

OIL ANALYSIS REPORT

Area KANSAS 2000 GMC 1000-MD912

Diesel Engine

SHELL Rotella T5 15W-40 (--- 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.

NORMAL

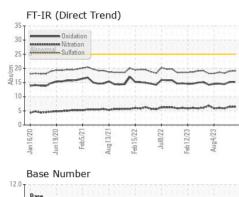


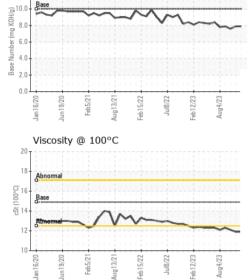
1020 hundron Eddard Augusta Ladara hundron

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0559209	WC0857194	WC0838595
Sample Date		Client Info		07 Mar 2024	05 Jan 2024	05 Oct 2023
Machine Age	mls	Client Info		317323	317277	317218
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	25	20	35
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	2	9
Lead	ppm	ASTM D5185m	>40	0	0	2
Copper	ppm	ASTM D5185m	>330	2	<1	8
Tin	ppm	ASTM D5185m	>15	<1	<1	1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 164	history1 187	history2 168
	ppm ppm		limit/base		· · · · ·	· · · · ·
Boron		ASTM D5185m	limit/base	164	187	168
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	164 0	187 0	168 12
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	164 0 73	187 0 77	168 12 71
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	164 0 73 <1	187 0 77 <1	168 12 71 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	164 0 73 <1 294	187 0 77 <1 322	168 12 71 <1 280
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	164 0 73 <1 294 1918	187 0 77 <1 322 1962	168 12 71 <1 280 1675
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	limit/base	164 0 73 <1 294 1918 1094	187 0 77 <1 322 1962 1180	168 12 71 <1 280 1675 1025
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	164 0 73 <1 294 1918 1094 1256	187 0 77 <1 322 1962 1180 1347	168 12 71 <1 280 1675 1025 1217
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	164 0 73 <1 294 1918 1094 1256 4023	187 0 777 <1 322 1962 1180 1347 4394	168 12 71 <1 280 1675 1025 1217 3435
Boron 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 ASTM D5185m	limit/base	164 0 73 <1 294 1918 1094 1256 4023 current	187 0 777 <1 322 1962 1180 1347 4394 history1	168 12 71 <1 280 1675 1025 1217 3435 history2
Boron 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 method ASTM D5185m	limit/base	164 0 73 <1 294 1918 1094 1256 4023 current 5	187 0 777 <1 322 1962 1180 1347 4394 history1 5	168 12 71 <1 280 1675 1025 1217 3435 history2 6
Boron 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 ASTM D5185m method ASTM D5185m	limit/base >25	164 0 73 <1 294 1918 1094 1256 4023 <u>current</u> 5 1	187 0 777 <1 322 1962 1180 1347 4394 history1 5 2	168 12 71 <1 280 1675 1025 1217 3435 history2 6 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20	164 0 73 <1 294 1918 1094 1256 4023 current 5 1 1 <1	187 0 777 <1 322 1962 1180 1347 4394 history1 5 2 2 0	168 12 71 <1 280 1675 1025 1217 3435 history2 6 2 2
Boron 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	limit/base >25 >20 limit/base	164 0 73 <1 294 1918 1094 1256 4023 current 5 1 <1 <1	187 0 777 <1 322 1962 1180 1347 4394 history1 5 2 0 0 history1	168 12 71 <1 280 1675 1025 1217 3435 history2 6 2 2 2
Boron 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	limit/base >25 >20 limit/base >3	164 0 73 <1 294 1918 1094 1256 4023 <i>current</i> 5 1 <1 <1 <i>current</i> 0.4	187 0 777 <1 322 1962 1180 1347 4394 history1 5 2 2 0 history1 0.4	168 12 71 <1 280 1675 1025 1217 3435 history2 6 2 2 2 history2 0.3
Boron 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	limit/base >25 >20 limit/base >3 >20	164 0 73 <1 294 1918 1094 1256 4023 <i>current</i> 5 1 <1 <1 <i>current</i> 0.4 6.4	187 0 77 <1 322 1962 1180 1347 4394 history1 5 2 0 history1 0.4 6.4	168 12 71 <1 280 1675 1025 1217 3435 history2 6 2 2 history2 0.3 5.9
Boron 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 D5185m	limit/base >25 >20 limit/base >3 >20 >3	164 0 73 <1 294 1918 1094 1256 4023 current 5 1 <1 <1 <1 current 0.4 6.4 19.1	187 0 777 <1 322 1962 1180 1347 4394 history1 5 2 0 history1 0.4 6.4 19.0	168 12 71 <1 280 1675 1025 1217 3435 history2 6 2 2 history2 0.3 5.9 18.3
Boron 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 D7615	limit/base >25 >20 limit/base >3 >20 >30 >30	164 0 73 <1 294 1918 1094 1256 4023 <i>current</i> 5 1 <1 <1 <i>current</i> 0.4 6.4 19.1	187 0 777 <1 322 1962 1180 1347 4394 history1 5 2 0 history1 0.4 6.4 19.0 history1	168 12 71 <1 280 1675 1025 1217 3435 history2 6 2 2 history2 0.3 5.9 18.3 history2

