

# **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id **352198** Component **Gasoline Engine** Fluid **NOT GIVEN (--- 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

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.

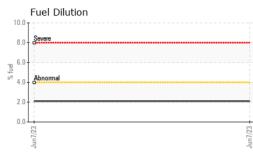
SAMPLE INFORI		method	limit/base	ourropt	biotonut	history2
	MATION		minubase		history1	
Sample Number		Client Info		GFL0086960	GFL0086944	GFL0069286
Sample Date		Client Info		04 Dec 2023	07 Sep 2023	07 Jun 2023
Machine Age	mls	Client Info		17000	14878	7671
Oil Age	mls	Client Info		4000	2878	1688
Oil Changed		Client Info		N/A	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	ATTENTION
CONTAMINAT	ION	method	limit/base	current	history1	history2
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	>150	9	7	10
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	<1	<1
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>40	3	<1	4
Lead	ppm	ASTM D5185m	>50	0	<1	<1
Copper	ppm	ASTM D5185m	>155	1	2	9
Tin	ppm	ASTM D5185m	>10	0	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/booo		1 C	biotom 0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	iimii/base	current 40	history1 94	113
	ppm ppm		iimirbase		· · · · · · · · · · · · · · · · · · ·	
Boron		ASTM D5185m	iimi/base	40	94	113
Boron Barium	ppm	ASTM D5185m ASTM D5185m		40 0	94 0	113 3
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		40 0 212	94 0 80	113 3 111
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		40 0 212 3	94 0 80 4	113 3 111 8
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		40 0 212 3 486	94 0 80 4 584	113 3 111 8 432
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		40 0 212 3 486 1186	94 0 80 4 584 1012	113 3 111 8 432 1017
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		40 0 212 3 486 1186 648	94 0 80 4 584 1012 745	113 3 111 8 432 1017 582
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	limit/base	40 0 212 3 486 1186 648 798	94 0 80 4 584 1012 745 866	113 3 111 8 432 1017 582 709
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	limit/base	40 0 212 3 486 1186 648 798 2046	94 0 80 4 584 1012 745 866 3675	113 3 111 8 432 1017 582 709 2737
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 ASTM D5185m	limit/base	40 0 212 3 486 1186 648 798 2046 current	94 0 80 4 584 1012 745 866 3675 history1	113 3 111 8 432 1017 582 709 2737 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 <b>method</b>	limit/base >30 >400	40 0 212 3 486 1186 648 798 2046 <u>current</u> 17	94 0 80 4 584 1012 745 866 3675 history1 14	113 3 111 8 432 1017 582 709 2737 history2 18
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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	limit/base >30 >400 >20	40 0 212 3 486 1186 648 798 2046 <b>current</b> 17 2	94 0 80 4 584 1012 745 866 3675 history1 14 2	113 3 111 8 432 1017 582 709 2737 history2 18 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	limit/base >30 >400 >20	40 0 212 3 486 1186 648 798 2046 <u>current</u> 17 2 0	94 0 80 4 584 1012 745 866 3675 history1 14 2 2	113 3 111 8 432 1017 582 709 2737 <b>history2</b> 18 5 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	limit/base >30 >400 >20 >4.0	40 0 212 3 486 1186 648 798 2046 <b>current</b> 17 2 0 0 <1.0	94 0 80 4 584 1012 745 866 3675 history1 14 2 2 2 <1.0	113 3 111 8 432 1017 582 709 2737 history2 18 5 3 3 ▲ 2.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >30 >400 >20 >4.0 limit/base	40 0 212 3 486 1186 648 798 2046 current 17 2 0 <1.0 current	94 0 80 4 584 1012 745 866 3675 history1 14 2 2 2 <1.0 history1	113 3 111 8 432 1017 582 709 2737 history2 18 5 3 ▲ 2.1 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 TS ppm ppm ppm %	ASTM D5185m ASTM D5185m	limit/base >30 >400 >20 >4.0 Limit/base	40 0 212 3 486 1186 648 798 2046 <i>current</i> 17 2 0 <1.0 <i>current</i> 0	94 0 80 4 584 1012 745 866 3675 history1 14 2 2 < <1.0 history1 0.1	113 3 111 8 432 1017 582 709 2737 history2 18 5 3 ▲ 2.1 history2 0.1
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 D3524 <b>method</b>	limit/base >30 >400 >20 >4.0 Limit/base	40 0 212 3 486 1186 648 798 2046 <i>current</i> 17 2 0 <1.0 <i>current</i> 0 10.0	94 0 80 4 584 1012 745 866 3675 history1 14 2 2 <1.0 history1 0.1 7.6	113 3 111 8 432 1017 582 709 2737 history2 18 5 3 ↓ 2.1 history2 0.1 7.1
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 D7844 *ASTM D7624	limit/base >30 >400 >20 >20 >4.0 limit/base >20 >30	40 0 212 3 486 1186 648 798 2046 <b>current</b> 17 2 0 <10 <10 0 10.0 19.6 <b>current</b>	94 0 80 4 584 1012 745 866 3675 history1 14 2 2 2 <1.0 history1 0.1 7.6 17.0 history1	113 3 111 8 432 1017 582 709 2737 history2 18 5 3 ↓ 2.1 history2 0.1 7.1 17.2 history2
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	limit/base >30 >400 >20 >20 >4.0 limit/base >20 >30	40 0 212 3 486 1186 648 798 2046 <b>current</b> 17 2 0 <1.0 <b>current</b> 0 10.0 19.6	94 0 80 4 584 1012 745 866 3675 history1 14 2 2 <1.0 history1 0.1 7.6 17.0	113 3 111 8 432 1017 582 709 2737 history2 18 5 3 ▲ 2.1 history2 0.1 7.1 17.2

