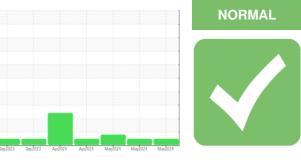


OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

727178 Component Diesel Engine Fluid

PETRO CANADA DURON SHP 15W40 (--- 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 INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0084827	GFL0084829	GFL0084826
Sample Date		Client Info		23 May 2024	21 May 2024	20 May 2024
Machine Age	hrs	Client Info		16406	16390	16405
Oil Age	hrs	Client Info		0	0	16282
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>2.0	<1.0	0.3	<u> </u>
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	0	0	7
Chromium	ppm	ASTM D5185m	>20	0	0	<1
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	1
Aluminum	ppm	ASTM D5185m	>20	1	1	3
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	0	0	2
Tin	ppm	ASTM D5185m	>15	<1	<1	1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	<1
				Ū	Ŭ,	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base		-	
		ASTM D5185m		current	history1	history2
Boron	ppm	ASTM D5185m	0	current 2	history1 2	history2 0
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	0 0 60	current 2 0	history1 2 0	history2 0 0
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 2 0 54	history1 2 0 54	history2 0 0 59
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 2 0 54 <1	history1 2 0 54 <1	history2 0 0 59 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 2 0 54 <1 953	history1 2 0 54 <1 946	history2 0 0 59 <1 955
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	Current 2 0 54 <1 953 1004	history1 2 0 54 <1 946 1003	history2 0 0 59 <1 955 1068
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm 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	Current 2 0 54 <1 953 1004 1048	history1 2 0 54 <1 946 1003 1049	history2 0 59 <1 955 1068 1074
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm 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	current 2 0 54 <1 953 1004 1048 1238	history1 2 0 54 <1 946 1003 1049 1237	history2 0 0 59 <1 955 1068 1074 1212
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	Current 2 0 54 <1 953 1004 1048 1238 3696	history1 2 0 54 <1 946 1003 1049 1237 3694	history2 0 0 59 <1 955 1068 1074 1212 3593
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	0 0 60 1010 1070 1150 1270 2060	current 2 0 54 <1 953 1004 1048 1238 3696 current	history1 2 0 54 <1 946 1003 1049 1237 3694 history1	history2 0 59 <1 955 1068 1074 1212 3593 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base	current 2 0 54 <1 953 1004 1048 1238 3696 current 4	history1 2 0 54 <1 946 1003 1049 1237 3694 history1 3	history2 0 0 59 <1 955 1068 1074 1212 3593 history2 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base	current 2 0 54 <1 953 1004 1048 1238 3696 current 4 2	history1 2 0 54 <1 946 1003 1049 1237 3694 history1 3 2	history2 0 59 <1 955 1068 1074 1212 3593 history2 6 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	2 0 54 <1 953 1004 1048 1238 3696 current 4 2 2 2	history1 2 0 54 <1 946 1003 1049 1237 3694 history1 3 2 2	history2 0 0 59 <1 955 1068 1074 1212 3593 history2 6 3 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	current 2 0 54 <1 953 1004 1048 1238 3696 current 4 2 2 2 2 2 current	history1 2 0 54 <1 946 1003 1049 1237 3694 history1 3 2 2 history1	history2 0 0 59 <1 955 1068 1074 1212 3593 history2 6 3 4 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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	current 2 0 54 <1 953 1004 1048 1238 3696 current 4 2 2 current 0.1	history1 2 0 54 <1 946 1003 1049 1237 3694 history1 3 2 history1 0.1	history2 0 0 59 <1 955 1068 1074 1212 3593 history2 6 3 4 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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	current 2 0 54 <1 953 1004 1048 1238 3696 current 4 2 2 current 4 2 current 0.1 4.5	history1 2 0 54 <1 946 1003 1049 1237 3694 history1 3 2 history1 3 2 history1 0.1 4.5	history2 0 0 59 <1 955 1068 1074 1212 3593 history2 6 3 4 history2 0.2 6.2
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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >3 >20 >3 >20	2 0 54 <1 953 1004 1048 1238 3696 current 4 2 2 current 0.1 4.5 17.1	history1 2 0 54 <1 946 1003 1049 1237 3694 history1 3 2 history1 0.1 4.5 17.2	history2 0 59 <1 955 1068 1074 1212 3593 history2 6 3 4 history2 0.2 6.2 18.0



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18 A

cSt (100°C) Base

> 10 Sep18/23

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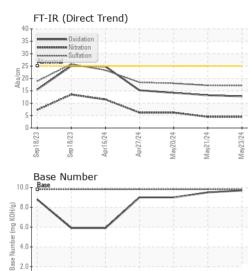
Sep18/23 -

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Sep 1

Viscosity @ 100°C

OIL ANALYSIS REPORT



Apr16/24

Apr16/24

PULL Cruck

kpr27/24

Mav20/24

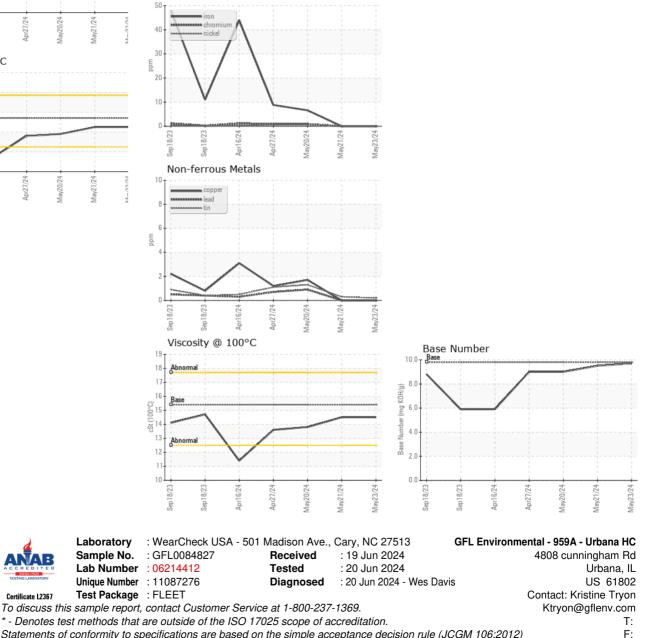
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/lav21/24

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	14.5	14.5	13.8

GRAPHS Ferrous Alloys



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

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Certificate 12367

Submitted By: Also GFL959E - Kristine Tryon