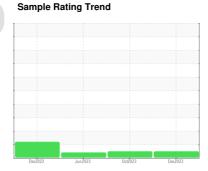


OIL ANALYSIS REPORT



Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- QTS)





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

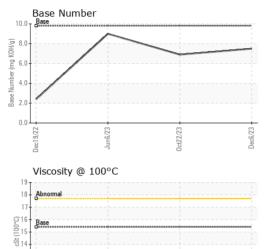
Fluid Condition

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	RMATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0097737	GFL0097701	GFL0072953
Sample Date		Client Info		06 Dec 2023	22 Oct 2023	06 Jun 2023
Machine Age	hrs	Client Info		23723	23431	22894
Oil Age	hrs	Client Info		292	537	513
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ATTENTION
CONTAMINAT	ΓΙΟΝ	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	0.7
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	>120	2	8	4
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>5	1	1	<1
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	1	3	0
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	2	3	<1
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	<1
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 2	history1	history2
	ppm		0			
Boron		ASTM D5185m	0	2	17	175
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	2 0	17 0	175 <1
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 0 49	17 0 41	175 <1 12
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	2 0 49 <1	17 0 41 <1	175 <1 12 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	2 0 49 <1 839	17 0 41 <1 699	175 <1 12 <1 179
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	2 0 49 <1 839 992	17 0 41 <1 699 1191	175 <1 12 <1 179 1930
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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	2 0 49 <1 839 992 1052	17 0 41 <1 699 1191 972	175 <1 12 <1 179 1930 990
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270	2 0 49 <1 839 992 1052 1209	17 0 41 <1 699 1191 972 1187	175 <1 12 <1 179 1930 990 1195
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 ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	2 0 49 <1 839 992 1052 1209 3044	17 0 41 <1 699 1191 972 1187 3004	175 <1 12 <1 179 1930 990 1195 4127
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	2 0 49 <1 839 992 1052 1209 3044 current	17 0 41 <1 699 1191 972 1187 3004 history1	175 <1 12 <1 179 1930 990 1195 4127 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	2 0 49 <1 839 992 1052 1209 3044 current	17 0 41 <1 699 1191 972 1187 3004 history1	175 <1 12 <1 179 1930 990 1195 4127 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	2 0 49 <1 839 992 1052 1209 3044 current 5	17 0 41 <1 699 1191 972 1187 3004 history1 11	175 <1 12 <1 179 1930 990 1195 4127 history2 9 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	2 0 49 <1 839 992 1052 1209 3044 current 5 4	17 0 41 <1 699 1191 972 1187 3004 history1 11 3	175 <1 12 <1 179 1930 990 1195 4127 history2 9 3 8
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	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	2 0 49 <1 839 992 1052 1209 3044 current 5 4 <1	17 0 41 <1 699 1191 972 1187 3004 history1 11 3 2	175 <1 12 <1 179 1930 990 1195 4127 history2 9 3 8 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 method *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 >25 >20 limit/base	2 0 49 <1 839 992 1052 1209 3044 current 5 4 <1	17 0 41 <1 699 1191 972 1187 3004 history1 11 3 2 history1 0.1	175 <1 12 <1 179 1930 990 1195 4127 history2 9 3 8 history2 0.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m method *ASTM D5185m *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D76185m	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	2 0 49 <1 839 992 1052 1209 3044 current 5 4 <1 current 0.1 6.5	17 0 41 <1 699 1191 972 1187 3004 history1 11 3 2 history1 0.1 8.4	175 <1 12 <1 179 1930 990 1195 4127 history2 9 3 8 history2 0.1 5.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m method *ASTM D5185m *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D76185m	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	2 0 49 <1 839 992 1052 1209 3044 current 5 4 <1 current 0.1 6.5 18.2	17 0 41 <1 699 1191 972 1187 3004 history1 11 3 2 history1 0.1 8.4 19.4	175 <1 12 <1 179 1930 990 1195 4127 history2 9 3 8 history2 0.1 5.7 20.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRA	ppm	ASTM D5185m method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7624 *ASTM D7415 method	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >30 limit/base >25	2 0 49 <1 839 992 1052 1209 3044 current 5 4 <1 current 0.1 6.5 18.2	17 0 41 <1 699 1191 972 1187 3004 history1 11 3 2 history1 0.1 8.4 19.4 history1	175 <1 12 <1 179 1930 990 1195 4127 history2 9 3 8 history2 0.1 5.7 20.0 history2



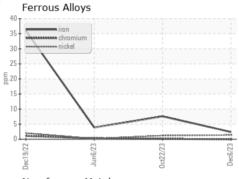
OIL ANALYSIS REPORT

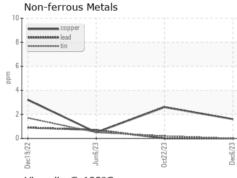


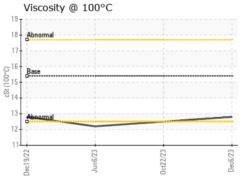
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

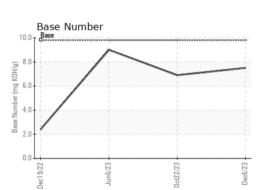
FLUID PROPE	RTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.8	12.5	▲ 12.2

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10781979

: GFL0097737 : 06032188 Test Package : FLEET

To discuss this sample report, contact Customer Service at 1-800-237-1369.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 12 Dec 2023 Diagnosed : 13 Dec 2023 Diagnostician : Wes Davis

GFL Environmental - 405 - Arbor Hills

7400 Napier Rd NORTHVILLE, MI US 48168 Contact: John Nahal

jnahal@gflenv.com

T:

* - 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)

F: