

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id **511** Component **Diesel Engine** Fluid **PETRO CANADA DURON HP 15W40 (11 GAL)**

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.

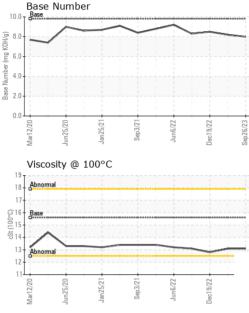
Fluid Condition

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

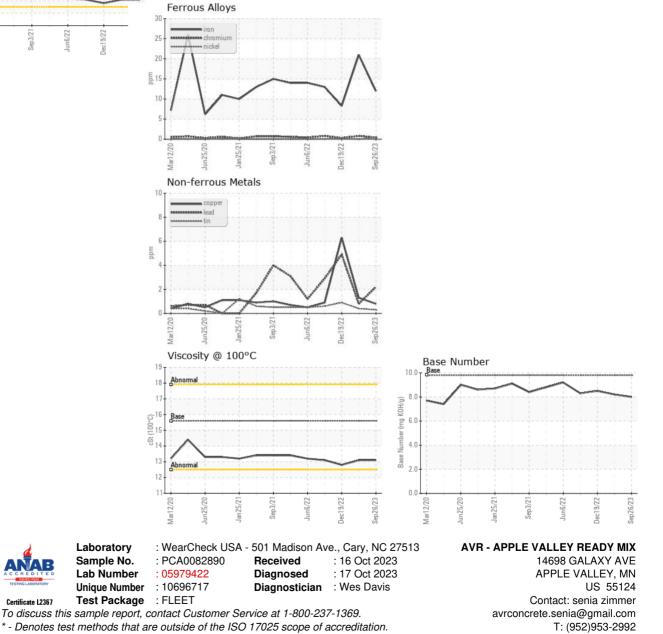
		Mar2020	Jun2020 Jan2021	Sep2021 Jun2022 Dec2022	Sep2023	
SAMPLE INFORM	NATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0082890	PCA0069614	PCA0069286
Sample Date		Client Info		26 Sep 2023	13 Jun 2023	19 Dec 2022
Machine Age	hrs	Client Info		0	14406	233882
Oil Age	hrs	Client Info		0	224	233882
Oil Changed		Client Info		Not Changd	Not Changd	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S .	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	12	21	8
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	0	5	1
Lead	ppm	ASTM D5185m	>40	2	<1	5
Copper	ppm	ASTM D5185m	>330	<1	1	6
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
Boron	ppm	ASTM D5185m		3	4	7
Barium	ppm	ASTM D5185m		2	0	0
Molybdenum	ppm	ASTM D5185m		63	67	59
Manganese		ASTM D5185m		<1	<1	<1
manganooo	ppm					
Magnesium	ppm ppm	ASTM D5185m		875	1065	1005
0	ppm			875 1026	1065 1199	1005 1184
Magnesium Calcium	ppm ppm	ASTM D5185m				
Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m		1026	1199	1184
Magnesium Calcium Phosphorus	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		1026 989	1199 1151	1184 1046
Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	1026 989 1156	1199 1151 1381	1184 1046 1371
Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		1026 989 1156 2914	1199 1151 1381 3921	1184 1046 1371 3930
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method		1026 989 1156 2914 current	1199 1151 1381 3921 history1	1184 1046 1371 3930 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m		1026 989 1156 2914 current 5	1199 1151 1381 3921 history1 8	1184 1046 1371 3930 history2 3
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium	ppm ppm ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>25	1026 989 1156 2914 current 5 0	1199 1151 1381 3921 history1 8 2	1184 1046 1371 3930 history2 3 <1
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium	ppm ppm ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>25 >20	1026 989 1156 2914 current 5 0 3	1199 1151 1381 3921 history1 8 2 4	1184 1046 1371 3930 history2 3 <1 2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>25 >20 limit/base >3	1026 989 1156 2914 current 5 0 3 3 current	1199 1151 1381 3921 history1 8 2 4 4 history1	1184 1046 1371 3930 history2 3 <1 2 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>25 >20 limit/base >3 >20	1026 989 1156 2914 <i>current</i> 5 0 3 <i>current</i> 0.4	1199 1151 1381 3921 history1 8 2 4 4 history1 0.5	1184 1046 1371 3930 history2 3 <1 2 history2 0.2
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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7624	>25 >20 limit/base >3 >20	1026 989 1156 2914 current 5 0 3 current 0.4 8.2	1199 1151 1381 3921 history1 8 2 4 4 history1 0.5 9.2	1184 1046 1371 3930 history2 3 <1 2 history2 0.2 7.1
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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7624	>25 >20 limit/base >3 >20 >30	1026 989 1156 2914 <i>current</i> 5 0 3 <i>current</i> 0.4 8.2 19.4	1199 1151 1381 3921 history1 8 2 4 4 history1 0.5 9.2 20.4	1184 1046 1371 3930 history2 3 <1 2 history2 0.2 7.1 19.9



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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
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.6	13.1	13.1	12.8
GRAPHS						



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