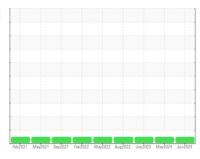


# **OIL ANALYSIS REPORT**

(YA152757) **AUTOCAR 810005** 

Diesel Engine

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



Sample Rating Trend



## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

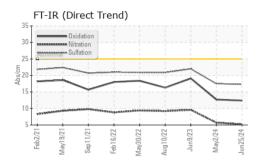
## **Fluid Condition**

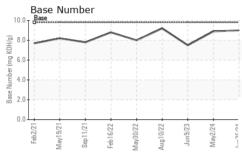
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

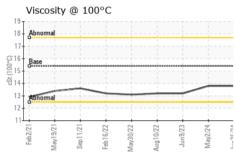
Cample Number   Client Info   Cample Pate   Client Info   Cample Date   Client Info   Cample Date   Client Info   Cample Pate   Client Info   Cample Pate   Client Info   Cample Pate   Cample Pate	IAL)		Feb2UZ1 INI	nyzuzi sepzuzi Febzuzz	mayzuzz Augzuzz Junzuza mayz	UZ4 JUNZUZ4	
Sample Date	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Machine Age   hrs   Client Info   0   0   0   8189	Sample Number		Client Info		GFL0119671	GFL0119646	GFL0059016
Oil Age	Sample Date		Client Info		25 Jun 2024	02 May 2024	09 Jun 2023
Cilient Info	Machine Age	hrs	Client Info		0	10592	6083
NORMAL   NORMAL   NORMAL   CONTAMINATION   method   imit/base   current   history1   history2   history2   water   WC Method   >3.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0	Oil Age	hrs	Client Info		0	0	8189
CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >3.0         <1.0	Oil Changed		Client Info		N/A	N/A	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water         WC Method         >0.2         NEG         NEG         NEG           Glycol         WC Method         Imitibase         NEG         NEG         NEG           WEAR METALS         method         limitibase         current         history1         history2           Iron         ppm         ASTM D5185m         >75         5         4         22           Chromium         ppm         ASTM D5185m         >5         0         0         0         1           Nickel         ppm         ASTM D5185m         >4         0         0         0         0           Silver         ppm         ASTM D5185m         >2         0         0         0         0           Silver         ppm         ASTM D5185m         >2         0         0         0         0           Silver         ppm         ASTM D5185m         >25         0         0         1         2         2         3           Lead         ppm         ASTM D5185m         >10         0         <1	CONTAMINAT	ΓΙΟΝ	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >75         5         4         22           Chromium         ppm         ASTM D5185m         >5         0         0         <1	Water		WC Method	>0.2	NEG	NEG	NEG
Continum   Continum	Glycol		WC Method		NEG	NEG	NEG
Chromium   ppm	WEAR METAL	LS	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>75	5	4	22
Description	Chromium	ppm	ASTM D5185m	>5	0	0	<1
Silver	Nickel	ppm	ASTM D5185m	>4	0	0	0
Aluminum	Titanium	ppm	ASTM D5185m	>2	0	0	0
Lead	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper         ppm         ASTM D5185m         >100         <1         2         2           Tin         ppm         ASTM D5185m         >4         0         <1	Aluminum	ppm	ASTM D5185m	>15	2	2	3
Tin	Lead	ppm	ASTM D5185m	>25	0	0	1
Vanadium         ppm         ASTM D5185m         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         15         4         8           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0         0           Manganese         ppm         ASTM D5185m         0         0         <1         <1           Magnesium         ppm         ASTM D5185m         1070         1048         1057         1141           Phosphorus         ppm         ASTM D5185m         1150         1019         1066         997           Zinc         ppm         ASTM D5185m         1270         1234         1239         1241           Sulfur         ppm         ASTM D5185m         2060         3627         3594         3535           CONTAMINANTS         method         limit/base         current         history1 <th< td=""><td>Copper</td><td>ppm</td><td>ASTM D5185m</td><td>&gt;100</td><td>&lt;1</td><td>2</td><td>2</td></th<>	Copper	ppm	ASTM D5185m	>100	<1	2	2
ADDITIVES	Tin	ppm	ASTM D5185m	>4	0	<1	0
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	0	0
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         60         56         57         60           Manganese         ppm         ASTM D5185m         0         0         <1         <1           Magnesium         ppm         ASTM D5185m         1010         893         903         952           Calcium         ppm         ASTM D5185m         1070         1048         1057         1141           Phosphorus         ppm         ASTM D5185m         1150         1019         1066         997           Zinc         ppm         ASTM D5185m         1270         1234         1239         1241           Sulfur         ppm         ASTM D5185m         2060         3627         3594         3535           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         22         2         6           Potassium         ppm         ASTM D5185m         20         2         1         2           INFRA-RED         method         limit/base         current         history1         history2           Soot %         *ASTM D7844         >6         0.2	Boron	ppm	ASTM D5185m	0	15	4	8
Manganese         ppm         ASTM D5185m         0         <1         <1           Magnesium         ppm         ASTM D5185m         1010         893         903         952           Calcium         ppm         ASTM D5185m         1070         1048         1057         1141           Phosphorus         ppm         ASTM D5185m         1150         1019         1066         997           Zinc         ppm         ASTM D5185m         1270         1234         1239         1241           Sulfur         ppm         ASTM D5185m         2060         3627         3594         3535           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         3         4           Sodium         ppm         ASTM D5185m         >20         2         1         2           Potassium         ppm         ASTM D5185m         >20         2         1         2           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium         ppm         ASTM D5185m         1010         893         903         952           Calcium         ppm         ASTM D5185m         1070         1048         1057         1141           Phosphorus         ppm         ASTM D5185m         1150         1019         1066         997           Zinc         ppm         ASTM D5185m         1270         1234         1239         1241           Sulfur         ppm         ASTM D5185m         2060         3627         3594         3535           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         25         4         3         4           Sodium         ppm         ASTM D5185m         20         2         1         2           Potassium         ppm         ASTM D5185m         >20         2         1         2           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         5.2         5.7         9.6           Sulfation         Abs/.1mm         *ASTM D7414	Molybdenum	ppm	ASTM D5185m	60	56	57	60
