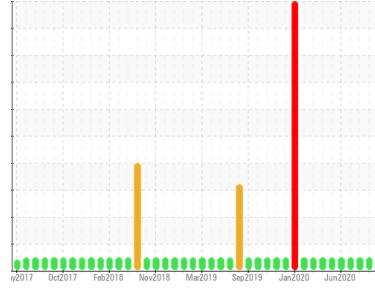


Area  
**Fwd Machinery Space [450204421]**  
Machine Id  
**Thruster Fwd Aft - Steering System (S/N Sample Tag CL-06004-S2)**  
Component  
**Hydraulic System**  
Fluid  
**AW HYDRAULIC OIL ISO 32 (200 LTR)**



**DIAGNOSIS**

**Recommendation**  
Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

**Wear**  
All component wear rates are normal.

**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>	PC0052580	PC
Sample Date	Client Info	<b>14 Sep 2023</b>	14 Aug 2023	05 Feb 2023
Machine Age	hrs	Client Info	<b>0</b>	0
Oil Age	hrs	Client Info	<b>0</b>	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>NORMAL</b>	NORMAL	NORMAL

**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>	<1	0
Titanium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185(m) >10	<b>0</b>	0	<1
Lead	ppm	ASTM D5185(m) >20	<b>2</b>	<1	2
Copper	ppm	ASTM D5185(m) >20	<b>6</b>	3	3
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) 5	<b>&lt;1</b>	<1	<1
Barium	ppm	ASTM D5185(m) 5	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185(m) 5	<b>0</b>	0	0
Manganese	ppm	ASTM D5185(m)	<b>0</b>	0	0
Magnesium	ppm	ASTM D5185(m) 25	<b>0</b>	<1	0
Calcium	ppm	ASTM D5185(m) 200	<b>46</b>	47	49
Phosphorus	ppm	ASTM D5185(m) 300	<b>325</b>	360	356
Zinc	ppm	ASTM D5185(m) 370	<b>419</b>	422	404
Sulfur	ppm	ASTM D5185(m) 2500	<b>744</b>	1128	747
Lithium	ppm	ASTM D5185(m)	<b>&lt;1</b>	<1	<1

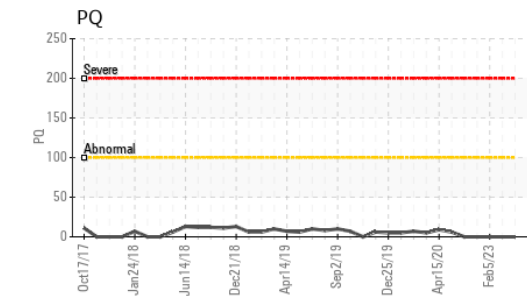
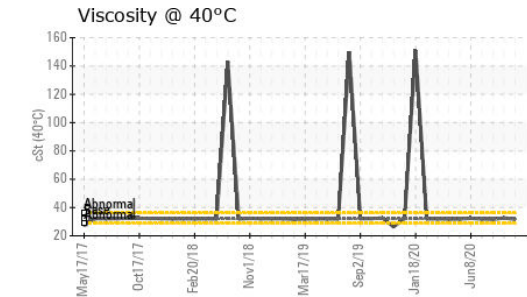
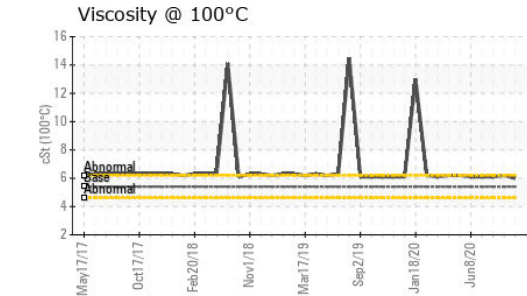
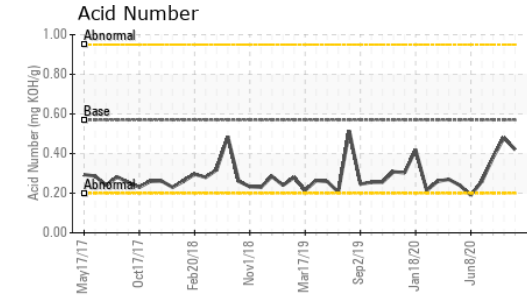
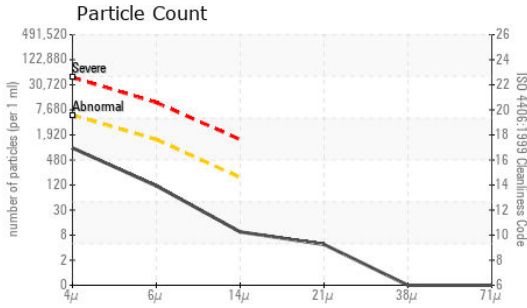
**CONTAMINANTS** method limit/base current history1 history2

Silicon	ppm	ASTM D5185(m) >15	<b>0</b>	<1	0
Sodium	ppm	ASTM D5185(m)	<b>&lt;1</b>	<1	0
Potassium	ppm	ASTM D5185(m) >20	<b>0</b>	<1	<1

**FLUID CLEANLINESS** method limit/base current history1 history2

Particles >4µm	ASTM D7647	>5000	<b>820</b>	2944	521
Particles >6µm	ASTM D7647	>1300	<b>101</b>	546	24
Particles >14µm	ASTM D7647	>160	<b>8</b>	40	3
Particles >21µm	ASTM D7647	>40	<b>4</b>	14	1
Particles >38µm	ASTM D7647	>10	<b>0</b>	0	0
Particles >71µm	ASTM D7647	>3	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14	<b>17/14/10</b>	19/16/12	16/12/9

# OIL ANALYSIS REPORT

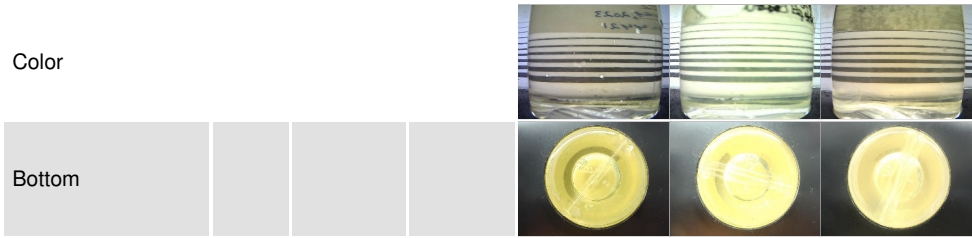


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.57	<b>0.42</b>	0.48	0.38

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)	32	<b>31.6</b>	32.7	31.6
Visc @ 100°C	cSt	ASTM D7279(m)	5.4	<b>6</b>	6.2	6.1
Viscosity Index (VI)	Scale	ASTM D2270*	102	<b>138</b>	141	144

### SAMPLE IMAGES



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC  
**Lab Number** : **02584912** **Received** : 25 Sep 2023  
**Unique Number** : 5645977 **Diagnosed** : 26 Sep 2023  
**Test Package** : MAR 2 ( Additional Tests: KV100, PQ, VI ) **Diagnostician** : Bill Quesnel

**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.