

### **OIL ANALYSIS REPORT**

Sample Rating Trend

# PHOENIX MIXER 263

Diesel Engine Fluid DIESEL ENGINE OIL SAE 15W40 (--- GAL)

#### DIAGNOSIS

#### Recommendation

We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. 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. Tests confirm the presence of fuel in the oil.

#### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.



SAMPLE INFOR		methou	iiiiii/base	current	Thatory i	Thatoryz
Sample Number		Client Info		PCA0109565	PCA0109802	LP0000512
Sample Date		Client Info		22 Dec 2023	22 Nov 2023	28 Aug 2023
Machine Age	hrs	Client Info		7985	7985	7985
Oil Age	hrs	Client Info		7985	500	0
Oil Changed		Client Info		N/A	Changed	Changed
Sample Status				SEVERE	SEVERE	ABNORMAL
		in a dia a di			latata met	biotom (O
CONTAMINAT	ION	method	iimii/base	current	nistory i	nistory2
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	2	19	5
Chromium	ppm	ASTM D5185m	>20	<1	1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	1	1	0
Lead	ppm	ASTM D5185m	>40	4	<u> </u>	1
Copper	ppm	ASTM D5185m	>330	0	2	0
Tin	ppm	ASTM D5185m	>15	<1	1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	28	11	4
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	250 10	28 0	11 0	4 0
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	28 0 32	11 0 32	4 0 59
Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	28 0 32 <1	11 0 32 <1	4 0 59 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	28 0 32 <1 91	11 0 32 <1 354	4 0 59 <1 997
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	28 0 32 <1 91 1874	11 0 32 <1 354 1542	4 0 59 <1 997 1139
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	28 0 32 <1 91 1874 896	11 0 32 <1 354 1542 824	4 0 59 <1 997 1139 1049
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	28 0 32 <1 91 1874 896 1010	11 0 32 <1 354 1542 824 992	4 0 59 <1 997 1139 1049 1299
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	28 0 32 <1 91 1874 896 1010 3256	11 0 32 <1 354 1542 824 992 2732	4 0 59 <1 997 1139 1049 1299 3890
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm 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	28 0 32 <1 91 1874 896 1010 3256 current	11 0 32 <1 354 1542 824 992 2732 history1	4 0 59 <1 997 1139 1049 1299 3890 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm 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 <b>limit/base</b> >25	28 0 32 <1 91 1874 896 1010 3256 current 4	11 0 32 <1 354 1542 824 992 2732 history1 4	4 0 59 <1 997 1139 1049 1299 3890 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b>	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 >158	28 0 32 <1 91 1874 896 1010 3256 current 4 0	11 0 32 <1 354 1542 824 992 2732 history1 4 0	4 0 59 <1 997 1139 1049 1299 3890 history2 4 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m 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>imit/base</b> >25 >158 >20	28 0 32 <1 91 1874 896 1010 3256 current 4 0 <1	11 0 32 <1 354 1542 824 992 2732 history1 4 0 0 0	4 0 59 <1 997 1139 1049 1299 3890 history2 4 1 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25 >158 >20 >5	28 0 32 <1 91 1874 896 1010 3256 Current 4 0 <1 € 9.2	11 0 32 <1 354 1542 824 992 2732 history1 4 0 0 0 16.2	4 0 59 <1 997 1139 1049 1299 3890 history2 4 1 3 3 × 7.