



Machine Id  
**HBR**  
Component  
**Starboard Reduction Gear**  
Fluid  
**PETRO CANADA DURON MARINE SAE 40 (7 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW06017507</b>	MW05981981	MW05934935
Sample Date		Client Info		<b>23 Nov 2023</b>	16 Oct 2023	24 Aug 2023
Machine Age	hrs	Client Info		<b>26071</b>	25690	25471
Oil Age	hrs	Client Info		<b>381</b>	435	215
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	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>150	<b>2</b>	1	2
Chromium	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Nickel	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>2</b>	1	<1
Lead	ppm	ASTM D5185m	>100	<b>0</b>	<1	0
Copper	ppm	ASTM D5185m	>50	<b>&lt;1</b>	0	<1
Tin	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185m		<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**

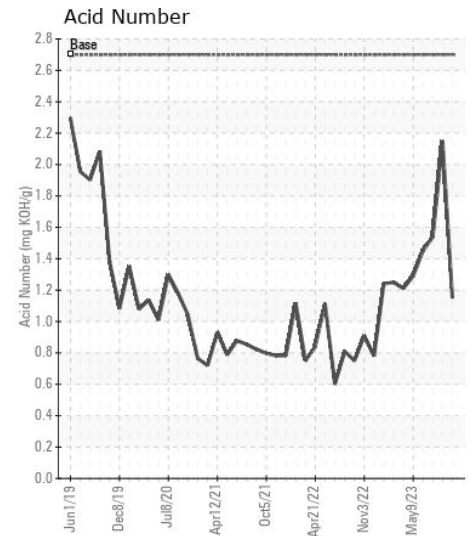
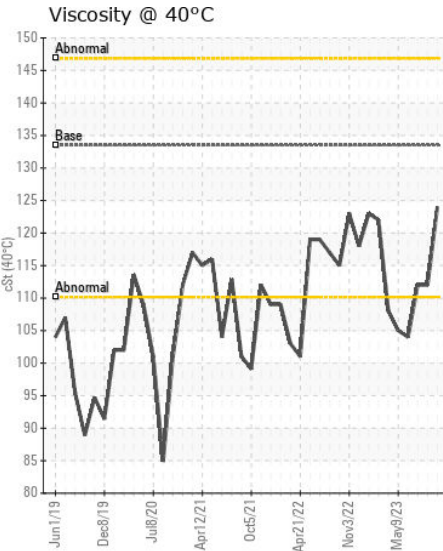
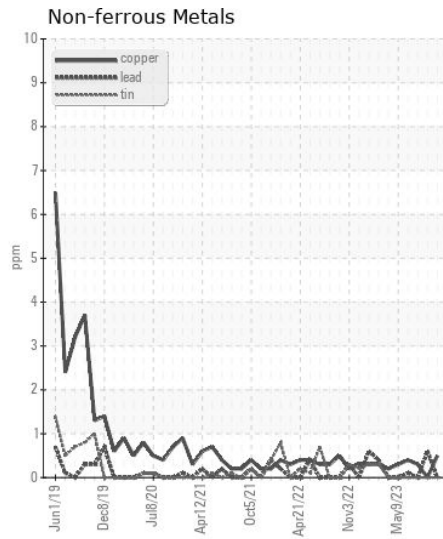
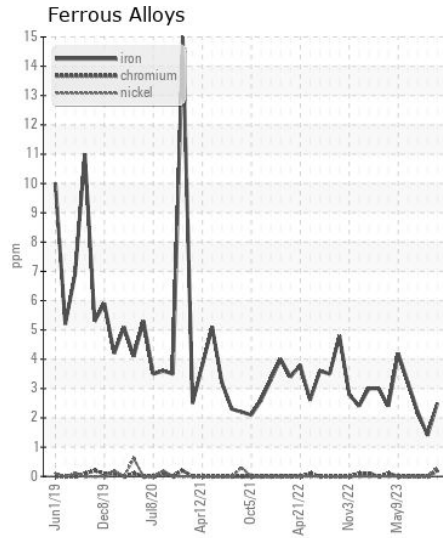
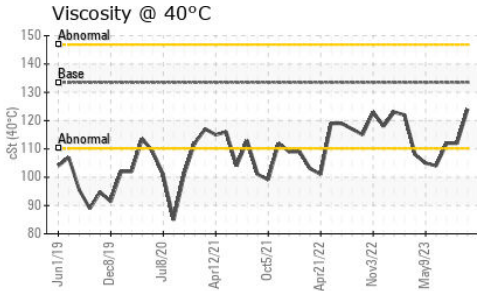
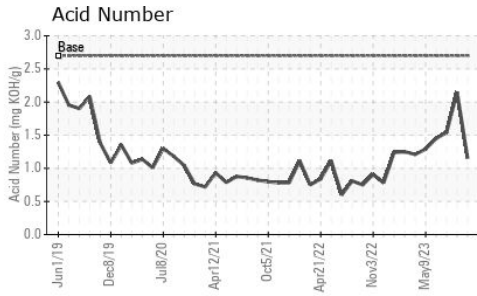
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>50	<b>5</b>	5	6
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	2	2
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
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	>0.1	<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

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

Sodium	ppm	ASTM D5185m		<b>0</b>	1	0
Boron	ppm	ASTM D5185m	1.0	<b>352</b>	370	400
Barium	ppm	ASTM D5185m	1.0	<b>0</b>	3	0
Molybdenum	ppm	ASTM D5185m	1.0	<b>42</b>	57	60
Manganese	ppm	ASTM D5185m	1	<b>&lt;1</b>	0	0
Magnesium	ppm	ASTM D5185m	15	<b>58</b>	161	151
Calcium	ppm	ASTM D5185m	2540	<b>2497</b>	2345	2378
Phosphorus	ppm	ASTM D5185m	1000	<b>670</b>	832	784
Zinc	ppm	ASTM D5185m	1110	<b>873</b>	948	907
Sulfur	ppm	ASTM D5185m	3700	<b>3492</b>	3090	3403
Acid Number (AN)	mg KOH/g	ASTM D8045	2.7	<b>1.15</b>	2.15	1.54
Visc @ 40°C	cSt	ASTM D445	133.5	<b>124</b>	112	112



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW06017507  
**Lab Number** : 06017507  
**Unique Number** : 10756651  
**Test Package** : MAR 2

**Received** : 24 Nov 2023  
**Tested** : 28 Nov 2023  
**Diagnosed** : 29 Nov 2023 - Jonathan Hester

**ILLINOIS MARINE TOWING**  
 PO BOX 391  
 LEMONT, IL  
 US 60439

Contact: RHETT DANIEL  
 rdaniel@imtowing.com

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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