

OIL ANALYSIS REPORT

Sample Rating Trend





Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (--- QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

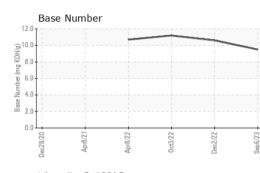
Fluid Condition

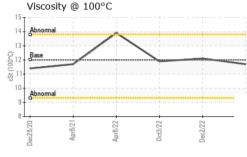
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

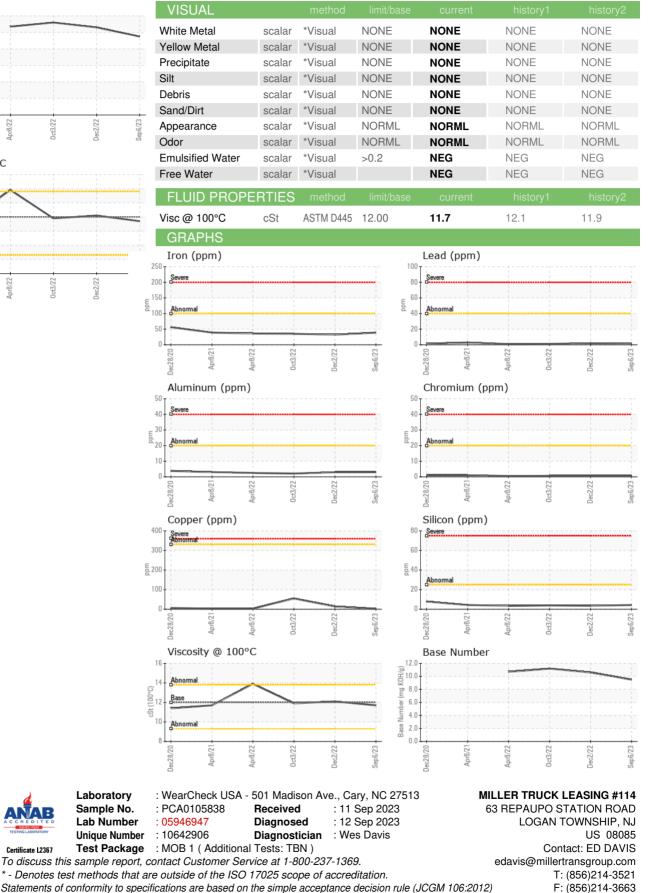
TS)		Dec2020	Apr2021 Apr2022	0ct2022 Dec2022	Sep 2023	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0105838	PCA0082555	PCA0079723
Sample Date		Client Info		06 Sep 2023	02 Dec 2022	03 Oct 2022
Machine Age	mls	Client Info		102102	74614	68692
Oil Age	mls	Client Info		8190	74614	5975
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
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	.S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	39	32	35
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	3	2
Lead	ppm	ASTM D5185m	>40	2	2	1
Copper	ppm	ASTM D5185m	>330	3	14	55
Tin	ppm	ASTM D5185m	>15	<1	1	1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
	ppm	method ASTM D5185m	limit/base 2	current 6	history1 16	history2 7
Boron	ppm ppm					
Boron Barium		ASTM D5185m	2	6	16	7
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0 50	6 0	16 0	7 0
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	6 0 60	16 0 66	7 0 63
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	6 0 60 1	16 0 66 <1	7 0 63 <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	6 0 60 1 918	16 0 66 <1 919	7 0 63 <1 898
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	6 0 60 1 918 1294	16 0 66 <1 919 1243	7 0 63 <1 898 1086
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 995	6 0 60 1 918 1294 1084	16 0 66 <1 919 1243 1029	7 0 63 <1 898 1086 964
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 0 950 1050 995 1180	6 0 60 1 918 1294 1084 1371	16 0 66 <1 919 1243 1029 1318	7 0 63 <1 898 1086 964 1165
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	6 0 60 1 918 1294 1084 1371 4039	16 0 66 <1 919 1243 1029 1318 3746	7 0 63 <1 898 1086 964 1165 3298
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	6 0 60 1 918 1294 1084 1371 4039 current	16 0 66 <1 919 1243 1029 1318 3746 history1	7 0 63 <1 898 1086 964 1165 3298 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ypm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	2 0 50 950 1050 995 1180 2600 Limit/base >25	6 0 60 1 918 1294 1084 1371 4039 current 4	16 0 66 <1 919 1243 1029 1318 3746 history1 4	7 0 63 <1 898 1086 964 1165 3298 history2 4
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 ASTM D5185m	2 0 50 950 1050 995 1180 2600 Limit/base >25	6 0 60 1 918 1294 1084 1371 4039 current 4 2	16 0 66 <1 919 1243 1029 1318 3746 history1 4 1	7 0 63 <1 898 1086 964 1165 3298 history2 4 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	6 0 60 1 918 1294 1084 1371 4039 current 4 2 2	16 0 66 <1 919 1243 1029 1318 3746 history1 4 1 0	7 0 63 <1 898 1086 964 1165 3298 history2 4 3 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm trs	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 -20 limit/base	6 0 60 1 918 1294 1084 1371 4039 current 4 2 2 2	16 0 66 <1 919 1243 1029 1318 3746 history1 4 1 0 0 history1	7 0 63 <1 898 1086 964 1165 3298 history2 4 3 0 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 ypm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3 >20	6 0 60 1 918 1294 1084 1371 4039 <u>current</u> 4 2 2 2 <u>current</u> 1.3	16 0 66 <1 919 1243 1029 1318 3746 history1 4 1 0 history1 1.6	7 0 63 <1 898 1086 964 1165 3298 history2 4 3 0 history2 1.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	<pre>ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm</pre>	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3 >20	6 0 60 1 918 1294 1084 1371 4039 current 4 2 2 2 current 1.3 10.1	16 0 66 <1 919 1243 1029 1318 3746 history1 4 1 0 history1 1.6 9.1	7 0 63 <1 898 1086 964 1165 3298 history2 4 3 0 history2 1.5 10.9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	<pre>ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm</pre>	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3 >20 >30	6 0 60 1 918 1294 1084 1371 4039 <u>current</u> 4 2 2 2 <u>current</u> 1.3 10.1 20.7	16 0 66 <1 919 1243 1029 1318 3746 history1 4 1 0 history1 1.6 9.1 21.1	7 0 63 <1 898 1086 964 1165 3298 history2 4 3 0 history2 1.5 1.5 10.9 23.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRA	ppm ppm ppm ppm ppm ppm ppm ppm ypm ppm p	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	2 0 50 0 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3 >20 >30	6 0 60 1 918 1294 1084 1371 4039 <i>current</i> 4 2 2 <i>current</i> 1.3 10.1 20.7	16 0 66 <1 919 1243 1029 1318 3746 history1 4 1 0 history1 1.6 9.1 21.1 history1	7 0 63 <1 898 1086 964 1165 3298 history2 4 3 0 history2 1.5 10.9 23.3 history2



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

Certificate L2367

Laboratory

Sample No.

Lab Number

Unique Number