

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Machine Id

927080-260332

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.

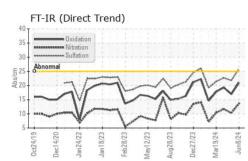
Fluid Condition

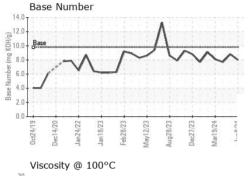
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

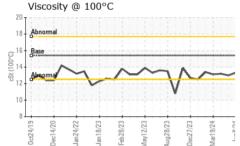
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2		
Sample Number		Client Info		GFL0118217	GFL0118279	GFL0109121		
Sample Date		Client Info		08 Jun 2024	13 May 2024	28 Mar 2024		
Machine Age	hrs	Client Info		17363	17072	16785		
Oil Age	hrs	Client Info		700	700	600		
Oil Changed		Client Info		Changed	Not Changd	Changed		
Sample Status				NORMAL	NORMAL	NORMAL		
CONTAMINAT	ION	method	limit/base	current	history1	history2		
Fuel		WC Method	>5	<1.0	<1.0	<1.0		
Water		WC Method	>0.2	NEG	NEG	NEG		
Glycol		WC Method		NEG	NEG	NEG		
WEAR METALS method limit/base current history1 history2								
Iron	ppm	ASTM D5185m	>100	33	19	32		
Chromium	ppm	ASTM D5185m	>20	2	2	2		
Nickel	ppm	ASTM D5185m	>4	0	<1	0		
Titanium	ppm	ASTM D5185m		<1	<1	0		
Silver	ppm	ASTM D5185m	>3	<1	1	0		
Aluminum	ppm	ASTM D5185m	>20	4	4	4		
Lead	ppm	ASTM D5185m	>40	<1	<1	0		
Copper	ppm	ASTM D5185m	>330	2	3	8		
Tin	ppm	ASTM D5185m	>15	<1	<1	0		
Vanadium	ppm	ASTM D5185m		0	<1	<1		
Cadmium	ppm	ASTM D5185m		0	<1	0		
	1-1-			U		0		
ADDITIVES	1- 1-	method	limit/base	-	history1	history2		
ADDITIVES Boron	ppm	method	limit/base	-		-		
		method		current	history1	history2		
Boron	ppm	method ASTM D5185m	0	current	history1 <1	history2 0		
Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0 0 60	current <1 0	history1 <1 <1	history2 0 0		
Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current <1 0 58	history1 <1 <1 58	history2 0 0 61		
Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	<pre>current <1 0 58 <1</pre>	history1 <1 58 <1	history2 0 0 61 <1		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	<pre>current <1 0 58 <1 1018</pre>	history1 <1 58 <1 905	history2 0 0 61 <1 971		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	current <1 0 58 <1 1018 1191	history1 <1 58 <1 905 1021	history2 0 0 61 <1 971 1097		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	<pre>current <1 0 58 <1 1018 1191 1082</pre>	history1 <1 58 <1 905 1021 949	history2 0 61 <1 971 1097 1016		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current <1 0 58 <1 1018 1191 1082 1336	history1 <1 58 <1 905 1021 949 1154	history2 0 0 61 <1 971 1097 1016 1262		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method 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	<pre>current <1 0 58 <1 1018 1191 1082 1336 3627</pre>	history1 <1 58 <1 905 1021 949 1154 2867	history2 0 0 61 <1 971 1097 1016 1262 3388		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method 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 <1 0 58 <1 1018 1191 1082 1336 3627 current	<1 <1 58 <1 905 1021 949 1154 2867 history1	history2 0 0 61 <1 971 1097 1016 1262 3388 history2		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 0 60 1010 1070 1150 1270 2060	Current <1 0 58 <1 1018 1191 1082 1336 3627 Current 5	<1 <1 58 <1 905 1021 949 1154 2867 history1 5	history2 0 0 61 <1 971 1097 1016 1262 3388 history2 4		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method 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 limit/base >25	current <1 0 58 <1 1018 1191 1082 1336 3627 current 5 7 0	<1 <1 58 <1 905 1021 949 1154 2867 history1 5 6	history2 0 0 61 <1 971 1097 1016 1262 3388 history2 4 8		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	current <1 0 58 <1 1018 1191 1082 1336 3627 current 5 7 0	<1 <1 58 <1 905 1021 949 1154 2867 history1 5 6 3	history2 0 0 61 <1 971 1097 1016 1262 3388 history2 4 8 1		
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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	<1 0 58 <1 1018 1191 1082 1336 3627 current 5 7 0 current	<1 <1 58 <1 905 1021 949 1154 2867 history1 5 6 3 history1	history2 0 0 61 <1 971 1097 1016 1262 3388 history2 4 8 1 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	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	current <1 0 58 <1 1018 1191 1082 1336 3627 current 5 7 0 current 2.1	<1 <1 58 <1 905 1021 949 1154 2867 history1 5 6 3 history1 1.3	history2 0 0 61 <1 971 1097 1016 1262 3388 history2 4 8 1 history2 1 1.3		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20	current <1 0 58 <1 1018 1191 1082 1336 3627 current 5 7 0 current 2.1 13.6	<1 <1 58 <1 905 1021 949 1154 2867 history1 5 6 3 history1 1.3 10.3	history2 0 0 61 <1 971 1097 1016 1262 3388 history2 4 8 1 history2 1 history2 1.3 11.7		
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	method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >3 >20	<1 0 58 <1 1018 1191 1082 1336 3627 current 5 7 0 current 2.1 13.6 25.9	<1 <1 58 <1 905 1021 949 1154 2867 history1 5 6 3 history1 1.3 10.3 21.8	history2 0 0 61 <1 971 1097 1016 1262 3388 history2 4 8 1 history2 1.3 11.7 22.7		



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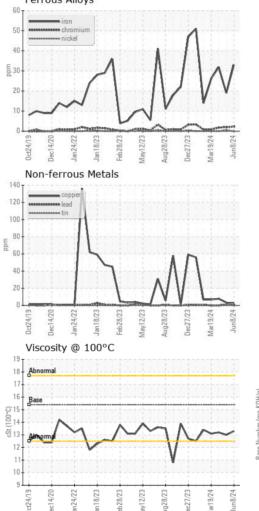


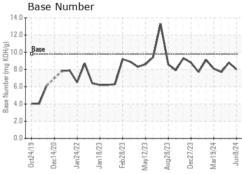




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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 PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.3	13.0	13.2
GRAPHS						

Ferrous Alloys





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 822 - Springfield Hauling Sample No. : GFL0118217 Received : 01 Jul 2024 2120 West Bennett Street Lab Number : 06224340 Tested : 02 Jul 2024 Springfield, MO US 65807 Unique Number : 11102537 Diagnosed : 02 Jul 2024 - Wes Davis Test Package : FLEET Contact: Dennis Moore Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. dennis.moore@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (417)403-3641 F:

lec27/23

Mar19/24

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

CUPCue an18/73 ah 28/23 /av12/23

0ct24/19 Dec14/20

Report Id: GFL822 [WUSCAR] 06224340 (Generated: 07/02/2024 07:35:49) Rev: 1

Submitted By: Dennis Moore

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