PROBLEM SUMMARY



Machine Id **21258P** Component **Diesel Engine** Fluid SHELL ROTELLA T 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample.

PROBLEMATIC TEST RESULTS								
Sample Status				SEVERE	NORMAL	NORMAL		
Boron	ppm	ASTM D5185m	316	<u> </u>	8	21		
Molybdenum	ppm	ASTM D5185m	1.2	<u> </u>	57	59		
Sodium	ppm	ASTM D5185m		<u> </u>	2	4		
Potassium	ppm	ASTM D5185m	>20	A 2350	4	6		
Glycol	%	*ASTM D2982		0.20	NEG	NEG		
Giycol	70	A3 1 WI D2902		0.20	NEG	NEG		

Customer Id: PGTTRUCK Sample No.: WC0725708 Lab Number: 05903666 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data: Wes Davis +1 905-569-8600 x223 wesd@wearcheck.ca

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

RECOMMENDED A	CTIONS			
Action	Status	Date	Done By	Description
Change Fluid			?	We recommend that you drain the oil from the component if this has not already been done.
Flush System			?	We advise that you flush the component thoroughly before re-filling with oil.
Resample			?	We recommend an early resample to monitor this condition.
Information Required			?	Please specify the component make and model with your next sample.
Check Fluid Source			?	Confirm the source of the lubricant being utilized for top-up/fill.
Check Glycol Access			?	We advise that you check for the source of the coolant leak.

HISTORICAL DIAGNOSIS

20 Jun 2022 Diag: Don Baldridge



NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

02 Ma

02 Mar 2022 Diag: Don Baldridge



Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

17 Sep 2021 Diag: Don Baldridge

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.









OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id **21258P** Component **Diesel Engine** Fluid SHELL ROTELLA T 15W40 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample.

Wear

All component wear rates are normal.

Contamination

Test for glycol is positive. There is a high concentration of glycol present in the oil.

