



Machine Id
EMD KELLY LEE
Component
Port Main Engine
Fluid
CHEVRON DELO 710 LE (285 GAL)

RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

WEAR

All component wear rates are normal.

CONTAMINATION

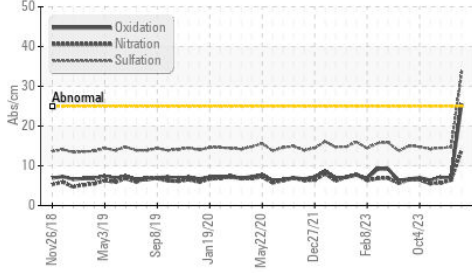
There is an abnormal amount of solids and carbon present in the oil.
There is a moderate amount of fuel present in the oil.

FLUID CONDITION

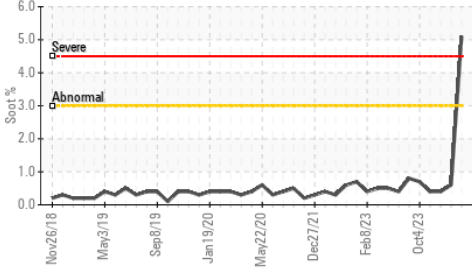
Fuel is present in the oil and is lowering the viscosity. The BN level is low.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0066966	MW0057770	MW0057763
Sample Date		Client Info		11 Apr 2024	23 Mar 2024	03 Feb 2024
Machine Age	hrs	Client Info		17174	16679	15762
Oil Age	hrs	Client Info		0	2322	1410
Filter Age	hrs	Client Info		0	918	1500
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Filter Changed		Client Info		Changed	Not Changd	Changed
Sample Status				SEVERE	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>75	41	5	4
Chromium	ppm	ASTM D5185m	>8	5	0	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m	>3	<1	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>15	2	<1	1
Lead	ppm	ASTM D5185m	>18	1	0	1
Copper	ppm	ASTM D5185m	>80	2	6	5
Tin	ppm	ASTM D5185m	>14	<1	<1	2
Vanadium	ppm	ASTM D5185m		<1	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	14	2	3
Potassium	ppm	ASTM D5185m	>20	8	0	1
Fuel	%	ASTM D3524	>4.0	▲ 6.6	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	▲ 5.1	0.6	0.4
Nitration	Abs/cm	*ASTM D7624	>20	13.9	6.4	5.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	33.3	14.6	14.5
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	<1	0
Boron	ppm	ASTM D5185m		99	41	42
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		4	42	41
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m		63	13	10
Calcium	ppm	ASTM D5185m		2227	3509	3001
Phosphorus	ppm	ASTM D5185m		1031	19	0
Zinc	ppm	ASTM D5185m	10	1189	16	<1
Sulfur	ppm	ASTM D5185m		3486	2499	2235
Oxidation	Abs/.1mm	*ASTM D7414	>25	25.6	7.0	7.1
Base Number (BN)	mg KOH/g	ASTM D2896	9.2	▲ 0.0	6.6	6.0
Visc @ 100°C	cSt	ASTM D445	15.5	▲ 15.8	14.6	14.6

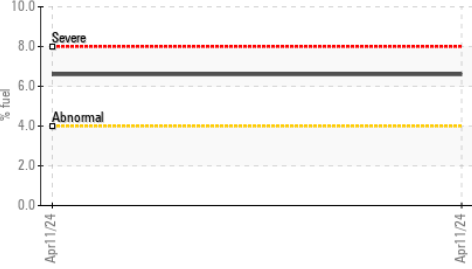
▲ FT-IR (Direct Trend)



