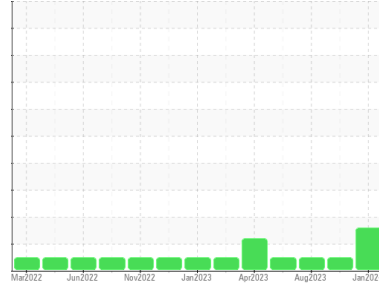


Machine Id
123001

Component
Hydraulic System

Fluid
PETRO CANADA TURBOFLO R&O 32 (--- GAL)



DIAGNOSIS

Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor. You have indicated that the oil has been changed to PETRO CANADA TURBOFLO R&O 32, however, it appears that this is a sample of the previous fluid HYDRAULIC OIL FG ISO 46. Please confirm on your next oil sample that the oil has indeed been changed to PETRO CANADA TURBOFLO R&O 32.

Wear

All component wear rates are normal.

Contamination

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

Fluid Condition

Viscosity of sample indicates oil is within ISO 46 range, advise investigate. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	PC0078802	PC0074817	PC0070437
Sample Date	Client Info	22 Jan 2024	10 Aug 2023	10 Aug 2023
Machine Age	hrs	0	0	0
Oil Age	hrs	0	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		ABNORMAL	NORMAL	NORMAL

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	<1	1	2
Chromium	ppm ASTM D5185(m) >20	0	0	0
Nickel	ppm ASTM D5185(m) >20	0	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	<1
Lead	ppm ASTM D5185(m) >20	<1	<1	0
Copper	ppm ASTM D5185(m) >20	<1	<1	<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	<1
Barium	ppm ASTM D5185(m)	0	0	0
Molybdenum	ppm ASTM D5185(m)	0	0	0
Manganese	ppm ASTM D5185(m)	0	0	0
Magnesium	ppm ASTM D5185(m)	0	<1	0
Calcium	ppm ASTM D5185(m) 0	0	<1	<1
Phosphorus	ppm ASTM D5185(m) 4	423	462	463
Zinc	ppm ASTM D5185(m) 0	<1	3	2
Sulfur	ppm ASTM D5185(m)	537	531	519
Lithium	ppm ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

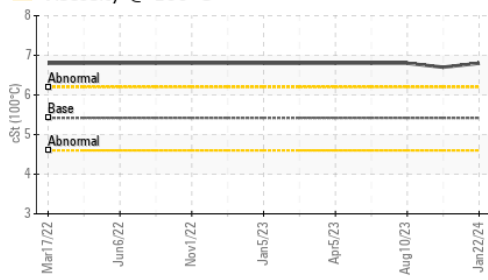
method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >15	<1	<1	<1
Sodium	ppm ASTM D5185(m)	0	0	0
Potassium	ppm ASTM D5185(m) >20	<1	0	0

FLUID CLEANLINESS

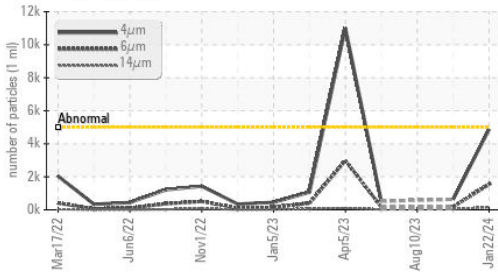
method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >5000	4870	---	637
Particles >6µm	ASTM D7647 >1300	▲ 1545	---	185
Particles >14µm	ASTM D7647 >160	157	---	35
Particles >21µm	ASTM D7647 >40	46	---	15
Particles >38µm	ASTM D7647 >10	5	---	1
Particles >71µm	ASTM D7647 >3	1	---	0
Oil Cleanliness	ISO 4406 (c) >19/17/14	▲ 19/18/14	---	16/15/12

