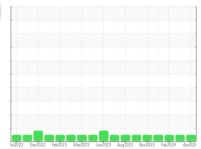


# **OIL ANALYSIS REPORT**

Sample Rating Trend



**NORMAL** 



Machine Id 731122

Natural Gas Engine

PETRO CANADA DURON GEO LD 15W40 (--- GAL)

## 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 oil.

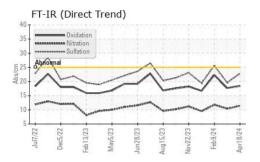
## **Fluid Condition**

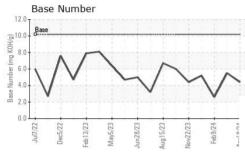
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

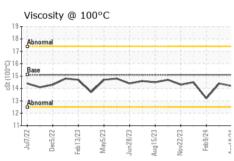
SAMPLE INFORMATION   method   limit/base   current   history1   history2	( GAL) Nudozz Owdozz Fedzoza Maydoza Junztorza Nuvdoza Fedzoza Fedz						
Sample Date	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Machine Age         hrs         Client Info         4467         4335         0           Oil Age         hrs         Client Info         1200         0         0         0           Oil Changed         Client Info         Changed         Not Changd         Not Changd         Not Changd           Sample Status         method         limit/base         current         history1         history2           Water         WC Method         >0.1         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >50         12         11         12           Chromium         ppm         ASTM D5185m         >4         <1         0         1           Nickel         ppm         ASTM D5185m         >2         0         0         0           Silver         ppm         ASTM D5185m         >3         0         0         0           Lead         ppm         ASTM D5185m         >9         2         <1         6           Copper         ppm         ASTM D5185m         >3         0         <1         7	Sample Number		Client Info		GFL0117193	GFL0114026	GFL0109772
Oil Age         hrs         Client Info         1200         0         0           Oil Changed Sample Status         Client Info         Changed Not Changed Not Changed Not Changed Not Changed NoRMAL         Not Changed NoRMAL         N	Sample Date		Client Info		18 Apr 2024	14 Mar 2024	09 Feb 2024
Oil Changed Sample Status	Machine Age	hrs	Client Info		4467	4335	0
Oil Changed Sample Status         Client Info         Changed NORMAL         Not Changd Normal         Not Change Normal         Not Change Normal         Not Change Normal	•	hrs	Client Info		1200	0	0
NORMAL   NORMAL   NORMAL   NORMAL			Client Info		Changed	Not Changd	Not Changd
Water         WC Method         >0.1         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >50         12         11         12           Chromium         ppm         ASTM D5185m         >2         0         0         0           Nickel         ppm         ASTM D5185m         >2         0         0         0           Titanium         ppm         ASTM D5185m         >3         0         0         0           Aluminum         ppm         ASTM D5185m         >3         0         0         0           Aluminum         ppm         ASTM D5185m         >30         0         <1	-					NORMAL	NORMAL
Iron	CONTAMINAT	ION	method	limit/base	current	history1	history2
Iron	Water		WC Method	>0.1	NEG	NEG	NEG
Chromium         ppm         ASTM D5185m         >4         <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>50	12	11	12
Titanium	Chromium	ppm	ASTM D5185m	>4	<1	0	1
Silver	Nickel	ppm	ASTM D5185m	>2	0	0	0
Aluminum	Titanium	ppm	ASTM D5185m		0	0	<1
Lead	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper         ppm         ASTM D5185m         >35         2         11         12           Tin         ppm         ASTM D5185m         >4         <1         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         50         10         13         5           Barium         ppm         ASTM D5185m         50         0         0         0           Molybdenum         ppm         ASTM D5185m         50         56         51         59           Manganese         ppm         ASTM D5185m         50         56         51         59           Magnesium         ppm         ASTM D5185m         50         605         517         581           Calcium         ppm         ASTM D5185m         560         605         517         581           Calcium         ppm         ASTM D5185m         780         790         762         720 </th <th>Aluminum</th> <th>ppm</th> <th>ASTM D5185m</th> <th>&gt;9</th> <th>2</th> <th>&lt;1</th> <th>6</th>	Aluminum	ppm	ASTM D5185m	>9	2	<1	6
Tin	Lead	ppm	ASTM D5185m	>30	0	<1	7
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         50         10         13         5           Barium         ppm         ASTM D5185m         50         0         0         0           Molybdenum         ppm         ASTM D5185m         50         56         51         59           Manganese         ppm         ASTM D5185m         50         56         51         59           Magnesium         ppm         ASTM D5185m         560         605         517         581           Calcium         ppm         ASTM D5185m         780         790         762         720           Zinc         ppm         ASTM D5185m         780         790         762         720           Zinc         ppm         ASTM D5185m         2040         2961         2795         2261           CONTAMINANTS         method         limit/base         current         history1         histor	Copper	ppm	ASTM D5185m	>35	2	11	12
Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         50         10         13         5           Barium         ppm         ASTM D5185m         5         0         0         0           Molybdenum         ppm         ASTM D5185m         50         56         51         59           Manganese         ppm         ASTM D5185m         0         <1         0         <1           Magnesium         ppm         ASTM D5185m         560         605         517         581           Calcium         ppm         ASTM D5185m         1510         1734         1541         1461           Phosphorus         ppm         ASTM D5185m         780         790         762         720           Zinc         ppm         ASTM D5185m         870         1056         945         965           Sulfur         ppm         ASTM D5185m         >+100         4         3         17           Sodium         ppm         ASTM D5185m         >+100         4         <	Tin	ppm	ASTM D5185m	>4	<1	0	1
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	0	0
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium         ppm         ASTM D5185m         5         0         0         0           Molybdenum         ppm         ASTM D5185m         50         56         51         59           Manganese         ppm         ASTM D5185m         0         <1         0         <1           Magnesium         ppm         ASTM D5185m         560         605         517         581           Calcium         ppm         ASTM D5185m         1510         1734         1541         1461           Phosphorus         ppm         ASTM D5185m         780         790         762         720           Zinc         ppm         ASTM D5185m         870         1056         945         965           Sulfur         ppm         ASTM D5185m         2040         2961         2795         2261           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >+100         4         3         17           Sodium         ppm         ASTM D5185m         >20         0         0         5           INFRA-RED         meth	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         50         56         51         59           Manganese         ppm         ASTM D5185m         0         <1	Boron	ppm	ASTM D5185m	50	10	13	5
Manganese         ppm         ASTM D5185m         0         <1	Barium	ppm	ASTM D5185m	5	0	0	0
