

OIL ANALYSIS REPORT



Machine Id

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. 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

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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SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0705418		
Sample Date		Client Info		01 Mar 2024		
Machine Age	mls	Client Info		20000		
Oil Age	mls	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				NORMAL		
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0		
Water		WC Method	>0.2	NEG		
Glycol		WC Method		NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	31		
Chromium	ppm	ASTM D5185m	>20	1		
Nickel	ppm	ASTM D5185m	>4	0		
Titanium	ppm	ASTM D5185m		0		
Silver	ppm	ASTM D5185m	>3	0		
Aluminum	ppm	ASTM D5185m	>20	13		
Lead	ppm	ASTM D5185m	>40	5		
Copper	ppm	ASTM D5185m	>330	1		
Tin	ppm	ASTM D5185m	>15	<1		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	8		
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	250 10	8 <1		
				-		
Barium	ppm ppm	ASTM D5185m	10	<1		
Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m	10	<1 68		
Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	10 100	<1 68 <1		
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450	<1 68 <1 1092		
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000	<1 68 <1 1092 1220		
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000 1150	<1 68 <1 1092 1220 1130		
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	10 100 450 3000 1150 1350	<1 68 <1 1092 1220 1130 1372	 	
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	10 100 450 3000 1150 1350 4250 limit/base	<1 68 <1 1092 1220 1130 1372 3532	 	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base	<1 68 <1 1092 1220 1130 1372 3532 current	 history1	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >158	<1 68 <1 1092 1220 1130 1372 3532 current 6	 history1 	 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >158	<1 68 <1 1092 1220 1130 1372 3532 current 6 2	 history1 	 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	<1 68 <1 1092 1220 1130 1372 3532 <u>current</u> 6 2 2	 history1 	 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base	<1 68 <1 1092 1220 1130 1372 3532 current 6 2 2 2 current	 history1 history1	 history2 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3	<1 68 <1 1092 1220 1130 1372 3532 current 6 2 2 2 current 1.2	 history1 history1 history1	 history2 history2 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20	<1 68 <1 1092 1220 1130 1372 3532 current 6 2 2 current 1.2 10.6	 history1 history1 history1	 history2 history2 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20 limit/base	<1 68 <1 1092 1220 1130 1372 3532 current 6 2 2 current 1.2 10.6 23.7 current	 history1 history1 history1	 history2 history2 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20 >30 limit/base	<1 68 <1 1092 1220 1130 1372 3532 <u>current</u> 6 2 2 <u>current</u> 1.2 10.6 23.7	 history1 history1 history1	 history2 history2 history2 history2



OIL ANALYSIS REPORT

FT-IR (Direct T	rend)		VISUAL		method	limit/base	current	history1	history2	
Oxidation			White Metal	scalar	*Visual	NONE	NONE			
Sulfation			Yellow Metal	scalar	*Visual	NONE	NONE			
E 25 - Abnormal			Precipitate	scalar	*Visual	NONE	NONE			
P 20-			Silt	scalar	*Visual	NONE	NONE			
15			Debris	scalar	*Visual	NONE	NONE			
10			Sand/Dirt	scalar	*Visual	NONE	NONE			
Mar1/24		Mar1/24	Appearance	scalar	*Visual	NORML	NORML			
Ma		Ma	Odor	scalar	*Visual	NORML	NORML			
Base Number			Emulsified Water	scalar	*Visual	>0.2	NEG			
14.0 T			Free Water	scalar	*Visual		NEG			
(12.0 (6)(10.0) (7)(10.0)			FLUID PROPER	TIES	method	limit/base	current	history1	history2	
Base E 8.0 -			Visc @ 100°C	cSt	ASTM D445	14.4	13.4			
4 Abnormal			GRAPHS							
4.0 4.0 2.0			Ferrous Alloys							
0.0			³⁵ T							
Mar1/24		NC 17	30 - chromium							
N N N N N N N N N N N N N N N N N N N		- M -	25 -							
Viscosity @ 10	ഘറ		20- E							
¹⁸ T			<u>ع</u> 15-							
17- Abnormal			10							
16- G			5							
ට 15 0015 Base 14										
10			Mar1/24			Mar1/24				
13 Abnormal			Ma			Ma				
11			Non-ferrous Meta	als						
Mar1/24		101-1	10 copper							
2		1 U	8 - Incompany lead							
			udd							
			4							
			Z							
			0							
			lar1/24			lar1/2				
			2	_		Z				
			Viscosity @ 100°	С			Base Number			
			17			14.0	Abnormal			
						12.0	Abnormal		-	
			16- 0			(0,110.0) HOX W W MARK HOX Base Mumuration Hox Base Market ALO	Base			
			0015 Base 5314			Bu 8.0	-			
			₹ ¹⁴				Abnormal			
			13 - Abnormal			* 4.0·				
			12-			2.0				
			11			0.0				
			Mar1/24			Mar1/24	Mar1/24		Mar1/24	
			2			2	2		2	
1		l ab c vet c ····	Maar Charles LOA		m Aura - 0-			1.011		
	4		: WearCheck USA - 50 : WC0705418	01 Madiso Rece		r, NC 27513 4 Apr 2024		1820 SHELTON	MISSION RD	
	ACCREDITED	Lab Number		Teste		5 Apr 2024			ENEVILLE, TN	
	Certificate L2367	Test Package				2		Contact: LON	NIE SONGER	
			contact Customer Ser are outside of the ISO						T:	
			ecifications are based				rule (JCGM 10)	3:2012)	F:	
		, sp			,			· · · · ·		

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