



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>



Machine Id  
**261221 STEERING SYSTEM 2 (S/N 09048-1)**  
Component  
**Starboard Steering**  
Fluid  
**PETRO CANADA HYDREX AW 32 (114 LTR)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0867272</b>	WC0635262	WC0599728
Sample Date		Client Info		<b>11 May 2024</b>	19 Feb 2022	30 Oct 2021
Machine Age	hrs	Client Info		<b>18192</b>	16460	15520
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	N/A	N/A
Filter Changed		Client Info		<b>N/A</b>	N/A	None
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

PQ		ASTM D8184*		<b>0</b>	0	0
Iron	ppm	ASTM D5185(m)	>60	<b>3</b>	3	3
Chromium	ppm	ASTM D5185(m)	>12	<b>1</b>	1	1
Nickel	ppm	ASTM D5185(m)	>6	<b>0</b>	<1	<1
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>4	<b>&lt;1</b>	<1	<1
Lead	ppm	ASTM D5185(m)	>12	<b>&lt;1</b>	<1	<1
Copper	ppm	ASTM D5185(m)	>30	<b>7</b>	7	7
Tin	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
White Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

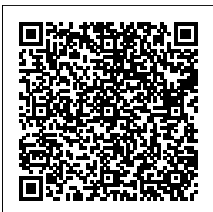
