

OIL ANALYSIS REPORT

Sample Rating Trend





NORMAL

Machine Id 414063 Component Diesel Engi Fluid DIESEL EN

Component Diesel Engine Fluid

DIESEL ENGINE OIL SAE 15W40 (--- GAL)

DIAGNOSIS
Recommendation

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

Metal levels are typical for a new component breaking in.

Contamination

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. 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		method	iiiiii/base	current	HIStOLA	TIStoryz
Sample Number		Client Info		GFL0098450	GFL0098442	GFL0098456
Sample Date		Client Info		26 Dec 2023	29 Nov 2023	07 Nov 2023
Machine Age	hrs	Client Info		1070	896	757
Oil Age	hrs	Client Info		1070	896	757
Oil Changed		Client Info		N/A	Not Changd	N/A
Sample Status				NORMAL	NORMAI	NORMAI
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CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	nnm	ASTM D5185m	>120	12	10	6
Chromium	nnm	ASTM D5185m	>20	-1	<1	-1
Nickel	ppm	ASTM D5185m	~5	1	0	0
Titanium	nnm	ASTM D5185m	>2	0	0	-1
Silvor	nnm	ASTM D5185m	>2	-1	-1	0
Aluminum	nnm	ASTM D5185m	>20	6	4	4
Lead	nnm	ASTM D5185m	>40	0	0	-1
Copper	nnm	ASTM D5185m	< <u>330</u>	98	40	30
Tin	nnm	ASTM D5185m	>15	1	0	<1
Vanadium	npm	ASTM D5185m	210	-1	0	0
Cadmium	nom	ASTM D5185m		0	0	0
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		and the second	11		In the American State	Internet of
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 250	current 61	history1 78	history2 93
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base 250 10	current 61 0	history1 78 2	history2 93 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100	current 61 0 74	history1 78 2 78	history2 93 0 82
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100	current 61 0 74 1	history1 78 2 78 0	history2 93 0 82 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450	current 61 0 74 1 840	history1 78 2 78 0 795	history2 93 0 82 <1 878
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000	Current 61 0 74 1 840 1123	history1 78 2 78 0 795 1148	history2 93 0 82 <1 878 1250
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150	current 61 0 74 1 840 1123 940	history1 78 2 78 0 795 1148 851	history2 93 0 82 <1 878 1250 1017
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	methodASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185m	limit/base 250 10 100 450 3000 1150 1350	current 61 0 74 1 840 1123 940 1138	history1 78 2 78 0 795 1148 851 1036	history2 93 0 82 <1 878 1250 1017 1183
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250	current 61 0 74 1 840 1123 940 1138 2695	history1 78 2 78 0 795 1148 851 1036 2825	history2 93 0 82 <1 878 1250 1017 1183 2858
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 400 450 3000 1150 1350 4250 limit/base	current 61 0 74 1 840 1123 940 1138 2695 current	history1 78 2 78 0 795 1148 851 1036 2825 history1	history2 93 0 82 <1 878 1250 1017 1183 2858 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25	current 61 0 74 1 840 1123 940 1138 2695 current 10	history1 78 2 78 0 795 1148 851 1036 2825 history1 10	history2 93 0 82 <1 878 1250 1017 1183 2858 history2 9
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >158	current 61 0 74 1 840 1123 940 1138 2695 current 10 4	history1 78 2 78 0 795 1148 851 1036 2825 history1 10 <1	history2 93 0 82 <1 878 1250 1017 1183 2858 history2 9 2
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ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	current 61 0 74 1 840 1123 940 1138 2695 current 10 4 11 current	history1 78 2 78 0 795 1148 851 1036 2825 history1 10 <1 10 <1 10 <1 10 history1	history2 93 0 82 <1 878 1250 1017 1183 2858 history2 9 2 6 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base	current 61 0 74 1 840 1123 940 1138 2695 current 10 4 11 current 0.3	history1 78 2 78 0 795 1148 851 1036 2825 history1 10 <1 10 <1 00 02	history2 93 0 82 <1 878 1250 1017 1183 2858 history2 9 2 6 history2 0.1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 250 10 10 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >4 >20	current 61 0 74 1 840 1123 940 1138 2695 current 10 4 11 current 0.3 7.4	history1 78 2 78 0 795 1148 851 1036 2825 history1 10 <1 10 <1 0.2 6.5	history2 93 0 82 <1 878 1250 1017 1183 2858 history2 9 2 6 history2 0.1 6.4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7624	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >20 s4 >20 >30	current 61 0 74 1 840 1123 940 1138 2695 current 10 4 11 current 0.3 7.4 20.9	history1 78 2 78 0 795 1148 851 1036 2825 history1 10 <1 10 <1 0 0.2 6.5 20.3	history2 93 0 82 <1 878 1250 1017 1183 2858 history2 9 2 6 history2 0.1 6.4 19.3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 250 10 10 450 3000 1150 1350 4250 255 >158 >20 limit/base >4 >20 >30 limit/base	current 61 0 74 1 840 1123 940 1138 2695 current 10 4 11 current 0.3 7.4 20.9 current	history1 78 2 78 0 795 1148 851 1036 2825 history1 10 <1 10 <1 0.2 6.5 20.3	history2 93 0 82 <1 878 1250 1017 1183 2858 history2 9 2 6 history2 0.1 6.4 19.3 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7414	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >4 >20 >30 limit/base >25	current 61 0 74 1 840 1123 940 1138 2695 current 10 4 11 current 0.3 7.4 20.9 current 16.3	history1 78 2 78 0 795 1148 851 1036 2825 history1 10 <1 10 <1 0.2 6.5 20.3 history1 15.6	history2 93 0 82 <1 878 1250 1017 1183 2858 history2 9 2 6 history2 0.1 6.4 19.3 history2 14.5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation Base Number (BN)	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm % Abs/cm Abs/cm Abs/.1mm mg KOH/g	method ASTM D5185m ASTM D7624 *ASTM D7624 *ASTM D7414 ASTM D7414 ASTM D2896	limit/base 250 10 10 450 3000 1150 1350 4250 255 >158 >20 limit/base >4 >20 >30 limit/base >25 \$30 Satisfy the set of	current 61 0 74 1 840 1123 940 1138 2695 current 10 4 11 current 0.3 7.4 20.9 current 16.3 7.8	history1 78 2 78 0 795 1148 851 1036 2825 history1 10 <1 10 <1 0.2 6.5 20.3 history1 15.6 8.3	history2 93 0 82 <1 878 1250 1017 1183 2858 history2 9 2 6 history2 0.1 6.4 19.3 history2 14.5 9.3



Aug18/23

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Sep28/23

OIL ANALYSIS REPORT

VISUAL



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Cent To co	ificate L2607 discuss t	La Sa La Uni Te this sar	boratory mple No b Numbe ique Num st Packa mple repu	udd Could As	80 60 60 60 60 60 60 60 60 60 6	EZGEHPO EZGEHPO ECON Madis Recieved Diagnose Diagnost rice at 1-8	EZ/Looy EZ/Looy ez/Looy econ Ave., Ca i : 03 . ed : 04 . ician : Wes	ry, NC 2751 Jan 2024 ban 2024 s Davis	Base Numbe	er EZ 82 46 vironmental - 180 - T 470 Contact: FREDEl fred.roge	EUGEDOOG EUSCALOOSA HAUIING D1 12TH ST NE Tuscaloosa, AL US 35404 RICK ROGERS ers@gflenv.com

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Submitted By: see also GFL868 - Chelsea Bryan