

OIL ANALYSIS REPORT

Sample Rating Trend

<u>.....................</u>

NORMAL

11111

Area (64834P) 3772 Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (10 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.

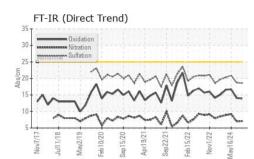
Fluid Condition

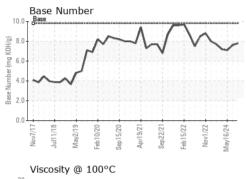
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

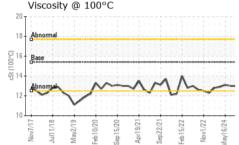
	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0125402	GFL0113901	GFL0113938
Sample Date		Client Info		10 Jul 2024	31 May 2024	16 May 2024
Machine Age	hrs	Client Info		14005	14005	13907
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	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 METALS	S	method	limit/base	current	history1	history2
		ASTM D5185m	>165	8	14	14
Iron	ppm			8		
Chromium	ppm	ASTM D5185m	>5	0	1 0	2
Nickel	ppm	ASTM D5185m ASTM D5185m		0 <1		0 <1
Titanium	ppm				0	
Silver	ppm	ASTM D5185m ASTM D5185m	>2	<1 2	0 <1	<1 1
Aluminum	ppm			_	1	
Lead	ppm	ASTM D5185m	>150	1		2
Copper	ppm	ASTM D5185m		-	<1	
Tin	ppm		>5	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	6	0	6
Boron Barium	ppm ppm		0		0 0	6 0
Boron		ASTM D5185m	0	6	0	6
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	6 0	0 0	6 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	6 0 55 <1 841	0 0 56 <1 867	6 0 56 0 869
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	6 0 55 <1 841 1091	0 0 56 <1 867 1101	6 0 56 0 869 1067
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	6 0 55 <1 841 1091 984	0 0 56 <1 867 1101 1012	6 0 56 0 869 1067 972
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	6 0 55 <1 841 1091	0 0 56 <1 867 1101 1012 1199	6 0 56 0 869 1067 972 1216
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	0 0 60 0 1010 1070 1150 1270 2060	6 0 55 <1 841 1091 984	0 0 56 <1 867 1101 1012	6 0 56 0 869 1067 972 1216 3231
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	0 0 60 0 1010 1070 1150 1270	6 0 55 <1 841 1091 984 1176	0 0 56 <1 867 1101 1012 1199	6 0 56 0 869 1067 972 1216
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	0 0 60 1010 1070 1150 1270 2060	6 0 555 <1 841 1091 984 1176 2962 current 5	0 0 56 <1 867 1101 1012 1199 3335 history1 0	6 0 56 0 869 1067 972 1216 3231 history2 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm 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 1010 1070 1150 1270 2060	6 0 555 <1 841 1091 984 1176 2962 current	0 0 56 <1 867 1101 1012 1199 3335 history1	6 0 56 0 869 1067 972 1216 3231 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 0 60 0 1010 1070 1150 1270 2060 limit/base	6 0 555 <1 841 1091 984 1176 2962 current 5	0 0 56 <1 867 1101 1012 1199 3335 history1 0	6 0 56 0 869 1067 972 1216 3231 history2 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	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 limit/base	6 0 55 <1 841 1091 984 1176 2962 current 5 3	0 0 56 <1 867 1101 1012 1199 3335 history1 0 3	6 0 56 0 869 1067 972 1216 3231 history2 6 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >35	6 0 55 <1 841 1091 984 1176 2962 current 5 3 1	0 0 56 <1 867 1101 1012 1199 3335 history1 0 3 0	6 0 56 0 869 1067 972 1216 3231 history2 6 3 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >35	6 0 55 <1 841 1091 984 1176 2962 current 5 3 1 1 current	0 0 56 <1 867 1101 1012 1199 3335 history1 0 3 0 0 history1	6 0 56 0 869 1067 972 1216 3231 history2 6 3 2 2 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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >35 >20 limit/base >7.5	6 0 55 <1 841 1091 984 1176 2962 current 5 3 1 current 0.2	0 0 56 <1 867 1101 1012 1199 3335 history1 0 3 0 history1 0.3	6 0 56 0 869 1067 972 1216 3231 history2 6 3 2 2 history2 0.7
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 t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >35 >20 imit/base >7.5 >20	6 0 55 <1 841 1091 984 1176 2962 <i>current</i> 5 3 1 <i>current</i> 0.2 7.1	0 0 56 <1 867 1101 1012 1199 3335 history1 0 3 0 history1 0.3 0.3 7.0	6 0 56 0 869 1067 972 1216 3231 history2 6 3 3 2 history2 0.7 9.2
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 t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >35 20 Imit/base >7.5 >20 >30	6 0 55 <1 841 1091 984 1176 2962 <u>current</u> 5 3 1 1 <u>current</u> 0.2 7.1 18.6	0 0 56 <1 867 1101 1012 1199 3335 history1 0 3 0 0 history1 0.3 7.0 18.7	6 0 56 0 869 1067 972 1216 3231 history2 6 3 2 history2 0.7 9.2 20.9



OIL ANALYSIS REPORT







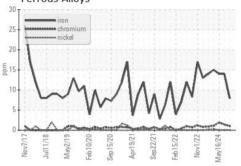
VISUAL		method				history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	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	13.0	13.0	13.1
GRAPHS						

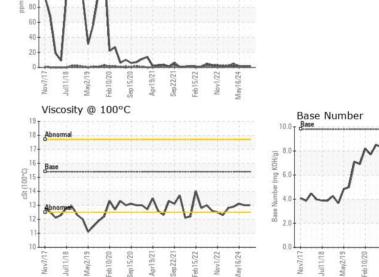
Ferrous Alloys

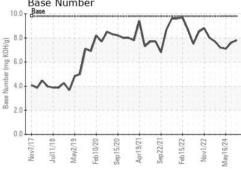
Non-ferrous Metals

160

140 120 100







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 029 - Wytheville Sample No. : GFL0125402 Received : 16 Jul 2024 2390 North 4th Street Lab Number : 06238730 Tested : 17 Jul 2024 Wytheville, VA Unique Number : 11127564 Diagnosed : 17 Jul 2024 - Wes Davis US 24382 Test Package : FLEET Contact: CHARLES CORVIN Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. charles.corvin@gflenv.com;canastasio@wearcheckusa.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (276)223-4476 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (276)223-1283

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Submitted By: CHARLES CORVIN

Page 2 of 2