

PROBLEM SUMMARY

Sample Rating Trend

WEAR

WEAR

TEAM 1

136110 Secondary Air FD Fan Outboard

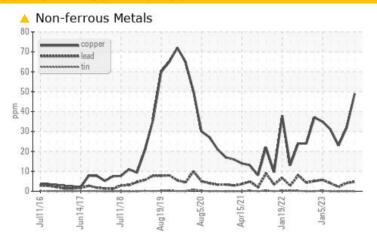
Bearing

PETRO CANADA TURBOFLO R&O 68 (1 QTS)





COMPONENT CONDITION SUMMARY



RECOMMENDATION

Resample at the next service interval to monitor.

Customer Id: CANDRY Sample No.: PC0069868 Lab Number: 02591747 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

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

10 Aug 2023 Diag: Kevin Marson

VISUAL METAL



We advise that you check for visible metal particles in the oil. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. Light concentration of visible metal present. Bearing wear is indicated. There is no indication of any contamination in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.



12 Apr 2023 Diag: Kevin Marson

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

15 Feb 2023 Diag: Kevin Marson

WEAR



Resample at the next service interval to monitor. Copper ppm levels are noted. All other component wear rates are normal. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.





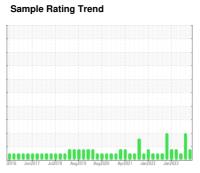
OIL ANALYSIS REPORT

TEAM 1

136110 Secondary Air FD Fan Outboard

Bearing

PETRO CANADA TURBOFLO R&O 68 (1 QTS)





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Copper ppm levels are noted. All other component wear rates are normal.

