

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 607054

Component Diesel Engine Fluid DIESEL ENGINE OIL SAE 5W40 (--- QTS)

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 INFORM	ΛΑΤΙΟΝ	method	limit/base	current	history1	history2	
Sample Number		Client Info		GFL0103839	GFL0097358	GFL0089541	
Sample Date		Client Info		02 Jan 2024	10 Oct 2023	19 Sep 2023	
Machine Age	hrs	Client Info	5261 5261 526		5261		
Oil Age	hrs	Client Info	5261 526		5261	5261	
Oil Changed		Client Info	N/A		N/A	N/A	
Sample Status				NORMAL	NORMAL	ABNORMAL	
CONTAMINATI	ON	method	limit/base	current	history1	history2	
Fuel		WC Method	>2.0	<1.0	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	NEG	
Glycol		WC Method		NEG	NEG	NEG	
WEAR METALS	S	method	limit/base	current	history1	history2	
Iron	nnm	ASTM D5185m	>100	8	8	64	
Chromium	nnm	ASTM D5185m	>20	0	<1	1	
Nickel	nom	ASTM D5185m	>4	0	0	0	
Titanium	ppm	ASTM D5185m		0	<1	<1	
Silver	ppm	ASTM D5185m	>3	0	0	0	
Aluminum	mag	ASTM D5185m	>20	2	2	9	
Lead	mag	ASTM D5185m	>40	0	0	0	
Copper	mag	ASTM D5185m	>330	<1	<1	4	
Tin	mag	ASTM D5185m	>15	<1	<1	<1	
Vanadium	mag	ASTM D5185m		0	<1	0	
	To To						
Cadmium	ppm	ASTM D5185m		0	0	0	
Cadmium ADDITIVES	ppm	ASTM D5185m method	limit/base	0 current	0 history1	0 history2	
Cadmium ADDITIVES Boron	ppm	ASTM D5185m method ASTM D5185m	limit/base	0 current 12	0 history1 12	0 history2 35	
Cadmium ADDITIVES Boron Barium	ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	limit/base 250 10	0 current 12 0	0 history1 12 12	0 history2 35 0	
Cadmium ADDITIVES Boron Barium Molvbdenum	ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100	0 current 12 0 55	0 history1 12 12 55	0 history2 35 0 49	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100	0 current 12 0 55 <1	0 history1 12 12 55 <1	0 history2 35 0 49 <1	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450	0 current 12 0 55 <1 911	0 history1 12 12 55 <1 915	0 history2 35 0 49 <1 943	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000	0 current 12 0 55 <1 911 1031	0 history1 12 12 55 <1 915 1013	0 history2 35 0 49 <1 943 1075	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150	0 current 12 0 55 <1 911 1031 1022	0 history1 12 12 55 <1 915 1013 983	0 history2 35 0 49 <1 943 1075 1010	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	limit/base 250 10 100 450 3000 1150 1350	0 current 12 0 55 <1 911 1031 1022 1227	0 history1 12 12 55 <1 915 1013 983 1182	0 history2 35 0 49 <1 943 1075 1010 1312	
Cadmium 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	limit/base 250 10 100 450 3000 1150 1350 4250	0 current 12 0 55 <1 911 1031 1022 1227 3054	0 history1 12 12 55 <1 915 1013 983 1182 3019	0 history2 35 0 49 <1 943 1075 1010 1312 3544	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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 ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250	0 current 12 0 55 <1 911 1031 1022 1227 3054 current	0 history1 12 12 55 <1 915 1013 983 1182 3019 history1	0 history2 35 0 49 <1 943 1075 1010 1312 3544 history2	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 ↓ base >25	0 current 12 0 55 <1 911 1031 1022 1227 3054 current 5	0 history1 12 12 55 <1 915 1013 983 1182 3019 history1 6	0 history2 35 0 49 <1 943 1075 1010 1312 3544 history2 10	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN 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 ASTM D5185m method ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >44	0 current 12 0 55 <1 911 1031 1022 1227 3054 current 5 1	0 history1 12 55 <1 915 1013 983 1182 3019 history1 6 2	0 history2 35 0 49 <1 943 1075 1010 1312 3544 history2 10 4	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 20 limit/base >25 >44	0 current 12 0 55 <1 911 1031 1022 1227 3054 current 5 1 3	0 history1 12 55 <1 915 1013 983 1182 3019 history1 6 2 6	0 history2 35 0 49 <1 943 1075 1010 1312 3544 history2 10 4 23	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	imit/base 250 10 100 450 3000 1150 1350 4250 imit/base ≥25 >44 ≥20	0 current 12 0 55 <1 911 1031 1022 1227 3054 current 5 1 3 current	0 history1 12 55 <1 915 1013 983 1182 3019 history1 6 2 6 history1	0 history2 35 0 49 <1 943 1075 1010 1312 3544 history2 10 4 23 history2	
Cadmium 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	ASTM D5185m method ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 25 >25 >25 >24 20 limit/base >3	0 current 12 0 55 <1 911 1031 1022 1227 3054 current 5 1 3 current 0.2	0 history1 12 12 55 <1 915 1013 983 1182 3019 history1 6 2 6 6 history1 0.1	0 history2 35 0 49 <1 943 1075 1010 1312 3544 history2 10 4 23 history2 1.1	
Cadmium 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	ASTM D5185m Method ASTM D5185m ASTM D5185m	imit/base 250 10 450 3000 1150 1350 4250 255 >44 >20 imit/base >3 >30	0 current 12 0 55 <1 911 1031 1022 1227 3054 current 5 1 3 current 0.2 6.6	0 history1 12 55 <1 915 1013 983 1182 3019 history1 6 2 6 6 2 6 5.4	0 history2 35 0 49 <1 943 1075 1010 1312 3544 history2 10 4 23 history2 1.1 1.1	
Cadmium 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	ASTM D5185m Method ASTM D5185m ASTM D5185m	limit/base 250 10 100 450 3000 1150 1350 4250 limit/base >25 >44 >20 limit/base >3 >20 >30	0 current 12 0 55 <1 911 1031 1022 1227 3054 current 5 1 3 current 0.2 6.6 19.6	0 history1 12 55 <1 915 1013 983 1182 3019 history1 6 2 6 2 6 history1 0.1 5.4 18.4	0 history2 35 0 49 <1 943 1075 1010 1312 3544 history2 10 4 23 history2 1.1 1.1 14.1 41.5	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	imit/base 250 10 100 450 3000 1150 1350 4250 imit/base >25 >44 >20 imit/base >3 >20 >30 imit/base	0 current 12 0 55 <1 911 1031 1022 1227 3054 current 5 1 3 current 0.2 6.6 19.6	0 history1 12 55 <1 915 1013 983 1182 3019 history1 6 2 6 2 6 history1 0.1 5.4 18.4 18.4	0 history2 35 0 49 <1 943 1075 1010 1312 3544 history2 10 4 23 history2 1.1 14.1 41.5 history2	
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7414	imit/base 250 10 450 3000 1150 1350 4250 255 344 20 imit/base >30 >30 imit/base >25	0 current 12 0 55 <1 911 1031 1022 1227 3054 current 5 1 3 current 0.2 6.6 19.6 19.6 current 16.0	0 history1 12 55 <1 915 1013 983 1182 3019 history1 6 2 6 2 6 history1 0.1 5.4 18.4 18.4 history1 14.8	0 history2 35 0 49 <1 943 1075 1010 1312 3544 history2 10 4 23 history2 1.1 1.1 14.1 41.5 history2 48.9	



