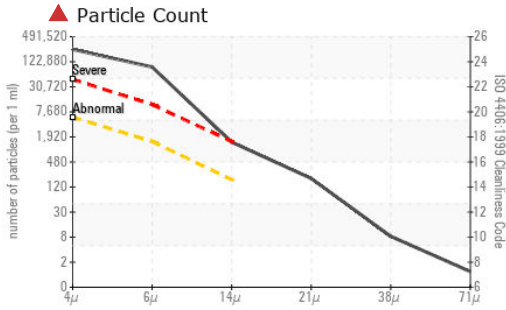
ADDITIVES method limit/base current history1 history2

Boron	ppm	ASTM D5185(m)		1	---
Barium	ppm	ASTM D5185(m)		0	---
Molybdenum	ppm	ASTM D5185(m)		0	---
Manganese	ppm	ASTM D5185(m)		1	---
Magnesium	ppm	ASTM D5185(m)		<1	---
Calcium	ppm	ASTM D5185(m)	0	1	---
Phosphorus	ppm	ASTM D5185(m)	3	2	---
Zinc	ppm	ASTM D5185(m)	0	9	---
Sulfur	ppm	ASTM D5185(m)		57	---
Lithium	ppm	ASTM D5185(m)		<1	---

CONTAMINANTS method limit/base current history1 history2

Silicon	ppm	ASTM D5185(m)	>15	0	---
Sodium	ppm	ASTM D5185(m)		<1	---
Potassium	ppm	ASTM D5185(m)	>20	<1	---

OIL ANALYSIS REPORT



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **Petro-Canada Technical/Behshad Sabah**
Sample No. : PC **Received** : 15 May 2024
Lab Number : 02635708 **Tested** : 21 May 2024
Unique Number : 5776861 **Diagnosed** : 21 May 2024 - Kevin Marson
Test Package : IND 2 (Additional Tests: KV100, PQ, TAN Man, VI)

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.

Mississauga, ON
 CA L5J 1K2
 Contact: Behshad Sabah
 Behshad.Sabah@hfsinclair.com
 T: (905)716-2158
 F: (905)403-6740

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	▲ 209742	---	---	
Particles >6µm	ASTM D7647	>1300	▲ 79231	---	---	
Particles >14µm	ASTM D7647	>160	▲ 1262	---	---	
Particles >21µm	ASTM D7647	>40	▲ 170	---	---	
Particles >38µm	ASTM D7647	>10	7	---	---	
Particles >71µm	ASTM D7647	>3	1	---	---	
Oil Cleanliness	ISO 4406 (c)	>19/17/14	▲ 25/23/17	---	---	

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.12	▲ 8.43	---	---

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	---	---
Yellow Metal	scalar	Visual*	NONE	NONE	---	---
Precipitate	scalar	Visual*	NONE	NONE	---	---
Silt	scalar	Visual*	NONE	NONE	---	---
Debris	scalar	Visual*	NONE	VLITE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	NORML	NORML	---	---
Odor	scalar	Visual*	NORML	NORML	---	---
Emulsified Water	scalar	Visual*	>0.05	NEG	---	---
Free Water	scalar	Visual*		NEG	---	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	44.4	▲ 16.7	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	6.72	▲ 3.7	---	---
Viscosity Index (VI)	Scale	ASTM D2270*	104	107	---	---

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