

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id DT671 Component Diesel Engine Fluid PETRO CANADA DURON SHP 10W30 (39 mls)

### 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.

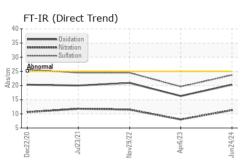
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0120545	PCA0074056	PCA0080429
Sample Date		Client Info		24 Jun 2024	06 Apr 2023	29 Nov 2022
Machine Age	mls	Client Info		193944	151483	139118
Oil Age	mls	Client Info		42461	12365	35085
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	25	8	27
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	17	6	9
Lead	ppm	ASTM D5185m	>45	0	0	0
Copper	ppm	ASTM D5185m	>85	<1	<1	2
Tin	ppm	ASTM D5185m	>4	<1	<1	<1
Antimony	ppm	ASTM D5185m				
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 2	current 6	history1 8	history2 1
	ppm ppm					
Boron		ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	6	8	1
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m	2 0 50	6 0	8	1 2
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	6 0 66	8 0 60	1 2 65 <1 963
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	6 0 66 <1	8 0 60 <1	1 2 65 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	6 0 66 <1 1021 1172 1110	8 0 60 <1 976 1130 1050	1 2 65 <1 963 1220 1079
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180	6 0 66 <1 1021 1172 1110 1397	8 0 60 <1 976 1130 1050 1306	1 2 65 <1 963 1220 1079 1306
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	2 0 50 0 950 1050 995	6 0 66 <1 1021 1172 1110	8 0 60 <1 976 1130 1050	1 2 65 <1 963 1220 1079
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180	6 0 66 <1 1021 1172 1110 1397	8 0 60 <1 976 1130 1050 1306	1 2 65 <1 963 1220 1079 1306
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	2 0 50 950 1050 995 1180 2600	6 0 66 <1 1021 1172 1110 1397 3332	8 0 60 <1 976 1130 1050 1306 3652	1 2 65 <1 963 1220 1079 1306 2737
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	2 0 50 950 1050 995 1180 2600	6 0 66 <1 1021 1172 1110 1397 3332 current	8 0 60 <1 976 1130 1050 1306 3652 history1	1 2 65 <1 963 1220 1079 1306 2737 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >30	6 0 66 <1 1021 1172 1110 1397 3332 current 6	8 0 60 <1 976 1130 1050 1306 3652 history1 4 1 8	1 2 65 <1 963 1220 1079 1306 2737 <b>history2</b> 5 0 24
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >30	6 0 66 <1 1021 1172 1110 1397 3332 current 6 1	8 0 60 <1 976 1130 1050 1306 3652 history1 4 1	1 2 65 <1 963 1220 1079 1306 2737 history2 5 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >30	6 0 66 <1 1021 1172 1110 1397 3332 <u>current</u> 6 1 23	8 0 60 <1 976 1130 1050 1306 3652 history1 4 1 8	1 2 65 <1 963 1220 1079 1306 2737 <b>history2</b> 5 0 24
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >30	6 0 66 <1 1021 1172 1110 1397 3332 current 6 1 23 NEG	8 0 60 <1 976 1130 1050 1306 3652 history1 4 1 8 NEG	1 2 65 <1 963 1220 1079 1306 2737 history2 5 0 24 NEG
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm %	ASTM D5185m ASTM D5185m *ASTM D2982	2 0 50 950 1050 995 1180 2600 limit/base >30 limit/base >20	6 0 66 <1 1021 1172 1110 1397 3332 current 6 1 23 NEG current	8 0 60 <1 976 1130 1050 1306 3652 history1 4 1 8 NEG NEG history1	1 2 65 <1 963 1220 1079 1306 2737 history2 5 0 24 NEG history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm %	ASTM D5185m ASTM D5185m *ASTM D2982 method	2 0 50 950 1050 995 1180 2600 limit/base >30 limit/base >20	6 0 66 <1 1021 1172 1110 1397 3332 current 6 1 23 NEG current 0.7	8 0 60 <1 976 1130 1050 1306 3652 history1 4 1 8 NEG history1 0.3	1 2 65 <1 963 1220 1079 1306 2737 history2 5 0 24 NEG history2 0.8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D2982 <b>method</b> *ASTM D7844 *ASTM D7824	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >30 >20 <b>limit/base</b> >3	6 0 66 <1 1021 1172 1110 1397 3332 current 6 1 23 NEG 23 NEG 0.7 11.3	8 0 60 <1 976 1130 1050 1306 3652 history1 4 1 8 NEG NEG history1 0.3 8.0	1 2 65 <1 963 1220 1079 1306 2737 history2 5 0 24 NEG 24 NEG history2 0.8 11.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D2982 <b>method</b> *ASTM D7844 *ASTM D7824	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >30 <b>imit/base</b> >20 <b>imit/base</b> >3	6 0 66 <1 1021 1172 1110 1397 3332 current 6 1 23 NEG current 0.7 11.3 23.7	8 0 60 <1 976 1130 1050 1306 3652 history1 4 1 8 NEG history1 0.3 8.0 19.6	1 2 65 <1 963 1220 1079 1306 2737 history2 5 0 24 NEG history2 0.8 11.5 24.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D2982 <b>method</b> *ASTM D7844 *ASTM D7844	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >30 <b>imit/base</b> >3 20 >30 imit/base	6 0 66 <1 1021 1172 1110 1397 3332 current 6 1 23 NEG 0.7 11.3 23.7 0.urrent	8 0 60 <1 976 1130 1050 1306 3652 history1 4 1 8 NEG history1 0.3 8.0 19.6 history1	1 2 65 <1 963 1220 1079 1306 2737 history2 5 0 24 NEG 24 NEG 0.8 11.5 24.5