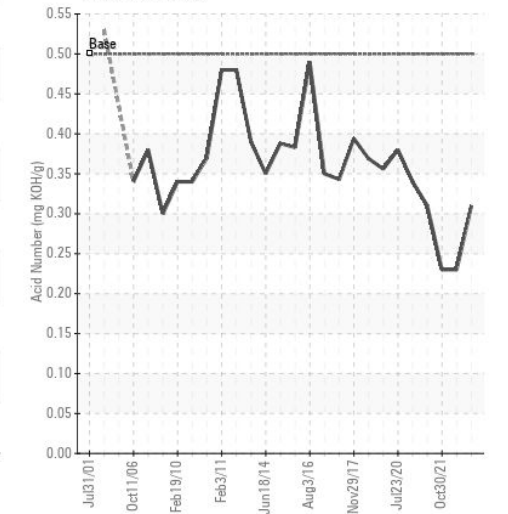
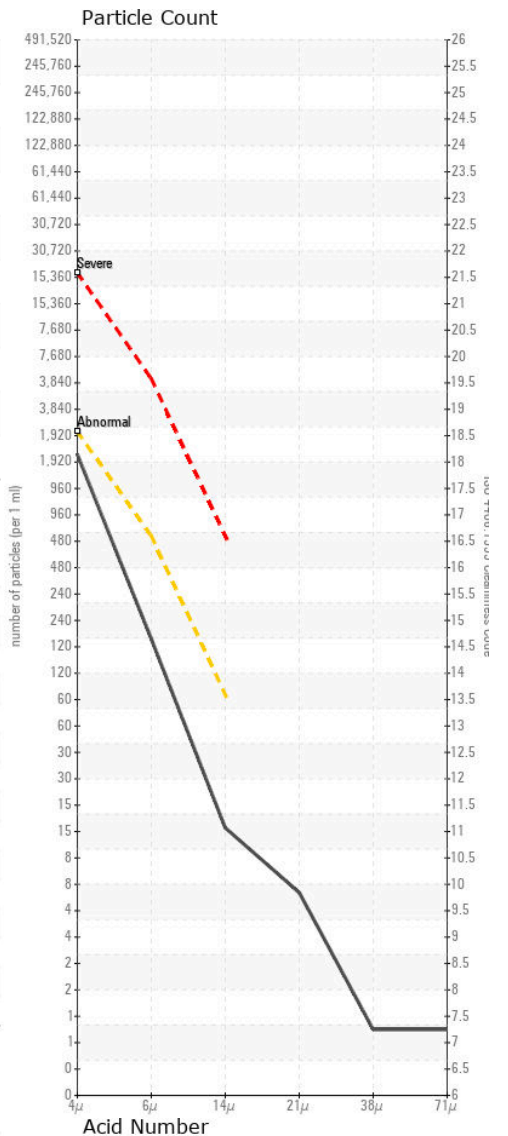
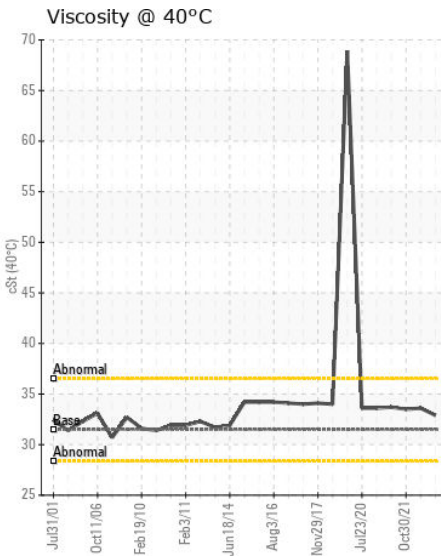
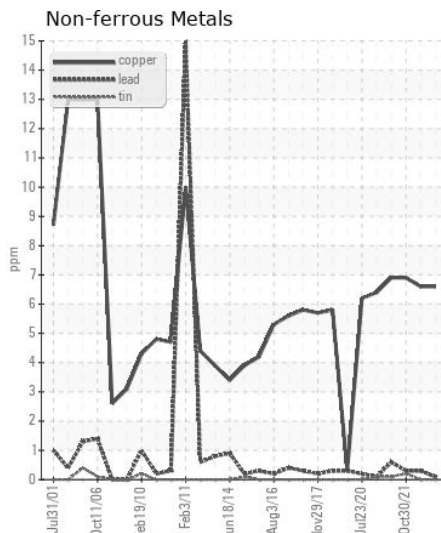
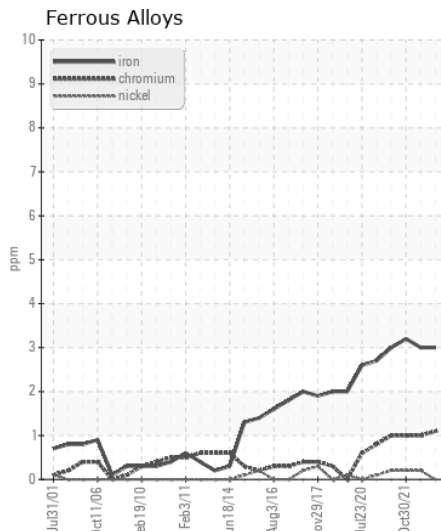
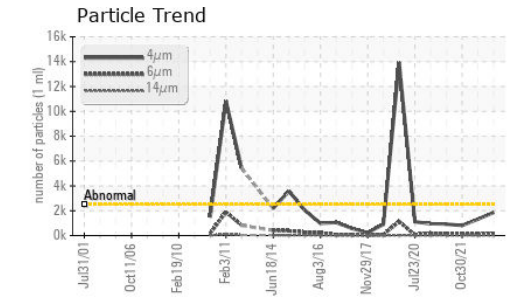
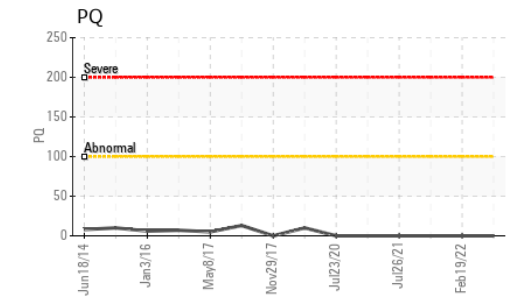
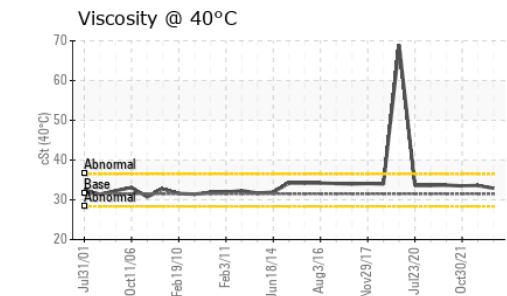
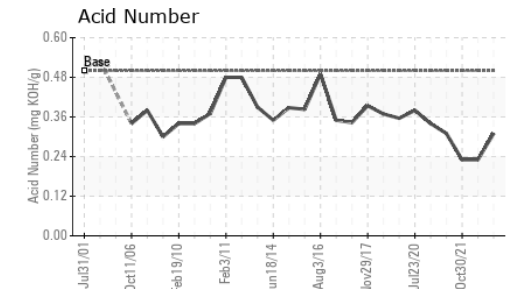
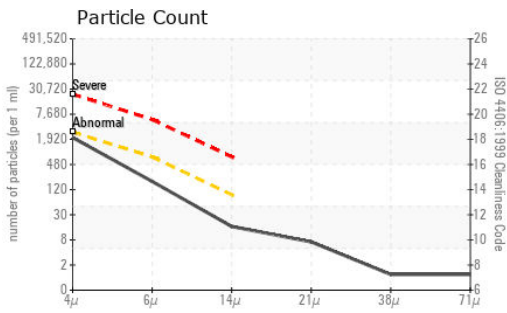
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Silicon	ppm	ASTM D5185(m)	>10	<b>0</b>	0	<1
Potassium	ppm	ASTM D5185(m)	>20	<b>1</b>	<1	<1
Water		WC Method		<b>NEG</b>	NEG	NEG
Particles >4µm		ASTM D7647	>2500	<b>1858</b>	1320	811
Particles >6µm		ASTM D7647	>640	<b>166</b>	101	109
Particles >14µm		ASTM D7647	>80	<b>14</b>	10	12
Particles >21µm		ASTM D7647	>20	<b>6</b>	3	3
Particles >38µm		ASTM D7647	>4	<b>1</b>	0	0
Particles >71µm		ASTM D7647	>3	<b>1</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>18/16/13	<b>18/15/11</b>	18/14/10	17/14/11
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*		<b>NEG</b>	NEG	NEG

