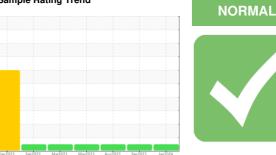


OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id
413019
Component
Diesel Engine
Fluid

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

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

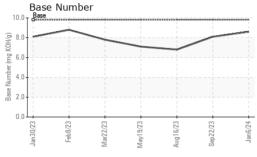
Fluid Condition

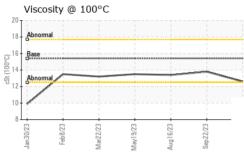
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

<u> </u>		Jan2023	Feb2023 Mar2023	May2023 Aug2023 Sep2023	Jan 2024	
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0089753	GFL0094269	GFL0085375
Sample Date		Client Info		06 Jan 2024	22 Sep 2023	16 Aug 2023
Machine Age	hrs	Client Info		3319	2361	2047
Oil Age	hrs	Client Info		958	314	2047
Oil Changed		Client Info		N/A	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
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	19	3	10
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	<1	<1
Aluminum	ppm	ASTM D5185m		1	4	3
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m		<1	7	59
Tin	ppm	ASTM D5185m		<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	0	3	4	<1
	le le			0		
DAHUH	ppm	ASTM D5185m	()		()	()
Barium Molybdenum	ppm	ASTM D5185m			0 60	0 64
Molybdenum	ppm	ASTM D5185m	60	58	60	64
Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m	60	58 <1	60 <1	64 <1
Molybdenum Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010	58 <1 886	60 <1 890	64 <1 824
Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070	58 <1 886 1057	60 <1 890 1138	64 <1 824 1189
Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150	58 <1 886 1057 1074	60 <1 890 1138 1014	64 <1 824 1189 967
Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070	58 <1 886 1057	60 <1 890 1138	64 <1 824 1189
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270	58 <1 886 1057 1074 1269	60 <1 890 1138 1014 1251	64 <1 824 1189 967 1217
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	60 0 1010 1070 1150 1270 2060	58 <1 886 1057 1074 1269 3040	60 <1 890 1138 1014 1251 3113	64 <1 824 1189 967 1217 2870
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m	60 0 1010 1070 1150 1270 2060	58 <1 886 1057 1074 1269 3040 current	60 <1 890 1138 1014 1251 3113 history1	64 <1 824 1189 967 1217 2870 history2
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	60 0 1010 1070 1150 1270 2060	58 <1 886 1057 1074 1269 3040	60 <1 890 1138 1014 1251 3113 history1	64 <1 824 1189 967 1217 2870 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >25	58 <1 886 1057 1074 1269 3040 current 3 16	60 <1 890 1138 1014 1251 3113 history1 4	64 <1 824 1189 967 1217 2870 history2 4 2 12
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >25 >20	58 <1 886 1057 1074 1269 3040 current 3 16 8 current	60 <1 890 1138 1014 1251 3113 history1 4 2 6	64 <1 824 1189 967 1217 2870 history2 4 2 12 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m Method *ASTM D7844	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	58 <1 886 1057 1074 1269 3040 current 3 16 8 current	60 <1 890 1138 1014 1251 3113 history1 4 2 6 history1 0.2	64 <1 824 1189 967 1217 2870 history2 4 2 12 history2 0.3
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	58 <1 886 1057 1074 1269 3040 current 3 16 8 current 1.5 10.0	60 <1 890 1138 1014 1251 3113 history1 4 2 6	64 <1 824 1189 967 1217 2870 history2 4 2 12 history2 0.3 8.0
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 D76185m ASTM D76185m ASTM D76185m ASTM D7844 *ASTM D7624 *ASTM D76185	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	58 <1 886 1057 1074 1269 3040 current 3 16 8 current	60 <1 890 1138 1014 1251 3113 history1 4 2 6 history1 0.2 6.6 18.7	64 <1 824 1189 967 1217 2870 history2 4 2 12 history2 0.3 8.0 19.4
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D7415 Method	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30 limit/base	58 <1 886 1057 1074 1269 3040 current 3 16 8 current 1.5 10.0 20.7 current	60 <1 890 1138 1014 1251 3113 history1 4 2 6 history1 0.2 6.6 18.7 history1	64 <1 824 1189 967 1217 2870 history2 4 2 12 history2 0.3 8.0 19.4 history2
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 D76185m ASTM D76185m ASTM D76185m ASTM D7844 *ASTM D7624 *ASTM D76185	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	58 <1 886 1057 1074 1269 3040 current 3 16 8 current 1.5 10.0 20.7	60 <1 890 1138 1014 1251 3113 history1 4 2 6 history1 0.2 6.6 18.7	64 <1 824 1189 967 1217 2870 history2 4 2 12 history2 0.3 8.0 19.4



OIL ANALYSIS REPORT

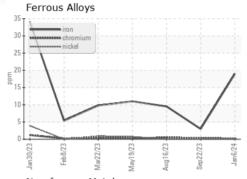


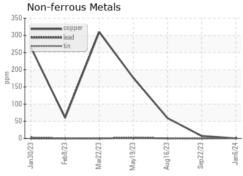


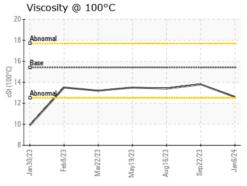
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

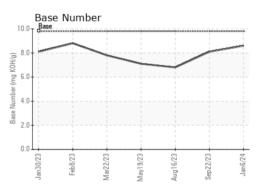
FLUID PROPE	RTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.6	13.8	13.4

GRAPHS













Certificate L2367

Laboratory

Sample No. Lab Number Unique Number : 10822336 Test Package : FLEET

: GFL0089753 : 06056387

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

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved : 10 Jan 2024

Diagnosed : 11 Jan 2024 Diagnostician : Don Baldridge GFL Environmental - 882 - Gainesville

5002 SW 41st Blvd Gainesville, FL US 32608

Contact: ROBERT CLARK

robert.clark@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)

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