Fluid Condition

Additive levels indicate the addition of a different brand, or type of oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORM	1ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0725708	WC0697378	WC0646496
Sample Date		Client Info		19 Jul 2023	20 Jun 2022	02 Mar 2022
Machine Age	mls	Client Info		0	159565	0
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				SEVERE	NORMAL	NORMAL
CONTAMINATION	١	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	39	18	27
Chromium	ppm	ASTM D5185m	>20	3	2	2
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	5	4	5
Lead	ppm	ASTM D5185m	>40	4	4	13
Copper	ppm	ASTM D5185m	>330	2	1	2
Tin	ppm	ASTM D5185m	>15	<1	1	1
Antimony	ppm	ASTM D5185m				0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 316	current	history1 8	history2 21
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base 316 0.0	current 22 0	history1 8 0	history2 21 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	Method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 316 0.0 1.2	current ▲ 22 0 ▲ 204	history1 8 0 57	history2 21 0 59
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 316 0.0 1.2	current ▲ 22 0 ▲ 204 1	history1 8 0 57 <1	history2 21 0 59 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 316 0.0 1.2 24	Current ▲ 22 0 ▲ 204 1 425	history1 8 0 57 <1 883	history2 21 0 59 <1 778
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 316 0.0 1.2 24 2292	Current ▲ 22 0 ▲ 204 1 425 1636	history1 8 0 57 <1 883 1115	history2 21 0 59 <1 778 1192
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 316 0.0 1.2 24 2292 1064	Current ▲ 22 0 ▲ 204 1 425 1636 798	history1 8 0 57 <1 883 1115 878	history2 21 0 59 <1 778 1192 636
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 316 0.0 1.2 24 2292 1064 1160	Current ▲ 22 0 0 ▲ 204 1 425 1636 798 1225 1	history1 8 0 57 <1 883 1115 878 1153	history2 21 0 59 <1 778 1192 636 840
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 316 0.0 1.2 24 2292 1064 1160 4996	Current ▲ 22 0 ▲ 204 1 425 1636 798 1225 3898	history1 8 0 57 <1 883 1115 878 1153 2633	history2 21 0 59 <1 778 1192 636 840 1904
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 316 0.0 1.2 24 2292 1064 1160 4996 limit/base	current 22 0 204 1 425 1636 798 1225 3898	history1 8 0 57 <1 883 1115 878 1153 2633 history1	history2 21 0 59 <1 778 1192 636 840 1904 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25	current 22 0 204 1 425 1636 798 1225 3898 current 8	history1 8 0 57 <1 883 1115 878 1153 2633 history1 5	history2 21 0 59 <1 778 1192 636 840 1904 history2 7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 4 ppm 4 ppm 4	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25	Current ▲ 22 0 0 ▲ 204 1 425 1636 798 1225 3898 Current 8 ▲ 448	history1 8 0 57 <1 883 1115 878 1153 2633 history1 5 2	history2 21 0 59 <1 778 1192 636 840 1904 history2 7 4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base 316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25	Current ▲ 22 0 0 ▲ 204 1 425 1636 798 1225 3898 Current 8 ▲ 448 ▲ 2350	history1 8 0 57 <1 883 1115 878 1153 2633 history1 5 2 4	history2 21 0 59 <1 778 1192 636 840 1904 history2 7 4 6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 2 ppm 2 ppm 3 ppm 3 ppm 3 %	method ASTM D5185m ASTM D5185m	limit/base 316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20	Current 22 0 204 1 425 1636 798 1225 3898 Current 8 448 2350 0.20	history1 8 0 57 <1 883 1115 878 1153 2633 history1 5 2 4 NEG	history2 21 0 59 <1 778 1192 636 840 1904 history2 7 4 6 NEG
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 4	method ASTM D5185m ASTM D2982	limit/base 316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20 limit/base	current ▲ 22 0	history1 8 0 57 <1 883 1115 878 1153 2633 history1 5 2 4 NEG history1	history2 21 0 59 <1 778 1192 636 840 1904 history2 7 4 6 NEG history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 4 ppm 2 ppm 4 ppm 4 %	method ASTM D5185m	limit/base 316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20 limit/base >3	Current ● 22 0 0 ● 204 1 425 1636 798 1225 3898 Current 8 ● 448 ● 2350 ● 0.20 Current 0.7	history1 8 0 57 <1 883 1115 878 1153 2633 history1 5 2 4 NEG history1 0.5	history2 21 0 59 <1 778 1192 636 840 1904 history2 7 4 6 NEG history2 0.6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 4	method ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D7844 *ASTM D7844	limit/base 316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20 limit/base >3 >20	Current ● 22 0 0 ● 204 1 425 1636 798 1225 3898 Current 8 ● 2350 ● 0.20 Current 0.7 14.9 14.9	history1 8 0 57 <1 883 1115 878 1153 2633 history1 5 2 4 NEG history1 0.5 10.7	history2 21 0 59 <1 778 1192 636 840 1904 history2 7 4 6 NEG history2 0.6 14.6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624	limit/base 316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20 limit/base >3 >20 >30	Current ● 22 0 0 ● 204 1 425 1636 798 1225 3898 Current 8 ▲ 448 ▲ 2350 ● 0.20 Current 0.7 14.9 26.4	history1 8 0 57 <1 883 1115 878 1153 2633 history1 5 2 4 NEG history1 0.5 10.7 22.9	history2 21 0 59 <1 778 1192 636 840 1904 history2 7 4 6 NEG history2 0.6 14.6 29.2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20 limit/base >3 >20 >30	Current ● 22 0 0 ● 204 1 425 1636 798 1225 3898 Current 8 448 ● 2350 ● 0.20 Current 0.7 14.9 26.4 Current	history1 8 0 57 <1 883 1115 878 1153 2633 history1 5 2 4 NEG history1 0.5 10.7 22.9 history1	history2 21 0 59 <1 778 1192 636 840 1904 history2 7 4 6 NEG history2 0.6 14.6 29.2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m *ASTM D7842 *ASTM D7844 *ASTM D7415 method *ASTM D7414	limit/base 316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 	Current ● 22 0 0 ● 204 1 425 1636 798 1225 3898 Current 8 ▲ 448 ▲ 2350 ● 0.20 Current 0.7 14.9 26.4 22.1 22.1	history1 8 0 57 <1 883 1115 878 1153 2633 history1 5 2 4 NEG history1 0.5 10.7 22.9 history1 19.0	history2 21 0 59 <1 778 1192 636 840 1904 history2 7 4 6 NEG history2 0.6 14.6 29.2 history2 29.9



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
	IFS	method	limit/hase	current	history1	history2
T LOID T HOT LITT		method	inin/base	current	matory	matoryz
Visc @ 100°C	cSt	ASTM D445	15.7	13.7	13.2	12.6
СРАРИС						

Ferrous Alloys





Certificate L2367