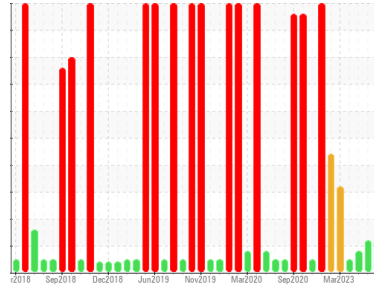


Area
Aft Machinery Space [450258432]
Machine Id
Thruster Aft Port - Seal Oil System (S/N Sample Tag CL-06002-S3)
Component
Sealing System
Fluid
PETRO CANADA ENERGOL GR-XP ISO 150 (65 LTR)



DIAGNOSIS

Recommendation
We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

Contamination
There is a moderate amount of silt (particulates < 14 microns in size) present in the fluid.

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

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	PC0080542	PC	PC
Sample Date	Client Info	29 Jan 2024	04 Jan 2024	14 Sep 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	ABNORMAL	ATTENTION

CONTAMINATION

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

WEAR METALS

method	limit/base	current	history1	history2
PQ	ASTM D8184*	0	0	0
Iron	ppm ASTM D5185(m) >100	14	6	6
Chromium	ppm ASTM D5185(m) >3	0	0	0
Nickel	ppm ASTM D5185(m) >8	0	<1	<1
Titanium	ppm ASTM D5185(m)	0	0	0
Silver	ppm ASTM D5185(m)	0	0	<1
Aluminum	ppm ASTM D5185(m) >3	<1	<1	0
Lead	ppm ASTM D5185(m)	0	0	<1
Copper	ppm ASTM D5185(m) >3	0	<1	<1
Tin	ppm ASTM D5185(m)	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

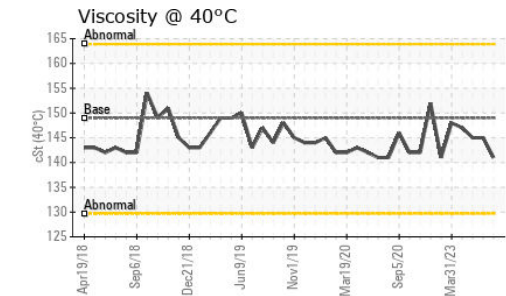
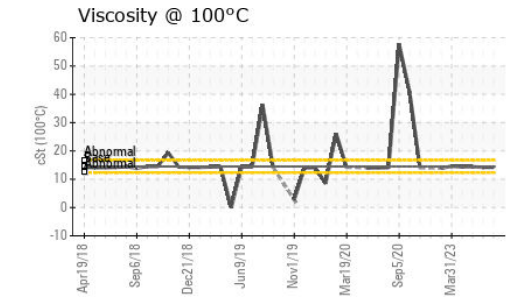
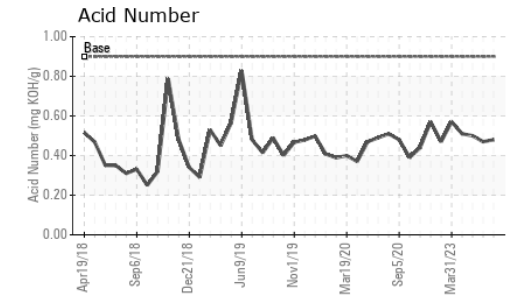
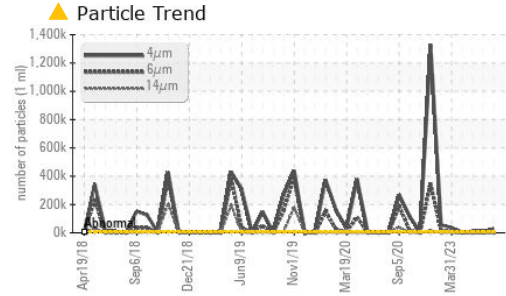
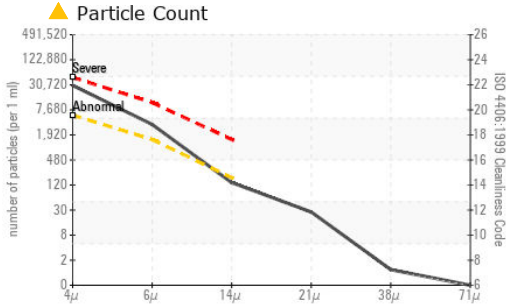
ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185(m)	8	9	4
Barium	ppm ASTM D5185(m)	0	0	<1
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)	2	2	4
Phosphorus	ppm ASTM D5185(m)	168	170	179
Zinc	ppm ASTM D5185(m)	5	5	8
Sulfur	ppm ASTM D5185(m)	8492	8491	13598
Lithium	ppm ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >25	3	2	2
Sodium	ppm ASTM D5185(m)	3	3	4
Potassium	ppm ASTM D5185(m) >20	<1	<1	0

OIL ANALYSIS REPORT



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0080542 **Received** : 16 Feb 2024
Lab Number : **02616447** **Tested** : 20 Feb 2024
Unique Number : 5733557 **Diagnosed** : 20 Feb 2024 - Kevin Marson
Test Package : MAR 2 (Additional Tests: KV100, PQ, PrtCount, TAN Man, 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.

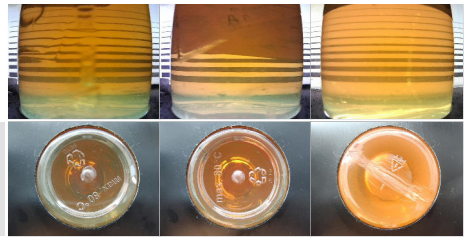
FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	▲ 25740	▲ 10383	▲ 9996
Particles >6µm	ASTM D7647	>1300	▲ 2988	▲ 1512	1265
Particles >14µm	ASTM D7647	>160	121	37	37
Particles >21µm	ASTM D7647	>40	24	11	9
Particles >38µm	ASTM D7647	>10	1	3	1
Particles >71µm	ASTM D7647	>3	0	1	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14	▲ 22/19/14	▲ 21/18/12	▲ 20/17/12

FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g ASTM D974*	0.9	0.48	0.47	0.50

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	VLITE	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*		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	141	145	145
Visc @ 100°C	cSt ASTM D7279(m)	14.5	14.2	14.2	14.4
Viscosity Index (VI)	Scale ASTM D2270*		97	94	97

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					



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