Contamination

There is no indication of any contamination in the

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION	,		12016 Jun 20	17 Jul2018 Aug2019	Aug2020 Apr2021 Jan2022	Jan2023	
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 0 0 0 0 Oil Age hrs Client Info 0 0 0 0 Oil Changed Client Info N/A N/A N/A N/A Sample Status Machine Info N/A N/A N/A N/A WEAR METALS method limit/base current history1 history2 PQ ASTM D8184* 0 0 Iron ppm ASTM D8188(m) >20 41 <1	Sample Number		Client Info		PC0069868	PC0074848	PC0070196
Oil Age hrs Client Info N/A N/A N/A N/A Sample Status method limit/base current history1 history2 WEAR METALS method limit/base current history1 history2 PQ ASTM D8184* 0 0 Iron ppm ASTM D8188(m) >20 <1	Sample Date		Client Info		06 Oct 2023	10 Aug 2023	12 Apr 2023
Oil Changed Sample Status Client Info N/A ATTENTION N/A ABNORMAL N/A NORMAL WEAR METALS method limit/base current history1 history2 PQ ASTM D8184* 0 0 Iron ppm ASTM D5185(m) >20 0 0 0 Nickel ppm ASTM D5185(m) >20 0 0 0 Nitver ppm ASTM D5185(m) >20 0 0 0 Aluminum ppm ASTM D5185(m) >20 0 0 0 Aluminum ppm ASTM D5185(m) >20 0 0 0 Aluminum ppm ASTM D5185(m) >20 5 4 2 Copper ppm ASTM D5185(m) >20 5 4 2 Copper ppm ASTM D5185(m) >20 0 0 0 April Salam ppm ASTM D5185(m) 0 0 0 0	Machine Age	hrs	Client Info		0	0	0
Sample Status method limit/base current history1 history2 PQ ASTM D8184* 0 0 Iron ppm ASTM D5185(m) >20 <1	Oil Age	hrs	Client Info		0	0	0
WEAR METALS method limit/base current history1 history2 PQ ASTM D8184* 0 0 Iron ppm ASTM D5185(m) >20 <1	Oil Changed		Client Info		N/A	N/A	N/A
PQ ASTM D8184* 0 0 Iron ppm ASTM D5185(m) >20 <1	Sample Status				ATTENTION	ABNORMAL	NORMAL
Iron	WEAR METAL	S	method	limit/base	current	history1	history2
Chromium ppm ASTM D5185(m) >20 0 0 0 Nickel ppm ASTM D5185(m) >20 0 <1 0 Titanium ppm ASTM D5185(m) 0 0 0 0 Silver ppm ASTM D5185(m) 20 0 0 0 Aluminum ppm ASTM D5185(m) 20 0 0 0 Lead ppm ASTM D5185(m) >20 5 4 2 2 Copper ppm ASTM D5185(m) >20 49 32 23 3 Tin ppm ASTM D5185(m) >20 0 0 0 0 Antimony ppm ASTM D5185(m) 20 0 0 0 1 Vanadium ppm ASTM D5185(m) 0 0 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 0 Cadmium	PQ		ASTM D8184*		0		0
Nickel ppm ASTM D5185(m) ≥20 0 <1 0 Silver ppm ASTM D5185(m) 0 0 0 Aluminum ppm ASTM D5185(m) >20 0 0 0 Aluminum ppm ASTM D5185(m) >20 5 4 2 Copper ppm ASTM D5185(m) >20 49 32 23 Tin ppm ASTM D5185(m) >20 0 0 0 Antimony ppm ASTM D5185(m) >20 0 0 0 Antimony ppm ASTM D5185(m) 0 0 0 1 Vanadium ppm ASTM D5185(m) 0 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 0 ADDITIVES method limit/base current history1 history2 Barium ppm ASTM D5185(m) 0 0 0 <	Iron	ppm	ASTM D5185(m)	>20	<1	<1	<1
Titanium ppm ASTM D518S(m) 0 0 0 Silver ppm ASTM D518S(m) <1 0 0 Aluminum ppm ASTM D518S(m) >20 0 0 0 Lead ppm ASTM D518S(m) >20 4 4 2 Copper ppm ASTM D518S(m) >20 4 49 32 23 Tin ppm ASTM D518S(m) >20 0 0 0 0 Antimony ppm ASTM D518S(m) 0 0 0 <1 Vanadium ppm ASTM D518S(m) 0 0 0 0 Beryllium ppm ASTM D518S(m) 0 0 0 0 Cadmium ppm ASTM D518S(m) 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D518S(m) 0 0 0 <td>Chromium</td> <td>ppm</td> <td>ASTM D5185(m)</td> <td>>20</td> <th>0</th> <td>0</td> <td>0</td>	Chromium	ppm	ASTM D5185(m)	>20	0	0	0
