MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION

Area
JMA
Machine Id
JMA
Component
Port Main Engine
Fluid
CHEVRON DELO 710 LS (350 GAL)

RECOMMENDATION

No corrective action is recommended at this time. We recommend an early resample to monitor this condition.

WEAR

All component wear rates are normal.

CONTAMINATION

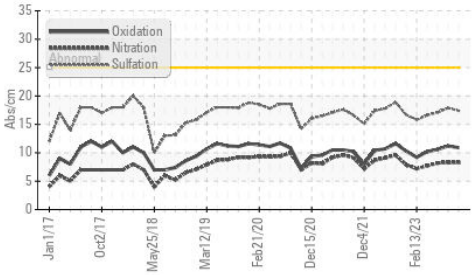
The high sodium (Na) level indicates the possible presence of salt water. Elemental level of sodium (Na) and/or boron (B) indicates a possible cooling water leak.

FLUID CONDITION

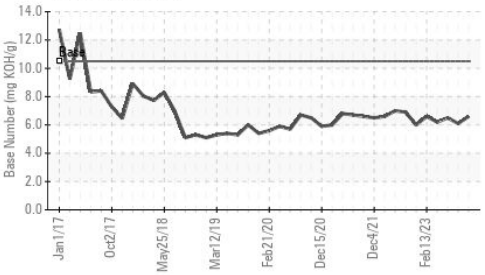
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW06153947	MW0054764	MW0054758
Sample Date		Client Info		23 Mar 2024	29 Jan 2024	05 Dec 2023
Machine Age	hrs	Client Info		24561	23259	22239
Oil Age	hrs	Client Info		4100	2797	1140
Filter Age	hrs	Client Info		1262	1304	1140
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ATTENTION	ATTENTION	ATTENTION
Iron	ppm	ASTM D5185m	>75	25	23	23
Chromium	ppm	ASTM D5185m	>8	<1	<1	1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m	>3	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	2	3
Lead	ppm	ASTM D5185m	>18	4	3	3
Copper	ppm	ASTM D5185m	>80	18	19	16
Tin	ppm	ASTM D5185m	>14	5	6	4
Vanadium	ppm	ASTM D5185m		<1	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	12	10	10
Potassium	ppm	ASTM D5185m	>20	1	<1	3
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	>3	0.5	0.5	0.5
Nitration	Abs/cm	*ASTM D7624	>20	8.3	8.3	8.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.4	17.9	17.1
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
Sodium	ppm	ASTM D5185m	>75	141	116	95
Boron	ppm	ASTM D5185m		52	47	45
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		47	45	45
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		11	10	10
Calcium	ppm	ASTM D5185m		3496	3263	3330
Phosphorus	ppm	ASTM D5185m		2	<1	11
Zinc	ppm	ASTM D5185m		0	0	0
Sulfur	ppm	ASTM D5185m		2528	2028	2253
Oxidation	Abs/.1mm	*ASTM D7414	>25	10.9	11.2	10.6
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	6.6	6.1	6.5
Visc @ 100°C	cSt	ASTM D445	15.5	14.1	14.3	14.3

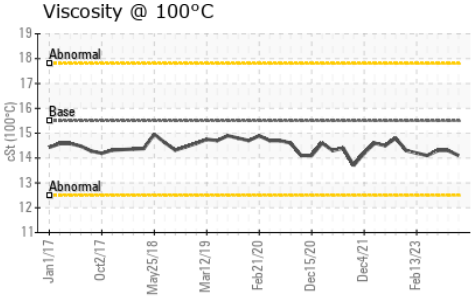
FT-IR (Direct Trend)



