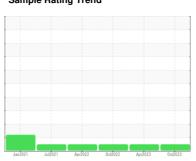


## **OIL ANALYSIS REPORT**

### Sample Rating Trend







# INTERNATIONAL 112156

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

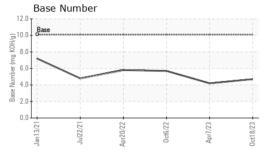
#### **Fluid Condition**

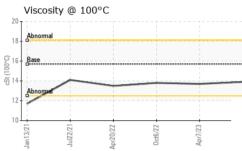
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		Jan 2021	Jul2021 Apr2022	Oct2022 Apr2023	0ct2023	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		IL0032762	IL0027573	IL0027757
Sample Date		Client Info		18 Oct 2023	07 Apr 2023	06 Oct 2022
Machine Age	mls	Client Info		196130	161320	130663
Oil Age	mls	Client Info		34810	30657	27020
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	18	18	16
Chromium	ppm	ASTM D5185m	>20	<1	2	2
Nickel	ppm	ASTM D5185m	>2	0	0	1
Titanium	ppm	ASTM D5185m	>2	<1	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	3	1	10
Lead	ppm	ASTM D5185m	>40	7	9	2
Copper	ppm	ASTM D5185m	>330	1	1	2
Tin	ppm	ASTM D5185m	>15	2	1	1
Vanadium	ppm	ASTM D5185m		0	0	1
Cadmium	ppm	ASTM D5185m		0	0	<1
ADDITIVES	ppm	ASTM D5185m method	limit/base	<b>o</b> current	0 history1	<1 history2
	ppm		limit/base			
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	316	current 34	history1 27	history2 23
ADDITIVES Boron Barium	ppm	method ASTM D5185m ASTM D5185m	316 0.0	current 34 20	history1 27 0	history2 23 0
ADDITIVES Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0	current 34 20 34	history1 27 0 88	history2 23 0 83
ADDITIVES  Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2	current 34 20 34 <1	history1 27 0 88 <1	history2 23 0 83
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 34 20 34 <1 109	history1 27 0 88 <1 37	history2 23 0 83 1 75
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	current  34  20  34  <1  109  1894	history1  27  0  88  <1  37  2108  943  1181	history2 23 0 83 1 75 2157
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	current  34  20  34  <1  109  1894  897	history1  27  0  88  <1  37  2108  943	history2 23 0 83 1 75 2157 986
ADDITIVES  Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185m	316 0.0 1.2 24 2292 1064 1160	current  34  20  34  <1  109  1894  897  1100	history1  27  0  88  <1  37  2108  943  1181  3252  history1	history2  23  0  83  1  75  2157  986  1222
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  34 20 34 <1 109 1894 897 1100 3986  current 5	history1  27  0  88  <1  37  2108  943  1181  3252	history2  23  0  83  1  75  2157  986  1222  3769  history2  8
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  34 20 34 <1 109 1894 897 1100 3986 current	history1  27  0  88  <1  37  2108  943  1181  3252  history1	history2  23  0  83  1  75  2157  986  1222  3769  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  34 20 34 <1 109 1894 897 1100 3986  current 5	history1  27  0  88  <1  37  2108  943  1181  3252  history1  5	history2  23  0  83  1  75  2157  986  1222  3769  history2  8
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 >25	current  34  20  34  <1  109  1894  897  1100  3986  current  5  7	history1 27 0 88 <1 37 2108 943 1181 3252 history1 5	history2 23 0 83 1 75 2157 986 1222 3769 history2 8 7
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  34  20  34  <1  109  1894  897  1100  3986  current  5  7  11	history1  27  0  88  <1  37  2108  943  1181  3252  history1  5  2  6	history2  23  0  83  1  75  2157  986  1222  3769  history2  8  7  11
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	316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25	current  34 20 34 <1 109 1894 897 1100 3986 current 5 7 11 current	history1  27  0  88  <1  37  2108  943  1181  3252  history1  5  2  6  history1	history2 23 0 83 1 75 2157 986 1222 3769 history2 8 7 11 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	316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20 limit/base >6	current  34 20 34 <1 109 1894 897 1100 3986 current  5 7 11 current 0.4	history1  27  0  88  <1  37  2108  943  1181  3252  history1  5  2  6  history1  0.4	history2  23  0 83  1 75  2157  986  1222  3769  history2  8  7  11  history2  0.4
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	316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20 limit/base	current  34 20 34 <1 109 1894 897 1100 3986  current 5 7 11  current 0.4 10.0	history1  27  0  88  <1  37  2108  943  1181  3252  history1  5  2  6  history1  0.4  9.4	history2 23 0 83 1 75 2157 986 1222 3769 history2 8 7 11 history2 0.4 11.1
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 D5185m ASTM D5185m  *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  *ASTM D7844  *ASTM D7624  *ASTM D7415	316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20 limit/base >6 >20 >30	current  34 20 34 <1 109 1894 897 1100 3986 current  5 7 11 current 0.4 10.0 24.6	history1  27  0  88  <1  37  2108  943  1181  3252  history1  5  2  6  history1  0.4  9.4  20.8	history2  23  0  83  1  75  2157  986  1222  3769  history2  8  7  11  history2  0.4  11.1  24.8



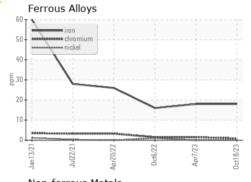
## **OIL ANALYSIS REPORT**

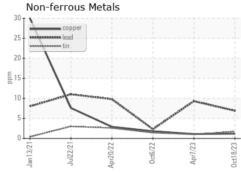


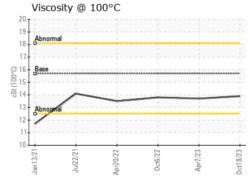


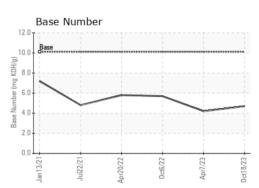
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.7	13.9	13.7	13.8













Certificate L2367

Laboratory Sample No. Lab Number

**Unique Number** Test Package : FLEET

: IL0032762 : 05994000 : 10722360

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 31 Oct 2023 Diagnosed : 01 Nov 2023 Diagnostician : Don Baldridge

**IDEALEASE OF NORTHWEST WI** 

611 HANSEN ROAD GREEN BAY, WI US 54304 Contact: GARY KOLTZ

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F: (920)499-5332

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)