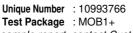


OIL ANALYSIS REPORT





	VISUAL		method	limit/base	current	history1	history2				
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE				
0.000.000	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				
and any divertify the stand stress	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE				
/23 -	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML				
Feb12/23 Aug4/23	Odor	scalar	*Visual	NORML	NORML	NORML	NORML				
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG				
	Free Water	scalar	*Visual	20.L	NEG	NEG	NEG				
	FLUID PROPERT		method	limit/base	current	history1	history2				
~~~~	Visc @ 100°C	cSt	ASTM D445	14.9	11.9	11.9	12.1				
	GRAPHS										
	Iron (ppm)				Lead (ppm)						
	250 - Severe	1001010		100		120000000000000000000000000000000000000					
Feb12/23 Aug4/23	200 - Severe			80							
Feb	Abnormal			E 60	Abarrat						
	100 - 0			40							
111111				<u>~</u> 20			<b>^</b>				
		5/22	Jul8/22			ug13/21 eb15/22	2/23				
	Jan 16/20 Jun 19/20 Feb 5/21 Aug 13/21	Feb15/22	Jul8/22 Feb12/23	Rnt	Jan 16/20 Jun 19/20 Feb5/21	Aug 13/21 Feb 15/22 Jul8/22	Feb12/23 Aug4/23				
	Aluminum (ppm)				Chromium (pp	om)					
	⁵⁰ T 333335555555555555			50		100000000000000000000000000000000000000					
	40 - Severe			40							
	and a second sec			³⁰ 20							
Feb12/23 Aug4/23	B ₂₀ Abnormal			² 20	) - Abnormal						
A A	10			Λ 10							
	120 120 120 120 120	122	Jul8/22			ug13/21- eb15/22 - Jul8/22 -	/23				
	Jan 16/20 Jun 19/20 Feb 5/21 Aug 13/21	Feb15/22	Jul8/22 Feb12/23	- Brock	Jan 16/20 Jun 19/20 Feb5/21	Aug13/21 Feb15/22 Jul8/22	Feb 12/23 Aug 4/23				
	Copper (ppm)				Silicon (ppm)						
	400 Severe			80	Severe						
	300			60	• • • • • • • • • • • • • • • • • • •						
	툞 200			틆 40	)						
	100-			20	Abnormal						
	0										
	Jan 16/20 Jun 19/20 Feb5/21	Feb15/22 -	Jul8/22 - Feb12/23 -	3	Jan 16/20	Aug13/21 - Feb15/22 - Jul8/22 -	Feb 12/23 - Aug4/23 -				
	Jan1 Jun1 Fet Aug1	Feb1	Feb1	P	Jan1 Jun1 Fet	Aug 1 Feb 1 Jul	Feb1 Aug				
	Viscosity @ 100°C Base Number										
	20 18 Abnormal										
				(b) 10.0 HOX Bul 10.0 Bul 10.0		$\sim\sim\sim$	have				
	Base 3 14			19 6.0	)						
	Abnormal	~~	<u> </u>		1						
	10			0.0	) + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + +						
	Jan 16/20 Jun 19/20 Feb 5/21 Aug 13/21	Feb15/22	Jul8/22 - Feb12/23 -	2 1 2	Jan 16/20 Jun 19/20 Feb5/21	Aug 13/21 Feb 15/22 Jul8/22	Feb12/23 Aug4/23				
	Jan Jun Fe	Feb	JL Feb		Jan Jun Fe	Aug Feb	Feb				
Laboratory Sample No.	: WearCheck USA - 501 Madison Ave., Cary, NC 27513						TY DISPOSAL EASTERN AVE				
Lab Number	: WC0559209 Received : 23 Apr 2024 : 06158343 Tested : 24 Apr 2024						OMA CITY, OK				
	: 10993766	Diagr		Apr 2024 - W	les Davis	one in	US 73149				
Test Package					Contact: R	Contact: RICK SCHMIDT					



To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

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

Report Id: SEAOKL [WUSCAR] 06158343 (Generated: 04/24/2024 14:47:02) Rev: 1

Certificate L2367

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