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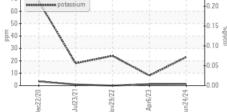
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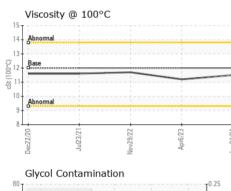


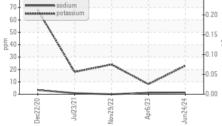
0.25



# Glycol Contamination







## **OIL ANALYSIS REPORT**

VISUAL		method				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
			11			
FLUID PROPE		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	11.5	11.2	11.7
GRAPHS						
Ferrous Alloys						
iron		1				
nickel		1				
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1.	Vov29/22	Apr6/23	Jun24/24			
Dec22/20	Nov29/22	Apr6/23	Jun24/24			
Dec22730 Dec22730 Non-ferrous Metal		Apr6/23	Jun24/24			
Non-ferrous Metal		Apr6/23	Jun24/24			
Non-ferrous Metal		Apr6/23	Jun24/24			
Non-ferrous Metal		Apr6/23	Jun24/24			
Non-ferrous Metal		Apr6/23	Jun24/24			
Non-ferrous Metal		Apr6/23	Jun24/24			
Non-ferrous Metal		Ap6/23	Jun24/24			
Non-ferrous Metal		Apr6/23	Jun2424			
Non-ferrous Metal	s					
Non-ferrous Metal	s					
Non-ferrous Metal		Apr6/23	Jun24/24			
Non-ferrous Metal	5			Base Number		
Non-ferrous Metal	5			Base Number		
Non-ferrous Metal	5		Jun24/24	Base Number		
Non-ferrous Metal	5		42742unn 627422unn 7.0			
Non-ferrous Metal	5		42742unn 627422unn 7.0			
Non-ferrous Metal	5		42742unn 627422unn 7.0			
Non-ferrous Metal	5		42742unn 627422unn 7.0			
Non-ferrous Metal	5		42/424 P2/424 8.0			
Non-ferrous Metal	5		42742unn 627422unn 7.0			
Non-ferrous Metal	S		8.0 7.0 (b(HOX bu) aqumN sec 8.0 7.0 4.0 8.0 8.0 8.0 8.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9		Nov23/22	Aprili23

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 NW WHITE & CO - GREER DIVISION Laboratory Sample No. : PCA0120545 Received : 28 Jun 2024 1060 ROGERS BRIDGE RD Lab Number : 06223121 Tested : 03 Jul 2024 DUNCAN, SC US 29334 Unique Number : 11101318 Diagnosed : 03 Jul 2024 - Jonathan Hester Test Package : FLEET ( Additional Tests: Glycol ) Contact: Matt Quinlan Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. mquinlan@nwwhite.com T: (864)905-8506 \* - 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) F:

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