Magnesium         ppm         ASTM D5185m         560         605         517         581           Calcium         ppm         ASTM D5185m         1510         1734         1541         1461           Phosphorus         ppm         ASTM D5185m         780         790         762         720           Zinc         ppm         ASTM D5185m         870         1056         945         965           Sulfur         ppm         ASTM D5185m         2040         2961         2795         2261           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >+100         4         3         17           Sodium         ppm         ASTM D5185m         >+100         4         3         1           Potassium         ppm         ASTM D5185m         >20         0         0         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         *ASTM D7624         >20         11.4         10.4         11.8           Sulfation         Abs/.1mm         *ASTM D7415         >30 <th>Molybdenum</th> <th>ppm</th> <th>ASTM D5185m</th> <th>50</th> <th>56</th> <th>51</th> <th>59</th>	Molybdenum	ppm	ASTM D5185m	50	56	51	59
Calcium         ppm         ASTM D5185m         1510         1734         1541         1461           Phosphorus         ppm         ASTM D5185m         780         790         762         720           Zinc         ppm         ASTM D5185m         870         1056         945         965           Sulfur         ppm         ASTM D5185m         2040         2961         2795         2261           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >+100         4         3         17           Sodium         ppm         ASTM D5185m         >+100         4         3         1           Potassium         ppm         ASTM D5185m         >20         0         0         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0.1         0         0           Nitration         Abs/cm         *ASTM D7415         >30         22.8         19.6         25.6           FLUID DEGRADATION         *ASTM D7414         >25<	Manganese	ppm	ASTM D5185m	0	<1	0	<1
Phosphorus         ppm         ASTM D5185m         780         790         762         720           Zinc         ppm         ASTM D5185m         870         1056         945         965           Sulfur         ppm         ASTM D5185m         2040         2961         2795         2261           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >+100         4         3         17           Sodium         ppm         ASTM D5185m         >+100         4         3         1           Potassium         ppm         ASTM D5185m         >20         0         0         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0.1         0         0           Nitration         Abs/cm         *ASTM D7624         >20         11.4         10.4         11.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         22.8         19.6         25.6           FLUID DEGRADATION         method         limit/base	Magnesium	ppm	ASTM D5185m	560	605	517	581
Zinc         ppm         ASTM D5185m         870         1056         945         965           Sulfur         ppm         ASTM D5185m         2040         2961         2795         2261           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >+100         4         3         17           Sodium         ppm         ASTM D5185m         6         3         1           Potassium         ppm         ASTM D5185m         >20         0         0         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0.1         0         0           Nitration         Abs/cm         *ASTM D7624         >20         11.4         10.4         11.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         22.8         19.6         25.6           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25	Calcium	ppm	ASTM D5185m	1510	1734	1541	1461
Sulfur         ppm         ASTM D5185m         2040         2961         2795         2261           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >+100         4         3         17           Sodium         ppm         ASTM D5185m         >+100         4         3         1           Potassium         ppm         ASTM D5185m         >20         0         0         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0.1         0         0           Nitration         Abs/cm         *ASTM D7624         >20         11.4         10.4         11.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         22.8         19.6         25.6           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.4         17.7         22.3	Phosphorus	ppm	ASTM D5185m	780	790	762	720
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >+100         4         3         17           Sodium         ppm         ASTM D5185m         6         3         1           Potassium         ppm         ASTM D5185m         >20         0         0         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0.1         0         0           Nitration         Abs/cm         *ASTM D7624         >20         11.4         10.4         11.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         22.8         19.6         25.6           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.4         17.7         22.3	Zinc	ppm	ASTM D5185m	870	1056	945	965
Silicon         ppm         ASTM D5185m         >+100         4         3         17           Sodium         ppm         ASTM D5185m         6         3         1           Potassium         ppm         ASTM D5185m         >20         0         0         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0.1         0         0           Nitration         Abs/cm         *ASTM D7624         >20         11.4         10.4         11.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         22.8         19.6         25.6           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.4         17.7         22.3	Sulfur	ppm	ASTM D5185m	2040	2961	2795	2261
Sodium         ppm         ASTM D5185m         6         3         1           Potassium         ppm         ASTM D5185m         >20         0         0         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0.1         0         0           Nitration         Abs/cm         *ASTM D7624         >20         11.4         10.4         11.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         22.8         19.6         25.6           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.4         17.7         22.3	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         0         0         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0.1         0         0           Nitration         Abs/cm         *ASTM D7624         >20         11.4         10.4         11.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         22.8         19.6         25.6           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.4         17.7         22.3	Silicon	ppm	ASTM D5185m	>+100	4	3	17
INFRA-RED	Sodium	ppm	ASTM D5185m		6	3	1
Soot %         %         *ASTM D7844         0.1         0         0           Nitration         Abs/cm         *ASTM D7624         >20         11.4         10.4         11.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         22.8         19.6         25.6           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.4         17.7         22.3	Potassium	ppm	ASTM D5185m	>20	0	0	5
Nitration         Abs/cm         *ASTM D7624         >20         11.4         10.4         11.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         22.8         19.6         25.6           FLUID DEGRADATION method limit/base current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.4         17.7         22.3	INFRA-RED		method	limit/base	current	history1	history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         22.8         19.6         25.6           FLUID DEGRADATION method limit/base current history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.4         17.7         22.3	Soot %	%	*ASTM D7844		0.1	0	0
FLUID DEGRADATION method limit/base current history1 history2  Oxidation Abs/.1mm *ASTM D7414 >25 18.4 17.7 22.3	Nitration	Abs/cm	*ASTM D7624	>20	11.4	10.4	11.8
Oxidation Abs/.1mm *ASTM D7414 >25 <b>18.4</b> 17.7 22.3	Sulfation	Abs/.1mm	*ASTM D7415	>30	22.8	19.6	25.6
	FLUID DEGRAI	OATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 10.2 4.4 5.5 2.6	Oxidation	Abs/.1mm	*ASTM D7414	>25	18.4	17.7	22.3
	Base Number (BN)	mg KOH/g	ASTM D2896	10.2	4.4	5.5	2.6



