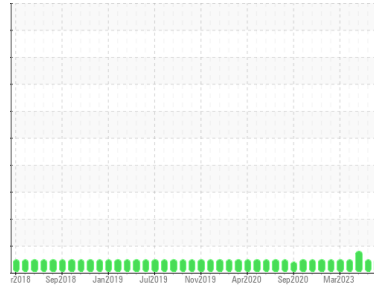




Area  
**Aft Machinery Space [450188488]**  
Machine Id  
**Thruster Aft Starboard - Lubrication System (S/N Sample Tag CL-06003-S1)**  
Component  
**Lube System**  
Fluid  
**PETRO CANADA ENERGOL GR-XP ISO 150 (5000 LTR)**



## DIAGNOSIS

**Recommendation**  
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 Advanced Oil Monitoring (AOM) kits for this system. The AOM test package includes advanced level testing to determine the suitability of turbine and large industrial compressor oils for continued use.

**Wear**  
Component wear rates appear to be normal (unconfirmed).

**Contamination**  
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

**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	<b>PC</b>	PC	PC0040121
Sample Date	Client Info	<b>14 Aug 2023</b>	19 Jul 2023	11 Jun 2023
Machine Age	hrs	<b>0</b>	0	0
Oil Age	hrs	<b>0</b>	0	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>NORMAL</b>	NORMAL	ATTENTION

## WEAR METALS

method	limit/base	current	history1	history2
PQ	ASTM D8184*	<b>0</b>	7	0
Iron	ppm	ASTM D5185(m) >20	<b>1</b>	1
Chromium	ppm	ASTM D5185(m) >10	<b>0</b>	0
Nickel	ppm	ASTM D5185(m) >10	<b>0</b>	0
Titanium	ppm	ASTM D5185(m)	<b>0</b>	0
Silver	ppm	ASTM D5185(m)	<b>&lt;1</b>	0
Aluminum	ppm	ASTM D5185(m) >10	<b>0</b>	<1
Lead	ppm	ASTM D5185(m) >20	<b>0</b>	0
Copper	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	<1
Tin	ppm	ASTM D5185(m) >10	<b>0</b>	0
Antimony	ppm	ASTM D5185(m)	<b>0</b>	0
Vanadium	ppm	ASTM D5185(m)	<b>0</b>	0
Beryllium	ppm	ASTM D5185(m)	<b>0</b>	0
Cadmium	ppm	ASTM D5185(m)	<b>0</b>	0

## ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	<b>4</b>	4
Barium	ppm	ASTM D5185(m)	<b>0</b>	0
Molybdenum	ppm	ASTM D5185(m)	<b>0</b>	0
Manganese	ppm	ASTM D5185(m)	<b>0</b>	0
Magnesium	ppm	ASTM D5185(m)	<b>&lt;1</b>	<1
Calcium	ppm	ASTM D5185(m)	<b>2</b>	2
Phosphorus	ppm	ASTM D5185(m)	<b>298</b>	291
Zinc	ppm	ASTM D5185(m)	<b>4</b>	5
Sulfur	ppm	ASTM D5185(m)	<b>11091</b>	10687
Lithium	ppm	ASTM D5185(m)	<b>&lt;1</b>	<1