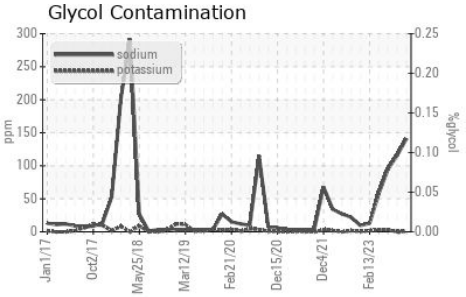
Base Number



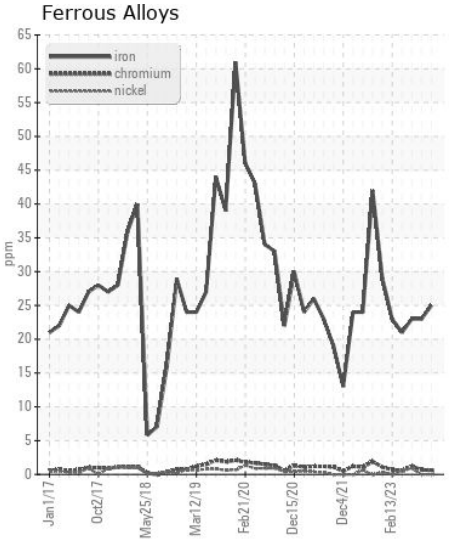
Viscosity @ 100°C



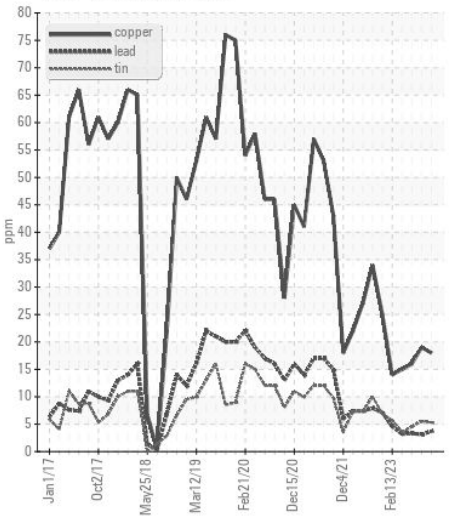
Glycol Contamination



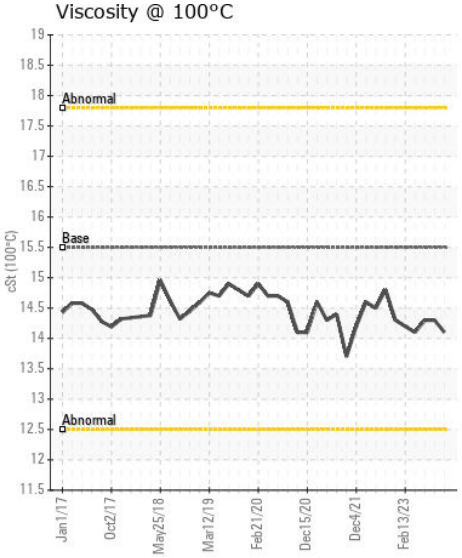
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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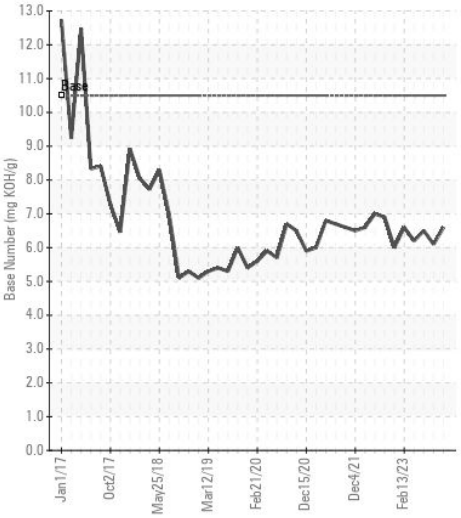

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW06153947
Lab Number : 06153947
Unique Number : 10989370
Test Package : MAR 2 (Additional Tests: Glycol)

Received : 19 Apr 2024
Tested : 23 Apr 2024
Diagnosed : 23 Apr 2024 - Jonathan Hester

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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