

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Area (57A2YN6) Machine Id 413052 Component Diesel Engine

PETRO CANADA DURON SHP 15W40 (12 GAL)



SAMPLE INFORMATION method limit/base

DIAG	NOS	IS

4

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.

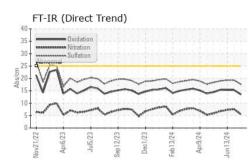
Fluid Condition

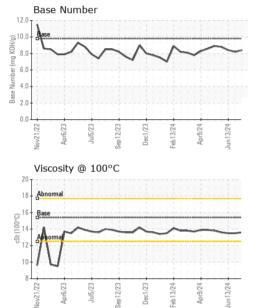
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number		Client Info		GFL0125862	GFL0125874	GFL0125867
Sample Date		Client Info		05 Jul 2024	20 Jun 2024	13 Jun 2024
Machine Age	hrs	Client Info		3899	3789	3603
Oil Age	hrs	Client Info		150	617	600
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ON	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	2	8	7
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	1	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	<1	4	1
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	0	2	1
Tin	ppm	ASTM D5185m	>15	0	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
			11 11 11			
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	current 4	history1 <1	history2 0
	ppm ppm					· · · ·
Boron		ASTM D5185m	0	4	<1	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	4 0	<1 0	0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 0 60	<1 0 60	0 0 65
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 0 60 0	<1 0 60 <1	0 0 65 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	4 0 60 0 989	<1 0 60 <1 1051	0 0 65 <1 1079
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	4 0 60 0 989 1176	<1 0 60 <1 1051 1123	0 0 65 <1 1079 1209
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 60 0 989 1176 1099	<1 0 60 <1 1051 1123 1167	0 0 65 <1 1079 1209 1143
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 60 0 989 1176 1099 1304	<1 0 60 <1 1051 1123 1167 1400	0 0 65 <1 1079 1209 1143 1440
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	4 0 60 0 989 1176 1099 1304 3759	<1 0 60 <1 1051 1123 1167 1400 3598	0 0 65 <1 1079 1209 1143 1440 3792
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	4 0 60 0 989 1176 1099 1304 3759 current	<1 0 60 <1 1051 1123 1167 1400 3598 history1	0 0 65 <1 1079 1209 1143 1440 3792 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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	4 0 60 0 989 1176 1099 1304 3759 current 2	<1 0 60 <1 1051 1123 1167 1400 3598 history1 5	0 0 65 <1 1079 1209 1143 1440 3792 history2 5
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 method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base	4 0 60 0 989 1176 1099 1304 3759 current 2 2 2	<1 0 60 <1 1051 1123 1167 1400 3598 history1 5 7	0 0 65 <1 1079 1209 1143 1440 3792 history2 5 4
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 limit/base >25	4 0 60 989 1176 1099 1304 3759 current 2 2 2 2 2	<1 0 60 <1 1051 1123 1167 1400 3598 history1 5 7 4	0 0 65 <1 1079 1209 1143 1440 3792 history2 5 4 4
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20	4 0 60 989 1176 1099 1304 3759 current 2 2 2 <1	<1 0 60 <1 1051 1123 1167 1400 3598 history1 5 7 4 4 history1	0 0 65 <1 1079 1209 1143 1440 3792 history2 5 4 4 4
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 limit/base >25 >20 limit/base	4 0 60 0 989 1176 1099 1304 3759 current 2 2 2 <1 current 0.1	<1 0 60 <1 1051 1123 1167 1400 3598 history1 5 7 4 history1 0.3	0 0 65 <1 1079 1209 1143 1440 3792 history2 5 4 4 4 4 history2 0.3
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	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 60 0 989 1176 1099 1304 3759 current 2 2 2 <1 2 <1 0.1 5.5	<1 0 60 <1 1051 1123 1167 1400 3598 history1 5 7 4 history1 0.3 7.6	0 0 65 <1 1079 1209 1143 1440 3792 history2 5 4 4 4 history2 0.3 7.3
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >4 >20	4 0 60 0 989 1176 1099 1304 3759 <u>current</u> 2 2 <1 2 <1 0.1 5.5 17.6	<1 0 60 <1 1051 1123 1167 1400 3598 history1 5 7 4 history1 0.3 7.6 19.3	0 0 65 <1 1079 1209 1143 1440 3792 history2 5 4 4 4 history2 0.3 7.3 19.3
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	ASTM D5185m ASTM D7844 *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 220 20 20 20 20 20 20 20 20	4 0 60 989 1176 1099 1304 3759 current 2 2 2 2 <1 current 0.1 5.5 17.6	<1 0 60 <1 1051 1123 1167 1400 3598 history1 5 7 4 history1 0.3 7.6 19.3 history1	0 0 65 <1 1079 1209 1143 1440 3792 history2 5 4 4 4 history2 0.3 7.3 19.3 history2



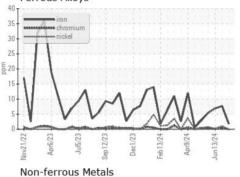
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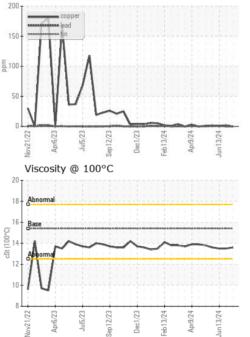


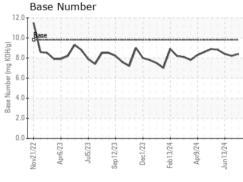


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	13.6	13.5	13.5
GRAPHS						

Ferrous Alloys







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 166 - Phenix City Sample No. : GFL0125862 Received : 09 Jul 2024 18 Old Brickyard Rd Lab Number : 06231299 Tested : 10 Jul 2024 Phenix City, AL Unique Number : 11114792 Diagnosed : 10 Jul 2024 - Wes Davis US 36869 Test Package : FLEET Contact: DEAN PEACE JR Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. dean.peace@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Report Id: GFL166 [WUSCAR] 06231299 (Generated: 07/10/2024 04:36:32) Rev: 1

Submitted By: DEAN PEACE JR Page 2 of 2