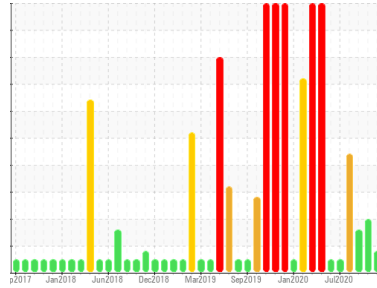




Area
Fwd Machinery Space [450258432]
Machine Id
Thruster Fwd Aft - Seal Oil System (S/N Sample Tag CL-06005-S3)
Component
Sealing System
Fluid
PETRO CANADA ENERGOL GR-XP ISO 150 (65 LTR)



DIAGNOSIS

Recommendation
We recommend you service the filters on this component. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
There is a light amount of silt (particulates < 14 microns in size) present in the fluid. The water content is negligible.

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

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	PC0080538	PC0076461	PC
Sample Date	Client Info	29 Jan 2024	09 Nov 2023	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		ATTENTION	ABNORMAL	ABNORMAL

WEAR METALS

method	limit/base	current	history1	history2	
PQ	ASTM D8184*	0	0	0	
Iron	ppm	ASTM D5185(m) >100	1	2	3
Chromium	ppm	ASTM D5185(m) >3	0	0	0
Nickel	ppm	ASTM D5185(m) >8	0	0	0
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m)	0	<1	<1
Aluminum	ppm	ASTM D5185(m) >3	<1	0	0
Lead	ppm	ASTM D5185(m)	0	0	<1
Copper	ppm	ASTM D5185(m) >3	<1	<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)	14	12	9
Barium	ppm	ASTM D5185(m)	0	<1	<1
Molybdenum	ppm	ASTM D5185(m)	0	0	0
Manganese	ppm	ASTM D5185(m)	0	0	0
Magnesium	ppm	ASTM D5185(m)	<1	<1	2
Calcium	ppm	ASTM D5185(m)	4	6	▲ 30
Phosphorus	ppm	ASTM D5185(m)	171	169	178
Zinc	ppm	ASTM D5185(m)	4	5	15
Sulfur	ppm	ASTM D5185(m)	10557	10919	16007
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

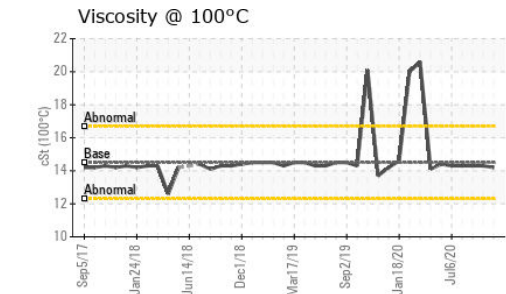
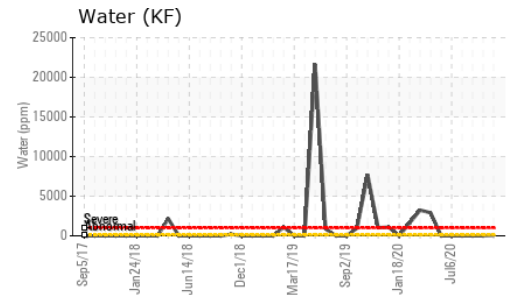
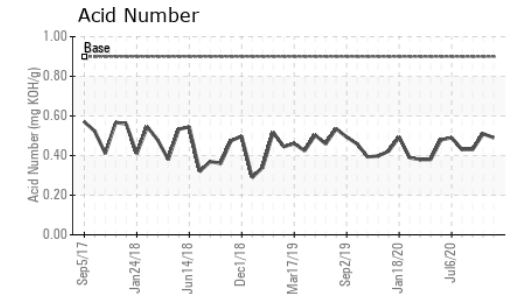
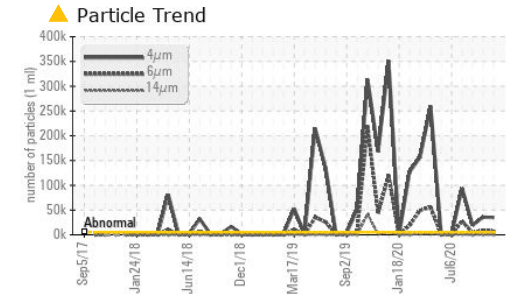
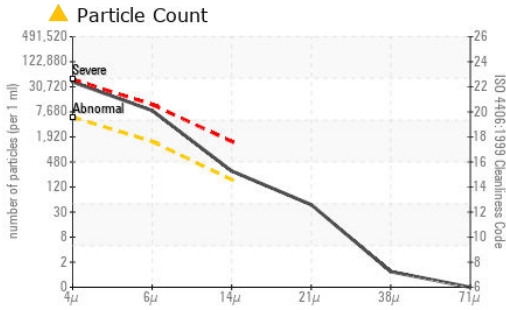
CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m) >25	4	5	3
Sodium	ppm	ASTM D5185(m)	2	2	2
Potassium	ppm	ASTM D5185(m) >20	<1	0	0
Water	%	ASTM D6304*	0.006	---	---
ppm Water	ppm	ASTM D6304*	62	---	---

FLUID CLEANLINESS

method	limit/base	current	history1	history2	
Particles >4µm	ASTM D7647	>5000	34729	▲ 35769	▲ 19236
Particles >6µm	ASTM D7647	>1300	7213	▲ 8833	▲ 4139
Particles >14µm	ASTM D7647	>160	▲ 256	▲ 512	153
Particles >21µm	ASTM D7647	>40	40	▲ 134	22
Particles >38µm	ASTM D7647	>10	1	13	1
Particles >71µm	ASTM D7647	>3	0	3	1
Oil Cleanliness	ISO 4406 (c)	>19/17/14	▲ 22/20/15	▲ 22/20/16	▲ 21/19/14

OIL ANALYSIS REPORT



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0080538 **Received** : 16 Feb 2024
Lab Number : 02616449 **Tested** : 21 Feb 2024
Unique Number : 5733559 **Diagnosed** : 21 Feb 2024 - Kevin Marson
Test Package : MAR 2 (Additional Tests: KF, 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 DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.9	0.49	0.51	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	VLITE	VLITE	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*		.2%	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	144	145	146
Visc @ 100°C	cSt	ASTM D7279(m)	14.5	14.2	14.3	14.3
Viscosity Index (VI)	Scale	ASTM D2270*		95	95	95

SAMPLE IMAGES		method	limit/base	current	history1	history2
Color						
Bottom						
PrtFilter				no image	no image	no image

Suncor - Terra Nova Projects
 Scotia Centre, 235 Water Strret
 St. John's, NL
 CA A1C 1B6
 Contact: Josh Hynes
 joshhynes@suncor.com
 T: (709)778-3575
 F: (709)724-2835