



Machine Id  
**GST**  
Component  
**Starboard Genset**  
Fluid  
**CHEVRON DELO 710 LS (8 GAL)**

**RECOMMENDATION**

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0060856</b>	MW0055049	MW0055046
Sample Date		Client Info		<b>19 Oct 2023</b>	15 Jul 2023	24 Jun 2023
Machine Age	hrs	Client Info		<b>7770</b>	6662	5554
Oil Age	hrs	Client Info		<b>285</b>	256	487
Filter Age	hrs	Client Info		<b>285</b>	256	487
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ATTENTION</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	<b>4</b>	7	9
Chromium	ppm	ASTM D5185m	>4	<b>0</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185m		<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>12	<b>1</b>	1	2
Lead	ppm	ASTM D5185m	>17	<b>&lt;1</b>	<1	4
Copper	ppm	ASTM D5185m	>70	<b>0</b>	<1	0
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	<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**

Fuel content negligible. There is no indication of any contamination in the oil.

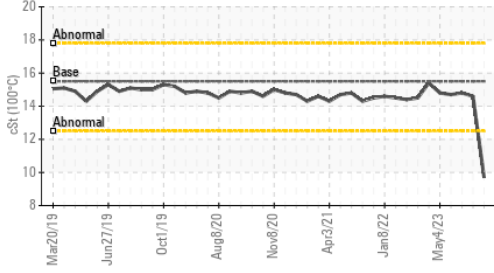
Silicon	ppm	ASTM D5185m	>25	<b>2</b>	2	2
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Fuel	%	ASTM D3524	>4.0	<b>0.3</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.3</b>	0.4	0.5
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.9</b>	8.7	9.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>16.3</b>	15.8	16.1
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**

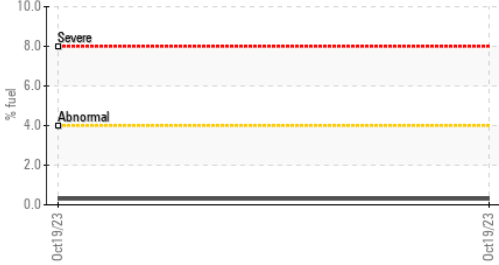
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Boron	ppm	ASTM D5185m		<b>37</b>	40	41
Barium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Molybdenum	ppm	ASTM D5185m		<b>49</b>	57	60
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>10</b>	13	14
Calcium	ppm	ASTM D5185m		<b>3375</b>	3834	3983
Phosphorus	ppm	ASTM D5185m		<b>5</b>	12	13
Zinc	ppm	ASTM D5185m		<b>0</b>	2	2
Sulfur	ppm	ASTM D5185m		<b>2273</b>	2883	2960
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>10.5</b>	9.5	9.6
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	<b>6.7</b>	6.6	7.3
Visc @ 100°C	cSt	ASTM D445	15.5	<b>▲ 9.7</b>	14.6	14.8

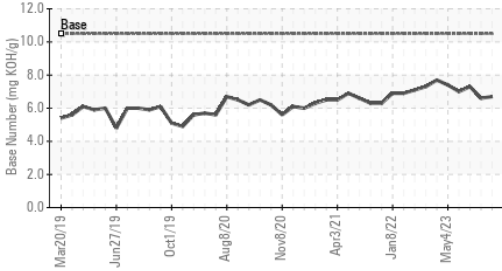
▲ Viscosity @ 100°C



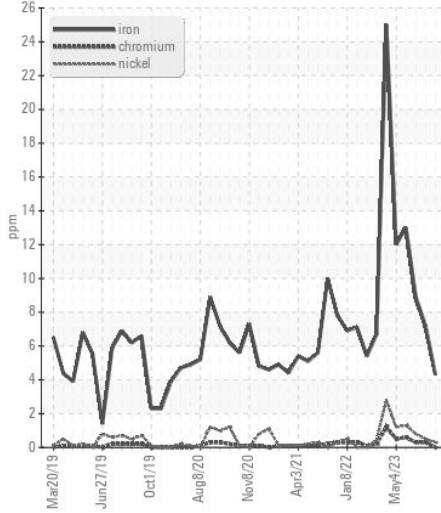
Fuel Dilution



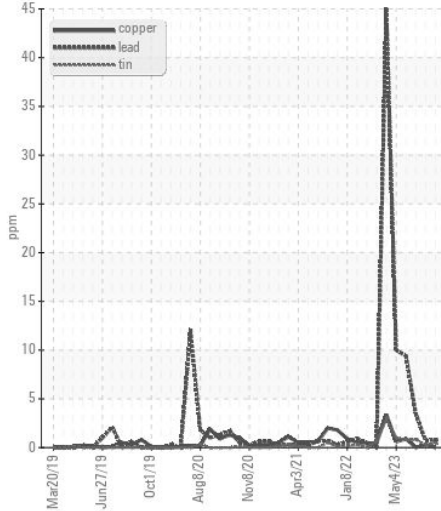
Base Number



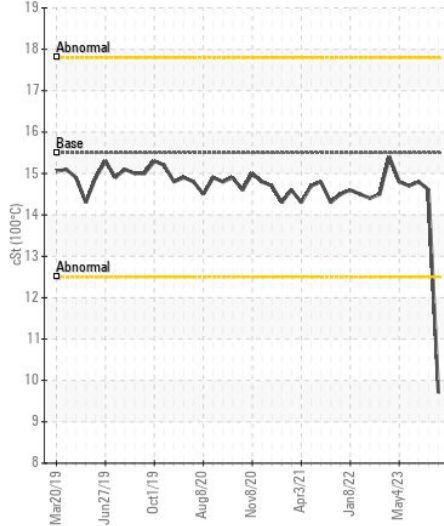
Ferrous Alloys



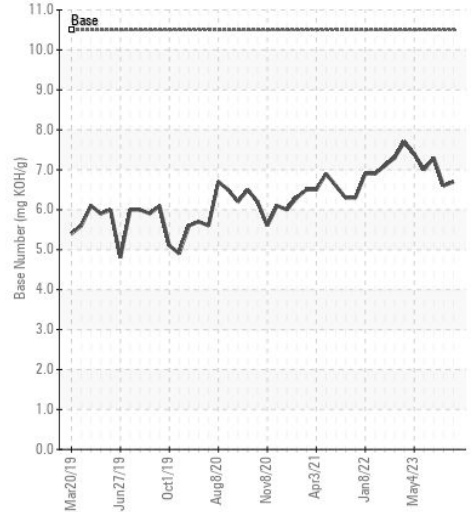
Non-ferrous Metals



▲ Viscosity @ 100°C



Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW0060856 **Received** : 14 Nov 2023  
**Lab Number** : 06006811 **Diagnosed** : 16 Nov 2023  
**Unique Number** : 10740573 **Diagnostician** : Don Baldridge  
**Test Package** : MAR 2 ( Additional Tests: FuelDilution, PercentFuel )

**AMERICAN RIVER TRANSPORTATION CO.**  
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 F: (314)481-5278

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)