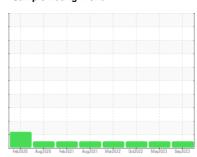


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id 109359 Component

Diesel Engine

SHELL ROTELLA T 15W40 (--- 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

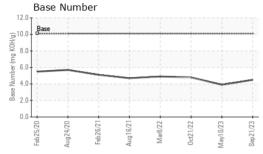
Fluid Condition

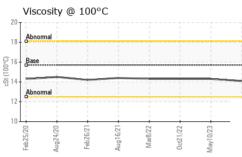
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		Feb 2020 A	lug2020 Feb2021 Aug20	21 Mar2022 Oct2022 May2023	Sep2023	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		IL0032720	IL0027548	IL0027739
Sample Date		Client Info		21 Sep 2023	10 May 2023	21 Oct 2022
Machine Age	mls	Client Info		350793	317966	280145
Oil Age	mls	Client Info		32827	37821	37848
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATIO	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	29	40	39
Chromium	ppm	ASTM D5185m	>20	1	1	2
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	10	1	9
Lead	ppm	ASTM D5185m	>40	9	10	14
Copper	ppm	ASTM D5185m	>330	1	2	2
Tin	ppm	ASTM D5185m	>15	<1	<1	1
Vanadium	ppm	ASTM D5185m		0	0	<1
O = al == 1:=		A OTA A DE LOS		_		
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES	ppm	method	limit/base	current	0 history1	0 history2
	ppm		limit/base	-		
ADDITIVES		method	316	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	316	current 27	history1 26	history2 29
ADDITIVES Boron Barium	ppm	method ASTM D5185m ASTM D5185m	316 0.0	current 27 2	history1 26 0	history2 29
ADDITIVES Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0	current 27 2 32	history1 26 0 64	history2 29 0 43
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2	current 27 2 32 <1	history1 26 0 64 <1	history2 29 0 43 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2	current 27 2 32 <1 204	history1 26 0 64 <1 40	history2 29 0 43 <1 42
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	method ASTM D5185m	316 0.0 1.2 24 2292 1064 1160	current 27 2 32 <1 204 2072	history1 26 0 64 <1 40 2267	history2 29 0 43 <1 42 2386
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m	316 0.0 1.2 24 2292 1064 1160	current 27 2 32 <1 204 2072 1020	history1 26 0 64 <1 40 2267 968	history2 29 0 43 <1 42 2386 974
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	316 0.0 1.2 24 2292 1064 1160	current 27 2 32 <1 204 2072 1020 1260	history1 26 0 64 <1 40 2267 968 1265	history2 29 0 43 <1 42 2386 974 1223
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996	current 27 2 32 <1 204 2072 1020 1260 3143	history1 26 0 64 <1 40 2267 968 1265 3799	history2 29 0 43 <1 42 2386 974 1223 3980
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996	current 27 2 32 <1 204 2072 1020 1260 3143 current	history1 26 0 64 <1 40 2267 968 1265 3799 history1	history2 29 0 43 <1 42 2386 974 1223 3980 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	316 0.0 1.2 24 2292 1064 1160 4996	current 27 2 32 <1 204 2072 1020 1260 3143 current 6	history1 26 0 64 <1 40 2267 968 1265 3799 history1 6	history2 29 0 43 <1 42 2386 974 1223 3980 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	316 0.0 1.2 24 2292 1064 1160 4996 limit/base	current 27 2 32 <1 204 2072 1020 1260 3143 current 6 3 22 current	history1 26 0 64 <1 40 2267 968 1265 3799 history1 6 3	history2 29 0 43 <1 42 2386 974 1223 3980 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	316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25	current 27 2 32 <1 204 2072 1020 1260 3143 current 6 3 22	history1 26 0 64 <1 40 2267 968 1265 3799 history1 6 3 10	history2 29 0 43 <1 42 2386 974 1223 3980 history2 6 3 16
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	316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20	current 27 2 32 <1 204 2072 1020 1260 3143 current 6 3 22 current	history1 26 0 64 <1 40 2267 968 1265 3799 history1 6 3 10	history2 29 0 43 <1 42 2386 974 1223 3980 history2 6 3 16 history2
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 ASTM D5185m method	316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20	current 27 2 32 <1 204 2072 1020 1260 3143 current 6 3 22 current 0.6	history1 26 0 64 <1 40 2267 968 1265 3799 history1 6 3 10 history1 0.7	history2 29 0 43 <1 42 2386 974 1223 3980 history2 6 3 16 history2 0.8
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	316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20	current 27 2 32 <1 204 2072 1020 1260 3143 current 6 3 22 current 0.6 11.6	history1 26 0 64 <1 40 2267 968 1265 3799 history1 6 3 10 history1 0.7 12.5	history2 29 0 43 <1 42 2386 974 1223 3980 history2 6 3 16 history2 0.8 13.4
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	316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20 limit/base >3 >20 >30	current 27 2 32 <1 204 2072 1020 1260 3143 current 6 3 22 current 0.6 11.6 27.8	history1 26 0 64 <1 40 2267 968 1265 3799 history1 6 3 10 history1 0.7 12.5 30.1	history2 29 0 43 <1 42 2386 974 1223 3980 history2 6 3 16 history2 0.8 13.4 32.5



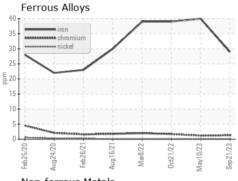
OIL ANALYSIS REPORT

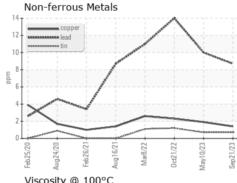


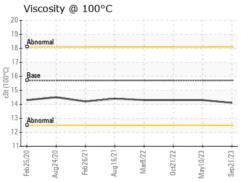


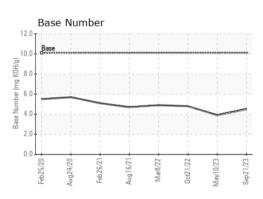
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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 PROPER	RTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.7	14.1	14.3	14.3













Certificate L2367

Laboratory Sample No. Lab Number

Unique Number : 10669912 Test Package : FLEET

: IL0032720 : 05963361

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

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 28 Sep 2023 Diagnosed : 29 Sep 2023 Diagnostician : Don Baldridge

GREEN BAY, WI US 54304 Contact: GARY KOLTZ gkoltz@pcitrucks.com T: (920)499-6200 F: (920)499-5332

611 HANSEN ROAD

IDEALEASE OF NORTHWEST WI

* - 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)