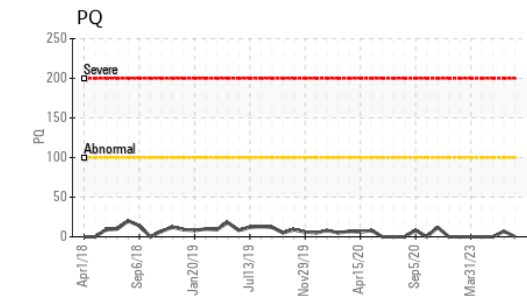
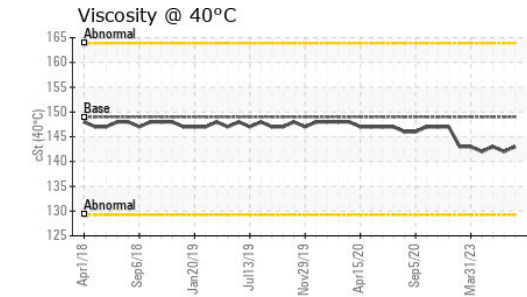
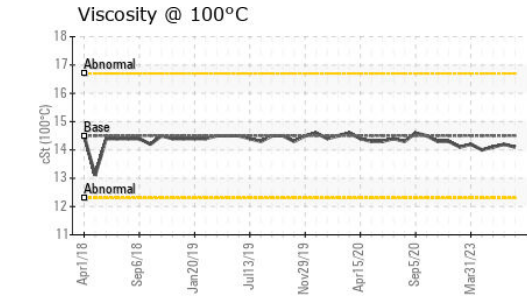
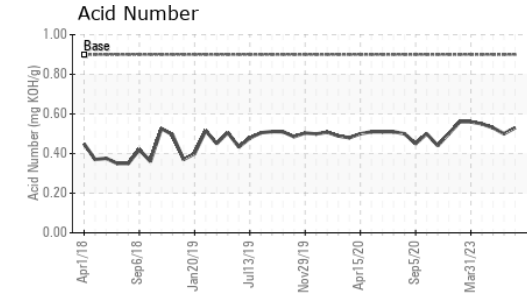
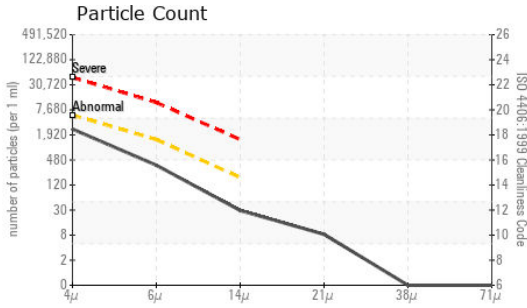
## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >15	<b>1</b>	1
Sodium	ppm	ASTM D5185(m)	<b>0</b>	0
Potassium	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	<1

## FLUID CLEANLINESS

method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >5000	<b>2320</b>	3615	▲ 5827
Particles >6µm	ASTM D7647 >1300	<b>316</b>	610	1158
Particles >14µm	ASTM D7647 >160	<b>26</b>	22	42
Particles >21µm	ASTM D7647 >40	<b>7</b>	7	11
Particles >38µm	ASTM D7647 >10	<b>0</b>	1	1
Particles >71µm	ASTM D7647 >3	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c) >19/17/14	<b>18/15/12</b>	19/16/12	▲ 20/17/13

# OIL ANALYSIS REPORT

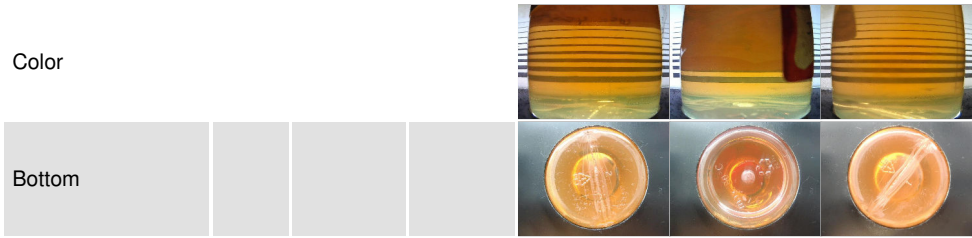


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.9	<b>0.53</b>	0.50	0.53

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>NORML</b>	NORML	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>143</b>	142	143
Visc @ 100°C	cSt	ASTM D7279(m)	14.5	<b>14.1</b>	14.2	14.1
Viscosity Index (VI)	Scale	ASTM D2270*		<b>95</b>	97	95

### SAMPLE IMAGES



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC  
**Lab Number** : **02582301** **Received** : 13 Sep 2023  
**Unique Number** : 5643366 **Diagnosed** : 15 Sep 2023  
**Test Package** : MAR 2 ( Additional Tests: KV100, PQ, TAN Man, VI ) **Diagnostician** : Kevin Marson

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

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.