Silver ppm ASTM D518S(m) <1 0 0 Aluminum ppm ASTM D518S(m) >20 0 0 0 Lead ppm ASTM D518S(m) >20 5 4 2 Copper ppm ASTM D518S(m) >20 49 32 23 Tin ppm ASTM D518S(m) >20 0 0 0 Antimony ppm ASTM D518S(m) 0 0 0 1 Vanadium ppm ASTM D518S(m) 0 0 0 0 Beryllium ppm ASTM D518S(m) 0 0 0 0 Cadmium ppm ASTM D518S(m) 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D518S(m) 0 0 0 0 Barium ppm ASTM D518S(m) 0 0 0 0	Nickel	ppm	ASTM D5185(m)	>20	0	<1	0
Aluminum ppm ASTM D5185(m) >20 0 0 0 Lead ppm ASTM D5185(m) >20 5 4 2 Copper ppm ASTM D5185(m) >20 49 32 23 Tin ppm ASTM D5185(m) >20 0 0 0 Antimony ppm ASTM D5185(m) 0 0 0 1 Vanadium ppm ASTM D5185(m) 0 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 0 0 0 0 Barium ppm ASTM D5185(m) 0 0 0 0 Molybdenum ppm ASTM D5185(m) 0 0 0 <td>Titanium</td> <td>ppm</td> <td>ASTM D5185(m)</td> <td></td> <th>0</th> <td>0</td> <td>0</td>	Titanium	ppm	ASTM D5185(m)		0	0	0
Lead ppm ASTM D5/185(m) >20 5 4 2 Copper ppm ASTM D5/185(m) >20 49 322 23 Tin ppm ASTM D5/185(m) >20 0 0 0 Antimony ppm ASTM D5/185(m) 0 0 0 0 Vanadium ppm ASTM D5/185(m) 0 0 0 0 Beryllium ppm ASTM D5/185(m) 0 0 0 0 Cadmium ppm ASTM D5/185(m) 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5/185(m) 0 0 0 0 Barium ppm ASTM D5/185(m) 0 0 0 0 Molybdenum ppm ASTM D5/185(m) 0 0 0 0 Magnesium ppm ASTM D5/185(m) 0 1	Silver	ppm	ASTM D5185(m)		<1	0	0
Copper ppm ASTM D5185(m) >20 ▲ 49 ▲ 32 23 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 Cadmium ppm ASTM D5185(m) 0 0 0 Boron ppm ASTM D5185(m) 0 0 0 Barium ppm ASTM D5185(m) 0 0 0 Molybdenum ppm ASTM D5185(m) 0 0 0 Magnesium ppm ASTM D5185(m) 0 0 0 Magnesium ppm ASTM D5185(m) 0 1 1 0 Calcium ppm ASTM D5185(m) 1 16 <td< td=""><td>Aluminum</td><td>ppm</td><td>ASTM D5185(m)</td><td>>20</td><th>0</th><td>0</td><td>0</td></td<>	Aluminum	ppm	ASTM D5185(m)	>20	0	0	0
Tin ppm ASTM D5185(m) >20 0 0 0 Antimony ppm ASTM D5185(m) 0 0 <1 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 0 Barium ppm ASTM D5185(m) 0 0 0 Molybdenum ppm ASTM D5185(m) 0 0 0 Magnaese ppm ASTM D5185(m) 0 0 0 Magnesium ppm ASTM D5185(m) 0 1 1 0 Calcium ppm ASTM D5185(m) 0 1 1 0 Phosphorus ppm ASTM D5185(m) 115 1	Lead	ppm	ASTM D5185(m)	>20	5	4	2
Antimony ppm ASTM D5185(m) 0 0 <1 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) <1 0 <1 Barium ppm ASTM D5185(m) 0 0 0 Molybdenum ppm ASTM D5185(m) 0 0 0 Magnesium ppm ASTM D5185(m) 0 0 0 Magnesium ppm ASTM D5185(m) 0 1 1 0 Calcium ppm ASTM D5185(m) 0 1 1 0 Phosphorus ppm ASTM D5185(m) 4 16 16 16 Zinc ppm ASTM D5185(m) 115	Copper	ppm	ASTM D5185(m)	>20	49	△ 32	23
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 0 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 1 0 Phosphorus ppm ASTM D5185(m) 0 31 24 21 Sulfur ppm ASTM D5185(m) 115 127 139 Lithium ppm ASTM D5185(m) <1	Tin	ppm	ASTM D5185(m)	>20	0	0	0
Beryllium	Antimony	ppm	ASTM D5185(m)		0	0	<1
Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) <1	Vanadium	ppm	ASTM D5185(m)		0	0	0
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) <1	Beryllium	ppm	ASTM D5185(m)		0	0	0
Boron	Cadmium	ppm	ASTM D5185(m)		0	0	0
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 1 0 Calcium ppm ASTM D5185(m) 0 1 1 0 Phosphorus ppm ASTM D5185(m) 4 16 16 16 Zinc ppm ASTM D5185(m) 0 31 24 21 Sulfur ppm ASTM D5185(m) 115 127 139 Lithium ppm ASTM D5185(m) <1	ADDITIVES		method	limit/base	current	history1	history2
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 1 1 0 Phosphorus ppm ASTM D5185(m) 4 16 16 16 16 Zinc ppm ASTM D5185(m) 0 31 24 21 Sulfur ppm ASTM D5185(m) 115 127 139 Lithium ppm ASTM D5185(m) <1 <1 <1 <1 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >15 0 0 0 Sodium ppm ASTM D5185(m) >20 <1 <1 <1 <1 Potassium ppm ASTM D5185(m) >20 <1 0	Boron	ppm	ASTM D5185(m)		<1	0	<1
Manganese ppm ASTM D5185(m) 0 0 0 Magnesium ppm ASTM D5185(m) 0 <1 0 Calcium ppm ASTM D5185(m) 0 1 1 0 Phosphorus ppm ASTM D5185(m) 4 16 16 16 Zinc ppm ASTM D5185(m) 0 31 24 21 Sulfur ppm ASTM D5185(m) 115 127 139 Lithium ppm ASTM D5185(m) <1 <1 <1 <1 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >15 0 0 0 Sodium ppm ASTM D5185(m) >20 <1 <1 <1 <1 Potassium ppm ASTM D5185(m) >20 <1 0 <1	Barium	ppm	ASTM D5185(m)		0	0	0
Magnesium ppm ASTM D5185(m) 0 <1 0 Calcium ppm ASTM D5185(m) 0 1 1 0 Phosphorus ppm ASTM D5185(m) 4 16 16 16 Zinc ppm ASTM D5185(m) 0 31 24 21 Sulfur ppm ASTM D5185(m) 115 127 139 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) >20 <1 <1 <1 FLUID DEGRADATION method limit/base current history1 history2	Molybdenum	ppm	ASTM D5185(m)		0	0	0
Calcium ppm ASTM D5185(m) 0 1 1 0 Phosphorus ppm ASTM D5185(m) 4 16 16 16 Zinc ppm ASTM D5185(m) 0 31 24 21 Sulfur ppm ASTM D5185(m) 115 127 139 Lithium ppm ASTM D5185(m) <1	Manganese	ppm	ASTM D5185(m)		0	0	0
Phosphorus ppm ASTM D5185(m) 4 16 16 16 Zinc ppm ASTM D5185(m) 0 31 24 21 Sulfur ppm ASTM D5185(m) 115 127 139 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	Magnesium	ppm	ASTM D5185(m)		0	<1	0
Zinc ppm ASTM D5185(m) 0 31 24 21 Sulfur ppm ASTM D5185(m) 115 127 139 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 <1 Potassium ppm ASTM D5185(m) >20 <1 0 <1 FLUID DEGRADATION method limit/base current history1 history2	Calcium	ppm	ASTM D5185(m)	0	1	1	0
Sulfur ppm ASTM D5185(m) 115 127 139 Lithium ppm ASTM D5185(m) <1 <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	Phosphorus	ppm	ASTM D5185(m)	4	16	16	16
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	Zinc	ppm	ASTM D5185(m)	0	31	24	21
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >15 0 0 0 Sodium ppm ASTM D5185(m) <1	Sulfur	ppm	ASTM D5185(m)		115	127	139
Silicon ppm ASTM D5185(m) >15 0 0 0 Sodium ppm ASTM D5185(m) <1 <1 <1 <1 Potassium ppm ASTM D5185(m) >20 <1 0 <1 FLUID DEGRADATION method limit/base current history1 history2	Lithium	ppm	ASTM D5185(m)		<1	<1	<1
Sodium ppm ASTM D5185(m) <1	CONTAMINAN	TS	method	limit/base	current	history1	history2
Sodium ppm ASTM D5185(m) <1 <1 <1 Potassium ppm ASTM D5185(m) >20 <1	Silicon	ppm	ASTM D5185(m)	>15	0	0	0
Potassium ppm ASTM D5185(m) >20 <1 0 <1 FLUID DEGRADATION method limit/base current history1 history2	Sodium		ASTM D5185(m)		<1	<1	<1
	Potassium		ASTM D5185(m)	>20	<1	0	<1
Acid Number (AN) mg KOH/g ASTM D974* 0.11 0.11 0.12	FLUID DEGRAI	OITAC	method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D974*	0.11	0.11		0.12



OIL ANALYSIS REPORT

