

## **OIL ANALYSIS REPORT**

#### Sample Rating Trend



#### Machine Io **AUTOCAR 812012** Component

**Diesel Engine** Fluid **DIESEL ENGINE OIL SAE 40 (--- 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.

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			AprŽ023 JulŽ023 AugŽ0	23 Sep2023 Jan2024 Jan2024	Jan2024	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0109116	GFL0109068	GFL0109065
Sample Date		Client Info		30 Jan 2024	11 Jan 2024	05 Jan 2024
Machine Age	hrs	Client Info		5026	4902	4876
Oil Age	hrs	Client Info		5026	4902	4876
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	ABNORMAL	ATTENTION
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<b>1</b> .1	0.5
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	>90	2	17	9
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	4	6
Lead	ppm	ASTM D5185m	>40	1	<1	0
Copper	ppm	ASTM D5185m	>330	<1	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	14	11	17
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	50	52	65
Manganese	ppm	ASTM D5185m		<1	<1	0
Magnesium	ppm	ASTM D5185m	450	672	613	731
Calcium	ppm	ASTM D5185m	3000	977	929	1178
Phosphorus	ppm	ASTM D5185m	1150	857	790	944
Zinc	ppm	ASTM D5185m	1350	1012	928	1132
Sulfur	ppm	ASTM D5185m	4250	2440	2315	2892
CONTAMINAN	ITS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m		2	9	2
Sodium	ppm	ASTM D5185m	>216	4	4	3
Potassium	ppm	ASTM D5185m	>20	7	2	12
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>6	0.2	0.6	0.3
Nitration	Abs/cm	*ASTM D7624	>20	6.1	10.1	7.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.2	20.0	18.1
FLUID DEGRAI	DATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.6	17.1	13.8
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.4	5.0	6.3
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Base

