

Area
Fwd Machinery Space [450234533]
Machine Id
Pump - Fire Water (Stbd) - Gearbox (S/N Sample Tag PA-71001B-S2)
Component
Starboard Gearbox
Fluid
PETRO CANADA PREMIUM R&O 220 (98 LTR)

RECOMMENDATION

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.

WEAR

All component wear rates are normal.

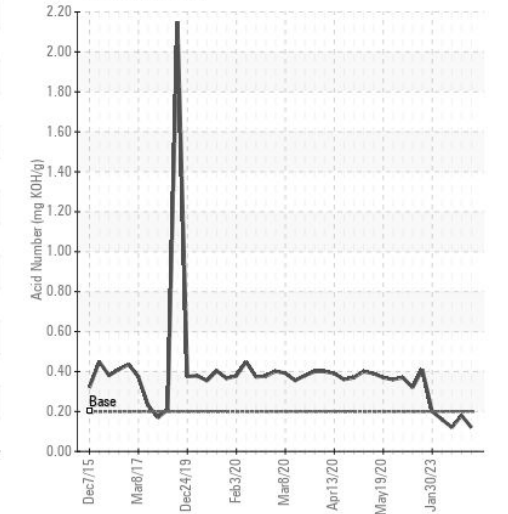
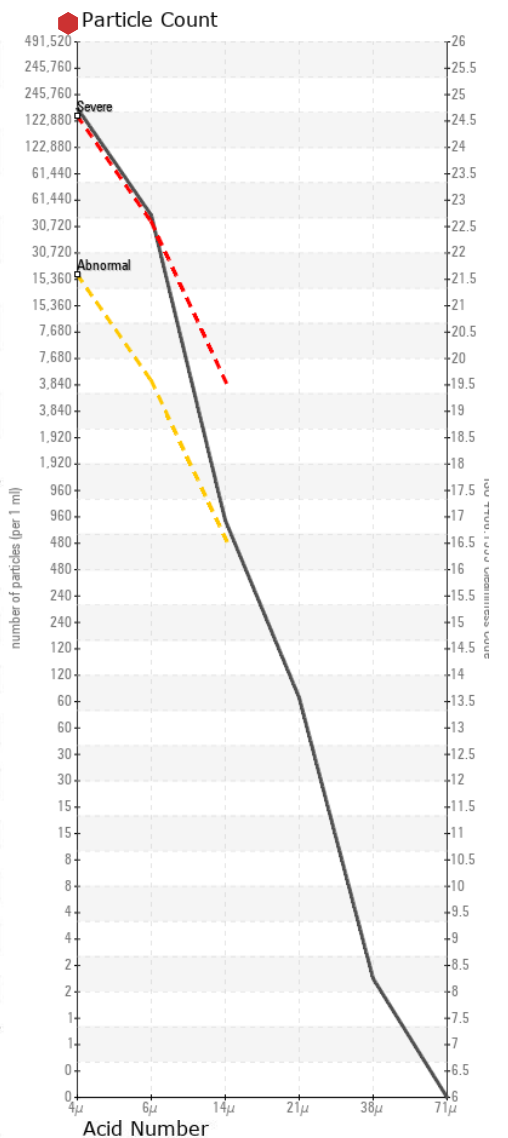
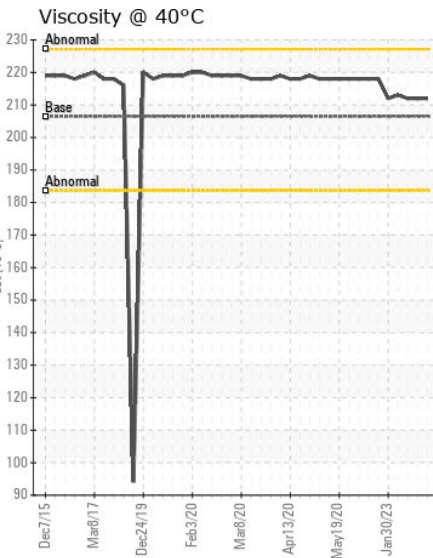
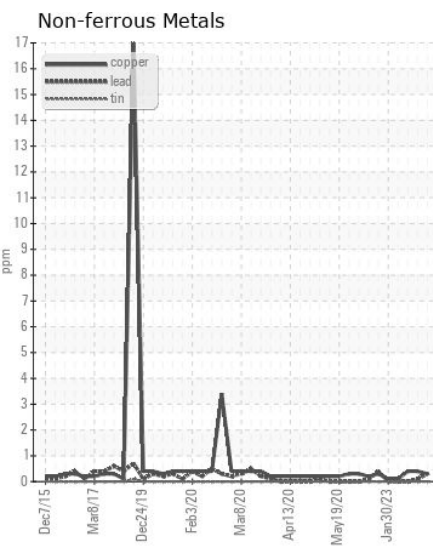
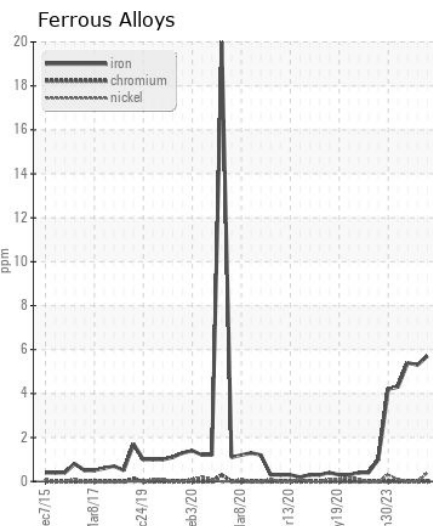
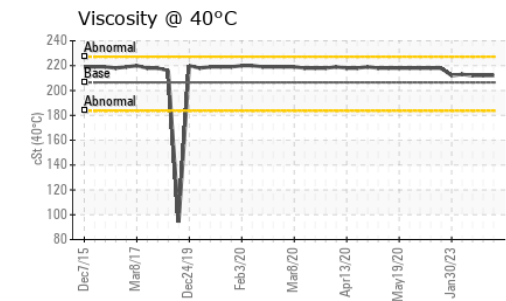
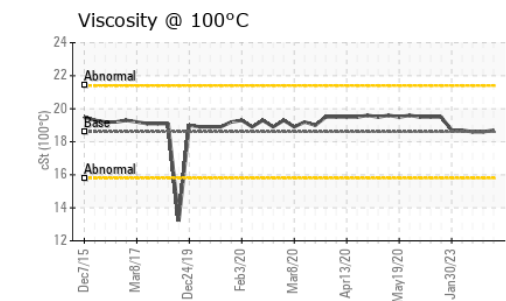
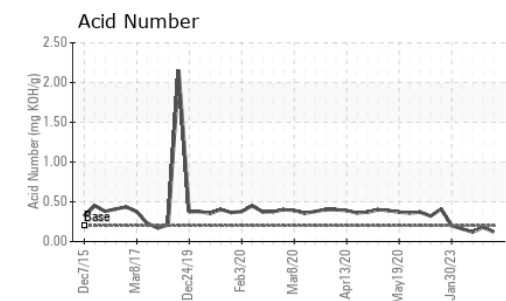
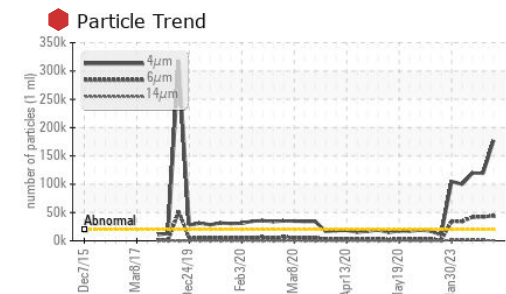
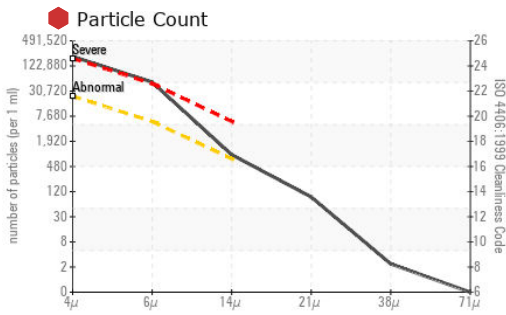
CONTAMINATION

