



WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ATTENTION

Area
DENNIS T DELANEY
Machine Id
[DENNIS T DELANEY] 003 536790-3
Component
Starboard Main Engine
Fluid
CHEVRON DELO 710 LS (--- GAL)

RECOMMENDATION

We advise that you check for possible coolant leak. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0067898	MW0061594	MW0061782
Sample Date		Client Info		01 Apr 2024	01 Feb 2024	02 Dec 2023
Machine Age	hrs	Client Info		74743	73353	72850
Oil Age	hrs	Client Info		74743	73353	72850
Filter Age	hrs	Client Info		136	102	6
Oil Changed		Client Info		N/A	Not Changed	Not Changed
Filter Changed		Client Info		N/A	Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	19	18	16
Chromium	ppm	ASTM D5185m	>8	1	<1	<1
Nickel	ppm	ASTM D5185m	>2	1	0	<1
Titanium	ppm	ASTM D5185m	>3	<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	2	2
Lead	ppm	ASTM D5185m	>18	8	▲ 11	3
Copper	ppm	ASTM D5185m	>80	20	18	19
Tin	ppm	ASTM D5185m	>14	4	3	3
Vanadium	ppm	ASTM D5185m		<1	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

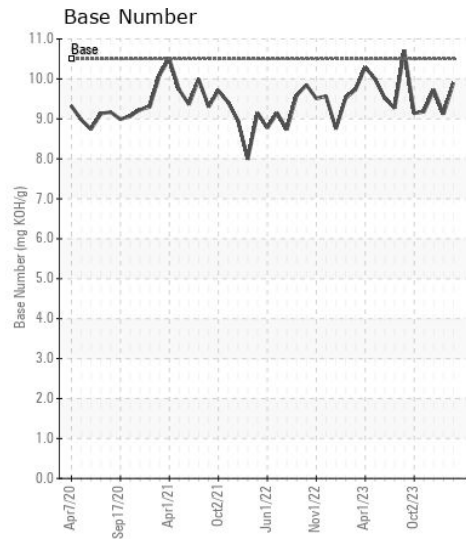
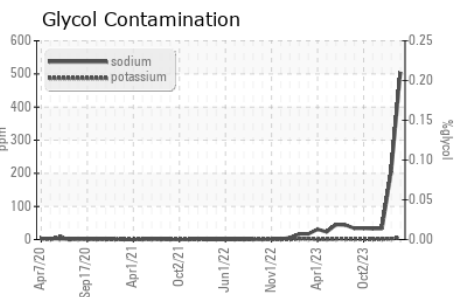
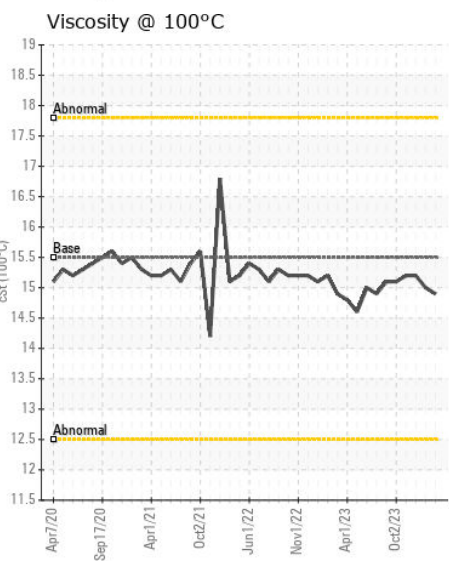
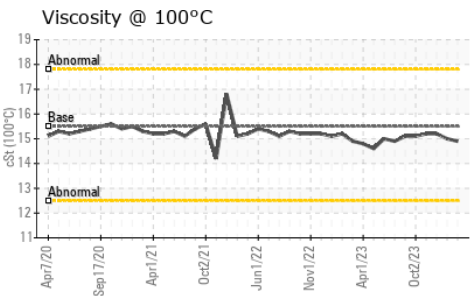
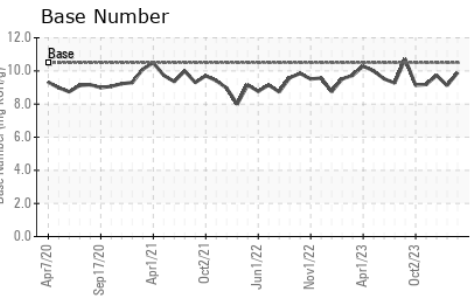
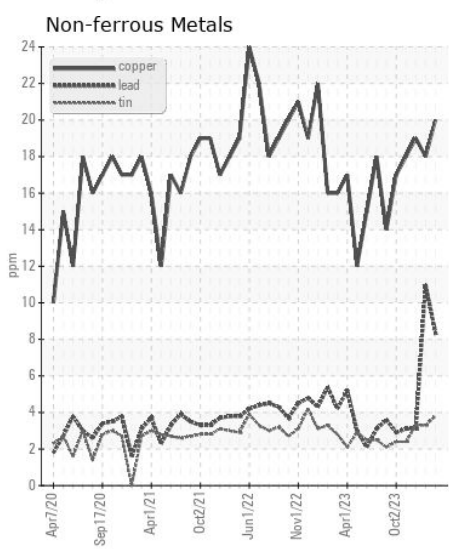
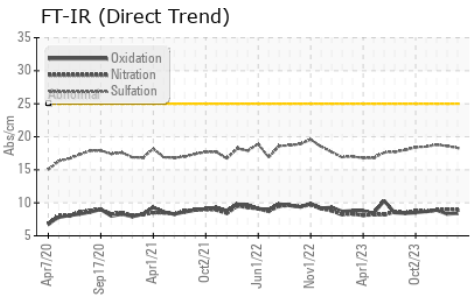
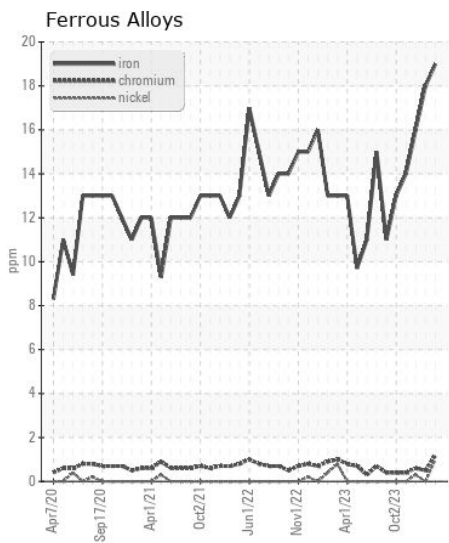
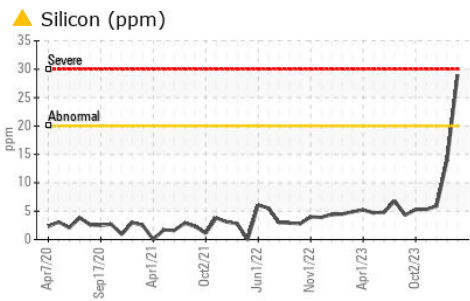
The high sodium (Na) level indicates the possible presence of salt water. Elemental level of sodium (Na) and/or boron (B) indicates a possible cooling water leak. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Silicon	ppm	ASTM D5185m	>20	▲ 29	14	6
Potassium	ppm	ASTM D5185m	>20	4	3	1
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844		1	1.2	1.4
Nitration	Abs/cm	*ASTM D7624	>20	8.9	9.0	8.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.3	18.6	18.8
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.

