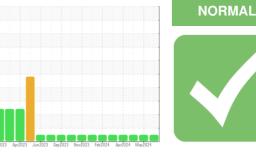


### **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id

## 728044-362000

#### 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

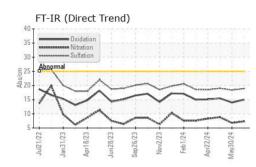
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

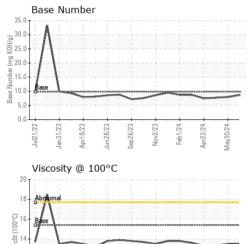
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0123211	GFL0104981	GFL0104832
Sample Date		Client Info		27 Jun 2024	30 May 2024	28 May 2024
Machine Age	mls	Client Info		242156	0	0
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	N/A	N/A
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 METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	10	6	20
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	4	4
Lead	ppm	ASTM D5185m	>40	<1	<1	<1
Copper	ppm	ASTM D5185m	>330	2	1	2
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current <1	history1 <1	history2 4
	ppm ppm		0			
Boron		ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	<1	<1	4
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	<1 0	<1 1	4
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	<1 0 55	<1 1 58	4 0 55
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	<1 0 55 <1	<1 1 58 0	4 0 55 <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	<1 0 55 <1 848	<1 1 58 0 842	4 0 55 <1 840
Boron Barium Molybdenum Manganese Magnesium Calcium	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	<1 0 55 <1 848 996	<1 1 58 0 842 1058	4 0 55 <1 840 948
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 ASTM D5185m	0 0 60 0 1010 1070 1150	<1 0 55 <1 848 996 938	<1 1 58 0 842 1058 931	4 0 55 <1 840 948 994
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	<1 0 55 <1 848 996 938 1154	<1 1 58 0 842 1058 931 1163	4 0 55 <1 840 948 994 1128
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	<1 0 55 <1 848 996 938 1154 2945	<1 1 58 0 842 1058 931 1163 3102	4 0 55 <1 840 948 994 1128 3807
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 00 00 1010 1070 1150 1270 2060	<1 0 55 <1 848 996 938 1154 2945 current	<1 1 58 0 842 1058 931 1163 3102 history1	4 0 55 <1 840 948 994 1128 3807 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 <b>method</b> ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 imit/base	<1 0 555 <1 848 996 938 1154 2945 current 5	<1 1 58 0 842 1058 931 1163 3102 history1 4	4 0 55 <1 840 948 994 1128 3807 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 <b>method</b> ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 imit/base	<1 0 55 <1 848 996 938 1154 2945 <u>current</u> 5 17	<1 1 58 0 842 1058 931 1163 3102 history1 4 8	4 0 55 <1 840 948 994 1128 3807 history2 5 42
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 <b>limit/base</b> >25	<1 0 55 <1 848 996 938 1154 2945 <u>current</u> 5 17 7	<1 1 58 0 842 1058 931 1163 3102 history1 4 8 6	4 0 55 <1 840 948 994 1128 3807 history2 5 42 18
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	<1 0 55 <1 848 996 938 1154 2945 current 5 17 7 2	<1 1 58 0 842 1058 931 1163 3102 history1 4 8 6 history1	4 0 55 <1 840 948 994 1128 3807 history2 5 42 18 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 Limit/base >20	<1 0 55 <1 848 996 938 1154 2945 <u>current</u> 5 17 7 <u>current</u> 0.3	<1 1 58 0 842 1058 931 1163 3102 history1 4 8 6 history1 0.2	4 0 55 <1 840 948 994 1128 3807 history2 5 42 18 history2 0.5
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 ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	<1 0 55 <1 848 996 938 1154 2945 <i>current</i> 5 17 7 <i>current</i> 0.3 7.3	<1 1 58 0 842 1058 931 1163 3102 history1 4 8 6 history1 0.2 6.8	4 0 55 <1 840 948 994 1128 3807 history2 5 42 18 history2 0.5 8.8
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 <b>imit/base</b> >25 <b>imit/base</b> >3 >20 >3 >20	<1 0 55 <1 848 996 938 1154 2945 <u>current</u> 5 17 7 <u>current</u> 0.3 7.3 18.9	<1 1 58 0 842 1058 931 1163 3102 history1 4 8 6 history1 0.2 6.8 18.4	4 0 55 <1 840 948 994 1128 3807 history2 5 42 18 history2 0.5 8.8 19.0



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# **OIL ANALYSIS REPORT**





iep26/23 Nov2/23 Feb1/24

Apr18/23 un28/23

Jan31/23

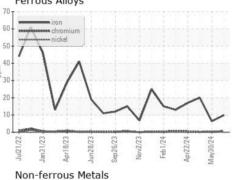
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	13.5	13.5	13.3
GRAPHS						

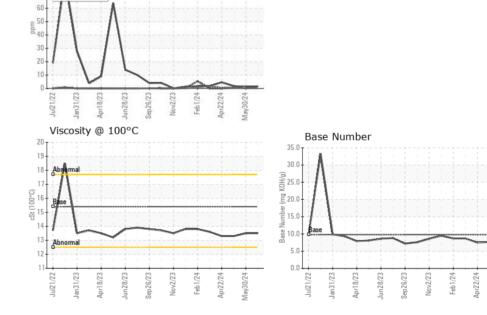
Ferrous Alloys

90

80 70

/lav30/24





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 820 - Joplin Hauling Sample No. : GFL0123211 Received : 10 Jul 2024 3700 West 7th Street Lab Number : 06232118 Tested : 11 Jul 2024 Joplin, MO US 64801 Unique Number : 11115611 Diagnosed : 11 Jul 2024 - Wes Davis Test Package : FLEET Contact: James Jarrett Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. jjarrett@gflenv.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (417)310-2802 回製 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Submitted By: VINCE ASTI Page 2 of 2

Aav30/24