MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Area
JAMES E ANDERSON
Machine Id
[JAMES E ANDERSON] 001 502590-1
Component
Port Main Engine
Fluid
CHEVRON DELO 710 LE (--- 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.

WEAR

All component wear rates are normal.

CONTAMINATION

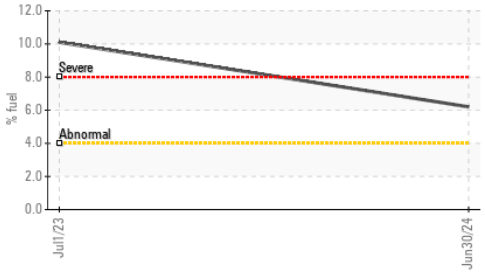
There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

FLUID CONDITION

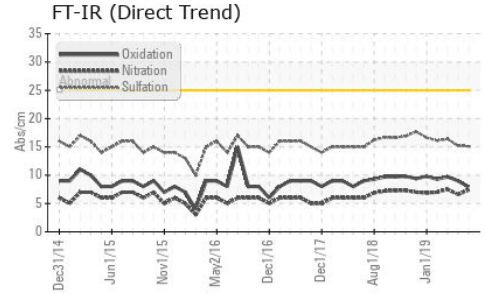
The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0073586	MWM690510	MWM690532
Sample Date		Client Info		30 Jun 2024	01 Jul 2023	01 Mar 2019
Machine Age	hrs	Client Info		65118	64153	62711
Oil Age	hrs	Client Info		0	64153	62711
Filter Age	hrs	Client Info		1004	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	SEVERE	NORMAL
Iron	ppm	ASTM D5185m	>75	12	11	7
Chromium	ppm	ASTM D5185m	>8	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	0
Titanium	ppm	ASTM D5185m	>3	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	3	6	<1
Lead	ppm	ASTM D5185m	>18	2	8	0
Copper	ppm	ASTM D5185m	>80	9	11	9
Tin	ppm	ASTM D5185m	>14	1	4	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	4	4	1
Potassium	ppm	ASTM D5185m	>20	<1	8	6
Fuel	%	ASTM D3524	>4.0	▲ 6.2	▲ 10.1	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.2	0.2	0.3
Nitration	Abs/cm	*ASTM D7624	>20	7.4	6.6	7.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	15.1	15.2	16.4
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	2	2	3
Boron	ppm	ASTM D5185m		35	31	24
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		43	39	49
Manganese	ppm	ASTM D5185m		<1	2	2
Magnesium	ppm	ASTM D5185m		11	2	8
Calcium	ppm	ASTM D5185m		3150	3123	3232
Phosphorus	ppm	ASTM D5185m		25	8	11
Zinc	ppm	ASTM D5185m	10	6	0	4
Sulfur	ppm	ASTM D5185m		2090	2709	2005
Oxidation	Abs/.1mm	*ASTM D7414	>25	7.9	9.0	9.7
Base Number (BN)	mg KOH/g	ASTM D2896	9.2	8.40	8.95	8.03
Visc @ 100°C	cSt	ASTM D445	15.5	12.7	▲ 11.5	14.02

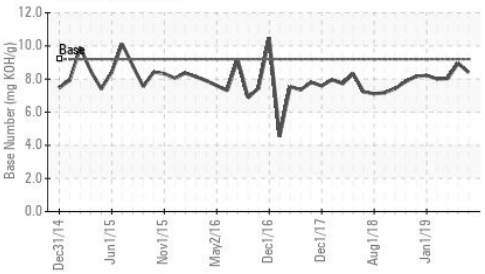
Fuel Dilution



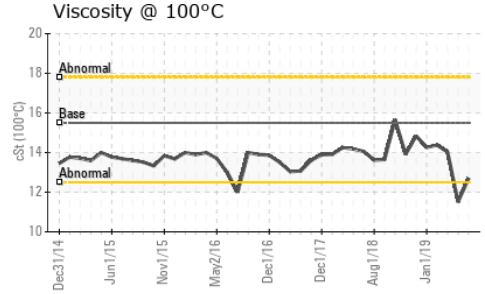
FT-IR (Direct Trend)



