



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

Machine Id  
**RIVER QUEST**  
Component  
**Port Main Engine**  
Fluid  
**PETRO CANADA DURON MARINE SAE 40 (16 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0035980</b>	MW0066780	MW0066816
Sample Date		Client Info		<b>21 May 2024</b>	05 Mar 2024	01 Feb 2024
Machine Age	hrs	Client Info		<b>23849</b>	22791	22291
Oil Age	hrs	Client Info		<b>1058</b>	500	968
Filter Age	hrs	Client Info		<b>1058</b>	500	968
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>120	<b>6</b>	3	8
Chromium	ppm	ASTM D5185m	>10	<b>0</b>	0	<1
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m		<b>0</b>	0	<1
Silver	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>0</b>	<1	2
Lead	ppm	ASTM D5185m	>40	<b>1</b>	<1	7
Copper	ppm	ASTM D5185m	>300	<b>0</b>	2	2
Tin	ppm	ASTM D5185m	>10	<b>0</b>	0	<1
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.

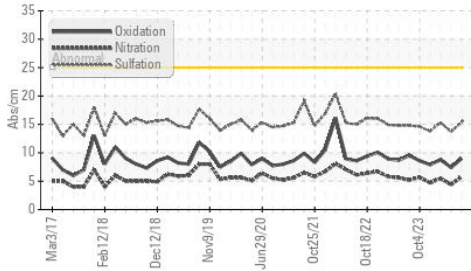
Silicon	ppm	ASTM D5185m	>25	<b>1</b>	2	2
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	0	<1
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.4</b>	0.3	0.5
Nitration	Abs/cm	*ASTM D7624	>20	<b>5.8</b>	4.4	5.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>15.4</b>	13.7	15.3
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**

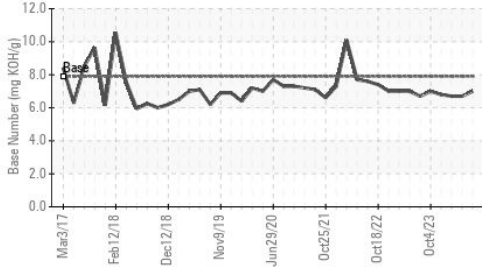
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>2</b>	1	0
Boron	ppm	ASTM D5185m	1.0	<b>3</b>	4	2
Barium	ppm	ASTM D5185m	1.0	<b>0</b>	0	13
Molybdenum	ppm	ASTM D5185m	1.0	<b>1</b>	3	3
Manganese	ppm	ASTM D5185m	1	<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m	15	<b>882</b>	942	882
Calcium	ppm	ASTM D5185m	2540	<b>1089</b>	1123	1089
Phosphorus	ppm	ASTM D5185m	1000	<b>1069</b>	1204	1112
Zinc	ppm	ASTM D5185m	1110	<b>1287</b>	1379	1262
Sulfur	ppm	ASTM D5185m	3700	<b>3349</b>	3790	3501
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>9.0</b>	7.4	8.8
Base Number (BN)	mg KOH/g	ASTM D2896	7.9	<b>7.0</b>	6.7	6.7
Visc @ 100°C	cSt	ASTM D445	14.6	<b>13.8</b>	13.5	13.7

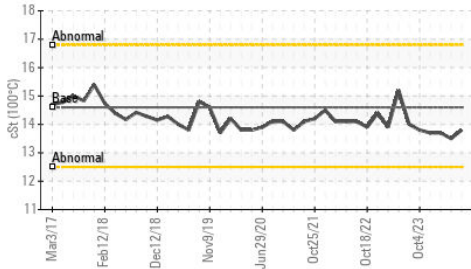
**FT-IR (Direct Trend)**



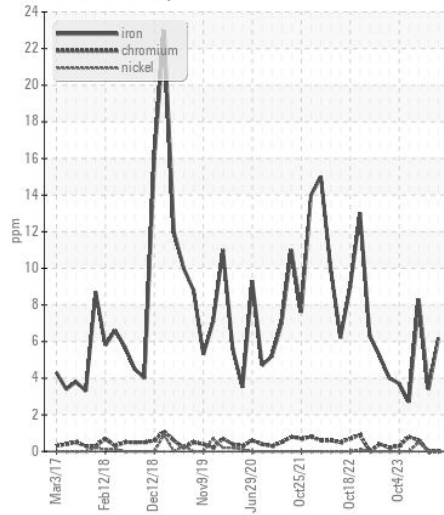
**Base Number**



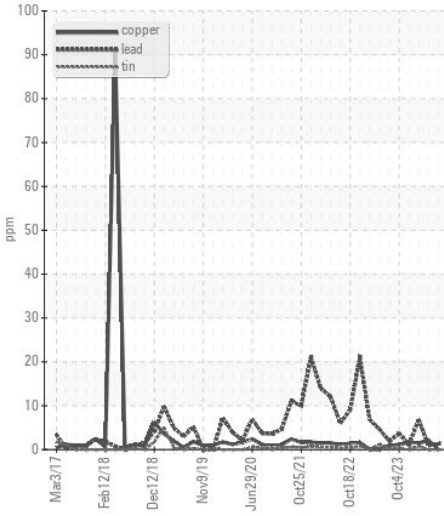
**Viscosity @ 100°C**



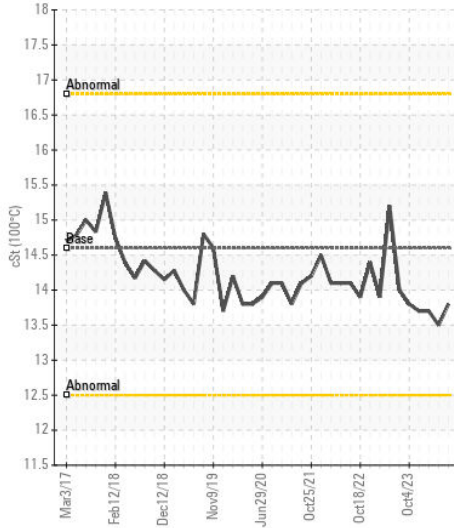
**Ferrous Alloys**



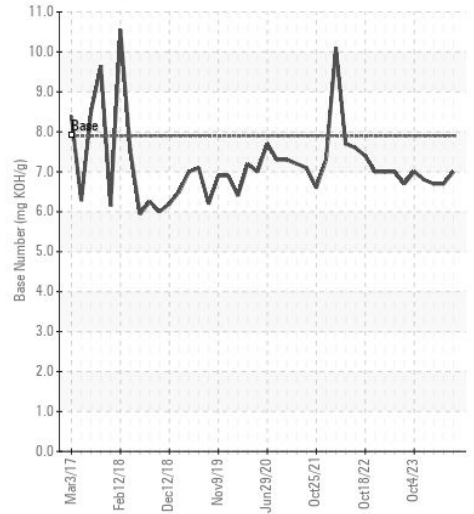
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW0035980  
**Lab Number** : 06195240  
**Unique Number** : 11057363  
**Test Package** : MAR 2

**Received** : 30 May 2024  
**Tested** : 31 May 2024  
**Diagnosed** : 31 May 2024 - Wes Davis

**AMERICAN RIVER TRANSPORTATION**  
 1495 EAST ILLINOIS RT 71  
 OTTAWA, IL  
 US 61350

Contact: Jackson Hayes  
 jackson.hayes@adm.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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