



WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Area
CARDINAL PRIDE

Machine Id
CPR

Component
Port Main Engine

Fluid
CHEVRON DELO 710 LS (75 GAL)

RECOMMENDATION

We recommend that you change the oil at the next available stoppage or outage. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0065143	MW0061004	MW0054792
Sample Date		Client Info		29 Dec 2023	14 Nov 2023	06 Oct 2023
Machine Age	hrs	Client Info		20509	19587	18787
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				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	13	11	11
Chromium	ppm	ASTM D5185m	>8	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>3	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	<1	2
Lead	ppm	ASTM D5185m	>18	2	2	<1
Copper	ppm	ASTM D5185m	>80	0	0	0
Tin	ppm	ASTM D5185m	>14	0	0	0
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

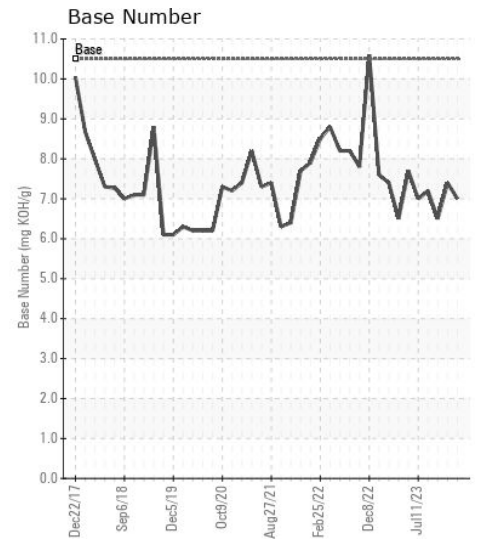
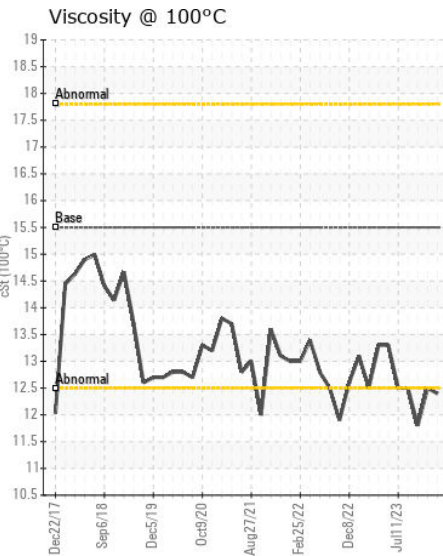
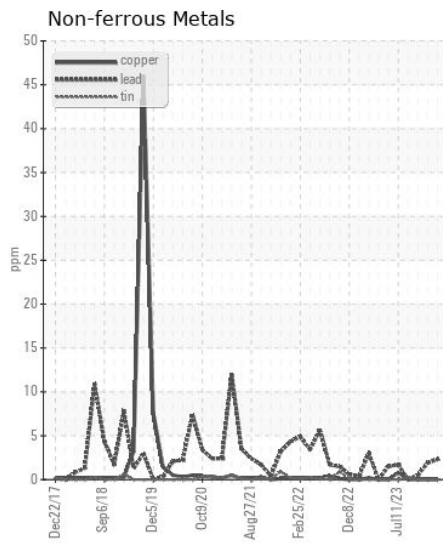
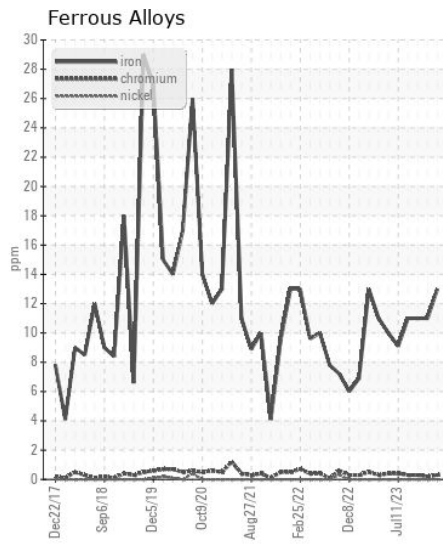
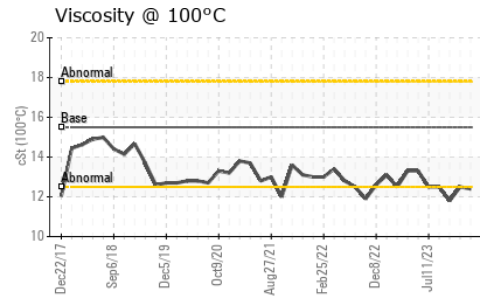
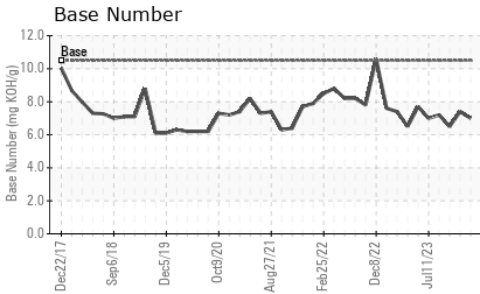
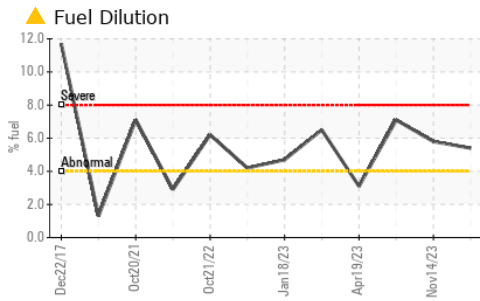
There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Silicon	ppm	ASTM D5185m	>20	2	2	2
Potassium	ppm	ASTM D5185m	>20	4	0	2
Fuel	%	ASTM D3524	>4.0	▲ 5.4	▲ 5.8	▲ 7.1
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.2	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	9.0	8.7	7.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	16.1	15.7	15.6
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 oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m	>75	24	8	4
Boron	ppm	ASTM D5185m		44	39	38
Barium	ppm	ASTM D5185m		3	0	0
Molybdenum	ppm	ASTM D5185m		47	42	42
Manganese	ppm	ASTM D5185m		0	0	0
Magnesium	ppm	ASTM D5185m		7	8	8
Calcium	ppm	ASTM D5185m		3196	3270	3067
Phosphorus	ppm	ASTM D5185m		47	0	0
Zinc	ppm	ASTM D5185m		0	0	0
Sulfur	ppm	ASTM D5185m		2213	1990	2223
Oxidation	Abs/.1mm	*ASTM D7414	>25	11.3	10.8	11.0
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	7.0	7.4	6.5
Visc @ 100°C	cSt	ASTM D445	15.5	12.4	12.5	▲ 11.8



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0065143 **Received** : 18 Jan 2024
Lab Number : 06064104 **Tested** : 19 Jan 2024
Unique Number : 10835486 **Diagnosed** : 19 Jan 2024 - Wes Davis
Test Package : MAR 2 (Additional Tests: PercentFuel)

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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