Sodium	ppm	ASTM D5185m	>75	● 505	● 205	33
Boron	ppm	ASTM D5185m		140	69	42
Barium	ppm	ASTM D5185m		<1	<1	0
Molybdenum	ppm	ASTM D5185m		51	43	46
Manganese	ppm	ASTM D5185m		3	2	1
Magnesium	ppm	ASTM D5185m		22	13	14
Calcium	ppm	ASTM D5185m		3492	3229	3529
Phosphorus	ppm	ASTM D5185m		19	3	4
Zinc	ppm	ASTM D5185m		12	1	1
Sulfur	ppm	ASTM D5185m		2406	2197	2478
Oxidation	Abs/.1mm	*ASTM D7414	>25	8.4	8.3	8.9
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	9.90	9.12	9.73
Visc @ 100°C	cSt	ASTM D445	15.5	14.9	15.0	15.2



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0067898 **Received** : 11 Apr 2024
Lab Number : 06146705 **Tested** : 16 Apr 2024
Unique Number : 10976783 **Diagnosed** : 16 Apr 2024 - Jonathan Hester
Test Package : MAR 2 (Additional Tests: Glycol)

INGRAM BARGE
 900 S 3RD ST
 PADUCAH, KY
 US 42003
 Contact: JEFF BISHOP
 jeff.bishop@ingrambarga.com
 T:
 F: (615)695-3697

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)