

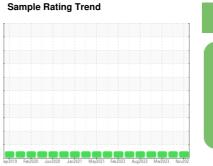
## **OIL ANALYSIS REPORT**

## Area OKLAHOMA/105/EG - TRUCK-ON-HWY-HEAVY DUTY 08.122 [OKLAHOMA^105^EG - TRUCK-ON-HWY-HEAVY DUTY] Component

Diesel Engine

DIAGNOSIS Recommendation

MOBIL DELVAC 1300 SUPER15W40 (--- GAL)





NORMAL

SAMPLE INFORM	<b>IATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0874062	WC0808088	WC0792547
Sample Date		Client Info		15 Nov 2023	27 Jul 2023	27 Mar 2023
Machine Age	hrs	Client Info		9204	8650	7794
Oil Age	hrs	Client Info		554	856	677
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	ppm	ASTM D5185m	>110	11	11	8
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	3	2	3
Lead	ppm	ASTM D5185m	>45	0	<1	0
Copper	ppm	ASTM D5185m	>85	<1	<1	<1
Tin	ppm	ASTM D5185m	>4	0	0	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
				U	<	0
Cadmium	ppm	ASTM D5185m		0	0	0
Cadmium ADDITIVES			limit/base	-		
		ASTM D5185m	limit/base	0	0	0
ADDITIVES	ppm	ASTM D5185m method		0 current	0 history1	0 history2
ADDITIVES Boron	ppm ppm	ASTM D5185m method ASTM D5185m	0	0 current 39	0 history1 26	0 history2 33
ADDITIVES Boron Barium	ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	0	0 current 39 0	0 history1 26 0	0 history2 33 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	0	0 current 39 0 42	0 history1 26 0 43	0 history2 33 0 39
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	0 current 39 0 42 <1	0 history1 26 0 43 <1	0 history2 33 0 39 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	0 current 39 0 42 <1 501	0 history1 26 0 43 <1 517	0 history2 33 0 39 1 484
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	0 current 39 0 42 <1 501 1754	0 history1 26 0 43 <1 517 1769	0 history2 33 0 39 1 484 1609
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	0 current 39 0 42 <1 501 1754 746	0 history1 26 0 43 <1 517 1769 740	0 history2 33 0 39 1 484 1609 700
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	0 current 39 0 42 <1 501 1754 746 940	0 history1 26 0 43 <1 517 1769 740 911	0 history2 33 0 39 1 484 1609 700 885 2446
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 0 0	0 current 39 0 42 <1 501 1754 746 940 2730	0 history1 26 0 43 <1 517 1769 740 911 2770	0 history2 33 0 39 1 484 1609 700 885
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 0 Imit/base	0 current 39 0 42 <1 501 1754 746 940 2730 current	0 history1 26 0 43 <1 517 1769 740 911 2770 history1	0 history2 33 0 39 1 484 1609 700 885 2446 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 0 Imit/base >30	0 current 39 0 42 <1 501 1754 746 940 2730 current 6	0 history1 26 0 43 <1 517 1769 740 911 2770 history1 5	0 history2 33 0 39 1 484 1609 700 885 2446 history2 5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m	0 0 0 0 Imit/base >30	0 current 39 0 42 <1 501 1754 746 940 2730 current 6 0	0 history1 26 0 43 <1 517 1769 740 911 2770 911 2770 history1 5 4	0 history2 33 0 39 1 484 1609 700 885 2446 history2 5 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m	0 0 0 0 1 0 1 1 1 1 1 1 1 1 1 2 0 2 0	0 current 39 0 42 <1 501 1754 746 940 2730 current 6 0 6	0 history1 26 0 43 <1 517 1769 740 911 2770 history1 5 4 2	0 history2 33 0 39 1 484 1609 700 885 2446 history2 5 2 2 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	0 0 0 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 current 39 0 42 <1 501 1754 746 940 2730 current 6 0 6 0 6 vurrent	0 history1 26 0 43 <1 517 1769 740 911 2770 history1 5 4 2 2 history1	0 history2 33 0 39 1 484 1609 700 885 2446 history2 5 2 2 1 history2
ADDITIVES 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 ppm	ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m	0 0 0 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 current 39 0 42 <1 501 1754 746 940 2730 current 6 0 6 0 6 current 0.2	0 history1 26 0 43 <1 517 1769 740 911 2770 history1 5 4 2 2 history1 0.3	0 history2 33 0 39 1 484 1609 700 885 2446 history2 5 2 2 1 history2 0.2
ADDITIVES 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 <b>method</b> ASTM D5185m ASTM D5185m	0 0 0 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 current 39 0 42 <1 501 1754 746 940 2730 current 6 0 6 0 6 current 0.2 7.8	0 history1 26 0 43 <1 517 1769 740 911 2770 history1 5 4 2 2 history1 0.3 9.4	0 history2 33 0 39 1 484 1609 700 885 2446 history2 5 2 2 1 history2 0.2 8.3 22.2
ADDITIVES 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 method ASTM D5185m ASTM D5185m	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 current 39 0 42 <1 501 1754 746 940 2730 current 6 0 6 0 6 current 0.2 7.8 22.3	0 history1 26 0 43 <1 517 1769 740 911 2770 history1 5 4 2 2 history1 0.3 9.4 22.1	0 history2 33 0 39 1 484 1609 700 885 2446 history2 5 2 2 4 4 6 history2 0.2 8.3

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

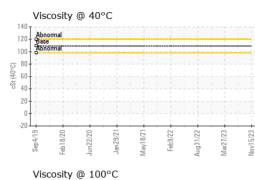
Resample at the next service interval to monitor.

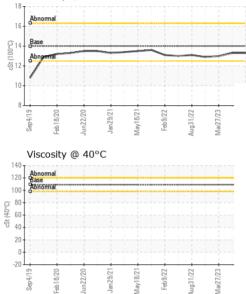
### Fluid Condition

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



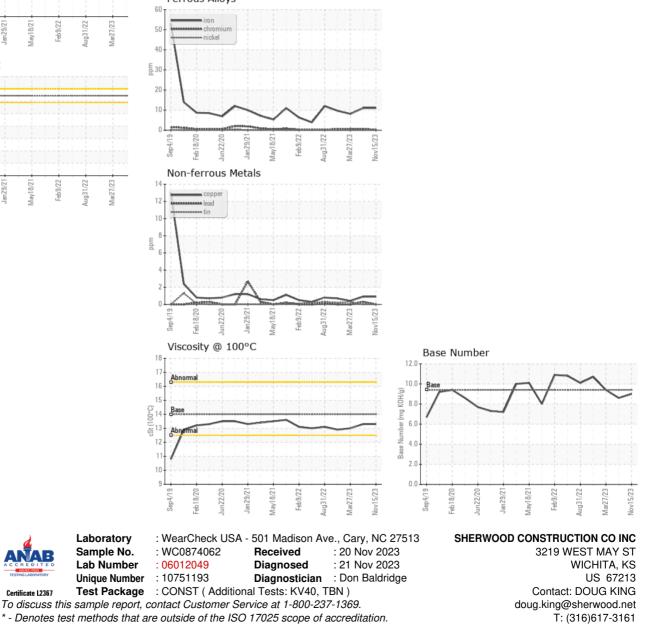
# **OIL ANALYSIS REPORT**





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	13.3	13.3	13.0
GRAPHS						

Ferrous Alloys



Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Certificate L2367

Page 2 of 2

F: x: