



WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
HBR
Component
Starboard Genset
Fluid
CHEVRON URSA SUPER PLUS 40 (5 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		MW05981759	MW05934677	MW05904216
Sample Date		Client Info		16 Oct 2023	24 Aug 2023	20 Jul 2023
Machine Age	hrs	Client Info		20077	19680	19213
Oil Age	hrs	Client Info		393	467	858
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	>50	8	7	8
Chromium	ppm	ASTM D5185m	>4	<1	0	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>12	4	2	3
Lead	ppm	ASTM D5185m	>17	<1	0	0
Copper	ppm	ASTM D5185m	>70	<1	<1	0
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

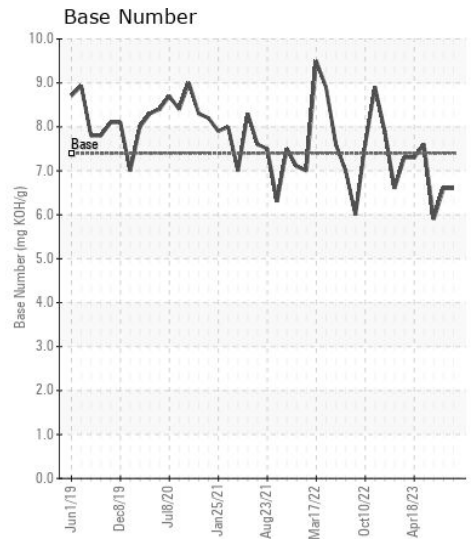
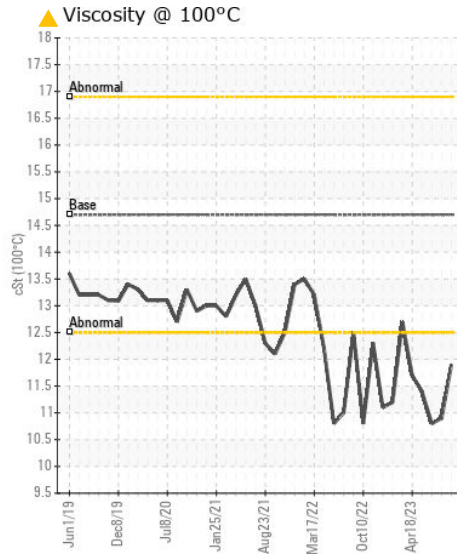
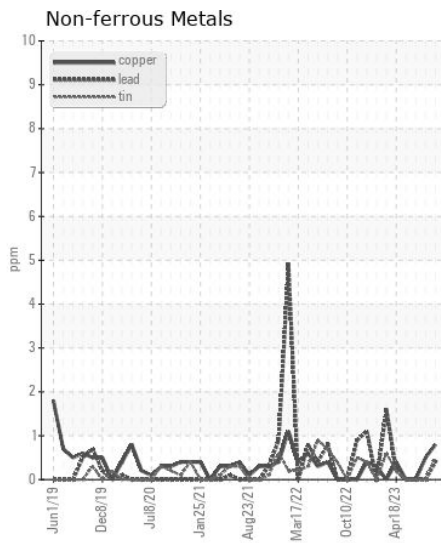
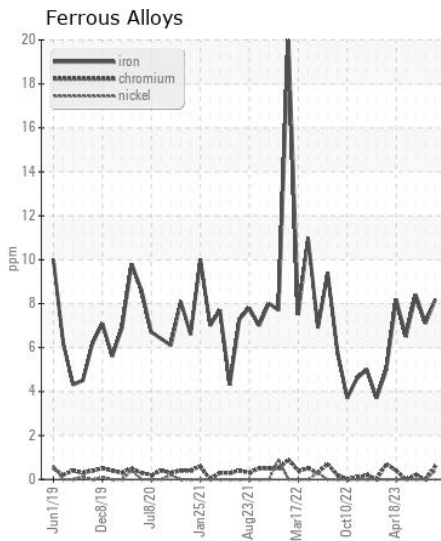
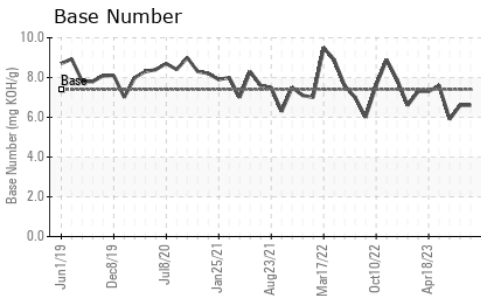
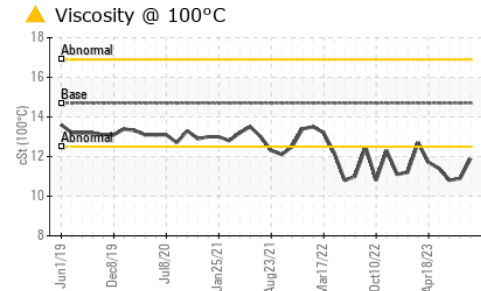
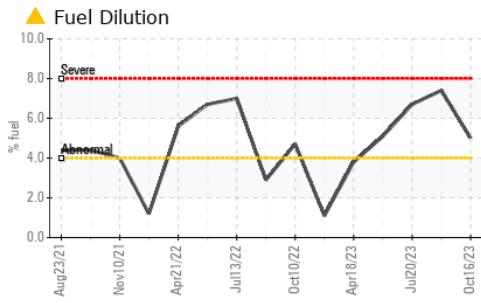
There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Silicon	ppm	ASTM D5185m	>25	4	4	4
Potassium	ppm	ASTM D5185m	>20	3	0	0
Fuel	%	ASTM D3524	>4.0	▲ 5.0	▲ 7.4	▲ 6.7
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	6.6	7.0	7.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.7	24.3	25.1
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. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m		<1	2	1
Boron	ppm	ASTM D5185m		326	304	326
Barium	ppm	ASTM D5185m		11	0	0
Molybdenum	ppm	ASTM D5185m		88	108	100
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m		363	541	512
Calcium	ppm	ASTM D5185m		1771	1642	1672
Phosphorus	ppm	ASTM D5185m	1000	770	797	914
Zinc	ppm	ASTM D5185m	1090	897	959	1116
Sulfur	ppm	ASTM D5185m		2686	3096	3470
Oxidation	Abs/.1mm	*ASTM D7414	>25	20.1	23.3	25.1
Base Number (BN)	mg KOH/g	ASTM D2896	7.4	6.6	6.6	5.9
Visc @ 100°C	cSt	ASTM D445	14.7	▲ 11.9	▲ 10.9	▲ 10.8



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW05981759 **Received** : 17 Oct 2023
Lab Number : 05981759 **Tested** : 18 Oct 2023
Unique Number : 10699054 **Diagnosed** : 18 Oct 2023 - Wes Davis
Test Package : MAR 2 (Additional Tests: PercentFuel)

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)