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm 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 >5 <b>limit/base</b>	28 0 32 <1 91 1874 896 1010 3256 <i>current</i> 4 0 <1 9.2 <i>current</i>	11 0 32 <1 354 1542 824 992 2732 history1 4 0 0 0 16.2 history1	4 0 59 <1 997 1139 1049 1299 3890 history2 4 1 3 3 7.2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D51854	250 10 100 450 3000 1150 1350 4250 <b>imit/base</b> >25 >158 >20 >5	28 0 32 <1 91 1874 896 1010 3256 Current 4 0 <1 9.2 Current 0.6	11 0 32 <1 354 1542 824 992 2732 history1 4 0 0 0 16.2 history1 2.2	4 0 59 <1 997 1139 1049 1299 3890 history2 4 1 3 3 0 7.2 history2 0.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D51854 ASTM D51854	250 10 100 450 3000 1150 1350 4250 <b>Imit/base</b> >25 >158 >20 >5 <b>Imit/base</b> >3 >20	28 0 32 <1 91 1874 896 1010 3256 <b>current</b> 4 0 <1 ● 9.2 <b>current</b> 0.6 7.1	111 0 32 <1 354 1542 824 992 2732 history1 4 0 0 0 16.2 history1 2.2 9.8	4 0 59 <1 997 1139 1049 1299 3890 <b>history2</b> 4 1 3 3 ▲ 7.2 <b>history2</b> 0.7 6.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel 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>limit/base</b> >25 >158 >20 >5 <b>limit/base</b> >3 >20 >30	28 0 32 <1 91 1874 896 1010 3256 current 4 0 <1 9.2 current 0.6 7.1 17.4	111 0 32 <1 354 1542 824 992 2732 history1 4 0 0 0 16.2 history1 2.2 9.8 24.9	4 0 59 <1 997 1139 1049 1299 3890 history2 4 1 3 ↓ 7.2 history2 0.7 6.1 18.9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel 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 >158 >20 >5 <b>imit/base</b> >3 >20 30	28 0 32 <1 91 1874 896 1010 3256 Current 4 0 <1 9.2 Current 0.6 7.1 17.4	111 0 32 <1 354 1542 824 992 2732 history1 4 0 0 16.2 history1 2.2 9.8 24.9 history1	4 0 59 <1 997 1139 1049 1299 3890 history2 4 1 3 3 ↓ 7.2 history2 0.7 6.1 18.9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7415	250 10 100 450 3000 1150 1350 4250 <b>Imit/base</b> >25 >158 >20 >5 <b>Imit/base</b> >3 >20 >30 <b>Imit/base</b>	28 0 32 <1 91 1874 896 1010 3256 <b>current</b> 4 0 <1 ● 9.2 <b>current</b> 0.6 7.1 17.4 <b>current</b>	111 0 32 <1 354 1542 824 992 2732 history1 4 0 0 0 16.2 history1 2.2 9.8 24.9 history1 18.0	4 0 59 <1 997 1139 1049 1299 3890 history2 4 1 3 ▲ 7.2 history2 0.7 6.1 18.9 history2 14.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation Base Number (BN)	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7414 ASTM D7414	250 10 100 450 3000 1150 1350 4250 <b>Imit/base</b> >25 >158 >20 >5 <b>Imit/base</b> >3 >20 >30 20 >5 <b>Imit/base</b> >3 >20 >3 >3 >20 >3 >20 >3 >3 >20 >3 >20 >3 >3 >20 >3 >3 >20 >3 >3 >20 >3 >3 >20 >3 >3 >20 >3 >3 >20 >3 >3 >20 >3 >3 >20 >3 >3 >20 >3 >20 >3 >3 >20 >3 >20 >3 >3 >20 >3 >20 >3 >20 >25 8 8 8 5 8 8 8 8 8 8 8 8 8 8 8 8 8	28 0 32 <1 91 1874 896 1010 3256 <i>current</i> 4 0 <1 9.2 <i>current</i> 0.6 7.1 17.4 <i>current</i> 11.2 8 90	111 0 32 <1 354 1542 824 992 2732 history1 4 0 0 0 16.2 history1 2.2 9.8 24.9 history1 18.9 6 10	4 0 59 <1 997 1139 1049 1299 3890 history2 4 1 3 ↓ 7.2 history2 0.7 6.1 18.9 history2 14.2 8 46



## **OIL ANALYSIS REPORT**





Certificate L2367

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