

OIL ANALYSIS REPORT

Sample Rating Trend





Component Diesel Engine

Fluid PETRO CANADA DURON SHP 10W30 (--- GAL)

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.

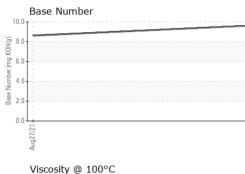
Fluid Condition

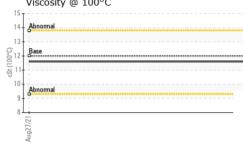
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

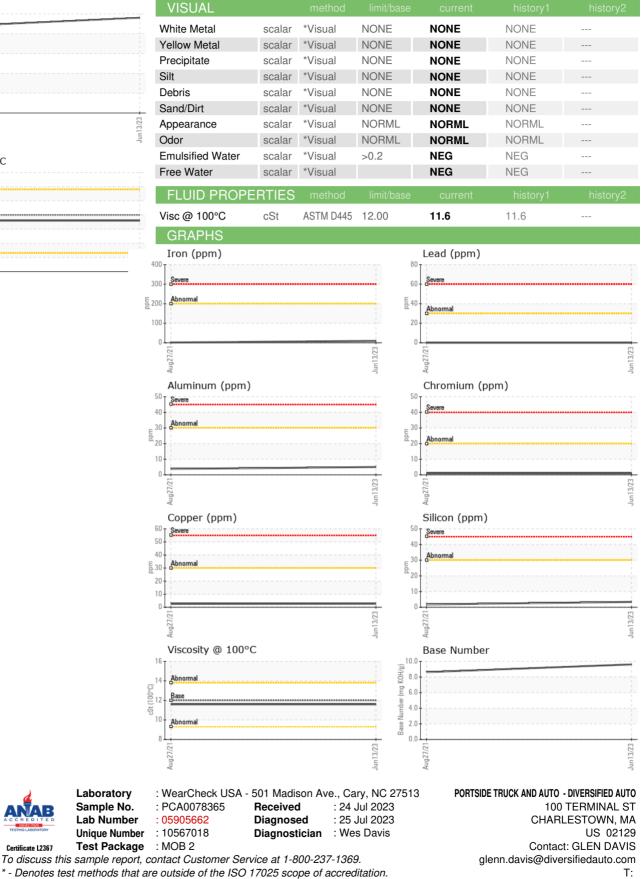
SAMPLE INFOR		mothod	limit/booo	ourropt	bioton/1	history?
	WATION		limit/base		history1	history2
Sample Number		Client Info		PCA0078365	WC0594320	
Sample Date		Client Info		13 Jun 2023	27 Aug 2021	
Machine Age	mls	Client Info		0	0	
Oil Age	mls	Client Info		0	264978	
Oil Changed		Client Info		N/A	N/A	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>200	10	1	
Chromium	ppm	ASTM D5185m	>20	1	1	
Nickel	ppm	ASTM D5185m	>2	<1	<1	
Titanium	ppm	ASTM D5185m	>2	1	<1	
Silver	ppm	ASTM D5185m	>2	0	<1	
Aluminum	ppm	ASTM D5185m	>30	5	4	
Lead	ppm	ASTM D5185m	>30	0	0	
Copper	ppm	ASTM D5185m	>30	3	3	
Tin	ppm	ASTM D5185m	>15	<1	0	
Antimony	ppm	ASTM D5185m			0	
Vanadium	ppm	ASTM D5185m		0	<1	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 7	history1 2	history2
	ppm ppm					
Boron		ASTM D5185m	2	7	2	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	7 <1	2 0	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	7 <1 65	2 0 58	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	7 <1 65 <1	2 0 58 <1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	7 <1 65 <1 1024	2 0 58 <1 949	
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	2 0 50 0 950 1050	7 <1 65 <1 1024 1196	2 0 58 <1 949 1095	
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	7 <1 65 <1 1024 1196 1105	2 0 58 <1 949 1095 993	
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	7 <1 65 <1 1024 1196 1105 1357	2 0 58 <1 949 1095 993 1207	
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	2 0 50 950 1050 995 1180 2600	7 <1 65 <1 1024 1196 1105 1357 3840	2 0 58 <1 949 1095 993 1207 2700	
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	2 0 50 950 1050 995 1180 2600	7 <1 65 <1 1024 1196 1105 1357 3840 current	2 0 58 <1 949 1095 993 1207 2700 history1	
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 ASTM D5185m	2 0 50 950 1050 995 1180 2600 Limit/base >30	7 <1 65 <1 1024 1196 1105 1357 3840 current 3	2 0 58 <1 949 1095 993 1207 2700 history1 2	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 Limit/base >30	7 <1 65 <1 1024 1196 1105 1357 3840 current 3 1 <1	2 0 58 <1 949 1095 993 1207 2700 history1 2 4	 history2
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	7 <1 65 <1 1024 1196 1105 1357 3840 current 3 1 <1	2 0 58 <1 949 1095 993 1207 2700 history1 2 4 3	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 Imit/base >30 -20 Imit/base	7 <1 65 <1 1024 1196 1105 1357 3840 current 3 1 <1 <1	2 0 58 <1 949 1095 993 1207 2700 history1 2 4 3 3 history1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >30 20 limit/base >33	7 <1 65 <1 1024 1196 1105 1357 3840 current 3 1 <1 <1 current 0.3	2 0 58 <1 949 1095 993 1207 2700 history1 2 4 3 <u>history1</u> 0.3	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>imit/base</i> >30 <i>imit/base</i> >20	7 <1 65 <1 1024 1196 1105 1357 3840 <u>current</u> 3 1 <1 <u>current</u> 0.3 7.9 18.8	2 0 58 <1 949 1095 993 1207 2700 history1 2 4 3 history1 0.3 8.7	history2 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >30 20 imit/base >3 >20 >3	7 <1 65 <1 1024 1196 1105 1357 3840 Current 3 1 <1 Current 0.3 7.9 18.8 Current	2 0 58 <1 949 1095 993 1207 2700 history1 2 4 3 5 history1 0.3 8.7 19.9	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	2 0 0 50 0 950 1050 995 1180 2600 imit/base >30 >20 >30 >20 >30 >30 >30	7 <1 65 <1 1024 1196 1105 1357 3840 <u>current</u> 3 1 <1 <u>current</u> 0.3 7.9 18.8	2 0 58 <1 949 1095 993 1207 2700 history1 2 4 3 history1 0.3 8.7 19.9 history1	 history2 history2 history2 history2



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Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Certificate L2367

Submitted By: MATTHEW PETROSINO

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