cSt (100°C) Abr

10

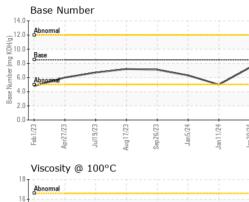
Feb1/23

Apr27/23

Jul19/23

# **OIL ANALYSIS REPORT**

VISUAL



		White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	/	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
	<u> </u>	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
		Debris	scalar	*Visual	NONE	NONE	NONE	NONE
		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Aug17/23 Sep26/23	Jan 5/24 Jan 1 1/24 Jan 30/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Aug 1 Sep 2	Jan j Jan j	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
		Free Water	scalar	*Visual		NEG	NEG	NEG
		FLUID PROPE	ERTIES	method	limit/base	current	history1	history2
		Visc @ 100°C	cSt	ASTM D445	14.4	12.7	▲ 9.4	▲ 11.9
	$\langle /$	GRAPHS						
	$\sim$	Ferrous Alloys						
		50						
Aug17/23 Sep26/23	Jan 5/24 Jan 1 1/24	40 - nickel						
Se		20						
		30 E						
		20						
			$\sim$					
		10-	~	-				
		0						
		Feb 1/23 Apr27/23 Jul 19/23	Aug 17/23 Sep 26/23	Jan5/24 Jan11/24	Jan 30/24			
		Apr	Sep	Jan	Jan			
	Non-ferrous Meta	ls						
	10 copper							
	8 - Research lead							
		е						
		6 Ed 4						
		6 4						
		4						
			1/23 6/23	1/24	0.24			
		4	Aug17/23 Sep26/23	Jan5,24 Jan 11,24	Jan 30/24			
		Viscosity @ 100°C		Jan5/24 Jan11/24	470Euer	Base Numb	or	
		Viscosity @ 100°C		Jan5/24 Jan11/24	to concuer 14.		er	
		Viscosity @ 100°C		Jan5/24			er	
		Viscosity @ 100°C		Jan5/24	14.	0 0 Abnormal	er	
		Viscosity @ 100°C		Jan5/24	14.	0 0 Abnormal	er	
		Viscosity @ 100°C		Jan5/24	14.	0 0 Abnormal	er	
		Viscosity @ 100°C		Jan524	14.	0 0 Abnormal	er	
		Viscosity @ 100°C		Jan524 Jan11/24	14. 12. (0)HOX 00U Bull 3- 4. 3- 4.	Abnormal Base Abnormal	er	
		Viscosity @ 100°0		Jan5/24	14. 12. (0)H10. 0)J 10. 0)J 10. 0)J 10. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0	Abnormal	er	
		Viscosity @ 100°C			14. 12. (0)H10. 14. 12. 10. 10. 10. 10. 10. 10. 10. 10	Abnormal Base Abnormal Abnormal		24
		Viscosity @ 100°C			14. 12. (0)H10. 14. 12. 10. 10. 10. 10. 10. 10. 10. 10	Abnormal Base Abnormal Abnormal		Jan5.24 am 11.24 am 11.24
		Viscosity @ 100°0		Jan5/24 - Jan5/24 - Jan5/24 - Jan11/24 - Jan	14. 12. (0)H10. 0)J 10. 0)J 10. 0)J 10. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0	Abnormal Base Abnormal Abnormal	er Aug17/23	Jan5/24
	Laboratorv	Viscosity @ 100°0 EZI(2) 4 4 2 0 EZI(2) 4 4 5 10 10 10 10 10 10 10 10 10 10	Aug17/23	Jan5/24	14. 12. (0)H10. 10. 10. 10. 10. 10. 10. 10.	Abnormal Base Abnormal Abnormal Ezuration Ezuration Ezuration Ezuration Ezuration	Jul19/23	~
	Laboratory Sample No.	Viscosity @ 100°C	Aug17/23	b7/11uer son Ave., Ca	14. 12. (0)H10. 10. 10. 10. 10. 10. 10. 10.	Abnormal Base Abnormal Abnormal Ezuration Ezuration Ezuration Ezuration Ezuration	Environmenta	 I - 009 - Fairbu
	Sample No. Lab Number	Viscosity @ 100°C	c + czugzdag 501 Madii Recieved Diagnos	+72/stuer son Ave., Ca d : 011 ed : 011	14. 19. 10. 10. 10. 10. 10. 10. 10. 10	Abnormal Base Abnormal Abnormal Ezuration Ezuration Ezuration Ezuration Ezuration	Environmenta	<b>I - 009 - Fairbu</b> 5 Roosevelt Hv Fairburn, G
	Sample No. Lab Number Unique Number	Viscosity @ 100°C Viscosity @ 100°C Abnormal Abnormal Contraction Contrel Contraction Contraction Contraction Contraction Con	c + czugzdas 501 Madii Recieved	+72/stuer son Ave., Ca d : 011 ed : 011	14. 12. 19H003 Bull. 19H003 Bull. 19H003 Bull. 19H003 Bull. 19H003 Bull. 19H003 Bull. 19H033 Bull. 19H033 Bull. 19H033 Bull. 19H034	Abnormal Base Abnormal Abnormal Ezuration Ezuration Ezuration Ezuration Ezuration	Environmental 690	<b>I - 009 - Fairbu</b> 5 Roosevelt Hy Fairburn, C US 302
ertificate L2367	Sample No. Lab Number Unique Number Test Package	Viscosity @ 100°C Viscosity @ 100°C Abnormal Abnormal Contraction Contrel Contraction Contraction Contraction Contraction Con	501 Madia Recieved Diagnos	+7215uer son Ave., Ca d : 011 ed : 011 tician : We	14. 12. 14. 12. 14. 12. 14. 12. 14. 12. 14. 12. 14. 12. 14. 12. 10. 10. 10. 10. 10. 10. 10. 10	Abnormal Base Abnormal Abnormal Ezuration Ezuration Ezuration Ezuration Ezuration	Environmental 690	<b>I - 009 - Fairbu</b> 5 Roosevelt Hu Fairburn, C

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