Calcium         ppm         ASTM D5185m         1070         1048         1057         1141           Phosphorus         ppm         ASTM D5185m         1150         1019         1066         997           Zinc         ppm         ASTM D5185m         1270         1234         1239         1241           Sulfur         ppm         ASTM D5185m         2060         3627         3594         3535           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         25         4         3         4           Sodium         ppm         ASTM D5185m         20         2         1         2           Potassium         ppm         ASTM D5185m         >20         2         1         2           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.2         0.3         0.7           Nitration         Abs/cm         *ASTM D7415         >30         17.3         17.5         22.0           FLUID DEGRADATION         *ASTM D741	Manganese	ppm	ASTM D5185m	0	0	<1	<1
Phosphorus         ppm         ASTM D5185m         1150         1019         1066         997           Zinc         ppm         ASTM D5185m         1270         1234         1239         1241           Sulfur         ppm         ASTM D5185m         2060         3627         3594         3535           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         3         4           Sodium         ppm         ASTM D5185m         2         2         6           Potassium         ppm         ASTM D5185m         >20         2         1         2           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.2         0.3         0.7           Nitration         Abs/cm         *ASTM D7624         >20         5.2         5.7         9.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.3         17.5         22.0           FLUID DEGRADATION         method         li	Magnesium	ppm	ASTM D5185m	1010	893	903	952
Zinc         ppm         ASTM D5185m         1270         1234         1239         1241           Sulfur         ppm         ASTM D5185m         2060         3627         3594         3535           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         3         4           Sodium         ppm         ASTM D5185m         2         2         6           Potassium         ppm         ASTM D5185m         >20         2         1         2           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.2         0.3         0.7           Nitration         Abs/cm         *ASTM D7624         >20         5.2         5.7         9.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.3         17.5         22.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D741	Calcium	ppm	ASTM D5185m	1070	1048	1057	1141
Sulfur         ppm         ASTM D5185m         2060         3627         3594         3535           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         3         4           Sodium         ppm         ASTM D5185m         2         2         6           Potassium         ppm         ASTM D5185m         >20         2         1         2           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.2         0.3         0.7           Nitration         Abs/cm         *ASTM D7624         >20         5.2         5.7         9.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.3         17.5         22.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         12.4         12.7         19.1	Phosphorus	ppm	ASTM D5185m	1150	1019	1066	997
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         3         4           Sodium         ppm         ASTM D5185m         2         2         6           Potassium         ppm         ASTM D5185m         >20         2         1         2           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.2         0.3         0.7           Nitration         Abs/cm         *ASTM D7624         >20         5.2         5.7         9.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.3         17.5         22.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         12.4         12.7         19.1	Zinc	ppm	ASTM D5185m	1270	1234	1239	1241
Silicon         ppm         ASTM D5185m         >25         4         3         4           Sodium         ppm         ASTM D5185m         2         2         6           Potassium         ppm         ASTM D5185m         >20         2         1         2           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.2         0.3         0.7           Nitration         Abs/cm         *ASTM D7624         >20         5.2         5.7         9.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.3         17.5         22.0           FLUID DEGRADATION method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         12.4         12.7         19.1	Sulfur	ppm	ASTM D5185m	2060	3627	3594	3535
Sodium         ppm         ASTM D5185m         2         2         6           Potassium         ppm         ASTM D5185m         >20         2         1         2           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.2         0.3         0.7           Nitration         Abs/cm         *ASTM D7624         >20         5.2         5.7         9.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.3         17.5         22.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         12.4         12.7         19.1	CONTAMINA	NTS	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         2         1         2           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.2         0.3         0.7           Nitration         Abs/cm         *ASTM D7624         >20         5.2         5.7         9.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.3         17.5         22.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         12.4         12.7         19.1	Silicon	ppm	ASTM D5185m	>25	4	3	4
INFRA-RED	Sodium	ppm	ASTM D5185m		2	2	6
Soot %         *ASTM D7844         >6         0.2         0.3         0.7           Nitration         Abs/cm         *ASTM D7624         >20         5.2         5.7         9.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.3         17.5         22.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         12.4         12.7         19.1	Potassium	ppm	ASTM D5185m	>20	2	1	2
Nitration         Abs/cm         *ASTM D7624         >20         5.2         5.7         9.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.3         17.5         22.0           FLUID DEGRADATION method limit/base current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         12.4         12.7         19.1	INFRA-RED		method	limit/base	current	history1	history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         17.3         17.5         22.0           FLUID DEGRADATION method limit/base current history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         12.4         12.7         19.1	Soot %	%	*ASTM D7844	>6	0.2	0.3	0.7
FLUID DEGRADATION method limit/base current history1 history2  Oxidation Abs/.1mm *ASTM D7414 >25 12.4 12.7 19.1	Nitration	Abs/cm	*ASTM D7624	>20	5.2	5.7	9.6
Oxidation Abs/.1mm *ASTM D7414 >25 <b>12.4</b> 12.7 19.1	Sulfation	Abs/.1mm	*ASTM D7415	>30	17.3	17.5	22.0
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	12.4	12.7	19.1
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	9.0	8.9	7.5

