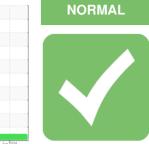


OIL ANALYSIS REPORT

Sample Rating Trend



K

53.171L [] Diesel Engine

Machine Id

MOBIL DELVAC 1300 SUPER15W40 (3 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

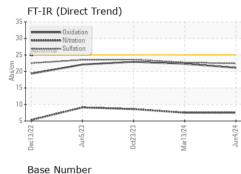
Fluid Condition

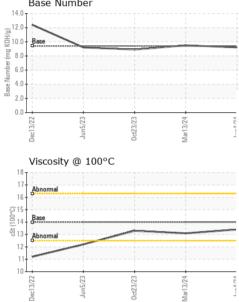
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0914475	WC0886901	WC0857269
Sample Date		Client Info		04 Jun 2024	13 Mar 2024	23 Oct 2023
Machine Age	hrs	Client Info		1130	900	678
Oil Age	hrs	Client Info		230	211	240
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	N	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	nnm	ASTM D5185m	>100	10	7	11
Chromium	ppm ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Titanium	ppm	ASTM D5185m		۰ <1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>25	2	2	2
Lead	ppm	ASTM D5185m	>40	- <1	<1	<1
Copper	ppm	ASTM D5185m		2	2	3
Tin	ppm	ASTM D5185m	>15	_ <1	<1	0
Vanadium	ppm	ASTM D5185m	210	<1	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	<1
ADDITIVES		method	limit/base	current	history1	history2
	ppm				history1	history2
Boron	ppm	ASTM D5185m	0	64	66	45
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	64 0	66 0	45 5
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	64 0 48	66 0 43	45 5 43
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0	64 0 48 0	66 0	45 5
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0	64 0 48	66 0 43 <1	45 5 43 <1 495
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	64 0 48 0 586	66 0 43 <1 508	45 5 43 <1 495 1696
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	64 0 48 0 586 1981	66 0 43 <1 508 1778	45 5 43 <1 495
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	64 0 48 0 586 1981 951	66 0 43 <1 508 1778 776	45 5 43 <1 495 1696 795
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	64 0 48 0 586 1981 951 1107	66 0 43 <1 508 1778 776 945	45 5 43 <1 495 1696 795 908
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 0 0	64 0 48 0 586 1981 951 1107 3182	66 0 43 <1 508 1778 776 945 2596	45 5 43 <1 495 1696 795 908 2733
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	64 0 48 0 586 1981 951 1107 3182 current	66 0 43 <1 508 1778 776 945 2596 history1	45 5 43 <1 495 1696 795 908 2733 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 0 0 	64 0 48 0 586 1981 951 1107 3182 current 6	66 0 43 <1 508 1778 776 945 2596 history1 6	45 5 43 <1 495 1696 795 908 2733 history2 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 0 0 	64 0 48 0 586 1981 951 1107 3182 current 6 3	66 0 43 <1 508 1778 776 945 2596 history1 6 3	45 5 43 <1 495 1696 795 908 2733 history2 6 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	64 0 48 0 586 1981 951 1107 3182 current 6 3 2	66 0 43 <1 508 1778 776 945 2596 history1 6 3 2	45 5 43 <1 495 1696 795 908 2733 history2 6 <1 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0	64 0 48 0 586 1981 951 1107 3182 current 6 3 2 2	66 0 43 <1 508 1778 776 945 2596 history1 6 3 2 2 history1 0.1	45 5 43 <1 495 1696 795 908 2733 history2 6 <1 2 history2 0.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0	64 0 48 0 586 1981 951 1107 3182 current 6 3 2 current 0.2	66 0 43 <1 508 1778 776 945 2596 history1 6 3 2 2 history1	45 5 43 <1 495 1696 795 908 2733 history2 6 <1 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	64 0 48 0 586 1981 951 1107 3182 current 6 3 2 current 0.2 7.5	66 0 43 <1 508 1778 776 945 2596 history1 6 3 2 2 history1 0.1 7.5	45 5 43 <1 495 1696 795 908 2733 history2 6 <1 2 history2 0.2 8.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	64 0 48 0 586 1981 951 1107 3182 current 6 3 2 current 0.2 7.5 22.4 current	66 0 43 <1 508 1778 776 945 2596 history1 6 3 2 2 history1 0.1 7.5 22.7 history1	45 5 43 <1 495 1696 795 908 2733 history2 6 <1 2 history2 0.2 8.6 23.6 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	64 0 48 0 586 1981 951 1107 3182 <u>current</u> 6 3 2 <u>current</u> 0.2 7.5 22.4	66 0 43 <1 508 1778 776 945 2596 history1 6 3 2 2 history1 0.1 7.5 22.7	45 5 43 <1 495 1696 795 908 2733 history2 6 <1 2 history2 0.2 8.6 23.6



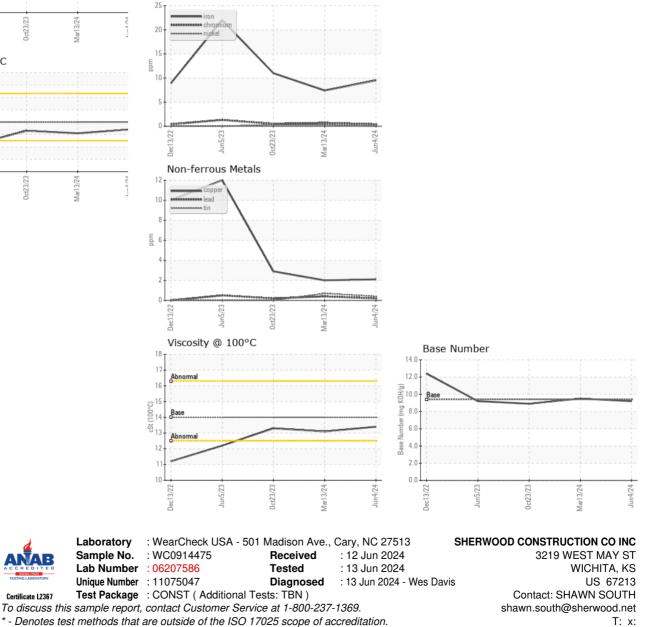
OIL ANALYSIS REPORT

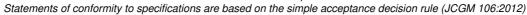




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14	13.4	13.1	13.3

GRAPHS Ferrous Alloys





Certificate 12367

Submitted By: WAYNE HUBBARD

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