

OIL ANALYSIS REPORT

Sample Rating Trend

11

11

NORMAL



Component Diesel Engine

Fluid

PETRO CANADA DURON SHP 15W40 (9 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.

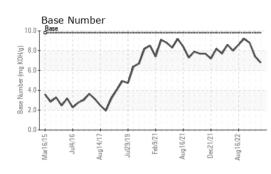
Fluid Condition

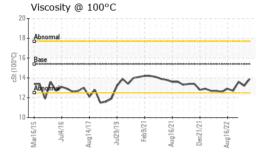
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

AL)	z2015 Jul2016 Aug2017 Jul2019 Feb/021 Aug2021 Dec2021 Aug2022								
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2			
Sample Number		Client Info		PCA0095838	PCA0077344	PCA0074696			
Sample Date		Client Info		07 Aug 2023	19 Apr 2023	26 Jan 2023			
Machine Age	hrs	Client Info		7911	7391	6920			
Oil Age	hrs	Client Info		649	649	649			
Oil Changed		Client Info		Changed	Changed	Changed			
Sample Status				NORMAL	NORMAL	NORMAL			
CONTAMINAT	ION	method	limit/base	current	history1	history2			
Fuel		WC Method	>3.0	<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	>165	43	23	7			
Chromium	ppm	ASTM D5185m	>5	1	<1	<1			
Nickel	ppm	ASTM D5185m	>4	0	0	<1			
Titanium	ppm	ASTM D5185m	>2	0	0	0			
Silver	ppm	ASTM D5185m	>2	0	0	0			
Aluminum	ppm	ASTM D5185m	>20	1	1	<1			
Lead	ppm	ASTM D5185m	>150	3	0	1			
Copper	ppm	ASTM D5185m	>90	<1	0	0			
Tin	ppm	ASTM D5185m	>5	<1	0	<1			
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	current 14	history1 19	history2 39			
	ppm ppm								
Boron		ASTM D5185m	0	14	19	39			
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	14 0	19 0	39 0			
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	14 0 71	19 0 58	39 0 64			
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	14 0 71 <1	19 0 58 <1	39 0 64 <1			
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	14 0 71 <1 945	19 0 58 <1 741	39 0 64 <1 817			
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	14 0 71 <1 945 1256	19 0 58 <1 741 1078	39 0 64 <1 817 1280			
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	0 0 60 0 1010 1070 1150	14 0 71 <1 945 1256 1082	19 0 58 <1 741 1078 854	39 0 64 <1 817 1280 977			
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	0 0 60 0 1010 1070 1150 1270	14 0 71 <1 945 1256 1082 1330	19 0 58 <1 741 1078 854 1083	39 0 64 <1 817 1280 977 1213			
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	0 0 60 0 1010 1070 1150 1270 2060	14 0 71 <1 945 1256 1082 1330 3676	19 0 58 <1 741 1078 854 1083 2828	39 0 64 <1 817 1280 977 1213 3630			
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	0 0 60 1010 1070 1150 1270 2060	14 0 71 <1 945 1256 1082 1330 3676 current	19 0 58 <1 741 1078 854 1083 2828 history1	39 0 64 <1 817 1280 977 1213 3630 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 method	0 0 60 0 1010 1070 1150 1270 2060 limit/base	14 0 71 <1 945 1256 1082 1330 3676 current 16	19 0 58 <1 741 1078 854 1083 2828 history1 16	39 0 64 <1 817 1280 977 1213 3630 history2 10			
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	0 0 60 0 1010 1070 1150 1270 2060 limit/base	14 0 71 <1 945 1256 1082 1330 3676 <u>current</u> 16 11	19 0 58 <1 741 1078 854 1083 2828 history1 16 4	39 0 64 <1 817 1280 977 1213 3630 history2 10 1			
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	0 0 60 0 1010 1070 1150 1270 2060 limit/base >35	14 0 71 <1 945 1256 1082 1330 3676 <i>current</i> 16 11 4	19 0 58 <1 741 1078 854 1083 2828 history1 16 4 <1	39 0 64 <1 817 1280 977 1213 3630 history2 10 1 1 <1			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >35	14 0 71 <1 945 1256 1082 1330 3676 current 16 11 4 current	19 0 58 <1 741 1078 854 1083 2828 history1 16 4 <1 history1	39 0 64 <1 817 1280 977 1213 3630 history2 10 1 <1 <1 +istory2			
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	0 0 0 1010 1070 1150 1270 2060 limit/base >35 >20 limit/base >7.5	14 0 71 <1 945 1256 1082 1330 3676 <i>current</i> 16 11 4 <i>current</i>	19 0 58 <1 741 1078 854 1083 2828 history1 16 4 <1 history1 0.9	39 0 64 <1 817 1280 977 1213 3630 history2 10 1 1 <1 ×1 history2 0.2			
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	0 0 0 1010 1070 1150 1270 2060 imit/base >35 >20 imit/base >7.5 >20	14 0 71 <1 945 1256 1082 1330 3676 <i>current</i> 16 11 4 <i>current</i> 1.6 12.8	19 0 58 <1 741 1078 854 1083 2828 history1 16 4 <1 history1 0.9 10.3	39 0 64 <1 817 1280 977 1213 3630 history2 10 1 1 <1 <1 history2 0.2 5.9			
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	0 0 0 1010 1070 1150 1270 2060 imit/base >35 20 imit/base >7.5 >20 >30	14 0 71 <1 945 1256 1082 1330 3676 <i>current</i> 16 11 4 <i>current</i> 1.6 12.8 25.2	19 0 58 <1 741 1078 854 1083 2828 history1 16 4 <1 16 4 <1 0.9 10.3 22.3	39 0 64 <1 817 1280 977 1213 3630 history2 10 1 1 <1 <1 history2 0.2 5.9 18.1			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 2060 2060 2060 2060 2060 2	14 0 71 <1 945 1256 1082 1330 3676 <i>current</i> 16 11 4 <i>current</i> 1.6 12.8 25.2 <i>current</i>	19 0 58 <1 741 1078 854 1083 2828 history1 16 4 <1 history1 0.9 10.3 22.3 history1	39 0 64 <1 817 1280 977 1213 3630 history2 10 1 1 <1 ×1 history2 0.2 5.9 18.1 history2			

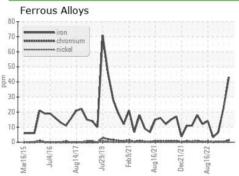


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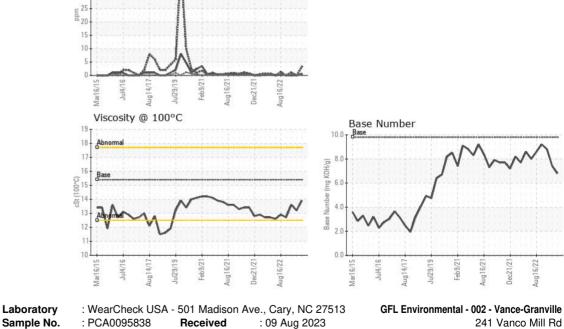




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	15.4	13.9	13.2	13.6
GRAPHS						



Non-ferrous Metals



: 09 Aug 2023

: Wes Davis

241 Vanco Mill Rd Henderson, NC US 27537 Contact: Cameron King cameron.king@gflenv.com T: (252)438-5333 F: (252)431-1635



Test Package : FLEET Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. * - 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)

Diagnosed

Diagnostician

: 05919668

: 10591582

Lab Number

Unique Number

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