

# **OIL ANALYSIS REPORT**

Sample Rating Trend







Machine Id 268 Component Diesel Engine Fluid DIESEL ENGINE OIL SAE 40 (--- GAL)

#### DIAGNOSIS

# Recommendation

Resample at the next service interval to monitor. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) DIESEL ENGINE OIL SAE 40. Please confirm. Please specify the component make and model with your next sample.

# 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		WC0584576		
Sample Date		Client Info		17 Aug 2023		
Machine Age	days	Client Info		0		
Oil Age	days	Client Info		432		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINATION	٧	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0		
Glycol		WC Method		NEG		
WEAR METALS		method	limit/base	ourropt	biotony1	history?
				current	history1	history2
Iron	ppm	ASTM D5185m	>100	42		
Chromium	ppm	ASTM D5185m	>20	1		
Nickel	ppm	ASTM D5185m	>4	<1		
Titanium	ppm	ASTM D5185m		<1		
Silver	ppm	ASTM D5185m	>3	0		
Aluminum	ppm	ASTM D5185m	>20	4		
Lead	ppm	ASTM D5185m	>40	<1		
Copper	ppm	ASTM D5185m	>330	5		
Tin	ppm	ASTM D5185m	>15	<1		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 250	current 310	history1	history2
	ppm ppm					
Boron		ASTM D5185m	250	310		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	250 10	310 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10	310 0 93		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	310 0 93 <1		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	310 0 93 <1 426		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	310 0 93 <1 426 1497	  	  
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	250 10 100 450 3000 1150	310 0 93 <1 426 1497 1098		
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	250 10 100 450 3000 1150 1350	310 0 93 <1 426 1497 1098 1331	    	
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	250 10 100 450 3000 1150 1350 4250 limit/base	310 0 93 <1 426 1497 1098 1331 3665		
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	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25	310 0 93 <1 426 1497 1098 1331 3665 current		
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 <b>method</b>	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25	310 0 93 <1 426 1497 1098 1331 3665 current 20	     history1 	     history2
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	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25 >216	310 0 93 <1 426 1497 1098 1331 3665 <u>current</u> 20 0	     history1	    history2
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	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25 >216 >20	310 0 93 <1 426 1497 1098 1331 3665 current 20 0 3	     history1  	     history2  
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	250 10 100 450 3000 1150 1350 4250 <b>Imit/base</b> >25 >216 >20 <b>Imit/base</b> >3	310 0 93 <1 426 1497 1098 1331 3665 current 20 0 3 3	     history1   history1	     history2   history2
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	250 10 100 450 3000 1150 1350 4250 <b>Imit/base</b> >25 >216 >20 <b>Imit/base</b> >3	310 0 93 <1 426 1497 1098 1331 3665 <i>current</i> 20 0 3 <i>current</i> 1.4	     history1   history1  history1	     history2  history2  history2
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	250 10 100 450 3000 1150 1350 4250 <b>Iimit/base</b> >25 >216 >20 <b>Iimit/base</b> >3 >20	310 0 93 <1 426 1497 1098 1331 3665 <i>current</i> 20 0 3 <i>current</i> 1.4 9.7	history1 history1	history2 history2 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 D7844 *ASTM D7844	250 10 100 450 3000 1150 1350 4250 20 225 >216 >20 >20 >30 >30 Simit/base	310 0 93 <1 426 1497 1098 1331 3665 <i>current</i> 20 0 3 <i>current</i> 1.4 9.7 25.0	history1 history1 history1 history1 history1	    history2  history2  history2  history2  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	250 10 100 450 3000 1150 1350 4250 <b>imit/base</b> >25 >216 >20 <b>imit/base</b> >3 >20 >30 <b>imit/base</b>	310 0 93 <1 426 1497 1098 1331 3665 <u>current</u> 20 0 3 <u>current</u> 1.4 9.7 25.0	      history1  history1	     history2  history2  history2

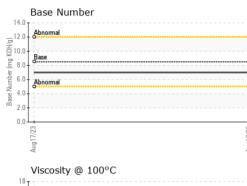


17 Abno 16 (0.001) 14 Base

13 Abnorma 12 11 Aug17/23

₽

# **OIL ANALYSIS REPORT**



	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	*Visual	NONE	NONE		
	Yellow Metal	scalar	*Visual	NONE	NONE		
	Precipitate	scalar	*Visual	NONE	NONE		
	Silt	scalar	*Visual	NONE	NONE		
	Debris	scalar	*Visual	NONE	NONE		
	Sand/Dirt	scalar	*Visual	NONE	NONE		
Aug17/23	Appearance	scalar	*Visual	NORML	NORML		
Aug	Odor	scalar	*Visual	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.2	NEG		
	Free Water	scalar	*Visual		NEG		
	FLUID PROPERT	IES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	14.4	14.9		
	GRAPHS						
	Iron (ppm)			100	Lead (ppm)		
	200 Severe				Severe		
	100			0			
mqq	Abnormal			e 40	Abaranal		
	50 -			20			
	0						
	4ug17/23			Aug17/23	Aug17/23		Aua17/23
				Aug			Aug
	Aluminum (ppm)			50	Chromium (pp	m)	
	40 - Gevere			40	Severe		1
	20 - Abnormal			<sup>30</sup>	Abnormal		
	10			10			
	0						
	Aug17/23			Aug17/23	Aug17/23		Aua 17/23
	Aug			Aug	Augi		Aua
	Copper (ppm)				Silicon (ppm)		
	400 Severe			80	Severe		
	300 -			60			
mqq	200			톱 40			
	100			20	Abnormal		
	0						
				7/23	7/23		7/23 -
	Aug17/23			Aug17/23	Aug17/23		Aua17/23 -
	Viscosity @ 100°C			15.0	Base Number		
	Abnormal			15.0 (M) Base Number Base	Abnormal		1
ć	16			p10.0	Base		
0017	Abnormal			nber (r	Abnormal		
q	Abnormal			N 5.0	- Abnormal		
	10			0.0			
	Aug17/23			Aug17/23	Aug17/23		Aua17/23
	Augl			Aug1	Augl		Aual
Laboratory Sample No. Lab Number Unique Number Test Package	: 05929397	Received Diagnose Diagnost	d : 21 / ed : 22 / tician : We	Aug 2023 Aug 2023 s Davis	3 MIDDLESE	MIDD	BOTTLING - MCCB BERLAND AVE LESBORO, KY US 40965 ct: TIM GOINS s@mccbw.com
Lab Number Unique Number Test Package	: 05929397 : 10609344 : MOB1+	Diagnos Diagnost	ed : 22 / tician : We	Aug 2023 s Davis		MIDD	LESBORO, K US 4096 ct: TIM GOIN

90

Submitted By: TIM GOINS