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

FLUID CONDITION

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		PC0076275	PC	PC0061610
Sample Date		Client Info		06 Dec 2023	13 Oct 2023	30 Aug 2023
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				SEVERE	SEVERE	SEVERE
PQ		ASTM D8184*		0	1	0
Iron	ppm	ASTM D5185(m)	>150	6	5	5
Chromium	ppm	ASTM D5185(m)	>10	0	0	0
Nickel	ppm	ASTM D5185(m)	>10	<1	0	0
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	<1	0
Aluminum	ppm	ASTM D5185(m)	>5	<1	<1	<1
Lead	ppm	ASTM D5185(m)	>65	<1	<1	0
Copper	ppm	ASTM D5185(m)	>80	<1	<1	<1
Tin	ppm	ASTM D5185(m)	>8	0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	NONE	VLITE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185(m)	>20	1	2	2
Potassium	ppm	ASTM D5185(m)	>20	0	0	<1
Water		WC Method	>0.2	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>20000	177354	119221	119748
Particles >6µm		ASTM D7647	>5000	43611	42704	41927
Particles >14µm		ASTM D7647	>640	807	1109	1272
Particles >21µm		ASTM D7647	>160	79	143	195
Particles >38µm		ASTM D7647	>40	2	8	7
Particles >71µm		ASTM D7647	>10	0	5	5
Oil Cleanliness		ISO 4406 (c)	>21/19/16	25/23/17	24/23/17	24/23/17
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Sodium	ppm	ASTM D5185(m)		<1	<1	<1
Boron	ppm	ASTM D5185(m)		4	4	4
Barium	ppm	ASTM D5185(m)		0	<1	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	<1
Calcium	ppm	ASTM D5185(m)		7	6	6
Phosphorus	ppm	ASTM D5185(m)	0	31	31	37
Zinc	ppm	ASTM D5185(m)		4	4	5
Sulfur	ppm	ASTM D5185(m)	500	3489	3319	3671
Acid Number (AN)	mg KOH/g	ASTM D974*	0.20	0.12	0.18	0.12
Visc @ 40°C	cSt	ASTM D7279(m)	206.5	212	212	212
Visc @ 100°C	cSt	ASTM D7279(m)	18.6	18.7	18.6	18.6
Viscosity Index (VI)	Scale	ASTM D2270*	96	98	97	97



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0076275
Lab Number : 02605591
Unique Number : 5698676
Test Package : MAR 2 (Additional Tests: KV100, PQ, PrtCount, VI)

Received : 28 Dec 2023
Tested : 29 Dec 2023
Diagnosed : 02 Jan 2024 - Kevin Marson

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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