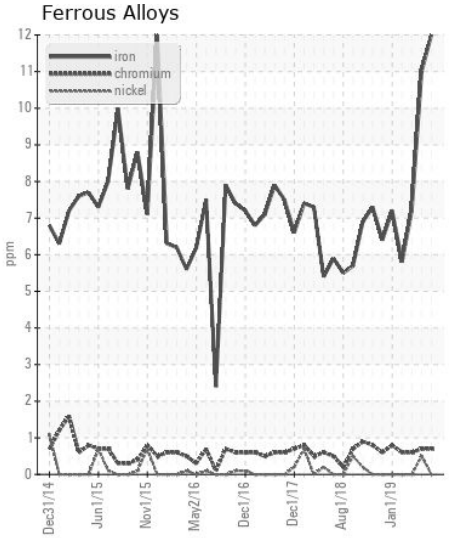
Base Number



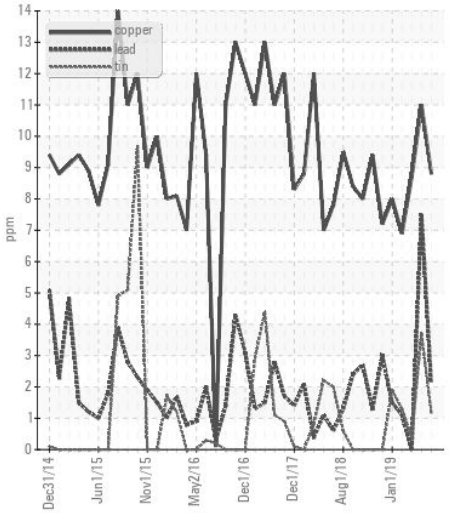
Viscosity @ 100°C



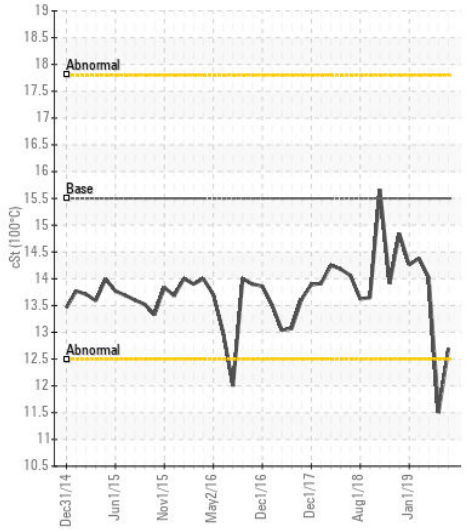
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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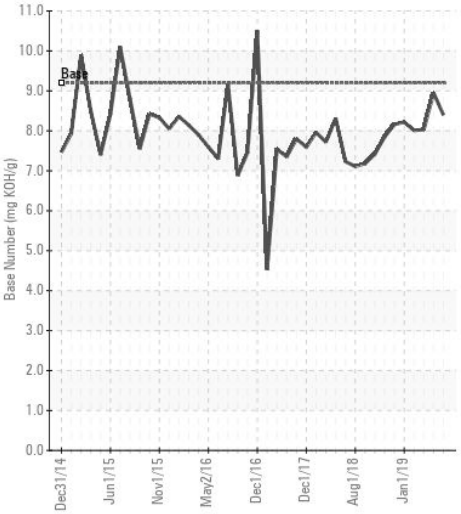

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0073586 **Received** : 15 Jul 2024
Lab Number : 06237074 **Tested** : 17 Jul 2024
Unique Number : 11125908 **Diagnosed** : 17 Jul 2024 - Wes Davis
Test Package : MAR 2 (Additional Tests: PercentFuel)

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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