

OIL ANALYSIS REPORT

OKLAHOMA/102 Machine Id 09.101 [OKLAHOMA^102]

Component **Diesel Engine**

MOBIL DELVAC 1300 SUPER15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

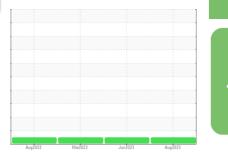
All component wear rates are normal.

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 Rating Trend



NORMAL

SAMPLE INFORM	1ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0726225	WC0821711	WC0800792
Sample Date		Client Info		08 Aug 2023	16 Jun 2023	27 Mar 2023
Machine Age	hrs	Client Info		15423	15061	14664
Oil Age	hrs	Client Info		362	397	870
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	١	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	24	16	11
Chromium	ppm	ASTM D5185m	>20	<1	1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	<1	0	<1
Aluminum	ppm	ASTM D5185m	>20	31	24	9
Lead	ppm	ASTM D5185m	>40	6	3	<1
Copper	ppm	ASTM D5185m	>330	<1	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 45	history1 44	history2 47
	ppm ppm		0		,	
Boron		ASTM D5185m	0	45	44	47
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	45 2	44 0	47 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	45 2 57	44 0 49	47 0 47
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	45 2 57 <1	44 0 49 <1	47 0 47 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	45 2 57 <1 614	44 0 49 <1 625 2093 905	47 0 47 <1 580
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	45 2 57 <1 614 2221 969 1164	44 0 49 <1 625 2093	47 0 47 <1 580 1916
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	45 2 57 <1 614 2221 969	44 0 49 <1 625 2093 905	47 0 47 <1 580 1916 829
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	45 2 57 <1 614 2221 969 1164	44 0 49 <1 625 2093 905 1108	47 0 47 <1 580 1916 829 1020
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 Intibase	45 2 57 <1 614 2221 969 1164 3185	44 0 49 <1 625 2093 905 1108 3371	47 0 47 <1 580 1916 829 1020 3336
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 ASTM D5185m	0 0 0 0 Intibase	45 2 57 <1 614 2221 969 1164 3185 current	44 0 49 <1 625 2093 905 1108 3371 history1	47 0 47 <1 580 1916 829 1020 3336 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 0 imit/base >25	45 2 57 <1 614 2221 969 1164 3185 current 8	44 0 49 <1 625 2093 905 1108 3371 history1 7	47 0 47 <1 580 1916 829 1020 3336 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 method ASTM D5185m	0 0 0 0 imit/base >25	45 2 57 <1 614 2221 969 1164 3185 current 8 0	44 0 49 <1 625 2093 905 1108 3371 history1 7 4	47 0 47 <1 580 1916 829 1020 3336 history2 6 4
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 imit/base >25	45 2 57 <1 614 2221 969 1164 3185 <u>current</u> 8 0 87	44 0 49 <1 625 2093 905 1108 3371 history1 7 4 60	47 0 47 <1 580 1916 829 1020 3336 history2 6 4 22
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 0 imit/base >25 >20	45 2 57 <1 614 2221 969 1164 3185 <u>current</u> 8 0 87 NEG	44 0 49 <1 625 2093 905 1108 3371 history1 7 4 60 NEG	47 0 47 <1 580 1916 829 1020 3336 history2 6 4 22 NEG
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D2982	0 0 0 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1	45 2 57 <1 614 2221 969 1164 3185 <u>current</u> 8 0 87 NEG	44 0 49 <1 625 2093 905 1108 3371 history1 7 4 60 NEG history1	47 0 47 <1 580 1916 829 1020 3336 history2 6 4 22 NEG history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm i ppm i ppm i ppm i ppm i ppm i ppm i ppm i ppm i ppm i % i	ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D5185m	0 0 0 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1	45 2 57 <1 614 2221 969 1164 3185 <u>current</u> 8 0 87 NEG <u>current</u> 0.3	44 0 49 <1 625 2093 905 1108 3371 history1 7 4 60 NEG history1 0.2	47 0 47 <1 580 1916 829 1020 3336 history2 6 4 22 NEG NEG history2 0.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D2982 method *ASTM D7844 *ASTM D7844	0 0 0 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1	45 2 57 <1 614 2221 969 1164 3185 current 8 0 87 NEG current 0.3 12.3	44 0 49 <1 625 2093 905 1108 3371 history1 7 4 60 NEG history1 0.2 12.3	47 0 47 <1 580 1916 829 1020 3336 history2 6 4 22 NEG NEG history2 0.2 10.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D2982 method *ASTM D7844 *ASTM D7624	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	45 2 57 <1 614 2221 969 1164 3185 current 8 0 87 NEG 0.3 7 NEG 0.3 12.3 27.9	44 0 49 <1 625 2093 905 1108 3371 history1 7 4 60 NEG history1 0.2 12.3 26.3	47 0 47 <1 580 1916 829 1020 3336 history2 6 4 22 NEG history2 0.2 10.0 24.9

8.4

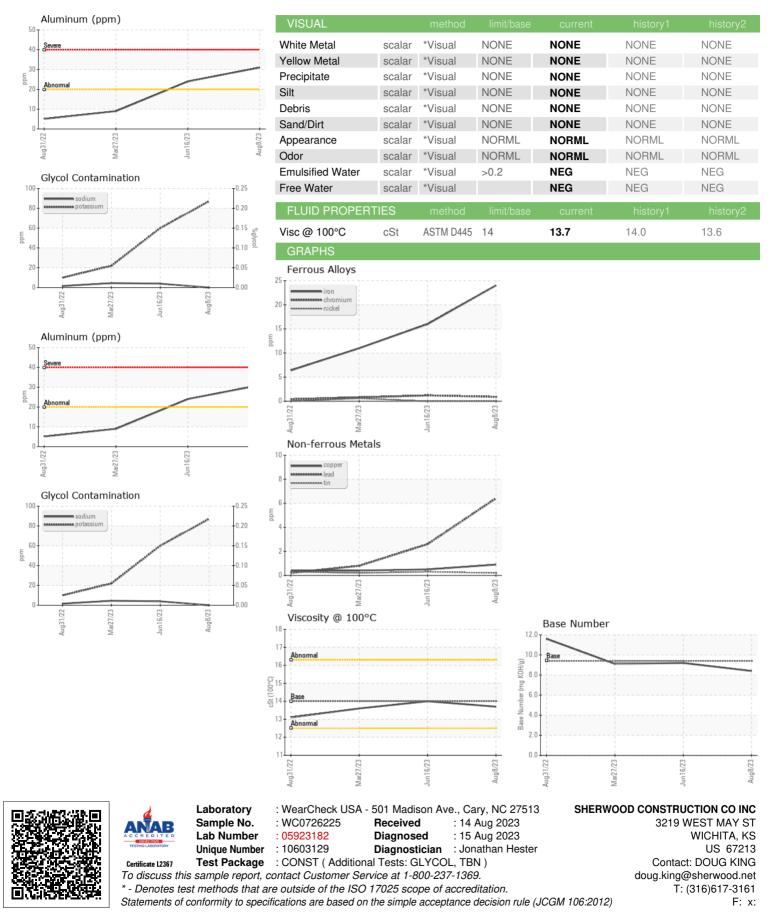
Base Number (BN) mg KOH/g ASTM D2896 9.4

9.1

9.2



OIL ANALYSIS REPORT



Submitted By: SHAWN SOUTH

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