OIL ANALYSIS REPORT

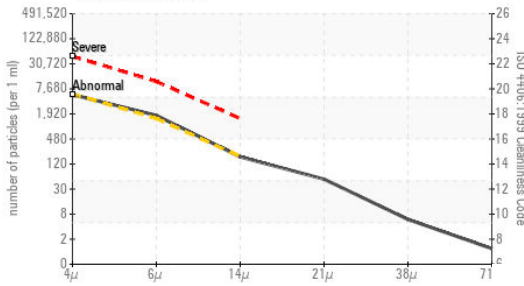
▲ Viscosity @ 100°C



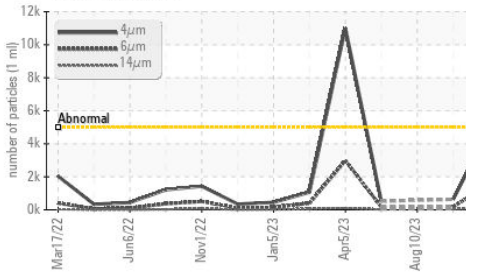
▲ Particle Trend



▲ Particle Count



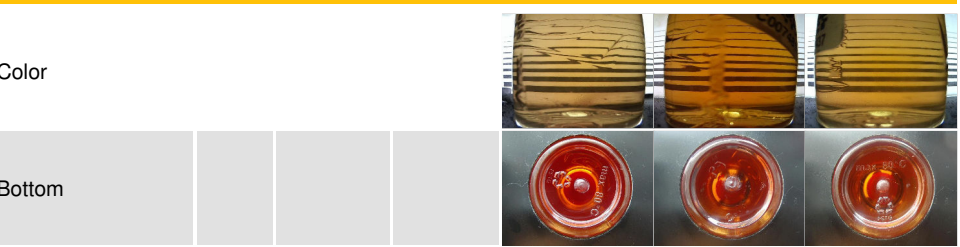
▲ Particle Trend



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

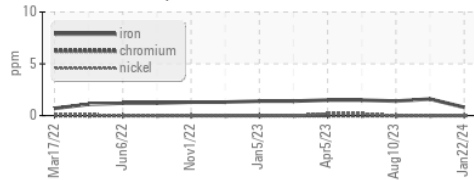
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	32.0	▲ 45.1	44.7
Visc @ 100°C	cSt	ASTM D7279(m)	5.42	▲ 6.8	6.7
Viscosity Index (VI)	Scale	ASTM D2270*	103	104	102

▲ SAMPLE IMAGES

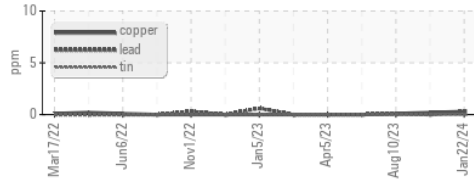


GRAPHS

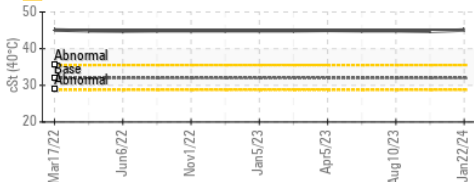
▲ Ferrous Alloys



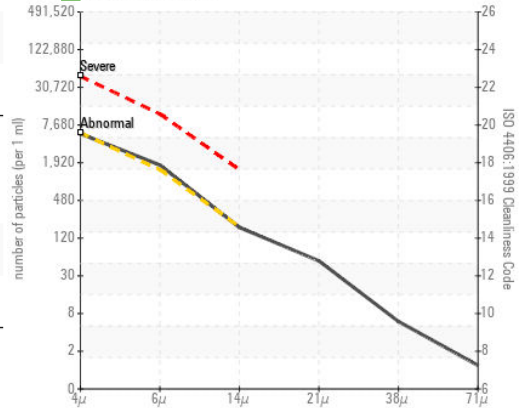
▲ Non-ferrous Metals



▲ Viscosity @ 40°C



▲ Particle Count



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0078802 **Received** : 31 Jan 2024
Lab Number : 02612459 **Diagnosed** : 01 Feb 2024
Unique Number : 5721554 **Diagnostician** : Bill Quesnel
Test Package : MOB 2 (Additional Tests: KV100, 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.

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