## FLUID CONDITION

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

Sodium	ppm	ASTM D5185(m)		<b>&lt;1</b>	0	<1
Boron	ppm	ASTM D5185(m)	0	<b>&lt;1</b>	<1	<1
Barium	ppm	ASTM D5185(m)	0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185(m)	0	<b>0</b>	0	<1
Manganese	ppm	ASTM D5185(m)	0	<b>0</b>	0	0
Magnesium	ppm	ASTM D5185(m)	0	<b>&lt;1</b>	0	0
Calcium	ppm	ASTM D5185(m)	50	<b>58</b>	56	59
Phosphorus	ppm	ASTM D5185(m)	330	<b>291</b>	274	296
Zinc	ppm	ASTM D5185(m)	430	<b>352</b>	335	354
Sulfur	ppm	ASTM D5185(m)	760	<b>1225</b>	1305	1336
Acid Number (AN)	mg KOH/g	ASTM D974*	0.50	<b>0.31</b>	0.23	0.23
Visc @ 40°C	cSt	ASTM D7279(m)	31.5	<b>32.9</b>	33.6	33.5



ISO 17025:2017  
Accredited  
Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0867272  
**Lab Number** : 02636356  
**Unique Number** : 5785518  
**Test Package** : MAR 2 ( Additional Tests: PQ, PrtCount )

**Received** : 17 May 2024  
**Tested** : 21 May 2024  
**Diagnosed** : 21 May 2024 - Wes Davis

**CCGS Cygnus - Fleet Tech Stores**  
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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.