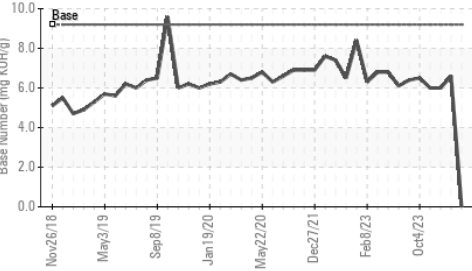
▲ Soot %



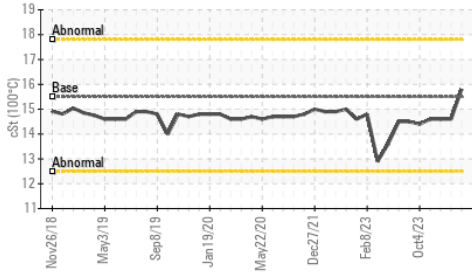
▲ Fuel Dilution



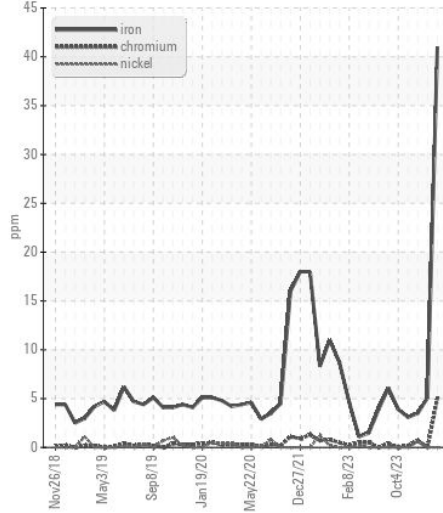
▲ Base Number



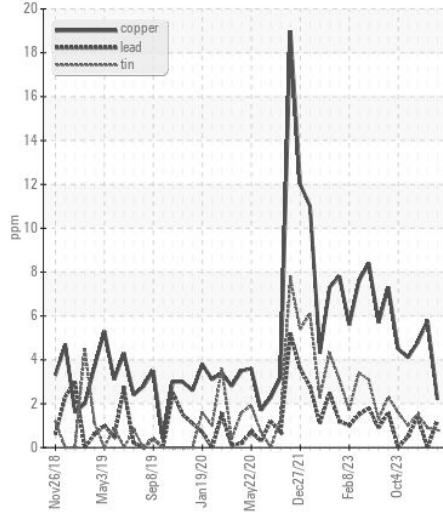
▲ Viscosity @ 100°C



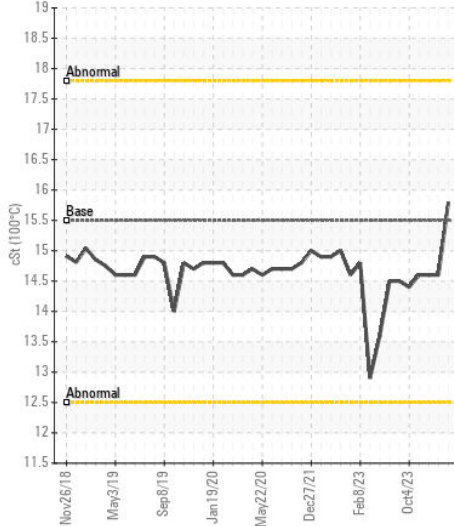
Ferrous Alloys



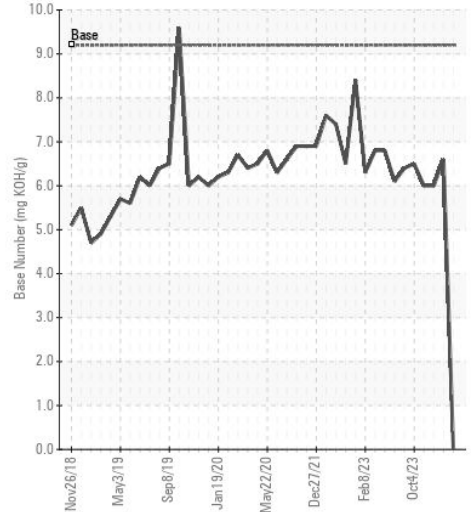
Non-ferrous Metals



▲ Viscosity @ 100°C



▲ Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : MW0066966

Lab Number : 06174880

Unique Number : 11020933

Test Package : MAR 2 (Additional Tests: FuelDilution, PercentFuel)

Received : 09 May 2024

Tested : 16 May 2024

Diagnosed : 16 May 2024 - Jonathan Hester

MAGNOLIA MARINE TRANSPORT

697 HAINING ROAD

VICKSBURG, MS

US 39183

Contact: MMT MAINTENANCE PLANNERS

mmtmaintenanceplanners@ergon.com

T: x:

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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