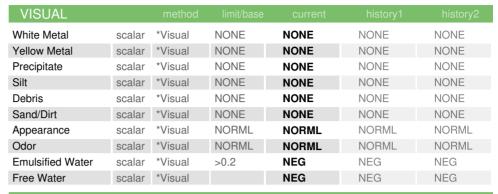


# **OIL ANALYSIS REPORT**



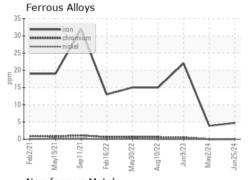


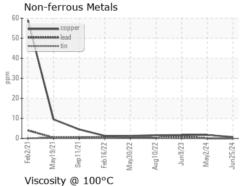


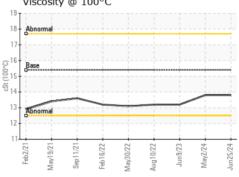


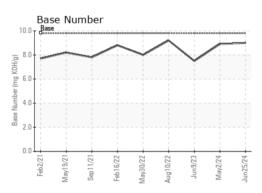
FLUID PROP	ERITES	method	ilmit/base		nistory i	nistoryz
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	13.8	13.2

### **GRAPHS**













Certificate 12367

Laboratory Sample No.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0119671 Lab Number : 06239795 Unique Number : 11128629

Test Package : FLEET

**Tested** Diagnosed

Received

: 17 Jul 2024 : 18 Jul 2024 : 18 Jul 2024 - Wes Davis

GFL Environmental - 004 - Newport - Central Coast 427 Roberts Road Newport, NC US 28570

Contact: Marquis Williams marquis.williams@gflenv.com

To discuss this sample report, contact Customer Service at 1-800-237-1369. \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

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

F: (252)223-6010 Submitted By: GFL004 and GLF112 - Marguis Williams

T: