

OIL ANALYSIS REPORT

OKLAHOMA CITY 2018 FREIGHTLINER 7729

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.

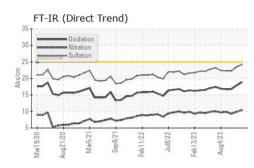


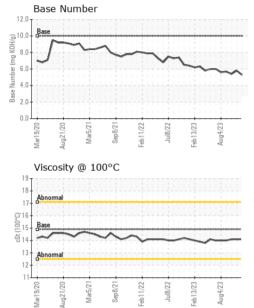
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SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0857192	WC0838590	WC0838593
Sample Date		Client Info		05 Jan 2024	03 Nov 2023	05 Oct 2023
Machine Age	hrs	Client Info		3135	2524	3474
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	N	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<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	>65	32	25	27
Chromium	ppm	ASTM D5185m	>5	4	4	4
Nickel	ppm	ASTM D5185m	>3	0	0	<1
Titanium	ppm	ASTM D5185m	>5	0	<1	<1
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m		16	13	13
Lead	ppm	ASTM D5185m		0	<1	<1
Copper	ppm	ASTM D5185m		35	33	32
Tin	ppm	ASTM D5185m		4	4	4
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current	history1 73	history2 76
	ppm ppm		limit/base			
Boron Barium	ppm	ASTM D5185m	limit/base	60	73	76
Boron		ASTM D5185m ASTM D5185m	limit/base	60 0	73 0	76 12
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	60 0 83	73 0 73	76 12 76
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	60 0 83 1	73 0 73 <1	76 12 76 <1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	60 0 83 1 258	73 0 73 <1 214	76 12 76 <1 237
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	60 0 83 1 258 2060	73 0 73 <1 214 1891	76 12 76 <1 237 1781
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	60 0 83 1 258 2060 1120	73 0 73 <1 214 1891 927	76 12 76 <1 237 1781 959
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	60 0 83 1 258 2060 1120 1397	73 0 73 <1 214 1891 927 1282	76 12 76 <1 237 1781 959 1247
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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		60 0 83 1 258 2060 1120 1397 3679	73 0 73 <1 214 1891 927 1282 2895	76 12 76 <1 237 1781 959 1247 2893
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	60 0 83 1 258 2060 1120 1397 3679 current	73 0 73 <1 214 1891 927 1282 2895 history1	76 12 76 <1 237 1781 959 1247 2893 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	60 0 83 1 258 2060 1120 1397 3679 current 5	73 0 73 <1 214 1891 927 1282 2895 history1 5	76 12 76 <1 237 1781 959 1247 2893 history2 5
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 ASTM D5185m	limit/base	60 0 83 1 258 2060 1120 1397 3679 <u>current</u> 5 2	73 0 73 <1 214 1891 927 1282 2895 history1 5 2	76 12 76 <1 237 1781 959 1247 2893 history2 5 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 >15 >20	60 0 83 1 258 2060 1120 1397 3679 current 5 2 2 25	73 0 73 <1 214 1891 927 1282 2895 history1 5 2 2 20	76 12 76 <1 237 1781 959 1247 2893 history2 5 2 2 22
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >15 >20 limit/base	60 0 83 1 258 2060 1120 1397 3679 current 5 2 2 25 current 0.7	73 0 73 <1 214 1891 927 1282 2895 history1 5 2 20 history1 0.7	76 12 76 <1 237 1781 959 1247 2893 history2 5 2 2 22 history2
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	ASTM D5185m ASTM D5185m	limit/base >15 >20 limit/base >3	60 0 83 1 258 2060 1120 1397 3679 current 5 2 2 25 current	73 0 73 <1 214 1891 927 1282 2895 history1 5 2 20 history1	76 12 76 <1 237 1781 959 1247 2893 history2 5 2 22 22 history2 0.6
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 >15 >20 limit/base >3 >20	60 0 83 1 258 2060 1120 1397 3679 <i>current</i> 5 2 25 25 <i>current</i> 0.7 10.4	73 0 73 <1 214 1891 927 1282 2895 history1 5 2 20 history1 0.7 9.9	76 12 76 <1 237 1781 959 1247 2893 history2 5 2 2 22 history2 0.6 9.3
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 >15 >20 limit/base >3 >20 >30 limit/base	60 0 83 1 258 2060 1120 1397 3679 Current 5 2 25 Current 0.7 10.4 24.2 Current	73 0 73 214 1891 927 1282 2895 history1 5 2 20 history1 0.7 9.9 23.5 history1	76 12 76 <1 237 1781 959 1247 2893 history2 5 2 22 22 history2 0.6 9.3 22.3
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 D5185m	limit/base >15 >20 limit/base >3 >20 >30	60 0 83 1 258 2060 1120 1397 3679 current 5 2 2 25 current 0.7 10.4 24.2	73 0 73 <1 214 1891 927 1282 2895 history1 5 2 20 history1 0.7 9.9 23.5	76 12 76 <1 237 1781 959 1247 2893 history2 5 2 22 22 history2 0.6 9.3 22.3 history2



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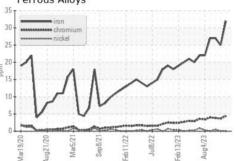


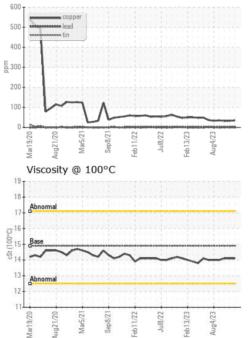


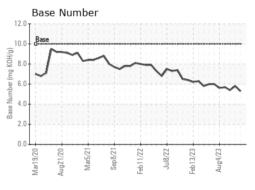
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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 PROPERT	TIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.9	14.1	14.1	14.1
CDADUS						

Ferrous Alloys

Non-ferrous Metals







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 LIBERTY DISPOSAL Sample No. : WC0857192 Received : 15 Apr 2024 6401 S EASTERN AVE Lab Number : 06149357 Tested : 16 Apr 2024 OKLAHOMA CITY, OK Unique Number : 10979435 Diagnosed : 17 Apr 2024 - Don Baldridge US 73149 Test Package : FLEET Contact: RICK SCHMIDT Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. r.schmidt@ldi89.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

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Contact/Location: RICK SCHMIDT - SEAOKL

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