



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

Area  
**SAR**  
Machine Id  
Component  
**SAR**  
Starboard Main Engine  
Fluid  
**CHEVRON DELO 710 LS (350 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0060920</b>	MW0060830	MW0050848
Sample Date		Client Info		<b>31 Mar 2024</b>	19 Dec 2023	30 Oct 2023
Machine Age	hrs	Client Info		<b>111185</b>	17259	16104
Oil Age	hrs	Client Info		<b>4695</b>	2372	1195
Filter Age	hrs	Client Info		<b>1211</b>	1189	1195
Oil Changed		Client Info		<b>Not Chngd</b>	Not Chngd	Not Chngd
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	>75	<b>8</b>	6	6
Chromium	ppm	ASTM D5185m	>8	<b>1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>15	<b>2</b>	2	<1
Lead	ppm	ASTM D5185m	>18	<b>3</b>	1	<1
Copper	ppm	ASTM D5185m	>80	<b>5</b>	5	5
Tin	ppm	ASTM D5185m	>14	<b>2</b>	2	2
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

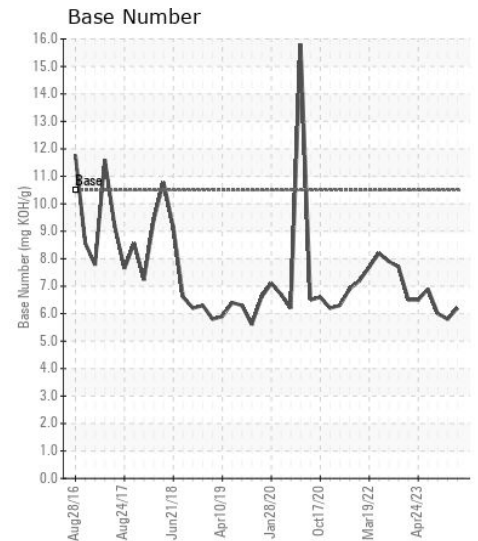
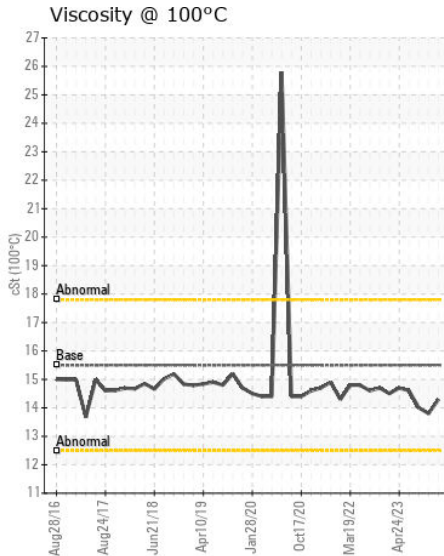
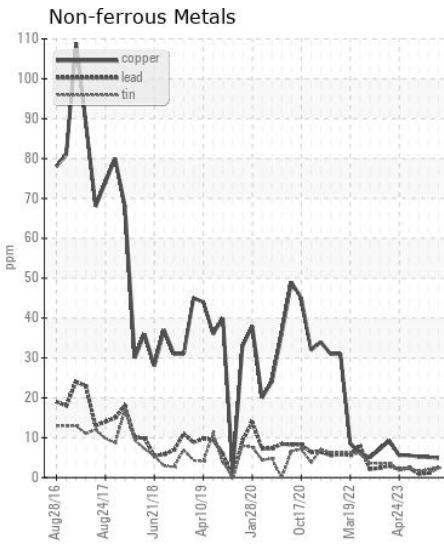
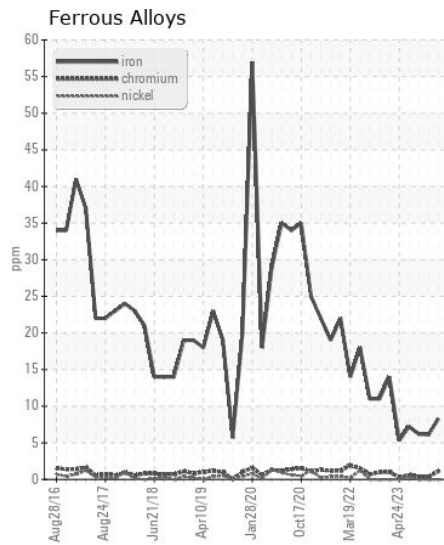
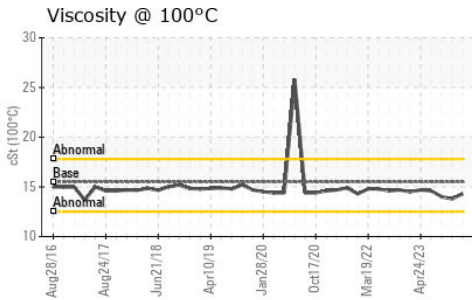
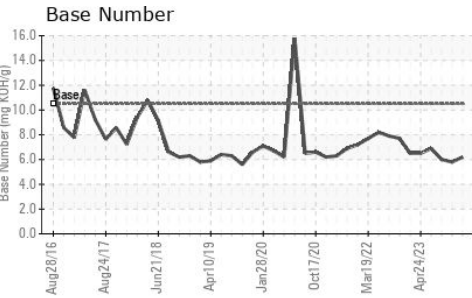
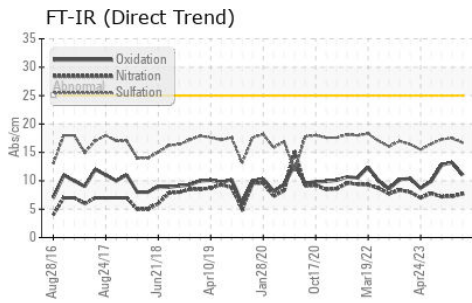
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	<b>3</b>	1	2
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	0
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	>3	<b>0.3</b>	0.3	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.7</b>	7.3	7.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>16.7</b>	17.5	17.3
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	>75	<b>1</b>	0	2
Boron	ppm	ASTM D5185m		<b>41</b>	39	43
Barium	ppm	ASTM D5185m		<b>0</b>	2	0
Molybdenum	ppm	ASTM D5185m		<b>45</b>	44	44
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Magnesium	ppm	ASTM D5185m		<b>9</b>	7	9
Calcium	ppm	ASTM D5185m		<b>3470</b>	3098	3327
Phosphorus	ppm	ASTM D5185m		<b>2</b>	39	4
Zinc	ppm	ASTM D5185m		<b>0</b>	0	<1
Sulfur	ppm	ASTM D5185m		<b>2413</b>	1966	2088
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>11.0</b>	13.2	12.8
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	<b>6.2</b>	5.8	6.0
Visc @ 100°C	cSt	ASTM D445	15.5	<b>14.3</b>	13.8	14.0



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW0060920  
**Lab Number** : 06194791  
**Unique Number** : 11056914  
**Test Package** : MAR 2  
**Received** : 29 May 2024  
**Tested** : 30 May 2024  
**Diagnosed** : 30 May 2024 - Wes Davis

**AMERICAN RIVER TRANSPORTATION CO.**  
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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)