OIL ANALYSIS REPORT

VISUAL



1		scalar *\	Visual	NONE	NONE	NONE	NONE	
	Yellow Metal	scalar *	Visual	NONE	NONE	NONE	NONE	
	Precipitate	scalar *	Visual	NONE	NONE	NONE	NONE	
	Silt	scalar *\	Vieual	NONE	NONE	NONE	NONE	
	Debrie	scalar *	Visual	NONE	NONE	NONE	NONE	
	Debits Cand/Dirt	Scalar *	Visual	NONE	NONE	NONE	NONE	
	Sand/Dirt	scalar *	Visual	NONE	NONE	NOR	NORM	
0ct10/	Appearance	scalar *	Visual	NORIVIL	NORML	NORML	NORML	
0	Odor Encode i Genel Master	scalar *	visual	NORIVIL	NORML	NORML	NORIVIL	
С	Emuisified water	scalar "	visuai	>0.2	NEG	NEG	NEG	
1	Free Water	scalar ^	Visual		NEG	NEG	NEG	
	FLUID PROPE	ERTIES	method				history2	
	Visc @ 100°C	cSt A	STM D445	14.4	14.1	14.0	14.0	
	GRAPHS							
	Ferrous Allovs							
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ANAB Sample No.	GELUIU3039	Diagnosed	. 04 J • 05	lan 2024		1180	Chester VA	
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Certificate L2367 Test Packa	ge : FLEET			- 3 -		Contact:	Jimmy Mayes	
To discuss this sample repo	ort, contact Customer Serv	∕ice at 1-800	-237-1369).		jmaye	s@gflenv.com	
* - Denotes test methods the	at are outside of the ISO	17025 scope	of accred	itation.	0011 100		<u> </u>	
Statements of conformity to s	pecifications are based on i	tne simple ac	ceptance o	lecision rule (J	JCGM 106:2012)		F:	

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Submitted By: Matt oversee 654, 654S, 659 - Matthew Shinault