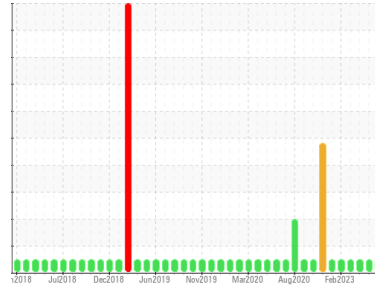


Area
Aft Machinery Space [50188488]
Machine Id
Thruster Aft Starboard - Steering System (S/N Sample Tag CL-06003-S2)
Component
Hydraulic System
Fluid
PETRO CANADA HYDREX MV 36 (200 LTR)



DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

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	PC0052573	PC	PC0040118
Sample Date	Client Info	14 Aug 2023	19 Jul 2023	11 Jun 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		NORMAL	NORMAL	NORMAL

WEAR METALS

method	limit/base	current	history1	history2
PQ	ASTM D8184*	0	10	0
Iron	ppm	ASTM D5185(m) >20	3	3
Chromium	ppm	ASTM D5185(m) >10	0	0
Nickel	ppm	ASTM D5185(m) >10	<1	<1
Titanium	ppm	ASTM D5185(m)	0	0
Silver	ppm	ASTM D5185(m)	0	0
Aluminum	ppm	ASTM D5185(m) >10	0	<1
Lead	ppm	ASTM D5185(m) >20	<1	<1
Copper	ppm	ASTM D5185(m) >20	7	6
Tin	ppm	ASTM D5185(m) >10	0	0
Antimony	ppm	ASTM D5185(m)	0	0
Vanadium	ppm	ASTM D5185(m)	0	0
Beryllium	ppm	ASTM D5185(m)	0	0
Cadmium	ppm	ASTM D5185(m)	0	0

ADDITIVES

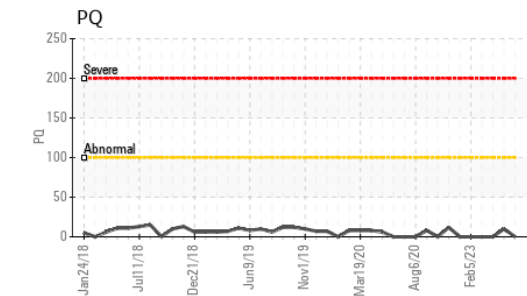
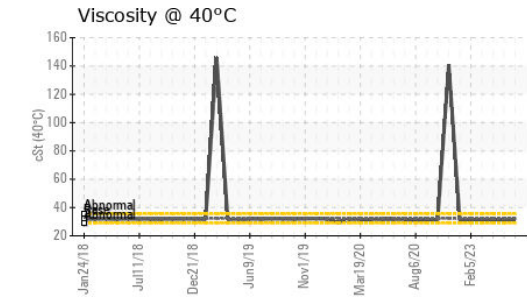
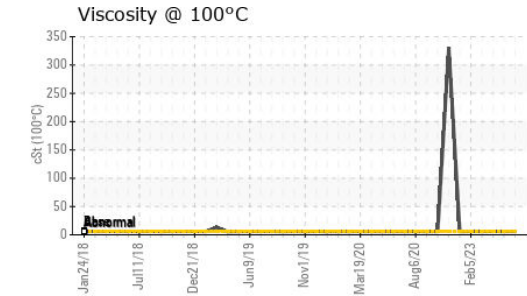
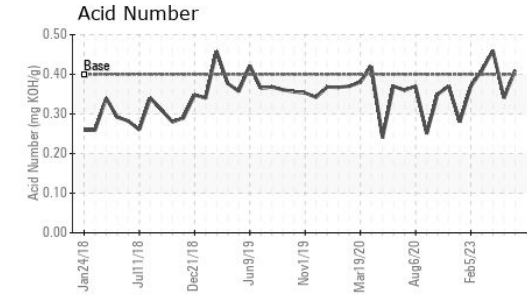
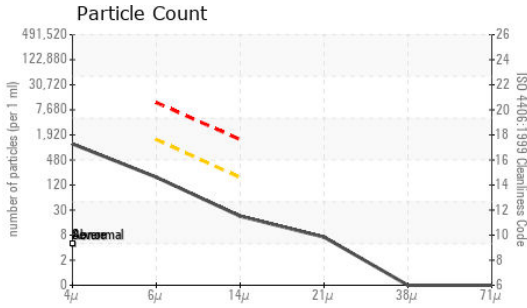
method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m) 0	<1	<1
Barium	ppm	ASTM D5185(m) 0	0	0
Molybdenum	ppm	ASTM D5185(m) 0	0	0
Manganese	ppm	ASTM D5185(m) 1	0	0
Magnesium	ppm	ASTM D5185(m) 0	<1	<1
Calcium	ppm	ASTM D5185(m) 135	71	69
Phosphorus	ppm	ASTM D5185(m) 236	349	334
Zinc	ppm	ASTM D5185(m) 317	391	377
Sulfur	ppm	ASTM D5185(m) 561	767	760
Lithium	ppm	ASTM D5185(m)	<1	<1

CONTAMINANTS

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

FLUID CLEANLINESS

method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	1025	1423	2311
Particles >6µm	ASTM D7647 >1300	163	271	343
Particles >14µm	ASTM D7647 >160	19	17	14
Particles >21µm	ASTM D7647 >40	6	5	5
Particles >38µm	ASTM D7647 >10	0	0	1
Particles >71µm	ASTM D7647 >3	0	0	0
Oil Cleanliness	ISO 4406 (c) >--/17/14	17/15/11	18/15/11	18/16/11

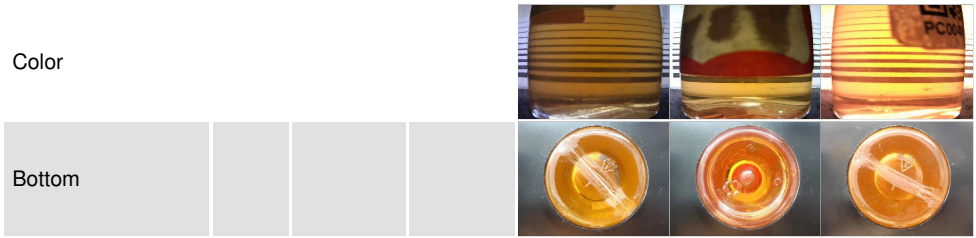


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.40	0.41	0.34	0.46

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*	>0.05	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)	32.25	31.5	31.3	31.5
Visc @ 100°C	cSt	ASTM D7279(m)	6.3	6	6	6.1
Viscosity Index (VI)	Scale	ASTM D2270*	148	139	140	144

SAMPLE IMAGES		method	limit/base	current	history1	history2
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Color

Bottom



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0052573 **Received** : 13 Sep 2023
Lab Number : **02582125** **Diagnosed** : 14 Sep 2023
Unique Number : 5643190 **Diagnostician** : Kevin Marson
Test Package : MAR 2 (Additional Tests: KV100, PQ, 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.

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