# **OIL ANALYSIS REPORT**



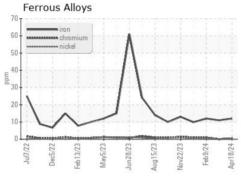


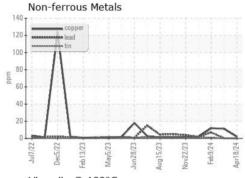


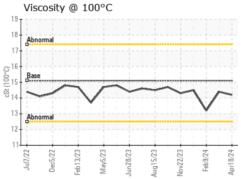
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

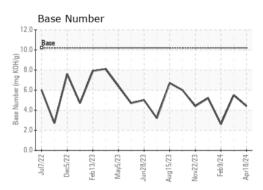
FLUID PROPI	ERITES	method	ilmit/base		nistory i	nistory∠
Visc @ 100°C	cSt	ASTM D445	15.1	14.2	14.4	13.2

### **GRAPHS**













Certificate 12367

Laboratory Sample No.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0117193 Lab Number : 06158362 Unique Number : 10993785

Test Package : FLEET

Received : 23 Apr 2024 **Tested** : 24 Apr 2024 Diagnosed

: 24 Apr 2024 - Wes Davis

GFL Environmental - 836 - Kansas City Hauling

7801 East Truman Road Kansas City, MO US 64126

Contact: Loyce Stewart loyce.stewart@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)

Report Id: GFL836 [WUSCAR] 06158362 (Generated: 04/24/2024 15:50:15) Rev: 1

Contact/Location: GFL823,834,836,837,840 - Loyce Stewart - GFL836

T:

F: