



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

Area  
**ARA**  
Machine Id  
Component  
**ARA**  
Port 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>MW0061180</b>	MW0039980	MW0031427
Sample Date		Client Info		<b>24 Mar 2024</b>	03 Feb 2024	15 Dec 2023
Machine Age	hrs	Client Info		<b>32581</b>	31386	30195
Oil Age	hrs	Client Info		<b>4936</b>	3144	2550
Filter Age	hrs	Client Info		<b>1190</b>	1190	1060
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>16</b>	14	12
Chromium	ppm	ASTM D5185m	>8	<b>1</b>	1	<1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185m	>3	<b>&lt;1</b>	<1	0
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>15	<b>2</b>	2	2
Lead	ppm	ASTM D5185m	>18	<b>5</b>	5	4
Copper	ppm	ASTM D5185m	>80	<b>25</b>	25	21
Tin	ppm	ASTM D5185m	>14	<b>5</b>	7	4
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	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.

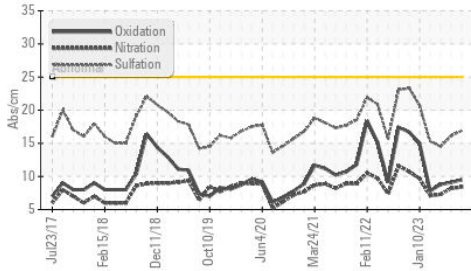
Silicon	ppm	ASTM D5185m	>20	<b>3</b>	2	3
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	1	0
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.9</b>	0.8	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.4</b>	8.2	7.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>16.9</b>	16.1	14.5
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**

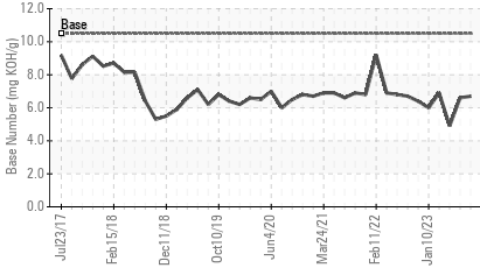
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	<b>3</b>	3	3
Boron	ppm	ASTM D5185m		<b>38</b>	39	35
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>44</b>	43	42
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>10</b>	10	12
Calcium	ppm	ASTM D5185m		<b>3446</b>	3527	3154
Phosphorus	ppm	ASTM D5185m		<b>4</b>	0	3
Zinc	ppm	ASTM D5185m		<b>3</b>	0	<1
Sulfur	ppm	ASTM D5185m		<b>2437</b>	2557	2176
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>9.5</b>	9.1	8.8
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	<b>6.7</b>	6.6	4.9
Visc @ 100°C	cSt	ASTM D445	15.5	<b>14.7</b>	14.7	14.7

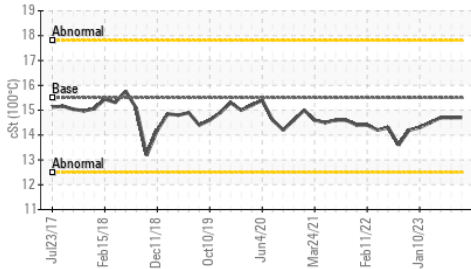
**FT-IR (Direct Trend)**



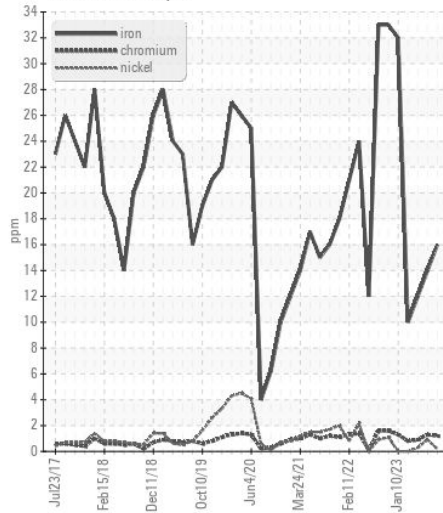
**Base Number**



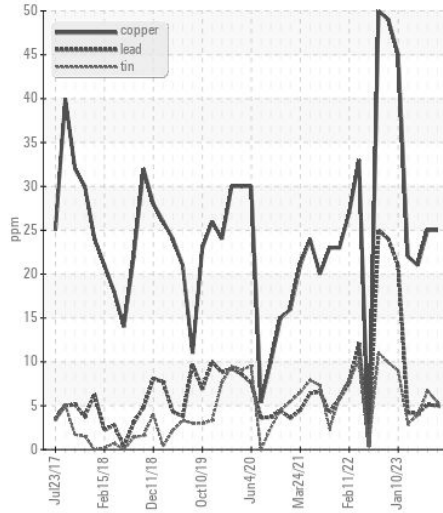
**Viscosity @ 100°C**



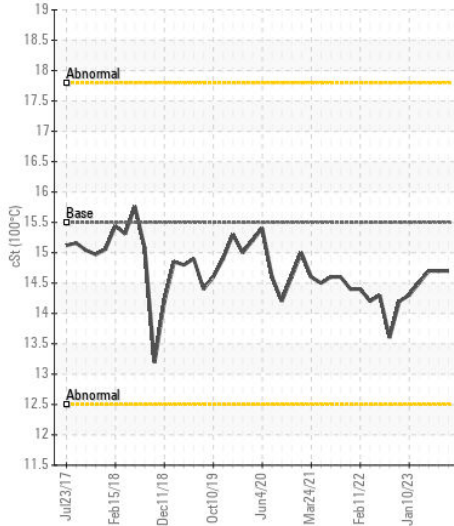
**Ferrous Alloys**



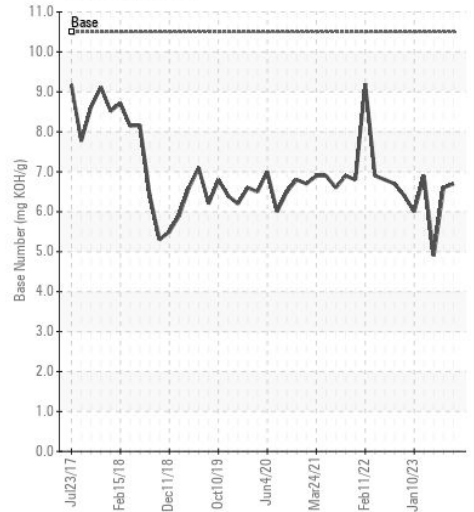
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW0061180  
**Lab Number** : 06194806  
**Unique Number** : 11056929  
**Test Package** : MAR 2

**Received** : 29 May 2024  
**Tested** : 30 May 2024  
**Diagnosed** : 30 May 2024 - Wes Davis

**AMERICAN RIVER TRANSPORTATION CO.**  
 P.O. BOX 2889  
 ST. LOUIS, MO  
 US 63111

Contact: BRIAN GRIEWING  
 brian.griewing@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)

T:  
 F: (314)481-5278