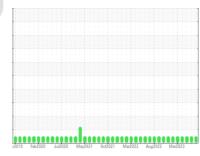


OIL ANALYSIS REPORT

KANSAS 2000 GMC 1000-MD912

Component **Diesel Engine**

SHELL Rotella T5 15W-40 (--- QTS)



Sample Rating Trend



Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

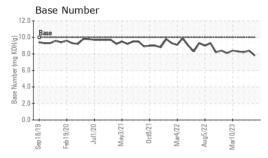
Fluid Condition

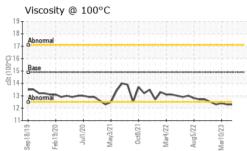
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0820382	WC0820383	WC0791749
Sample Date		Client Info		04 Aug 2023	14 Jul 2023	10 Jun 2023
Machine Age	mls	Client Info		316982	316980	316894
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	V	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	14	13	14
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	<1
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	2	2	<1
Lead	ppm	ASTM D5185m	>40	1	0	5
Copper	ppm	ASTM D5185m	>330	2	2	9
Tin	ppm	ASTM D5185m	>15	<1	0	1
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		0	0	<1
oddiniani	ρρ	710 1111 20 100111		U	O	
ADDITIVES	PP	method	limit/base	current	history1	history2
	ppm		limit/base			
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current	history1	history2 167
ADDITIVES Boron Barium	ppm	method ASTM D5185m ASTM D5185m	limit/base	current 187	history1 175 0	history2 167 2
ADDITIVES Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 187 0 73	history1 175 0 73	history2 167 2 70
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 187 0 73 <1	history1 175 0 73 <1	history2 167 2 70 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 187 0 73 <1 294	history1 175 0 73 <1 291	history2 167 2 70 <1 325
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 187 0 73 <1 294 1909	history1 175 0 73 <1 291 1925	history2 167 2 70 <1 325 1984
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current 187 0 73 <1 294 1909 1046	history1 175 0 73 <1 291 1925 1090	history2 167 2 70 <1 325 1984 1075
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current 187 0 73 <1 294 1909 1046 1244	history1 175 0 73 <1 291 1925 1090 1306	history2 167 2 70 <1 325 1984 1075 1309
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current 187 0 73 <1 294 1909 1046 1244 4113	history1 175 0 73 <1 291 1925 1090 1306 4347	history2 167 2 70 <1 325 1984 1075 1309 4209
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current 187 0 73 <1 294 1909 1046 1244 4113 current	history1 175 0 73 <1 291 1925 1090 1306 4347 history1	history2 167 2 70 <1 325 1984 1075 1309 4209 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current 187 0 73 <1 294 1909 1046 1244 4113 current 5	history1 175 0 73 <1 291 1925 1090 1306 4347 history1 4	history2 167 2 70 <1 325 1984 1075 1309 4209 history2 6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current 187 0 73 <1 294 1909 1046 1244 4113 current 5	history1 175 0 73 <1 291 1925 1090 1306 4347 history1 4	history2 167 2 70 <1 325 1984 1075 1309 4209 history2 6 3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base >25 >20 limit/base	current 187 0 73 <1 294 1909 1046 1244 4113 current 5 2 3	history1 175 0 73 <1 291 1925 1090 1306 4347 history1 4 2 <1	history2 167 2 70 <1 325 1984 1075 1309 4209 history2 6 3 <1
ADDITIVES 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	method ASTM D5185m	limit/base >25 >20 limit/base >3	current 187 0 73 <1 294 1909 1046 1244 4113 current 5 2 3 current	history1 175 0 73 <1 291 1925 1090 1306 4347 history1 4 2 <1	history2 167 2 70 <1 325 1984 1075 1309 4209 history2 6 3 <1
ADDITIVES 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 ppm	method ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3	current 187 0 73 <1 294 1909 1046 1244 4113 current 5 2 3 current 0.3	history1 175 0 73 <1 291 1925 1090 1306 4347 history1 4 2 <1 history1 0.3	history2 167 2 70 <1 325 1984 1075 1309 4209 history2 6 3 <1 history2 0.3
ADDITIVES 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	method ASTM D5185m method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20	current 187 0 73 <1 294 1909 1046 1244 4113 current 5 2 3 current 0.3 5.9	history1 175 0 73 <1 291 1925 1090 1306 4347 history1 4 2 <1 history1 0.3 6.8	history2 167 2 70 <1 325 1984 1075 1309 4209 history2 6 3 <1 history2 0.3 6.1
ADDITIVES 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	method ASTM D5185m method *ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	limit/base >25 >20 limit/base >3 >20 >30	current 187 0 73 <1 294 1909 1046 1244 4113 current 5 2 3 current 0.3 5.9 18.2	history1 175 0 73 <1 291 1925 1090 1306 4347 history1 4 2 <1 history1 0.3 6.8 18.2	history2 167 2 70 <1 325 1984 1075 1309 4209 history2 6 3 <1 history2 0.3 6.1 19.2



OIL ANALYSIS REPORT

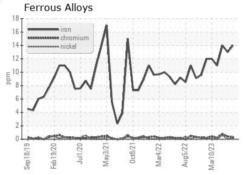


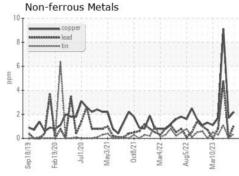


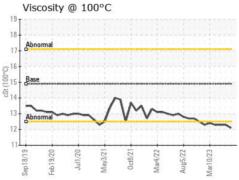
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

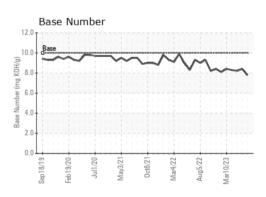
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	14.9	12.1	12.3	12.3

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : FLEET

: WC0820382 : 05931342 : 10616613

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

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 22 Aug 2023 Diagnosed : 23 Aug 2023

Diagnostician : Wes Davis

OKLAHOMA CITY, OK

Contact: RICK SCHMIDT r.schmidt@ldi89.com

T: F:

LIBERTY DISPOSAL

6401 S EASTERN AVE

* - 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) US 73149