

Area

Fwd Machinery Space [450343811]

Machine Id

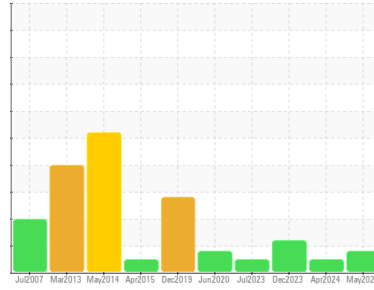
Thruster Fwd Aft - Steering Gear Lubrication (S/N Sample Tag CL-06004-S4)

Component

Gear Unit

Fluid

PETRO CANADA ENERGOL GR-XP ISO 150 (5000 LTR)



DIAGNOSIS

Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MAR 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.

Wear

Component wear rates appear to be normal (unconfirmed).

Contamination

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

Fluid Condition

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

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	PC0080639	PC	PC
Sample Date	Client Info	16 May 2024	21 Apr 2024	02 Dec 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		ATTENTION	NORMAL	ATTENTION

CONTAMINATION

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

WEAR METALS

method	limit/base	current	history1	history2
PQ	ASTM D8184*	0	0	0
Iron	ppm ASTM D5185(m) >125	6	<1	1
Chromium	ppm ASTM D5185(m) >5	<1	0	0
Nickel	ppm ASTM D5185(m) >10	<1	0	<1
Titanium	ppm ASTM D5185(m)	0	0	0
Silver	ppm ASTM D5185(m)	0	0	0
Aluminum	ppm ASTM D5185(m) >30	0	0	<1
Lead	ppm ASTM D5185(m) >5	0	0	0
Copper	ppm ASTM D5185(m) >100	<1	<1	<1
Tin	ppm ASTM D5185(m) >5	0	0	0
Antimony	ppm ASTM D5185(m) >5	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

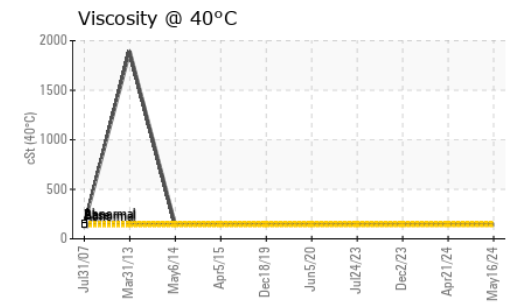
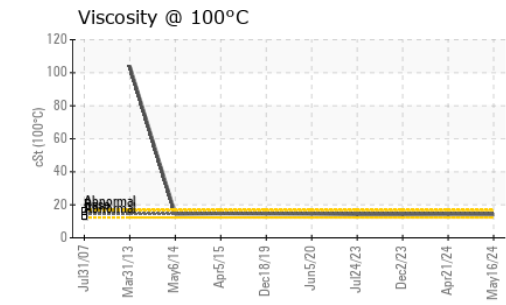
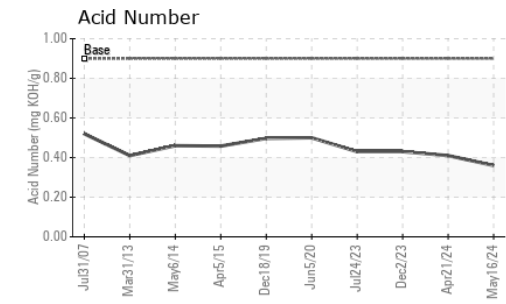
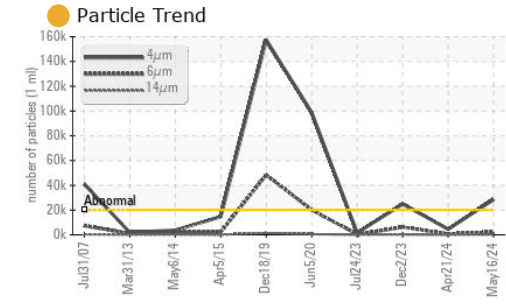
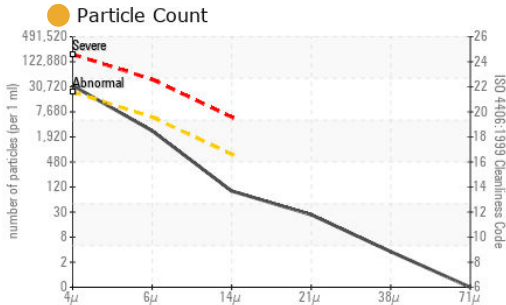
ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185(m)	7	11	10
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)	<1	<1	<1
Calcium	ppm ASTM D5185(m)	13	15	7
Phosphorus	ppm ASTM D5185(m)	153	158	157
Zinc	ppm ASTM D5185(m)	5	4	5
Sulfur	ppm ASTM D5185(m)	9401	12522	10803
Lithium	ppm ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >50	1	<1	4
Sodium	ppm ASTM D5185(m)	1	0	<1
Potassium	ppm ASTM D5185(m) >20	<1	0	0

OIL ANALYSIS REPORT



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0080639
Lab Number : 02639708
Unique Number : 5788870
Test Package : MAR 2 (Additional Tests: KV100, PQ, VI)
Received : 04 Jun 2024
Tested : 07 Jun 2024
Diagnosed : 07 Jun 2024 - Kevin Marson

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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.

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	● 28449	4546	● 24791	
Particles >6µm	ASTM D7647	>5000	2349	659	● 6217	
Particles >14µm	ASTM D7647	>640	85	24	227	
Particles >21µm	ASTM D7647	>160	23	5	26	
Particles >38µm	ASTM D7647	>40	3	1	2	
Particles >71µm	ASTM D7647	>10	0	1	1	
Oil Cleanliness	ISO 4406 (c)	>21/19/16	● 22/18/14	19/17/12	● 22/20/15	

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.9	0.36	0.41	0.43

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	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	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
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	149	145	146	145
Visc @ 100°C	cSt	ASTM D7279(m)	14.5	14.2	14.3	14.2
Viscosity Index (VI)	Scale	ASTM D2270*		94	95	94

SAMPLE IMAGES		method	limit/base	current	history1	history2
Color						
Bottom						