MAR II

WEAR CHECK
Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL

Machine Id
BROMLEY
Component
Port Genset
Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (3 GAL)

RECOMMENDATION

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.

WEAR

All component wear rates are normal.

CONTAMINATION

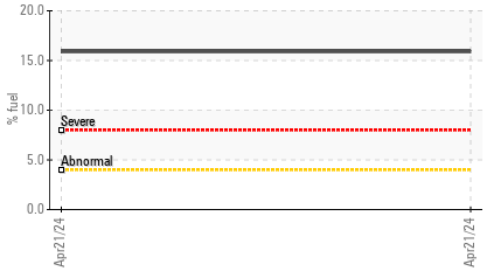
There is a high amount of fuel present in the oil.

FLUID CONDITION

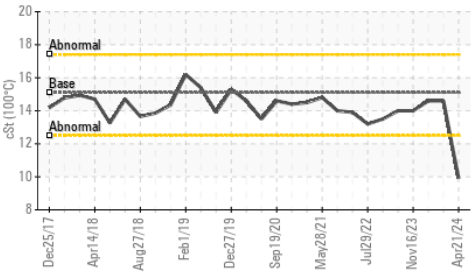
Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		**MW0042018**	MW06104956	MW0057115
Sample Date		Client Info		**21 Apr 2024**	28 Feb 2024	30 Dec 2023
Machine Age	hrs	Client Info		**20624**	0	19266
Oil Age	hrs	Client Info		**1000**	750	500
Filter Age	hrs	Client Info		**1000**	0	500
Oil Changed		Client Info		**Changed**	Changed	Changed
Filter Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>50	**8**	4	3
Chromium	ppm	ASTM D5185m	>4	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>2	**<1**	<1	0
Titanium	ppm	ASTM D5185m		**<1**	0	0
Silver	ppm	ASTM D5185m	>5	**0**	0	0
Aluminum	ppm	ASTM D5185m	>12	**4**	3	2
Lead	ppm	ASTM D5185m	>17	**<1**	<1	<1
Copper	ppm	ASTM D5185m	>70	**<1**	<1	<1
Tin	ppm	ASTM D5185m	>15	**<1**	0	<1
Vanadium	ppm	ASTM D5185m		**<1**	<1	0
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	**5**	4	4
Potassium	ppm	ASTM D5185m	>20	**1**	2	0
Fuel	%	ASTM D3524	>4.0	▲ **15.9**	<1.0	<1.0
Water		WC Method	>0.1	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG
Soot %	%	*ASTM D7844		**0.1**	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**12.6**	9.4	9.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	**21.3**	22.1	21.4
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		**4**	2	3
Boron	ppm	ASTM D5185m		**35**	87	49
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**40**	54	61
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m		**450**	531	371
Calcium	ppm	ASTM D5185m		**1321**	1453	1733
Phosphorus	ppm	ASTM D5185m	1360	**1019**	1003	1018
Zinc	ppm	ASTM D5185m	1480	**1092**	1306	1208
Sulfur	ppm	ASTM D5185m		**3210**	1890	3092
Oxidation	Abs/.1mm	*ASTM D7414	>25	**25.7**	21.4	20.0
Base Number (BN)	mg KOH/g	ASTM D2896	12.2	**7.3**	8.7	8.4
Visc @ 100°C	cSt	ASTM D445	15.1	▲ **9.9**	14.6	14.6

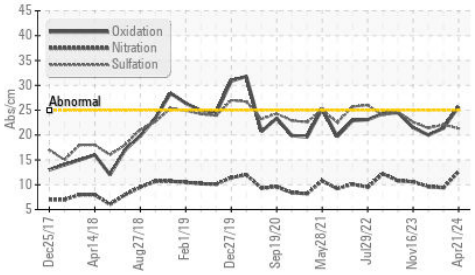
Fuel Dilution



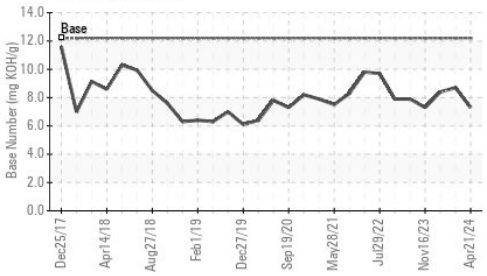
Viscosity @ 100°C



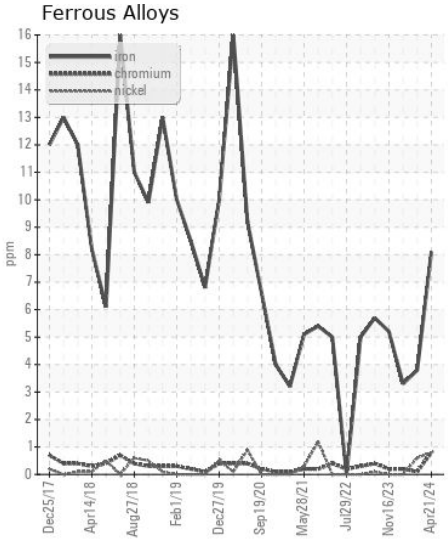
FT-IR (Direct Trend)



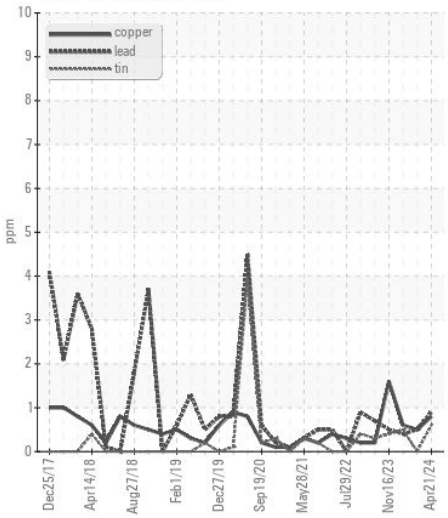
Base Number



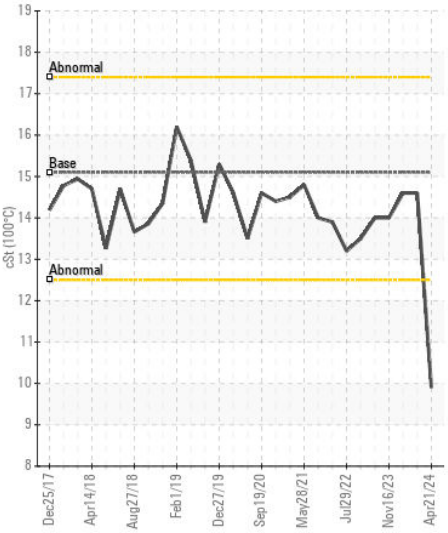
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0042018
Lab Number : 06161121
Unique Number : 10996544
Test Package : MAR 2 (Additional Tests: FuelDilution, PercentFuel)

Received : 25 Apr 2024
Tested : 30 Apr 2024
Diagnosed : 30 Apr 2024 - Sean Felton

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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