

Area

**Fwd Machinery Space**

Machine Id

**Thruster Fwd Fore - Lubrication System (S/N Sample Tag CL-06005-S1)**

Component

**Lube System**

Fluid

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

**DIAGNOSIS**

**Recommendation**

We recommend you service the filters on this component. 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. The water content is negligible.

**Fluid Condition**

The AN level is acceptable for this fluid.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			<b>PC</b>	PC0081676	PC0076664
Sample Date	Client Info			<b>21 Apr 2024</b>	31 Mar 2024	29 Jan 2024
Machine Age	hrs	Client Info		<b>0</b>	0	0
Oil Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed	Client Info			<b>N/A</b>	N/A	N/A
Sample Status				<b>ABNORMAL</b>	ABNORMAL	ATTENTION

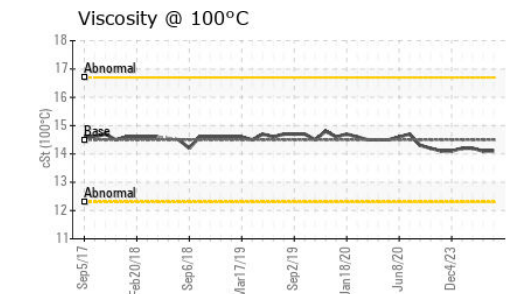
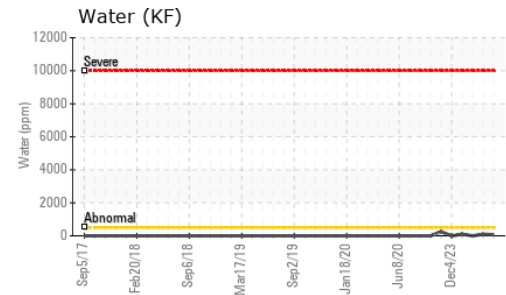
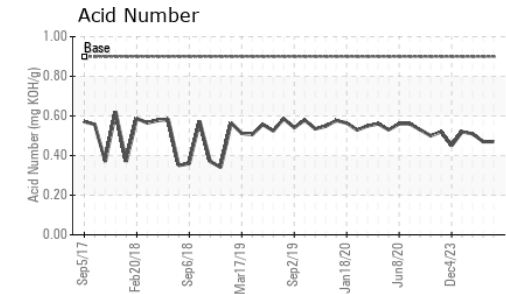
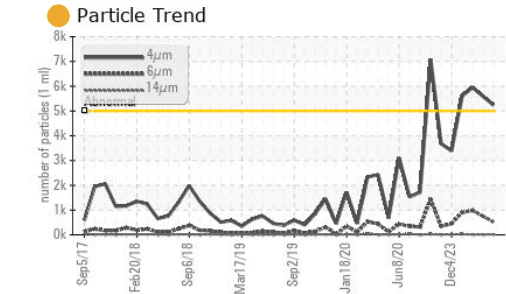
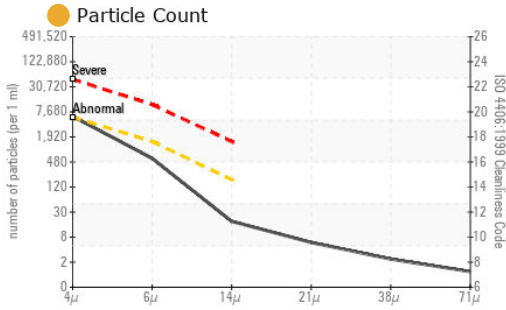
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		<b>0</b>	0	0
Iron	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	<1	<1
Chromium	ppm	ASTM D5185(m)	>10	<b>0</b>	0	0
Nickel	ppm	ASTM D5185(m)	>10	<b>0</b>	0	0
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>10	<b>0</b>	0	<1
Lead	ppm	ASTM D5185(m)	>20	<b>0</b>	0	0
Copper	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	<1	<1
Tin	ppm	ASTM D5185(m)	>10	<b>0</b>	0	0
Antimony	ppm	ASTM D5185(m)		<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Beryllium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185(m)		<b>0</b>	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		<b>9</b>	9	11
Barium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185(m)		<b>0</b>	0	0
Manganese	ppm	ASTM D5185(m)		<b>0</b>	0	0
Magnesium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1
Calcium	ppm	ASTM D5185(m)		<b>4</b>	4	4
Phosphorus	ppm	ASTM D5185(m)		<b>175</b>	182	188
Zinc	ppm	ASTM D5185(m)		<b>5</b>	4	5
Sulfur	ppm	ASTM D5185(m)		<b>11349</b>	11537	11977
Lithium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	<b>0</b>	0	<1
Sodium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Potassium	ppm	ASTM D5185(m)	>20	<b>0</b>	0	<1
Water	%	ASTM D6304*	>0.05	<b>0.007</b>	0.009	---
ppm Water	ppm	ASTM D6304*	>500	<b>70</b>	97	---

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	<b>5237</b>	5592	5947
Particles >6µm		ASTM D7647	>1300	<b>516</b>	749	982
Particles >14µm		ASTM D7647	>160	<b>16</b>	14	16
Particles >21µm		ASTM D7647	>40	<b>5</b>	3	2
Particles >38µm		ASTM D7647	>10	<b>2</b>	0	0
Particles >71µm		ASTM D7647	>3	<b>1</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	<b>20/16/11</b>	20/17/11	20/17/11

# OIL ANALYSIS REPORT



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC  
**Lab Number** : 02634774  
**Unique Number** : 5775927  
**Test Package** : MAR 2 ( Additional Tests: KF, KV100, PQ, TAN Man, VI )  
**Received** : 10 May 2024  
**Tested** : 14 May 2024  
**Diagnosed** : 14 May 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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## FLUID DEGRADATION

method	limit/base	current	history1	history2	
Acid Number (AN) mg KOH/g	ASTM D974*	0.9	<b>0.47</b>	0.47	0.51

## VISUAL

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

## FLUID PROPERTIES

method	limit/base	current	history1	history2	
Visc @ 40°C	cSt ASTM D7279(m)	149	<b>146</b>	144	145
Visc @ 100°C	cSt ASTM D7279(m)	14.5	<b>14.1</b>	14.1	14.2
Viscosity Index (VI)	Scale ASTM D2270*		<b>92</b>	94	94

## SAMPLE IMAGES

