



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
CARDINAL PRIDE

Machine Id
CPR
Component
Port Main Engine

Fluid
CHEVRON DELO 710 LS (75 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0065081	MW0065121	MW0065119
Sample Date		Client Info		14 May 2024	04 Apr 2024	19 Feb 2024
Machine Age	hrs	Client Info		23171	22394	21595
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	MARGINAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	15	17	22
Chromium	ppm	ASTM D5185m	>8	<1	1	1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m	>3	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>15	2	1	2
Lead	ppm	ASTM D5185m	>18	5	4	▲ 21
Copper	ppm	ASTM D5185m	>80	<1	0	<1
Tin	ppm	ASTM D5185m	>14	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

There is no indication of any contamination in the oil.

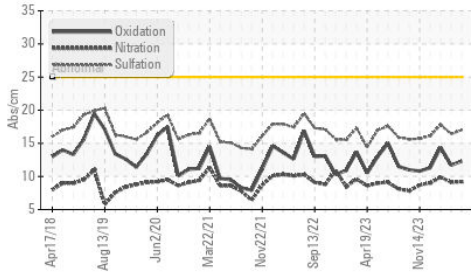
Silicon	ppm	ASTM D5185m	>20	4	4	4
Potassium	ppm	ASTM D5185m	>20	2	0	4
Fuel		WC Method	>4.0	<1.0	▲ 2.1	▲ 5.2
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.2	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	9.2	9.1	9.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.0	16.4	17.8
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG

FLUID CONDITION

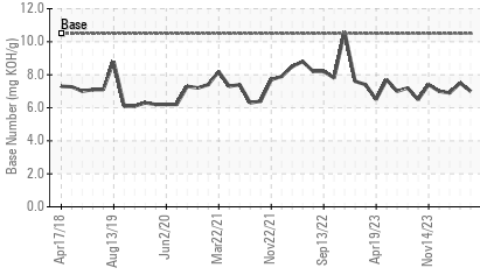
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	2	8	22
Boron	ppm	ASTM D5185m		45	51	42
Barium	ppm	ASTM D5185m		0	0	34
Molybdenum	ppm	ASTM D5185m		45	48	51
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		23	13	9
Calcium	ppm	ASTM D5185m		3335	3611	3259
Phosphorus	ppm	ASTM D5185m		27	<1	37
Zinc	ppm	ASTM D5185m		22	0	28
Sulfur	ppm	ASTM D5185m		2470	2566	2282
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.3	11.7	14.4
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	7.0	7.5	6.9
Visc @ 100°C	cSt	ASTM D445	15.5	13.9	13.7	12.8

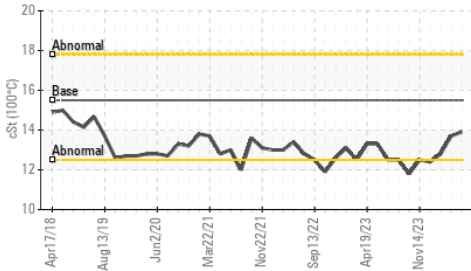
FT-IR (Direct Trend)



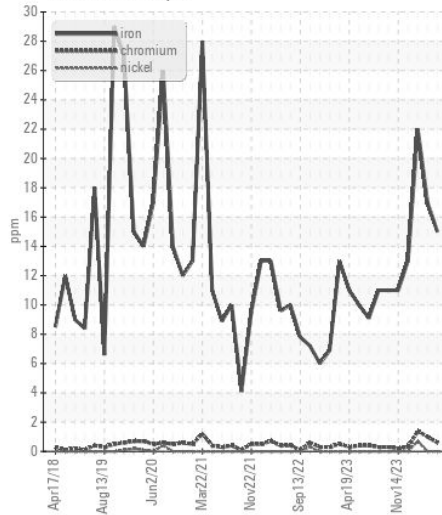
Base Number



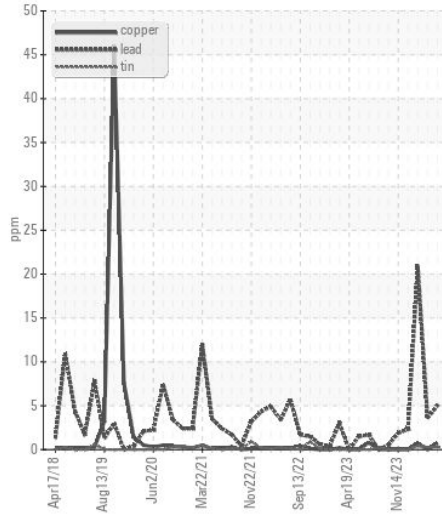
Viscosity @ 100°C



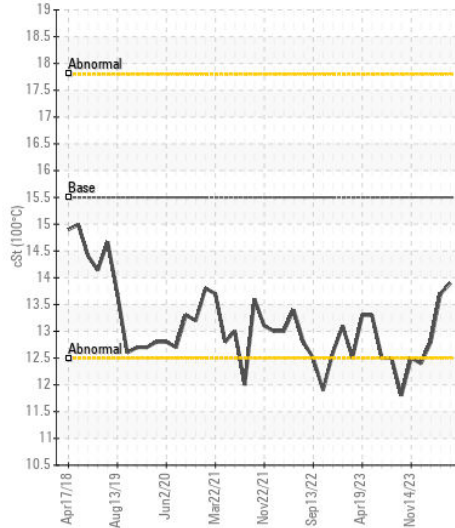
Ferrous Alloys



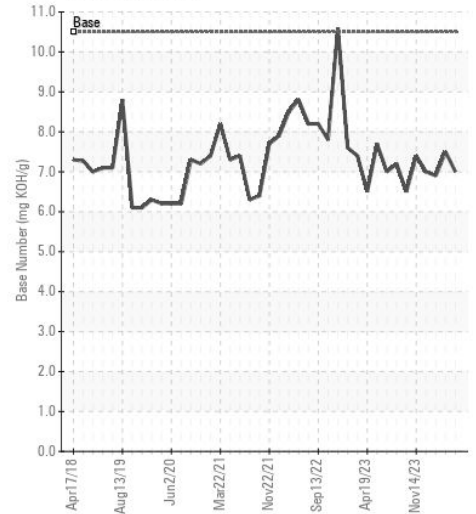
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0065081
Lab Number : 06185913
Unique Number : 11042665
Test Package : MAR 2

Received : 21 May 2024
Tested : 22 May 2024
Diagnosed : 22 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)

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