



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
LOUISIANA MARINER

Component
Port Main Engine

Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (38 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0065023	MW0057319	MW0016574
Sample Date		Client Info		16 May 2024	08 Dec 2023	26 Sep 2023
Machine Age	hrs	Client Info		10835	7222	5574
Oil Age	hrs	Client Info		3554	3405	1787
Filter Age	hrs	Client Info		1804	1750	1787
Oil Changed		Client Info		Changed	Changed	Not Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	17	17	8
Chromium	ppm	ASTM D5185m	>8	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m	>3	11	12	11
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	<1	1	0
Lead	ppm	ASTM D5185m	>18	12	7	3
Copper	ppm	ASTM D5185m	>80	0	0	<1
Tin	ppm	ASTM D5185m	>14	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

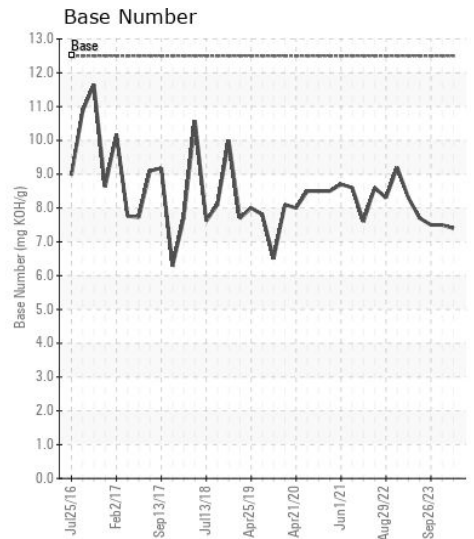
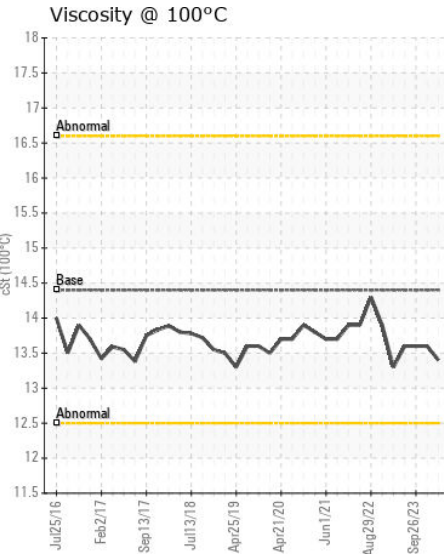
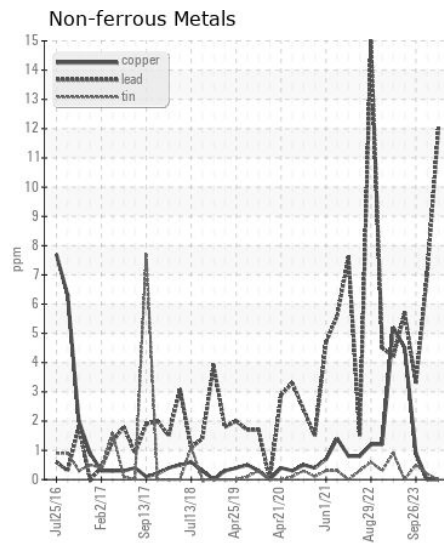
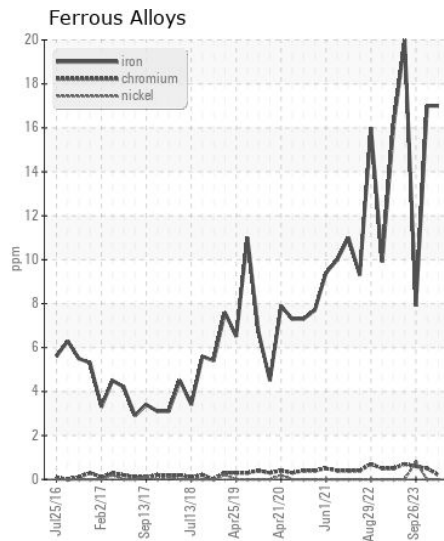
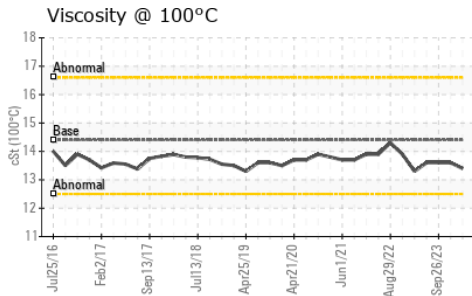
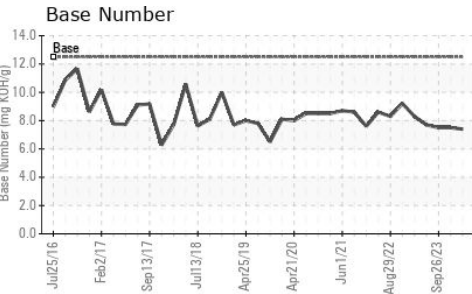
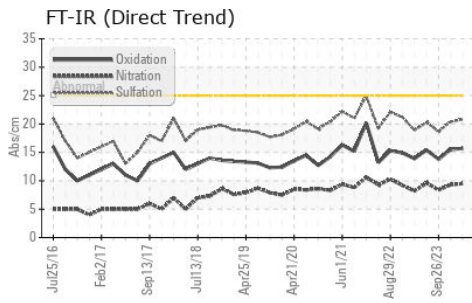
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	3	4	4
Potassium	ppm	ASTM D5185m	>20	2	2	4
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.4	0.4	0.3
Nitration	Abs/cm	*ASTM D7624	>20	9.5	9.3	8.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.8	20.4	18.7
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	6	6	2
Boron	ppm	ASTM D5185m	151	63	71	81
Barium	ppm	ASTM D5185m	0.4	0	0	0
Molybdenum	ppm	ASTM D5185m	250	29	33	35
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m	0	660	645	581
Calcium	ppm	ASTM D5185m	2046	1617	1758	1675
Phosphorus	ppm	ASTM D5185m	1043	736	795	777
Zinc	ppm	ASTM D5185m	943	872	958	961
Sulfur	ppm	ASTM D5185m	5012	3296	3106	3408
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.7	15.5	13.8
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	7.4	7.5	7.5
Visc @ 100°C	cSt	ASTM D445	14.4	13.4	13.6	13.6



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0065023
Lab Number : 06195230
Unique Number : 11057353
Test Package : MAR 2

Received : 30 May 2024
Tested : 31 May 2024
Diagnosed : 31 May 2024 - Wes Davis

AMERICAN RIVER TRANSPORTATION CO
 8400 RIVER RD, PO BOX 656
 WESTWEGO, LA
 US 70094-2317
 Contact: KEVIN CHIASSON
 kevin.chiasson@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)