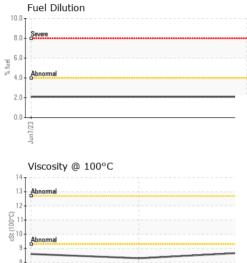


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# **OIL ANALYSIS REPORT**





	VISUAL		method		current		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
50 L mil	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
-	Ouoi	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
	Free Water	scalar	*Visual		NEG	NEG	NEG
	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445		8.7	8.3	▲ 8.6
	GRAPHS						
	Ferrous Alloys						
	10 iron						
	8 - nickel						
	6						
	mqq						
	4						
	2-						
			*****				
	0 ++			/23			
	Jun7/23	Sep7/23		Dec4/23			
	Non-ferrous Meta	ls					
Sep7/23	<sup>10</sup> T						
Sep	copper Retractions lead						
	enseeting tin						
	<sup>™</sup> 4						
	2			-			
		and the second s	100kpopkense				
	0	ep7/23 -		ec4/23			
	Jun7/23	Sep7/23 -		Dec4/23			
	0				Base Number		
	Viscosity @ 100°C			6.0· 5.0·			
	Viscosity @ 100°C			6.0· 5.0·			
	Viscosity @ 100°C			6.0· 5.0·			
	Viscosity @ 100°C			6.0· 5.0·			
	Viscosity @ 100°C			6.0· 5.0·			
	Viscosity @ 100°C			6.0			
	Viscosity @ 100°C			6.0 5.0 (6)HOX 4.0 Jaquingu 3.0 2.0 See 8			
	Viscosity @ 100°C			6.0 5.0 (b)HOX Bul a-aquinn() see 8 1.0 0.0		2/23	
	Viscosity @ 100°C			6.0 5.0 (0)(H 4.0 bu) 3.0 9 aquiny 9 aguiny 2.0 1.0		Sep7/23	
Laboratory	Viscosity @ 100°C	501 Madis	on Ave., Ca	6.0 5.0 (0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(	Jun7/23		408 - Brown Ci
Sample No.	Viscosity @ 100°C	501 Madis Received	<b>d</b> : 07 [	6.0 5.0 000 4.0 100 4.	Jun7/23	vironmental -	<b>408 - Brown Ci</b> 4235 M-5
Sample No. Lab Number	Viscosity @ 100°C	501 Madis Received Diagnose	d : 07 [ ed : 10 [	6.0 5.0 (0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(	Jun7/23	vironmental -	<b>408 - Brown Ci</b> 4235 M-5 ROWN CITY, N US 4841
Sample No.	Viscosity @ 100°C	501 Madis Received Diagnose Diagnost Tests: Fu	d : 07 [ ed : 10 [ iician : Dor ielDilution )	6.0 5.0 (0)(U)(0) (0)() 4.0 (0)(0)(0)(0)() 4.0 (0)() (0)() 4.0 (0)() (0)() 4.0 (0)() (0)() 4.0 (0)() (0)() 4.0 (0)() (0)() (0)() 4.0 (0)()	Jun7/23	r <b>ironmental -</b> B Contact: V	<b>408 - Brown Ci</b> 4235 M-5 ROWN CITY, N

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

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