

## Machine Id INTERNATIONAL 107586 Component Diesel Engine

SHELL ROTELLA T 15W40 (--- QTS)

SHELL NOTELLA T 15W40 ( Q15)							
RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Resample at the next service interval to monitor.	Sample Number		Client Info		IL0033017	IL0032744	IL0027492
	Sample Date		Client Info		19 Apr 2024	11 Oct 2023	27 Jun 2023
	Machine Age	mls	Client Info		484797	452373	420246
	Oil Age	mls	Client Info		32424	32127	34370
	Filter Age	mls	Client Info		32424	32127	34370
	Oil Changed		Client Info		Changed	Changed	Changed
	Filter Changed		Client Info		Changed	Changed	Changed
	Sample Status				NORMAL	NORMAL	NORMAL
WEAR	Iron	ppm	ASTM D5185m	>100	31	16	26
	Chromium	ppm	ASTM D5185m	>20	1	1	1
All component wear rates are normal.	Nickel	ppm	ASTM D5185m	>4	0	<1	0
	Titanium	ppm	ASTM D5185m		0	<1	<1
	Silver	ppm	ASTM D5185m	>3	0	0	0
	Aluminum	ppm	ASTM D5185m	>20	4	4	2
	Lead	ppm	ASTM D5185m		0	<1	2
	Copper	ppm	ASTM D5185m		1	2	3
	Tin	ppm	ASTM D5185m	>15	0	0	0
	Vanadium	ppm	ASTM D5185m		0	0	0
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
CONTAMINATION	Silicon	ppm	ASTM D5185m	>25	8	9	9
There is no indication of any contamination in the oil.	Potassium	ppm	ASTM D5185m	>20	6	10	5
	Fuel		WC Method	>2.0	<1.0	<1.0	<1.0
	Water		WC Method	>0.2	NEG	NEG	NEG
	Glycol		WC Method		NEG	NEG	NEG
	Soot %	%	*ASTM D7844		1.3	1	1.5
	Nitration	Abs/cm	*ASTM D7624	>20	11.5	10.0	12.0
	Sulfation	Abs/.1mm	*ASTM D7415		26.3	24.1	26.3
	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
	Sand/Dirt	scalar	*Visual *Visual	NONE NORML	NONE NORML	NONE NORML	NONE NORML
	Appearance Odor	scalar scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water		*Visual	>0.2	NEG	NEG	NEG
			100001	20.L		NLG	
FLUID CONDITION	Sodium	ppm	ASTM D5185m		4	<1	5
The BN result indicates that there is suitable alkalinity remaining in the	Boron	ppm	ASTM D5185m		21	20	16
oil. The condition of the oil is suitable for further service.	Barium	ppm	ASTM D5185m	0.0	0	0	12
	Molybdenum	ppm	ASTM D5185m	1.2	37	30	85
	Manganese	ppm	ASTM D5185m	0.4	<1	0	<1
	Magnesium	ppm	ASTM D5185m		356	190	48
	Calcium	ppm	ASTM D5185m		2132	1809	1931
	Phosphorus	ppm	ASTM D5185m		1051	869	886
	Zinc	ppm	ASTM D5185m		1338	1057	1103
	Sulfur	ppm	ASTM D5185m		3885	3097	3790
	Oxidation	Abs/.1mm	*ASTM D7414	>25	21.2	19.1	19.5

Base Number (BN) mg KOH/g ASTM D2896 10.1

ASTM D445 15.7

Visc @ 100°C cSt

5.8

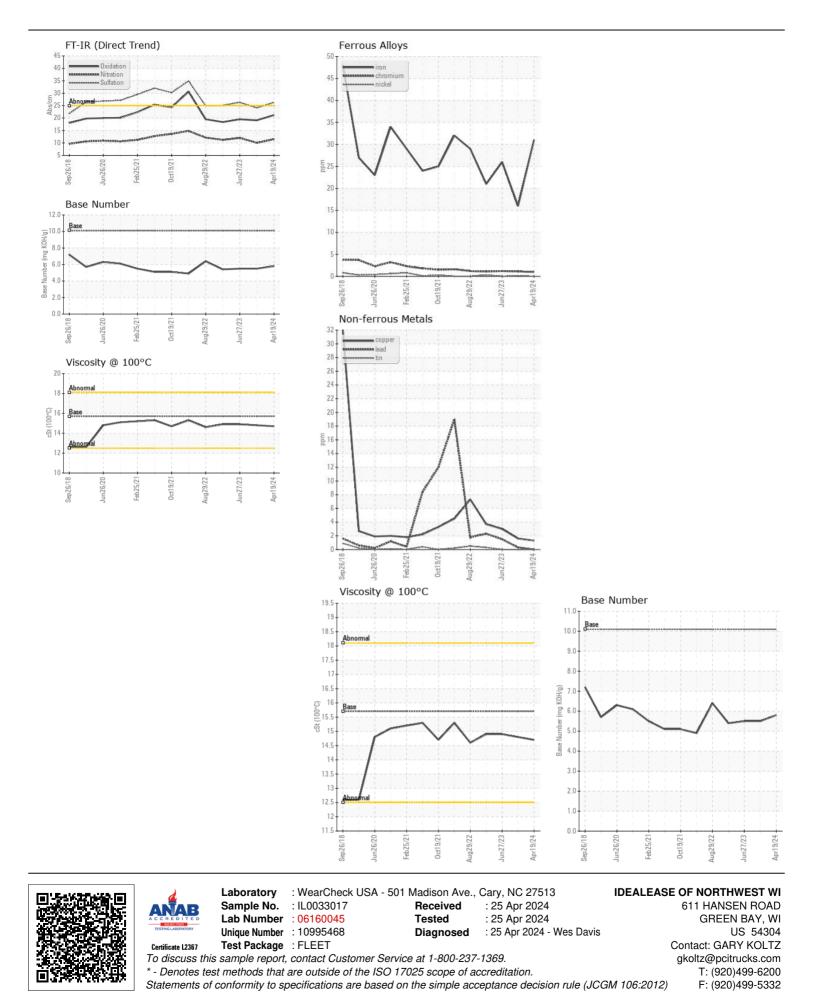
14.7

5.5

14.8

5.5

14.9



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Contact/Location: GARY KOLTZ - IDEGREWI Page 2 of 2