

OIL ANALYSIS REPORT

Sample Rating Trend



812102 Component Diesel Engine

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

SAMPLE INFORMATION method

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Machine Id

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

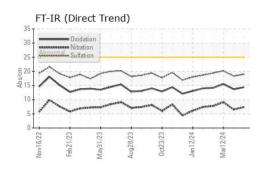
Fluid Condition

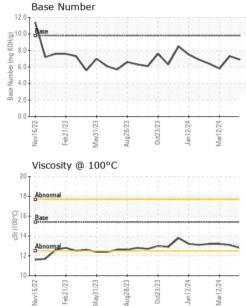
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM		method	limit/base	current	history i	nistory2
Sample Number		Client Info		GFL0118062	GFL0115702	GFL0115752
Sample Date		Client Info		23 Apr 2024	09 Apr 2024	12 Mar 2024
Machine Age	hrs	Client Info		5178	5059	4845
Oil Age	hrs	Client Info		333	214	583
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
-				Noninae		
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	6	4	11
Chromium	ppm	ASTM D5185m	>20	0	0	<1
Nickel	ppm	ASTM D5185m	>5	0	0	1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	0	<1	1
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	0	0	2
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m	210	0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
	ppin			•	0	
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	4	11	5
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	0	4 0	11 0	5
Boron Barium Molybdenum		ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 0 67	11 0 61	5 0 58
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 0 67 0	11 0 61 <1	5 0 58 <1
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 0 67 0 961	11 0 61	5 0 58 <1 849
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	4 0 67 0	11 0 61 <1	5 0 58 <1 849 997
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	4 0 67 0 961 1214 1027	11 0 61 <1 858 1042 935	5 0 58 <1 849 997 898
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	4 0 67 0 961 1214	11 0 61 <1 858 1042	5 0 58 <1 849 997
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	4 0 67 0 961 1214 1027	11 0 61 <1 858 1042 935	5 0 58 <1 849 997 898
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	4 0 67 0 961 1214 1027 1308	11 0 61 <1 858 1042 935 1113	5 0 58 <1 849 997 898 1133
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	4 0 67 0 961 1214 1027 1308 3456	11 0 61 <1 858 1042 935 1113 3073	5 0 58 <1 849 997 898 1133 2765
Boron Barium 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	0 0 60 1010 1070 1150 1270 2060	4 0 67 0 961 1214 1027 1308 3456 current	11 0 61 <1 858 1042 935 1113 3073 history1	5 0 58 <1 849 997 898 1133 2765 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	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 kimit/base >25	4 0 67 0 961 1214 1027 1308 3456 current 2	11 0 61 <1 858 1042 935 1113 3073 history1 3	5 0 58 <1 849 997 898 1133 2765 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m 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 kimit/base >25	4 0 67 0 961 1214 1027 1308 3456 <u>current</u> 2 2	11 0 61 <1 858 1042 935 1113 3073 history1 3 2	5 0 58 <1 849 997 898 1133 2765 history2 3 3 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 0 1010 1070 1150 1270 2060 2060 225 >25 >20	4 0 67 0 961 1214 1027 1308 3456 current 2 2 2 0 0	11 0 61 <1 858 1042 935 1113 3073 history1 3 2 0 history1	5 0 58 <1 849 997 898 1133 2765 history2 3 3 <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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 imit/base >20	4 0 67 0 961 1214 1027 1308 3456 <u>current</u> 2 2 2 0 <u>current</u> 0.4	11 0 61 <1 858 1042 935 1113 3073 history1 3 2 0 history1 0.3	5 0 58 <1 849 997 898 1133 2765 history2 3 3 <1 history2 0.8
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 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	4 0 67 0 961 1214 1027 1308 3456 <u>current</u> 2 2 2 0 0 <u>current</u> 0.4 7.4	11 0 61 <1 858 1042 935 1113 3073 history1 3 2 0 history1 0.3 6.5	5 0 58 <1 849 997 898 1133 2765 history2 3 3 3 <1 history2 0.8 9.1
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 >25 imit/base >4 >20	4 0 67 0 961 1214 1027 1308 3456 <u>current</u> 2 2 2 0 <u>current</u> 0.4 7.4 19.0	11 0 61 <1 858 1042 935 1113 3073 history1 3 2 0 history1 0.3 6.5 18.3	5 0 58 <1 849 997 898 1133 2765 history2 3 3 <1 history2 0.8 9.1 20.2
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 TS ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	4 0 67 0 961 1214 1027 1308 3456 <u>current</u> 2 2 2 0 0 <u>current</u> 0.4 7.4	11 0 61 <1 858 1042 935 1113 3073 history1 3 2 0 history1 0.3 6.5	5 0 58 <1 849 997 898 1133 2765 history2 3 3 3 <1 history2 0.8 9.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7414	0 0 0 1010 1070 1150 1270 2060 imit/base >25 20 imit/base >4 >20 >30 imit/base	4 0 67 0 961 1214 1027 1308 3456 <u>current</u> 2 2 2 0 <u>current</u> 0.4 7.4 19.0 <u>current</u>	111 0 61 <1 858 1042 935 1113 3073 history1 3 2 0 history1 0.3 6.5 18.3 history1 13.7	5 0 58 <1 849 997 898 1133 2765 history2 3 3 3 <1 history2 0.8 9.1 20.2 history2 15.5
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 TS ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 imit/base >25 20 imit/base >4 >20 >30 imit/base	4 0 67 0 961 1214 1027 1308 3456 <i>current</i> 2 2 2 0 <i>current</i> 0.4 7.4 19.0	11 0 61 <1 858 1042 935 1113 3073 history1 3 2 0 history1 0.3 6.5 18.3 history1	5 0 58 <1 849 997 898 1133 2765 history2 3 3 3 <1 history2 0.8 9.1 20.2 history2



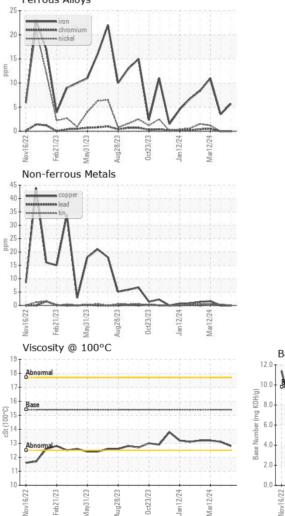
OIL ANALYSIS REPORT

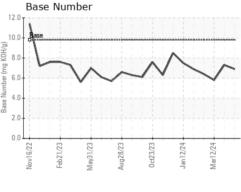




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.8	13.1	13.2
GRAPHS						

Ferrous Alloys





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 010 - Stockbridge Sample No. : GFL0118062 Received : 24 Apr 2024 1280 Rum Creek Parkway Lab Number : 06158744 Tested : 25 Apr 2024 Stockbridge, GA Unique Number : 10994167 Diagnosed : 25 Apr 2024 - Wes Davis US 30281 Test Package : FLEET Contact: JOSHUA TINKER Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. joshuatinker@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: F:

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

Submitted By: JOSHUA TINKER Page 2 of 2