

OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id
411042
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

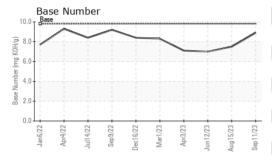
Fluid Condition

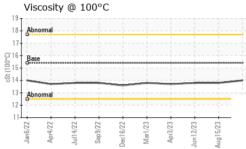
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0092635	GFL0082539	GFL0082523
Sample Date		Client Info		11 Sep 2023	15 Aug 2023	12 Jun 2023
Machine Age	hrs	Client Info		5607	5430	4845
Oil Age	hrs	Client Info		610	609	0
Oil Changed		Client Info		Changed	Changed	N/A
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	1	9	8
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	1	2	<1
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m	>330	0	3	2
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
Gaamam	ррпп	AO I WI DO TOOTII		U	U	O
ADDITIVES	ррш	method	limit/base	current	history1	history2
	ppm		limit/base			_
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 2	history1	history2
ADDITIVES Boron Barium	ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0	current 2 0	history1 0 0	history2 0 0
ADDITIVES Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 2 0 61	history1 0 0 63	history2 0 0 59
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 2 0 61 <1	history1 0 0 63 <1	history2 0 0 59 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 2 0 61 <1 1031	history1 0 0 63 <1 1066	history2 0 0 59 <1 1000
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070	current 2 0 61 <1 1031 1131	history1 0 0 63 <1 1066 1124	history2 0 0 59 <1 1000 1116
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150	current 2 0 61 <1 1031 1131 1076	history1 0 0 63 <1 1066 1124 1041	history2 0 0 59 <1 1000 1116 984
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current 2 0 61 <1 1031 1131 1076 1322	history1 0 0 63 <1 1066 1124 1041 1305	history2 0 0 59 <1 1000 1116 984 1271
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current 2 0 61 <1 1031 1131 1076 1322 3809	history1 0 0 63 <1 1066 1124 1041 1305 3294	history2 0 0 59 <1 1000 1116 984 1271 3292
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current 2 0 61 <1 1031 1131 1076 1322 3809 current	history1 0 0 63 <1 1066 1124 1041 1305 3294 history1	history2 0 0 59 <1 1000 1116 984 1271 3292 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current 2 0 61 <1 1031 1131 1076 1322 3809 current	history1 0 0 63 <1 1066 1124 1041 1305 3294 history1 4	history2 0 0 59 <1 1000 1116 984 1271 3292 history2 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current 2 0 61 <1 1031 1131 1076 1322 3809 current 3 3	history1 0 0 63 <1 1066 1124 1041 1305 3294 history1 4 5	history2 0 0 59 <1 1000 1116 984 1271 3292 history2 2 5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current 2 0 61 <1 1031 1131 1076 1322 3809 current 3 3 <1	history1 0 0 63 <1 1066 1124 1041 1305 3294 history1 4 5 0	history2 0 0 59 <1 1000 1116 984 1271 3292 history2 2 5 2
ADDITIVES 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	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	current 2 0 61 <1 1031 1131 1076 1322 3809 current 3 <1 current	history1 0 0 63 <1 1066 1124 1041 1305 3294 history1 4 5 0 history1	history2 0 0 59 <1 1000 1116 984 1271 3292 history2 2 5 2
ADDITIVES 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	method 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	current 2 0 61 <1 1031 1131 1076 1322 3809 current 3 3 <1 current	history1 0 0 63 <1 1066 1124 1041 1305 3294 history1 4 5 0 history1 0.4	history2 0 0 59 <1 1000 1116 984 1271 3292 history2 2 5 2 history2 0.4
ADDITIVES 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	method ASTM D5185m method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	current 2 0 61 <1 1031 1131 1076 1322 3809 current 3 3 <1 current 0 7.1	history1 0 0 63 <1 1066 1124 1041 1305 3294 history1 4 5 0 history1 0.4 7.8	history2 0 0 59 <1 1000 1116 984 1271 3292 history2 2 5 2 history2 0.4 8.2
ADDITIVES 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	method ASTM D5185m method *ASTM D5185m ASTM D5185m	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	current 2 0 61 <1 1031 1131 1076 1322 3809 current 3 3 <1 current 0 7.1 21.6	history1 0 0 63 <1 1066 1124 1041 1305 3294 history1 4 5 0 history1 0.4 7.8 19.2	history2 0 0 59 <1 1000 1116 984 1271 3292 history2 2 5 2 history2 0.4 8.2 20.5



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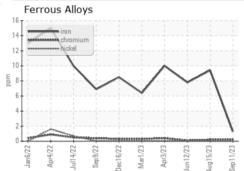


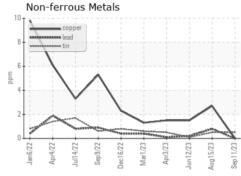


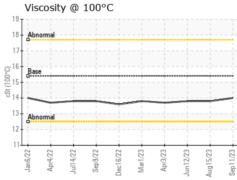
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

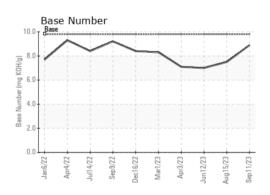
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.0	13.8	13.8

GRAPHS













Laboratory Sample No. Lab Number Unique Number : 10659251 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0092635 : 05958038

Received Diagnosed Diagnostician : Wes Davis

: 21 Sep 2023

: 22 Sep 2023

GFL Environmental - 947 - WB Horicon HC N7296 County Rd V

Horicon, WI US 53032 Contact: Tim Kieffer tim.kieffer@gflenv.com

T: (608)219-0288

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)