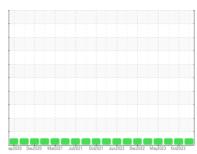


OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id **825018-140**

Component

Diesel Engine

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

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.

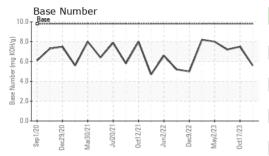
Fluid Condition

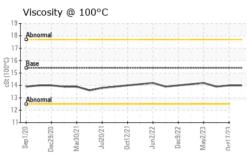
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

_TR)		ep2020 Dec20	20 Mar2021 Jul2021 Oc	t2021 Jun2022 Dec2022 May2023	Oct2023	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0058095	GFL0058077	GFL0082515
Sample Date		Client Info		16 Nov 2023	17 Oct 2023	17 Jul 2023
Machine Age	hrs	Client Info		19493	19330	18973
Oil Age	hrs	Client Info		520	357	557
Oil Changed		Client Info		Changed	Not Changd	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	>120	8	9	10
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	0	<1
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	3	4
Lead	ppm	ASTM D5185m	>40	0	<1	0
Copper	ppm	ASTM D5185m	>330	0	<1	1
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	4	3	2
Boron Barium	ppm		0	4 0	3	2
Barium	ppm	ASTM D5185m	0	0	0	0
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0	0 62	0 62	0 66
Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0	0 62 <1	0 62 <1	0 66 <1
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010	0 62 <1 973 1082 1052	0 62 <1 982	0 66 <1 1082
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070	0 62 <1 973 1082	0 62 <1 982 1086	0 66 <1 1082 1205
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	0 60 0 1010 1070 1150	0 62 <1 973 1082 1052	0 62 <1 982 1086 1026	0 66 <1 1082 1205 1051
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 60 0 1010 1070 1150 1270	0 62 <1 973 1082 1052 1324	0 62 <1 982 1086 1026 1292	0 66 <1 1082 1205 1051 1364
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	0 60 0 1010 1070 1150 1270 2060	0 62 <1 973 1082 1052 1324 2777	0 62 <1 982 1086 1026 1292 2945	0 66 <1 1082 1205 1051 1364 3509
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 60 0 1010 1070 1150 1270 2060	0 62 <1 973 1082 1052 1324 2777	0 62 <1 982 1086 1026 1292 2945 history1	0 66 <1 1082 1205 1051 1364 3509 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060	0 62 <1 973 1082 1052 1324 2777 current	0 62 <1 982 1086 1026 1292 2945 history1	0 66 <1 1082 1205 1051 1364 3509 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base	0 62 <1 973 1082 1052 1324 2777 current 8 19	0 62 <1 982 1086 1026 1292 2945 history1 8	0 66 <1 1082 1205 1051 1364 3509 history2 7 34
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25	0 62 <1 973 1082 1052 1324 2777 current 8 19	0 62 <1 982 1086 1026 1292 2945 history1 8 14	0 66 <1 1082 1205 1051 1364 3509 history2 7 34
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	0 62 <1 973 1082 1052 1324 2777 current 8 19 6	0 62 <1 982 1086 1026 1292 2945 history1 8 14 5	0 66 <1 1082 1205 1051 1364 3509 history2 7 34 13
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	0 62 <1 973 1082 1052 1324 2777 current 8 19 6 current 0.3	0 62 <1 982 1086 1026 1292 2945 history1 8 14 5 history1 0.2	0 66 <1 1082 1205 1051 1364 3509 history2 7 34 13 history2 0.3
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 D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D76185m ASTM D7844 *ASTM D7624 *ASTM D7624	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20	0 62 <1 973 1082 1052 1324 2777 current 8 19 6 current 0.3 8.2	0 62 <1 982 1086 1026 1292 2945 history1 8 14 5 history1 0.2 7.8	0 66 <1 1082 1205 1051 1364 3509 history2 7 34 13 history2 0.3 9.1
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 D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D76185m ASTM D7844 *ASTM D7624 *ASTM D7624	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	0 62 <1 973 1082 1052 1324 2777 current 8 19 6 current 0.3 8.2 20.4	0 62 <1 982 1086 1026 1292 2945 history1 8 14 5 history1 0.2 7.8 19.4	0 66 <1 1082 1205 1051 1364 3509 history2 7 34 13 history2 0.3 9.1 21.1



OIL ANALYSIS REPORT

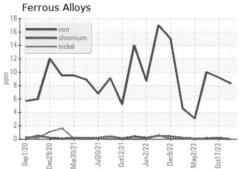


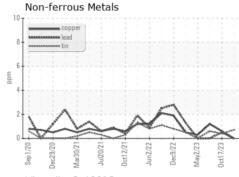


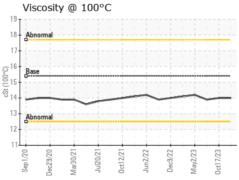
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

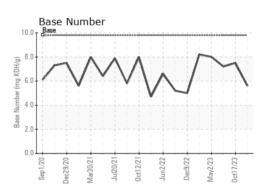
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.0	14.0	13.9

GRAPHS













Certificate L2367

Laboratory Sample No. Test Package : FLEET

Lab Number **Unique Number**

: GFL0058095 : 06010680 : 10749824

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 17 Nov 2023 Diagnosed : 19 Nov 2023 Diagnostician : Wes Davis

GFL Environmental - 657 - Charlottesville Hauling 5498 Richmond Road

Troy, VA US 22974 Contact: Brian Ulickas

bulickas@gflenv.com

T: F:

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)

Report Id: GFL657 [WUSCAR] 06010680 (Generated: 11/19/2023 00:36:23) Rev: 1