



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
HBR
Component
Port Main Engine
Fluid
CHEVRON DELO 400 XLE 15W40 (11 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW05904213	MW05843070	MW05823787
Sample Date		Client Info		20 Jul 2023	09 May 2023	18 Apr 2023
Machine Age	hrs	Client Info		25264	24496	23890
Oil Age	hrs	Client Info		768	3550	2947
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	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	5	3	5
Chromium	ppm	ASTM D5185m	>8	<1	0	<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	5	0
Lead	ppm	ASTM D5185m	>18	0	0	0
Copper	ppm	ASTM D5185m	>80	0	0	<1
Tin	ppm	ASTM D5185m	>14	0	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

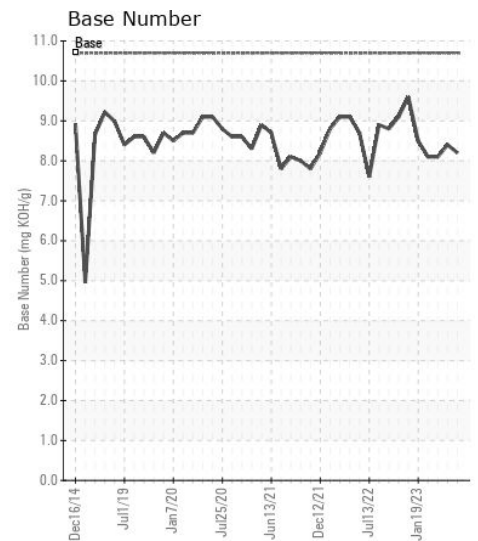
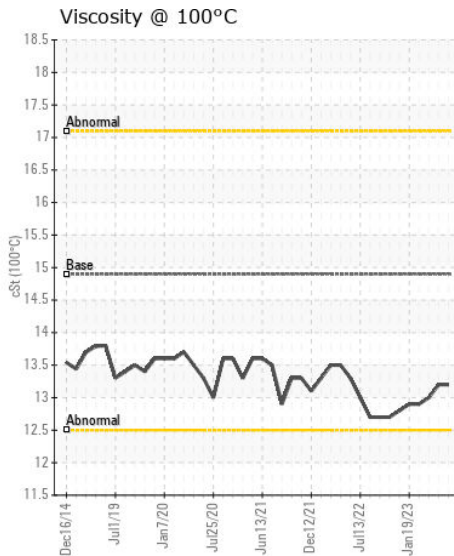
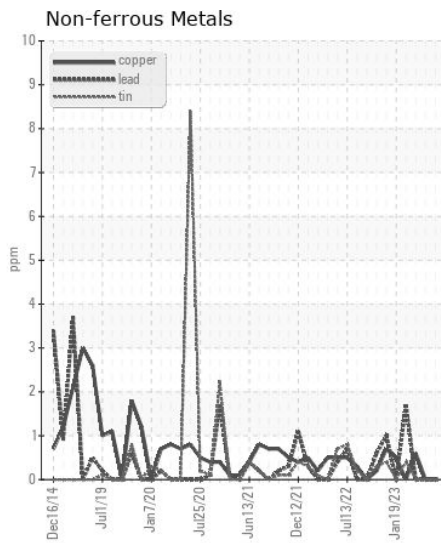
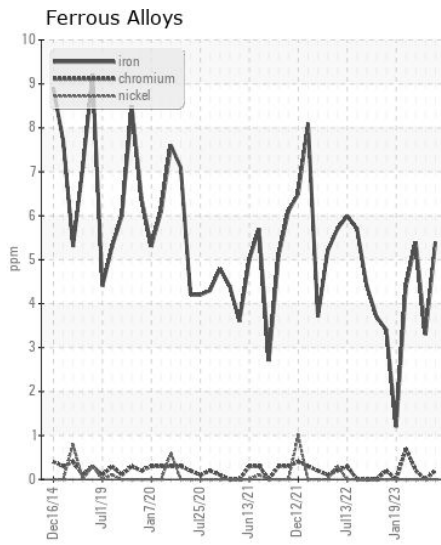
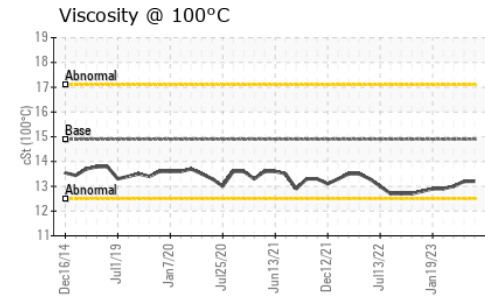
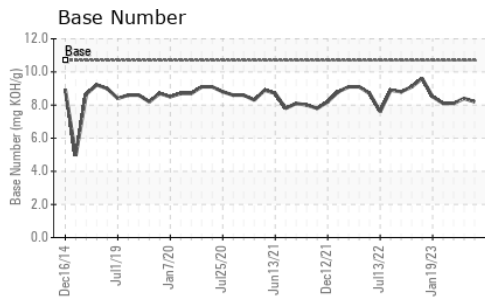
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	5	5	6
Potassium	ppm	ASTM D5185m	>20	<1	2	2
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		0.5	0.6	0.4
Nitration	Abs/cm	*ASTM D7624	>20	6.0	6.4	6.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.3	22.4	21.7
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	<1	<1	1
Boron	ppm	ASTM D5185m		388	305	343
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		105	104	106
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m		538	562	515
Calcium	ppm	ASTM D5185m		1716	1692	1522
Phosphorus	ppm	ASTM D5185m	760	962	840	789
Zinc	ppm	ASTM D5185m	830	1158	1027	947
Sulfur	ppm	ASTM D5185m	2770	3806	3120	2767
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.5	15.4	15.0
Base Number (BN)	mg KOH/g	ASTM D2896	10.7	8.2	8.4	8.1
Visc @ 100°C	cSt	ASTM D445	14.9	13.2	13.2	13.0



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW05904213
Lab Number : 05904213
Unique Number : 10565569
Test Package : MAR 2
Received : 21 Jul 2023
Tested : 21 Jul 2023
Diagnosed : 24 Jul 2023 - Angela Borella

ILLINOIS MARINE TOWING
 PO BOX 391
 LEMONT, IL
 US 60439
 Contact: RHETT DANIEL
 rdaniel@imtowing.com
 T: (630)280-4926
 F: (630)739-2041

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)